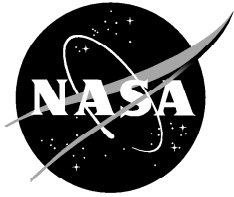


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# Flow-Field Survey in the Test Region of the SR-71 Aircraft Test Bed Configuration

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**August 2000**

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## ABSTRACT

A flat plate and faired pod have been mounted on a NASA SR-71A aircraft for use as a supersonic flight experiment test bed. A test article can be placed on the flat plate; the pod can contain supporting systems. A series of test flights has been conducted to validate this test bed configuration. Flight speeds to a maximum of Mach 3.0 have been attained. Steady-state sideslip maneuvers to a maximum of  $2^\circ$  have been conducted, and the flow field in the test region has been surveyed. Two total-pressure rakes, each with two flow-angle probes, have been placed in the expected vicinity of an experiment. Static-pressure measurements have been made on the flat plate. At subsonic and low supersonic speeds with no sideslip, the flow in the surveyed region is quite uniform. During sideslip maneuvers, localized flow distortions impinge on the test region. Aircraft sideslip does not produce a uniform sidewash over the test region. At speeds faster than Mach 1.5, variable-pressure distortions were observed in the test region. Boundary-layer thickness on the flat plate at the rake was less than 2.1 in. For future experiments, a more focused and detailed flow-field survey than this one would be desirable.

## NOMENCLATURE

$A, B$	angle-of-attack solution parameters for a five-hole probe
$A', B', C'$	angle-of-sideslip solution parameters for a five-hole probe
$c$	flat-plate length, in.
$D$	dummy variable
$KEAS$	equivalent airspeed, knots
LASRE	Linear Aerospike SR-71 Experiment
$M$	Mach number
$P$	pressure, lbf/in <sup>2</sup>
$U$	velocity, ft/sec
$x$	axial distance from leading edge of flat plate, in.
$y$	vertical distance off surface of flat plate, in.
$z$	lateral distance from aircraft centerline, in.
	angle of attack, deg
	angle of sideslip, deg
	pressure difference triple, lbf/in <sup>2</sup>
	ratio of specific heats
	angle-of-attack offset for a five-hole probe, in.
	angle-of-sideslip offset for a five-hole probe, in.
	rotation angle for the five-hole probe orifice, deg
	cone angle for the five-hole probe orifice, deg
	standard deviation

angle of roll, deg

## Subscripts

<i>avg</i>	average
<i>e</i>	local flow angle
<i>i, j, k</i>	port indices
<i>max</i>	maximum
<i>min</i>	minimum
<i>p</i>	flow-angle probe
<i>pitot</i>	pitot conditions
<i>s</i>	static conditions
<i>t</i>	total conditions
	free stream

## INTRODUCTION

An SR-71A aircraft at NASA Dryden Flight Research Center (Edwards, California), tail number 844, has been modified into a test bed configuration by incorporating a faired pod and a flat plate onto the upper fuselage (fig. 1). This modified aircraft is intended as a supersonic flight experiment test bed, including for aerodynamic and airbreathing propulsion experiments. A test article can be placed in the test region over the flat plate. The flat plate, in previous literature called the “reflection plane,” is at a  $-2^\circ$  angle of incidence to align with the local flow field over the aircraft. The plate also serves to straighten the flow in the test region, and can also serve as a simulated wing panel for propulsion concepts, if appropriate. The faired pod, referred to as the “canoe,” can contain supporting systems such as instrumentation, controllers, and fuel, as appropriate. The canoe and flat plate were originally built for the Linear Aerospike SR-71 Experiment (LASRE), in which flight effects on the performance of linear aerospike rockets were studied (ref. 1). A series of four test flights has been conducted to validate this test bed configuration (fig. 2), including two flights with the flow-field instrumentation that is the subject of this report. Details about the SR-71 test bed configuration, flight test results, and integration of experiments previously have been published (ref. 2).

For airbreathing propulsion experiments to be carried on the test bed, flow quality over the flat plate into the inlet is anticipated to be important because high-performance supersonic inlets often are highly sensitive to incoming flow conditions. For example, supersonic cruise inlets optimized for high recovery can usually tolerate only a few degrees of flow angle, or a small fraction of a Mach number distortion, before “unstaring” (ref. 3). Therefore, characterizing the flow field of a supersonic propulsion test facility is important.

During two flights of the SR-71 test bed aircraft, relevant flow-field measurements were taken near the likely inlet location of an airbreathing propulsion experiment. This report presents the flight test data and analyses of that flow field. Note this experiment was a “piggyback” one, added onto the already-



planned flights for the test bed configuration. As such, this experiment had to meet the existing flight schedule for little additional cost. Whatever hardware was available or could be borrowed, and could be qualified for flight on short notice, was used. The goal was to obtain any test region flow-field information that would otherwise not be known.

## INSTRUMENTATION

Two flow survey rakes (fig. 3) were placed on the flat plate. The rakes were lent from NASA Glenn Research Center (Cleveland, Ohio), where they were used as throat calibration rakes in the 10- by 10-ft supersonic wind tunnel. Each rake was 2 ft tall and had 16 total-pressure elements. Each rake was fitted with two hemispherical-tip five-hole probes for flow-angle measurements; these probes also incorporated static taps for instream static-pressure measurements. Hemispherical-tip five-hole probes are believed to have smoother response characteristics than other tip geometries over a range of subsonic to supersonic Mach numbers (ref. 4). The rakes were fabricated from steel. Flight qualification of the rakes was determined from some simple aerodynamic and loads analysis, ground vibration testing, and prior application in the supersonic wind tunnel under similar flow conditions. Table 1 shows vertical positions of the rake elements.

Table 1. Rake element vertical position.

Element <sup>a</sup>	y, in. <sup>b</sup>
16	24.1
Five-hole probe, upper	22.6
15	21.1
14	18.3
13	15.7
12	13.3
11 (not connected)	12.2
10	11.1
Five-hole probe, lower	10.1
9	9.1
8	7.3
7	5.7
6	4.3
5	3.1
4	2.1
3	1.3
2	0.7
1	0.3

<sup>a</sup> Numbered elements are pitot probes.

<sup>b</sup> Distances are referenced from flat plate.

The rakes were positioned in the likely inlet location of an airbreathing propulsion experiment (fig. 4). Longitudinally, the rakes were positioned as far forward as possible while remaining behind the Mach wave from the flat-plate leading edge that occurs during Mach-3.2 flight. Laterally, the “centerline” rake was actually positioned 2 in. right of centerline, and the “offset” rake was 17 in. left of centerline (fig. 5).

Alignment of the five-hole probes on the rake was measured. The flat plate was used as the reference plane, and its side edge was the reference axis. Yaw alignment was measured with the rakes installed on the flat plate. Obviously, the lower surface of the rake base was coincident with the flat plate. Pitch alignment was measured with the rake sitting on a reference flat surface. Individual orifice locations on each probe were measured using a scope on a milling machine. Orifice positions were geometrically converted to half-cone and rotation angles. Measurements were taken before and after flights, and the average was used. Figure 6 shows the orifice numbering convention used in this report. Table 2 shows five-hole probe alignment data.

The centerline rake lower probe was found to be installed rotated nearly 45°, and two of its tubes were broken. Therefore, this probe was considered inoperative and not used. Measurements of orifice positions on the centerline upper probe before and after flights had discrepancies that could not be explained by rotation of the probe. Determining which orifice position measurement was more correct was not possible, so the nominal orifice positions were used for this probe. For the other probes, consistency of orifice position measurements before and after flights was good.

Surface static-pressure measurements were taken on the flat plate at the locations shown in figure 4. Drilling and installing conventional flush static-pressure orifices on the existing hardware were not feasible in the time available. Instead, thin stainless-steel tubes (0.012 in. outer diameter; 0.024 in. inner diameter), sealed at one end, were epoxied to the surface; and an orifice was drilled at the measurement location (fig. 7). These materials are considered robust to the maximum flight speed of approximately Mach 3.0. This configuration is comparable to ribbons of thin flexible tubes, with an orifice in the side of each tube, used for surface static-pressure measurements. Measurements near the rakes provided local surface static pressures for the rakes. Measurement points upstream provided some indication of upstream flow distortions.

In addition, a large hemispherical-tip probe called the “stream probe” was located on the centerline of the canoe, 100 in. in front of the flat-plate leading edge. This probe had nine orifices for total-pressure and flow-angle (five of which were used), and two orifices for static pressure (fig. 8).

All test bed external pressures were measured with 10-lbf/in<sup>2</sup> multiplexed, electronic differential pressure sensors, accurate to approximately  $\pm 0.1$  lbf/in<sup>2</sup>. Reference pressure was read from absolute pressure transducers, accurate to  $\pm 0.0057$  lbf/in<sup>2</sup>. The data were digitally telemetered to the ground station for monitoring and recording.

Aircraft free-stream pitot and static pressures were obtained from the aircraft noseboom; airspeed parameters were derived from these data. Aircraft angle of attack,  $\alpha$ , and angle of sideslip,  $\beta$ , were obtained from a four-hole hemispherical-tip probe attached to the aircraft noseboom. The noseboom was calibrated. Angle of attack was referenced to the wing reference plane. Roll angle was obtained from the inertial navigation system (ref. 5). All data were digitally telemetered to ground station and also recorded on an onboard tape. In most cases, the onboard tape data were used for analysis, because the tape is free of telemetry data spikes and dropouts.

Table 2. Five-hole probe geometry measurements and misalignment.

Rake	Orifice number	Angles, deg	
Centerline, lower		-0.4	0.6
	1		0.0 0.0
	Inoperative		218.2 49.3
	3		134.1 47.8
	Inoperative		46.3 49.8
	5		-49.3 50.0
Centerline, upper <sup>a</sup>		-0.2	0.4
	1		0.0 0.0
	2		180.0 45.0
	3		270.0 45.0
	4		0.0 45.0
	5		90.0 45.0
Offset, lower		0.0	-0.3
	1		0.0 0.0
	2		188.0 45.7
	3		276.6 53.7
	4		-1.5 50.2
	5		92.3 45.5
Offset, upper		0.6	1.1
	1		0.0 0.0
	2		185.9 44.1
	3		279.2 49.0
	4		-2.9 52.1
	5		81.2 46.8

<sup>a</sup> Nominal orifice positions.

## FLIGHT CONDITIONS

Two flights, flights 54 and 55, were conducted with the flow-field instrumentation in place. Flight 54 reached a speed of Mach 3.00 and an altitude of 68,700 ft. Flight 55 reached a speed of Mach 2.75 and an altitude of 63,200 ft, and included a level transonic acceleration for additional transonic data. Test region flow fields were evaluated at several quasi-steady-state test points. Figure 9 shows all test points evaluated, superimposed on the nominal SR-71 flight envelope. Tables 3–6 show Mach number and altitude for the test points considered. In total, 61 test points were examined.

Flight 54 flow-field characteristics were analyzed for Mach numbers from 0.40 to 3.00 during both climb and descent (table 3). A similar range of flight Mach numbers was analyzed for flight 55, but the peak was Mach 2.75 (table 4).

Table 3. Flight 54 flow-field evaluation test points.

Free-stream Mach number	Altitude, ft
0.89	24,100
0.79	24,900
1.20	28,700
1.51	37,900
2.01	51,300
2.40	57,700
3.00	68,700
3.01	66,200
2.38	65,000
2.02	59,400
1.51	47,400
1.17	35,600
0.79	14,700
0.59	11,200
0.41	7,000

Table 4. Flight 55 flow-field evaluation test points.

Free-stream Mach number	Altitude, ft
0.79	16,100
0.90	27,700
0.95	31,700
1.20	27,700
1.52	38,300
2.01	49,500
2.42	57,200
2.70	61,300
2.75	63,200
2.70	62,500
2.42	63,100
2.03	58,700
1.53	46,900
1.20	37,400
0.59	9,400
0.41	5,100

Steady-heading sideslip maneuvers to the left and right were flown to evaluate sensitivity of the test region flow field to aircraft sideslip, and to determine if a reasonably uniform sidewash could be induced for testing purposes.

To obtain data during sideslip maneuvers, flow-field data were extracted from three specific stages on each sideslip maneuver for both flights: the steady-state conditions immediately preceding the maneuver, and the maximum sideslip to the left and to the right as determined by the aircraft noseboom. As before, these three flow-field stages were averaged over a 1-sec flight interval, during which relatively steady-state flow-field properties were achieved.

Flight 54 included five sideslip maneuvers at approximate Mach numbers of 0.90, 0.95, 1.40, 2.60, and 2.80 (table 5). Flight 55 also included five sideslip maneuvers, at approximate Mach numbers of 0.50, 0.80, 0.90, 1.10, and 2.00 (table 6).

Table 5. Flight 54 flow-field evaluation test points with sideslip.

Sideslip maneuver		Free-stream	Altitude,	
Number	Direction	Mach number	ft	deg
1	Straight	2.60	61,000	0.3
	Left	2.62	61,200	0.7
	Right	2.65	61,600	-0.4
2	Straight	2.78	65,200	0.6
	Left	2.81	66,000	0.8
	Right	2.80	66,800	-0.5
3	Straight	1.38	43,900	0.7
	Left	1.35	42,100	2.2
	Right	1.31	40,100	-1.8
4	Straight	0.91	25,100	0.3
	Left	0.92	25,200	2.1
	Right	0.91	25,200	-1.9
5	Straight	0.95	25,000	0.2
	Left	0.96	25,500	2.1
	Right	0.96	25,700	-1.7

Table 6. Flight 55 flow-field evaluation test points with sideslip.

Sideslip maneuver		Free-stream	Altitude,	,
Number	Direction	Mach number	ft	deg
1	Straight	2.07	59,400	-0.1
	Left	2.02	57,400	1.4
	Right	1.94	56,600	-1.0
2	Straight	0.89	24,700	0.4
	Left	0.89	24,900	2.2
	Right	0.91	25,100	-1.6
3	Straight	1.12	25,700	0.1
	Left	1.12	25,900	2.0
	Right	1.14	26,000	-1.8
4	Straight	0.81	15,000	0.1
	Left	0.81	15,000	2.2
	Right	0.81	15,600	-1.7
5	Straight	0.51	5,800	-0.1
	Left	0.52	5,700	2.7
	Right	0.50	5,900	-1.7

## ANALYSIS

Procedures and calculations for processing instrumentation measurements are described in this section. Rake pressures and flow-angle probes are also considered.

### Data Processing

Flow-field data from flights 54 and 55 were analyzed for the test points. For the sideslip analysis, data were sampled while at maximum sideslip in each direction. To establish a flow-field baseline for the maneuver, data were also extracted immediately preceding the sideslip maneuver.

Data were sampled at 50 Hz over each 1-sec interval. All pressure measurements were corrected from differential pressure to absolute pressure by adding the absolute reference pressure of the canoe. Data points outside a 3- band from the mean were considered telemetry data spikes and were discarded. All parameters were then averaged over the 1-sec interval to obtain a steady-state value.

## Rakes

To convert the rake-measured pitot pressures into Mach number and total pressure, some assumption must be made about the flow over the rake. Three different approaches were used in the data analysis:

- **The uniform static-pressure assumption.** Surface static pressure measured near the base was applied uniformly over the entire height of the rake, as is conventional for boundary-layer rakes. The argument can be made that, although this assumption is good across a boundary layer, the static pressure could significantly vary elsewhere, especially in supersonic flow. The two static pressures nearest the base of each rake were averaged and used for each respective rake.
- **The interpolated static-pressure assumption.** Pressures from the five-hole probe static ports were used to obtain additional in-stream static-pressure information. In this approach, static pressures between the surface pressures near the base of the rake and the five-hole probe static port pressures were linearly interpolated over the rake.
- **The uniform total-pressure assumption.** For supersonic flow only, total pressure was assumed to be uniform over the entire rake and equal to free-stream total pressure,  $P_t$ , from the noseboom. The argument can be made that in supersonic flow over a relatively clean, low-drag configuration, the waves would be relatively weak and cause minimal total-pressure losses. Therefore, the total pressure would be nearly uniform, although greater static-pressure and Mach number variations might exist. Note that this assumption was only used for supersonic flow because in subsonic flow, the total pressure was directly measured. This assumption is not applicable within the boundary layer.

For the uniform static-pressure assumption and the interpolated static-pressure assumption, Mach number and total pressure were computed from the measured pitot pressure and the assumed static pressure. The calculations differed for subsonic and supersonic cases. The flow was determined to be supersonic if the following equations, based on the adiabatic Mach-1 pressure ratio, held true. For convenience, the free-stream static pressure,  $P_s$ , from the aircraft noseboom was used for this discriminator.

$$\frac{P_{pitot}}{P_s} > 1.89293 \quad (1)$$

For subsonic flow,

$$P_t = P_{pitot} \quad (2)$$

The Mach number was obtained from the isentropic compressible flow equations:

$$M = \sqrt{\frac{2}{-1} \frac{P_t}{P_s}^{-1} - 1} \quad (3)$$

where the method for obtaining static pressure,  $P_s$ , depended on whether the uniform or interpolated static-pressure assumption was used. Air was assumed to be a calorically perfect gas with the ratio of specific heats,  $\gamma$ , equal to 1.4.

For supersonic flow, the equations differ because the normal shock in front of the pitot tube must be taken into account. For the uniform and interpolated static-pressure assumptions, the local static pressure was assumed to be known. The local Mach number was then calculated using a Taylor series expansion of the inverse Raleigh-Pitot equation (ref. 6):

$$M = \sqrt{\frac{1.42857 - 0.357143D - 0.0625D^2 - 0.025D^3 - 0.012617D^4 - 0.00715D^5 - 0.0043458D^6 - 0.0087725D^9}{D}} \quad (4)$$

where the dummy variable

$$D = 1.839371 \frac{P_s}{P_{pitot}} \quad (5)$$

Total pressure was then derived from the normal shock relation (ref. 7).

$$P_t = P_{pitot} \frac{(\gamma + 1)M^2}{(\gamma - 1)M^2 + 2} \frac{1}{1 - \frac{\gamma - 1}{2}M^2} \quad (6)$$

For the uniform total-pressure assumption, the total pressure was assumed to be known. However, no closed-form solution exists to obtain Mach number given the pressures in equation (6). Therefore, a fifth-order polynomial curve fit was applied to the inverse of equation (6) over a Mach range from 1 to 5, with  $\gamma = 1.4$ , giving:

$$M = -46.979D^5 + 132.80D^4 - 145.75D^3 + 78.831D^2 - 23.936D + 6.1571 \quad (7)$$

where the independent dummy variable  $D$  was defined to be the total-pressure ratio across the normal shock in front of the pitot tube:

$$D = \frac{P_{pitot}}{P_t} \quad (8)$$

The correlation coefficient is 0.9997. Figure 10 shows a graphical representation of the fit.

Average values of Mach number and total pressures were calculated. Flow distortions of Mach number and total pressure were quantified by maximum minus minimum values, a simple criterion often used for inlet research. The bottom three rake probe elements were excluded because they have been shown to be in the boundary layer.



## Flow-Angle Probes

Flow-angle probes consisted of the four five-hole probes on the rakes and the larger 11-hole stream probe on the canoe. The five-hole probe data were analyzed using the triples algorithm (ref. 8).<sup>\*</sup> This method was chosen because it is applicable to supersonic flows, and reasonable results can be obtained by using probe geometry measurements without a wind-tunnel calibration. As observed from the data in reference 9, at Mach numbers greater than 1.5 and flow angles less than 10°, the error caused by using initial flow-angle estimates without further correction was less than 1°. In this study, those errors probably were overwhelmed by probe geometry measurement uncertainties. The algorithm was based on sets of pressure differences between three aligned pressure orifices,  $P_{ik}$ ,  $P_{ji}$ , and  $P_{kj}$ , called “triples”:

$$\begin{aligned} P_{ik} &= P_i - P_k \\ P_{ji} &= P_j - P_i \\ P_{kj} &= P_k - P_j \end{aligned} \quad (9)$$

The local angle of attack,  $\alpha_e$ , is obtained from

$$\alpha_e = \frac{1}{2} \tan^{-1} \frac{A}{B} \quad (10)$$

where

$$\begin{aligned} A &= P_{ik} \sin^2 \theta_j + P_{ji} \sin^2 \theta_k + P_{kj} \sin^2 \theta_i \\ B &= P_{ik} \cos \theta_j \sin \theta_j \cos \theta_j + P_{ji} \cos \theta_k \sin \theta_k \cos \theta_k + P_{kj} \cos \theta_i \sin \theta_i \cos \theta_i \end{aligned} \quad (11)$$

and  $\theta_i$  and  $\theta_j$  are the orifice cone and rotation angles, respectively. Using the orifice numbering convention defined in figure 6,

$$\begin{aligned} i &= 1 \\ j &= 2 \\ k &= 4 \end{aligned} \quad (12)$$

---

<sup>\*</sup>A patent has been filed on this NASA invention.

The nominal cone angles of the orifices were 45°, except for the center orifice (number 1), which was 0°. Nominal rotation angles were as follows:

$$\begin{aligned} \theta_1 &= 0^\circ \\ \theta_2 &= 180^\circ \\ \theta_3 &= 270^\circ \\ \theta_4 &= 0^\circ \\ \theta_5 &= 90^\circ \end{aligned}$$

Actual cone and rotation angles of the orifices were obtained using trigonometry from detailed position measurements of the probe orifices made using a milling machine scope (table 2 shows the values).

Angle of sideslip was the solution to the quadratic equation in  $\tan \theta_e$ :

$$A' \tan^2 \theta_e + 2B' \tan \theta_e + C' = 0 \quad (13)$$

where

$$\begin{aligned} A' &= i_k v_j^2 + j_i v_k^2 + k_j v_i^2 \\ B' &= i_k u_j v_j + j_i u_k v_k + k_j u_i v_i \\ C' &= i_k u_j^2 + j_i u_k^2 + k_j u_i^2 \end{aligned} \quad (14)$$

and

$$\begin{aligned} u_{\{ijk\}} &= \cos \theta_e \cos \theta_{\{ijk\}} + \sin \theta_e \sin \theta_{\{ijk\}} \cos \theta_{\{ijk\}} \\ v_{\{ijk\}} &= \sin \theta_{\{ijk\}} \sin \theta_{\{ijk\}} \end{aligned} \quad (15)$$

and the indices were

$$\begin{aligned} i &= 1 \\ j &= 3 \\ k &= 5 \end{aligned} \quad (16)$$

Equations (9)–(11) and (13)–(15) are included in the triples algorithm patent (ref. 8). Correcting for probe installation angles, the local flow angles at the five-hole probes were:

$$\begin{aligned} \theta_p &= \theta_e + \theta_{\{ijk\}} \\ \theta_p &= \theta_e + \theta_{\{ijk\}} \end{aligned} \quad (17)$$

Installation angle corrections and were determined from simple geometric measurements referencing the plane and side edge of the flat plate. Therefore, flow angles were measured in relation to the flat plate. Note that flow angles were in the probe frame of reference (that is, positive  $\theta_e$  was upwash, and positive  $\theta_e$  was flow from right to left).

The same technique was used to process data from the canoe stream probe. Nominal orifice locations were used, and a of  $-2^\circ$  was used to compensate for the incidence angle of the flat plate relative to the canoe. The vertical and horizontal orifice triples were used for angles of attack and sideslip, respectively. No attempt was made to blend in pressures from the other four diagonal orifices.

## RESULTS

The appendix provides a complete set of data in tabulated form. An electronic copy of the data is available from the authors. For convenient interpretation and comparison between flights, pressure data were nondimensionalized. Pressures were normalized by free-stream total pressure; except for static pressures, which were normalized by free-stream static pressure. Therefore, with no distortion or losses, nondimensional total pressure was 1.0. Free-stream conditions were obtained from the aircraft noseboom.

### Rakes

Rake average and distortion parameters, taken over both rakes, were examined using the three different assumptions (figs. 11–16). The bottom three elements of each rake were excluded because they were in the boundary layer. Effects of right and left sideslip were not expected to be symmetric because the rake placement was not laterally symmetric with respect to the aircraft fuselage centerline.

- **Uniform static-pressure assumption.** Figure 11(a) shows the rake average total pressures. Sideslip cases are plotted with open symbols. As expected, subsonic total pressures were close to free-stream levels, and decreased at supersonic Mach numbers because of increasing shock losses over the aircraft. Right sideslip (that is, the nose pointed right) caused a slight total-pressure decrease. Rake total-pressure maximum and minimum distortions are plotted (fig. 12(a)). With no sideslip, distortions were near zero at subsonic speeds and increased with Mach number, with substantial scatter at speeds faster than Mach 1.6. Right sideslip caused a substantial increase in distortion. Right sideslip may have caused flow distortion off the canoe, canopy, or aircraft forebody to impinge on the survey region because the offset rake is left of centerline. The rake average Mach numbers are plotted (fig. 13(a)). The Mach numbers in the survey region were near or slightly below free stream. A slight dip exists near Mach 1. This decrease could be caused by uncertainties in measuring static pressure in this regime, which would also affect the switch between subsonic and supersonic calculations and result in anomalous data. Rake Mach number maximum and minimum distortions (fig. 14(a)) exhibited similar patterns as the total-pressure distortion. Average static pressures measured near the base of the rake (fig. 15(a)) were close to free-stream levels, although increases existed at approximately Mach 1 and greater.
- **Interpolated static-pressure assumption.** This method makes use of all available static-pressure information. Compared with the uniform static-pressure assumption, rake average total pressures (fig. 11(b)) showed a greater decrease with increasing Mach number, and total-pressure distortions (fig. 12(b)) were comparable. Rake average Mach numbers (fig. 13(b)) were similar, but with a more pronounced dip at approximately Mach 1. Mach distortions (fig. 14(b)) were substantially

higher in the transonic region, but comparable in other cases. Rake average static-pressure measurements (fig. 15(b)) had a pronounced spike at approximately Mach 1. Rake static-pressure maximum and minimum distortions (fig. 16(a)) also had a large spike at approximately Mach 1, and showed high levels and scatter at greater Mach numbers. These characteristics suggested that static-pressure ports on the five-hole probes were strongly influenced by transonic effects. At supersonic speeds, especially faster than Mach 1.5, waves appeared to be impinging on the rakes, and also static-pressure measurements may have been influenced by waves from adjacent probes. Therefore, the interpolated static-pressure assumption also has inherent inaccuracies.

- **Uniform total-pressure assumption.** Rake average Mach number was close to or slightly greater than the free-stream Mach number (fig. 13(c)). Recall the uniform total-pressure assumption was only applicable to supersonic cases. Outlying data points at approximately Mach 1 probably were caused by transonic effects. Mach distortions were much higher than with the uniform static-pressure assumption (fig. 14(c)). The inferred rake average static pressures (fig. 15(c)) were lower than the measured static pressure near the base of the rakes (fig. 15(a)). A possible explanation is that supersonic total-pressure losses in the flow field of the aircraft and test bed were not negligible, which would result in an artificially low static pressure when the uniform total-pressure assumption was used. Therefore, this assumption may not be the best for obtaining quantitative results. For completeness, rake static-pressure distortions are also plotted (fig. 16(b)).

In the subsequent rake profile plots, the uniform static-pressure assumption was used, and total-pressure profiles were plotted (figs. 17–25). Total pressure was exactly measured in subsonic flow, and was minimally influenced by static-pressure errors in low supersonic flow. As discussed above, the uniform static-pressure assumption appears to be the best approach for obtaining quantitative results. To illustrate the three different assumptions, rake total-pressure, Mach number, and static-pressure profiles are plotted for a representative Mach 2.4 case (figs. 17–19).

In subsonic flight, total-pressure profiles in straight flight showed excellent flow uniformity (fig. 20). During sideslip maneuvers, localized total-pressure loss was observed in right sideslip on the offset rake (fig. 21(b)). Note that angle of sideslip is negative in a right sideslip (the aircraft nose points to the right) to maintain consistency with past reports.

Figure 22 shows total-pressure profiles from straight supersonic flight. At speeds faster than Mach 1.6, distortions were greater and the offset rake measured what appeared to be localized total-pressure loss regions. Total pressure appeared to decrease at supersonic Mach numbers, which was expected because of greater shock losses. Sideslips at Mach numbers of 1.4, 2.0, and 2.8 showed significant, localized total-pressure loss on the offset rake in right sideslip (figs. 23–25). Localized total-pressure losses also became apparent on the centerline rake in right sideslip at Mach 2.0 and faster (figs. 24(a) and 25(a)).

## Flow-Angle Probes

Difficulty in accurately measuring orifice positions, and the sensitivity of flow-angle measurements to orifice position, suggests that flow angles presented here should be used only for qualitative evaluation of the flow field. As previously mentioned, nominal orifice locations were used for the stream probe. To obtain accurate flow-angle measurements, wind-tunnel calibration of the probes over the Mach ranges to be considered would still be necessary. As previously noted, without calibration, the results were good only at greater than Mach 1.5. Also recall the centerline rake lower probe was inoperative.

Figure 26 shows variations of five-hole and stream probe angle of attack,  $\alpha_p$ , and angle of sideslip,  $\beta_p$ , with free-stream Mach number plotted for nominally straight flight. The  $\alpha_p$  of the lower probe and stream probe were close to  $0^\circ$ , probably because of the flow straightening effect of the flat plate. The upper probes exhibited greater scatter than the lower probe. The  $\beta_p$  values were also close to  $0^\circ$ , except for the offset lower probe, which showed substantial scatter. These results suggest a localized flow distortion is impinging in this region in this Mach number range.

Figure 27 shows variations of five-hole and stream probe flow angles over a limited range of aircraft angle of attack plotted for nominally straight flight. As expected, not much variation existed in  $\alpha_p$  because of the straightening effect of the flat plate; and as before, substantial scatter existed in  $\beta_p$  of the offset lower probe.

Figure 28 shows variations of five-hole and stream probe flow angles with aircraft angle of sideslip plotted. As might be expected, no major trend in  $\beta_p$  existed. No strong correlation existed between aircraft  $\beta$  and flow-angle probe  $\beta_p$ , as would be desired if using aircraft  $\beta$  to create a uniform sidewash over the test region. As before,  $\beta_p$  of the offset lower probe showed substantial scatter.

Measurements from stream probe static ports were erratic for unknown reasons. Therefore, local Mach number and supersonic total pressure could not be accurately calculated using the stream probe.

## Boundary Layer

The flow survey rakes were not designed as boundary-layer rakes, and the spatial resolution near the surface was inadequate for quantitative boundary-layer analysis. However, consider the minimum and maximum rake velocity profiles for all the cases (fig. 29), assuming uniform static temperature over the rake. Boundary-layer effects evidently were confined to the bottom three probe elements in all cases. Therefore, one can reasonably claim that in the conditions investigated, the boundary-layer thickness was less than 2.1 in., the height of the fourth probe element off the surface.

## Static Pressures

Static-pressure data were collected for flights 54 and 55 at various static-pressure ports located along the flat plate. The static pressures were evaluated for combinations of the following conditions: level flight, sideslip maneuvers, varying Mach number, and varying location along the flat plate.

Static pressures at subsonic flight speeds were fairly constant with axial position along the flat plate (fig. 30). Supersonic level flight data for static pressures show that static pressure decreased with increasing distance from the leading edge, with this trend becoming more pronounced as flight speed increased (fig. 31). Supersonic data also show the static pressure increased with increasing flight speed.

Static-pressure data were also collected at various lateral distances from the flat-plate centerline. Static pressure did not significantly vary in subsonic flight (fig. 32), but greater pressure variation was measured supersonically (fig. 33).

Static-pressure data were taken with sideslip and compared with distance from the flat-plate leading edge. Static pressure is shown to have somewhat increased with increasing flight speeds (figs. 34–37) and considerably more scatter exists than during straight and level flight. No clear trends of static pressure

existed with increasing distance from the leading edge. Trends in static-pressure measurements between left and right sideslips were also not obvious.

Static pressures were fairly constant in comparison with distance from the centerline while in all sideslip maneuvers (figs. 38–41). This constant trend is even more noticeable for flight 55. Here again, trends of static-pressure data with location on the reflection plane were not obvious, nor were differences between the left and right sideslips.

## DISCUSSION

At subsonic and low supersonic speeds with no sideslip, the flow in the surveyed region was quite uniform. The first major type of flow distortion observed was a localized total-pressure loss that impinged on the surveyed region when the aircraft was in sideslip at subsonic to supersonic speeds. Aircraft configuration geometry and flow-distortion profiles suggest these distortions could have been vortices or wakes shed off the aircraft canopy, forebody chines, or canoe forebody when flying at a positive angle of attack (fig. 42). Large variations between test points also suggest these distortions were highly localized flow phenomena. Partly as a result of this flow distortion, aircraft sideslip did not produce a uniform sidewash over the test region, as would be desired.

The second major type of flow distortion observed was highly variable–pressure distortions at supersonic speeds, particularly speeds faster than Mach 1.5. These distortions appear to have been supersonic waves off the aircraft. Configuration geometry, and the range of Mach numbers where distortions were observed, suggest the waves could have been from the region around the J58 engine inlet to the bleed exit ports (fig. 43). That flow field would have been highly nonuniform and could have varied depending on engine and inlet operating conditions, which could partly explain the data scatter.

Direct correlation of present data with existing computational fluid dynamic analyses and wind-tunnel testing was not possible. The configurations previously examined were substantially different, with the large, blunt LASRE model occupying nearly the entire length of the flat plate or the canoe alone without the flat plate (ref. 9). If some of the supersonic flow distortions were indeed caused by the J58 inlet and bleed exit flow, they were probably not accurately reproduced in the analysis.

Some suggestions are offered for inlet flow-field considerations on potential airbreathing propulsion experiments to be carried. Sideslip maneuvers introduced flow distortions, rather than a uniform sidewash, into the surveyed region. The experiment could be designed to be highly tolerant to flow distortions, which may or may not be feasible. The present study obtained data in one specific area and encountered localized and variable flow distortions. Therefore, the flow quality over the flat plate could be highly variable. If an experiment is sensitive to flow distortion, then a separate flow-field survey should be performed, focusing on the particular inlet region, flight conditions, and flow-distortion types of interest. From a purely flow-quality standpoint, the best solution would be to locate the experiment inlet as far forward as possible, near the front of the canoe, moving the flat plate forward if necessary. This placement should bring the inlet out in front of the major waves from the J58 engine pods, into a cleaner flow field. However, this configuration aerodynamically would be substantially different than the one flown and would require additional analysis and flight envelope clearance. Also, if a large experiment is mounted far forward, it may lead to problems with aircraft moments and stability, which was the original reason why the flat plate was located so far aft in the LASRE experiment.

## CONCLUDING REMARKS

Using the SR-71 test bed configuration, flow surveys were conducted in the estimated location of the inlet of a hypothetical airbreathing propulsion experiment carried on the aircraft. Two flights were conducted at speeds to a maximum of Mach 3.0. Rake total pressures, surface static pressures, and several flow angles were measured. Major findings and recommendations are as follows:

- At subsonic and low supersonic flight with no sideslip, the flow in the surveyed region was quite uniform.
- During sideslip maneuvers, localized flow distortion impinged in the test region. These distortions could have been vortices or wakes shed off the aircraft canopy, forebody chines, or canoe forebody. Aircraft sideslip did not produce a uniform sidewash over the test region, as would be desired.
- At supersonic speeds, especially faster than Mach 1.5, variable-pressure distortions were observed in the test region. These distortions were probably supersonic waves off the aircraft, possibly from the J58 engine inlets, cowl leading edge, or bleed exit ports.
- Boundary-layer thickness on the flat plate at the rake was no more than 2.1 in.
- For future airbreathing propulsion experiments, especially if sensitive to flow distortions, a flow-field survey would be desirable, focusing on the particular inlet region, flight conditions, and flow-distortion types of interest.
- Several approaches were used to calculate flow parameters from pitot pressures measured by the flow survey rake with available instrumentation. The most successful approach was to apply the static pressure measured at the surface near the base of the rake over the entire rake, as is conventional for boundary-layer rakes.
- Qualitative flow-angle information for flight at Mach 1.5 and faster were obtained from hemispherical-tip five-hole probe pressure measurements using only geometric and theoretical means. To obtain quantitative or low-speed flow-angle data, wind-tunnel calibration of the probes would be necessary.

# FIGURES

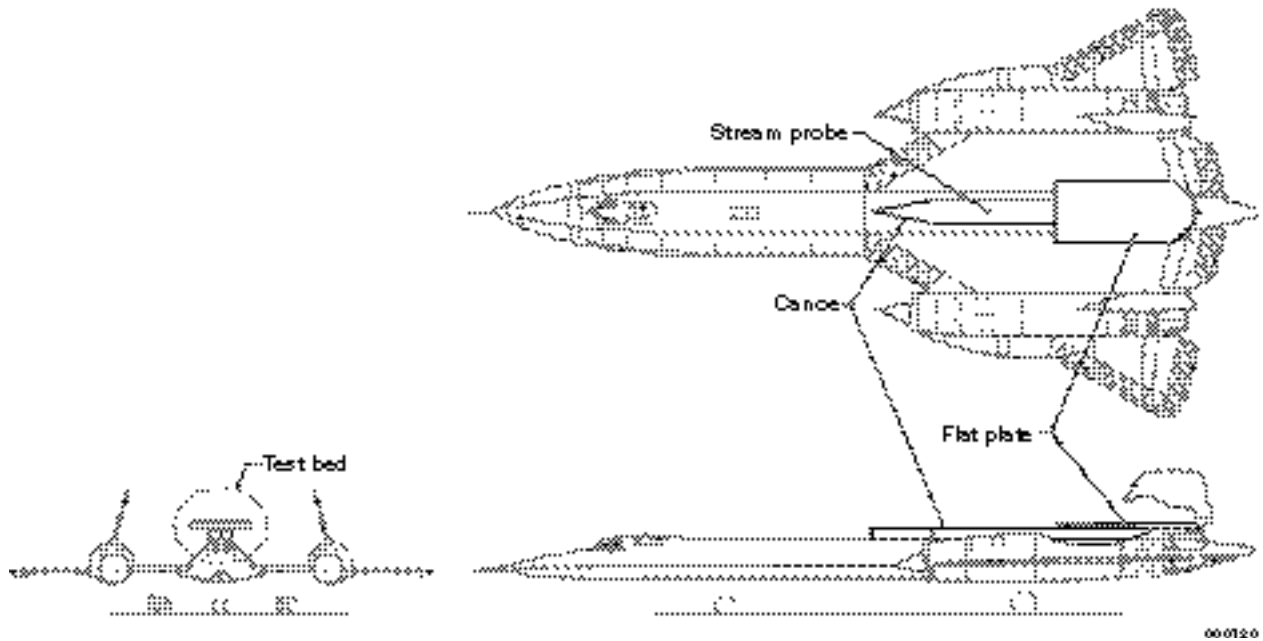


Figure 1. SR-71A aircraft test bed configuration.



EC99-4506506

Figure 2. SR-71A aircraft test bed configuration in flight.



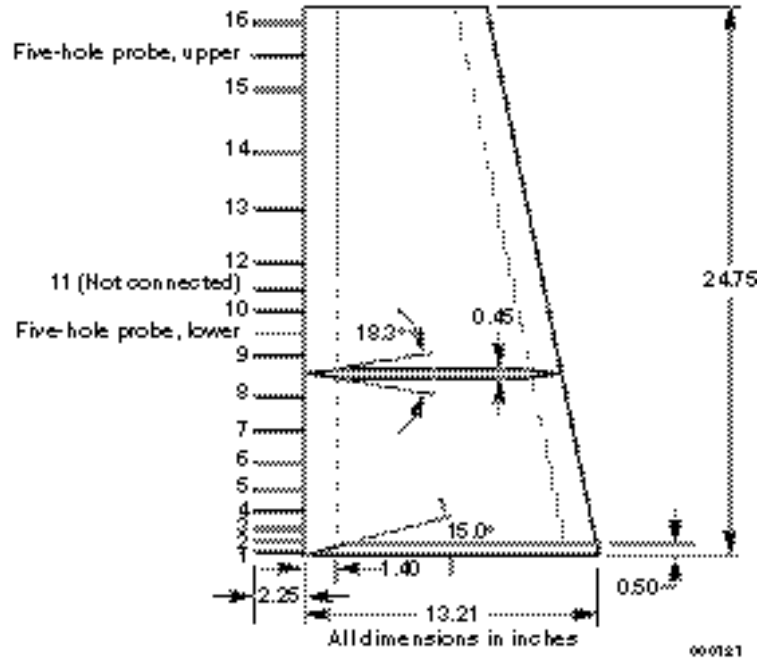


Figure 3. Flow survey rake.

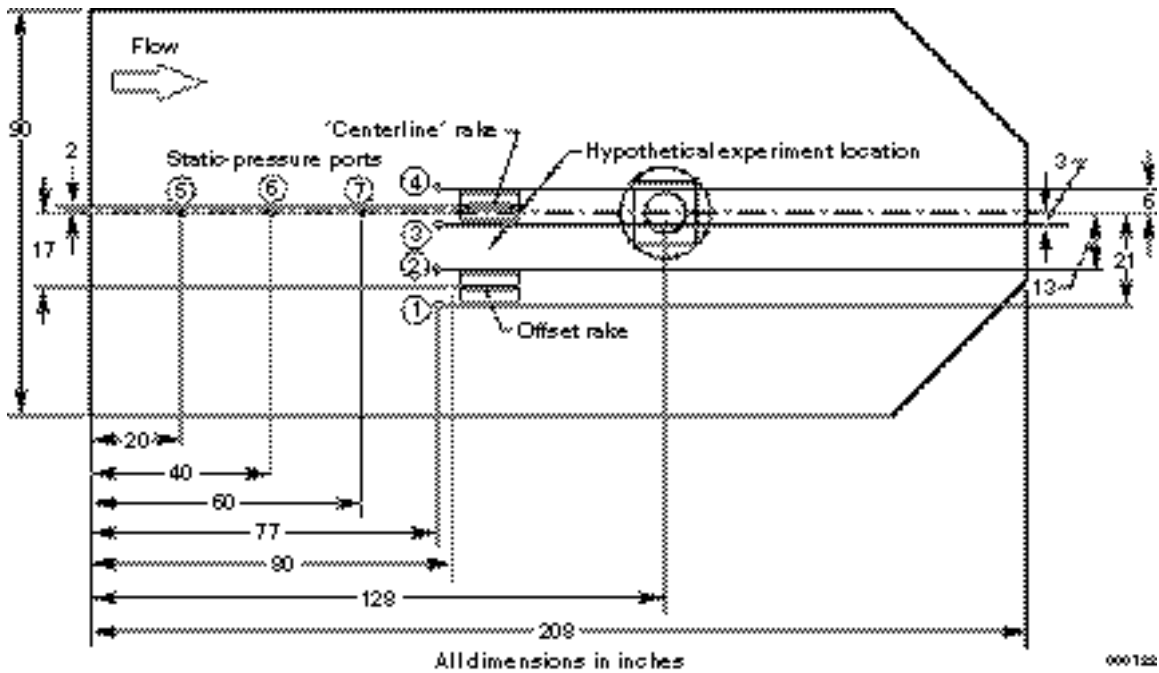
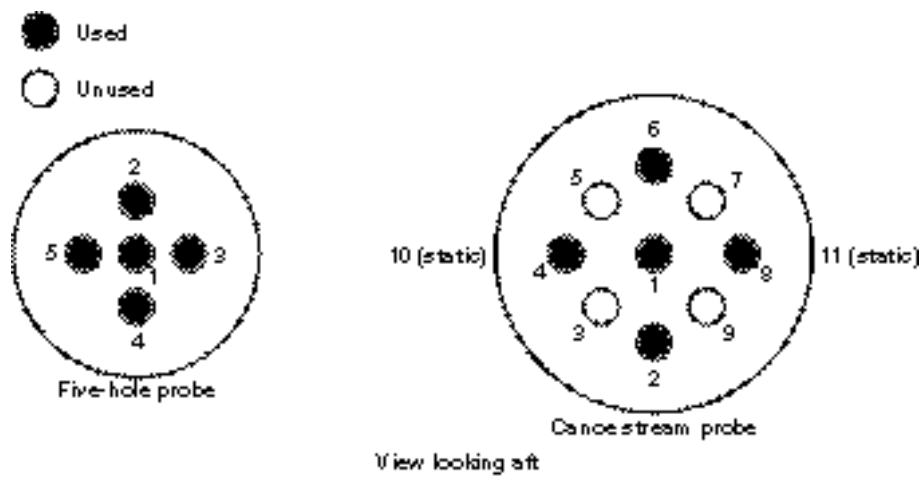


Figure 4. Instrumentation on flat plate.



Photo by Masashi Mizukami

Figure 5. Rake installation on flat plate.



000125

Figure 6. Flow-angle probe orifice numbering convention.

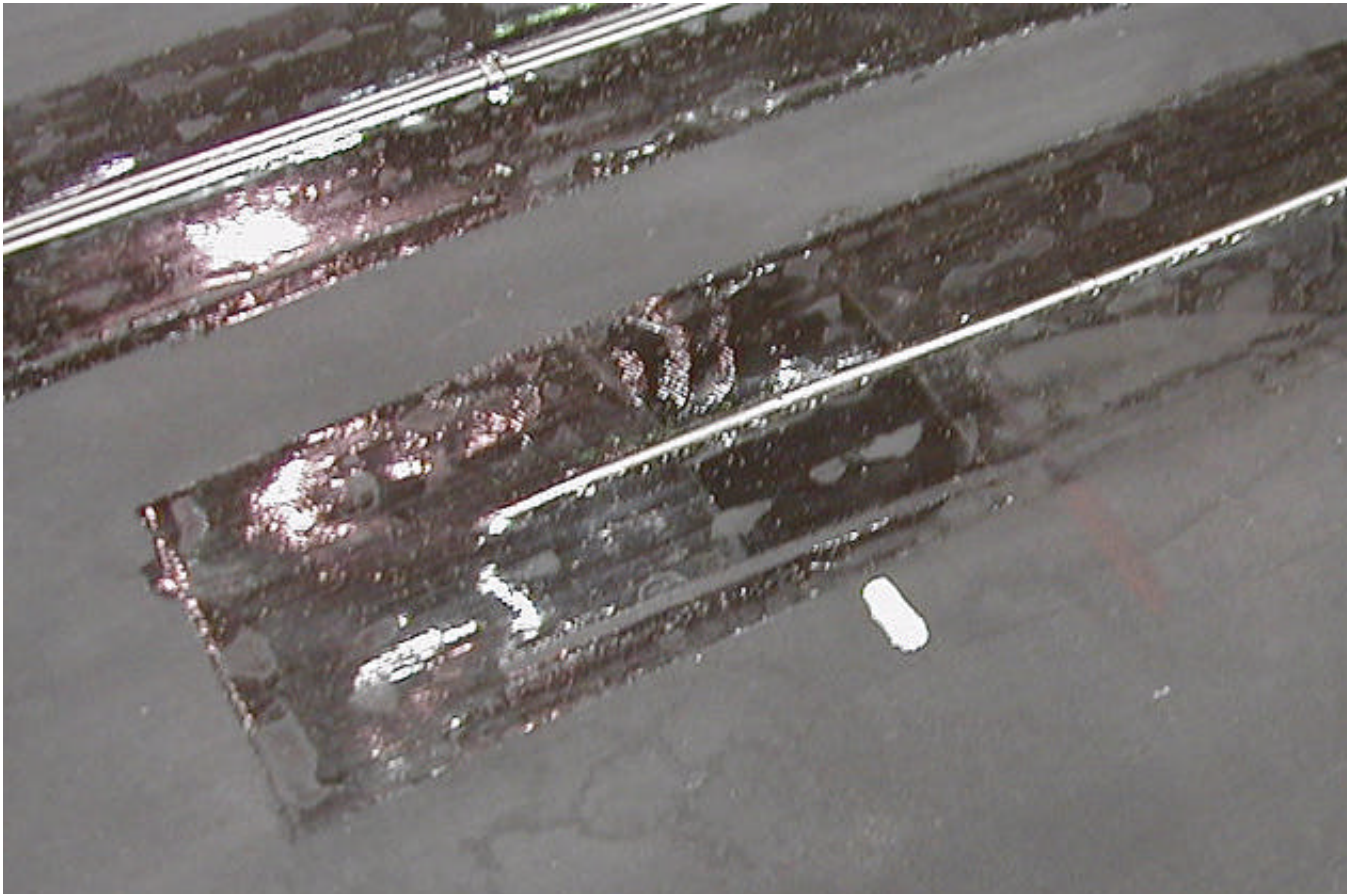


Photo by Masashi Mizukami

Figure 7. Stake pressure port installation.

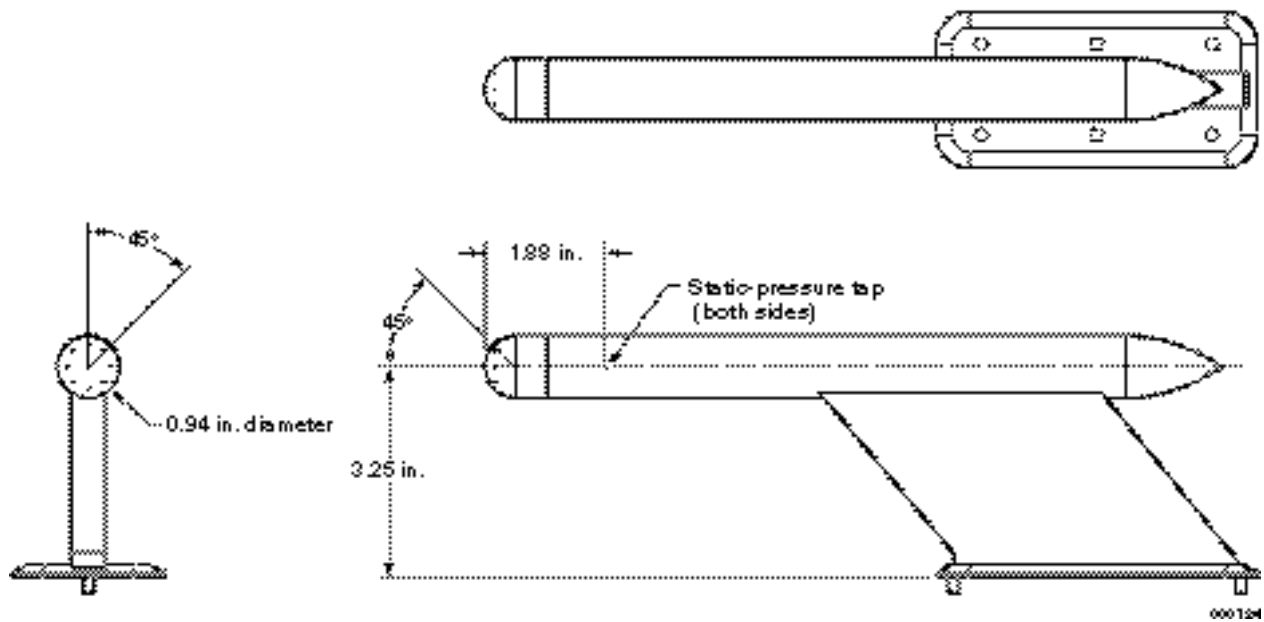


Figure 8. Canoe stream probe.

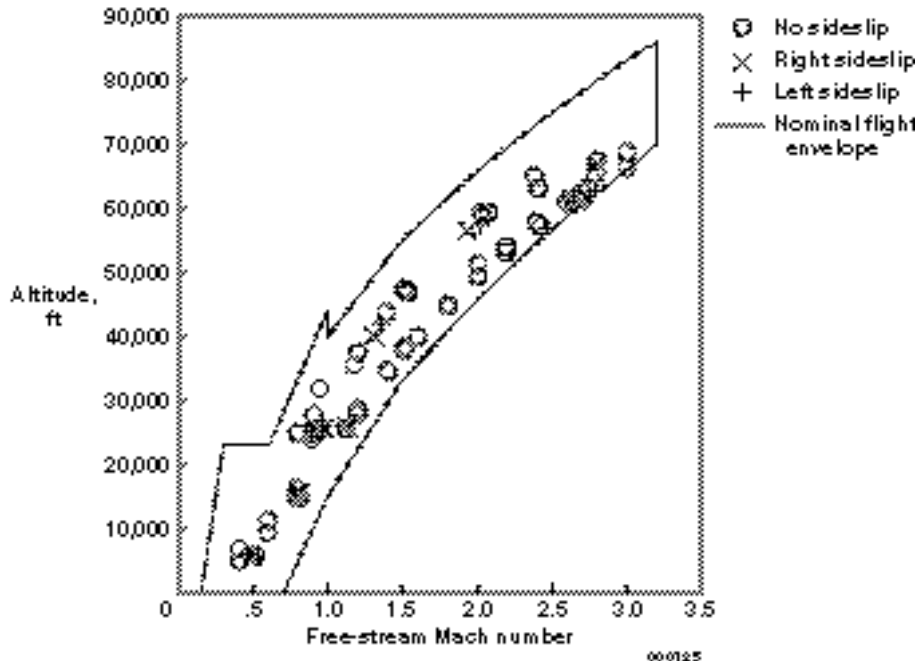


Figure 9. Test points and SR-71 nominal flight envelope.

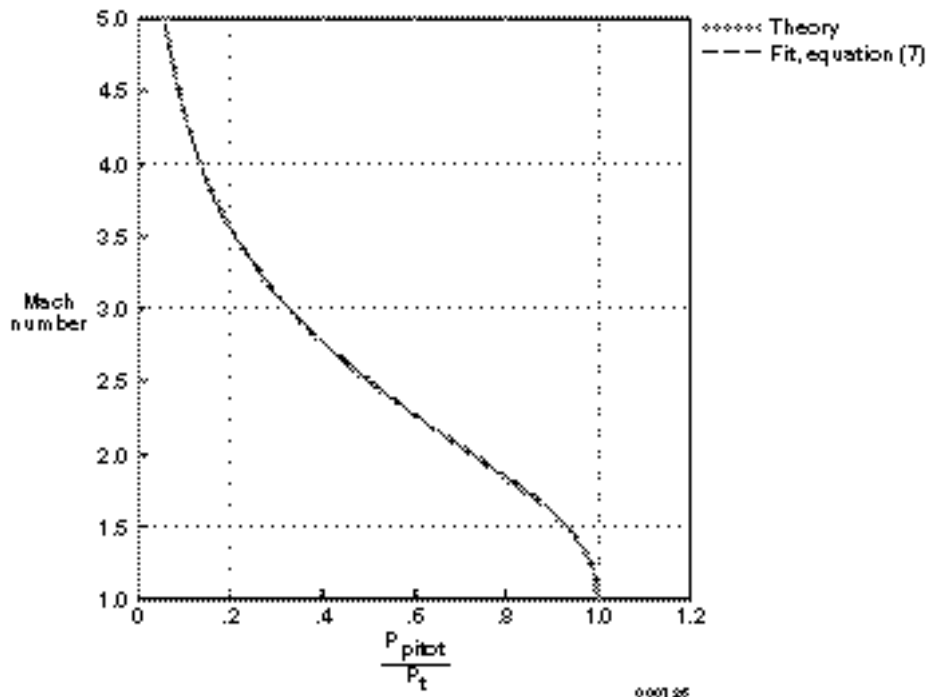
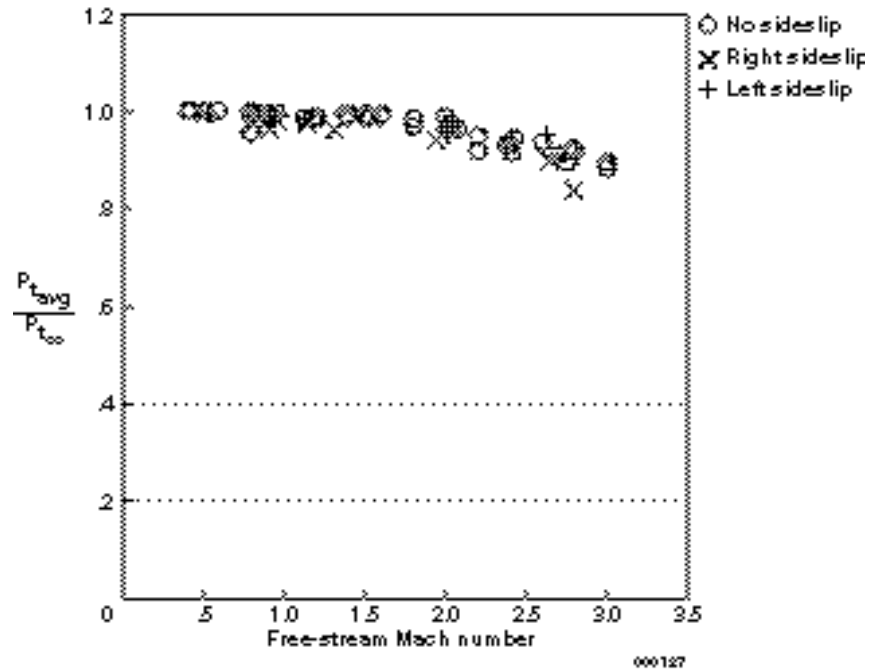
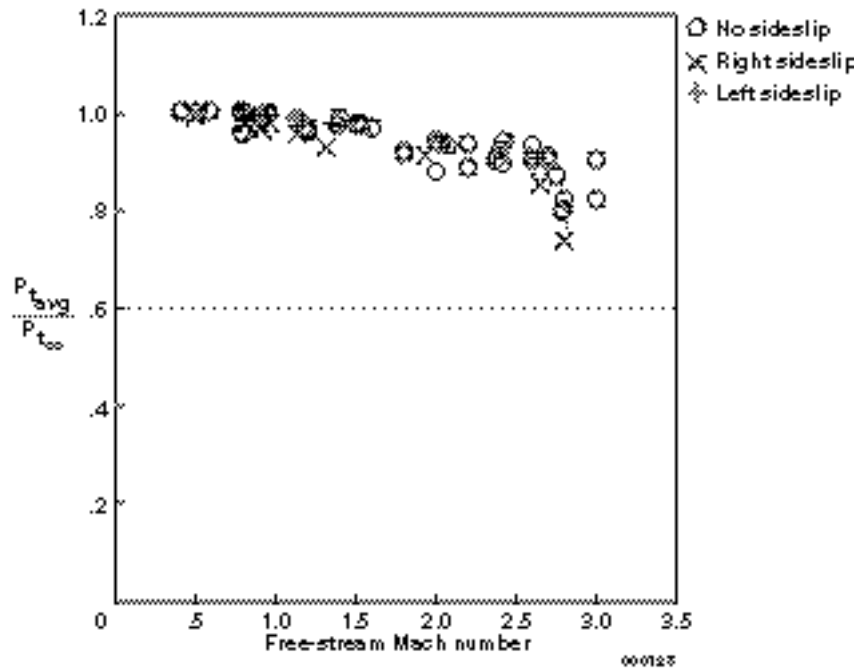


Figure 10. Normal shock total-pressure ratio as a function of upstream Mach number, theory, and fifth-order polynomial curve fit.

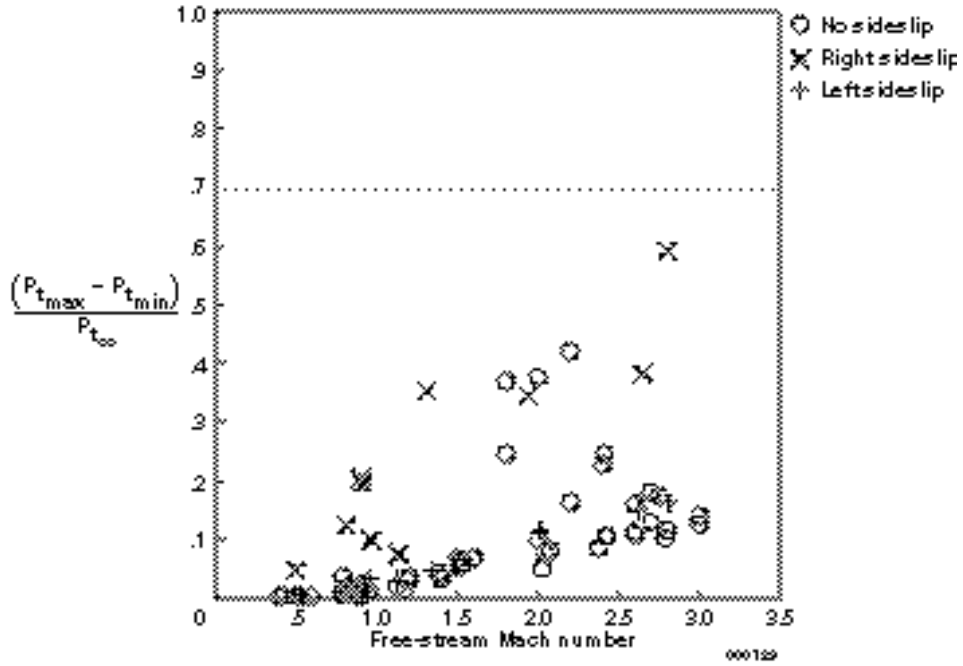


(a) Uniform static-pressure assumption.

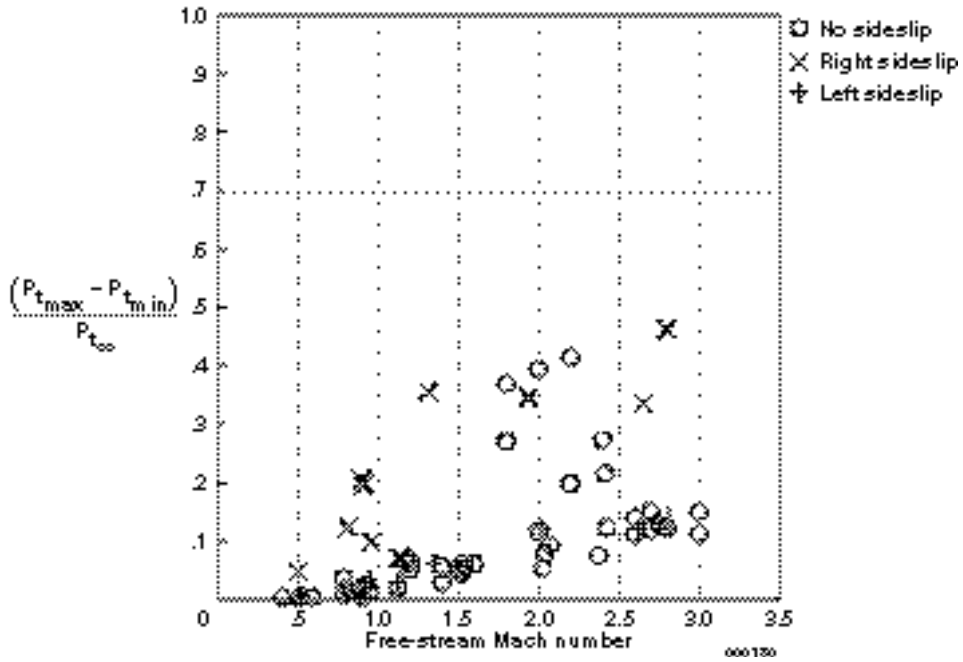


(b) Interpolated static-pressure assumption.

Figure 11. Rake average total pressures for both rakes.

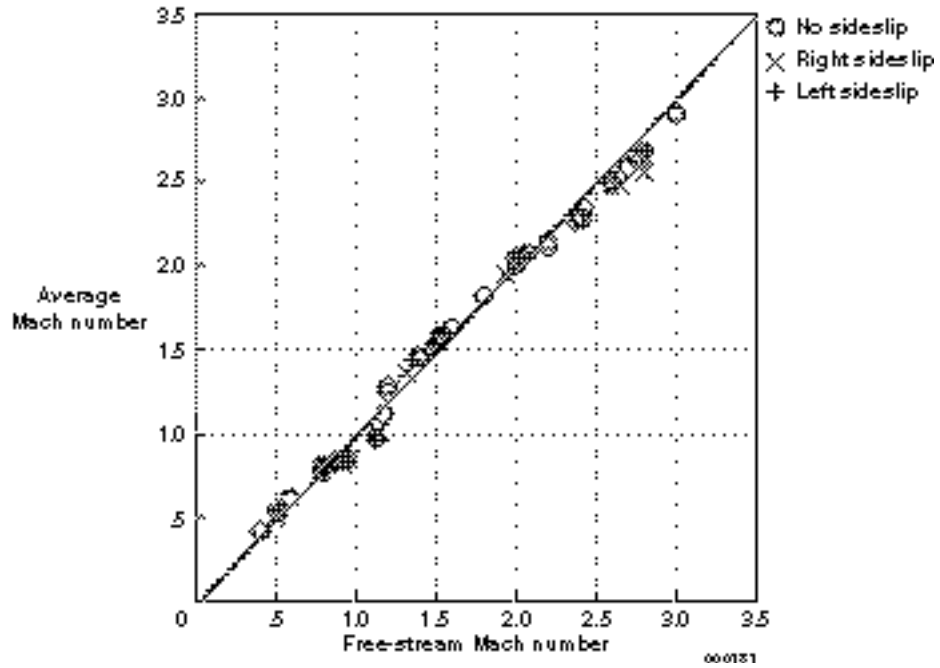


(a) Uniform static-pressure assumption.

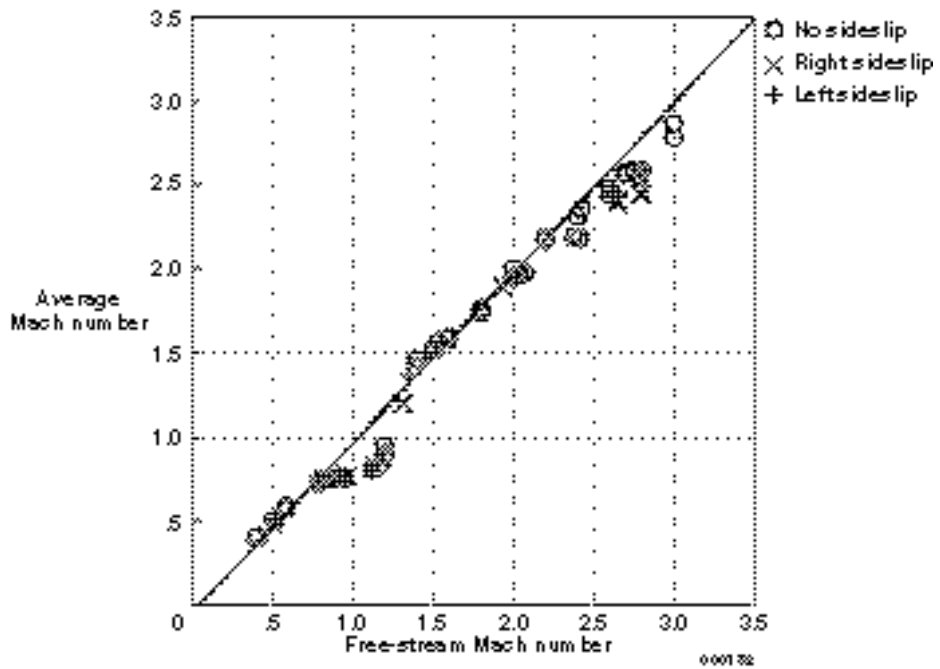


(b) Interpolated static-pressure assumption.

Figure 12. Rake total-pressure distortions for both rakes.

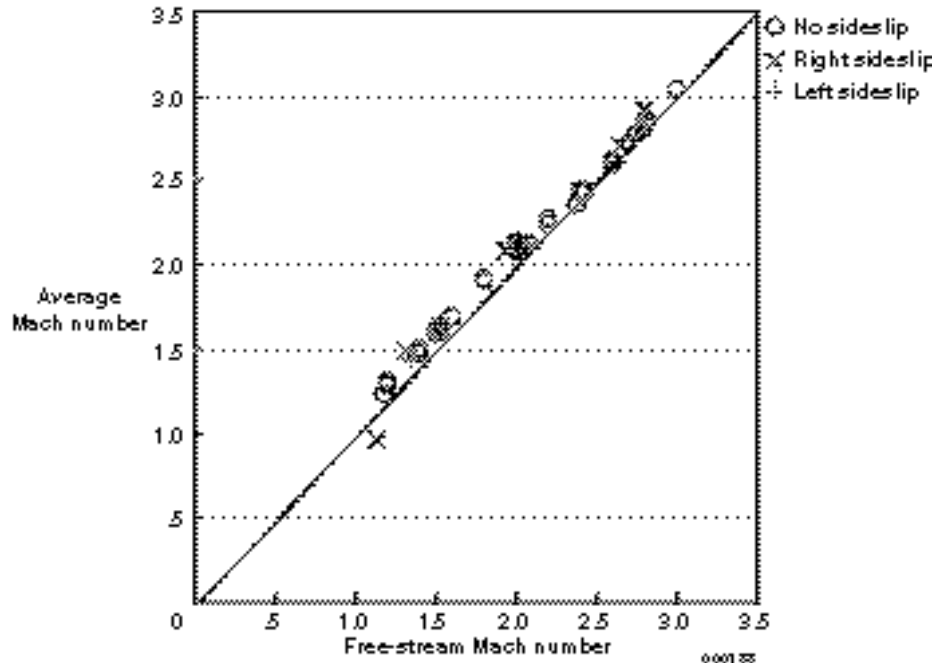


(a) Uniform static-pressure assumption.



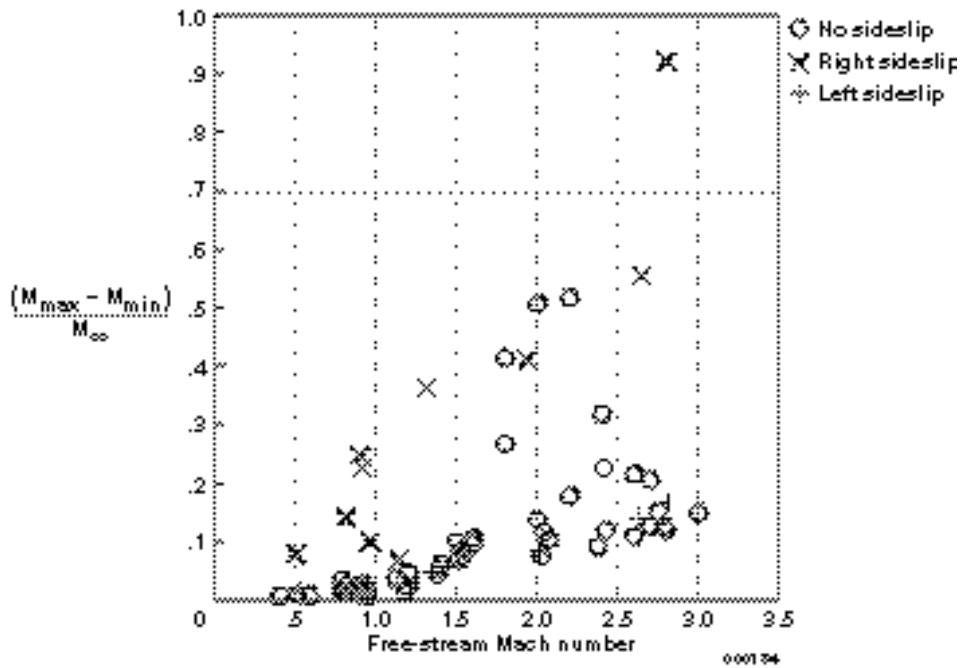
(b) Interpolated static-pressure assumption.

Figure 13. Rake average Mach number for both rakes.



(c) Uniform total-pressure assumption.

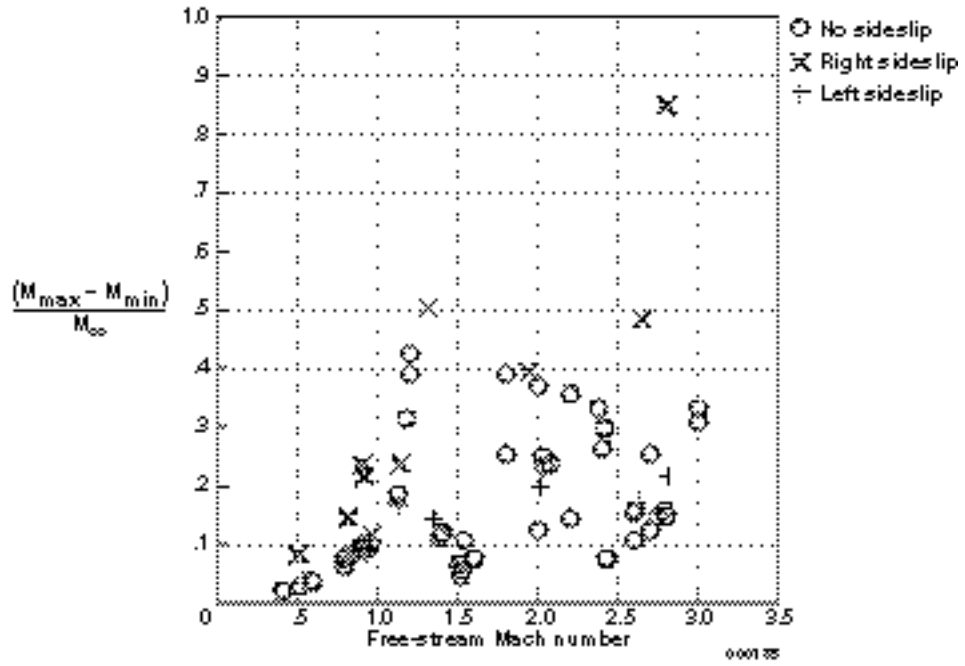
Figure 13. Concluded



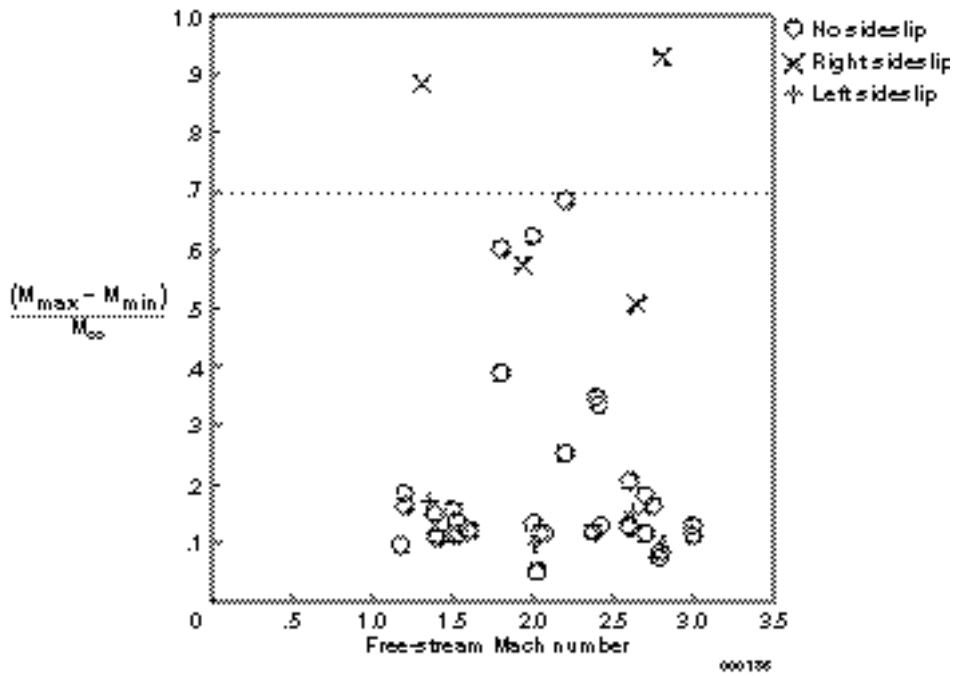
(a) Uniform static-pressure assumption.

Figure 14. Rake Mach number distortions for both rakes.



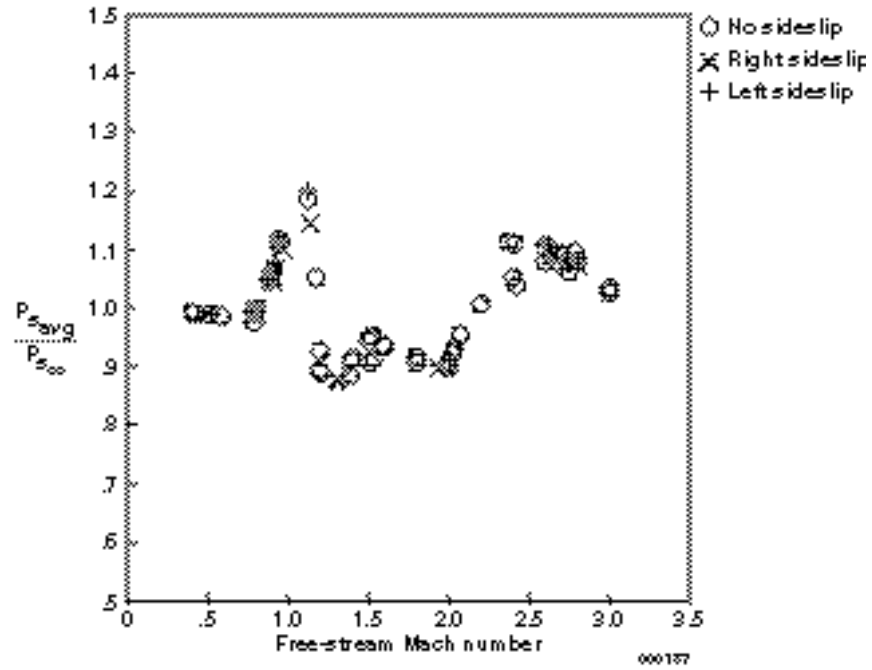


(b) Interpolated static-pressure assumption.

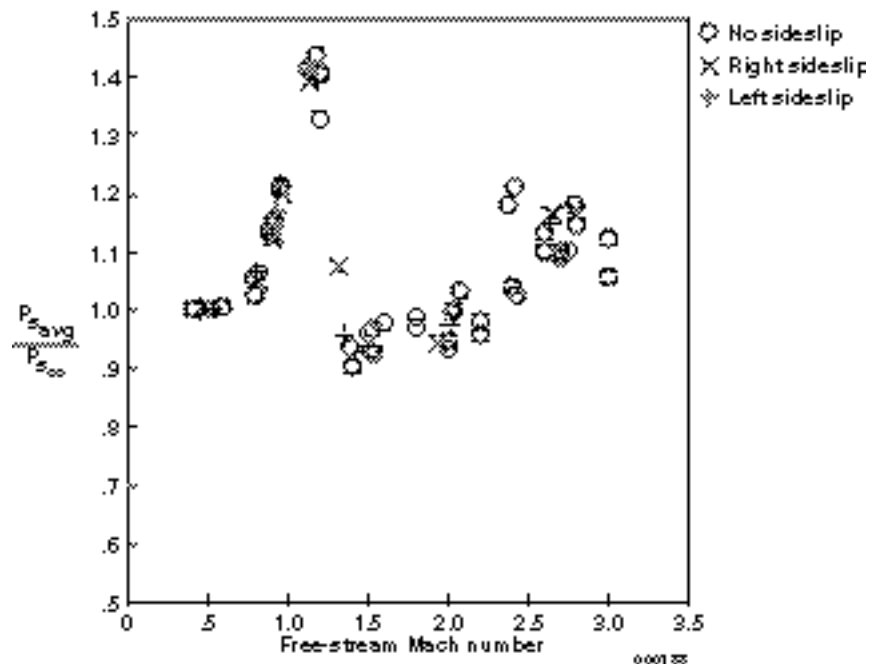


(c) Uniform total-pressure assumption.

Figure 14. Concluded.

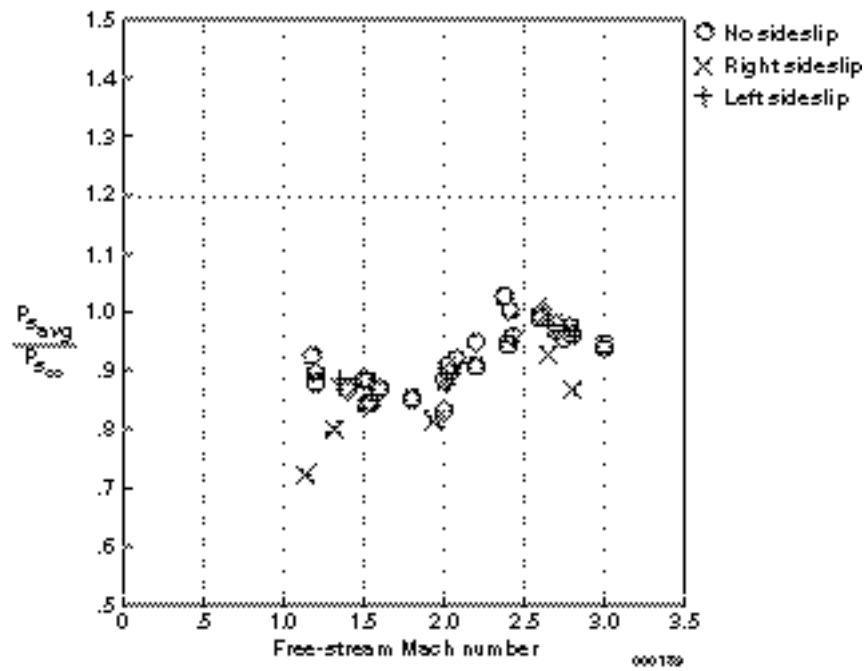


(a) Uniform static-pressure assumption.



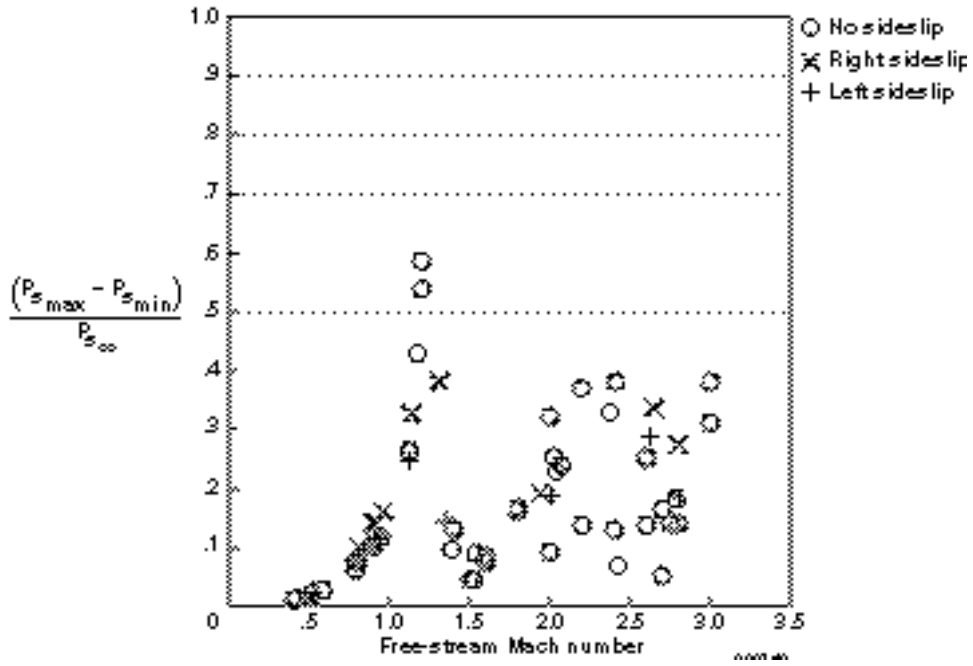
(b) Interpolated static-pressure assumption.

Figure 15. Rake average static pressures for both rakes.

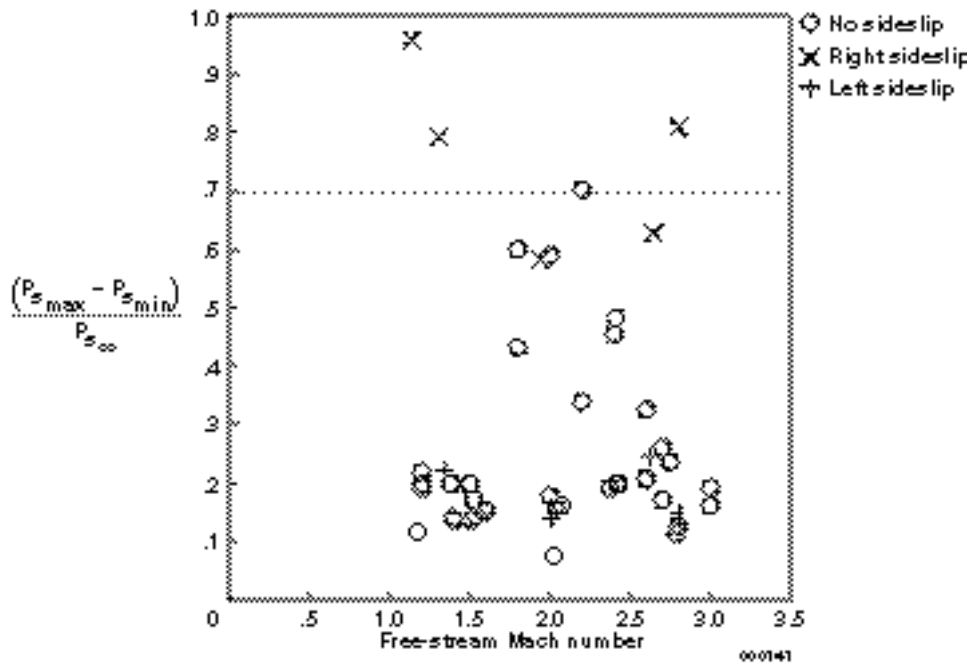


(c) Uniform total-pressure assumption.

Figure 15. Concluded.

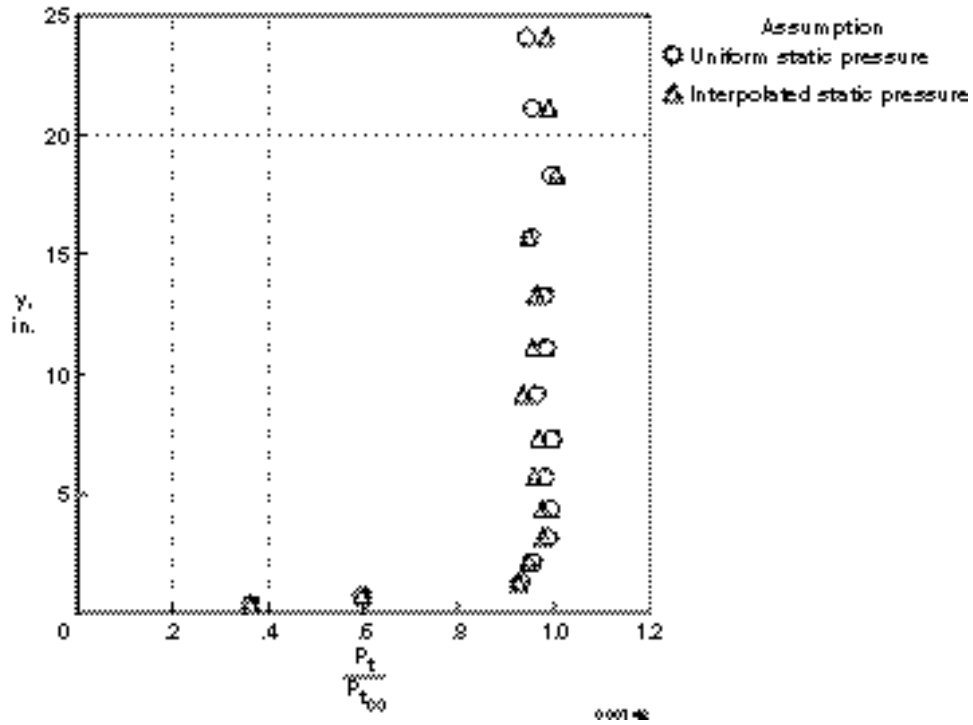


(a) Interpolated static-pressure assumption.

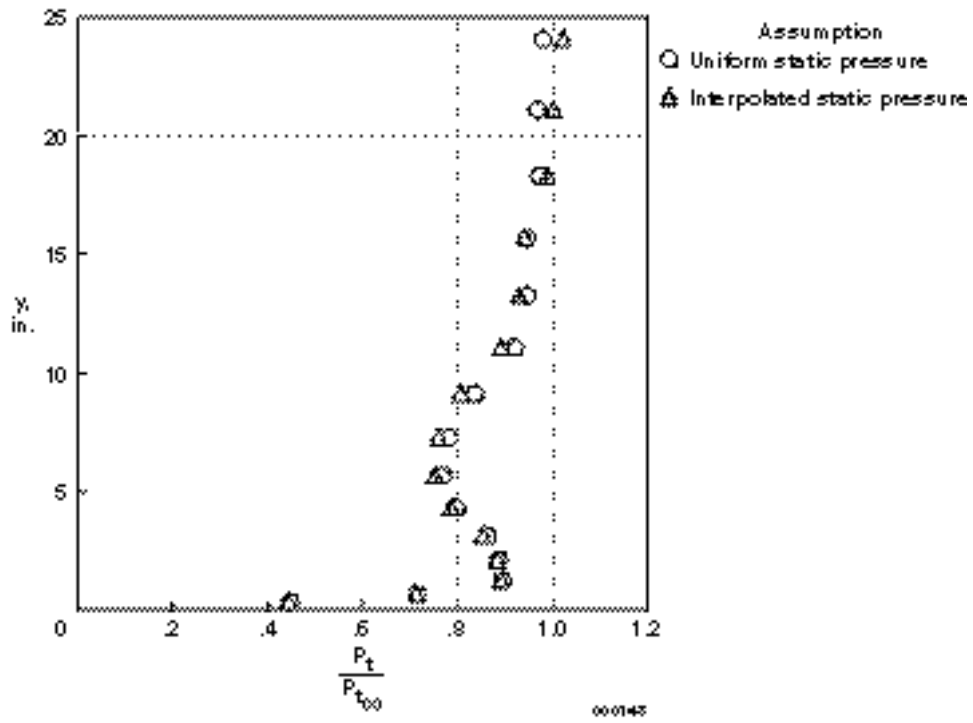


(b) Uniform total-pressure assumption.

Figure 16. Rake static-pressure distortions for both rakes.

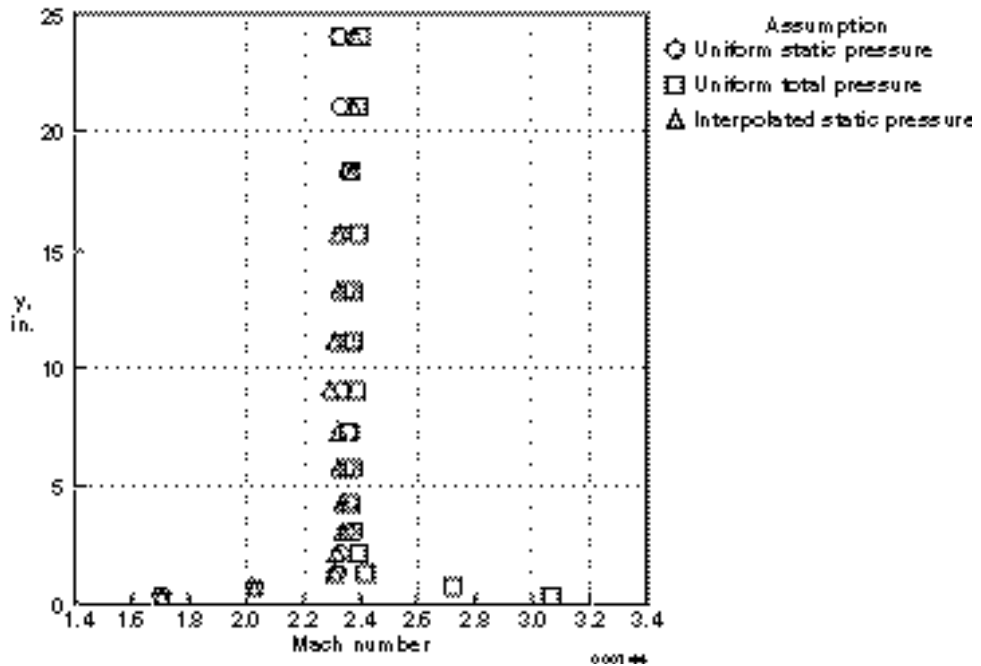


(a) The centerline rake.

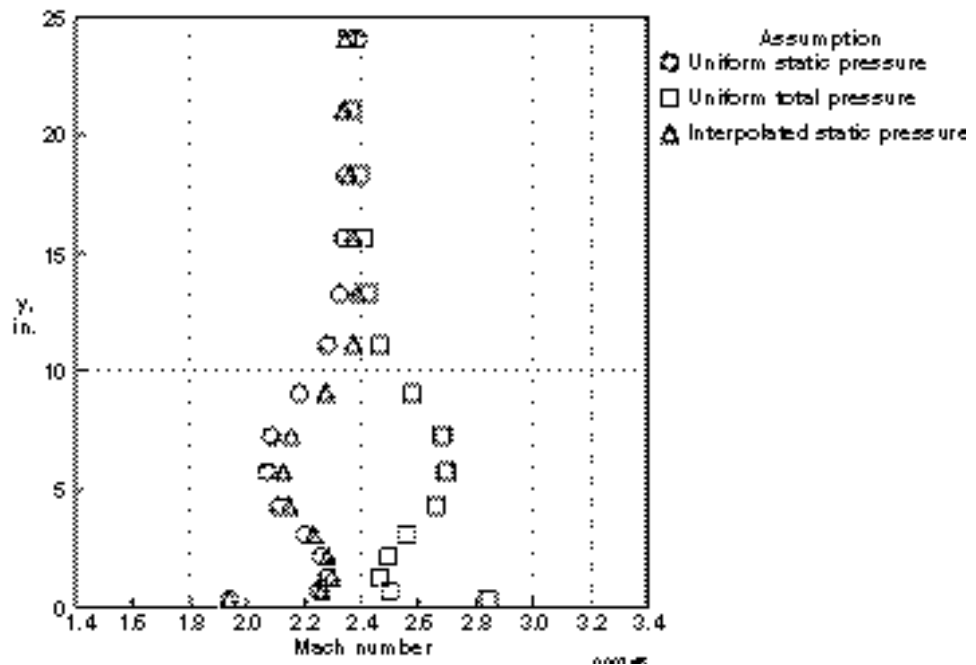


(b) The offset rake.

Figure 17. Effect of different computational assumptions on rake total-pressure profiles; no sideslip, Mach 2.4, 57,742 ft.

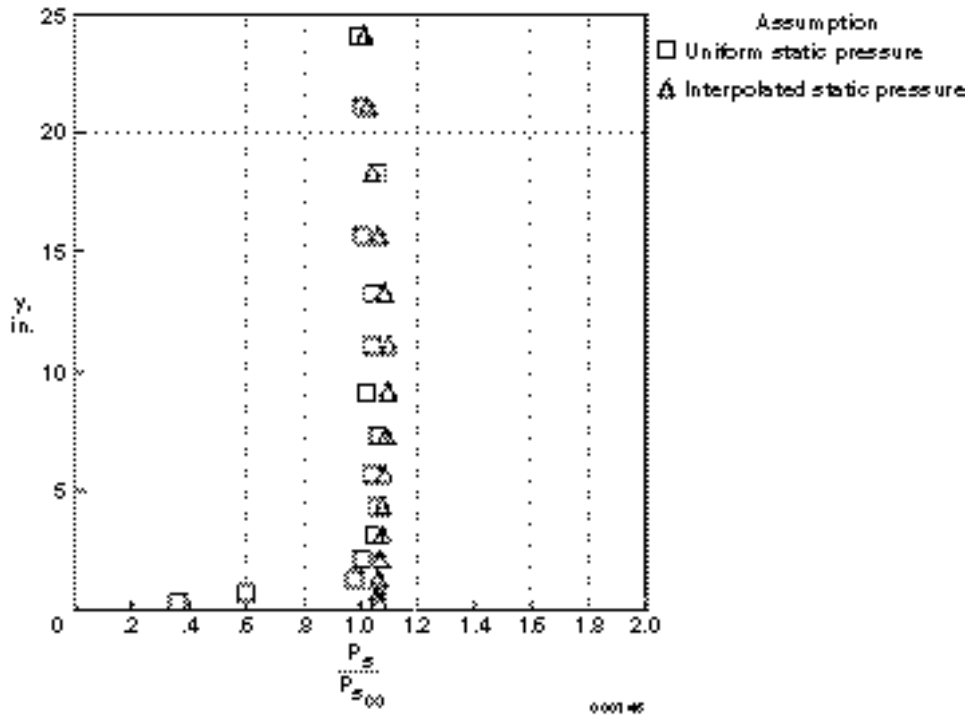


(a) The centerline rake.

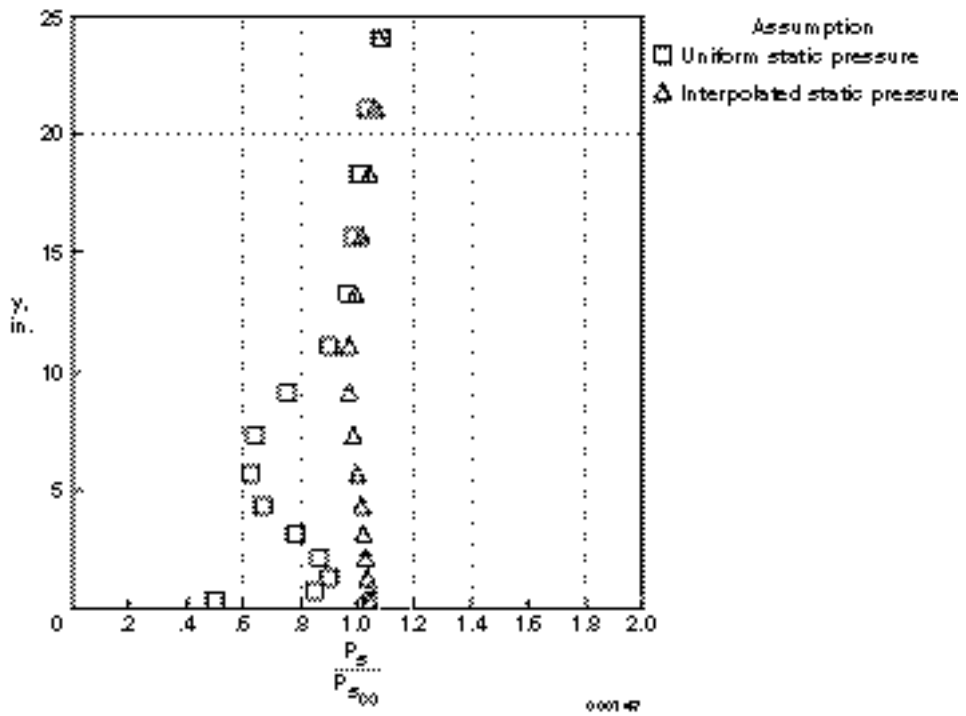


(b) The offset rake.

Figure 18. Effect of different computational assumptions on rake Mach number profiles; no sideslip, Mach 2.4, 57,742 ft.

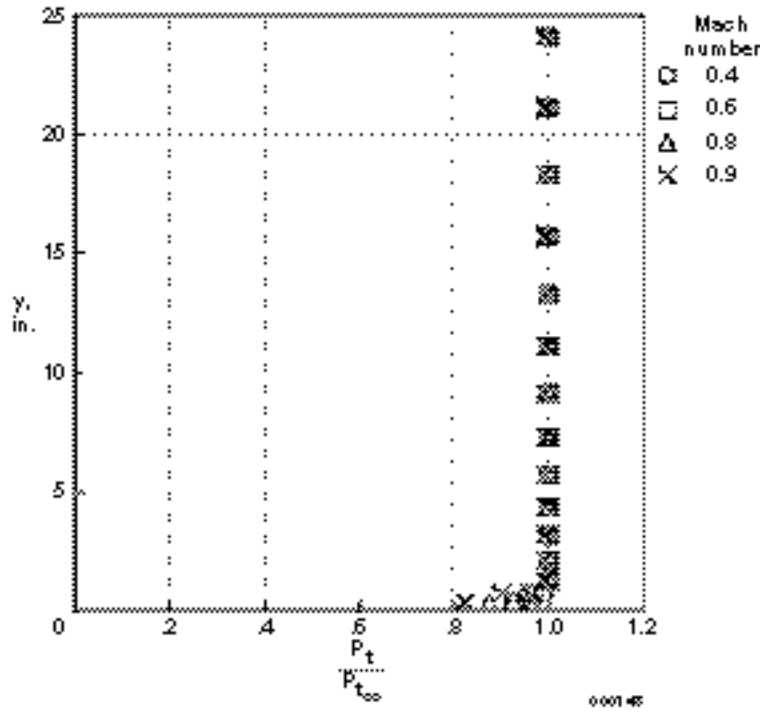


(a) The centerline rake.

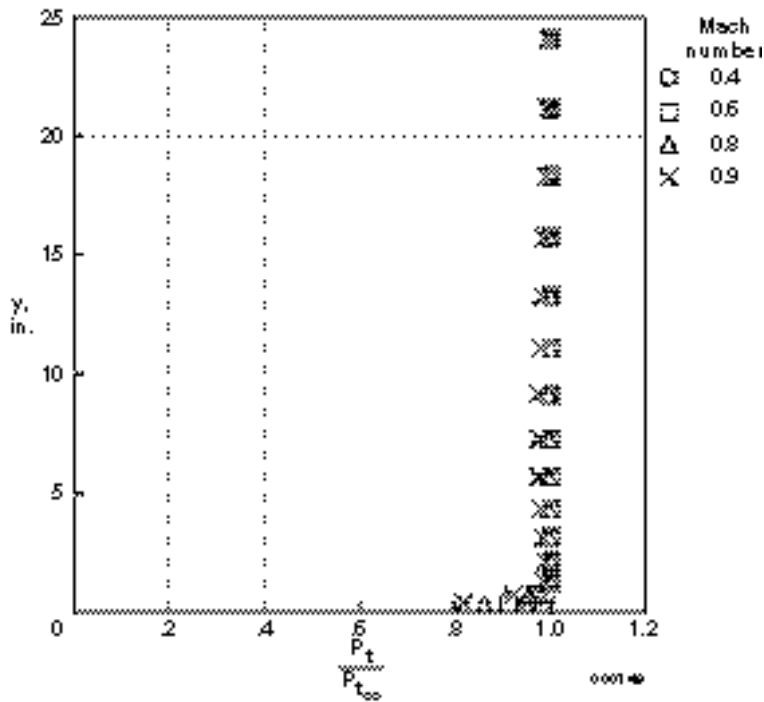


(b) The offset rake.

Figure 19. Effect of different computational assumptions on rake static-pressure profiles; no sideslip, Mach 2.4, 57,742 ft.



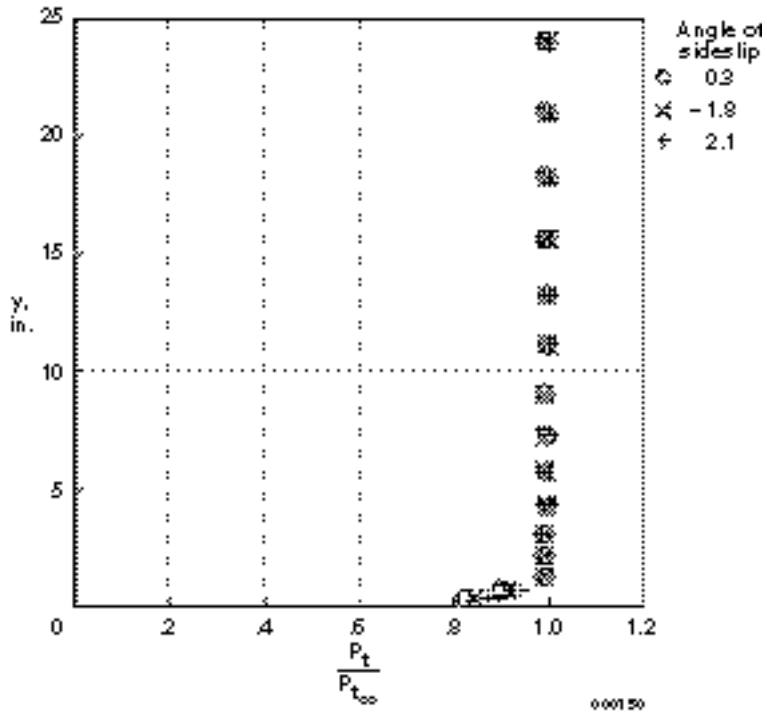
(a) The centerline rake.



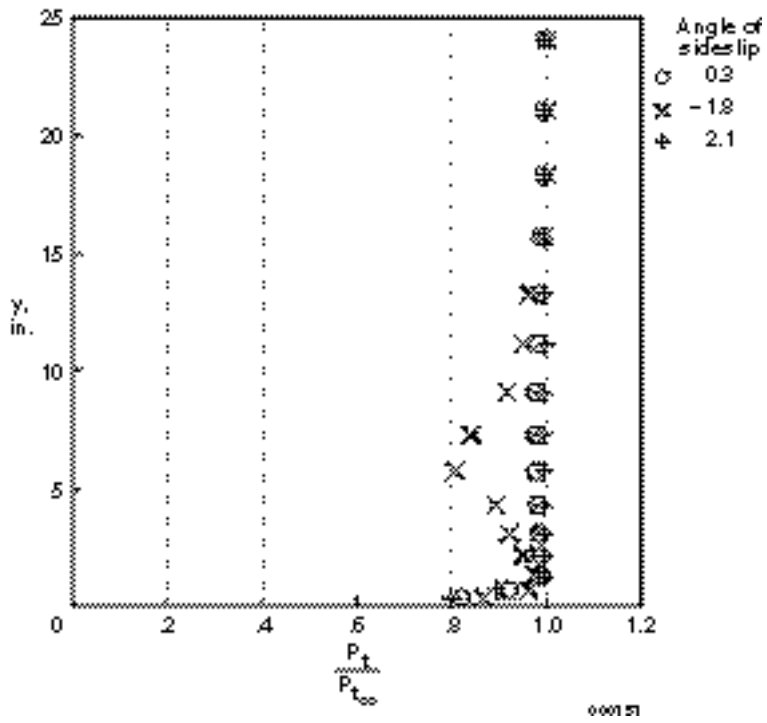
(b) The offset rake.

Figure 20. Rake total-pressure profiles; subsonic flight, no sideslip, uniform static-pressure assumption.



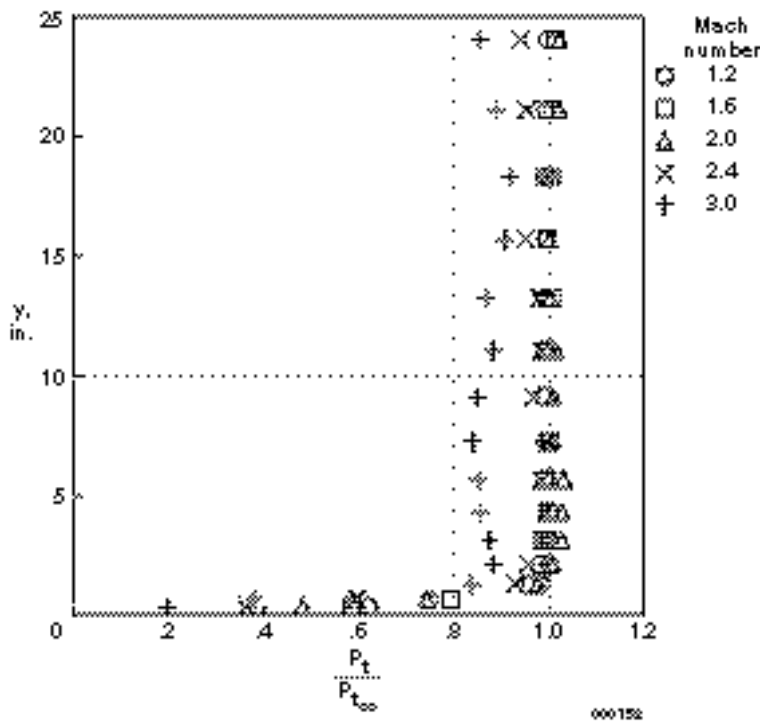


(a) The centerline rake.

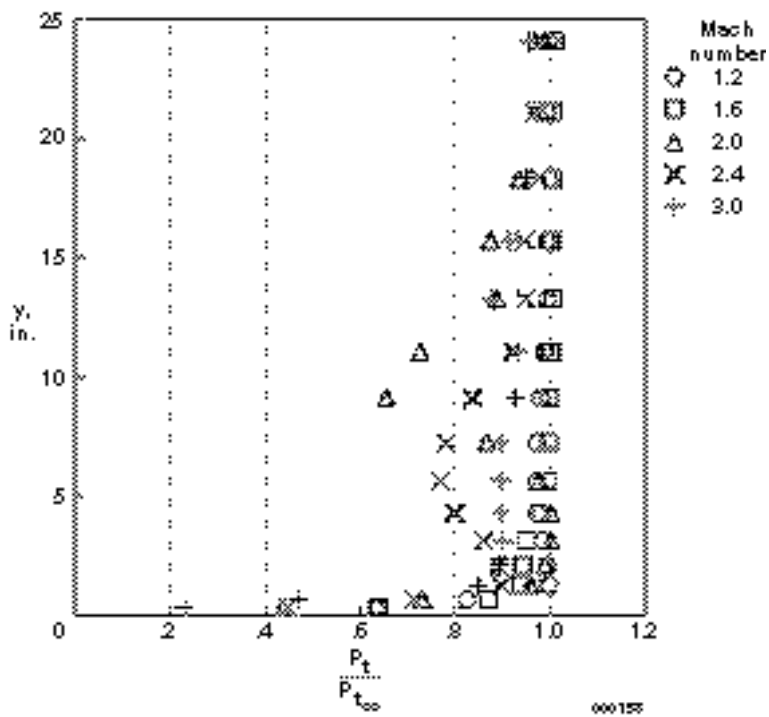


(b) The offset rake.

Figure 21. Rake total-pressure profiles; Mach 0.9, uniform static-pressure assumption.

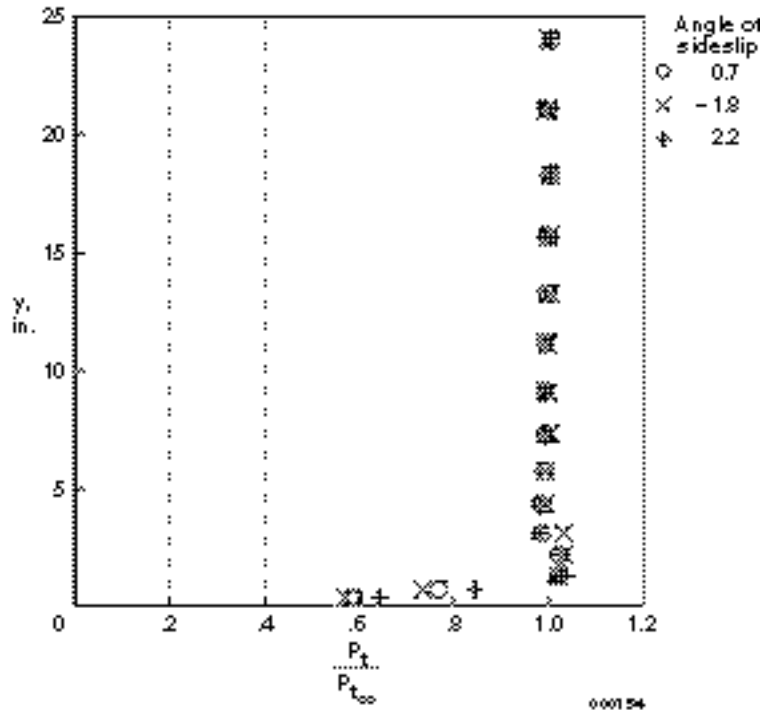


(a) The centerline rake.

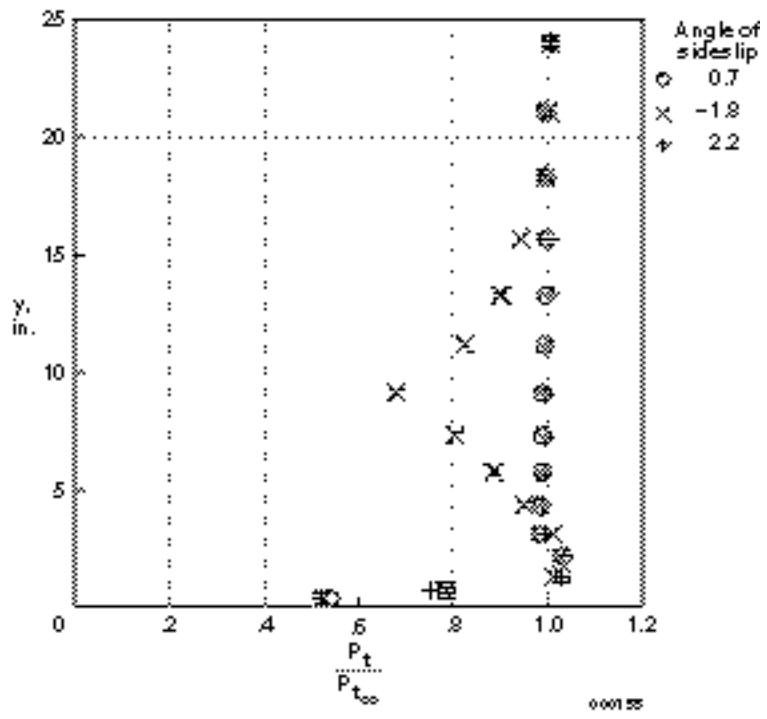


(b) The offset rake.

Figure 22. Rake total-pressure profiles; supersonic flight, no sideslip, uniform static-pressure assumption.

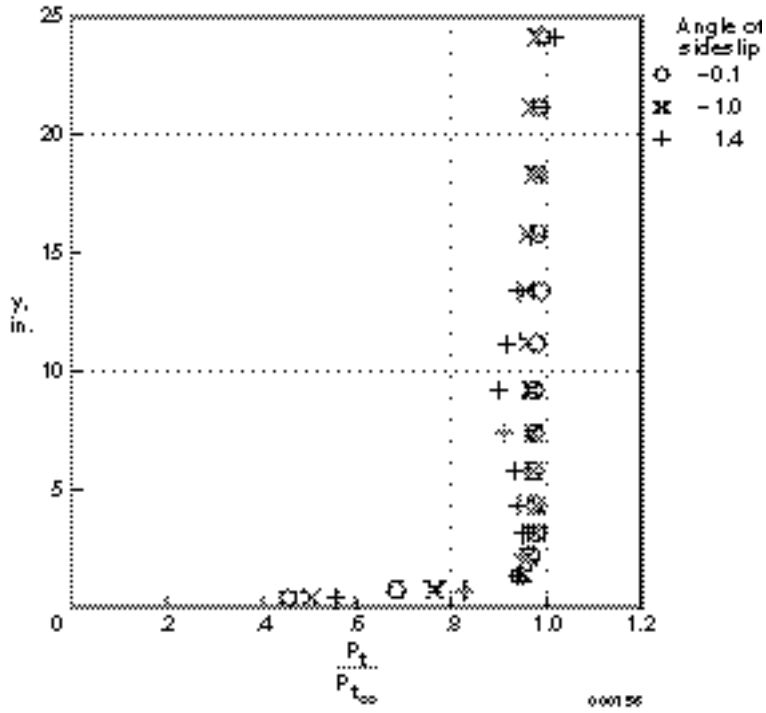


(a) The centerline rake.

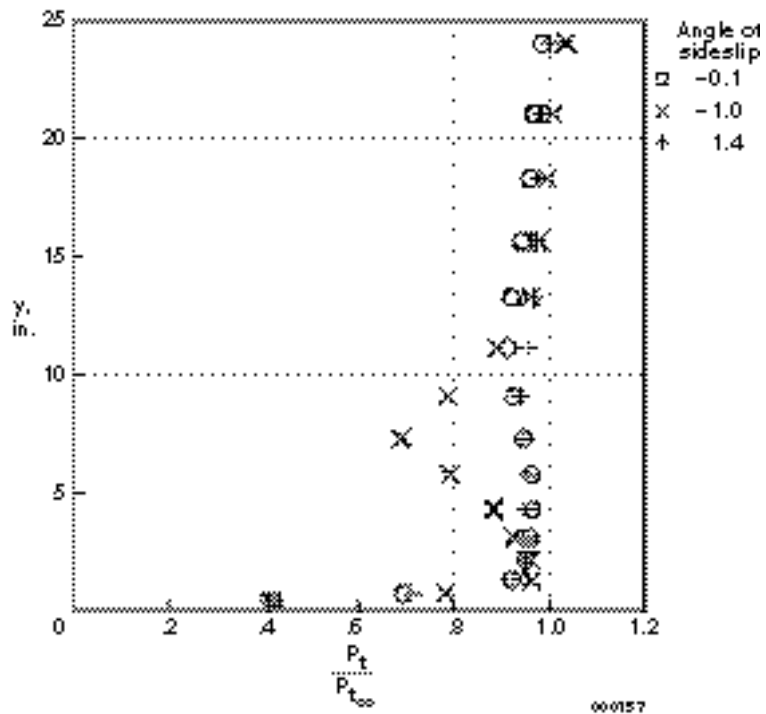


(b) The offset rake.

Figure 23. Rake total-pressure profiles; Mach 1.4, uniform static-pressure assumption.

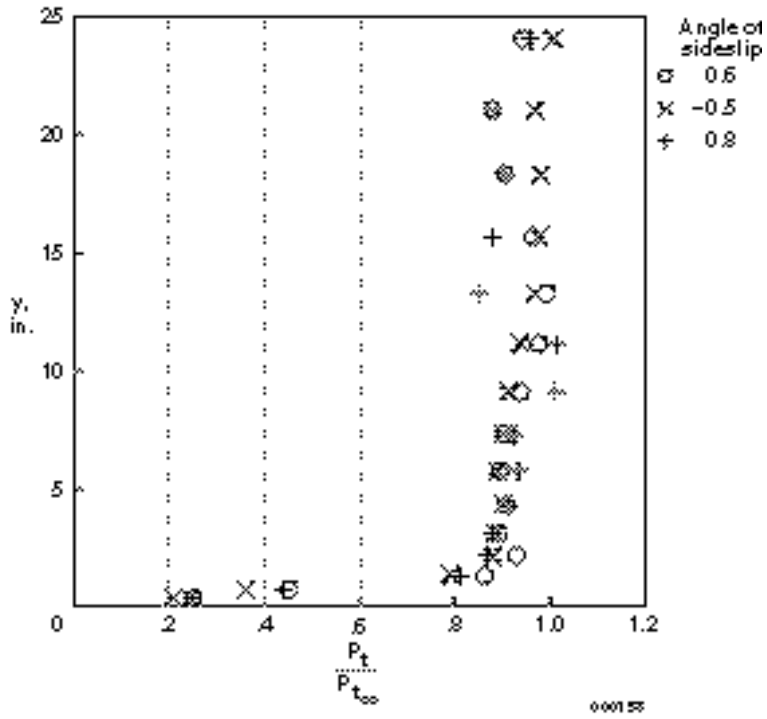


(a) The centerline rake.

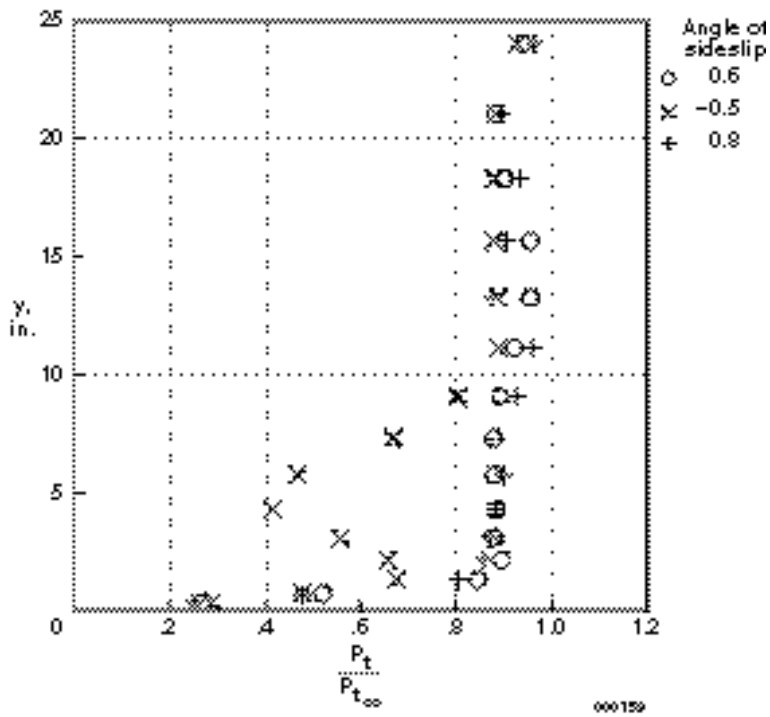


(b) The offset rake.

Figure 24. Rake total-pressure profiles; Mach 2.0, uniform static-pressure assumption.

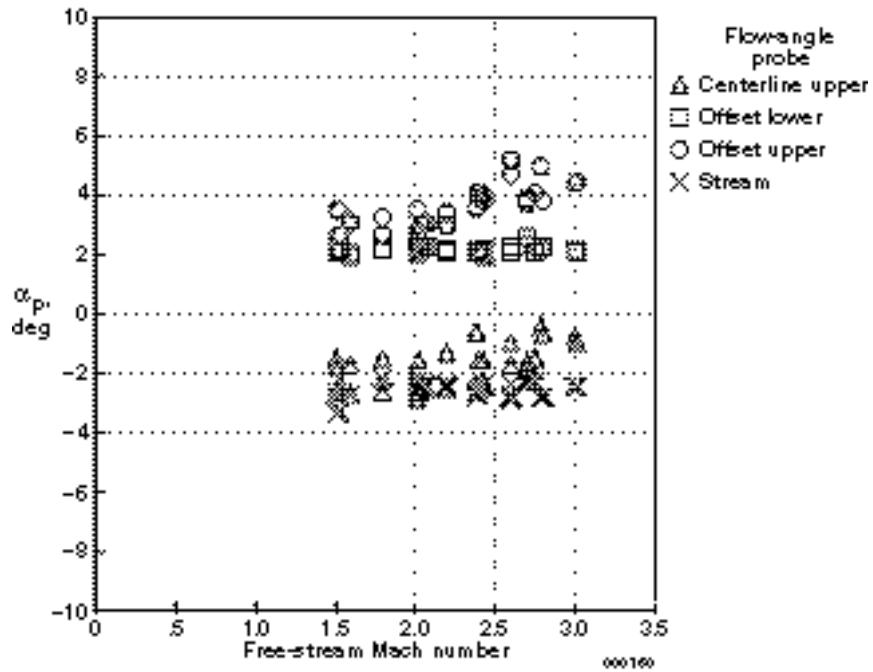


(a) The centerline rake.

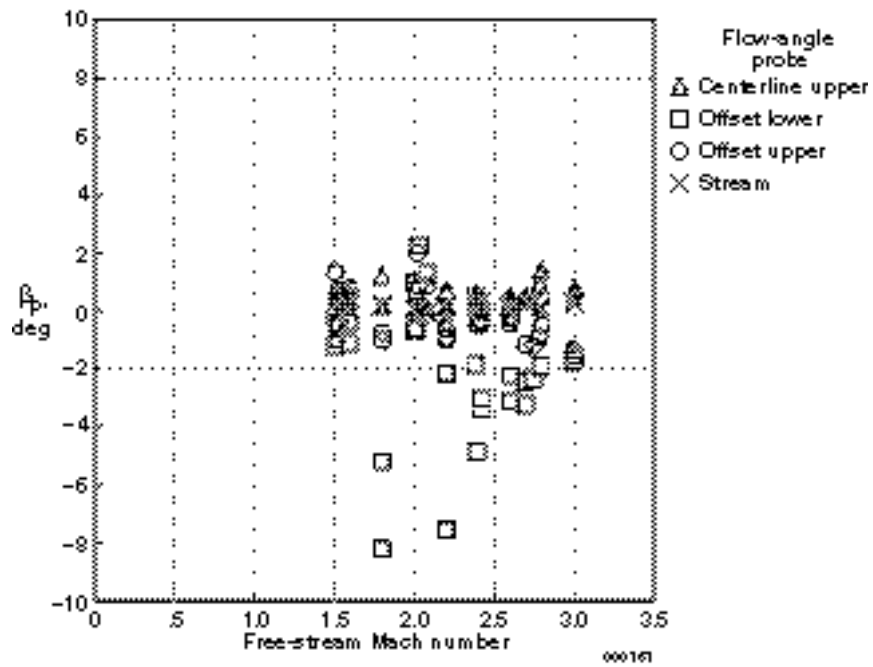


(b) The offset rake.

Figure 25. Rake total-pressure profiles; Mach 2.8, uniform static-pressure assumption.

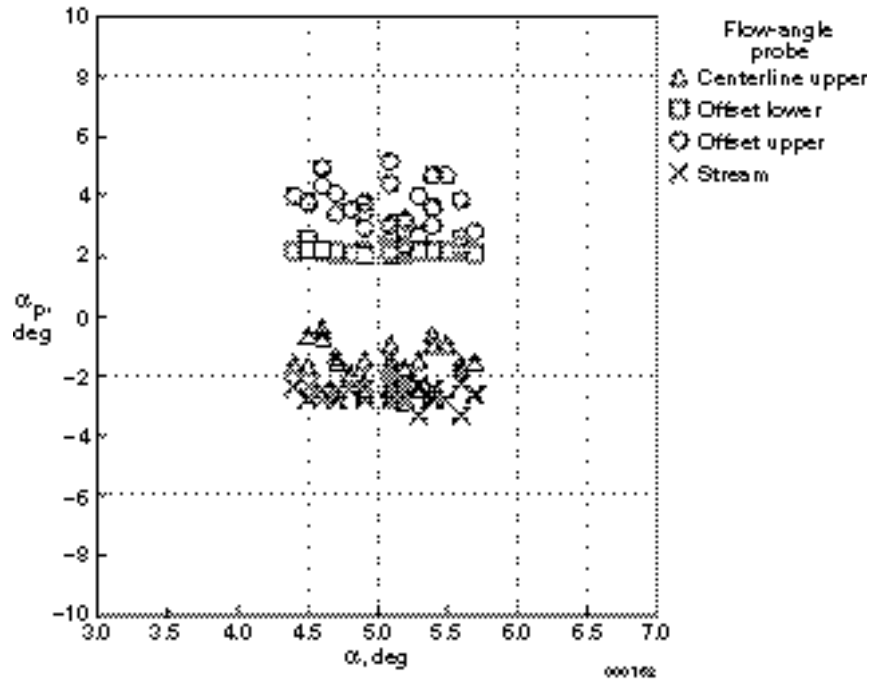


(a) Angle of attack as a function of aircraft Mach number.

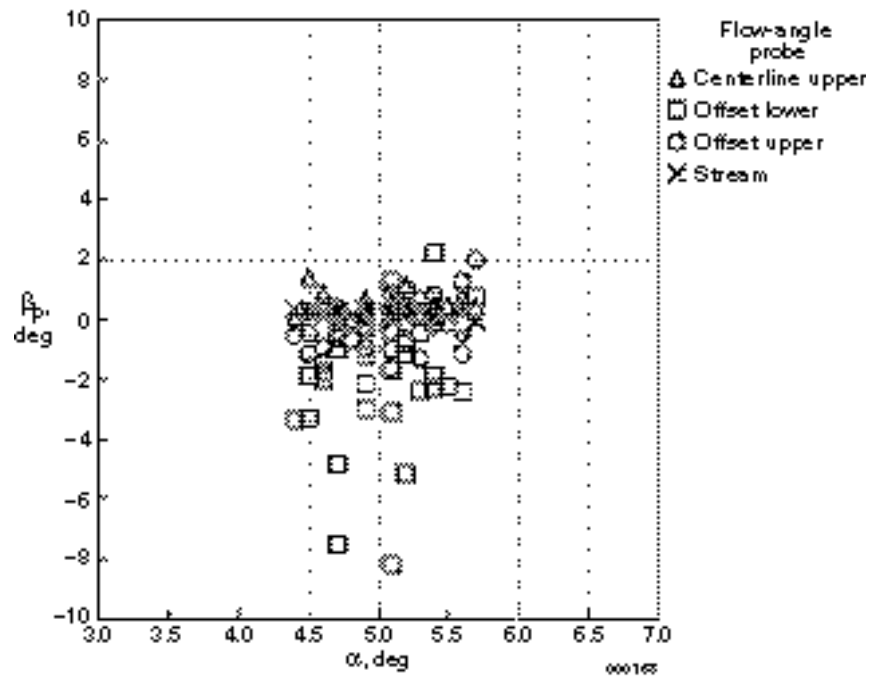


(b) Angle of sideslip as a function of aircraft Mach number.

Figure 26. Flow-angle probes; no sideslip.

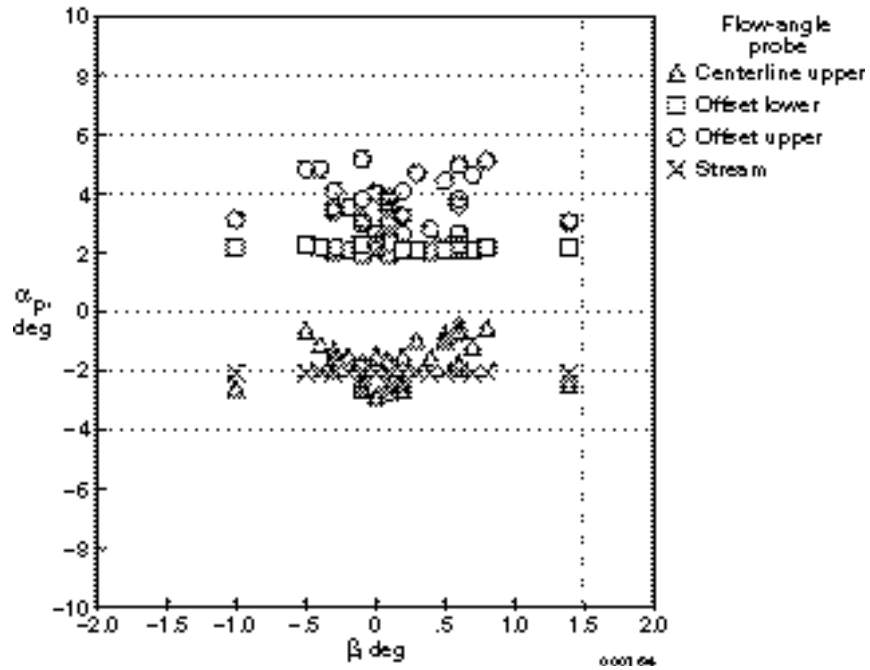


(a) Angle of attack as a function of aircraft angle of attack.

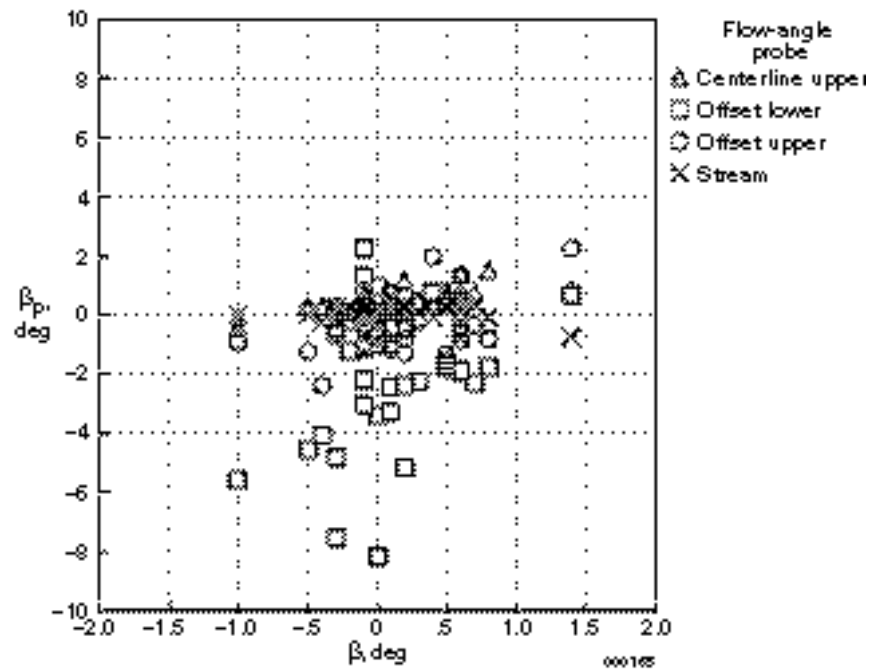


(b) Angle of sideslip as a function of aircraft angle of attack.

Figure 27. Flow-angle probes; no sideslip, Mach 1.5–3.0.



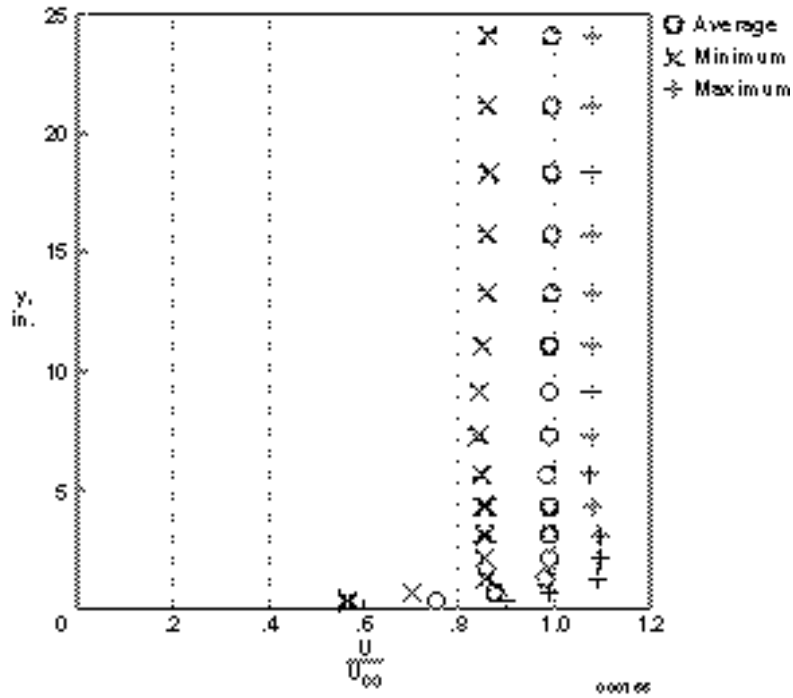
(a) Angle of attack as a function of aircraft angle of sideslip.



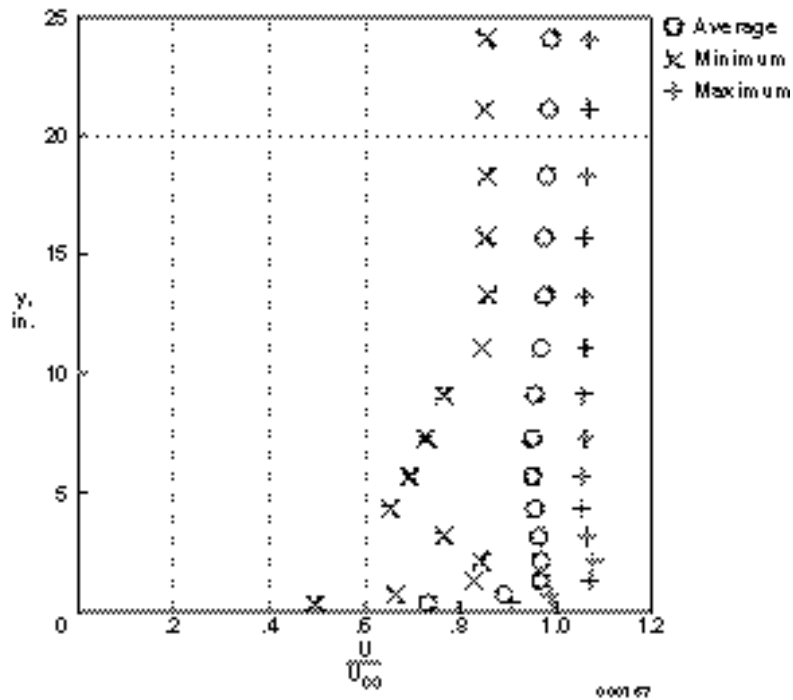
(b) Angle of sideslip as a function of aircraft angle of sideslip.

Figure 28. Flow-angle probes; Mach 1.5–3.0.





(a) The centerline rake.



(b) The offset rake.

Figure 29. Rake velocity profile statistics, all cases (flights 54 and 55, free-stream Mach 0.4–3.0, including sideslips), uniform static-pressure assumption.

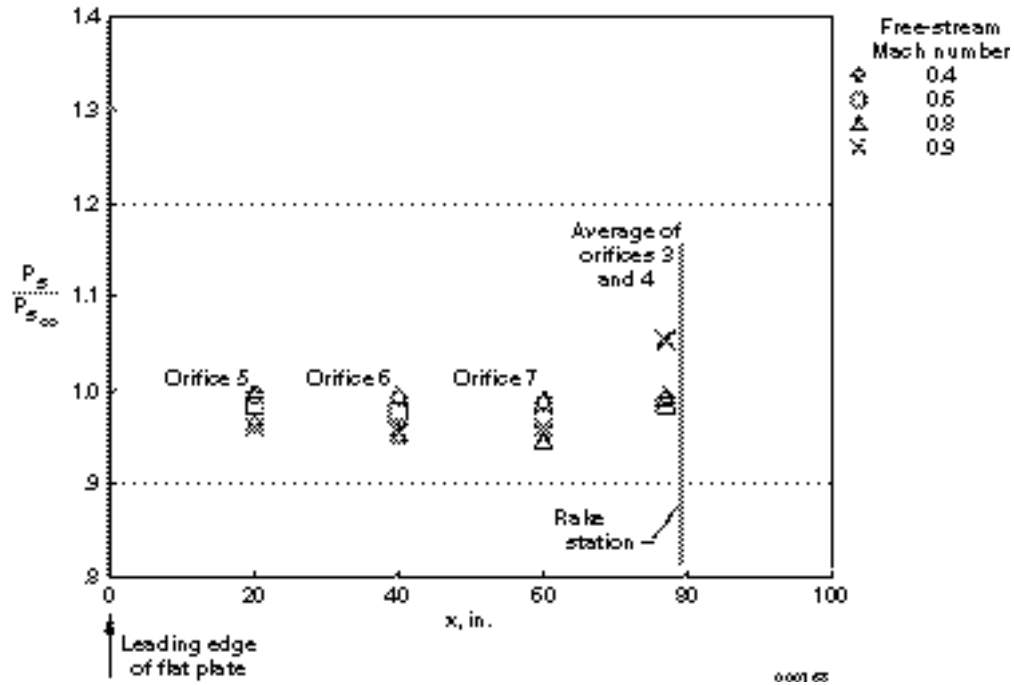


Figure 30. Surface static pressure as a function of axial distance; flight 54, no sideslip.

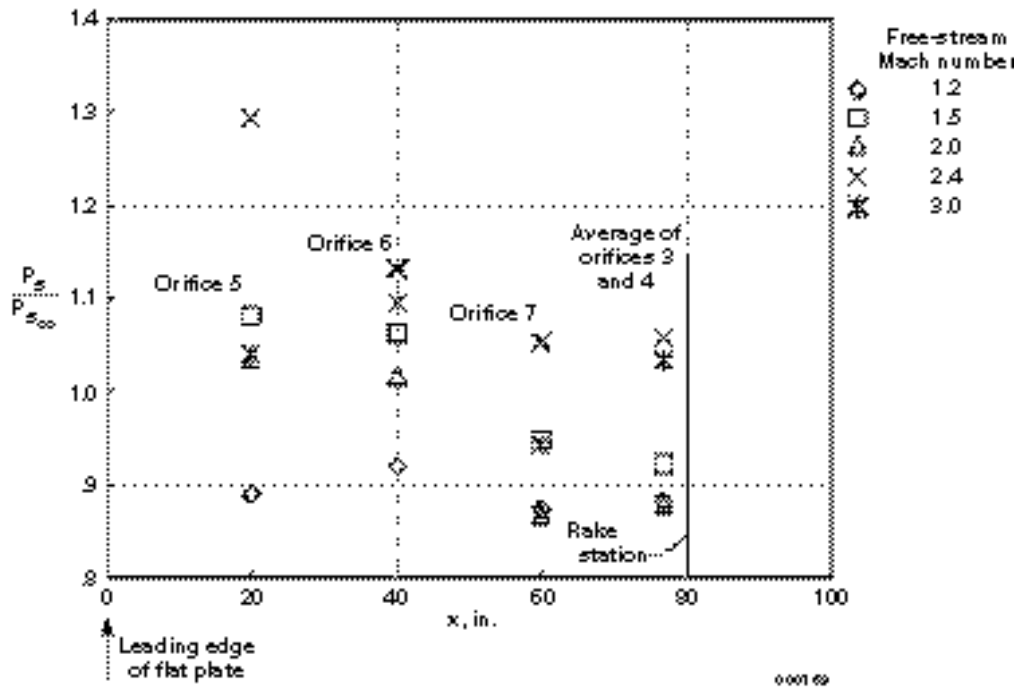


Figure 31. Surface static pressure as a function of axial distance; flight 54, no sideslip.

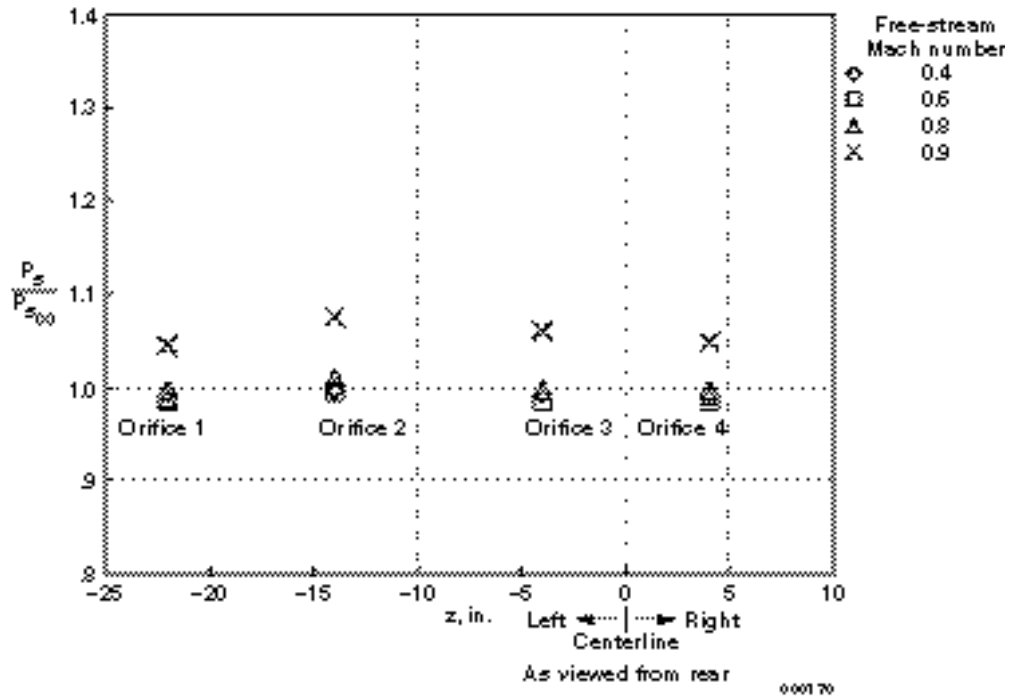


Figure 32. Surface static pressure as a function of lateral distance; flight 54, no sideslip.

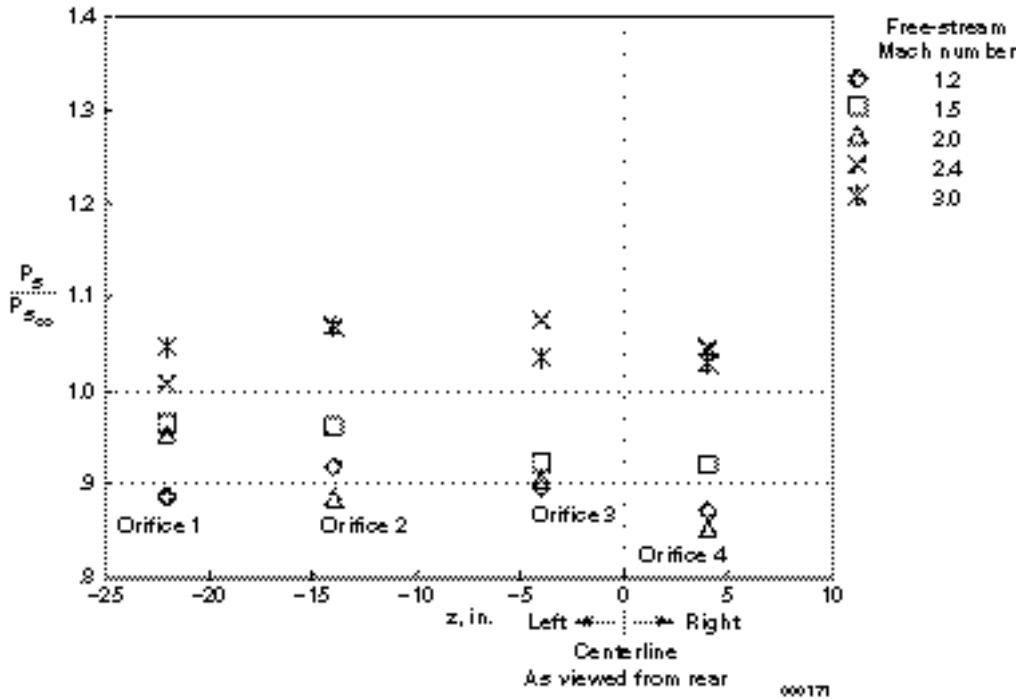


Figure 33. Surface static pressure as a function of lateral distance; flight 54, no sideslip.

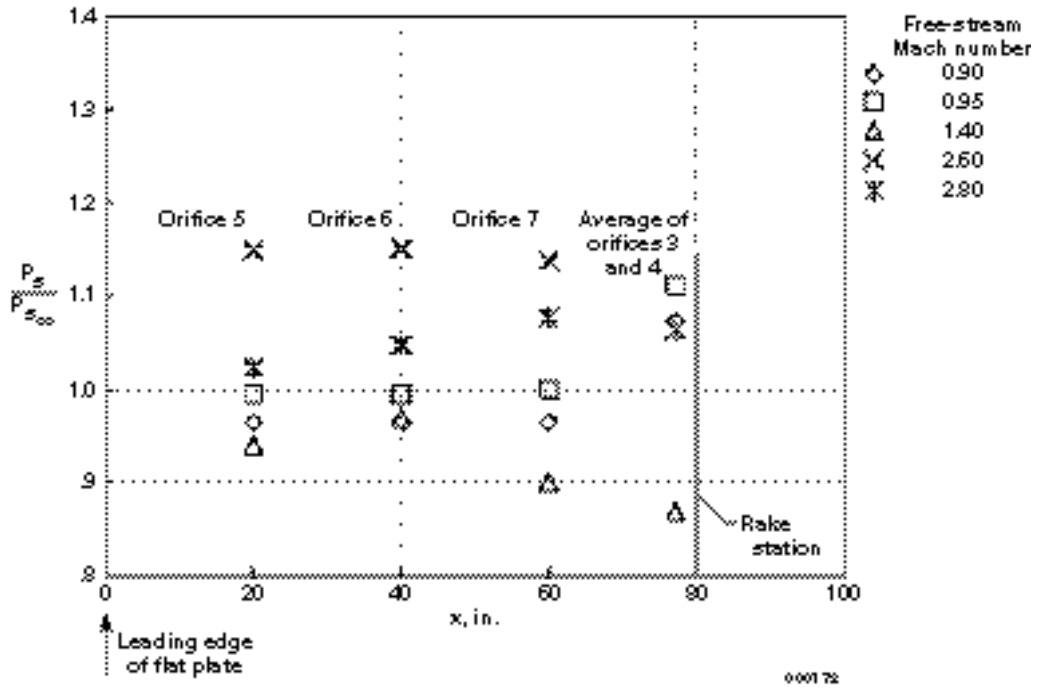


Figure 34. Surface static pressure as a function of axial position; flight 54, left sideslip.

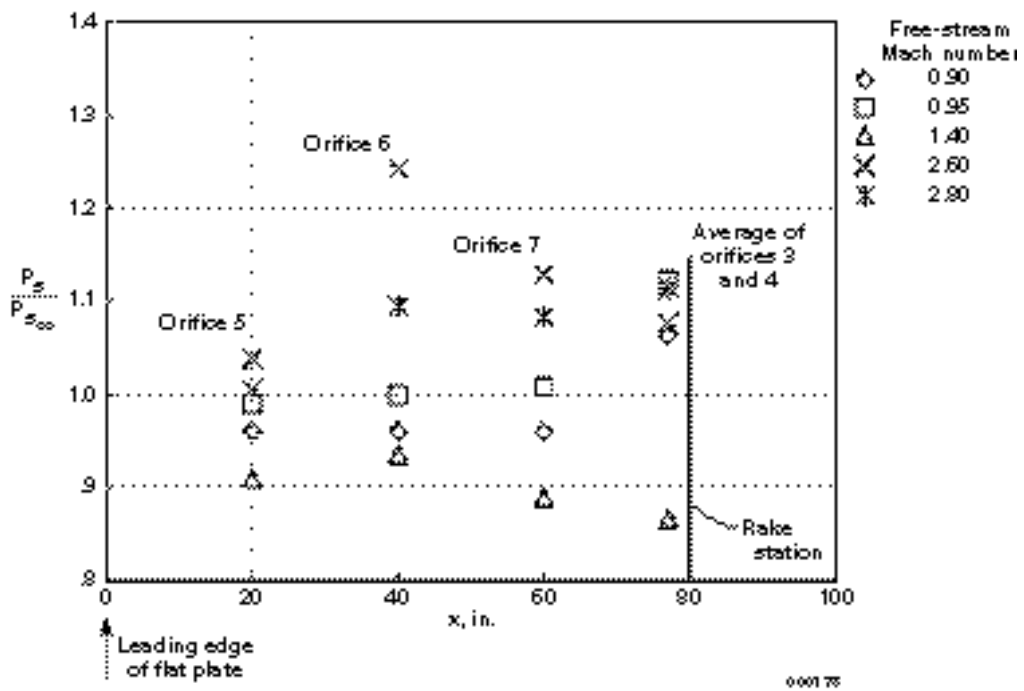


Figure 35. Surface static pressure as a function of axial position; flight 54, right sideslip.

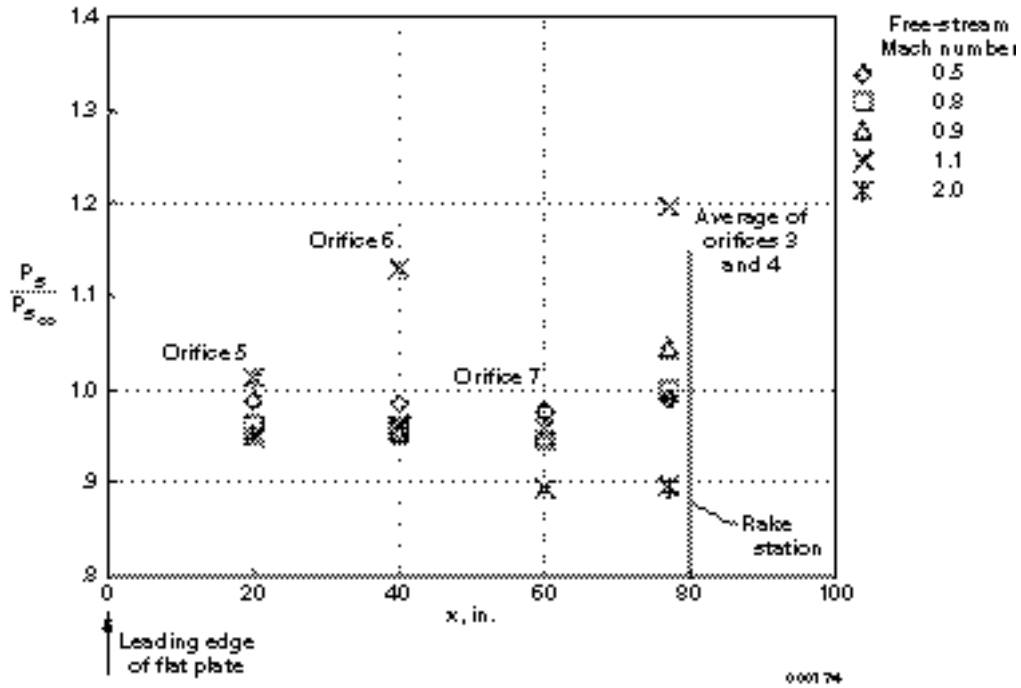


Figure 36. Surface static pressure as a function of axial position; flight 55, left sideslip.

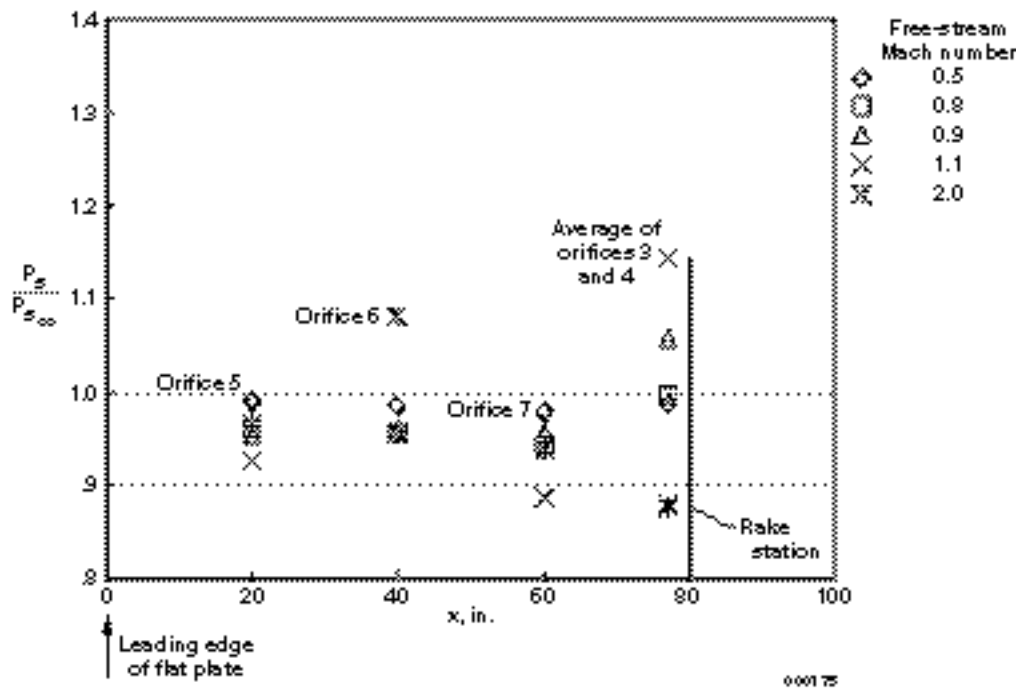


Figure 37. Surface static pressure as a function of axial position; flight 55, right sideslip.

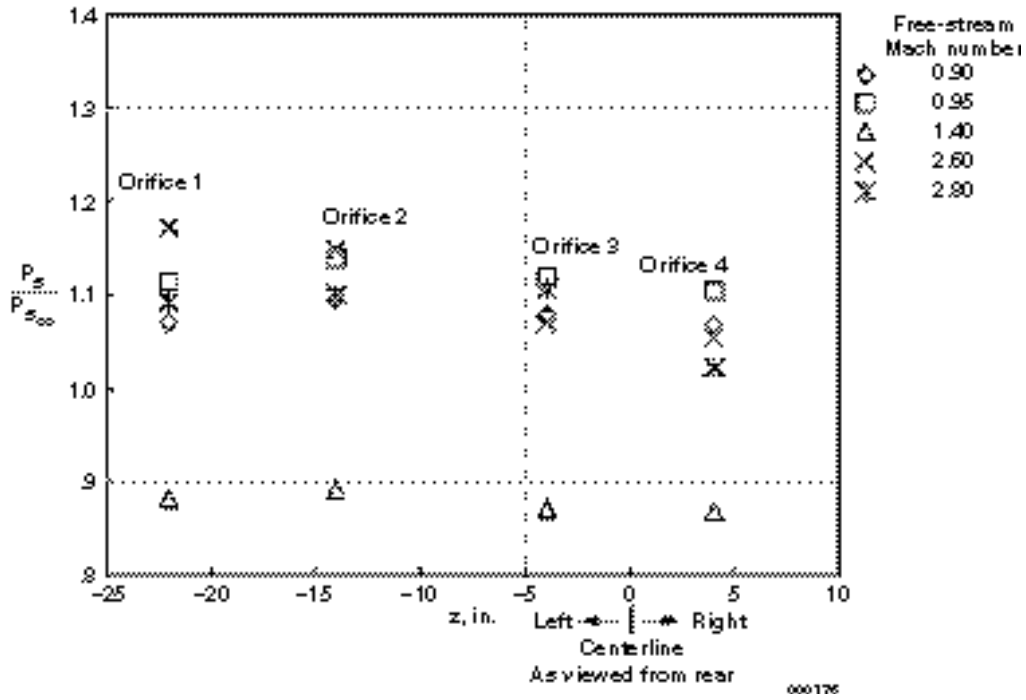


Figure 38. Surface static pressure as a function of lateral position, flight 54, left sideslip.

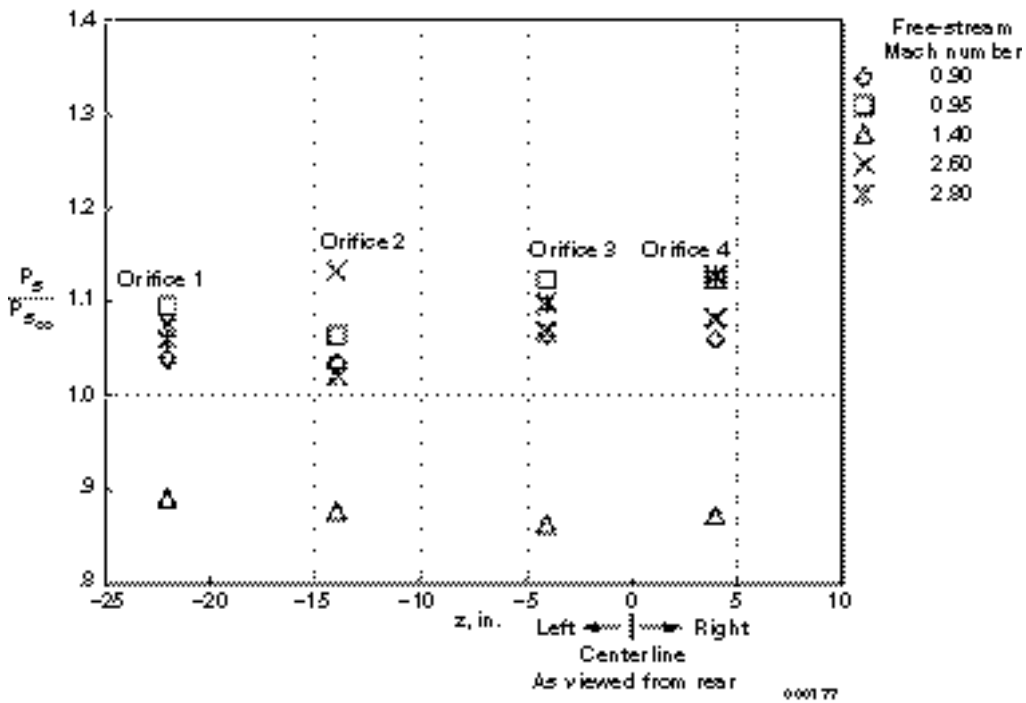


Figure 39. Surface static pressure as a function of lateral position; flight 54, right sideslip.

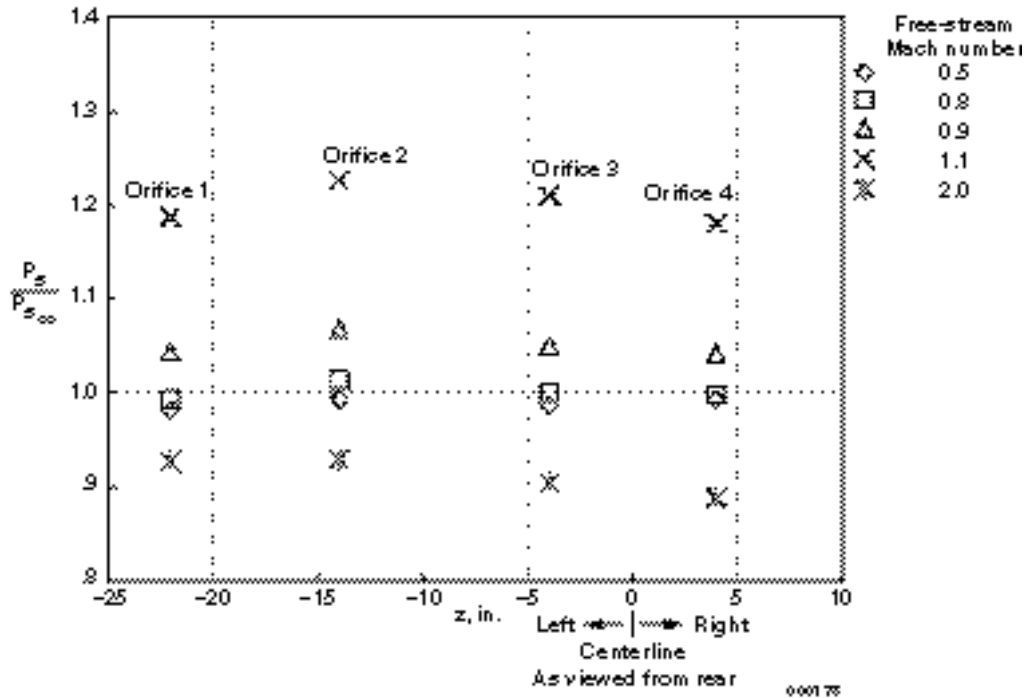


Figure 40. Surface static pressure as a function of lateral position; flight 55, left sideslip.

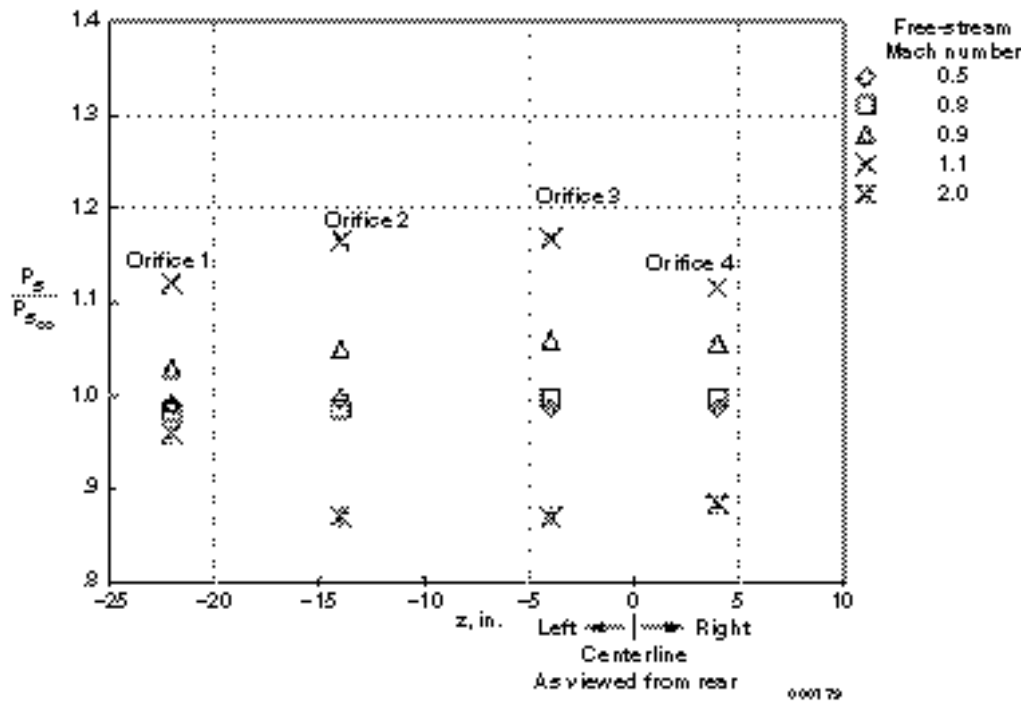
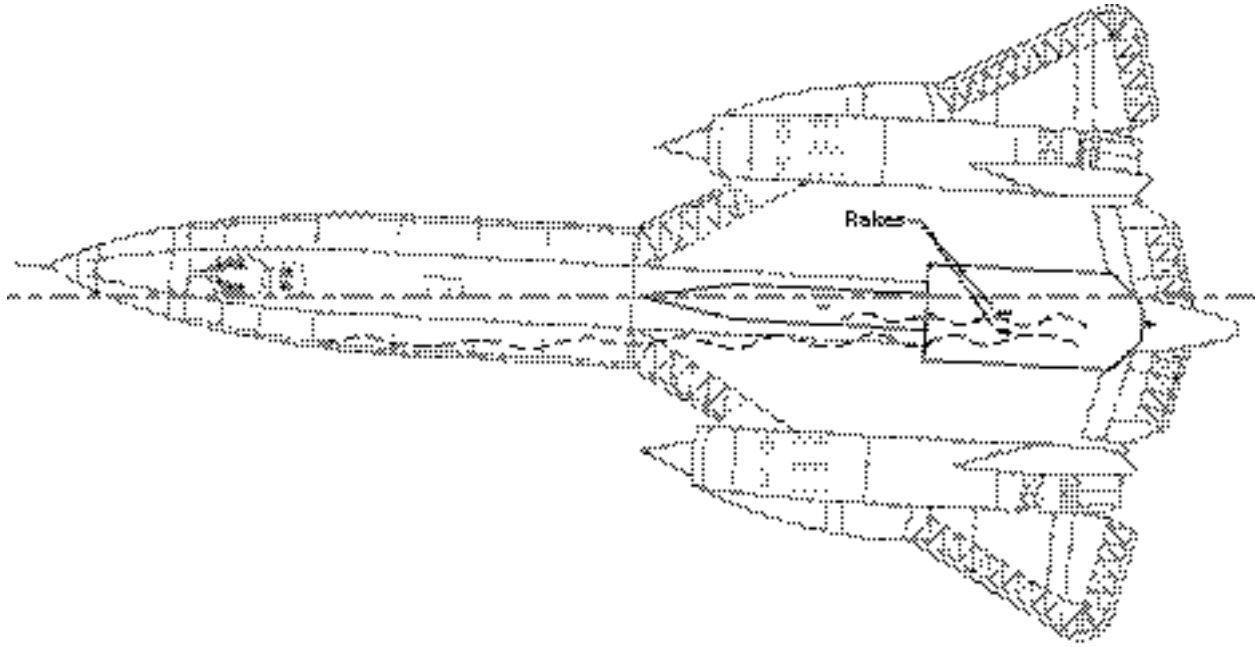
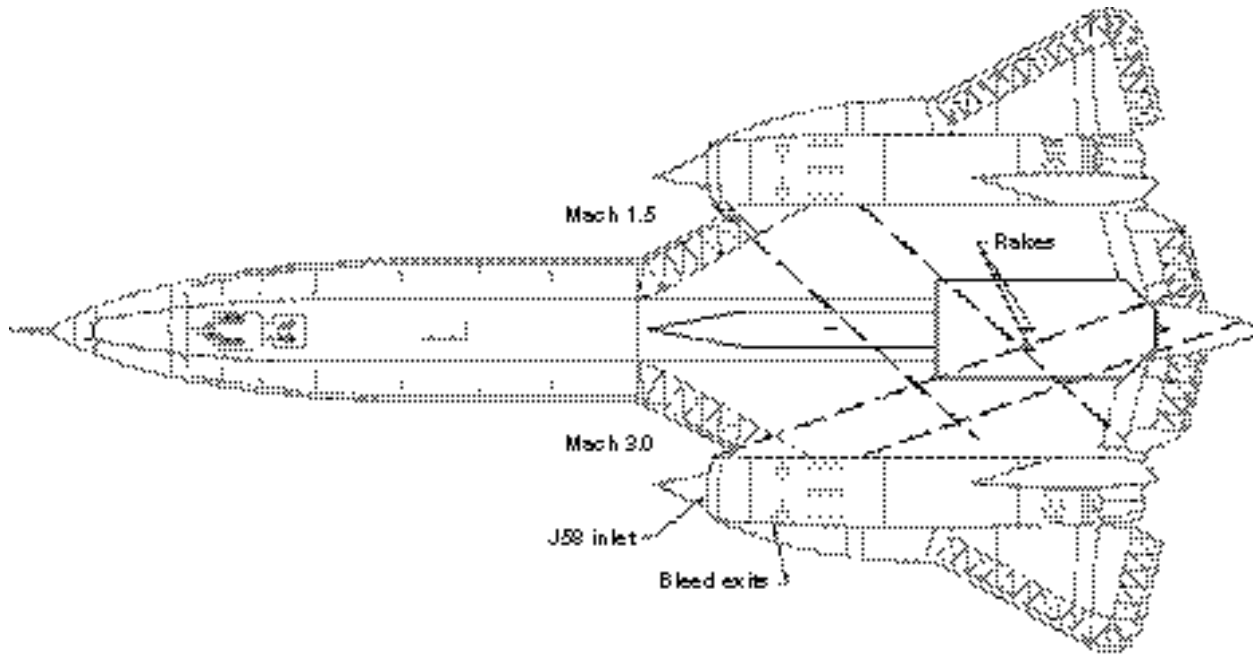


Figure 41. Surface static pressure as a function of lateral position; flight 55, right sideslip.



000130

Figure 42. Possible flow distortion off SR-71 or canoe forebody impinging on test region during sideslip flight.



000131

Figure 43. Possible waves off J58 inlet region impinging on test region during supersonic flight.



## **APPENDIX**

### **TIME-AVERAGED FLOW DATA AT TEST POINTS**

This appendix contains the complete set of data analyzed for the 61 quasi-steady-state test points. Electronic copies of these data are available from the authors.

FLIGHT: 54 MACH: 0.891 ALTITUDE(ft): 24133. KEAS: 366.  
 PSINF(psia): 5.66 PTINF(psia): 9.49 TSINF(F): -13. TTINF(F): 58.  
 ALPHA(deg): 5.0 BETA(deg): 0.0 PHI(deg): -9.0

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.996	0.996	0.842	--	--	0.996	0.757	1.141
15	21.1	0.995	0.995	0.841	--	--	0.995	0.752	1.146
14	18.3	0.996	0.996	0.842	--	--	0.996	0.744	1.155
13	15.7	0.996	0.996	0.842	--	--	0.996	0.737	1.163
12	13.3	0.996	0.996	0.842	--	--	0.996	0.730	1.171
10	11.1	0.996	0.996	0.842	--	--	0.996	0.723	1.178
09	9.1	0.995	0.995	0.841	--	--	0.995	0.731	1.168
08	7.3	0.995	0.995	0.841	--	--	0.995	0.753	1.144
07	5.7	0.993	0.993	0.840	--	--	0.993	0.771	1.123
06	4.3	0.995	0.995	0.841	--	--	0.995	0.789	1.105
05	3.1	0.995	0.995	0.841	--	--	0.995	0.804	1.089
04	2.1	0.996	0.996	0.842	--	--	0.996	0.816	1.076
03	1.3	0.994	0.994	0.840	--	--	0.994	0.824	1.066
02	0.7	0.906	0.906	0.746	--	--	0.906	0.737	1.058
01	0.3	0.828	0.828	0.646	--	--	0.828	0.641	1.053

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.001	1.001	0.843	--	--	1.001	0.755	1.149
15	21.1	0.998	0.998	0.841	--	--	0.998	0.750	1.152
14	18.3	0.999	0.999	0.842	--	--	0.999	0.746	1.157
13	15.7	0.999	0.999	0.842	--	--	0.999	0.740	1.163
12	13.3	0.996	0.996	0.838	--	--	0.996	0.732	1.168
10	11.1	0.992	0.992	0.834	--	--	0.992	0.724	1.172
09	9.1	0.985	0.985	0.828	--	--	0.985	0.726	1.162
08	7.3	0.979	0.979	0.822	--	--	0.979	0.740	1.140
07	5.7	0.983	0.983	0.826	--	--	0.983	0.762	1.121
06	4.3	0.986	0.986	0.829	--	--	0.986	0.780	1.104
05	3.1	0.990	0.990	0.833	--	--	0.990	0.798	1.090
04	2.1	0.993	0.993	0.836	--	--	0.993	0.812	1.078
03	1.3	0.993	0.993	0.836	--	--	0.993	0.821	1.068
02	0.7	0.939	0.939	0.780	--	--	0.939	0.771	1.061
01	0.3	0.833	0.833	0.647	--	--	0.833	0.643	1.056

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.955  
 (6) 0.952  
 (7) 0.953  
 (1) 1.038 (2) 1.067 (3) 1.054 (4) 1.043

5-HOLE PROBE offset rake centerline rake  
 upper 1.149 1.141  
 lower 1.174 1.181

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.684		0.624		
	0.693	0.999	0.705	0.649	0.995	0.614
		0.699			0.640	
		ALPHA: 0.7			ALPHA: 0.6	
		BETA: 0.6			BETA: -1.4	
lower		0.625		0.703		
	0.620	0.987	0.706	0.706	0.995	0.653
		0.624			0.666	
		ALPHA: 0.0			ALPHA: -1.7	
		BETA: 3.8			BETA: -2.4	

FLIGHT: 54 MACH: 0.789 ALTITUDE(ft): 24937. KEAS: 318.  
 PSINF(psia): 5.47 PTINF(psia): 8.25 TSINF(F): -16. TTINF(F): 38.  
 ALPHA(deg): 8.2 BETA(deg): 0.0 PHI(deg): -2.0

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.967	0.967	0.782	--	--	0.967	0.721	1.031
15	21.1	0.961	0.961	0.776	--	--	0.961	0.713	1.033
14	18.3	0.955	0.955	0.770	--	--	0.955	0.704	1.035
13	15.7	0.952	0.952	0.766	--	--	0.952	0.697	1.037
12	13.3	0.949	0.949	0.764	--	--	0.949	0.692	1.039
10	11.1	0.947	0.947	0.760	--	--	0.947	0.687	1.041
09	9.1	0.946	0.946	0.760	--	--	0.946	0.692	1.035
08	7.3	0.945	0.945	0.759	--	--	0.945	0.705	1.023
07	5.7	0.944	0.944	0.758	--	--	0.944	0.715	1.012
06	4.3	0.945	0.945	0.758	--	--	0.945	0.727	1.002
05	3.1	0.945	0.945	0.759	--	--	0.945	0.736	0.994
04	2.1	0.947	0.947	0.761	--	--	0.947	0.746	0.987
03	1.3	0.940	0.940	0.753	--	--	0.940	0.743	0.982
02	0.7	0.899	0.899	0.705	--	--	0.899	0.699	0.978
01	0.3	0.850	0.850	0.640	--	--	0.850	0.638	0.975

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.984	0.984	0.793	--	--	0.984	0.733	1.038
15	21.1	0.980	0.980	0.789	--	--	0.980	0.727	1.040
14	18.3	0.976	0.976	0.785	--	--	0.976	0.719	1.043
13	15.7	0.972	0.972	0.781	--	--	0.972	0.712	1.046
12	13.3	0.968	0.968	0.776	--	--	0.968	0.704	1.048
10	11.1	0.966	0.966	0.775	--	--	0.966	0.699	1.051
09	9.1	0.961	0.961	0.769	--	--	0.961	0.700	1.045
08	7.3	0.958	0.958	0.765	--	--	0.958	0.710	1.032
07	5.7	0.957	0.957	0.764	--	--	0.957	0.721	1.021
06	4.3	0.953	0.953	0.761	--	--	0.953	0.728	1.011
05	3.1	0.953	0.953	0.760	--	--	0.953	0.737	1.002
04	2.1	0.953	0.953	0.761	--	--	0.953	0.745	0.995
03	1.3	0.946	0.946	0.753	--	--	0.946	0.743	0.989
02	0.7	0.898	0.898	0.695	--	--	0.898	0.690	0.985
01	0.3	0.826	0.826	0.596	--	--	0.826	0.593	0.982

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.969  
 (6) 0.954  
 (7) 0.942  
 (1) 0.972 (2) 0.988 (3) 0.975 (4) 0.971

5-HOLE PROBE offset rake centerline rake  
 upper 1.038 1.031  
 lower 1.052 1.042

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.694	0.699	0.704	0.649	0.661	0.622
		0.687			0.612	
		ALPHA: -0.6			ALPHA: -2.1	
		BETA: 0.5			BETA: -1.2	
lower	0.618	0.660	0.713	0.677	0.693	0.657
		0.658			0.652	
		ALPHA: -0.1			ALPHA: -2.1	
		BETA: 4.6			BETA: -1.0	

FLIGHT: 54 MACH: 1.200 ALTITUDE(ft): 28676. KEAS: 446.  
 PSINF(psia): 4.63 PTINF(psia): 11.24 TSINF(F): -31. TTINF(F): 92.  
 ALPHA(deg): 4.8 BETA(deg): -0.2 PHI(deg): -0.6

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.977	0.996	1.292	1.275	0.906	0.974	0.882	1.427
15	21.1	0.976	0.995	1.292	1.280	0.900	0.972	0.863	1.453
14	18.3	0.975	0.994	1.291	1.286	0.892	0.965	0.828	1.501
13	15.7	0.974	0.993	1.290	1.292	0.885	0.956	0.794	1.546
12	13.3	0.976	0.995	1.291	1.281	0.898	0.948	0.765	1.588
10	11.1	0.974	0.993	1.290	1.292	0.884	0.928	0.732	1.626
09	9.1	0.972	0.990	1.288	1.303	0.872	0.948	0.776	1.567
08	7.3	0.974	0.993	1.290	1.289	0.888	0.971	0.876	1.432
07	5.7	0.973	0.992	1.289	1.295	0.882	0.973	0.957	1.311
06	4.3	0.981	1.001	1.296	1.250	0.937	0.981	1.035	1.205
05	3.1	0.982	1.002	1.297	1.244	0.944	0.983	1.101	1.115
04	2.1	0.980	1.000	1.295	1.254	0.931	0.984	1.158	1.039
03	1.3	0.967	0.985	1.284	1.329	0.841	0.974	1.196	0.979
02	0.7	0.748	0.749	1.071	1.933	0.344	0.748	1.022	0.934
01	0.3	0.623	0.623	0.913	--	--	0.623	0.889	0.904

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.979	0.998	1.275	1.260	0.923	0.976	0.849	1.479
15	21.1	0.976	0.996	1.273	1.277	0.903	0.972	0.833	1.496
14	18.3	0.978	0.997	1.275	1.266	0.916	0.969	0.812	1.530
13	15.7	0.976	0.995	1.273	1.278	0.902	0.959	0.787	1.560
12	13.3	0.975	0.994	1.272	1.287	0.891	0.947	0.763	1.589
10	11.1	0.969	0.987	1.266	1.322	0.850	0.924	0.734	1.615
09	9.1	0.963	0.981	1.261	1.353	0.814	0.939	0.774	1.555
08	7.3	0.955	0.973	1.254	1.392	0.771	0.952	0.860	1.426
07	5.7	0.953	0.971	1.253	1.401	0.761	0.953	0.938	1.311
06	4.3	0.951	0.971	1.251	1.410	0.752	0.951	1.006	1.210
05	3.1	0.963	0.983	1.262	1.351	0.816	0.964	1.079	1.124
04	2.1	0.976	0.995	1.272	1.282	0.897	0.979	1.144	1.052
03	1.3	0.978	0.996	1.275	1.265	0.917	0.985	1.193	0.994
02	0.7	0.824	0.824	1.132	1.791	0.428	0.824	1.087	0.951
01	0.3	0.632	0.632	0.906	--	--	0.632	0.884	0.923

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.889  
 (6) 0.922  
 (7) 0.874  
 (1) 0.886 (2) 0.916 (3) 0.892 (4) 0.870

5-HOLE PROBE offset rake centerline rake  
 upper 1.479 1.427  
 lower 1.627 1.643

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.651			0.587	
	0.630	0.976	0.622	0.563	0.975	0.542
		0.591			0.516	
		ALPHA: -2.4			ALPHA: -2.4	
		BETA: -0.3			BETA: -0.7	
lower		0.455			0.671	
	0.599	0.963	0.672	0.698	0.972	0.612
		0.450			0.647	
		ALPHA: -0.1			ALPHA: -1.1	
		BETA: 3.2			BETA: -3.8	

FLIGHT: 54 MACH: 1.505 ALTITUDE(ft): 37908. KEAS: 450.  
 PSINF(psia): 3.01 PTINF(psia): 11.12 TSINF(F): -63. TTINF(F): 117.  
 ALPHA(deg): 4.9 BETA(deg): -0.2 PHI(deg): -0.6

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.916	1.009	1.566	1.553	0.932	0.990
15	21.1	0.915	1.008	1.566	1.555	0.930	0.989
14	18.3	0.913	1.005	1.563	1.562	0.920	0.986
13	15.7	0.912	1.004	1.562	1.565	0.916	0.985
12	13.3	0.912	1.004	1.562	1.565	0.916	0.985
10	11.1	0.910	1.001	1.560	1.573	0.905	0.981
09	9.1	0.910	1.001	1.560	1.573	0.906	0.983
08	7.3	0.911	1.001	1.561	1.571	0.908	0.987
07	5.7	0.911	1.002	1.561	1.570	0.910	0.991
06	4.3	0.907	0.996	1.557	1.584	0.891	0.987
05	3.1	0.903	0.989	1.553	1.597	0.874	0.983
04	2.1	0.897	0.981	1.547	1.615	0.851	0.977
03	1.3	0.917	1.011	1.567	1.548	0.939	1.009
02	0.7	0.754	0.785	1.392	1.922	0.533	0.784
01	0.3	0.596	0.600	1.193	2.260	0.315	0.600

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.912	1.005	1.521	1.567	0.914	0.986
15	21.1	0.910	1.003	1.519	1.573	0.905	0.984
14	18.3	0.910	1.002	1.519	1.573	0.905	0.983
13	15.7	0.911	1.002	1.520	1.570	0.909	0.983
12	13.3	0.910	1.001	1.519	1.573	0.906	0.982
10	11.1	0.908	0.998	1.517	1.580	0.896	0.979
09	9.1	0.906	0.996	1.515	1.586	0.888	0.979
08	7.3	0.902	0.991	1.510	1.600	0.870	0.977
07	5.7	0.903	0.993	1.511	1.597	0.874	0.982
06	4.3	0.879	0.965	1.488	1.665	0.790	0.957
05	3.1	0.866	0.949	1.474	1.700	0.750	0.943
04	2.1	0.860	0.941	1.468	1.712	0.735	0.937
03	1.3	0.884	0.974	1.492	1.652	0.805	0.972
02	0.7	0.773	0.805	1.375	1.886	0.564	0.805
01	0.3	0.574	0.578	1.125	2.315	0.289	0.578

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.071  
 (6) 1.066  
 (7) 0.950  
 (1) 0.968 (2) 0.964 (3) 0.925 (4) 0.922

5-HOLE PROBE offset rake centerline rake  
 upper 0.979 0.976  
 lower 0.945 0.978

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.564	0.572	0.565	0.499	0.509	0.478
		0.545			0.465	
		ALPHA: -1.0			ALPHA: -1.3	
		BETA: 0.1			BETA: -0.6	
lower	0.465	0.396	0.538	0.535	0.546	0.510
		0.392			0.507	
		ALPHA: -0.1			ALPHA: -1.5	
		BETA: 2.6			BETA: -0.9	

FLIGHT: 54 MACH: 2.006 ALTITUDE(ft): 51321. KEAS: 435.  
 PSINF(psia): 1.58 PTINF(psia): 12.46 TSINF(F): -78. TTINF(F): 228.  
 ALPHA(deg): 4.8 BETA(deg): -0.3 PHI(deg): 36.8

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.690	1.022	2.098	2.047	0.937	0.859	1.821	1.142
15	21.1	0.691	1.024	2.100	2.045	0.940	0.869	1.839	1.124
14	18.3	0.684	1.007	2.089	2.058	0.921	0.871	1.860	1.091
13	15.7	0.683	1.003	2.086	2.062	0.916	0.883	1.887	1.061
12	13.3	0.682	1.002	2.086	2.063	0.915	0.897	1.915	1.033
10	11.1	0.688	1.016	2.094	2.052	0.931	0.924	1.950	1.007
09	9.1	0.686	1.011	2.091	2.056	0.925	0.934	1.972	0.985
08	7.3	0.684	1.006	2.088	2.059	0.920	0.943	1.991	0.965
07	5.7	0.693	1.031	2.104	2.040	0.948	0.979	2.027	0.947
06	4.3	0.691	1.026	2.101	2.044	0.942	0.986	2.042	0.932
05	3.1	0.692	1.028	2.102	2.042	0.945	0.999	2.059	0.919
04	2.1	0.684	1.008	2.089	2.058	0.921	0.988	2.060	0.908
03	1.3	0.673	0.978	2.070	2.082	0.887	0.966	2.052	0.899
02	0.7	0.574	0.745	1.895	2.316	0.615	0.741	1.886	0.892
01	0.3	0.431	0.483	1.609	2.700	0.339	0.482	1.606	0.888

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.667	0.987	2.008	2.096	0.869	0.830	1.947	0.980
15	21.1	0.661	0.980	1.998	2.109	0.851	0.831	1.960	0.959
14	18.3	0.634	0.933	1.953	2.169	0.775	0.807	1.960	0.921
13	15.7	0.596	0.876	1.887	2.260	0.672	0.771	1.936	0.885
12	13.3	0.605	0.888	1.903	2.238	0.695	0.795	1.993	0.852
10	11.1	0.492	0.727	1.693	2.531	0.440	0.662	1.813	0.821
09	9.1	0.445	0.656	1.596	2.661	0.360	0.606	1.714	0.819
08	7.3	0.589	0.866	1.874	2.278	0.653	0.812	1.978	0.841
07	5.7	0.655	0.974	1.989	2.121	0.835	0.925	2.072	0.859
06	4.3	0.675	1.001	2.021	2.079	0.892	0.962	2.084	0.876
05	3.1	0.673	1.000	2.019	2.082	0.888	0.971	2.064	0.890
04	2.1	0.673	0.990	2.017	2.083	0.886	0.971	2.048	0.902
03	1.3	0.660	0.958	1.996	2.111	0.848	0.947	2.014	0.911
02	0.7	0.564	0.733	1.830	2.340	0.593	0.729	1.839	0.918
01	0.3	0.391	0.438	1.477	2.813	0.285	0.437	1.481	0.923

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.043  
 (6) 0.992  
 (7) 0.866  
 (1) 0.965 (2) 0.888 (3) 0.916 (4) 0.853

5-HOLE PROBE offset rake centerline rake  
 upper 0.980 1.142  
 lower 0.808 0.996

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.383			0.351	
	0.380	0.719	0.365	0.330	0.702	0.319
		0.360			0.305	
		ALPHA: -1.0			ALPHA: -1.8	
		BETA: -0.6			BETA: -0.4	
lower		0.295			0.379	
	0.222	0.441	0.264	0.357	0.688	0.347
		0.293			0.329	
		ALPHA: -0.2			ALPHA: -2.2	
		BETA: 3.0			BETA: -0.4	

FLIGHT: 54 MACH: 2.398 ALTITUDE(ft): 57742. KEAS: 446.  
 PSINF(psia): 1.16 PTINF(psia): 16.90 TSINF(F): -76. TTINF(F): 365.  
 ALPHA(deg): 4.7 BETA(deg): -0.3 PHI(deg): -1.3

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.541	0.944	2.324	2.401	0.995	0.986
15	21.1	0.544	0.956	2.332	2.392	1.009	0.988
14	18.3	0.555	0.993	2.356	2.364	1.054	1.007
13	15.7	0.543	0.952	2.329	2.395	1.004	0.948
12	13.3	0.551	0.980	2.348	2.374	1.039	0.962
10	11.1	0.553	0.985	2.351	2.370	1.045	0.953
09	9.1	0.547	0.965	2.338	2.385	1.021	0.932
08	7.3	0.556	0.998	2.359	2.361	1.060	0.969
07	5.7	0.552	0.982	2.349	2.372	1.041	0.960
06	4.3	0.555	0.993	2.356	2.364	1.055	0.976
05	3.1	0.553	0.987	2.352	2.369	1.047	0.974
04	2.1	0.544	0.954	2.330	2.394	1.007	0.946
03	1.3	0.537	0.930	2.314	2.412	0.979	0.926
02	0.7	0.422	0.597	2.030	2.725	0.602	0.595
01	0.3	0.309	0.362	1.705	3.067	0.359	0.362

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.561	0.980	2.387	2.348	1.081	1.023
15	21.1	0.551	0.968	2.364	2.374	1.038	1.000
14	18.3	0.544	0.973	2.347	2.393	1.008	0.987
13	15.7	0.539	0.945	2.336	2.405	0.989	0.942
12	13.3	0.533	0.947	2.321	2.423	0.962	0.929
10	11.1	0.517	0.921	2.283	2.466	0.900	0.891
09	9.1	0.475	0.838	2.181	2.579	0.755	0.809
08	7.3	0.436	0.782	2.083	2.685	0.641	0.760
07	5.7	0.431	0.768	2.070	2.698	0.628	0.751
06	4.3	0.446	0.798	2.108	2.658	0.668	0.784
05	3.1	0.483	0.862	2.203	2.555	0.783	0.852
04	2.1	0.507	0.889	2.260	2.491	0.865	0.882
03	1.3	0.516	0.895	2.282	2.466	0.899	0.890
02	0.7	0.504	0.714	2.254	2.498	0.855	0.712
01	0.3	0.380	0.446	1.932	2.843	0.503	0.445

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.298  
 (6) 1.136  
 (7) 1.056  
 (1) 1.029 (2) 1.064 (3) 1.074 (4) 1.047

5-HOLE PROBE offset rake centerline rake  
 upper 1.080 1.014  
 lower 0.963 1.105

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.297			0.251		
	0.302	0.539	0.294	0.234	0.559	0.231
		0.288			0.220	
	ALPHA:	-0.5		ALPHA:	-1.4	
	BETA:	-0.5		BETA:	-0.1	
lower	0.209			0.284		
	0.232	0.503	0.222	0.274	0.551	0.264
		0.207			0.258	
	ALPHA:	-0.1		ALPHA:	-1.4	
	BETA:	-0.5		BETA:	-0.5	

FLIGHT: 54 MACH: 3.003 ALTITUDE(ft): 68666. KEAS: 429.  
 PSINF(psia): 0.69 PTINF(psia): 25.31 TSINF(F): -70. TTINF(F): 634.  
 ALPHA(deg): 4.6 BETA(deg): 0.5 PHI(deg): 33.9

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.305	0.852	2.898	3.079	0.892	0.773	2.785	1.076
15	21.1	0.311	0.893	2.929	3.057	0.922	0.807	2.811	1.079
14	18.3	0.316	0.922	2.951	3.043	0.942	0.828	2.825	1.085
13	15.7	0.314	0.910	2.942	3.049	0.934	0.813	2.810	1.089
12	13.3	0.308	0.873	2.914	3.068	0.907	0.777	2.777	1.094
10	11.1	0.310	0.881	2.920	3.064	0.913	0.780	2.777	1.098
09	9.1	0.305	0.848	2.896	3.081	0.890	0.759	2.764	1.090
08	7.3	0.303	0.838	2.888	3.087	0.883	0.766	2.781	1.071
07	5.7	0.305	0.853	2.899	3.078	0.893	0.794	2.815	1.055
06	4.3	0.306	0.857	2.902	3.076	0.896	0.811	2.838	1.041
05	3.1	0.309	0.874	2.916	3.067	0.909	0.840	2.869	1.029
04	2.1	0.310	0.882	2.921	3.063	0.914	0.858	2.889	1.019
03	1.3	0.303	0.835	2.885	3.088	0.880	0.821	2.866	1.011
02	0.7	0.209	0.378	2.372	3.503	0.482	0.376	2.363	1.005
01	0.3	0.146	0.197	1.954	3.945	0.262	0.197	1.951	1.000

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.343	0.956	2.984	2.956	1.073	0.869	2.580	1.398
15	21.1	0.337	0.967	2.960	2.973	1.047	0.874	2.593	1.363
14	18.3	0.326	0.953	2.909	3.008	0.993	0.856	2.614	1.299
13	15.7	0.315	0.914	2.857	3.044	0.940	0.816	2.632	1.239
12	13.3	0.311	0.880	2.836	3.060	0.919	0.783	2.675	1.184
10	11.1	0.329	0.935	2.920	3.000	1.005	0.828	2.819	1.133
09	9.1	0.332	0.924	2.934	2.991	1.019	0.827	2.870	1.105
08	7.3	0.323	0.894	2.894	3.018	0.978	0.817	2.843	1.096
07	5.7	0.320	0.895	2.881	3.027	0.964	0.833	2.841	1.088
06	4.3	0.320	0.895	2.878	3.030	0.961	0.848	2.848	1.081
05	3.1	0.317	0.899	2.866	3.038	0.949	0.864	2.845	1.075
04	2.1	0.314	0.893	2.850	3.050	0.933	0.869	2.835	1.070
03	1.3	0.308	0.849	2.820	3.071	0.904	0.835	2.811	1.066
02	0.7	0.258	0.468	2.572	3.260	0.684	0.465	2.567	1.063
01	0.3	0.172	0.232	2.068	3.739	0.346	0.231	2.067	1.061

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.040  
 (6) 1.092  
 (7) 0.932  
 (1) 1.056 (2) 1.063 (3) 0.975 (4) 1.020

5-HOLE PROBE offset rake centerline rake  
 upper 1.398 1.076  
 lower 1.110 1.100

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.163			0.133		
	0.174	0.344	0.158	0.126	0.331	0.131
	0.160			0.125		
	ALPHA: -0.2			ALPHA: -0.5		
	BETA: -1.3			BETA: 0.4		
lower	0.156			0.138		
	0.120	0.325	0.148	0.134	0.305	0.142
	0.155			0.140		
	ALPHA: -0.1			ALPHA: 0.1		
	BETA: 2.1			BETA: 0.6		



FLIGHT: 54 MACH: 3.005 ALTITUDE(ft): 66184. KEAS: 456.  
 PSINF(psia): 0.77 PTINF(psia): 28.61 TSINF(F): -74. TTINF(F): 621.  
 ALPHA(deg): 5.1 BETA(deg): 0.5 PHI(deg): 6.8

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.306	0.847	2.887	3.075	0.902	0.873	2.922	0.990
15	21.1	0.319	0.928	2.947	3.032	0.960	0.957	2.983	0.990
14	18.3	0.322	0.951	2.963	3.022	0.976	0.980	2.998	0.990
13	15.7	0.313	0.891	2.920	3.051	0.933	0.917	2.955	0.990
12	13.3	0.310	0.871	2.905	3.062	0.919	0.897	2.939	0.990
10	11.1	0.307	0.851	2.890	3.072	0.905	0.876	2.924	0.990
09	9.1	0.304	0.834	2.876	3.082	0.891	0.855	2.906	0.993
08	7.3	0.304	0.835	2.877	3.082	0.892	0.852	2.901	0.997
07	5.7	0.308	0.856	2.894	3.070	0.908	0.870	2.912	1.000
06	4.3	0.308	0.859	2.896	3.069	0.910	0.869	2.910	1.003
05	3.1	0.309	0.863	2.899	3.066	0.913	0.871	2.910	1.006
04	2.1	0.311	0.874	2.907	3.060	0.921	0.879	2.914	1.008
03	1.3	0.304	0.831	2.874	3.084	0.890	0.834	2.878	1.010
02	0.7	0.211	0.380	2.368	3.493	0.490	0.381	2.370	1.011
01	0.3	0.147	0.197	1.947	3.938	0.265	0.197	1.948	1.012

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.338	0.935	2.979	2.971	1.054	0.963	2.665	1.301
15	21.1	0.334	0.973	2.961	2.983	1.034	1.002	2.681	1.271
14	18.3	0.320	0.945	2.895	3.028	0.966	0.973	2.684	1.215
13	15.7	0.311	0.884	2.851	3.060	0.922	0.910	2.704	1.163
12	13.3	0.307	0.862	2.833	3.073	0.904	0.888	2.747	1.115
10	11.1	0.318	0.882	2.886	3.035	0.956	0.907	2.858	1.071
09	9.1	0.328	0.897	2.930	3.004	1.002	0.921	2.931	1.051
08	7.3	0.314	0.861	2.866	3.049	0.937	0.878	2.867	1.051
07	5.7	0.315	0.874	2.869	3.047	0.939	0.889	2.869	1.052
06	4.3	0.314	0.876	2.869	3.047	0.939	0.887	2.869	1.052
05	3.1	0.315	0.879	2.869	3.047	0.940	0.887	2.870	1.052
04	2.1	0.311	0.874	2.851	3.060	0.922	0.879	2.851	1.052
03	1.3	0.305	0.834	2.823	3.080	0.895	0.837	2.823	1.052
02	0.7	0.259	0.467	2.589	3.258	0.688	0.468	2.589	1.052
01	0.3	0.173	0.232	2.084	3.734	0.350	0.232	2.084	1.052

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.037  
 (6) 1.084  
 (7) 0.941  
 (1) 1.048 (2) 1.056 (3) 1.002 (4) 1.023

5-HOLE PROBE offset rake centerline rake  
 upper 1.301 0.990  
 lower 1.051 0.990

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.176	0.165	0.161	0.124	0.131	0.127
		0.164			0.122	
		ALPHA: -0.2			ALPHA: -0.7	
		BETA: -1.5			BETA: 0.2	
lower	0.121	0.141	0.149	0.135	0.140	0.142
		0.139			0.141	
		ALPHA: -0.1			ALPHA: 0.1	
		BETA: 2.2			BETA: 0.6	

FLIGHT: 54 MACH: 2.380 ALTITUDE(ft): 65017. KEAS: 371.  
 PSINF(psia): 0.82 PTINF(psia): 11.58 TSINF(F): -72. TTINF(F): 366.  
 ALPHA(deg): 5.4 BETA(deg): 0.6 PHI(deg): 0.7

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.576	0.991	2.304	2.309	1.116	0.942	2.236	1.179
15	21.1	0.575	0.986	2.301	2.313	1.109	0.939	2.235	1.178
14	18.3	0.571	0.972	2.291	2.324	1.091	0.928	2.229	1.175
13	15.7	0.572	0.977	2.295	2.320	1.098	0.935	2.235	1.172
12	13.3	0.569	0.968	2.289	2.327	1.086	0.928	2.232	1.169
10	11.1	0.568	0.965	2.287	2.330	1.081	0.926	2.232	1.167
09	9.1	0.560	0.938	2.269	2.351	1.047	0.906	2.221	1.161
08	7.3	0.559	0.933	2.265	2.355	1.040	0.907	2.227	1.152
07	5.7	0.553	0.916	2.254	2.369	1.017	0.896	2.223	1.144
06	4.3	0.551	0.910	2.249	2.374	1.009	0.895	2.227	1.137
05	3.1	0.551	0.910	2.249	2.374	1.009	0.899	2.233	1.131
04	2.1	0.551	0.908	2.248	2.375	1.007	0.901	2.237	1.126
03	1.3	0.542	0.882	2.229	2.398	0.972	0.877	2.222	1.122
02	0.7	0.430	0.582	1.963	2.703	0.606	0.581	1.960	1.119
01	0.3	0.316	0.361	1.651	3.041	0.363	0.361	1.650	1.118

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.547	0.941	2.249	2.384	0.993	0.895	1.951	1.438
15	21.1	0.538	0.923	2.229	2.408	0.958	0.879	1.962	1.401
14	18.3	0.532	0.907	2.216	2.423	0.935	0.866	2.006	1.331
13	15.7	0.530	0.905	2.210	2.430	0.924	0.865	2.056	1.265
12	13.3	0.539	0.916	2.230	2.407	0.959	0.878	2.131	1.205
10	11.1	0.540	0.917	2.234	2.402	0.966	0.881	2.190	1.150
09	9.1	0.539	0.904	2.231	2.405	0.962	0.872	2.215	1.123
08	7.3	0.558	0.933	2.273	2.356	1.039	0.906	2.260	1.120
07	5.7	0.566	0.938	2.291	2.335	1.073	0.917	2.281	1.118
06	4.3	0.565	0.932	2.287	2.339	1.065	0.916	2.279	1.116
05	3.1	0.561	0.926	2.279	2.349	1.050	0.915	2.273	1.114
04	2.1	0.551	0.909	2.257	2.375	1.008	0.901	2.253	1.112
03	1.3	0.526	0.855	2.201	2.441	0.909	0.851	2.198	1.111
02	0.7	0.418	0.567	1.942	2.735	0.577	0.565	1.940	1.110
01	0.3	0.286	0.327	1.563	3.148	0.309	0.327	1.562	1.109

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.258  
 (6) 1.115  
 (7) 1.145  
 (1) 1.063 (2) 1.154 (3) 1.129 (4) 1.103

5-HOLE PROBE offset rake centerline rake  
 upper 1.438 1.179  
 lower 1.125 1.166

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.304			0.265	
	0.301	0.545	0.301	0.256	0.578	0.259
		0.289			0.256	
		ALPHA: -0.9			ALPHA: -0.4	
		BETA: 0.0			BETA: 0.1	
lower		0.360			0.297	
	0.228	0.542	0.270	0.286	0.566	0.270
		0.359			0.271	
		ALPHA: -0.1			ALPHA: -1.3	
		BETA: 2.0			BETA: -0.8	

FLIGHT: 54 MACH: 2.023 ALTITUDE(ft): 59380. KEAS: 361.  
 PSINF(psia): 1.07 PTINF(psia): 8.69 TSINF(F): -76. TTINF(F): 238.  
 ALPHA(deg): 5.7 BETA(deg): 0.4 PHI(deg): 4.5

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.682	0.997	2.081	2.064	0.937	0.970
15	21.1	0.677	0.986	2.073	2.074	0.924	0.955
14	18.3	0.678	0.988	2.075	2.072	0.926	0.950
13	15.7	0.674	0.978	2.068	2.081	0.914	0.933
12	13.3	0.677	0.985	2.073	2.075	0.923	0.935
10	11.1	0.676	0.983	2.071	2.076	0.921	0.928
09	9.1	0.670	0.969	2.062	2.088	0.904	0.918
08	7.3	0.672	0.974	2.065	2.084	0.910	0.932
07	5.7	0.677	0.986	2.073	2.074	0.924	0.952
06	4.3	0.671	0.972	2.064	2.086	0.907	0.946
05	3.1	0.673	0.975	2.066	2.083	0.911	0.956
04	2.1	0.667	0.960	2.056	2.096	0.892	0.947
03	1.3	0.657	0.936	2.040	2.117	0.864	0.928
02	0.7	0.567	0.730	1.880	2.333	0.616	0.728
01	0.3	0.432	0.484	1.609	2.697	0.350	0.484

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.672	0.983	2.029	2.085	0.908	0.956
15	21.1	0.672	0.979	2.029	2.085	0.908	0.948
14	18.3	0.677	0.987	2.038	2.073	0.925	0.949
13	15.7	0.673	0.977	2.031	2.082	0.912	0.933
12	13.3	0.675	0.982	2.034	2.079	0.917	0.932
10	11.1	0.672	0.978	2.029	2.084	0.909	0.922
09	9.1	0.669	0.967	2.024	2.091	0.900	0.916
08	7.3	0.667	0.967	2.021	2.095	0.894	0.924
07	5.7	0.670	0.975	2.025	2.090	0.901	0.941
06	4.3	0.667	0.965	2.021	2.095	0.894	0.940
05	3.1	0.661	0.958	2.011	2.108	0.876	0.940
04	2.1	0.657	0.946	2.005	2.117	0.864	0.933
03	1.3	0.644	0.917	1.983	2.146	0.825	0.910
02	0.7	0.544	0.701	1.804	2.393	0.561	0.698
01	0.3	0.372	0.418	1.445	2.866	0.270	0.417

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.050  
 (6) 1.098  
 (7) 0.992  
 (1) 0.936 (2) 0.946 (3) 0.914 (4) 0.910

5-HOLE PROBE offset rake centerline rake  
 upper 1.182 0.946  
 lower 1.001 0.990

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.394			0.337	
	0.365	0.674	0.402	0.314	0.684	0.314
		0.360			0.302	
		ALPHA: -1.6			ALPHA: -1.3	
		BETA: 1.8			BETA: 0.0	
lower		0.490			0.373	
	0.277	0.674	0.379	0.343	0.670	0.337
		0.488			0.318	
		ALPHA: -0.2			ALPHA: -2.4	
		BETA: 4.2			BETA: -0.3	

FLIGHT: 54 MACH: 1.512 ALTITUDE(ft): 47397. KEAS: 360.  
 PSINF(psia): 1.91 PTINF(psia): 7.12 TSINF(F): -86. TTINF(F): 85.  
 ALPHA(deg): 5.6 BETA(deg): 0.6 PHI(deg): 0.0

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.904	1.006	1.591	1.593	0.887	0.992	1.556	0.929
15	21.1	0.900	1.000	1.587	1.606	0.871	0.985	1.550	0.932
14	18.3	0.901	1.001	1.588	1.603	0.874	0.985	1.545	0.937
13	15.7	0.902	1.002	1.589	1.600	0.878	0.984	1.542	0.942
12	13.3	0.897	0.996	1.584	1.613	0.861	0.977	1.533	0.947
10	11.1	0.895	0.992	1.582	1.620	0.852	0.972	1.527	0.951
09	9.1	0.892	0.988	1.579	1.629	0.842	0.969	1.528	0.947
08	7.3	0.893	0.990	1.580	1.626	0.846	0.974	1.538	0.937
07	5.7	0.888	0.982	1.575	1.640	0.828	0.970	1.542	0.928
06	4.3	0.885	0.977	1.571	1.650	0.816	0.968	1.546	0.920
05	3.1	0.878	0.967	1.564	1.668	0.794	0.960	1.546	0.913
04	2.1	0.878	0.967	1.564	1.668	0.794	0.962	1.552	0.907
03	1.3	0.900	0.999	1.586	1.607	0.869	0.996	1.579	0.903
02	0.7	0.686	0.707	1.345	2.054	0.438	0.706	1.341	0.899
01	0.3	0.541	0.543	1.146	2.401	0.255	0.543	1.144	0.897

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.902	1.004	1.564	1.598	0.881	0.991	1.563	0.922
15	21.1	0.902	1.002	1.563	1.601	0.877	0.987	1.560	0.923
14	18.3	0.900	1.000	1.561	1.605	0.871	0.984	1.556	0.926
13	15.7	0.897	0.997	1.558	1.615	0.859	0.979	1.550	0.928
12	13.3	0.900	0.999	1.561	1.605	0.871	0.979	1.552	0.930
10	11.1	0.895	0.992	1.556	1.622	0.851	0.971	1.544	0.932
09	9.1	0.897	0.994	1.559	1.614	0.860	0.974	1.547	0.932
08	7.3	0.894	0.990	1.555	1.624	0.848	0.975	1.546	0.930
07	5.7	0.894	0.989	1.556	1.622	0.850	0.977	1.548	0.928
06	4.3	0.880	0.972	1.541	1.662	0.800	0.963	1.535	0.926
05	3.1	0.868	0.956	1.528	1.694	0.764	0.949	1.524	0.924
04	2.1	0.863	0.950	1.523	1.706	0.750	0.946	1.520	0.923
03	1.3	0.872	0.969	1.532	1.684	0.775	0.966	1.531	0.922
02	0.7	0.717	0.739	1.359	1.992	0.483	0.738	1.358	0.921
01	0.3	0.526	0.528	1.100	2.441	0.240	0.527	1.100	0.921

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.946  
 (6) 1.038  
 (7) 0.928  
 (1) 0.926 (2) 0.915 (3) 0.889 (4) 0.902

5-HOLE PROBE offset rake centerline rake  
 upper 0.922 0.929  
 lower 0.933 0.952

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.566			0.498	
	0.538	0.898	0.566	0.464	0.900	0.475
		0.522			0.451	
		ALPHA: -1.8			ALPHA: -1.6	
		BETA: 1.2			BETA: 0.3	
lower		0.607			0.527	
	0.437	0.893	0.536	0.514	0.892	0.502
		0.605			0.502	
		ALPHA: -0.1			ALPHA: -0.9	
		BETA: 3.5			BETA: -0.4	

FLIGHT: 54 MACH: 1.171 ALTITUDE(ft): 35606. KEAS: 370.  
 PSINF(psia): 3.36 PTINF(psia): 7.84 TSINF(F): -56. TTINF(F): 54.  
 ALPHA(deg): 4.5 BETA(deg): 0.4 PHI(deg): -0.2

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.983	0.985	1.119	1.234	0.920	0.961	0.780	1.521
15	21.1	0.982	0.984	1.118	1.244	0.909	0.956	0.771	1.530
14	18.3	0.982	0.984	1.118	1.240	0.913	0.951	0.758	1.547
13	15.7	0.983	0.985	1.118	1.238	0.915	0.945	0.746	1.563
12	13.3	0.984	0.986	1.120	1.230	0.925	0.940	0.735	1.577
10	11.1	0.984	0.985	1.119	1.233	0.921	0.932	0.723	1.591
09	9.1	0.982	0.983	1.117	1.246	0.906	0.951	0.761	1.543
08	7.3	0.985	0.987	1.121	1.223	0.934	0.978	0.839	1.446
07	5.7	0.987	0.988	1.122	1.215	0.944	0.985	0.901	1.359
06	4.3	0.992	0.994	1.126	1.177	0.992	0.992	0.958	1.284
05	3.1	0.988	0.990	1.123	1.203	0.959	0.988	1.000	1.219
04	2.1	0.986	0.988	1.121	1.216	0.942	0.986	1.036	1.165
03	1.3	0.969	0.971	1.107	1.317	0.823	0.969	1.053	1.122
02	0.7	0.730	0.730	0.859	--	--	0.730	0.825	1.090
01	0.3	0.622	0.622	0.695	--	--	0.622	0.677	1.068

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.983	0.984	1.119	1.240	0.914	0.960	0.804	1.489
15	21.1	0.982	0.984	1.119	1.242	0.911	0.956	0.795	1.501
14	18.3	0.982	0.984	1.119	1.243	0.910	0.951	0.778	1.522
13	15.7	0.981	0.983	1.118	1.248	0.904	0.944	0.761	1.541
12	13.3	0.982	0.984	1.118	1.243	0.909	0.938	0.747	1.560
10	11.1	0.981	0.983	1.117	1.250	0.901	0.929	0.732	1.576
09	9.1	0.977	0.979	1.114	1.272	0.874	0.947	0.765	1.531
08	7.3	0.978	0.979	1.115	1.270	0.877	0.970	0.837	1.436
07	5.7	0.983	0.985	1.120	1.235	0.919	0.982	0.903	1.352
06	4.3	0.990	0.992	1.125	1.192	0.973	0.990	0.960	1.278
05	3.1	0.988	0.990	1.123	1.208	0.953	0.988	1.002	1.215
04	2.1	0.986	0.988	1.122	1.216	0.943	0.986	1.039	1.162
03	1.3	0.974	0.976	1.112	1.289	0.855	0.975	1.060	1.120
02	0.7	0.755	0.755	0.891	--	--	0.755	0.859	1.088
01	0.3	0.612	0.612	0.677	--	--	0.612	0.659	1.067

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.914  
 (6) 0.924  
 (7) 0.876  
 (1) 1.006 (2) 1.096 (3) 1.080 (4) 1.023

5-HOLE PROBE offset rake centerline rake  
 upper 1.489 1.521  
 lower 1.584 1.597

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.640	0.658	0.653	0.573	0.597	0.576
		0.623			0.562	
		ALPHA: -1.5			ALPHA: -1.3	
		BETA: 0.6			BETA: 0.1	
lower	0.597	0.578	0.696	0.694	0.677	0.629
		0.976			0.981	
		0.577			0.657	
		ALPHA: 0.0			ALPHA: -0.9	
		BETA: 4.3			BETA: -2.9	

FLIGHT: 54 MACH: 0.790 ALTITUDE(ft): 14730. KEAS: 395.  
 PSINF(psia): 8.38 PTINF(psia): 12.65 TSINF(F): 24. TTINF(F): 84.  
 ALPHA(deg): 4.6 BETA(deg): 0.5 PHI(deg): -0.4

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.002	1.002	0.801	--	--	1.002	0.732	1.059
15	21.1	1.001	1.001	0.800	--	--	1.001	0.727	1.063
14	18.3	1.002	1.002	0.800	--	--	1.002	0.721	1.069
13	15.7	1.001	1.001	0.800	--	--	1.001	0.715	1.075
12	13.3	1.002	1.002	0.800	--	--	1.002	0.709	1.081
10	11.1	1.002	1.002	0.800	--	--	1.002	0.704	1.086
09	9.1	1.001	1.001	0.800	--	--	1.001	0.711	1.079
08	7.3	1.002	1.002	0.801	--	--	1.002	0.729	1.061
07	5.7	1.001	1.001	0.799	--	--	1.001	0.744	1.046
06	4.3	1.002	1.002	0.801	--	--	1.002	0.759	1.033
05	3.1	1.001	1.001	0.800	--	--	1.001	0.770	1.021
04	2.1	1.002	1.002	0.800	--	--	1.002	0.780	1.011
03	1.3	1.002	1.002	0.800	--	--	1.002	0.788	1.004
02	0.7	0.945	0.945	0.740	--	--	0.945	0.733	0.998
01	0.3	0.876	0.876	0.655	--	--	0.876	0.651	0.994

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.003	1.003	0.796	--	--	1.003	0.736	1.056
15	21.1	1.001	1.001	0.794	--	--	1.001	0.731	1.059
14	18.3	1.002	1.002	0.795	--	--	1.002	0.725	1.065
13	15.7	1.001	1.001	0.794	--	--	1.001	0.719	1.071
12	13.3	1.002	1.002	0.796	--	--	1.002	0.715	1.076
10	11.1	1.001	1.001	0.794	--	--	1.001	0.709	1.081
09	9.1	0.999	0.999	0.792	--	--	0.999	0.712	1.075
08	7.3	0.996	0.996	0.789	--	--	0.996	0.725	1.059
07	5.7	0.998	0.998	0.791	--	--	0.998	0.741	1.046
06	4.3	0.997	0.997	0.790	--	--	0.997	0.753	1.034
05	3.1	0.998	0.998	0.791	--	--	0.998	0.764	1.023
04	2.1	1.000	1.000	0.793	--	--	1.000	0.775	1.015
03	1.3	1.001	1.001	0.794	--	--	1.001	0.783	1.008
02	0.7	0.956	0.956	0.746	--	--	0.956	0.740	1.003
01	0.3	0.861	0.861	0.628	--	--	0.861	0.625	0.999

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.964  
 (6) 0.957  
 (7) 0.945  
 (1) 0.987 (2) 1.006 (3) 0.992 (4) 0.991

5-HOLE PROBE offset rake centerline rake  
 upper 1.056 1.059  
 lower 1.083 1.088

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.697	0.705	0.722	0.650	0.652	0.646
		0.701			0.650	
		ALPHA: -0.2			ALPHA: -0.1	
		BETA: 1.2			BETA: -0.2	
lower	0.630	0.657	0.725	0.709	0.709	0.678
		0.655			0.685	
		ALPHA: -0.1			ALPHA: -1.2	
		BETA: 4.2			BETA: -1.4	

FLIGHT: 54 MACH: 0.593 ALTITUDE(ft): 11215. KEAS: 317.  
 PSINF(psia): 9.64 PTINF(psia): 12.22 TSINF(F): 43. TTINF(F): 78.  
 ALPHA(deg): 6.6 BETA(deg): 0.5 PHI(deg): 40.2

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.001	1.001	0.615	--	--	1.001	0.577	1.013
15	21.1	1.001	1.001	0.615	--	--	1.001	0.575	1.014
14	18.3	1.002	1.002	0.616	--	--	1.002	0.575	1.016
13	15.7	1.001	1.001	0.615	--	--	1.001	0.572	1.017
12	13.3	1.002	1.002	0.617	--	--	1.002	0.572	1.018
10	11.1	1.002	1.002	0.616	--	--	1.002	0.570	1.019
09	9.1	1.001	1.001	0.615	--	--	1.001	0.573	1.016
08	7.3	1.002	1.002	0.616	--	--	1.002	0.582	1.010
07	5.7	1.001	1.001	0.615	--	--	1.001	0.589	1.004
06	4.3	1.002	1.002	0.616	--	--	1.002	0.597	0.999
05	3.1	1.001	1.001	0.615	--	--	1.001	0.601	0.995
04	2.1	1.002	1.002	0.616	--	--	1.002	0.606	0.991
03	1.3	1.002	1.002	0.616	--	--	1.002	0.610	0.988
02	0.7	0.971	0.971	0.575	--	--	0.971	0.572	0.986
01	0.3	0.927	0.927	0.511	--	--	0.927	0.509	0.985

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.003	1.003	0.612	--	--	1.003	0.583	1.010
15	21.1	1.001	1.001	0.610	--	--	1.001	0.580	1.010
14	18.3	1.002	1.002	0.611	--	--	1.002	0.579	1.012
13	15.7	1.001	1.001	0.610	--	--	1.001	0.577	1.013
12	13.3	1.003	1.003	0.612	--	--	1.003	0.578	1.014
10	11.1	1.002	1.002	0.612	--	--	1.002	0.576	1.015
09	9.1	1.001	1.001	0.609	--	--	1.001	0.577	1.013
08	7.3	1.001	1.001	0.609	--	--	1.001	0.583	1.008
07	5.7	1.001	1.001	0.610	--	--	1.001	0.590	1.003
06	4.3	1.001	1.001	0.610	--	--	1.001	0.595	0.999
05	3.1	1.001	1.001	0.610	--	--	1.001	0.599	0.996
04	2.1	1.001	1.001	0.610	--	--	1.001	0.603	0.993
03	1.3	1.002	1.002	0.611	--	--	1.002	0.606	0.991
02	0.7	0.973	0.973	0.573	--	--	0.973	0.570	0.989
01	0.3	0.913	0.913	0.483	--	--	0.913	0.482	0.988

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.983  
 (6) 0.977  
 (7) 0.968  
 (1) 0.983 (2) 0.992 (3) 0.982 (4) 0.985

5-HOLE PROBE offset rake centerline rake  
 upper 1.010 1.013  
 lower 1.016 1.020

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.795			0.758	
	0.785	0.998	0.795	0.752	1.002	0.746
		0.778			0.747	
		ALPHA: -1.1			ALPHA: -0.6	
		BETA: 0.7			BETA: -0.3	
lower		0.787			0.789	
	0.736	0.999	0.798	0.787	1.000	0.766
		0.785			0.770	
		ALPHA: -0.1			ALPHA: -1.2	
		BETA: 3.8			BETA: -1.4	

FLIGHT: 54 MACH: 0.409 ALTITUDE(ft): 7014. KEAS: 238.  
 PSINF(psia): 11.33 PTINF(psia): 12.72 TSINF(F): 61. TTINF(F): 78.  
 ALPHA(deg): 8.3 BETA(deg): 0.2 PHI(deg): 0.6

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.001	1.001	0.425	--	--	1.001	0.400	1.006
15	21.1	1.001	1.001	0.425	--	--	1.001	0.400	1.006
14	18.3	1.002	1.002	0.426	--	--	1.002	0.401	1.007
13	15.7	1.001	1.001	0.425	--	--	1.001	0.399	1.007
12	13.3	1.002	1.002	0.427	--	--	1.002	0.401	1.007
10	11.1	1.002	1.002	0.426	--	--	1.002	0.399	1.007
09	9.1	1.001	1.001	0.425	--	--	1.001	0.401	1.006
08	7.3	1.002	1.002	0.426	--	--	1.002	0.407	1.003
07	5.7	1.001	1.001	0.425	--	--	1.001	0.410	1.001
06	4.3	1.002	1.002	0.427	--	--	1.002	0.415	0.999
05	3.1	1.001	1.001	0.426	--	--	1.001	0.417	0.997
04	2.1	1.002	1.002	0.426	--	--	1.002	0.421	0.995
03	1.3	1.001	1.001	0.426	--	--	1.001	0.422	0.994
02	0.7	0.988	0.988	0.401	--	--	0.988	0.399	0.993
01	0.3	0.965	0.965	0.355	--	--	0.965	0.354	0.993

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.003	1.003	0.424	--	--	1.003	0.406	1.004
15	21.1	1.001	1.001	0.422	--	--	1.001	0.403	1.005
14	18.3	1.002	1.002	0.422	--	--	1.002	0.403	1.005
13	15.7	1.001	1.001	0.422	--	--	1.001	0.402	1.006
12	13.3	1.002	1.002	0.423	--	--	1.002	0.403	1.006
10	11.1	1.003	1.003	0.424	--	--	1.003	0.403	1.006
09	9.1	1.001	1.001	0.420	--	--	1.001	0.401	1.005
08	7.3	1.001	1.001	0.422	--	--	1.001	0.407	1.003
07	5.7	1.001	1.001	0.422	--	--	1.001	0.410	1.001
06	4.3	1.001	1.001	0.422	--	--	1.001	0.413	1.000
05	3.1	1.001	1.001	0.421	--	--	1.001	0.415	0.998
04	2.1	1.002	1.002	0.422	--	--	1.002	0.418	0.997
03	1.3	1.002	1.002	0.422	--	--	1.002	0.420	0.996
02	0.7	0.992	0.992	0.404	--	--	0.992	0.403	0.995
01	0.3	0.957	0.957	0.334	--	--	0.957	0.333	0.995

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.994  
 (6) 0.992  
 (7) 0.986  
 (1) 0.993 (2) 0.996 (3) 0.991 (4) 0.993

5-HOLE PROBE offset rake centerline rake  
 upper 1.004 1.006  
 lower 1.006 1.007

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.893			0.875	
	0.889	0.999	0.890	0.871	1.003	0.864
		0.883			0.867	
		ALPHA: -1.3			ALPHA: -0.8	
		BETA: 0.1			BETA: -0.7	
lower		0.910			0.890	
	0.865	1.000	0.892	0.889	1.000	0.874
		0.908			0.875	
		ALPHA: -0.3			ALPHA: -1.8	
		BETA: 3.2			BETA: -1.8	



FLIGHT: 55 MACH: 0.793 ALTITUDE(ft): 16117. KEAS: 385.  
 PSINF(psia): 7.93 PTINF(psia): 12.00 TSINF(F): 30. TTINF(F): 92.  
 ALPHA(deg): 5.1 BETA(deg): 0.3 PHI(deg): 34.8

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.002	1.002	0.803	--	--	1.002	0.732	1.062
15	21.1	1.001	1.001	0.802	--	--	1.001	0.728	1.065
14	18.3	1.002	1.002	0.803	--	--	1.002	0.722	1.072
13	15.7	1.002	1.002	0.803	--	--	1.002	0.716	1.078
12	13.3	1.002	1.002	0.804	--	--	1.002	0.712	1.083
10	11.1	1.002	1.002	0.803	--	--	1.002	0.706	1.088
09	9.1	1.001	1.001	0.803	--	--	1.001	0.713	1.080
08	7.3	1.002	1.002	0.804	--	--	1.002	0.732	1.063
07	5.7	1.002	1.002	0.803	--	--	1.002	0.747	1.047
06	4.3	1.002	1.002	0.804	--	--	1.002	0.762	1.034
05	3.1	1.001	1.001	0.802	--	--	1.001	0.772	1.022
04	2.1	1.002	1.002	0.804	--	--	1.002	0.783	1.012
03	1.3	1.001	1.001	0.803	--	--	1.001	0.790	1.005
02	0.7	0.937	0.937	0.733	--	--	0.937	0.726	0.999
01	0.3	0.868	0.868	0.647	--	--	0.868	0.643	0.995

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.004	1.004	0.799	--	--	1.004	0.734	1.062
15	21.1	1.000	1.000	0.796	--	--	1.000	0.728	1.065
14	18.3	1.002	1.002	0.797	--	--	1.002	0.724	1.070
13	15.7	1.002	1.002	0.798	--	--	1.002	0.719	1.075
12	13.3	1.002	1.002	0.798	--	--	1.002	0.714	1.080
10	11.1	1.000	1.000	0.796	--	--	1.000	0.707	1.085
09	9.1	0.996	0.996	0.791	--	--	0.996	0.710	1.078
08	7.3	0.992	0.992	0.788	--	--	0.992	0.722	1.062
07	5.7	0.994	0.994	0.789	--	--	0.994	0.738	1.048
06	4.3	0.995	0.995	0.791	--	--	0.995	0.752	1.035
05	3.1	0.997	0.997	0.793	--	--	0.997	0.765	1.025
04	2.1	1.000	1.000	0.795	--	--	1.000	0.777	1.016
03	1.3	1.001	1.001	0.796	--	--	1.001	0.785	1.009
02	0.7	0.961	0.961	0.754	--	--	0.961	0.748	1.004
01	0.3	0.863	0.863	0.633	--	--	0.863	0.630	1.000

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.962  
 (6) 0.953  
 (7) 0.944  
 (1) 0.987 (2) 1.008 (3) 0.994 (4) 0.990

5-HOLE PROBE offset rake centerline rake  
 upper 1.062 1.062  
 lower 1.087 1.090

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.705	0.706	0.717	0.656	0.651	0.639
		0.704			0.651	
		ALPHA: -0.1			ALPHA: 0.0	
		BETA: 0.6			BETA: -0.7	
lower	0.638	0.693	0.720	0.712	0.704	0.673
		0.693			0.680	
		ALPHA: 0.0			ALPHA: -1.1	
		BETA: 3.7			BETA: -1.8	

FLIGHT: 55 MACH: 0.900 ALTITUDE(ft): 27696. KEAS: 342.  
 PSINF(psia): 4.84 PTINF(psia): 8.19 TSINF(F): -26. TTINF(F): 44.  
 ALPHA(deg): 6.6 BETA(deg): -0.1 PHI(deg): -7.7

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.992	0.992	0.840	--	--	0.992	0.757	1.147
15	21.1	0.990	0.990	0.838	--	--	0.990	0.751	1.152
14	18.3	0.992	0.992	0.840	--	--	0.992	0.744	1.161
13	15.7	0.994	0.994	0.842	--	--	0.994	0.738	1.170
12	13.3	0.994	0.994	0.842	--	--	0.994	0.731	1.178
10	11.1	0.993	0.993	0.841	--	--	0.993	0.723	1.185
09	9.1	0.992	0.992	0.840	--	--	0.992	0.731	1.176
08	7.3	0.993	0.993	0.841	--	--	0.993	0.754	1.152
07	5.7	0.992	0.992	0.840	--	--	0.992	0.772	1.131
06	4.3	0.993	0.993	0.841	--	--	0.993	0.790	1.113
05	3.1	0.991	0.991	0.839	--	--	0.991	0.802	1.097
04	2.1	0.993	0.993	0.841	--	--	0.993	0.816	1.084
03	1.3	0.991	0.991	0.839	--	--	0.991	0.823	1.074
02	0.7	0.897	0.897	0.737	--	--	0.897	0.728	1.066
01	0.3	0.820	0.820	0.635	--	--	0.820	0.631	1.061

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.996	0.996	0.838	--	--	0.996	0.762	1.146
15	21.1	0.992	0.992	0.834	--	--	0.992	0.753	1.152
14	18.3	0.994	0.994	0.837	--	--	0.994	0.747	1.161
13	15.7	0.994	0.994	0.837	--	--	0.994	0.739	1.170
12	13.3	0.994	0.994	0.837	--	--	0.994	0.731	1.178
10	11.1	0.994	0.994	0.837	--	--	0.994	0.725	1.186
09	9.1	0.992	0.992	0.835	--	--	0.992	0.731	1.177
08	7.3	0.991	0.991	0.833	--	--	0.991	0.750	1.154
07	5.7	0.992	0.992	0.835	--	--	0.992	0.770	1.134
06	4.3	0.992	0.992	0.835	--	--	0.992	0.786	1.117
05	3.1	0.992	0.992	0.834	--	--	0.992	0.799	1.102
04	2.1	0.991	0.991	0.834	--	--	0.991	0.810	1.089
03	1.3	0.991	0.991	0.834	--	--	0.991	0.819	1.079
02	0.7	0.914	0.914	0.752	--	--	0.914	0.743	1.072
01	0.3	0.810	0.810	0.614	--	--	0.810	0.609	1.067

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.960  
 (6) 0.953  
 (7) 0.958  
 (1) 1.050 (2) 1.076 (3) 1.062 (4) 1.052

5-HOLE PROBE offset rake centerline rake  
 upper 1.146 1.147  
 lower 1.189 1.189

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.690	0.679	0.701	0.646	0.623	0.612
		0.697			0.633	
		ALPHA: 0.8			ALPHA: 0.4	
		BETA: 0.6			BETA: -1.3	
lower	0.623	0.603	0.709	0.706	0.699	0.648
		0.601			0.664	
		ALPHA: -0.1			ALPHA: -1.6	
		BETA: 3.8			BETA: -2.6	

FLIGHT: 55 MACH: 0.948 ALTITUDE(ft): 31737. KEAS: 328.  
 PSINF(psia): 4.03 PTINF(psia): 7.18 TSINF(F): -45. TTINF(F): 30.  
 ALPHA(deg): 6.8 BETA(deg): 0.0 PHI(deg): 0.3

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.998	0.998	0.847	--	--	0.998	0.756	1.218
15	21.1	0.996	0.996	0.845	--	--	0.996	0.751	1.222
14	18.3	0.997	0.997	0.845	--	--	0.997	0.743	1.231
13	15.7	0.995	0.995	0.843	--	--	0.995	0.734	1.239
12	13.3	0.995	0.995	0.844	--	--	0.995	0.728	1.247
10	11.1	0.993	0.993	0.842	--	--	0.993	0.720	1.254
09	9.1	0.996	0.996	0.844	--	--	0.996	0.732	1.243
08	7.3	0.996	0.996	0.845	--	--	0.996	0.755	1.217
07	5.7	0.995	0.995	0.844	--	--	0.995	0.773	1.194
06	4.3	0.995	0.995	0.844	--	--	0.995	0.791	1.174
05	3.1	0.993	0.993	0.842	--	--	0.993	0.804	1.157
04	2.1	0.990	0.990	0.839	--	--	0.990	0.813	1.143
03	1.3	0.991	0.991	0.840	--	--	0.991	0.824	1.132
02	0.7	0.900	0.900	0.742	--	--	0.900	0.733	1.123
01	0.3	0.821	0.821	0.637	--	--	0.821	0.633	1.117

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.003	1.003	0.845	--	--	1.003	0.761	1.219
15	21.1	0.998	0.998	0.840	--	--	0.998	0.751	1.224
14	18.3	1.002	1.002	0.844	--	--	1.002	0.746	1.235
13	15.7	1.002	1.002	0.844	--	--	1.002	0.738	1.244
12	13.3	1.002	1.002	0.844	--	--	1.002	0.730	1.253
10	11.1	1.002	1.002	0.844	--	--	1.002	0.723	1.261
09	9.1	1.000	1.000	0.842	--	--	1.000	0.730	1.251
08	7.3	0.999	0.999	0.841	--	--	0.999	0.751	1.225
07	5.7	1.000	1.000	0.842	--	--	1.000	0.772	1.202
06	4.3	0.999	0.999	0.841	--	--	0.999	0.788	1.182
05	3.1	0.999	0.999	0.841	--	--	0.999	0.803	1.165
04	2.1	0.998	0.998	0.840	--	--	0.998	0.814	1.151
03	1.3	0.997	0.997	0.839	--	--	0.997	0.823	1.139
02	0.7	0.907	0.907	0.743	--	--	0.907	0.734	1.131
01	0.3	0.802	0.802	0.600	--	--	0.802	0.596	1.125

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.998  
 (6) 0.987  
 (7) 0.997  
 (1) 1.108 (2) 1.134 (3) 1.118 (4) 1.108

5-HOLE PROBE offset rake centerline rake  
 upper 1.219 1.218  
 lower 1.265 1.257

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.686			0.627		
	0.695	1.000	0.710	0.650	1.000	0.617
	0.705			0.635		
	ALPHA:	0.9		ALPHA:	0.3	
	BETA:	0.7		BETA:	-1.3	
lower	0.592			0.701		
	0.628	1.001	0.719	0.708	0.993	0.651
	0.590			0.667		
	ALPHA:	-0.1		ALPHA:	-1.6	
	BETA:	3.9		BETA:	-2.6	

FLIGHT: 55 MACH: 1.201 ALTITUDE(ft): 27740. KEAS: 456.  
 PSINF(psia): 4.83 PTINF(psia): 11.73 TSINF(F): -39. TTINF(F): 82.  
 ALPHA(deg): 4.8 BETA(deg): 0.0 PHI(deg): 16.0

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.976	0.995	1.290	1.281	0.899	0.974	0.903	1.396
15	21.1	0.974	0.993	1.289	1.291	0.887	0.971	0.881	1.426
14	18.3	0.975	0.994	1.290	1.283	0.897	0.968	0.843	1.483
13	15.7	0.974	0.993	1.289	1.290	0.888	0.960	0.804	1.535
12	13.3	0.977	0.996	1.291	1.273	0.909	0.952	0.772	1.583
10	11.1	0.975	0.994	1.290	1.283	0.897	0.932	0.735	1.627
09	9.1	0.973	0.991	1.288	1.297	0.880	0.949	0.775	1.572
08	7.3	0.976	0.994	1.290	1.282	0.899	0.972	0.876	1.436
07	5.7	0.974	0.993	1.289	1.289	0.890	0.974	0.956	1.315
06	4.3	0.982	1.002	1.295	1.245	0.943	0.982	1.035	1.209
05	3.1	0.986	1.006	1.299	1.221	0.974	0.987	1.103	1.118
04	2.1	0.983	1.003	1.296	1.240	0.950	0.986	1.158	1.042
03	1.3	0.970	0.988	1.285	1.315	0.859	0.976	1.197	0.982
02	0.7	0.744	0.744	1.065	1.941	0.340	0.744	1.016	0.936
01	0.3	0.619	0.619	0.906	--	--	0.619	0.883	0.906

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.979	0.998	1.274	1.262	0.922	0.977	0.850	1.478
15	21.1	0.973	0.992	1.269	1.295	0.883	0.971	0.832	1.495
14	18.3	0.975	0.994	1.271	1.284	0.896	0.968	0.811	1.528
13	15.7	0.975	0.994	1.271	1.283	0.897	0.961	0.789	1.558
12	13.3	0.974	0.993	1.270	1.290	0.888	0.949	0.766	1.586
10	11.1	0.966	0.985	1.263	1.333	0.838	0.923	0.736	1.611
09	9.1	0.958	0.976	1.256	1.376	0.789	0.935	0.772	1.552
08	7.3	0.952	0.970	1.250	1.406	0.756	0.949	0.860	1.424
07	5.7	0.952	0.971	1.251	1.404	0.759	0.952	0.939	1.310
06	4.3	0.957	0.976	1.255	1.384	0.781	0.957	1.012	1.210
05	3.1	0.973	0.993	1.269	1.296	0.881	0.974	1.088	1.124
04	2.1	0.980	1.000	1.275	1.253	0.934	0.984	1.148	1.053
03	1.3	0.980	0.998	1.275	1.257	0.928	0.987	1.193	0.996
02	0.7	0.802	0.802	1.109	1.833	0.402	0.802	1.064	0.954
01	0.3	0.618	0.618	0.883	--	--	0.618	0.861	0.925

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.870  
 (6) 0.915  
 (7) 0.873  
 (1) 0.891 (2) 0.917 (3) 0.893 (4) 0.874

5-HOLE PROBE offset rake centerline rake  
 upper 1.478 1.396  
 lower 1.623 1.648

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.626	0.651	0.627	0.559	0.588	0.547
		0.594			0.496	
		ALPHA: -2.3			ALPHA: -3.0	
		BETA: 0.0			BETA: -0.4	
lower	0.593	0.404	0.673	0.696	0.669	0.617
		0.403			0.649	
		ALPHA: 0.0			ALPHA: -0.9	
		BETA: 3.5			BETA: -3.5	

FLIGHT: 55 MACH: 1.523 ALTITUDE(ft): 38294. KEAS: 451.  
 PSINF(psia): 2.95 PTINF(psia): 11.20 TSINF(F): -68. TTINF(F): 114.  
 ALPHA(deg): 4.7 BETA(deg): 0.1 PHI(deg): 0.4

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.907	1.001	1.570	1.585	0.913	0.984
15	21.1	0.907	1.001	1.571	1.583	0.915	0.985
14	18.3	0.910	1.006	1.574	1.572	0.930	0.988
13	15.7	0.910	1.006	1.574	1.574	0.928	0.987
12	13.3	0.910	1.005	1.573	1.575	0.927	0.985
10	11.1	0.907	1.001	1.570	1.584	0.914	0.981
09	9.1	0.904	0.997	1.568	1.592	0.903	0.978
08	7.3	0.905	0.998	1.568	1.591	0.905	0.982
07	5.7	0.904	0.997	1.568	1.593	0.902	0.984
06	4.3	0.900	0.991	1.563	1.605	0.885	0.982
05	3.1	0.896	0.985	1.559	1.618	0.869	0.978
04	2.1	0.894	0.981	1.557	1.624	0.861	0.977
03	1.3	0.906	1.000	1.570	1.586	0.911	0.997
02	0.7	0.781	0.824	1.436	1.872	0.592	0.823
01	0.3	0.618	0.625	1.235	2.207	0.351	0.625

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.908	1.002	1.537	1.579	0.921	0.986
15	21.1	0.903	0.997	1.532	1.595	0.899	0.981
14	18.3	0.900	0.995	1.529	1.605	0.886	0.977
13	15.7	0.901	0.996	1.530	1.603	0.889	0.977
12	13.3	0.906	1.001	1.535	1.586	0.912	0.982
10	11.1	0.902	0.996	1.531	1.598	0.895	0.976
09	9.1	0.900	0.992	1.529	1.605	0.885	0.974
08	7.3	0.896	0.988	1.525	1.618	0.869	0.973
07	5.7	0.901	0.994	1.530	1.601	0.891	0.982
06	4.3	0.880	0.968	1.508	1.664	0.812	0.959
05	3.1	0.868	0.954	1.496	1.694	0.776	0.947
04	2.1	0.862	0.946	1.489	1.709	0.758	0.942
03	1.3	0.873	0.964	1.501	1.680	0.792	0.961
02	0.7	0.777	0.819	1.398	1.880	0.584	0.818
01	0.3	0.574	0.580	1.142	2.316	0.296	0.580

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.047  
 (6) 1.066  
 (7) 0.958  
 (1) 0.972 (2) 0.966 (3) 0.933 (4) 0.934

5-HOLE PROBE offset rake centerline rake  
 upper 0.971 0.978  
 lower 0.960 0.992

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.555	0.568	0.565	0.481	0.504	0.478
		0.540			0.432	
		ALPHA: -1.1			ALPHA: -2.3	
		BETA: 0.4			BETA: -0.1	
lower	0.453	0.303	0.532	0.531	0.540	0.508
		0.296			0.506	
		ALPHA: -0.2			ALPHA: -1.3	
		BETA: 2.8			BETA: -0.8	

FLIGHT: 55 MACH: 2.005 ALTITUDE(ft): 49466. KEAS: 454.  
 PSINF(psia): 1.73 PTINF(psia): 13.61 TSINF(F): \*\*\*\* TTINF(F): 185.  
 ALPHA(deg): 5.2 BETA(deg): 0.0 PHI(deg): 0.6

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.677	0.987	2.074	2.073	0.899	0.958
15	21.1	0.683	1.001	2.083	2.062	0.915	0.965
14	18.3	0.688	1.014	2.092	2.051	0.930	0.967
13	15.7	0.683	1.003	2.084	2.060	0.917	0.947
12	13.3	0.685	1.007	2.087	2.057	0.922	0.942
10	11.1	0.697	1.038	2.106	2.033	0.957	0.962
09	9.1	0.687	1.011	2.090	2.054	0.927	0.942
08	7.3	0.682	1.000	2.083	2.063	0.914	0.944
07	5.7	0.690	1.021	2.096	2.046	0.938	0.974
06	4.3	0.685	1.008	2.087	2.057	0.923	0.972
05	3.1	0.690	1.019	2.095	2.048	0.936	0.993
04	2.1	0.681	0.997	2.081	2.065	0.911	0.980
03	1.3	0.670	0.968	2.062	2.089	0.877	0.957
02	0.7	0.561	0.718	1.870	2.348	0.585	0.715
01	0.3	0.426	0.475	1.597	2.713	0.332	0.475

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.663	0.966	2.016	2.105	0.855	0.937
15	21.1	0.660	0.968	2.012	2.110	0.849	0.933
14	18.3	0.659	0.972	2.011	2.112	0.846	0.927
13	15.7	0.656	0.963	2.005	2.120	0.836	0.909
12	13.3	0.636	0.935	1.971	2.164	0.780	0.875
10	11.1	0.637	0.949	1.973	2.163	0.782	0.879
09	9.1	0.651	0.959	1.996	2.131	0.821	0.893
08	7.3	0.664	0.973	2.019	2.102	0.860	0.919
07	5.7	0.667	0.986	2.023	2.096	0.868	0.941
06	4.3	0.670	0.986	2.029	2.088	0.879	0.951
05	3.1	0.670	0.991	2.029	2.088	0.878	0.965
04	2.1	0.665	0.974	2.021	2.099	0.863	0.957
03	1.3	0.652	0.942	1.998	2.128	0.825	0.932
02	0.7	0.567	0.725	1.848	2.334	0.598	0.722
01	0.3	0.396	0.442	1.503	2.797	0.292	0.442

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.015  
 (6) 0.995  
 (7) 0.862  
 (1) 0.940 (2) 0.886 (3) 0.920 (4) 0.853

5-HOLE PROBE offset rake centerline rake  
 upper 0.889 0.923  
 lower 0.952 0.985

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.386			0.345	
	0.374	0.679	0.361	0.315	0.692	0.319
		0.341			0.274	
		ALPHA: -2.0			ALPHA: -2.7	
		BETA: -0.6			BETA: 0.2	
lower		0.184			0.381	
	0.261	0.646	0.364	0.357	0.690	0.348
		0.181			0.333	
		ALPHA: -0.1			ALPHA: -2.1	
		BETA: 4.4			BETA: -0.4	

FLIGHT: 55 MACH: 2.420 ALTITUDE(ft): 57195. KEAS: 455.  
 PSINF(psia): 1.19 PTINF(psia): 17.94 TSINF(F): -89. TTINF(F): 345.  
 ALPHA(deg): 4.9 BETA(deg): -0.1 PHI(deg): 0.5

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.536	0.985	2.390	2.414	1.009	0.993	2.401	1.022
15	21.1	0.528	0.957	2.372	2.434	0.978	0.962	2.379	1.025
14	18.3	0.538	0.991	2.394	2.409	1.016	0.991	2.394	1.031
13	15.7	0.528	0.956	2.371	2.435	0.976	0.951	2.365	1.036
12	13.3	0.524	0.942	2.362	2.445	0.961	0.934	2.350	1.041
10	11.1	0.523	0.937	2.358	2.449	0.955	0.925	2.341	1.045
09	9.1	0.526	0.948	2.366	2.441	0.967	0.935	2.348	1.046
08	7.3	0.527	0.952	2.369	2.437	0.972	0.942	2.354	1.043
07	5.7	0.529	0.961	2.374	2.431	0.982	0.952	2.363	1.040
06	4.3	0.530	0.964	2.376	2.429	0.985	0.958	2.368	1.038
05	3.1	0.524	0.943	2.362	2.444	0.962	0.938	2.356	1.036
04	2.1	0.524	0.940	2.360	2.447	0.958	0.937	2.356	1.034
03	1.3	0.514	0.907	2.337	2.472	0.922	0.905	2.335	1.033
02	0.7	0.440	0.674	2.148	2.675	0.672	0.673	2.146	1.032
01	0.3	0.322	0.398	1.808	3.023	0.396	0.397	1.807	1.032

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.549	1.008	2.409	2.381	1.063	1.017	2.382	1.062
15	21.1	0.536	0.972	2.380	2.413	1.011	0.977	2.364	1.053
14	18.3	0.532	0.980	2.370	2.425	0.992	0.980	2.373	1.037
13	15.7	0.526	0.952	2.356	2.440	0.969	0.948	2.378	1.022
12	13.3	0.519	0.932	2.338	2.460	0.939	0.924	2.377	1.008
10	11.1	0.521	0.934	2.344	2.453	0.949	0.922	2.399	0.995
09	9.1	0.508	0.916	2.313	2.488	0.899	0.904	2.368	0.995
08	7.3	0.500	0.903	2.291	2.511	0.867	0.893	2.335	1.003
07	5.7	0.499	0.906	2.291	2.512	0.866	0.898	2.325	1.011
06	4.3	0.502	0.913	2.298	2.503	0.878	0.907	2.324	1.018
05	3.1	0.509	0.915	2.315	2.485	0.902	0.911	2.333	1.024
04	2.1	0.515	0.925	2.330	2.469	0.926	0.922	2.342	1.029
03	1.3	0.517	0.911	2.333	2.465	0.931	0.910	2.341	1.033
02	0.7	0.488	0.748	2.263	2.542	0.826	0.748	2.267	1.036
01	0.3	0.353	0.436	1.894	2.925	0.459	0.436	1.895	1.038

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.269  
 (6) 1.168  
 (7) 1.067  
 (1) 0.986 (2) 1.093 (3) 1.022 (4) 1.040

5-HOLE PROBE offset rake centerline rake  
 upper 1.062 1.022  
 lower 0.990 1.047

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.291			0.247	
	0.292	0.530	0.287	0.231	0.551	0.231
		0.278			0.201	
		ALPHA: -0.7			ALPHA: -2.0	
		BETA: -0.3			BETA: 0.0	
lower		0.129			0.269	
	0.217	0.511	0.238	0.258	0.523	0.248
		0.123			0.242	
		ALPHA: -0.2			ALPHA: -1.5	
		BETA: 1.0			BETA: -0.5	

FLIGHT: 55 MACH: 2.702 ALTITUDE(ft): 61272. KEAS: 461.  
 PSINF(psia): 0.98 PTINF(psia): 22.86 TSINF(F): -84. TTINF(F): 464.  
 ALPHA(deg): 5.6 BETA(deg): 0.1 PHI(deg): 33.1

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH PS/PSINF	PT/PTINF	MACH PS/PSINF	PT/PTINF	MACH PS/PSINF
16	24.1	0.435	0.944	2.599	2.689	1.020	0.926	2.576	1.126
15	21.1	0.434	0.940	2.597	2.691	1.017	0.925	2.577	1.122
14	18.3	0.442	0.977	2.621	2.670	1.051	0.966	2.609	1.117
13	15.7	0.441	0.974	2.620	2.671	1.049	0.969	2.614	1.111
12	13.3	0.429	0.921	2.583	2.703	0.998	0.921	2.583	1.106
10	11.1	0.430	0.923	2.585	2.702	1.001	0.928	2.591	1.102
09	9.1	0.424	0.898	2.567	2.718	0.977	0.903	2.574	1.100
08	7.3	0.430	0.922	2.584	2.703	0.999	0.926	2.590	1.101
07	5.7	0.424	0.898	2.567	2.718	0.977	0.901	2.572	1.103
06	4.3	0.428	0.914	2.578	2.707	0.992	0.917	2.582	1.103
05	3.1	0.425	0.899	2.568	2.717	0.978	0.901	2.571	1.104
04	2.1	0.424	0.897	2.566	2.718	0.976	0.898	2.568	1.105
03	1.3	0.406	0.819	2.508	2.769	0.903	0.820	2.509	1.106
02	0.7	0.291	0.429	2.095	3.131	0.523	0.430	2.095	1.106
01	0.3	0.213	0.256	1.761	3.481	0.315	0.256	1.761	1.106

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH PS/PSINF	PT/PTINF	MACH PS/PSINF	PT/PTINF	MACH PS/PSINF
16	24.1	0.417	0.905	2.580	2.739	0.945	0.888	2.582	1.075
15	21.1	0.406	0.880	2.544	2.769	0.903	0.866	2.540	1.080
14	18.3	0.439	0.971	2.652	2.677	1.040	0.961	2.634	1.090
13	15.7	0.436	0.963	2.641	2.686	1.026	0.958	2.612	1.100
12	13.3	0.427	0.915	2.612	2.711	0.986	0.915	2.572	1.108
10	11.1	0.429	0.921	2.620	2.704	0.997	0.926	2.570	1.116
09	9.1	0.431	0.911	2.625	2.700	1.003	0.916	2.575	1.116
08	7.3	0.418	0.896	2.583	2.736	0.950	0.901	2.544	1.108
07	5.7	0.411	0.869	2.560	2.756	0.921	0.872	2.529	1.101
06	4.3	0.402	0.859	2.532	2.780	0.888	0.862	2.509	1.095
05	3.1	0.400	0.848	2.525	2.785	0.880	0.849	2.509	1.090
04	2.1	0.405	0.856	2.540	2.773	0.897	0.857	2.528	1.085
03	1.3	0.405	0.817	2.541	2.772	0.899	0.818	2.534	1.082
02	0.7	0.367	0.543	2.412	2.881	0.761	0.543	2.409	1.079
01	0.3	0.248	0.299	1.949	3.304	0.406	0.299	1.948	1.078

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.981  
 (6) 1.282  
 (7) 1.132  
 (1) 1.069 (2) 1.084 (3) 1.110 (4) 1.102

5-HOLE PROBE offset rake centerline rake  
 upper 1.075 1.126  
 lower 1.120 1.100

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.219	0.212	0.204	0.182	0.190	0.182
		0.202			0.165	
		ALPHA: -0.7			ALPHA: -1.4	
		BETA: -1.1			BETA: 0.0	
lower	0.176	0.084	0.202	0.210	0.209	0.194
		0.086			0.198	
		ALPHA: 0.0			ALPHA: -0.7	
		BETA: 1.5			BETA: -1.0	



FLIGHT: 55 MACH: 2.747 ALTITUDE(ft): 63221. KEAS: 447.  
 PSINF(psia): 0.89 PTINF(psia): 22.30 TSINF(F): -84. TTINF(F): 482.  
 ALPHA(deg): 5.3 BETA(deg): 0.2 PHI(deg): 36.7

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.428	0.983	2.665	2.706	1.064	0.930
15	21.1	0.420	0.941	2.637	2.730	1.026	0.895
14	18.3	0.421	0.948	2.642	2.726	1.033	0.909
13	15.7	0.421	0.945	2.640	2.728	1.030	0.912
12	13.3	0.419	0.936	2.634	2.733	1.021	0.909
10	11.1	0.420	0.942	2.638	2.729	1.028	0.921
09	9.1	0.415	0.920	2.623	2.742	1.007	0.904
08	7.3	0.416	0.921	2.623	2.742	1.008	0.907
07	5.7	0.409	0.892	2.603	2.759	0.981	0.882
06	4.3	0.416	0.921	2.624	2.742	1.008	0.913
05	3.1	0.409	0.888	2.600	2.762	0.977	0.882
04	2.1	0.408	0.884	2.597	2.765	0.974	0.880
03	1.3	0.392	0.813	2.543	2.809	0.909	0.811
02	0.7	0.283	0.430	2.136	3.160	0.537	0.430
01	0.3	0.202	0.245	1.773	3.540	0.310	0.245

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.402	0.923	2.720	2.780	0.951	0.874
15	21.1	0.394	0.883	2.691	2.803	0.918	0.840
14	18.3	0.391	0.879	2.678	2.813	0.904	0.842
13	15.7	0.391	0.878	2.679	2.812	0.905	0.847
12	13.3	0.392	0.876	2.683	2.810	0.909	0.851
10	11.1	0.386	0.865	2.660	2.827	0.885	0.846
09	9.1	0.410	0.908	2.747	2.758	0.983	0.891
08	7.3	0.393	0.870	2.686	2.807	0.912	0.857
07	5.7	0.384	0.837	2.655	2.832	0.879	0.827
06	4.3	0.373	0.827	2.615	2.863	0.838	0.820
05	3.1	0.371	0.806	2.606	2.870	0.829	0.801
04	2.1	0.375	0.814	2.623	2.857	0.845	0.810
03	1.3	0.379	0.786	2.634	2.848	0.857	0.784
02	0.7	0.353	0.536	2.537	2.925	0.762	0.536
01	0.3	0.242	0.293	2.070	3.334	0.416	0.293

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.994  
 (6) 1.159  
 (7) 1.133  
 (1) 0.941 (2) 1.073 (3) 1.121 (4) 1.107

5-HOLE PROBE offset rake centerline rake  
 upper 1.039 1.168  
 lower 1.116 1.134

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.214	0.205	0.197	0.178	0.185	0.176
		0.197			0.161	
		ALPHA: -0.5			ALPHA: -1.3	
		BETA: -1.2			BETA: -0.1	
lower	0.156	0.080	0.181	0.200	0.203	0.188
		0.077			0.188	
		ALPHA: -0.1			ALPHA: -1.0	
		BETA: 1.6			BETA: -0.8	

FLIGHT: 55 MACH: 2.700 ALTITUDE(ft): 62455. KEAS: 448.  
 PSINF(psia): 0.92 PTINF(psia): 21.53 TSINF(F): -81. TTINF(F): 470.  
 ALPHA(deg): 4.5 BETA(deg): 0.1 PHI(deg): 0.2

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.448	0.999	2.632	2.653	1.076	0.970	2.596	1.139
15	21.1	0.441	0.969	2.612	2.670	1.047	0.944	2.580	1.136
14	18.3	0.441	0.967	2.611	2.672	1.045	0.947	2.586	1.130
13	15.7	0.436	0.946	2.597	2.684	1.025	0.932	2.579	1.124
12	13.3	0.437	0.950	2.600	2.682	1.029	0.941	2.588	1.119
10	11.1	0.433	0.930	2.585	2.694	1.010	0.925	2.580	1.114
09	9.1	0.431	0.922	2.580	2.699	1.002	0.920	2.577	1.112
08	7.3	0.435	0.938	2.591	2.689	1.017	0.936	2.589	1.111
07	5.7	0.427	0.905	2.569	2.709	0.987	0.904	2.567	1.111
06	4.3	0.431	0.923	2.581	2.698	1.004	0.922	2.580	1.111
05	3.1	0.427	0.903	2.567	2.710	0.985	0.903	2.566	1.110
04	2.1	0.428	0.909	2.571	2.706	0.991	0.909	2.571	1.110
03	1.3	0.414	0.847	2.526	2.746	0.932	0.847	2.526	1.110
02	0.7	0.306	0.470	2.149	3.075	0.567	0.470	2.149	1.110
01	0.3	0.220	0.269	1.790	3.440	0.332	0.269	1.790	1.110

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.417	0.930	2.624	2.739	0.942	0.903	2.714	0.975
15	21.1	0.406	0.892	2.589	2.768	0.901	0.869	2.650	0.994
14	18.3	0.406	0.890	2.588	2.770	0.899	0.872	2.599	1.030
13	15.7	0.421	0.912	2.637	2.728	0.959	0.899	2.604	1.064
12	13.3	0.445	0.967	2.716	2.661	1.063	0.958	2.642	1.095
10	11.1	0.434	0.932	2.681	2.691	1.015	0.928	2.572	1.124
09	9.1	0.423	0.903	2.643	2.723	0.966	0.902	2.532	1.127
08	7.3	0.402	0.866	2.573	2.782	0.882	0.865	2.485	1.110
07	5.7	0.391	0.828	2.537	2.812	0.843	0.827	2.468	1.094
06	4.3	0.384	0.821	2.511	2.833	0.816	0.820	2.459	1.081
05	3.1	0.388	0.820	2.525	2.822	0.830	0.819	2.487	1.069
04	2.1	0.402	0.853	2.574	2.781	0.884	0.853	2.548	1.059
03	1.3	0.411	0.842	2.606	2.754	0.921	0.841	2.589	1.052
02	0.7	0.391	0.600	2.536	2.813	0.842	0.600	2.527	1.046
01	0.3	0.269	0.329	2.075	3.214	0.462	0.329	2.072	1.042

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.006  
 (6) 1.220  
 (7) 1.141  
 (1) 1.013 (2) 1.066 (3) 1.110 (4) 1.109

5-HOLE PROBE offset rake centerline rake  
 upper 0.975 1.139  
 lower 1.137 1.112

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.213			0.196		
	0.219	0.432	0.203	0.188	0.450	0.187
	0.201			0.168		
	ALPHA: -0.8			ALPHA: -1.5		
	BETA: -1.1			BETA: 0.0		
lower	0.072			0.213		
	0.180	0.429	0.194	0.211	0.431	0.195
	0.079			0.197		
	ALPHA: 0.3			ALPHA: -1.0		
	BETA: 0.8			BETA: -1.1		

FLIGHT: 55 MACH: 2.415 ALTITUDE(ft): 63127. KEAS: 394.  
 PSINF(psia): 0.90 PTINF(psia): 13.41 TSINF(F): -80. TTINF(F): 362.  
 ALPHA(deg): 4.4 BETA(deg): 0.0 PHI(deg): -0.3

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.578	1.013	2.329	2.305	1.188	0.973	2.276	1.211
15	21.1	0.577	1.009	2.326	2.308	1.182	0.971	2.276	1.208
14	18.3	0.576	1.006	2.325	2.310	1.179	0.972	2.279	1.203
13	15.7	0.563	0.961	2.295	2.344	1.117	0.933	2.256	1.198
12	13.3	0.567	0.977	2.306	2.332	1.139	0.951	2.271	1.193
10	11.1	0.567	0.976	2.305	2.333	1.138	0.954	2.274	1.189
09	9.1	0.560	0.952	2.289	2.352	1.104	0.933	2.263	1.185
08	7.3	0.563	0.963	2.296	2.343	1.119	0.948	2.275	1.180
07	5.7	0.559	0.948	2.287	2.355	1.100	0.937	2.270	1.175
06	4.3	0.562	0.960	2.294	2.346	1.115	0.951	2.282	1.171
05	3.1	0.561	0.955	2.291	2.349	1.109	0.949	2.282	1.168
04	2.1	0.559	0.948	2.287	2.355	1.099	0.944	2.281	1.165
03	1.3	0.549	0.916	2.265	2.380	1.056	0.914	2.261	1.163
02	0.7	0.461	0.664	2.059	2.617	0.731	0.664	2.057	1.162
01	0.3	0.336	0.397	1.726	2.978	0.422	0.397	1.725	1.160

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.545	0.956	2.367	2.390	1.041	0.918	1.985	1.467
15	21.1	0.535	0.936	2.343	2.416	0.999	0.901	1.990	1.434
14	18.3	0.532	0.930	2.337	2.423	0.988	0.899	2.034	1.371
13	15.7	0.520	0.889	2.308	2.456	0.939	0.863	2.056	1.313
12	13.3	0.514	0.886	2.294	2.471	0.917	0.863	2.091	1.260
10	11.1	0.505	0.870	2.272	2.496	0.882	0.850	2.116	1.211
09	9.1	0.482	0.820	2.215	2.559	0.800	0.804	2.095	1.176
08	7.3	0.454	0.776	2.144	2.636	0.710	0.764	2.049	1.153
07	5.7	0.452	0.767	2.140	2.641	0.705	0.758	2.065	1.133
06	4.3	0.465	0.795	2.174	2.604	0.746	0.787	2.116	1.115
05	3.1	0.490	0.835	2.236	2.536	0.829	0.830	2.193	1.100
04	2.1	0.508	0.861	2.278	2.490	0.891	0.858	2.248	1.088
03	1.3	0.513	0.856	2.290	2.476	0.910	0.854	2.271	1.078
02	0.7	0.498	0.718	2.254	2.517	0.854	0.717	2.244	1.070
01	0.3	0.363	0.430	1.896	2.894	0.478	0.429	1.892	1.065

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.254  
 (6) 1.151  
 (7) 1.142  
 (1) 1.003 (2) 1.120 (3) 1.168 (4) 1.152

5-HOLE PROBE offset rake centerline rake  
 upper 1.467 1.211  
 lower 1.188 1.187

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.302			0.266		
	0.305	0.541	0.297	0.259	0.576	0.252
		0.292			0.235	
	ALPHA:	-0.5		ALPHA:	-1.4	
	BETA:	-0.5		BETA:	-0.3	
lower	0.144			0.294		
	0.228	0.509	0.242	0.284	0.563	0.267
		0.141			0.264	
	ALPHA:	-0.1		ALPHA:	-1.5	
	BETA:	0.7		BETA:	-0.9	

FLIGHT: 55 MACH: 2.034 ALTITUDE(ft): 58669. KEAS: 370.  
 PSINF(psia): 1.11 PTINF(psia): 9.15 TSINF(F): -91. TTINF(F): 213.  
 ALPHA(deg): 5.4 BETA(deg): -0.1 PHI(deg): 0.1

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.679	0.997	2.086	2.070	0.946	0.963
15	21.1	0.677	0.992	2.083	2.074	0.940	0.957
14	18.3	0.673	0.982	2.076	2.082	0.928	0.945
13	15.7	0.673	0.982	2.076	2.082	0.928	0.942
12	13.3	0.676	0.989	2.081	2.076	0.936	0.947
10	11.1	0.681	1.002	2.089	2.066	0.952	0.956
09	9.1	0.669	0.973	2.070	2.090	0.917	0.933
08	7.3	0.671	0.976	2.072	2.087	0.921	0.943
07	5.7	0.675	0.987	2.079	2.078	0.934	0.961
06	4.3	0.671	0.976	2.072	2.088	0.920	0.956
05	3.1	0.671	0.976	2.072	2.087	0.920	0.961
04	2.1	0.665	0.962	2.063	2.099	0.903	0.952
03	1.3	0.655	0.937	2.046	2.121	0.874	0.931
02	0.7	0.542	0.682	1.840	2.399	0.565	0.680
01	0.3	0.412	0.454	1.572	2.754	0.326	0.454

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.668	0.982	2.042	2.093	0.913	0.948
15	21.1	0.662	0.971	2.032	2.106	0.894	0.936
14	18.3	0.655	0.957	2.021	2.121	0.874	0.920
13	15.7	0.648	0.946	2.008	2.137	0.852	0.907
12	13.3	0.635	0.930	1.986	2.167	0.813	0.890
10	11.1	0.629	0.926	1.975	2.181	0.795	0.884
09	9.1	0.636	0.924	1.988	2.164	0.816	0.886
08	7.3	0.648	0.943	2.007	2.138	0.850	0.911
07	5.7	0.660	0.965	2.028	2.111	0.888	0.939
06	4.3	0.662	0.963	2.031	2.107	0.893	0.943
05	3.1	0.658	0.958	2.025	2.115	0.882	0.944
04	2.1	0.658	0.951	2.025	2.115	0.881	0.942
03	1.3	0.646	0.923	2.004	2.142	0.845	0.918
02	0.7	0.556	0.700	1.844	2.362	0.599	0.698
01	0.3	0.381	0.421	1.481	2.840	0.286	0.421

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.030  
 (6) 1.093  
 (7) 0.983  
 (1) 0.946 (2) 0.937 (3) 0.918 (4) 0.923

5-HOLE PROBE offset rake centerline rake  
 upper 1.162 0.964  
 lower 1.032 0.980

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.392			0.341	
	0.374	0.669	0.389	0.313	0.678	0.305
		0.362			0.278	
		ALPHA: -1.5			ALPHA: -2.4	
		BETA: 0.7			BETA: -0.3	
lower		0.220			0.371	
	0.250	0.630	0.372	0.341	0.671	0.336
		0.218			0.317	
		ALPHA: 0.0			ALPHA: -2.4	
		BETA: 5.4			BETA: -0.2	

FLIGHT: 55 MACH: 1.533 ALTITUDE(ft): 46872. KEAS: 370.  
 PSINF(psia): 1.95 PTINF(psia): 7.53 TSINF(F): -94. TTINF(F): 77.  
 ALPHA(deg): 5.3 BETA(deg): 0.2 PHI(deg): 0.9

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.897	1.006	1.607	1.613	0.888	1.003	1.601	0.908
15	21.1	0.894	1.000	1.603	1.625	0.873	0.994	1.589	0.915
14	18.3	0.891	0.996	1.601	1.632	0.864	0.985	1.574	0.928
13	15.7	0.898	1.006	1.607	1.613	0.889	0.990	1.568	0.940
12	13.3	0.892	0.997	1.602	1.630	0.867	0.977	1.551	0.951
10	11.1	0.890	0.994	1.599	1.636	0.859	0.970	1.539	0.962
09	9.1	0.887	0.990	1.597	1.643	0.850	0.967	1.538	0.960
08	7.3	0.891	0.995	1.600	1.633	0.862	0.976	1.553	0.948
07	5.7	0.890	0.994	1.600	1.634	0.861	0.980	1.562	0.938
06	4.3	0.889	0.992	1.598	1.639	0.855	0.981	1.570	0.929
05	3.1	0.881	0.980	1.590	1.660	0.829	0.972	1.570	0.921
04	2.1	0.880	0.979	1.589	1.662	0.826	0.974	1.575	0.915
03	1.3	0.906	1.020	1.617	1.585	0.926	1.016	1.608	0.910
02	0.7	0.717	0.749	1.404	1.992	0.498	0.748	1.400	0.906
01	0.3	0.555	0.558	1.188	2.364	0.279	0.558	1.186	0.903

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.894	1.001	1.574	1.625	0.873	0.998	1.634	0.872
15	21.1	0.889	0.994	1.570	1.638	0.856	0.989	1.620	0.881
14	18.3	0.887	0.991	1.567	1.644	0.849	0.980	1.602	0.896
13	15.7	0.889	0.997	1.570	1.637	0.857	0.981	1.590	0.910
12	13.3	0.891	0.996	1.572	1.632	0.864	0.976	1.578	0.923
10	11.1	0.892	0.996	1.573	1.630	0.866	0.973	1.567	0.935
09	9.1	0.885	0.987	1.565	1.650	0.842	0.965	1.556	0.939
08	7.3	0.884	0.987	1.564	1.652	0.838	0.969	1.556	0.937
07	5.7	0.892	0.996	1.572	1.630	0.866	0.981	1.566	0.936
06	4.3	0.873	0.975	1.553	1.680	0.804	0.964	1.549	0.934
05	3.1	0.856	0.953	1.535	1.722	0.755	0.945	1.532	0.933
04	2.1	0.852	0.948	1.531	1.731	0.744	0.942	1.528	0.932
03	1.3	0.868	0.976	1.547	1.694	0.787	0.973	1.546	0.931
02	0.7	0.778	0.813	1.448	1.878	0.594	0.812	1.448	0.930
01	0.3	0.548	0.551	1.152	2.382	0.271	0.551	1.151	0.930

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.977  
 (6) 1.030  
 (7) 0.937  
 (1) 0.935 (2) 0.924 (3) 0.893 (4) 0.909

5-HOLE PROBE offset rake centerline rake  
 upper 0.872 0.908  
 lower 0.940 0.967

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.529	0.553	0.544	0.466	0.494	0.460
		0.510			0.427	
		ALPHA: -1.7			ALPHA: -2.2	
		BETA: 0.6			BETA: -0.2	
lower	0.430	0.313	0.520	0.517	0.527	0.491
		0.310			0.493	
		ALPHA: -0.1			ALPHA: -1.3	
		BETA: 3.2			BETA: -1.0	

FLIGHT: 55 MACH: 1.199 ALTITUDE(ft): 37401. KEAS: 363.  
 PSINF(psia): 3.08 PTINF(psia): 7.47 TSINF(F): -66. TTINF(F): 47.  
 ALPHA(deg): 5.1 BETA(deg): 0.2 PHI(deg): 30.9

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.978	0.990	1.243	1.269	0.912	1.057
15	21.1	0.973	0.985	1.239	1.294	0.882	1.014
14	18.3	0.974	0.985	1.239	1.292	0.885	0.942
13	15.7	0.974	0.985	1.239	1.292	0.884	0.876
12	13.3	0.975	0.986	1.240	1.287	0.890	0.813
10	11.1	0.976	0.987	1.241	1.282	0.896	0.751
09	9.1	0.971	0.983	1.237	1.306	0.868	0.771
08	7.3	0.977	0.988	1.242	1.275	0.904	0.868
07	5.7	0.976	0.988	1.241	1.280	0.899	0.943
06	4.3	0.989	1.002	1.252	1.202	0.997	1.020
05	3.1	0.984	0.996	1.248	1.232	0.958	1.075
04	2.1	0.983	0.995	1.247	1.238	0.950	1.126
03	1.3	0.964	0.974	1.231	1.347	0.820	1.154
02	0.7	0.706	0.706	0.971	--	--	0.925
01	0.3	0.587	0.587	0.798	--	--	0.775

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.978	0.990	1.253	1.266	0.915	1.091
15	21.1	0.972	0.983	1.248	1.303	0.871	1.043
14	18.3	0.975	0.986	1.250	1.285	0.892	0.969
13	15.7	0.974	0.985	1.249	1.293	0.884	0.899
12	13.3	0.975	0.986	1.250	1.285	0.892	0.835
10	11.1	0.970	0.981	1.246	1.315	0.857	0.765
09	9.1	0.962	0.973	1.239	1.356	0.810	0.937
08	7.3	0.960	0.972	1.238	1.365	0.800	0.866
07	5.7	0.965	0.976	1.242	1.341	0.827	0.965
06	4.3	0.977	0.991	1.253	1.271	0.910	1.023
05	3.1	0.983	0.995	1.257	1.238	0.950	1.086
04	2.1	0.987	0.999	1.260	1.215	0.981	1.140
03	1.3	0.977	0.987	1.252	1.274	0.905	1.175
02	0.7	0.742	0.742	1.024	1.944	0.338	0.981
01	0.3	0.580	0.580	0.798	--	--	0.775

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.887  
 (6) 0.923  
 (7) 0.866  
 (1) 0.886 (2) 0.962 (3) 0.955 (4) 0.915

5-HOLE PROBE offset rake centerline rake  
 upper 1.124 1.170  
 lower 1.617 1.642

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.649			0.590	
	0.624	0.970	0.624	0.554	0.977	0.547
		0.590			0.506	
		ALPHA: -2.4			ALPHA: -2.8	
		BETA: 0.0			BETA: -0.2	
lower		0.400			0.670	
	0.583	0.959	0.665	0.695	0.973	0.615
		0.398			0.650	
		ALPHA: 0.0			ALPHA: -0.9	
		BETA: 3.5			BETA: -3.6	

FLIGHT: 55 MACH: 0.586 ALTITUDE(ft): 9431. KEAS: 325.  
 PSINF(psia): 10.33 PTINF(psia): 13.04 TSINF(F): 57. TTINF(F): 92.  
 ALPHA(deg): 6.4 BETA(deg): 0.3 PHI(deg): 34.7

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH	----INTERPOLATED-PS---- PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH	----INTERPOLATED-PS---- PS/PSINF
16	24.1	1.000	1.000	0.607	--	--	1.000	0.569	1.014
15	21.1	1.000	1.000	0.606	--	--	1.000	0.567	1.014
14	18.3	1.001	1.001	0.608	--	--	1.001	0.568	1.015
13	15.7	1.000	1.000	0.607	--	--	1.000	0.566	1.016
12	13.3	1.002	1.002	0.610	--	--	1.002	0.567	1.017
10	11.1	1.002	1.002	0.609	--	--	1.002	0.565	1.018
09	9.1	0.999	0.999	0.606	--	--	0.999	0.565	1.015
08	7.3	1.002	1.002	0.609	--	--	1.002	0.577	1.009
07	5.7	1.000	1.000	0.606	--	--	1.000	0.581	1.004
06	4.3	1.002	1.002	0.610	--	--	1.002	0.591	0.999
05	3.1	1.000	1.000	0.607	--	--	1.000	0.594	0.995
04	2.1	1.001	1.001	0.608	--	--	1.001	0.599	0.991
03	1.3	1.001	1.001	0.608	--	--	1.001	0.603	0.989
02	0.7	0.970	0.970	0.567	--	--	0.970	0.564	0.987
01	0.3	0.928	0.928	0.505	--	--	0.928	0.504	0.985

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH	----INTERPOLATED-PS---- PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH	----INTERPOLATED-PS---- PS/PSINF
16	24.1	1.003	1.003	0.607	--	--	1.003	0.578	1.010
15	21.1	0.999	0.999	0.601	--	--	0.999	0.572	1.010
14	18.3	1.001	1.001	0.604	--	--	1.001	0.573	1.011
13	15.7	1.000	1.000	0.602	--	--	1.000	0.570	1.012
12	13.3	1.003	1.003	0.607	--	--	1.003	0.573	1.013
10	11.1	1.003	1.003	0.606	--	--	1.003	0.571	1.014
09	9.1	1.000	1.000	0.603	--	--	1.000	0.571	1.012
08	7.3	1.000	1.000	0.602	--	--	1.000	0.577	1.007
07	5.7	1.001	1.001	0.604	--	--	1.001	0.584	1.003
06	4.3	1.000	1.000	0.602	--	--	1.000	0.588	0.999
05	3.1	1.000	1.000	0.603	--	--	1.000	0.592	0.996
04	2.1	1.000	1.000	0.602	--	--	1.000	0.595	0.993
03	1.3	1.001	1.001	0.604	--	--	1.001	0.599	0.991
02	0.7	0.974	0.974	0.569	--	--	0.974	0.566	0.990
01	0.3	0.915	0.915	0.477	--	--	0.915	0.476	0.989

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.982  
 (6) 0.977  
 (7) 0.969  
 (1) 0.983 (2) 0.993 (3) 0.982 (4) 0.986

5-HOLE PROBE offset rake centerline rake  
 upper 1.010 1.014  
 lower 1.015 1.018

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.798			0.764	
	0.790	0.998	0.797	0.756	1.002	0.747
		0.783			0.751	
		ALPHA: -1.1			ALPHA: -0.7	
		BETA: 0.4			BETA: -0.5	
lower		0.767			0.793	
	0.742	0.997	0.799	0.792	1.000	0.768
		0.764			0.771	
		ALPHA: -0.2			ALPHA: -1.4	
		BETA: 3.6			BETA: -1.6	

FLIGHT: 55 MACH: 0.405 ALTITUDE(ft): 5111. KEAS: 244.  
 PSINF(psia): 12.18 PTINF(psia): 13.64 TSINF(F): 75. TTINF(F): 92.  
 ALPHA(deg): 6.6 BETA(deg): 0.0 PHI(deg): -3.2

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.000	1.000	0.417	--	--	1.000	0.395	1.006
15	21.1	1.000	1.000	0.416	--	--	1.000	0.393	1.006
14	18.3	1.001	1.001	0.419	--	--	1.001	0.396	1.006
13	15.7	1.001	1.001	0.418	--	--	1.001	0.394	1.007
12	13.3	1.002	1.002	0.420	--	--	1.002	0.396	1.007
10	11.1	1.001	1.001	0.419	--	--	1.001	0.394	1.007
09	9.1	1.000	1.000	0.417	--	--	1.000	0.394	1.006
08	7.3	1.001	1.001	0.419	--	--	1.001	0.401	1.004
07	5.7	1.000	1.000	0.418	--	--	1.000	0.404	1.001
06	4.3	1.002	1.002	0.420	--	--	1.002	0.409	0.999
05	3.1	1.001	1.001	0.418	--	--	1.001	0.410	0.998
04	2.1	1.001	1.001	0.419	--	--	1.001	0.414	0.996
03	1.3	1.001	1.001	0.418	--	--	1.001	0.415	0.995
02	0.7	0.985	0.985	0.390	--	--	0.985	0.388	0.995
01	0.3	0.964	0.964	0.346	--	--	0.964	0.345	0.994

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.002	1.002	0.419	--	--	1.002	0.403	1.004
15	21.1	0.999	0.999	0.413	--	--	0.999	0.397	1.004
14	18.3	1.001	1.001	0.416	--	--	1.001	0.399	1.004
13	15.7	1.000	1.000	0.415	--	--	1.000	0.397	1.005
12	13.3	1.002	1.002	0.418	--	--	1.002	0.399	1.005
10	11.1	1.002	1.002	0.418	--	--	1.002	0.398	1.006
09	9.1	1.000	1.000	0.414	--	--	1.000	0.396	1.005
08	7.3	1.001	1.001	0.416	--	--	1.001	0.401	1.003
07	5.7	1.000	1.000	0.415	--	--	1.000	0.404	1.001
06	4.3	1.000	1.000	0.415	--	--	1.000	0.407	1.000
05	3.1	1.000	1.000	0.414	--	--	1.000	0.408	0.998
04	2.1	1.000	1.000	0.415	--	--	1.000	0.411	0.997
03	1.3	1.001	1.001	0.416	--	--	1.001	0.413	0.996
02	0.7	0.989	0.989	0.394	--	--	0.989	0.393	0.996
01	0.3	0.958	0.958	0.329	--	--	0.958	0.329	0.995

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.993  
 (6) 0.992  
 (7) 0.987  
 (1) 0.993 (2) 0.997 (3) 0.993 (4) 0.995

5-HOLE PROBE offset rake centerline rake  
 upper 1.004 1.006  
 lower 1.006 1.007

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.894			0.877	
	0.891	0.998	0.892	0.872	1.002	0.867
		0.886			0.870	
		ALPHA: -1.1			ALPHA: -0.8	
		BETA: 0.1			BETA: -0.6	
lower		0.882			0.891	
	0.868	0.999	0.893	0.890	0.999	0.876
		0.880			0.878	
		ALPHA: -0.3			ALPHA: -1.6	
		BETA: 3.0			BETA: -1.7	



FLIGHT: 54 MACH: 2.597 ALTITUDE(ft): 60966. KEAS: 447.  
 PSINF(psia): 0.99 PTINF(psia): 19.72 TSINF(F): -74. TTINF(F): 446.  
 ALPHA(deg): 5.5 BETA(deg): 0.3 PHI(deg): 34.3

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.462	0.933	2.510	2.614	0.973	0.899	2.465	1.105
15	21.1	0.462	0.933	2.510	2.614	0.974	0.898	2.463	1.106
14	18.3	0.462	0.934	2.511	2.613	0.975	0.897	2.461	1.109
13	15.7	0.455	0.904	2.490	2.633	0.946	0.867	2.437	1.111
12	13.3	0.458	0.918	2.500	2.624	0.959	0.878	2.444	1.114
10	11.1	0.459	0.920	2.501	2.622	0.961	0.878	2.443	1.116
09	9.1	0.461	0.931	2.509	2.615	0.972	0.892	2.455	1.112
08	7.3	0.455	0.906	2.491	2.632	0.948	0.876	2.448	1.103
07	5.7	0.458	0.917	2.499	2.625	0.958	0.892	2.465	1.095
06	4.3	0.459	0.921	2.502	2.622	0.962	0.902	2.476	1.089
05	3.1	0.458	0.919	2.500	2.623	0.960	0.905	2.481	1.083
04	2.1	0.458	0.919	2.500	2.623	0.960	0.910	2.488	1.078
03	1.3	0.444	0.861	2.459	2.662	0.904	0.856	2.451	1.074
02	0.7	0.348	0.538	2.158	2.938	0.593	0.536	2.154	1.071
01	0.3	0.259	0.324	1.830	3.258	0.369	0.323	1.829	1.069

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.502	1.013	2.524	2.505	1.152	0.977	2.336	1.326
15	21.1	0.492	0.993	2.497	2.533	1.104	0.956	2.339	1.297
14	18.3	0.484	0.978	2.476	2.554	1.069	0.940	2.373	1.242
13	15.7	0.474	0.943	2.450	2.580	1.027	0.904	2.401	1.192
12	13.3	0.467	0.936	2.430	2.599	0.996	0.895	2.433	1.145
10	11.1	0.469	0.942	2.437	2.593	1.006	0.899	2.490	1.102
09	9.1	0.461	0.930	2.413	2.617	0.970	0.891	2.481	1.089
08	7.3	0.461	0.918	2.414	2.615	0.972	0.887	2.469	1.100
07	5.7	0.468	0.937	2.433	2.597	1.000	0.912	2.476	1.110
06	4.3	0.467	0.937	2.430	2.600	0.996	0.918	2.462	1.120
05	3.1	0.466	0.934	2.427	2.603	0.991	0.920	2.450	1.127
04	2.1	0.469	0.939	2.434	2.595	1.002	0.930	2.450	1.134
03	1.3	0.457	0.886	2.401	2.628	0.953	0.880	2.411	1.139
02	0.7	0.373	0.577	2.155	2.863	0.665	0.575	2.159	1.143
01	0.3	0.258	0.323	1.757	3.259	0.369	0.323	1.758	1.145

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.105  
 (6) 1.241  
 (7) 1.103  
 (1) 1.152 (2) 1.143 (3) 1.067 (4) 1.068

5-HOLE PROBE offset rake centerline rake  
 upper 1.326 1.105  
 lower 1.082 1.117

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.260	0.253	0.258	0.195	0.206	0.197
		0.254			0.193	
		ALPHA: 0.1			ALPHA: -0.7	
		BETA: -0.2			BETA: 0.1	
lower	0.187	0.178	0.218	0.225	0.228	0.214
		0.175			0.213	
		ALPHA: -0.1			ALPHA: -0.9	
		BETA: 1.7			BETA: -0.7	

FLIGHT: 54 MACH: 2.621 ALTITUDE(ft): 61217. KEAS: 448.  
 PSINF(psia): 0.98 PTINF(psia): 20.23 TSINF(F): -75. TTINF(F): 452.  
 ALPHA(deg): 5.1 BETA(deg): 0.7 PHI(deg): 30.1

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.458	0.958	2.554	2.625	0.994	0.909	2.489	1.116
15	21.1	0.459	0.962	2.557	2.623	0.998	0.911	2.490	1.118
14	18.3	0.464	0.988	2.574	2.607	1.023	0.933	2.503	1.121
13	15.7	0.459	0.963	2.558	2.622	0.999	0.908	2.484	1.123
12	13.3	0.460	0.968	2.561	2.619	1.003	0.910	2.484	1.126
10	11.1	0.456	0.953	2.551	2.629	0.989	0.895	2.472	1.128
09	9.1	0.456	0.953	2.551	2.629	0.988	0.899	2.478	1.122
08	7.3	0.453	0.939	2.542	2.637	0.976	0.896	2.483	1.111
07	5.7	0.443	0.897	2.512	2.665	0.935	0.865	2.466	1.100
06	4.3	0.442	0.892	2.508	2.668	0.930	0.867	2.474	1.091
05	3.1	0.441	0.888	2.506	2.670	0.927	0.871	2.481	1.083
04	2.1	0.441	0.889	2.506	2.670	0.927	0.877	2.489	1.077
03	1.3	0.430	0.842	2.471	2.702	0.883	0.835	2.461	1.071
02	0.7	0.344	0.544	2.192	2.953	0.603	0.542	2.187	1.068
01	0.3	0.254	0.323	1.856	3.278	0.372	0.322	1.854	1.065

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.497	1.040	2.546	2.519	1.172	0.986	2.336	1.365
15	21.1	0.485	1.017	2.514	2.551	1.115	0.963	2.335	1.333
14	18.3	0.475	1.010	2.486	2.578	1.069	0.954	2.366	1.274
13	15.7	0.467	0.981	2.465	2.600	1.034	0.924	2.401	1.219
12	13.3	0.460	0.969	2.446	2.618	1.005	0.911	2.437	1.169
10	11.1	0.466	0.973	2.461	2.603	1.029	0.913	2.505	1.122
09	9.1	0.456	0.952	2.434	2.630	0.987	0.898	2.495	1.107
08	7.3	0.459	0.950	2.441	2.623	0.998	0.907	2.490	1.118
07	5.7	0.462	0.934	2.449	2.615	1.010	0.900	2.488	1.127
06	4.3	0.464	0.937	2.457	2.607	1.023	0.911	2.486	1.135
05	3.1	0.464	0.935	2.457	2.607	1.022	0.916	2.478	1.142
04	2.1	0.464	0.934	2.456	2.608	1.020	0.921	2.470	1.148
03	1.3	0.442	0.866	2.394	2.668	0.931	0.859	2.403	1.153
02	0.7	0.337	0.534	2.068	2.973	0.585	0.532	2.072	1.156
01	0.3	0.229	0.290	1.662	3.397	0.313	0.290	1.664	1.159

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.147  
 (6) 1.151  
 (7) 1.136  
 (1) 1.174 (2) 1.147 (3) 1.071 (4) 1.055

5-HOLE PROBE offset rake centerline rake  
 upper 1.365 1.116  
 lower 1.101 1.129

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.252			0.205		
	0.259	0.453	0.255	0.190	0.460	0.197
	0.252			0.188		
	ALPHA:	0.0		ALPHA:	-0.9	
	BETA:	-0.3		BETA:	0.3	
lower	0.172			0.230		
	0.185	0.459	0.216	0.219	0.458	0.212
	0.169			0.205		
	ALPHA:	-0.2		ALPHA:	-1.5	
	BETA:	1.7		BETA:	-0.4	

FLIGHT: 54 MACH: 2.645 ALTITUDE(ft): 61602. KEAS: 448.  
 PSINF(psia): 0.96 PTINF(psia): 20.62 TSINF(F): -74. TTINF(F): 467.  
 ALPHA(deg): 5.1 BETA(deg): -0.4 PHI(deg): 29.6

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.454	0.969	2.578	2.635	1.016	0.905	2.493	1.146
15	21.1	0.453	0.964	2.575	2.638	1.012	0.901	2.491	1.145
14	18.3	0.456	0.976	2.582	2.631	1.023	0.913	2.500	1.144
13	15.7	0.456	0.975	2.582	2.631	1.022	0.913	2.500	1.143
12	13.3	0.452	0.961	2.572	2.640	1.008	0.901	2.492	1.142
10	11.1	0.443	0.920	2.544	2.665	0.970	0.864	2.466	1.142
09	9.1	0.440	0.906	2.534	2.675	0.956	0.856	2.464	1.135
08	7.3	0.438	0.898	2.529	2.680	0.948	0.858	2.472	1.123
07	5.7	0.440	0.905	2.534	2.675	0.955	0.873	2.489	1.113
06	4.3	0.443	0.920	2.544	2.666	0.969	0.895	2.510	1.104
05	3.1	0.440	0.907	2.535	2.674	0.957	0.890	2.511	1.096
04	2.1	0.437	0.893	2.525	2.683	0.944	0.881	2.508	1.090
03	1.3	0.419	0.821	2.471	2.732	0.876	0.814	2.461	1.085
02	0.7	0.291	0.412	2.030	3.129	0.481	0.411	2.025	1.081
01	0.3	0.215	0.253	1.712	3.469	0.293	0.252	1.710	1.078

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.447	0.953	2.520	2.656	0.984	0.890	2.203	1.420
15	21.1	0.446	0.950	2.520	2.657	0.983	0.888	2.232	1.385
14	18.3	0.445	0.954	2.516	2.660	0.978	0.892	2.287	1.320
13	15.7	0.454	0.972	2.542	2.636	1.015	0.910	2.370	1.260
12	13.3	0.486	1.032	2.636	2.548	1.163	0.968	2.518	1.204
10	11.1	0.477	0.991	2.610	2.572	1.120	0.931	2.551	1.153
09	9.1	0.456	0.940	2.549	2.629	1.025	0.888	2.521	1.127
08	7.3	0.389	0.798	2.343	2.817	0.769	0.763	2.322	1.123
07	5.7	0.336	0.691	2.163	2.978	0.602	0.667	2.147	1.119
06	4.3	0.314	0.652	2.085	3.049	0.542	0.634	2.074	1.115
05	3.1	0.339	0.698	2.173	2.969	0.611	0.684	2.165	1.112
04	2.1	0.364	0.744	2.260	2.891	0.687	0.734	2.254	1.110
03	1.3	0.383	0.749	2.321	2.836	0.746	0.743	2.317	1.107
02	0.7	0.391	0.554	2.349	2.811	0.776	0.552	2.347	1.106
01	0.3	0.307	0.361	2.059	3.073	0.522	0.360	2.059	1.105

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.005  
 (6) 1.241  
 (7) 1.130  
 (1) 1.076 (2) 1.133 (3) 1.069 (4) 1.084

5-HOLE PROBE offset rake centerline rake  
 upper 1.420 1.146  
 lower 1.130 1.141

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.258	0.236	0.227	0.194	0.203	0.191
		0.239			0.187	
		ALPHA: 0.2			ALPHA: -0.9	
		BETA: -2.2			BETA: -0.2	
lower	0.201	0.169	0.204	0.217	0.219	0.203
		0.167			0.206	
		ALPHA: -0.1			ALPHA: -0.8	
		BETA: 0.2			BETA: -0.8	

FLIGHT: 54 MACH: 2.784 ALTITUDE(ft): 65198. KEAS: 432.  
 PSINF(psia): 0.81 PTINF(psia): 21.46 TSINF(F): -71. TTINF(F): 531.  
 ALPHA(deg): 4.6 BETA(deg): 0.6 PHI(deg): -1.1

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.402	0.943	2.694	2.782	1.003	0.802	2.495	1.252
15	21.1	0.404	0.954	2.702	2.776	1.013	0.807	2.498	1.256
14	18.3	0.410	0.986	2.723	2.759	1.040	0.826	2.508	1.265
13	15.7	0.410	0.985	2.722	2.759	1.039	0.820	2.499	1.273
12	13.3	0.409	0.981	2.720	2.761	1.035	0.812	2.489	1.281
10	11.1	0.403	0.953	2.701	2.776	1.012	0.786	2.465	1.287
09	9.1	0.400	0.933	2.687	2.787	0.995	0.782	2.470	1.270
08	7.3	0.395	0.913	2.673	2.799	0.977	0.790	2.495	1.233
07	5.7	0.391	0.888	2.655	2.813	0.956	0.792	2.515	1.200
06	4.3	0.394	0.904	2.667	2.804	0.970	0.827	2.558	1.171
05	3.1	0.390	0.887	2.655	2.814	0.956	0.832	2.576	1.147
04	2.1	0.396	0.914	2.674	2.798	0.979	0.874	2.619	1.126
03	1.3	0.384	0.858	2.633	2.831	0.931	0.835	2.599	1.110
02	0.7	0.281	0.456	2.227	3.168	0.561	0.450	2.211	1.097
01	0.3	0.200	0.254	1.850	3.552	0.323	0.253	1.844	1.089

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.396	0.931	2.642	2.797	0.981	0.791	2.534	1.200
15	21.1	0.387	0.915	2.609	2.823	0.942	0.774	2.515	1.189
14	18.3	0.395	0.950	2.637	2.801	0.975	0.797	2.566	1.168
13	15.7	0.397	0.955	2.644	2.795	0.983	0.795	2.595	1.149
12	13.3	0.390	0.937	2.621	2.813	0.956	0.776	2.594	1.131
10	11.1	0.387	0.915	2.609	2.823	0.942	0.754	2.602	1.115
09	9.1	0.383	0.896	2.596	2.834	0.927	0.750	2.598	1.108
08	7.3	0.386	0.890	2.604	2.828	0.936	0.770	2.605	1.108
07	5.7	0.388	0.883	2.614	2.819	0.947	0.788	2.615	1.108
06	4.3	0.388	0.892	2.614	2.819	0.948	0.816	2.615	1.109
05	3.1	0.391	0.888	2.621	2.813	0.956	0.832	2.622	1.109
04	2.1	0.389	0.899	2.617	2.817	0.951	0.860	2.618	1.109
03	1.3	0.382	0.853	2.590	2.839	0.920	0.829	2.591	1.109
02	0.7	0.323	0.524	2.370	3.019	0.701	0.518	2.370	1.109
01	0.3	0.218	0.275	1.911	3.454	0.371	0.275	1.911	1.109

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.026  
 (6) 1.073  
 (7) 1.090  
 (1) 1.128 (2) 1.091 (3) 1.110 (4) 1.055

5-HOLE PROBE offset rake centerline rake  
 upper 1.200 1.252  
 lower 1.108 1.291

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.210	0.205	0.198	0.169	0.177	0.178
		0.209			0.173	
		ALPHA: 0.3			ALPHA: -0.2	
		BETA: -0.9			BETA: 0.5	
lower	0.152	0.174	0.182	0.191	0.196	0.180
		0.173			0.181	
		ALPHA: -0.1			ALPHA: -1.0	
		BETA: 1.9			BETA: -0.7	

FLIGHT: 54 MACH: 2.808 ALTITUDE(ft): 66030. KEAS: 427.  
 PSINF(psia): 0.78 PTINF(psia): 21.38 TSINF(F): -73. TTINF(F): 537.  
 ALPHA(deg): 4.6 BETA(deg): 0.8 PHI(deg): 2.0

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.393	0.960	2.741	2.806	1.003	0.777	2.484	1.282
15	21.1	0.379	0.884	2.687	2.848	0.941	0.721	2.437	1.280
14	18.3	0.383	0.907	2.704	2.835	0.959	0.741	2.456	1.276
13	15.7	0.378	0.880	2.685	2.850	0.938	0.723	2.442	1.272
12	13.3	0.372	0.853	2.664	2.867	0.915	0.704	2.427	1.268
10	11.1	0.403	1.017	2.779	2.777	1.049	0.832	2.536	1.265
09	9.1	0.402	1.012	2.775	2.780	1.044	0.843	2.555	1.244
08	7.3	0.387	0.928	2.719	2.823	0.977	0.802	2.542	1.208
07	5.7	0.388	0.934	2.723	2.821	0.981	0.831	2.582	1.177
06	4.3	0.384	0.910	2.706	2.834	0.962	0.832	2.598	1.149
05	3.1	0.377	0.879	2.683	2.851	0.936	0.824	2.605	1.125
04	2.1	0.375	0.869	2.676	2.857	0.928	0.831	2.622	1.105
03	1.3	0.364	0.814	2.634	2.890	0.883	0.792	2.601	1.089
02	0.7	0.269	0.441	2.240	3.215	0.543	0.436	2.224	1.078
01	0.3	0.193	0.246	1.867	3.598	0.313	0.246	1.861	1.070

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.395	0.965	2.706	2.800	1.012	0.782	2.571	1.207
15	21.1	0.384	0.897	2.666	2.832	0.964	0.732	2.548	1.194
14	18.3	0.394	0.933	2.701	2.804	1.007	0.762	2.611	1.169
13	15.7	0.389	0.907	2.685	2.817	0.987	0.745	2.623	1.146
12	13.3	0.384	0.879	2.664	2.833	0.962	0.725	2.628	1.125
10	11.1	0.381	0.960	2.653	2.842	0.950	0.785	2.642	1.105
09	9.1	0.369	0.928	2.610	2.876	0.902	0.773	2.610	1.096
08	7.3	0.371	0.890	2.617	2.870	0.909	0.769	2.617	1.096
07	5.7	0.374	0.900	2.629	2.861	0.923	0.801	2.629	1.096
06	4.3	0.372	0.884	2.623	2.866	0.916	0.808	2.623	1.096
05	3.1	0.374	0.870	2.627	2.862	0.921	0.816	2.627	1.096
04	2.1	0.371	0.859	2.618	2.870	0.910	0.822	2.618	1.096
03	1.3	0.360	0.804	2.574	2.904	0.864	0.782	2.574	1.096
02	0.7	0.291	0.477	2.299	3.130	0.616	0.471	2.299	1.096
01	0.3	0.196	0.250	1.852	3.579	0.322	0.250	1.852	1.096

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.021  
 (6) 1.048  
 (7) 1.078  
 (1) 1.092 (2) 1.101 (3) 1.106 (4) 1.022

5-HOLE PROBE offset rake centerline rake  
 upper 1.207 1.282  
 lower 1.096 1.264

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.206	0.200	0.194	0.151	0.166	0.171
	0.206				0.159	
	ALPHA:	0.4		ALPHA:	-0.4	
	BETA:	-0.8		BETA:	1.1	
lower	0.146	0.173	0.178	0.190	0.196	0.180
		0.377			0.401	
		0.172			0.180	
	ALPHA:	0.0		ALPHA:	-1.0	
	BETA:	2.1		BETA:	-0.6	

FLIGHT: 54 MACH: 2.796 ALTITUDE(ft): 66836. KEAS: 417.  
 PSINF(psia): 0.75 PTINF(psia): 20.19 TSINF(F): -71. TTINF(F): 535.  
 ALPHA(deg): 4.6 BETA(deg): -0.5 PHI(deg): 1.3

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.416	1.007	2.730	2.741	1.087	0.830	2.495	1.321
15	21.1	0.408	0.966	2.703	2.763	1.052	0.804	2.478	1.313
14	18.3	0.411	0.981	2.713	2.754	1.065	0.826	2.504	1.297
13	15.7	0.411	0.979	2.711	2.756	1.063	0.834	2.517	1.282
12	13.3	0.409	0.968	2.704	2.762	1.053	0.835	2.524	1.269
10	11.1	0.402	0.936	2.682	2.780	1.025	0.817	2.516	1.257
09	9.1	0.397	0.910	2.664	2.794	1.003	0.809	2.520	1.237
08	7.3	0.395	0.901	2.657	2.800	0.994	0.818	2.540	1.213
07	5.7	0.392	0.886	2.646	2.808	0.981	0.821	2.554	1.191
06	4.3	0.396	0.902	2.658	2.799	0.995	0.851	2.587	1.172
05	3.1	0.392	0.884	2.645	2.809	0.979	0.847	2.594	1.156
04	2.1	0.390	0.877	2.640	2.814	0.973	0.852	2.605	1.142
03	1.3	0.372	0.789	2.572	2.869	0.895	0.775	2.550	1.132
02	0.7	0.247	0.358	2.066	3.308	0.466	0.356	2.057	1.123
01	0.3	0.176	0.206	1.708	3.711	0.263	0.206	1.705	1.118

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF		
16	24.1	0.382	0.925	2.705	2.838	0.938	0.762	2.500	1.208
15	21.1	0.372	0.881	2.669	2.866	0.898	0.733	2.484	1.192
14	18.3	0.368	0.879	2.653	2.879	0.881	0.740	2.504	1.161
13	15.7	0.369	0.880	2.657	2.876	0.885	0.750	2.541	1.132
12	13.3	0.374	0.886	2.675	2.861	0.905	0.764	2.591	1.106
10	11.1	0.381	0.885	2.700	2.842	0.932	0.773	2.646	1.081
09	9.1	0.351	0.805	2.588	2.930	0.816	0.715	2.553	1.067
08	7.3	0.294	0.670	2.355	3.118	0.615	0.609	2.329	1.062
07	5.7	0.208	0.471	1.953	3.505	0.351	0.436	1.936	1.057
06	4.3	0.184	0.420	1.821	3.656	0.284	0.396	1.809	1.053
05	3.1	0.247	0.558	2.144	3.308	0.466	0.535	2.134	1.050
04	2.1	0.293	0.657	2.348	3.124	0.610	0.638	2.341	1.047
03	1.3	0.318	0.675	2.455	3.036	0.696	0.663	2.450	1.044
02	0.7	0.329	0.477	2.499	3.000	0.734	0.474	2.497	1.043
01	0.3	0.246	0.289	2.140	3.312	0.463	0.289	2.140	1.041

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.038  
 (6) 1.095  
 (7) 1.085  
 (1) 1.059 (2) 1.022 (3) 1.099 (4) 1.129

5-HOLE PROBE offset rake centerline rake  
 upper 1.208 1.321  
 lower 1.070 1.251

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.200			0.179		
	0.209	0.398	0.193	0.175	0.444	0.173
	0.202			0.172		
	ALPHA:	0.2		ALPHA:	-0.4	
	BETA:	-1.1		BETA:	-0.1	
lower	0.183			0.196		
	0.162	0.368	0.157	0.192	0.400	0.180
	0.183			0.183		
	ALPHA:	0.0		ALPHA:	-0.9	
	BETA:	-0.3		BETA:	-0.8	

FLIGHT: 54 MACH: 1.383 ALTITUDE(ft): 43901. KEAS: 358.  
 PSINF(psia): 2.25 PTINF(psia): 7.00 TSINF(F): -82. TTINF(F): 62.  
 ALPHA(deg): 5.1 BETA(deg): 0.7 PHI(deg): -1.4

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.941	1.005	1.478	1.456	0.902	0.983
15	21.1	0.934	0.995	1.471	1.484	0.866	0.973
14	18.3	0.939	1.002	1.476	1.464	0.891	0.977
13	15.7	0.936	0.998	1.473	1.477	0.875	0.971
12	13.3	0.935	0.997	1.472	1.480	0.871	0.968
10	11.1	0.934	0.995	1.471	1.484	0.865	0.965
09	9.1	0.932	0.992	1.469	1.494	0.854	0.964
08	7.3	0.934	0.995	1.471	1.486	0.863	0.971
07	5.7	0.929	0.988	1.466	1.505	0.841	0.970
06	4.3	0.926	0.983	1.463	1.518	0.824	0.969
05	3.1	0.925	0.983	1.463	1.519	0.823	0.972
04	2.1	0.954	1.022	1.490	1.398	0.979	1.014
03	1.3	0.954	1.023	1.490	1.397	0.981	1.017
02	0.7	0.754	0.768	1.285	1.923	0.447	0.767
01	0.3	0.589	0.589	1.080	2.278	0.257	0.589

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.943	1.006	1.462	1.449	0.911	0.984
15	21.1	0.934	0.995	1.454	1.485	0.865	0.973
14	18.3	0.935	0.997	1.454	1.483	0.867	0.972
13	15.7	0.937	0.998	1.456	1.475	0.878	0.971
12	13.3	0.937	0.998	1.456	1.473	0.879	0.970
10	11.1	0.934	0.995	1.454	1.484	0.866	0.966
09	9.1	0.930	0.990	1.450	1.501	0.844	0.962
08	7.3	0.930	0.990	1.450	1.502	0.843	0.967
07	5.7	0.930	0.990	1.450	1.499	0.847	0.971
06	4.3	0.927	0.985	1.447	1.514	0.829	0.970
05	3.1	0.927	0.984	1.447	1.515	0.828	0.974
04	2.1	0.960	1.029	1.478	1.369	1.020	1.020
03	1.3	0.961	1.030	1.479	1.362	1.029	1.025
02	0.7	0.772	0.787	1.290	1.888	0.472	0.786
01	0.3	0.540	0.540	0.992	--	--	0.540

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.017  
 (6) 0.972  
 (7) 0.906  
 (1) 0.892 (2) 0.899 (3) 0.874 (4) 0.882

5-HOLE PROBE offset rake centerline rake  
 upper 0.923 0.957  
 lower 0.927 1.000

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.599			0.539	
	0.568	0.935	0.592	0.500	0.940	0.512
		0.553			0.482	
		ALPHA: -1.8			ALPHA: -1.9	
		BETA: 1.0			BETA: 0.4	
lower		0.608			0.567	
	0.467	0.927	0.567	0.548	0.932	0.542
		0.605			0.535	
		ALPHA: -0.1			ALPHA: -1.2	
		BETA: 3.5			BETA: -0.2	

FLIGHT: 54 MACH: 1.354 ALTITUDE(ft): 42094. KEAS: 366.  
 PSINF(psia): 2.46 PTINF(psia): 7.34 TSINF(F): -75. TTINF(F): 66.  
 ALPHA(deg): 5.2 BETA(deg): 2.2 PHI(deg): 4.2

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.947	1.004	1.457	1.429	0.900	0.986
15	21.1	0.944	1.001	1.454	1.441	0.884	0.981
14	18.3	0.947	1.005	1.457	1.427	0.902	0.982
13	15.7	0.946	1.002	1.455	1.436	0.892	0.977
12	13.3	0.942	0.997	1.452	1.452	0.871	0.970
10	11.1	0.941	0.996	1.451	1.457	0.865	0.966
09	9.1	0.937	0.991	1.448	1.471	0.848	0.964
08	7.3	0.937	0.991	1.447	1.472	0.846	0.968
07	5.7	0.936	0.989	1.446	1.478	0.839	0.970
06	4.3	0.934	0.987	1.445	1.484	0.832	0.973
05	3.1	0.933	0.986	1.444	1.489	0.826	0.975
04	2.1	0.967	1.031	1.475	1.332	1.030	1.022
03	1.3	0.969	1.034	1.477	1.321	1.046	1.028
02	0.7	0.821	0.844	1.333	1.796	0.522	0.842
01	0.3	0.642	0.643	1.127	2.151	0.301	0.643

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.948	1.005	1.439	1.425	0.906	0.987
15	21.1	0.945	1.002	1.436	1.436	0.890	0.982
14	18.3	0.945	1.002	1.436	1.439	0.888	0.979
13	15.7	0.944	1.000	1.434	1.445	0.880	0.975
12	13.3	0.945	1.001	1.436	1.439	0.888	0.973
10	11.1	0.944	0.999	1.434	1.444	0.881	0.969
09	9.1	0.940	0.994	1.431	1.460	0.861	0.966
08	7.3	0.943	0.997	1.434	1.448	0.876	0.973
07	5.7	0.941	0.995	1.432	1.455	0.867	0.976
06	4.3	0.935	0.988	1.427	1.479	0.837	0.974
05	3.1	0.939	0.992	1.430	1.463	0.858	0.981
04	2.1	0.969	1.034	1.458	1.319	1.049	1.025
03	1.3	0.960	1.025	1.450	1.365	0.985	1.019
02	0.7	0.731	0.751	1.216	1.966	0.402	0.749
01	0.3	0.518	0.518	0.926	--	--	0.518

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.940  
 (6) 0.969  
 (7) 0.900  
 (1) 0.883 (2) 0.892 (3) 0.870 (4) 0.868

5-HOLE PROBE offset rake centerline rake  
 upper 0.889 0.936  
 lower 1.045 1.002

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.550	0.598	0.595	0.477	0.553	0.547
		0.545			0.476	
		ALPHA: -2.1			ALPHA: -2.6	
		BETA: 1.7			BETA: 2.3	
lower	0.454	0.584	0.574	0.529	0.581	0.575
		0.583			0.532	
		ALPHA: -0.1			ALPHA: -1.9	
		BETA: 4.1			BETA: 1.7	



FLIGHT: 54 MACH: 1.307 ALTITUDE(ft): 40121. KEAS: 371.  
 PSINF(psia): 2.70 PTINF(psia): 7.57 TSINF(F): -77. TTINF(F): 54.  
 ALPHA(deg): 5.1 BETA(deg): -1.8 PHI(deg): 1.3

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.956	1.000	1.410	1.388	0.894	0.980
15	21.1	0.954	0.998	1.408	1.394	0.887	0.972
14	18.3	0.957	1.001	1.410	1.384	0.900	0.965
13	15.7	0.957	1.002	1.411	1.382	0.902	0.961
12	13.3	0.957	1.001	1.410	1.384	0.899	0.958
10	11.1	0.954	0.998	1.408	1.395	0.886	0.955
09	9.1	0.955	0.998	1.408	1.394	0.887	0.955
08	7.3	0.956	1.000	1.410	1.387	0.896	0.958
07	5.7	0.951	0.994	1.405	1.410	0.867	0.956
06	4.3	0.952	0.995	1.406	1.405	0.873	0.962
05	3.1	0.981	1.033	1.432	1.250	1.081	1.001
04	2.1	0.979	1.030	1.430	1.264	1.060	1.006
03	1.3	0.969	1.017	1.421	1.321	0.982	1.002
02	0.7	0.731	0.735	1.183	1.965	0.377	0.734
01	0.3	0.571	0.571	0.977	--	--	0.571

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.961	1.005	1.397	1.362	0.927	0.985
15	21.1	0.958	1.002	1.395	1.375	0.911	0.976
14	18.3	0.952	0.996	1.389	1.408	0.870	0.960
13	15.7	0.899	0.941	1.340	1.609	0.650	0.902
12	13.3	0.860	0.900	1.302	1.713	0.556	0.861
10	11.1	0.789	0.826	1.230	1.857	0.446	0.790
09	9.1	0.650	0.679	1.069	2.134	0.290	0.650
08	7.3	0.769	0.805	1.209	1.894	0.422	0.771
07	5.7	0.850	0.889	1.292	1.735	0.537	0.855
06	4.3	0.908	0.949	1.348	1.580	0.678	0.917
05	3.1	0.957	1.007	1.393	1.383	0.901	0.977
04	2.1	0.974	1.025	1.409	1.291	1.022	1.001
03	1.3	0.965	1.013	1.401	1.340	0.956	0.998
02	0.7	0.781	0.785	1.221	1.873	0.436	0.784
01	0.3	0.522	0.522	0.877	--	--	0.522

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.911  
 (6) 0.936  
 (7) 0.889  
 (1) 0.891 (2) 0.878 (3) 0.863 (4) 0.872

5-HOLE PROBE offset rake centerline rake  
 upper 0.934 0.960  
 lower 1.157 1.344

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.612			0.567		
	0.653	0.953	0.568	0.559	0.952	0.482
	0.555			0.485		
	ALPHA: -2.2			ALPHA: -2.8		
	BETA: -3.5			BETA: -2.6		
lower	0.576			0.612		
	0.495	0.693	0.402	0.577	0.952	0.548
	0.572			0.528		
	ALPHA: -0.5			ALPHA: -3.2		
	BETA: -5.4			BETA: -1.1		

FLIGHT: 54 MACH: 0.909 ALTITUDE(ft): 25087. KEAS: 366.  
 PSINF(psia): 5.43 PTINF(psia): 9.28 TSINF(F): -18. TTINF(F): 55.  
 ALPHA(deg): 5.2 BETA(deg): 0.3 PHI(deg): 0.6

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.995	0.995	0.847	--	--	0.995	0.760	1.160
15	21.1	0.993	0.993	0.845	--	--	0.993	0.753	1.165
14	18.3	0.994	0.994	0.845	--	--	0.994	0.745	1.175
13	15.7	0.995	0.995	0.847	--	--	0.995	0.738	1.184
12	13.3	0.996	0.996	0.847	--	--	0.996	0.731	1.192
10	11.1	0.996	0.996	0.848	--	--	0.996	0.725	1.200
09	9.1	0.994	0.994	0.846	--	--	0.994	0.732	1.189
08	7.3	0.996	0.996	0.848	--	--	0.996	0.756	1.164
07	5.7	0.994	0.994	0.845	--	--	0.994	0.774	1.142
06	4.3	0.996	0.996	0.847	--	--	0.996	0.793	1.123
05	3.1	0.994	0.994	0.845	--	--	0.994	0.806	1.106
04	2.1	0.994	0.994	0.846	--	--	0.994	0.820	1.093
03	1.3	0.993	0.993	0.844	--	--	0.993	0.828	1.082
02	0.7	0.899	0.899	0.744	--	--	0.899	0.735	1.073
01	0.3	0.822	0.822	0.643	--	--	0.822	0.638	1.068

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.996	0.996	0.843	--	--	0.996	0.765	1.155
15	21.1	0.993	0.993	0.840	--	--	0.993	0.759	1.159
14	18.3	0.993	0.993	0.840	--	--	0.993	0.752	1.166
13	15.7	0.989	0.989	0.836	--	--	0.989	0.741	1.173
12	13.3	0.985	0.985	0.833	--	--	0.985	0.732	1.179
10	11.1	0.981	0.981	0.828	--	--	0.981	0.722	1.185
09	9.1	0.976	0.976	0.824	--	--	0.976	0.725	1.176
08	7.3	0.975	0.975	0.822	--	--	0.975	0.743	1.154
07	5.7	0.979	0.979	0.826	--	--	0.979	0.765	1.136
06	4.3	0.982	0.982	0.829	--	--	0.982	0.783	1.119
05	3.1	0.985	0.985	0.833	--	--	0.985	0.799	1.105
04	2.1	0.990	0.990	0.837	--	--	0.990	0.815	1.093
03	1.3	0.988	0.988	0.835	--	--	0.988	0.821	1.084
02	0.7	0.920	0.920	0.764	--	--	0.920	0.756	1.077
01	0.3	0.819	0.819	0.633	--	--	0.819	0.629	1.072

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.957  
 (6) 0.957  
 (7) 0.959  
 (1) 1.055 (2) 1.082 (3) 1.067 (4) 1.060

5-HOLE PROBE offset rake centerline rake  
 upper 1.155 1.160  
 lower 1.187 1.203

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.678			0.622	
	0.684	0.991	0.707	0.640	0.995	0.617
		0.699			0.639	
	ALPHA:	1.0		ALPHA:	0.7	
	BETA:	1.1		BETA:	-0.9	
lower		0.603			0.699	
	0.613	0.976	0.705	0.704	0.994	0.653
		0.602			0.669	
	ALPHA:	0.0		ALPHA:	-1.4	
	BETA:	4.1		BETA:	-2.3	

FLIGHT: 54 MACH: 0.919 ALTITUDE(ft): 25150. KEAS: 369.  
 PSINF(psia): 5.42 PTINF(psia): 9.36 TSINF(F): -18. TTINF(F): 56.  
 ALPHA(deg): 5.2 BETA(deg): 2.1 PHI(deg): 4.5

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.002	1.002	0.855	--	--	1.002	0.762	1.177
15	21.1	1.000	1.000	0.853	--	--	1.000	0.756	1.182
14	18.3	1.001	1.001	0.854	--	--	1.001	0.749	1.192
13	15.7	1.002	1.002	0.855	--	--	1.002	0.742	1.200
12	13.3	1.002	1.002	0.855	--	--	1.002	0.735	1.208
10	11.1	1.001	1.001	0.854	--	--	1.001	0.728	1.216
09	9.1	0.998	0.998	0.851	--	--	0.998	0.734	1.205
08	7.3	0.999	0.999	0.852	--	--	0.999	0.758	1.179
07	5.7	0.994	0.994	0.847	--	--	0.994	0.774	1.156
06	4.3	0.993	0.993	0.846	--	--	0.993	0.790	1.135
05	3.1	0.986	0.986	0.839	--	--	0.986	0.799	1.118
04	2.1	0.985	0.985	0.838	--	--	0.985	0.811	1.104
03	1.3	0.983	0.983	0.836	--	--	0.983	0.819	1.092
02	0.7	0.937	0.937	0.789	--	--	0.937	0.779	1.084
01	0.3	0.870	0.870	0.710	--	--	0.870	0.706	1.078

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.998	0.998	0.843	--	--	0.998	0.770	1.165
15	21.1	0.995	0.995	0.840	--	--	0.995	0.761	1.170
14	18.3	0.995	0.995	0.840	--	--	0.995	0.752	1.180
13	15.7	0.995	0.995	0.840	--	--	0.995	0.744	1.190
12	13.3	0.996	0.996	0.841	--	--	0.996	0.738	1.198
10	11.1	0.996	0.996	0.841	--	--	0.996	0.731	1.206
09	9.1	0.994	0.994	0.839	--	--	0.994	0.736	1.197
08	7.3	0.993	0.993	0.838	--	--	0.993	0.756	1.174
07	5.7	0.995	0.995	0.840	--	--	0.995	0.775	1.154
06	4.3	0.994	0.994	0.840	--	--	0.994	0.791	1.137
05	3.1	0.993	0.993	0.838	--	--	0.993	0.803	1.121
04	2.1	0.994	0.994	0.839	--	--	0.994	0.815	1.109
03	1.3	0.992	0.992	0.837	--	--	0.992	0.822	1.099
02	0.7	0.896	0.896	0.734	--	--	0.896	0.725	1.091
01	0.3	0.798	0.798	0.598	--	--	0.798	0.593	1.086

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.965  
 (6) 0.964  
 (7) 0.966  
 (1) 1.070 (2) 1.095 (3) 1.078 (4) 1.069

5-HOLE PROBE offset rake centerline rake  
 upper 1.165 1.177  
 lower 1.210 1.219

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.653	0.677	0.740	0.606	0.633	0.660
		0.696			0.635	
	ALPHA:	0.9		ALPHA:	0.1	
	BETA:	4.2		BETA:	2.1	
lower	0.587	0.597	0.744	0.669	0.701	0.692
		0.595			0.667	
	ALPHA:	-0.1		ALPHA:	-1.5	
	BETA:	6.7		BETA:	1.1	

FLIGHT: 54 MACH: 0.911 ALTITUDE(ft): 25242. KEAS: 365.  
 PSINF(psia): 5.40 PTINF(psia): 9.24 TSINF(F): -19. TTINF(F): 54.  
 ALPHA(deg): 5.3 BETA(deg): -1.9 PHI(deg): -9.9

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.998	0.998	0.852	--	--	0.998	0.763	1.162
15	21.1	0.997	0.997	0.851	--	--	0.997	0.758	1.167
14	18.3	0.998	0.998	0.852	--	--	0.998	0.751	1.175
13	15.7	0.998	0.998	0.852	--	--	0.998	0.744	1.183
12	13.3	0.998	0.998	0.852	--	--	0.998	0.738	1.190
10	11.1	0.997	0.997	0.851	--	--	0.997	0.731	1.196
09	9.1	0.994	0.994	0.848	--	--	0.994	0.737	1.186
08	7.3	0.994	0.994	0.848	--	--	0.994	0.759	1.161
07	5.7	0.991	0.991	0.846	--	--	0.991	0.776	1.140
06	4.3	0.995	0.995	0.849	--	--	0.995	0.796	1.121
05	3.1	0.993	0.993	0.847	--	--	0.993	0.809	1.105
04	2.1	0.995	0.995	0.849	--	--	0.995	0.823	1.091
03	1.3	0.991	0.991	0.845	--	--	0.991	0.829	1.080
02	0.7	0.918	0.918	0.769	--	--	0.918	0.760	1.072
01	0.3	0.845	0.845	0.679	--	--	0.845	0.674	1.067

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.002	1.002	0.880	--	--	1.002	0.768	1.161
15	21.1	1.000	1.000	0.878	--	--	1.000	0.771	1.155
14	18.3	1.001	1.001	0.879	--	--	1.001	0.783	1.144
13	15.7	0.995	0.995	0.873	--	--	0.995	0.786	1.133
12	13.3	0.967	0.967	0.845	--	--	0.967	0.765	1.123
10	11.1	0.950	0.950	0.828	--	--	0.950	0.755	1.114
09	9.1	0.915	0.915	0.791	--	--	0.915	0.727	1.103
08	7.3	0.848	0.848	0.710	--	--	0.848	0.653	1.090
07	5.7	0.818	0.818	0.669	--	--	0.818	0.623	1.078
06	4.3	0.891	0.891	0.764	--	--	0.891	0.732	1.068
05	3.1	0.918	0.918	0.794	--	--	0.918	0.772	1.059
04	2.1	0.947	0.947	0.825	--	--	0.947	0.810	1.052
03	1.3	0.974	0.974	0.852	--	--	0.974	0.844	1.046
02	0.7	0.958	0.958	0.837	--	--	0.958	0.832	1.042
01	0.3	0.859	0.859	0.725	--	--	0.859	0.722	1.039

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.961  
 (6) 0.960  
 (7) 0.961  
 (1) 1.039 (2) 1.035 (3) 1.064 (4) 1.061

5-HOLE PROBE offset rake centerline rake  
 upper 1.161 1.162  
 lower 1.110 1.199

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.685			0.629	
	0.736	0.999	0.662	0.680	0.999	0.579
		0.703			0.634	
		ALPHA: 0.8			ALPHA: 0.2	
		BETA: -3.5			BETA: -3.9	
lower		0.605			0.724	
	0.726	0.917	0.539	0.714	0.994	0.639
		0.603			0.643	
		ALPHA: -0.1			ALPHA: -3.7	
		BETA: -9.1			BETA: -3.4	

FLIGHT: 54 MACH: 0.948 ALTITUDE(ft): 24983. KEAS: 382.  
 PSINF(psia): 5.46 PTINF(psia): 9.74 TSINF(F): -18. TTINF(F): 61.  
 ALPHA(deg): 4.9 BETA(deg): 0.2 PHI(deg): 3.0

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.000	1.000	0.852	--	--	1.000	0.760	1.217
15	21.1	0.999	0.999	0.850	--	--	0.999	0.754	1.223
14	18.3	1.000	1.000	0.852	--	--	1.000	0.747	1.232
13	15.7	1.000	1.000	0.851	--	--	1.000	0.739	1.241
12	13.3	1.000	1.000	0.851	--	--	1.000	0.732	1.250
10	11.1	1.000	1.000	0.851	--	--	1.000	0.725	1.257
09	9.1	0.997	0.997	0.849	--	--	0.997	0.732	1.246
08	7.3	0.999	0.999	0.851	--	--	0.999	0.757	1.219
07	5.7	0.997	0.997	0.848	--	--	0.997	0.775	1.195
06	4.3	0.998	0.998	0.850	--	--	0.998	0.795	1.175
05	3.1	0.996	0.996	0.848	--	--	0.996	0.808	1.157
04	2.1	0.995	0.995	0.847	--	--	0.995	0.820	1.142
03	1.3	0.991	0.991	0.843	--	--	0.991	0.826	1.130
02	0.7	0.900	0.900	0.745	--	--	0.900	0.735	1.121
01	0.3	0.821	0.821	0.642	--	--	0.821	0.637	1.115

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.001	1.001	0.850	--	--	1.001	0.763	1.215
15	21.1	0.999	0.999	0.848	--	--	0.999	0.757	1.219
14	18.3	1.000	1.000	0.849	--	--	1.000	0.751	1.228
13	15.7	0.999	0.999	0.847	--	--	0.999	0.743	1.235
12	13.3	0.999	0.999	0.847	--	--	0.999	0.736	1.243
10	11.1	0.994	0.994	0.843	--	--	0.994	0.726	1.249
09	9.1	0.990	0.990	0.839	--	--	0.990	0.731	1.238
08	7.3	0.987	0.987	0.836	--	--	0.987	0.749	1.214
07	5.7	0.991	0.991	0.840	--	--	0.991	0.772	1.192
06	4.3	0.994	0.994	0.842	--	--	0.994	0.792	1.173
05	3.1	0.995	0.995	0.844	--	--	0.995	0.807	1.156
04	2.1	0.997	0.997	0.846	--	--	0.997	0.821	1.143
03	1.3	0.998	0.998	0.847	--	--	0.998	0.831	1.132
02	0.7	0.939	0.939	0.786	--	--	0.939	0.778	1.124
01	0.3	0.825	0.825	0.644	--	--	0.825	0.640	1.118

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.980  
 (6) 0.982  
 (7) 0.990  
 (1) 1.098 (2) 1.131 (3) 1.115 (4) 1.106

5-HOLE PROBE offset rake centerline rake  
 upper 1.215 1.217  
 lower 1.252 1.261

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.685			0.626	
	0.691	0.999	0.708	0.645	1.001	0.619
		0.702			0.638	
	ALPHA:	0.8		ALPHA:	0.5	
	BETA:	0.8		BETA:	-1.0	
lower		0.574			0.704	
	0.617	0.991	0.711	0.706	0.998	0.655
		0.573			0.667	
	ALPHA:	-0.1		ALPHA:	-1.7	
	BETA:	4.1		BETA:	-2.3	

FLIGHT: 54 MACH: 0.955 ALTITUDE(ft): 25488. KEAS: 381.  
 PSINF(psia): 5.34 PTINF(psia): 9.59 TSINF(F): -19. TTINF(F): 60.  
 ALPHA(deg): 4.9 BETA(deg): 2.1 PHI(deg): 0.9

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.001	1.001	0.859	--	--	1.001	0.762	1.224
15	21.1	1.000	1.000	0.857	--	--	1.000	0.758	1.228
14	18.3	1.000	1.000	0.858	--	--	1.000	0.752	1.235
13	15.7	0.998	0.998	0.856	--	--	0.998	0.745	1.241
12	13.3	0.995	0.995	0.853	--	--	0.995	0.736	1.247
10	11.1	0.991	0.991	0.849	--	--	0.991	0.728	1.252
09	9.1	0.986	0.986	0.844	--	--	0.986	0.732	1.241
08	7.3	0.980	0.980	0.839	--	--	0.980	0.748	1.215
07	5.7	0.971	0.971	0.829	--	--	0.971	0.758	1.192
06	4.3	0.968	0.968	0.826	--	--	0.968	0.772	1.172
05	3.1	0.970	0.970	0.829	--	--	0.970	0.790	1.155
04	2.1	0.980	0.980	0.838	--	--	0.980	0.812	1.141
03	1.3	0.989	0.989	0.847	--	--	0.989	0.831	1.130
02	0.7	0.956	0.956	0.814	--	--	0.956	0.805	1.121
01	0.3	0.886	0.886	0.735	--	--	0.886	0.731	1.116

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.001	1.001	0.845	--	--	1.001	0.769	1.216
15	21.1	0.999	0.999	0.843	--	--	0.999	0.762	1.222
14	18.3	0.999	0.999	0.844	--	--	0.999	0.753	1.233
13	15.7	0.999	0.999	0.843	--	--	0.999	0.744	1.243
12	13.3	1.001	1.001	0.846	--	--	1.001	0.739	1.252
10	11.1	1.001	1.001	0.845	--	--	1.001	0.731	1.260
09	9.1	0.999	0.999	0.844	--	--	0.999	0.738	1.250
08	7.3	0.997	0.997	0.842	--	--	0.997	0.757	1.226
07	5.7	0.999	0.999	0.843	--	--	0.999	0.777	1.204
06	4.3	0.999	0.999	0.844	--	--	0.999	0.793	1.185
05	3.1	0.998	0.998	0.843	--	--	0.998	0.806	1.169
04	2.1	0.999	0.999	0.843	--	--	0.999	0.819	1.155
03	1.3	0.997	0.997	0.842	--	--	0.997	0.827	1.144
02	0.7	0.900	0.900	0.738	--	--	0.900	0.729	1.136
01	0.3	0.799	0.799	0.599	--	--	0.799	0.595	1.131

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.995  
 (6) 0.994  
 (7) 0.999  
 (1) 1.114 (2) 1.140 (3) 1.119 (4) 1.104

5-HOLE PROBE offset rake centerline rake  
 upper 1.216 1.224  
 lower 1.264 1.255

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.656	0.679	0.742	0.607	0.632	0.658
		0.699			0.633	
	ALPHA:	0.9		ALPHA:	0.0	
	BETA:	4.1		BETA:	2.0	
lower	0.591	0.576	0.746	0.658	0.695	0.693
		0.574			0.661	
	ALPHA:	-0.1		ALPHA:	-1.5	
	BETA:	6.6		BETA:	1.6	

FLIGHT: 54 MACH: 0.963 ALTITUDE(ft): 25733. KEAS: 382.  
 PSINF(psia): 5.28 PTINF(psia): 9.58 TSINF(F): -22. TTINF(F): 59.  
 ALPHA(deg): 4.8 BETA(deg): -1.7 PHI(deg): -4.2

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.001	1.001	0.858	--	--	1.001	0.765	1.233
15	21.1	1.000	1.000	0.856	--	--	1.000	0.761	1.237
14	18.3	1.001	1.001	0.857	--	--	1.001	0.755	1.245
13	15.7	1.000	1.000	0.856	--	--	1.000	0.747	1.252
12	13.3	0.998	0.998	0.855	--	--	0.998	0.740	1.259
10	11.1	0.997	0.997	0.854	--	--	0.997	0.734	1.265
09	9.1	0.993	0.993	0.850	--	--	0.993	0.739	1.253
08	7.3	0.995	0.995	0.852	--	--	0.995	0.763	1.228
07	5.7	0.995	0.995	0.851	--	--	0.995	0.782	1.205
06	4.3	0.998	0.998	0.854	--	--	0.998	0.802	1.185
05	3.1	0.998	0.998	0.854	--	--	0.998	0.817	1.168
04	2.1	0.999	0.999	0.855	--	--	0.999	0.830	1.154
03	1.3	0.998	0.998	0.854	--	--	0.998	0.838	1.142
02	0.7	0.935	0.935	0.790	--	--	0.935	0.781	1.134
01	0.3	0.851	0.851	0.690	--	--	0.851	0.685	1.128

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.003	1.003	0.896	--	--	1.003	0.770	1.229
15	21.1	1.000	1.000	0.893	--	--	1.000	0.771	1.225
14	18.3	1.000	1.000	0.893	--	--	1.000	0.778	1.216
13	15.7	0.998	0.998	0.892	--	--	0.998	0.783	1.209
12	13.3	0.991	0.991	0.884	--	--	0.991	0.781	1.202
10	11.1	0.957	0.957	0.852	--	--	0.957	0.751	1.195
09	9.1	0.936	0.936	0.830	--	--	0.936	0.740	1.181
08	7.3	0.908	0.908	0.799	--	--	0.908	0.724	1.161
07	5.7	0.904	0.904	0.795	--	--	0.904	0.736	1.144
06	4.3	0.920	0.920	0.813	--	--	0.920	0.769	1.128
05	3.1	0.941	0.941	0.835	--	--	0.941	0.805	1.115
04	2.1	0.965	0.965	0.859	--	--	0.965	0.839	1.104
03	1.3	0.960	0.960	0.854	--	--	0.960	0.842	1.095
02	0.7	0.908	0.908	0.800	--	--	0.908	0.793	1.089
01	0.3	0.819	0.819	0.690	--	--	0.819	0.687	1.084

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.991  
 (6) 0.999  
 (7) 1.008  
 (1) 1.097 (2) 1.065 (3) 1.124 (4) 1.123

5-HOLE PROBE offset rake centerline rake  
 upper 1.229 1.233  
 lower 1.192 1.267

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.737	0.998	0.660	0.680	1.001	0.579
		0.704			0.631	
	ALPHA:	1.0		ALPHA:	0.1	
	BETA:	-3.7		BETA:	-3.9	
lower	0.693	0.933	0.564	0.710	0.994	0.640
		0.567			0.638	
	ALPHA:	0.0		ALPHA:	-4.0	
	BETA:	-6.0		BETA:	-3.2	

FLIGHT: 55 MACH: 2.073 ALTITUDE(ft): 59408. KEAS: 370.  
 PSINF(psia): 1.07 PTINF(psia): 9.39 TSINF(F): -90. TTINF(F): 227.  
 ALPHA(deg): 5.1 BETA(deg): -0.1 PHI(deg): 0.1

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.669	0.995	2.104	2.091	0.972	0.955
15	21.1	0.666	0.986	2.099	2.098	0.962	0.946
14	18.3	0.666	0.986	2.098	2.098	0.961	0.943
13	15.7	0.664	0.982	2.096	2.102	0.957	0.938
12	13.3	0.666	0.988	2.100	2.097	0.964	0.942
10	11.1	0.664	0.983	2.096	2.101	0.957	0.935
09	9.1	0.663	0.978	2.093	2.105	0.952	0.935
08	7.3	0.661	0.975	2.091	2.108	0.948	0.940
07	5.7	0.662	0.977	2.093	2.106	0.951	0.949
06	4.3	0.663	0.978	2.093	2.105	0.952	0.957
05	3.1	0.663	0.980	2.094	2.104	0.953	0.964
04	2.1	0.658	0.967	2.086	2.114	0.938	0.956
03	1.3	0.649	0.944	2.070	2.135	0.909	0.937
02	0.7	0.538	0.687	1.865	2.409	0.591	0.685
01	0.3	0.412	0.460	1.601	2.753	0.347	0.460

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.661	0.983	2.075	2.109	0.946	0.943
15	21.1	0.654	0.970	2.063	2.123	0.925	0.929
14	18.3	0.649	0.961	2.054	2.136	0.907	0.920
13	15.7	0.637	0.942	2.034	2.162	0.870	0.900
12	13.3	0.622	0.922	2.007	2.198	0.823	0.879
10	11.1	0.618	0.914	1.999	2.207	0.811	0.870
09	9.1	0.627	0.925	2.015	2.187	0.838	0.884
08	7.3	0.641	0.945	2.041	2.153	0.884	0.911
07	5.7	0.653	0.964	2.062	2.125	0.922	0.937
06	4.3	0.654	0.966	2.063	2.124	0.924	0.944
05	3.1	0.651	0.961	2.057	2.132	0.913	0.946
04	2.1	0.648	0.952	2.052	2.138	0.904	0.941
03	1.3	0.635	0.922	2.029	2.168	0.862	0.916
02	0.7	0.543	0.693	1.861	2.395	0.604	0.691
01	0.3	0.374	0.418	1.499	2.862	0.294	0.417

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.059  
 (6) 1.104  
 (7) 1.014  
 (1) 0.953 (2) 0.969 (3) 0.945 (4) 0.951

5-HOLE PROBE offset rake centerline rake  
 upper 1.200 1.000  
 lower 1.059 1.013

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.369	0.387	0.384	0.310	0.336	0.302
		0.358			0.276	
		ALPHA: -1.4			ALPHA: -2.3	
		BETA: 0.8			BETA: -0.3	
lower	0.256	0.213	0.361	0.338	0.366	0.331
		0.212			0.314	
		ALPHA: 0.0			ALPHA: -2.3	
		BETA: 4.6			BETA: -0.3	



FLIGHT: 55 MACH: 2.018 ALTITUDE(ft): 57360. KEAS: 378.  
 PSINF(psia): 1.18 PTINF(psia): 9.50 TSINF(F): -95. TTINF(F): 201.  
 ALPHA(deg): 5.9 BETA(deg): 1.4 PHI(deg): 1.9

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.688	1.020	2.101	2.052	0.949	0.992
15	21.1	0.675	0.988	2.080	2.078	0.911	0.959
14	18.3	0.672	0.980	2.075	2.085	0.901	0.947
13	15.7	0.668	0.970	2.068	2.092	0.890	0.934
12	13.3	0.658	0.945	2.051	2.114	0.861	0.907
10	11.1	0.647	0.916	2.032	2.140	0.827	0.878
09	9.1	0.641	0.902	2.021	2.153	0.810	0.867
08	7.3	0.646	0.913	2.029	2.143	0.823	0.884
07	5.7	0.654	0.935	2.044	2.123	0.848	0.911
06	4.3	0.658	0.943	2.050	2.116	0.858	0.925
05	3.1	0.660	0.950	2.055	2.110	0.867	0.936
04	2.1	0.659	0.946	2.052	2.113	0.862	0.937
03	1.3	0.656	0.938	2.046	2.120	0.852	0.932
02	0.7	0.610	0.829	1.967	2.226	0.723	0.826
01	0.3	0.476	0.560	1.712	2.574	0.420	0.559

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.675	1.001	2.040	2.079	0.909	0.974
15	21.1	0.672	0.983	2.035	2.085	0.901	0.954
14	18.3	0.672	0.979	2.035	2.085	0.900	0.947
13	15.7	0.670	0.973	2.033	2.088	0.896	0.937
12	13.3	0.674	0.967	2.039	2.080	0.908	0.929
10	11.1	0.673	0.953	2.037	2.083	0.904	0.913
09	9.1	0.671	0.943	2.033	2.088	0.897	0.907
08	7.3	0.668	0.945	2.029	2.093	0.889	0.915
07	5.7	0.670	0.957	2.032	2.089	0.895	0.932
06	4.3	0.667	0.957	2.028	2.095	0.887	0.938
05	3.1	0.666	0.957	2.025	2.098	0.882	0.944
04	2.1	0.661	0.949	2.017	2.109	0.868	0.939
03	1.3	0.644	0.921	1.988	2.147	0.818	0.915
02	0.7	0.521	0.708	1.766	2.453	0.506	0.706
01	0.3	0.349	0.410	1.392	2.937	0.241	0.409

STATIC PRESSURES (/PSINF)

SURFACE (5) 1.012  
 (6) 1.129  
 (7) 0.959  
 (1) 0.928 (2) 0.929 (3) 0.904 (4) 0.890

5-HOLE PROBE offset rake centerline rake  
 upper 1.096 0.930  
 lower 1.021 0.954

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.389			0.342	
	0.358	0.676	0.400	0.307	0.687	0.319
		0.359			0.283	
		ALPHA: -1.4			ALPHA: -2.3	
		BETA: 2.0			BETA: 0.5	
lower		0.216			0.373	
	0.268	0.672	0.370	0.321	0.645	0.340
		0.214			0.299	
		ALPHA: -0.1			ALPHA: -3.4	
		BETA: 4.1			BETA: 0.8	

FLIGHT: 55 MACH: 1.943 ALTITUDE(ft): 56577. KEAS: 371.  
 PSINF(psia): 1.23 PTINF(psia): 8.78 TSINF(F): -93. TTINF(F): 184.  
 ALPHA(deg): 5.3 BETA(deg): -1.0 PHI(deg): 2.6

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.702	0.984	2.015	2.022	0.884	0.962
15	21.1	0.696	0.969	2.006	2.035	0.867	0.944
14	18.3	0.698	0.975	2.010	2.030	0.874	0.945
13	15.7	0.693	0.963	2.002	2.040	0.860	0.929
12	13.3	0.692	0.961	2.000	2.042	0.857	0.922
10	11.1	0.692	0.960	2.000	2.042	0.857	0.918
09	9.1	0.696	0.969	2.006	2.035	0.867	0.929
08	7.3	0.698	0.973	2.008	2.031	0.871	0.940
07	5.7	0.699	0.977	2.011	2.028	0.876	0.950
06	4.3	0.700	0.978	2.012	2.027	0.878	0.958
05	3.1	0.699	0.976	2.010	2.029	0.875	0.961
04	2.1	0.694	0.965	2.003	2.038	0.862	0.955
03	1.3	0.689	0.952	1.994	2.049	0.847	0.946
02	0.7	0.604	0.765	1.853	2.242	0.627	0.763
01	0.3	0.457	0.506	1.579	2.628	0.344	0.505

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.738	1.034	2.024	1.953	0.984	1.010
15	21.1	0.725	1.009	2.005	1.977	0.948	0.984
14	18.3	0.715	0.998	1.990	1.996	0.920	0.967
13	15.7	0.704	0.978	1.973	2.018	0.889	0.943
12	13.3	0.692	0.960	1.954	2.043	0.856	0.922
10	11.1	0.643	0.892	1.876	2.149	0.726	0.853
09	9.1	0.565	0.787	1.744	2.338	0.539	0.754
08	7.3	0.493	0.687	1.611	2.529	0.400	0.664
07	5.7	0.567	0.792	1.747	2.334	0.543	0.770
06	4.3	0.630	0.881	1.855	2.178	0.693	0.863
05	3.1	0.662	0.925	1.907	2.105	0.776	0.911
04	2.1	0.691	0.961	1.953	2.044	0.854	0.951
03	1.3	0.698	0.965	1.964	2.030	0.873	0.959
02	0.7	0.616	0.781	1.831	2.212	0.657	0.778
01	0.3	0.374	0.414	1.364	2.861	0.241	0.414

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.968  
 (6) 1.082  
 (7) 0.940  
 (1) 0.961 (2) 0.871 (3) 0.872 (4) 0.885

5-HOLE PROBE offset rake centerline rake  
 upper 1.084 0.907  
 lower 0.942 0.941

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.426			0.360	
	0.428	0.730	0.408	0.339	0.704	0.318
		0.397			0.298	
		ALPHA: -1.3			ALPHA: -2.4	
		BETA: -0.9			BETA: -0.8	
lower		0.236			0.388	
	0.323	0.600	0.300	0.361	0.696	0.355
		0.234			0.338	
		ALPHA: -0.1			ALPHA: -2.1	
		BETA: -1.2			BETA: -0.3	

FLIGHT: 55 MACH: 0.890 ALTITUDE(ft): 24686. KEAS: 361.  
 PSINF(psia): 5.53 PTINF(psia): 9.25 TSINF(F): -12. TTINF(F): 58.  
 ALPHA(deg): 6.3 BETA(deg): 0.4 PHI(deg): -30.1

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.994	0.994	0.843	--	--	0.994	0.761	1.134
15	21.1	0.990	0.990	0.840	--	--	0.990	0.753	1.139
14	18.3	0.992	0.992	0.842	--	--	0.992	0.746	1.148
13	15.7	0.991	0.991	0.841	--	--	0.991	0.737	1.157
12	13.3	0.992	0.992	0.841	--	--	0.992	0.730	1.165
10	11.1	0.993	0.993	0.842	--	--	0.993	0.724	1.172
09	9.1	0.988	0.988	0.838	--	--	0.988	0.729	1.162
08	7.3	0.992	0.992	0.842	--	--	0.992	0.754	1.139
07	5.7	0.989	0.989	0.838	--	--	0.989	0.770	1.118
06	4.3	0.993	0.993	0.843	--	--	0.993	0.791	1.100
05	3.1	0.989	0.989	0.839	--	--	0.989	0.801	1.085
04	2.1	0.990	0.990	0.839	--	--	0.990	0.814	1.072
03	1.3	0.989	0.989	0.838	--	--	0.989	0.823	1.061
02	0.7	0.894	0.894	0.736	--	--	0.894	0.726	1.054
01	0.3	0.817	0.817	0.633	--	--	0.817	0.628	1.048

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.995	0.995	0.839	--	--	0.995	0.769	1.126
15	21.1	0.989	0.989	0.833	--	--	0.989	0.758	1.132
14	18.3	0.991	0.991	0.835	--	--	0.991	0.751	1.142
13	15.7	0.990	0.990	0.834	--	--	0.990	0.740	1.151
12	13.3	0.994	0.994	0.838	--	--	0.994	0.737	1.160
10	11.1	0.994	0.994	0.838	--	--	0.994	0.729	1.168
09	9.1	0.992	0.992	0.836	--	--	0.992	0.735	1.160
08	7.3	0.991	0.991	0.835	--	--	0.991	0.754	1.138
07	5.7	0.992	0.992	0.835	--	--	0.992	0.772	1.119
06	4.3	0.992	0.992	0.835	--	--	0.992	0.788	1.102
05	3.1	0.988	0.988	0.831	--	--	0.988	0.797	1.088
04	2.1	0.989	0.989	0.833	--	--	0.989	0.809	1.076
03	1.3	0.991	0.991	0.835	--	--	0.991	0.821	1.066
02	0.7	0.911	0.911	0.749	--	--	0.911	0.741	1.059
01	0.3	0.806	0.806	0.608	--	--	0.806	0.604	1.054

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.948  
 (6) 0.947  
 (7) 0.944  
 (1) 1.038 (2) 1.064 (3) 1.047 (4) 1.042

5-HOLE PROBE offset rake centerline rake  
 upper 1.126 1.134  
 lower 1.172 1.175

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.680	0.678	0.707	0.622	0.639	0.617
		0.696		0.625		
		ALPHA: 0.9		ALPHA: 0.1		
		BETA: 1.3		BETA: -0.9		
lower	0.611	0.543	0.711	0.651	0.701	0.651
		0.541		0.667		
		ALPHA: -0.1		ALPHA: -1.3		
		BETA: 4.4		BETA: -2.3		

FLIGHT: 55 MACH: 0.892 ALTITUDE(ft): 24929. KEAS: 360.  
 PSINF(psia): 5.47 PTINF(psia): 9.17 TSINF(F): -16. TTINF(F): 54.  
 ALPHA(deg): 5.6 BETA(deg): 2.2 PHI(deg): 1.0

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.001	1.001	0.849	--	--	1.001	0.760	1.144
15	21.1	0.998	0.998	0.847	--	--	0.998	0.753	1.148
14	18.3	1.000	1.000	0.849	--	--	1.000	0.749	1.155
13	15.7	0.999	0.999	0.848	--	--	0.999	0.742	1.162
12	13.3	0.999	0.999	0.847	--	--	0.999	0.735	1.169
10	11.1	0.995	0.995	0.844	--	--	0.995	0.725	1.175
09	9.1	0.986	0.986	0.835	--	--	0.986	0.725	1.165
08	7.3	0.986	0.986	0.835	--	--	0.986	0.747	1.141
07	5.7	0.985	0.985	0.834	--	--	0.985	0.765	1.120
06	4.3	0.992	0.992	0.841	--	--	0.992	0.789	1.102
05	3.1	0.991	0.991	0.840	--	--	0.991	0.803	1.087
04	2.1	0.994	0.994	0.843	--	--	0.994	0.817	1.074
03	1.3	0.993	0.993	0.842	--	--	0.993	0.827	1.063
02	0.7	0.949	0.949	0.797	--	--	0.949	0.789	1.055
01	0.3	0.878	0.878	0.716	--	--	0.878	0.711	1.050

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	0.998	0.998	0.838	--	--	0.998	0.767	1.134
15	21.1	0.994	0.994	0.833	--	--	0.994	0.757	1.139
14	18.3	0.995	0.995	0.834	--	--	0.995	0.749	1.149
13	15.7	0.993	0.993	0.832	--	--	0.993	0.738	1.159
12	13.3	0.997	0.997	0.836	--	--	0.997	0.734	1.168
10	11.1	0.999	0.999	0.839	--	--	0.999	0.730	1.175
09	9.1	0.995	0.995	0.834	--	--	0.995	0.732	1.167
08	7.3	0.995	0.995	0.835	--	--	0.995	0.753	1.145
07	5.7	0.995	0.995	0.834	--	--	0.995	0.771	1.126
06	4.3	0.996	0.996	0.835	--	--	0.996	0.787	1.109
05	3.1	0.995	0.995	0.834	--	--	0.995	0.800	1.094
04	2.1	0.996	0.996	0.836	--	--	0.996	0.812	1.082
03	1.3	0.994	0.994	0.834	--	--	0.994	0.819	1.072
02	0.7	0.905	0.905	0.737	--	--	0.905	0.729	1.065
01	0.3	0.806	0.806	0.603	--	--	0.806	0.598	1.060

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.954  
 (6) 0.954  
 (7) 0.950  
 (1) 1.044 (2) 1.069 (3) 1.050 (4) 1.042

5-HOLE PROBE offset rake centerline rake  
 upper 1.134 1.144  
 lower 1.179 1.178

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.655	0.680	0.742	0.604	0.635	0.660
		0.697			0.626	
	ALPHA:	0.8		ALPHA:	-0.3	
	BETA:	4.3		BETA:	2.2	
lower	0.589	0.555	0.745	0.666	0.695	0.689
		0.552			0.666	
	ALPHA:	-0.1		ALPHA:	-1.3	
	BETA:	6.7		BETA:	1.1	

FLIGHT: 55 MACH: 0.906 ALTITUDE(ft): 25087. KEAS: 364.  
 PSINF(psia): 5.43 PTINF(psia): 9.25 TSINF(F): -14. TTINF(F): 59.  
 ALPHA(deg): 5.3 BETA(deg): -1.6 PHI(deg): 1.4

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.996	0.996	0.849	--	--	0.996	0.763	1.153
15	21.1	0.994	0.994	0.847	--	--	0.994	0.756	1.158
14	18.3	0.996	0.996	0.850	--	--	0.996	0.751	1.167
13	15.7	0.995	0.995	0.849	--	--	0.995	0.742	1.175
12	13.3	0.997	0.997	0.850	--	--	0.997	0.737	1.183
10	11.1	0.997	0.997	0.850	--	--	0.997	0.730	1.190
09	9.1	0.993	0.993	0.847	--	--	0.993	0.736	1.180
08	7.3	0.996	0.996	0.850	--	--	0.996	0.761	1.156
07	5.7	0.993	0.993	0.847	--	--	0.993	0.777	1.134
06	4.3	0.996	0.996	0.850	--	--	0.996	0.797	1.115
05	3.1	0.994	0.994	0.847	--	--	0.994	0.809	1.099
04	2.1	0.997	0.997	0.850	--	--	0.997	0.824	1.086
03	1.3	0.994	0.994	0.848	--	--	0.994	0.832	1.075
02	0.7	0.917	0.917	0.767	--	--	0.917	0.758	1.067
01	0.3	0.838	0.838	0.667	--	--	0.838	0.663	1.062

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.003	1.003	0.872	--	--	1.003	0.773	1.149
15	21.1	0.998	0.998	0.868	--	--	0.998	0.774	1.143
14	18.3	1.000	1.000	0.870	--	--	1.000	0.787	1.131
13	15.7	0.989	0.989	0.860	--	--	0.989	0.785	1.120
12	13.3	0.978	0.978	0.849	--	--	0.978	0.784	1.110
10	11.1	0.956	0.956	0.827	--	--	0.956	0.768	1.101
09	9.1	0.913	0.913	0.780	--	--	0.913	0.729	1.091
08	7.3	0.817	0.817	0.659	--	--	0.817	0.611	1.081
07	5.7	0.795	0.795	0.626	--	--	0.795	0.587	1.072
06	4.3	0.895	0.895	0.760	--	--	0.895	0.735	1.064
05	3.1	0.925	0.925	0.793	--	--	0.925	0.776	1.057
04	2.1	0.952	0.952	0.822	--	--	0.952	0.811	1.051
03	1.3	0.975	0.975	0.846	--	--	0.975	0.839	1.047
02	0.7	0.958	0.958	0.829	--	--	0.958	0.825	1.043
01	0.3	0.865	0.865	0.723	--	--	0.865	0.721	1.041

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.953  
 (6) 0.957  
 (7) 0.955  
 (1) 1.030 (2) 1.049 (3) 1.058 (4) 1.057

5-HOLE PROBE offset rake centerline rake  
 upper 1.149 1.153  
 lower 1.097 1.193

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.684			0.628	
	0.730	0.995	0.664	0.673	0.997	0.580
		0.702			0.620	
		ALPHA: 0.8			ALPHA: -0.3	
		BETA: -3.2			BETA: -3.6	
lower		0.545			0.719	
	0.731	0.915	0.520	0.714	0.993	0.639
		0.544			0.644	
		ALPHA: -0.1			ALPHA: -3.4	
		BETA: -10.0			BETA: -3.4	

FLIGHT: 55 MACH: 1.120 ALTITUDE(ft): 25736. KEAS: 444.  
 PSINF(psia): 5.28 PTINF(psia): 11.56 TSINF(F): -16. TTINF(F): 95.  
 ALPHA(deg): 4.1 BETA(deg): 0.1 PHI(deg): 0.8

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.991	0.991	0.982	--	--	0.991	0.775	1.459
15	21.1	0.989	0.989	0.980	--	--	0.989	0.768	1.466
14	18.3	0.991	0.991	0.982	--	--	0.991	0.762	1.477
13	15.7	0.989	0.989	0.981	--	--	0.989	0.753	1.487
12	13.3	0.992	0.992	0.983	--	--	0.992	0.749	1.497
10	11.1	0.991	0.991	0.982	--	--	0.991	0.741	1.506
09	9.1	0.987	0.987	0.979	--	--	0.987	0.758	1.477
08	7.3	0.989	0.989	0.981	--	--	0.989	0.803	1.416
07	5.7	0.985	0.985	0.977	--	--	0.985	0.837	1.362
06	4.3	0.990	0.990	0.982	--	--	0.990	0.876	1.315
05	3.1	0.988	0.988	0.979	--	--	0.988	0.903	1.275
04	2.1	0.988	0.988	0.979	--	--	0.988	0.927	1.241
03	1.3	0.981	0.981	0.973	--	--	0.981	0.941	1.214
02	0.7	0.803	0.803	0.785	--	--	0.803	0.765	1.194
01	0.3	0.699	0.699	0.632	--	--	0.699	0.621	1.180

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	0.994	0.994	0.964	--	--	0.994	0.781	1.455
15	21.1	0.989	0.989	0.959	--	--	0.989	0.772	1.460
14	18.3	0.990	0.990	0.960	--	--	0.990	0.767	1.468
13	15.7	0.989	0.989	0.959	--	--	0.989	0.760	1.476
12	13.3	0.992	0.992	0.962	--	--	0.992	0.758	1.483
10	11.1	0.984	0.984	0.955	--	--	0.984	0.746	1.490
09	9.1	0.978	0.978	0.949	--	--	0.978	0.757	1.464
08	7.3	0.971	0.971	0.944	--	--	0.971	0.788	1.411
07	5.7	0.975	0.975	0.947	--	--	0.975	0.826	1.365
06	4.3	0.980	0.980	0.951	--	--	0.980	0.860	1.324
05	3.1	0.986	0.986	0.957	--	--	0.986	0.891	1.289
04	2.1	0.988	0.988	0.959	--	--	0.988	0.914	1.260
03	1.3	0.987	0.987	0.958	--	--	0.987	0.930	1.236
02	0.7	0.861	0.861	0.831	--	--	0.861	0.815	1.219
01	0.3	0.707	0.707	0.616	--	--	0.707	0.607	1.207

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.947  
 (6) 0.951  
 (7) 0.886  
 (1) 1.181 (2) 1.216 (3) 1.187 (4) 1.154

5-HOLE PROBE offset rake centerline rake  
 upper 1.455 1.459  
 lower 1.493 1.510

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.659			0.603		
	0.679	0.987	0.698	0.635	0.992	0.601
		0.703			0.608	
	ALPHA:	2.0		ALPHA:	0.2	
	BETA:	0.9		BETA:	-1.3	
lower	0.409			0.685		
	0.601	0.976	0.689	0.700	0.988	0.632
		0.400			0.654	
	ALPHA:	-0.2		ALPHA:	-1.4	
	BETA:	3.8		BETA:	-3.0	

FLIGHT: 55 MACH: 1.120 ALTITUDE(ft): 25910. KEAS: 442.  
 PSINF(psia): 5.24 PTINF(psia): 11.47 TSINF(F): -25. TTINF(F): 84.  
 ALPHA(deg): 4.1 BETA(deg): 2.0 PHI(deg): -1.8

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	----INTERPOLATED-PS---- MACH PS/PSINF	PT/PTINF	MACH PS/PSINF
16	24.1	0.993	0.993	0.964	--	--	0.993 0.777 1.458
15	21.1	0.991	0.991	0.963	--	--	0.991 0.773 1.461
14	18.3	0.993	0.993	0.965	--	--	0.993 0.772 1.465
13	15.7	0.991	0.991	0.963	--	--	0.991 0.767 1.469
12	13.3	0.989	0.989	0.961	--	--	0.989 0.762 1.473
10	11.1	0.976	0.976	0.949	--	--	0.976 0.746 1.477
09	9.1	0.965	0.965	0.940	--	--	0.965 0.753 1.450
08	7.3	0.968	0.968	0.942	--	--	0.968 0.793 1.400
07	5.7	0.971	0.971	0.945	--	--	0.971 0.828 1.355
06	4.3	0.982	0.982	0.955	--	--	0.982 0.867 1.316
05	3.1	0.983	0.983	0.955	--	--	0.983 0.892 1.282
04	2.1	0.985	0.985	0.958	--	--	0.985 0.915 1.255
03	1.3	0.986	0.986	0.959	--	--	0.986 0.932 1.232
02	0.7	0.914	0.914	0.890	--	--	0.914 0.875 1.215
01	0.3	0.792	0.792	0.748	--	--	0.792 0.741 1.204

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	----INTERPOLATED-PS---- MACH PS/PSINF	PT/PTINF	MACH PS/PSINF
16	24.1	0.994	0.994	0.958	--	--	0.994 0.786 1.447
15	21.1	0.988	0.988	0.953	--	--	0.988 0.775 1.454
14	18.3	0.991	0.991	0.955	--	--	0.991 0.769 1.467
13	15.7	0.990	0.990	0.954	--	--	0.990 0.759 1.479
12	13.3	0.996	0.996	0.959	--	--	0.996 0.757 1.490
10	11.1	0.993	0.993	0.957	--	--	0.993 0.747 1.500
09	9.1	0.990	0.990	0.954	--	--	0.990 0.762 1.475
08	7.3	0.987	0.987	0.952	--	--	0.987 0.797 1.422
07	5.7	0.990	0.990	0.954	--	--	0.990 0.833 1.375
06	4.3	0.992	0.992	0.956	--	--	0.992 0.864 1.334
05	3.1	0.989	0.989	0.954	--	--	0.989 0.887 1.298
04	2.1	0.987	0.987	0.951	--	--	0.987 0.906 1.269
03	1.3	0.977	0.977	0.942	--	--	0.977 0.914 1.245
02	0.7	0.796	0.796	0.744	--	--	0.796 0.726 1.227
01	0.3	0.678	0.678	0.553	--	--	0.678 0.543 1.215

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.949  
 (6) 0.963  
 (7) 0.893  
 (1) 1.187 (2) 1.227 (3) 1.210 (4) 1.181

5-HOLE PROBE offset rake centerline rake  
 upper 1.447 1.458  
 lower 1.505 1.478

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.638	0.655	0.741	0.588	0.607	0.650
		0.700			0.610	
	ALPHA:	2.1		ALPHA:	0.1	
	BETA:	4.9		BETA:	2.4	
lower	0.567	0.412	0.738	0.634	0.669	0.677
		0.401			0.647	
	ALPHA:	-0.3		ALPHA:	-1.0	
	BETA:	7.2		BETA:	2.0	

FLIGHT: 55 MACH: 1.137 ALTITUDE(ft): 25976. KEAS: 449.  
 PSINF(psia): 5.23 PTINF(psia): 11.69 TSINF(F): -17. TTINF(F): 98.  
 ALPHA(deg): 4.1 BETA(deg): -1.8 PHI(deg): 1.5

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.989	0.989	1.020	1.197	0.926	0.962 0.768 1.481
15	21.1	0.988	0.988	1.019	1.203	0.919	0.959 0.763 1.487
14	18.3	0.991	0.991	1.021	1.188	0.937	0.958 0.757 1.497
13	15.7	0.988	0.988	1.019	1.205	0.917	0.950 0.745 1.507
12	13.3	0.990	0.990	1.020	1.191	0.933	0.949 0.740 1.516
10	11.1	0.988	0.988	1.019	1.203	0.919	0.941 0.730 1.524
09	9.1	0.985	0.986	1.016	1.221	0.897	0.953 0.756 1.490
08	7.3	0.988	0.988	1.019	1.204	0.918	0.976 0.815 1.421
07	5.7	0.987	0.987	1.017	1.215	0.905	0.982 0.859 1.360
06	4.3	0.992	0.992	1.022	1.182	0.945	0.990 0.903 1.307
05	3.1	0.991	0.991	1.021	1.185	0.941	0.991 0.936 1.261
04	2.1	0.991	0.991	1.021	1.187	0.938	0.991 0.963 1.223
03	1.3	0.986	0.986	1.017	1.220	0.899	0.986 0.980 1.192
02	0.7	0.823	0.823	0.855	--	--	0.823 0.833 1.169
01	0.3	0.705	0.705	0.695	--	--	0.705 0.684 1.154

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH PS/PSINF
16	24.1	0.993	0.993	1.023	1.170	0.959	0.966 0.781 1.472
15	21.1	0.989	0.989	1.019	1.201	0.921	0.959 0.781 1.465
14	18.3	0.990	0.990	1.020	1.193	0.931	0.957 0.793 1.452
13	15.7	0.987	0.987	1.018	1.209	0.912	0.949 0.800 1.439
12	13.3	0.986	0.986	1.016	1.221	0.898	0.945 0.807 1.428
10	11.1	0.945	0.945	0.980	--	--	0.945 0.778 1.417
09	9.1	0.932	0.932	0.967	--	--	0.932 0.787 1.386
08	7.3	0.919	0.919	0.956	--	--	0.919 0.809 1.338
07	5.7	0.932	0.932	0.967	--	--	0.932 0.853 1.295
06	4.3	0.952	0.952	0.986	--	--	0.952 0.901 1.258
05	3.1	0.969	0.969	1.002	1.318	0.788	0.969 0.941 1.226
04	2.1	0.975	0.975	1.006	1.288	0.821	0.974 0.965 1.199
03	1.3	0.905	0.905	0.942	--	--	0.905 0.915 1.178
02	0.7	0.759	0.759	0.774	--	--	0.759 0.757 1.162
01	0.3	0.650	0.650	0.597	--	--	0.650 0.588 1.151

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.925  
 (6) 0.956  
 (7) 0.888  
 (1) 1.120 (2) 1.167 (3) 1.169 (4) 1.116

5-HOLE PROBE offset rake centerline rake  
 upper 1.472 1.481  
 lower 1.413 1.528

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.652			0.604		
	0.725	0.986	0.647	0.679	0.990	0.550
		0.707			0.600	
	ALPHA:	2.6		ALPHA:	-0.1	
	BETA:	-3.7		BETA:	-4.9	
lower	0.400			0.716		
	0.649	0.918	0.552	0.709	0.985	0.612
		0.393			0.617	
	ALPHA:	-0.2		ALPHA:	-4.4	
	BETA:	-4.4		BETA:	-4.3	



FLIGHT: 55 MACH: 0.807 ALTITUDE(ft): 14952. KEAS: 401.  
 PSINF(psia): 8.31 PTINF(psia): 12.75 TSINF(F): 36. TTINF(F): 100.  
 ALPHA(deg): 4.6 BETA(deg): 0.1 PHI(deg): 2.7

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.001	1.001	0.810	--	--	1.001	0.740	1.067
15	21.1	0.999	0.999	0.809	--	--	0.999	0.735	1.071
14	18.3	1.002	1.002	0.811	--	--	1.002	0.730	1.079
13	15.7	1.000	1.000	0.810	--	--	1.000	0.722	1.085
12	13.3	1.001	1.001	0.811	--	--	1.001	0.716	1.092
10	11.1	1.002	1.002	0.811	--	--	1.002	0.711	1.097
09	9.1	0.999	0.999	0.809	--	--	0.999	0.716	1.090
08	7.3	1.001	1.001	0.811	--	--	1.001	0.736	1.071
07	5.7	1.000	1.000	0.809	--	--	1.000	0.751	1.055
06	4.3	1.002	1.002	0.812	--	--	1.002	0.768	1.041
05	3.1	1.000	1.000	0.810	--	--	1.000	0.778	1.029
04	2.1	1.001	1.001	0.811	--	--	1.001	0.789	1.019
03	1.3	1.001	1.001	0.810	--	--	1.001	0.797	1.010
02	0.7	0.936	0.936	0.741	--	--	0.936	0.733	1.004
01	0.3	0.866	0.866	0.653	--	--	0.866	0.650	1.000

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.003	1.003	0.809	--	--	1.003	0.746	1.063
15	21.1	0.999	0.999	0.805	--	--	0.999	0.739	1.066
14	18.3	1.001	1.001	0.806	--	--	1.001	0.735	1.072
13	15.7	0.999	0.999	0.805	--	--	0.999	0.728	1.078
12	13.3	1.000	1.000	0.806	--	--	1.000	0.723	1.083
10	11.1	0.996	0.996	0.802	--	--	0.996	0.714	1.087
09	9.1	0.988	0.988	0.793	--	--	0.988	0.712	1.081
08	7.3	0.982	0.982	0.787	--	--	0.982	0.722	1.065
07	5.7	0.983	0.983	0.788	--	--	0.983	0.737	1.051
06	4.3	0.984	0.984	0.790	--	--	0.984	0.751	1.038
05	3.1	0.989	0.989	0.795	--	--	0.989	0.767	1.028
04	2.1	0.995	0.995	0.801	--	--	0.995	0.782	1.019
03	1.3	0.998	0.998	0.804	--	--	0.998	0.793	1.012
02	0.7	0.968	0.968	0.773	--	--	0.968	0.767	1.007
01	0.3	0.870	0.870	0.655	--	--	0.870	0.652	1.003

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.959  
 (6) 0.954  
 (7) 0.942  
 (1) 0.988 (2) 1.013 (3) 0.998 (4) 0.996

5-HOLE PROBE offset rake centerline rake  
 upper 1.063 1.067  
 lower 1.089 1.100

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.700			0.646	
	0.701	0.998	0.710	0.652	1.003	0.631
		0.700			0.640	
	ALPHA:	0.0		ALPHA:	-0.3	
	BETA:	0.4		BETA:	-0.8	
lower		0.618			0.709	
	0.634	0.988	0.707	0.711	1.000	0.668
		0.614			0.676	
	ALPHA:	-0.2		ALPHA:	-1.6	
	BETA:	3.3		BETA:	-2.0	

FLIGHT: 55 MACH: 0.806 ALTITUDE(ft): 15043. KEAS: 400.  
 PSINF(psia): 8.28 PTINF(psia): 12.69 TSINF(F): 32. TTINF(F): 96.  
 ALPHA(deg): 4.7 BETA(deg): 2.2 PHI(deg): 2.4

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.001	1.001	0.807	--	--	1.001	0.737	1.069
15	21.1	1.000	1.000	0.806	--	--	1.000	0.733	1.072
14	18.3	1.002	1.002	0.808	--	--	1.002	0.729	1.078
13	15.7	1.001	1.001	0.807	--	--	1.001	0.722	1.084
12	13.3	1.001	1.001	0.807	--	--	1.001	0.716	1.089
10	11.1	0.998	0.998	0.804	--	--	0.998	0.709	1.094
09	9.1	0.991	0.991	0.797	--	--	0.991	0.708	1.087
08	7.3	0.990	0.990	0.796	--	--	0.990	0.725	1.069
07	5.7	0.987	0.987	0.793	--	--	0.987	0.738	1.054
06	4.3	0.991	0.991	0.797	--	--	0.991	0.755	1.040
05	3.1	0.991	0.991	0.797	--	--	0.991	0.767	1.029
04	2.1	0.994	0.994	0.800	--	--	0.994	0.780	1.019
03	1.3	0.997	0.997	0.804	--	--	0.997	0.791	1.012
02	0.7	0.972	0.972	0.777	--	--	0.972	0.770	1.006
01	0.3	0.910	0.910	0.708	--	--	0.910	0.705	1.002

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.003	1.003	0.805	--	--	1.003	0.749	1.060
15	21.1	0.999	0.999	0.801	--	--	0.999	0.741	1.064
14	18.3	1.001	1.001	0.803	--	--	1.001	0.735	1.071
13	15.7	1.000	1.000	0.802	--	--	1.000	0.727	1.078
12	13.3	1.003	1.003	0.805	--	--	1.003	0.724	1.085
10	11.1	1.003	1.003	0.805	--	--	1.003	0.718	1.091
09	9.1	1.000	1.000	0.802	--	--	1.000	0.721	1.084
08	7.3	1.000	1.000	0.802	--	--	1.000	0.737	1.068
07	5.7	1.001	1.001	0.803	--	--	1.001	0.752	1.054
06	4.3	1.001	1.001	0.803	--	--	1.001	0.765	1.042
05	3.1	1.000	1.000	0.802	--	--	1.000	0.774	1.031
04	2.1	1.000	1.000	0.802	--	--	1.000	0.783	1.022
03	1.3	1.000	1.000	0.802	--	--	1.000	0.791	1.015
02	0.7	0.936	0.936	0.733	--	--	0.936	0.726	1.010
01	0.3	0.841	0.841	0.609	--	--	0.841	0.606	1.006

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.962  
 (6) 0.958  
 (7) 0.946  
 (1) 0.993 (2) 1.015 (3) 1.000 (4) 0.998

5-HOLE PROBE offset rake centerline rake  
 upper 1.060 1.069  
 lower 1.093 1.096

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.696			0.653	
	0.662	0.998	0.749	0.612	1.003	0.679
		0.697			0.640	
	ALPHA:	0.0		ALPHA:	-0.5	
	BETA:	4.2		BETA:	2.7	
lower		0.625			0.699	
	0.600	0.998	0.753	0.667	0.994	0.712
		0.621			0.681	
	ALPHA:	-0.1		ALPHA:	-0.8	
	BETA:	6.7		BETA:	2.1	

FLIGHT: 55 MACH: 0.813 ALTITUDE(ft): 15564. KEAS: 400.  
 PSINF(psia): 8.11 PTINF(psia): 12.52 TSINF(F): 33. TTINF(F): 98.  
 ALPHA(deg): 4.7 BETA(deg): -1.7 PHI(deg): 0.9

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.001	1.001	0.817	--	--	1.001	0.746	1.069
15	21.1	1.000	1.000	0.816	--	--	1.000	0.741	1.073
14	18.3	1.002	1.002	0.818	--	--	1.002	0.736	1.080
13	15.7	1.000	1.000	0.817	--	--	1.000	0.728	1.086
12	13.3	1.001	1.001	0.818	--	--	1.001	0.723	1.092
10	11.1	1.001	1.001	0.818	--	--	1.001	0.718	1.098
09	9.1	0.998	0.998	0.815	--	--	0.998	0.722	1.090
08	7.3	1.001	1.001	0.818	--	--	1.001	0.744	1.072
07	5.7	0.999	0.999	0.816	--	--	0.999	0.758	1.055
06	4.3	1.002	1.002	0.819	--	--	1.002	0.775	1.041
05	3.1	1.000	1.000	0.817	--	--	1.000	0.785	1.029
04	2.1	1.001	1.001	0.817	--	--	1.001	0.796	1.018
03	1.3	1.001	1.001	0.817	--	--	1.001	0.804	1.010
02	0.7	0.949	0.949	0.763	--	--	0.949	0.755	1.004
01	0.3	0.876	0.876	0.676	--	--	0.876	0.672	1.000

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.003	1.003	0.832	--	--	1.003	0.748	1.069
15	21.1	0.999	0.999	0.828	--	--	0.999	0.747	1.066
14	18.3	1.001	1.001	0.830	--	--	1.001	0.754	1.061
13	15.7	1.000	1.000	0.829	--	--	1.000	0.758	1.056
12	13.3	0.997	0.997	0.826	--	--	0.997	0.759	1.051
10	11.1	0.977	0.977	0.806	--	--	0.977	0.742	1.047
09	9.1	0.947	0.947	0.774	--	--	0.947	0.717	1.039
08	7.3	0.906	0.906	0.728	--	--	0.906	0.679	1.028
07	5.7	0.878	0.878	0.693	--	--	0.878	0.654	1.018
06	4.3	0.913	0.913	0.736	--	--	0.913	0.707	1.010
05	3.1	0.939	0.939	0.766	--	--	0.939	0.746	1.003
04	2.1	0.961	0.961	0.790	--	--	0.961	0.777	0.997
03	1.3	0.980	0.980	0.810	--	--	0.980	0.802	0.992
02	0.7	0.964	0.964	0.793	--	--	0.964	0.788	0.988
01	0.3	0.883	0.883	0.699	--	--	0.883	0.697	0.986

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.960  
 (6) 0.955  
 (7) 0.943  
 (1) 0.984 (2) 0.985 (3) 0.998 (4) 0.996

5-HOLE PROBE offset rake centerline rake  
 upper 1.069 1.069  
 lower 1.045 1.100

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.744	0.700	0.667	0.684	0.648	0.592
		0.703			0.636	
		ALPHA: 0.2			ALPHA: -0.5	
		BETA: -3.7			BETA: -3.6	
lower	0.741	0.622	0.556	0.721	0.730	0.650
		0.620			0.651	
		ALPHA: -0.1			ALPHA: -3.7	
		BETA: -8.7			BETA: -3.3	

FLIGHT: 55 MACH: 0.509 ALTITUDE(ft): 5790. KEAS: 303.  
 PSINF(psia): 11.87 PTINF(psia): 14.17 TSINF(F): 71. TTINF(F): 98.  
 ALPHA(deg): 6.3 BETA(deg): -0.1 PHI(deg): 1.6

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.001	1.001	0.527	--	--	1.001	0.497	1.009
15	21.1	1.000	1.000	0.526	--	--	1.000	0.495	1.009
14	18.3	1.001	1.001	0.529	--	--	1.001	0.496	1.010
13	15.7	1.000	1.000	0.527	--	--	1.000	0.494	1.011
12	13.3	1.002	1.002	0.530	--	--	1.002	0.495	1.011
10	11.1	1.002	1.002	0.529	--	--	1.002	0.494	1.012
09	9.1	1.000	1.000	0.526	--	--	1.000	0.494	1.010
08	7.3	1.002	1.002	0.529	--	--	1.002	0.503	1.006
07	5.7	1.000	1.000	0.527	--	--	1.000	0.507	1.002
06	4.3	1.002	1.002	0.530	--	--	1.002	0.515	0.998
05	3.1	1.001	1.001	0.527	--	--	1.001	0.517	0.995
04	2.1	1.001	1.001	0.529	--	--	1.001	0.521	0.993
03	1.3	1.001	1.001	0.528	--	--	1.001	0.524	0.991
02	0.7	0.977	0.977	0.493	--	--	0.977	0.490	0.990
01	0.3	0.945	0.945	0.439	--	--	0.945	0.438	0.989

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	PT/PTINF	MACH	MACH	PS/PSINF	PT/PTINF	MACH	PS/PSINF
16	24.1	1.003	1.003	0.527	--	--	1.003	0.504	1.006
15	21.1	1.000	1.000	0.522	--	--	1.000	0.499	1.007
14	18.3	1.001	1.001	0.525	--	--	1.001	0.500	1.007
13	15.7	1.000	1.000	0.523	--	--	1.000	0.497	1.008
12	13.3	1.002	1.002	0.527	--	--	1.002	0.499	1.009
10	11.1	1.003	1.003	0.527	--	--	1.003	0.498	1.010
09	9.1	1.000	1.000	0.522	--	--	1.000	0.496	1.008
08	7.3	1.000	1.000	0.523	--	--	1.000	0.502	1.005
07	5.7	0.999	0.999	0.522	--	--	0.999	0.506	1.002
06	4.3	0.999	0.999	0.522	--	--	0.999	0.509	0.999
05	3.1	0.999	0.999	0.521	--	--	0.999	0.512	0.997
04	2.1	1.000	1.000	0.523	--	--	1.000	0.517	0.995
03	1.3	1.000	1.000	0.523	--	--	1.000	0.520	0.993
02	0.7	0.984	0.984	0.499	--	--	0.984	0.497	0.992
01	0.3	0.938	0.938	0.421	--	--	0.938	0.420	0.991

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.987  
 (6) 0.984  
 (7) 0.977  
 (1) 0.987 (2) 0.994 (3) 0.986 (4) 0.990

5-HOLE PROBE offset rake centerline rake  
 upper 1.006 1.009  
 lower 1.010 1.012

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.841			0.813	
	0.834	0.998	0.837	0.808	1.003	0.799
		0.827			0.802	
		ALPHA: -1.2			ALPHA: -0.8	
		BETA: 0.2			BETA: -0.6	
lower		0.821			0.836	
	0.796	0.999	0.839	0.835	1.000	0.815
		0.818			0.817	
		ALPHA: -0.2			ALPHA: -1.6	
		BETA: 3.4			BETA: -1.7	

FLIGHT: 55 MACH: 0.523 ALTITUDE(ft): 5717. KEAS: 312.  
 PSINF(psia): 11.90 PTINF(psia): 14.34 TSINF(F): 63. TTINF(F): 91.  
 ALPHA(deg): 6.5 BETA(deg): 2.7 PHI(deg): -0.6

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH	----INTERPOLATED-PS---- PS/PSINF
16	24.1	1.001	1.001	0.538	--	1.001	0.510	1.010
		15	21.1	1.000	1.000	0.537	--	1.000 0.507 1.011
14	18.3	1.002	1.002	0.540	--	1.002	0.508	1.012
13	15.7	1.001	1.001	0.538	--	1.001	0.506	1.013
12	13.3	1.002	1.002	0.541	--	1.002	0.507	1.014
10	11.1	1.002	1.002	0.540	--	1.002	0.504	1.015
09	9.1	0.999	0.999	0.536	--	0.999	0.504	1.013
08	7.3	0.999	0.999	0.536	--	0.999	0.510	1.008
07	5.7	0.997	0.997	0.533	--	0.997	0.513	1.004
06	4.3	0.998	0.998	0.535	--	0.998	0.520	1.001
05	3.1	0.997	0.997	0.534	--	0.997	0.523	0.998
04	2.1	0.998	0.998	0.535	--	0.998	0.527	0.995
03	1.3	0.998	0.998	0.535	--	0.998	0.530	0.993
02	0.7	0.986	0.986	0.517	--	0.986	0.514	0.992
01	0.3	0.956	0.956	0.470	--	0.956	0.469	0.991

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	---UNIFORM-PT-- MACH	---UNIFORM-PT-- MACH PS/PSINF	----INTERPOLATED-PS---- PT/PTINF	----INTERPOLATED-PS---- MACH	----INTERPOLATED-PS---- PS/PSINF
16	24.1	1.003	1.003	0.545	--	1.003	0.523	1.003
15	21.1	1.000	1.000	0.540	--	1.000	0.519	1.003
14	18.3	1.001	1.001	0.542	--	1.001	0.520	1.003
13	15.7	1.000	1.000	0.541	--	1.000	0.519	1.003
12	13.3	1.003	1.003	0.544	--	1.003	0.522	1.004
10	11.1	1.003	1.003	0.544	--	1.003	0.522	1.004
09	9.1	1.000	1.000	0.541	--	1.000	0.521	1.002
08	7.3	1.001	1.001	0.542	--	1.001	0.526	0.999
07	5.7	1.001	1.001	0.542	--	1.001	0.529	0.997
06	4.3	1.001	1.001	0.542	--	1.001	0.532	0.995
05	3.1	1.000	1.000	0.541	--	1.000	0.534	0.993
04	2.1	1.001	1.001	0.541	--	1.001	0.537	0.991
03	1.3	1.001	1.001	0.542	--	1.001	0.539	0.990
02	0.7	0.978	0.978	0.509	--	0.978	0.507	0.989
01	0.3	0.930	0.930	0.429	--	0.930	0.428	0.988

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.988  
 (6) 0.985  
 (7) 0.977  
 (1) 0.982 (2) 0.994 (3) 0.986 (4) 0.994

5-HOLE PROBE offset rake centerline rake  
 upper 1.003 1.010  
 lower 1.004 1.015

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper		0.828			0.805	
	0.796	0.997	0.860	0.774	1.002	0.821
		0.814			0.795	
		ALPHA: -1.1			ALPHA: -0.7	
		BETA: 5.4			BETA: 3.3	
lower		0.813			0.811	
	0.752	0.998	0.867	0.802	0.999	0.838
		0.811			0.829	
		ALPHA: -0.2			ALPHA: 1.4	
		BETA: 8.4			BETA: 2.8	

FLIGHT: 55 MACH: 0.496 ALTITUDE(ft): 5930. KEAS: 294.  
 PSINF(psia): 11.81 PTINF(psia): 13.97 TSINF(F): 63. TTINF(F): 88.  
 ALPHA(deg): 7.1 BETA(deg): -1.7 PHI(deg): 4.6

CENTERLINE RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.001	1.001	0.515	--	--	1.001	0.487	1.007
15	21.1	1.000	1.000	0.514	--	--	1.000	0.485	1.007
14	18.3	1.002	1.002	0.516	--	--	1.002	0.488	1.007
13	15.7	1.000	1.000	0.514	--	--	1.000	0.486	1.007
12	13.3	1.002	1.002	0.517	--	--	1.002	0.489	1.007
10	11.1	1.002	1.002	0.516	--	--	1.002	0.488	1.007
09	9.1	1.000	1.000	0.514	--	--	1.000	0.488	1.005
08	7.3	1.001	1.001	0.516	--	--	1.001	0.496	1.002
07	5.7	1.000	1.000	0.514	--	--	1.000	0.498	0.999
06	4.3	1.002	1.002	0.517	--	--	1.002	0.505	0.996
05	3.1	1.001	1.001	0.515	--	--	1.001	0.506	0.994
04	2.1	1.001	1.001	0.516	--	--	1.001	0.510	0.992
03	1.3	1.001	1.001	0.515	--	--	1.001	0.512	0.990
02	0.7	0.981	0.981	0.486	--	--	0.981	0.484	0.989
01	0.3	0.950	0.950	0.434	--	--	0.950	0.433	0.989

OFFSET RAKE

TAP #	Y (in)	PPITOT /PTINF	---UNIFORM-PS-- PT/PTINF	MACH	---UNIFORM-PT-- MACH	PS/PSINF	PT/PTINF	----INTERPOLATED-PS---- MACH	PS/PSINF
16	24.1	1.003	1.003	0.512	--	--	1.003	0.490	1.007
15	21.1	1.000	1.000	0.507	--	--	1.000	0.485	1.007
14	18.3	1.001	1.001	0.510	--	--	1.001	0.488	1.007
13	15.7	1.000	1.000	0.508	--	--	1.000	0.487	1.006
12	13.3	1.003	1.003	0.512	--	--	1.003	0.490	1.006
10	11.1	1.002	1.002	0.511	--	--	1.002	0.490	1.006
09	9.1	0.996	0.996	0.501	--	--	0.996	0.482	1.005
08	7.3	0.984	0.984	0.483	--	--	0.984	0.467	1.002
07	5.7	0.970	0.970	0.462	--	--	0.970	0.449	1.000
06	4.3	0.956	0.956	0.437	--	--	0.956	0.427	0.998
05	3.1	0.963	0.963	0.448	--	--	0.963	0.441	0.996
04	2.1	0.973	0.973	0.465	--	--	0.973	0.460	0.995
03	1.3	0.980	0.980	0.478	--	--	0.980	0.475	0.994
02	0.7	0.986	0.986	0.486	--	--	0.986	0.484	0.993
01	0.3	0.964	0.964	0.450	--	--	0.964	0.450	0.992

STATIC PRESSURES (/PSINF)

SURFACE (5) 0.989  
 (6) 0.986  
 (7) 0.979  
 (1) 0.989 (2) 0.996 (3) 0.988 (4) 0.988

5-HOLE PROBE offset rake centerline rake  
 upper 1.007 1.007  
 lower 1.006 1.007

5 HOLE PROBE PRESSURES (/PTINF) AND FLOW ANGLES (deg) (viewed tail-on)

	offset rake			centerline rake		
upper	0.849			0.823		
	0.866	0.998	0.824	0.834	1.003	0.789
		0.838			0.810	
		ALPHA: -1.0			ALPHA: -1.0	
		BETA: -3.9			BETA: -3.4	
lower	0.834			0.860		
	0.849	0.995	0.803	0.855	1.000	0.804
		0.831			0.807	
		ALPHA: -0.3			ALPHA: -4.5	
		BETA: -3.8			BETA: -4.3	

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<b>11. SUPPLEMENTARY NOTES</b> Masashi Mizukami and Daniel Jones, NASA Dryden Flight Research Center, Edwards, California; and Vladimir D. Weinstock, Analytic Services and Materials, Inc., Hampton, Virginia. Equations (9)–(11) and (13)–(15) are included in a patent filed on a NASA invention.				
<b>12a. DISTRIBUTION/AVAILABILITY STATEMENT</b>  Unclassified—Unlimited Subject Category 02  This report is available at <a href="http://www.dfrc.nasa.gov/DTRS/">http://www.dfrc.nasa.gov/DTRS/</a>			<b>12b. DISTRIBUTION CODE</b>	
<b>13. ABSTRACT (Maximum 200 words)</b>  A flat plate and faired pod have been mounted on a NASA SR-71A aircraft for use as a supersonic flight experiment test bed. A test article can be placed on the flat plate; the pod can contain supporting systems. A series of test flights has been conducted to validate this test bed configuration. Flight speeds to a maximum of Mach 3.0 have been attained. Steady-state sideslip maneuvers to a maximum of 2° have been conducted, and the flow field in the test region has been surveyed. Two total-pressure rakes, each with two flow-angle probes, have been placed in the expected vicinity of an experiment. Static-pressure measurements have been made on the flat plate. At subsonic and low supersonic speeds with no sideslip, the flow in the surveyed region is quite uniform. During sideslip maneuvers, localized flow distortions impinge on the test region. Aircraft sideslip does not produce a uniform sidewash over the test region. At speeds faster than Mach 1.5, variable-pressure distortions were observed in the test region. Boundary-layer thickness on the flat plate at the rake was less than 2.1 in. For future experiments, a more focused and detailed flow-field survey than this one would be desirable.				
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