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James S. Bowman, Jr.
Langley Research Center
Hampton, Virginia

Randy S. Hultberg
Bihrle Applied Research, Inc.
Jericho, New York

Colin A. Martin
Aeronautical Research Laboratories
Melbourne, Australia

NASA

National Aeronautics and Space Administration
Office of Management
Scientific and Technical Information Division

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Summary

An investigation has been conducted in the Langley Spin Tunnel to measure the pressures on the surface of the horizontal tail, the vertical tail, and the aft fuselage of an aircraft model. The pressures were measured on a model of a proposed Australian Primary Trainer airplane configuration while the model was rotating at spinning attitudes. The tests were made to determine the nature of the airflow at the tail under spinning conditions and to determine the interference effects of the horizontal tail and wing on the vertical tail.

Rotary balance force and moment test results have shown for years the trends in damping characteristics of various horizontal and vertical tail configurations and how the wing can influence the damping. The pressure data results help explain these trends and why they occur. The force test results indicate that removal of the horizontal tail caused a large increase in the damping yawing-moment characteristics of the vertical tail. The pressure data results showed that removal of the horizontal tail caused a favorable pressure change on the vertical tail. Also, the force data showed the presence of the wing caused the tail configuration to have less aerodynamic damping with rotation than when the wing was removed. The wing was shown to have a large adverse influence on the magnitude of the pressures measured on the empennage and aft fuselage area during model rotation.

Introduction

The characteristics of the airflow interaction around the tail and aft fuselage of a spinning airplane have been of interest since the early days of spinning. Since the tail does provide a significant moment for promoting the spin, as well as for spin recovery, attempts have been made for many years to estimate the tail contributions while the airplane was rotating at spinning attitudes. The most widely used technique for estimating rudder power for recovery was called the tail damping power factor (TDPF). However, based on the conclusions from a general aviation spin program conducted at the Langley Research Center in the early 1970's, both model and flight test results have shown that the TDPF criterion is inaccurate and misleading (refs. 1 and 2). On the other hand, as has been observed from many free-spinning and rotary balance test results (ref. 3), the location of the horizontal tail with respect to the vertical tail can alter the airflow over the empennage and drastically change the spin recovery characteristics. The cause of this significant change in the spin characteristics was believed to be a pressure change on the vertical tail caused by the horizontal tail, but sufficient pressure data had never been measured until the present tests to provide a detailed analysis of the tail contributions during rotation of the aircraft configuration at spinning attitudes. A limited test to measure pressures on the horizontal and vertical tails was conducted about 50 years ago, and the results indicated propelling pressure differences between the inboard and outboard vertical tail surfaces during model rotation (ref. 4). In the present tests, pressures were measured to provide a detailed analysis of the interference effects of the horizontal and vertical tails. Past indications have shown that the wing can also significantly modify the yawing moment produced by the vertical tail (ref. 5). For this reason, tests were also conducted to measure the tail pressures with the wing removed. Therefore, a systematic set of pressure data was obtained to determine the pressure distribution over the empennage and aft fuselage during spinning conditions.

The subject program was a joint effort between the Langley Research Center and the Aeronautical Research Laboratory (ARL) of Australia. Bihrle Applied Research (BAR) was contracted to conduct the tests in the Langley Spin Tunnel. The ARL participation was sponsored by The Technical Cooperative Program (TTCP), Office of the Under Secretary of Defense, DOD.

This paper presents the results of the pressure measurements that were made on the vertical and horizontal tails and the aft fuselage under spinning conditions. Also presented are the aerodynamic data corresponding to the conditions under which the pressures were measured to show how the aerodynamic yawing moment data are influenced by the pressure changes.

Symbols

Symbols in parentheses are used in the appendix.

b	wing span, ft
$\bar{c}$	mean aerodynamic chord, ft
C_n	yawing-moment coefficient, Yawing moment/qSb
C_p	coefficient of pressure, $(p_m - p)/q$
p	free-stream static pressure, lb/ft^2
p_m	measured pressure, lb/ft^2
q	free-stream dynamic pressure, lb/ft^2

S		wing area, ft^2
V		free-stream velocity, ft/sec
α	(ALPHA)	angle of attack, deg
β	(BETA)	angle of sideslip, deg
Ω		angular velocity about spin axis, rad/sec
$\Omega b/2V$	(Ob/2V)	spin coefficient, positive for clockwise spin

Abbreviations:

c.g.	center of gravity
FRL	fuselage reference line at (WL = 0)
FS	fuselage station, inches model scale (FS = 4.25 in. at the nose)
WL	water line (model scale), in.

Model component abbreviations:

B	body
H	horizontal tail
RT	right
V	vertical tail
W	wing

Model

A 1/7-scale balsa, plywood, and fiberglass model representing the proposed Australian MK-1 Pilot Training Aircraft was used in the investigation. A photograph of the model is shown in figure 1(a), and a three-view drawing of the model is shown in figure 1(b). The dimensional characteristics of the model are given in table I. The model had been used in previous rotary balance force tests and was modified by the Aeronautical Research Laboratory (ARL) of Australia for the pressure tests. The modifications included removing the dorsal fin, placing pressure taps and tubing in the fuselage, and constructing new fiberglass horizontal and vertical tails with pressure taps and tubing. The locations of the ports on each surface are shown in figure 2. A total of 180 ports were used on the model. Pressure taps with 0.060-in. metal tubing were placed on the right side (when facing forward) of the vertical tail, the upper surface of the right horizontal tail, the lower surface of the left horizontal tail, and the left side of the fuselage aft of the wing. Each of these taps was connected by 0.060-in. plastic tubing to the scanivalve located inside the forward section of the fuselage. The scanivalve was connected to the pressure transbyducer mounted on the rotary balance by a 0.060-in. plastic tube. The horizontal and vertical tails were constructed such that each could be removed independently from the model and still allow pressure readings on the remaining surface.

Test Equipment and Accuracy

A rotary balance apparatus was used to rotate the model in a steady-state spinning attitude. Normally, the apparatus is used to measure six-component aerodynamic data. In this study, however, the rotary balance system was used to rotate the model while pressure data were measured at ports on the aft fuselage and the horizontal and vertical tail surfaces. To measure the pressures, plastic tubes from each port on the model surface were connected to one side of a scanivalve inside the model. The other side of the scanivalve was connected to a differential pressure transducer mounted on the rig, which could convert differential pressure to voltage. The scanivalve could be rotated by a switch in the control room, so that only one port at a time was connected to the pressure transducer while all others were sealed. Voltage representing a pressure was passed from the transducer through the rig slip rings and wiring to a signal conditioner in the tunnel control room. The resulting voltage from the conditioner was then input to the computer through an analog-to-digital converter. The data were then reduced to pressure and coefficient form for on-line output storage on magnetic disc. A schematic of the data acquisition system used is shown in figure 3.

Because of the very low pressures to be measured (less than 1.0 psf), a differential, as opposed to an absolute, pressure transducer was used for these tests to ensure a high degree of sensitivity and resolution. One problem with this type of transducer during model rotation, however, is that of having a good, known reference pressure. For these tests, the reference pressure used was the pressure measured inside the model with the tunnel airflow at the test velocity. The reference side of the transducer was connected to the pressure through 8 ft of plastic tubing coiled inside the model. Measurements for all ports were taken using this reference pressure and then corrected to the free-stream static pressure. To correctly reference the port pressures to the free-stream static pressure, the difference between the free-stream static pressure and the pressure inside the model was measured at each angle of attack and added to the data. These pressure differences were measured without the model rotating. A check measurement was made with the model slowly spinning (less than 10 rpm, $\Omega b/2V = 0.1$) to determine any further variation between the two pressures due to model rotation. None was noted so it was assumed that little change to the reference pressure inside the model occurred with rotation.

To determine the number of pressure readings needed to get repeatable results, preliminary tests were conducted with from 20 to 80 readings made and then averaged for a final pressure. The number of readings to be averaged during the tests was established at 40. This value was an acceptable trade-off between data acquisition speed and good repeatability. It also happened to be the number of readings taken during normal rotary balance force testing with a strain-gage balance. The final data sampling scheme was to take one pressure reading on one port every 45° of model rotation until 40 samples were taken. This procedure required five revolutions to complete. The values were then averaged to give a final value.

Tests conducted in the tunnel to determine the accuracy, sensitivity, and repeatability of the data acquisition system show all values are within 5 percent of dynamic pressure. For these tests with dynamic pressure $q = 0.71$ lb/ft^2, an accuracy of 0.036 lb/ft^2 was achieved.

Test Procedures

Pressure data were measured one port at a time because of instrument limitations. At each rotation rate, a total of 40 pressure readings were taken for one port and then averaged and processed by the computer. The scanivalve was then stepped to the next port by the test technician, and another 40 readings were made and averaged. This procedure was followed for each desired angle of attack, rotation rate, and configuration tested. All reduced data were printed out, as well as stored on magnetic disc for later analysis.

Test Conditions

The tests were conducted in the spin tunnel at a velocity of 25 ft/sec. This corresponds to a test dynamic pressure of approximately 0.71 lb/ft^2 and a Reynolds number of 140 000 based on the model mean aerodynamic chord. All configurations were tested with the spin axis passing through the full-scale c.g. location of 25-percent $\bar{c}$.

Pressure readings were obtained for each configuration at $\Omega b/2V$ values of 0.05, 0.1, 0.2, 0.3, 0.4, and 0.5, in both clockwise (pilot's right) and counterclockwise directions.

Most configurations were tested at several angles of attack and sideslip. A complete description of all configurations tested, as well as the angles of attack and sideslip at which these tests were conducted, is presented in the appendix. As previously mentioned, only one side of the surfaces was tapped with tubes. The figures of pressure data presented in this report that show pressure data on both sides of the surface were made by using combinations of data for right and left rotation.

Presentation of Results

All configurations that were tested during this study and a listing of the data are presented in the appendix. A large amount of data were obtained during this study; only a portion of it will be discussed in this report. Free-spinning tests (ref. 6) and unpublished rotary balance aerodynamic test results of this model were used as a guide to determine the test program for the pressure study.

Steady-state spin modes calculated from the unpublished data and the method described in reference 7 indicated the model would spin with neutral controls at $\alpha = 50°$ and a spin rate of $\Omega b/2V = 0.4$. The force test data (fig. 4(a)) for the complete configuration of this model at $\alpha = 50°$ indicated propelling yawing moments at low values of $\Omega b/2V$ ($\approx \pm 0.1$). These propelling yawing moments were eliminated by the removal of various components of the airplane. Similar characteristics were seen at $\alpha = 40°$. The force data at $\alpha = 20°$ showed a linear increase in damping with rotation and no effect by the removal of the horizontal tail (fig. 4(b)). Based on these results, the pressure tests were conducted at $\alpha = 50°, 40°$, and 20°.

The data discussed in this paper include the pressure results for $\alpha = 50°$ and 20° at spin rates of $\Omega b/2V = -0.4$ and -0.1. Also included are the unpublished rotary balance aerodynamic yawing-moment characteristics (fig. 4) to correlate with the pressure results. The pressure data are presented in figures 5 to 21.

The pressure data are presented in two formats. One format shows the actual pressures measured on both the inboard and the outboard sides of the model (fig. 5). The two sides are shown side by side for a direct comparison. The pressure data obtained on untapped surfaces are from rotation in the opposite direction. As indicated on the figures, the model sketch represents a spin to the left, and the tail is swinging from right to left as indicated by the arrows on the figures. Under these conditions, the negative pressures on the outboard side of the spin (right side of the model) would produce a prospin yawing moment, and the negative pressures on the inboard side of the spin (left side of the model) would produce a damping yawing moment. The other format shows the resultant pressures (difference in pressure between the inboard and outboard sides) plotted on one side of the model (fig. 6). In this case, the difference in the pressures on the inboard and outboard sides is shown and is the resultant pressure producing the net yawing moment on the model.

Results and Discussion

Normal Spin Condition ($\alpha = 50°$ and $\Omega b/2V = -0.4$)

Complete configuration. The pressure distribution for the complete configuration is shown in figures 5 and 6. The actual pressures measured on each side of the model (fig. 5) show that both sides of the model (fuselage and vertical tail) experience negative pressure except for a small area of positive pressure on the fuselage under the horizontal tail. The resultant pressures (fig. 6) show that the fuselage area ahead of the horizontal tail has very similar pressure characteristics on each side of the fuselage. The moment resulting from such fuselage pressure distributions, therefore, would be expected to be small and have little or no influence on the spin. However, the resultant pressures on the vertical tail and aft fuselage are large and could have significant influence on the spin. The vertical tail has a large resultant negative pressure on the outboard side (prospin), which produces a propelling yawing moment during a spin (fig. 6). On the other hand, the resultant pressure on the fuselage under the horizontal tail is positive and provides a large damping moment. The aerodynamic data of the complete configuration presented in figure 4(a) show that the yawing moment is almost neutral and appears to correlate very well with the resultant pressures shown in figure 6.

Horizontal tail off. The pressure distribution for the horizontal-tail-off configuration at $\alpha = 50°$ is shown in figures 7 and 8. The actual pressures measured on each side of the model (fig. 7) show that a negative pressure existed on both sides of the vertical tail and the aft fuselage. The largest negative pressure was measured on the inboard side of the vertical tail and aft fuselage. The large aerodynamic damping increment (fig. 4) obtained by removing the horizontal tail is due to this large negative pressure on the inboard side rather than any positive pressure on the outboard side. The resultant pressures presented in figure 8 show the difference between the inboard and outboard pressures, and a comparison of the data of figures 6 and 8 indicates that a significant increase in damping is generated by removing the horizontal tail. When the horizontal tail was on (fig. 6), the highest negative pressure was measured on the outboard side of the vertical tail, and this negative pressure resulted in a propelling moment being produced by the vertical tail.

The aerodynamic yawing moment presented in figure 4(a) shows that the damping at $\alpha = 50°$ is increased by a significant amount when the horizontal tail is removed. This result is in good agreement with the pressure data obtained with the horizontal tail off. The significance of these results is that the horizontal tail strongly influences the pressure field of the vertical tail and will be discussed later.

Wing off. The data for the model with the wing removed are shown in figures 9 and 10. Removing the wing caused the aerodynamic yaw damping of the model to increase (fig. 4(a)). Results and discussion of wing location effects on airplane aerodynamic characteristics are presented in reference 5. The resultant pressures with the wing removed are presented in figure 10. A comparison of the data of figures 6 and 10 shows that the propelling vertical tail pressure differential above the horizontal tail is reduced when the wing is removed from the complete configuration. Also, the damping moment from the aft fuselage increases when the wing is removed. The reason for the increase in damping can be seen from figure 9, where the measured pressures are plotted for both the inboard and outboard sides of the model. When figure 9 is compared with figure 5 (the complete configuration), notice that all the pressures for the wing-off configuration are considerably more negative than with the wing on. The relatively large negative pressures on the inboard side of the model produce the decreased propelling moments on the vertical tail and the increased damping moments on the aft fuselage.

These results show that the wing does influence the pressures over the aft fuselage and tail area of the airplane during a spin. Of course, removal of the wing is not an option to change the spin characteristics of a given design, but proper placement of the wing can possibly be a choice to improve the spin characteristics. As discussed in reference 1, a certain low-wing model had a flat spin with no recovery possible. Unpublished results show that by moving the wing from the low position to a high position, the flat spin mode was eliminated. These results illustrate the important role that the position of the wing can play in influencing the pressure field over the aft fuselage and tail area to provide improved spin and recovery characteristics for an airplane, even at high angles of attack.

Slow Spin Condition
($\alpha = 50^\circ$ and $\Omega b/2V = -0.1$)

Complete configuration. Reducing the spin rate from $\Omega b/2V = -0.4$ to -0.1 causes the aerodynamic yawing moment of the model to change from damping to propelling (fig. 4(a)). The pressures on the vertical tail and the aft fuselage at the lower spin rate are shown in figures 11 and 12. These are to be compared with the results of the spin rate in figures 5 and 6. The resultant pressures on the vertical tail were changed very little by the slower spin rate, but the resultant pressures under the horizontal tail made a dramatic change from damping to propelling (compare figs. 12 and 6). The reason for the dramatic change in the resultant pressures below the horizontal tail is shown in figure 11, where the measured pressures are given for the inboard and outboard sides of the model. The positive pressures measured under the horizontal tail at the higher spin rate were dramatically reduced when the spin rate was reduced from $\Omega b/2V = -0.4$ to -0.1 (compare figs. 5 and 11). The pressure in a few areas even changed from positive to negative, which caused the damping to change to propelling.

Horizontal tail off. The pressure data for the horizontal-tail-off configuration are shown in figures 13 and 14. The pressures measured on both the inboard and the outboard sides of the vertical tail appear equal (fig. 13), but the resultant pressures (fig. 14) show that the vertical tail provides a small amount of damping. The aerodynamic yawing-moment data presented in figure 4(a) also show a damping increment when the horizontal tail is removed and are in agreement with the pressure data results.

Steep Spin Condition
($\alpha = 20^\circ$ and $\Omega b/2V = -0.4$)

The aerodynamic yawing-moment characteristics presented in figure 4(b) for $\alpha = 20^\circ$ indicate that the configuration is damped at -0.4 spin rate and that there is little or no change between the horizontal-tail-on or -off configuration. The corresponding pressure data for this condition are presented in figures 15 to 18.

Complete configuration. The complete configuration resultant pressures presented in figure 16 show that the vertical tail has a resultant positive pressure, which is antispin. The measured pressures presented for both the inboard and the outboard sides in figure 15 show that both surfaces have damping pressures. The pressures on the outboard side of the vertical tail are positive (damping), and those on the inboard side are negative (also damping).

For the flatter attitude at $\alpha = 50^\circ$ at the same spin rate (fig. 5), the inboard and outboard sides of the vertical tail both had negative pressures. The resultant pressure over the vertical tail was negative on the outboard side, which is prospin. However, at the steeper attitude of $\alpha = 20^\circ$, the pressure characteristics were just the opposite; that is, the pressure over the outboard side of the vertical tail was positive and antispin. These results show how the pressure field can change as the angle of attack changes.

Although a spin as steep at $\alpha = 20^\circ$ is unlikely, the change in the vertical tail pressure with angle of attack does show that the vertical tail pressure characteristics could change from propelling at spinning attitudes of $\alpha = 50^\circ$ to damping at steeper spinning attitudes.

Horizontal tail off. The resultant pressures on the vertical tail for the horizontal-tail-off configuration are shown in figure 18. The vertical tail has a resultant pressure that is generally similar to that for the horizontal-tail-on configuration shown in figure 16. This result is also in agreement with the aerodynamic yawing-moment data in figure 4(b) for $\alpha = 20^\circ$ and $\Omega b/2V = -0.4$. The data of figure 4(b) show that the aerodynamic yawing moment changed very little when the horizontal tail was removed. However, an inspection of the measured pressures on the inboard and outboard sides of the model (fig. 17) shows that the pressures on each side of the vertical tail are positive, with larger positive pressures on the outboard side than on the inboard side. In contrast, as previously mentioned, the pressures on the vertical tail with the horizontal tail on show positive pressures on the outboard side and negative pressures on the inboard side. These results indicate that the force test yawing-moment results may be misleading if they are used to predict the pressure changes on one surface due to the removal of another.

Horizontal Tail Pressures
($\alpha = 50^\circ$)

The pressures measured on the horizontal tail are shown in figure 19. The tail has negative pressures on the upper surface and positive pressures on the lower surface. The positive pressures on the underside of the horizontal tail surfaces are about equal in magnitude on both the inboard and the outboard sides of the model. As previously discussed, the negative pressures measured on the outboard side of the vertical tail are larger than those measured on the inboard side (fig. 5). A similar trend is seen for the horizontal tail; that is, the negative pressures measured on the upper surface of the outboard side of the horizontal tail are larger than those measured on the inboard side. Also, it is significant to note that the negative pressures on the horizontal tail are of about the same magnitude as the negative pressures measured on the corresponding side of the vertical tail (see fig. 20). These results strongly suggest that the negative pressure on the upper surface of the horizontal tail determines the magnitude of the negative pressure on the vertical tail for a conventional tail arrangement such as the one tested in this investigation. However, as noted in reference 3, if the horizontal tail is displaced forward or rearward of the vertical tail, the influence of the horizontal tail on the vertical would change and could be made more favorable to provide damping and good spin and recovery characteristics. It is also possible that a slot in the horizontal tail (inboard side), close to the vertical tail, could significantly improve the pressures on the surface of the vertical tail to produce increased yaw damping.

From the force data (fig. 4(a)), it can be seen that the removal of the wing from the complete configuration significantly improves the yaw damping. It is actually equivalent to the horizontal tail-off configuration at low rotation rates. The presence of the wing modifies the horizontal tail pressures. While no pressure data were measured on the horizontal tail surface with the wing removed, those on the vertical tail were measured for this configuration. Because the vertical tail pressures seem to be about equal to those of the horizontal tail for the complete configuration, any changes in vertical tail pressures with the removal of the wing would probably be indicative of the pressure changes on the upper horizontal tail surfaces. As can be seen in figure 21(a), the negative pressures on the outboard side of the vertical tail are larger in magnitude than the pressures on the inboard side. When the wing is removed (fig. 21(b)), the negative pressures on each side of the vertical tail are more nearly equal. Therefore, it would appear that the horizontal tail is being affected by the wing wake at $\alpha = 50°$, which in turn affects the vertical tail pressures.

Significance of Results

The results of the pressure study indicate that the horizontal tail and the wing have a pronounced influence on the pressure distribution of the aft fuselage and empennage of a spinning airplane. The addition of the horizontal tail on the vertical tail caused the vertical tail pressures to change from damping to propelling. The horizontal tail upper surface negative pressures determine the nature of the pressure on the vertical tail. Effects of horizontal tail interference have been seen in other models during free-spinning and rotary balance tests (see refs. 1 and 4). In reference 1, free-spinning tests were made for a number of horizontal tail positions. Some positions provided damping and therefore steep spins, while the others provided propelling moments which led to flat spins.

Horizontal tail effects were seen in reference 3, where rotary balance tests were conducted to investigate the effects of several horizontal tail positions. These results showed that the yawing moment could be propelling or damping, depending on the horizontal tail position. Based on these results and the results of the pressure tests in this report, the pressure field on the vertical tail can be made favorable or unfavorable, depending on the location of the horizontal tail. The conventional location of the horizontal tail relative to the vertical tail, such as the configuration tested in this report (fig. 5), appeared to be one of the horizontal tail locations where the interference effects on the vertical tail are most severe. The horizontal tail locations for reduced adverse interference on the vertical tail are the T-tail position and forward horizontal tail positions (horizontal tail somewhat forward of the vertical tail), such as the configuration tested in reference 3.

The wing also had a pronounced effect on the pressure distribution over the aft end of the model. The wing can strongly influence the pressure on the upper horizontal and vertical tail surfaces. When the wing was removed, a considerable increase in damping was obtained from both the fuselage and the vertical tail. A large wing influence has also been seen in free-spinning model tests in the spin tunnel. Unpublished results on a model with two wing positions show that for the low wing position, the model had a nonrecoverable, fast flat spin. By moving the wing up to the top of the fuselage, the spin changed to a steep, slower mode from which good recoveries were obtained.

As previously noted, the tail damping power factor (TDPF) criterion was developed in the past to estimate the recovery characteristics for a given airplane design. The background and description of this criterion are given in reference 1. The criterion can give misleading results and should never be used. The results of the present pressure tests also point out that some of the assumptions made in the development of the criterion are wrong. As illustrated in figure 22, the TDPF criterion assumed that the airflow over the horizontal tail causes a wake behind the tail and covers only a part of the vertical tail in what was referred to as the "dead air" region. It was assumed that the area of the vertical tail outside this wake was in the "free air stream" and the exposed rudder in this "free air stream" would be effective for recovery (fig. 22). Furthermore, the area under the horizontal tail was considered the only area for damping. As was shown in the present tests, however, damping is contributed by the inboard side of the fuselage and vertical tail, as well as by the fuselage area on the outboard side under the horizontal tail. Results of the present tests reaffirm that the tail design criterion (TDPF) cannot be used to predict the contribution of the tail and aft fuselage to spin aerodynamics, much less the spin-recovery characteristics of airplane designs—the same conclusion reached in reference 1.

Concluding Remarks

Pressure measurement tests have been made in the Langley Spin Tunnel to measure the pressure distribution on the aft fuselage and empennage area of a model of the Australian trainer airplane in spinning attitudes.

1. The horizontal tail can have a large influence on the pressure field on both sides of the vertical tail while the model is rotating at spinning attitudes. The data show that negative pressures on each side of the vertical tail are similar in magnitude to the negative pressures on top of each respective horizontal tail.

2. Removal of the horizontal tail caused a large increase in the damping yawing-moment characteristics of the vertical tail, primarily because of the favorable change in pressure on the vertical tail.

3. The presence of the wing on the complete configuration caused the damping at the tail to be reduced when the model was rotating at spinning attitudes.

4. The predominantly positive pressure on the fuselage beneath the horizontal tail on the outboard side and the negative pressure on the inboard side provided a significant amount of damping to the airplane configuration during rotation at spinning attitudes.

NASA Langley Research Center
Hampton, VA 23665-5225
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Appendix

Pressure Data From Rotary Balance Pressure Tests

The configurations and conditions that were tested are shown in the following table.

Configuration	α, deg	β, deg
Right vertical tail surface pressure measurements:		
BWHV (complete) (body + wing + horizontal + vertical)	50, 40, 20	0
BWHV (complete)	50	10
BWHV (complete)	50	−10
BWV (body + wing + vertical)	50, 40, 20	0
BHV (body + horizontal + vertical)	50	0
Right upper horizontal surface:		
BWHV (complete)	50, 40, 20	0
Left lower horizontal surface:		
BWHV (complete)	50, 40, 20	0
Left aft fuselage surface (FS 47.24 to FS 55.68):		
BWHV (complete)	50	0
BWV	50, 20	0
BHV	50	0
Left forward aft fuselage surface (FS 33.74 to FS 43.87):		
BWHV (complete)	50	0
BHV	50	0

The pressure data obtained in this study were converted to coefficient form (C_p) and are presented in the following printouts.

DATE: 08/05/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWHV RT VERTICAL

PORT#	Ob/2V 0	.05	.1	.2	.3	.4	.5	PORT#
111	-.636	-.568	-.513	-.483	-.490	-.461	-.515	111
112	-.685	-.600	-.558	-.543	-.538	-.500	-.497	112
113	-.740	-.656	-.620	-.607	-.608	-.595	-.543	113
114	-.763	-.696	-.641	-.653	-.660	-.629	-.611	114
115	-.822	-.688	-.677	-.673	-.677	-.636	-.619	115
116	-.764	-.697	-.669	-.676	-.669	-.639	-.623	116
117	-.750	-.699	-.668	-.674	-.671	-.633	-.622	117
121	-.588	-.510	-.472	-.429	-.442	-.426	-.476	121
122	-.590	-.555	-.528	-.498	-.492	-.480	-.500	122
123	-.717	-.654	-.610	-.604	-.606	-.582	-.593	123
124	-.732	-.665	-.647	-.652	-.645	-.641	-.619	124
125	-.701	-.674	-.638	-.646	-.673	-.630	-.636	125
126	-.678	-.681	-.676	-.652	-.658	-.630	-.624	126
127	-.746	-.695	-.669	-.658	-.656	-.616	-.596	127
131	-.507	-.468	-.433	-.381	-.370	-.360	-.396	131
132	-.593	-.546	-.529	-.491	-.469	-.448	-.443	132
133	-.711	-.652	-.583	-.580	-.601	-.557	-.599	133
134	-.778	-.641	-.596	-.617	-.622	-.587	-.618	134
135	-.685	-.615	-.576	-.598	-.605	-.579	-.604	135
136	-.575	-.546	-.536	-.539	-.534	-.535	-.533	136
137	-.750	-.694	-.668	-.673	-.672	-.636	-.580	137
141	-.460	-.428	-.423	-.386	-.358	-.253	-.268	141
142	-.604	-.570	-.530	-.515	-.508	-.441	-.422	142
143	-.670	-.588	-.547	-.538	-.540	-.524	-.567	143
144	-.766	-.607	-.537	-.554	-.545	-.543	-.594	144
145	-.689	-.623	-.584	-.581	-.588	-.566	-.645	145
146	-.737	-.677	-.617	-.623	-.632	-.614	-.680	146
147	-.834	-.694	-.643	-.633	-.656	-.640	-.651	147
151	-.497	-.491	-.487	-.485	-.459	-.318	-.236	151
152	-.710	-.572	-.555	-.526	-.533	-.479	-.432	152
153	-.695	-.594	-.533	-.521	-.538	-.510	-.535	153
154	-.689	-.580	-.559	-.548	-.548	-.540	-.560	154
155	-.673	-.608	-.554	-.573	-.576	-.557	-.614	155
156	-.743	-.607	-.561	-.581	-.575	-.578	-.632	156
157	-.716	-.660	-.623	-.608	-.606	-.597	-.656	157
166	-.103	-.091	-.079	-.090	-.131	-.156	-.174	166
167	-.427	-.401	-.409	-.440	-.486	-.502	-.506	167
176	-.141	-.156	-.174	-.195	-.198	-.130	-.080	176
177	-.238	-.230	-.231	-.226	-.218	-.189	-.177	177
186	.004	.007	.008	-.005	-.020	-.015	.004	186
103	-.841	-.892	-.916	-.927	-.954	-.917	-.933	103
105	-.782	-.785	-.819	-.846	-.872	-.854	-.860	105
106	-.449	-.447	-.442	-.443	-.443	-.430	-.415	106
107	-.428	-.442	-.418	-.381	-.351	-.279	-.198	107

Pressure Data, C_p

DATE: 08/05/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWHV RT VERTICAL

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	******************************			Ob/2V	**************************			
111	-.579	-.772	-.791	-.776	-.728	-.759	-.876	111
112	-.635	-.765	-.791	-.780	-.738	-.754	-.835	112
113	-.731	-.817	-.863	-.851	-.809	-.852	-.908	113
114	-.769	-.860	-.904	-.904	-.881	-.878	-.929	114
115	-.772	-.875	-.897	-.907	-.876	-.898	-.992	115
116	-.748	-.845	-.907	-.948	-.907	-.924	-1.027	116
117	-.791	-.858	-.913	-.960	-.946	-.944	-1.040	117
121	-.552	-.679	-.754	-.760	-.732	-.742	-.865	121
122	-.635	-.695	-.747	-.763	-.743	-.754	-.823	122
123	-.719	-.870	-.945	-.971	-.953	-.959	-.979	123
124	-.758	-.929	-.969	-1.002	-.987	-.937	-.987	124
125	-.694	-.897	-.962	-.970	-.968	-.954	-1.039	125
126	-.739	-.899	-.947	-.966	-.979	-.949	-1.032	126
127	-.718	-.865	-.917	-.956	-.963	-.917	-.931	127
131	-.513	-.583	-.626	-.664	-.666	-.703	-.851	131
132	-.573	-.717	-.777	-.811	-.844	-.868	-.990	132
133	-.766	-.897	-.982	-1.020	-1.036	-1.043	-1.057	133
134	-.731	-.902	-.982	-1.029	-1.039	-1.059	-1.065	134
135	-.691	-.808	-.861	-.884	-.882	-.889	-.891	135
136	-.559	-.626	-.657	-.656	-.656	-.628	-.630	136
137	-.733	-.841	-.926	-.903	-.868	-.817	-.775	137
141	-.441	-.475	-.519	-.568	-.604	-.648	-.819	141
142	-.623	-.727	-.798	-.881	-.922	-.928	-1.010	142
143	-.689	-.834	-.896	-.916	-.944	-.891	-.973	143
144	-.695	-.844	-.897	-.949	-.957	-1.001	-1.082	144
145	-.679	-.924	-.975	-1.037	-1.097	-1.115	-1.194	145
146	-.774	-.971	-1.029	-1.074	-1.081	-1.045	-.887	146
147	-.778	-.955	-1.040	-1.049	-1.021	-.897	-.695	147
151	-.507	-.588	-.653	-.694	-.727	-.705	-.821	151
152	-.696	-.791	-.853	-.909	-.964	-.953	-.976	152
153	-.659	-.798	-.854	-.909	-.889	-.879	-.927	153
154	-.689	-.782	-.835	-.864	-.895	-.894	-.928	154
155	-.655	-.800	-.863	-.897	-.961	-.938	-1.009	155
156	-.715	-.808	-.861	-.897	-.916	-.903	-1.026	156
157	-.800	-.873	-.921	-.956	-.982	-.948	-.960	157
166	-.113	-.140	-.166	-.161	-.128	-.050	-.003	166
167	-.402	-.439	-.445	-.438	-.423	-.387	-.364	167
176	-.148	-.180	-.173	-.097	-.009	.098	.170	176
177	-.221	-.259	-.269	-.232	-.181	-.098	-.023	177
186	.026	-.017	-.025	.008	.063	.137	.178	186
103	-.782	-.723	-.636	-.631	-.656	-.620	-.669	103
105	-.760	-.635	-.587	-.594	-.601	-.612	-.673	105
106	-.442	-.447	-.453	-.457	-.457	-.453	-.454	106
107	-.434	-.406	-.411	-.468	-.510	-.520	-.535	107

Pressure Data, C_p

DATE: 08/05/86 ALPHA= 40 BETA= 0 CONFIGURATION: BWHV RT VERTICAL

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	************	************	************	Ob/2V	************	************	************	
111	-.335	-.362	-.377	-.361	-.342	-.249	-.199	111
112	-.365	-.379	-.357	-.345	-.318	-.262	-.257	112
113	-.450	-.430	-.401	-.368	-.352	-.360	-.380	113
114	-.548	-.508	-.477	-.434	-.421	-.431	-.442	114
115	-.607	-.555	-.521	-.507	-.468	-.501	-.496	115
116	-.641	-.546	-.514	-.494	-.467	-.482	-.486	116
117	-.669	-.593	-.542	-.516	-.487	-.465	-.475	117
121	-.335	-.355	-.336	-.322	-.309	-.252	-.219	121
122	-.431	-.403	-.375	-.363	-.361	-.323	-.316	122
123	-.606	-.539	-.497	-.467	-.444	-.433	-.450	123
124	-.711	-.644	-.585	-.546	-.555	-.550	-.582	124
125	-.712	-.653	-.634	-.585	-.613	-.593	-.608	125
126	-.696	-.657	-.612	-.589	-.582	-.567	-.554	126
127	-.725	-.646	-.597	-.601	-.585	-.552	-.538	127
131	-.343	-.309	-.281	-.263	-.264	-.219	-.202	131
132	-.413	-.397	-.356	-.311	-.306	-.276	-.290	132
133	-.682	-.624	-.549	-.502	-.524	-.541	-.524	133
134	-.735	-.698	-.626	-.613	-.641	-.637	-.658	134
135	-.634	-.611	-.598	-.562	-.591	-.592	-.588	135
136	-.502	-.487	-.481	-.477	-.482	-.478	-.467	136
137	-.633	-.604	-.582	-.571	-.579	-.532	-.488	137
141	-.225	-.175	-.162	-.167	-.158	-.148	-.126	141
142	-.380	-.335	-.281	-.241	-.256	-.239	-.261	142
143	-.669	-.622	-.556	-.522	-.561	-.514	-.538	143
144	-.649	-.645	-.592	-.613	-.622	-.605	-.607	144
145	-.733	-.672	-.629	-.602	-.656	-.668	-.653	145
146	-.775	-.721	-.664	-.621	-.661	-.642	-.645	146
147	-.666	-.661	-.664	-.612	-.615	-.579	-.557	147
151	-.122	-.084	-.013	-.002	-.045	-.048	-.083	151
152	-.517	-.411	-.368	-.254	-.220	-.246	-.293	152
153	-.666	-.603	-.550	-.534	-.541	-.553	-.512	153
154	-.588	-.581	-.573	-.569	-.615	-.609	-.556	154
155	-.660	-.587	-.556	-.561	-.602	-.593	-.605	155
156	-.662	-.644	-.606	-.615	-.656	-.644	-.673	156
157	-.712	-.686	-.658	-.666	-.665	-.684	-.667	157
166	-.099	-.086	-.099	-.133	-.146	-.142	-.169	166
167	-.352	-.336	-.354	-.380	-.403	-.409	-.423	167
176	-.181	-.167	-.164	-.189	-.187	-.178	-.167	176
177	-.222	-.201	-.191	-.188	-.184	-.167	-.159	177
186	-.040	-.021	-.009	-.031	-.033	-.012	-.026	186
103	-.561	-.573	-.548	-.558	-.604	-.633	-.705	103
105	-.553	-.584	-.585	-.608	-.631	-.686	-.773	105
106	-.336	-.323	-.315	-.307	-.310	-.316	-.321	106
107	-.301	-.269	-.259	-.249	-.217	-.171	-.146	107

Pressure Data, C_p

DATE: 08/05/86 ALPHA= 40 BETA= 0 CONFIGURATION: BWHV RT VERTICAL

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	******	******	******	Ob/2V	******	******	******	
111	-.304	-.304	-.304	-.366	-.478	-.519	-.588	111
112	-.335	-.359	-.341	-.381	-.440	-.492	-.582	112
113	-.484	-.459	-.442	-.423	-.460	-.504	-.525	113
114	-.550	-.533	-.529	-.490	-.497	-.539	-.564	114
115	-.607	-.591	-.564	-.519	-.523	-.570	-.587	115
116	-.619	-.609	-.574	-.518	-.522	-.542	-.593	116
117	-.636	-.652	-.621	-.544	-.524	-.539	-.541	117
121	-.350	-.333	-.327	-.350	-.415	-.467	-.568	121
122	-.406	-.402	-.393	-.406	-.436	-.474	-.526	122
123	-.583	-.581	-.568	-.557	-.588	-.636	-.684	123
124	-.641	-.691	-.688	-.654	-.663	-.711	-.733	124
125	-.698	-.718	-.712	-.676	-.677	-.719	-.748	125
126	-.722	-.729	-.710	-.683	-.682	-.699	-.689	126
127	-.683	-.765	-.770	-.692	-.641	-.655	-.591	127
131	-.340	-.330	-.330	-.329	-.355	-.391	-.457	131
132	-.442	-.425	-.429	-.437	-.464	-.528	-.622	132
133	-.701	-.732	-.707	-.691	-.728	-.794	-.852	133
134	-.757	-.767	-.792	-.772	-.765	-.818	-.859	134
135	-.627	-.658	-.666	-.661	-.654	-.664	-.679	135
136	-.498	-.504	-.513	-.504	-.498	-.492	-.483	136
137	-.636	-.684	-.706	-.663	-.640	-.579	-.555	137
141	-.227	-.228	-.231	-.253	-.252	-.298	-.358	141
142	-.391	-.415	-.425	-.412	-.444	-.543	-.669	142
143	-.681	-.720	-.745	-.740	-.730	-.722	-.782	143
144	-.710	-.680	-.701	-.705	-.699	-.767	-.899	144
145	-.705	-.758	-.744	-.737	-.772	-.884	-.930	145
146	-.786	-.790	-.791	-.760	-.768	-.712	-.624	146
147	-.672	-.661	-.675	-.625	-.645	-.548	-.488	147
151	-.098	-.142	-.144	-.092	-.108	-.233	-.326	151
152	-.480	-.534	-.553	-.497	-.507	-.627	-.729	152
153	-.659	-.680	-.706	-.709	-.693	-.631	-.679	153
154	-.594	-.608	-.621	-.629	-.589	-.652	-.751	154
155	-.672	-.681	-.677	-.707	-.688	-.762	-.832	155
156	-.674	-.693	-.692	-.699	-.650	-.675	-.779	156
157	-.691	-.700	-.697	-.664	-.658	-.668	-.650	157
166	-.106	-.108	-.113	-.091	-.074	-.025	.011	166
167	-.347	-.348	-.339	-.325	-.302	-.283	-.264	167
176	-.173	-.181	-.167	-.095	.010	.094	.137	176
177	-.229	-.229	-.219	-.180	-.126	-.061	-.017	177
186	-.039	-.044	-.031	-.007	.045	.092	.114	186
103	-.582	-.547	-.536	-.486	-.486	-.496	-.507	103
105	-.562	-.551	-.546	-.592	-.676	-.679	-.659	105
106	-.337	-.339	-.337	-.333	-.322	-.332	-.339	106
107	-.304	-.328	-.355	-.397	-.406	-.417	-.419	107

Pressure Data, C_p

DATE: 08/05/86 ALPHA= 20 BETA= 0 CONFIGURATION: BWHV RT VERTICAL

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	*********	*********	*********	Ob/2V	*********	*********	*********	
111	-.156	-.272	-.359	-.589	-.754	-.895	-.878	111
112	-.136	-.206	-.278	-.386	-.496	-.589	-.679	112
113	-.057	-.095	-.120	-.170	-.182	-.205	-.216	113
114	-.024	-.046	-.060	-.085	-.086	-.091	-.088	114
115	.006	-.007	-.019	-.032	-.025	-.017	-.012	115
116	.041	.035	.025	.020	.034	.046	.049	116
117	.070	.060	.056	.058	.073	.091	.102	117
121	-.119	-.250	-.374	-.540	-.739	-.824	-.877	121
122	-.140	-.169	-.231	-.347	-.399	-.444	-.486	122
123	-.073	-.105	-.127	-.185	-.191	-.222	-.220	123
124	-.042	-.054	-.070	-.103	-.111	-.127	-.136	124
125	.002	-.009	-.016	-.037	-.042	-.042	-.055	125
126	.040	.034	.030	.019	.025	.026	.031	126
127	.066	.061	.058	.058	.069	.082	.087	127
131	-.107	-.162	-.235	-.351	-.424	-.445	-.401	131
132	-.083	-.145	-.180	-.244	-.280	-.312	-.302	132
133	-.079	-.112	-.137	-.187	-.226	-.261	-.265	133
134	-.043	-.063	-.084	-.126	-.146	-.177	-.203	134
135	-.036	-.046	-.052	-.073	-.083	-.102	-.120	135
136	-.082	-.083	-.087	-.092	-.093	-.098	-.103	136
137	.076	.067	.072	.066	.074	.077	.076	137
141	.001	-.027	-.050	-.079	-.102	-.099	-.073	141
142	-.067	-.101	-.125	-.176	-.202	-.197	-.213	142
143	-.118	-.135	-.168	-.242	-.287	-.335	-.361	143
144	-.053	-.074	-.108	-.163	-.193	-.230	-.280	144
145	.008	-.000	-.012	-.047	-.058	-.085	-.117	145
146	.049	.053	.044	.035	.035	.027	.017	146
147	.087	.089	.085	.093	.095	.096	.095	147
151	.025	.020	.011	.009	-.001	.007	.007	151
152	-.056	-.079	-.110	-.149	-.188	-.217	-.210	152
153	-.101	-.146	-.180	-.258	-.344	-.416	-.464	153
154	-.051	-.073	-.107	-.163	-.197	-.224	-.285	154
155	.016	.011	.004	-.023	-.026	-.051	-.068	155
156	.048	.037	.032	.015	.008	-.002	-.021	156
157	.082	.084	.080	.083	.081	.071	.054	157
166	.173	.174	.177	.176	.192	.178	.176	166
167	.013	.018	.024	.026	.032	.024	.015	167
176	.090	.087	.096	.091	.106	.092	.098	176
177	.112	.119	.126	.141	.149	.154	.145	177
186	.137	.136	.142	.161	.192	.193	.201	186
103	-.071	-.048	-.028	.029	.070	.123	.170	103
105	.006	.015	.024	.039	.067	.111	.150	105
106	-.091	-.089	-.089	-.088	-.083	-.085	-.077	106
107	.124	.120	.126	.139	.170	.196	.226	107

Pressure Data, C_p

DATE: 08/05/86 ALPHA= 20 BETA= 0 CONFIGURATION: BWHV RT VERTICAL

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	************	************	************	Ωb/2V	************	************	************	
111	-.106	-.044	.044	.175	.325	.430	.544	111
112	-.105	-.059	-.006	.092	.176	.260	.341	112
113	-.064	-.032	-.011	.039	.068	.131	.160	113
114	-.018	-.010	.004	.037	.052	.080	.114	114
115	.004	.017	.024	.045	.054	.083	.108	115
116	.046	.050	.053	.072	.084	.103	.132	116
117	.069	.070	.074	.081	.093	.107	.131	117
121	-.163	-.040	.022	.147	.274	.389	.451	121
122	-.112	-.076	-.047	.031	.104	.150	.236	122
123	-.067	-.043	-.019	.027	.071	.123	.179	123
124	-.038	-.019	-.006	.025	.055	.092	.136	124
125	.006	.016	.023	.045	.071	.098	.139	125
126	.051	.049	.058	.073	.099	.125	.152	126
127	.065	.070	.068	.084	.099	.114	.142	127
131	-.112	-.046	-.008	.079	.161	.228	.321	131
132	-.104	-.056	-.020	.030	.105	.163	.232	132
133	-.081	-.061	-.045	-.007	.031	.090	.130	133
134	-.032	-.027	-.018	.008	.035	.075	.121	134
135	-.037	-.026	-.023	-.009	.012	.033	.067	135
136	-.080	-.077	-.076	-.068	-.057	-.050	-.035	136
137	.077	.081	.083	.095	.113	.139	.171	137
141	-.020	.015	.023	.050	.071	.117	.170	141
142	-.062	-.058	-.044	-.016	.007	.061	.120	142
143	-.100	-.091	-.075	-.054	-.028	.016	.060	143
144	-.044	-.037	-.029	-.013	.013	.049	.092	144
145	.011	.019	.031	.049	.070	.103	.144	145
146	.059	.066	.076	.092	.114	.144	.172	146
147	.091	.101	.103	.117	.141	.167	.193	147
151	.025	.049	.057	.073	.082	.111	.153	151
152	-.066	-.050	-.034	-.010	-.005	.010	.061	152
153	-.119	-.090	-.083	-.068	-.038	-.010	.014	153
154	-.045	-.030	-.022	-.003	.025	.048	.082	154
155	.020	.034	.037	.054	.077	.107	.140	155
156	.044	.056	.066	.078	.103	.140	.169	156
157	.088	.090	.099	.114	.135	.160	.192	157
166	.177	.178	.180	.194	.209	.235	.274	166
167	.015	.019	.019	.029	.043	.055	.070	167
176	.093	.102	.109	.129	.153	.174	.207	176
177	.120	.119	.123	.133	.149	.167	.187	177
186	.126	.131	.125	.135	.145	.157	.163	186
103	-.055	-.090	-.124	-.174	-.246	-.286	-.326	103
105	.010	.005	-.001	-.039	-.068	-.086	-.107	105
106	-.091	-.086	-.085	-.086	-.085	-.088	-.089	106
107	.116	.120	.126	.135	.139	.125	.119	107

Pressure Data, C_p

DATE: 08/06/86 ALPHA= 50 BETA= 10 CONFIGURATION: BWHV RT VERTICAL

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	**************************			Ob/2V	************************			
111	-.507	-.521	-.521	-.514	-.537	-.471	-.523	111
112	-.566	-.561	-.561	-.571	-.578	-.529	-.556	112
113	-.646	-.612	-.616	-.629	-.654	-.625	-.654	113
114	-.650	-.658	-.649	-.678	-.648	-.649	-.665	114
115	-.655	-.658	-.666	-.686	-.673	-.670	-.701	115
116	-.670	-.672	-.671	-.693	-.703	-.668	-.678	116
117	-.680	-.666	-.670	-.692	-.685	-.683	-.706	117
121	-.494	-.491	-.494	-.489	-.508	-.458	-.487	121
122	-.555	-.539	-.546	-.534	-.565	-.532	-.556	122
123	-.626	-.616	-.609	-.633	-.621	-.625	-.634	123
124	-.639	-.640	-.641	-.661	-.642	-.647	-.688	124
125	-.659	-.656	-.635	-.682	-.655	-.674	-.685	125
126	-.679	-.648	-.668	-.676	-.657	-.672	-.664	126
127	-.658	-.661	-.660	-.677	-.696	-.661	-.660	127
131	-.517	-.506	-.494	-.476	-.498	-.466	-.489	131
132	-.591	-.568	-.552	-.554	-.572	-.567	-.580	132
133	-.638	-.606	-.604	-.599	-.620	-.605	-.628	133
134	-.650	-.623	-.613	-.606	-.640	-.626	-.676	134
135	-.586	-.601	-.597	-.616	-.617	-.588	-.622	135
136	-.550	-.541	-.546	-.544	-.549	-.539	-.546	136
137	-.694	-.660	-.671	-.674	-.696	-.654	-.684	137
141	-.509	-.486	-.478	-.454	-.481	-.467	-.493	141
142	-.588	-.568	-.550	-.570	-.566	-.551	-.564	142
143	-.585	-.571	-.571	-.563	-.580	-.566	-.595	143
144	-.616	-.592	-.599	-.608	-.586	-.593	-.610	144
145	-.603	-.619	-.612	-.615	-.622	-.606	-.649	145
146	-.658	-.652	-.647	-.645	-.647	-.639	-.688	146
147	-.703	-.667	-.674	-.687	-.672	-.669	-.664	147
151	-.518	-.502	-.492	-.504	-.497	-.483	-.493	151
152	-.574	-.573	-.568	-.551	-.558	-.526	-.534	152
153	-.586	-.573	-.572	-.569	-.581	-.541	-.554	153
154	-.621	-.573	-.571	-.603	-.578	-.555	-.572	154
155	-.601	-.608	-.588	-.611	-.597	-.592	-.626	155
156	-.614	-.602	-.597	-.614	-.598	-.595	-.624	156
157	-.640	-.637	-.634	-.664	-.630	-.597	-.629	157
166	-.102	-.098	-.097	-.103	-.078	.009	.044	166
167	-.384	-.383	-.385	-.378	-.390	-.382	-.432	167
176	.030	.013	-.004	-.049	-.104	-.099	-.090	176
177	-.157	-.155	-.163	-.189	-.202	-.159	-.175	177
186	.069	.063	.065	.052	.033	.106	.127	186
103	-.749	-.758	-.777	-.855	-.934	-.910	-.976	103
105	-.728	-.725	-.722	-.773	-.826	-.810	-.945	105
106	-.447	-.450	-.448	-.449	-.447	-.438	-.435	106
107	-.553	-.536	-.512	-.477	-.458	-.335	-.255	107

Pressure Data, C_p

DATE: 08/06/86 ALPHA= 50 BETA= 10 CONFIGURATION: BWHV RT VERTICAL

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	************************			Ob/2V	************************			
111	-.479	-.497	-.484	-.543	-.628	-.642	-.617	111
112	-.542	-.551	-.573	-.608	-.691	-.711	-.659	112
113	-.632	-.649	-.670	-.721	-.785	-.812	-.824	113
114	-.650	-.684	-.720	-.753	-.829	-.905	-.942	114
115	-.682	-.706	-.736	-.774	-.834	-.943	-1.039	115
116	-.666	-.692	-.727	-.762	-.805	-.977	-1.019	116
117	-.679	-.700	-.725	-.750	-.799	-.889	-.884	117
121	-.510	-.508	-.503	-.536	-.649	-.727	-.728	121
122	-.539	-.549	-.563	-.612	-.676	-.742	-.746	122
123	-.634	-.662	-.701	-.787	-.850	-.891	-.945	123
124	-.650	-.694	-.740	-.809	-.861	-.876	-1.113	124
125	-.671	-.698	-.739	-.830	-.854	-.969	-1.213	125
126	-.661	-.701	-.730	-.793	-.848	-.938	-1.137	126
127	-.664	-.695	-.716	-.761	-.801	-.855	-.917	127
131	-.525	-.528	-.553	-.621	-.698	-.775	-.862	131
132	-.563	-.615	-.634	-.715	-.789	-.881	-.990	132
133	-.625	-.658	-.713	-.798	-.865	-.952	-.971	133
134	-.645	-.680	-.715	-.804	-.880	-.952	-1.023	134
135	-.606	-.636	-.667	-.731	-.783	-.849	-.946	135
136	-.537	-.553	-.574	-.591	-.605	-.603	-.664	136
137	-.665	-.706	-.741	-.746	-.786	-.755	-.794	137
141	-.523	-.520	-.554	-.618	-.674	-.784	-.892	141
142	-.586	-.626	-.651	-.761	-.816	-.922	-1.042	142
143	-.584	-.625	-.669	-.754	-.808	-.919	-1.046	143
144	-.616	-.652	-.685	-.779	-.831	-.970	-1.149	144
145	-.630	-.685	-.696	-.804	-.898	-1.025	-1.133	145
146	-.638	-.704	-.734	-.856	-.940	-.843	-.624	146
147	-.662	-.722	-.757	-.840	-.904	-.700	-.638	147
151	-.510	-.547	-.591	-.657	-.707	-.822	-.942	151
152	-.608	-.631	-.680	-.769	-.798	-.901	-1.013	152
153	-.585	-.624	-.660	-.738	-.780	-.872	-1.034	153
154	-.615	-.630	-.667	-.725	-.771	-.893	-1.047	154
155	-.614	-.631	-.681	-.737	-.798	-.914	-1.121	155
156	-.603	-.651	-.682	-.747	-.813	-.997	-1.044	156
157	-.652	-.686	-.719	-.793	-.881	-.924	-.814	157
166	-.099	-.095	-.108	-.095	-.075	-.058	-.052	166
167	-.374	-.382	-.390	-.386	-.372	-.361	-.354	167
176	.026	.045	.047	.072	.101	.126	.142	176
177	-.133	-.129	-.127	-.080	-.044	-.015	.018	177
186	.072	.071	.065	.071	.082	.066	.046	186
103	-.713	-.722	-.729	-.785	-.723	-.662	-.655	103
105	-.739	-.735	-.738	-.772	-.715	-.706	-.688	105
106	-.443	-.439	-.436	-.436	-.440	-.448	-.456	106
107	-.568	-.547	-.537	-.474	-.460	-.478	-.512	107

Pressure Data, C_p

DATE: 08/07/86 ALPHA= 50 BETA=-10 CONFIGURATION: BWHV RT VERTICAL

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	******************************			0b/2V	**************************			
111	-.675	-.719	-.765	-.859	-.876	-.817	-.775	111
112	-.686	-.712	-.734	-.838	-.841	-.790	-.743	112
113	-.696	-.711	-.726	-.789	-.791	-.733	-.706	113
114	-.749	-.727	-.716	-.735	-.742	-.678	-.697	114
115	-.763	-.745	-.728	-.715	-.705	-.688	-.668	115
116	-.751	-.731	-.700	-.679	-.679	-.671	-.685	116
117	-.746	-.734	-.705	-.675	-.669	-.663	-.664	117
121	-.667	-.650	-.700	-.840	-.838	-.754	-.711	121
122	-.649	-.623	-.645	-.743	-.742	-.669	-.645	122
123	-.773	-.747	-.736	-.778	-.771	-.694	-.704	123
124	-.803	-.782	-.764	-.767	-.756	-.711	-.720	124
125	-.826	-.802	-.777	-.750	-.762	-.722	-.717	125
126	-.800	-.774	-.760	-.718	-.734	-.693	-.697	126
127	-.789	-.757	-.737	-.710	-.705	-.682	-.672	127
131	-.609	-.586	-.576	-.649	-.694	-.592	-.612	131
132	-.686	-.625	-.614	-.701	-.711	-.615	-.593	132
133	-.793	-.766	-.746	-.758	-.755	-.687	-.706	133
134	-.808	-.813	-.804	-.794	-.812	-.751	-.736	134
135	-.748	-.737	-.729	-.727	-.692	-.670	-.671	135
136	-.594	-.597	-.584	-.570	-.570	-.545	-.556	136
137	-.790	-.766	-.728	-.691	-.689	-.640	-.641	137
141	-.568	-.494	-.457	-.504	-.517	-.479	-.497	141
142	-.680	-.625	-.555	-.560	-.578	-.526	-.544	142
143	-.789	-.736	-.759	-.774	-.770	-.652	-.667	143
144	-.786	-.795	-.802	-.841	-.826	-.746	-.711	144
145	-.833	-.833	-.811	-.802	-.814	-.749	-.738	145
146	-.846	-.858	-.825	-.774	-.752	-.734	-.738	146
147	-.881	-.894	-.819	-.729	-.711	-.710	-.709	147
151	-.592	-.503	-.365	-.370	-.382	-.383	-.402	151
152	-.720	-.670	-.576	-.479	-.465	-.451	-.486	152
153	-.760	-.766	-.749	-.788	-.767	-.656	-.643	153
154	-.732	-.780	-.783	-.849	-.796	-.754	-.684	154
155	-.790	-.798	-.813	-.849	-.828	-.727	-.732	155
156	-.798	-.819	-.835	-.844	-.845	-.756	-.754	156
157	-.859	-.867	-.876	-.782	-.801	-.810	-.811	157
166	-.215	-.265	-.289	-.311	-.302	-.296	-.308	166
167	-.549	-.562	-.578	-.558	-.539	-.538	-.554	167
176	-.269	-.264	-.266	-.269	-.281	-.326	-.390	176
177	-.329	-.316	-.319	-.281	-.290	-.334	-.395	177
186	-.127	-.158	-.169	-.197	-.187	-.178	-.192	186
103	-.677	-.712	-.742	-.817	-.868	-.963	-1.079	103
105	-.655	-.686	-.707	-.767	-.799	-.939	-1.163	105
106	-.451	-.438	-.430	-.431	-.436	-.444	-.453	106
107	-.369	-.358	-.357	-.351	-.339	-.328	-.329	107

Pressure Data, C_p

DATE: 08/07/86 ALPHA= 50 BETA=-10 CONFIGURATION: BWHV RT VERTICAL

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	*****	*****	*****	Ob/2V	*****	*****	*****	
111	-.730	-.712	-.720	-.766	-.842	-.931	-1.023	111
112	-.681	-.698	-.703	-.747	-.826	-.870	-.920	112
113	-.728	-.733	-.745	-.794	-.842	-.867	-.916	113
114	-.759	-.765	-.783	-.822	-.880	-.905	-.953	114
115	-.777	-.790	-.808	-.845	-.881	-.924	-.962	115
116	-.805	-.776	-.800	-.834	-.905	-.940	-1.015	116
117	-.794	-.766	-.799	-.834	-.897	-.936	-.988	117
121	-.688	-.690	-.720	-.775	-.859	-.919	-.997	121
122	-.647	-.673	-.695	-.739	-.798	-.831	-.878	122
123	-.776	-.791	-.815	-.880	-.934	-.982	-1.034	123
124	-.793	-.833	-.867	-.903	-.950	-1.003	-1.027	124
125	-.823	-.844	-.861	-.922	-.969	-.988	-1.039	125
126	-.786	-.825	-.837	-.885	-.950	-1.000	-1.056	126
127	-.777	-.800	-.807	-.873	-.929	-.959	-.994	127
131	-.598	-.651	-.691	-.746	-.790	-.856	-.946	131
132	-.669	-.718	-.745	-.808	-.881	-.931	-1.013	132
133	-.759	-.826	-.840	-.919	-.950	-.995	-1.090	133
134	-.851	-.849	-.866	-.938	-.986	-1.038	-1.099	134
135	-.757	-.764	-.782	-.828	-.878	-.897	-.949	135
136	-.602	-.611	-.624	-.649	-.669	-.681	-.664	136
137	-.795	-.815	-.847	-.868	-.938	-.949	-.888	137
141	-.561	-.622	-.673	-.696	-.755	-.790	-.869	141
142	-.678	-.717	-.749	-.805	-.858	-.925	-.999	142
143	-.776	-.767	-.796	-.835	-.880	-.920	-1.018	143
144	-.771	-.802	-.830	-.861	-.954	-.981	-1.095	144
145	-.812	-.839	-.864	-.918	-1.030	-1.088	-1.184	145
146	-.876	-.894	-.932	-.986	-1.019	-1.056	-1.060	146
147	-.878	-.924	-.931	-.976	-1.016	-1.040	-.978	147
151	-.617	-.678	-.716	-.751	-.812	-.835	-.907	151
152	-.708	-.744	-.764	-.827	-.868	-.933	-1.004	152
153	-.751	-.785	-.779	-.816	-.859	-.874	-.943	153
154	-.742	-.758	-.785	-.816	-.865	-.889	-.945	154
155	-.784	-.786	-.802	-.852	-.890	-.915	-.998	155
156	-.751	-.793	-.795	-.855	-.847	-.867	-.938	156
157	-.832	-.852	-.842	-.858	-.877	-.901	-.945	157
166	-.225	-.193	-.170	-.120	-.088	-.046	-.018	166
167	-.532	-.528	-.508	-.469	-.448	-.410	-.392	167
176	-.257	-.267	-.276	-.246	-.212	-.104	.022	176
177	-.314	-.309	-.309	-.303	-.282	-.222	-.152	177
186	-.135	-.120	-.108	-.078	-.039	.040	.128	186
103	-.684	-.672	-.660	-.688	-.676	-.671	-.718	103
105	-.635	-.633	-.641	-.639	-.656	-.652	-.683	105
106	-.455	-.457	-.461	-.462	-.465	-.470	-.475	106
107	-.357	-.356	-.355	-.380	-.410	-.450	-.514	107

Pressure Data, C_p

DATE: 08/11/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWV RT VERTICAL

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	******	******	******	Ob/2V	******	******	******	
111	-.667	-.622	-.592	-.592	-.626	-.584	-.570	111
112	-.606	-.569	-.539	-.544	-.578	-.543	-.463	112
113	-.517	-.466	-.467	-.470	-.482	-.422	-.387	113
114	-.463	-.441	-.428	-.414	-.404	-.351	-.337	114
115	-.454	-.407	-.392	-.379	-.377	-.330	-.310	115
116	-.395	-.342	-.356	-.332	-.331	-.273	-.273	116
117	-.357	-.319	-.303	-.294	-.275	-.227	-.249	117
121	-.605	-.568	-.560	-.586	-.624	-.604	-.614	121
122	-.518	-.491	-.499	-.526	-.548	-.509	-.536	122
123	-.479	-.422	-.404	-.446	-.454	-.395	-.428	123
124	-.423	-.390	-.383	-.391	-.392	-.348	-.355	124
125	-.406	-.365	-.347	-.363	-.339	-.319	-.322	125
126	-.352	-.294	-.298	-.298	-.275	-.249	-.261	126
127	-.312	-.259	-.250	-.266	-.203	-.194	-.237	127
131	-.498	-.436	-.439	-.481	-.487	-.488	-.578	131
132	-.426	-.383	-.408	-.457	-.466	-.476	-.516	132
133	-.405	-.329	-.375	-.387	-.411	-.413	-.425	133
134	-.417	-.302	-.327	-.341	-.332	-.337	-.354	134
135	-.348	-.281	-.295	-.290	-.264	-.270	-.306	135
136	-.325	-.238	-.249	-.231	-.208	-.183	-.277	136
137	-.283	-.224	-.206	-.172	-.159	-.150	-.272	137
141	-.404	-.359	-.348	-.346	-.358	-.340	-.396	141
142	-.390	-.333	-.301	-.304	-.345	-.321	-.426	142
143	-.336	-.321	-.276	-.278	-.305	-.302	-.423	143
144	-.345	-.316	-.271	-.235	-.249	-.252	-.430	144
145	-.320	-.306	-.223	-.196	-.171	-.177	-.332	145
146	-.317	-.277	-.215	-.167	-.172	-.185	-.426	146
147	-.299	-.263	-.250	-.251	-.298	-.367	-.408	147
151	-.352	-.310	-.312	-.264	-.273	-.227	-.385	151
152	-.266	-.221	-.219	-.181	-.211	-.214	-.424	152
153	-.271	-.213	-.192	-.143	-.155	-.180	-.423	153
154	-.305	-.277	-.237	-.182	-.188	-.220	-.529	154
155	-.311	-.290	-.262	-.226	-.317	-.327	-.531	155
156	-.330	-.327	-.371	-.475	-.599	-.684	-.619	156
157	-.295	-.297	-.353	-.466	-.549	-.643	-.500	157
166	-.394	-.433	-.466	-.468	-.526	-.615	-.506	166
167	-.401	-.388	-.367	-.355	-.394	-.448	-.430	167
176	-.423	-.439	-.426	-.429	-.498	-.550	-.460	176
177	-.512	-.554	-.569	-.649	-.589	-.458	-.416	177
186	-.635	-.639	-.650	-.744	-.817	-.657	-.563	186
103	-.400	-.364	-.318	-.296	-.259	-.215	-.266	103
105	-.459	-.372	-.314	-.234	-.191	-.097	-.063	105
106	-.463	-.474	-.446	-.428	-.428	-.408	-.420	106
107	-.374	-.329	-.275	-.206	-.174	-.078	-.027	107

Pressure Data, C_p

DATE: 08/11/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWV RT VERTICAL

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	**********	**********	**********	Ob/2V	**********	**********	**********	
111	-.595	-.486	-.469	-.417	-.349	-.414	-.520	111
112	-.542	-.426	-.404	-.359	-.291	-.365	-.458	112
113	-.494	-.408	-.405	-.358	-.328	-.352	-.357	113
114	-.462	-.400	-.397	-.367	-.334	-.329	-.349	114
115	-.443	-.401	-.388	-.364	-.333	-.322	-.309	115
116	-.392	-.370	-.350	-.329	-.301	-.295	-.278	116
117	-.346	-.333	-.314	-.301	-.275	-.287	-.279	117
121	-.566	-.457	-.420	-.342	-.273	-.257	-.381	121
122	-.507	-.412	-.393	-.298	-.240	-.220	-.276	122
123	-.414	-.374	-.370	-.286	-.265	-.245	-.250	123
124	-.402	-.361	-.350	-.288	-.267	-.258	-.244	124
125	-.392	-.331	-.324	-.276	-.265	-.250	-.251	125
126	-.331	-.295	-.284	-.258	-.244	-.245	-.223	126
127	-.294	-.275	-.261	-.238	-.232	-.265	-.294	127
131	-.493	-.395	-.367	-.252	-.181	-.152	-.215	131
132	-.413	-.367	-.344	-.244	-.160	-.143	-.206	132
133	-.386	-.356	-.322	-.269	-.218	-.195	-.205	133
134	-.358	-.314	-.302	-.272	-.210	-.204	-.193	134
135	-.360	-.292	-.282	-.262	-.223	-.224	-.185	135
136	-.296	-.270	-.256	-.249	-.217	-.212	-.211	136
137	-.262	-.238	-.231	-.235	-.209	-.242	-.270	137
141	-.364	-.273	-.248	-.146	-.073	-.068	-.054	141
142	-.295	-.266	-.232	-.145	-.069	-.045	-.048	142
143	-.296	-.293	-.264	-.200	-.148	-.121	-.102	143
144	-.305	-.285	-.278	-.230	-.182	-.162	-.118	144
145	-.330	-.288	-.278	-.244	-.192	-.181	-.151	145
146	-.281	-.279	-.274	-.236	-.196	-.188	-.163	146
147	-.252	-.268	-.249	-.221	-.207	-.228	-.238	147
151	-.305	-.276	-.203	-.098	-.045	.004	.058	151
152	-.224	-.256	-.196	-.095	-.027	.017	.130	152
153	-.215	-.288	-.235	-.152	-.094	-.032	.041	153
154	-.290	-.328	-.299	-.211	-.148	-.083	-.032	154
155	-.283	-.311	-.289	-.208	-.161	-.135	-.085	155
156	-.315	-.306	-.285	-.233	-.200	-.170	-.151	156
157	-.275	-.269	-.250	-.231	-.223	-.221	-.199	157
166	-.404	-.389	-.323	-.240	-.184	-.127	-.084	166
167	-.366	-.373	-.352	-.333	-.308	-.290	-.266	167
176	-.409	-.430	-.366	-.243	-.158	-.097	-.003	176
177	-.504	-.506	-.442	-.326	-.206	-.114	-.020	177
186	-.609	-.622	-.571	-.438	-.253	-.121	-.001	186
103	-.430	-.489	-.510	-.542	-.543	-.554	-.579	103
105	-.418	-.333	-.341	-.451	-.671	-.659	-.566	105
106	-.443	-.447	-.454	-.461	-.463	-.455	-.447	106
107	-.349	-.353	-.376	-.431	-.484	-.460	-.466	107

Pressure Data, C_p

DATE: 08/11/86 ALPHA= 40 BETA= 0 CONFIGURATION: BWV RT VERTICAL

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	**************************			Ob/2V	************************			
111	-.301	-.383	-.379	-.347	-.293	-.286	-.309	111
112	-.239	-.339	-.347	-.314	-.226	-.219	-.218	112
113	-.231	-.297	-.330	-.298	-.215	-.179	-.184	113
114	-.240	-.278	-.314	-.279	-.199	-.178	-.170	114
115	-.228	-.282	-.297	-.268	-.221	-.161	-.146	115
116	-.246	-.258	-.263	-.259	-.191	-.166	-.144	116
117	-.225	-.261	-.260	-.252	-.216	-.156	-.157	117
121	-.352	-.432	-.412	-.415	-.321	-.333	-.345	121
122	-.250	-.369	-.391	-.345	-.281	-.244	-.254	122
123	-.236	-.316	-.337	-.287	-.224	-.211	-.200	123
124	-.220	-.284	-.300	-.287	-.234	-.197	-.206	124
125	-.216	-.275	-.288	-.252	-.223	-.192	-.194	125
126	-.201	-.248	-.269	-.243	-.207	-.178	-.140	126
127	-.211	-.228	-.235	-.226	-.225	-.155	-.114	127
131	-.280	-.453	-.464	-.430	-.344	-.357	-.380	131
132	-.243	-.378	-.399	-.363	-.302	-.312	-.297	132
133	-.223	-.344	-.364	-.355	-.288	-.244	-.232	133
134	-.225	-.312	-.317	-.311	-.271	-.214	-.228	134
135	-.212	-.262	-.286	-.281	-.242	-.202	-.182	135
136	-.164	-.241	-.243	-.233	-.200	-.185	-.178	136
137	-.161	-.182	-.184	-.174	-.162	-.140	-.130	137
141	-.276	-.389	-.381	-.356	-.299	-.278	-.322	141
142	-.340	-.356	-.367	-.352	-.290	-.282	-.291	142
143	-.266	-.317	-.336	-.329	-.291	-.269	-.297	143
144	-.222	-.276	-.295	-.278	-.271	-.235	-.271	144
145	-.185	-.242	-.242	-.224	-.197	-.221	-.233	145
146	-.176	-.188	-.192	-.173	-.162	-.204	-.200	146
147	-.157	-.144	-.151	-.117	-.144	-.190	-.233	147
151	-.347	-.349	-.361	-.328	-.274	-.285	-.311	151
152	-.299	-.343	-.350	-.313	-.304	-.325	-.337	152
153	-.250	-.265	-.277	-.278	-.278	-.302	-.357	153
154	-.215	-.244	-.253	-.236	-.255	-.327	-.362	154
155	-.212	-.202	-.200	-.174	-.200	-.315	-.348	155
156	-.215	-.208	-.213	-.187	-.244	-.315	-.400	156
157	-.196	-.179	-.206	-.228	-.264	-.300	-.349	157
166	-.286	-.309	-.399	-.497	-.430	-.355	-.410	166
167	-.281	-.293	-.308	-.320	-.302	-.297	-.325	167
176	-.283	-.317	-.340	-.335	-.330	-.277	-.343	176
177	-.321	-.365	-.385	-.374	-.314	-.278	-.291	177
186	-.358	-.407	-.415	-.428	-.367	-.326	-.346	186
103	-.257	-.219	-.215	-.207	-.225	-.209	-.189	103
105	-.298	-.256	-.252	-.218	-.187	-.123	-.084	105
106	-.367	-.363	-.369	-.356	-.347	-.335	-.337	106
107	-.246	-.209	-.198	-.147	-.095	-.060	-.022	107

Pressure Data, C_p

DATE: 08/11/86 ALPHA= 40 BETA= 0 CONFIGURATION: BWV RT VERTICAL

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	************	************	************	Ob/2V	************	************	************	
111	-.329	-.317	-.298	-.284	-.270	-.261	-.227	111
112	-.269	-.240	-.231	-.248	-.222	-.196	-.159	112
113	-.251	-.219	-.221	-.224	-.215	-.160	-.167	113
114	-.254	-.224	-.218	-.227	-.204	-.166	-.156	114
115	-.260	-.240	-.224	-.228	-.214	-.166	-.158	115
116	-.220	-.234	-.218	-.216	-.226	-.165	-.159	116
117	-.228	-.243	-.239	-.228	-.236	-.175	-.162	117
121	-.342	-.277	-.263	-.243	-.275	-.337	-.313	121
122	-.272	-.228	-.208	-.204	-.255	-.243	-.230	122
123	-.236	-.208	-.191	-.214	-.242	-.203	-.166	123
124	-.237	-.213	-.200	-.214	-.241	-.181	-.168	124
125	-.243	-.221	-.210	-.215	-.231	-.196	-.156	125
126	-.207	-.205	-.197	-.192	-.211	-.157	-.142	126
127	-.189	-.205	-.200	-.200	-.205	-.162	-.167	127
131	-.281	-.247	-.219	-.189	-.246	-.326	-.302	131
132	-.219	-.206	-.188	-.168	-.231	-.262	-.244	132
133	-.214	-.208	-.193	-.183	-.250	-.233	-.236	133
134	-.224	-.206	-.190	-.194	-.229	-.191	-.163	134
135	-.202	-.196	-.190	-.190	-.223	-.137	-.141	135
136	-.178	-.174	-.171	-.167	-.183	-.135	-.128	136
137	-.160	-.156	-.145	-.142	-.166	-.122	-.129	137
141	-.330	-.233	-.185	-.149	-.193	-.216	-.207	141
142	-.273	-.215	-.172	-.145	-.192	-.205	-.187	142
143	-.215	-.205	-.175	-.169	-.215	-.163	-.138	143
144	-.254	-.201	-.183	-.176	-.199	-.133	-.132	144
145	-.184	-.190	-.177	-.157	-.172	-.121	-.104	145
146	-.166	-.167	-.169	-.162	-.165	-.100	-.100	146
147	-.151	-.160	-.155	-.146	-.134	-.104	-.109	147
151	-.307	-.275	-.221	-.165	-.144	-.143	-.110	151
152	-.318	-.251	-.212	-.157	-.157	-.130	-.072	152
153	-.247	-.203	-.175	-.147	-.164	-.091	-.056	153
154	-.246	-.218	-.205	-.178	-.167	-.102	-.076	154
155	-.206	-.207	-.182	-.170	-.153	-.086	-.059	155
156	-.205	-.224	-.180	-.182	-.156	-.097	-.077	156
157	-.194	-.201	-.164	-.156	-.145	-.099	-.107	157
166	-.294	-.269	-.223	-.165	-.137	-.066	-.025	166
167	-.296	-.297	-.273	-.250	-.236	-.210	-.196	167
176	-.303	-.288	-.243	-.155	-.092	-.035	.006	176
177	-.297	-.293	-.266	-.186	-.137	-.060	.007	177
186	-.336	-.345	-.308	-.223	-.153	-.057	.034	186
103	-.323	-.405	-.423	-.361	-.281	-.244	-.271	103
105	-.324	-.340	-.326	-.298	-.300	-.374	-.450	105
106	-.370	-.381	-.380	-.372	-.368	-.367	-.372	106
107	-.269	-.307	-.327	-.347	-.337	-.326	-.347	107

Pressure Data, C_p

DATE: 08/11/86 ALPHA= 20 BETA= 0 CONFIGURATION: BWV RT VERTICAL

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	*****	*****	*****	Ob/2V	*****	*****	*****	
111	-.081	-.151	-.266	-.397	-.454	-.439	-.435	111
112	-.029	-.069	-.166	-.213	-.254	-.264	-.301	112
113	.050	.042	.001	-.014	-.021	-.022	-.025	113
114	.086	.104	.065	.058	.061	.089	.085	114
115	.116	.129	.112	.110	.126	.144	.161	115
116	.153	.158	.130	.128	.142	.154	.188	116
117	.168	.176	.161	.159	.164	.198	.227	117
121	-.067	-.124	-.243	-.373	-.416	-.402	-.388	121
122	.004	-.048	-.129	-.187	-.225	-.258	-.263	122
123	.078	.064	.017	.015	.007	.005	.013	123
124	.112	.099	.085	.074	.069	.080	.093	124
125	.132	.128	.110	.105	.107	.134	.144	125
126	.163	.148	.134	.128	.152	.164	.189	126
127	.166	.155	.158	.145	.170	.196	.220	127
131	.025	-.030	-.094	-.138	-.162	-.173	-.129	131
132	.045	.021	-.032	-.043	-.042	-.042	-.004	132
133	.082	.072	.039	.028	.041	.031	.052	133
134	.100	.092	.078	.076	.075	.087	.096	134
135	.117	.109	.100	.097	.115	.128	.147	135
136	.138	.137	.124	.123	.146	.148	.170	136
137	.149	.147	.138	.150	.167	.187	.208	137
141	.088	.073	.064	.043	.039	.071	.127	141
142	.071	.061	.035	.015	.055	.068	.076	142
143	.088	.061	.038	.044	.053	.063	.061	143
144	.081	.071	.063	.075	.065	.090	.085	144
145	.093	.095	.080	.060	.095	.111	.118	145
146	.107	.106	.105	.113	.112	.144	.160	146
147	.106	.109	.112	.103	.137	.172	.179	147
151	.101	.081	.068	.064	.112	.110	.138	151
152	.076	.061	.058	.060	.082	.091	.098	152
153	.087	.060	.000	.042	.053	.074	.080	153
154	.081	.059	.019	.050	.048	.071	.071	154
155	.072	.079	.023	.071	.095	.111	.120	155
156	.097	.078	.030	.073	.100	.113	.131	156
157	.100	.092	.044	.106	.116	.156	.165	157
166	.061	.045	.009	.017	.005	-.039	-.083	166
167	-.022	-.023	-.048	-.031	-.062	-.052	-.057	167
176	.047	.041	.002	.002	-.021	-.015	-.002	176
177	.072	.064	.027	.046	.061	.079	.050	177
186	.065	.053	.044	.055	.063	.048	.048	186
103	.087	.092	.102	.146	.218	.233	.302	103
105	.067	.063	.068	.097	.131	.185	.234	105
106	-.098	-.106	-.102	-.110	-.098	-.092	-.084	106
107	.078	.081	.086	.111	.130	.164	.212	107

Pressure Data, C_p

DATE: 08/11/86   ALPHA= 20   BETA= 0   CONFIGURATION: BWV RT VERTICAL

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	********	********	********	Ob/2V	********	********	********	
111	-.047	.041	.122	.339	.437	.514	.599	111
112	-.040	.034	.088	.267	.309	.388	.458	112
113	.039	.072	.085	.218	.219	.264	.304	113
114	.079	.097	.099	.212	.184	.226	.231	114
115	.110	.116	.123	.210	.181	.209	.246	115
116	.138	.147	.151	.224	.200	.229	.269	116
117	.156	.164	.158	.242	.208	.243	.251	117
121	-.050	.056	.123	.287	.389	.494	.570	121
122	-.004	.055	.100	.236	.306	.389	.475	122
123	.045	.090	.101	.207	.226	.283	.338	123
124	.091	.112	.107	.201	.200	.248	.303	124
125	.110	.129	.127	.211	.202	.245	.277	125
126	.130	.146	.148	.220	.226	.256	.283	126
127	.158	.161	.152	.223	.219	.247	.259	127
131	.031	.083	.108	.257	.322	.396	.458	131
132	.047	.089	.110	.204	.247	.337	.418	132
133	.072	.093	.104	.190	.220	.263	.328	133
134	.105	.113	.112	.187	.219	.249	.306	134
135	.120	.127	.127	.200	.216	.259	.298	135
136	.134	.143	.143	.199	.234	.251	.292	136
137	.141	.147	.150	.219	.228	.251	.283	137
141	.115	.128	.135	.214	.258	.292	.376	141
142	.083	.096	.115	.185	.228	.282	.357	142
143	.068	.086	.094	.174	.176	.262	.306	143
144	.093	.101	.112	.172	.187	.240	.313	144
145	.105	.111	.121	.176	.197	.243	.291	145
146	.109	.114	.118	.189	.222	.251	.277	146
147	.113	.116	.129	.186	.217	.254	.284	147
151	.100	.118	.141	.198	.241	.296	.329	151
152	.078	.088	.094	.150	.196	.244	.315	152
153	.061	.076	.088	.144	.176	.235	.298	153
154	.057	.075	.088	.153	.183	.226	.273	154
155	.071	.085	.095	.148	.177	.224	.265	155
156	.069	.087	.099	.150	.186	.235	.265	156
157	.089	.091	.105	.161	.210	.229	.259	157
166	.043	.054	.069	.130	.182	.204	.257	166
167	-.026	-.018	-.015	.033	.057	.075	.094	167
176	.050	.065	.075	.142	.165	.193	.217	176
177	.075	.058	.072	.123	.165	.182	.209	177
186	.041	.041	.050	.088	.124	.138	.147	186
103	.055	.062	.035	.052	.018	.006	-.028	103
105	.053	.042	.035	.083	.102	.099	.113	105
106	-.112	-.103	-.109	-.105	-.093	-.085	-.096	106
107	.078	.050	.044	.068	.089	.099	.114	107

DATE: 08/06/86 ALPHA= 50 BETA= 0 CONFIGURATION: BHV RT VERTICAL

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	*****	*****	*****	Ob/2V	*****	*****	*****	
111	-.932	-.964	-1.047	-1.220	-1.255	-1.055	-.566	111
112	-.906	-.959	-.983	-1.140	-1.165	-1.018	-.806	112
113	-.911	-.922	-.963	-1.032	-1.051	-.978	-.923	113
114	-.881	-.909	-.939	-.983	-1.000	-.940	-.942	114
115	-.880	-.897	-.925	-.947	-.952	-.921	-.944	115
116	-.882	-.898	-.894	-.906	-.920	-.911	-.944	116
117	-.908	-.846	-.865	-.891	-.918	-.923	-.956	117
121	-.783	-.865	-.908	-1.174	-1.219	-1.077	-.654	121
122	-.714	-.785	-.825	-.978	-1.023	-.942	-.767	122
123	-.840	-.889	-.953	-1.038	-1.056	-.978	-.971	123
124	-.880	-.910	-.926	-.952	-.958	-.945	-.949	124
125	-.915	-.929	-.932	-.923	-.926	-.909	-.956	125
126	-.877	-.890	-.907	-.903	-.908	-.916	-.936	126
127	-.862	-.869	-.881	-.908	-.926	-.933	-.973	127
131	-.627	-.686	-.734	-.931	-1.045	-1.148	-.949	131
132	-.730	-.721	-.780	-.936	-1.032	-1.136	-1.037	132
133	-.855	-.864	-.863	-.902	-.948	-1.015	-1.067	133
134	-.838	-.876	-.871	-.907	-.929	-.962	-.998	134
135	-.759	-.803	-.786	-.795	-.803	-.816	-.835	135
136	-.644	-.637	-.637	-.633	-.640	-.635	-.649	136
137	-.876	-.880	-.876	-.881	-.886	-.900	-.928	137
141	-.486	-.399	-.400	-.596	-.608	-.697	-.772	141
142	-.748	-.629	-.606	-.697	-.789	-.902	-1.043	142
143	-.780	-.819	-.803	-.857	-.919	-1.007	-1.108	143
144	-.785	-.811	-.835	-.851	-.914	-.951	-1.021	144
145	-.816	-.852	-.831	-.832	-.860	-.890	-.920	145
146	-.935	-.905	-.880	-.863	-.880	-.886	-.875	146
147	-.955	-.895	-.896	-.873	-.868	-.881	-.869	147
151	-.597	-.494	-.472	-.426	-.556	-.588	-.629	151
152	-.818	-.791	-.772	-.498	-.674	-.763	-.843	152
153	-.794	-.812	-.829	-.789	-.854	-.945	-1.052	153
154	-.772	-.824	-.818	-.790	-.831	-.898	-.979	154
155	-.778	-.820	-.854	-.811	-.834	-.902	-.944	155
156	-.779	-.807	-.829	-.811	-.820	-.877	-.980	156
157	-.884	-.859	-.872	-.835	-.836	-.875	-.949	157
166	-.233	-.259	-.276	-.353	-.397	-.443	-.421	166
167	-.517	-.544	-.552	-.613	-.624	-.634	-.641	167
176	-.295	-.299	-.332	-.306	-.334	-.351	-.353	176
177	-.398	-.408	-.435	-.441	-.443	-.424	-.383	177
186	-.181	-.184	-.206	-.228	-.260	-.299	-.291	186
103	-.800	-.739	-.721	-.793	-.885	-.990	-1.121	103
105	-.773	-.684	-.672	-.747	-.840	-.944	-1.034	105
106	-.459	-.451	-.450	-.439	-.450	-.457	-.461	106
107	-.530	-.455	-.427	-.434	-.449	-.465	-.462	107

Pressure Data, C_p

DATE: 08/06/86   ALPHA= 50   BETA= 0   CONFIGURATION: BHV RT VERTICAL

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	************	************	************	Ob/2V	************	************	************	
111	-.906	-1.014	-.759	-.782	-.832	-.893	-1.391	111
112	-.876	-.941	-.786	-.794	-.882	-.960	-1.207	112
113	-.853	-.869	-.781	-.841	-.945	-1.048	-1.137	113
114	-.888	-.866	-.809	-.852	-.955	-1.078	-1.126	114
115	-.859	-.865	-.785	-.853	-.975	-1.073	-1.096	115
116	-.817	-.867	-.812	-.861	-.967	-1.084	-1.085	116
117	-.817	-.790	-.809	-.871	-.971	-1.042	-1.112	117
121	-.704	-.821	-.704	-.857	-.976	-1.085	-1.235	121
122	-.724	-.742	-.707	-.774	-.857	-.937	-1.027	122
123	-.821	-.843	-.809	-.863	-.974	-1.055	-1.195	123
124	-.781	-.852	-.806	-.862	-.963	-1.077	-1.143	124
125	-.902	-.855	-.822	-.857	-.964	-1.077	-1.072	125
126	-.888	-.850	-.797	-.867	-.984	-1.096	-1.093	126
127	-.835	-.806	-.812	-.878	-.973	-1.079	-1.072	127
131	-.608	-.613	-.672	-.852	-.996	-1.096	-1.064	131
132	-.675	-.720	-.745	-.847	-.979	-1.069	-1.173	132
133	-.851	-.826	-.759	-.861	-.972	-1.058	-1.236	133
134	-.842	-.843	-.789	-.865	-.967	-1.057	-1.223	134
135	-.750	-.751	-.744	-.776	-.849	-.923	-1.040	135
136	-.619	-.616	-.608	-.628	-.669	-.704	-.722	136
137	-.810	-.874	-.786	-.919	-1.015	-1.120	-1.047	137
141	-.464	-.520	-.613	-.774	-.922	-1.015	-1.038	141
142	-.682	-.718	-.741	-.823	-.948	-1.062	-1.191	142
143	-.753	-.782	-.746	-.821	-.942	-1.032	-1.147	143
144	-.737	-.765	-.734	-.834	-.949	-1.041	-1.197	144
145	-.802	-.793	-.765	-.858	-.963	-1.056	-1.287	145
146	-.817	-.867	-.767	-.868	-.996	-1.082	-1.262	146
147	-.826	-.910	-.790	-.881	-1.010	-1.094	-1.259	147
151	-.521	-.582	-.632	-.736	-.862	-.978	-.917	151
152	-.717	-.770	-.750	-.812	-.924	-1.032	-1.172	152
153	-.746	-.774	-.728	-.819	-.926	-1.020	-1.114	153
154	-.742	-.764	-.726	-.806	-.926	-.999	-1.109	154
155	-.767	-.805	-.752	-.802	-.920	-1.001	-1.143	155
156	-.746	-.789	-.709	-.808	-.923	-1.012	-1.113	156
157	-.805	-.809	-.730	-.840	-.958	-1.043	-1.172	157
166	-.225	-.213	-.215	-.252	-.274	-.300	-.293	166
167	-.493	-.475	-.454	-.473	-.494	-.503	-.521	167
176	-.277	-.252	-.214	-.181	-.159	-.139	-.123	176
177	-.365	-.355	-.325	-.338	-.330	-.307	-.294	177
186	-.163	-.127	-.110	-.108	-.118	-.110	-.112	186
103	-.771	-.727	-.850	-.969	-1.020	-1.131	-1.036	103
105	-.689	-.709	-.802	-.803	-.894	-.964	-1.020	105
106	-.446	-.458	-.457	-.459	-.474	-.479	-.474	106
107	-.541	-.559	-.590	-.646	-.680	-.717	-.745	107

Pressure Data, C_p

DATE: 08/07/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWHV RT UPPER HORIZONTAL

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	*********	*********	*********	Ob/2V	*********	*********	*********	
211	-.635	-.560	-.510	-.488	-.492	-.474	-.477	211
212	-.642	-.564	-.506	-.517	-.492	-.451	-.475	212
213	-.645	-.579	-.520	-.505	-.498	-.478	-.471	213
214	-.606	-.569	-.533	-.516	-.504	-.470	-.492	214
215	-.731	-.585	-.540	-.523	-.512	-.485	-.493	215
216	-.694	-.591	-.540	-.522	-.509	-.474	-.500	216
217	-.693	-.579	-.533	-.522	-.512	-.468	-.507	217
221	-.613	-.568	-.540	-.554	-.545	-.532	-.551	221
222	-.633	-.571	-.548	-.553	-.527	-.495	-.542	222
223	-.622	-.588	-.545	-.549	-.549	-.517	-.525	223
224	-.661	-.615	-.563	-.553	-.536	-.523	-.547	224
225	-.665	-.609	-.570	-.559	-.554	-.509	-.555	225
226	-.694	-.607	-.555	-.564	-.560	-.528	-.522	226
227	-.706	-.569	-.573	-.568	-.553	-.500	-.543	227
231	-.711	-.589	-.568	-.573	-.580	-.547	-.604	231
232	-.639	-.604	-.573	-.576	-.574	-.550	-.589	232
233	-.666	-.599	-.587	-.579	-.584	-.560	-.596	233
234	-.727	-.642	-.583	-.587	-.578	-.557	-.615	234
235	-.695	-.652	-.606	-.616	-.600	-.590	-.629	235
236	-.694	-.647	-.588	-.605	-.607	-.590	-.649	236
237	-.665	-.610	-.590	-.613	-.626	-.575	-.623	237
241	-.672	-.602	-.576	-.565	-.564	-.560	-.585	241
242	-.651	-.608	-.568	-.566	-.557	-.560	-.582	242
243	-.701	-.621	-.580	-.569	-.549	-.536	-.558	243
244	-.755	-.618	-.589	-.579	-.576	-.547	-.630	244
245	-.758	-.656	-.601	-.598	-.584	-.566	-.624	245
246	-.741	-.653	-.619	-.615	-.610	-.616	-.632	246
247	-.709	-.654	-.637	-.637	-.640	-.632	-.686	247
251	-.663	-.609	-.569	-.540	-.545	-.502	-.573	251
252	-.624	-.626	-.567	-.542	-.535	-.534	-.561	252
253	-.675	-.604	-.564	-.536	-.525	-.511	-.559	253
254	-.674	-.635	-.575	-.565	-.531	-.523	-.569	254
255	-.708	-.640	-.583	-.575	-.562	-.568	-.619	255
256	-.711	-.643	-.612	-.616	-.585	-.575	-.636	256
257	-.727	-.659	-.612	-.611	-.603	-.594	-.663	257
202	.952	.969	.991	1.030	1.058	1.137	1.197	202
203	.148	.150	.189	.205	.245	.293	.341	203
205	.306	.339	.361	.413	.460	.572	.665	205
207	-.044	-.013	.029	.060	.096	.167	.252	207

Pressure Data, C_p

DATE: 08/07/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWHV RT UPPER HORIZONTAL

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	***************************			Ob/2V	*************************			
211	-.611	-.813	-.867	-.952	-.981	-.965	-.999	211
212	-.617	-.798	-.876	-.943	-.985	-.973	-1.033	212
213	-.670	-.797	-.890	-.967	-.997	-.962	-.989	213
214	-.671	-.834	-.931	-.988	-1.027	-.994	-1.048	214
215	-.753	-.864	-.959	-1.007	-1.054	-1.006	-1.051	215
216	-.699	-.850	-.972	-1.034	-1.069	-1.038	-1.077	216
217	-.647	-.838	-.962	-1.055	-1.084	-1.026	-1.111	217
221	-.600	-.779	-.855	-.922	-.954	-.967	-1.039	221
222	-.641	-.767	-.863	-.922	-.970	-.945	-1.024	222
223	-.645	-.825	-.895	-.943	-.984	-.966	-1.037	223
224	-.691	-.815	-.922	-.979	-1.010	-.979	-1.071	224
225	-.703	-.866	-.955	-.994	-1.058	-1.002	-1.086	225
226	-.683	-.862	-.944	-1.029	-1.061	-1.025	-1.107	226
227	-.671	-.809	-.922	-.997	-1.034	-1.009	-1.118	227
231	-.663	-.760	-.809	-.881	-.896	-.874	-.916	231
232	-.647	-.760	-.836	-.882	-.908	-.868	-.938	232
233	-.677	-.783	-.875	-.923	-.945	-.901	-.986	233
234	-.657	-.837	-.889	-.940	-.975	-.960	-1.016	234
235	-.686	-.846	-.916	-.974	-.998	-.992	-1.035	235
236	-.686	-.831	-.899	-.952	-.999	-.969	-1.048	236
237	-.659	-.782	-.860	-.899	-.961	-.951	-1.036	237
241	-.678	-.773	-.827	-.859	-.862	-.835	-.880	241
242	-.658	-.774	-.837	-.856	-.897	-.875	-.889	242
243	-.658	-.805	-.867	-.906	-.939	-.922	-.949	243
244	-.722	-.850	-.904	-.941	-.967	-.945	-.972	244
245	-.699	-.856	-.927	-.931	-.975	-.932	-.964	245
246	-.682	-.830	-.897	-.926	-.935	-.879	-.908	246
247	-.715	-.793	-.846	-.873	-.870	-.833	-.876	247
251	-.629	-.815	-.869	-.916	-.973	-.952	-.940	251
252	-.681	-.823	-.941	-.999	-1.023	-.999	-.986	252
253	-.716	-.831	-.888	-.908	-.950	-.912	-.942	253
254	-.666	-.783	-.856	-.887	-.939	-.916	-.971	254
255	-.679	-.817	-.873	-.925	-.957	-.941	-1.031	255
256	-.720	-.837	-.902	-.928	-.947	-.913	-.998	256
257	-.745	-.841	-.901	-.912	-.923	-.858	-.882	257
202	.977	.972	.978	.982	1.022	1.086	1.150	202
203	.176	.159	.159	.174	.200	.250	.290	203
205	.333	.314	.297	.301	.324	.377	.422	205
207	-.027	-.099	-.142	-.174	-.159	-.129	-.116	207

Pressure Data, C_p

DATE: 08/07/86 ALPHA= 40 BETA= 0 CONFIGURATION: BWHV RT UPPER HORIZONTAL

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	******	******	******	Ob/2V	******	******	******	
211	-.653	-.533	-.450	-.436	-.449	-.416	-.406	211
212	-.632	-.541	-.454	-.442	-.448	-.421	-.406	212
213	-.640	-.557	-.475	-.454	-.454	-.438	-.405	213
214	-.688	-.593	-.502	-.459	-.482	-.480	-.438	214
215	-.742	-.626	-.514	-.480	-.498	-.497	-.471	215
216	-.751	-.618	-.559	-.497	-.517	-.506	-.470	216
217	-.725	-.625	-.520	-.467	-.500	-.504	-.456	217
221	-.622	-.501	-.471	-.472	-.506	-.470	-.458	221
222	-.635	-.510	-.472	-.470	-.501	-.453	-.453	222
223	-.648	-.550	-.495	-.487	-.499	-.486	-.471	223
224	-.643	-.593	-.530	-.505	-.546	-.511	-.489	224
225	-.747	-.624	-.555	-.508	-.585	-.550	-.511	225
226	-.730	-.619	-.524	-.541	-.570	-.563	-.529	226
227	-.701	-.575	-.517	-.515	-.520	-.504	-.484	227
231	-.551	-.513	-.492	-.536	-.527	-.507	-.511	231
232	-.576	-.509	-.502	-.522	-.550	-.522	-.523	232
233	-.623	-.544	-.524	-.529	-.565	-.559	-.518	233
234	-.671	-.599	-.562	-.558	-.609	-.580	-.559	234
235	-.707	-.618	-.588	-.579	-.609	-.634	-.606	235
236	-.700	-.627	-.581	-.575	-.629	-.591	-.588	236
237	-.643	-.568	-.540	-.556	-.574	-.539	-.514	237
241	-.587	-.549	-.519	-.532	-.558	-.546	-.528	241
242	-.584	-.559	-.542	-.526	-.550	-.563	-.536	242
243	-.631	-.598	-.556	-.572	-.572	-.578	-.562	243
244	-.683	-.634	-.579	-.569	-.627	-.612	-.578	244
245	-.712	-.640	-.600	-.601	-.693	-.642	-.624	245
246	-.669	-.639	-.635	-.635	-.668	-.671	-.659	246
247	-.621	-.588	-.590	-.625	-.648	-.645	-.681	247
251	-.635	-.559	-.514	-.525	-.547	-.554	-.515	251
252	-.650	-.568	-.538	-.502	-.547	-.511	-.495	252
253	-.675	-.660	-.574	-.552	-.568	-.577	-.520	253
254	-.635	-.614	-.587	-.551	-.613	-.592	-.596	254
255	-.645	-.599	-.591	-.589	-.634	-.641	-.644	255
256	-.637	-.624	-.604	-.612	-.669	-.676	-.639	256
257	-.618	-.630	-.636	-.639	-.674	-.699	-.695	257
202	.965	.991	1.010	1.027	1.057	1.099	1.143	202
203	.155	.180	.194	.207	.260	.299	.361	203
205	.238	.274	.279	.310	.356	.433	.528	205
207	-.113	-.055	-.013	.009	.055	.122	.186	207

DATE: 08/07/86 ALPHA= 40 BETA= 0 CONFIGURATION: BWHV RT UPPER HORIZONTAL

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	**********	**********	**********	Ob/2V	**********	**********	**********	
211	-.624	-.723	-.715	-.702	-.650	-.673	-.728	211
212	-.656	-.721	-.751	-.712	-.675	-.651	-.742	212
213	-.671	-.726	-.752	-.729	-.679	-.705	-.762	213
214	-.730	-.775	-.797	-.764	-.706	-.699	-.797	214
215	-.690	-.805	-.799	-.776	-.725	-.741	-.812	215
216	-.724	-.835	-.860	-.811	-.745	-.753	-.827	216
217	-.775	-.812	-.853	-.800	-.773	-.794	-.836	217
221	-.589	-.656	-.678	-.667	-.618	-.652	-.748	221
222	-.610	-.674	-.699	-.668	-.625	-.665	-.749	222
223	-.641	-.687	-.711	-.697	-.676	-.693	-.796	223
224	-.680	-.742	-.789	-.730	-.703	-.714	-.826	224
225	-.729	-.800	-.831	-.803	-.765	-.799	-.869	225
226	-.728	-.801	-.832	-.798	-.751	-.784	-.863	226
227	-.687	-.750	-.780	-.776	-.743	-.777	-.843	227
231	-.553	-.608	-.634	-.624	-.591	-.610	-.663	231
232	-.582	-.632	-.666	-.623	-.612	-.629	-.671	232
233	-.608	-.651	-.686	-.680	-.647	-.655	-.770	233
234	-.663	-.723	-.749	-.729	-.747	-.740	-.776	234
235	-.691	-.764	-.806	-.793	-.784	-.792	-.852	235
236	-.719	-.750	-.759	-.764	-.699	-.725	-.819	236
237	-.611	-.672	-.697	-.657	-.651	-.681	-.735	237
241	-.608	-.647	-.651	-.657	-.660	-.618	-.675	241
242	-.638	-.651	-.660	-.702	-.673	-.629	-.672	242
243	-.673	-.699	-.714	-.766	-.705	-.697	-.790	243
244	-.706	-.708	-.748	-.744	-.738	-.765	-.781	244
245	-.723	-.736	-.776	-.773	-.754	-.761	-.800	245
246	-.700	-.725	-.744	-.750	-.717	-.684	-.693	246
247	-.604	-.625	-.662	-.669	-.609	-.585	-.592	247
251	-.611	-.689	-.709	-.745	-.703	-.725	-.814	251
252	-.685	-.740	-.766	-.777	-.747	-.817	-.833	252
253	-.710	-.745	-.805	-.846	-.873	-.801	-.780	253
254	-.625	-.679	-.665	-.724	-.728	-.718	-.788	254
255	-.630	-.687	-.705	-.728	-.705	-.789	-.829	255
256	-.655	-.704	-.720	-.710	-.716	-.733	-.716	256
257	-.636	-.677	-.689	-.682	-.657	-.610	-.583	257
202	.963	.975	.966	.985	1.012	1.078	1.112	202
203	.160	.147	.149	.149	.175	.215	.237	203
205	.237	.215	.212	.222	.270	.313	.333	205
207	-.104	-.120	-.150	-.148	-.126	-.111	-.125	207

Pressure Data, C_p

DATE: 08/07/86 ALPHA= 20 BETA= 0 CONFIGURATION: BWHV RT UPPER HORIZONTAL

PORT#	Ob/2V 0	.05	.1	.2	.3	PORT#
211	-.781	-.791	-.739	-.593	-.594	211
212	-.786	-.797	-.750	-.637	-.617	212
213	-.674	-.710	-.707	-.693	-.690	213
214	-.413	-.467	-.493	-.600	-.654	214
215	-.269	-.327	-.325	-.457	-.494	215
216	-.184	-.202	-.208	-.331	-.397	216
217	-.113	-.159	-.147	-.231	-.263	217
221	-.784	-.764	-.757	-.769	-.847	221
222	-.713	-.787	-.814	-.810	-.804	222
223	-.555	-.613	-.622	-.715	-.753	223
224	-.352	-.417	-.420	-.549	-.568	224
225	-.174	-.242	-.247	-.335	-.354	225
226	-.102	-.144	-.149	-.197	-.224	226
227	-.043	-.075	-.064	-.107	-.129	227
231	-.880	-.913	-.934	-1.050	-1.096	231
232	-.796	-.884	-.918	-1.021	-1.050	232
233	-.446	-.513	-.563	-.685	-.705	233
234	-.229	-.283	-.328	-.411	-.450	234
235	-.127	-.148	-.142	-.236	-.266	235
236	-.056	-.081	-.073	-.122	-.163	236
237	-.001	-.020	-.014	-.057	-.074	237
241	-.908	-1.005	-1.051	-1.226	-1.287	241
242	-.690	-.788	-.844	-1.049	-1.178	242
243	-.268	-.325	-.353	-.531	-.553	243
244	-.100	-.160	-.173	-.291	-.312	244
245	-.065	-.086	-.096	-.166	-.216	245
246	.002	-.030	-.031	-.081	-.111	246
247	.039	.005	.014	-.020	-.017	247
251	-.520	-.737	-.873	-1.154	-1.319	251
252	-.384	-.468	-.587	-.763	-.906	252
253	-.152	-.214	-.269	-.385	-.443	253
254	-.083	-.131	-.138	-.233	-.263	254
255	-.034	-.066	-.086	-.145	-.163	255
256	.005	-.026	-.042	-.092	-.069	256
257	.043	.014	.008	-.004	-.006	257
202	.614	.675	.730	.781	.863	202
203	.195	.190	.189	.195	.223	203
205	.252	.251	.241	.250	.294	205
207	.135	.128	.125	.113	.125	207

Pressure Data, C_p

DATE: 08/08/86 ALPHA= 50 BETA= 0

CONFIGURATION: BWHV LEFT LOWER HORIZONTAL

PORT#	Ob/2V 0	.05	.1	.2	.3	.4	.5	PORT#
311	.761	.775	.826	.867	.920	1.045	1.144	311
312	.850	.848	.896	.928	.996	1.108	1.224	312
313	.627	.619	.647	.663	.712	.827	.912	313
314	.426	.419	.439	.446	.495	.578	.682	314
315	.286	.264	.266	.270	.304	.377	.488	315
316	.134	.100	.106	.113	.127	.209	.295	316
317	-.073	-.121	-.137	-.148	-.119	-.050	.016	317
321	.798	.814	.825	.881	.916	1.028	1.112	321
322	.895	.929	.948	.990	1.047	1.145	1.237	322
323	.710	.730	.743	.735	.797	.889	.993	323
324	.517	.509	.522	.527	.550	.648	.755	324
325	.350	.324	.338	.349	.363	.450	.530	325
326	.142	.134	.148	.144	.162	.226	.302	326
327	-.052	-.101	-.100	-.108	-.108	-.049	.000	327
331	.863	.849	.881	.916	.941	1.038	1.134	331
332	.930	.943	.975	1.008	1.068	1.170	1.236	332
333	.590	.584	.609	.615	.677	.749	.817	333
334	.536	.525	.549	.556	.591	.683	.765	334
335	.367	.340	.356	.362	.373	.471	.548	335
336	.168	.148	.158	.138	.179	.249	.304	336
337	-.052	-.085	-.077	-.105	-.073	-.029	.008	337
341	.877	.875	.906	.908	.946	1.020	1.053	341
342	.970	.953	1.002	.997	1.075	1.176	1.221	342
343	.770	.750	.767	.819	.854	.955	1.027	343
344	.536	.515	.534	.555	.606	.695	.765	344
345	.365	.342	.342	.365	.407	.482	.557	345
346	.168	.142	.132	.149	.166	.243	.319	346
347	-.069	-.077	-.095	-.087	-.088	-.011	.044	347
351	.664	.696	.716	.768	.842	.894	.966	351
352	.906	.901	.911	.976	1.022	1.136	1.204	352
353	.755	.754	.765	.820	.882	.977	1.060	353
354	.491	.483	.487	.526	.590	.686	.764	354
355	.297	.293	.299	.346	.384	.471	.546	355
356	.047	.062	.081	.112	.138	.209	.294	356
357	-.126	-.179	-.163	-.152	-.138	-.046	.004	357
302	-.578	-.588	-.593	-.585	-.585	-.578	-.582	302
303	-.616	-.679	-.690	-.717	-.723	-.715	-.734	303
305	-.736	-.787	-.798	-.824	-.834	-.791	-.767	305
307	-.787	-.848	-.896	-.955	-.990	-.931	-.978	307

Pressure Data, C_p

DATE: 08/08/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWHV LEFT LOWER HORIZONTAL

PORT#	Ob/2V 0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
311	.761	.756	.736	.720	.679	.677	.627	311
312	.841	.832	.812	.835	.825	.842	.862	312
313	.651	.626	.630	.657	.700	.748	.789	313
314	.428	.440	.432	.478	.519	.603	.652	314
315	.276	.299	.310	.333	.386	.443	.512	315
316	.132	.162	.174	.193	.248	.300	.361	316
317	-.073	-.021	-.013	.016	.049	.127	.163	317
321	.771	.793	.770	.755	.753	.733	.720	321
322	.903	.893	.893	.901	.920	.948	.965	322
323	.707	.704	.706	.735	.787	.844	.926	323
324	.495	.512	.517	.536	.617	.666	.764	324
325	.341	.347	.332	.380	.461	.538	.597	325
326	.178	.186	.202	.230	.271	.360	.376	326
327	-.036	-.005	.001	.032	.077	.131	.190	327
331	.851	.854	.846	.855	.866	.876	.913	331
332	.934	.926	.919	.943	.967	1.026	1.091	332
333	.578	.576	.570	.606	.647	.727	.807	333
334	.531	.535	.540	.564	.630	.733	.787	334
335	.357	.361	.360	.403	.432	.546	.624	335
336	.173	.184	.178	.221	.279	.348	.458	336
337	-.046	-.018	-.025	.002	.034	.131	.228	337
341	.877	.886	.872	.906	.918	.973	.963	341
342	.952	.952	.951	.977	.977	1.067	1.125	342
343	.765	.738	.735	.784	.839	.895	.952	343
344	.545	.522	.522	.530	.595	.679	.723	344
345	.349	.342	.353	.376	.438	.524	.595	345
346	.172	.155	.163	.192	.266	.342	.433	346
347	-.037	-.038	-.037	-.013	.056	.151	.245	347
351	.669	.694	.716	.695	.647	.577	.502	351
352	.883	.875	.887	.922	.899	.850	.790	352
353	.766	.734	.716	.750	.770	.794	.772	353
354	.486	.466	.454	.437	.473	.487	.461	354
355	.307	.294	.261	.273	.273	.232	.182	355
356	.082	.078	.063	.064	.021	.006	-.082	356
357	-.153	-.144	-.153	-.154	-.189	-.269	-.393	357
302	-.555	-.538	-.522	-.524	-.526	-.529	-.531	302
303	-.615	-.565	-.534	-.551	-.548	-.524	-.536	303
305	-.670	-.643	-.585	-.595	-.581	-.576	-.636	305
307	-.809	-.629	-.580	-.598	-.610	-.566	-.588	307

Pressure Data, C_p

DATE: 08/08/86 ALPHA= 40 BETA= 0 CONFIGURATION: BWHV LEFT LOWER HORIZONTAL

PORT#	Ωb/2V 0	.05	.1	.2	.3	.4	.5	PORT#
311	.934	.959	.978	1.013	1.080	1.156	1.207	311
312	.862	.913	.910	.950	1.012	1.086	1.152	312
313	.553	.574	.582	.600	.638	.714	.751	313
314	.360	.376	.373	.382	.425	.482	.511	314
315	.228	.241	.243	.229	.276	.318	.351	315
316	.098	.110	.082	.089	.118	.165	.177	316
317	-.080	-.076	-.090	-.092	-.072	-.054	-.058	317
321	.979	1.010	.991	1.021	1.087	1.161	1.185	321
322	.941	.987	.973	.988	1.047	1.157	1.197	322
323	.627	.680	.658	.666	.740	.804	.840	323
324	.421	.445	.444	.420	.500	.558	.576	324
325	.278	.278	.274	.258	.328	.368	.371	325
326	.125	.137	.135	.107	.163	.189	.187	326
327	-.037	-.040	-.062	-.070	-.044	-.028	-.052	327
331	1.028	1.021	1.026	1.057	1.131	1.177	1.181	331
332	.964	.972	.983	1.005	1.087	1.148	1.184	332
333	.516	.538	.555	.567	.618	.686	.726	333
334	.429	.443	.457	.458	.511	.574	.608	334
335	.273	.281	.287	.301	.337	.382	.399	335
336	.115	.120	.131	.131	.183	.207	.209	336
337	-.050	-.039	-.046	-.041	-.013	.003	-.032	337
341	1.029	1.058	1.051	1.094	1.147	1.169	1.186	341
342	1.008	1.005	1.006	1.048	1.101	1.172	1.207	342
343	.676	.676	.704	.732	.788	.849	.897	343
344	.434	.435	.448	.474	.524	.602	.633	344
345	.275	.275	.292	.310	.353	.412	.433	345
346	.105	.115	.122	.133	.176	.211	.219	346
347	-.062	-.052	-.050	-.042	-.012	.031	.005	347
351	.850	.795	.837	.905	.996	1.081	1.082	351
352	.915	.894	.922	.987	1.055	1.166	1.194	352
353	.681	.680	.695	.731	.807	.888	.922	353
354	.371	.399	.412	.442	.516	.574	.594	354
355	.220	.233	.253	.281	.349	.406	.422	355
356	.031	.233	.067	.090	.152	.195	.208	356
357	-.149	-.131	-.126	-.094	-.049	.004	-.020	357
302	-.432	-.465	-.464	-.474	-.440	-.449	-.467	302
303	-.455	-.494	-.504	-.497	-.488	-.511	-.586	303
305	-.550	-.561	-.542	-.562	-.527	-.550	-.594	305
307	-.568	-.598	-.597	-.663	-.661	-.676	-.842	307

Pressure Data, C_p

DATE: 08/08/86 ALPHA= 40 BETA= 0 CONFIGURATION: BWHV LEFT LOWER HORIZONTAL

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	*************			Ob/2V		*************		
311	.926	.942	.861	.869	.853	.858	.831	311
312	.869	.886	.837	.861	.886	.917	.948	312
313	.550	.560	.528	.584	.638	.712	.774	313
314	.342	.371	.345	.388	.444	.511	.586	314
315	.230	.233	.208	.258	.306	.367	.433	315
316	.102	.118	.089	.140	.171	.244	.296	316
317	-.082	-.048	-.065	-.041	-.013	.059	.100	317
321	.961	.956	.912	.909	.918	.920	.888	321
322	.959	.934	.898	.933	.958	1.008	1.051	322
323	.648	.633	.609	.651	.711	.794	.874	323
324	.420	.418	.390	.447	.507	.581	.657	324
325	.263	.260	.243	.280	.347	.415	.503	325
326	.134	.120	.098	.136	.193	.255	.334	326
327	-.037	-.047	-.062	-.043	.007	.068	.126	327
331	1.018	.989	.946	.973	.994	1.030	1.055	331
332	.942	.933	.901	.942	.986	1.058	1.113	332
333	.525	.507	.495	.528	.589	.667	.726	333
334	.427	.408	.405	.447	.516	.582	.684	334
335	.266	.245	.241	.267	.344	.414	.514	335
336	.115	.093	.085	.130	.187	.253	.341	336
337	-.055	-.080	-.082	-.072	-.021	.060	.128	337
341	1.027	1.000	.970	.995	1.020	1.009	.986	341
342	.977	.946	.930	.942	.965	1.002	1.055	342
343	.669	.628	.633	.661	.684	.755	.836	343
344	.426	.393	.400	.429	.464	.538	.611	344
345	.272	.237	.229	.260	.316	.377	.455	345
346	.097	.074	.058	.092	.149	.228	.297	346
347	-.063	-.102	-.103	-.069	-.029	.066	.132	347
351	.795	.823	.805	.725	.576	.531	.499	351
352	.893	.890	.871	.840	.743	.715	.733	352
353	.671	.633	.617	.660	.633	.688	.700	353
354	.391	.346	.332	.353	.362	.405	.418	354
355	.228	.178	.177	.178	.163	.195	.193	355
356	.032	-.015	-.021	-.035	-.046	-.019	-.047	356
357	-.152	-.190	-.205	-.217	-.239	-.238	-.280	357
302	-.435	-.472	-.468	-.463	-.494	-.499	-.484	302
303	-.441	-.477	-.460	-.467	-.499	-.485	-.482	303
305	-.530	-.561	-.554	-.584	-.663	-.666	-.655	305
307	-.549	-.530	-.525	-.545	-.602	-.573	-.571	307

Pressure Data, C_p

DATE: 08/08/86 ALPHA= 20 BETA= 0 CONFIGURATION: BWHV LEFT LOWER HORIZONTAL

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	*******************	*******************	******	Ob/2V	******	*******************	*******************	
311	.861	.976	.928	.924	.900	.833	.782	311
312	.688	.789	.739	.715	.667	.598	.538	312
313	.360	.450	.395	.372	.334	.298	.267	313
314	.243	.320	.265	.242	.217	.202	.182	314
315	.186	.260	.197	.182	.163	.173	.165	315
316	.134	.202	.155	.142	.144	.148	.147	316
317	.075	.129	.092	.087	.104	.116	.132	317
321	.883	.947	.932	.930	.938	.895	.848	321
322	.778	.819	.784	.767	.764	.711	.662	322
323	.475	.511	.462	.460	.447	.419	.393	323
324	.332	.335	.306	.303	.299	.278	.263	324
325	.228	.244	.227	.218	.223	.213	.210	325
326	.177	.186	.174	.166	.177	.177	.192	326
327	.120	.117	.116	.115	.137	.151	.170	327
331	.806	.813	.799	.786	.840	.855	.798	331
332	.730	.709	.701	.713	.745	.746	.691	332
333	.403	.396	.381	.398	.406	.395	.395	333
334	.319	.316	.320	.329	.334	.336	.315	334
335	.232	.239	.236	.247	.262	.266	.268	335
336	.173	.181	.183	.182	.208	.215	.228	336
337	.132	.127	.132	.132	.155	.178	.188	337
341	.659	.593	.553	.518	.602	.595	.611	341
342	.608	.565	.548	.537	.561	.578	.589	342
343	.408	.382	.401	.400	.421	.432	.453	343
344	.292	.274	.294	.293	.327	.342	.354	344
345	.222	.230	.234	.247	.267	.279	.302	345
346	.174	.177	.175	.190	.223	.236	.252	346
347	.144	.140	.137	.160	.179	.192	.225	347
351	.458	.379	.338	.339	.363	.408	.457	351
352	.502	.415	.412	.403	.424	.450	.501	352
353	.451	.375	.366	.381	.399	.425	.460	353
354	.305	.260	.258	.275	.303	.316	.355	354
355	.249	.209	.208	.226	.264	.277	.311	355
356	.172	.152	.159	.170	.197	.226	.260	356
357	.138	.117	.117	.141	.171	.199	.228	357
302	-.086	-.135	-.134	-.130	-.118	-.104	-.093	302
303	-.367	-.407	-.430	-.398	-.371	-.330	-.288	303
305	-.656	-.688	-.713	-.681	-.667	-.609	-.552	305
307	-.046	-.076	-.089	-.078	-.040	.008	.058	307

Pressure Data, C_p

DATE: 08/08/86 ALPHA= 20 BETA= 0 CONFIGURATION: BWHV LEFT LOWER HORIZONTAL

PORT#	Ωb/2V 0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
311	.935	.945	.957	1.020	1.046	1.064	1.102	311
312	.768	.782	.803	.863	.909	.945	1.005	312
313	.443	.454	.465	.512	.566	.610	.658	313
314	.294	.308	.318	.362	.404	.450	.488	314
315	.222	.237	.252	.280	.314	.342	.380	315
316	.171	.179	.189	.215	.241	.262	.292	316
317	.098	.110	.115	.123	.131	.156	.170	317
321	.921	.966	.997	1.045	1.061	1.096	1.120	321
322	.823	.814	.857	.884	.938	.973	1.027	322
323	.490	.498	.528	.566	.616	.649	.706	323
324	.321	.345	.363	.392	.434	.467	.513	324
325	.241	.255	.268	.299	.334	.358	.403	325
326	.184	.194	.206	.231	.255	.280	.323	326
327	.128	.145	.149	.170	.200	.203	.225	327
331	.850	.870	.933	1.022	1.052	1.082	1.091	331
332	.743	.771	.804	.856	.899	.927	.964	332
333	.418	.423	.446	.473	.488	.516	.561	333
334	.334	.340	.354	.387	.413	.445	.477	334
335	.243	.262	.266	.298	.316	.352	.395	335
336	.200	.206	.206	.235	.260	.281	.313	336
337	.141	.153	.159	.174	.211	.209	.246	337
341	.668	.718	.813	.917	.920	.986	.962	341
342	.634	.650	.705	.776	.765	.803	.816	342
343	.422	.447	.472	.493	.495	.515	.539	343
344	.317	.311	.324	.341	.355	.365	.397	344
345	.233	.250	.257	.277	.292	.312	.324	345
346	.191	.196	.199	.207	.247	.249	.257	346
347	.152	.162	.164	.183	.195	.212	.227	347
351	.397	.511	.568	.661	.682	.696	.723	351
352	.452	.532	.570	.648	.632	.632	.600	352
353	.403	.421	.426	.470	.439	.439	.434	353
354	.275	.289	.294	.292	.295	.293	.297	354
355	.217	.227	.224	.233	.232	.242	.236	355
356	.159	.161	.166	.173	.166	.158	.169	356
357	.131	.132	.137	.136	.141	.126	.129	357
302	-.115	-.120	-.122	-.132	-.142	-.144	-.152	302
303	-.404	-.415	-.429	-.486	-.499	-.527	-.515	303
305	-.685	-.790	-.867	-1.041	-1.115	-1.190	-1.254	305
307	-.051	-.056	-.052	-.065	-.077	-.140	-.125	307

DATE: 08/13/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWHV LEFT AFT FUSELAGE

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	*****	*****	*****	Ob/2V	*****	*****	*****	
450	.199	.031	-.062	.104	.108	.188	.274	450
451	-.199	-.286	-.318	-.156	-.083	.078	.234	451
452	-.847	-.742	-.689	-.728	-.580	-.433	-.341	452
453	-.687	-.633	-.608	-.674	-.584	-.471	-.443	453
454	-.706	-.637	-.591	-.610	-.523	-.419	-.378	454
455	-.556	-.527	-.496	-.455	-.456	-.383	-.278	455
456	-.483	-.477	-.473	-.436	-.449	-.359	-.343	456
457	-.459	-.527	-.369	-.321	-.367	-.369	-.350	457
458	-.571	-.526	-.506	-.470	-.469	-.386	-.381	458
459	-.474	-.480	-.482	-.443	-.463	-.378	-.366	459
460	.257	.043	.047	.186	.168	.258	.334	460
461	-.031	-.198	-.169	.006	.106	.261	.437	461
462	-.241	-.357	-.353	-.275	-.191	-.004	.196	462
463	-.235	-.335	-.321	-.217	-.116	.061	.254	463
464	-.252	-.342	-.332	-.225	-.102	.095	.295	464
465	-.053	-.152	-.033	.118	.189	.323	.481	465
466	.109	-.053	.078	.224	.252	.399	.547	466
467	.131	-.163	-.117	-.019	.039	.163	.293	467
470	.273	.020	.093	.153	.161	.238	.364	470
471	.108	-.117	-.023	.076	.175	.330	.538	471
472	.049	-.161	-.062	.002	.094	.265	.471	472
473	.035	-.180	-.068	-.001	.107	.285	.507	473
474	.000	-.196	-.076	.079	.100	.272	.524	474
475	-.038	-.114	.109	.230	.337	.481	.691	475
476	.432	.120	.308	.361	.452	.631	.816	476
477	.823	.445	.608	.604	.668	.812	.995	477
480	.049	-.138	-.028	-.032	-.013	.046	.108	480
481	-.106	-.215	-.093	-.052	.034	.154	.291	481
482	-.125	-.222	-.095	-.059	.020	.130	.307	482
483	-.167	-.257	-.136	-.089	-.008	.115	.305	483
484	-.208	-.281	-.165	-.119	-.035	.113	.263	484
485	-.229	-.310	-.185	-.105	.014	.152	.299	485
486	-.094	-.166	-.036	-.044	.024	.139	.277	486
487	-.038	-.139	.002	-.017	.015	.122	.280	487

DATE: 08/13/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWHV LEFT AFT FUSELAGE

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	******	******	******	Ob/2V	******	******	******	
450	.140	.086	.165	.194	.226	.268	.300	450
451	-.222	-.230	-.200	-.257	-.276	-.267	-.345	451
452	-.807	-.742	-.817	-.829	-.742	-.659	-.608	452
453	-.683	-.619	-.674	-.661	-.659	-.574	-.604	453
454	-.689	-.589	-.667	-.689	-.661	-.628	-.595	454
455	-.563	-.497	-.548	-.536	-.556	-.542	-.562	455
456	-.491	-.428	-.455	-.468	-.536	-.552	-.572	456
457	-.438	-.531	-.951	-.684	-.626	-.630	-.683	457
458	-.565	-.517	-.607	-.604	-.598	-.534	-.622	458
459	-.486	-.464	-.513	-.468	-.417	-.370	-.448	459
460	.235	.142	.271	.280	.290	.372	.315	460
461	-.051	-.110	-.046	-.120	-.173	-.206	-.281	461
462	-.273	-.274	-.247	-.273	-.298	-.293	-.323	462
463	-.266	-.276	-.243	-.295	-.350	-.315	-.368	463
464	-.254	-.261	-.243	-.306	-.353	-.336	-.404	464
465	-.027	-.069	-.054	-.282	-.456	-.550	-.700	465
466	-.018	.056	.072	-.236	-.407	-.539	-.783	466
467	.064	.071	.139	.312	.271	.207	.141	467
470	.201	.218	.288	.313	.292	.354	.319	470
471	.020	.054	.066	.002	-.033	-.028	-.108	471
472	-.019	.019	.038	-.018	-.073	-.008	-.090	472
473	-.043	.007	.002	-.046	-.079	-.115	-.168	473
474	-.066	.000	-.011	-.077	-.173	-.201	-.291	474
475	-.008	.023	-.017	-.288	-.472	-.588	-.749	475
476	.321	.415	.435	.535	.408	.184	-.075	476
477	.675	.815	.803	.833	.876	.951	.918	477
480	.016	.084	.075	.089	.084	.108	.093	480
481	-.098	-.025	-.048	-.056	-.079	-.063	-.061	481
482	-.110	-.034	-.049	-.066	-.098	-.115	-.144	482
483	-.118	-.066	-.091	-.124	-.164	-.193	-.175	483
484	-.147	-.108	-.133	-.182	-.215	-.243	-.271	484
485	-.206	-.148	-.173	-.189	-.242	-.252	-.351	485
486	-.022	.035	.015	-.030	-.102	-.267	-.325	486
487	.013	.090	.065	.056	.061	.042	.076	487

Pressure Data, C_p

DATE: 08/12/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWV LEFT AFT FUSELAGE

PORT#	Ob/2V 0	.05	.1	.2	.3	.4	.5	PORT#
450	.004	.006	.027	-.048	-.051	.015	.068	450
451	-.464	-.438	-.369	-.299	-.236	-.098	.012	451
452	-1.128	-1.163	-1.107	-.898	-.739	-.604	-.511	452
453	-.990	-1.000	-.955	-.803	-.720	-.636	-.606	453
454	-.973	-1.000	-.942	-.762	-.658	-.569	-.525	454
455	-.974	-.880	-.842	-.642	-.594	-.517	-.482	455
456	-.660	-.655	-.614	-.511	-.504	-.459	-.449	456
457	-.628	-1.101	-1.082	-.575	-.534	-.469	-.447	457
458	-.626	-.628	-.606	-.525	-.522	-.458	-.476	458
459	-.472	-.478	-.460	-.453	-.467	-.422	-.421	459
460	.002	.017	.041	-.064	-.050	.026	.083	460
461	-.615	-.551	-.466	-.384	-.278	-.104	.028	461
462	-1.070	-1.067	-1.045	-.850	-.745	-.598	-.507	462
463	-1.008	-.978	-.949	-.726	-.624	-.527	-.484	463
464	-1.003	-.988	-.931	-.711	-.608	-.496	-.440	464
465	-1.001	-.965	-.876	-.607	-.547	-.474	-.401	465
466	-.739	-.650	-.563	-.479	-.460	-.404	-.385	466
467	-.550	-.508	-.470	-.449	-.426	-.378	-.393	467
470	-.004	.025	-.034	-.077	-.065	-.012	.035	470
471	-.624	-.557	-.479	-.391	-.271	-.080	.047	471
472	-.945	-.941	-.820	-.736	-.664	-.541	-.448	472
473	-.948	-.919	-.796	-.681	-.576	-.469	-.404	473
474	-.924	-.932	-.793	-.672	-.561	-.451	-.359	474
475	-.967	-.895	-.709	-.525	-.445	-.399	-.314	475
476	-.793	-.711	-.604	-.486	-.429	-.346	-.314	476
477	-.642	-.543	-.492	-.442	-.423	-.365	-.340	477
480	-.138	-.104	-.076	-.053	-.091	-.052	-.003	480
481	-.862	-.835	-.804	-.682	-.443	-.185	.019	481
482	-.782	-.797	-.787	-.747	-.553	-.404	-.226	482
483	-.788	-.816	-.805	-.736	-.499	-.329	-.178	483
484	-.765	-.779	-.761	-.716	-.485	-.306	-.183	484
485	-.761	-.732	-.648	-.430	-.334	-.254	-.138	485
486	-.723	-.654	-.538	-.379	-.324	-.232	-.142	486
487	-.684	-.597	-.472	-.365	-.341	-.243	-.162	487

DATE: 08/12/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWV LEFT AFT FUSELAGE

PORT#	Ωb/2V 0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
450	-.137	-.165	-.162	-.128	-.111	-.090	-.025	450
451	-.458	-.424	-.443	-.474	-.494	-.476	-.414	451
452	-.990	-.820	-.870	-.918	-.841	-.640	-.528	452
453	-.809	-.711	-.761	-.785	-.768	-.634	-.487	453
454	-.808	-.711	-.767	-.818	-.767	-.667	-.504	454
455	-.735	-.680	-.728	-.801	-.808	-.651	-.535	455
456	-.593	-.493	-.489	-.531	-.587	-.596	-.542	456
457	-.570	-.411	-.466	-.525	-.704	-.577	-.541	457
458	-.537	-.493	-.477	-.496	-.510	-.497	-.556	458
459	-.474	-.505	-.487	-.496	-.479	-.451	-.479	459
460	-.146	-.179	-.127	-.140	-.149	-.102	-.034	460
461	-.544	-.503	-.531	-.591	-.613	-.553	-.487	461
462	-.822	-.792	-.868	-.872	-.784	-.614	-.487	462
463	-.812	-.748	-.833	-.840	-.796	-.590	-.545	463
464	-.852	-.741	-.841	-.864	-.811	-.620	-.493	464
465	-.843	-.777	-.890	-.924	-.863	-.702	-.532	465
466	-.601	-.530	-.553	-.730	-.871	-.702	-.531	466
467	-.511	-.488	-.485	-.530	-.588	-.587	-.552	467
470	-.150	-.176	-.115	-.132	-.146	-.091	-.036	470
471	-.543	-.530	-.567	-.632	-.648	-.574	-.508	471
472	-.726	-.725	-.808	-.787	-.770	-.623	-.517	472
473	-.764	-.729	-.805	-.797	-.750	-.616	-.503	473
474	-.736	-.739	-.801	-.809	-.758	-.609	-.499	474
475	-.715	-.746	-.858	-.826	-.822	-.658	-.501	475
476	-.778	-.737	-.862	-1.135	-1.269	-.953	-.634	476
477	-.609	-.528	-.523	-.729	-.955	-.874	-.701	477
480	-.144	-.112	-.108	-.119	-.111	-.056	-.058	480
481	-.795	-.864	-.882	-.911	-.884	-.741	-.602	481
482	-.734	-.791	-.798	-.825	-.795	-.666	-.568	482
483	-.776	-.794	-.801	-.826	-.802	-.658	-.574	483
484	-.815	-.791	-.803	-.810	-.829	-.698	-.601	484
485	-.741	-.777	-.792	-.823	-.817	-.704	-.582	485
486	-.710	-.812	-.877	-.893	-.858	-.751	-.595	486
487	-.712	-.747	-.911	-1.099	-1.052	-.776	-.630	487

Pressure Data, C_p

DATE: 08/12/86 ALPHA= 20 BETA= 0 CONFIGURATION: BWV LEFT AFT FUSELAGE

PORT#	Ωb/2V 0	.05	.1	.2	.3	.4	.5	PORT#
450	-.019	-.021	.051	.057	.068	.069	.075	450
451	-.059	-.054	.020	.044	.077	.088	.109	451
452	-.110	-.108	-.065	-.017	.011	.046	.090	452
453	-.113	-.104	-.049	-.020	.013	.037	.096	453
454	-.120	-.103	-.057	-.025	.018	.054	.102	454
455	-.099	-.090	-.034	.006	.024	.059	.120	455
456	-.094	-.089	-.036	.006	.020	.074	.148	456
457	-.150	.011	-.143	.082	.173	.233	.233	457
458	-.061	-.038	.032	.071	.100	.153	.199	458
459	-.023	-.019	.009	.013	.040	.050	.085	459
460	-.001	.027	.083	.082	.099	.087	.081	460
461	-.043	-.005	.042	.058	.084	.103	.107	461
462	-.074	-.035	.005	.026	.046	.081	.127	462
463	-.076	-.035	-.002	.027	.059	.099	.148	463
464	-.068	-.032	.000	.037	.064	.106	.156	464
465	-.076	-.023	.010	.049	.075	.116	.169	465
466	-.073	-.010	.005	.046	.074	.127	.191	466
467	-.068	.027	.029	.063	.104	.153	.216	467
470	.013	.116	.089	.083	.092	.074	.062	470
471	-.038	.070	.052	.068	.087	.113	.109	471
472	-.056	.036	.028	.043	.074	.108	.140	472
473	-.065	.018	.027	.047	.076	.124	.163	473
474	-.052	.021	.033	.054	.085	.135	.185	474
475	-.055	.026	.038	.065	.097	.146	.200	475
476	-.059	-.051	-.087	-.078	-.044	-.006	.046	476
477	-.059	-.045	-.088	-.067	-.050	-.009	.041	477
480	-.009	.013	-.067	-.074	-.073	-.088	-.090	480
481	-.025	-.058	-.088	-.089	-.077	-.073	-.052	481
482	-.028	-.051	-.085	-.075	-.059	-.039	-.006	482
483	-.021	-.048	-.083	-.060	-.037	-.014	.008	483
484	-.035	-.058	-.079	-.067	-.045	-.010	.013	484
485	-.025	-.069	-.082	-.058	-.034	.001	.042	485
486	-.021	-.082	-.077	-.063	-.038	-.002	.050	486
487	-.038	-.082	-.080	-.059	-.043	.008	.051	487

Pressure Data, C_p

DATE: 08/12/86 ALPHA= 20 BETA= 0 CONFIGURATION: BWV LEFT AFT FUSELAGE

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	********	********	********	Ob/2V	********	********	********	
450	.058	.068	.066	.083	.091	.093	.115	450
451	-.006	-.012	-.034	-.043	-.046	-.069	-.042	451
452	-.088	-.115	-.133	-.161	-.122	-.117	-.094	452
453	-.096	-.103	-.130	-.136	-.109	-.124	-.087	453
454	-.098	-.121	-.136	-.139	-.138	-.137	-.109	454
455	-.060	-.068	-.057	-.057	-.051	-.063	-.087	455
456	-.047	-.066	-.060	-.029	.008	.023	.015	456
457	.130	.257	.328	.118	.065	.126	-.011	457
458	.013	-.009	-.021	-.020	.018	.009	-.023	458
459	.062	.079	.101	.127	.162	.184	.202	459
460	.092	.100	.097	.097	.111	.111	.111	460
461	.017	.015	-.006	-.032	-.021	-.040	-.030	461
462	-.033	-.032	-.048	-.070	-.033	-.052	-.031	462
463	-.030	-.032	-.042	-.059	-.028	-.056	-.039	463
464	-.030	-.043	-.060	-.073	-.058	-.054	-.056	464
465	.002	-.033	-.044	-.062	-.069	-.078	-.102	465
466	-.020	-.031	-.028	-.007	-.002	-.007	-.041	466
467	-.002	.003	-.016	.026	.046	.049	.024	467
470	.099	.118	.107	.107	.110	.115	.112	470
471	.022	.028	.015	-.022	-.007	-.013	-.029	471
472	.001	.002	-.006	-.020	-.006	-.003	-.017	472
473	.001	-.014	-.017	-.021	-.016	-.015	-.026	473
474	-.003	-.004	-.008	-.034	-.023	-.028	-.017	474
475	.008	-.009	-.014	-.040	-.050	-.037	-.040	475
476	-.030	-.069	-.080	-.067	-.070	-.109	-.110	476
477	-.034	-.066	-.065	-.051	-.029	-.034	-.049	477
480	.035	.028	.021	.006	.011	.009	.019	480
481	-.014	-.035	-.042	-.052	-.051	-.046	-.036	481
482	-.008	-.025	-.034	-.040	-.041	-.018	-.021	482
483	-.023	-.022	-.035	-.051	-.029	-.028	-.042	483
484	-.026	-.033	-.041	-.052	-.046	-.042	-.048	484
485	-.016	-.044	-.052	-.067	-.073	-.096	-.061	485
486	-.015	-.042	-.056	-.087	-.085	-.100	-.087	486
487	-.035	-.043	-.056	-.048	-.041	-.063	-.098	487

DATE: 08/14/86 ALPHA= 50 BETA= 0 CONFIGURATION: BHV LEFT AFT FUSELAGE

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	************	************	************	Ob/2V	************	************	************	
450	.212	.189	.189	.206	.200	.222	.219	450
451	-.218	-.184	-.160	-.075	.009	.122	.245	451
452	-1.085	-1.063	-1.027	-.894	-.763	-.596	-.384	452
453	-.942	-.961	-.952	-.924	-.866	-.781	-.586	453
454	-.896	-.881	-.854	-.793	-.736	-.649	-.506	454
455	-.460	-.442	-.430	-.493	-.625	-.493	-.363	455
456	-.369	-.427	-.468	-.540	-.592	-.611	-.523	456
457	-.744	-.748	-.792	-.906	-.701	-.607	-.424	457
458	-.173	-.194	-.211	-.357	-.453	-.500	-.557	458
459	-.164	-.187	-.232	-.354	-.449	-.513	-.518	459
460	.261	.239	.239	.237	.228	.224	.221	460
461	-.049	-.023	.014	.089	.173	.273	.374	461
462	-.291	-.323	-.315	-.274	-.182	-.046	.135	462
463	-.271	-.267	-.241	-.180	-.096	.004	.130	463
464	-.267	-.293	-.257	-.170	-.080	.049	.178	464
465	-.038	.054	.096	.157	.224	.248	.271	465
466	.000	.151	.185	.209	.227	.261	.337	466
467	-.025	-.083	-.069	-.031	-.045	-.020	.036	467
470	.226	.217	.205	.205	.215	.197	.172	470
471	.065	.077	.109	.173	.238	.292	.360	471
472	.014	.017	.032	.064	.129	.212	.331	472
473	-.023	-.005	.030	.073	.160	.240	.359	473
474	-.051	-.012	.016	.062	.146	.248	.365	474
475	-.073	.088	.219	.329	.388	.425	.491	475
476	.299	.317	.373	.453	.500	.543	.600	476
477	.625	.642	.640	.650	.677	.699	.735	477
480	.022	.012	.013	-.015	-.027	-.071	-.107	480
481	-.088	-.044	-.016	.015	.055	.092	.107	481
482	-.081	-.054	-.024	-.012	.028	.075	.134	482
483	-.094	-.077	-.054	-.030	.018	.059	.121	483
484	-.148	-.113	-.086	-.054	-.007	.035	.103	484
485	-.176	-.161	-.110	-.026	.037	.073	.125	485
486	-.038	.008	.015	.033	.050	.077	.114	486
487	.034	.052	.055	.017	.016	.046	.069	487

Pressure Data, C_p

DATE: 08/14/86   ALPHA= 50   BETA= 0   CONFIGURATION: BHV LEFT AFT FUSELAGE

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	**********	**********	**********	Ob/2V	**********	**********	**********	
450	.181	.200	.189	.198	.201	.198	.175	450
451	-.228	-.258	-.229	-.261	-.302	-.396	-.543	451
452	-1.088	-1.038	-.721	-.625	-.602	-.644	-.780	452
453	-.955	-.882	-.626	-.563	-.581	-.625	-.772	453
454	-.911	-.876	-.630	-.567	-.578	-.636	-.779	454
455	-.479	-.527	-.556	-.552	-.557	-.621	-.768	455
456	-.384	-.348	-.420	-.513	-.570	-.644	-.764	456
457	-.525	-.703	-.861	-.883	-.799	-.782	-.985	457
458	-.189	-.198	-.268	-.459	-.621	-.801	-1.027	458
459	-.168	-.166	-.208	-.331	-.405	-.509	-.517	459
460	.240	.244	.226	.226	.215	.174	.148	460
461	-.050	-.090	-.176	-.168	-.228	-.316	-.450	461
462	-.262	-.287	-.374	-.245	-.277	-.332	-.449	462
463	-.275	-.293	-.386	-.277	-.307	-.360	-.489	463
464	-.277	-.300	-.387	-.292	-.325	-.382	-.525	464
465	-.037	-.230	-.375	-.407	-.421	-.497	-.703	465
466	-.021	-.194	-.276	-.526	-.461	-.498	-.768	466
467	-.044	.109	.130	.009	-.077	-.115	-.171	467
470	.246	.232	.223	.209	.194	.182	.126	470
471	.056	.017	-.064	-.061	-.108	-.167	-.251	471
472	.008	-.030	-.125	-.076	-.108	-.134	-.217	472
473	-.014	-.061	-.143	-.114	-.152	-.184	-.278	473
474	-.030	-.088	-.160	-.166	-.201	-.251	-.358	474
475	-.058	-.240	-.295	-.432	-.483	-.573	-.754	475
476	.284	.323	.354	-.159	-.399	-.591	-.729	476
477	.651	.625	.632	.624	.584	.553	.467	477
480	.024	.025	.014	-.019	-.053	-.100	-.124	480
481	-.073	-.106	-.161	-.196	-.240	-.266	-.268	481
482	-.082	-.108	-.151	-.202	-.271	-.293	-.309	482
483	-.111	-.135	-.187	-.232	-.299	-.379	-.385	483
484	-.131	-.180	-.234	-.284	-.351	-.418	-.434	484
485	-.161	-.185	-.238	-.310	-.387	-.458	-.543	485
486	-.028	-.105	-.120	-.321	-.435	-.527	-.615	486
487	.056	.020	-.009	-.042	-.080	-.084	-.085	487

Pressure Data, C_p

DATE: 08/13/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWHV LEFT FWD AFT FUSELAGE

PORT#	Ob/2V 0	.05	.1	.2	.3	.4	.5	PORT#
410	-.031	-.073	-.123	-.099	-.068	-.012	.054	410
411	-.092	-.139	-.183	-.174	-.157	-.087	-.022	411
412	-.119	-.177	-.207	-.210	-.180	-.124	-.055	412
413	-.162	-.220	-.264	-.261	-.236	-.185	-.122	413
414	-.289	-.336	-.363	-.378	-.369	-.294	-.252	414
415	-.626	-.659	-.614	-.636	-.652	-.605	-.522	415
416	-.687	-.693	-.654	-.680	-.662	-.626	-.564	416
417	-.678	-.688	-.645	-.671	-.677	-.636	-.589	417
418	-.621	-.637	-.594	-.570	-.589	-.638	-.604	418
419	-.583	-.562	-.511	-.489	-.483	-.517	-.546	419
420	-.091	-.167	-.189	-.191	-.149	-.085	-.043	420
421	-.262	-.322	-.345	-.346	-.314	-.252	-.171	421
422	-.517	-.531	-.485	-.474	-.470	-.460	-.403	422
423	-.641	-.607	-.577	-.572	-.596	-.559	-.501	423
424	-.661	-.619	-.590	-.584	-.611	-.578	-.516	424
425	-.643	-.601	-.567	-.571	-.589	-.595	-.515	425
426	-.645	-.593	-.559	-.547	-.563	-.570	-.532	426
427	-.614	-.585	-.553	-.531	-.540	-.576	-.534	427
428	-.599	-.576	-.544	-.517	-.512	-.536	-.496	428
429	-.534	-.544	-.511	-.485	-.471	-.478	-.485	429
430	-.093	-.172	-.187	-.177	-.134	-.065	-.018	430
431	-.345	-.360	-.366	-.358	-.308	-.229	-.135	431
432	-.682	-.664	-.640	-.591	-.571	-.508	-.471	432
433	-.741	-.717	-.705	-.696	-.671	-.655	-.610	433
434	-.667	-.680	-.650	-.637	-.628	-.597	-.563	434
435	-.569	-.590	-.576	-.558	-.537	-.522	-.503	435
436	-.572	-.560	-.544	-.541	-.508	-.474	-.483	436
437	-.546	-.531	-.516	-.498	-.477	-.446	-.479	437
438	-.539	-.517	-.501	-.488	-.467	-.432	-.474	438
439	-.483	-.483	-.493	-.481	-.471	-.467	-.461	439
440	-.056	-.151	-.138	-.117	-.078	-.010	.041	440
441	-.324	-.373	-.365	-.328	-.269	-.143	-.053	441
442	-.785	-.749	-.709	-.652	-.580	-.502	-.453	442
443	-.784	-.724	-.745	-.730	-.706	-.614	-.599	443
444	-.749	-.682	-.690	-.645	-.619	-.547	-.528	444
445	-.769	-.696	-.676	-.640	-.596	-.524	-.488	445
446	-.505	-.472	-.474	-.468	-.467	-.455	-.459	446
447	-.563	-.539	-.551	-.567	-.565	-.487	-.488	447
448	-.549	-.529	-.525	-.547	-.551	-.481	-.473	448
449	-.521	-.482	-.488	-.490	-.494	-.466	-.442	449

Pressure Data, C_p

DATE: 08/13/86 ALPHA= 50 BETA= 0 CONFIGURATION: BWHV LEFT FWD AFT FUSELAGE

PORT#	Ob/2V 0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
410	-.112	-.126	-.149	-.142	-.133	-.107	-.086	410
411	-.173	-.170	-.183	-.178	-.167	-.136	-.103	411
412	-.206	-.190	-.208	-.196	-.175	-.147	-.131	412
413	-.259	-.239	-.245	-.237	-.212	-.182	-.172	413
414	-.336	-.324	-.332	-.326	-.312	-.277	-.278	414
415	-.565	-.540	-.474	-.476	-.481	-.497	-.525	415
416	-.655	-.554	-.483	-.479	-.488	-.504	-.535	416
417	-.602	-.563	-.484	-.484	-.491	-.504	-.535	417
418	-.560	-.557	-.499	-.485	-.491	-.528	-.546	418
419	-.525	-.553	-.511	-.509	-.522	-.557	-.579	419
420	-.204	-.198	-.225	-.214	-.207	-.175	-.143	420
421	-.345	-.322	-.343	-.342	-.343	-.329	-.330	421
422	-.466	-.489	-.440	-.451	-.468	-.471	-.472	422
423	-.533	-.542	-.476	-.476	-.486	-.495	-.518	423
424	-.565	-.539	-.479	-.490	-.490	-.503	-.517	424
425	-.561	-.556	-.476	-.481	-.498	-.498	-.523	425
426	-.567	-.555	-.479	-.485	-.494	-.495	-.529	426
427	-.564	-.551	-.485	-.494	-.497	-.510	-.537	427
428	-.535	-.530	-.490	-.492	-.504	-.507	-.532	428
429	-.512	-.516	-.488	-.502	-.504	-.525	-.529	429
430	-.190	-.183	-.210	-.196	-.182	-.156	-.140	430
431	-.371	-.351	-.376	-.391	-.402	-.387	-.394	431
432	-.640	-.605	-.562	-.583	-.607	-.624	-.615	432
433	-.681	-.629	-.593	-.615	-.604	-.575	-.583	433
434	-.628	-.579	-.559	-.568	-.580	-.573	-.566	434
435	-.555	-.527	-.491	-.499	-.508	-.511	-.543	435
436	-.525	-.509	-.479	-.488	-.499	-.499	-.532	436
437	-.513	-.501	-.478	-.491	-.493	-.498	-.529	437
438	-.508	-.489	-.489	-.496	-.498	-.494	-.524	438
439	-.497	-.474	-.483	-.490	-.487	-.478	-.484	439
440	-.132	-.149	-.177	-.158	-.143	-.126	-.090	440
441	-.363	-.361	-.382	-.412	-.432	-.425	-.425	441
442	-.748	-.659	-.658	-.701	-.723	-.679	-.607	442
443	-.746	-.649	-.664	-.659	-.654	-.638	-.536	443
444	-.646	-.621	-.607	-.640	-.647	-.627	-.548	444
445	-.682	-.641	-.618	-.668	-.695	-.663	-.562	445
446	-.491	-.462	-.465	-.474	-.481	-.483	-.503	446
447	-.525	-.489	-.485	-.493	-.497	-.483	-.513	447
448	-.525	-.477	-.489	-.496	-.503	-.484	-.508	448
449	-.508	-.473	-.498	-.510	-.508	-.486	-.492	449

Pressure Data, C_p

DATE: 08/13/86 ALPHA= 20 BETA= 0 CONFIGURATION: BWHV LEFT FWD AFT FUSELAGE

PORT#	Ωb/2V 0	.05	.1	.2	.3	.4	.5	PORT#
410	-.159	-.156	-.176	-.170	-.160	-.155	-.135	410
411	-.166	-.163	-.183	-.188	-.167	-.157	-.137	411
412	-.169	-.170	-.191	-.189	-.180	-.158	-.141	412
413	-.177	-.172	-.191	-.201	-.182	-.162	-.149	413
414	-.187	-.186	-.203	-.207	-.196	-.168	-.148	414
415	-.246	-.255	-.289	-.270	-.265	-.235	-.202	415
416	-.269	-.275	-.298	-.300	-.292	-.257	-.225	416
417	-.284	-.287	-.305	-.286	-.250	-.218	-.187	417
418	-.236	-.234	-.256	-.243	-.223	-.188	-.165	418
419	-.282	-.289	-.308	-.320	-.316	-.282	-.275	419
420	-.156	-.158	-.174	-.162	-.157	-.149	-.130	420
421	-.179	-.180	-.196	-.182	-.162	-.152	-.130	421
422	-.233	-.228	-.248	-.226	-.203	-.159	-.139	422
423	-.247	-.249	-.275	-.240	-.221	-.178	-.153	423
424	-.274	-.294	-.302	-.263	-.241	-.197	-.156	424
425	-.281	-.300	-.300	-.269	-.226	-.175	-.150	425
426	-.278	-.291	-.290	-.243	-.213	-.164	-.154	426
427	-.319	-.324	-.316	-.245	-.223	-.177	-.154	427
428	-.312	-.300	-.293	-.244	-.224	-.189	-.176	428
429	-.243	-.241	-.271	-.260	-.294	-.297	-.349	429
430	-.151	-.153	-.148	-.135	-.120	-.128	-.113	430
431	-.158	-.162	-.173	-.149	-.125	-.125	-.102	431
432	-.210	-.209	-.239	-.191	-.164	-.141	-.121	432
433	-.239	-.223	-.256	-.208	-.181	-.148	-.127	433
434	-.227	-.226	-.252	-.206	-.179	-.148	-.133	434
435	-.236	-.237	-.252	-.210	-.184	-.147	-.132	435
436	-.242	-.230	-.240	-.191	-.159	-.138	-.116	436
437	-.244	-.228	-.230	-.172	-.151	-.132	-.125	437
438	-.197	-.198	-.219	-.185	-.180	-.154	-.158	438
439	-.185	-.195	-.228	-.227	-.226	-.228	-.205	439
440	-.132	-.127	-.101	-.086	-.088	-.095	-.077	440
441	-.149	-.149	-.128	-.097	-.097	-.097	-.078	441
442	-.170	-.172	-.174	-.146	-.134	-.119	-.101	442
443	-.175	-.178	-.180	-.161	-.147	-.126	-.107	443
444	-.171	-.176	-.188	-.156	-.147	-.127	-.108	444
445	-.160	-.173	-.174	-.151	-.146	-.127	-.104	445
446	-.156	-.169	-.172	-.156	-.153	-.138	-.137	446
447	-.153	-.167	-.154	-.130	-.128	-.113	-.092	447
448	-.156	-.158	-.145	-.126	-.137	-.134	-.138	448
449	-.150	-.150	-.160	-.152	-.154	-.138	-.140	449

Pressure Data, C_p

DATE: 08/13/86 ALPHA= 20 BETA= 0 CONFIGURATION: BWHV LEFT FWD AFT FUSELAGE

PORT#	0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
	************	************	************	Ob/2V	************	************	************	
410	-.163	-.178	-.188	-.209	-.196	-.163	-.136	410
411	-.175	-.190	-.206	-.259	-.256	-.233	-.234	411
412	-.183	-.198	-.220	-.269	-.267	-.254	-.251	412
413	-.196	-.202	-.224	-.294	-.302	-.297	-.296	413
414	-.204	-.211	-.242	-.327	-.352	-.357	-.371	414
415	-.258	-.261	-.330	-.492	-.580	-.602	-.678	415
416	-.281	-.269	-.339	-.499	-.573	-.624	-.686	416
417	-.293	-.277	-.354	-.508	-.571	-.598	-.669	417
418	-.248	-.246	-.320	-.431	-.489	-.510	-.522	418
419	-.286	-.287	-.369	-.500	-.502	-.509	-.527	419
420	-.174	-.170	-.155	-.192	-.178	-.158	-.120	420
421	-.204	-.205	-.228	-.293	-.308	-.309	-.304	421
422	-.239	-.247	-.337	-.448	-.511	-.527	-.582	422
423	-.257	-.266	-.370	-.492	-.563	-.598	-.646	423
424	-.278	-.282	-.393	-.486	-.556	-.601	-.643	424
425	-.287	-.303	-.432	-.497	-.591	-.625	-.728	425
426	-.298	-.308	-.475	-.518	-.579	-.629	-.683	426
427	-.311	-.331	-.569	-.586	-.657	-.703	-.763	427
428	-.300	-.323	-.568	-.585	-.623	-.698	-.763	428
429	-.243	-.267	-.453	-.449	-.479	-.519	-.513	429
430	-.149	-.157	-.160	-.141	-.114	-.079	-.050	430
431	-.182	-.204	-.266	-.258	-.272	-.242	-.254	431
432	-.237	-.260	-.432	-.485	-.522	-.545	-.541	432
433	-.246	-.276	-.460	-.525	-.556	-.566	-.542	433
434	-.240	-.265	-.428	-.474	-.477	-.491	-.474	434
435	-.254	-.272	-.469	-.476	-.452	-.439	-.395	435
436	-.247	-.280	-.473	-.500	-.480	-.422	-.335	436
437	-.242	-.268	-.487	-.487	-.429	-.367	-.316	437
438	-.228	-.238	-.442	-.482	-.515	-.511	-.473	438
439	-.204	-.197	-.317	-.355	-.346	-.341	-.297	439
440	-.104	-.141	-.064	-.041	-.014	-.002	.035	440
441	-.141	-.141	-.147	-.161	-.163	-.164	-.156	441
442	-.196	-.186	-.341	-.372	-.369	-.357	-.309	442
443	-.205	-.178	-.323	-.369	-.319	-.310	-.300	443
444	-.200	-.172	-.316	-.359	-.342	-.316	-.285	444
445	-.183	-.154	-.242	-.221	-.183	-.124	-.118	445
446	-.175	-.166	-.220	-.216	-.174	-.149	-.124	446
447	-.168	-.175	-.240	-.180	-.132	-.075	-.063	447
448	-.166	-.170	-.241	-.233	-.157	-.147	-.092	448
449	-.149	-.159	-.181	-.180	-.170	-.120	-.119	449

Pressure Data, C_p

DATE: 08/14/86 ALPHA= 50 BETA= 0 CONFIGURATION: BHV LEFT FWD AFT FUSELAGE

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	******************************			Ob/2V	**************************			
410	.102	.085	.088	.084	.117	.137	.164	410
411	-.279	-.274	-.256	-.218	-.173	-.113	-.042	411
412	-.953	-.932	-.898	-.840	-.778	-.694	-.593	412
413	-1.614	-1.569	-1.547	-1.502	-1.446	-1.366	-1.254	413
414	-1.494	-1.501	-1.483	-1.461	-1.435	-1.395	-1.318	414
415	-1.156	-1.208	-1.239	-1.261	-1.241	-1.243	-1.154	415
416	-.799	-.828	-.847	-.890	-.939	-.951	-.931	416
417	-.441	-.463	-.483	-.529	-.581	-.605	-.570	417
418	-.387	-.408	-.426	-.460	-.482	-.482	-.458	418
419	-.407	-.420	-.412	-.399	-.359	-.330	-.321	419
420	.080	.079	.089	.097	.121	.150	.163	420
421	-.301	-.283	-.261	-.222	-.153	-.084	-.012	421
422	-1.094	-1.053	-1.019	-.941	-.860	-.763	-.632	422
423	-1.620	-1.591	-1.588	-1.540	-1.506	-1.401	-1.273	423
424	-1.421	-1.413	-1.413	-1.399	-1.417	-1.371	-1.273	424
425	-1.380	-1.364	-1.355	-1.331	-1.273	-1.187	-1.075	425
426	-.773	-.813	-.853	-.928	-.999	-1.030	-.984	426
427	-.317	-.341	-.371	-.445	-.573	-.667	-.637	427
428	-.272	-.287	-.296	-.302	-.299	-.311	-.313	428
429	-.269	-.288	-.300	-.324	-.331	-.337	-.254	429
430	.114	.099	.107	.125	.140	.162	.174	430
431	-.324	-.300	-.269	-.204	-.133	-.051	.046	431
432	-1.271	-1.230	-1.175	-1.067	-.981	-.834	-.674	432
433	-1.548	-1.563	-1.542	-1.496	-1.427	-1.322	-1.165	433
434	-1.337	-1.344	-1.337	-1.325	-1.298	-1.256	-1.133	434
435	-1.074	-1.113	-1.155	-1.152	-1.099	-1.026	-.936	435
436	-.582	-.624	-.666	-.738	-.802	-.838	-.857	436
437	-.340	-.362	-.388	-.464	-.540	-.612	-.669	437
438	-.286	-.308	-.318	-.345	-.353	-.359	-.356	438
439	-.286	-.304	-.316	-.340	-.353	-.356	-.324	439
440	.147	.141	.147	.160	.191	.203	.204	440
441	-.294	-.258	-.225	-.153	-.068	.026	.138	441
442	-1.237	-1.183	-1.150	-1.041	-.927	-.773	-.556	442
443	-1.326	-1.343	-1.346	-1.328	-1.259	-1.150	-.978	443
444	-1.191	-1.171	-1.153	-1.131	-1.114	-1.056	-.939	444
445	-.896	-.938	-1.003	-1.062	-.964	-.842	-.724	445
446	-.484	-.508	-.536	-.578	-.607	-.642	-.618	446
447	-.299	-.350	-.413	-.552	-.658	-.745	-.703	447
448	-.230	-.239	-.273	-.343	-.380	-.439	-.532	448
449	-.237	-.241	-.272	-.341	-.373	-.406	-.392	449

Pressure Data, C_p

DATE: 08/14/86 ALPHA= 50 BETA= 0 CONFIGURATION: BHV LEFT FWD AFT FUSELAGE

PORT#	Ob/2V 0	-.05	-.1	-.2	-.3	-.4	-.5	PORT#
410	.073	.073	.073	.079	.091	.111	.127	410
411	-.300	-.323	-.342	-.370	-.395	-.421	-.444	411
412	-.974	-1.010	-1.044	-1.110	-1.156	-1.222	-1.295	412
413	-1.616	-1.657	-1.690	-1.764	-1.823	-1.887	-1.926	413
414	-1.515	-1.538	-1.550	-1.593	-1.625	-1.672	-1.738	414
415	-1.173	-1.134	-1.110	-1.079	-1.061	-1.039	-1.030	415
416	-.819	-.808	-.797	-.781	-.762	-.737	-.722	416
417	-.459	-.447	-.442	-.427	-.402	-.381	-.363	417
418	-.404	-.392	-.388	-.376	-.365	-.342	-.333	418
419	-.422	-.429	-.431	-.422	-.390	-.363	-.339	419
420	.079	.076	.073	.082	.090	.107	.121	420
421	-.311	-.344	-.367	-.401	-.434	-.476	-.537	421
422	-1.097	-1.151	-1.196	-1.266	-1.321	-1.424	-1.558	422
423	-1.655	-1.673	-1.688	-1.717	-1.725	-1.788	-1.950	423
424	-1.444	-1.463	-1.467	-1.495	-1.513	-1.605	-1.701	424
425	-1.391	-1.436	-1.452	-1.518	-1.549	-1.659	-1.834	425
426	-.787	-.758	-.746	-.731	-.715	-.659	-.616	426
427	-.335	-.326	-.326	-.325	-.308	-.280	-.250	427
428	-.287	-.294	-.306	-.329	-.338	-.310	-.285	428
429	-.284	-.287	-.297	-.318	-.343	-.318	-.274	429
430	.106	.098	.104	.109	.117	.121	.123	430
431	-.337	-.369	-.395	-.433	-.473	-.528	-.640	431
432	-1.293	-1.336	-1.370	-1.414	-1.442	-1.543	-1.752	432
433	-1.577	-1.582	-1.548	-1.485	-1.416	-1.432	-1.594	433
434	-1.368	-1.374	-1.368	-1.372	-1.351	-1.397	-1.571	434
435	-1.092	-1.107	-1.061	-1.045	-1.104	-1.230	-1.497	435
436	-.586	-.571	-.564	-.628	-.741	-.883	-.975	436
437	-.343	-.342	-.356	-.413	-.459	-.431	-.334	437
438	-.295	-.302	-.312	-.342	-.340	-.325	-.284	438
439	-.295	-.306	-.318	-.351	-.367	-.366	-.354	439
440	.142	.136	.148	.146	.143	.156	.143	440
441	-.308	-.338	-.342	-.361	-.419	-.493	-.630	441
442	-1.253	-1.294	-1.245	-1.125	-1.113	-1.193	-1.344	442
443	-1.341	-1.322	-1.217	-.984	-.943	-1.023	-1.147	443
444	-1.201	-1.206	-1.136	-.964	-.958	-1.027	-1.185	444
445	-.893	-.887	-.764	-.805	-.884	-.974	-1.149	445
446	-.491	-.474	-.471	-.533	-.605	-.691	-.860	446
447	-.305	-.294	-.325	-.457	-.602	-.784	-.952	447
448	-.238	-.252	-.297	-.417	-.508	-.554	-.464	448
449	-.245	-.255	-.293	-.385	-.430	-.431	-.437	449

Pressure Data, C_p

DATE: 08/14/86 ALPHA= 20 BETA= 0 CONFIGURATION: BHV LEFT FWD AFT FUSELAGE

PORT#	0	.05	.1	.2	.3	.4	.5	PORT#
	**********	**********	**********	Ob/2V	**********	**********	**********	
410	-.184	-.195	-.159	-.143	-.176	-.174	-.158	410
411	-.238	-.239	-.180	-.158	-.201	-.191	-.163	411
412	-.349	-.343	-.258	-.231	-.278	-.270	-.246	412
413	-.462	-.454	-.356	-.312	-.368	-.375	-.350	413
414	-.454	-.451	-.357	-.326	-.389	-.409	-.381	414
415	-.446	-.440	-.343	-.315	-.380	-.406	-.374	415
416	-.296	-.300	-.223	-.217	-.281	-.296	-.287	416
417	-.162	-.168	-.146	-.132	-.173	-.181	-.173	417
418	-.155	-.157	-.135	-.121	-.154	-.151	-.139	418
419	-.258	-.258	-.194	-.189	-.252	-.257	-.209	419
420	-.132	-.133	-.108	-.105	-.127	-.120	-.098	420
421	-.200	-.199	-.150	-.133	-.159	-.153	-.126	421
422	-.346	-.338	-.246	-.220	-.267	-.256	-.225	422
423	-.413	-.408	-.306	-.280	-.344	-.335	-.307	423
424	-.378	-.372	-.272	-.256	-.317	-.326	-.307	424
425	-.354	-.359	-.263	-.240	-.286	-.276	-.259	425
426	-.168	-.183	-.146	-.147	-.203	-.211	-.209	426
427	-.055	-.077	-.093	-.101	-.131	-.141	-.144	427
428	-.086	-.105	-.106	-.109	-.133	-.136	-.129	428
429	.010	-.004	-.037	-.041	-.018	-.008	.020	429
430	-.094	-.095	-.097	-.089	-.093	-.079	-.054	430
431	-.168	-.165	-.131	-.125	-.132	-.111	-.084	431
432	-.333	-.324	-.234	-.211	-.269	-.240	-.200	432
433	-.341	-.340	-.253	-.245	-.318	-.298	-.267	433
434	-.314	-.305	-.221	-.213	-.285	-.263	-.244	434
435	-.184	-.189	-.153	-.162	-.251	-.244	-.211	435
436	-.103	-.106	-.106	-.107	-.142	-.150	-.152	436
437	-.046	-.051	-.074	-.087	-.098	-.111	-.119	437
438	-.034	-.067	-.064	-.070	-.063	-.072	-.077	438
439	-.096	-.104	-.097	-.098	-.097	-.085	-.078	439
440	-.050	-.071	-.061	-.065	-.041	-.034	-.011	440
441	-.132	-.124	-.105	-.109	-.082	-.061	-.031	441
442	-.275	-.208	-.186	-.188	-.215	-.187	-.157	442
443	-.255	-.194	-.180	-.194	-.239	-.228	-.206	443
444	-.242	-.183	-.165	-.176	-.210	-.201	-.183	444
445	-.163	-.149	-.138	-.161	-.185	-.173	-.158	445
446	-.102	-.106	-.094	-.116	-.119	-.124	-.130	446
447	-.002	-.042	-.054	-.052	-.054	-.080	-.101	447
448	.003	-.038	-.049	-.037	-.019	-.029	-.037	448
449	-.014	-.051	-.057	-.030	-.021	-.025	-.019	449

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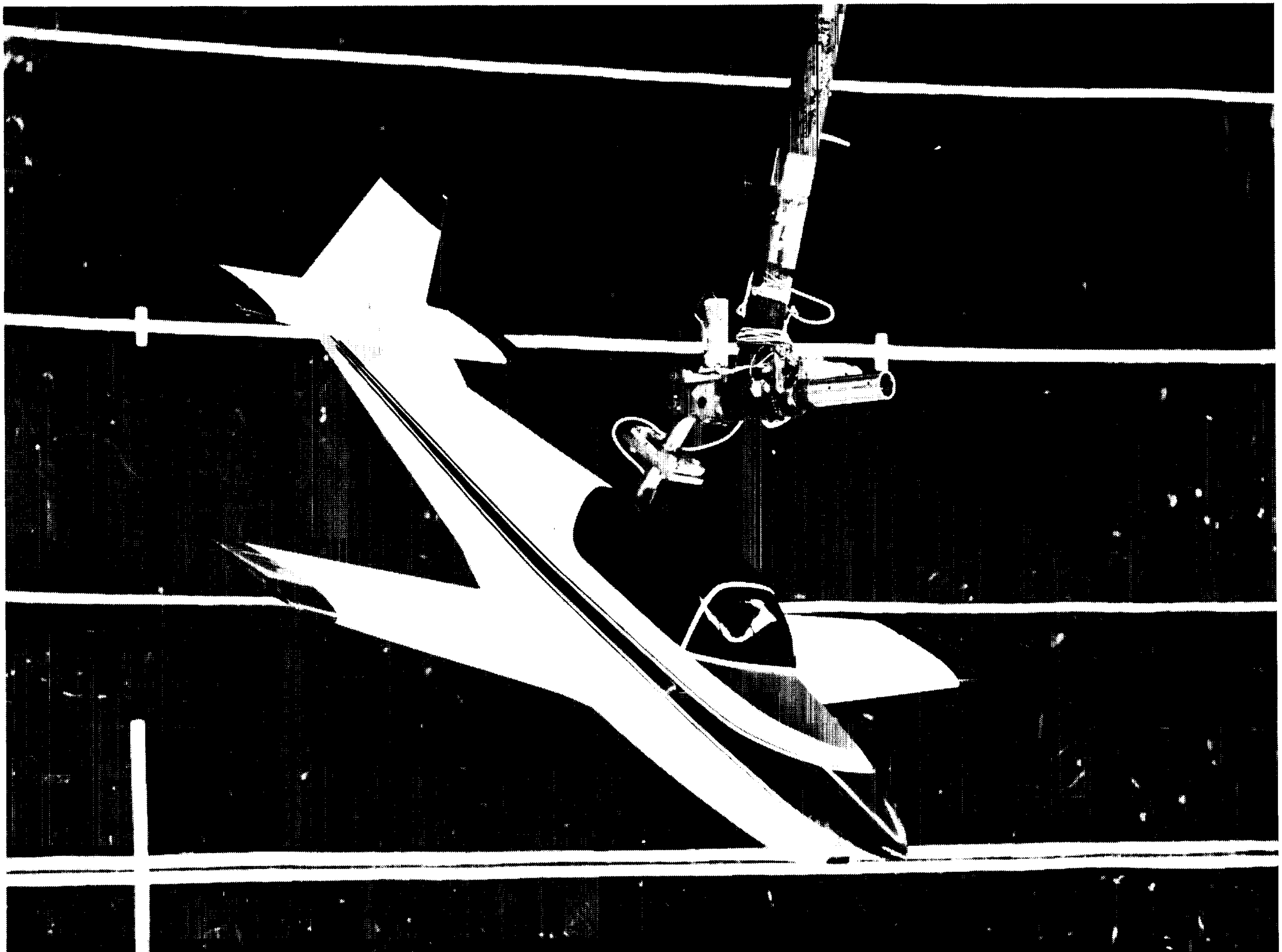
7. Bihrle, William, Jr.; and Barnhart, Billy: Spin Prediction Techniques. *J. Aircr.*, vol. 20, no. 2, Feb. 1983, pp. 97–101.

Table I. Dimensional Characteristics of the 1/7-Scale Model

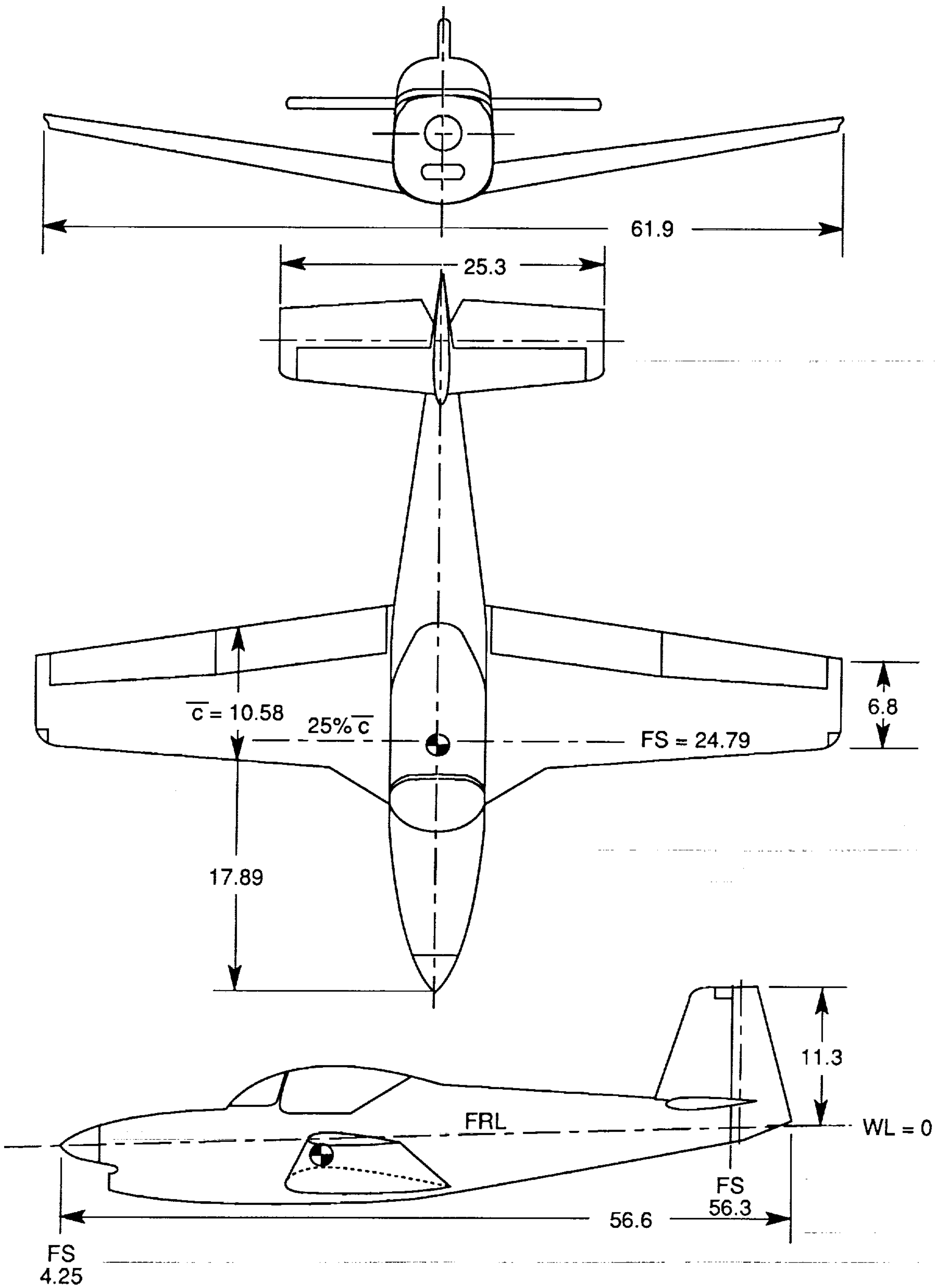
Overall length, ft	4.33
Wing:	
Area, ft^2	4.389
Span, ft	5.153
Mean aerodynamic chord, ft	0.882
Root chord (without cuff), ft	1.069
Centerline chord (without cuff), ft	1.135
Tip chord, ft	0.567
Airfoil section (centerline)	NACA 23018
Airfoil section (tip)	NACA 23012
Aspect ratio	6.05
Taper ratio	0.5
Leading-edge sweep, deg	3.2
Trailing-edge sweep, deg	−9.4
Dihedral, deg	7.0
Incidence relative to FRL, deg	3.0
Horizontal tail:	
Area, ft^2	1.183
Span, ft	2.109
Root chord, ft	0.666
Tip chord, ft	0.462
Mean chord, ft	0.567
Airfoil section	NACA 0012
Aspect ratio	3.75
Taper ratio	0.7
Leading-edge sweep, deg	5.9
Trailing-edge sweep, deg	−4.8
Incidence relative to FRL, deg	0
Dihedral, deg	0
Distance from 25% wing $\bar{c}$ to 25% tailplane $\bar{c}$, ft	2.345
Vertical tail:	
Area, ft^2	0.635
Tip height above FRL, ft	0.941
Tip height above fuselage, ft	0.774
Root chord (at WL = 0.62), ft	0.941
Tip chord, ft	0.407
Airfoil section	NACA 0012
Aspect ratio	1.25
Taper ratio	0.43
Leading-edge sweep, deg	19.8
Trailing-edge sweep, deg	−13.5
Distance from 25% wing $\bar{c}$ to fin center of pressure, ft	2.371



L-83-4450

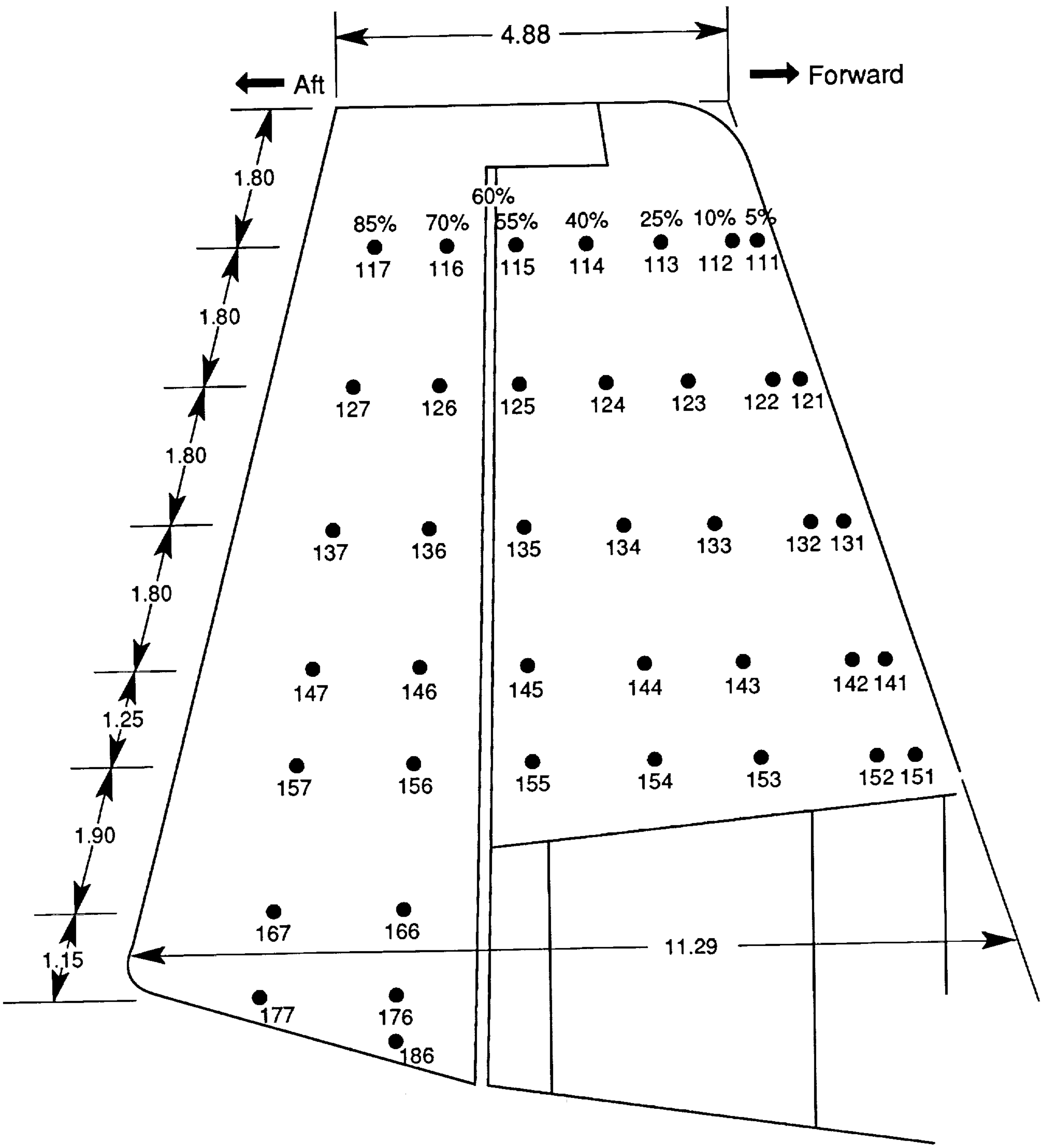
(a) Photograph of the model.

Figure 1. 1/7-scale model of the Australian airplane used in the pressure measurements.



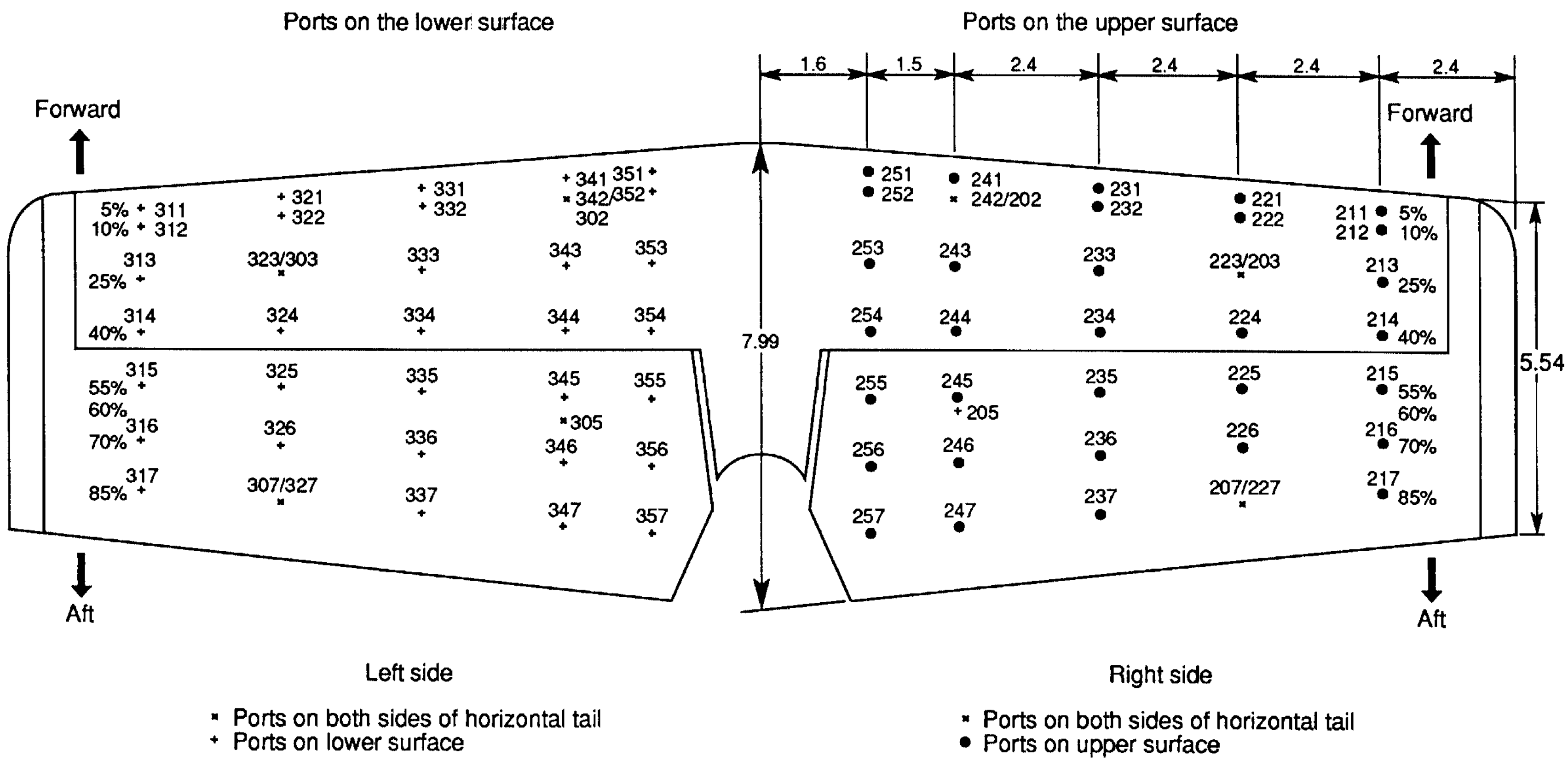
(b) Three-view drawing of the model. Dimensions are in inches (model scale).

Figure 1. Concluded.



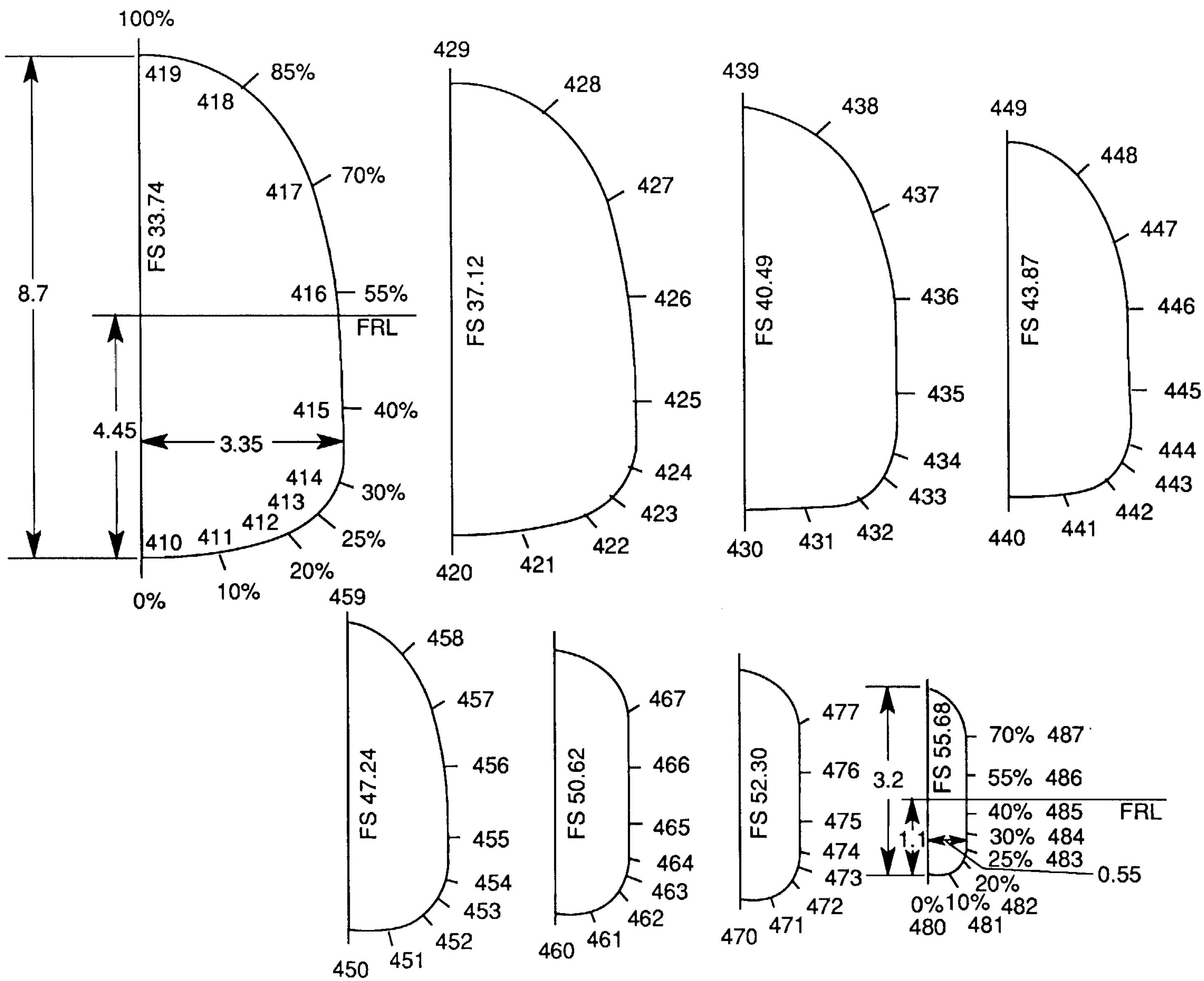
(a) Right side of vertical tail.

Figure 2. Locations and numbers of pressure ports on model surfaces. Dimensions are in inches (model scale).



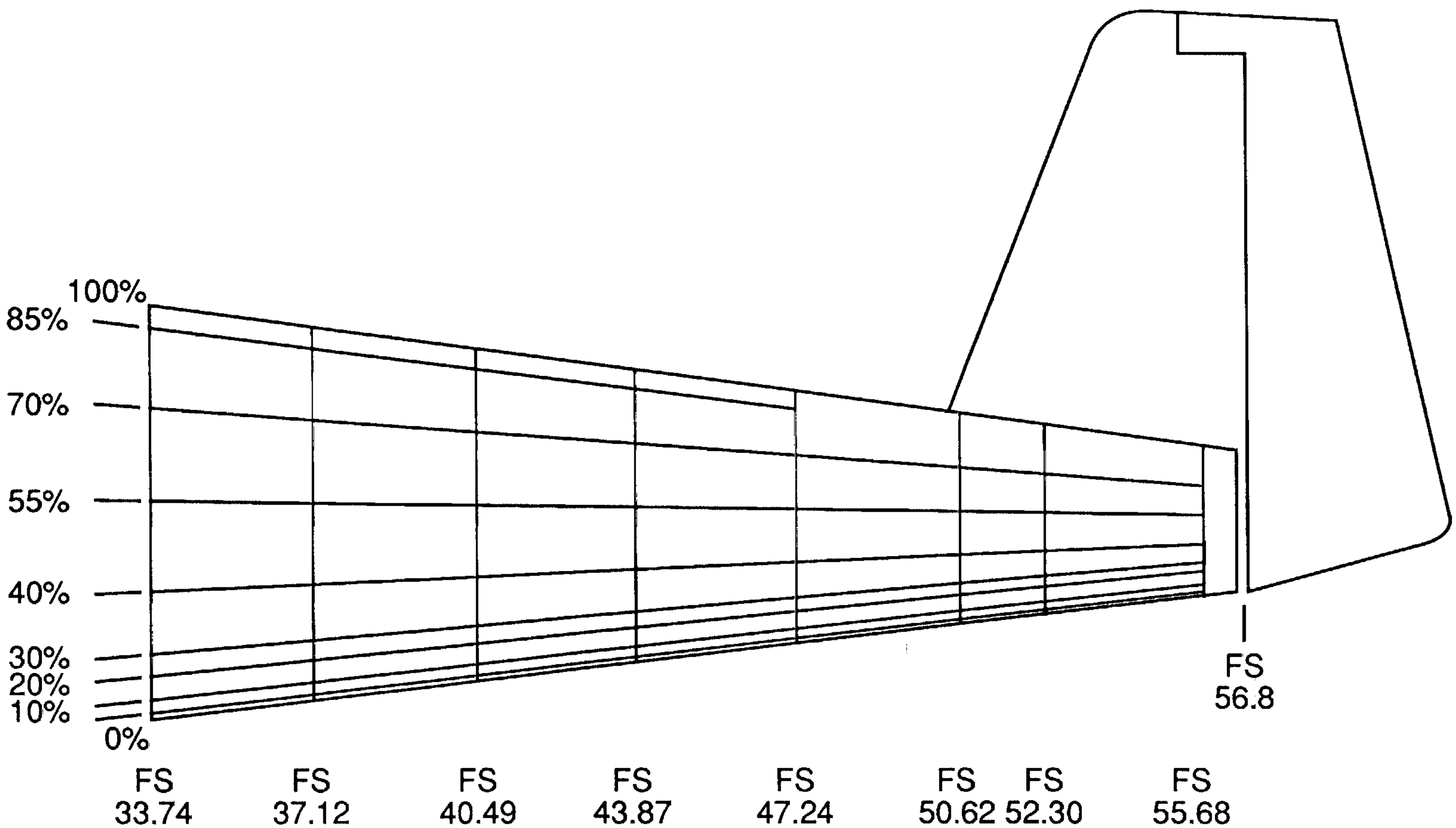
(b) Horizontal tail right upper surface and left lower surface.

Figure 2. Continued.



(c) Left aft fuselage station cuts.

Figure 2. Continued.



(d) Left aft fuselage stations.

Figure 2. Concluded.

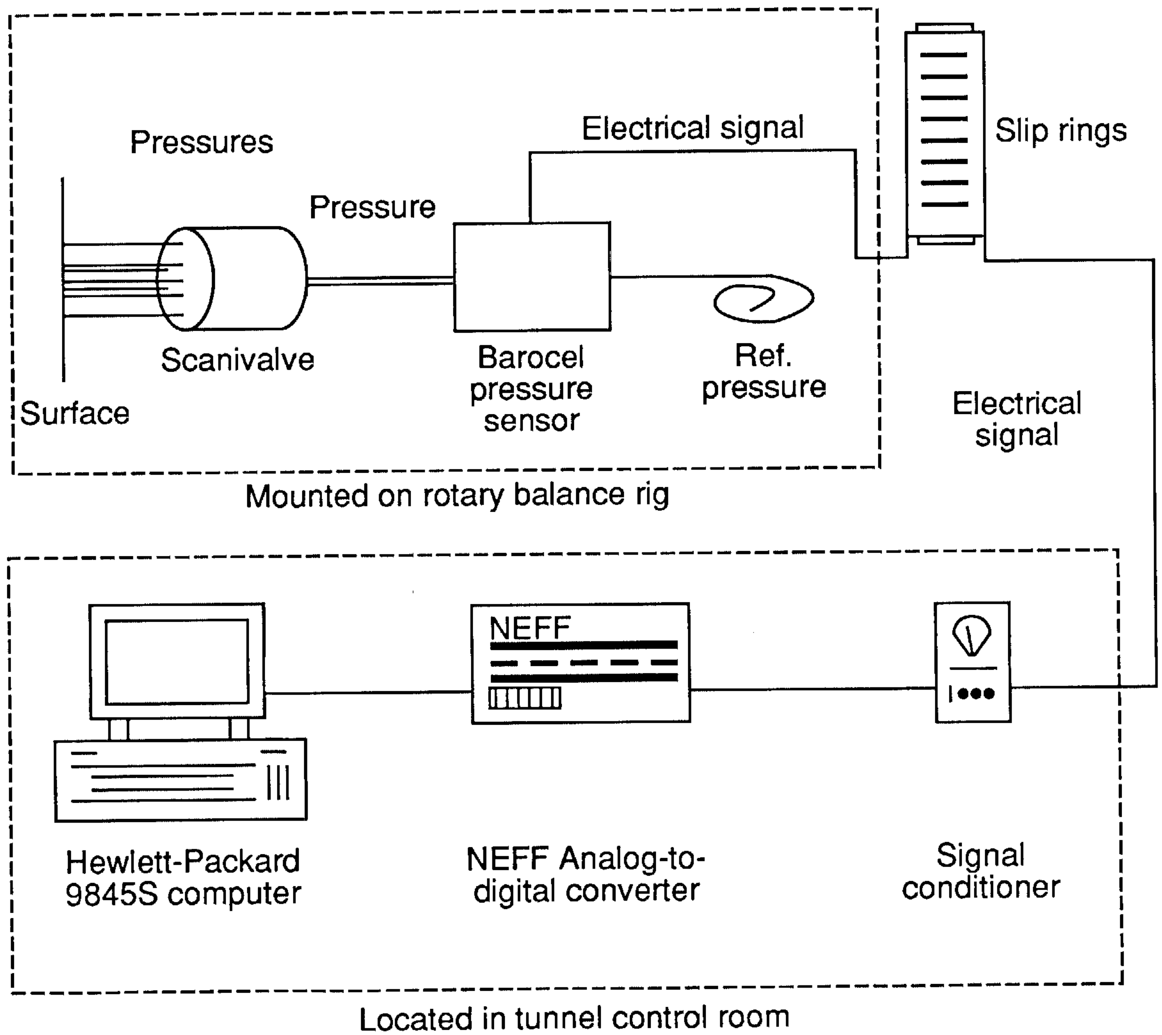
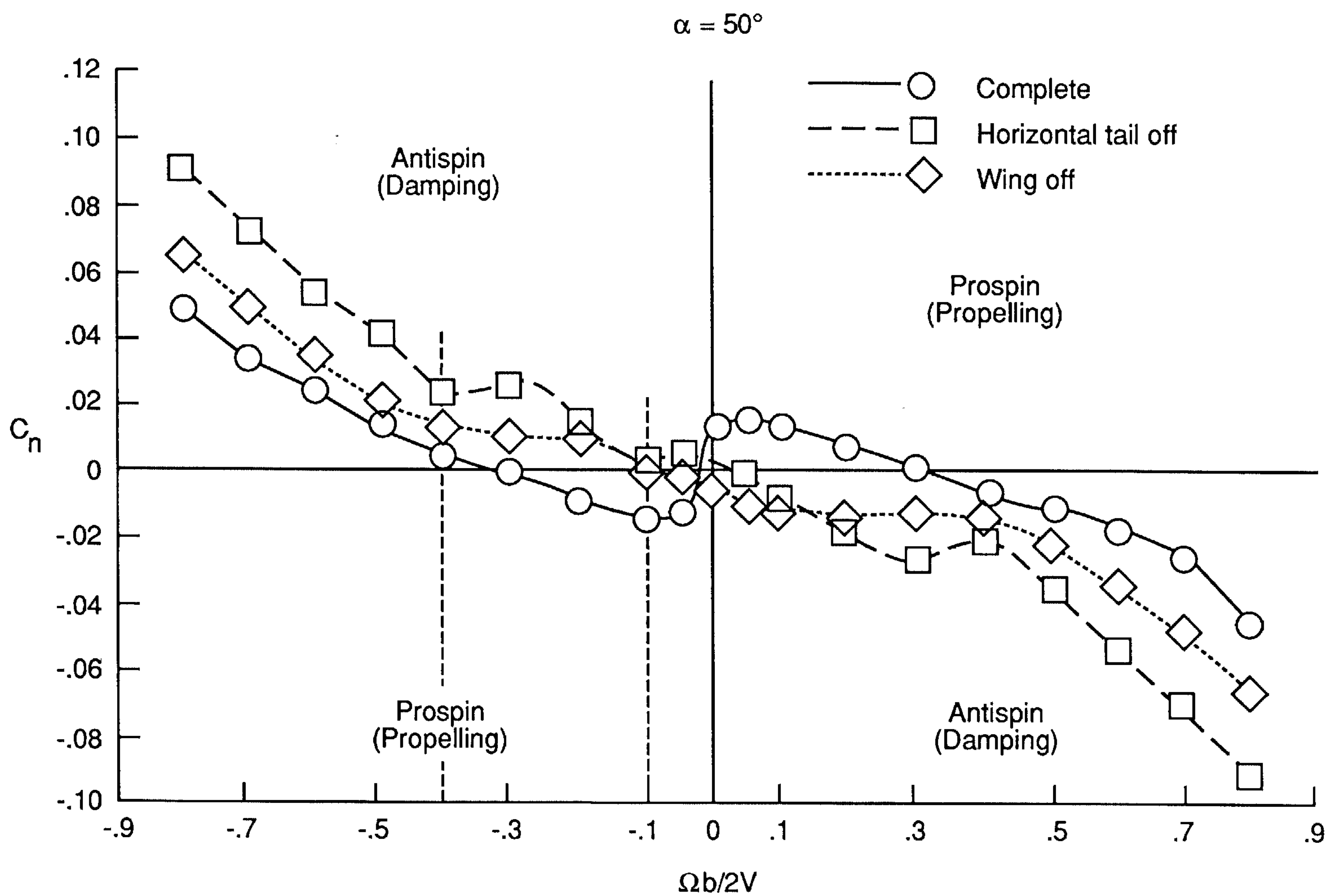
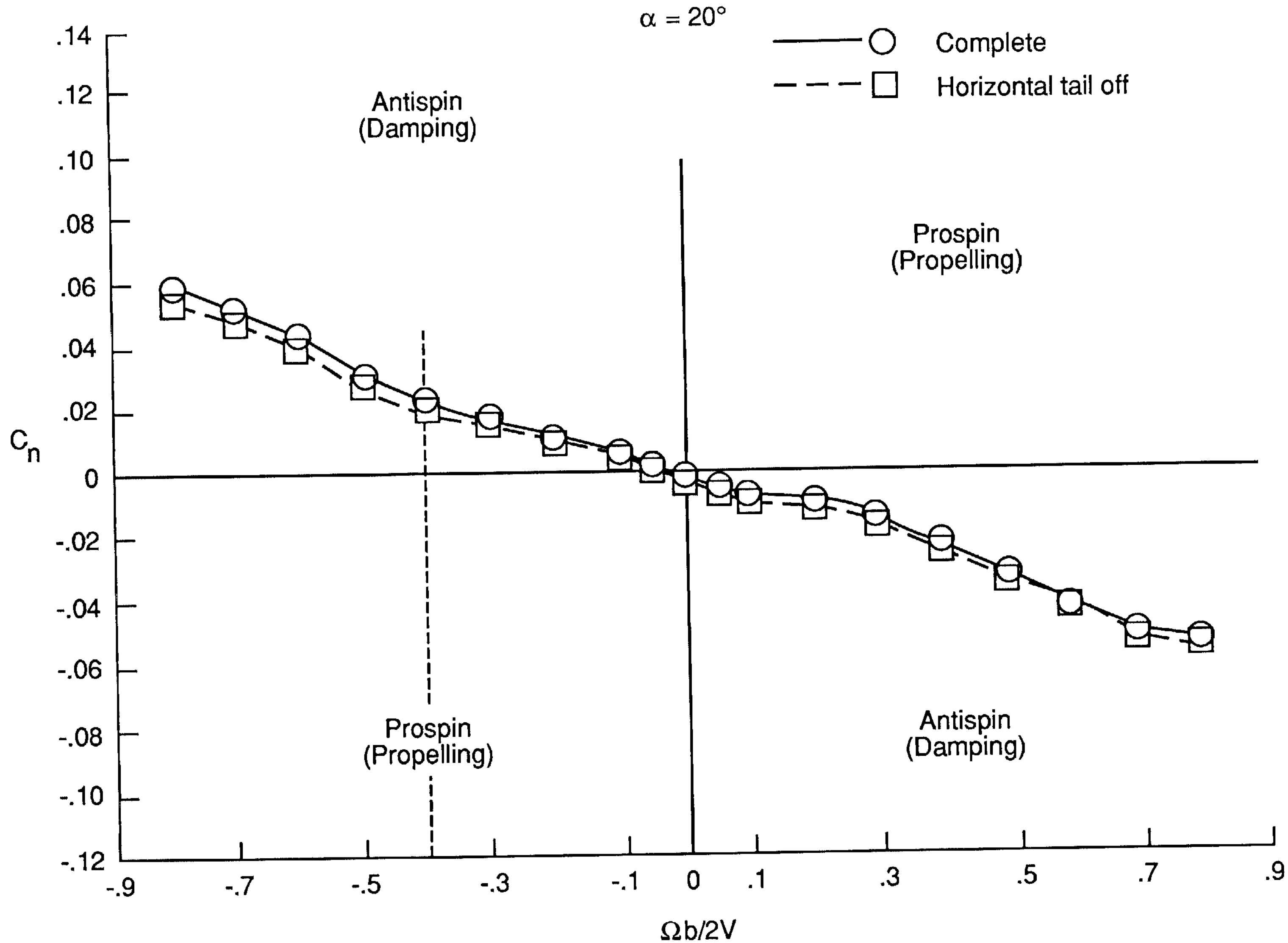


Figure 3. Diagram of data acquisition system used to measure surface pressure on model.



(a) Effect of the wing and horizontal tail on damping.

Figure 4. Yawing-moment characteristics of the model during rotation.



(b) Effect of the horizontal tail on damping.

Figure 4. Concluded.

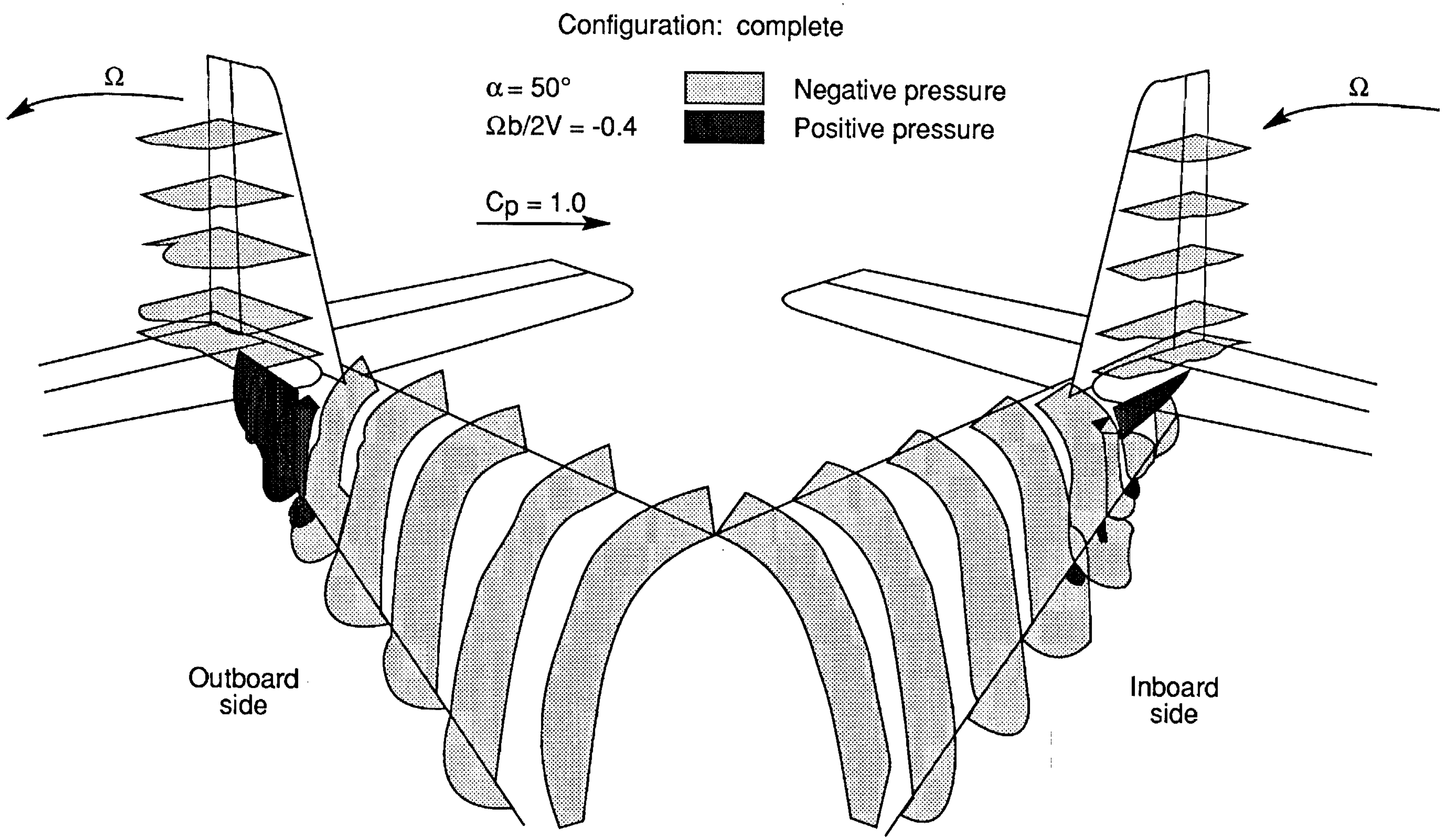


Figure 5. Pressures measured on inboard and outboard sides of fuselage and vertical tail for complete configuration at $\alpha = 50^\circ$ and $\Omega b/2V = -0.4$.

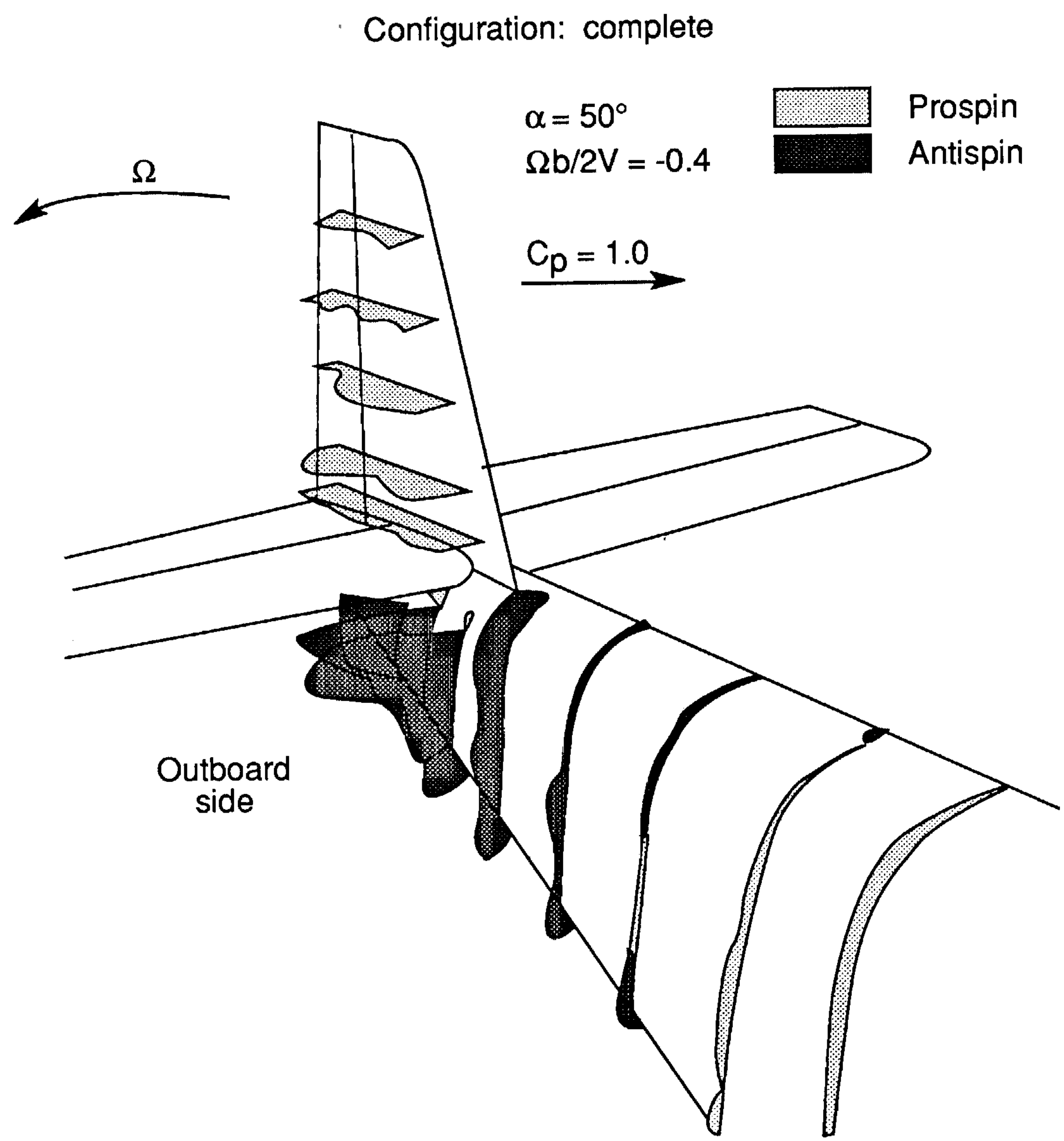


Figure 6. Resultant pressures shown for outboard side of fuselage and vertical tail for complete configuration at $\alpha = 50°$ and $\Omega b/2V = -0.4$.

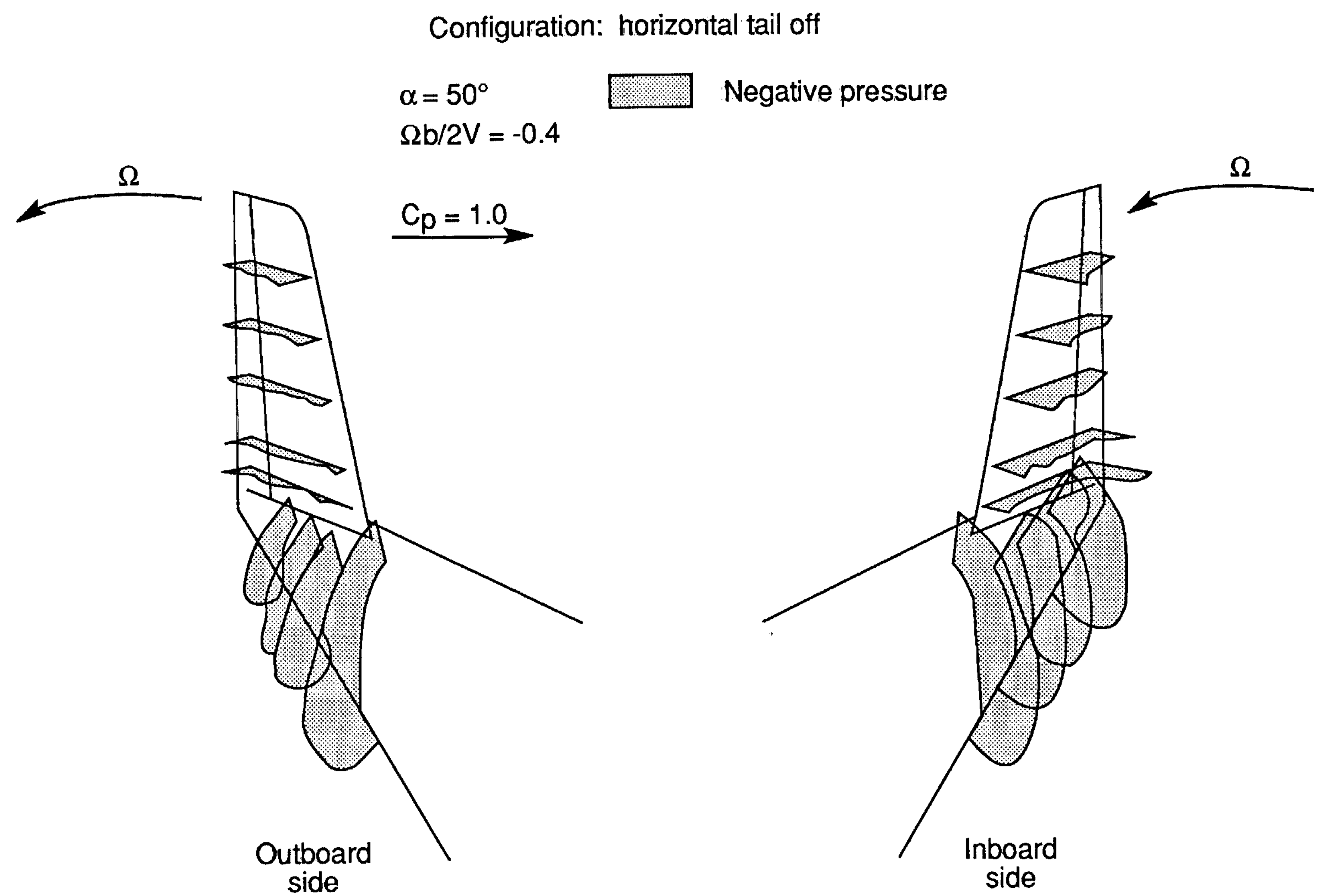


Figure 7. Pressures measured on inboard and outboard sides of aft fuselage and vertical tail for horizontal-tail-off configuration at $\alpha = 50°$ and $\Omega b/2V = -0.4$.

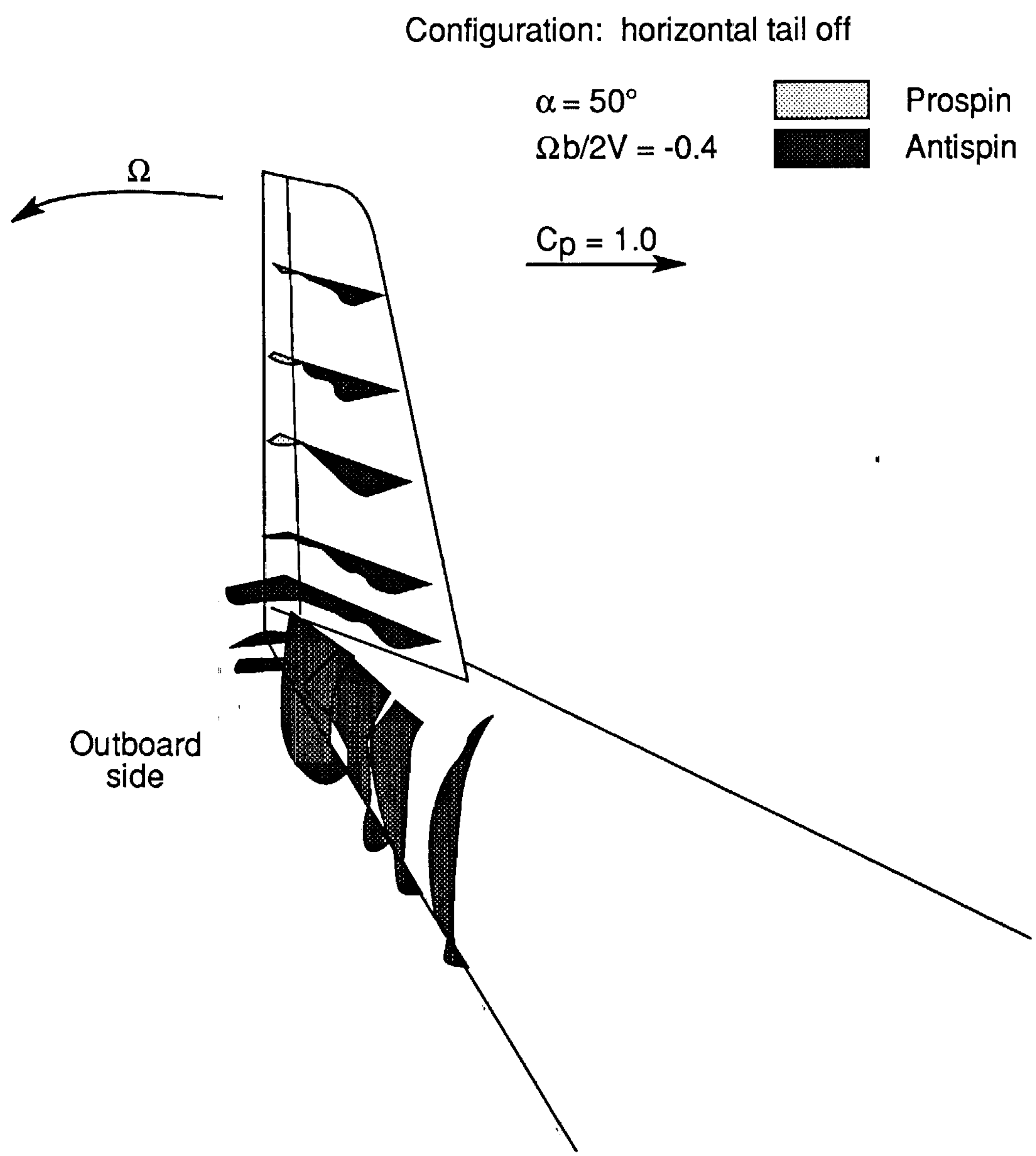


Figure 8. Resultant pressures shown for outboard side of aft fuselage and vertical tail for horizontal-tail-off configuration at $\alpha = 50°$ and $\Omega b/2V = -0.4$.

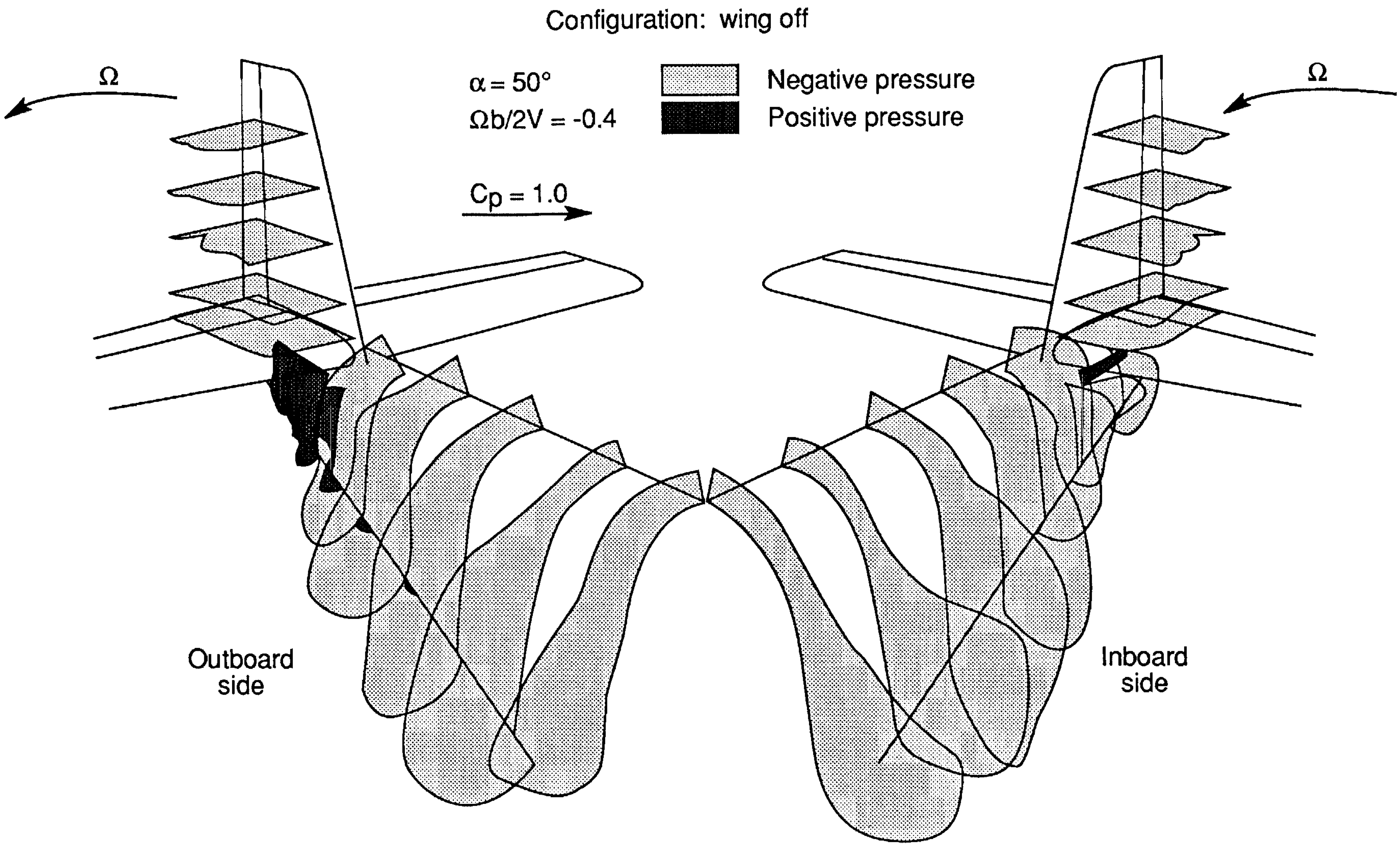


Figure 9. Pressures measured on inboard and outboard sides of fuselage and vertical tail for wing-off configuration at $\alpha = 50°$ and $\Omega b/2V = -0.4$.

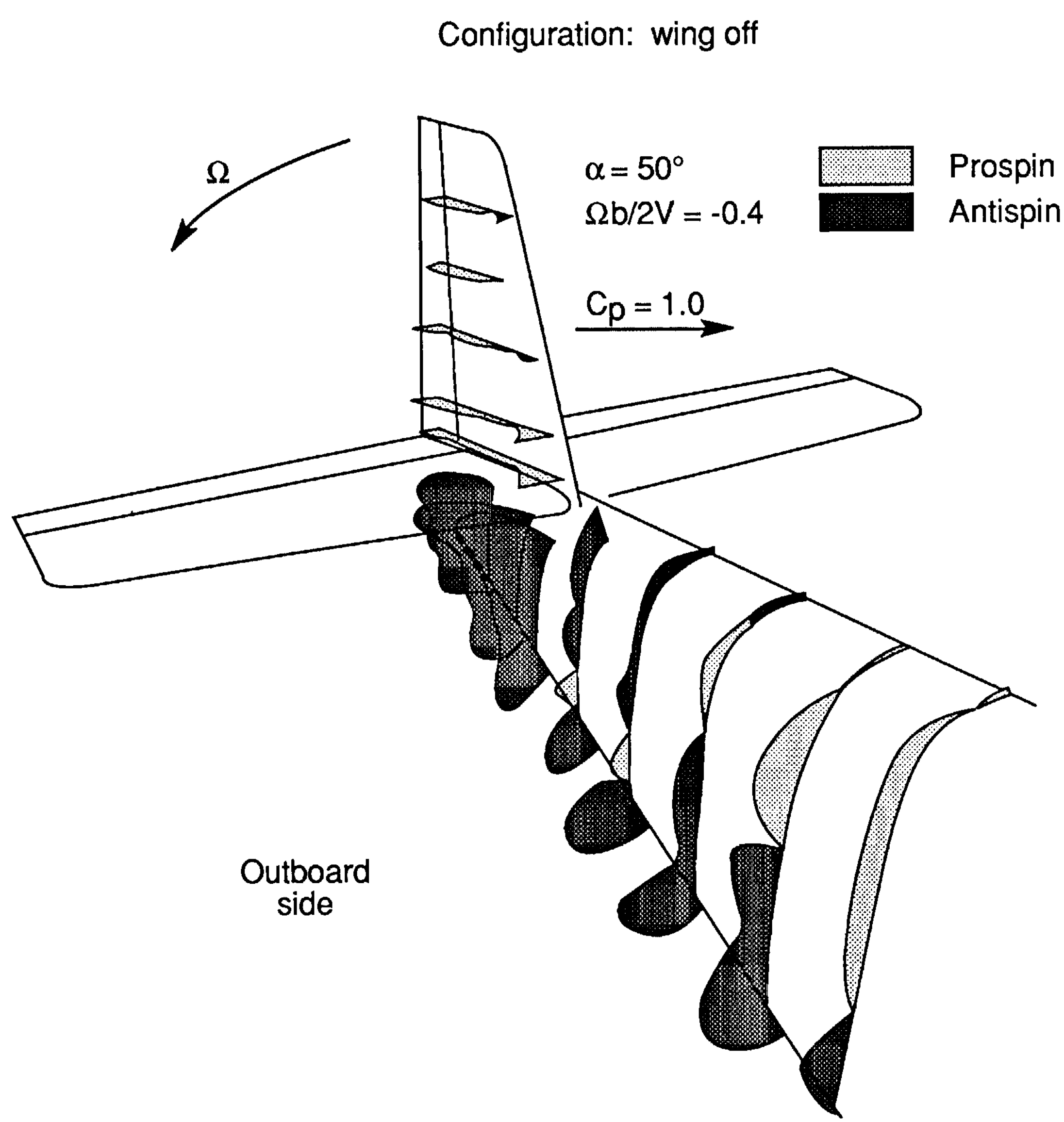


Figure 10. Resultant pressures shown for outboard side of fuselage and vertical tail for wing-off configuration at $\alpha = 50^{\circ}$ and $\Omega b/2V = -0.4$.

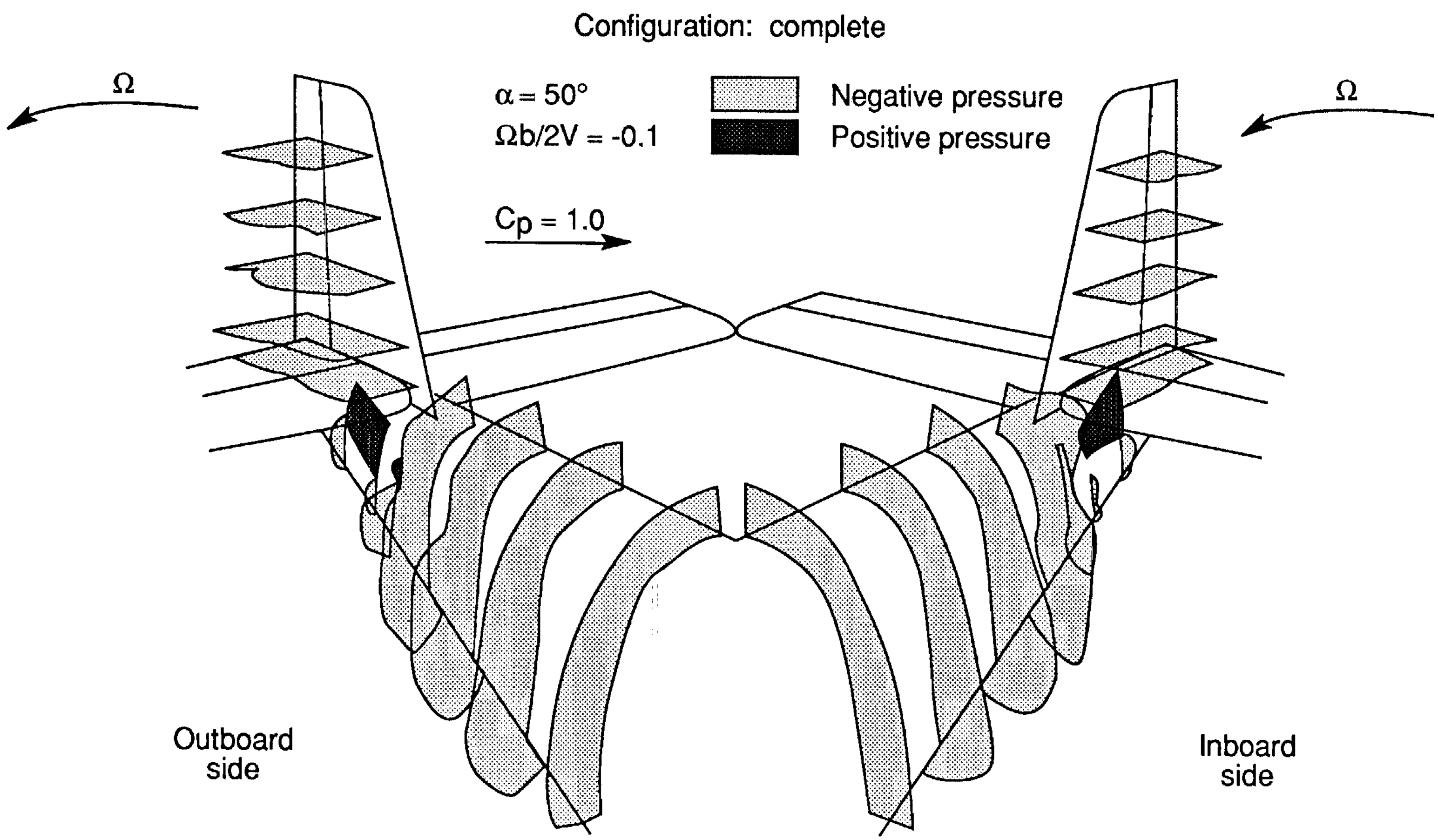


Figure 11. Pressures measured on inboard and outboard sides of fuselage and vertical tail for complete configuration at $\alpha = 50°$ and $\Omega b/2V = -0.1$.

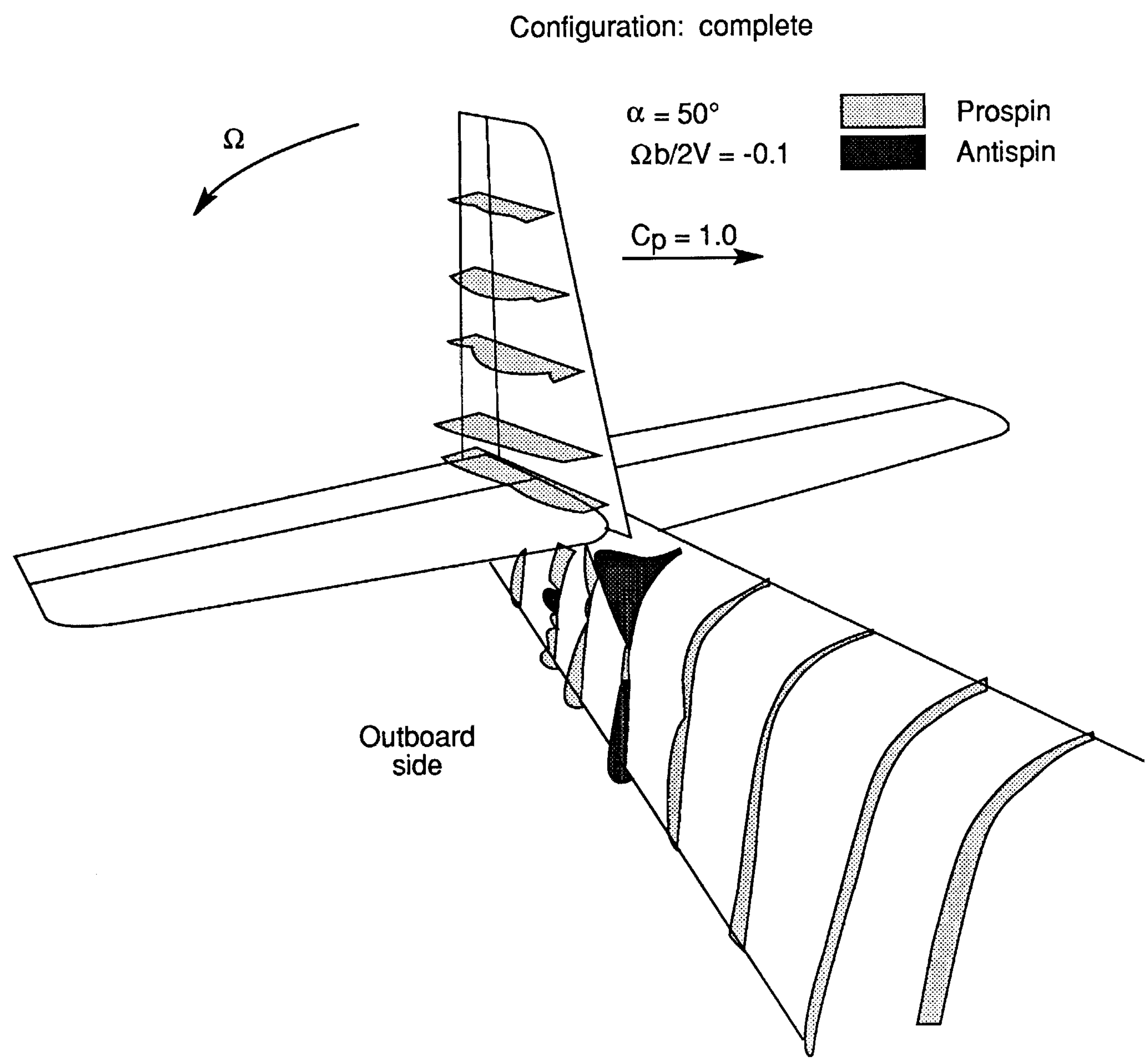


Figure 12. Resultant pressures shown for outboard side of fuselage and vertical tail for complete configuration at $\alpha = 50°$ and $\Omega b/2V = -0.1$.

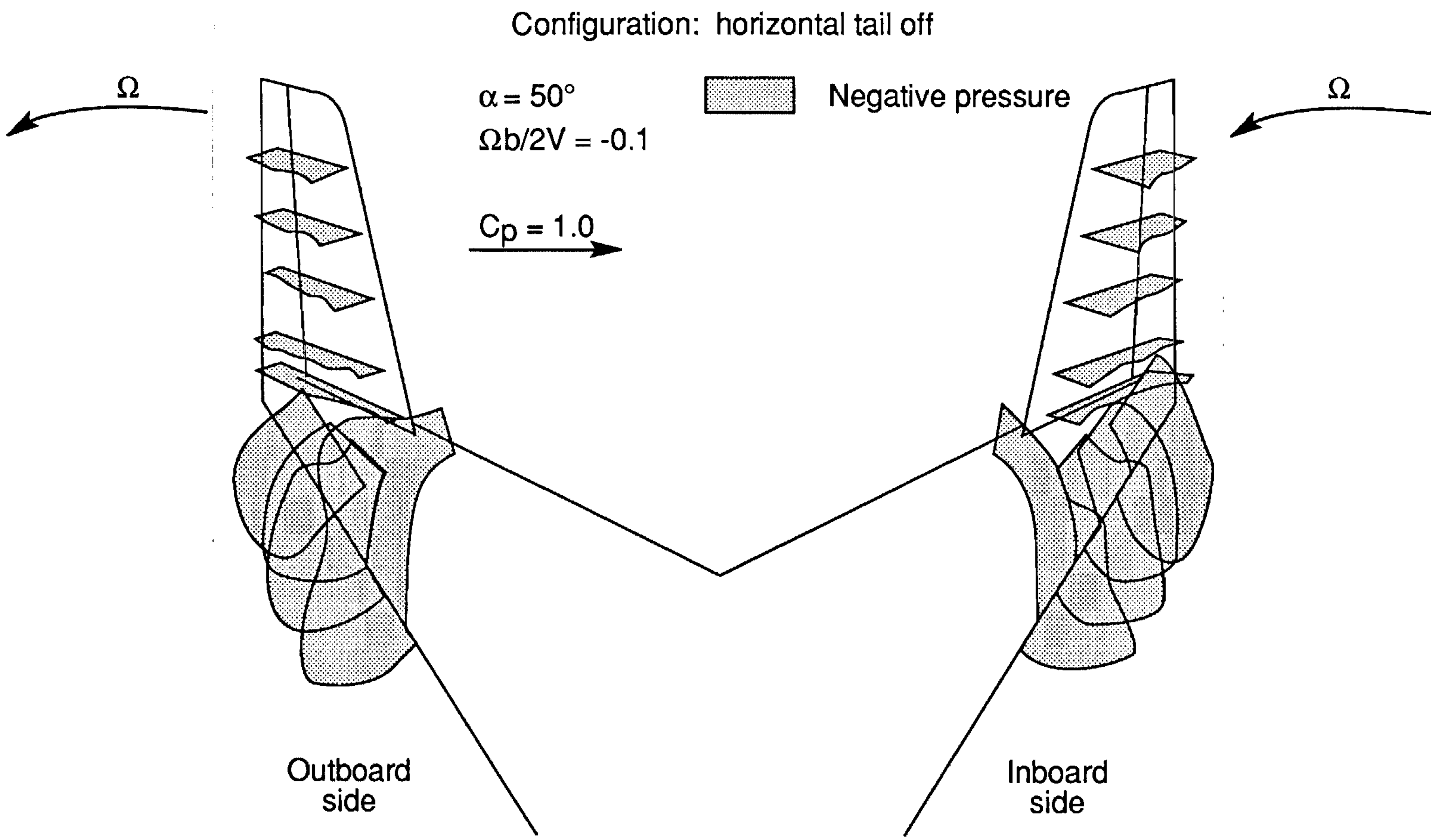


Figure 13. Pressures measured on inboard and outboard sides of aft fuselage and vertical tail for horizontal-tail-off configuration at $\alpha = 50°$ and $\Omega b/2V = -0.1$.

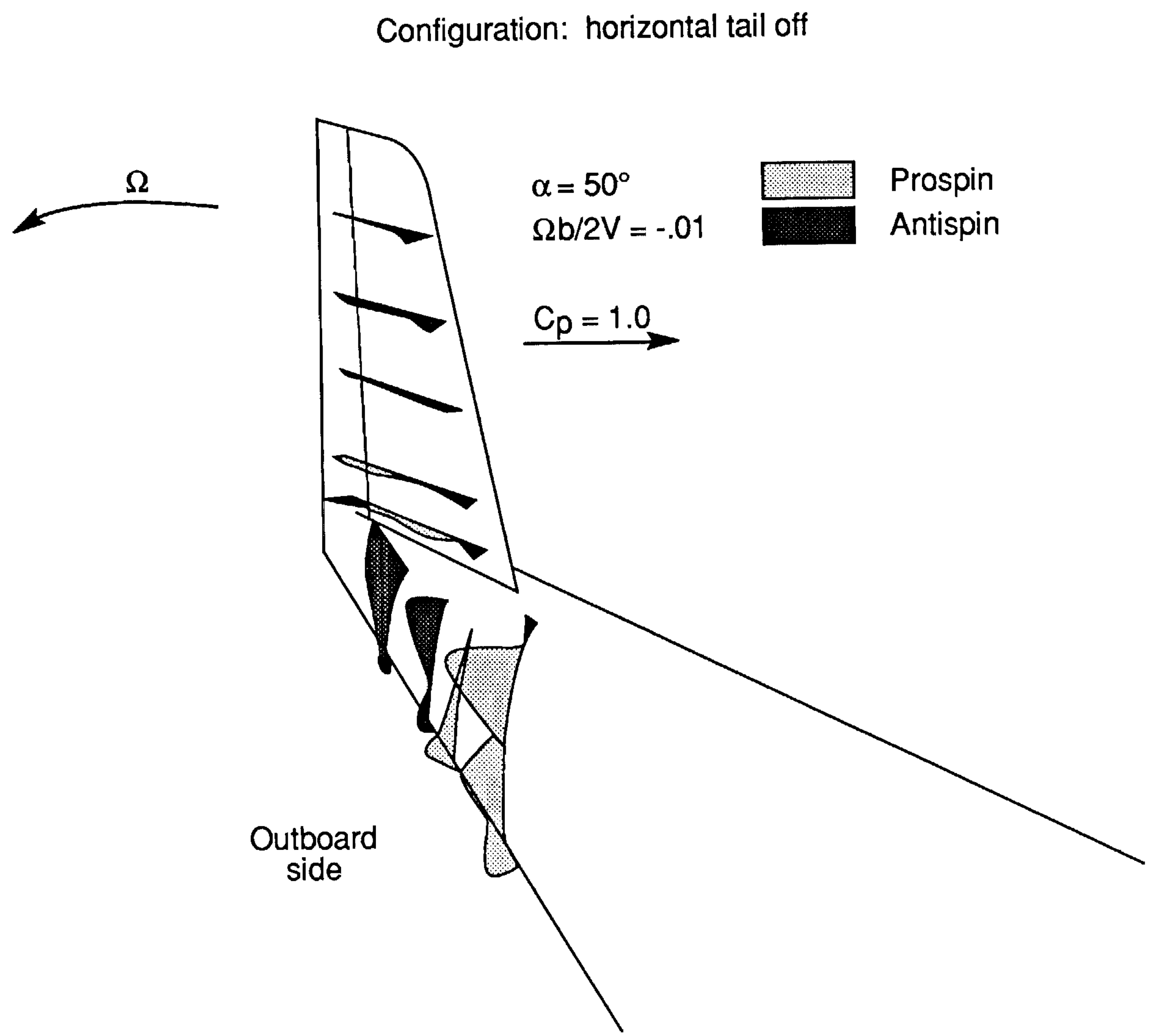


Figure 14. Resultant pressures shown for outboard side of aft fuselage and vertical tail for horizontal-tail-off configuration at $\alpha = 50^\circ$ and $\Omega b/2V = -0.1$.

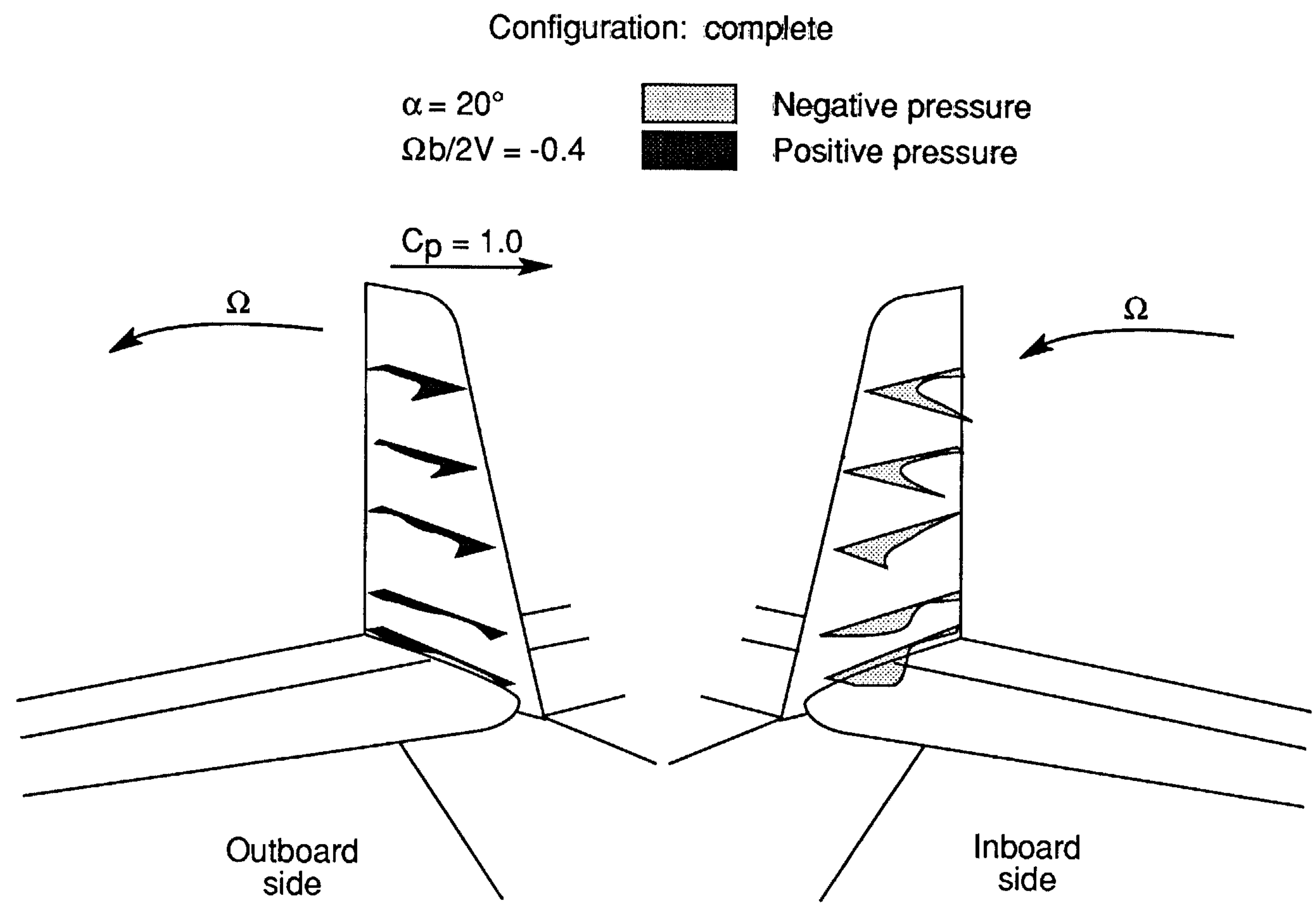


Figure 15. Pressures measured on inboard and outboard sides of vertical tail for complete configuration at $\alpha = 20^\circ$ and $\Omega b/2V = -0.4$.

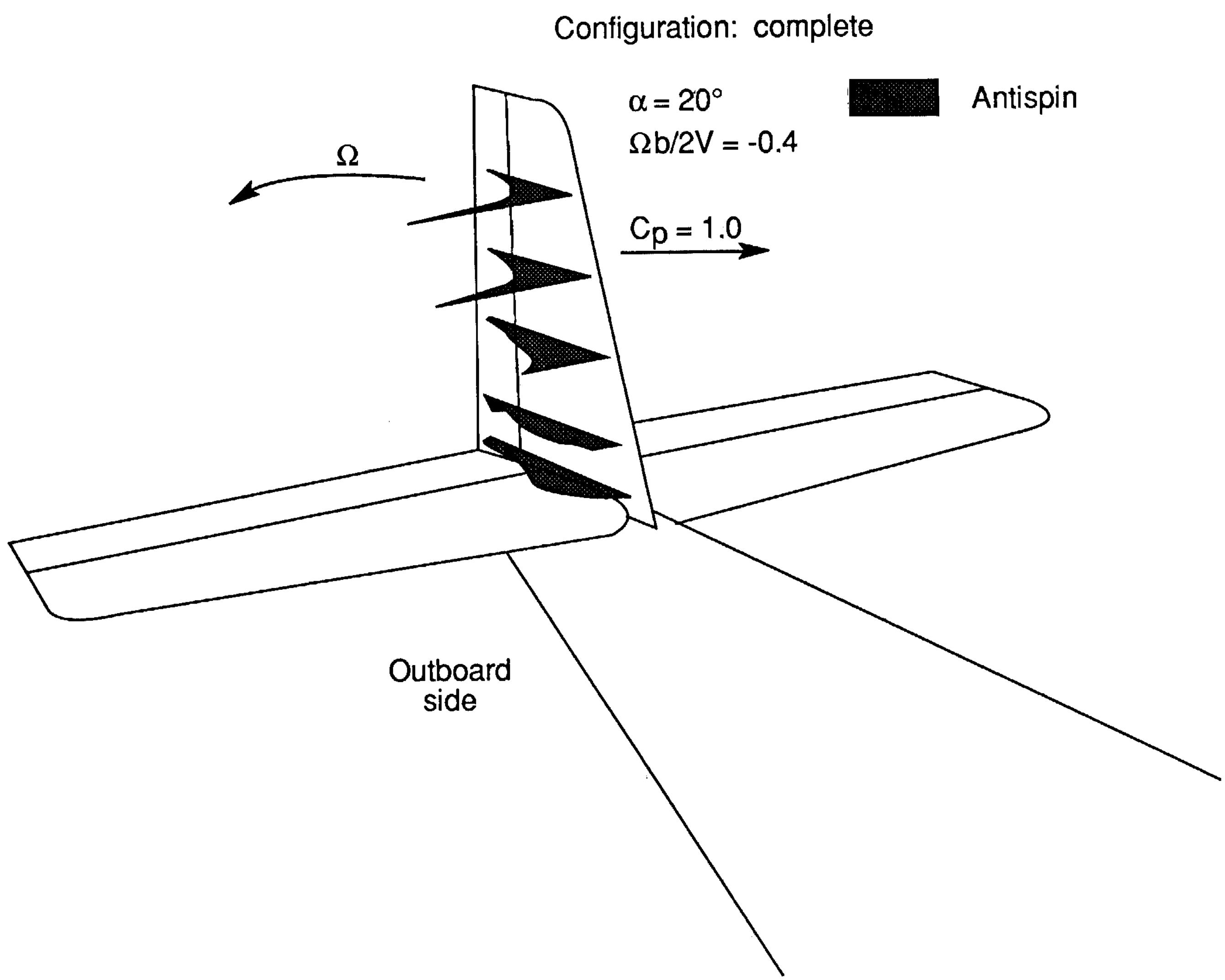


Figure 16. Resultant pressures shown for outboard side of vertical tail for complete configuration at $\alpha = 20°$ and $\Omega b/2V = -0.4$.

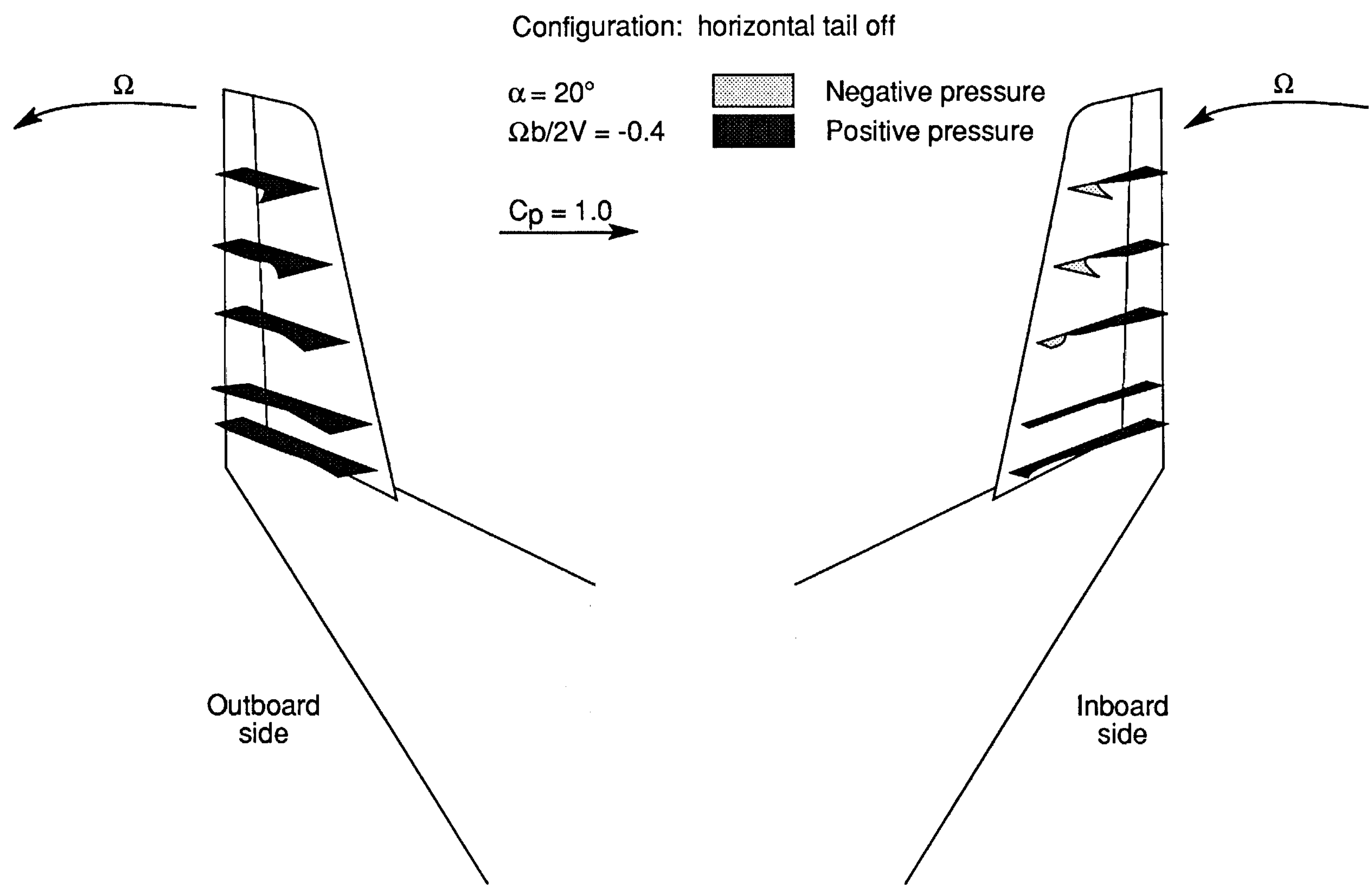


Figure 17. Pressures measured on inboard and outboard sides of vertical tail for horizontal-tail-off configuration at $\alpha = 20°$ and $\Omega b/2V = -0.4$.

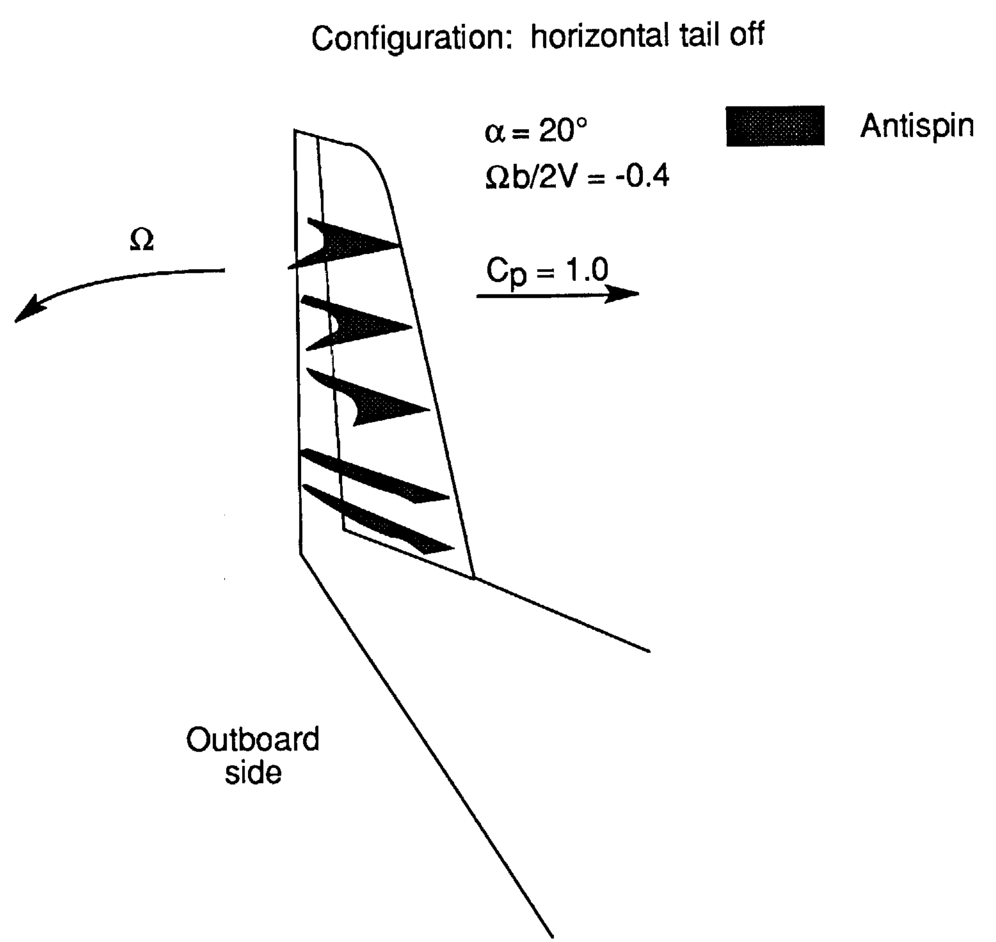


Figure 18. Resultant pressures shown for outboard side of vertical tail for horizontal-tail-off configuration at $\alpha = 20°$ and $\Omega b/2V = -0.4$.

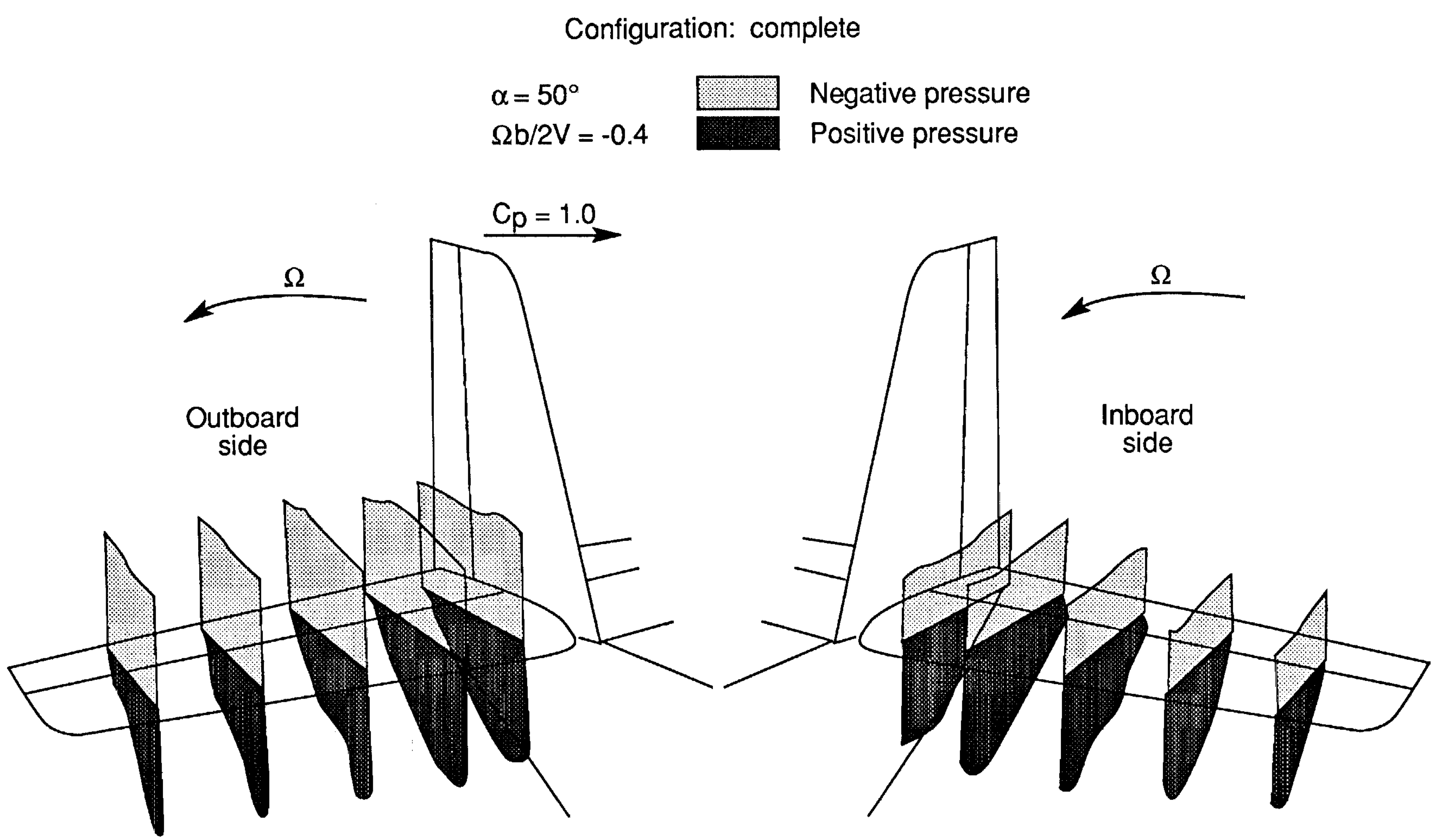


Figure 19. Pressures measured on upper and lower surfaces of inboard and outboard horizontal tail for complete configuration at $\alpha = 50°$ and $\Omega b/2V = -0.4$.

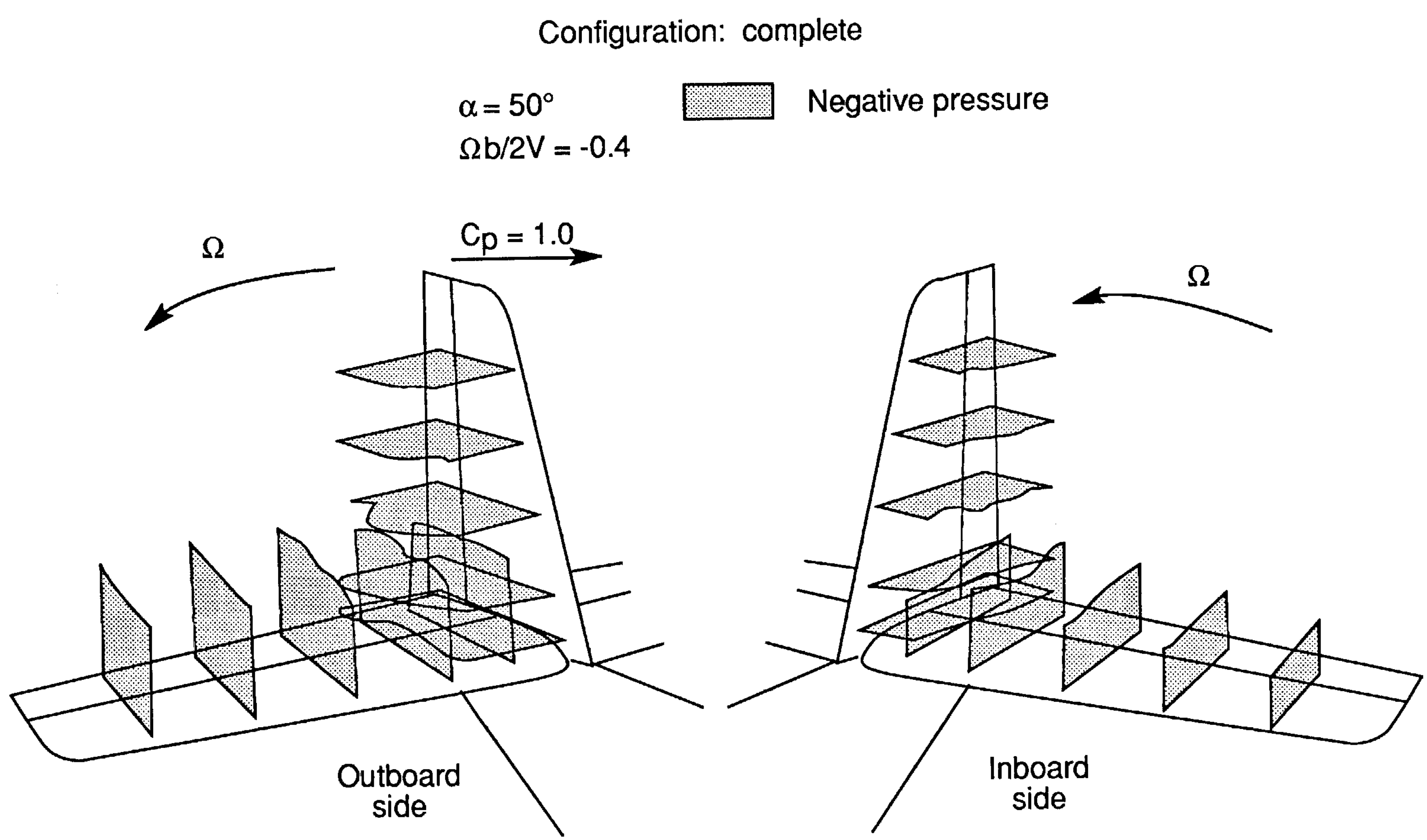
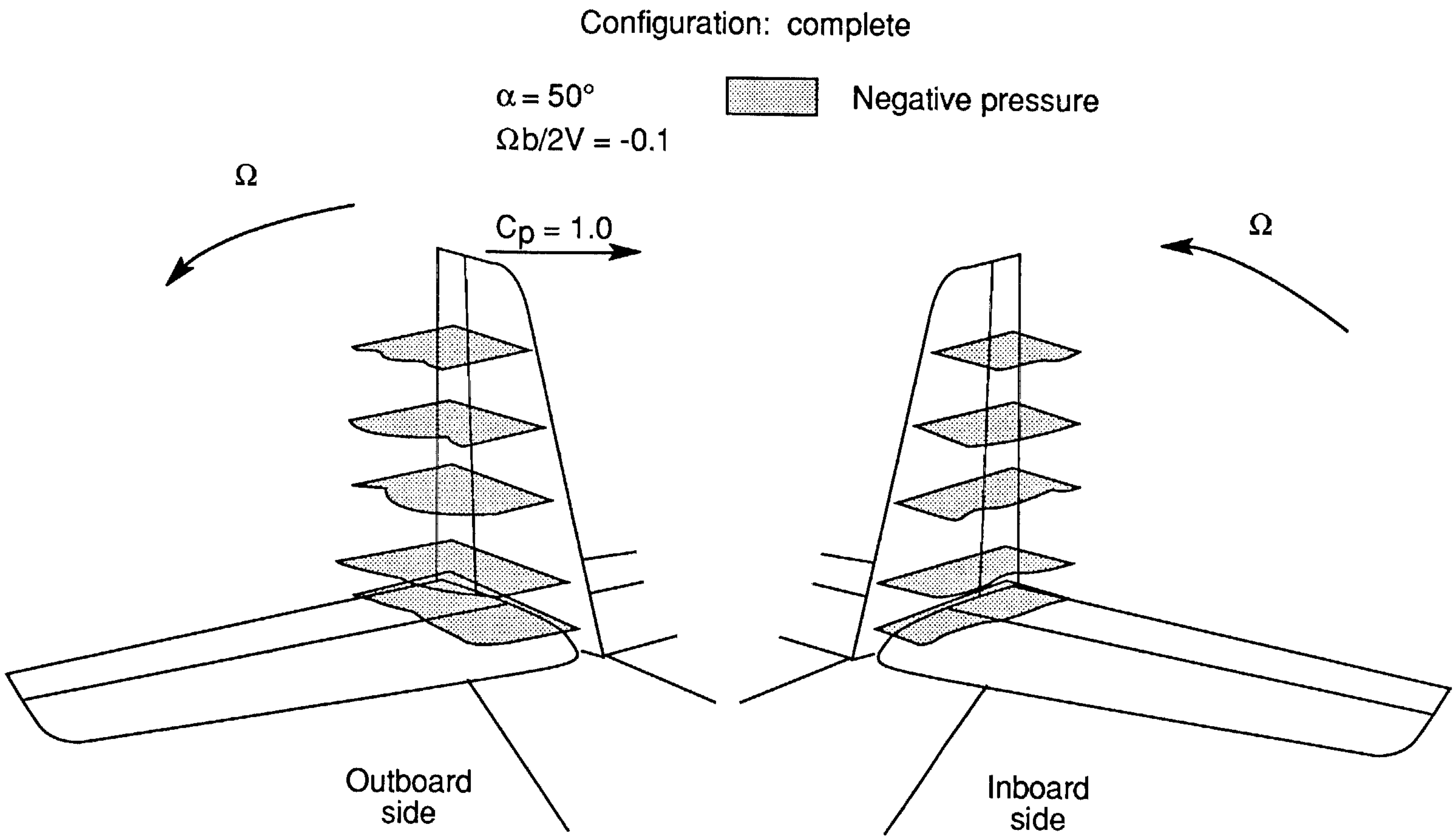
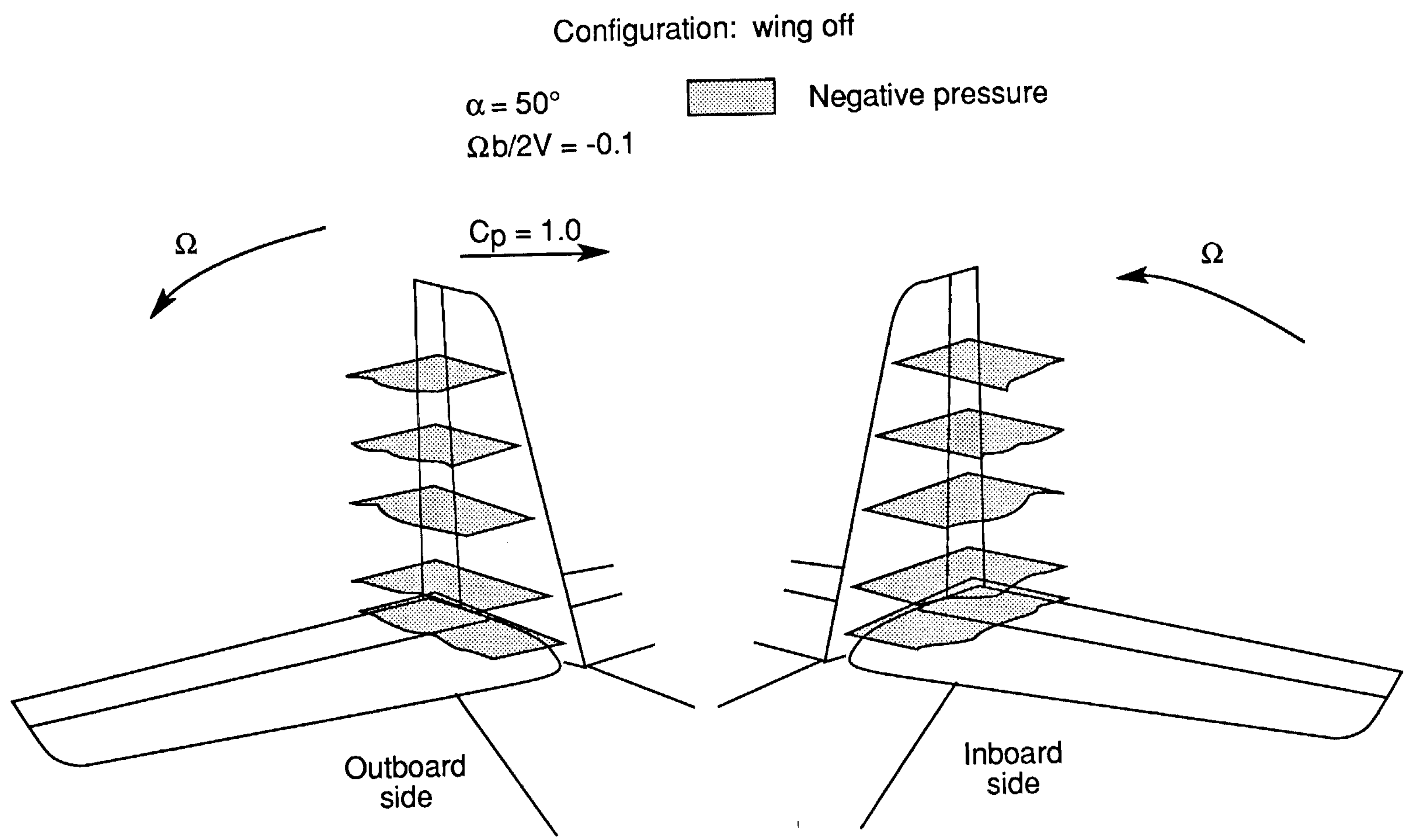


Figure 20. Pressures measured on outboard and inboard sides of vertical tail and on upper surface of horizontal tail for complete configuration at $\alpha = 50°$ and $\Omega b/2V = -0.4$.



(a) Complete configuration.

Figure 21. Pressures measured on outboard and inboard sides of vertical tail for $\alpha = 50°$ and $\Omega b/2V = -0.1$.



(b) Wing-off configuration.

Figure 21. Concluded.

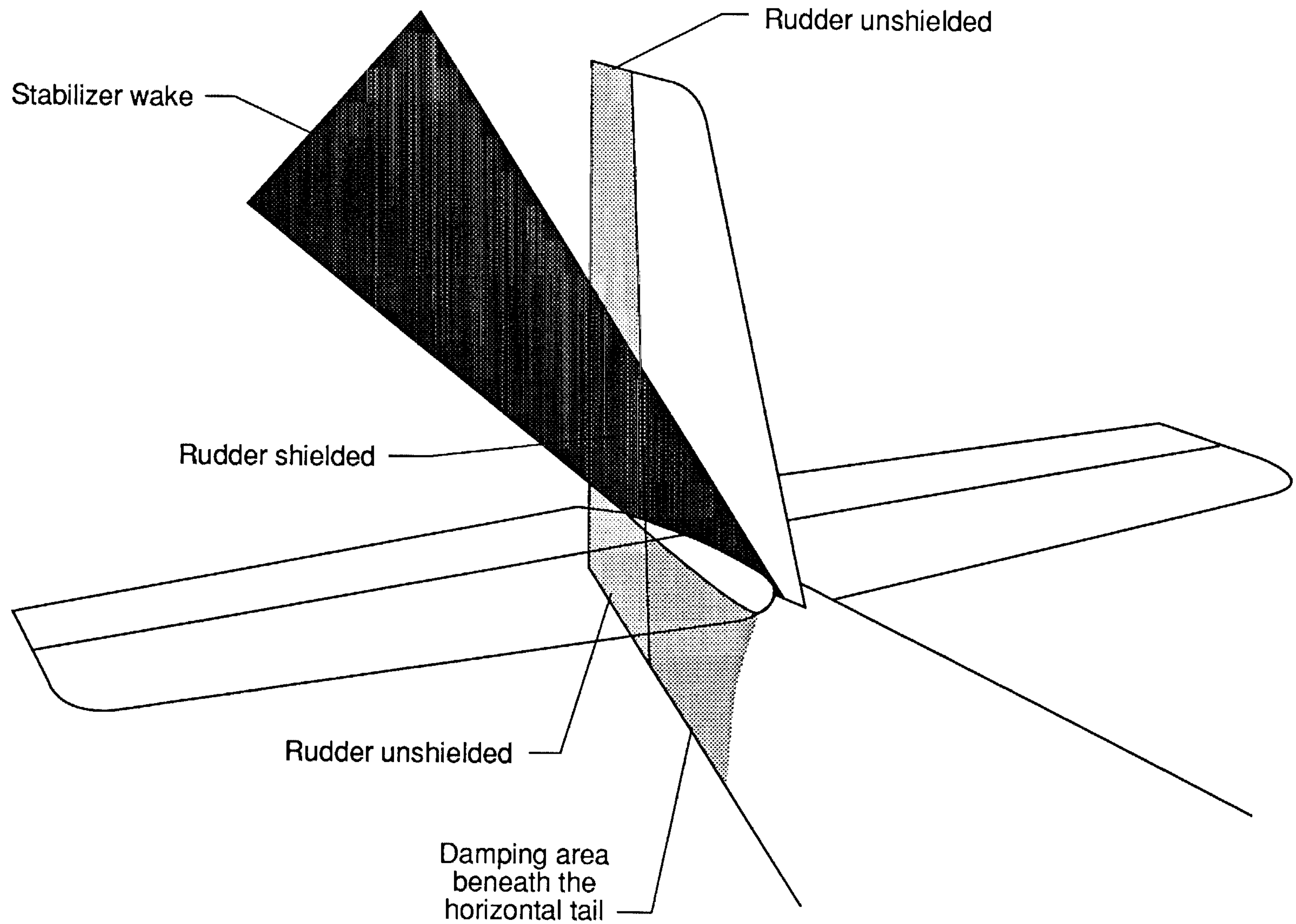


Figure 22. Tail damping power factor concept.

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James S. Bowman, Jr.: Langley Research Center, Hampton, Virginia.
Randy S. Hultberg: Bihrle Applied Research, Inc., Jericho, New York.
Colin A. Martin: Aeronautical Research Laboratories, Melbourne, Australia.

16. Abstract

An investigation has been conducted in the Langley Spin Tunnel to measure the pressures on the surface of the horizontal and vertical tails and the aft fuselage of an aircraft model. The pressures were measured on a model of a proposed Australian Primary Trainer airplane configuration while the model was rotating at spinning attitudes. The test results indicate that the presence of the horizontal tail adversely modifies the surface pressures on the vertical tail. The presence of the wing also adversely modifies the pressures on the horizontal and vertical tails.

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