NEW LIMITATION CHANGE

TO
Approved for public release, distribution unlimited

FROM
Distribution authorized to U.S. Gov't. agencies only; Test and Evaluation; Aug 1979. Other requests shall be referred to Air Force Flight Dynamic Laboratory, Attn: FBG, Wright-Patterson AFB, OH 45433.

AUTHORITY

AFWAL ltr, 30 May 1985
STOL AIRCRAFT STRUCTURAL VIBRATION PREDICTION METHOD

VOLUME II
ACOUSTIC PREDICTION DETAILS AND ADDITIONAL PLOTS FOR SMALL STOL AIRCRAFT

Boeing Aerospace Company
Boeing Military Airplane Development
P.O. Box 3999, Seattle, Wa. 98124

AUGUST 1979

FINAL REPORT FOR PERIOD AUGUST 1977 - AUGUST 1979

Distribution limited to U.S. Government agencies only; test and evaluation; statement applied in August 1979. Other requests for this document must be referred to AF Flight Dynamic Laboratory (FB), Wright-Patterson AFB, Ohio 45433

AIR FORCE FLIGHT DYNAMICS LABORATORY (AFFDL/FBG)
AIR FORCE SYSTEM COMMAND
WRIGHT PATTERSON AFB, OHIO 45433

DTIC ELECTED
AUG 7 1980  S D
NOTICE

When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever, and the fact that the government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

This technical report has been reviewed and is approved for publication.

Jerome Pearson
Project Engineer

Ralph N. Bingman
Technical Manager

FOR THE COMMANDER:

Ralph L. Kuster, Jr., Colonel, USAF
Chief, Structures and Dynamics Division

"If your address has changed, if you wish to be removed from our mailing list, or if the addressee is no longer employed by your organization please notify AFFDL/FB W-P AFB, OH 45433 to help us maintain a current mailing list."

Copies of this report should not be returned unless return is required by security considerations, contractual obligations, or notice on a specific document.

AIR FORCE/5678U/23 July 1980 — 150
This report consists of two volumes. Volume I contains the basic report.

**Abstract**

Structural response predictions have been made for two important areas of STOL-type aircraft. The method was developed to significantly improve environmental prediction methods that have been used in the past. A mathematically rigorous spectral analysis approach was developed that simulated the structure with a finite element model and used correlated and calculated acoustic input data for the forcing function.
The structural vibration predictions were successful in predicting operating
levels and describing the spectral frequency content of chosen locations
on the structure. Comparisons of predicted and measured data show that
the method developed and described here, may be used for a more precise way
in which to predict complex structural response to jet engine excitation.

The development of a method for prediction of the external acoustic
environment of USB flap-type STOL aircraft was also accomplished in a
concise manner. The method is described in detail with comparisons of
actual measurements to prediction. The method is seen to give good
results and represents a significant improvement in acoustic prediction
methods for STOL aircraft.
FOREWORD

This report was prepared by the Boeing Aerospace Company, Military Airplane Development Division, Seattle, Washington, for the Air Force Flight Dynamics Laboratory, Air Force Systems Command, Wright-Patterson Air Force Base, Ohio, under Contract F33615-77-C-3035. This research was conducted under Project 2401 and Task 240104, "Vibration Prediction and Control, Measurement and Analysis." Mr. Jerome Pearson (AFFDL/FBG) was project engineer.

This report entitled, "STOL Aircraft Structural Vibration Prediction Method," has been divided into two volumes, Volume I is entitled, "Prediction Procedure and Aircraft Parameteric Studies", and Volume II is entitled, "Acoustic Prediction, Details and Additional Plots For Small STOL Aircraft."

The performance period for this project was August 1977 through August 1979.

Overall cognizance of the project including technical method development and application was carried out by the Structural Dynamics Group of the Boeing Military Airplane Division. Key personnel associated with this program were as follows:

B. F. Dotson    Program Manager
C. S. Doherty   Technical Leader
L. M. Butzel    Acoustics Staff
C. D. Larkins   Structural Dynamics Staff
S. J. Nanevicz  Structural Dynamics Staff

Acknowledgements are given to Mr. Leo Butzel as co-author of the report who largely was responsible for development of the ribbon external acoustic prediction method. Mr. C. D. Larkins helped in the early stages of the report with timely suggestions for interpolating and extrapolating the pressure data to each panel of the finite element structural math model. Mr. Stan Nanevicz did the lion's share of the finite element modeling analyses and performed the response calculations using the Random Harmonic Analysis Program, TEV156. Valuable aid and comments were received from both Mr. Hussein Nijim and Mr. Gautam Sen Gupta on methods to simulate fuselage structure for acoustic response predictions. Thanks are also due Diane Ellis for the considerable work of typing, and to Kristi Pepper for the graphics layout and assembly of the final document.
This report was submitted by the authors in August 1979 for publication as an AFFDL Technical Report.
VOLUME II

ACOUSTIC PREDICTION DETAILS
(APPENDIX A)

ADDITIONAL PLOTS FOR SMALL STOL AIRCRAFT
(APPENDIX B)
APPENDIX A
ACOUSTIC FIELD PREDICTION PROCEDURE
APPENDIX A TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>5</td>
</tr>
<tr>
<td>II.</td>
<td>6</td>
</tr>
<tr>
<td>III.</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>26</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>III.</td>
<td></td>
</tr>
<tr>
<td>3.7 Turbulent Boundary Layer Noise</td>
<td>27</td>
</tr>
<tr>
<td>3.7.1 General</td>
<td>27</td>
</tr>
<tr>
<td>3.7.2 Turbulent Boundary Layer Noise Estimation</td>
<td></td>
</tr>
<tr>
<td>Procedure</td>
<td>27</td>
</tr>
<tr>
<td>3.8 Exhaust Shock Noise</td>
<td>29</td>
</tr>
<tr>
<td>3.8.1 General</td>
<td>29</td>
</tr>
<tr>
<td>3.8.2 Shock Noise Estimation Procedure</td>
<td>29</td>
</tr>
<tr>
<td>3.9 Estimation of Indirect Field Points</td>
<td>31</td>
</tr>
</tbody>
</table>
SECTION I

ARRANGEMENT OF PROCEDURE

The procedure has been broken up into sections as:

<table>
<thead>
<tr>
<th>Section</th>
<th>Subject Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Characterization of the Flow Ribbon</td>
</tr>
<tr>
<td>3.2</td>
<td>Geometry Computations</td>
</tr>
<tr>
<td>3.3</td>
<td>Jet Mixing Noise</td>
</tr>
<tr>
<td>3.4</td>
<td>Near-Nozzle Noise</td>
</tr>
<tr>
<td>3.5</td>
<td>Trailing-Edge Noise</td>
</tr>
<tr>
<td>3.6</td>
<td>Separation Noise</td>
</tr>
<tr>
<td>3.7</td>
<td>Turbulent Boundary Layer Noise</td>
</tr>
<tr>
<td>3.8</td>
<td>Exhaust Shock Noise</td>
</tr>
<tr>
<td>3.9</td>
<td>Estimation for Indirect Field Points</td>
</tr>
</tbody>
</table>

Section 3.1 addresses computation of parameters fixing the engine exhaust flow field idealization, (i.e., the flow ribbon) employed for purposes of noise estimation.

Section 3.2 addresses computation of the coordinates of a field point (at which a noise estimate is desired) with respect to the flow ribbon determined in section 3.1.

Sections 3.3 through 3.8 then deal with computation of the spectra of the various noise components making up the overall noise estimate.

Section 3.9 discusses noise estimation of field points that are not really in direct view of most of the jet exhaust flow field, as points in the shadow zone of the wing, or on the underside of the wing, or well forward of the engine nozzle.
In this section, inputs to and outputs of the various parts (per section division indicated in sec. I) are listed. Note that inputs are divided into fixed geometry and operational inputs. Fixed geometry inputs include those that described non-changeable geometric features of an airplane, such as the position of the engine nozzle in relationship to the fuselage. The coordinates of a field point at which an estimate is required are treated as a fixed geometry input. Operational inputs characterize the operating configuration of the airplane. These include airplane speed, altitude, engine power setting, USB flap angle, nozzle door status, VG status, etc.

English units listed for inputs will ensure consistent English units for the outputs, with output 1/3 octave band sound pressure level units of dB re 200 picobars.

Note that outputs of one section of the estimation procedure often become inputs to another section.

For section 3.1 - Characterization of the Flow Ribbon (fig. 1)

a. Fixed geometry inputs (fig. 2)

\[
\begin{align*}
\theta_{KD}^u \quad \theta_{KD}^D \quad \theta_{KU}^D \\
\theta_{KI}^D \quad \theta_{KO}^D \\
\theta_{TB} \quad \theta_{SK} \\
\theta_{w} \\
A \\
A_{EFF}
\end{align*}
\]

\[
\begin{align*}
\theta_{KD}^u, \theta_{KD}^D, \theta_{KU}^D & = \text{nozzle top, bottom, and side angles, deg} \\
\theta_{KI}^D, \theta_{KO}^D & = \text{nozzle tip-back and skew angles, deg} \\
\theta_{w} & = \text{wing (fixed) trailing-edge angle, deg} \\
A & = \text{geometric and effective nozzle exit area ft}^2 \\
A_{EFF} & = \text{geometric and effective nozzle exit area ft}^2
\end{align*}
\]
$A_{DOOR} =$ side facing open area of nozzle, when side door is open, $ft^2$

$w =$ nozzle width $ft$ (fig. 2)

$L_w =$ distance from nozzle exit plane to start of highly curved portion of flap system, typically at fixed wing trailing edge, $ft$

b. Operational inputs

$V_A =$ airplane forward velocity, $ft/s$

$V_j =$ engine mixed exhaust jet velocity, $ft/s$

$\theta_{FT} =$ static flow turning capability of propulsion/flap system when trailing edge of flap system is at $\theta_F$ degrees, $deg$ (fig. 1). Note: The relationship between $\theta_{FT}$ and $\theta_F$ for the YC-14 is given in figure 7.2-7 of Reference 5.

c. Outputs (fig. 1)

$w*$

$W^*_{DOOR}$

$\theta^*$

$\theta^1$ = flow ribbon widths with nozzle side door closed and open, $ft$

= flow ribbon skew and trail-off angles, $deg$

For section 3.2 - Geometry Computations

a. Fixed geometry inputs (figs. 3 and 4)

$(X_0, Y_0, Z_0) =$ coordinates of point $P_0$ at middle of nozzle exit plane, $ft$
coordinates of point \( P_i \), ft

\[(X_i, Y_i, Z_i) = \]

Note that

\[ X_i = X_o + L_w \tan \theta^* \]
\[ Y_i = Y_o + L_w \]

\( L_w \)

= section 3.1 input

\( L_T \)

= length of flat terminating section of flap if any, ft

\[(X_p, Y_p, Z_p) = \]

coordinates of field point \( P \) at which noise required, ft

b. Operational inputs

\[
\begin{align*}
W^*, W^*_{DOOR} \\
\theta^*, \theta' \\
\theta_F
\end{align*}
\]

= section 3.1 outputs

\[ \theta_F \]

= angle of trailing edge flap, deg, fig. 1)

c. Outputs

\[
\begin{align*}
S, \delta \\
S_{TE}, \delta_{TE}
\end{align*}
\]

= coordinates of field point, \( P \), re flow ribbon, ft (fig. 3)

\[ S_{TE}, \delta_{TE} \]

= coordinates of flap trailing edge re flow ribbon, ft (fig. 3)

For section 3.3 - Jet Mixing Noise

a. Fixed geometry inputs

\[
\begin{align*}
A_{EFF} \\
L_w \\
A_{VG} \\
N_{VG}
\end{align*}
\]

= section 3.1 inputs

\[ L_w \]

= blockage area of single vortex generator plate, ft\(^2\)

\[ A_{VG} \]

= number of vortex generator plates per engine
b. Operational inputs

\[
\begin{array}{c}
V_A, V_j \\
\theta_{FT}
\end{array} = \text{section 3.1 inputs}
\]

\[
\begin{array}{c}
S, \delta \\
S_{TE}
\end{array} = \text{section 3.2 outputs}
\]

\[
\rho_j = \text{engine mixed exhaust jet density, lb-s}^2/\text{ft}^4
\]

c. Outputs

1/3 octave band spectrum of jet mixing noise with and without vortex generators deployed, and which is fixed by:

- General spectrum shape without vortex generators deployed (fig. 11)
- Frequency, \( f_{R1} \), of peak spectrum level, Hz
- Peak level, \( \text{SPL}_{R1} \), of spectrum, dB re 200 picobars
- Spectrum addition shape due to VG's being deployed (fig. 12)
- Reference frequency, \( f'_{\text{PEAK}} \), of spectrum addition, Hz
- Addition level, \( \Delta \text{SPL} \), dB re 200 picobars

For section 3.4 - Near-Nozzle Noise

a. Fixed geometry inputs

\[
D_H = \text{section 3.3 intermediate output, ft}
\]

b. Operational inputs

\[
V_j = \text{section 3.1 input}
\]

\[
S, \delta = \text{section 3.2 outputs}
\]

\[
\rho_j = \text{section 3.3 inputs}
\]
c. Outputs

1/3 octave band spectrum of near nozzle noise, and which is fixed by:
   o General spectrum shape per jet mixing noise (fig. 11)
   o Frequency, \( f_{R_1} = f_{R_1}^{NN} \) of peak spectrum level, Hz
   o Peak level SPL\(_{R_1} = \text{SPL}_{R_1}^{NN} \), of spectrum, dB re 200 picobars.

For section 3.5 - Trailing-edge Noise

a. Fixed geometry inputs

\[(X_p, Y_p, Z_p) = \text{section 3.2 input}\]

b. Operational inputs

\[V_A, V_j = \text{section 3.1 inputs}\]

\[W*, \theta* = \text{section 3.1 outputs}\]

\[(X_{TE}, Y_{TE}, Z_{TE}) = \text{section 3.2 intermediate output}\]

\[S_{TE}, \delta_{TE} = \text{section 3.2 outputs}\]

c. Outputs

1/3 octave band spectrum for trailing-edge noise, and which is fixed by:
   o General spectrum shape for trailing edge noise (fig. 15)
   o Frequency, \( f_{R_1} \), of peak spectrum level, Hz
   o Peak level SPL\(_{TP} \), of spectrum, dB re 200 picobars
For section 3.6 - Separation Noise

a. Fixed geometry inputs

\[ D_H = \text{section 3.3 intermediate output} \]

b. Operational inputs

\[ V_j = \text{section 3.1 input} \]
\[ W^* = \text{section 3.1 output} \]
\[ \delta_{TE} = \text{section 3.2 output} \]
\[ \rho_j = \text{section 3.3 input} \]
\[ r = \text{section 3.5 intermediate output} \]

c. Outputs

\(1/3\) octave band spectrum of separation noise, and which is fixed by:
- General spectrum shape for separation noise (fig. 16)
- Frequency, \(f_{SP}\), of peak spectrum level, Hz
- Peak level, \(SPL_{SP}\), of spectrum, dB re 200 picobars

For section 3.7 - Turbulent Boundary Layer Noise

a. Fixed geometry inputs

\[ \mathcal{X} = \text{surface flow length, ft} \]

b. Operational inputs

\[ \bar{V} = \text{representative flow velocity, ft/s} \]
\[ \bar{\rho} = \text{representative flow density, lb-s}^2/\text{ft}^4 \]
\[ \text{ALT} = \text{airplane altitude, ft} \]
c. Outputs

1/3 octave band spectrum of turbulent boundary layer noise, and which is fixed by:
- General spectrum shape for turbulent boundary layer noise (fig. 18)
- Frequency, \( f_{BP} \), of peak spectrum level, Hz
- Peak level, \( SPL_{BP} \), of spectrum, \( \text{dB re 200 picobars} \)

For section 3.8 - Exhaust Shock Noise

a. Fixed geometry inputs

\[ A_{EFF} = \text{section 3.1 input} \]

b. Operational inputs

\[ \nu_A = \text{section 3.1 input} \]
\[ \nu^i_j = \text{ideally expanded engine mixed exhaust jet velocity, ft/s} \]
\[ C_j = \text{mixed exhaust jet sound speed, ft/s} \]
\[ \rho_j = \text{section 3.1 input} \]
\[ S, \delta = \text{section 3.2 inputs} \]

c. Outputs

1/3 octave band spectrum of exhaust shock noise, and which is fixed by:
- General spectrum shape (fig. 19)
- Frequency, \( f_S \), of peak spectrum level, Hz
- Peak level, \( SPL_S \), of spectrum, \( \text{dB re 200 picobars} \)
SECTION III  
ESTIMATION PROCEDURE

3.1 Characterization of the Flow Ribbons

3.1.1 General

For purposes of noise estimation, the engine exhaust field is characterized as a flow ribbon, of Vol I. The ribbon is described in terms of (see fig. 1) (a) its maximum width \( w^* \) (or \( w^*_{DOOR} \) in the case of a nozzle with an open side door), (b) the skew angle, \( \theta^* \), of the initial spreading portion of the ribbon, and (c) the trail-off angle, \( \vartheta' \), of the ribbon.

Conceptually, the flow ribbon is viewed as emanating from the nozzle, attached to the wing surface. It spreads laterally as it flows toward the start of the highly curved portion of the flap system at \( S = L_w \), reaching its maximum width at \( S = L_w^* \). Thereafter, its width is taken to remain constant, and its direction of flow (as viewed from above) parallel to the engine centerline axis. It initially remains attached to the strongly curved portion of the flap, turning to an angle, \( \theta' \), at which point it separates from the flap and continues on a straight course at the elevation angle, \( \vartheta' \).

Note that the above characterization is more akin to the flow of turbulence than the thrust flow. Hence the trail-off angle, \( \vartheta' \), is not necessarily similar to the flow turning angle, \( \theta_{FT} \), of the system. Based on the (Tulalip) data source for \( \theta' \) and \( \theta_{FT} \), \( \theta' \) is typically much less than \( \theta_{FT} \).

Finally, due to the usual case of unequal nozzle side lip angles, \( \theta_{KI}^0 \) and \( \theta_{KO}^1 \) (see Fig. 2), and/or a nozzle exit plane skewed at an angle, \( \theta_{SK} \), the centerline of the initial part of the flow ribbon need not be parallel to the centerline axis of the engine. The nonparallelism is reflected in a nonzero flow ribbon skew angle, \( \theta^* \), per figure 1.
3.1.2 Determination of Characterizing Parameters

a. Calculate effective nozzle kickdown angle, as:

\[
\theta_{KD} = \begin{cases} 
\theta'_{KD} & \theta'_{KD} \geq 0 \\
0 & \theta'_{KD} < 0 
\end{cases}
\]

where

\[
\theta'_{KD} = \frac{1}{2} \left[ \theta_U^D - \theta_U^{KD} \right] - \left[ \theta_U^{KO} + \theta_U^{KI} \right] \frac{h'}{w} - \frac{1}{4} \theta_w
\]

and \( h' = \frac{A_{EFF}}{w} \)

- \( \theta_U^D \) = kick-down angle
- \( \theta_U^{KD} \) = kick-up angle
- \( \theta_U^{KO} \) = inner side-lip angle
- \( \theta_U^{KI} \) = outer side-lip angle
- \( \theta_w \) = wing elevation angle

b. Determine the equivalent wing length, \( L'_w \) (accounts for effect of forward velocity), as

\[
L'_w = \frac{L_w}{1 + \frac{V_A}{V_j}}
\]

where

- \( V_A \) = airplane forward velocity
- \( V_j \) = engine mixed exhaust jet velocity

c. Enter figure 5 with \( \theta_{KD} \) to find the normalized uncorrected flow ribbon width, \( (W' - W)/L'_w \)
d. Correct \((W' - W)/L_w\) for the effect of nozzle tip-back angle, \(\theta_{TB}\) (see fig. 2), to obtain the (door closed) normalized flow ribbon width, \((W* - W)/L_w\), as

\[
\frac{W* - W}{L_w} = \left[ 1 - 0.5 \sin^2 \theta_{TB} \right] \left\{ \frac{W' - W}{L_w} \right\}
\]

and then solve for \(W^*\).

e. Locate \(W^*\) at \(S = L_w\) per figure 1 and where the flow ribbon skew angle, \(\theta^*_S\), is given by

\[
\theta^*_S = \tan^{-1} \left\{ \frac{\tan \theta^*_S / (1 + V_A/V_j)}{1 + V_A/V_j} \right\}
\]

where

\[
\theta^*_S = \frac{1}{4} \left( \theta^*_{KO} - \theta^*_{KI} \right) + \frac{1}{4} \theta^*_{SK}
\]

with \(\theta^*_{KO}, \theta^*_{KI}\) and \(\theta^*_{SK}\) defined on figure 2.

f. Find the static trail-off angle, \(\theta'_S\), by entering figure 6 with the propulsion/flap system static flow turning angle, \(\theta_{FT}\).

g. Correct \(\theta'_S\) for the effect of airplane forward velocity to obtain the actual flow ribbon trail-off angle, \(\theta'\), as

\[
\theta' = \tan^{-1} \left\{ \sin \theta'_S / \left[ \cos \theta'_S + 0.25 (V_A/V_j) \right] \right\}
\]

where

\[
V_A = \text{airplane forward velocity}
\]

\[
V_j = \text{engine mixed exhaust jet velocity}
\]

3.1.3 Adjustment for Open Nozzle Side Door

Referring to step (e) of section 3.1.2, and figure 1, move the outer edge of the flow ribbon outwards (but leave the inboard edge position unchanged), to achieve a flow ribbon width, \(W^*_\text{DOOR}\), as

\[
W^*_{\text{DOOR}} = W^* + \frac{A_{\text{DOOR}}}{h^2} (W^* - W)
\]
where

\[ h' = \frac{A_{\text{EFF}}}{W} \]  

(See fig. 2, view B)

3.2 Geometry Computations

3.2.1 General

This section contains procedures for determining the \( S \) and \( \delta \) coordinates of a field point \( P \) (per fig. 3). In general the noise at \( P \) is a smooth, relatively slowly varying function of \( S \), but a much more rapidly varying function of \( \delta \).

3.2.2 Dimensional Frame of Reference

For the following computations, the frame of reference used is tied to the fuselage, per figure 4. Referring now to figure 3, we define the coordinates of certain points basic to computations in section 3.2.2 and 3.2.3.

\[
\begin{align*}
(X_0, Y_0, Z_0) &= \text{coordinates of point } P_0 \text{ (at the nozzle exit plane)} \\
(X_1, Y_1, Z_1) &= \text{coordinates of Point } P_1 \text{ (at the start of the strongly curved portion of the USB flap system)} \\
(X_p, Y_p, Z_p) &= \text{coordinates of field point } P.
\end{align*}
\]

Note that (per fig. 3)

\[
\begin{align*}
X_1 &= X_0 + L_w \tan \theta^* \\
Y_1 &= Y_0 + L_w
\end{align*}
\]
The coordinates of point $P'$ (where the flow ribbon departs from the flap surface) are given by

$$X_{p'} = X_1$$

$$Y_{p'} = Y_1 + 2 R_F \sin \left( \frac{\theta' - \theta_w}{2} \right) \cos \left( \frac{\theta' + \theta_w}{2} \right)$$

$$Z_{p'} = Z_1 - 2 R_F \sin \left( \frac{\theta' - \theta_w}{2} \right) \cos \left( \frac{\theta' + \theta_w}{2} \right)$$

For future reference, the coordinates of the useful point, $P_{TE'}$ on the flap trailing edge are given by

$$X_{TE} = X_1$$

$$Y_{TE} = Y_1 + 2 R_F \sin \left( \frac{\theta_F - \theta_w}{2} \right) \cos \left( \frac{\theta_F + \theta_w}{2} \right) + L_T \cos \theta_F$$

$$Z_{TE} = Z_1 - 2 R_F \sin \left( \frac{\theta_F - \theta_w}{2} \right) \sin \left( \frac{\theta_F + \theta_w}{2} \right) - L_T \sin \theta_F$$

3.2.3 Computation of $S$

Referring to figure 3, $s$ is the distance downstream of the nozzle exit plane (as measured along the flow ribbon), of the point, $P_T$, on the ribbon that is closest to the field point, $P$, and is given by

$$S = \begin{cases} 
Y_p - Y_o & ; Y_p - Y_o \leq L_w \\
L_w & ; L_w < Y_p - Y_o \leq L_w + (Z_p - Z_o) \tan \theta' \\
L_w + (Y_p - Y_1) \cos \theta' - (Z_p - Z_o) \sin \theta' & ; Y_p - Y_o > L_w + (Z_p - Z_o) \tan \theta'
\end{cases}$$

3.2.4 Computation of $\delta$

The generalized expression for $\delta$ is given by

$$\delta = \sqrt{R_R - \left( \frac{R_f r}{r_f} \right)^2}$$
with
\[ R \cdot R = R_x^2 + R_y^2 + R_z^2 \]
\[ R \cdot \vec{r} = R_x r_x + R_y r_y + R_z r_z \]
\[ \vec{r} \cdot \vec{r} = r_x^2 + r_y^2 + r_z^2 \]

and the expressions for \( R_x, R_y, R_z \) and \( r_x, r_y, r_z \) depend upon the regional location of the field point, \( P \). Eight distinct regions are identified in figure 7 in each of which a unique set of expressions apply. These are given in fig. 21 and fig. 22. Note the field points in the shadow zone of the wing and/or forward of the nozzle exit plane are not considered here, but rather in section 3.9.

3.2.5 Computation of \( S_{TE} \) and \( \delta_{TE} \)

Since the \( S \) and \( \delta \) coordinates of the flap trailing edge are often required (\( S_{TE} \) is needed in the jet mixing noise computation, while \( S_{TE} \) and \( \delta_{TE} \) are required in the separation and trailing-edge noise computations), the formulas for these are given in this section.

\[
S_{TE} = \begin{cases} 
L_w + \frac{\pi}{180} (\theta'_F - \theta_w) R_F + \pi_T \theta_F = \theta' \\
L_w + \frac{\pi}{180} (\theta'_F - \theta_w) R_F + \\
2R_F \sin \left( \frac{\theta_F - \theta'}{2} \right) \cos \left( \frac{\theta_F + \theta'}{2} \right) + \pi_T \cos (\theta_F - \theta') \end{cases} ; \theta_F > \theta'
\]

\[
\delta_{TE} = \begin{cases} 
0 ; \theta_F = \theta' \\
2R_F \sin \left( \frac{\theta_F - \theta'}{2} \right) \sin \left( \frac{\theta_F + \theta'}{2} \right) + \pi_T \sin (\theta_F - \theta') ; \theta_F > \theta' 
\end{cases}
\]

3.3 Jet Mixing Noise

3.3.1 General

This estimate is for jet mixing noise in the presence of a scrubbed wing/flap system with or without vortex generators. (The vortex generators, if present, are viewed as amplifiers of certain portions of the basic jet mixing noise spectrum. The amplification
effect is treated in sec. 3.3.4). The estimate applies to scrubbed or nonscrubbed wing, flap, and body sections.

The mixing noise is characterized as having a simple, single peaked spectrum shape whose peak frequency depends upon engine mixed exhaust velocity, $V_j$, airplane velocity, $V_A$, the downstream S coordinate, and distance, $\delta$, of the field point from the flow ribbon (idealization of the flow field, per sec. 3.1). The peak spectrum level is taken to depend on these same parameters, and additionally on engine mixed exhaust density, $\rho_j$.

There appears to be an additional component of the jet mixing noise, which is observed close to the nozzle exit plane. This component, referred to as near-nozzle noise, is likely due to interaction of the flow with the nozzle lip and perhaps to primary/secondary mixing. It is treated separately in section 3.4.

3.3.2 Jet Mixing Noise Estimation Procedure

a. Determine the reference peak level frequency, $f_{S1}$, as

$$f_{S1} = \frac{1.8V_j/D_H}{S + 3.0}$$

where

- $V_j = \text{engine mixed exhaust jet velocity}$
- $D_H = \text{engine hydraulic diameter} = \sqrt{\frac{\pi}{4}} A_{EFF}$

and $A_{EFF} = \text{is defined on view A of figure 2}$

b. Determine the reference peak level frequency, $f_{R1}$, by adjusting $f_{S1}$ as

$$f_{R1} = \left(\frac{V_j + V_A}{V_j - V_A}\right) \left(\frac{V_j + V_A}{V_j}\right) f_{S1}$$
where

$$V_A = \text{airplane velocity}$$

c. Enter figure 8 with $\delta/D_H$ to obtain the final correction, $C_{R1'}$, to $f_{R1}$, and then compute the frequency, $f_{R1'}$, of the peak level of the jet mixing noise as

$$f_{R1'} = C_{R1'} f_{R1}$$

d. Determine the reference static peak jet mixing noise level, $SPL_{S1}$, via the construction of figure 9.

e. Obtain the reference peak level, $SPL_{R1'}$, by adjusting $SPL_{S1}$ to local airplane conditions as

$$SPL_{R1'} = SPL_{S1} - \Delta SPL_1$$

where

$$\Delta SPL_1 = -20 \log \left( \frac{\rho_j(V_j - V_{A})}{\rho_o V_o^2} \right)$$

and

$$\rho_j = \text{at-altitude engine mixed exhaust jet density}$$

$$\rho_o = \text{(sea level static density)} = 2.38 \times 10^{-3} \text{ lb-s}^2/\text{ft}^4$$

$$V_j = \text{engine mixed exhaust jet velocity}$$

$$V_{A} = \text{airplane velocity}$$

$$V_o = 750 \text{ ft/s}$$
f. Enter figure 10 with $\delta/D_h$ to obtain $\Delta_{RI}$, the final correction to $SPL_{R1}$, and then form $SPL_{R1}$, the peak level of the jet mixing noise spectrum as

$$SPL_{R1} = SPL_{R1} - \Delta_{R1}$$

g. Apply $f_{RI}$ and $SPL_{R1}$ to obtain the dimensional jet mixing noise spectrum from the dimensionless spectrum of figure 11. This applies for the case of no vortex deployed.

3.3.3 Adjustment Due to Deployed Vortex Generators

Obtain the adjustment $\Delta_{VG}$ to the jet mixing noise spectrum (obtained in sec. 3.3.2) due to deployed vortex generators from figure 11, in which

$$N_{VG} = \text{number of vortex generators per engine}$$

$$A_{VG} = \text{flow blockage area of each vortex generator plate}$$

This adjustment is to be added to the jet noise spectrum obtained in section A.4.2.

3.4 Near-Nozzle Noise

3.4.1 General

In a number of USB installations, a noise peak is observed close to the nozzle having its corresponding frequency about five times higher than that predicted by jet mixing, per section 3.3.2. This peak may be due to direct interaction of the flow with the nozzle lip, or, perhaps, due to primary/secondary flow mixing. However, to date no simple intuitively comfortable model has been found to handle this phenomenon. In the absence of such a model, the following approach has been used: the noise source, referred to as "near nozzle noise," is taken to have a spectrum shape the same as that for jet mixing noise (without vortex generators) specified in section 3.3. The peak frequency is taken
to be five times the static reference frequency, $f_{S1}$, of the jet mixing noise spectrum, as evaluated at the nozzle exit plane (i.e., at $S/D_H=0$). The peak frequency, and peak level, are taken to be independent of airplane velocity. The peak level is based upon NASA 1 x 6 slot data in which the near-nozzle noise is most clearly observable.

3.4.2 Near Nozzle Noise Estimation Procedure

a. Determine the peak frequency, $(f_{R1})_{NN}$, of the near-nozzle noise spectrum as

\[
(f_{R1})_{NN} = 3.6 \frac{V_j}{D_H}
\]

where

\begin{align*}
V_j &= \text{engine mixed exhaust jet velocity} \\
D_H &= \text{engine hydraulic diameter} = \sqrt{\frac{A_{EFF}}{\pi}}
\end{align*}

and $A_{EFF}$ is defined in view A of figure 2.

b. Determine the near-nozzle noise spectrum peak level, $(SPL_{R1})_{NN}$, as

\[
(SPL_{R1})_{NN} = 20 \log \left[ \frac{\rho_j V_j^2}{\rho_o V_o^2} \right] - 20 \log \left( 1 + \frac{S}{D_H} + \left( \frac{\delta}{D_H} \right)^2 \right) + 146 \text{ (dB)}
\]

where

\begin{align*}
\rho_j &= \text{engine mixed exhaust jet density} \\
\rho_o &= \text{(sea level ambient density)} = 2.38 \times 10^{-3} \text{ lb-}s^2/\text{ft}^4 \\
V_o &= 750 \text{ ft/s}
\end{align*}
c. Apply these values of $f_{RI}$ and $SPL_{RI}$ to the dimensionless spectrum of figure 11 to obtain the dimensionless near-nozzle noise spectrum.

3.5 Trailing-Edge Noise

3.5.1 General

Trailing-edge noise is viewed as due to conversion of jet mixing fluctuations past the flap trailing edge into acoustic radiation. In the near field, this noise is taken to decrease as $1/r^2$, where $r$ is the distance to the field point, $P$, from the trailing edge (point directly under the center of the flow ribbon, see fig. 13), and also to depend upon the distance, $\delta_{TE}$, of this same trailing-edge point from the flow ribbon.

3.5.2 Trailing-Edge Noise Estimation Procedure

a. Determine $\delta_{TE}$ and $S_{TE}$ (using the procedure of sec. 3.2.5) for point $P_{TE}'$ per figure 13.

b. Determine $f_{RI}$ and $SPL_{RI}$ for point $P_{TE}$ using the procedure of section 3.3.2.

c. Adjust $SPL_{RI}$ to obtain the peak level $SPL_{TP}$ of the trailing-edge noise spectrum at field point, $P$, as

$$SPL_{TP} = SPL_{RI} + 10 \log \left[ \left( \frac{V_c}{c} \right) \left( 1 + \left( \frac{W^*}{r} \right)^2 \right) \right]$$

$$+ 10 \log \left[ \cos \eta \right] \left[ \sin^2 \frac{\vartheta}{2} \right] - 14 \text{ (dB)}$$

where

$$V_c = (V_j + V_A)/2$$

c = local ambient air sound speed

$W^*$ = flow ribbon width (from sec. 3.1.2)

$r, \eta, \theta$ = coordinates of field point, $P$, with respect to trailing-edge point, $P_{TE}$, per Figure 14.
Appropriate expressions for \( r \), \( \eta \), and \( \theta \) consistent with Figure 14 are

\[
\begin{align*}
    r &= \sqrt{(X_p - X_{TE})^2 + (Y_p - Y_{TE})^2 + (Z_p - Z_{TE})^2} \\
    \eta &= \tan^{-1} \frac{\Delta X}{\Delta Y} \\
    \theta &= \sin^{-1} \frac{\Delta Z}{r}
\end{align*}
\]

where

\[
\begin{align*}
    \Delta X &= X_{TE} - X_p \\
    \Delta Y &= (Y_p - Y_{TE}) \cos \theta' - (Z_p - Z_{TE}) \sin \theta' \\
    \Delta Z &= (Y_p - Y_{TE}) \sin \theta' + (Z_p - Z_{TE}) \cos \theta'
\end{align*}
\]

In these expressions, \( \theta' \) is the flow ribbon trail-off angle (from sec. 3.1), while \((X_p, Y_p, Z_p)\) are the coordinates of the field point \( P \), and \((X_{TE}, Y_{TE}, Z_{TE})\) are the coordinates of the trailing-edge point (see sec. 3.2).

d. Apply these values of \( SPL_{TP} \) and \( f_{R1} \) to the dimensionless trailing-edge noise spectrum of figure 15 to obtain the dimensional trailing-edge noise spectrum.

3.6 Separation Noise

3.6.1 General

Separation noise is typically observed only on the aft portion of the USB flaps, and typically only at frequencies below the peak (frequency) of the jet mixing noise spectrum, per section 3.3. Noise associated with aft flap flow separation would seem to be similar to wing separation with no reattachment point, or perhaps base flow separation. Both are discussed in volume II of AFFDL-TR-76-91, but the contents are not very satisfying. In all cases, however, a spectrum shape for separation noise not unlike that for turbulent boundary layer is suggested. Hence the approach here is to model the separation noise spectra with a TBL spectrum shape, as
$$\text{SPL} = \frac{2}{\pi} \left[ \tan^{-1} \left( \frac{1}{2 \pi \delta_{s}s} \right) - \tan^{-1} \left( \frac{1}{2 \pi \delta_{s}s} \right) + K \right]$$

where SPL is the 1/3 octave band value at a Strouhal number, $\delta_s$. $\delta_s$ is taken to have the form

$$\delta_s = \frac{2 \delta_{TE} f}{V_j}$$

and

$$\delta_{TE} = \text{distance of flow ribbon from flap trailing edge}$$

$$V_j = \text{engine mixed exhaust jet velocity}$$

$$f = \text{frequency}$$

and $K$ has the form

$$K = 20 \log \left[ \frac{\delta_{TE}}{D_H} \cdot \frac{\rho_j V_j^2}{\rho_o V_o^2} \right] - f(r) + K'$$

with

$$D_H = \text{nozzle hydraulic diameter}$$

$$\rho_j = \text{engine mixed exhaust jet density}$$

$$\rho_o = \text{sea level static air density}$$

$$V_o = 750 \text{ ft/s}$$

and where $K'$ is chosen to fit a particular data source, in this case YC-14 Tulalip test data, and $f(r)$ accounts for the distance of the field point from the separation region.
3.6.2 Separation Noise Estimation Procedure

a. Determine the peak frequency, $f_{SP}$, of the separation noise spectrum as

$$f_{SP} = \frac{1}{4\pi} \frac{V_j}{\delta_{TE}}$$

where

$V_j = \text{engine mixed exhaust jet velocity}$

$\delta_{TE} = \text{distance of flow ribbon (per sec. 3.2.3) from flap trailing edge}$

b. Determine the separation noise spectrum peak level, $SPL_{SP}$, as

$$SPL_{SP} = 20 \log \left[ \frac{\delta_{TE}}{D_H} \right] + 20 \log \left( \frac{\rho_j V_j^2}{\rho_0 V_o^2} \right) - 20 \log (1 + \frac{r}{W^*}) + 151 \text{ (dB)}$$

where

$\rho_j = \text{engine mixed exhaust jet density}$

$\rho_0 = \text{(sea level ambient density)} = 2.38 \times 10^{-3} \text{ lb-s}^2/\text{ft}^4$

$V_o = 750 \text{ ft/s}$

$r = \text{distance between field point, P, and trailing-edge point, P}_{TE}$, per section 3.2.5

$W^* = \text{width of flow ribbon, per section 3.1.2}$

c. Apply these values of $f_{SP}$ and $SPL_{SP}$ to the dimensionless separation noise spectrum of figure 16 to obtain the dimensional separation noise spectrum.
3.7 Turbulent Boundary Layer Noise

3.7.1 General

The spectrum of turbulent boundary layer noise displays a simple, single peaked, gently rolling off spectrum whose peak level scales reasonably well with the dynamic pressure of the flow field scrubbing the field point. The peak frequency scales reasonably with the ratio of the scrubbing flow velocity to the local boundary layer thickness, but even in the case where the flow is associated with the airplane velocity, there is some confusion as to the actual proportionality constant. The constants used in this estimation procedure are based entirely on YC-14 flight data for fuselage points/conditions for which engine noise is not important. The general spectrum shape is taken to be the same as that used for the separation noise spectrum of section 3.5. The same constants and spectrum shape are also taken to apply to field points where the characteristic scrubbing velocity is the engine mixed exhaust jet velocity.

3.7.2 Turbulent Boundary Layer Noise Estimation Procedure

a. Determine the characteristic distance, $\bar{x}$, velocity, $\bar{v}$, and density, $\bar{\rho}$, to be used:

1. For field points clearly away from the engine exhaust flow field (i.e., $\delta/D_H \geq 1$)

   $\bar{x} = x_1 = \text{distance from airplane noise to fuselage field point, or wing leading edge to wing field point}$

   $\bar{v} = v_A = \text{airplane velocity}$

   $\bar{\rho} = \rho = \text{ambient air density}$

2. For field points distinctly scrubbed by the engine exhaust flow

   $\bar{x} = x_2 = \text{sum of the distance from the nozzle exit plane to the field point and the fan duct length}$

   $\bar{v} = v_j = \text{engine mixed exhaust jet velocity}$
\bar{\rho} = \rho_j = \text{engine mixed exhaust jet density}

3. For other field points, take \( X = (X_1 + X_2)/2 \)
   \( V = (V_j + V_A)/2 \)
   \( \bar{\rho} = (\rho_j + \bar{\rho})/2 \)

b. Determine the boundary layer noise spectrum peak frequency, \( f_{BP} \), as

\[ f_{BP} = \frac{1}{2} \frac{V}{\delta_{BL}} \]

where

\[ \delta_{BL} = \text{boundary layer thickness} = \frac{0.37X}{R_{X}^{1/5}} \]

with

\[ R_{X} = \text{Reynold number} = \frac{1}{U} \bar{X} \bar{V} \]

and \( \frac{1}{U} \) is obtained from figure 17.

c. Determine the turbulent boundary layer noise peak spectral level, \( \text{SPL}_{BP} \), as

\[ \text{SPL}_{BP} = 20 \log \left( \frac{\bar{\rho} V^2}{\rho \nu_0^2} \right) + 125 \text{ (dB)} \]
where

\[ \rho_o = (\text{sea level air density}) = 2.38 \times 10^{-3} \text{ lb-s}^2/\text{ft}^4 \]

\[ V_o = 750 \text{ ft/s} \]

d. Apply these values of \( f_{PB} \) and \( S_{PB} \) to the dimensionless spectrum of figure 18 to obtain the dimensional turbulent boundary layer noise spectrum.

### 3.8 Exhaust Shock Noise

#### 3.8.1 General

When the engine mixed exhaust ideal velocity, \( V_j^i \), exceeds the local sound speed, \( c \), of the exhaust mixture, additional engine noise is observed beyond that predicted in the previous sections. This noise is found to scale in level with a classical shock noise parameter, \( \beta' \), as \( 40 \log \beta' \) (refs 6,7 - see reference list for Vol. I) where

\[ \beta' = \sqrt{\left(\frac{V_j^i}{c}\right)^2 - 1} \]

The additional noise is hence referred to as shock noise. For USB STOL airplanes with high-bypass engines, as for the YC-14 such additional noise is typically observed only at high-altitude, high-speed operations, as in cruise.

#### 3.8.2 Shock Noise Estimation Procedure

a. Determine the peak frequency, \( f_s \), of the shock noise spectrum as

\[ f_s = \left( \frac{1.8}{S/D_{H}+3.0} \right) \left( \frac{V_j^i + V_A}{D_{H}} \right) \left( \frac{V_j^i + V_A}{V_j^i - V_A} \right) \]

where

\[ S = \text{downstream coordinate of field point} \]
$D_H = \text{engine hydraulic diameter } = \sqrt{\frac{\delta}{\pi} A_{EFF}}$, and $A_{EFF}$ is defined in view A of figure 2.

$V_j = \text{idealy expanded mixed exhaust jet velocity}$

$V_A = \text{airplane velocity}$

b. Determine the peak level, $SPL_S$ of the shock noise spectrum as

$$SPL_S = SPL_{S1} + \Delta_1 - \Delta_2 \Delta (dB)$$

where

$$SPL_{S1} = 20 \log \left( \frac{\rho_j}{\rho_o} \right) + 40 \log \beta$$

$$\Delta_1 = \begin{cases} 150 & \delta/D_H \leq 0.37 \\ 150 - 20 \log (2.70 \delta/D_H); \delta/D_H > 0.37 \end{cases}$$

$$\Delta_2 = \begin{cases} 0 & S/D_H \leq 3 \\ 20 \log (S/3D_H); \ S/D_H > 3 \end{cases}$$

In the equation for $SPL_{S1}$

$$\beta = \sqrt{\left( \frac{V_j}{c} \right)^2 - 1}$$

$\rho_j = \text{engine mixed exhaust jet density}$

$\rho_o = \text{(sea level air density)} = 2.38 \times 10^{-3} \text{ lb-s}^2/\text{ft}^4$
c. Apply the values of $f_S$ and SPL$_S$ to the dimensionless spectrum of figure 19 to obtain the dimensional shock noise spectrum.

3.9 Estimation for Indirect Field Points

For field points that are in the shadow zone of the wing and/or forward of the nozzle exit plane (i.e., in region B) per figure 20, the following approach is suggested.

a. Determine the shortest overwing path length, $L_o$, from the nozzle exit plane to the field point $P$

b. Determine the shortest underwing path length, $L_u$, from the flow ribbon to the field point, $P$

c. Determine the levels at $P$ due to jet mixing noise and near-nozzle noise with

$$ S = 0 $$

$$ \delta = L_o $$

and the jet mixing noise and trailing-edge noise with

$$ S = S_{TE} $$

$$ \delta = L_u $$

d. Determine the turbulent boundary layer noise at $P$

e. Sum the above five noise contributions.
Figure 1. Flow Ribbon Characterization Parameters
NOTE: \( A_{\text{EFF}} = A \cos \theta_{TB} \cos \theta_{SK} \)

*Figure 2. Wing/Flap/Nozzle Parameters*
\( \delta = R_{\text{MIN}} \) - minimum distance from field point, \( P \), to flow ribbon. In example shown, this is to an edge point of the ribbon.

**Figure 3. General Geometry for \( S \) and \( \delta \)**
NOTE: \( X_p \) = TYPICALLY REFERRED TO AS BUTTOCK LINE (BL)
\( Y_p \) = TYPICALLY REFERRED TO AS BODY STATION (BS)
\( Z_p \) = TYPICALLY REFERRED TO AS WATERLINE (WL) COORDINATE OF \( P \)

*Figure 4. General Coordinate System for Points*
Figure 5. Dependence of Flow Spreading on Effective Nozzle Kickdown Angle

Figure 6. Dependence of Static Trail-Off Angle, $\theta_s^*$, on Static Flow-Turning Angle
Figure 7. 5-Computation Regions
Figure 8. Final Correction, $C_{R1}$, to Obtain $f_{R1}$

*NOTE: VALUES BASED ON

$V_j = 750$ ft/s

$\rho_j = (SEA\ LEVEL\ STATIC) = 2.38 \times 10^{-3} \text{ lb-s}^2/\text{ft}^4$

Figure 9. Construction for Determining Reference Static Peak Jet Mixing Noise Level, $SPL_{S1}$
Figure 10. Final Correction, $\Delta R_1$, to Obtain SPLR_1
**Figure 11.** Spectrum Shape for Jet Mixing Noise (No Vortex Generators Present)

**Figure 12.** Adjustment to Jet Noise Mixing Spectrum for Vortex Generator Effects

\[
P_{\text{peak}} = 0.3 \sqrt{V_{\text{mix}}} \sqrt{A_{\text{VG}}}
\]

\[
\Delta' = 10 \log (20 \times A_{\text{VG}} \times N_{\text{VG}})
\]
Figure 13. Conceptual Geometry for Trailing-Edge Noise Model

Figure 14. Coordinate Geometry for Field Point P, Relative to Trailing-Edge Point PTE
Figure 15. Dimensionless Trailing-Edge Noise Spectrum

Figure 16. Dimensionless Separation Noise Spectrum
Figure 17. Variation of Kinematic Viscosity With Altitude

Figure 18. Dimensionless Turbulent Boundary Layer Noise Spectrum
Figure 19. Spectrum Shape for Shock Noise

Figure 20. General Indication of Length Scales for Region B Field Points
<table>
<thead>
<tr>
<th>Region</th>
<th>$R_x$</th>
<th>$R_y$</th>
<th>$R_z$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>$X_p - X_0 + \frac{w}{2}$</td>
<td>$Y_p - Y_0$</td>
<td>$Z_p - Z_0$</td>
</tr>
<tr>
<td>2'</td>
<td>$X_p - X_0 - \frac{w}{2}$</td>
<td>$Y_p - Y_0$</td>
<td>$Z_p - Z_0$</td>
</tr>
<tr>
<td>3</td>
<td>$X_p - X_1 + \frac{w}{2}$</td>
<td>$Y_p - Y_1$</td>
<td>$Z_p - Z_1$</td>
</tr>
<tr>
<td>3'</td>
<td>$X_p - X_1 - \alpha$</td>
<td>$Y_p - Y_1$</td>
<td>$Z_p - Z_1$</td>
</tr>
</tbody>
</table>

where $\alpha = \begin{cases} \frac{w}{2} & \text{side door closed} \\ (w \text{ DOOR} - \frac{w}{2}) & \text{door open} \end{cases}$

Figure 21. Expressions for $R_x$, $R_y$, and $R_z$

<table>
<thead>
<tr>
<th>Region</th>
<th>$r_x$</th>
<th>$r_y$</th>
<th>$r_z$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>$X_1 - X_0 - \frac{w}{2}$</td>
<td>$Y_p - Y_1$</td>
<td>$Z_p - Z_1$</td>
</tr>
<tr>
<td>2'</td>
<td>$X_1 - X_0 + \alpha - \frac{w}{2}$</td>
<td>$Y_p - Y_1$</td>
<td>$Z_p - Z_1$</td>
</tr>
</tbody>
</table>

where $\alpha = \begin{cases} \frac{w}{2} & \text{side door closed} \\ (w \text{ DOOR} - \frac{w}{2}) & \text{door open} \end{cases}$

Figure 22. Expressions for $r_x$, $r_y$, and $r_z$
APPENDIX B

TABULATIONS AND PLOTS OF EXTERIOR SURFACE NOISE ESTIMATES FOR A SMALL STOL AIRPLANE
# APPENDIX B TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.</td>
<td>Computer Tabulations for Field Point Noise Levels at STOL Operation Due to Inboard Engines</td>
<td>48</td>
</tr>
<tr>
<td>II.</td>
<td>Computer Tabulations for Field Noise Levels at Brake Release Due to Inboard Engines</td>
<td>67</td>
</tr>
<tr>
<td>III.</td>
<td>Computer Tabulations for Field Point Noise Levels at STOL Operation Due to Outboard Engines</td>
<td>83</td>
</tr>
<tr>
<td>IV.</td>
<td>Computer Tabulations for Field Point Noise Levels at Brake Release Due to Outboard Engines</td>
<td>102</td>
</tr>
<tr>
<td>V.</td>
<td>Computer Plots of QSRA Sized Airplane</td>
<td>118</td>
</tr>
</tbody>
</table>
SECTION I
COMPUTER TABULATIONS FOR FIELD POINT NOISE LEVELS AT STOL OPERATION DUE TO INBOARD ENGINES
PROGRAM USBEST-VERSION 06/MAY/78
UPDATED MARCH, 1979..L.BUTZEL
GENERATES SPL ESTIMATE OF EXTERIOR
FUSELAGE/FLAP, WING FLUCTUATING
PRESSURE LEVELS FOR USB AIRCRAFT

AUTHORS=L.BUTZEL; W.LUNDIN
USER DOCUMENTATION=D6-XXXXX
RUN DATE=79/03/21.

*****************************************************************************

A/P GEOMETRY CHANGES ARE

<table>
<thead>
<tr>
<th>PARAM</th>
<th>NEW</th>
<th>OLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>THUKD</td>
<td>20.0</td>
<td>-.1</td>
</tr>
<tr>
<td>THOKU</td>
<td>0.0</td>
<td>-.1</td>
</tr>
<tr>
<td>THOKI</td>
<td>0.0</td>
<td>-.1</td>
</tr>
<tr>
<td>THIKO</td>
<td>12.0</td>
<td>-.1</td>
</tr>
<tr>
<td>THTB</td>
<td>12.0</td>
<td>-.1</td>
</tr>
<tr>
<td>THSK</td>
<td>0.0</td>
<td>-.1</td>
</tr>
<tr>
<td>THW</td>
<td>19.0</td>
<td>-.1</td>
</tr>
<tr>
<td>AEFF</td>
<td>770.0</td>
<td>-.1</td>
</tr>
<tr>
<td>ADOR</td>
<td>0.0</td>
<td>-.1</td>
</tr>
<tr>
<td>AVG</td>
<td>5.0</td>
<td>-.1</td>
</tr>
<tr>
<td>NUG</td>
<td>12.0</td>
<td>-1.0</td>
</tr>
<tr>
<td>W</td>
<td>54.0</td>
<td>-.1</td>
</tr>
<tr>
<td>LW</td>
<td>80.0</td>
<td>-.1</td>
</tr>
<tr>
<td>RF</td>
<td>26.0</td>
<td>-.1</td>
</tr>
<tr>
<td>X0</td>
<td>88.0</td>
<td>-.1</td>
</tr>
<tr>
<td>Y0</td>
<td>345.0</td>
<td>-.1</td>
</tr>
<tr>
<td>Z0</td>
<td>213.0</td>
<td>-.1</td>
</tr>
<tr>
<td>Z1</td>
<td>201.0</td>
<td>-.1</td>
</tr>
<tr>
<td>LT</td>
<td>25.0</td>
<td>-.1</td>
</tr>
<tr>
<td>YR</td>
<td>0.0</td>
<td>-.1</td>
</tr>
<tr>
<td>LFAN</td>
<td>150.0</td>
<td>-.1</td>
</tr>
<tr>
<td>XBBL</td>
<td>57.0</td>
<td>-.1</td>
</tr>
</tbody>
</table>

**CASE 1, B01, ST50 (STOL FLAPS=50)**

<table>
<thead>
<tr>
<th><strong>ALT</strong></th>
<th>6500.</th>
<th><strong>USB</strong></th>
<th>50.</th>
<th><strong>DEG</strong></th>
<th><strong>R/RD</strong></th>
<th>.848</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UA</strong></td>
<td>110.</td>
<td><strong>DOOR</strong></td>
<td>CLOSED</td>
<td><strong>THETAS</strong></td>
<td>5.</td>
<td><strong>DEG</strong></td>
</tr>
<tr>
<td><strong>UW</strong></td>
<td>680.</td>
<td><strong>VGS</strong></td>
<td><strong>UP</strong></td>
<td><strong>THETRP</strong></td>
<td>33.</td>
<td><strong>DEG</strong></td>
</tr>
</tbody>
</table>

**RIBBON**

<table>
<thead>
<tr>
<th>STA</th>
<th>WL</th>
<th>BL (IN)</th>
<th>BL (OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>345.</td>
<td>213.</td>
<td>61.</td>
<td>115.</td>
</tr>
<tr>
<td>425.</td>
<td>201.</td>
<td>57.</td>
<td>133.</td>
</tr>
<tr>
<td>431.</td>
<td>198.</td>
<td>57.</td>
<td>133.</td>
</tr>
<tr>
<td>460.</td>
<td>179.</td>
<td>57.</td>
<td>133.</td>
</tr>
</tbody>
</table>

**TRAIL EDGE**

| 450. | 162. | 57. | 133. |

**FIELD POINT**

| 460. | 190. | 57. |

**FIELD POINT IN ZONE 3 AND INBOARD OF FLOW RIBBON**

| S=115.4 | **DELTA**= 9.1 |

**PEAK JET MIX LEVEL**

| 139. | **DB AT** | 113. | **HZ** |

**CORRECTION FOR VGS APPLIED**

| **DISPL**= 5. | **DB** | **F1**= 2190. | **HZ** |

**PEAK NEAR NOZ LEVEL**

| 117. | **DB AT** | 938. | **HZ** |

**STE= 122.**

| **D DELTATE**= 20. |

**PEAK TRAIL EDGE LEVEL**

| 94. | **DB AT** | 110. | **HZ** |

**PEAK SEP LEVEL**

| 124. | **DB AT** | 33. | **HZ** |

**PEAK TBL LEVEL**

| 90. | **DB AT** | 115. | **HZ** |

**SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)**

<table>
<thead>
<tr>
<th><strong>HZ</strong></th>
<th><strong>MIX</strong></th>
<th><strong>NN</strong></th>
<th><strong>TE</strong></th>
<th><strong>SEP</strong></th>
<th><strong>TBL</strong></th>
<th><strong>SUM</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>132.</td>
<td>98.</td>
<td>81.</td>
<td>124.</td>
<td>98.</td>
<td>132.8</td>
</tr>
<tr>
<td>31.</td>
<td>133.</td>
<td>99.</td>
<td>84.</td>
<td>124.</td>
<td>98.</td>
<td>133.9</td>
</tr>
<tr>
<td>40.</td>
<td>135.</td>
<td>101.</td>
<td>87.</td>
<td>124.</td>
<td>89.</td>
<td>135.2</td>
</tr>
<tr>
<td>50.</td>
<td>136.</td>
<td>102.</td>
<td>89.</td>
<td>123.</td>
<td>39.</td>
<td>136.3</td>
</tr>
<tr>
<td>63.</td>
<td>137.</td>
<td>104.</td>
<td>92.</td>
<td>123.</td>
<td>90.</td>
<td>137.5</td>
</tr>
<tr>
<td>80.</td>
<td>138.</td>
<td>105.</td>
<td>93.</td>
<td>122.</td>
<td>90.</td>
<td>138.4</td>
</tr>
<tr>
<td>100.</td>
<td>139.</td>
<td>106.</td>
<td>94.</td>
<td>122.</td>
<td>90.</td>
<td>138.7</td>
</tr>
<tr>
<td>125.</td>
<td>139.</td>
<td>107.</td>
<td>94.</td>
<td>121.</td>
<td>90.</td>
<td>138.7</td>
</tr>
<tr>
<td>160.</td>
<td>138.</td>
<td>109.</td>
<td>93.</td>
<td>121.</td>
<td>90.</td>
<td>138.3</td>
</tr>
<tr>
<td>200.</td>
<td>137.</td>
<td>110.</td>
<td>91.</td>
<td>120.</td>
<td>89.</td>
<td>137.4</td>
</tr>
<tr>
<td>250.</td>
<td>136.</td>
<td>112.</td>
<td>89.</td>
<td>120.</td>
<td>89.</td>
<td>136.2</td>
</tr>
<tr>
<td>315.</td>
<td>135.</td>
<td>113.</td>
<td>86.</td>
<td>119.</td>
<td>89.</td>
<td>134.9</td>
</tr>
<tr>
<td>400.</td>
<td>133.</td>
<td>114.</td>
<td>83.</td>
<td>119.</td>
<td>89.</td>
<td>133.6</td>
</tr>
<tr>
<td>500.</td>
<td>132.</td>
<td>115.</td>
<td>81.</td>
<td>118.</td>
<td>88.</td>
<td>132.4</td>
</tr>
<tr>
<td>630.</td>
<td>132.</td>
<td>117.</td>
<td>78.</td>
<td>117.</td>
<td>87.</td>
<td>132.3</td>
</tr>
<tr>
<td>800.</td>
<td>132.</td>
<td>117.</td>
<td>75.</td>
<td>116.</td>
<td>87.</td>
<td>132.2</td>
</tr>
<tr>
<td>1000.</td>
<td>132.</td>
<td>117.</td>
<td>73.</td>
<td>116.</td>
<td>86.</td>
<td>131.8</td>
</tr>
<tr>
<td>1250.</td>
<td>131.</td>
<td>117.</td>
<td>70.</td>
<td>115.</td>
<td>85.</td>
<td>131.2</td>
</tr>
<tr>
<td>1600.</td>
<td>130.</td>
<td>116.</td>
<td>67.</td>
<td>114.</td>
<td>85.</td>
<td>130.3</td>
</tr>
<tr>
<td>2000.</td>
<td>129.</td>
<td>115.</td>
<td>65.</td>
<td>113.</td>
<td>84.</td>
<td>129.3</td>
</tr>
<tr>
<td>2500.</td>
<td>128.</td>
<td>113.</td>
<td>62.</td>
<td>112.</td>
<td>82.</td>
<td>128.0</td>
</tr>
<tr>
<td>3150.</td>
<td>126.</td>
<td>112.</td>
<td>59.</td>
<td>111.</td>
<td>82.</td>
<td>126.4</td>
</tr>
<tr>
<td>4000.</td>
<td>124.</td>
<td>111.</td>
<td>57.</td>
<td>111.</td>
<td>81.</td>
<td>124.5</td>
</tr>
<tr>
<td>5000.</td>
<td>122.</td>
<td>109.</td>
<td>54.</td>
<td>110.</td>
<td>81.</td>
<td>122.5</td>
</tr>
</tbody>
</table>

**DASPL** 148.4 126.6 101.9 133.8 101.5 148.6
CASE 2, B02, BKRL (STOL FLAPS=50)

ALT = 6500. FT \hspace{1cm} USB = 50. DEG R/RO = .848
VA = 110. FT/S \hspace{1cm} DOOR = CLOSED \hspace{1cm} THETAS = 5. DEG
UJ = 680. FT/S \hspace{1cm} UGS = UP \hspace{1cm} THETAFL = 33. DEG

RIBBON STA WL BL <IN> BL <OUT>
AT NOZ EX = 345. 213. 61. 115.
AT WNG TE = 425. 201. 57. 133.
AT TR OFF = 431. 198. 57. 133.
AT TR EDG = 460. 179. 57. 133.

TRAIL EDGE = 450. 162. 57. 133.

FIELD POINT = 460. 160. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 131.7 DELTA = 16.1

PEAK JET MIX LEVEL = 130. DB AT 105. HZ
CORRECTION FOR UGS APPLIED
DBPL = 5. DB FL = 2190. HZ
PEAK NEAR NOZ LEVEL = 108. DB AT 938. HZ
STE = 122. 6. DELTATE = 20.
PEAK TRAIL EDGE LEVEL = 79. DB AT 110. HZ
PEAK SEP LEVEL = 124. DB AT 33. HZ
PEAK TBL LEVEL = 90. DB AT 115. HZ

SPL - IN DB RE 200 PICUBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>124</td>
<td>89</td>
<td>66</td>
<td>124</td>
<td>88</td>
<td>127</td>
</tr>
<tr>
<td>31</td>
<td>126</td>
<td>90</td>
<td>69</td>
<td>124</td>
<td>88</td>
<td>127.8</td>
</tr>
<tr>
<td>40</td>
<td>127</td>
<td>92</td>
<td>72</td>
<td>124</td>
<td>89</td>
<td>128.6</td>
</tr>
<tr>
<td>50</td>
<td>128</td>
<td>93</td>
<td>74</td>
<td>123</td>
<td>89</td>
<td>129.4</td>
</tr>
<tr>
<td>63</td>
<td>129</td>
<td>94</td>
<td>77</td>
<td>123</td>
<td>90</td>
<td>130.2</td>
</tr>
<tr>
<td>80</td>
<td>130</td>
<td>96</td>
<td>79</td>
<td>122</td>
<td>90</td>
<td>130.6</td>
</tr>
<tr>
<td>100</td>
<td>130</td>
<td>97</td>
<td>79</td>
<td>122</td>
<td>90</td>
<td>130.7</td>
</tr>
<tr>
<td>125</td>
<td>130</td>
<td>98</td>
<td>79</td>
<td>121</td>
<td>90</td>
<td>130.5</td>
</tr>
<tr>
<td>160</td>
<td>129</td>
<td>100</td>
<td>78</td>
<td>121</td>
<td>90</td>
<td>130.0</td>
</tr>
<tr>
<td>200</td>
<td>128</td>
<td>101</td>
<td>76</td>
<td>120</td>
<td>89</td>
<td>129.0</td>
</tr>
<tr>
<td>250</td>
<td>127</td>
<td>102</td>
<td>74</td>
<td>120</td>
<td>89</td>
<td>127.9</td>
</tr>
<tr>
<td>315</td>
<td>126</td>
<td>104</td>
<td>71</td>
<td>119</td>
<td>89</td>
<td>126.7</td>
</tr>
<tr>
<td>400</td>
<td>124</td>
<td>105</td>
<td>68</td>
<td>119</td>
<td>88</td>
<td>125.4</td>
</tr>
<tr>
<td>500</td>
<td>123</td>
<td>106</td>
<td>66</td>
<td>118</td>
<td>88</td>
<td>124.3</td>
</tr>
<tr>
<td>630</td>
<td>123</td>
<td>107</td>
<td>63</td>
<td>117</td>
<td>87</td>
<td>124.1</td>
</tr>
<tr>
<td>800</td>
<td>123</td>
<td>108</td>
<td>60</td>
<td>116</td>
<td>87</td>
<td>123.8</td>
</tr>
<tr>
<td>1000</td>
<td>123</td>
<td>108</td>
<td>58</td>
<td>116</td>
<td>86</td>
<td>123.4</td>
</tr>
<tr>
<td>1250</td>
<td>122</td>
<td>108</td>
<td>55</td>
<td>115</td>
<td>85</td>
<td>122.8</td>
</tr>
<tr>
<td>1600</td>
<td>121</td>
<td>107</td>
<td>52</td>
<td>114</td>
<td>85</td>
<td>121.9</td>
</tr>
<tr>
<td>2000</td>
<td>120</td>
<td>106</td>
<td>50</td>
<td>113</td>
<td>84</td>
<td>120.9</td>
</tr>
<tr>
<td>2500</td>
<td>119</td>
<td>104</td>
<td>47</td>
<td>112</td>
<td>83</td>
<td>119.7</td>
</tr>
<tr>
<td>3150</td>
<td>117</td>
<td>103</td>
<td>45</td>
<td>111</td>
<td>82</td>
<td>118.2</td>
</tr>
<tr>
<td>4000</td>
<td>115</td>
<td>102</td>
<td>42</td>
<td>111</td>
<td>81</td>
<td>116.5</td>
</tr>
<tr>
<td>5000</td>
<td>113</td>
<td>100</td>
<td>39</td>
<td>110</td>
<td>81</td>
<td>114.9</td>
</tr>
</tbody>
</table>

DBSPL = 139.9 117.5 87.1 133.8 101.5 140.8

51
CASE 3B03;ST50 ($TDL FLAPS=50$)

\[\begin{align*}
\text{ALT} &= 6500. \text{ FT} \\
\text{USB} &= 50. \text{ DEG} \\
\text{R/R} &= 0.843 \\
\text{VA} &= 110. \text{ FT/S} \\
\text{DOOR} &= \text{CLOSED} \\
\text{THETA=5. DEG} \\
\text{UGS} &= \text{UP} \\
\text{THETAF=33. DEG}
\end{align*}\]

**RIBBON**

\[\begin{align*}
\text{STA} & \quad \text{WL} & \text{BL(IN)} & \text{BL(OUT)} \\
\text{AT NOZ EX} & 345. & 213. & 61. & 115. \\
\text{AT WING TE} & 425. & 201. & 57. & 133. \\
\text{AT TR OFF} & 431. & 198. & 57. & 133. \\
\text{AT TR EDG} & 450. & 179. & 57. & 133.
\end{align*}\]

**TRAIL EDGE** 450. 162. 57. 133.

**FIELD POINT** 450. 130. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON

\[S= 148.1 \quad \text{DELTATE}= 41.3\]

\[\begin{align*}
\text{PEAK JET MIX LEVEL}= 120. \text{ DB AT 228. HZ} \\
\text{CORRECTION FOR UGS APPLIED} \\
\text{DISPL}= 5. \text{ DB F1= 2190. HZ} \\
\text{PEAK NEAR NOZ LEVEL}= 99. \text{ DB AT 938. HZ} \\
\text{ST= 122. ; DELTATE= 20.} \\
\text{PEAK TRAIL EDGE LEVEL}= 96. \text{ DB AT 110. HZ} \\
\text{PEAK SEP LEVEL}= 104. \text{ DB AT 33. HZ} \\
\text{PEAK TBL LEVEL}= 90. \text{ DB AT 115. HZ} \\
\end{align*}\]

**SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)**

\[\begin{array}{cccccccc}
\text{HZ} & \text{MIX} & \text{NN} & \text{TE} & \text{SEP} & \text{TBL} & \text{SUM} \\
25. & 114. & 80. & 83. & 103. & 88. & 114.5 \\
31. & 115. & 81. & 86. & 103. & 88. & 115.3 \\
40. & 116. & 83. & 88. & 103. & 89. & 117.1 \\
50. & 117. & 84. & 91. & 103. & 89. & 116.9 \\
63. & 118. & 85. & 94. & 103. & 90. & 117.7 \\
80. & 118. & 87. & 95. & 102. & 90. & 118.6 \\
100. & 119. & 88. & 96. & 102. & 90. & 118.4 \\
125. & 120. & 89. & 96. & 101. & 90. & 120.1 \\
160. & 121. & 91. & 95. & 101. & 90. & 120.6 \\
200. & 120. & 92. & 93. & 100. & 89. & 126.5 \\
250. & 120. & 93. & 91. & 100. & 89. & 120.2 \\
315. & 120. & 95. & 98. & 99. & 89. & 119.9 \\
400. & 119. & 96. & 95. & 98. & 89. & 119.0 \\
500. & 118. & 97. & 93. & 98. & 88. & 117.8 \\
630. & 118. & 98. & 92. & 97. & 87. & 117.7 \\
800. & 118. & 99. & 91. & 96. & 87. & 117.6 \\
1000. & 117. & 99. & 75. & 95. & 86. & 117.3 \\
1250. & 117. & 99. & 72. & 94. & 85. & 116.7 \\
1600. & 116. & 98. & 69. & 93. & 85. & 115.6 \\
2000. & 115. & 97. & 67. & 93. & 84. & 114.7 \\
2500. & 113. & 95. & 64. & 92. & 83. & 113.4 \\
3150. & 112. & 94. & 61. & 91. & 82. & 111.8 \\
4000. & 110. & 93. & 59. & 90. & 81. & 109.9 \\
5000. & 108. & 91. & 56. & 89. & 81. & 107.9 \\
\end{array}\]

\[\text{OASPL 131.3 108.4 103.8 113.4 101.5 131.4}\]

52
**CASE 4.04, ST50 (STOL FLAPS=50)**

- **ALT** = 6500. FT
- **VW** = 110. FT/S
- **VW** = 680. FT/S
- **THETA** = 5. DEG
- **R/RU** = .848
- **VA** = 110. FT/S
- **DOOR** = CLOSED
- **THETA** = 5. DEG
- **F/S** = UP
- **THETA** = 33. DEG

### RIBBON STA WLI BL(IN) BL(OUT)

<table>
<thead>
<tr>
<th>STA</th>
<th>WLI</th>
<th>BL(IN)</th>
<th>BL(OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO2 EX</td>
<td>345.</td>
<td>213.</td>
<td>61. 115.</td>
</tr>
<tr>
<td>WNG TE</td>
<td>425.</td>
<td>201.</td>
<td>57. 133.</td>
</tr>
<tr>
<td>TR OFF</td>
<td>431.</td>
<td>198.</td>
<td>57. 133.</td>
</tr>
<tr>
<td>TR EDG</td>
<td>460.</td>
<td>179.</td>
<td>57. 133.</td>
</tr>
</tbody>
</table>

### TRAIL EDGE

- 450. 162. 57. 133.

### FIELD POINT

- 500. 190. 57.

**FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON**

S = 149.0 DELTA = 30.8

**PEAK JET MIX LEVEL = 123. DB AT 176. HZ**

**CORRECTION FOR VGS APPLIED**

- DSPL = 5. DB
- F1 = 2190. HZ

**PEAK NEAR NO2 LEVEL = 101. DB AT 938. HZ**

- STE = 122. DEGREE
- DELTATE = 20.

**PEAK TRAIL EDGE LEVEL = 101. DB AT 110. HZ**

**PEAK SEP LEVEL = 107. DB AT 33. HZ**

**PEAK TAB LEVEL = 90. DB AT 108. HZ**

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>MN</th>
<th>TE</th>
<th>SEP</th>
<th>TAB</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>116.</td>
<td>82.</td>
<td>88.</td>
<td>107.</td>
<td>88.</td>
<td>116.7</td>
</tr>
<tr>
<td>31</td>
<td>117.</td>
<td>84.</td>
<td>90.</td>
<td>107.</td>
<td>88.</td>
<td>117.5</td>
</tr>
<tr>
<td>40</td>
<td>118.</td>
<td>85.</td>
<td>93.</td>
<td>107.</td>
<td>89.</td>
<td>118.6</td>
</tr>
<tr>
<td>50</td>
<td>119.</td>
<td>86.</td>
<td>96.</td>
<td>107.</td>
<td>89.</td>
<td>119.5</td>
</tr>
<tr>
<td>63</td>
<td>120.</td>
<td>86.</td>
<td>98.</td>
<td>106.</td>
<td>90.</td>
<td>120.4</td>
</tr>
<tr>
<td>80</td>
<td>121.</td>
<td>89.</td>
<td>100.</td>
<td>106.</td>
<td>90.</td>
<td>121.4</td>
</tr>
<tr>
<td>100</td>
<td>122.</td>
<td>91.</td>
<td>101.</td>
<td>105.</td>
<td>90.</td>
<td>122.3</td>
</tr>
<tr>
<td>125</td>
<td>123.</td>
<td>92.</td>
<td>101.</td>
<td>105.</td>
<td>90.</td>
<td>122.8</td>
</tr>
<tr>
<td>160</td>
<td>123.</td>
<td>93.</td>
<td>100.</td>
<td>104.</td>
<td>90.</td>
<td>122.9</td>
</tr>
<tr>
<td>200</td>
<td>123.</td>
<td>94.</td>
<td>98.</td>
<td>104.</td>
<td>89.</td>
<td>122.7</td>
</tr>
<tr>
<td>250</td>
<td>122.</td>
<td>96.</td>
<td>95.</td>
<td>103.</td>
<td>89.</td>
<td>122.3</td>
</tr>
<tr>
<td>315</td>
<td>121.</td>
<td>97.</td>
<td>93.</td>
<td>103.</td>
<td>88.</td>
<td>121.4</td>
</tr>
<tr>
<td>400</td>
<td>120.</td>
<td>99.</td>
<td>90.</td>
<td>102.</td>
<td>88.</td>
<td>120.1</td>
</tr>
<tr>
<td>500</td>
<td>119.</td>
<td>100.</td>
<td>87.</td>
<td>101.</td>
<td>87.</td>
<td>118.8</td>
</tr>
<tr>
<td>630</td>
<td>119.</td>
<td>101.</td>
<td>85.</td>
<td>101.</td>
<td>87.</td>
<td>118.7</td>
</tr>
<tr>
<td>800</td>
<td>118.</td>
<td>101.</td>
<td>82.</td>
<td>100.</td>
<td>86.</td>
<td>118.6</td>
</tr>
<tr>
<td>1000</td>
<td>118.</td>
<td>101.</td>
<td>79.</td>
<td>99.</td>
<td>86.</td>
<td>118.3</td>
</tr>
<tr>
<td>1250</td>
<td>118.</td>
<td>101.</td>
<td>77.</td>
<td>98.</td>
<td>85.</td>
<td>117.7</td>
</tr>
<tr>
<td>1600</td>
<td>117.</td>
<td>100.</td>
<td>74.</td>
<td>97.</td>
<td>84.</td>
<td>116.8</td>
</tr>
<tr>
<td>2000</td>
<td>116.</td>
<td>99.</td>
<td>71.</td>
<td>97.</td>
<td>84.</td>
<td>115.7</td>
</tr>
<tr>
<td>2500</td>
<td>114.</td>
<td>98.</td>
<td>69.</td>
<td>96.</td>
<td>83.</td>
<td>114.4</td>
</tr>
<tr>
<td>3150</td>
<td>113.</td>
<td>96.</td>
<td>66.</td>
<td>95.</td>
<td>82.</td>
<td>112.8</td>
</tr>
<tr>
<td>4000</td>
<td>111.</td>
<td>95.</td>
<td>63.</td>
<td>94.</td>
<td>81.</td>
<td>110.9</td>
</tr>
<tr>
<td>5000</td>
<td>109.</td>
<td>94.</td>
<td>61.</td>
<td>93.</td>
<td>80.</td>
<td>108.9</td>
</tr>
</tbody>
</table>

**DASPL 133.2 110.9 108.4 117.3 101.5 133.3**
CASE 5, B05, 8750 (STOL FLAPS=50)

ALT= 6500. FT   USB = 50. DEG  R/RO = .848
VA = 110. FT/S  IDOR= CLOSED  THETAS= 5. DEG
VJ = 680. FT/S  VGS = UP    THETAP=33. DEG

RIBBON      STA   WL   BL(IN) BL(OUT)
AT NOZ EX   345. 213.  61.   115.
AT WNG TE   425. 201.  57.   133.
AT TR OFF   431. 198.  57.   133.
AT TR EDG   460. 179.  57.   133.

TRAIL EDGE  450. 162.  57.   133.

FIELD POINT 500. 160.  57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S=165.3 DELTA = 5.7

PEAK JET MIX LEVEL= 138. DB AT 91. HZ
CORRECTION FOR VGS APPLIED
DBPL= 5. DB F1= 2190. HZ
PEAK NEAR NOZ LEVEL= 117. DB AT 938. HZ
STE= 122.  DELTATE= 20.
PEAK TRAIL EDGE LEVEL= 96. DB AT 110. HZ
PEAK SEP LEVEL= 97. DB AT 33. HZ
PEAK TIL LEVEL= 106. DB AT 343. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TIL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>133</td>
<td>99</td>
<td>83</td>
<td>97</td>
<td>99</td>
<td>132.5</td>
</tr>
<tr>
<td>31.</td>
<td>134</td>
<td>100</td>
<td>86</td>
<td>97</td>
<td>100</td>
<td>133.7</td>
</tr>
<tr>
<td>40.</td>
<td>135</td>
<td>101</td>
<td>89</td>
<td>97</td>
<td>101</td>
<td>135.2</td>
</tr>
<tr>
<td>50.</td>
<td>136</td>
<td>103</td>
<td>91</td>
<td>97</td>
<td>102</td>
<td>136.4</td>
</tr>
<tr>
<td>63.</td>
<td>137</td>
<td>104</td>
<td>94</td>
<td>96</td>
<td>103</td>
<td>137.4</td>
</tr>
<tr>
<td>80.</td>
<td>138</td>
<td>105</td>
<td>95</td>
<td>96</td>
<td>103</td>
<td>137.8</td>
</tr>
<tr>
<td>100</td>
<td>138</td>
<td>107</td>
<td>96</td>
<td>95</td>
<td>104</td>
<td>137.8</td>
</tr>
<tr>
<td>125</td>
<td>138</td>
<td>108</td>
<td>96</td>
<td>95</td>
<td>104</td>
<td>137.5</td>
</tr>
<tr>
<td>160</td>
<td>137</td>
<td>109</td>
<td>95</td>
<td>94</td>
<td>105</td>
<td>136.6</td>
</tr>
<tr>
<td>200</td>
<td>135</td>
<td>111</td>
<td>93</td>
<td>94</td>
<td>105</td>
<td>135.4</td>
</tr>
<tr>
<td>250</td>
<td>134</td>
<td>112</td>
<td>91</td>
<td>93</td>
<td>105</td>
<td>134.1</td>
</tr>
<tr>
<td>315</td>
<td>133</td>
<td>113</td>
<td>88</td>
<td>93</td>
<td>106</td>
<td>132.8</td>
</tr>
<tr>
<td>400</td>
<td>131</td>
<td>115</td>
<td>85</td>
<td>92</td>
<td>105</td>
<td>131.5</td>
</tr>
<tr>
<td>500</td>
<td>130</td>
<td>116</td>
<td>83</td>
<td>91</td>
<td>105</td>
<td>130.2</td>
</tr>
<tr>
<td>630</td>
<td>130</td>
<td>117</td>
<td>80</td>
<td>90</td>
<td>105</td>
<td>130.2</td>
</tr>
<tr>
<td>800</td>
<td>130</td>
<td>117</td>
<td>77</td>
<td>90</td>
<td>104</td>
<td>130.1</td>
</tr>
<tr>
<td>1000</td>
<td>130</td>
<td>117</td>
<td>75</td>
<td>89</td>
<td>104</td>
<td>129.8</td>
</tr>
<tr>
<td>1250</td>
<td>129</td>
<td>117</td>
<td>72</td>
<td>88</td>
<td>103</td>
<td>129.2</td>
</tr>
<tr>
<td>1600</td>
<td>128</td>
<td>116</td>
<td>69</td>
<td>87</td>
<td>103</td>
<td>128.3</td>
</tr>
<tr>
<td>2000</td>
<td>127</td>
<td>115</td>
<td>67</td>
<td>86</td>
<td>102</td>
<td>127.2</td>
</tr>
<tr>
<td>2500</td>
<td>126</td>
<td>114</td>
<td>64</td>
<td>85</td>
<td>102</td>
<td>125.9</td>
</tr>
<tr>
<td>3150</td>
<td>124</td>
<td>112</td>
<td>61</td>
<td>85</td>
<td>101</td>
<td>124.3</td>
</tr>
<tr>
<td>4000</td>
<td>122</td>
<td>111</td>
<td>59</td>
<td>84</td>
<td>101</td>
<td>122.5</td>
</tr>
<tr>
<td>5000</td>
<td>120</td>
<td>110</td>
<td>56</td>
<td>83</td>
<td>100</td>
<td>120.5</td>
</tr>
</tbody>
</table>

DBPL 147.4 126.9 103.9 107.0 117.2 147.5
CASE 6, B06, ST50 (STOL FLAPS=50)

ALT = 6500. FT  USB = 50. DEG  R/RD = .848

Ua = 110. FT/S  DOOR = CLOSED  THETAS = 5. DEG

UJ = 680. FT/S  VGS = UP  THETAP = 33. DEG

RIBBON  STA  WL  BL (IN)  BL (OUT)

AT NOZ EX  345.  213.  61.  115.
AT WNG TE  425.  201.  57.  133.
AT TR OFF  431.  198.  57.  133.
AT TR EDG  460.  179.  57.  133.

TRAIL EDGE  450.  162.  57.  133.

FIELD POINT  500.  130.  57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 181.6 DELTA = 19.5

PEAK JET MIX LEVEL = 123. DB AT 96. HZ

CORRECTION FOR VGS APPLIED

DSPL = 5. DB  F1 = 2190. HZ

PEAK NEAR NOZ LEVEL = 104. DB AT 928. HZ

STE = 122.  DELTATE = 20.

PEAK TRAIL EDGE LEVEL = 52. DB AT 110. HZ

PEAK SEP LEVEL = 89. DB AT 33. HZ

PEAK TBL LEVEL = 90. DB AT 108. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

HZ  MIX  NN  TE  SEP  TBL  SUM

25. 119. 85. 39. 88. 88. 119.0
31. 120. 86. 41. 89. 88. 120.1
40. 121. 88. 44. 89. 89. 121.4
50. 123. 89. 47. 88. 89. 122.5
63. 123. 90. 49. 88. 90. 123.2
80. 123. 92. 51. 87. 90. 123.4
100. 123. 93. 52. 87. 90. 123.3
125. 123. 94. 52. 86. 90. 122.8
160. 122. 96. 51. 86. 90. 121.7
200. 120. 97. 49. 85. 89. 120.5
250. 119. 98. 46. 85. 89. 119.2
315. 118. 100. 44. 84. 88. 117.9
400. 116. 101. 41. 84. 88. 116.6
500. 115. 102. 38. 83. 87. 115.4
630. 115. 103. 35. 82. 87. 115.4
800. 115. 104. 33. 81. 86. 115.3
1000. 115. 104. 30. 80. 86. 115.0
1250. 114. 103. 28. 80. 85. 114.4
1600. 113. 103. 25. 79. 84. 113.5
2000. 112. 101. 22. 78. 84. 112.4
2500. 111. 100. 20. 77. 83. 111.1
3150. 109. 99. 17. 76. 82. 109.5
4000. 107. 97. 14. 75. 81. 107.6
5000. 105. 96. 12. 75. 80. 105.7

OASPL 133.0  113.3  59.4  98.7  101.5  133.0

55
CASE 7,07,ST50 (STOL FLAPS=50)

ALT= 6500. FT      USB =50. DEG     R/RO = .848
VA = 110. FT/S      DOOR= CLOSED     THETAS= 5. DEG
VJ = 680. FT/S      VGS = UP         THETAP=33. DEG

RIBBON     STA     WL     BL(IN)     BL(OUT)
AT NOZ EX   345.   213.   61.      115.
AT WNG TE   425.   201.   57.      133.
AT TR OFF   431.   198.   57.      133.
AT TR EDG   460.   179.   57.      133.
TRAIL EDGE  450.   162.   57.      133.
FIELD POINT 550.  190.   57.

FIELD POINT IN ZONE 3 AND IS
INBOARD OF FLOW RIBBON
S= 190.9 DELTA = 58.1

PEAK JET MIX LEVEL= 113. DB AT 245. HZ
CORRECTION FOR VGS APPLIED
DSPL= 5. DB  F1= 2190. HZ
PEAK NEAR NOZ LEVEL= 94. DB AT 938. HZ
STE= 122. ;DELTATE= 20.
PEAK TRAIL EDGE LEVEL= 100. DB AT 110. HZ
PEAK SEP LEVEL= 82. DB AT 33. HZ
PEAK TBL LEVEL= 90. DB AT 100. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>109</td>
<td>75</td>
<td>87</td>
<td>81</td>
<td>88</td>
<td>108.6</td>
</tr>
<tr>
<td>31</td>
<td>109</td>
<td>76</td>
<td>89</td>
<td>81</td>
<td>89</td>
<td>109.3</td>
</tr>
<tr>
<td>40</td>
<td>110</td>
<td>78</td>
<td>92</td>
<td>81</td>
<td>89</td>
<td>110.0</td>
</tr>
<tr>
<td>50</td>
<td>111</td>
<td>79</td>
<td>95</td>
<td>81</td>
<td>89</td>
<td>110.7</td>
</tr>
<tr>
<td>63</td>
<td>111</td>
<td>80</td>
<td>97</td>
<td>81</td>
<td>90</td>
<td>111.5</td>
</tr>
<tr>
<td>80</td>
<td>112</td>
<td>82</td>
<td>99</td>
<td>80</td>
<td>90</td>
<td>112.2</td>
</tr>
<tr>
<td>100</td>
<td>113</td>
<td>83</td>
<td>100</td>
<td>80</td>
<td>90</td>
<td>112.9</td>
</tr>
<tr>
<td>125</td>
<td>113</td>
<td>84</td>
<td>100</td>
<td>79</td>
<td>90</td>
<td>113.5</td>
</tr>
<tr>
<td>150</td>
<td>114</td>
<td>86</td>
<td>99</td>
<td>79</td>
<td>90</td>
<td>113.9</td>
</tr>
<tr>
<td>200</td>
<td>114</td>
<td>87</td>
<td>97</td>
<td>78</td>
<td>89</td>
<td>113.8</td>
</tr>
<tr>
<td>250</td>
<td>113</td>
<td>88</td>
<td>94</td>
<td>78</td>
<td>89</td>
<td>113.4</td>
</tr>
<tr>
<td>315</td>
<td>113</td>
<td>90</td>
<td>92</td>
<td>77</td>
<td>88</td>
<td>113.1</td>
</tr>
<tr>
<td>400</td>
<td>112</td>
<td>91</td>
<td>89</td>
<td>76</td>
<td>88</td>
<td>112.4</td>
</tr>
<tr>
<td>500</td>
<td>111</td>
<td>92</td>
<td>86</td>
<td>76</td>
<td>87</td>
<td>111.2</td>
</tr>
<tr>
<td>600</td>
<td>111</td>
<td>93</td>
<td>83</td>
<td>75</td>
<td>87</td>
<td>111.2</td>
</tr>
<tr>
<td>800</td>
<td>111</td>
<td>94</td>
<td>81</td>
<td>74</td>
<td>86</td>
<td>111.1</td>
</tr>
<tr>
<td>1000</td>
<td>111</td>
<td>94</td>
<td>78</td>
<td>73</td>
<td>86</td>
<td>110.7</td>
</tr>
<tr>
<td>1250</td>
<td>110</td>
<td>94</td>
<td>76</td>
<td>72</td>
<td>85</td>
<td>110.1</td>
</tr>
<tr>
<td>1600</td>
<td>109</td>
<td>93</td>
<td>73</td>
<td>71</td>
<td>84</td>
<td>109.2</td>
</tr>
<tr>
<td>2000</td>
<td>108</td>
<td>92</td>
<td>70</td>
<td>71</td>
<td>83</td>
<td>108.2</td>
</tr>
<tr>
<td>2500</td>
<td>107</td>
<td>90</td>
<td>68</td>
<td>70</td>
<td>83</td>
<td>106.8</td>
</tr>
<tr>
<td>3150</td>
<td>105</td>
<td>89</td>
<td>65</td>
<td>69</td>
<td>82</td>
<td>105.2</td>
</tr>
<tr>
<td>4000</td>
<td>103</td>
<td>88</td>
<td>62</td>
<td>68</td>
<td>81</td>
<td>103.3</td>
</tr>
<tr>
<td>5000</td>
<td>101</td>
<td>86</td>
<td>60</td>
<td>67</td>
<td>80</td>
<td>101.3</td>
</tr>
</tbody>
</table>

DASPL 124.7 103.4 107.4 91.4 101.4 124.9
Case 8, DOG, ST50 (STOL FLAPS=50)

- **ALT**: 6500. FT
- **USB**: =50. DEG
- **R/RO**: = .848
- **VA**: 110. FT/S
- **DOOR**: CLOSED
- **THETAS**: 5. DEG
- **VJ**: 680. FT/S
- **VGS**: = UP
- **THETA**: =33. DEG

###.Ribbon STA WL BL (IN) BL (OUT)

- **AT NOZ EX**: 345. 213. 61. 115
- **AT WING TE**: 425. 201. 57. 133
- **AT TR OFF**: 431. 198. 57. 133
- **AT TR EDG**: 460. 179. 57. 133

**TRAIL EDGE**: 450. 162. 57. 133

###.FIELD POINT 550. 160. 57.

- **FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON

  **S**: 207.2 **DELTA**: = 32.9

**PEAK JET MIX LEVEL**: = 118. DB AT 151. HZ

**CORRECTION FOR VGS APPLIED**

**DSPL**: = 5. DB **F1**: = 2130. HZ

**PEAK NEAR NOZ LEVEL**: = 98. DB AT 938. HZ

**STE**: = 122. **DELTATE**: = 20.

**PEAK TRAIL EDGE LEVEL**: = 96. DB AT 110. HZ

**PEAK SEP LEVEL**: = 79. DB AT 33. HZ

**PEAK TBL LEVEL**: = 90. DB AT 100. HZ

**SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)**

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>112</td>
<td>79</td>
<td>83</td>
<td>79</td>
<td>88</td>
<td>112.1</td>
</tr>
<tr>
<td>31</td>
<td>113</td>
<td>80</td>
<td>86</td>
<td>79</td>
<td>89</td>
<td>113.0</td>
</tr>
<tr>
<td>40</td>
<td>114</td>
<td>82</td>
<td>89</td>
<td>79</td>
<td>89</td>
<td>114.1</td>
</tr>
<tr>
<td>50</td>
<td>115</td>
<td>83</td>
<td>91</td>
<td>79</td>
<td>89</td>
<td>115.0</td>
</tr>
<tr>
<td>63</td>
<td>116</td>
<td>85</td>
<td>94</td>
<td>78</td>
<td>90</td>
<td>116.0</td>
</tr>
<tr>
<td>80</td>
<td>117</td>
<td>86</td>
<td>96</td>
<td>78</td>
<td>90</td>
<td>117.0</td>
</tr>
<tr>
<td>100</td>
<td>118</td>
<td>87</td>
<td>96</td>
<td>77</td>
<td>90</td>
<td>117.7</td>
</tr>
<tr>
<td>125</td>
<td>118</td>
<td>89</td>
<td>96</td>
<td>77</td>
<td>90</td>
<td>117.9</td>
</tr>
<tr>
<td>160</td>
<td>118</td>
<td>90</td>
<td>95</td>
<td>76</td>
<td>90</td>
<td>117.7</td>
</tr>
<tr>
<td>200</td>
<td>117</td>
<td>91</td>
<td>93</td>
<td>76</td>
<td>89</td>
<td>117.4</td>
</tr>
<tr>
<td>250</td>
<td>117</td>
<td>93</td>
<td>91</td>
<td>75</td>
<td>89</td>
<td>116.7</td>
</tr>
<tr>
<td>315</td>
<td>115</td>
<td>94</td>
<td>88</td>
<td>75</td>
<td>89</td>
<td>115.5</td>
</tr>
<tr>
<td>400</td>
<td>114</td>
<td>95</td>
<td>86</td>
<td>74</td>
<td>88</td>
<td>114.1</td>
</tr>
<tr>
<td>500</td>
<td>113</td>
<td>97</td>
<td>83</td>
<td>73</td>
<td>87</td>
<td>112.9</td>
</tr>
<tr>
<td>630</td>
<td>113</td>
<td>98</td>
<td>80</td>
<td>73</td>
<td>87</td>
<td>112.8</td>
</tr>
<tr>
<td>800</td>
<td>113</td>
<td>98</td>
<td>77</td>
<td>72</td>
<td>86</td>
<td>112.7</td>
</tr>
<tr>
<td>1000</td>
<td>112</td>
<td>98</td>
<td>75</td>
<td>71</td>
<td>86</td>
<td>112.4</td>
</tr>
<tr>
<td>1250</td>
<td>112</td>
<td>98</td>
<td>72</td>
<td>70</td>
<td>85</td>
<td>111.8</td>
</tr>
<tr>
<td>1600</td>
<td>111</td>
<td>97</td>
<td>69</td>
<td>69</td>
<td>84</td>
<td>110.9</td>
</tr>
<tr>
<td>2000</td>
<td>110</td>
<td>96</td>
<td>67</td>
<td>68</td>
<td>83</td>
<td>109.8</td>
</tr>
<tr>
<td>2500</td>
<td>108</td>
<td>95</td>
<td>64</td>
<td>68</td>
<td>83</td>
<td>108.5</td>
</tr>
<tr>
<td>3150</td>
<td>107</td>
<td>93</td>
<td>62</td>
<td>67</td>
<td>82</td>
<td>106.9</td>
</tr>
<tr>
<td>4000</td>
<td>105</td>
<td>92</td>
<td>59</td>
<td>66</td>
<td>81</td>
<td>105.0</td>
</tr>
<tr>
<td>5000</td>
<td>103</td>
<td>91</td>
<td>56</td>
<td>65</td>
<td>80</td>
<td>103.0</td>
</tr>
</tbody>
</table>

**DBSPL**: 128.1 107.6 104.1 89.1 101.4 128.2
CASE 9, B09, ST50 (STOL FLAPS=50)

ALT  = 6500. FT  
USB  =50. DEG  
R/RO  = .848

VA  = 110. FT/S  
DOOR= CLOSED  
THETAS= 5. DEG

UJ  = 680. FT/S  
VGS  = UP  
THETA F=33. DEG

RIBBON  
STA  
WL  
BL (IN)  
BL (OUT)

AT NOZ EX  345.  213.  61.  115.
AT WNG TE  425.  201.  57.  133.
AT TR OFF  431.  198.  57.  133.
AT TR EIDG  460.  179.  57.  133.

TRAIL EDGE  450.  162.  57.  133.

FIELD POINT  550.  130.  57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S= 223.6 DELTA = 7.7

PEAK JET MIX LEVEL= 133. DB AT 74. HZ
CORRECTION FOR UGS APPLIED
DSPL= 5. DB F1= 2190. HZ
PEAK NEAR NOZ LEVEL= 113. DB AT 938. HZ
STE= 122. , DELTA T= 20.
PEAK TRAIL EDGE LEVEL= 90. DB AT 110. HZ
PEAK SEP LEVEL= 75. DB AT 33. HZ
PEAK TBL LEVEL= 91. DB AT 109. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TIL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>129</td>
<td>94</td>
<td>77</td>
<td>75</td>
<td>89</td>
<td>128.6</td>
</tr>
<tr>
<td>31</td>
<td>130</td>
<td>95</td>
<td>79</td>
<td>75</td>
<td>90</td>
<td>129.8</td>
</tr>
<tr>
<td>40</td>
<td>131</td>
<td>97</td>
<td>82</td>
<td>75</td>
<td>90</td>
<td>131.2</td>
</tr>
<tr>
<td>50</td>
<td>132</td>
<td>98</td>
<td>85</td>
<td>74</td>
<td>90</td>
<td>132.2</td>
</tr>
<tr>
<td>63</td>
<td>133</td>
<td>100</td>
<td>87</td>
<td>74</td>
<td>91</td>
<td>132.6</td>
</tr>
<tr>
<td>80</td>
<td>133</td>
<td>101</td>
<td>89</td>
<td>74</td>
<td>91</td>
<td>132.7</td>
</tr>
<tr>
<td>100</td>
<td>132</td>
<td>102</td>
<td>90</td>
<td>73</td>
<td>91</td>
<td>132.4</td>
</tr>
<tr>
<td>125</td>
<td>132</td>
<td>103</td>
<td>90</td>
<td>73</td>
<td>91</td>
<td>131.7</td>
</tr>
<tr>
<td>160</td>
<td>130</td>
<td>105</td>
<td>89</td>
<td>72</td>
<td>91</td>
<td>130.4</td>
</tr>
<tr>
<td>200</td>
<td>129</td>
<td>106</td>
<td>87</td>
<td>72</td>
<td>90</td>
<td>129.1</td>
</tr>
<tr>
<td>250</td>
<td>128</td>
<td>108</td>
<td>84</td>
<td>71</td>
<td>90</td>
<td>127.8</td>
</tr>
<tr>
<td>315</td>
<td>126</td>
<td>109</td>
<td>82</td>
<td>70</td>
<td>90</td>
<td>126.5</td>
</tr>
<tr>
<td>400</td>
<td>125</td>
<td>110</td>
<td>79</td>
<td>70</td>
<td>89</td>
<td>125.2</td>
</tr>
<tr>
<td>500</td>
<td>124</td>
<td>111</td>
<td>76</td>
<td>69</td>
<td>89</td>
<td>124.0</td>
</tr>
<tr>
<td>630</td>
<td>124</td>
<td>113</td>
<td>74</td>
<td>68</td>
<td>88</td>
<td>124.0</td>
</tr>
<tr>
<td>800</td>
<td>124</td>
<td>113</td>
<td>71</td>
<td>67</td>
<td>88</td>
<td>123.9</td>
</tr>
<tr>
<td>1000</td>
<td>123</td>
<td>113</td>
<td>68</td>
<td>67</td>
<td>87</td>
<td>123.6</td>
</tr>
<tr>
<td>1250</td>
<td>123</td>
<td>113</td>
<td>66</td>
<td>66</td>
<td>86</td>
<td>123.0</td>
</tr>
<tr>
<td>1600</td>
<td>122</td>
<td>112</td>
<td>63</td>
<td>65</td>
<td>86</td>
<td>122.1</td>
</tr>
<tr>
<td>2000</td>
<td>121</td>
<td>111</td>
<td>60</td>
<td>64</td>
<td>85</td>
<td>121.0</td>
</tr>
<tr>
<td>2500</td>
<td>119</td>
<td>109</td>
<td>58</td>
<td>63</td>
<td>84</td>
<td>119.7</td>
</tr>
<tr>
<td>3150</td>
<td>118</td>
<td>108</td>
<td>55</td>
<td>62</td>
<td>83</td>
<td>118.2</td>
</tr>
<tr>
<td>4000</td>
<td>116</td>
<td>107</td>
<td>52</td>
<td>62</td>
<td>82</td>
<td>116.3</td>
</tr>
<tr>
<td>5000</td>
<td>114</td>
<td>105</td>
<td>50</td>
<td>61</td>
<td>82</td>
<td>114.3</td>
</tr>
</tbody>
</table>

OASPL 142.1 122.6 97.6 84.9 102.6 142.2

58
CASE 13, W01, $T50 (STOL FLAPS=50)

ALT = 6500. FT  UEB = 50. DEG  R/RO = .648
VA = 110. FT/S  DOOR = CLOSED  THETAS = 5. DEG
VJ = 680. FT/S  UGS = UP  THETAP = 33. DEG

RIBBON  STA  WL  BL(IN)  BL(OUT)
AT NOZ EX  345.  213.  61.  115.
AT WNG TE  425.  201.  57.  133.
AT TR OFF  431.  198.  57.  133.
AT TR EDG  460.  179.  57.  133.

TRAIL EDGE  450.  162.  57.  133.

FIELD POINT  375.  212.  90.

FIELD POINT IN ZONE 1 AND IS ABOVE ON OR UNDER FLOW RIBBON
S = 30.0  DELTA = 3.5

PEAK JET MIX LEVEL = 127. DB AT 191. HZ
CORRECTION FOR UGS APPLIED
ISPL = 5. DB  FI = 2190. HZ
PEAK NEAR NOZ LEVEL = 130. DB AT 938. HZ
STE = 122.  DELTATE = 20.
PEAK TRAIL EDGE LEVEL = 64. DB AT 110. HZ
PEAK SEP LEVEL = 88. DB AT 33. HZ
PEAK TBL LEVEL = 114. DB AT 912. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>117</td>
<td>111</td>
<td>51</td>
<td>88</td>
<td>101</td>
<td>113</td>
</tr>
<tr>
<td>31</td>
<td>119</td>
<td>113</td>
<td>53</td>
<td>88</td>
<td>102</td>
<td>119.6</td>
</tr>
<tr>
<td>40</td>
<td>120</td>
<td>114</td>
<td>56</td>
<td>88</td>
<td>104</td>
<td>121.1</td>
</tr>
<tr>
<td>50</td>
<td>121</td>
<td>115</td>
<td>59</td>
<td>88</td>
<td>106</td>
<td>122.4</td>
</tr>
<tr>
<td>63</td>
<td>123</td>
<td>117</td>
<td>61</td>
<td>87</td>
<td>107</td>
<td>123.7</td>
</tr>
<tr>
<td>80</td>
<td>124</td>
<td>118</td>
<td>63</td>
<td>87</td>
<td>108</td>
<td>125.1</td>
</tr>
<tr>
<td>100</td>
<td>125</td>
<td>119</td>
<td>64</td>
<td>86</td>
<td>109</td>
<td>126.3</td>
</tr>
<tr>
<td>125</td>
<td>126</td>
<td>121</td>
<td>64</td>
<td>86</td>
<td>110</td>
<td>127.4</td>
</tr>
<tr>
<td>160</td>
<td>127</td>
<td>122</td>
<td>63</td>
<td>85</td>
<td>111</td>
<td>128.2</td>
</tr>
<tr>
<td>200</td>
<td>127</td>
<td>123</td>
<td>61</td>
<td>85</td>
<td>111</td>
<td>128.6</td>
</tr>
<tr>
<td>250</td>
<td>127</td>
<td>125</td>
<td>58</td>
<td>84</td>
<td>112</td>
<td>128.9</td>
</tr>
<tr>
<td>315</td>
<td>126</td>
<td>126</td>
<td>56</td>
<td>84</td>
<td>112</td>
<td>129.1</td>
</tr>
<tr>
<td>400</td>
<td>125</td>
<td>127</td>
<td>53</td>
<td>83</td>
<td>113</td>
<td>129.3</td>
</tr>
<tr>
<td>500</td>
<td>123</td>
<td>129</td>
<td>50</td>
<td>82</td>
<td>113</td>
<td>129.8</td>
</tr>
<tr>
<td>630</td>
<td>123</td>
<td>130</td>
<td>47</td>
<td>82</td>
<td>113</td>
<td>130.6</td>
</tr>
<tr>
<td>800</td>
<td>123</td>
<td>130</td>
<td>45</td>
<td>81</td>
<td>114</td>
<td>131.0</td>
</tr>
<tr>
<td>1000</td>
<td>123</td>
<td>130</td>
<td>42</td>
<td>80</td>
<td>114</td>
<td>131.0</td>
</tr>
<tr>
<td>1250</td>
<td>122</td>
<td>130</td>
<td>40</td>
<td>79</td>
<td>113</td>
<td>130.7</td>
</tr>
<tr>
<td>1600</td>
<td>121</td>
<td>129</td>
<td>37</td>
<td>78</td>
<td>113</td>
<td>129.8</td>
</tr>
<tr>
<td>2000</td>
<td>120</td>
<td>128</td>
<td>34</td>
<td>77</td>
<td>113</td>
<td>128.7</td>
</tr>
<tr>
<td>2500</td>
<td>119</td>
<td>127</td>
<td>32</td>
<td>77</td>
<td>112</td>
<td>127.4</td>
</tr>
<tr>
<td>3150</td>
<td>117</td>
<td>125</td>
<td>29</td>
<td>76</td>
<td>112</td>
<td>126.1</td>
</tr>
<tr>
<td>4000</td>
<td>115</td>
<td>124</td>
<td>26</td>
<td>75</td>
<td>111</td>
<td>124.6</td>
</tr>
<tr>
<td>5000</td>
<td>113</td>
<td>123</td>
<td>24</td>
<td>74</td>
<td>111</td>
<td>123.3</td>
</tr>
</tbody>
</table>

OASPL 137.1 139.7 71.4 98.2 125.1 141.7
CASE 14, W02, ST50 (STOL FLAPS=50)

ALT = 6500. FT USB = 50. DEG R/RO = .648
VA = 110. FT/S DOOR = CLOSED THETAS = 5. DEG
VJ = 680. FT/S VGS = UP THETAP = 33. DEG

RIBBON STA WL (IN) BL (OUT)
AT NOZ EX 345. 213. 61. 115.
AT WNG TE 425. 201. 57. 133.
AT TR OFF 431. 198. 57. 133.
AT TR EDG 460. 179. 57. 133.

TRAIL EDGE 450. 162. 57. 133.

FIELD POINT 395. 206. 90.

FIELD POINT IN ZONE 1 AND IS ABOVE, ON OR UNDER FLOW RIBBON
$ = 50.0 DELTA = .5

PEAK JET MIX LEVEL = 132. DB AT 164. HZ
CORRECTION FOR VGS APPLIED
DSPL = 5. DB F1 = 2190. HZ
PEAK NEAR NOZ LEVEL = 127. DB AT 938. HZ
STE = 122. DELTATE = 20.
PEAK TRAIL EDGE LEVEL = 84. DB AT 110. HZ
PEAK SEP LEVEL = 95. DB AT 33. HZ
PEAK TEL LEVEL = 121. DB AT 1755. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>123</td>
<td>108</td>
<td>71</td>
<td>94</td>
<td>103</td>
<td>123.4</td>
</tr>
<tr>
<td>31</td>
<td>124</td>
<td>109</td>
<td>74</td>
<td>95</td>
<td>105</td>
<td>124.7</td>
</tr>
<tr>
<td>40</td>
<td>126</td>
<td>110</td>
<td>77</td>
<td>94</td>
<td>106</td>
<td>126.1</td>
</tr>
<tr>
<td>50</td>
<td>127</td>
<td>112</td>
<td>79</td>
<td>94</td>
<td>108</td>
<td>127.4</td>
</tr>
<tr>
<td>63</td>
<td>129</td>
<td>113</td>
<td>82</td>
<td>94</td>
<td>110</td>
<td>128.8</td>
</tr>
<tr>
<td>80</td>
<td>130</td>
<td>115</td>
<td>84</td>
<td>93</td>
<td>111</td>
<td>130.2</td>
</tr>
<tr>
<td>100</td>
<td>131</td>
<td>116</td>
<td>84</td>
<td>93</td>
<td>113</td>
<td>131.3</td>
</tr>
<tr>
<td>125</td>
<td>132</td>
<td>117</td>
<td>94</td>
<td>92</td>
<td>114</td>
<td>132.0</td>
</tr>
<tr>
<td>160</td>
<td>132</td>
<td>119</td>
<td>83</td>
<td>92</td>
<td>115</td>
<td>132.4</td>
</tr>
<tr>
<td>200</td>
<td>132</td>
<td>120</td>
<td>81</td>
<td>91</td>
<td>116</td>
<td>132.3</td>
</tr>
<tr>
<td>250</td>
<td>131</td>
<td>121</td>
<td>79</td>
<td>91</td>
<td>117</td>
<td>132.0</td>
</tr>
<tr>
<td>315</td>
<td>130</td>
<td>122</td>
<td>76</td>
<td>90</td>
<td>118</td>
<td>131.2</td>
</tr>
<tr>
<td>400</td>
<td>129</td>
<td>124</td>
<td>73</td>
<td>89</td>
<td>119</td>
<td>130.4</td>
</tr>
<tr>
<td>500</td>
<td>128</td>
<td>125</td>
<td>71</td>
<td>89</td>
<td>119</td>
<td>130.0</td>
</tr>
<tr>
<td>630</td>
<td>128</td>
<td>126</td>
<td>68</td>
<td>86</td>
<td>120</td>
<td>130.3</td>
</tr>
<tr>
<td>800</td>
<td>127</td>
<td>127</td>
<td>65</td>
<td>87</td>
<td>120</td>
<td>130.5</td>
</tr>
<tr>
<td>1000</td>
<td>127</td>
<td>127</td>
<td>63</td>
<td>86</td>
<td>120</td>
<td>130.4</td>
</tr>
<tr>
<td>1250</td>
<td>127</td>
<td>126</td>
<td>60</td>
<td>86</td>
<td>121</td>
<td>130.0</td>
</tr>
<tr>
<td>1600</td>
<td>126</td>
<td>126</td>
<td>57</td>
<td>85</td>
<td>121</td>
<td>130.3</td>
</tr>
<tr>
<td>2000</td>
<td>125</td>
<td>124</td>
<td>55</td>
<td>84</td>
<td>121</td>
<td>129.3</td>
</tr>
<tr>
<td>2500</td>
<td>123</td>
<td>123</td>
<td>52</td>
<td>83</td>
<td>120</td>
<td>127.2</td>
</tr>
<tr>
<td>3150</td>
<td>122</td>
<td>122</td>
<td>50</td>
<td>82</td>
<td>120</td>
<td>126.0</td>
</tr>
<tr>
<td>4000</td>
<td>120</td>
<td>120</td>
<td>47</td>
<td>81</td>
<td>120</td>
<td>124.7</td>
</tr>
<tr>
<td>5000</td>
<td>118</td>
<td>119</td>
<td>44</td>
<td>81</td>
<td>119</td>
<td>123.5</td>
</tr>
</tbody>
</table>

DASPL 142.1 136.2 92.1 104.6 131.7 143.4
CASE 15*F01;ST50 (STOL FLAPS=50)

ALT= 6500. FT  USB =50. DEG  R/0D = .848
VA = 110. FT/S  DOOR= CLOSED  THETAS= 5. DEG
VJ = 680. FT/S  VGS = UP  THETAP=33. DEG

RIBBON  STA  WL  BL<IN> BL<OUT>
AT NOZ EX  345.  213.  61.  115.
AT WNG TE  425.  201.  57.  133.
AT TR OFF  431.  198.  57.  133.
AT TR EDG  460.  179.  57.  133.

TRAIL EDGE  450.  162.  57.  133.

FIELD POINT  432.  199.  60.

FIELD POINT IN ZONE 3 AND IS
ABOVE,ON OR UNDER FLOW RIBBON
S= 87.0  DELTA = 1.4

PEAK JET MIX LEVEL= 140. DB AT 131. HZ
CORRECTION FOR VGS APPLIED
DISPL= 5. DB  F1= 2190. HZ
PEAK NEAR NOZ LEVEL= 123. DB AT 938. HZ
STE= 122. ,DELTA= 20.
PEAK TRAIL EDGE LEVEL= 93. DB AT 110. HZ
PEAK SEP LEVEL= 106. DB AT 33. HZ
PEAK TEL LEVEL= 119. DB AT 1298. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TEL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>104</td>
<td>83</td>
<td>106</td>
<td>104</td>
<td>132.7</td>
<td></td>
</tr>
<tr>
<td>31</td>
<td>105</td>
<td>86</td>
<td>106</td>
<td>105</td>
<td>133.9</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>106</td>
<td>89</td>
<td>106</td>
<td>107</td>
<td>135.4</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>108</td>
<td>91</td>
<td>105</td>
<td>109</td>
<td>136.7</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>109</td>
<td>94</td>
<td>105</td>
<td>110</td>
<td>138.0</td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>110</td>
<td>95</td>
<td>104</td>
<td>112</td>
<td>139.3</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>112</td>
<td>96</td>
<td>104</td>
<td>113</td>
<td>139.9</td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>113</td>
<td>96</td>
<td>103</td>
<td>114</td>
<td>140.2</td>
<td></td>
</tr>
<tr>
<td>160</td>
<td>114</td>
<td>95</td>
<td>103</td>
<td>115</td>
<td>140.1</td>
<td></td>
</tr>
<tr>
<td>200</td>
<td>116</td>
<td>93</td>
<td>102</td>
<td>116</td>
<td>139.6</td>
<td></td>
</tr>
<tr>
<td>250</td>
<td>117</td>
<td>91</td>
<td>102</td>
<td>116</td>
<td>138.5</td>
<td></td>
</tr>
<tr>
<td>315</td>
<td>118</td>
<td>88</td>
<td>101</td>
<td>117</td>
<td>137.2</td>
<td></td>
</tr>
<tr>
<td>400</td>
<td>120</td>
<td>85</td>
<td>101</td>
<td>117</td>
<td>135.9</td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>121</td>
<td>83</td>
<td>100</td>
<td>118</td>
<td>134.7</td>
<td></td>
</tr>
<tr>
<td>630</td>
<td>122</td>
<td>80</td>
<td>99</td>
<td>118</td>
<td>134.7</td>
<td></td>
</tr>
<tr>
<td>800</td>
<td>122</td>
<td>77</td>
<td>98</td>
<td>119</td>
<td>134.6</td>
<td></td>
</tr>
<tr>
<td>1000</td>
<td>123</td>
<td>75</td>
<td>97</td>
<td>119</td>
<td>134.3</td>
<td></td>
</tr>
<tr>
<td>1250</td>
<td>122</td>
<td>72</td>
<td>97</td>
<td>119</td>
<td>133.8</td>
<td></td>
</tr>
<tr>
<td>1600</td>
<td>121</td>
<td>69</td>
<td>96</td>
<td>119</td>
<td>132.9</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>120</td>
<td>67</td>
<td>95</td>
<td>119</td>
<td>131.9</td>
<td></td>
</tr>
<tr>
<td>2500</td>
<td>119</td>
<td>64</td>
<td>94</td>
<td>118</td>
<td>130.6</td>
<td></td>
</tr>
<tr>
<td>3150</td>
<td>118</td>
<td>61</td>
<td>93</td>
<td>118</td>
<td>129.1</td>
<td></td>
</tr>
<tr>
<td>4000</td>
<td>116</td>
<td>59</td>
<td>92</td>
<td>117</td>
<td>127.3</td>
<td></td>
</tr>
<tr>
<td>5000</td>
<td>115</td>
<td>56</td>
<td>92</td>
<td>117</td>
<td>125.5</td>
<td></td>
</tr>
</tbody>
</table>

OASPL 150.0 132.0 103.9 115.8 130.2 150.1
CASE 16, F02, ST50 (STOL FLAPS=50)

ALT = 6500. FT  USB = 50. DEG  R/RO = .848
VA = 110. FT/S  DOOR = CLOSED  THETAS = 5. DEG
UJ = 680. FT/S  VGS = UP  THETAP = 33. DEG

RIBBON  STA  WL  BL(IN)  BL(OUT)
AT NOZ EX  345.  213.  61.  115.
AT WNG TE  425.  201.  57.  133.
AT TR OFF  431.  198.  57.  133.
AT TR EDG  460.  179.  57.  133.

TRAIL EDGE  450.  162.  57.  133.

FIELD POINT  432.  199.  90.

FIELD POINT IN ZONE 3 AND IS
ABOVE, ON OR UNDER FLOW RIBBON
s = 87.0  DELTA = 1.4

PEAK JET MIX LEVEL= 140. DB AT 131. HZ
CORRECTION FOR VGs APPLIED
DISPL = 5. DB  F1 = 2190. HZ
PEAK NEAR NOZ LEVEL= 123. DB AT 938. HZ
STE = 122.  DELTATE = 20.
PEAK TRAIL EDGE LEVEL = 101. DB AT 110. HZ
PEAK SEP LEVEL = 114. DB AT 33. HZ
PEAK TBL LEVEL = 119. DB AT 1298. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>133</td>
<td>104</td>
<td>98</td>
<td>113</td>
<td>104</td>
<td>132.7</td>
</tr>
<tr>
<td>31</td>
<td>134</td>
<td>105</td>
<td>90</td>
<td>114</td>
<td>105</td>
<td>134.0</td>
</tr>
<tr>
<td>40</td>
<td>135</td>
<td>106</td>
<td>93</td>
<td>113</td>
<td>107</td>
<td>135.4</td>
</tr>
<tr>
<td>50</td>
<td>137</td>
<td>108</td>
<td>96</td>
<td>113</td>
<td>109</td>
<td>136.7</td>
</tr>
<tr>
<td>63</td>
<td>138</td>
<td>109</td>
<td>98</td>
<td>113</td>
<td>110</td>
<td>138.0</td>
</tr>
<tr>
<td>80</td>
<td>139</td>
<td>110</td>
<td>100</td>
<td>112</td>
<td>112</td>
<td>139.3</td>
</tr>
<tr>
<td>100</td>
<td>140</td>
<td>112</td>
<td>101</td>
<td>112</td>
<td>113</td>
<td>140.0</td>
</tr>
<tr>
<td>125</td>
<td>140</td>
<td>113</td>
<td>101</td>
<td>111</td>
<td>114</td>
<td>140.2</td>
</tr>
<tr>
<td>150</td>
<td>140</td>
<td>114</td>
<td>100</td>
<td>111</td>
<td>115</td>
<td>140.1</td>
</tr>
<tr>
<td>200</td>
<td>140</td>
<td>116</td>
<td>98</td>
<td>110</td>
<td>116</td>
<td>139.6</td>
</tr>
<tr>
<td>250</td>
<td>138</td>
<td>117</td>
<td>95</td>
<td>110</td>
<td>116</td>
<td>138.5</td>
</tr>
<tr>
<td>315</td>
<td>137</td>
<td>118</td>
<td>93</td>
<td>109</td>
<td>117</td>
<td>137.2</td>
</tr>
<tr>
<td>400</td>
<td>136</td>
<td>120</td>
<td>90</td>
<td>108</td>
<td>117</td>
<td>135.9</td>
</tr>
<tr>
<td>500</td>
<td>134</td>
<td>121</td>
<td>87</td>
<td>108</td>
<td>118</td>
<td>134.7</td>
</tr>
<tr>
<td>630</td>
<td>134</td>
<td>122</td>
<td>85</td>
<td>107</td>
<td>118</td>
<td>134.7</td>
</tr>
<tr>
<td>800</td>
<td>134</td>
<td>122</td>
<td>82</td>
<td>106</td>
<td>119</td>
<td>134.6</td>
</tr>
<tr>
<td>1000</td>
<td>134</td>
<td>123</td>
<td>79</td>
<td>105</td>
<td>119</td>
<td>134.3</td>
</tr>
<tr>
<td>1250</td>
<td>133</td>
<td>122</td>
<td>77</td>
<td>104</td>
<td>119</td>
<td>133.8</td>
</tr>
<tr>
<td>1600</td>
<td>132</td>
<td>121</td>
<td>74</td>
<td>104</td>
<td>119</td>
<td>132.9</td>
</tr>
<tr>
<td>2000</td>
<td>131</td>
<td>120</td>
<td>71</td>
<td>103</td>
<td>119</td>
<td>131.9</td>
</tr>
<tr>
<td>2500</td>
<td>130</td>
<td>119</td>
<td>69</td>
<td>102</td>
<td>118</td>
<td>130.6</td>
</tr>
<tr>
<td>3150</td>
<td>128</td>
<td>118</td>
<td>66</td>
<td>101</td>
<td>118</td>
<td>129.1</td>
</tr>
<tr>
<td>4000</td>
<td>126</td>
<td>116</td>
<td>63</td>
<td>100</td>
<td>117</td>
<td>127.3</td>
</tr>
<tr>
<td>5000</td>
<td>124</td>
<td>115</td>
<td>61</td>
<td>99</td>
<td>117</td>
<td>125.5</td>
</tr>
</tbody>
</table>

OASPL 150.0  132.0  108.5  123.5  130.2  150.2
**CASE 17, F03, ST50 (SIDL FLAPS=50)**

<table>
<thead>
<tr>
<th>Location</th>
<th>STA</th>
<th>WL (IN)</th>
<th>WL (OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Noz Ex</td>
<td>345</td>
<td>213</td>
<td>61</td>
</tr>
<tr>
<td>At Wng Tc</td>
<td>425</td>
<td>201</td>
<td>57</td>
</tr>
<tr>
<td>At Tr Off</td>
<td>431</td>
<td>198</td>
<td>57</td>
</tr>
<tr>
<td>At Tr Edg</td>
<td>460</td>
<td>179</td>
<td>57</td>
</tr>
</tbody>
</table>

**TRAIL EDGE** 450, 162, 57, 133.

**FIELD POINT** 432, 199, 130.

**FIELD POINT IN ZONE 3 AND IS ABOVE, ON OR UNDER FLOW RIBBON**

s = 87.0  \( \Delta = 1.4 \)

**PEAK JET MIX LEVEL** = 140. DB AT 131. HZ

**CORRECTION FOR VGS APPLIED**

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>133</td>
<td>104</td>
<td>83</td>
<td>117</td>
<td>104</td>
<td>132.8</td>
</tr>
<tr>
<td>31</td>
<td>134</td>
<td>105</td>
<td>86</td>
<td>117</td>
<td>105</td>
<td>134.0</td>
</tr>
<tr>
<td>40</td>
<td>135</td>
<td>106</td>
<td>89</td>
<td>117</td>
<td>107</td>
<td>135.4</td>
</tr>
<tr>
<td>50</td>
<td>137</td>
<td>108</td>
<td>91</td>
<td>116</td>
<td>109</td>
<td>136.7</td>
</tr>
<tr>
<td>63</td>
<td>138</td>
<td>109</td>
<td>94</td>
<td>116</td>
<td>110</td>
<td>138.0</td>
</tr>
<tr>
<td>80</td>
<td>139</td>
<td>110</td>
<td>96</td>
<td>115</td>
<td>112</td>
<td>139.3</td>
</tr>
<tr>
<td>100</td>
<td>140</td>
<td>112</td>
<td>96</td>
<td>115</td>
<td>113</td>
<td>140.0</td>
</tr>
<tr>
<td>125</td>
<td>140</td>
<td>113</td>
<td>96</td>
<td>114</td>
<td>114</td>
<td>140.2</td>
</tr>
<tr>
<td>160</td>
<td>140</td>
<td>114</td>
<td>95</td>
<td>114</td>
<td>115</td>
<td>140.1</td>
</tr>
<tr>
<td>200</td>
<td>140</td>
<td>116</td>
<td>93</td>
<td>113</td>
<td>116</td>
<td>139.6</td>
</tr>
<tr>
<td>250</td>
<td>138</td>
<td>117</td>
<td>91</td>
<td>113</td>
<td>116</td>
<td>138.5</td>
</tr>
<tr>
<td>315</td>
<td>137</td>
<td>118</td>
<td>88</td>
<td>112</td>
<td>117</td>
<td>137.2</td>
</tr>
<tr>
<td>400</td>
<td>136</td>
<td>120</td>
<td>85</td>
<td>112</td>
<td>117</td>
<td>135.9</td>
</tr>
<tr>
<td>500</td>
<td>134</td>
<td>121</td>
<td>83</td>
<td>111</td>
<td>118</td>
<td>134.8</td>
</tr>
<tr>
<td>630</td>
<td>134</td>
<td>122</td>
<td>80</td>
<td>110</td>
<td>118</td>
<td>134.7</td>
</tr>
<tr>
<td>800</td>
<td>134</td>
<td>122</td>
<td>77</td>
<td>109</td>
<td>119</td>
<td>134.7</td>
</tr>
<tr>
<td>1000</td>
<td>134</td>
<td>123</td>
<td>75</td>
<td>106</td>
<td>119</td>
<td>134.4</td>
</tr>
<tr>
<td>1250</td>
<td>133</td>
<td>122</td>
<td>72</td>
<td>108</td>
<td>119</td>
<td>133.8</td>
</tr>
<tr>
<td>1600</td>
<td>132</td>
<td>121</td>
<td>69</td>
<td>107</td>
<td>119</td>
<td>132.9</td>
</tr>
<tr>
<td>2000</td>
<td>131</td>
<td>120</td>
<td>67</td>
<td>106</td>
<td>119</td>
<td>131.9</td>
</tr>
<tr>
<td>2500</td>
<td>130</td>
<td>119</td>
<td>64</td>
<td>105</td>
<td>118</td>
<td>130.6</td>
</tr>
<tr>
<td>3150</td>
<td>128</td>
<td>118</td>
<td>61</td>
<td>104</td>
<td>118</td>
<td>129.1</td>
</tr>
<tr>
<td>4000</td>
<td>126</td>
<td>116</td>
<td>59</td>
<td>103</td>
<td>117</td>
<td>127.3</td>
</tr>
<tr>
<td>5000</td>
<td>124</td>
<td>115</td>
<td>56</td>
<td>103</td>
<td>117</td>
<td>125.5</td>
</tr>
</tbody>
</table>

**SPL IN DB RE 200 PICOBAR (BY COMP AND SUM)**

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>104</td>
<td>132</td>
<td>104</td>
<td>104</td>
<td>132</td>
<td>132</td>
<td></td>
</tr>
</tbody>
</table>

**SPL IN DB RE 150.0**

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>104</td>
<td>132</td>
<td>104</td>
<td>104</td>
<td>132</td>
<td>132</td>
<td></td>
</tr>
</tbody>
</table>
CASE 10, F04, ST50 (STOL FLAPS=50)

ALY = 6500. FT  USB = 50, DEG R/HO = .848
VA = 110. FT/S  UWR= CLOSED THETAS= 5. DEG
VH = 680. FT/S  VGS = UP  THETA= 33. DEG

RIBBON  STA  WL  BL(IN)  BL(OUT)
AT NOZ EX 435.  213.  61.  115.
AT WNG TE 425.  201.  57.  133.
AT TR OFF 431.  198.  57.  133.
AT TR EDG 460.  179.  57.  133.

TRAIL EDGE  450.  162.  57.  133.

FIELD POINT  445.  177.  60.

FIELD POINT IN ZONE 3 AND IS
ABOVE ON OR UNDER FLOW RIBBON
S= 109.9 DELTA= 10.0

PEAK JET MIX LEVEL= 137. DB AT 116. HZ
CORRECTION FOR VGS APPLIED
DSPL= 5. DB  F1= 2190. HZ
PEAK NEAR NOZ LEVEL= 117. DB AT 938. HZ
STE= 122. 21E= 20.
PEAK TRAIL EDGE LEVEL= 90. DB AT 110. HZ
PEAK SEP LEVEL= 127. DB AT 33. HZ
PEAK TML LEVEL= 90. DB AT 118. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TML</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>131.98</td>
<td>77.</td>
<td>127.</td>
<td>88.</td>
<td>132.2</td>
<td></td>
</tr>
<tr>
<td>31.</td>
<td>132.99</td>
<td>79.</td>
<td>127.</td>
<td>88.</td>
<td>133.2</td>
<td></td>
</tr>
<tr>
<td>40.</td>
<td>133.10</td>
<td>82.</td>
<td>127.</td>
<td>89.</td>
<td>134.3</td>
<td></td>
</tr>
<tr>
<td>50.</td>
<td>135.10</td>
<td>85.</td>
<td>126.</td>
<td>89.</td>
<td>135.3</td>
<td></td>
</tr>
<tr>
<td>63.</td>
<td>136.10</td>
<td>87.</td>
<td>126.</td>
<td>89.</td>
<td>136.4</td>
<td></td>
</tr>
<tr>
<td>80.</td>
<td>137.10</td>
<td>89.</td>
<td>125.</td>
<td>90.</td>
<td>137.2</td>
<td></td>
</tr>
<tr>
<td>100.</td>
<td>137.10</td>
<td>89.</td>
<td>125.</td>
<td>90.</td>
<td>137.6</td>
<td></td>
</tr>
<tr>
<td>125.</td>
<td>137.10</td>
<td>89.</td>
<td>124.</td>
<td>90.</td>
<td>137.6</td>
<td></td>
</tr>
<tr>
<td>160.</td>
<td>137.10</td>
<td>88.</td>
<td>124.</td>
<td>90.</td>
<td>137.6</td>
<td></td>
</tr>
<tr>
<td>200.</td>
<td>136.11</td>
<td>87.</td>
<td>123.</td>
<td>89.</td>
<td>136.4</td>
<td></td>
</tr>
<tr>
<td>250.</td>
<td>135.11</td>
<td>84.</td>
<td>123.</td>
<td>89.</td>
<td>135.3</td>
<td></td>
</tr>
<tr>
<td>315.</td>
<td>134.12</td>
<td>81.</td>
<td>122.</td>
<td>89.</td>
<td>134.0</td>
<td></td>
</tr>
<tr>
<td>400.</td>
<td>132.14</td>
<td>79.</td>
<td>122.</td>
<td>88.</td>
<td>132.7</td>
<td></td>
</tr>
<tr>
<td>500.</td>
<td>131.15</td>
<td>76.</td>
<td>121.</td>
<td>88.</td>
<td>131.5</td>
<td></td>
</tr>
<tr>
<td>630.</td>
<td>131.16</td>
<td>73.</td>
<td>120.</td>
<td>87.</td>
<td>131.4</td>
<td></td>
</tr>
<tr>
<td>800.</td>
<td>131.16</td>
<td>71.</td>
<td>119.</td>
<td>87.</td>
<td>131.2</td>
<td></td>
</tr>
<tr>
<td>1000.</td>
<td>130.17</td>
<td>68.</td>
<td>119.</td>
<td>86.</td>
<td>130.9</td>
<td></td>
</tr>
<tr>
<td>1250.</td>
<td>130.16</td>
<td>65.</td>
<td>118.</td>
<td>85.</td>
<td>130.3</td>
<td></td>
</tr>
<tr>
<td>1600.</td>
<td>129.15</td>
<td>63.</td>
<td>117.</td>
<td>85.</td>
<td>129.4</td>
<td></td>
</tr>
<tr>
<td>2000.</td>
<td>129.14</td>
<td>60.</td>
<td>116.</td>
<td>84.</td>
<td>128.3</td>
<td></td>
</tr>
<tr>
<td>2500.</td>
<td>127.13</td>
<td>57.</td>
<td>115.</td>
<td>83.</td>
<td>127.0</td>
<td></td>
</tr>
<tr>
<td>3150.</td>
<td>125.12</td>
<td>55.</td>
<td>114.</td>
<td>82.</td>
<td>125.5</td>
<td></td>
</tr>
<tr>
<td>4000.</td>
<td>123.11</td>
<td>52.</td>
<td>113.</td>
<td>81.</td>
<td>123.7</td>
<td></td>
</tr>
<tr>
<td>5000.</td>
<td>121.10</td>
<td>49.</td>
<td>113.</td>
<td>81.</td>
<td>121.0</td>
<td></td>
</tr>
</tbody>
</table>

DASPL  147.2  126.0  97.2  136.8  101.5  147.6
**CASE 11, F05, ST50 (STOL FLAPS=50)**

- **ALT:** 6500. FT
- **USB:** =50. DEG
- **R/RO:** = .848
- **VA:** = 110. FT/S
- **DOOR:** = CLOSED
- **THETAS:** = 5. DEG
- **UJ:** = 680. FT/S
- **VGS:** = UP
- **THETAP:** = 33. DEG

**RIBBON**

<table>
<thead>
<tr>
<th>STA</th>
<th>WL</th>
<th>BL (IN)</th>
<th>BL (OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT NOZ EX</td>
<td>345.</td>
<td>213.</td>
<td>61.</td>
</tr>
<tr>
<td>AT WNG TE</td>
<td>425.</td>
<td>201.</td>
<td>57.</td>
</tr>
<tr>
<td>AT TR OFF</td>
<td>431.</td>
<td>198.</td>
<td>57.</td>
</tr>
<tr>
<td>AT TR EDG</td>
<td>460.</td>
<td>179.</td>
<td>57.</td>
</tr>
</tbody>
</table>

**TRAIL EDGE**

- 450. 162. 57. 133.

**FIELD POINT**

- 445. 177. 90.

FIELD POINT IN ZONE 3 AND IS ABOVE, ON OR UNDER FLOW RIBBON

- S = 109.9 DELTA = 10.0

**PEAK JET MIX LEVEL**: 137. DB AT 116. HZ

**CORRECTION FOR VGS APPLIED**

- **DSPL**: 5. DB
- **F1**: = 2.900. HZ
- **PEAK NEAR NOZ LEVEL**: 117. DB AT 938. HZ
- **STE**: 122. DELTATE = 20.

**PEAK TRAIL EDGE LEVEL**: 103. DB AT 110. HZ

**PEAK SEP LEVEL**: 125. DB AT 33. HZ

**PEAK TBL LEVEL**: 90. DB AT 118. HZ

**SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)**

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>131</td>
<td>96</td>
<td>90</td>
<td>134</td>
<td>88</td>
<td>135.9</td>
</tr>
<tr>
<td>31</td>
<td>132</td>
<td>99</td>
<td>92</td>
<td>135</td>
<td>88</td>
<td>136.5</td>
</tr>
<tr>
<td>40</td>
<td>133</td>
<td>100</td>
<td>95</td>
<td>134</td>
<td>89</td>
<td>136.9</td>
</tr>
<tr>
<td>50</td>
<td>135</td>
<td>102</td>
<td>98</td>
<td>134</td>
<td>89</td>
<td>137.4</td>
</tr>
<tr>
<td>63</td>
<td>136</td>
<td>103</td>
<td>100</td>
<td>134</td>
<td>89</td>
<td>138.0</td>
</tr>
<tr>
<td>80</td>
<td>137</td>
<td>104</td>
<td>102</td>
<td>133</td>
<td>90</td>
<td>138.5</td>
</tr>
<tr>
<td>100</td>
<td>137</td>
<td>106</td>
<td>103</td>
<td>133</td>
<td>90</td>
<td>138.6</td>
</tr>
<tr>
<td>125</td>
<td>137</td>
<td>107</td>
<td>103</td>
<td>132</td>
<td>90</td>
<td>138.5</td>
</tr>
<tr>
<td>150</td>
<td>137</td>
<td>108</td>
<td>102</td>
<td>132</td>
<td>90</td>
<td>138.1</td>
</tr>
<tr>
<td>200</td>
<td>136</td>
<td>110</td>
<td>100</td>
<td>121</td>
<td>89</td>
<td>137.4</td>
</tr>
<tr>
<td>250</td>
<td>135</td>
<td>111</td>
<td>97</td>
<td>131</td>
<td>89</td>
<td>136.4</td>
</tr>
<tr>
<td>315</td>
<td>134</td>
<td>112</td>
<td>95</td>
<td>130</td>
<td>89</td>
<td>135.3</td>
</tr>
<tr>
<td>400</td>
<td>132</td>
<td>114</td>
<td>92</td>
<td>129</td>
<td>88</td>
<td>134.1</td>
</tr>
<tr>
<td>500</td>
<td>131</td>
<td>115</td>
<td>89</td>
<td>129</td>
<td>88</td>
<td>133.1</td>
</tr>
<tr>
<td>630</td>
<td>131</td>
<td>116</td>
<td>87</td>
<td>128</td>
<td>87</td>
<td>132.8</td>
</tr>
<tr>
<td>800</td>
<td>131</td>
<td>115</td>
<td>84</td>
<td>127</td>
<td>87</td>
<td>132.4</td>
</tr>
<tr>
<td>1000</td>
<td>130</td>
<td>117</td>
<td>81</td>
<td>126</td>
<td>86</td>
<td>132.0</td>
</tr>
<tr>
<td>1250</td>
<td>130</td>
<td>116</td>
<td>79</td>
<td>125</td>
<td>85</td>
<td>131.3</td>
</tr>
<tr>
<td>1600</td>
<td>129</td>
<td>115</td>
<td>76</td>
<td>125</td>
<td>85</td>
<td>130.4</td>
</tr>
<tr>
<td>2000</td>
<td>128</td>
<td>114</td>
<td>73</td>
<td>124</td>
<td>84</td>
<td>129.4</td>
</tr>
<tr>
<td>2500</td>
<td>127</td>
<td>113</td>
<td>71</td>
<td>123</td>
<td>83</td>
<td>128.3</td>
</tr>
<tr>
<td>3150</td>
<td>125</td>
<td>112</td>
<td>68</td>
<td>122</td>
<td>82</td>
<td>126.9</td>
</tr>
<tr>
<td>4000</td>
<td>123</td>
<td>110</td>
<td>65</td>
<td>121</td>
<td>81</td>
<td>125.4</td>
</tr>
<tr>
<td>5000</td>
<td>121</td>
<td>109</td>
<td>63</td>
<td>120</td>
<td>81</td>
<td>123.9</td>
</tr>
</tbody>
</table>

**DASPL 147.2 126.0 110.6 144.5 101.5 149.1**
CASE 12, F06, S150 (STOL FLAPS=50)

\[ \text{ALT} = 6500 \text{ FT} \quad \text{USB} = 50 \text{ DEG} \quad R/RD = .648 \]
\[ \text{VA} = 110 \text{ FT/S} \quad \text{MOD= CLOSED} \quad \text{THETAS= 5 } \text{ DEG} \]
\[ \text{VJ} = 680 \text{ FT/S} \quad \text{VGS = UP} \quad \text{THETA=33 } \text{ DEG} \]

RIBBON

<table>
<thead>
<tr>
<th>STA</th>
<th>WL</th>
<th>BL (IND)</th>
<th>BL (OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT NOZ EX</td>
<td>345</td>
<td>213</td>
<td>61</td>
</tr>
<tr>
<td>AT WNG TE</td>
<td>425</td>
<td>201</td>
<td>57</td>
</tr>
<tr>
<td>AT TR OFF</td>
<td>431</td>
<td>198</td>
<td>57</td>
</tr>
<tr>
<td>AT TR ED5</td>
<td>460</td>
<td>179</td>
<td>57</td>
</tr>
</tbody>
</table>

TRAIL EDGE

| 450 | 162 | 57 | 133 |

FIELD POINT

| 445 | 177 | 13C |

FIELD POINT IN ZONE 3 AND IS ABOVE, ON OR UNDER FLOW RIBBON

\[ S = 109.9 \quad \text{DELT}A = 10.0 \]

PEAK JET MIX LEVEL = 137, DB AT 116, HZ
CORRECTION FOR VGS APPLIED

\[ \text{DSPL} = 5, \text{ DB} \quad F1 = 2190, \text{ HZ} \]
\[ \text{PEAK NEAR NOZ LEVEL} = 117, \text{ DB AT 938, HZ} \]
\[ \text{STE} = 192, \quad \text{DELTA=} = 20, \]
\[ \text{PEAK TRAIL EDGE LEVEL} = 90, \text{ DB AT 110, HZ} \]
\[ \text{PEAK SEP LEVEL} = 138, \text{ DB AT 33, HZ} \]
\[ \text{PEAK TBL LEVEL} = 90, \text{ DB AT 118, HZ} \]

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>131</td>
<td>93</td>
<td>77</td>
<td>138</td>
<td>88</td>
<td>138.4</td>
</tr>
<tr>
<td>31</td>
<td>132</td>
<td>99</td>
<td>79</td>
<td>138</td>
<td>88</td>
<td>138.8</td>
</tr>
<tr>
<td>40</td>
<td>133</td>
<td>100</td>
<td>82</td>
<td>138</td>
<td>89</td>
<td>139.0</td>
</tr>
<tr>
<td>50</td>
<td>135</td>
<td>102</td>
<td>85</td>
<td>137</td>
<td>89</td>
<td>139.2</td>
</tr>
<tr>
<td>63</td>
<td>136</td>
<td>103</td>
<td>87</td>
<td>137</td>
<td>89</td>
<td>139.5</td>
</tr>
<tr>
<td>80</td>
<td>137</td>
<td>104</td>
<td>89</td>
<td>136</td>
<td>90</td>
<td>139.7</td>
</tr>
<tr>
<td>100</td>
<td>137</td>
<td>106</td>
<td>90</td>
<td>136</td>
<td>90</td>
<td>139.7</td>
</tr>
<tr>
<td>125</td>
<td>137</td>
<td>107</td>
<td>90</td>
<td>135</td>
<td>90</td>
<td>139.5</td>
</tr>
<tr>
<td>160</td>
<td>137</td>
<td>108</td>
<td>89</td>
<td>135</td>
<td>90</td>
<td>139.1</td>
</tr>
<tr>
<td>200</td>
<td>136</td>
<td>110</td>
<td>87</td>
<td>134</td>
<td>89</td>
<td>138.4</td>
</tr>
<tr>
<td>250</td>
<td>135</td>
<td>111</td>
<td>84</td>
<td>134</td>
<td>89</td>
<td>137.5</td>
</tr>
<tr>
<td>315</td>
<td>134</td>
<td>112</td>
<td>82</td>
<td>133</td>
<td>89</td>
<td>136.8</td>
</tr>
<tr>
<td>400</td>
<td>132</td>
<td>114</td>
<td>79</td>
<td>133</td>
<td>88</td>
<td>135.8</td>
</tr>
<tr>
<td>500</td>
<td>131</td>
<td>115</td>
<td>76</td>
<td>132</td>
<td>88</td>
<td>134.6</td>
</tr>
<tr>
<td>630</td>
<td>131</td>
<td>116</td>
<td>74</td>
<td>131</td>
<td>87</td>
<td>134.1</td>
</tr>
<tr>
<td>800</td>
<td>131</td>
<td>116</td>
<td>71</td>
<td>130</td>
<td>87</td>
<td>133.6</td>
</tr>
<tr>
<td>1000</td>
<td>130</td>
<td>117</td>
<td>68</td>
<td>130</td>
<td>86</td>
<td>133.1</td>
</tr>
<tr>
<td>1250</td>
<td>130</td>
<td>116</td>
<td>66</td>
<td>129</td>
<td>85</td>
<td>132.4</td>
</tr>
<tr>
<td>1600</td>
<td>129</td>
<td>115</td>
<td>63</td>
<td>128</td>
<td>85</td>
<td>131.5</td>
</tr>
<tr>
<td>2000</td>
<td>128</td>
<td>114</td>
<td>60</td>
<td>127</td>
<td>84</td>
<td>130.6</td>
</tr>
<tr>
<td>2500</td>
<td>127</td>
<td>113</td>
<td>58</td>
<td>126</td>
<td>83</td>
<td>129.5</td>
</tr>
<tr>
<td>3150</td>
<td>125</td>
<td>112</td>
<td>55</td>
<td>125</td>
<td>82</td>
<td>128.3</td>
</tr>
<tr>
<td>4000</td>
<td>123</td>
<td>110</td>
<td>52</td>
<td>124</td>
<td>81</td>
<td>126.9</td>
</tr>
<tr>
<td>5000</td>
<td>121</td>
<td>109</td>
<td>50</td>
<td>124</td>
<td>81</td>
<td>125.6</td>
</tr>
</tbody>
</table>

OASPL 147.2 126.0 97.4 147.8 101.5 150.5
SECTION II
COMPUTER TABULATIONS FOR FIELD POINT NOISE LEVELS AT BRAKE RELEASE DUE TO INBOARD ENGINES
**PROGRAM USBEST-VERSION 06/MAY/78**
**UPDATED MARCH 1979 L.BUTZEL**
**GENERATES SPL ESTIMATE OF EXTERIOR**
**FUSELAGE/FLAP, WING FLUCTUATING**
**PRESSURE LEVELS FOR USB AIRCRAFT**

**AUTHORS = L. BUTZEL, W. LUNDT**
**USER DOCUMENTATION = D6-XXXXX**
**RUN DATE = 79/03/21.**

**A/P GEOMETRY CHANGES ARE**

<table>
<thead>
<tr>
<th>PARAM</th>
<th>NEW</th>
<th>OLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>THUKD</td>
<td>20.0</td>
<td>-.1</td>
</tr>
<tr>
<td>THKD</td>
<td>0.0</td>
<td>-.1</td>
</tr>
<tr>
<td>THDK</td>
<td>0.0</td>
<td>-.1</td>
</tr>
<tr>
<td>THKD</td>
<td>12.0</td>
<td>-.1</td>
</tr>
<tr>
<td>THTB</td>
<td>0.0</td>
<td>-.1</td>
</tr>
<tr>
<td>THSK</td>
<td>12.0</td>
<td>-.1</td>
</tr>
<tr>
<td>THN</td>
<td>19.0</td>
<td>-.1</td>
</tr>
<tr>
<td>AEFF</td>
<td>770.0</td>
<td>-.1</td>
</tr>
<tr>
<td>ADDOR</td>
<td>0.0</td>
<td>-.1</td>
</tr>
<tr>
<td>AVG</td>
<td>5.0</td>
<td>-.1</td>
</tr>
<tr>
<td>NUG</td>
<td>12.0</td>
<td>-1.0</td>
</tr>
<tr>
<td>W</td>
<td>54.0</td>
<td>-.1</td>
</tr>
<tr>
<td>LW</td>
<td>80.0</td>
<td>-.1</td>
</tr>
<tr>
<td>RF</td>
<td>26.0</td>
<td>-.1</td>
</tr>
<tr>
<td>XO</td>
<td>88.0</td>
<td>-.1</td>
</tr>
<tr>
<td>YO</td>
<td>345.0</td>
<td>-.1</td>
</tr>
<tr>
<td>Z0</td>
<td>213.0</td>
<td>-.1</td>
</tr>
<tr>
<td>Z1</td>
<td>201.0</td>
<td>-.1</td>
</tr>
<tr>
<td>LT</td>
<td>25.0</td>
<td>-.1</td>
</tr>
<tr>
<td>YR</td>
<td>0.0</td>
<td>-.1</td>
</tr>
<tr>
<td>LFAN</td>
<td>150.0</td>
<td>-.1</td>
</tr>
<tr>
<td>XBBL</td>
<td>57.0</td>
<td>-.1</td>
</tr>
</tbody>
</table>
CASE 1, B01, BKRL (BRAKE RELEASE)

ALT = 0. FT    USB = 0. DEG    R/RO = 1.000
VA = 0. FT/S    DOOR = CLOSED    THETAS = 6. DEG
VU = 870. FT/S    VGS = UP    ThetaP = 19. DEG

RIBBON
STA    WL    BL (IN)    BL (OUT)
AT NOZ EX 345. 213. 61. 115.
AT WING TE 425. 201. 57. 136.
AT TR OFF 425. 201. 57. 136.
AT TR EDG 449. 193. 57. 136.
TRAIL EDGE 449. 193. 57. 136.
FIELD POINT 460. 190. 57.

FIELD POINT IN ZONE 3 AND IS
ABOVE, ON OR UNDER FLOW RIBBON
S = 116.7 DELTA = .7

PEAK JET MIX LEVEL = 149. DB AT 89. HZ
CORRECTION FOR VGS APPLIED
DSPL = 5. DB    FI = 2801. HZ
PEAK NEAR NOZ LEVEL = 128. DB AT 1200. HZ
STE = 105. DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 97. DB AT 94. HZ
PEAK SEP LEVEL = 93. DB AT 4743. HZ
PEAK TBL LEVEL = 126. DB AT 1857. HZ

SPL-IN DB RE 200 PICCOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>143</td>
<td>108</td>
<td>75</td>
<td>68</td>
<td>108</td>
<td>143.4</td>
</tr>
<tr>
<td>31</td>
<td>145</td>
<td>109</td>
<td>78</td>
<td>70</td>
<td>109</td>
<td>144.6</td>
</tr>
<tr>
<td>40</td>
<td>146</td>
<td>110</td>
<td>81</td>
<td>72</td>
<td>111</td>
<td>146.1</td>
</tr>
<tr>
<td>50</td>
<td>147</td>
<td>112</td>
<td>83</td>
<td>73</td>
<td>113</td>
<td>147.3</td>
</tr>
<tr>
<td>63</td>
<td>148</td>
<td>113</td>
<td>85</td>
<td>75</td>
<td>114</td>
<td>148.2</td>
</tr>
<tr>
<td>80</td>
<td>149</td>
<td>114</td>
<td>86</td>
<td>77</td>
<td>116</td>
<td>148.6</td>
</tr>
<tr>
<td>100</td>
<td>149</td>
<td>116</td>
<td>87</td>
<td>78</td>
<td>118</td>
<td>148.6</td>
</tr>
<tr>
<td>125</td>
<td>148</td>
<td>117</td>
<td>86</td>
<td>80</td>
<td>119</td>
<td>148.3</td>
</tr>
<tr>
<td>160</td>
<td>147</td>
<td>118</td>
<td>84</td>
<td>82</td>
<td>120</td>
<td>147.3</td>
</tr>
<tr>
<td>200</td>
<td>146</td>
<td>120</td>
<td>82</td>
<td>83</td>
<td>121</td>
<td>146.1</td>
</tr>
<tr>
<td>250</td>
<td>145</td>
<td>121</td>
<td>79</td>
<td>85</td>
<td>122</td>
<td>144.8</td>
</tr>
<tr>
<td>315</td>
<td>143</td>
<td>122</td>
<td>77</td>
<td>87</td>
<td>123</td>
<td>143.5</td>
</tr>
<tr>
<td>400</td>
<td>142</td>
<td>124</td>
<td>74</td>
<td>88</td>
<td>123</td>
<td>142.2</td>
</tr>
<tr>
<td>500</td>
<td>141</td>
<td>125</td>
<td>71</td>
<td>89</td>
<td>124</td>
<td>141.0</td>
</tr>
<tr>
<td>630</td>
<td>139</td>
<td>126</td>
<td>69</td>
<td>90</td>
<td>124</td>
<td>139.8</td>
</tr>
<tr>
<td>800</td>
<td>139</td>
<td>127</td>
<td>66</td>
<td>90</td>
<td>125</td>
<td>139.6</td>
</tr>
<tr>
<td>1000</td>
<td>139</td>
<td>128</td>
<td>63</td>
<td>91</td>
<td>125</td>
<td>139.6</td>
</tr>
<tr>
<td>1250</td>
<td>139</td>
<td>128</td>
<td>61</td>
<td>91</td>
<td>125</td>
<td>139.4</td>
</tr>
<tr>
<td>1600</td>
<td>138</td>
<td>128</td>
<td>58</td>
<td>92</td>
<td>126</td>
<td>138.8</td>
</tr>
<tr>
<td>2000</td>
<td>137</td>
<td>127</td>
<td>55</td>
<td>92</td>
<td>126</td>
<td>138.0</td>
</tr>
<tr>
<td>2500</td>
<td>136</td>
<td>126</td>
<td>53</td>
<td>93</td>
<td>125</td>
<td>137.0</td>
</tr>
<tr>
<td>3150</td>
<td>135</td>
<td>125</td>
<td>50</td>
<td>93</td>
<td>125</td>
<td>135.8</td>
</tr>
<tr>
<td>4000</td>
<td>133</td>
<td>123</td>
<td>47</td>
<td>93</td>
<td>125</td>
<td>134.2</td>
</tr>
<tr>
<td>5000</td>
<td>132</td>
<td>122</td>
<td>45</td>
<td>93</td>
<td>124</td>
<td>132.7</td>
</tr>
</tbody>
</table>

DASPL 158.2 137.5 94.3 102.7 136.6 158.2

69
CASE 2, BO2, BKRL (BRAKE RELEASE)

**CASE 2, BO2, BKRL (BRAKE RELEASE)**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALT</td>
<td>0. FT</td>
</tr>
<tr>
<td>USF</td>
<td>0. FT/S</td>
</tr>
<tr>
<td>DOOR</td>
<td>CLOSED</td>
</tr>
<tr>
<td>DESIGNER</td>
<td>0.000</td>
</tr>
<tr>
<td>VA</td>
<td>0. FT/S</td>
</tr>
<tr>
<td>DOOR</td>
<td>CLOSED</td>
</tr>
<tr>
<td>THETA</td>
<td>6. DEG</td>
</tr>
</tbody>
</table>

**RIBBON**

<table>
<thead>
<tr>
<th>Location</th>
<th>STA</th>
<th>WL</th>
<th>BL (IN)</th>
<th>BL (OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT NOZ EX</td>
<td>345.</td>
<td>213.</td>
<td>61.</td>
<td>115.</td>
</tr>
<tr>
<td>AT WING TE</td>
<td>425.</td>
<td>201.</td>
<td>57.</td>
<td>136.</td>
</tr>
<tr>
<td>AT TR OFF</td>
<td>425.</td>
<td>201.</td>
<td>57.</td>
<td>136.</td>
</tr>
<tr>
<td>AT TR EDG</td>
<td>449.</td>
<td>193.</td>
<td>57.</td>
<td>136.</td>
</tr>
</tbody>
</table>

**TRAIL EDGE**

<table>
<thead>
<tr>
<th>Location</th>
<th>STA</th>
<th>WL</th>
<th>BL (IN)</th>
<th>BL (OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>449.</td>
<td>193.</td>
<td>57.</td>
<td>136.</td>
</tr>
</tbody>
</table>

**FIELD POINT**

<table>
<thead>
<tr>
<th>Location</th>
<th>STA</th>
<th>WL</th>
<th>BL (IN)</th>
<th>BL (OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>460.</td>
<td>160.</td>
<td>57.</td>
<td></td>
</tr>
</tbody>
</table>

**FIELD POINT IN ZONE 3 AND IS ABOVE, ON OR UNDER FLOW RIBBON**

$S = 126.2, \Delta = 27.7$

**PEAK JET MIX LEVEL**

$132. DB$ AT $138. HZ$

**CORRECTION FOR VGS APPLIED**

$\Delta = 5. DB, F_1 = 2801. HZ$

**PEAK NEAR NOZ LEVEL**

$112. DB$ AT $1200. HZ$

**STE**

$105. DB, \Delta TATE = 0.$

**PEAK TRAIL EDGE LEVEL**

$116. DB$ AT $94. HZ$

**PEAK SEP LEVEL**

$65. DB$ AT $4743. HZ$

**NO TBL ACTIVITY, A/P VELOCITY TOO SMALL**

**SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)**

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>126.</td>
<td>91.</td>
<td>105.</td>
<td>40.</td>
<td>0.</td>
<td>126.3</td>
</tr>
<tr>
<td>31.</td>
<td>127.</td>
<td>92.</td>
<td>107.</td>
<td>42.</td>
<td>0.</td>
<td>127.3</td>
</tr>
<tr>
<td>40.</td>
<td>128.</td>
<td>94.</td>
<td>110.</td>
<td>43.</td>
<td>0.</td>
<td>128.5</td>
</tr>
<tr>
<td>50.</td>
<td>129.</td>
<td>95.</td>
<td>113.</td>
<td>45.</td>
<td>0.</td>
<td>129.6</td>
</tr>
<tr>
<td>63.</td>
<td>131.</td>
<td>97.</td>
<td>115.</td>
<td>47.</td>
<td>0.</td>
<td>130.7</td>
</tr>
<tr>
<td>80.</td>
<td>132.</td>
<td>98.</td>
<td>116.</td>
<td>48.</td>
<td>0.</td>
<td>131.7</td>
</tr>
<tr>
<td>100.</td>
<td>132.</td>
<td>99.</td>
<td>116.</td>
<td>50.</td>
<td>0.</td>
<td>132.2</td>
</tr>
<tr>
<td>125.</td>
<td>132.</td>
<td>100.</td>
<td>116.</td>
<td>52.</td>
<td>0.</td>
<td>132.3</td>
</tr>
<tr>
<td>160.</td>
<td>132.</td>
<td>102.</td>
<td>114.</td>
<td>53.</td>
<td>0.</td>
<td>132.1</td>
</tr>
<tr>
<td>200.</td>
<td>132.</td>
<td>103.</td>
<td>112.</td>
<td>55.</td>
<td>0.</td>
<td>131.6</td>
</tr>
<tr>
<td>250.</td>
<td>131.</td>
<td>105.</td>
<td>109.</td>
<td>57.</td>
<td>0.</td>
<td>130.7</td>
</tr>
<tr>
<td>315.</td>
<td>129.</td>
<td>106.</td>
<td>106.</td>
<td>58.</td>
<td>0.</td>
<td>129.4</td>
</tr>
<tr>
<td>400.</td>
<td>128.</td>
<td>107.</td>
<td>104.</td>
<td>59.</td>
<td>0.</td>
<td>128.0</td>
</tr>
<tr>
<td>500.</td>
<td>127.</td>
<td>109.</td>
<td>101.</td>
<td>60.</td>
<td>0.</td>
<td>126.8</td>
</tr>
<tr>
<td>630.</td>
<td>125.</td>
<td>110.</td>
<td>98.</td>
<td>61.</td>
<td>0.</td>
<td>125.5</td>
</tr>
<tr>
<td>800.</td>
<td>125.</td>
<td>111.</td>
<td>96.</td>
<td>62.</td>
<td>0.</td>
<td>125.3</td>
</tr>
<tr>
<td>1000.</td>
<td>125.</td>
<td>111.</td>
<td>93.</td>
<td>62.</td>
<td>0.</td>
<td>125.2</td>
</tr>
<tr>
<td>1250.</td>
<td>125.</td>
<td>112.</td>
<td>90.</td>
<td>63.</td>
<td>0.</td>
<td>125.0</td>
</tr>
<tr>
<td>1600.</td>
<td>124.</td>
<td>111.</td>
<td>86.</td>
<td>63.</td>
<td>0.</td>
<td>124.3</td>
</tr>
<tr>
<td>2000.</td>
<td>123.</td>
<td>111.</td>
<td>85.</td>
<td>64.</td>
<td>0.</td>
<td>123.5</td>
</tr>
<tr>
<td>2500.</td>
<td>122.</td>
<td>109.</td>
<td>82.</td>
<td>64.</td>
<td>0.</td>
<td>122.5</td>
</tr>
<tr>
<td>3150.</td>
<td>121.</td>
<td>108.</td>
<td>80.</td>
<td>65.</td>
<td>0.</td>
<td>121.1</td>
</tr>
<tr>
<td>4000.</td>
<td>119.</td>
<td>107.</td>
<td>77.</td>
<td>65.</td>
<td>0.</td>
<td>119.5</td>
</tr>
<tr>
<td>5000.</td>
<td>117.</td>
<td>105.</td>
<td>74.</td>
<td>65.</td>
<td>0.</td>
<td>117.7</td>
</tr>
</tbody>
</table>

**DASPL 142.2 120.9 123.9 74.3 0.0 142.3**
CASE 3, BKRL (BRAKE RELEASE)

ALT = 0. FT USP = 0. DEG R/RD = 1.000
VA = 0. FT/S DOOR = CLOSED THETAS = 6. DEG
VU = 870. FT/S VGS = UP THETAP = 19. DEG

RIBBON STA WL BL(IN) BL(OUT)
AT NOZ EX 345. 213. 61. 115.
AT WNG TE 425. 201. 57. 136.
AT TR OFF 425. 201. 57. 136.
AT TR EDG 449. 193. 57. 136.
TRAIL EDGE 449. 193. 57. 136.
FIELD POINT 460. 130. 57.
FIELD POINT IN ZONE 3 AND IS ABOVE; ON OR UNDER FLOW RIBBON
S = 135.8 DELTA = 56.1

PEAK JET MIX LEVEL = 125. DB AT 236. HZ
CORRECTION FOR VGS APPLIED
DSPL = 5. DB FI = 2601. HZ
PEAK NEAR NOZ LEVEL = 105. DB AT 1200. HZ
STE = 105. DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 120. DB AT 94. HZ
PEAK SEP LEVEL = 49. DB AT 4743. HZ
NO TBL ACTIVITY; A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>121</td>
<td>84</td>
<td>109</td>
<td>24</td>
<td>0</td>
<td>120.9</td>
</tr>
<tr>
<td>31</td>
<td>121</td>
<td>86</td>
<td>111</td>
<td>26</td>
<td>0</td>
<td>121.7</td>
</tr>
<tr>
<td>40</td>
<td>122</td>
<td>87</td>
<td>114</td>
<td>28</td>
<td>0</td>
<td>122.7</td>
</tr>
<tr>
<td>50</td>
<td>123</td>
<td>88</td>
<td>116</td>
<td>29</td>
<td>0</td>
<td>123.6</td>
</tr>
<tr>
<td>63</td>
<td>123</td>
<td>90</td>
<td>119</td>
<td>31</td>
<td>0</td>
<td>124.6</td>
</tr>
<tr>
<td>80</td>
<td>124</td>
<td>91</td>
<td>120</td>
<td>33</td>
<td>0</td>
<td>125.4</td>
</tr>
<tr>
<td>100</td>
<td>125</td>
<td>92</td>
<td>120</td>
<td>34</td>
<td>0</td>
<td>126.0</td>
</tr>
<tr>
<td>125</td>
<td>125</td>
<td>94</td>
<td>119</td>
<td>36</td>
<td>0</td>
<td>126.4</td>
</tr>
<tr>
<td>160</td>
<td>126</td>
<td>95</td>
<td>118</td>
<td>38</td>
<td>0</td>
<td>126.4</td>
</tr>
<tr>
<td>200</td>
<td>126</td>
<td>96</td>
<td>115</td>
<td>39</td>
<td>0</td>
<td>126.1</td>
</tr>
<tr>
<td>250</td>
<td>125</td>
<td>98</td>
<td>113</td>
<td>41</td>
<td>0</td>
<td>125.5</td>
</tr>
<tr>
<td>315</td>
<td>125</td>
<td>99</td>
<td>110</td>
<td>42</td>
<td>0</td>
<td>125.2</td>
</tr>
<tr>
<td>400</td>
<td>124</td>
<td>101</td>
<td>107</td>
<td>43</td>
<td>0</td>
<td>124.3</td>
</tr>
<tr>
<td>500</td>
<td>123</td>
<td>102</td>
<td>105</td>
<td>44</td>
<td>0</td>
<td>123.1</td>
</tr>
<tr>
<td>630</td>
<td>122</td>
<td>103</td>
<td>102</td>
<td>45</td>
<td>0</td>
<td>121.8</td>
</tr>
<tr>
<td>800</td>
<td>121</td>
<td>104</td>
<td>99</td>
<td>46</td>
<td>0</td>
<td>121.6</td>
</tr>
<tr>
<td>1000</td>
<td>121</td>
<td>105</td>
<td>97</td>
<td>47</td>
<td>0</td>
<td>121.5</td>
</tr>
<tr>
<td>1250</td>
<td>121</td>
<td>105</td>
<td>94</td>
<td>47</td>
<td>0</td>
<td>121.2</td>
</tr>
<tr>
<td>1600</td>
<td>120</td>
<td>105</td>
<td>91</td>
<td>48</td>
<td>0</td>
<td>120.6</td>
</tr>
<tr>
<td>2000</td>
<td>120</td>
<td>104</td>
<td>89</td>
<td>48</td>
<td>0</td>
<td>119.8</td>
</tr>
<tr>
<td>2500</td>
<td>119</td>
<td>103</td>
<td>86</td>
<td>48</td>
<td>0</td>
<td>118.7</td>
</tr>
<tr>
<td>3150</td>
<td>117</td>
<td>101</td>
<td>83</td>
<td>49</td>
<td>0</td>
<td>117.4</td>
</tr>
<tr>
<td>4000</td>
<td>116</td>
<td>100</td>
<td>81</td>
<td>49</td>
<td>0</td>
<td>115.7</td>
</tr>
<tr>
<td>5000</td>
<td>114</td>
<td>99</td>
<td>78</td>
<td>49</td>
<td>0</td>
<td>113.9</td>
</tr>
</tbody>
</table>

DBSPL 136.6 114.2 127.5 58.4 0.0 137.1
CASE 4: B04, BKRL (BRAKE RELEASE)

ALT = 0. FT
USB = 0. DEG
R/RD = 1.000

VA = 0. FT/S
DOOR = CLOSED
THETAS = 6. DEG

WJ = 870. FT/S
VG'S = UP
THETA = 19. DEG

RIBBON
STA  WL  BL (IN)  BL (OUT)
AT NOZ EX 345.  213.  61.  115.
AT WNG TE 425.  201.  57.  136.
AT TR OFF 425.  201.  57.  136.
AT TR EDG 449.  193.  57.  136.

TRAIL EDGE 449.  193.  57.  136.

FIELD POINT 500.  190.  57.

FIELD POINT IN ZONE 3 AND IS ABOVE, ON OR UNDER FLOW RIBBON
S = 154.6
DELTA = 13.5

PEAK JET MIX LEVEL = 137. DB AT 76. HZ
CORRECTION FOR VGS APPLIED

DSPL = 5. DB
F1 = 2801. HZ

PEAK NEAR NOZ LEVEL = 117. DB AT 1200. HZ
STE = 105.

PEAK TRAIL EDGE LEVEL = 110. DB AT 94. HZ

PEAK SEP LEVEL = 55. DB AT 4743. HZ

NO TBL ACTIVITY, A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

H2  MIX  NN  TE  SEP  TBL  SUM
25.  133.  97.  98.  30.  0.  133.4
31.  135.  98.  101.  31.  0.  134.6
40.  136.  99.  104.  33.  0.  135.9
50.  137.  101.  106.  35.  0.  136.9
63.  137.  102.  108.  37.  0.  137.4
80.  137.  103.  109.  39.  0.  137.4
100. 137.  105.  109.  40.  0.  137.1
125. 136.  106.  109.  42.  0.  136.4
160. 135.  108.  107.  43.  0.  135.1
200. 134.  109.  105.  45.  0.  133.8
250. 133.  110.  102.  47.  0.  132.6
315. 131.  111.  100.  48.  0.  131.2
400. 130.  113.  97.  49.  0.  129.9
500. 129.  114.  94.  50.  0.  128.7
630. 127.  115.  92.  51.  0.  127.5
800. 127.  117.  89.  52.  0.  127.4
1000. 127.  117.  86.  52.  0.  127.3
1250. 127.  117.  84.  53.  0.  127.0
1600. 126.  117.  81.  53.  0.  126.5
2000. 125.  116.  78.  54.  0.  125.7
2500. 124.  115.  76.  54.  0.  124.6
3150. 123.  114.  73.  54.  0.  123.2
4000. 121.  112.  70.  55.  0.  121.6
5000. 119.  111.  68.  55.  0.  119.9

OASPL 146.8 126.5 117.2  64.1  0.0  146.9

72
CASE 5,B05,5KRL (BRAKE RELEASE)

ALT= 0. FT USB = 0. DEG R/RD = 1.000
VR = 0. FT/S DOOR= CLOSED THetas= 6. DEG
VJ = 870. FT/S UGS = UP THETAP=19. DEG

RIBBON STA WL BL(IN) BL(OUT)
AT NOZ EX 345. 213. 61. 115.
AT WNG TE 425. 201. 57. 136.
AT TR OFF 425. 201. 57. 136.
AT TR EDG 449. 193. 57. 136.

TRAIL EDGE 449. 193. 57. 136.

FIELD POINT 500. 160. 57.

FIELD POINT IN ZONE 3 AND IS ABOVE,ON OR UNDER FLOW RIBBON
S= 164.2 DELTA = 14.9

PEAK JET MIX LEVEL= 135. DB AT 73. HZ
CORRECTION FOR UGS APPLIED
DSPL= 5. DB F1= 2801. HZ
PEAK NEAR NOZ LEVEL= 115. DB AT 1200. HZ
STE= 105. .DELTATE= 0.
PEAK TRAIL EDGE LEVEL= 109. DB AT 94. HZ
PEAK SEP LEVEL= 50. DB AT 4743. HZ
NO TBL ACTIVITY,A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>131</td>
<td>95</td>
<td>98</td>
<td>25</td>
<td>0</td>
<td>131.5</td>
</tr>
<tr>
<td>31</td>
<td>133</td>
<td>96</td>
<td>100</td>
<td>27</td>
<td>0</td>
<td>132.6</td>
</tr>
<tr>
<td>40</td>
<td>134</td>
<td>97</td>
<td>103</td>
<td>29</td>
<td>0</td>
<td>134.0</td>
</tr>
<tr>
<td>50</td>
<td>135</td>
<td>99</td>
<td>106</td>
<td>30</td>
<td>0</td>
<td>134.8</td>
</tr>
<tr>
<td>63</td>
<td>135</td>
<td>100</td>
<td>108</td>
<td>32</td>
<td>0</td>
<td>135.2</td>
</tr>
<tr>
<td>80</td>
<td>135</td>
<td>101</td>
<td>109</td>
<td>34</td>
<td>0</td>
<td>135.2</td>
</tr>
<tr>
<td>100</td>
<td>135</td>
<td>103</td>
<td>109</td>
<td>35</td>
<td>0</td>
<td>134.8</td>
</tr>
<tr>
<td>125</td>
<td>134</td>
<td>104</td>
<td>108</td>
<td>37</td>
<td>0</td>
<td>134.1</td>
</tr>
<tr>
<td>160</td>
<td>133</td>
<td>105</td>
<td>107</td>
<td>39</td>
<td>0</td>
<td>132.7</td>
</tr>
<tr>
<td>200</td>
<td>131</td>
<td>107</td>
<td>104</td>
<td>40</td>
<td>0</td>
<td>131.4</td>
</tr>
<tr>
<td>250</td>
<td>130</td>
<td>108</td>
<td>102</td>
<td>42</td>
<td>0</td>
<td>130.1</td>
</tr>
<tr>
<td>315</td>
<td>129</td>
<td>109</td>
<td>99</td>
<td>44</td>
<td>0</td>
<td>128.8</td>
</tr>
<tr>
<td>400</td>
<td>127</td>
<td>111</td>
<td>96</td>
<td>45</td>
<td>0</td>
<td>127.5</td>
</tr>
<tr>
<td>500</td>
<td>126</td>
<td>112</td>
<td>94</td>
<td>46</td>
<td>0</td>
<td>126.3</td>
</tr>
<tr>
<td>630</td>
<td>125</td>
<td>113</td>
<td>91</td>
<td>46</td>
<td>0</td>
<td>125.1</td>
</tr>
<tr>
<td>800</td>
<td>125</td>
<td>114</td>
<td>88</td>
<td>47</td>
<td>0</td>
<td>125.0</td>
</tr>
<tr>
<td>1000</td>
<td>124</td>
<td>115</td>
<td>86</td>
<td>48</td>
<td>0</td>
<td>124.9</td>
</tr>
<tr>
<td>1250</td>
<td>124</td>
<td>115</td>
<td>83</td>
<td>48</td>
<td>0</td>
<td>124.7</td>
</tr>
<tr>
<td>1600</td>
<td>124</td>
<td>115</td>
<td>80</td>
<td>49</td>
<td>0</td>
<td>124.1</td>
</tr>
<tr>
<td>2000</td>
<td>123</td>
<td>114</td>
<td>78</td>
<td>49</td>
<td>0</td>
<td>123.3</td>
</tr>
<tr>
<td>2500</td>
<td>122</td>
<td>113</td>
<td>75</td>
<td>50</td>
<td>0</td>
<td>122.2</td>
</tr>
<tr>
<td>3150</td>
<td>120</td>
<td>112</td>
<td>72</td>
<td>50</td>
<td>0</td>
<td>120.9</td>
</tr>
<tr>
<td>4000</td>
<td>119</td>
<td>110</td>
<td>70</td>
<td>50</td>
<td>0</td>
<td>119.3</td>
</tr>
<tr>
<td>5000</td>
<td>117</td>
<td>109</td>
<td>67</td>
<td>50</td>
<td>0</td>
<td>117.5</td>
</tr>
</tbody>
</table>

OASPL 144.6 124.5 116.7 59.7 0.0 144.6

73
CASE 6,806, BKRL (BRAKE RELEASE)

ALT = 0. FT  USB = 0. DEG  R/R = 1.000
VA = 0. FT/S  INCR = CLOSED  THETAS = 6. DEG
VJ = 870. FT/S  VGS = UP  THETAP = 19. DEG

RIBBON STA WL BL(IN) BL(OUT)
AT NOZ EX 345. 213. 61. 115.
AT WNG TE 425. 201. 57. 136.
AT TR OFF 425. 201. 57. 136.
AT TR EDG 449. 193. 57. 136.

TRAIL EDGE 449. 193. 57. 136.

FIELD POINT 500. 130. 57.

FIELD POINT IN ZONE 3 AND IS
ABOVE, ON OR UNDER FLOW RIBBON
S = 173.7 DELTA = 43.4

PEAK JET MIX LEVEL = 125. DB AT 170. HZ
CORRECTION FOR VGS APPLIED
DSPL = 5. DB  Ti = 2801. HZ
PEAK NEAR NOZ LEVEL = 105. DB AT 1200. HZ
STE = 105. sDELTATE = 0.
PEAK TRAIL EDGE LEVEL = 116. DB AT 94. HZ
PEAK SEP LEVEL = 43. DB AT 4743. HZ
NO TBL ACTIVITY; A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>120</td>
<td>85</td>
<td>105</td>
<td>18</td>
<td>0</td>
<td>120.3</td>
</tr>
<tr>
<td>31</td>
<td>121</td>
<td>86</td>
<td>107</td>
<td>19</td>
<td>0</td>
<td>121.2</td>
</tr>
<tr>
<td>40</td>
<td>122</td>
<td>87</td>
<td>110</td>
<td>21</td>
<td>0</td>
<td>122.2</td>
</tr>
<tr>
<td>50</td>
<td>123</td>
<td>89</td>
<td>113</td>
<td>23</td>
<td>0</td>
<td>123.1</td>
</tr>
<tr>
<td>63</td>
<td>124</td>
<td>90</td>
<td>115</td>
<td>25</td>
<td>0</td>
<td>124.0</td>
</tr>
<tr>
<td>80</td>
<td>124</td>
<td>91</td>
<td>116</td>
<td>26</td>
<td>0</td>
<td>124.9</td>
</tr>
<tr>
<td>100</td>
<td>125</td>
<td>93</td>
<td>116</td>
<td>26</td>
<td>0</td>
<td>125.6</td>
</tr>
<tr>
<td>125</td>
<td>125</td>
<td>94</td>
<td>115</td>
<td>30</td>
<td>0</td>
<td>125.7</td>
</tr>
<tr>
<td>160</td>
<td>125</td>
<td>95</td>
<td>114</td>
<td>31</td>
<td>0</td>
<td>125.4</td>
</tr>
<tr>
<td>200</td>
<td>125</td>
<td>97</td>
<td>111</td>
<td>33</td>
<td>0</td>
<td>125.1</td>
</tr>
<tr>
<td>250</td>
<td>124</td>
<td>98</td>
<td>109</td>
<td>35</td>
<td>0</td>
<td>124.5</td>
</tr>
<tr>
<td>315</td>
<td>123</td>
<td>99</td>
<td>106</td>
<td>36</td>
<td>0</td>
<td>123.5</td>
</tr>
<tr>
<td>400</td>
<td>122</td>
<td>101</td>
<td>103</td>
<td>37</td>
<td>0</td>
<td>122.2</td>
</tr>
<tr>
<td>500</td>
<td>121</td>
<td>102</td>
<td>101</td>
<td>38</td>
<td>0</td>
<td>120.9</td>
</tr>
<tr>
<td>630</td>
<td>119</td>
<td>103</td>
<td>98</td>
<td>39</td>
<td>0</td>
<td>119.6</td>
</tr>
<tr>
<td>800</td>
<td>119</td>
<td>104</td>
<td>95</td>
<td>40</td>
<td>0</td>
<td>119.4</td>
</tr>
<tr>
<td>1000</td>
<td>119</td>
<td>105</td>
<td>93</td>
<td>40</td>
<td>0</td>
<td>119.3</td>
</tr>
<tr>
<td>1250</td>
<td>119</td>
<td>105</td>
<td>90</td>
<td>41</td>
<td>0</td>
<td>119.0</td>
</tr>
<tr>
<td>1600</td>
<td>118</td>
<td>105</td>
<td>87</td>
<td>41</td>
<td>0</td>
<td>118.4</td>
</tr>
<tr>
<td>2000</td>
<td>117</td>
<td>104</td>
<td>85</td>
<td>42</td>
<td>0</td>
<td>117.6</td>
</tr>
<tr>
<td>2500</td>
<td>116</td>
<td>103</td>
<td>82</td>
<td>42</td>
<td>0</td>
<td>116.5</td>
</tr>
<tr>
<td>3150</td>
<td>115</td>
<td>102</td>
<td>79</td>
<td>42</td>
<td>0</td>
<td>115.2</td>
</tr>
<tr>
<td>4000</td>
<td>113</td>
<td>100</td>
<td>77</td>
<td>43</td>
<td>0</td>
<td>113.6</td>
</tr>
<tr>
<td>5000</td>
<td>112</td>
<td>99</td>
<td>74</td>
<td>43</td>
<td>0</td>
<td>111.8</td>
</tr>
</tbody>
</table>

OASPL 135.7 114.5 123.7 52.2 0.0 136.0

74
CASE 7:07, BKRL (BRAKE RELEASE)

ALT = 0. FT
USB = 0. DEG
R/RD = 1.000
VR = 0. FT/SEC
DOOR = CLOSED
THETAS = 6. DEG
WJ = 870. FT/SEC
VGS = UP
THETAP = 19. DEG

RIBBON
STA WL BL (IN) BL (OUT)
AT NOZ EX 345. 213. 61. 115.
AT WNG TE 425. 201. 57. 136.
AT TR OFF 425. 201. 57. 136.
AT TR EDG 449. 193. 57. 136.

TRAIL EDGE 449. 193. 57. 136.

FIELD POINT 550. 190. 57.

FIELD POINT IN ZONE 3 AND IS
ABOVE 1N OR UNDER FLOW RIBBON
S = 202.0 DELTA = 29.4

PEAK JET MIX LEVEL = 127. DB AT 109. HZ
CORRECTION FOR VGS APPLIED
DSPL = 5. DE F1 = 2801. HZ
PEAK NEAR NOZ LEVEL = 107. DB AT 1200. HZ
STE = 105. DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 110. DB AT 94. HZ
PEAK SEP LEVEL = 37. DB AT 4743. HZ
NO TBL ACTIVITY, A/P VELOCITY TOO SMALL

SPL-IN, DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>123.</td>
<td>87.</td>
<td>99.</td>
<td>12.</td>
<td>0.</td>
<td>122.7</td>
</tr>
<tr>
<td>31.</td>
<td>124.</td>
<td>88.</td>
<td>101.</td>
<td>14.</td>
<td>0.</td>
<td>123.7</td>
</tr>
<tr>
<td>40.</td>
<td>125.</td>
<td>90.</td>
<td>104.</td>
<td>16.</td>
<td>0.</td>
<td>124.9</td>
</tr>
<tr>
<td>50.</td>
<td>126.</td>
<td>91.</td>
<td>107.</td>
<td>17.</td>
<td>0.</td>
<td>125.9</td>
</tr>
<tr>
<td>63.</td>
<td>127.</td>
<td>92.</td>
<td>109.</td>
<td>19.</td>
<td>0.</td>
<td>126.9</td>
</tr>
<tr>
<td>80.</td>
<td>127.</td>
<td>94.</td>
<td>110.</td>
<td>21.</td>
<td>0.</td>
<td>127.4</td>
</tr>
<tr>
<td>100.</td>
<td>127.</td>
<td>95.</td>
<td>110.</td>
<td>22.</td>
<td>0.</td>
<td>127.5</td>
</tr>
<tr>
<td>125.</td>
<td>127.</td>
<td>96.</td>
<td>110.</td>
<td>24.</td>
<td>0.</td>
<td>127.3</td>
</tr>
<tr>
<td>160.</td>
<td>127.</td>
<td>96.</td>
<td>108.</td>
<td>26.</td>
<td>0.</td>
<td>126.8</td>
</tr>
<tr>
<td>200.</td>
<td>126.</td>
<td>99.</td>
<td>106.</td>
<td>27.</td>
<td>0.</td>
<td>125.8</td>
</tr>
<tr>
<td>250.</td>
<td>125.</td>
<td>100.</td>
<td>103.</td>
<td>29.</td>
<td>0.</td>
<td>124.6</td>
</tr>
<tr>
<td>315.</td>
<td>123.</td>
<td>101.</td>
<td>100.</td>
<td>30.</td>
<td>0.</td>
<td>123.3</td>
</tr>
<tr>
<td>400.</td>
<td>122.</td>
<td>103.</td>
<td>98.</td>
<td>31.</td>
<td>0.</td>
<td>121.9</td>
</tr>
<tr>
<td>500.</td>
<td>121.</td>
<td>104.</td>
<td>95.</td>
<td>32.</td>
<td>0.</td>
<td>120.6</td>
</tr>
<tr>
<td>630.</td>
<td>119.</td>
<td>105.</td>
<td>92.</td>
<td>33.</td>
<td>0.</td>
<td>119.4</td>
</tr>
<tr>
<td>800.</td>
<td>119.</td>
<td>107.</td>
<td>89.</td>
<td>34.</td>
<td>0.</td>
<td>119.3</td>
</tr>
<tr>
<td>1000.</td>
<td>119.</td>
<td>107.</td>
<td>87.</td>
<td>35.</td>
<td>0.</td>
<td>119.2</td>
</tr>
<tr>
<td>1250.</td>
<td>119.</td>
<td>107.</td>
<td>84.</td>
<td>35.</td>
<td>0.</td>
<td>118.9</td>
</tr>
<tr>
<td>1600.</td>
<td>118.</td>
<td>107.</td>
<td>81.</td>
<td>36.</td>
<td>0.</td>
<td>118.3</td>
</tr>
<tr>
<td>2000.</td>
<td>117.</td>
<td>106.</td>
<td>79.</td>
<td>36.</td>
<td>0.</td>
<td>117.5</td>
</tr>
<tr>
<td>2500.</td>
<td>116.</td>
<td>105.</td>
<td>76.</td>
<td>36.</td>
<td>0.</td>
<td>116.4</td>
</tr>
<tr>
<td>3150.</td>
<td>115.</td>
<td>104.</td>
<td>74.</td>
<td>37.</td>
<td>0.</td>
<td>115.1</td>
</tr>
<tr>
<td>4000.</td>
<td>113.</td>
<td>102.</td>
<td>71.</td>
<td>37.</td>
<td>0.</td>
<td>113.5</td>
</tr>
<tr>
<td>5000.</td>
<td>111.</td>
<td>101.</td>
<td>68.</td>
<td>37.</td>
<td>0.</td>
<td>111.7</td>
</tr>
</tbody>
</table>

DASPL 137.3 116.6 117.8 46.4 0.0 137.4
CASE 8,808, BKRL (BRAKE RELEASE)

ALT = 0. FT USB = 0. DEG R/RO = 1.000
VA = 0. FT/S DOOR = CLOSED THETAS = 6. DEG
UJ = 870. FT/S VGS = UP THETAP = 19. DEG

RIBBON STA WL BL(IN) BL(OUT)
AT NOZ EX 345. 213. 61. 115.
AT WNG TE 425. 201. 57. 136.
AT TR OFF 425. 201. 57. 136.
AT TR EDG 449. 193. 57. 136.

TRAIL EDGE 449. 193. 57. 136.
FIELD POINT 550. 160. 57.
FIELD POINT IN ZONE 3 AND IS ABOVE; ON OR UNDER FLOW RIBBON
S = 211.5 DELTA = 1.0

PEAK JET MIX LEVEL = 143. DB AT 62. HZ
CORRECTION FOR VGS APPLIED
DISPL = 5. DB F1 = 2801. HZ
PEAK NEAR NOZ LEVEL = 123. DB AT 1200. HZ
STE = 105. ; DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 82. DB AT 94. HZ
PEAK SEP LEVEL = 36. DB AT 4743. HZ
PEAK TBL LEVEL = 125. DB AT 1400. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>140</td>
<td>103</td>
<td>70</td>
<td>11</td>
<td>109</td>
</tr>
<tr>
<td>31</td>
<td>142</td>
<td>104</td>
<td>73</td>
<td>12</td>
<td>111</td>
</tr>
<tr>
<td>40</td>
<td>143</td>
<td>106</td>
<td>76</td>
<td>14</td>
<td>112</td>
</tr>
<tr>
<td>50</td>
<td>143</td>
<td>107</td>
<td>78</td>
<td>16</td>
<td>114</td>
</tr>
<tr>
<td>63</td>
<td>143</td>
<td>109</td>
<td>80</td>
<td>18</td>
<td>116</td>
</tr>
<tr>
<td>80</td>
<td>143</td>
<td>110</td>
<td>81</td>
<td>19</td>
<td>117</td>
</tr>
<tr>
<td>100</td>
<td>143</td>
<td>111</td>
<td>81</td>
<td>21</td>
<td>119</td>
</tr>
<tr>
<td>125</td>
<td>141</td>
<td>112</td>
<td>81</td>
<td>22</td>
<td>120</td>
</tr>
<tr>
<td>160</td>
<td>140</td>
<td>114</td>
<td>79</td>
<td>24</td>
<td>121</td>
</tr>
<tr>
<td>200</td>
<td>139</td>
<td>115</td>
<td>77</td>
<td>25</td>
<td>122</td>
</tr>
<tr>
<td>250</td>
<td>137</td>
<td>116</td>
<td>74</td>
<td>27</td>
<td>122</td>
</tr>
<tr>
<td>315</td>
<td>136</td>
<td>118</td>
<td>72</td>
<td>29</td>
<td>123</td>
</tr>
<tr>
<td>400</td>
<td>135</td>
<td>119</td>
<td>69</td>
<td>30</td>
<td>123</td>
</tr>
<tr>
<td>500</td>
<td>133</td>
<td>120</td>
<td>66</td>
<td>31</td>
<td>124</td>
</tr>
<tr>
<td>630</td>
<td>132</td>
<td>122</td>
<td>64</td>
<td>32</td>
<td>124</td>
</tr>
<tr>
<td>800</td>
<td>132</td>
<td>123</td>
<td>61</td>
<td>33</td>
<td>125</td>
</tr>
<tr>
<td>1000</td>
<td>132</td>
<td>123</td>
<td>58</td>
<td>33</td>
<td>125</td>
</tr>
<tr>
<td>1250</td>
<td>131</td>
<td>123</td>
<td>56</td>
<td>34</td>
<td>125</td>
</tr>
<tr>
<td>1600</td>
<td>131</td>
<td>123</td>
<td>53</td>
<td>34</td>
<td>125</td>
</tr>
<tr>
<td>2000</td>
<td>130</td>
<td>122</td>
<td>50</td>
<td>35</td>
<td>125</td>
</tr>
<tr>
<td>2500</td>
<td>129</td>
<td>121</td>
<td>48</td>
<td>35</td>
<td>124</td>
</tr>
<tr>
<td>3150</td>
<td>128</td>
<td>120</td>
<td>45</td>
<td>35</td>
<td>124</td>
</tr>
<tr>
<td>4000</td>
<td>126</td>
<td>118</td>
<td>42</td>
<td>36</td>
<td>123</td>
</tr>
<tr>
<td>5000</td>
<td>124</td>
<td>117</td>
<td>40</td>
<td>36</td>
<td>123</td>
</tr>
</tbody>
</table>

TOTAL 152.6 132.7 89.2 45.1 136.1 152.8
CASE 9, B09, BKRL (BRAKE RELEASE)

ALT = 0. FT  USB = 0. DEG R/RO = 1.000  
VR = 0. FT/S  NOOR= CLOSED  THETAS = 6. DEG  
VU = 870. FT/S  UGS = UP  THETAP=19. DEG

RIBBON   STA   WL   BL(IN)   BL(OUT)
AT NOZ EX  345.  213.  61.   115.
AT WNG TE  425.  201.  57.   136.
AT TR OFF  425.  201.  57.   136.
PT TR EDG  449.  193.  57.   136.

TRAIL EDGE  449.  193.  57.   136.
FIELD POINT  550.  130.  57.
FIELD POINT IN ZONE 3 AND IS
ABOVE, ON OR UNDER FLOW RIBBON
S = 221.1 DELTA = 27.4

PEAK JET MIX LEVEL = 127. DB AT 95. HZ
CORRECTION FOR UGS APPLIED
SCR=5. DB FI= 2801. HZ
PEAK NEAR NOZ LEVEL = 107. DB AT 1200. HZ
ST= 105. DELTATE= 0.
PEAK TRAIL EDGE LEVEL = 107. DB AT 94. HZ
PEAK SEP LEVEL = 33. DB AT 4743. HZ
NO TBL ACTIVITY; A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP & ID SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>123.</td>
<td>87.</td>
<td>96.</td>
<td>8.</td>
<td>0.</td>
<td>123.2</td>
</tr>
<tr>
<td>31</td>
<td>124.</td>
<td>88.</td>
<td>99.</td>
<td>9.</td>
<td>0.</td>
<td>124.2</td>
</tr>
<tr>
<td>40</td>
<td>125.</td>
<td>89.</td>
<td>101.</td>
<td>11.</td>
<td>0.</td>
<td>125.4</td>
</tr>
<tr>
<td>50</td>
<td>126.</td>
<td>91.</td>
<td>104.</td>
<td>13.</td>
<td>0.</td>
<td>126.4</td>
</tr>
<tr>
<td>63</td>
<td>127.</td>
<td>92.</td>
<td>106.</td>
<td>15.</td>
<td>0.</td>
<td>127.2</td>
</tr>
<tr>
<td>80</td>
<td>127.</td>
<td>93.</td>
<td>107.</td>
<td>16.</td>
<td>0.</td>
<td>127.4</td>
</tr>
<tr>
<td>100</td>
<td>127.</td>
<td>95.</td>
<td>107.</td>
<td>18.</td>
<td>0.</td>
<td>127.3</td>
</tr>
<tr>
<td>125</td>
<td>127.</td>
<td>96.</td>
<td>107.</td>
<td>20.</td>
<td>0.</td>
<td>127.1</td>
</tr>
<tr>
<td>160</td>
<td>126.</td>
<td>97.</td>
<td>105.</td>
<td>21.</td>
<td>0.</td>
<td>126.3</td>
</tr>
<tr>
<td>200</td>
<td>125.</td>
<td>99.</td>
<td>103.</td>
<td>23.</td>
<td>0.</td>
<td>125.1</td>
</tr>
<tr>
<td>250</td>
<td>124.</td>
<td>100.</td>
<td>100.</td>
<td>25.</td>
<td>0.</td>
<td>123.8</td>
</tr>
<tr>
<td>315</td>
<td>122.</td>
<td>101.</td>
<td>97.</td>
<td>26.</td>
<td>0.</td>
<td>122.5</td>
</tr>
<tr>
<td>400</td>
<td>121.</td>
<td>103.</td>
<td>95.</td>
<td>27.</td>
<td>0.</td>
<td>121.1</td>
</tr>
<tr>
<td>500</td>
<td>120.</td>
<td>104.</td>
<td>92.</td>
<td>28.</td>
<td>0.</td>
<td>119.9</td>
</tr>
<tr>
<td>630</td>
<td>118.</td>
<td>105.</td>
<td>89.</td>
<td>29.</td>
<td>0.</td>
<td>118.6</td>
</tr>
<tr>
<td>800</td>
<td>118.</td>
<td>106.</td>
<td>87.</td>
<td>30.</td>
<td>0.</td>
<td>118.5</td>
</tr>
<tr>
<td>1000</td>
<td>118.</td>
<td>107.</td>
<td>84.</td>
<td>30.</td>
<td>0.</td>
<td>118.4</td>
</tr>
<tr>
<td>1250</td>
<td>118.</td>
<td>107.</td>
<td>82.</td>
<td>31.</td>
<td>0.</td>
<td>118.2</td>
</tr>
<tr>
<td>1600</td>
<td>117.</td>
<td>107.</td>
<td>79.</td>
<td>31.</td>
<td>0.</td>
<td>117.6</td>
</tr>
<tr>
<td>2000</td>
<td>116.</td>
<td>106.</td>
<td>76.</td>
<td>32.</td>
<td>0.</td>
<td>116.7</td>
</tr>
<tr>
<td>2500</td>
<td>115.</td>
<td>105.</td>
<td>74.</td>
<td>32.</td>
<td>0.</td>
<td>115.7</td>
</tr>
<tr>
<td>3150</td>
<td>114.</td>
<td>104.</td>
<td>71.</td>
<td>32.</td>
<td>0.</td>
<td>114.3</td>
</tr>
<tr>
<td>4000</td>
<td>112.</td>
<td>102.</td>
<td>68.</td>
<td>33.</td>
<td>0.</td>
<td>112.7</td>
</tr>
<tr>
<td>5000</td>
<td>111.</td>
<td>101.</td>
<td>65.</td>
<td>33.</td>
<td>0.</td>
<td>111.0</td>
</tr>
</tbody>
</table>

DBSPL 137.1 116.5 115.0 42.2 0.0 137.2

77
### CASE 13:B01,BKRL (BRAKE RELEASE)

**ALT** = 0.0 FT **USB** = 0.0 FT **R/RO** = 1.000

**VA** = 0.0 FT/S **DOOR** = CLOSED **THETAS** = 6.0 DEG

**UJ** = 870.0 FT/S **VGS** = UP **THETAP** = 19.0 DEG

### RIBBON

**STA** | **WL** | **BL (IN)** | **BL (OUT)**
---|---|---|---
AT NOZ EX | 345.62 | 213.61 | 115.00
AT WING TE | 425.20 | 201.57 | 136.00
AT TR OFF | 425.20 | 201.57 | 136.00
AT TR EDG | 449.19 | 193.57 | 136.00

### TRAIL EDGE

449.19 | 193.57 | 136.00

### FIELD POINT

375.21 | 212.90 | 90.00

**SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)**

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.0</td>
<td>127.89</td>
<td>119.91</td>
<td>91.32</td>
<td>105.103</td>
<td>127.9</td>
<td></td>
</tr>
<tr>
<td>31.0</td>
<td>129.91</td>
<td>119.91</td>
<td>91.32</td>
<td>105.105</td>
<td>129.1</td>
<td></td>
</tr>
<tr>
<td>40.0</td>
<td>130.94</td>
<td>120.94</td>
<td>94.34</td>
<td>107.107</td>
<td>130.6</td>
<td></td>
</tr>
<tr>
<td>50.0</td>
<td>131.97</td>
<td>122.97</td>
<td>97.36</td>
<td>108.108</td>
<td>131.9</td>
<td></td>
</tr>
<tr>
<td>63.0</td>
<td>133.99</td>
<td>123.99</td>
<td>99.37</td>
<td>110.110</td>
<td>133.2</td>
<td></td>
</tr>
<tr>
<td>80.0</td>
<td>134.100</td>
<td>124.100</td>
<td>100.39</td>
<td>111.111</td>
<td>134.6</td>
<td></td>
</tr>
<tr>
<td>100.0</td>
<td>135.126</td>
<td>126.100</td>
<td>100.41</td>
<td>112.112</td>
<td>135.6</td>
<td></td>
</tr>
<tr>
<td>125.0</td>
<td>136.127</td>
<td>127.100</td>
<td>42.113</td>
<td>136.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>160.0</td>
<td>136.128</td>
<td>128.98</td>
<td>44.114</td>
<td>136.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>200.0</td>
<td>135.130</td>
<td>130.96</td>
<td>46.115</td>
<td>136.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>250.0</td>
<td>135.131</td>
<td>131.93</td>
<td>47.115</td>
<td>136.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>315.0</td>
<td>134.132</td>
<td>132.90</td>
<td>49.116</td>
<td>136.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>400.0</td>
<td>132.134</td>
<td>134.88</td>
<td>50.116</td>
<td>136.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500.0</td>
<td>131.135</td>
<td>135.85</td>
<td>51.116</td>
<td>136.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>630.0</td>
<td>130.136</td>
<td>136.82</td>
<td>52.117</td>
<td>137.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>800.0</td>
<td>129.137</td>
<td>137.80</td>
<td>52.117</td>
<td>138.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1000.0</td>
<td>129.138</td>
<td>138.77</td>
<td>53.117</td>
<td>138.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1250.0</td>
<td>129.138</td>
<td>138.74</td>
<td>54.117</td>
<td>138.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1600.0</td>
<td>128.138</td>
<td>138.72</td>
<td>54.117</td>
<td>138.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000.0</td>
<td>128.137</td>
<td>137.69</td>
<td>54.117</td>
<td>137.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2500.0</td>
<td>128.136</td>
<td>136.66</td>
<td>55.116</td>
<td>136.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3150.0</td>
<td>125.135</td>
<td>135.64</td>
<td>55.116</td>
<td>135.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4000.0</td>
<td>123.133</td>
<td>133.61</td>
<td>55.115</td>
<td>133.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5000.0</td>
<td>122.132</td>
<td>132.58</td>
<td>55.115</td>
<td>132.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**BASPL** 145.6 147.5 108.0 64.8 128.6 149.7
CASE 14: W62, IKRL (BRAKE RELEASE)

**AL** = 0. FT USB = 0. DEG R/RO = 1.000
**UA** = 870. FT/S **DOOR** = CLOSED **THETA** = 6. DEG

**VA** = 870. FT/S **DOOR** = UP **THETA** = 6. DEG

**RIBBON** **STA** **WL** **BL**(IN) **BL**(OUT)
**AT NOZ EX** 345. 213. 61. 115.
**AT WING** 425. 201. 57. 136.
**AT TR OFF** 425. 201. 57. 136.
**AT TR EDG** 449. 193. 57. 136.

**TRAIL EDGE** 449. 193. 57. 136.

**FIELD POINT** 395. 206. 90.

**FIELD POINT IN ZONE 1 AND IS ABOVE, ON OR UNDER FLOW RIBBON**

$= 50.0 \text{ DELTA} = 0.5$

**PEAK JET MIX LEVEL** = 141. DB AT 131. HZ

**CORRECTION FOR VGS APPLIED**

DSPL = 5. DB F1 = 280.1. HZ

**PEAK NEAR NOZ LEVEL** = 135. DB AT 1200. HZ

**STE** = 105. **DELTATE** = 0.

**PEAK TRAIL EDGE LEVEL** = 103. DB AT 94. HZ

**PEAK SEP LEVEL** = 64. DB AT 4743. HZ

**PEAK TBL LEVEL** = 126. DB AT 2436. HZ

**SPL IN DB RE 200 PICOBAR (BY COMP AND SUM)**

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>133</td>
<td>114</td>
<td>92</td>
<td>39</td>
<td>106</td>
<td>133.4</td>
</tr>
<tr>
<td>31</td>
<td>135</td>
<td>115</td>
<td>94</td>
<td>40</td>
<td>108</td>
<td>134.7</td>
</tr>
<tr>
<td>40</td>
<td>136</td>
<td>117</td>
<td>97</td>
<td>42</td>
<td>110</td>
<td>136.1</td>
</tr>
<tr>
<td>50</td>
<td>137</td>
<td>118</td>
<td>100</td>
<td>44</td>
<td>111</td>
<td>137.4</td>
</tr>
<tr>
<td>63</td>
<td>139</td>
<td>120</td>
<td>102</td>
<td>45</td>
<td>113</td>
<td>138.8</td>
</tr>
<tr>
<td>80</td>
<td>140</td>
<td>121</td>
<td>103</td>
<td>47</td>
<td>115</td>
<td>140.0</td>
</tr>
<tr>
<td>100</td>
<td>141</td>
<td>122</td>
<td>103</td>
<td>49</td>
<td>116</td>
<td>140.7</td>
</tr>
<tr>
<td>125</td>
<td>141</td>
<td>124</td>
<td>102</td>
<td>50</td>
<td>118</td>
<td>141.0</td>
</tr>
<tr>
<td>150</td>
<td>141</td>
<td>125</td>
<td>101</td>
<td>52</td>
<td>120</td>
<td>140.9</td>
</tr>
<tr>
<td>200</td>
<td>140</td>
<td>126</td>
<td>98</td>
<td>54</td>
<td>121</td>
<td>140.4</td>
</tr>
<tr>
<td>250</td>
<td>139</td>
<td>128</td>
<td>96</td>
<td>55</td>
<td>122</td>
<td>139.5</td>
</tr>
<tr>
<td>315</td>
<td>138</td>
<td>129</td>
<td>93</td>
<td>57</td>
<td>123</td>
<td>138.4</td>
</tr>
<tr>
<td>400</td>
<td>136</td>
<td>130</td>
<td>90</td>
<td>58</td>
<td>123</td>
<td>137.5</td>
</tr>
<tr>
<td>500</td>
<td>135</td>
<td>132</td>
<td>88</td>
<td>59</td>
<td>124</td>
<td>136.9</td>
</tr>
<tr>
<td>630</td>
<td>134</td>
<td>133</td>
<td>85</td>
<td>60</td>
<td>124</td>
<td>136.6</td>
</tr>
<tr>
<td>800</td>
<td>134</td>
<td>134</td>
<td>82</td>
<td>60</td>
<td>125</td>
<td>137.1</td>
</tr>
<tr>
<td>1000</td>
<td>134</td>
<td>134</td>
<td>80</td>
<td>61</td>
<td>125</td>
<td>137.3</td>
</tr>
<tr>
<td>1250</td>
<td>133</td>
<td>135</td>
<td>77</td>
<td>62</td>
<td>126</td>
<td>137.3</td>
</tr>
<tr>
<td>1600</td>
<td>133</td>
<td>134</td>
<td>74</td>
<td>62</td>
<td>126</td>
<td>136.9</td>
</tr>
<tr>
<td>2000</td>
<td>132</td>
<td>134</td>
<td>72</td>
<td>63</td>
<td>126</td>
<td>136.2</td>
</tr>
<tr>
<td>2500</td>
<td>131</td>
<td>132</td>
<td>69</td>
<td>63</td>
<td>126</td>
<td>135.2</td>
</tr>
<tr>
<td>3150</td>
<td>129</td>
<td>131</td>
<td>66</td>
<td>63</td>
<td>126</td>
<td>134.0</td>
</tr>
<tr>
<td>4000</td>
<td>128</td>
<td>130</td>
<td>64</td>
<td>63</td>
<td>126</td>
<td>132.8</td>
</tr>
<tr>
<td>5000</td>
<td>126</td>
<td>128</td>
<td>61</td>
<td>64</td>
<td>125</td>
<td>131.5</td>
</tr>
</tbody>
</table>

**OASPL** 150.6 144.0 110.6 72.9 136.9 151.6
CASE 10, F04, BKRL (BRAKE RELEASE)

ALT = 0. FT  USB = 0. DEG  R/RO = 1.000
VR = 0. FT/S  IDOR = CLOSED  THETAS = 6. DEG
VU = 870. FT/S  UGS = UF  THETAF = 19. DEG

RIBBON  STA  WL  BL (IND)  BL (OUT)
AT NO2 EX = 349. 213. 61. 115.
AT WNG TE = 425. 201. 57. 136.
AT TR OFF = 425. 201. 57. 136.
AT TR EDG = 449. 193. 57. 136.

TRAIL EDGE = 449. 193. 57. 136.

FIELD POINT = 433. 199. 60.

FIELD POINT IN ZONE 3 AND IS ABOVE OR UNDER FLOW RIBBON
S = 88.2  DELTA = .7

PEAK JET MIX LEVEL = 149. DB AT 103. HZ
CORRECTION FOR UGS APPLIED
DSPL = 5. DB  F1 = 2801. HZ
PEAK NEAR NO2 LEVEL = 130. DB AT 1200. HZ
STE = 105.  DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 88. DB AT 94. HZ
PEAK SEP LEVEL = 87. DB AT 4743. HZ
PEAK TEL LEVEL = 126. DB AT 2053. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>MN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>143</td>
<td>110</td>
<td>76.0</td>
<td>62.</td>
<td>107.</td>
<td>142.7</td>
</tr>
<tr>
<td>31</td>
<td>144</td>
<td>111</td>
<td>79.0</td>
<td>63.</td>
<td>109.</td>
<td>143.9</td>
</tr>
<tr>
<td>40</td>
<td>145</td>
<td>113</td>
<td>82.0</td>
<td>65.</td>
<td>111.</td>
<td>145.4</td>
</tr>
<tr>
<td>50</td>
<td>147</td>
<td>114</td>
<td>84.0</td>
<td>67.</td>
<td>112.</td>
<td>146.7</td>
</tr>
<tr>
<td>63</td>
<td>148</td>
<td>115</td>
<td>87.0</td>
<td>69.</td>
<td>114.</td>
<td>147.9</td>
</tr>
<tr>
<td>80</td>
<td>149</td>
<td>117</td>
<td>88.0</td>
<td>70.</td>
<td>116.</td>
<td>148.6</td>
</tr>
<tr>
<td>100</td>
<td>149</td>
<td>118</td>
<td>88.0</td>
<td>72.</td>
<td>117.</td>
<td>148.9</td>
</tr>
<tr>
<td>125</td>
<td>149</td>
<td>119</td>
<td>87.0</td>
<td>74.</td>
<td>119.</td>
<td>148.7</td>
</tr>
<tr>
<td>160</td>
<td>148</td>
<td>121</td>
<td>86.0</td>
<td>75.</td>
<td>120.</td>
<td>148.2</td>
</tr>
<tr>
<td>200</td>
<td>147</td>
<td>122</td>
<td>83.0</td>
<td>77.</td>
<td>121.</td>
<td>147.1</td>
</tr>
<tr>
<td>250</td>
<td>146</td>
<td>123</td>
<td>81.0</td>
<td>79.</td>
<td>122.</td>
<td>145.8</td>
</tr>
<tr>
<td>315</td>
<td>144</td>
<td>125</td>
<td>78.0</td>
<td>80.</td>
<td>123.</td>
<td>144.5</td>
</tr>
<tr>
<td>400</td>
<td>143</td>
<td>126</td>
<td>75.0</td>
<td>81.</td>
<td>123.</td>
<td>143.2</td>
</tr>
<tr>
<td>500</td>
<td>142</td>
<td>127</td>
<td>73.0</td>
<td>82.</td>
<td>124.</td>
<td>142.0</td>
</tr>
<tr>
<td>630</td>
<td>140</td>
<td>129</td>
<td>70.0</td>
<td>83.</td>
<td>124.</td>
<td>140.8</td>
</tr>
<tr>
<td>800</td>
<td>140</td>
<td>130</td>
<td>67.0</td>
<td>84.</td>
<td>125.</td>
<td>140.7</td>
</tr>
<tr>
<td>1000</td>
<td>140</td>
<td>130</td>
<td>65.0</td>
<td>84.</td>
<td>125.</td>
<td>140.7</td>
</tr>
<tr>
<td>1250</td>
<td>140</td>
<td>130</td>
<td>62.0</td>
<td>85.</td>
<td>125.</td>
<td>140.4</td>
</tr>
<tr>
<td>1600</td>
<td>139</td>
<td>130</td>
<td>59.0</td>
<td>85.</td>
<td>126.</td>
<td>139.9</td>
</tr>
<tr>
<td>2000</td>
<td>138</td>
<td>129</td>
<td>56.0</td>
<td>86.</td>
<td>126.</td>
<td>139.1</td>
</tr>
<tr>
<td>2500</td>
<td>137</td>
<td>128</td>
<td>54.0</td>
<td>86.</td>
<td>126.</td>
<td>138.1</td>
</tr>
<tr>
<td>3150</td>
<td>136</td>
<td>127</td>
<td>51.0</td>
<td>86.</td>
<td>125.</td>
<td>136.8</td>
</tr>
<tr>
<td>4000</td>
<td>134</td>
<td>125</td>
<td>48.0</td>
<td>87.</td>
<td>125.</td>
<td>135.3</td>
</tr>
<tr>
<td>5000</td>
<td>133</td>
<td>124</td>
<td>46.0</td>
<td>87.</td>
<td>125.</td>
<td>133.7</td>
</tr>
</tbody>
</table>

OASPL 158.4 139.7 95.4 96.2 136.7 158.5
CASE 11, F05, EKRL (BRAKE RELEASE)

ALT = 0. FT USB = 0. DEG R/RO = 1.000
VA = 0. FT/S DOOR = CLOSED THETA = 6. DEG
VJ = 870. FT/S VGS = UP THETA = 19. DEG

RIBBON STA WL BL (IN) BL (OUT)
AT NOZ EX 345. 213. 61. 115.
AT WNG TE 425. 201. 57. 136.
AT TR OFF 425. 201. 57. 136.
AT TR EDG 449. 193. 57. 136.

TRAIL EDGE 449. 193. 57. 136.
FIELD POINT 433. 199. 90.

FIELD POINT IN ZONE 3 AND IS
ABOVE ON OR UNDER FLOW RIBBON
S = 88.2 DELTA = .7

PEAK JET MIX LEVEL = 149. DB AT 103. HZ
CORRECTION FOR VGS APPLIED
DISPL = 5. DB F1 = 2801. HZ
PEAK NEAR NOZ LEVEL = 130. DB AT 1200. HZ
STE = 105. DELTA = 0.
PEAK TRAIL EDGE LEVEL = 99. DB AT 94. HZ
PEAK SEP LEVEL = 95. DB AT 4743. HZ
PEAK TBL LEVEL = 126. DB AT 2053. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>143</td>
<td>110</td>
<td>88</td>
<td>70</td>
<td>107</td>
<td>142.7</td>
</tr>
<tr>
<td>31</td>
<td>144</td>
<td>111</td>
<td>90</td>
<td>71</td>
<td>109</td>
<td>143.9</td>
</tr>
<tr>
<td>40</td>
<td>145</td>
<td>113</td>
<td>93</td>
<td>73</td>
<td>111</td>
<td>145.4</td>
</tr>
<tr>
<td>50</td>
<td>157</td>
<td>114</td>
<td>96</td>
<td>75</td>
<td>112</td>
<td>146.7</td>
</tr>
<tr>
<td>63</td>
<td>158</td>
<td>115</td>
<td>98</td>
<td>76</td>
<td>114</td>
<td>147.9</td>
</tr>
<tr>
<td>80</td>
<td>159</td>
<td>117</td>
<td>99</td>
<td>78</td>
<td>115</td>
<td>148.6</td>
</tr>
<tr>
<td>100</td>
<td>149</td>
<td>118</td>
<td>99</td>
<td>80</td>
<td>117</td>
<td>148.9</td>
</tr>
<tr>
<td>125</td>
<td>159</td>
<td>119</td>
<td>98</td>
<td>81</td>
<td>119</td>
<td>148.7</td>
</tr>
<tr>
<td>160</td>
<td>158</td>
<td>121</td>
<td>97</td>
<td>83</td>
<td>120</td>
<td>148.2</td>
</tr>
<tr>
<td>200</td>
<td>157</td>
<td>122</td>
<td>94</td>
<td>85</td>
<td>121</td>
<td>147.1</td>
</tr>
<tr>
<td>250</td>
<td>146</td>
<td>123</td>
<td>92</td>
<td>86</td>
<td>122</td>
<td>145.8</td>
</tr>
<tr>
<td>315</td>
<td>144</td>
<td>125</td>
<td>89</td>
<td>88</td>
<td>123</td>
<td>144.5</td>
</tr>
<tr>
<td>400</td>
<td>143</td>
<td>126</td>
<td>86</td>
<td>89</td>
<td>123</td>
<td>143.2</td>
</tr>
<tr>
<td>500</td>
<td>142</td>
<td>127</td>
<td>84</td>
<td>90</td>
<td>124</td>
<td>142.0</td>
</tr>
<tr>
<td>630</td>
<td>140</td>
<td>129</td>
<td>81</td>
<td>91</td>
<td>124</td>
<td>140.8</td>
</tr>
<tr>
<td>800</td>
<td>140</td>
<td>130</td>
<td>78</td>
<td>91</td>
<td>125</td>
<td>140.7</td>
</tr>
<tr>
<td>1000</td>
<td>140</td>
<td>130</td>
<td>76</td>
<td>92</td>
<td>125</td>
<td>140.7</td>
</tr>
<tr>
<td>1250</td>
<td>140</td>
<td>130</td>
<td>73</td>
<td>93</td>
<td>125</td>
<td>140.4</td>
</tr>
<tr>
<td>1600</td>
<td>139</td>
<td>130</td>
<td>70</td>
<td>93</td>
<td>126</td>
<td>139.9</td>
</tr>
<tr>
<td>2000</td>
<td>138</td>
<td>129</td>
<td>68</td>
<td>93</td>
<td>126</td>
<td>139.1</td>
</tr>
<tr>
<td>2500</td>
<td>137</td>
<td>128</td>
<td>65</td>
<td>94</td>
<td>126</td>
<td>138.1</td>
</tr>
<tr>
<td>3150</td>
<td>136</td>
<td>127</td>
<td>62</td>
<td>94</td>
<td>125</td>
<td>136.8</td>
</tr>
<tr>
<td>4000</td>
<td>134</td>
<td>125</td>
<td>60</td>
<td>94</td>
<td>125</td>
<td>135.3</td>
</tr>
<tr>
<td>5000</td>
<td>133</td>
<td>124</td>
<td>57</td>
<td>94</td>
<td>125</td>
<td>133.7</td>
</tr>
</tbody>
</table>

DRSPL 158.4 139.7 106.7 103.8 136.7 158.5
CASE 12, FO6R PKRL (BRAKE RELEASE)

ALT = 0. FT USB = 0. DEG R/RO = 1.000

VA = 0. FT/S IDOR = CLOSED THETAS = 6. DEG

VU = 870. FT/S VGS = UP THETAP = 19. DEG

RIBBON WL BL(IN) BL(OUT)
AT NOZ EX 345. 213. 61. 115.
AT WNG TE 425. 201. 57. 136.
AT TR OFF 425. 201. 57. 136.
AT TR EDG 449. 193. 57. 136.

TRAIL EDGE 449. 193. 57. 136.

FIELD POINT 433. 199. 130.

FIELD POINT IN ZONE 3 AND IS ABOVE, ON OR UNDER FLOW RIBBON
S = 88.2 DELTA = .7

PEAK JET MIX LEVEL = 149. DB AT 103. HZ
CORRECTION FOR VGS APPLIED
DSPL = 5. DB F1 = 2801. HZ
PEAK NEAR NOZ LEVEL = 130. DB AT 1200. HZ
STE = 105. DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 89. DB AT 94. HZ
PEAK SEP LEVEL = 98. DB AT 4743. HZ
PEAK TBL LEVEL = 126. DB AT 2053. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>143</td>
<td>110</td>
<td>78</td>
<td>73</td>
<td>107</td>
<td>142.7</td>
</tr>
<tr>
<td>31</td>
<td>144</td>
<td>111</td>
<td>80</td>
<td>74</td>
<td>109</td>
<td>143.9</td>
</tr>
<tr>
<td>40</td>
<td>145</td>
<td>113</td>
<td>83</td>
<td>76</td>
<td>111</td>
<td>145.4</td>
</tr>
<tr>
<td>50</td>
<td>147</td>
<td>114</td>
<td>86</td>
<td>78</td>
<td>112</td>
<td>146.7</td>
</tr>
<tr>
<td>60</td>
<td>148</td>
<td>115</td>
<td>88</td>
<td>79</td>
<td>114</td>
<td>147.9</td>
</tr>
<tr>
<td>80</td>
<td>149</td>
<td>117</td>
<td>89</td>
<td>81</td>
<td>116</td>
<td>148.6</td>
</tr>
<tr>
<td>100</td>
<td>149</td>
<td>118</td>
<td>89</td>
<td>83</td>
<td>117</td>
<td>148.9</td>
</tr>
<tr>
<td>120</td>
<td>149</td>
<td>119</td>
<td>88</td>
<td>84</td>
<td>119</td>
<td>148.7</td>
</tr>
<tr>
<td>160</td>
<td>148</td>
<td>121</td>
<td>87</td>
<td>86</td>
<td>120</td>
<td>148.2</td>
</tr>
<tr>
<td>200</td>
<td>147</td>
<td>122</td>
<td>84</td>
<td>88</td>
<td>121</td>
<td>147.1</td>
</tr>
<tr>
<td>250</td>
<td>146</td>
<td>123</td>
<td>82</td>
<td>89</td>
<td>122</td>
<td>145.8</td>
</tr>
<tr>
<td>315</td>
<td>144</td>
<td>125</td>
<td>79</td>
<td>91</td>
<td>123</td>
<td>144.5</td>
</tr>
<tr>
<td>400</td>
<td>143</td>
<td>126</td>
<td>76</td>
<td>92</td>
<td>123</td>
<td>143.2</td>
</tr>
<tr>
<td>500</td>
<td>142</td>
<td>127</td>
<td>74</td>
<td>93</td>
<td>124</td>
<td>142.0</td>
</tr>
<tr>
<td>630</td>
<td>140</td>
<td>129</td>
<td>71</td>
<td>94</td>
<td>124</td>
<td>140.8</td>
</tr>
<tr>
<td>800</td>
<td>140</td>
<td>130</td>
<td>68</td>
<td>95</td>
<td>125</td>
<td>140.7</td>
</tr>
<tr>
<td>1000</td>
<td>140</td>
<td>130</td>
<td>66</td>
<td>95</td>
<td>125</td>
<td>140.7</td>
</tr>
<tr>
<td>1250</td>
<td>140</td>
<td>130</td>
<td>63</td>
<td>96</td>
<td>125</td>
<td>140.4</td>
</tr>
<tr>
<td>1600</td>
<td>139</td>
<td>130</td>
<td>60</td>
<td>96</td>
<td>126</td>
<td>139.9</td>
</tr>
<tr>
<td>2000</td>
<td>138</td>
<td>129</td>
<td>58</td>
<td>97</td>
<td>126</td>
<td>139.1</td>
</tr>
<tr>
<td>2500</td>
<td>137</td>
<td>128</td>
<td>55</td>
<td>97</td>
<td>126</td>
<td>138.1</td>
</tr>
<tr>
<td>3150</td>
<td>136</td>
<td>127</td>
<td>52</td>
<td>97</td>
<td>125</td>
<td>136.8</td>
</tr>
<tr>
<td>4000</td>
<td>134</td>
<td>125</td>
<td>50</td>
<td>98</td>
<td>125</td>
<td>135.3</td>
</tr>
<tr>
<td>5000</td>
<td>133</td>
<td>124</td>
<td>47</td>
<td>98</td>
<td>125</td>
<td>133.7</td>
</tr>
</tbody>
</table>

DSPL 158.4 139.7 96.6 107.1 136.7 158.5

82
SECTION III
COMPUTER TABULATIONS FOR FIELD POINT NOISE LEVELS AT STOL OPERATION DUE TO OUTBOARD ENGINES
PROGRAM USBEST-VERSION 06/MAY/78
UPDATED MARCH, 1979, L. BUTZEL
GENERATES SPL ESTIMATE OF EXTERIOR FUSELAGE/FLAP/WING FLUCTUATING PRESSURE LEVELS FOR USB AIRCRAFT

AUTHORS= L. BUTZEL; W. LUNDT
USER DOCUMENTATION=D6-XXXXX
RUN DATE= 79/03/22.

A/P GEOMETRY CHANGES ARE

<table>
<thead>
<tr>
<th>PARAM</th>
<th>NEW</th>
<th>OLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>THUKD</td>
<td>20.0</td>
<td>-1</td>
</tr>
<tr>
<td>THIKU</td>
<td>0.0</td>
<td>-1</td>
</tr>
<tr>
<td>THOKI</td>
<td>12.0</td>
<td>-1</td>
</tr>
<tr>
<td>THIKO</td>
<td>0.0</td>
<td>-1</td>
</tr>
<tr>
<td>THTB</td>
<td>0.0</td>
<td>-1</td>
</tr>
<tr>
<td>THSK</td>
<td>-12.0</td>
<td>-1</td>
</tr>
<tr>
<td>THW</td>
<td>19.0</td>
<td>-1</td>
</tr>
<tr>
<td>AEFF</td>
<td>770.0</td>
<td>-1</td>
</tr>
<tr>
<td>ADOOR</td>
<td>0.0</td>
<td>-1</td>
</tr>
<tr>
<td>AVG</td>
<td>5.0</td>
<td>-1</td>
</tr>
<tr>
<td>NVG</td>
<td>12.0</td>
<td>-1.0</td>
</tr>
<tr>
<td>W</td>
<td>54.0</td>
<td>-1</td>
</tr>
<tr>
<td>LW</td>
<td>51.0</td>
<td>-1</td>
</tr>
<tr>
<td>RF</td>
<td>26.0</td>
<td>-1</td>
</tr>
<tr>
<td>XO</td>
<td>182.0</td>
<td>-1</td>
</tr>
<tr>
<td>Y0</td>
<td>374.0</td>
<td>-1</td>
</tr>
<tr>
<td>Z0</td>
<td>208.0</td>
<td>-1</td>
</tr>
<tr>
<td>Z1</td>
<td>201.0</td>
<td>-1</td>
</tr>
<tr>
<td>LT</td>
<td>25.0</td>
<td>-1</td>
</tr>
<tr>
<td>YR</td>
<td>0.0</td>
<td>-1</td>
</tr>
<tr>
<td>LFAN</td>
<td>150.0</td>
<td>-1</td>
</tr>
<tr>
<td>XEEL</td>
<td>57.0</td>
<td>-1</td>
</tr>
</tbody>
</table>
CASE 1: B01; ST50 (STOL FLAPS=50)

ALT= 6500. FT  USB =50. DEG  R/RD = .848
VA = 110. FT/S  DOOR= CLOSED  THETAS= -5. DEG
VJ = 680. FT/S  USB = UP  THETAP= 33. DEG

RIBBON  STA  WL  BL (IN)  BL (OUT)
AT NOZ EX  374.  208.  155.  209.
AT WNG TE  425.  201.  143.  211.
AT TR QFF  431.  198.  143.  211.
AT TR EDG  460.  179.  143.  211.

TRAIL EDGE  450.  162.  143.  211.

FIELD POINT  460.  190.  57.
FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S= 86.4 DELTA = 86.8

PEAK JET MIX LEVEL= 116. DB AT 482. HZ
CORRECTION FOR UGS APPLIED
DSPL= 5. DB  FI= 2190. HZ
PEAK NEAR NOZ LEVEL= 97. DB AT 938. HZ
STE= 93. DELTATE= 20,
PEAK TRAIL EDGE LEVEL= 76. DB AT 127. HZ
PEAK SEP LEVEL= 85. DB AT 33. HZ
PEAK TBL LEVEL= 90. DB AT 115. HZ

SPL- IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>109</td>
<td>78</td>
<td>61</td>
<td>84</td>
<td>88</td>
<td>109.5</td>
</tr>
<tr>
<td>31</td>
<td>110</td>
<td>79</td>
<td>63</td>
<td>85</td>
<td>88</td>
<td>110.1</td>
</tr>
<tr>
<td>40</td>
<td>111</td>
<td>81</td>
<td>66</td>
<td>84</td>
<td>89</td>
<td>110.9</td>
</tr>
<tr>
<td>50</td>
<td>111</td>
<td>82</td>
<td>69</td>
<td>84</td>
<td>89</td>
<td>111.5</td>
</tr>
<tr>
<td>63</td>
<td>112</td>
<td>83</td>
<td>72</td>
<td>84</td>
<td>90</td>
<td>112.2</td>
</tr>
<tr>
<td>80</td>
<td>113</td>
<td>85</td>
<td>74</td>
<td>83</td>
<td>90</td>
<td>112.9</td>
</tr>
<tr>
<td>100</td>
<td>113</td>
<td>86</td>
<td>75</td>
<td>83</td>
<td>90</td>
<td>113.5</td>
</tr>
<tr>
<td>125</td>
<td>114</td>
<td>87</td>
<td>76</td>
<td>82</td>
<td>90</td>
<td>114.2</td>
</tr>
<tr>
<td>160</td>
<td>115</td>
<td>89</td>
<td>75</td>
<td>82</td>
<td>90</td>
<td>114.9</td>
</tr>
<tr>
<td>200</td>
<td>116</td>
<td>90</td>
<td>74</td>
<td>81</td>
<td>89</td>
<td>115.5</td>
</tr>
<tr>
<td>250</td>
<td>116</td>
<td>91</td>
<td>72</td>
<td>81</td>
<td>89</td>
<td>116.2</td>
</tr>
<tr>
<td>315</td>
<td>117</td>
<td>92</td>
<td>69</td>
<td>80</td>
<td>89</td>
<td>116.6</td>
</tr>
<tr>
<td>400</td>
<td>116</td>
<td>94</td>
<td>66</td>
<td>79</td>
<td>88</td>
<td>116.5</td>
</tr>
<tr>
<td>500</td>
<td>116</td>
<td>95</td>
<td>64</td>
<td>79</td>
<td>88</td>
<td>116.1</td>
</tr>
<tr>
<td>630</td>
<td>117</td>
<td>96</td>
<td>61</td>
<td>78</td>
<td>87</td>
<td>117.1</td>
</tr>
<tr>
<td>800</td>
<td>118</td>
<td>97</td>
<td>58</td>
<td>77</td>
<td>87</td>
<td>117.6</td>
</tr>
<tr>
<td>1000</td>
<td>117</td>
<td>97</td>
<td>56</td>
<td>76</td>
<td>86</td>
<td>117.4</td>
</tr>
<tr>
<td>1250</td>
<td>117</td>
<td>96</td>
<td>53</td>
<td>76</td>
<td>85</td>
<td>116.8</td>
</tr>
<tr>
<td>1600</td>
<td>116</td>
<td>96</td>
<td>50</td>
<td>75</td>
<td>85</td>
<td>115.9</td>
</tr>
<tr>
<td>2000</td>
<td>115</td>
<td>94</td>
<td>48</td>
<td>74</td>
<td>84</td>
<td>114.8</td>
</tr>
<tr>
<td>2500</td>
<td>113</td>
<td>93</td>
<td>45</td>
<td>73</td>
<td>83</td>
<td>113.5</td>
</tr>
<tr>
<td>3150</td>
<td>112</td>
<td>92</td>
<td>43</td>
<td>72</td>
<td>82</td>
<td>111.9</td>
</tr>
<tr>
<td>4000</td>
<td>110</td>
<td>90</td>
<td>40</td>
<td>71</td>
<td>81</td>
<td>110.0</td>
</tr>
<tr>
<td>5000</td>
<td>108</td>
<td>89</td>
<td>37</td>
<td>71</td>
<td>81</td>
<td>107.9</td>
</tr>
</tbody>
</table>

DASPL 128.4 106.2 83.5 94.6 101.5 128.5

85
CASE 2, B02, BKRL (STOL FLAPS=50)

<table>
<thead>
<tr>
<th>FT</th>
<th>Altitude</th>
<th>Deg</th>
<th>FLDO</th>
<th>STOL</th>
<th>FLAIPS</th>
<th>50</th>
</tr>
</thead>
<tbody>
<tr>
<td>6500</td>
<td>6500</td>
<td>110</td>
<td>680</td>
<td>848</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RIBBON</th>
<th>STA</th>
<th>WL</th>
<th>BL (IN)</th>
<th>BL (OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noz Ex</td>
<td>374</td>
<td>208</td>
<td>155</td>
<td>209</td>
</tr>
<tr>
<td>Wing TE</td>
<td>425</td>
<td>201</td>
<td>143</td>
<td>211</td>
</tr>
<tr>
<td>TR Off</td>
<td>431</td>
<td>198</td>
<td>143</td>
<td>211</td>
</tr>
<tr>
<td>TR Edg</td>
<td>460</td>
<td>179</td>
<td>143</td>
<td>211</td>
</tr>
</tbody>
</table>

| TRAIL EDGE | 450 | 162 | 143 | 211 |

| FIELD POINT | 460 | 160 | 57 |

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON

S = 102.7 DELTA = 87.8

PEAK JET MIX LEVEL= 116. DB AT 445. HZ
CORRECTION FOR UGS APPLIED

<table>
<thead>
<tr>
<th>DSPL</th>
<th>5. DB FL= 2190. HZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEAK NEAR NOZ LEVEL= 95. DB AT 938. HZ</td>
<td></td>
</tr>
<tr>
<td>STE= 93. DELTATE= 20.</td>
<td></td>
</tr>
<tr>
<td>PEAK TRAIL EDGE LEVEL= 60. DB AT 127. HZ</td>
<td></td>
</tr>
<tr>
<td>PEAK SEP LEVEL= 84. DB AT 33. HZ</td>
<td></td>
</tr>
<tr>
<td>PEAK TBL LEVEL= 90. DB AT 115. HZ</td>
<td></td>
</tr>
</tbody>
</table>

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.0</td>
<td>110.</td>
<td>76.</td>
<td>45.</td>
<td>84.</td>
<td>88.</td>
<td>109.2</td>
</tr>
<tr>
<td>31.0</td>
<td>110.</td>
<td>76.</td>
<td>48.</td>
<td>84.</td>
<td>88.</td>
<td>109.8</td>
</tr>
<tr>
<td>40.0</td>
<td>111.</td>
<td>79.</td>
<td>50.</td>
<td>84.</td>
<td>89.</td>
<td>110.6</td>
</tr>
<tr>
<td>50.0</td>
<td>111.</td>
<td>80.</td>
<td>53.</td>
<td>84.</td>
<td>89.</td>
<td>111.2</td>
</tr>
<tr>
<td>63.0</td>
<td>112.</td>
<td>82.</td>
<td>56.</td>
<td>83.</td>
<td>90.</td>
<td>111.9</td>
</tr>
<tr>
<td>80.0</td>
<td>113.</td>
<td>83.</td>
<td>58.</td>
<td>83.</td>
<td>90.</td>
<td>112.6</td>
</tr>
<tr>
<td>100.0</td>
<td>113.</td>
<td>84.</td>
<td>59.</td>
<td>92.</td>
<td>90.</td>
<td>113.2</td>
</tr>
<tr>
<td>125.0</td>
<td>114.</td>
<td>86.</td>
<td>60.</td>
<td>82.</td>
<td>90.</td>
<td>113.9</td>
</tr>
<tr>
<td>160.0</td>
<td>115.</td>
<td>87.</td>
<td>59.</td>
<td>81.</td>
<td>90.</td>
<td>114.6</td>
</tr>
<tr>
<td>200.0</td>
<td>115.</td>
<td>88.</td>
<td>58.</td>
<td>81.</td>
<td>89.</td>
<td>115.2</td>
</tr>
<tr>
<td>250.0</td>
<td>116.</td>
<td>90.</td>
<td>56.</td>
<td>80.</td>
<td>89.</td>
<td>115.8</td>
</tr>
<tr>
<td>315.0</td>
<td>116.</td>
<td>91.</td>
<td>53.</td>
<td>80.</td>
<td>89.</td>
<td>116.1</td>
</tr>
<tr>
<td>400.0</td>
<td>116.</td>
<td>92.</td>
<td>50.</td>
<td>79.</td>
<td>88.</td>
<td>115.8</td>
</tr>
<tr>
<td>500.0</td>
<td>115.</td>
<td>94.</td>
<td>48.</td>
<td>78.</td>
<td>88.</td>
<td>115.5</td>
</tr>
<tr>
<td>630.0</td>
<td>116.</td>
<td>95.</td>
<td>45.</td>
<td>77.</td>
<td>87.</td>
<td>116.3</td>
</tr>
<tr>
<td>800.0</td>
<td>117.</td>
<td>95.</td>
<td>42.</td>
<td>77.</td>
<td>87.</td>
<td>116.7</td>
</tr>
<tr>
<td>1000.0</td>
<td>116.</td>
<td>95.</td>
<td>40.</td>
<td>76.</td>
<td>86.</td>
<td>116.4</td>
</tr>
<tr>
<td>1250.0</td>
<td>116.</td>
<td>95.</td>
<td>37.</td>
<td>75.</td>
<td>85.</td>
<td>115.8</td>
</tr>
<tr>
<td>1600.0</td>
<td>115.</td>
<td>94.</td>
<td>34.</td>
<td>74.</td>
<td>85.</td>
<td>114.9</td>
</tr>
<tr>
<td>2000.0</td>
<td>114.</td>
<td>93.</td>
<td>32.</td>
<td>73.</td>
<td>84.</td>
<td>113.8</td>
</tr>
<tr>
<td>2500.0</td>
<td>112.</td>
<td>92.</td>
<td>29.</td>
<td>72.</td>
<td>83.</td>
<td>112.5</td>
</tr>
<tr>
<td>3150.0</td>
<td>111.</td>
<td>90.</td>
<td>27.</td>
<td>72.</td>
<td>82.</td>
<td>110.9</td>
</tr>
<tr>
<td>4000.0</td>
<td>109.</td>
<td>89.</td>
<td>24.</td>
<td>71.</td>
<td>81.</td>
<td>109.0</td>
</tr>
<tr>
<td>5000.0</td>
<td>107.</td>
<td>88.</td>
<td>21.</td>
<td>70.</td>
<td>81.</td>
<td>106.9</td>
</tr>
</tbody>
</table>

OASPL 127.8 104.8 67.5 94.1 101.5 127.8
CASE 3, B03, ST50 (STOL FLAPS=50)

ALT = 6500. FT  
USB = 50. DEG  
R/RD = .848

VA = 110. FT/S  
DOOR = CLOSED  
THETAS = -5. DEG

VU = 680. FT/S  
VGS = UP  
THETAP = 33. DEG

RIBBON  
STA  
WL  
BL<IN>  
BL<OUT>

AT NOZ EX  
374.  208.  155.  209.

AT WNG TE  
425.  201.  143.  211.

AT TR QFF  
431.  190.  143.  211.

AT TR EDG  
460.  179.  143.  211.

TRAIL EDGE  
450.  162.  143.  211.

FIELD POINT  
460.  130.  57.

FIELD POINT IN ZONE 3 AND IS  
INBOARD OF FLOW RIBBON

S = 119.1  
DELTA = 95.7

PEAK JET MIX LEVEL = 113. DB AT 428. HZ

CORRECTION FOR VGS APPLIED

DSPL = 5. DB  
F1 = 2190. HZ

PEAK NEAR NOZ LEVEL = 93. DB AT 938. HZ

STE = 93.  
Deltate = 20.

PEAK TRAIL EDGE LEVEL = 79. DB AT 127. HZ

PEAK SEP LEVEL = 80. DB AT 33. HZ

PEAK TBL LEVEL = 90. DB AT 115. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>107.</td>
<td>74.</td>
<td>64.</td>
<td>80.</td>
<td>88.</td>
<td>107.2</td>
</tr>
<tr>
<td>31.</td>
<td>108.</td>
<td>76.</td>
<td>67.</td>
<td>80.</td>
<td>88.</td>
<td>107.8</td>
</tr>
<tr>
<td>40.</td>
<td>109.</td>
<td>77.</td>
<td>70.</td>
<td>80.</td>
<td>89.</td>
<td>108.6</td>
</tr>
<tr>
<td>50.</td>
<td>109.</td>
<td>78.</td>
<td>72.</td>
<td>79.</td>
<td>89.</td>
<td>109.2</td>
</tr>
<tr>
<td>63.</td>
<td>110.</td>
<td>80.</td>
<td>75.</td>
<td>79.</td>
<td>90.</td>
<td>109.9</td>
</tr>
<tr>
<td>80.</td>
<td>111.</td>
<td>81.</td>
<td>78.</td>
<td>79.</td>
<td>90.</td>
<td>110.6</td>
</tr>
<tr>
<td>100.</td>
<td>111.</td>
<td>82.</td>
<td>79.</td>
<td>78.</td>
<td>90.</td>
<td>111.3</td>
</tr>
<tr>
<td>125.</td>
<td>112.</td>
<td>84.</td>
<td>79.</td>
<td>78.</td>
<td>90.</td>
<td>111.9</td>
</tr>
<tr>
<td>160.</td>
<td>113.</td>
<td>85.</td>
<td>79.</td>
<td>77.</td>
<td>90.</td>
<td>112.6</td>
</tr>
<tr>
<td>200.</td>
<td>113.</td>
<td>86.</td>
<td>78.</td>
<td>77.</td>
<td>89.</td>
<td>113.3</td>
</tr>
<tr>
<td>250.</td>
<td>114.</td>
<td>88.</td>
<td>75.</td>
<td>76.</td>
<td>89.</td>
<td>113.8</td>
</tr>
<tr>
<td>315.</td>
<td>114.</td>
<td>89.</td>
<td>73.</td>
<td>76.</td>
<td>89.</td>
<td>114.0</td>
</tr>
<tr>
<td>400.</td>
<td>114.</td>
<td>91.</td>
<td>70.</td>
<td>75.</td>
<td>88.</td>
<td>113.6</td>
</tr>
<tr>
<td>500.</td>
<td>113.</td>
<td>92.</td>
<td>67.</td>
<td>74.</td>
<td>88.</td>
<td>113.4</td>
</tr>
<tr>
<td>630.</td>
<td>114.</td>
<td>93.</td>
<td>65.</td>
<td>73.</td>
<td>87.</td>
<td>114.1</td>
</tr>
<tr>
<td>800.</td>
<td>114.</td>
<td>93.</td>
<td>62.</td>
<td>73.</td>
<td>87.</td>
<td>114.4</td>
</tr>
<tr>
<td>1000.</td>
<td>114.</td>
<td>93.</td>
<td>59.</td>
<td>72.</td>
<td>86.</td>
<td>114.1</td>
</tr>
<tr>
<td>1250.</td>
<td>113.</td>
<td>93.</td>
<td>57.</td>
<td>71.</td>
<td>85.</td>
<td>113.5</td>
</tr>
<tr>
<td>1600.</td>
<td>113.</td>
<td>92.</td>
<td>54.</td>
<td>70.</td>
<td>85.</td>
<td>112.6</td>
</tr>
<tr>
<td>2000.</td>
<td>111.</td>
<td>91.</td>
<td>51.</td>
<td>69.</td>
<td>84.</td>
<td>111.5</td>
</tr>
<tr>
<td>2500.</td>
<td>110.</td>
<td>90.</td>
<td>49.</td>
<td>68.</td>
<td>83.</td>
<td>110.2</td>
</tr>
<tr>
<td>3150.</td>
<td>109.</td>
<td>88.</td>
<td>46.</td>
<td>68.</td>
<td>82.</td>
<td>108.6</td>
</tr>
<tr>
<td>4000.</td>
<td>107.</td>
<td>87.</td>
<td>43.</td>
<td>67.</td>
<td>81.</td>
<td>106.6</td>
</tr>
<tr>
<td>5000.</td>
<td>105.</td>
<td>86.</td>
<td>41.</td>
<td>66.</td>
<td>81.</td>
<td>104.6</td>
</tr>
</tbody>
</table>

OASPL 125.6  102.9  86.8  90.0  101.5  125.7

87
CASE 4B04, ST50 (STOL FLAPS=50)

ALT = 6500. FT USB = 50. DEG R/RO = .848
Vp = 110. FT/S DOOR = CLOSED THETA* = 5. DEG
VU = 680. FT/S VGS = UP THETA* = 33. DEG

RIBBON STA WL BL (IN) BL (OUT)
AT NOZ EX 374. 208. 155. 209.
AT WNG TE 425. 201. 143. 211.
AT TR OFF 431. 198. 143. 211.
AT TR EDG 460. 179. 143. 211.

TRAIL EDGE 450. 162. 143. 211.

FIELD POINT 500. 190. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 120.0 DELTA = 91.7

PEAK JET MIX LEVEL = 114. DB AT 418. HZ
CORRECTION FOR VGS APPLIED
DISPL = 5. DB F1 = 2190. HZ
PEAK NEAR NOZ LEVEL = 94. DB AT 938. HZ
STF = 93. DELTATE = 20.
PEAK TRAIL EDGE LEVEL = 86. DB AT 127. HZ
PEAK SEP LEVEL = 81. DB AT 33. HZ
PEAK TBL LEVEL = 90. DB AT 108. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>108</td>
<td>75</td>
<td>71</td>
<td>81</td>
<td>88</td>
<td>107.6</td>
</tr>
<tr>
<td>31</td>
<td>109</td>
<td>76</td>
<td>74</td>
<td>81</td>
<td>88</td>
<td>108.2</td>
</tr>
<tr>
<td>40</td>
<td>109</td>
<td>77</td>
<td>76</td>
<td>81</td>
<td>89</td>
<td>109.0</td>
</tr>
<tr>
<td>50</td>
<td>110</td>
<td>79</td>
<td>79</td>
<td>81</td>
<td>89</td>
<td>109.6</td>
</tr>
<tr>
<td>63</td>
<td>110</td>
<td>80</td>
<td>82</td>
<td>80</td>
<td>90</td>
<td>110.3</td>
</tr>
<tr>
<td>80</td>
<td>111</td>
<td>81</td>
<td>84</td>
<td>80</td>
<td>90</td>
<td>111.0</td>
</tr>
<tr>
<td>100</td>
<td>112</td>
<td>83</td>
<td>85</td>
<td>79</td>
<td>90</td>
<td>111.6</td>
</tr>
<tr>
<td>125</td>
<td>112</td>
<td>84</td>
<td>86</td>
<td>79</td>
<td>90</td>
<td>112.3</td>
</tr>
<tr>
<td>160</td>
<td>113</td>
<td>86</td>
<td>85</td>
<td>78</td>
<td>90</td>
<td>113.0</td>
</tr>
<tr>
<td>200</td>
<td>114</td>
<td>87</td>
<td>84</td>
<td>78</td>
<td>90</td>
<td>113.6</td>
</tr>
<tr>
<td>250</td>
<td>114</td>
<td>88</td>
<td>82</td>
<td>77</td>
<td>89</td>
<td>114.2</td>
</tr>
<tr>
<td>315</td>
<td>114</td>
<td>89</td>
<td>79</td>
<td>77</td>
<td>88</td>
<td>114.9</td>
</tr>
<tr>
<td>400</td>
<td>114</td>
<td>91</td>
<td>77</td>
<td>76</td>
<td>88</td>
<td>113.9</td>
</tr>
<tr>
<td>500</td>
<td>114</td>
<td>92</td>
<td>74</td>
<td>75</td>
<td>87</td>
<td>113.6</td>
</tr>
<tr>
<td>630</td>
<td>114</td>
<td>93</td>
<td>71</td>
<td>75</td>
<td>87</td>
<td>114.4</td>
</tr>
<tr>
<td>800</td>
<td>114</td>
<td>94</td>
<td>68</td>
<td>74</td>
<td>86</td>
<td>114.5</td>
</tr>
<tr>
<td>1000</td>
<td>114</td>
<td>95</td>
<td>66</td>
<td>73</td>
<td>86</td>
<td>114.2</td>
</tr>
<tr>
<td>1250</td>
<td>114</td>
<td>93</td>
<td>63</td>
<td>72</td>
<td>85</td>
<td>113.8</td>
</tr>
<tr>
<td>1600</td>
<td>113</td>
<td>93</td>
<td>60</td>
<td>71</td>
<td>84</td>
<td>112.7</td>
</tr>
<tr>
<td>2000</td>
<td>112</td>
<td>91</td>
<td>58</td>
<td>70</td>
<td>84</td>
<td>111.6</td>
</tr>
<tr>
<td>2500</td>
<td>110</td>
<td>90</td>
<td>55</td>
<td>70</td>
<td>83</td>
<td>110.3</td>
</tr>
<tr>
<td>3150</td>
<td>109</td>
<td>89</td>
<td>53</td>
<td>69</td>
<td>82</td>
<td>108.7</td>
</tr>
<tr>
<td>4000</td>
<td>107</td>
<td>87</td>
<td>50</td>
<td>68</td>
<td>81</td>
<td>106.8</td>
</tr>
<tr>
<td>5000</td>
<td>105</td>
<td>86</td>
<td>47</td>
<td>67</td>
<td>80</td>
<td>104.8</td>
</tr>
</tbody>
</table>

OASPL 125.9 103.2 93.5 91.2 101.5 125.9

88
CASE 5: B05 ST50 (STOL FLAPS=50)

ALT = 6500. FT
USB = 50. DEG
R/RO = .848

VA = 110. FT/S
DOOR = CLOSED
THETAS = -5. DEG

VJ = 680. FT/S
UGS = UP
THETAP = 33. DEG

RIBBON
STATA
WL
BL<IN>
BL<OUT>

AT NOZ EX 374. 208. 155. 209.
AT WNG TE 425. 201. 143. 211.
AT TR OFF 431. 198. 143. 211.
AT TR EDG 460. 179. 143. 211.

TRAIL EDGE 450. 162. 143. 211.

FIELD POINT 500. 160. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBON
S = 136.3 DELTA = 86.5

PEAK JET MIX LEVEL = 113. DB AT 377. HZ
CORRECTION FOR UGS APPLIED
DSPL = 5. DB
F1 = 2190. HZ

PEAK NEAR NOZ LEVEL = 93. DB AT 938. HZ
ST = 93. DELTA = 20.

PEAK TRAIL EDGE LEVEL = 92. DB AT 127. HZ
PEAK SEP LEVEL = 80. DB AT 33. HZ
PEAK TBL LEVEL = 90. DB AT 108. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>107</td>
<td>74</td>
<td>67</td>
<td>80</td>
<td>88</td>
<td>107.0</td>
</tr>
<tr>
<td>31</td>
<td>108</td>
<td>75</td>
<td>70</td>
<td>80</td>
<td>88</td>
<td>107.7</td>
</tr>
<tr>
<td>40</td>
<td>108</td>
<td>77</td>
<td>73</td>
<td>80</td>
<td>89</td>
<td>108.4</td>
</tr>
<tr>
<td>50</td>
<td>109</td>
<td>78</td>
<td>75</td>
<td>80</td>
<td>89</td>
<td>109.1</td>
</tr>
<tr>
<td>63</td>
<td>110</td>
<td>80</td>
<td>78</td>
<td>79</td>
<td>90</td>
<td>109.7</td>
</tr>
<tr>
<td>80</td>
<td>110</td>
<td>81</td>
<td>80</td>
<td>79</td>
<td>90</td>
<td>110.4</td>
</tr>
<tr>
<td>100</td>
<td>111</td>
<td>82</td>
<td>81</td>
<td>78</td>
<td>90</td>
<td>111.1</td>
</tr>
<tr>
<td>125</td>
<td>112</td>
<td>84</td>
<td>82</td>
<td>78</td>
<td>90</td>
<td>111.7</td>
</tr>
<tr>
<td>160</td>
<td>112</td>
<td>85</td>
<td>81</td>
<td>77</td>
<td>90</td>
<td>112.4</td>
</tr>
<tr>
<td>200</td>
<td>113</td>
<td>86</td>
<td>80</td>
<td>77</td>
<td>89</td>
<td>113.1</td>
</tr>
<tr>
<td>250</td>
<td>113</td>
<td>88</td>
<td>78</td>
<td>76</td>
<td>89</td>
<td>113.4</td>
</tr>
<tr>
<td>315</td>
<td>113</td>
<td>89</td>
<td>75</td>
<td>76</td>
<td>88</td>
<td>113.3</td>
</tr>
<tr>
<td>400</td>
<td>113</td>
<td>90</td>
<td>73</td>
<td>75</td>
<td>88</td>
<td>112.9</td>
</tr>
<tr>
<td>500</td>
<td>113</td>
<td>92</td>
<td>70</td>
<td>74</td>
<td>87</td>
<td>112.6</td>
</tr>
<tr>
<td>630</td>
<td>113</td>
<td>93</td>
<td>67</td>
<td>74</td>
<td>87</td>
<td>113.1</td>
</tr>
<tr>
<td>800</td>
<td>113</td>
<td>93</td>
<td>65</td>
<td>73</td>
<td>86</td>
<td>113.1</td>
</tr>
<tr>
<td>1000</td>
<td>113</td>
<td>93</td>
<td>62</td>
<td>72</td>
<td>86</td>
<td>112.8</td>
</tr>
<tr>
<td>1250</td>
<td>112</td>
<td>93</td>
<td>59</td>
<td>71</td>
<td>85</td>
<td>112.2</td>
</tr>
<tr>
<td>1600</td>
<td>111</td>
<td>92</td>
<td>57</td>
<td>70</td>
<td>84</td>
<td>111.3</td>
</tr>
<tr>
<td>2000</td>
<td>110</td>
<td>91</td>
<td>54</td>
<td>69</td>
<td>84</td>
<td>110.2</td>
</tr>
<tr>
<td>2500</td>
<td>109</td>
<td>90</td>
<td>51</td>
<td>69</td>
<td>83</td>
<td>108.9</td>
</tr>
<tr>
<td>3150</td>
<td>107</td>
<td>88</td>
<td>49</td>
<td>68</td>
<td>82</td>
<td>107.3</td>
</tr>
<tr>
<td>4000</td>
<td>105</td>
<td>87</td>
<td>46</td>
<td>67</td>
<td>81</td>
<td>105.4</td>
</tr>
<tr>
<td>5000</td>
<td>103</td>
<td>86</td>
<td>43</td>
<td>66</td>
<td>80</td>
<td>103.3</td>
</tr>
</tbody>
</table>

OASPL 124.9 102.7 89.6 90.2 101.5 124.9
CASE 6_B06_ST50 (STOL FLAPS=50)

ALT = 6500. FT  USB = 50. DEG  R/RD = .848
VA = 110. FT/S  DOOR= CLOSED  THETAS=-5. DEG
VJ = 680. FT/S  UGS = UP  THETAP=33. DEG

RIBBON  STA  WL  BL (IN)  BL (OUT)
AT NOZ EX  374.  208.  155.  209.
AT WNG TE  425.  201.  143.  211.
AT TR OFF  431.  198.  143.  211.
AT TR EDEG  460.  179.  143.  211.

TRAIL EDGE  450.  162.  143.  211.

FIELD POINT  500.  130.  57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 152.6 DELTA = 88.5

PEAK JET MIX LEVEL = 111. DB AT 356. HZ
CORRECTION FOR UGS APPLIED
DSPL = 5. DB  FL = 2190. HZ
PEAK NEAR NOZ LEVEL = 92. DB AT 938. HZ
STE = 93. DELTATE = 20.
PEAK TRAIL EDGE LEVEL = 39. DB AT 127. HZ
PEAK SEP LEVEL = 77. DB AT 33. HZ
PEAK TBL LEVEL = 90. DB AT 108. HZ

SPL-IN DB RE 200 PICODAR <BY COMP AND SUM>

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>106</td>
<td>73</td>
<td>24</td>
<td>77</td>
<td>88</td>
<td>105.7</td>
</tr>
<tr>
<td>31.</td>
<td>106</td>
<td>74</td>
<td>27</td>
<td>77</td>
<td>88</td>
<td>106.3</td>
</tr>
<tr>
<td>40.</td>
<td>107</td>
<td>76</td>
<td>30</td>
<td>77</td>
<td>89</td>
<td>107.0</td>
</tr>
<tr>
<td>50.</td>
<td>108</td>
<td>77</td>
<td>32</td>
<td>76</td>
<td>89</td>
<td>107.7</td>
</tr>
<tr>
<td>63.</td>
<td>108</td>
<td>78</td>
<td>35</td>
<td>76</td>
<td>90</td>
<td>108.4</td>
</tr>
<tr>
<td>80.</td>
<td>109</td>
<td>80</td>
<td>38</td>
<td>75</td>
<td>90</td>
<td>109.1</td>
</tr>
<tr>
<td>100.</td>
<td>110</td>
<td>81</td>
<td>39</td>
<td>75</td>
<td>90</td>
<td>109.7</td>
</tr>
<tr>
<td>125.</td>
<td>110</td>
<td>82</td>
<td>39</td>
<td>74</td>
<td>90</td>
<td>110.3</td>
</tr>
<tr>
<td>160.</td>
<td>111</td>
<td>83</td>
<td>39</td>
<td>74</td>
<td>90</td>
<td>111.1</td>
</tr>
<tr>
<td>200.</td>
<td>112</td>
<td>85</td>
<td>38</td>
<td>73</td>
<td>89</td>
<td>111.6</td>
</tr>
<tr>
<td>250.</td>
<td>112</td>
<td>86</td>
<td>35</td>
<td>73</td>
<td>89</td>
<td>111.9</td>
</tr>
<tr>
<td>315.</td>
<td>112</td>
<td>88</td>
<td>33</td>
<td>72</td>
<td>88</td>
<td>111.6</td>
</tr>
<tr>
<td>400.</td>
<td>111</td>
<td>89</td>
<td>30</td>
<td>72</td>
<td>88</td>
<td>111.3</td>
</tr>
<tr>
<td>500.</td>
<td>111</td>
<td>90</td>
<td>27</td>
<td>71</td>
<td>87</td>
<td>110.9</td>
</tr>
<tr>
<td>630.</td>
<td>111</td>
<td>91</td>
<td>25</td>
<td>70</td>
<td>87</td>
<td>111.3</td>
</tr>
<tr>
<td>800.</td>
<td>111</td>
<td>92</td>
<td>22</td>
<td>69</td>
<td>86</td>
<td>111.3</td>
</tr>
<tr>
<td>1000.</td>
<td>111</td>
<td>92</td>
<td>19</td>
<td>68</td>
<td>86</td>
<td>110.9</td>
</tr>
<tr>
<td>1250.</td>
<td>110</td>
<td>92</td>
<td>17</td>
<td>68</td>
<td>85</td>
<td>110.3</td>
</tr>
<tr>
<td>1600.</td>
<td>109</td>
<td>91</td>
<td>14</td>
<td>67</td>
<td>84</td>
<td>109.4</td>
</tr>
<tr>
<td>2000.</td>
<td>108</td>
<td>90</td>
<td>11</td>
<td>66</td>
<td>84</td>
<td>108.3</td>
</tr>
<tr>
<td>2500.</td>
<td>107</td>
<td>88</td>
<td>9</td>
<td>65</td>
<td>83</td>
<td>107.0</td>
</tr>
<tr>
<td>3150.</td>
<td>105</td>
<td>87</td>
<td>6</td>
<td>64</td>
<td>82</td>
<td>105.4</td>
</tr>
<tr>
<td>4000.</td>
<td>103</td>
<td>86</td>
<td>3</td>
<td>63</td>
<td>81</td>
<td>103.5</td>
</tr>
<tr>
<td>5000.</td>
<td>101</td>
<td>84</td>
<td>1</td>
<td>63</td>
<td>80</td>
<td>101.5</td>
</tr>
</tbody>
</table>

OASPL 123.3 101.6  46.9  86.7  101.5  123.3
This report has been delimited and cleared for public release under DOD Directive 5200.20 and no restrictions are imposed upon its use and disclosure.

Distribution Statement A

Approved for public release; distribution unlimited.
CASE 7,07,ST50 (STOL FLAPS=50)

ALT= 6500. FT    USB =50. DEG    R/0 = .848
VR = 110. FT/S    DOOR= CLOSED    THETAS=-5. DEG
UW = 680. FT/S    UGS = UP    THETAP=33. DEG

RIBBON

STA   WL   BL(IN)   BL(OUT)

AT NOZ EX 374. 208. 155. 209.
AT WING TE 425. 201. 143. 211.
AT TR OFF 431. 198. 143. 211.
AT TR EDG 460. 179. 143. 211.

TRAIL EDGE  450. 162. 143. 211.

FIELD POINT 550. 190. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON

S= 161.9 DELTA = 104.0

PEAK JET MIX LEVEL= 109. DB AT 370. HZ
CORRECTION FOR UGS APPLIED
DSPL= 5. DB F1= 2190. HZ
PEAK NEAR NOZ LEVEL= 90. DB AT 938. HZ
STE= 93. ; DELTATE= 20.
PEAK TRAIL EDGE LEVEL= 90. DB AT 127. HZ
PEAK SEP LEVEL= 72. DB AT 33. HZ
PEAK TEL LEVEL= 90. DB AT 100. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TEL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>103</td>
<td>71</td>
<td>76</td>
<td>72</td>
<td>88</td>
<td>103.4</td>
</tr>
<tr>
<td>31</td>
<td>104</td>
<td>72</td>
<td>78</td>
<td>72</td>
<td>89</td>
<td>104.1</td>
</tr>
<tr>
<td>40</td>
<td>105</td>
<td>74</td>
<td>81</td>
<td>72</td>
<td>89</td>
<td>104.8</td>
</tr>
<tr>
<td>50</td>
<td>105</td>
<td>75</td>
<td>84</td>
<td>72</td>
<td>89</td>
<td>105.5</td>
</tr>
<tr>
<td>63</td>
<td>106</td>
<td>77</td>
<td>86</td>
<td>71</td>
<td>90</td>
<td>106.2</td>
</tr>
<tr>
<td>80</td>
<td>107</td>
<td>78</td>
<td>89</td>
<td>71</td>
<td>90</td>
<td>106.9</td>
</tr>
<tr>
<td>100</td>
<td>107</td>
<td>79</td>
<td>90</td>
<td>70</td>
<td>90</td>
<td>107.5</td>
</tr>
<tr>
<td>125</td>
<td>108</td>
<td>81</td>
<td>90</td>
<td>70</td>
<td>90</td>
<td>108.2</td>
</tr>
<tr>
<td>160</td>
<td>109</td>
<td>82</td>
<td>90</td>
<td>69</td>
<td>90</td>
<td>108.8</td>
</tr>
<tr>
<td>200</td>
<td>109</td>
<td>83</td>
<td>89</td>
<td>69</td>
<td>89</td>
<td>109.4</td>
</tr>
<tr>
<td>250</td>
<td>110</td>
<td>85</td>
<td>87</td>
<td>68</td>
<td>89</td>
<td>109.8</td>
</tr>
<tr>
<td>315</td>
<td>110</td>
<td>86</td>
<td>84</td>
<td>68</td>
<td>88</td>
<td>109.6</td>
</tr>
<tr>
<td>400</td>
<td>109</td>
<td>87</td>
<td>81</td>
<td>67</td>
<td>88</td>
<td>109.2</td>
</tr>
<tr>
<td>500</td>
<td>109</td>
<td>89</td>
<td>79</td>
<td>66</td>
<td>87</td>
<td>108.9</td>
</tr>
<tr>
<td>630</td>
<td>109</td>
<td>90</td>
<td>76</td>
<td>65</td>
<td>87</td>
<td>109.3</td>
</tr>
<tr>
<td>800</td>
<td>109</td>
<td>90</td>
<td>73</td>
<td>65</td>
<td>86</td>
<td>109.3</td>
</tr>
<tr>
<td>1000</td>
<td>109</td>
<td>90</td>
<td>71</td>
<td>64</td>
<td>86</td>
<td>109.0</td>
</tr>
<tr>
<td>1250</td>
<td>108</td>
<td>90</td>
<td>68</td>
<td>63</td>
<td>85</td>
<td>108.4</td>
</tr>
<tr>
<td>1600</td>
<td>107</td>
<td>89</td>
<td>65</td>
<td>62</td>
<td>84</td>
<td>107.5</td>
</tr>
<tr>
<td>2000</td>
<td>106</td>
<td>86</td>
<td>63</td>
<td>61</td>
<td>83</td>
<td>106.4</td>
</tr>
<tr>
<td>2500</td>
<td>105</td>
<td>87</td>
<td>60</td>
<td>61</td>
<td>83</td>
<td>105.1</td>
</tr>
<tr>
<td>3150</td>
<td>103</td>
<td>85</td>
<td>57</td>
<td>60</td>
<td>82</td>
<td>103.5</td>
</tr>
<tr>
<td>4000</td>
<td>101</td>
<td>84</td>
<td>55</td>
<td>59</td>
<td>81</td>
<td>101.6</td>
</tr>
<tr>
<td>5000</td>
<td>99</td>
<td>83</td>
<td>52</td>
<td>58</td>
<td>80</td>
<td>99.6</td>
</tr>
</tbody>
</table>

OASPL 121.1 99.7 98.2 82.1 101.4 121.2
CASE 8: Boeing ST50 (STOL FLAPS=50)

<table>
<thead>
<tr>
<th>FLAP</th>
<th>STAB</th>
<th>0L</th>
<th>0L</th>
<th>0L</th>
<th>0L</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALT=</td>
<td>6500. FT</td>
<td>USB</td>
<td>50. DEG</td>
<td>R/RO =</td>
<td>.848</td>
</tr>
<tr>
<td>VA =</td>
<td>110. FT/S</td>
<td>IDOR=</td>
<td>CLOSED</td>
<td>THETAS=</td>
<td>-5. DEG</td>
</tr>
<tr>
<td>VJ =</td>
<td>680. FT/S</td>
<td>VGS =</td>
<td>UP</td>
<td>THETAP=</td>
<td>33. DEG</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RIBBON</th>
<th>STA</th>
<th>WL</th>
<th>BL(IN)</th>
<th>BL(OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT NOZ EX</td>
<td>374.</td>
<td>208.</td>
<td>155.</td>
<td>209.</td>
</tr>
<tr>
<td>AT WNG TE</td>
<td>425.</td>
<td>201.</td>
<td>143.</td>
<td>211.</td>
</tr>
<tr>
<td>AT TR OFF</td>
<td>431.</td>
<td>198.</td>
<td>143.</td>
<td>211.</td>
</tr>
<tr>
<td>AT TR EDG</td>
<td>460.</td>
<td>179.</td>
<td>143.</td>
<td>211.</td>
</tr>
</tbody>
</table>

TRAIL EDGE | 450. | 162. | 143. | 211. |

FIELD POINT | 550. | 160. | 57. |

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S= 178.2 DELTA = 92.4

PEAK JET MIX LEVEL= 109. DB AT 329. HZ
CORRECTION FOR VGS APPLIED
DSPL= 5. DB FI= 2190. HZ
PEAK NEAR NOZ LEVEL= 90. DB AT 938. HZ
STE= 93. DELTATE= 20.
PEAK TRAIL EDGE LEVEL= 88. DB AT 127. HZ
PEAK SEP LEVEL= 71. DB AT 33. HZ
PEAK TBL LEVEL= 90. DB AT 100. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>104.</td>
<td>71.</td>
<td>73.</td>
<td>71.</td>
<td>88.</td>
<td>103.8</td>
</tr>
<tr>
<td>31.</td>
<td>104.</td>
<td>73.</td>
<td>75.</td>
<td>71.</td>
<td>89.</td>
<td>104.4</td>
</tr>
<tr>
<td>40.</td>
<td>105.</td>
<td>74.</td>
<td>78.</td>
<td>71.</td>
<td>89.</td>
<td>105.2</td>
</tr>
<tr>
<td>50.</td>
<td>106.</td>
<td>75.</td>
<td>81.</td>
<td>71.</td>
<td>89.</td>
<td>105.8</td>
</tr>
<tr>
<td>63.</td>
<td>106.</td>
<td>77.</td>
<td>84.</td>
<td>70.</td>
<td>90.</td>
<td>106.5</td>
</tr>
<tr>
<td>80.</td>
<td>107.</td>
<td>78.</td>
<td>86.</td>
<td>70.</td>
<td>90.</td>
<td>107.2</td>
</tr>
<tr>
<td>100.</td>
<td>108.</td>
<td>80.</td>
<td>87.</td>
<td>70.</td>
<td>90.</td>
<td>107.8</td>
</tr>
<tr>
<td>125.</td>
<td>108.</td>
<td>81.</td>
<td>88.</td>
<td>69.</td>
<td>90.</td>
<td>108.5</td>
</tr>
<tr>
<td>160.</td>
<td>109.</td>
<td>82.</td>
<td>87.</td>
<td>69.</td>
<td>90.</td>
<td>109.2</td>
</tr>
<tr>
<td>200.</td>
<td>110.</td>
<td>84.</td>
<td>86.</td>
<td>68.</td>
<td>89.</td>
<td>109.7</td>
</tr>
<tr>
<td>250.</td>
<td>110.</td>
<td>85.</td>
<td>84.</td>
<td>68.</td>
<td>89.</td>
<td>109.7</td>
</tr>
<tr>
<td>315.</td>
<td>109.</td>
<td>86.</td>
<td>81.</td>
<td>67.</td>
<td>88.</td>
<td>109.3</td>
</tr>
<tr>
<td>400.</td>
<td>109.</td>
<td>88.</td>
<td>78.</td>
<td>66.</td>
<td>88.</td>
<td>109.1</td>
</tr>
<tr>
<td>500.</td>
<td>109.</td>
<td>89.</td>
<td>76.</td>
<td>66.</td>
<td>87.</td>
<td>108.6</td>
</tr>
<tr>
<td>630.</td>
<td>109.</td>
<td>90.</td>
<td>73.</td>
<td>65.</td>
<td>87.</td>
<td>108.7</td>
</tr>
<tr>
<td>800.</td>
<td>109.</td>
<td>90.</td>
<td>70.</td>
<td>64.</td>
<td>86.</td>
<td>108.7</td>
</tr>
<tr>
<td>1000.</td>
<td>108.</td>
<td>90.</td>
<td>68.</td>
<td>63.</td>
<td>86.</td>
<td>108.3</td>
</tr>
<tr>
<td>1250.</td>
<td>108.</td>
<td>90.</td>
<td>65.</td>
<td>62.</td>
<td>85.</td>
<td>107.8</td>
</tr>
<tr>
<td>1600.</td>
<td>107.</td>
<td>89.</td>
<td>62.</td>
<td>61.</td>
<td>84.</td>
<td>106.8</td>
</tr>
<tr>
<td>2000.</td>
<td>106.</td>
<td>88.</td>
<td>60.</td>
<td>61.</td>
<td>83.</td>
<td>105.8</td>
</tr>
<tr>
<td>2500.</td>
<td>104.</td>
<td>87.</td>
<td>57.</td>
<td>60.</td>
<td>83.</td>
<td>104.4</td>
</tr>
<tr>
<td>3150.</td>
<td>103.</td>
<td>85.</td>
<td>55.</td>
<td>59.</td>
<td>82.</td>
<td>102.8</td>
</tr>
<tr>
<td>4000.</td>
<td>101.</td>
<td>84.</td>
<td>52.</td>
<td>58.</td>
<td>81.</td>
<td>100.9</td>
</tr>
<tr>
<td>5000.</td>
<td>99.</td>
<td>83.</td>
<td>49.</td>
<td>57.</td>
<td>80.</td>
<td>98.9</td>
</tr>
</tbody>
</table>

DSPL 121.0 99.9 95.5 81.3 101.4 121.1
CASE 9, B09, ST50 (STOL FLAPS=50)

ALT= 6500. FT USB =50. DEG R/RO = .848
VA = 110. FT/S DOOR= CLOSED THETAS=-5. DEG
UJ = 680. FT/S VGS = UP THETAP=33. DEG

<table>
<thead>
<tr>
<th>RIBBON</th>
<th>STA</th>
<th>WL</th>
<th>BL(IN)</th>
<th>BL(OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT NOZ EX</td>
<td>374.</td>
<td>208.</td>
<td>155.</td>
<td>209.</td>
</tr>
<tr>
<td>AT WNG TE</td>
<td>425.</td>
<td>201.</td>
<td>143.</td>
<td>211.</td>
</tr>
<tr>
<td>AT TR OFF</td>
<td>431.</td>
<td>198.</td>
<td>143.</td>
<td>211.</td>
</tr>
<tr>
<td>AT TR EDG</td>
<td>460.</td>
<td>179.</td>
<td>143.</td>
<td>211.</td>
</tr>
</tbody>
</table>

TRAIL EDGE 450. 162. 143. 211.

FIELD POINT 550. 130. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S= 194.6 DELTA = 86.7

PEAK JET MIX LEVEL= 109. DB AT 301. HZ
CORRECTION FOR VGS APPLIED
DSPL= 5. DB FL= 2190. HZ
PEAK NEAR NOZ LEVEL= 90. DB AT 938. HZ
STE= 93. DELTATE= 20.3
PEAK TRAIL EDGE LEVEL= 82. DB AT 127. HZ
PEAK SEP LEVEL= 69. DB AT 33. HZ
PEAK TBL LEVEL= 90. DB AT 100. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>104.</td>
<td>71.</td>
<td>67.</td>
<td>69.</td>
<td>88.</td>
<td>104.1</td>
</tr>
<tr>
<td>31</td>
<td>105.</td>
<td>73.</td>
<td>70.</td>
<td>69.</td>
<td>89.</td>
<td>104.7</td>
</tr>
<tr>
<td>40</td>
<td>105.</td>
<td>74.</td>
<td>73.</td>
<td>69.</td>
<td>89.</td>
<td>105.4</td>
</tr>
<tr>
<td>50</td>
<td>106.</td>
<td>75.</td>
<td>75.</td>
<td>69.</td>
<td>89.</td>
<td>106.1</td>
</tr>
<tr>
<td>63</td>
<td>107.</td>
<td>77.</td>
<td>78.</td>
<td>68.</td>
<td>90.</td>
<td>106.7</td>
</tr>
<tr>
<td>80</td>
<td>107.</td>
<td>78.</td>
<td>81.</td>
<td>68.</td>
<td>90.</td>
<td>107.4</td>
</tr>
<tr>
<td>100</td>
<td>108.</td>
<td>79.</td>
<td>82.</td>
<td>67.</td>
<td>90.</td>
<td>108.1</td>
</tr>
<tr>
<td>125</td>
<td>109.</td>
<td>81.</td>
<td>82.</td>
<td>67.</td>
<td>90.</td>
<td>108.7</td>
</tr>
<tr>
<td>160</td>
<td>109.</td>
<td>82.</td>
<td>82.</td>
<td>66.</td>
<td>90.</td>
<td>109.4</td>
</tr>
<tr>
<td>200</td>
<td>110.</td>
<td>83.</td>
<td>81.</td>
<td>66.</td>
<td>89.</td>
<td>109.8</td>
</tr>
<tr>
<td>250</td>
<td>110.</td>
<td>85.</td>
<td>78.</td>
<td>65.</td>
<td>89.</td>
<td>109.7</td>
</tr>
<tr>
<td>315</td>
<td>109.</td>
<td>86.</td>
<td>76.</td>
<td>65.</td>
<td>88.</td>
<td>109.2</td>
</tr>
<tr>
<td>400</td>
<td>109.</td>
<td>87.</td>
<td>73.</td>
<td>64.</td>
<td>88.</td>
<td>109.0</td>
</tr>
<tr>
<td>500</td>
<td>108.</td>
<td>89.</td>
<td>70.</td>
<td>63.</td>
<td>87.</td>
<td>108.3</td>
</tr>
<tr>
<td>630</td>
<td>108.</td>
<td>90.</td>
<td>68.</td>
<td>63.</td>
<td>87.</td>
<td>108.3</td>
</tr>
<tr>
<td>800</td>
<td>108.</td>
<td>90.</td>
<td>65.</td>
<td>62.</td>
<td>86.</td>
<td>108.2</td>
</tr>
<tr>
<td>1000</td>
<td>108.</td>
<td>90.</td>
<td>62.</td>
<td>61.</td>
<td>86.</td>
<td>107.9</td>
</tr>
<tr>
<td>1250</td>
<td>107.</td>
<td>90.</td>
<td>60.</td>
<td>60.</td>
<td>85.</td>
<td>107.3</td>
</tr>
<tr>
<td>1600</td>
<td>106.</td>
<td>89.</td>
<td>57.</td>
<td>59.</td>
<td>84.</td>
<td>106.4</td>
</tr>
<tr>
<td>2000</td>
<td>105.</td>
<td>88.</td>
<td>54.</td>
<td>58.</td>
<td>83.</td>
<td>105.3</td>
</tr>
<tr>
<td>2500</td>
<td>104.</td>
<td>87.</td>
<td>52.</td>
<td>58.</td>
<td>83.</td>
<td>104.0</td>
</tr>
<tr>
<td>3150</td>
<td>102.</td>
<td>85.</td>
<td>49.</td>
<td>57.</td>
<td>82.</td>
<td>102.4</td>
</tr>
<tr>
<td>4000</td>
<td>100.</td>
<td>84.</td>
<td>46.</td>
<td>56.</td>
<td>81.</td>
<td>100.5</td>
</tr>
<tr>
<td>5000</td>
<td>98.</td>
<td>83.</td>
<td>44.</td>
<td>55.</td>
<td>80.</td>
<td>98.4</td>
</tr>
</tbody>
</table>

DASPL 120.9 99.7 89.8 79.2 101.4 121.0
CASE 13 W01 ST50 (STOL FLAPS=50)

ALT = 6500. FT  VSE = 50. DEG  R/RO = .848
VA = 110. FT/S  DOOR = CLOSED  THETAS = -5. DEG
VU = 680. FT/S  VGS = UP  THETAP = 33. DEG

RIBBON STA WL BL(IN) BL(OUT)
AT NOZ EX 374. 208. 155. 209.
AT WNG TE 425. 201. 143. 211.
AT TR OFF 431. 198. 143. 211.
AT TR EDG 460. 179. 143. 211.
TRAIL EDGE 450. 162. 143. 211.
FIELD POINT 375. 212. 90.

FIELD POINT IN ZONE 1 AND IS
INBOARD OF FLOW RIBBON
S = 1.0  DELTA = 63.4

PEAK JET MIX LEVEL = 104. DB AT 775. HZ
CORRECTION FOR VGS APPLIED

DSPL = 5. DB  F1 = 2190. HZ
PEAK NEAR NOZ LEVEL = 118. DB AT 938. HZ
STE = 93.  DELTATE = 20.
PEAK TRAIL EDGE LEVEL = 57. DB AT 127. HZ
PEAK SEP LEVEL = 82. DB AT 33. HZ
PEAK TBL LEVEL = 90. DB AT 136. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>96</td>
<td>99</td>
<td>42</td>
<td>82</td>
<td>87</td>
<td>101.0</td>
</tr>
<tr>
<td>31</td>
<td>96</td>
<td>100</td>
<td>45</td>
<td>82</td>
<td>88</td>
<td>102.1</td>
</tr>
<tr>
<td>40</td>
<td>97</td>
<td>102</td>
<td>47</td>
<td>82</td>
<td>88</td>
<td>103.3</td>
</tr>
<tr>
<td>50</td>
<td>98</td>
<td>103</td>
<td>50</td>
<td>81</td>
<td>89</td>
<td>104.4</td>
</tr>
<tr>
<td>63</td>
<td>99</td>
<td>104</td>
<td>53</td>
<td>81</td>
<td>89</td>
<td>105.6</td>
</tr>
<tr>
<td>80</td>
<td>99</td>
<td>106</td>
<td>55</td>
<td>81</td>
<td>90</td>
<td>106.8</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
<td>107</td>
<td>56</td>
<td>80</td>
<td>90</td>
<td>108.0</td>
</tr>
<tr>
<td>125</td>
<td>101</td>
<td>108</td>
<td>57</td>
<td>80</td>
<td>90</td>
<td>109.1</td>
</tr>
<tr>
<td>160</td>
<td>101</td>
<td>110</td>
<td>56</td>
<td>79</td>
<td>90</td>
<td>110.5</td>
</tr>
<tr>
<td>200</td>
<td>102</td>
<td>111</td>
<td>55</td>
<td>79</td>
<td>90</td>
<td>111.7</td>
</tr>
<tr>
<td>250</td>
<td>103</td>
<td>112</td>
<td>53</td>
<td>78</td>
<td>89</td>
<td>112.9</td>
</tr>
<tr>
<td>315</td>
<td>103</td>
<td>114</td>
<td>50</td>
<td>77</td>
<td>89</td>
<td>114.2</td>
</tr>
<tr>
<td>400</td>
<td>104</td>
<td>115</td>
<td>47</td>
<td>77</td>
<td>88</td>
<td>115.5</td>
</tr>
<tr>
<td>500</td>
<td>104</td>
<td>116</td>
<td>45</td>
<td>76</td>
<td>88</td>
<td>116.7</td>
</tr>
<tr>
<td>630</td>
<td>106</td>
<td>117</td>
<td>42</td>
<td>75</td>
<td>87</td>
<td>117.7</td>
</tr>
<tr>
<td>800</td>
<td>106</td>
<td>118</td>
<td>39</td>
<td>74</td>
<td>87</td>
<td>118.2</td>
</tr>
<tr>
<td>1000</td>
<td>107</td>
<td>118</td>
<td>37</td>
<td>74</td>
<td>86</td>
<td>118.4</td>
</tr>
<tr>
<td>1250</td>
<td>107</td>
<td>118</td>
<td>34</td>
<td>73</td>
<td>86</td>
<td>118.1</td>
</tr>
<tr>
<td>1600</td>
<td>106</td>
<td>117</td>
<td>31</td>
<td>72</td>
<td>85</td>
<td>117.3</td>
</tr>
<tr>
<td>2000</td>
<td>105</td>
<td>116</td>
<td>29</td>
<td>71</td>
<td>84</td>
<td>116.1</td>
</tr>
<tr>
<td>2500</td>
<td>104</td>
<td>114</td>
<td>26</td>
<td>70</td>
<td>84</td>
<td>114.8</td>
</tr>
<tr>
<td>3150</td>
<td>102</td>
<td>113</td>
<td>24</td>
<td>69</td>
<td>83</td>
<td>113.4</td>
</tr>
<tr>
<td>4000</td>
<td>100</td>
<td>112</td>
<td>21</td>
<td>69</td>
<td>82</td>
<td>112.0</td>
</tr>
<tr>
<td>5000</td>
<td>98</td>
<td>110</td>
<td>18</td>
<td>68</td>
<td>81</td>
<td>110.7</td>
</tr>
</tbody>
</table>

OASPL 117.0 127.5 64.5 91.9 101.6 127.9

94
CASE 14, NO2, S150 (STOL FLA 500)

\[ \text{ALT} = 6500 \text{ FT} \quad \text{USB} = 50 \text{ DEG} \quad \text{R/RO} = 0.848 \]
\[ \text{VA} = 110 \text{ FT/S} \quad \text{DOOR} = 0 \text{ CLOSED} \quad \text{THETAS} = -5 \text{ DEG} \]
\[ \text{VJ} = 680 \text{ FT/S} \quad \text{VGS} = \text{ UP} \quad \text{THETAP} = 33 \text{ DEG} \]

**RIBBON**

- **STA**: WL IN (IN) BL OUT
- **AT NOZ EX**: 374, 208, 155, 209
- **AT WNG TE**: 425, 201, 143, 211
- **AT TR OFF**: 431, 198, 143, 211
- **AT TR EDG**: 460, 179, 143, 211

**TRAIL EDGE**: 450, 162, 143, 211

**FIELD POINT**: 395, 206, 90

**FIELD POINT IN ZONE 1 AND IS INBOARD OF FLOW RIBBON**

\[ S = 21.0 \quad \text{DELT} = 58.7 \]

**PEAK JET MIX LEVEL** = 110 DB AT 611 HZ

**CORRECTION FOR VGS APPLIED**

\[ \text{DSPL} = 5 \text{ DB} \quad F1 = 2190 \text{ HZ} \]

**PEAK NEAR NOZ LEVEL** = 110 DB AT 938 HZ

\[ \text{STE} = 93 \quad \text{DELTATE} = 20 \]

**PEAK TRAIL EDGE LEVEL** = 75 DB AT 127 HZ

**PEAK SEP LEVEL** = 88 DB AT 33 HZ

**PEAK TBL LEVEL** = 90 DB AT 130 HZ

**SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)**

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>102</td>
<td>91</td>
<td>61</td>
<td>87</td>
<td>87</td>
<td>102.8</td>
</tr>
<tr>
<td>31</td>
<td>103</td>
<td>92</td>
<td>63</td>
<td>88</td>
<td>88</td>
<td>103.5</td>
</tr>
<tr>
<td>40</td>
<td>104</td>
<td>94</td>
<td>66</td>
<td>87</td>
<td>89</td>
<td>104.3</td>
</tr>
<tr>
<td>50</td>
<td>104</td>
<td>95</td>
<td>69</td>
<td>87</td>
<td>89</td>
<td>105.0</td>
</tr>
<tr>
<td>63</td>
<td>105</td>
<td>96</td>
<td>71</td>
<td>87</td>
<td>89</td>
<td>105.7</td>
</tr>
<tr>
<td>80</td>
<td>106</td>
<td>98</td>
<td>74</td>
<td>86</td>
<td>90</td>
<td>106.5</td>
</tr>
<tr>
<td>100</td>
<td>106</td>
<td>99</td>
<td>75</td>
<td>86</td>
<td>90</td>
<td>107.2</td>
</tr>
<tr>
<td>125</td>
<td>107</td>
<td>100</td>
<td>75</td>
<td>85</td>
<td>90</td>
<td>107.9</td>
</tr>
<tr>
<td>160</td>
<td>108</td>
<td>102</td>
<td>75</td>
<td>85</td>
<td>90</td>
<td>108.8</td>
</tr>
<tr>
<td>200</td>
<td>108</td>
<td>103</td>
<td>74</td>
<td>84</td>
<td>90</td>
<td>109.5</td>
</tr>
<tr>
<td>250</td>
<td>109</td>
<td>104</td>
<td>71</td>
<td>84</td>
<td>89</td>
<td>110.3</td>
</tr>
<tr>
<td>315</td>
<td>110</td>
<td>106</td>
<td>69</td>
<td>83</td>
<td>89</td>
<td>111.2</td>
</tr>
<tr>
<td>400</td>
<td>110</td>
<td>107</td>
<td>66</td>
<td>82</td>
<td>88</td>
<td>111.9</td>
</tr>
<tr>
<td>500</td>
<td>110</td>
<td>108</td>
<td>63</td>
<td>82</td>
<td>88</td>
<td>112.3</td>
</tr>
<tr>
<td>630</td>
<td>111</td>
<td>109</td>
<td>61</td>
<td>81</td>
<td>87</td>
<td>113.2</td>
</tr>
<tr>
<td>800</td>
<td>112</td>
<td>110</td>
<td>58</td>
<td>80</td>
<td>87</td>
<td>114.0</td>
</tr>
<tr>
<td>1000</td>
<td>112</td>
<td>110</td>
<td>55</td>
<td>79</td>
<td>86</td>
<td>114.2</td>
</tr>
<tr>
<td>1250</td>
<td>112</td>
<td>110</td>
<td>53</td>
<td>79</td>
<td>86</td>
<td>113.8</td>
</tr>
<tr>
<td>1600</td>
<td>111</td>
<td>109</td>
<td>50</td>
<td>78</td>
<td>85</td>
<td>112.9</td>
</tr>
<tr>
<td>2000</td>
<td>110</td>
<td>108</td>
<td>47</td>
<td>77</td>
<td>84</td>
<td>111.8</td>
</tr>
<tr>
<td>2500</td>
<td>108</td>
<td>106</td>
<td>45</td>
<td>76</td>
<td>84</td>
<td>110.5</td>
</tr>
<tr>
<td>3150</td>
<td>107</td>
<td>105</td>
<td>42</td>
<td>75</td>
<td>83</td>
<td>109.0</td>
</tr>
<tr>
<td>4000</td>
<td>105</td>
<td>104</td>
<td>39</td>
<td>74</td>
<td>82</td>
<td>107.3</td>
</tr>
<tr>
<td>5000</td>
<td>103</td>
<td>102</td>
<td>37</td>
<td>74</td>
<td>81</td>
<td>105.6</td>
</tr>
</tbody>
</table>

**OASPL**: 122.4 119.4 83.1 97.6 101.6 124.2

95
CASE 15, FOI, ST50 (STOL FLAPS=50)

ALT = 6500. FT  USB = 50. DEG  R/RD = .848
VA = 110. FT/S  DOOR= CLOSED  THETAS= -5. DEG
WJ = 680. FT/S  VGS = UP  THETAP= 33. DEG

RIBBON   STA   WL   BL(IN)  BL(OUT)
AT NOZ EX 374.  208.  155.  209.
AT WNG TE 425.  201.  143.  211.
AT TR OFF 431.  198.  143.  211.
AT TR EDG 460.  179.  143.  211.

TRAIL EDGE 450.  162.  143.  211.

FIELD POINT 432.  199.  60.

FIELD POINT IN ZONE 3 AND IS
INBOARD OF FLOW RIBBON
S= 58.0  DELTA = 83.3

PEAK JET MIX LEVEL= 115. DB AT 561. HZ
CORRECTION FOR VGS APPLIED
DSPL= 5. DB  F1= 2190. HZ
PEAK NEAR NOZ LEVEL= 100. DB AT 938. HZ
STE= 93.  DELTATE= 20.
PEAK TRAIL EDGE LEVEL= 80. DB AT 127. HZ
PEAK SEP LEVEL= 84. DB AT 33. HZ
PEAK TBL LEVEL= 90. DB AT 121. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>108</td>
<td>81</td>
<td>65</td>
<td>84</td>
<td>86</td>
<td>107.7</td>
</tr>
<tr>
<td>31</td>
<td>108</td>
<td>82</td>
<td>68</td>
<td>84</td>
<td>86</td>
<td>108.3</td>
</tr>
<tr>
<td>40</td>
<td>109</td>
<td>84</td>
<td>71</td>
<td>84</td>
<td>89</td>
<td>109.1</td>
</tr>
<tr>
<td>50</td>
<td>110</td>
<td>85</td>
<td>73</td>
<td>84</td>
<td>89</td>
<td>109.7</td>
</tr>
<tr>
<td>63</td>
<td>110</td>
<td>87</td>
<td>76</td>
<td>84</td>
<td>89</td>
<td>110.0</td>
</tr>
<tr>
<td>80</td>
<td>111</td>
<td>88</td>
<td>79</td>
<td>83</td>
<td>90</td>
<td>111.1</td>
</tr>
<tr>
<td>100</td>
<td>112</td>
<td>89</td>
<td>80</td>
<td>83</td>
<td>90</td>
<td>111.7</td>
</tr>
<tr>
<td>125</td>
<td>112</td>
<td>91</td>
<td>80</td>
<td>82</td>
<td>90</td>
<td>112.4</td>
</tr>
<tr>
<td>160</td>
<td>113</td>
<td>92</td>
<td>82</td>
<td>90</td>
<td>90</td>
<td>113.1</td>
</tr>
<tr>
<td>200</td>
<td>114</td>
<td>93</td>
<td>79</td>
<td>81</td>
<td>89</td>
<td>113.8</td>
</tr>
<tr>
<td>250</td>
<td>114</td>
<td>95</td>
<td>76</td>
<td>81</td>
<td>89</td>
<td>114.4</td>
</tr>
<tr>
<td>315</td>
<td>115</td>
<td>96</td>
<td>74</td>
<td>80</td>
<td>89</td>
<td>115.0</td>
</tr>
<tr>
<td>400</td>
<td>115</td>
<td>97</td>
<td>71</td>
<td>79</td>
<td>88</td>
<td>115.3</td>
</tr>
<tr>
<td>500</td>
<td>115</td>
<td>98</td>
<td>68</td>
<td>79</td>
<td>88</td>
<td>115.1</td>
</tr>
<tr>
<td>630</td>
<td>116</td>
<td>100</td>
<td>66</td>
<td>78</td>
<td>87</td>
<td>116.0</td>
</tr>
<tr>
<td>800</td>
<td>117</td>
<td>100</td>
<td>63</td>
<td>77</td>
<td>87</td>
<td>116.8</td>
</tr>
<tr>
<td>1000</td>
<td>117</td>
<td>100</td>
<td>60</td>
<td>76</td>
<td>86</td>
<td>116.9</td>
</tr>
<tr>
<td>1250</td>
<td>116</td>
<td>100</td>
<td>58</td>
<td>75</td>
<td>85</td>
<td>116.4</td>
</tr>
<tr>
<td>1600</td>
<td>115</td>
<td>99</td>
<td>55</td>
<td>74</td>
<td>85</td>
<td>115.5</td>
</tr>
<tr>
<td>2000</td>
<td>114</td>
<td>98</td>
<td>52</td>
<td>74</td>
<td>84</td>
<td>114.4</td>
</tr>
<tr>
<td>2500</td>
<td>113</td>
<td>97</td>
<td>50</td>
<td>73</td>
<td>83</td>
<td>113.1</td>
</tr>
<tr>
<td>3150</td>
<td>111</td>
<td>95</td>
<td>47</td>
<td>72</td>
<td>82</td>
<td>111.5</td>
</tr>
<tr>
<td>4000</td>
<td>109</td>
<td>94</td>
<td>44</td>
<td>71</td>
<td>82</td>
<td>109.5</td>
</tr>
<tr>
<td>5000</td>
<td>107</td>
<td>92</td>
<td>42</td>
<td>70</td>
<td>81</td>
<td>107.5</td>
</tr>
</tbody>
</table>

DASPL 127.3 109.6  88.0  94.4  101.5  127.4
CASE 16, P02, ST50 (STOL FLAPS=50)

ALT = 6500. FT
USB = 50. DEG
R/RO = .848

VR = 110. FT/S
DOOR = CLOSED
THETAS = -5. DEG

VJ = 680. FT/S
VGS = UP
THETAP = 33. DEG

RIBBON

<table>
<thead>
<tr>
<th>STA</th>
<th>WL</th>
<th>BL(IN)</th>
<th>BL(OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT NOZ EX</td>
<td>374.</td>
<td>208.</td>
<td>155.</td>
</tr>
<tr>
<td>AT WNG TE</td>
<td>425.</td>
<td>201.</td>
<td>143.</td>
</tr>
<tr>
<td>AT TR OFF</td>
<td>431.</td>
<td>198.</td>
<td>143.</td>
</tr>
<tr>
<td>AT TR EDG</td>
<td>460.</td>
<td>179.</td>
<td>143.</td>
</tr>
</tbody>
</table>

TRAIL EDGE

| 450. | 162. | 143. | 211. |

FIELD POINT

| 432. | 199. | 90. |

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON

S = 58.0
DELTA = 53.3

PEAK JET MIX LEVEL = 119. DB AT 425. HZ

CORRECTION FOR VGS APPLIED

DISPL = 5.
DB
FI = 2190. HZ

PEAK NEAR NOZ LEVEL = 104. DB AT 938. HZ

STE = 93.
DELTA = 20.

PEAK TRAIL EDGE LEVEL = 85. DB AT 127. HZ

PEAK SEP LEVEL = 101. DB AT 33. HZ

PEAK TBL LEVEL = 90. DB AT 121. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)


<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>112.</td>
<td>85.</td>
<td>70.</td>
<td>101.</td>
<td>88.</td>
<td>112.2</td>
</tr>
<tr>
<td>31.</td>
<td>112.</td>
<td>86.</td>
<td>73.</td>
<td>101.</td>
<td>88.</td>
<td>112.8</td>
</tr>
<tr>
<td>40.</td>
<td>113.</td>
<td>88.</td>
<td>76.</td>
<td>101.</td>
<td>89.</td>
<td>113.5</td>
</tr>
<tr>
<td>50.</td>
<td>114.</td>
<td>89.</td>
<td>78.</td>
<td>101.</td>
<td>89.</td>
<td>114.2</td>
</tr>
<tr>
<td>63.</td>
<td>115.</td>
<td>90.</td>
<td>81.</td>
<td>100.</td>
<td>89.</td>
<td>114.8</td>
</tr>
<tr>
<td>80.</td>
<td>115.</td>
<td>92.</td>
<td>84.</td>
<td>100.</td>
<td>90.</td>
<td>115.5</td>
</tr>
<tr>
<td>100.</td>
<td>116.</td>
<td>93.</td>
<td>85.</td>
<td>95.</td>
<td>90.</td>
<td>116.2</td>
</tr>
<tr>
<td>125.</td>
<td>117.</td>
<td>94.</td>
<td>85.</td>
<td>99.</td>
<td>90.</td>
<td>116.9</td>
</tr>
<tr>
<td>160.</td>
<td>118.</td>
<td>96.</td>
<td>85.</td>
<td>98.</td>
<td>90.</td>
<td>117.6</td>
</tr>
<tr>
<td>200.</td>
<td>118.</td>
<td>97.</td>
<td>84.</td>
<td>98.</td>
<td>89.</td>
<td>118.3</td>
</tr>
<tr>
<td>250.</td>
<td>119.</td>
<td>98.</td>
<td>81.</td>
<td>97.</td>
<td>89.</td>
<td>118.9</td>
</tr>
<tr>
<td>315.</td>
<td>119.</td>
<td>100.</td>
<td>79.</td>
<td>97.</td>
<td>89.</td>
<td>119.1</td>
</tr>
<tr>
<td>400.</td>
<td>119.</td>
<td>101.</td>
<td>76.</td>
<td>96.</td>
<td>88.</td>
<td>118.9</td>
</tr>
<tr>
<td>500.</td>
<td>118.</td>
<td>102.</td>
<td>73.</td>
<td>95.</td>
<td>88.</td>
<td>118.6</td>
</tr>
<tr>
<td>630.</td>
<td>119.</td>
<td>103.</td>
<td>71.</td>
<td>95.</td>
<td>87.</td>
<td>119.4</td>
</tr>
<tr>
<td>800.</td>
<td>120.</td>
<td>104.</td>
<td>68.</td>
<td>94.</td>
<td>87.</td>
<td>119.7</td>
</tr>
<tr>
<td>1000.</td>
<td>119.</td>
<td>104.</td>
<td>65.</td>
<td>93.</td>
<td>86.</td>
<td>119.4</td>
</tr>
<tr>
<td>1250.</td>
<td>119.</td>
<td>104.</td>
<td>63.</td>
<td>92.</td>
<td>85.</td>
<td>118.8</td>
</tr>
<tr>
<td>1600.</td>
<td>118.</td>
<td>103.</td>
<td>60.</td>
<td>91.</td>
<td>85.</td>
<td>117.9</td>
</tr>
<tr>
<td>2000.</td>
<td>117.</td>
<td>102.</td>
<td>57.</td>
<td>90.</td>
<td>84.</td>
<td>116.8</td>
</tr>
<tr>
<td>2500.</td>
<td>115.</td>
<td>100.</td>
<td>55.</td>
<td>90.</td>
<td>83.</td>
<td>115.5</td>
</tr>
<tr>
<td>3150.</td>
<td>114.</td>
<td>99.</td>
<td>52.</td>
<td>89.</td>
<td>82.</td>
<td>113.9</td>
</tr>
<tr>
<td>4000.</td>
<td>112.</td>
<td>98.</td>
<td>49.</td>
<td>88.</td>
<td>82.</td>
<td>112.0</td>
</tr>
<tr>
<td>5000.</td>
<td>110.</td>
<td>96.</td>
<td>47.</td>
<td>87.</td>
<td>81.</td>
<td>110.0</td>
</tr>
</tbody>
</table>

DASPL 130.7 113.5 92.9 111.2 101.5 130.8

97
CASE 17,F03,ST50 (STOL FLAPS=50)

ALT= 6500. FT   USE=50. DEG   R/RO = .848
VA = 110. FT/S   DOOR= CLOSED   THETAS=-5. DEG
VJ = 680. FT/S   VGS= UP   THETAP=33. DEG

RIBBON    STA    WL    BL(IN)    BL(OUT)
AT NOZ EX  374.  208.  155.  209.
AT WING TE 425.  201.  143.  211.
AT TR OFF  431.  198.  143.  211.
AT TR EDG  460.  179.  143.  211.

TRAIL EDGE  450.  162.  143.  211.
FIELD POINT  432.  199.  130.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S= 58.0 DELTA = 13.4

PEAK JET MIX LEVEL= 132. DB AT 156. HZ
CORRECTION FOR VGS APPLIED
DISPL= 5. DB   F1= 2190. HZ
PEAK NEAR NOZ LEVEL= 117. DB AT 938. HZ
STE= 93.   DELTATE= 20.
PEAK TRAIL EDGE LEVEL= 93. DB AT 127. HZ
PEAK SEP LEVEL= 113. DB AT 33. HZ
PEAK TBL LEVEL=  90. DB AT 121. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>MIX</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>124</td>
<td>98</td>
<td>78</td>
<td>113</td>
<td>88</td>
<td>124.0</td>
</tr>
<tr>
<td>31</td>
<td>125</td>
<td>99</td>
<td>81</td>
<td>113</td>
<td>86</td>
<td>125.1</td>
</tr>
<tr>
<td>40</td>
<td>126</td>
<td>101</td>
<td>84</td>
<td>113</td>
<td>89</td>
<td>126.4</td>
</tr>
<tr>
<td>50</td>
<td>127</td>
<td>102</td>
<td>86</td>
<td>112</td>
<td>89</td>
<td>127.6</td>
</tr>
<tr>
<td>63</td>
<td>129</td>
<td>103</td>
<td>89</td>
<td>112</td>
<td>89</td>
<td>128.8</td>
</tr>
<tr>
<td>80</td>
<td>130</td>
<td>105</td>
<td>92</td>
<td>112</td>
<td>90</td>
<td>130.1</td>
</tr>
<tr>
<td>100</td>
<td>131</td>
<td>106</td>
<td>93</td>
<td>111</td>
<td>90</td>
<td>131.1</td>
</tr>
<tr>
<td>125</td>
<td>132</td>
<td>107</td>
<td>93</td>
<td>111</td>
<td>90</td>
<td>131.6</td>
</tr>
<tr>
<td>160</td>
<td>132</td>
<td>109</td>
<td>93</td>
<td>110</td>
<td>90</td>
<td>131.7</td>
</tr>
<tr>
<td>200</td>
<td>131</td>
<td>110</td>
<td>92</td>
<td>110</td>
<td>89</td>
<td>131.4</td>
</tr>
<tr>
<td>250</td>
<td>131</td>
<td>111</td>
<td>89</td>
<td>109</td>
<td>89</td>
<td>130.8</td>
</tr>
<tr>
<td>315</td>
<td>130</td>
<td>113</td>
<td>87</td>
<td>108</td>
<td>89</td>
<td>129.7</td>
</tr>
<tr>
<td>400</td>
<td>128</td>
<td>114</td>
<td>84</td>
<td>108</td>
<td>88</td>
<td>128.4</td>
</tr>
<tr>
<td>500</td>
<td>127</td>
<td>115</td>
<td>81</td>
<td>107</td>
<td>88</td>
<td>127.2</td>
</tr>
<tr>
<td>630</td>
<td>127</td>
<td>116</td>
<td>79</td>
<td>106</td>
<td>87</td>
<td>127.2</td>
</tr>
<tr>
<td>800</td>
<td>127</td>
<td>117</td>
<td>76</td>
<td>105</td>
<td>87</td>
<td>127.1</td>
</tr>
<tr>
<td>1000</td>
<td>126</td>
<td>117</td>
<td>73</td>
<td>105</td>
<td>86</td>
<td>126.8</td>
</tr>
<tr>
<td>1250</td>
<td>126</td>
<td>117</td>
<td>71</td>
<td>104</td>
<td>85</td>
<td>126.3</td>
</tr>
<tr>
<td>1600</td>
<td>125</td>
<td>116</td>
<td>68</td>
<td>103</td>
<td>85</td>
<td>125.4</td>
</tr>
<tr>
<td>2000</td>
<td>124</td>
<td>115</td>
<td>65</td>
<td>102</td>
<td>84</td>
<td>124.3</td>
</tr>
<tr>
<td>2500</td>
<td>122</td>
<td>113</td>
<td>63</td>
<td>101</td>
<td>83</td>
<td>123.0</td>
</tr>
<tr>
<td>3150</td>
<td>121</td>
<td>112</td>
<td>60</td>
<td>100</td>
<td>82</td>
<td>121.4</td>
</tr>
<tr>
<td>4000</td>
<td>119</td>
<td>111</td>
<td>57</td>
<td>100</td>
<td>82</td>
<td>119.6</td>
</tr>
<tr>
<td>5000</td>
<td>117</td>
<td>109</td>
<td>55</td>
<td>99</td>
<td>81</td>
<td>117.6</td>
</tr>
</tbody>
</table>

OASPL 141.7 126.5 101.0 122.9 101.5 141.9
CASE 10,F04;ST50 (STOL FLAPS=50)

ALT = 6500. FT        USB = 50. DEG        R/RD = .848
VA = 110. FT/S        DOOR = CLOSED        THETAS = -5. DEG
VJ = 680. FT/S        VGS = UP            THETAP = 33. DEG

<table>
<thead>
<tr>
<th>RIBBON</th>
<th>STA</th>
<th>WL</th>
<th>BL (IN)</th>
<th>BL (OUT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT NOZ EX</td>
<td>374</td>
<td>208</td>
<td>155</td>
<td>209</td>
</tr>
<tr>
<td>AT WNG TE</td>
<td>425</td>
<td>201</td>
<td>143</td>
<td>211</td>
</tr>
<tr>
<td>AT TR OFF</td>
<td>431</td>
<td>198</td>
<td>143</td>
<td>211</td>
</tr>
<tr>
<td>AT TR EDG</td>
<td>460</td>
<td>179</td>
<td>143</td>
<td>211</td>
</tr>
</tbody>
</table>

TRAIL EDGE 450. 162. 143. 211.

FIELD POINT 445. 177. 60.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON

S = 80.9 DELTA = 83.9

PEAK JET MIX LEVEL = 116. DB AT 469. HZ

CORRECTION FOR VGS APPLIED

DSPL = 5.  DB F1 = 2190. HZ

PEAK NEAR NOZ LEVEL = 98. DB AT 938. HZ

STE = 93.  DELTATE = 20.

PEAK TRAIL EDGE LEVEL = 70. DB AT 127. HZ

PEAK SEP LEVEL = 87. DB AT 33. HZ

PEAK TBL LEVEL = 90. DB AT 118. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>109.</td>
<td>79.</td>
<td>55.</td>
<td>87.</td>
<td>88.</td>
<td>109.4</td>
</tr>
<tr>
<td>31.</td>
<td>110.</td>
<td>80.</td>
<td>57.</td>
<td>87.</td>
<td>88.</td>
<td>110.0</td>
</tr>
<tr>
<td>40.</td>
<td>111.</td>
<td>81.</td>
<td>60.</td>
<td>87.</td>
<td>89.</td>
<td>110.8</td>
</tr>
<tr>
<td>50.</td>
<td>111.</td>
<td>83.</td>
<td>63.</td>
<td>87.</td>
<td>89.</td>
<td>111.4</td>
</tr>
<tr>
<td>63.</td>
<td>112.</td>
<td>84.</td>
<td>66.</td>
<td>86.</td>
<td>89.</td>
<td>112.1</td>
</tr>
<tr>
<td>80.</td>
<td>113.</td>
<td>85.</td>
<td>68.</td>
<td>86.</td>
<td>90.</td>
<td>112.8</td>
</tr>
<tr>
<td>100.</td>
<td>113.</td>
<td>87.</td>
<td>69.</td>
<td>85.</td>
<td>90.</td>
<td>113.4</td>
</tr>
<tr>
<td>125.</td>
<td>114.</td>
<td>88.</td>
<td>70.</td>
<td>85.</td>
<td>90.</td>
<td>114.1</td>
</tr>
<tr>
<td>160.</td>
<td>115.</td>
<td>89.</td>
<td>69.</td>
<td>84.</td>
<td>90.</td>
<td>114.8</td>
</tr>
<tr>
<td>200.</td>
<td>115.</td>
<td>91.</td>
<td>68.</td>
<td>84.</td>
<td>89.</td>
<td>115.5</td>
</tr>
<tr>
<td>250.</td>
<td>116.</td>
<td>92.</td>
<td>66.</td>
<td>83.</td>
<td>89.</td>
<td>116.1</td>
</tr>
<tr>
<td>315.</td>
<td>117.</td>
<td>93.</td>
<td>63.</td>
<td>83.</td>
<td>89.</td>
<td>116.6</td>
</tr>
<tr>
<td>400.</td>
<td>116.</td>
<td>95.</td>
<td>60.</td>
<td>82.</td>
<td>88.</td>
<td>116.5</td>
</tr>
<tr>
<td>500.</td>
<td>116.</td>
<td>96.</td>
<td>58.</td>
<td>81.</td>
<td>88.</td>
<td>116.1</td>
</tr>
<tr>
<td>630.</td>
<td>117.</td>
<td>97.</td>
<td>55.</td>
<td>81.</td>
<td>87.</td>
<td>117.1</td>
</tr>
<tr>
<td>800.</td>
<td>118.</td>
<td>97.</td>
<td>52.</td>
<td>80.</td>
<td>87.</td>
<td>117.6</td>
</tr>
<tr>
<td>1000.</td>
<td>117.</td>
<td>98.</td>
<td>50.</td>
<td>79.</td>
<td>86.</td>
<td>117.4</td>
</tr>
<tr>
<td>1250.</td>
<td>117.</td>
<td>97.</td>
<td>47.</td>
<td>78.</td>
<td>85.</td>
<td>116.9</td>
</tr>
<tr>
<td>1600.</td>
<td>116.</td>
<td>96.</td>
<td>44.</td>
<td>77.</td>
<td>85.</td>
<td>115.9</td>
</tr>
<tr>
<td>2000.</td>
<td>115.</td>
<td>95.</td>
<td>42.</td>
<td>76.</td>
<td>84.</td>
<td>114.9</td>
</tr>
<tr>
<td>2500.</td>
<td>113.</td>
<td>94.</td>
<td>39.</td>
<td>76.</td>
<td>83.</td>
<td>113.5</td>
</tr>
<tr>
<td>3150.</td>
<td>112.</td>
<td>93.</td>
<td>36.</td>
<td>75.</td>
<td>82.</td>
<td>111.9</td>
</tr>
<tr>
<td>4000.</td>
<td>110.</td>
<td>91.</td>
<td>34.</td>
<td>74.</td>
<td>81.</td>
<td>110.0</td>
</tr>
<tr>
<td>5000.</td>
<td>108.</td>
<td>90.</td>
<td>31.</td>
<td>73.</td>
<td>81.</td>
<td>108.0</td>
</tr>
</tbody>
</table>

OASPL 128.4 107.0 77.4 97.1 101.5 128.5
CASE 11, F05, ST50 (STOL FLAPS=50)

ALT= 6500. FT USB =50. DEG R/RO = .848
VA = 110. FT/S DOOR= CLOSED THETAS=-5. DEG
VJ = 680. FT/S VGS = UP THETAP=33. DEG

RIBBON STA WL BL<IN> BL<OUT>
AT NOZ EX 374. 208. 155. 209.
AT WNG TE 425. 201. 143. 211.
AT TR OFF 431. 198. 143. 211.
AT TR EDG 460. 179. 143. 211.

TRAIL EDGE 450. 162. 143. 211.
FIELD POINT 445. 177. 90.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S= 80.9 DELTA = 54.3

PEAK JET MIX LEVEL= 120. DB AT 383. HZ
CORRECTION FOR VGS APPLIED
DSPL= 5. DB FI= 2190. HZ
PEAK NEAR NOZ LEVEL= 101. DB AT 938. HZ
STE= 93. DELTATE= 20.
PEAK TRAIL EDGE LEVEL= 75. DB AT 127. HZ
PEAK SEP LEVEL= 109. DB AT 33. HZ
PEAK TBL LEVEL= 90. DB AT 118. HZ

SPL-IN DB RE 200 PICOBAR <BY COMP AND SUM>

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>114.</td>
<td>82.</td>
<td>60.</td>
<td>106.</td>
<td>88.</td>
<td>114.7</td>
</tr>
<tr>
<td>31.</td>
<td>114.</td>
<td>84.</td>
<td>63.</td>
<td>109.</td>
<td>88.</td>
<td>115.2</td>
</tr>
<tr>
<td>40.</td>
<td>115.</td>
<td>85.</td>
<td>66.</td>
<td>108.</td>
<td>89.</td>
<td>115.8</td>
</tr>
<tr>
<td>50.</td>
<td>116.</td>
<td>86.</td>
<td>68.</td>
<td>108.</td>
<td>89.</td>
<td>116.3</td>
</tr>
<tr>
<td>63.</td>
<td>116.</td>
<td>88.</td>
<td>71.</td>
<td>108.</td>
<td>89.</td>
<td>116.9</td>
</tr>
<tr>
<td>80.</td>
<td>117.</td>
<td>89.</td>
<td>74.</td>
<td>107.</td>
<td>90.</td>
<td>117.5</td>
</tr>
<tr>
<td>100.</td>
<td>118.</td>
<td>90.</td>
<td>75.</td>
<td>107.</td>
<td>90.</td>
<td>118.1</td>
</tr>
<tr>
<td>125.</td>
<td>118.</td>
<td>92.</td>
<td>75.</td>
<td>106.</td>
<td>90.</td>
<td>118.7</td>
</tr>
<tr>
<td>160.</td>
<td>119.</td>
<td>93.</td>
<td>75.</td>
<td>106.</td>
<td>90.</td>
<td>119.4</td>
</tr>
<tr>
<td>200.</td>
<td>120.</td>
<td>94.</td>
<td>74.</td>
<td>105.</td>
<td>89.</td>
<td>120.0</td>
</tr>
<tr>
<td>250.</td>
<td>120.</td>
<td>96.</td>
<td>71.</td>
<td>105.</td>
<td>89.</td>
<td>120.4</td>
</tr>
<tr>
<td>315.</td>
<td>120.</td>
<td>97.</td>
<td>69.</td>
<td>104.</td>
<td>89.</td>
<td>120.3</td>
</tr>
<tr>
<td>400.</td>
<td>120.</td>
<td>98.</td>
<td>66.</td>
<td>103.</td>
<td>88.</td>
<td>119.9</td>
</tr>
<tr>
<td>500.</td>
<td>120.</td>
<td>100.</td>
<td>63.</td>
<td>103.</td>
<td>88.</td>
<td>119.7</td>
</tr>
<tr>
<td>630.</td>
<td>120.</td>
<td>101.</td>
<td>61.</td>
<td>102.</td>
<td>87.</td>
<td>120.2</td>
</tr>
<tr>
<td>800.</td>
<td>120.</td>
<td>101.</td>
<td>58.</td>
<td>101.</td>
<td>87.</td>
<td>120.2</td>
</tr>
<tr>
<td>1000.</td>
<td>120.</td>
<td>101.</td>
<td>55.</td>
<td>100.</td>
<td>86.</td>
<td>119.9</td>
</tr>
<tr>
<td>1250.</td>
<td>119.</td>
<td>101.</td>
<td>53.</td>
<td>99.</td>
<td>85.</td>
<td>119.3</td>
</tr>
<tr>
<td>1600.</td>
<td>118.</td>
<td>100.</td>
<td>50.</td>
<td>99.</td>
<td>85.</td>
<td>118.4</td>
</tr>
<tr>
<td>2000.</td>
<td>117.</td>
<td>99.</td>
<td>47.</td>
<td>98.</td>
<td>84.</td>
<td>117.3</td>
</tr>
<tr>
<td>2500.</td>
<td>116.</td>
<td>98.</td>
<td>45.</td>
<td>97.</td>
<td>83.</td>
<td>116.0</td>
</tr>
<tr>
<td>3150.</td>
<td>114.</td>
<td>96.</td>
<td>42.</td>
<td>96.</td>
<td>82.</td>
<td>114.4</td>
</tr>
<tr>
<td>4000.</td>
<td>112.</td>
<td>95.</td>
<td>39.</td>
<td>95.</td>
<td>81.</td>
<td>112.5</td>
</tr>
<tr>
<td>5000.</td>
<td>110.</td>
<td>94.</td>
<td>37.</td>
<td>94.</td>
<td>81.</td>
<td>110.5</td>
</tr>
</tbody>
</table>

OASPL 131.8 110.8 82.9 118.5 101.5 132.0
CASE 12, F06, ST50 (STOL FLAPS=50)

ALT = 6500. FT USB = 50. deg R/RD = .848

VA = 110. FT/S DOOR = CLOSED THETAS = -5. deg

VJ = 680. FT/S UGS = UP THETAP = 33. deg

RIBBON STA WL BL(IN) BL<OUT>

AT NOZ EX 374. 208. 155. 209.
AT WNG TE 425. 201. 143. 211.
AT TR OFF 431. 198. 143. 211.
AT TR EDG 460. 179. 143. 211.

TRAIL EDGE 450. 162. 143. 211.

FIELD POINT 445. 177. 130.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 80.9 DELTA = 16.7

PEAK JET MIX LEVEL = 130. DB AT 135. HZ

CORRECTION FOR UGS APPLIED
DSPL = 5. DB FL = 2190. HZ

PEAK NEAR NOZ LEVEL = 112. DB AT 938. HZ
STE = 93. , DELTATE = 20.

PEAK TRAIL EDGE LEVEL = 85. DB AT 127. HZ

PEAK SEP LEVEL = 135. DB AT 33. HZ

PEAK TBL LEVEL = 90. DB AT 118. HZ

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>MN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>123</td>
<td>93</td>
<td>71</td>
<td>135</td>
<td>88</td>
<td>134.9</td>
</tr>
<tr>
<td>31</td>
<td>124</td>
<td>94</td>
<td>73</td>
<td>135</td>
<td>88</td>
<td>135.3</td>
</tr>
<tr>
<td>40</td>
<td>126</td>
<td>95</td>
<td>76</td>
<td>135</td>
<td>89</td>
<td>135.2</td>
</tr>
<tr>
<td>50</td>
<td>127</td>
<td>97</td>
<td>79</td>
<td>134</td>
<td>89</td>
<td>135.1</td>
</tr>
<tr>
<td>63</td>
<td>128</td>
<td>98</td>
<td>81</td>
<td>134</td>
<td>89</td>
<td>135.0</td>
</tr>
<tr>
<td>80</td>
<td>129</td>
<td>99</td>
<td>84</td>
<td>134</td>
<td>90</td>
<td>134.9</td>
</tr>
<tr>
<td>100</td>
<td>130</td>
<td>101</td>
<td>85</td>
<td>133</td>
<td>90</td>
<td>134.8</td>
</tr>
<tr>
<td>125</td>
<td>130</td>
<td>102</td>
<td>85</td>
<td>133</td>
<td>90</td>
<td>134.5</td>
</tr>
<tr>
<td>160</td>
<td>130</td>
<td>103</td>
<td>85</td>
<td>132</td>
<td>90</td>
<td>134.1</td>
</tr>
<tr>
<td>200</td>
<td>129</td>
<td>105</td>
<td>84</td>
<td>132</td>
<td>89</td>
<td>133.7</td>
</tr>
<tr>
<td>250</td>
<td>128</td>
<td>106</td>
<td>81</td>
<td>131</td>
<td>89</td>
<td>133.0</td>
</tr>
<tr>
<td>315</td>
<td>127</td>
<td>107</td>
<td>79</td>
<td>130</td>
<td>89</td>
<td>132.1</td>
</tr>
<tr>
<td>400</td>
<td>126</td>
<td>109</td>
<td>76</td>
<td>130</td>
<td>88</td>
<td>131.2</td>
</tr>
<tr>
<td>500</td>
<td>125</td>
<td>110</td>
<td>73</td>
<td>129</td>
<td>88</td>
<td>130.4</td>
</tr>
<tr>
<td>630</td>
<td>124</td>
<td>111</td>
<td>71</td>
<td>128</td>
<td>87</td>
<td>129.8</td>
</tr>
<tr>
<td>800</td>
<td>124</td>
<td>112</td>
<td>68</td>
<td>127</td>
<td>87</td>
<td>129.2</td>
</tr>
<tr>
<td>1000</td>
<td>124</td>
<td>112</td>
<td>65</td>
<td>127</td>
<td>86</td>
<td>128.6</td>
</tr>
<tr>
<td>1250</td>
<td>123</td>
<td>111</td>
<td>63</td>
<td>126</td>
<td>85</td>
<td>127.9</td>
</tr>
<tr>
<td>1600</td>
<td>122</td>
<td>110</td>
<td>60</td>
<td>125</td>
<td>85</td>
<td>127.0</td>
</tr>
<tr>
<td>2000</td>
<td>121</td>
<td>109</td>
<td>57</td>
<td>124</td>
<td>84</td>
<td>126.1</td>
</tr>
<tr>
<td>2500</td>
<td>120</td>
<td>108</td>
<td>55</td>
<td>123</td>
<td>83</td>
<td>125.1</td>
</tr>
<tr>
<td>3150</td>
<td>118</td>
<td>107</td>
<td>52</td>
<td>122</td>
<td>82</td>
<td>124.0</td>
</tr>
<tr>
<td>4000</td>
<td>117</td>
<td>105</td>
<td>49</td>
<td>122</td>
<td>81</td>
<td>122.9</td>
</tr>
<tr>
<td>5000</td>
<td>114</td>
<td>104</td>
<td>47</td>
<td>121</td>
<td>81</td>
<td>121.8</td>
</tr>
</tbody>
</table>

OASPL 140.0 121.1 93.0 144.9 101.5 146.1
SECTION IV

COMPUTER TABULATIONS FOR FIELD POINT NOISE LEVELS AT BRAKE RELEASE DUE TO OUTBOARD ENGINES
PROGRAM USEST-VERSION 06/MAY/78
UPDATED MARCH, 1979
L. BUTZEL
GENERATES SPL ESTIMATE OF EXTERIOR
FUSELAGE/FLAP, WING FLUCTUATING
PRESSURE LEVELS FOR USB AIRCRAFT

AUTHORS=L. BUTZEL, W. LUNDI
USER DOCUMENTATION=D6-XXXX
RUN DATE=79/03/22.

A/P GEOMETRY CHANGES ARE

<table>
<thead>
<tr>
<th>PARAM</th>
<th>NEW</th>
<th>OLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>THUKD</td>
<td>20.0</td>
<td>-1</td>
</tr>
<tr>
<td>THDKU</td>
<td>0.0</td>
<td>-1</td>
</tr>
<tr>
<td>THoki</td>
<td>12.0</td>
<td>-1</td>
</tr>
<tr>
<td>THIKO</td>
<td>0.0</td>
<td>-1</td>
</tr>
<tr>
<td>THTB</td>
<td>0.0</td>
<td>-1</td>
</tr>
<tr>
<td>THSK</td>
<td>-12.0</td>
<td>-1</td>
</tr>
<tr>
<td>THW</td>
<td>19.0</td>
<td>-1</td>
</tr>
<tr>
<td>AEFF</td>
<td>770.0</td>
<td>-1</td>
</tr>
<tr>
<td>ADDOR</td>
<td>0.0</td>
<td>-1</td>
</tr>
<tr>
<td>AVG</td>
<td>5.0</td>
<td>-1</td>
</tr>
<tr>
<td>NGG</td>
<td>12.0</td>
<td>-1.0</td>
</tr>
<tr>
<td>W</td>
<td>54.0</td>
<td>-1</td>
</tr>
<tr>
<td>LW</td>
<td>51.0</td>
<td>-1</td>
</tr>
<tr>
<td>RF</td>
<td>26.0</td>
<td>-1</td>
</tr>
<tr>
<td>X0</td>
<td>182.0</td>
<td>-1</td>
</tr>
<tr>
<td>Y0</td>
<td>374.0</td>
<td>-1</td>
</tr>
<tr>
<td>Z0</td>
<td>208.0</td>
<td>-1</td>
</tr>
<tr>
<td>Z1</td>
<td>101.0</td>
<td>-1</td>
</tr>
<tr>
<td>LT</td>
<td>25.0</td>
<td>-1</td>
</tr>
<tr>
<td>YR</td>
<td>0.0</td>
<td>-1</td>
</tr>
<tr>
<td>LFAN</td>
<td>150.0</td>
<td>-1</td>
</tr>
<tr>
<td>XBBL</td>
<td>57.0</td>
<td>-1</td>
</tr>
</tbody>
</table>
CASE 1, 801, BKRL (BRAKE RELEASE)

ALT = 0. FT USB = 0. DEG R/RO = 1.000
VA = 0. FTS DOOR = CLOSED THETAS = -6. DEG
VJ = 870. FTS VGS = UP THETAP = 19. DEG

RIBBON STA WL BL(IN) BL(OUT)
AT NOZ EX 374. 208. 155. 209.
AT WNG TE 425. 201. 141. 212.
AT TR OFF 425. 201. 141. 212.
AT TR EDG 449. 193. 141. 212.

TRAIL EDGE 449. 193. 141. 212.

FIELD POINT 460. 190. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 87.7 DELTA = 84.4

PEAK JET MIX LEVEL = 123. DB AT 375. HZ
CORRECTION FOR VGS APPLIED
DSPL = 5. DB F1 = 2801. HZ
PEAK NEAR NOZ LEVEL = 105. DB AT 1200. HZ
STE = 76. DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 68. DB AT 111. HZ
PEAK SEP LEVEL = 41. DB AT 4743. HZ
NO TBL ACTIVITY; A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>117</td>
<td>84</td>
<td>55</td>
<td>16</td>
<td>0</td>
<td>117.3</td>
</tr>
<tr>
<td>31</td>
<td>118</td>
<td>86</td>
<td>57</td>
<td>17</td>
<td>0</td>
<td>118.0</td>
</tr>
<tr>
<td>40</td>
<td>119</td>
<td>87</td>
<td>60</td>
<td>19</td>
<td>0</td>
<td>118.7</td>
</tr>
<tr>
<td>50</td>
<td>119</td>
<td>88</td>
<td>63</td>
<td>21</td>
<td>0</td>
<td>119.4</td>
</tr>
<tr>
<td>63</td>
<td>120</td>
<td>90</td>
<td>65</td>
<td>22</td>
<td>0</td>
<td>120.0</td>
</tr>
<tr>
<td>80</td>
<td>121</td>
<td>91</td>
<td>67</td>
<td>24</td>
<td>0</td>
<td>120.7</td>
</tr>
<tr>
<td>100</td>
<td>121</td>
<td>92</td>
<td>68</td>
<td>26</td>
<td>0</td>
<td>121.4</td>
</tr>
<tr>
<td>125</td>
<td>122</td>
<td>94</td>
<td>68</td>
<td>27</td>
<td>0</td>
<td>122.0</td>
</tr>
<tr>
<td>160</td>
<td>123</td>
<td>95</td>
<td>67</td>
<td>29</td>
<td>0</td>
<td>122.8</td>
</tr>
<tr>
<td>200</td>
<td>123</td>
<td>96</td>
<td>65</td>
<td>31</td>
<td>0</td>
<td>123.4</td>
</tr>
<tr>
<td>250</td>
<td>124</td>
<td>98</td>
<td>62</td>
<td>32</td>
<td>0</td>
<td>123.8</td>
</tr>
<tr>
<td>315</td>
<td>124</td>
<td>99</td>
<td>60</td>
<td>34</td>
<td>0</td>
<td>123.6</td>
</tr>
<tr>
<td>400</td>
<td>123</td>
<td>100</td>
<td>57</td>
<td>35</td>
<td>0</td>
<td>123.2</td>
</tr>
<tr>
<td>500</td>
<td>123</td>
<td>102</td>
<td>54</td>
<td>36</td>
<td>0</td>
<td>122.9</td>
</tr>
<tr>
<td>630</td>
<td>122</td>
<td>103</td>
<td>52</td>
<td>37</td>
<td>0</td>
<td>122.2</td>
</tr>
<tr>
<td>800</td>
<td>122</td>
<td>104</td>
<td>49</td>
<td>37</td>
<td>0</td>
<td>122.1</td>
</tr>
<tr>
<td>1000</td>
<td>122</td>
<td>105</td>
<td>46</td>
<td>38</td>
<td>0</td>
<td>122.1</td>
</tr>
<tr>
<td>1250</td>
<td>122</td>
<td>105</td>
<td>44</td>
<td>39</td>
<td>0</td>
<td>121.7</td>
</tr>
<tr>
<td>1600</td>
<td>121</td>
<td>104</td>
<td>41</td>
<td>39</td>
<td>0</td>
<td>121.1</td>
</tr>
<tr>
<td>2000</td>
<td>120</td>
<td>104</td>
<td>38</td>
<td>40</td>
<td>0</td>
<td>120.3</td>
</tr>
<tr>
<td>2500</td>
<td>119</td>
<td>103</td>
<td>36</td>
<td>40</td>
<td>0</td>
<td>119.3</td>
</tr>
<tr>
<td>3150</td>
<td>118</td>
<td>101</td>
<td>33</td>
<td>40</td>
<td>0</td>
<td>117.9</td>
</tr>
<tr>
<td>4000</td>
<td>116</td>
<td>100</td>
<td>30</td>
<td>40</td>
<td>0</td>
<td>116.3</td>
</tr>
<tr>
<td>5000</td>
<td>114</td>
<td>99</td>
<td>28</td>
<td>41</td>
<td>0</td>
<td>114.5</td>
</tr>
</tbody>
</table>

OASPL 135.0 114.1 75.5 49.9 0.0 135.0
CASE 2,B02,BKRL (BRAKE RELEASE)

ALT = 0. FT USB = 0. DEG R/RO = 1.000
VA = 0. FT/S IDDR = CLOSED THETAS = -6. DEG
VJ = 870. FT/S VGS = UP THETAB = 19. DEG

RIBBON STA WL BL(IN) BL(OUT)
AT NOZ EX 374. 208. 155. 209.
AT WNG TE 425. 201. 141. 212.
AT TR OFF 425. 201. 141. 212.
AT TR EDG 449. 193. 141. 212.

TRAIL EDGE 449. 193. 141. 212.

FIELD POINT 460. 160. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 97.2 DELTA = 88.9

PEAK JET MIX LEVEL = 122. DB AT 366. HZ
CORRECTION FOR VGS APPLIED
DSPL = 5. DB F1 = 2801. HZ
PEAK NEAR NOZ LEVEL = 104. DB AT 1200. HZ
STE = 76. DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 100. DB AT 111. HZ
PEAK SEP LEVEL = 39. DB AT 4743. HZ
NO TBL ACTIVITY A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>116</td>
<td>63</td>
<td>86</td>
<td>14</td>
<td>0</td>
<td>116.4</td>
</tr>
<tr>
<td>31</td>
<td>117</td>
<td>64</td>
<td>89</td>
<td>15</td>
<td>0</td>
<td>117.1</td>
</tr>
<tr>
<td>40</td>
<td>118</td>
<td>86</td>
<td>92</td>
<td>17</td>
<td>0</td>
<td>117.8</td>
</tr>
<tr>
<td>50</td>
<td>118</td>
<td>87</td>
<td>94</td>
<td>19</td>
<td>0</td>
<td>118.5</td>
</tr>
<tr>
<td>63</td>
<td>119</td>
<td>88</td>
<td>97</td>
<td>21</td>
<td>0</td>
<td>119.1</td>
</tr>
<tr>
<td>80</td>
<td>120</td>
<td>90</td>
<td>99</td>
<td>22</td>
<td>0</td>
<td>119.9</td>
</tr>
<tr>
<td>100</td>
<td>120</td>
<td>91</td>
<td>99</td>
<td>24</td>
<td>0</td>
<td>120.5</td>
</tr>
<tr>
<td>125</td>
<td>121</td>
<td>92</td>
<td>99</td>
<td>26</td>
<td>0</td>
<td>121.2</td>
</tr>
<tr>
<td>160</td>
<td>122</td>
<td>94</td>
<td>98</td>
<td>27</td>
<td>0</td>
<td>121.9</td>
</tr>
<tr>
<td>200</td>
<td>122</td>
<td>95</td>
<td>97</td>
<td>29</td>
<td>0</td>
<td>122.5</td>
</tr>
<tr>
<td>250</td>
<td>123</td>
<td>96</td>
<td>94</td>
<td>31</td>
<td>0</td>
<td>122.8</td>
</tr>
<tr>
<td>315</td>
<td>123</td>
<td>98</td>
<td>91</td>
<td>32</td>
<td>0</td>
<td>122.6</td>
</tr>
<tr>
<td>400</td>
<td>122</td>
<td>99</td>
<td>89</td>
<td>33</td>
<td>0</td>
<td>122.2</td>
</tr>
<tr>
<td>500</td>
<td>122</td>
<td>100</td>
<td>86</td>
<td>34</td>
<td>0</td>
<td>121.9</td>
</tr>
<tr>
<td>630</td>
<td>121</td>
<td>102</td>
<td>83</td>
<td>35</td>
<td>0</td>
<td>121.1</td>
</tr>
<tr>
<td>800</td>
<td>121</td>
<td>103</td>
<td>81</td>
<td>36</td>
<td>0</td>
<td>121.0</td>
</tr>
<tr>
<td>1000</td>
<td>121</td>
<td>103</td>
<td>78</td>
<td>36</td>
<td>0</td>
<td>120.9</td>
</tr>
<tr>
<td>1250</td>
<td>121</td>
<td>104</td>
<td>75</td>
<td>37</td>
<td>0</td>
<td>120.6</td>
</tr>
<tr>
<td>1600</td>
<td>120</td>
<td>103</td>
<td>73</td>
<td>37</td>
<td>0</td>
<td>120.0</td>
</tr>
<tr>
<td>2000</td>
<td>119</td>
<td>102</td>
<td>70</td>
<td>38</td>
<td>0</td>
<td>119.2</td>
</tr>
<tr>
<td>2500</td>
<td>118</td>
<td>101</td>
<td>67</td>
<td>38</td>
<td>0</td>
<td>118.1</td>
</tr>
<tr>
<td>3150</td>
<td>117</td>
<td>100</td>
<td>65</td>
<td>38</td>
<td>0</td>
<td>116.8</td>
</tr>
<tr>
<td>4000</td>
<td>115</td>
<td>99</td>
<td>62</td>
<td>39</td>
<td>0</td>
<td>115.1</td>
</tr>
<tr>
<td>5000</td>
<td>113</td>
<td>97</td>
<td>59</td>
<td>39</td>
<td>0</td>
<td>113.4</td>
</tr>
</tbody>
</table>

DSPL 134.0 112.9 107.2 48.1 0.0 134.0
CASE 3,003,BKRL (BRAKE RELEASE)

ALT= 0. FT USB = 0. DEG R/RO =1.000
VA = 0. FT/S DOOR= CLOSED THETAS=-6. DEG
UJ = 870. FT/S VGS = UP THETAP=19. DEG

RIBBON STA WL BL(IND) BL(DOUT)
AT NOZ EX 374. 208. 155. 209.
AT WNG TE 425. 201. 141. 212.
AT TR OFF 425. 201. 141. 212.
AT TR EDG 449. 193. 141. 212.

TRAIL EDGE 449. 193. 141. 212.

FIELD POINT 460. 130. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S= 106.8 DELTA = 101.4

PEAK JET MIX LEVEL= 121. DB AT 371. HZ
CORRECTION FOR VGS APPLIED
DSPL= 5. DB F1= 2801. HZ
PEAK NEAR NOZ LEVEL= 102. DB AT 1200. HZ
STE= 76. DELTATE= 0.
PEAK TRAIL EDGE LEVEL= 106. DB AT 111. HZ
PEAK SEP LEVEL= 35. DB AT 4743. HZ
NO TBL ACTIVITY, A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>115</td>
<td>61</td>
<td>93</td>
<td>10</td>
<td>0</td>
<td>114.7</td>
</tr>
<tr>
<td>31</td>
<td>115</td>
<td>82</td>
<td>95</td>
<td>12</td>
<td>0</td>
<td>115.4</td>
</tr>
<tr>
<td>40</td>
<td>116</td>
<td>84</td>
<td>98</td>
<td>13</td>
<td>0</td>
<td>116.1</td>
</tr>
<tr>
<td>50</td>
<td>117</td>
<td>85</td>
<td>101</td>
<td>15</td>
<td>0</td>
<td>116.8</td>
</tr>
<tr>
<td>63</td>
<td>117</td>
<td>87</td>
<td>103</td>
<td>17</td>
<td>0</td>
<td>117.6</td>
</tr>
<tr>
<td>80</td>
<td>118</td>
<td>88</td>
<td>105</td>
<td>18</td>
<td>0</td>
<td>118.3</td>
</tr>
<tr>
<td>100</td>
<td>119</td>
<td>89</td>
<td>106</td>
<td>20</td>
<td>0</td>
<td>119.0</td>
</tr>
<tr>
<td>125</td>
<td>119</td>
<td>91</td>
<td>106</td>
<td>22</td>
<td>0</td>
<td>119.6</td>
</tr>
<tr>
<td>160</td>
<td>120</td>
<td>92</td>
<td>105</td>
<td>23</td>
<td>0</td>
<td>120.3</td>
</tr>
<tr>
<td>200</td>
<td>121</td>
<td>93</td>
<td>103</td>
<td>25</td>
<td>0</td>
<td>120.8</td>
</tr>
<tr>
<td>250</td>
<td>121</td>
<td>95</td>
<td>101</td>
<td>27</td>
<td>0</td>
<td>121.1</td>
</tr>
<tr>
<td>315</td>
<td>121</td>
<td>96</td>
<td>98</td>
<td>28</td>
<td>0</td>
<td>120.9</td>
</tr>
<tr>
<td>400</td>
<td>121</td>
<td>97</td>
<td>95</td>
<td>29</td>
<td>0</td>
<td>120.5</td>
</tr>
<tr>
<td>500</td>
<td>120</td>
<td>99</td>
<td>93</td>
<td>30</td>
<td>0</td>
<td>120.2</td>
</tr>
<tr>
<td>630</td>
<td>119</td>
<td>100</td>
<td>90</td>
<td>31</td>
<td>0</td>
<td>119.5</td>
</tr>
<tr>
<td>800</td>
<td>119</td>
<td>101</td>
<td>87</td>
<td>32</td>
<td>0</td>
<td>119.4</td>
</tr>
<tr>
<td>1000</td>
<td>119</td>
<td>101</td>
<td>85</td>
<td>32</td>
<td>0</td>
<td>119.3</td>
</tr>
<tr>
<td>1250</td>
<td>119</td>
<td>102</td>
<td>82</td>
<td>33</td>
<td>0</td>
<td>119.0</td>
</tr>
<tr>
<td>1600</td>
<td>118</td>
<td>101</td>
<td>79</td>
<td>33</td>
<td>0</td>
<td>118.4</td>
</tr>
<tr>
<td>2000</td>
<td>117</td>
<td>101</td>
<td>77</td>
<td>34</td>
<td>0</td>
<td>117.6</td>
</tr>
<tr>
<td>2500</td>
<td>116</td>
<td>99</td>
<td>74</td>
<td>34</td>
<td>0</td>
<td>116.5</td>
</tr>
<tr>
<td>3150</td>
<td>115</td>
<td>98</td>
<td>71</td>
<td>34</td>
<td>0</td>
<td>115.2</td>
</tr>
<tr>
<td>4000</td>
<td>113</td>
<td>97</td>
<td>69</td>
<td>35</td>
<td>0</td>
<td>113.5</td>
</tr>
<tr>
<td>5000</td>
<td>112</td>
<td>95</td>
<td>66</td>
<td>35</td>
<td>0</td>
<td>111.7</td>
</tr>
</tbody>
</table>

DASPL 132.3 111.0 113.8 44.3 0.0 132.4
CASE 4_B04_BKRL (BRAKE RELEASE)

<table>
<thead>
<tr>
<th>ALT</th>
<th>0. FT</th>
<th>USB</th>
<th>0. DEG</th>
<th>R/RO = 1.000</th>
</tr>
</thead>
<tbody>
<tr>
<td>VA</td>
<td>0. FT/S</td>
<td>DOOR = CLOSED</td>
<td>THETAS = 6. DEG</td>
<td></td>
</tr>
<tr>
<td>WJ</td>
<td>870. FT/S</td>
<td>VGS = UP</td>
<td>THETAP = 19. DEG</td>
<td></td>
</tr>
</tbody>
</table>

**RIBBON STA WL BL(IN) BL(OUT)**

| AT NOZ EX | 374. | 208. | 155. | 209. |
| AT WNG TE | 425. | 201. | 141. | 212. |
| AT TR DFF | 425. | 201. | 141. | 212. |
| AT TR EDG | 449. | 193. | 141. | 212. |

**TRAIL EDGE**

| 449. | 193. | 141. | 212. |

**FIELD POINT**

| 500. | 190. | 57. |

**FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON**

| S = 125.6 DELTA = 85.5 |

PEAK JET MIX LEVEL = 121. DB AT 313. Hz

CORRECTION FOR VGS APPLIED

| DSPL = 5. DB | F1 = 2801. Hz |

PEAK NEAR NOZ LEVEL = 102. DB AT 1200. Hz

STE = 76. , DELTAT = 0.

PEAK TRAIL EDGE LEVEL = 96. DB AT 111. Hz

PEAK SEP LEVEL = 37. DB AT 4743. Hz

NO TBL ACTIVITY; A/P VELOCITY TOO SMALL

**SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)**

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>116.</td>
<td>81.</td>
<td>83.</td>
<td>12.</td>
<td>0.</td>
<td>115.6</td>
</tr>
<tr>
<td>31</td>
<td>116.</td>
<td>83.</td>
<td>85.</td>
<td>13.</td>
<td>0.</td>
<td>116.2</td>
</tr>
<tr>
<td>40</td>
<td>117.</td>
<td>84.</td>
<td>88.</td>
<td>15.</td>
<td>0.</td>
<td>117.0</td>
</tr>
<tr>
<td>50</td>
<td>118.</td>
<td>85.</td>
<td>91.</td>
<td>17.</td>
<td>0.</td>
<td>117.6</td>
</tr>
<tr>
<td>63</td>
<td>118.</td>
<td>87.</td>
<td>93.</td>
<td>18.</td>
<td>0.</td>
<td>118.3</td>
</tr>
<tr>
<td>80</td>
<td>119.</td>
<td>88.</td>
<td>95.</td>
<td>20.</td>
<td>0.</td>
<td>119.0</td>
</tr>
<tr>
<td>100</td>
<td>120.</td>
<td>89.</td>
<td>96.</td>
<td>22.</td>
<td>0.</td>
<td>119.7</td>
</tr>
<tr>
<td>125</td>
<td>120.</td>
<td>91.</td>
<td>96.</td>
<td>23.</td>
<td>0.</td>
<td>120.3</td>
</tr>
<tr>
<td>160</td>
<td>121.</td>
<td>92.</td>
<td>95.</td>
<td>25.</td>
<td>0.</td>
<td>121.0</td>
</tr>
<tr>
<td>200</td>
<td>122.</td>
<td>93.</td>
<td>93.</td>
<td>27.</td>
<td>0.</td>
<td>121.5</td>
</tr>
<tr>
<td>250</td>
<td>121.</td>
<td>95.</td>
<td>91.</td>
<td>28.</td>
<td>0.</td>
<td>121.4</td>
</tr>
<tr>
<td>315</td>
<td>121.</td>
<td>96.</td>
<td>88.</td>
<td>30.</td>
<td>0.</td>
<td>121.0</td>
</tr>
<tr>
<td>400</td>
<td>121.</td>
<td>97.</td>
<td>85.</td>
<td>31.</td>
<td>0.</td>
<td>120.8</td>
</tr>
<tr>
<td>500</td>
<td>120.</td>
<td>99.</td>
<td>83.</td>
<td>32.</td>
<td>0.</td>
<td>120.2</td>
</tr>
<tr>
<td>630</td>
<td>119.</td>
<td>100.</td>
<td>80.</td>
<td>33.</td>
<td>0.</td>
<td>119.0</td>
</tr>
<tr>
<td>800</td>
<td>119.</td>
<td>101.</td>
<td>77.</td>
<td>34.</td>
<td>0.</td>
<td>118.8</td>
</tr>
<tr>
<td>1000</td>
<td>119.</td>
<td>102.</td>
<td>75.</td>
<td>34.</td>
<td>0.</td>
<td>118.7</td>
</tr>
<tr>
<td>1250</td>
<td>118.</td>
<td>102.</td>
<td>72.</td>
<td>35.</td>
<td>0.</td>
<td>118.4</td>
</tr>
<tr>
<td>1600</td>
<td>118.</td>
<td>101.</td>
<td>69.</td>
<td>35.</td>
<td>0.</td>
<td>117.8</td>
</tr>
<tr>
<td>2000</td>
<td>117.</td>
<td>101.</td>
<td>67.</td>
<td>36.</td>
<td>0.</td>
<td>117.0</td>
</tr>
<tr>
<td>2500</td>
<td>116.</td>
<td>100.</td>
<td>64.</td>
<td>36.</td>
<td>0.</td>
<td>115.9</td>
</tr>
<tr>
<td>3150</td>
<td>115.</td>
<td>98.</td>
<td>61.</td>
<td>36.</td>
<td>0.</td>
<td>114.6</td>
</tr>
<tr>
<td>4000</td>
<td>113.</td>
<td>97.</td>
<td>59.</td>
<td>37.</td>
<td>0.</td>
<td>113.0</td>
</tr>
<tr>
<td>5000</td>
<td>111.</td>
<td>96.</td>
<td>56.</td>
<td>37.</td>
<td>0.</td>
<td>111.2</td>
</tr>
</tbody>
</table>

| DASPL | 132.5 | 111.2 | 103.8 | 46.1 | 0.0 | 132.6 |
CASE 5, B05, BKRL (BRAKE RELEASE)

ALT = 0. FT
USB = 0. DEG
R/RO = 1.000
VA = 0. FT/S
DOOR = CLOSED
THETAS = -6. DEG
VJ = 870. FT/S
UGS = UP
THETAP = 19. DEG

RIBBON
STA
WL
BL (IN)
BL (OUT)

AT NOZ EX 374. 208. 155. 209.
AT WNG TE 425. 201. 141. 212.
AT TR OFF 425. 201. 141. 212.
AT TR EDG 449. 193. 141. 212.

TRAIL EDGE 449. 193. 141. 212.

FIELD POINT 500. 160. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 135.2 DELTA = 85.7

PEAK JET MIX LEVEL = 120. DB AT 300. HZ
CORRECTION FOR UGS APPLIED
DSPL = 5. DB
F1 = 2801. HZ

PEAK NEAR NOZ LEVEL = 101. DB AT 1200. HZ
STE = 76. DELTATE = 0.

PEAK TRAIL EDGE LEVEL = 97. DB AT 111. HZ

PEAK SEP LEVEL = 35. DB AT 4743. HZ
NO TBL ACTIVITY, A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>115</td>
<td>81</td>
<td>84</td>
<td>10</td>
<td>0</td>
<td>115.2</td>
</tr>
<tr>
<td>31</td>
<td>116</td>
<td>82</td>
<td>86</td>
<td>12</td>
<td>0</td>
<td>115.8</td>
</tr>
<tr>
<td>40</td>
<td>117</td>
<td>84</td>
<td>89</td>
<td>14</td>
<td>0</td>
<td>116.5</td>
</tr>
<tr>
<td>50</td>
<td>117</td>
<td>85</td>
<td>92</td>
<td>15</td>
<td>0</td>
<td>117.2</td>
</tr>
<tr>
<td>63</td>
<td>118</td>
<td>86</td>
<td>94</td>
<td>17</td>
<td>0</td>
<td>117.9</td>
</tr>
<tr>
<td>80</td>
<td>119</td>
<td>88</td>
<td>96</td>
<td>19</td>
<td>0</td>
<td>118.6</td>
</tr>
<tr>
<td>100</td>
<td>119</td>
<td>89</td>
<td>97</td>
<td>20</td>
<td>0</td>
<td>119.2</td>
</tr>
<tr>
<td>125</td>
<td>120</td>
<td>90</td>
<td>97</td>
<td>22</td>
<td>0</td>
<td>119.9</td>
</tr>
<tr>
<td>160</td>
<td>121</td>
<td>92</td>
<td>96</td>
<td>24</td>
<td>0</td>
<td>120.6</td>
</tr>
<tr>
<td>200</td>
<td>121</td>
<td>93</td>
<td>94</td>
<td>25</td>
<td>0</td>
<td>120.9</td>
</tr>
<tr>
<td>250</td>
<td>121</td>
<td>94</td>
<td>92</td>
<td>27</td>
<td>0</td>
<td>120.8</td>
</tr>
<tr>
<td>315</td>
<td>120</td>
<td>95</td>
<td>89</td>
<td>29</td>
<td>0</td>
<td>120.4</td>
</tr>
<tr>
<td>400</td>
<td>120</td>
<td>97</td>
<td>86</td>
<td>30</td>
<td>0</td>
<td>120.1</td>
</tr>
<tr>
<td>500</td>
<td>119</td>
<td>98</td>
<td>84</td>
<td>31</td>
<td>0</td>
<td>119.4</td>
</tr>
<tr>
<td>630</td>
<td>118</td>
<td>99</td>
<td>81</td>
<td>32</td>
<td>0</td>
<td>118.2</td>
</tr>
<tr>
<td>800</td>
<td>118</td>
<td>101</td>
<td>78</td>
<td>32</td>
<td>0</td>
<td>118.0</td>
</tr>
<tr>
<td>1000</td>
<td>118</td>
<td>101</td>
<td>75</td>
<td>33</td>
<td>0</td>
<td>117.9</td>
</tr>
<tr>
<td>1250</td>
<td>118</td>
<td>101</td>
<td>73</td>
<td>33</td>
<td>0</td>
<td>117.6</td>
</tr>
<tr>
<td>1600</td>
<td>117</td>
<td>101</td>
<td>70</td>
<td>34</td>
<td>0</td>
<td>117.0</td>
</tr>
<tr>
<td>2000</td>
<td>116</td>
<td>100</td>
<td>67</td>
<td>34</td>
<td>0</td>
<td>116.2</td>
</tr>
<tr>
<td>2500</td>
<td>115</td>
<td>99</td>
<td>65</td>
<td>35</td>
<td>0</td>
<td>115.1</td>
</tr>
<tr>
<td>3150</td>
<td>114</td>
<td>98</td>
<td>62</td>
<td>35</td>
<td>0</td>
<td>113.8</td>
</tr>
<tr>
<td>4000</td>
<td>112</td>
<td>96</td>
<td>59</td>
<td>35</td>
<td>0</td>
<td>112.2</td>
</tr>
<tr>
<td>5000</td>
<td>110</td>
<td>95</td>
<td>57</td>
<td>35</td>
<td>0</td>
<td>110.4</td>
</tr>
</tbody>
</table>

OASPL 131.9 110.6 104.6 44.7 0.0 131.9
CASE 6, D06, BKRL (BRAKE RELEASE)

ALT = 0. FT USB = 0. DEG R/RO = 1.000
Ua = 0. FT/S IDOR = CLOSED THETAS = -6. DEG
WJ = 870. FT/S VGS = UP THETA = 19. DEG

RIBBON STA WL BL(IN) BL(OUT)
AT NOZ EX 374. 208. 155. 209.
AT WNG TE 425. 201. 141. 212.
AT TR OFF 425. 201. 141. 212.
AT TR EDG 449. 193. 141. 212.
TRAIL EDGE 449. 193. 141. 212.
FIELD POINT 500. 130. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 144.7 DELTA = 94.9

PEAK JET MIX LEVEL = 119. DB AT 302. HZ
CORRECTION FOR VGS APPLIED
DSPL = 5. DB F1 = 2801. HZ
PEAK NEAR NOZ LEVEL = 100. DB AT 1200. HZ
STE = 76. JDELTATE = 0.
PEAK TRAIL EDGE LEVEL = 106. DB AT 111. HZ
PEAK SEP LEVEL = 32. DB AT 4743. HZ
NO TBL ACTIVITY, A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>114.</td>
<td>79</td>
<td>93</td>
<td>7</td>
<td>0</td>
<td>113.7</td>
</tr>
<tr>
<td>31</td>
<td>114.</td>
<td>81</td>
<td>95</td>
<td>9</td>
<td>0</td>
<td>114.4</td>
</tr>
<tr>
<td>40</td>
<td>115.</td>
<td>82</td>
<td>98</td>
<td>11</td>
<td>0</td>
<td>115.2</td>
</tr>
<tr>
<td>50</td>
<td>116.</td>
<td>83</td>
<td>101.</td>
<td>12</td>
<td>0</td>
<td>115.9</td>
</tr>
<tr>
<td>63</td>
<td>116.</td>
<td>85</td>
<td>103.</td>
<td>14</td>
<td>0</td>
<td>116.6</td>
</tr>
<tr>
<td>80</td>
<td>117.</td>
<td>86</td>
<td>105.</td>
<td>16</td>
<td>0</td>
<td>117.4</td>
</tr>
<tr>
<td>100</td>
<td>118.</td>
<td>87</td>
<td>106.</td>
<td>17</td>
<td>0</td>
<td>118.0</td>
</tr>
<tr>
<td>125</td>
<td>118.</td>
<td>89</td>
<td>106.</td>
<td>19</td>
<td>0</td>
<td>118.6</td>
</tr>
<tr>
<td>160</td>
<td>119.</td>
<td>90</td>
<td>105.</td>
<td>21</td>
<td>0</td>
<td>119.3</td>
</tr>
<tr>
<td>200</td>
<td>120.</td>
<td>91</td>
<td>103.</td>
<td>22</td>
<td>0</td>
<td>119.6</td>
</tr>
<tr>
<td>250</td>
<td>119.</td>
<td>93</td>
<td>100.</td>
<td>24</td>
<td>0</td>
<td>119.4</td>
</tr>
<tr>
<td>315</td>
<td>119.</td>
<td>94</td>
<td>98</td>
<td>26</td>
<td>0</td>
<td>119.0</td>
</tr>
<tr>
<td>400</td>
<td>119.</td>
<td>95</td>
<td>95</td>
<td>27</td>
<td>0</td>
<td>118.7</td>
</tr>
<tr>
<td>500</td>
<td>118.</td>
<td>97</td>
<td>92</td>
<td>28</td>
<td>0</td>
<td>118.0</td>
</tr>
<tr>
<td>630</td>
<td>117.</td>
<td>98</td>
<td>90</td>
<td>28</td>
<td>0</td>
<td>116.8</td>
</tr>
<tr>
<td>800</td>
<td>117.</td>
<td>99</td>
<td>87</td>
<td>29</td>
<td>0</td>
<td>116.6</td>
</tr>
<tr>
<td>1000</td>
<td>116.</td>
<td>100.</td>
<td>84</td>
<td>30</td>
<td>0</td>
<td>116.6</td>
</tr>
<tr>
<td>1250</td>
<td>116.</td>
<td>100.</td>
<td>82</td>
<td>30</td>
<td>0</td>
<td>116.3</td>
</tr>
<tr>
<td>1600</td>
<td>116.</td>
<td>99</td>
<td>79</td>
<td>31</td>
<td>0</td>
<td>115.6</td>
</tr>
<tr>
<td>2000</td>
<td>115.</td>
<td>99</td>
<td>76</td>
<td>31</td>
<td>0</td>
<td>114.8</td>
</tr>
<tr>
<td>2500</td>
<td>114.</td>
<td>98</td>
<td>74</td>
<td>32</td>
<td>0</td>
<td>113.8</td>
</tr>
<tr>
<td>3150</td>
<td>112.</td>
<td>96</td>
<td>71</td>
<td>32</td>
<td>0</td>
<td>112.4</td>
</tr>
<tr>
<td>4000</td>
<td>111.</td>
<td>95</td>
<td>68</td>
<td>32</td>
<td>0</td>
<td>110.8</td>
</tr>
<tr>
<td>5000</td>
<td>109.</td>
<td>94</td>
<td>66</td>
<td>32</td>
<td>0</td>
<td>109.0</td>
</tr>
</tbody>
</table>

OASPL 130.5 109.1 113.4 41.6 0.0 130.6
CASE 7, BKRL (BRAKE RELEASE)

ALT = 0. FT USB = 0. DEG R/RO = 1.000
VA = 0. FT/S DOOR = CLOSED THETAS = -6. DEG
WJ = 870. FT/S VGS = UP THETAP = 19. DEG

RIBBON STA WL BL(IN) BL(OUT)
AT NOZ EX 374. 208. 155. 209.
AT WNG TE 425. 201. 141. 212.
AT TR OFF 425. 201. 141. 212.
AT TR EDG 449. 193. 141. 212.
TRAIL EDGE 449. 193. 141. 212.
FIELD POINT 550. 190. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 173.0 DELTA = 89.4

PEAK JET MIX LEVEL = 118. DB AT 263. HZ
CORRECTION FOR VGS APPLIED
DSPL = 5. DB F1 = 2801. HZ
PEAK NEAR NOZ LEVEL = 99. DB AT 1200. HZ
STE = 76. DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 102. DB AT 111. HZ
PEAK SEP LEVEL = 29. DB AT 4743. HZ
NO TBL ACTIVITY; A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>113</td>
<td>78</td>
<td>89</td>
<td>4</td>
<td>0</td>
<td>113.3</td>
</tr>
<tr>
<td>31</td>
<td>114</td>
<td>80</td>
<td>91</td>
<td>6</td>
<td>0</td>
<td>113.9</td>
</tr>
<tr>
<td>40</td>
<td>115</td>
<td>81</td>
<td>94</td>
<td>8</td>
<td>0</td>
<td>114.7</td>
</tr>
<tr>
<td>50</td>
<td>115</td>
<td>82</td>
<td>97</td>
<td>9</td>
<td>0</td>
<td>115.4</td>
</tr>
<tr>
<td>63</td>
<td>116</td>
<td>84</td>
<td>99</td>
<td>11</td>
<td>0</td>
<td>116.1</td>
</tr>
<tr>
<td>80</td>
<td>117</td>
<td>85</td>
<td>101</td>
<td>13</td>
<td>0</td>
<td>116.8</td>
</tr>
<tr>
<td>100</td>
<td>117</td>
<td>86</td>
<td>102</td>
<td>14</td>
<td>0</td>
<td>117.5</td>
</tr>
<tr>
<td>125</td>
<td>118</td>
<td>88</td>
<td>102</td>
<td>16</td>
<td>0</td>
<td>118.1</td>
</tr>
<tr>
<td>160</td>
<td>119</td>
<td>89</td>
<td>101</td>
<td>18</td>
<td>0</td>
<td>118.7</td>
</tr>
<tr>
<td>200</td>
<td>119</td>
<td>90</td>
<td>99</td>
<td>19</td>
<td>0</td>
<td>118.7</td>
</tr>
<tr>
<td>250</td>
<td>118</td>
<td>92</td>
<td>97</td>
<td>21</td>
<td>0</td>
<td>118.3</td>
</tr>
<tr>
<td>315</td>
<td>118</td>
<td>93</td>
<td>94</td>
<td>22</td>
<td>0</td>
<td>118.0</td>
</tr>
<tr>
<td>400</td>
<td>117</td>
<td>94</td>
<td>91</td>
<td>23</td>
<td>0</td>
<td>117.5</td>
</tr>
<tr>
<td>500</td>
<td>116</td>
<td>96</td>
<td>89</td>
<td>24</td>
<td>0</td>
<td>116.4</td>
</tr>
<tr>
<td>630</td>
<td>115</td>
<td>97</td>
<td>86</td>
<td>25</td>
<td>0</td>
<td>115.2</td>
</tr>
<tr>
<td>800</td>
<td>115</td>
<td>98</td>
<td>83</td>
<td>26</td>
<td>0</td>
<td>115.0</td>
</tr>
<tr>
<td>1000</td>
<td>115</td>
<td>99</td>
<td>81</td>
<td>27</td>
<td>0</td>
<td>114.9</td>
</tr>
<tr>
<td>1250</td>
<td>114</td>
<td>99</td>
<td>78</td>
<td>27</td>
<td>0</td>
<td>114.6</td>
</tr>
<tr>
<td>1600</td>
<td>114</td>
<td>99</td>
<td>75</td>
<td>28</td>
<td>0</td>
<td>114.0</td>
</tr>
<tr>
<td>2000</td>
<td>113</td>
<td>98</td>
<td>73</td>
<td>28</td>
<td>0</td>
<td>113.2</td>
</tr>
<tr>
<td>2500</td>
<td>112</td>
<td>97</td>
<td>70</td>
<td>28</td>
<td>0</td>
<td>112.1</td>
</tr>
<tr>
<td>3150</td>
<td>111</td>
<td>95</td>
<td>67</td>
<td>29</td>
<td>0</td>
<td>110.8</td>
</tr>
<tr>
<td>4000</td>
<td>109</td>
<td>94</td>
<td>65</td>
<td>29</td>
<td>0</td>
<td>109.1</td>
</tr>
<tr>
<td>5000</td>
<td>107</td>
<td>93</td>
<td>62</td>
<td>29</td>
<td>0</td>
<td>107.4</td>
</tr>
</tbody>
</table>

OASPL 129.5 108.2 109.8 38.5 0.0 129.6
CASE 8,008, BRL (BRAKE RELEASE)

ALT = 0. FT USB = 0. DEG R/RO = 1.000
VA = 0. FT/S DOOR = CLOSED THETAS = -6. DEG
VJ = 870. FT/S UGS = UP THETAP = 19. DEG

RIBBON STA WL BL (IN) BL (OUT)
AT NOZ EX 374. 200. 155. 209.
AT WNG TE 425. 201. 141. 212.
AT TR OFF 425. 201. 141. 212.
AT TR EDG 449. 193. 141. 212.

TRAIL EDGE 449. 193. 141. 212.

FIELD POINT 550. 160. 57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
3 = 182.5 DELTA = 84.4

PEAK JET MIX LEVEL = 118. DB AT 247. HZ
CORRECTION FOR VGS APPLIED
DSPL = 5. DB FL = 2801. HZ
PEAK NEAR NOZ LEVEL = 99. DB AT 1200. HZ
STE = 76. , DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 74. DB AT 111. HZ
PEAK SEP LEVEL = 28. DB AT 4743. HZ
NO TBL ACTIVITY, A/P VELOCITY TOO SMALL

SPL IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>114</td>
<td>78</td>
<td>61</td>
<td>3</td>
<td>0</td>
<td>113.7</td>
</tr>
<tr>
<td>31</td>
<td>114</td>
<td>80</td>
<td>63</td>
<td>5</td>
<td>0</td>
<td>114.3</td>
</tr>
<tr>
<td>40</td>
<td>115</td>
<td>81</td>
<td>66</td>
<td>7</td>
<td>0</td>
<td>115.0</td>
</tr>
<tr>
<td>50</td>
<td>116</td>
<td>83</td>
<td>69</td>
<td>8</td>
<td>0</td>
<td>115.7</td>
</tr>
<tr>
<td>63</td>
<td>116</td>
<td>84</td>
<td>71</td>
<td>10</td>
<td>0</td>
<td>116.4</td>
</tr>
<tr>
<td>80</td>
<td>117</td>
<td>85</td>
<td>73</td>
<td>12</td>
<td>0</td>
<td>117.1</td>
</tr>
<tr>
<td>100</td>
<td>118</td>
<td>87</td>
<td>74</td>
<td>14</td>
<td>0</td>
<td>117.7</td>
</tr>
<tr>
<td>125</td>
<td>118</td>
<td>88</td>
<td>74</td>
<td>15</td>
<td>0</td>
<td>118.4</td>
</tr>
<tr>
<td>160</td>
<td>119</td>
<td>89</td>
<td>73</td>
<td>17</td>
<td>0</td>
<td>118.9</td>
</tr>
<tr>
<td>200</td>
<td>119</td>
<td>91</td>
<td>71</td>
<td>19</td>
<td>0</td>
<td>118.8</td>
</tr>
<tr>
<td>250</td>
<td>118</td>
<td>92</td>
<td>69</td>
<td>20</td>
<td>0</td>
<td>118.3</td>
</tr>
<tr>
<td>315</td>
<td>118</td>
<td>93</td>
<td>66</td>
<td>22</td>
<td>0</td>
<td>118.1</td>
</tr>
<tr>
<td>400</td>
<td>117</td>
<td>95</td>
<td>63</td>
<td>23</td>
<td>0</td>
<td>117.4</td>
</tr>
<tr>
<td>500</td>
<td>116</td>
<td>96</td>
<td>61</td>
<td>24</td>
<td>0</td>
<td>116.3</td>
</tr>
<tr>
<td>630</td>
<td>115</td>
<td>97</td>
<td>58</td>
<td>25</td>
<td>0</td>
<td>115.0</td>
</tr>
<tr>
<td>800</td>
<td>115</td>
<td>98</td>
<td>55</td>
<td>25</td>
<td>0</td>
<td>114.8</td>
</tr>
<tr>
<td>1000</td>
<td>115</td>
<td>99</td>
<td>53</td>
<td>26</td>
<td>0</td>
<td>114.8</td>
</tr>
<tr>
<td>1250</td>
<td>114</td>
<td>99</td>
<td>50</td>
<td>27</td>
<td>0</td>
<td>114.4</td>
</tr>
<tr>
<td>1600</td>
<td>114</td>
<td>99</td>
<td>47</td>
<td>27</td>
<td>0</td>
<td>113.8</td>
</tr>
<tr>
<td>2000</td>
<td>113</td>
<td>98</td>
<td>45</td>
<td>27</td>
<td>0</td>
<td>113.0</td>
</tr>
<tr>
<td>2500</td>
<td>112</td>
<td>97</td>
<td>42</td>
<td>28</td>
<td>0</td>
<td>112.0</td>
</tr>
<tr>
<td>3150</td>
<td>110</td>
<td>95</td>
<td>39</td>
<td>28</td>
<td>0</td>
<td>110.6</td>
</tr>
<tr>
<td>4000</td>
<td>109</td>
<td>94</td>
<td>37</td>
<td>28</td>
<td>0</td>
<td>109.0</td>
</tr>
<tr>
<td>5000</td>
<td>107</td>
<td>93</td>
<td>34</td>
<td>28</td>
<td>0</td>
<td>107.2</td>
</tr>
</tbody>
</table>

OASPL 129.6 108.3 81.7 37.8 0.0 129.7
CASE 9.109.BKRL (BRAKE RELEASE)

ALT = 0. FT  USB = 0. DEG  R/RO = 1.000
VR = 0. FT/S  DOOR = CLOSED  THETAS= -6. DEG
VJ = 870. FT/S  VGS = UP  THETA P= 19. DEG

RIBBON  STA  WL  BL(IN)  BL(OUT)
AT NOZ EX  374.  208.  155.  209.
AT WNG TE  425.  201.  141.  212.
AT TR OFF  425.  201.  141.  212.
AT TR EDG  449.  193.  141.  212.

TRAIL EDGE  449.  193.  141.  212.

FIELD POINT  550.  130.  57.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 192.1  DELTA = 88.8

PEAK JET MIX LEVEL = 118. DB AT 244. HZ
CORRECTION FOR VGS APPLIED
DISPL = 5. DB  F1 = 2801. HZ
PEAK NEAR NOZ LEVEL = 98. DB AT 1200. HZ
STE = 76.  DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 101. DB AT 111. HZ
PEAK SEP LEVEL = 27. DB AT 4743. HZ
NO TBL ACTIVITY; A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>113.</td>
<td>78.</td>
<td>87.</td>
<td></td>
<td></td>
<td>113</td>
</tr>
<tr>
<td>31.</td>
<td>114.</td>
<td>79.</td>
<td>90.</td>
<td>3</td>
<td></td>
<td>113.6</td>
</tr>
<tr>
<td>40.</td>
<td>114.</td>
<td>80.</td>
<td>93.</td>
<td>5</td>
<td></td>
<td>114.3</td>
</tr>
<tr>
<td>50.</td>
<td>115.</td>
<td>82.</td>
<td>95.</td>
<td>7</td>
<td></td>
<td>115</td>
</tr>
<tr>
<td>63.</td>
<td>116.</td>
<td>83.</td>
<td>98.</td>
<td>8</td>
<td></td>
<td>115.7</td>
</tr>
<tr>
<td>80.</td>
<td>116.</td>
<td>84.</td>
<td>100.</td>
<td>10</td>
<td>0.0</td>
<td>116.4</td>
</tr>
<tr>
<td>100.</td>
<td>117.</td>
<td>86.</td>
<td>100.</td>
<td>12</td>
<td>0.0</td>
<td>117.1</td>
</tr>
<tr>
<td>125.</td>
<td>118.</td>
<td>87.</td>
<td>100.</td>
<td>13</td>
<td>0.0</td>
<td>117.7</td>
</tr>
<tr>
<td>160.</td>
<td>118.</td>
<td>88.</td>
<td>100.</td>
<td>15</td>
<td>0.0</td>
<td>118.2</td>
</tr>
<tr>
<td>200.</td>
<td>118.</td>
<td>90.</td>
<td>98.</td>
<td>17</td>
<td>0.0</td>
<td>118.1</td>
</tr>
<tr>
<td>250.</td>
<td>118.</td>
<td>91.</td>
<td>95.</td>
<td>18</td>
<td>0.0</td>
<td>117.6</td>
</tr>
<tr>
<td>315.</td>
<td>117.</td>
<td>92.</td>
<td>93.</td>
<td>20</td>
<td>0.0</td>
<td>117.4</td>
</tr>
<tr>
<td>400.</td>
<td>117.</td>
<td>94.</td>
<td>90.</td>
<td>21</td>
<td>0.0</td>
<td>116.7</td>
</tr>
<tr>
<td>500.</td>
<td>115.</td>
<td>95.</td>
<td>87.</td>
<td>22</td>
<td>0.0</td>
<td>115.5</td>
</tr>
<tr>
<td>630.</td>
<td>114.</td>
<td>96.</td>
<td>85.</td>
<td>23</td>
<td>0.0</td>
<td>114.2</td>
</tr>
<tr>
<td>800.</td>
<td>114.</td>
<td>97.</td>
<td>82.</td>
<td>23</td>
<td>0.0</td>
<td>114.0</td>
</tr>
<tr>
<td>1000.</td>
<td>114.</td>
<td>98.</td>
<td>79.</td>
<td>24</td>
<td>0.0</td>
<td>114.0</td>
</tr>
<tr>
<td>1250.</td>
<td>114.</td>
<td>98.</td>
<td>77.</td>
<td>25</td>
<td>0.0</td>
<td>113.7</td>
</tr>
<tr>
<td>1600.</td>
<td>113.</td>
<td>98.</td>
<td>74.</td>
<td>25</td>
<td>0.0</td>
<td>113.0</td>
</tr>
<tr>
<td>2000.</td>
<td>112.</td>
<td>97.</td>
<td>71.</td>
<td>25</td>
<td>0.0</td>
<td>112.2</td>
</tr>
<tr>
<td>2500.</td>
<td>111.</td>
<td>96.</td>
<td>69.</td>
<td>26</td>
<td>0.0</td>
<td>111.2</td>
</tr>
<tr>
<td>3150.</td>
<td>110.</td>
<td>94.</td>
<td>66.</td>
<td>26</td>
<td>0.0</td>
<td>109.8</td>
</tr>
<tr>
<td>4000.</td>
<td>108.</td>
<td>93.</td>
<td>63.</td>
<td>26</td>
<td>0.0</td>
<td>108.2</td>
</tr>
<tr>
<td>5000.</td>
<td>106.</td>
<td>92.</td>
<td>61.</td>
<td>26</td>
<td>0.0</td>
<td>106.4</td>
</tr>
</tbody>
</table>

DASPL 128.9 107.4 108.3 35.9 0.0 129.0

112
CASE 13, W01, BKRL (BRAKE RELEASE)

ALT = 0.0 FT  USI = 0.0 DEG  R/RO = 1.000
VA = 0.0 FT/S  DOR= CLOSED  THETAS = -6.0 DEG
VU = 870.0 FT/S  VGS = UP  THETAP = 19.0 DEG

RIBBON STA  WL  BL IND BL (OUT)
AT NOZ EX  374.  208.  155.  209.
AT WNG TE  425.  201.  141.  212.
AT TR OFF  425.  201.  141.  212.
AT TR EDG  449.  193.  141.  212.

TRAIL EDGE  449.  193.  141.  212.

FIELD POINT  375.  212.  90.

FIELD POINT IN ZONE 1 AND IS INBOARD OF FLOW RIBBON
S=  1.0 DELTA = 62.9

PEAK JET MIX LEVEL = 113.0 DB AT 613.0 HZ
CORRECTION FOR VGS APPLIED
DSPL = 5.0 DB  F1 = 2801.0 HZ
PEAK NEAR NOZ LEVEL = 126.0 DB AT 1200.0 HZ
STE = 76.0  DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 92.0 DB AT 111.0 HZ
PEAK SEP LEVEL = 45.0 DB AT 4743.0 HZ
NO TBL ACTIVITY, A/P VELOCITY TOO SMALL

SPL IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.0</td>
<td>105.0</td>
<td>106.0</td>
<td>79.0</td>
<td>20.0</td>
<td>0.0</td>
<td>108.5</td>
</tr>
<tr>
<td>31.0</td>
<td>106.0</td>
<td>107.0</td>
<td>81.0</td>
<td>22.0</td>
<td>0.0</td>
<td>109.5</td>
</tr>
<tr>
<td>40.0</td>
<td>107.0</td>
<td>108.0</td>
<td>84.0</td>
<td>23.0</td>
<td>0.0</td>
<td>110.6</td>
</tr>
<tr>
<td>50.0</td>
<td>107.0</td>
<td>110.0</td>
<td>87.0</td>
<td>25.0</td>
<td>0.0</td>
<td>111.7</td>
</tr>
<tr>
<td>63.0</td>
<td>108.0</td>
<td>111.0</td>
<td>90.0</td>
<td>27.0</td>
<td>0.0</td>
<td>112.8</td>
</tr>
<tr>
<td>80.0</td>
<td>109.0</td>
<td>112.0</td>
<td>91.0</td>
<td>28.0</td>
<td>0.0</td>
<td>113.9</td>
</tr>
<tr>
<td>100.0</td>
<td>109.0</td>
<td>114.0</td>
<td>92.0</td>
<td>30.0</td>
<td>0.0</td>
<td>115.1</td>
</tr>
<tr>
<td>125.0</td>
<td>110.0</td>
<td>115.0</td>
<td>92.0</td>
<td>32.0</td>
<td>0.0</td>
<td>116.2</td>
</tr>
<tr>
<td>160.0</td>
<td>111.0</td>
<td>116.0</td>
<td>91.0</td>
<td>33.0</td>
<td>0.0</td>
<td>117.4</td>
</tr>
<tr>
<td>200.0</td>
<td>111.0</td>
<td>118.0</td>
<td>89.0</td>
<td>35.0</td>
<td>0.0</td>
<td>118.6</td>
</tr>
<tr>
<td>250.0</td>
<td>112.0</td>
<td>119.0</td>
<td>87.0</td>
<td>37.0</td>
<td>0.0</td>
<td>119.8</td>
</tr>
<tr>
<td>315.0</td>
<td>113.0</td>
<td>120.0</td>
<td>84.0</td>
<td>38.0</td>
<td>0.0</td>
<td>121.0</td>
</tr>
<tr>
<td>400.0</td>
<td>113.0</td>
<td>122.0</td>
<td>81.0</td>
<td>39.0</td>
<td>0.0</td>
<td>122.2</td>
</tr>
<tr>
<td>500.0</td>
<td>113.0</td>
<td>123.0</td>
<td>79.0</td>
<td>40.0</td>
<td>0.0</td>
<td>123.4</td>
</tr>
<tr>
<td>630.0</td>
<td>113.0</td>
<td>124.0</td>
<td>76.0</td>
<td>41.0</td>
<td>0.0</td>
<td>124.6</td>
</tr>
<tr>
<td>800.0</td>
<td>114.0</td>
<td>125.0</td>
<td>73.0</td>
<td>42.0</td>
<td>0.0</td>
<td>125.6</td>
</tr>
<tr>
<td>1000.0</td>
<td>114.0</td>
<td>126.0</td>
<td>71.0</td>
<td>43.0</td>
<td>0.0</td>
<td>126.1</td>
</tr>
<tr>
<td>1250.0</td>
<td>114.0</td>
<td>126.0</td>
<td>68.0</td>
<td>43.0</td>
<td>0.0</td>
<td>126.2</td>
</tr>
<tr>
<td>1600.0</td>
<td>113.0</td>
<td>126.0</td>
<td>65.0</td>
<td>44.0</td>
<td>0.0</td>
<td>125.9</td>
</tr>
<tr>
<td>2000.0</td>
<td>113.0</td>
<td>125.0</td>
<td>63.0</td>
<td>44.0</td>
<td>0.0</td>
<td>125.2</td>
</tr>
<tr>
<td>2500.0</td>
<td>112.0</td>
<td>124.0</td>
<td>60.0</td>
<td>44.0</td>
<td>0.0</td>
<td>124.0</td>
</tr>
<tr>
<td>3150.0</td>
<td>110.0</td>
<td>122.0</td>
<td>57.0</td>
<td>45.0</td>
<td>0.0</td>
<td>122.7</td>
</tr>
<tr>
<td>4000.0</td>
<td>109.0</td>
<td>121.0</td>
<td>55.0</td>
<td>45.0</td>
<td>0.0</td>
<td>121.3</td>
</tr>
<tr>
<td>5000.0</td>
<td>107.0</td>
<td>120.0</td>
<td>52.0</td>
<td>45.0</td>
<td>0.0</td>
<td>120.0</td>
</tr>
</tbody>
</table>

OASPL 125.1 135.4 99.8 54.3 0.0 135.8

113
CASE 14, W02, BKRL (BRAKE RELEASE)

ALT = 0. FT USB = 0. DEG R/RO = 1,000
VA = 0. FT/S DOOR = CLOSED THETA = -6. DEG
VJ = 870. FT/S VGS = UP THETAP = 19. DEG

RIBBON STA WL BL(IN) BL(OUT)
AT NOZ EX 374. 208. 155. 209.
AT WING TE 425. 201. 141. 212.
AT TR OFF 425. 201. 141. 212.
AT TR EDG 449. 193. 141. 212.
TRAIL EDGE 449. 193. 141. 212.

FIELD POINT 395. 206. 90.

FIELD POINT IN ZONE 1 AND IS
INBOARD OF FLOW RIBBON
S = 21.0 DELTA = 57.5

PEAK JET MIX LEVEL = 119. DB AT 480. HZ
CORRECTION FOR VGS APPLIED
DSPL= 5. DB F1= 2801. HZ
PEAK NEAR NOZ LEVEL = 118. DB AT 1200. HZ
STE= 76. DELTATE= 0.
PEAK TRAIL EDGE LEVEL = 92. DB AT 111. HZ
PEAK SEP LEVEL = 50. DB AT 4743. HZ
NO TBL ACTIVITY: A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25.</td>
<td>112</td>
<td>98</td>
<td>79</td>
<td>25.</td>
<td>0.</td>
<td>112.0</td>
</tr>
<tr>
<td>31.</td>
<td>112</td>
<td>99</td>
<td>81</td>
<td>27.</td>
<td>0.</td>
<td>112.7</td>
</tr>
<tr>
<td>40.</td>
<td>113</td>
<td>100</td>
<td>84</td>
<td>29.</td>
<td>0.</td>
<td>113.5</td>
</tr>
<tr>
<td>50.</td>
<td>114</td>
<td>102</td>
<td>87</td>
<td>30.</td>
<td>0.</td>
<td>114.2</td>
</tr>
<tr>
<td>63.</td>
<td>115</td>
<td>103</td>
<td>89</td>
<td>32.</td>
<td>0.</td>
<td>114.9</td>
</tr>
<tr>
<td>80.</td>
<td>115</td>
<td>104</td>
<td>91</td>
<td>34.</td>
<td>0.</td>
<td>115.7</td>
</tr>
<tr>
<td>100.</td>
<td>116</td>
<td>106</td>
<td>92</td>
<td>35.</td>
<td>0.</td>
<td>116.4</td>
</tr>
<tr>
<td>125.</td>
<td>117</td>
<td>107</td>
<td>92</td>
<td>37.</td>
<td>0.</td>
<td>117.1</td>
</tr>
<tr>
<td>160.</td>
<td>117</td>
<td>108</td>
<td>91</td>
<td>39.</td>
<td>0.</td>
<td>117.9</td>
</tr>
<tr>
<td>200.</td>
<td>118</td>
<td>110</td>
<td>89</td>
<td>41.</td>
<td>0.</td>
<td>118.6</td>
</tr>
<tr>
<td>250.</td>
<td>119</td>
<td>111</td>
<td>86</td>
<td>42.</td>
<td>0.</td>
<td>119.4</td>
</tr>
<tr>
<td>315.</td>
<td>119</td>
<td>112</td>
<td>84</td>
<td>44.</td>
<td>0.</td>
<td>119.9</td>
</tr>
<tr>
<td>400.</td>
<td>119</td>
<td>114</td>
<td>81</td>
<td>45.</td>
<td>0.</td>
<td>120.1</td>
</tr>
<tr>
<td>500.</td>
<td>119</td>
<td>115</td>
<td>78</td>
<td>46.</td>
<td>0.</td>
<td>120.2</td>
</tr>
<tr>
<td>630.</td>
<td>118</td>
<td>116</td>
<td>76</td>
<td>47.</td>
<td>0.</td>
<td>120.4</td>
</tr>
<tr>
<td>800.</td>
<td>119</td>
<td>117</td>
<td>73</td>
<td>47.</td>
<td>0.</td>
<td>121.1</td>
</tr>
<tr>
<td>1000.</td>
<td>119</td>
<td>118</td>
<td>70</td>
<td>48.</td>
<td>0.</td>
<td>121.4</td>
</tr>
<tr>
<td>1250.</td>
<td>118</td>
<td>118</td>
<td>68</td>
<td>49.</td>
<td>0.</td>
<td>121.2</td>
</tr>
<tr>
<td>1600.</td>
<td>118</td>
<td>118</td>
<td>65</td>
<td>49.</td>
<td>0.</td>
<td>120.8</td>
</tr>
<tr>
<td>2000.</td>
<td>117</td>
<td>117</td>
<td>62</td>
<td>49.</td>
<td>0.</td>
<td>120.0</td>
</tr>
<tr>
<td>2500.</td>
<td>116</td>
<td>116</td>
<td>60</td>
<td>50.</td>
<td>0.</td>
<td>119.9</td>
</tr>
<tr>
<td>3150.</td>
<td>115</td>
<td>114</td>
<td>57</td>
<td>50.</td>
<td>0.</td>
<td>117.5</td>
</tr>
<tr>
<td>4000.</td>
<td>113</td>
<td>113</td>
<td>54</td>
<td>50.</td>
<td>0.</td>
<td>116.0</td>
</tr>
<tr>
<td>5000.</td>
<td>111</td>
<td>112</td>
<td>52</td>
<td>50.</td>
<td>0.</td>
<td>114.5</td>
</tr>
</tbody>
</table>

DASPL 130.6 127.4 99.4 59.7 0.0 132.3

114
CASE 10, F04, BKRL (BRAKE RELEASE)

**ALT** = 0. FT
**USB** = 0. DEG
**THETAS** = -6. DEG

**VA** = 0. FT/S
**DOOR** = CLOSED
**THETAP** = 19. DEG

**RIBBON STA WL BL (IN) BL (OUT)**
- AT NDZ EX 374. 208. 155. 209.
- AT WNG TE 425. 201. 141. 212.
- AT TR OFF 425. 201. 141. 212.
- AT TR EDG 449. 193. 141. 212.

**TRAIL EDGE** 449. 193. 141. 212.

**FIELD POINT** 433. 199. 60.

**FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON**

**S** = 59.2
**DELTA** = 61.4

**PEAK JET MIX LEVEL** = 124. DB AT 437. HZ
**CORRECTION FOR VGS APPLIED**
**DISPL** = 5. DB
**F1** = 2801. HZ
**PEAK NEAR NDZ LEVEL** = 108. DB AT 1200. HZ
**STE** = 76.
**DELTA** = 0.
**PEAK TRAIL EDGE LEVEL** = 69. DB AT 111. HZ
**PEAK SEP LEVEL** = 43. DB AT 4743. HZ
**NO TBL ACTIVITY, A/P VELOCITY TOO SMALL**

**SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)**

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>117</td>
<td>88</td>
<td>56</td>
<td>18</td>
<td>0</td>
<td>117.2</td>
</tr>
<tr>
<td>31</td>
<td>118</td>
<td>89</td>
<td>58</td>
<td>20</td>
<td>0</td>
<td>117.9</td>
</tr>
<tr>
<td>40</td>
<td>119</td>
<td>90</td>
<td>61</td>
<td>21</td>
<td>0</td>
<td>118.6</td>
</tr>
<tr>
<td>50</td>
<td>119</td>
<td>92</td>
<td>64</td>
<td>23</td>
<td>0</td>
<td>119.3</td>
</tr>
<tr>
<td>60</td>
<td>119</td>
<td>93</td>
<td>66</td>
<td>25</td>
<td>0</td>
<td>119.9</td>
</tr>
<tr>
<td>70</td>
<td>120</td>
<td>94</td>
<td>68</td>
<td>26</td>
<td>0</td>
<td>120.6</td>
</tr>
<tr>
<td>80</td>
<td>121</td>
<td>96</td>
<td>69</td>
<td>28</td>
<td>0</td>
<td>121.3</td>
</tr>
<tr>
<td>90</td>
<td>121</td>
<td>97</td>
<td>69</td>
<td>30</td>
<td>0</td>
<td>121.9</td>
</tr>
<tr>
<td>100</td>
<td>122</td>
<td>98</td>
<td>68</td>
<td>31</td>
<td>0</td>
<td>122.7</td>
</tr>
<tr>
<td>125</td>
<td>123</td>
<td>100</td>
<td>66</td>
<td>33</td>
<td>0</td>
<td>123.3</td>
</tr>
<tr>
<td>140</td>
<td>124</td>
<td>101</td>
<td>64</td>
<td>35</td>
<td>0</td>
<td>123.9</td>
</tr>
<tr>
<td>160</td>
<td>125</td>
<td>102</td>
<td>61</td>
<td>36</td>
<td>0</td>
<td>124.1</td>
</tr>
<tr>
<td>180</td>
<td>126</td>
<td>104</td>
<td>58</td>
<td>37</td>
<td>0</td>
<td>123.8</td>
</tr>
<tr>
<td>200</td>
<td>127</td>
<td>105</td>
<td>56</td>
<td>38</td>
<td>0</td>
<td>123.5</td>
</tr>
<tr>
<td>220</td>
<td>128</td>
<td>106</td>
<td>53</td>
<td>39</td>
<td>0</td>
<td>123.1</td>
</tr>
<tr>
<td>240</td>
<td>129</td>
<td>107</td>
<td>50</td>
<td>40</td>
<td>0</td>
<td>123.3</td>
</tr>
<tr>
<td>260</td>
<td>130</td>
<td>108</td>
<td>48</td>
<td>40</td>
<td>0</td>
<td>123.3</td>
</tr>
<tr>
<td>280</td>
<td>131</td>
<td>109</td>
<td>45</td>
<td>41</td>
<td>0</td>
<td>123.0</td>
</tr>
<tr>
<td>300</td>
<td>132</td>
<td>110</td>
<td>42</td>
<td>42</td>
<td>0</td>
<td>122.4</td>
</tr>
<tr>
<td>320</td>
<td>133</td>
<td>110</td>
<td>42</td>
<td>42</td>
<td>0</td>
<td>122.4</td>
</tr>
<tr>
<td>340</td>
<td>134</td>
<td>110</td>
<td>40</td>
<td>43</td>
<td>0</td>
<td>121.6</td>
</tr>
<tr>
<td>360</td>
<td>135</td>
<td>109</td>
<td>37</td>
<td>42</td>
<td>0</td>
<td>120.5</td>
</tr>
<tr>
<td>380</td>
<td>136</td>
<td>108</td>
<td>34</td>
<td>43</td>
<td>0</td>
<td>119.2</td>
</tr>
<tr>
<td>400</td>
<td>137</td>
<td>107</td>
<td>31</td>
<td>43</td>
<td>0</td>
<td>117.6</td>
</tr>
<tr>
<td>420</td>
<td>138</td>
<td>106</td>
<td>29</td>
<td>43</td>
<td>0</td>
<td>115.8</td>
</tr>
<tr>
<td>440</td>
<td>139</td>
<td>105</td>
<td>27</td>
<td>43</td>
<td>0</td>
<td>114.2</td>
</tr>
<tr>
<td>460</td>
<td>140</td>
<td>104</td>
<td>25</td>
<td>43</td>
<td>0</td>
<td>112.6</td>
</tr>
<tr>
<td>480</td>
<td>141</td>
<td>103</td>
<td>23</td>
<td>43</td>
<td>0</td>
<td>111.0</td>
</tr>
<tr>
<td>500</td>
<td>142</td>
<td>102</td>
<td>21</td>
<td>43</td>
<td>0</td>
<td>109.4</td>
</tr>
<tr>
<td>520</td>
<td>143</td>
<td>101</td>
<td>19</td>
<td>43</td>
<td>0</td>
<td>107.8</td>
</tr>
<tr>
<td>540</td>
<td>144</td>
<td>100</td>
<td>17</td>
<td>43</td>
<td>0</td>
<td>106.2</td>
</tr>
<tr>
<td>560</td>
<td>145</td>
<td>99</td>
<td>15</td>
<td>43</td>
<td>0</td>
<td>104.6</td>
</tr>
<tr>
<td>580</td>
<td>146</td>
<td>98</td>
<td>13</td>
<td>43</td>
<td>0</td>
<td>103.0</td>
</tr>
</tbody>
</table>

**DISPL** 135.5 117.4 76.7 52.3 0.0 135.6

115
CASE 11, F05, BKRL (BRAKE RELEASE)

ALT = 0, FT USB = 0, DEG R/RO = 1.000
VA = 0, FT/S DOOR = CLOSED THetas = -6, DEG
UJ = 870, FT/S VGS = UP THETA = 19, DEG

RIBBON STA WL BL(IN) BL(OUT)
AT NOZ EX 374, 208, 155, 209.
AT WNG TE 425, 201, 141, 212.
AT TR DFF 425, 201, 141, 212.
AT TR EDG 449, 193, 141, 212.

TRAIL EDGE 449, 193, 141, 212.

FIELD POINT 433, 199, 90.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 59.2 DELTA = 51.4

PEAK JET MIX LEVEL = 128, DB AT 335, HZ
CORRECTION FOR VGS APPLIED
DSPL = 5, DB FL1 = 2801, HZ
PEAK NEAR NOZ LEVEL = 112, DB AT 1200, HZ
STE = 76, DB DELTA = 0.
PEAK TRAIL EDGE LEVEL = 75, DB AT 111, HZ
PEAK SEP LEVEL = 61, DB AT 4743, HZ
NO TEL ACTIVITY, A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NN</th>
<th>TE</th>
<th>SEP</th>
<th>TEL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>121</td>
<td>92</td>
<td>61</td>
<td>36</td>
<td>0</td>
<td>121.4</td>
</tr>
<tr>
<td>31</td>
<td>122</td>
<td>93</td>
<td>64</td>
<td>37</td>
<td>0</td>
<td>122.1</td>
</tr>
<tr>
<td>40</td>
<td>123</td>
<td>94</td>
<td>67</td>
<td>39</td>
<td>0</td>
<td>122.9</td>
</tr>
<tr>
<td>50</td>
<td>124</td>
<td>96</td>
<td>69</td>
<td>41</td>
<td>0</td>
<td>123.6</td>
</tr>
<tr>
<td>63</td>
<td>124</td>
<td>97</td>
<td>72</td>
<td>42</td>
<td>0</td>
<td>124.3</td>
</tr>
<tr>
<td>80</td>
<td>125</td>
<td>98</td>
<td>74</td>
<td>44</td>
<td>0</td>
<td>125.1</td>
</tr>
<tr>
<td>100</td>
<td>126</td>
<td>100</td>
<td>74</td>
<td>46</td>
<td>0</td>
<td>125.8</td>
</tr>
<tr>
<td>125</td>
<td>126</td>
<td>101</td>
<td>74</td>
<td>47</td>
<td>0</td>
<td>126.5</td>
</tr>
<tr>
<td>160</td>
<td>127</td>
<td>102</td>
<td>73</td>
<td>49</td>
<td>0</td>
<td>127.3</td>
</tr>
<tr>
<td>200</td>
<td>128</td>
<td>104</td>
<td>72</td>
<td>51</td>
<td>0</td>
<td>127.9</td>
</tr>
<tr>
<td>250</td>
<td>128</td>
<td>105</td>
<td>69</td>
<td>52</td>
<td>0</td>
<td>128.0</td>
</tr>
<tr>
<td>315</td>
<td>128</td>
<td>106</td>
<td>66</td>
<td>54</td>
<td>0</td>
<td>127.7</td>
</tr>
<tr>
<td>400</td>
<td>127</td>
<td>108</td>
<td>64</td>
<td>55</td>
<td>0</td>
<td>127.5</td>
</tr>
<tr>
<td>500</td>
<td>127</td>
<td>109</td>
<td>61</td>
<td>56</td>
<td>0</td>
<td>127.0</td>
</tr>
<tr>
<td>630</td>
<td>126</td>
<td>110</td>
<td>58</td>
<td>57</td>
<td>0</td>
<td>126.0</td>
</tr>
<tr>
<td>800</td>
<td>126</td>
<td>111</td>
<td>56</td>
<td>57</td>
<td>0</td>
<td>125.9</td>
</tr>
<tr>
<td>1000</td>
<td>126</td>
<td>112</td>
<td>53</td>
<td>58</td>
<td>0</td>
<td>125.8</td>
</tr>
<tr>
<td>1250</td>
<td>125</td>
<td>112</td>
<td>50</td>
<td>59</td>
<td>0</td>
<td>125.5</td>
</tr>
<tr>
<td>1600</td>
<td>125</td>
<td>112</td>
<td>48</td>
<td>59</td>
<td>0</td>
<td>124.9</td>
</tr>
<tr>
<td>2000</td>
<td>124</td>
<td>111</td>
<td>45</td>
<td>59</td>
<td>0</td>
<td>124.1</td>
</tr>
<tr>
<td>2500</td>
<td>123</td>
<td>110</td>
<td>42</td>
<td>60</td>
<td>0</td>
<td>123.1</td>
</tr>
<tr>
<td>3150</td>
<td>121</td>
<td>108</td>
<td>40</td>
<td>60</td>
<td>0</td>
<td>121.7</td>
</tr>
<tr>
<td>4000</td>
<td>120</td>
<td>107</td>
<td>37</td>
<td>60</td>
<td>0</td>
<td>120.1</td>
</tr>
<tr>
<td>5000</td>
<td>118</td>
<td>106</td>
<td>34</td>
<td>60</td>
<td>0</td>
<td>118.3</td>
</tr>
</tbody>
</table>

OASPL 139.1 121.4 82.1 69.8 0.0 139.1

116
CASE 12, F06, BKRL (BRAKE RELEASE)

ALT = 0.0 FT  USB = 0.0 DEG  R/RD = 1.000
VA = 0.0 FT/S  DOOR = CLOSED  THETA = -6.0 DEG
UJ = 870.0 FT/S  VGS = UP  THETAP = 19.0 DEG

RIBBON  STA  WL  BL (IN)  BL (OUT)
AT NOZ EX  374.  208.  155.  208.
AT WHG TE  425.  201.  141.  212.
AT TR OFF  425.  201.  141.  212.
AT TR EDG  449.  193.  141.  212.

TRAIL EDGE  449.  193.  141.  212.
FIELD POINT  433.  199.  130.

FIELD POINT IN ZONE 3 AND IS INBOARD OF FLOW RIBBON
S = 59.2  DELTA = 11.5

PEAK JET MIX LEVEL = 143.0 DB AT 123.0 HZ
CORRECTION FOR VGS APPLIED
DSPL = 5.0 DB  F1 = 2801.0 HZ
PEAK NEAR NOZ LEVEL = 127.0 DB AT 1200.0 HZ
STE = 76.0  DELTATE = 0.
PEAK TRAIL EDGE LEVEL = 84.0 DB AT 111.0 HZ
PEAK SEP LEVEL = 89.0 DB AT 4743.0 HZ
NO TBL ACTIVITY, A/P VELOCITY TOO SMALL

SPL-IN DB RE 200 PICOBAR (BY COMP AND SUM)

<table>
<thead>
<tr>
<th>HZ</th>
<th>MIX</th>
<th>NH</th>
<th>TE</th>
<th>SEP</th>
<th>TBL</th>
<th>SUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>136</td>
<td>107</td>
<td>71</td>
<td>64</td>
<td>0.0</td>
<td>135.8</td>
</tr>
<tr>
<td>31</td>
<td>137</td>
<td>108</td>
<td>74</td>
<td>66</td>
<td>0.0</td>
<td>137.0</td>
</tr>
<tr>
<td>40</td>
<td>138</td>
<td>109</td>
<td>77</td>
<td>68</td>
<td>0.0</td>
<td>138.5</td>
</tr>
<tr>
<td>50</td>
<td>140</td>
<td>111</td>
<td>79</td>
<td>69</td>
<td>0.0</td>
<td>139.7</td>
</tr>
<tr>
<td>63</td>
<td>141</td>
<td>112</td>
<td>82</td>
<td>71</td>
<td>0.0</td>
<td>141.0</td>
</tr>
<tr>
<td>80</td>
<td>142</td>
<td>113</td>
<td>83</td>
<td>73</td>
<td>0.0</td>
<td>142.1</td>
</tr>
<tr>
<td>100</td>
<td>143</td>
<td>115</td>
<td>84</td>
<td>74</td>
<td>0.0</td>
<td>142.6</td>
</tr>
<tr>
<td>125</td>
<td>143</td>
<td>116</td>
<td>84</td>
<td>76</td>
<td>0.0</td>
<td>142.7</td>
</tr>
<tr>
<td>160</td>
<td>142</td>
<td>117</td>
<td>83</td>
<td>78</td>
<td>0.0</td>
<td>142.4</td>
</tr>
<tr>
<td>200</td>
<td>142</td>
<td>119</td>
<td>81</td>
<td>79</td>
<td>0.0</td>
<td>141.8</td>
</tr>
<tr>
<td>250</td>
<td>141</td>
<td>120</td>
<td>79</td>
<td>81</td>
<td>0.0</td>
<td>140.6</td>
</tr>
<tr>
<td>315</td>
<td>139</td>
<td>121</td>
<td>76</td>
<td>82</td>
<td>0.0</td>
<td>139.3</td>
</tr>
<tr>
<td>400</td>
<td>138</td>
<td>123</td>
<td>73</td>
<td>83</td>
<td>0.0</td>
<td>138.0</td>
</tr>
<tr>
<td>500</td>
<td>137</td>
<td>124</td>
<td>71</td>
<td>84</td>
<td>0.0</td>
<td>136.8</td>
</tr>
<tr>
<td>630</td>
<td>135</td>
<td>125</td>
<td>68</td>
<td>85</td>
<td>0.0</td>
<td>135.6</td>
</tr>
<tr>
<td>800</td>
<td>135</td>
<td>127</td>
<td>65</td>
<td>86</td>
<td>0.0</td>
<td>135.6</td>
</tr>
<tr>
<td>1000</td>
<td>135</td>
<td>127</td>
<td>63</td>
<td>87</td>
<td>0.0</td>
<td>135.6</td>
</tr>
<tr>
<td>1250</td>
<td>135</td>
<td>127</td>
<td>60</td>
<td>87</td>
<td>0.0</td>
<td>135.3</td>
</tr>
<tr>
<td>1600</td>
<td>134</td>
<td>127</td>
<td>57</td>
<td>88</td>
<td>0.0</td>
<td>134.7</td>
</tr>
<tr>
<td>2000</td>
<td>133</td>
<td>126</td>
<td>55</td>
<td>88</td>
<td>0.0</td>
<td>134.0</td>
</tr>
<tr>
<td>2500</td>
<td>132</td>
<td>125</td>
<td>52</td>
<td>88</td>
<td>0.0</td>
<td>132.9</td>
</tr>
<tr>
<td>3150</td>
<td>131</td>
<td>124</td>
<td>50</td>
<td>89</td>
<td>0.0</td>
<td>131.5</td>
</tr>
<tr>
<td>4000</td>
<td>129</td>
<td>122</td>
<td>47</td>
<td>89</td>
<td>0.0</td>
<td>129.9</td>
</tr>
<tr>
<td>5000</td>
<td>127</td>
<td>121</td>
<td>44</td>
<td>89</td>
<td>0.0</td>
<td>128.2</td>
</tr>
</tbody>
</table>

OASPL 152.4  136.5  92.0  98.5  0.0  152.5

117
SECTION V
COMPUTER PLOTS
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-INBOARD ENGINE

PLOT X-DUCER COND. ALT. SPEED N1 VMIX USBFA OVERALL
SYMBOL NO. NO. (FT) (FPS) RPM (FPS) DEG (DB)
○ B01 ST50
▼ B01 ST50
□ B01 ST50
◊ B01 ST50
□ B01 ST50
△ B01 ST50

NOTES
○ PREDICTED TOTAL NOISE, CREATED 79/03/21.
▼ PREDICTED TBL NOISE 79/03/21.
□ PREDICTED SEP NOISE 79/03/21.
◊ PREDICTED EDGE NOISE 79/03/21.
□ PREDICTED NN NOISE 79/03/21.
△ PREDICTED MIXING NOISE 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE. USB = 50-INBOARD ENGINE

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>PLOT X-UCER COND. ALT.</th>
<th>SPEED</th>
<th>N1</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⊙</td>
<td>B02 BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>141</td>
</tr>
<tr>
<td>▼</td>
<td>B02 BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>□</td>
<td>B02 BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>134</td>
</tr>
<tr>
<td>◆</td>
<td>B02 BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>87</td>
</tr>
<tr>
<td>◆</td>
<td>B02 BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>117</td>
</tr>
<tr>
<td>△</td>
<td>B02 BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>140</td>
</tr>
</tbody>
</table>

NOTES
⊙ PREDICTED TOTAL NOISE CREATED 79/03/21.
▼ PREDICTED TBL NOISE 79/03/21.
□ PREDICTED SEP NOISE 79/03/21.
◆ PREDICTED EDGE NOISE 79/03/21.
◆ PREDICTED NN NOISE 79/03/21.
△ PREDICTED MIXING NOISE 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-INBOARD ENGINE

1/3 OCTAVE BAND SPECTRUM RE 200 MICROBAR

FREQUENCY (HZ)

<table>
<thead>
<tr>
<th>PLOT SYMBOL</th>
<th>X-DUCER NO.</th>
<th>COND. NO.</th>
<th>ALT. (FT)</th>
<th>SPEED (FPS)</th>
<th>NI (RPM)</th>
<th>VMIX (FPS)</th>
<th>USBFA</th>
<th>OVERALL (DB)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B03</td>
<td>S150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>131</td>
</tr>
<tr>
<td></td>
<td>B03</td>
<td>S150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>B03</td>
<td>S150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>113</td>
</tr>
<tr>
<td></td>
<td>B03</td>
<td>S150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>B03</td>
<td>S150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>B03</td>
<td>S150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>131</td>
</tr>
</tbody>
</table>

NOTES

PREDICTED TOTAL NOISE, CREATED 79/03/21.
PREDICTED TBL NOISE 79/03/21.
PREDICTED SEP NOISE 79/03/21.
PREDICTED EDGE NOISE 79/03/21.
PREDICTED NN NOISE 79/03/21.
PREDICTED MIXING NOISE 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE. USB=50-INBOARD ENGINE

**Plot X-Ducer**

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NO</th>
<th>NO</th>
<th>ALT (FT)</th>
<th>SPEED (FPS)</th>
<th>RPM (RPM)</th>
<th>VMIX (FPS)</th>
<th>USFB (dB)</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>o</td>
<td>B06</td>
<td>ST50</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>▽</td>
<td>B06</td>
<td>ST50</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>△</td>
<td>B06</td>
<td>ST50</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>◊</td>
<td>B06</td>
<td>ST50</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>○</td>
<td>B06</td>
<td>ST50</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

**Notes**

- Predicted total noise: 79/03/21.
- Predicted TOL noise: 79/03/21.
- Predicted SEP noise: 79/03/21.
- Predicted EDGE noise: 79/03/21.
- Predicted NN noise: 79/03/21.
- Predicted mixing noise: 79/03/21.
### Prediction for OSRA Type Airplane, USB-50-Inboard Engine

#### 1/3 Octave Band Spectra (dB re 200 microbar)

<table>
<thead>
<tr>
<th>Plot</th>
<th>X-Ducer</th>
<th>Cond.</th>
<th>Alt.</th>
<th>Speed</th>
<th>N1</th>
<th>VMix</th>
<th>USBFA</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>B07</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>125</td>
</tr>
<tr>
<td>V</td>
<td>B07</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>101</td>
</tr>
<tr>
<td>□</td>
<td>B07</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>108</td>
</tr>
<tr>
<td>□</td>
<td>B07</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>103</td>
</tr>
<tr>
<td>△</td>
<td>B07</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>$90^\circ$</td>
<td>125</td>
</tr>
</tbody>
</table>

#### Notes
- Predicted total noise created: 79/03/21.
- Predicted tbl noise: 79/03/21.
- Predicted sep noise: 79/03/21.
- Predicted edge noise: 79/03/21.
- Predicted nn noise: 79/03/21.
- Predicted mixing noise: 79/03/21.

---

125
PREDICTION FOR OSRA TYPE AIRPLANE. USB=50-INBOARD ENGINE

PLOT: OCTAVE BAND ACCEL DB RE 200 PICO- BAR

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NO.</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>o</td>
<td>808</td>
<td>ST50</td>
<td>100</td>
<td>340</td>
<td>7</td>
<td>120</td>
<td>101</td>
<td>128</td>
</tr>
<tr>
<td>▽</td>
<td>808</td>
<td>ST50</td>
<td>100</td>
<td>340</td>
<td>7</td>
<td>120</td>
<td>104</td>
<td>129</td>
</tr>
<tr>
<td>▽</td>
<td>808</td>
<td>ST50</td>
<td>100</td>
<td>340</td>
<td>7</td>
<td>120</td>
<td>108</td>
<td>129</td>
</tr>
<tr>
<td>△</td>
<td>808</td>
<td>ST50</td>
<td>100</td>
<td>340</td>
<td>7</td>
<td>120</td>
<td>103</td>
<td>129</td>
</tr>
<tr>
<td>△</td>
<td>808</td>
<td>ST50</td>
<td>100</td>
<td>340</td>
<td>7</td>
<td>120</td>
<td>104</td>
<td>129</td>
</tr>
</tbody>
</table>

NOTES:
- PREDICTED TOTAL NOISE CREATED 79/03/21.
- PREDICTED TBL NOISE 79/03/21.
- PREDICTED SEP NOISE 79/03/21.
- PREDICTED EDGE NOISE 79/03/21.
- PREDICTED NN NOISE 79/03/21.
- PREDICTED MIXING NOISE 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-INBOARD ENGINE

PREDICTED TOTAL NOISE CREATED 79/03/21.

NOTES
- PREDICTED TOTAL NOISE CREATED 79/03/21.
- PREDICTED TBL NOISE 79/03/21.
- PREDICTED SEP NOISE 79/03/21.
- PREDICTED EDGE NOISE 79/03/21.
- PREDICTED NN NOISE 79/03/21.
- PREDICTED MIXING NOISE 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-INBOARD ENGINE

PLOT: X-DECOR COND. ALT. SPEED NI YMIX USBFA OVERALL
SYMBOL NO. NO. [FT] [FPS] [RPM] [FPS] [DEC] [DB]
○ VOI ST50 142
▼ VOI ST50 125
□ VOI ST50 98
◊ VOI ST50 0
△ VOI ST50 140
△ VOI ST50 137

NOTES:
○ PREDICTED TOTAL NOISE CREATED 79/03/21.
▼ PREDICTED TLE NOISE 79/03/21.
□ PREDICTED SEP NOISE 79/03/21.
◊ PREDICTED EDGE NOISE 79/03/21.
△ PREDICTED NN NOISE 79/03/21.
△ PREDICTED MIXING NOISE 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-INBOARD ENGINE

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>PLOT</th>
<th>X-UCER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>○</td>
<td>V02</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>143</td>
</tr>
<tr>
<td>▽</td>
<td>V02</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>132</td>
</tr>
<tr>
<td>△</td>
<td>V02</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>105</td>
</tr>
<tr>
<td>□</td>
<td>V02</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>92</td>
</tr>
<tr>
<td>●</td>
<td>V02</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>136</td>
</tr>
<tr>
<td>▲</td>
<td>V02</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>142</td>
</tr>
</tbody>
</table>

NOTES
- PREDICTED TOTAL NOISE CREATED 79/03/21.
- PREDICTED TOTAL NOISE 79/03/21.
- PREDICTED SEP NOISE 79/03/21.
- PREDICTED EDGE NOISE 79/03/21.
- PREDICTED NN NOISE 79/03/21.
- PREDICTED MIXING NOISE 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-INBOARD ENGINE

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>X-DUCER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>MI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø</td>
<td>F01</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>▼</td>
<td>F01</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>130</td>
</tr>
<tr>
<td>▲</td>
<td>F01</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>116</td>
</tr>
<tr>
<td>○</td>
<td>F01</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>104</td>
</tr>
<tr>
<td>▽</td>
<td>F01</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>132</td>
</tr>
<tr>
<td>△</td>
<td>F01</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>150</td>
</tr>
</tbody>
</table>

NOISES

- Ø: PREDICTED TOTAL NOISE CREATED 79/03/21.
- ▼: PREDICTED TOTAL NOISE 79/03/21.
- ▲: PREDICTED SEP NOISE 79/03/21.
- ○: PREDICTED EDGE NOISE 79/03/21.
- ▽: PREDICTED NN NOISE 79/03/21.
- △: PREDICTED MIXING NOISE 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-INBOARD ENGINE

NOTES

- Predicted Total Noise Created: 79/03/21.
- Predicted TBL Noise: 79/03/21.
- Predicted SEP Noise: 79/03/21.
- Predicted EDGE Noise: 79/03/21.
- Predicted NN Noise: 79/03/21.
- Predicted Mixing Noise: 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE, USB-5C-INBOARD ENGINE

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>X-DUCER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FO3</td>
<td>5150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>FO3</td>
<td>5150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>130</td>
</tr>
<tr>
<td></td>
<td>FO3</td>
<td>5150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>127</td>
</tr>
<tr>
<td></td>
<td>FO3</td>
<td>5150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>FO3</td>
<td>5150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>132</td>
</tr>
<tr>
<td></td>
<td>FO3</td>
<td>5150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>150</td>
</tr>
</tbody>
</table>

NOTES

○ PREDICTED TOTAL NOISE, CREATED 79/03/21.
△ PREDICTED TOTAL NOISE 79/03/21.
□ PREDICTED SEPARATE NOISE 79/03/21.
◆ PREDICTED EDGE NOISE 79/03/21.
● PREDICTED MIXING NOISE 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE. USB=50-INBOARD ENGINE

1/3 OCTAVE BAND SPL DB RE 200 MICRO-BAR

FREQUENCY (HZ)

PLOT X-OWER COND. ALT. SPEED NI VMIX USBFA OVERALL
SYMBOL NO. NO. (FT) (FPS) (RPM) (FPS) (DEG) (DB)
○ F04 ST50 147
▼ F04 ST50 102
□ F04 ST50 137
◊ F04 ST50 97
☆ F04 ST50 126
△ F04 ST50 147

NOTES
○ PREDICTED TOTAL NOISE CREATED 79/03/21.
▼ PREDICTED TBL NOISE 79/03/21.
□ PREDICTED SEP NOISE 79/03/21.
◊ PREDICTED EDGE NOISE 79/03/21.
☆ PREDICTED NN NOISE 79/03/21.
△ PREDICTED MIXING NOISE 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-INBOARD ENGINE

![Graph showing frequency response of noise levels for different conditions and speeds.]

**Legend:**
- **F05, ST50**
- **F05, ST70**
- **F05, ST95**

**Notes:**
- **Predicted Total Noise Created:** 79/03/21.
- **Predicted TBL Noise:** 79/03/21.
- **Predicted SEP Noise:** 79/03/21.
- **Predicted Edge Noise:** 79/03/21.
- **Predicted NN Noise:** 79/03/21.
- **Predicted Mixing Noise:** 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-INBOARD ENGINE

**Plot Details:***
- **Symbol**: 
  - ○: Predicted Total Noise, Created
  - ▼: Predicted TBL Noise
  - □: Predicted SEP Noise
  - ◇: Predicted Edge Noise
  - ◊: Predicted NN Noise
  - ▲: Predicted Mixing Noise
- **Plot Legends**: 79/03/21.

**Table:**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>X-ducer Cond.</th>
<th>Alt. (FT)</th>
<th>Speed (FPS)</th>
<th>VMIX (RPM)</th>
<th>USBFA (FPS)</th>
<th>Overall (DB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>○</td>
<td>F06</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td>151</td>
</tr>
<tr>
<td>▼</td>
<td>F06</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>□</td>
<td>F06</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td>148</td>
</tr>
<tr>
<td>◇</td>
<td>F06</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td>98</td>
</tr>
<tr>
<td>◊</td>
<td>F06</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td>126</td>
</tr>
<tr>
<td>▲</td>
<td>F06</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td>147</td>
</tr>
</tbody>
</table>

**Notes:**
- PREDICTED TOTAL NOISE, CREATED 79/03/21.
- PREDICTED TBL NOISE 79/03/21.
- PREDICTED SEP NOISE 79/03/21.
- PREDICTED EDGE NOISE 79/03/21.
- PREDICTED NN NOISE 79/03/21.
- PREDICTED MIXING NOISE 79/03/21.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE-INBOARD ENGINE

1/3 OCTAVE BAND SPECTRAL DB RE 200 MICRO-PER-Bar

FREQUENCY (HZ)

PLT DX-UCR COND. ALT. SPEED NI VMIX USFLA OVE RL
SYMBOL NO. NO. (FT) (FPS) (RPM) (FPS) (DEG) (DB)

○ B01 BKRL 150
▼ B01 BKRL 137
□ B01 BKRL 103
● B01 BKRL 94
▲ B01 BKRL 137
△ B01 BKRL 158

NOTES
○ PREDICTED TOTAL NOISE CREATED 79/03/16.
▼ PREDICTED TBL NOISE 79/03/16.
□ PREDICTED SEP NOISE 79/03/16.
● PREDICTED EDGE NOISE 79/03/16.
▲ PREDICTED NN NOISE 79/03/16.
△ PREDICTED MIXING NOISE 79/03/16.
PREDICTION FOR QSRA TYPE AIRPLANE, BRAKE RELEASE- INBOARD ENGINE

| SYMBOL | X-DECOR COND. ALT. SPEED NH WMIX USBFA OVERALL |
|--------|-----------------|--------|--------|--------|--------|--------|
| O 002  | BKRL            | 142    | 0      | 124    | 121    | 142    |
| ▼ 002  | BKRL            |        |        |        |        |        |
| □ 002  | BKRL            |        |        |        |        |        |
| ◆ 002  | BKRL            |        |        |        |        |        |
| Ø 002  | BKRL            |        |        |        |        |        |

**NOTES**
- ○ PREDICTED TOTAL NOISE, CREATED 79/03/16.
- ▼ PREDICTED SEP NOISE 79/03/16.
- □ PREDICTED EDGE NOISE 79/03/16.
- ◆ PREDICTED NN NOISE 79/03/16.
- Ø PREDICTED MIXING NOISE 79/03/16.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE - INBOARD ENGINE

PLOT X-DUCER COND. ALT. SPEED NI VMIX USBFA OVERALL
SYMBOL NO. NO. (FT) (FPS) (RPM) (FPS) (DOE1) (DOE1)
0 B03 BKRL 137
v B03 BKRL 0
□ B03 BKRL 128
❖ B03 BKRL 114
0 B03 BKRL 137

NOTES
0 PREDICTED TOTAL NOISE CREATED 79/03/16.
v PREDICTED SEP NOISE 79/03/16.
□ PREDICTED EDGE NOISE 79/03/16.
❖ PREDICTED NN NOISE 79/03/16.
0 PREDICTED MIXING NOISE 79/03/16.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE-INBOARD ENGINE

PLOT X-OPER COND. ALT. SPEED NI VMIX USBFA OVERALL
SYMBOL NO. NO. [F.T] [FPS] [RPM] [FPS] [DEG] [DB]
○ B04 BKRL 147
△ B04 BKRL 0
□ B04 BKRL 117
◇ B04 BKRL 127
○ B04 BKRL 147

NOTES
○ PREDICTED TOTAL NOISE, CREATED 79/03/16.
△ PREDICTED SEP NOISE 79/03/16.
□ PREDICTED EDGE NOISE 79/03/16.
◇ PREDICTED NN NOISE 79/03/16.
○ PREDICTED MIXING NOISE 79/03/16.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE-INBOARD ENGINE

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>X-UCER</th>
<th>COND. NO.</th>
<th>ALT. (FT)</th>
<th>SPEED (FTS)</th>
<th>RPM</th>
<th>Vmix</th>
<th>USBA</th>
<th>OVERALL</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>@</td>
<td>005</td>
<td>BKRL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>▼</td>
<td>005</td>
<td>BKRL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>□</td>
<td>005</td>
<td>BKRL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>●</td>
<td>005</td>
<td>BKRL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>☆</td>
<td>005</td>
<td>BKRL</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

NOTES

@ PREDICTED TOTAL NOISE CREATED 79/03/16.
▼ PREDICTED SEP NOISE 79/03/16.
□ PREDICTED EDGE NOISE 79/03/16.
● PREDICTED NH NOISE 79/03/16.
☆ PREDICTED MIXING NOISE 79/03/16.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE-INBOARD ENGINE

1/3 OCTAVE BAND SPL DB RE 200 MICRO-P 1.0

PLOT X-DUCER COND. ALT. SPEED NI VMIX USBFA OVERALL

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NO.</th>
<th>NO.</th>
<th>[FT]</th>
<th>[FPS]</th>
<th>[RPM]</th>
<th>[FPS]</th>
<th>[DEG]</th>
<th>[DB]</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

NOTES

PREDICTED TOTAL NOISE CREATED 79/03/16.
PREDICTED SEP NOISE 79/03/16.
PREDICTED EDGE NOISE 79/03/16.
PREDICTED NN NOISE 79/03/16.
PREDICTED MIXING NOISE 79/03/16.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE-INBOARD ENGINE

![Graph showing predicted noise levels for different parameters.]

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>X-PLICER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>N1</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>🍃</td>
<td>B07</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>137</td>
</tr>
<tr>
<td>🍃</td>
<td>B07</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>118</td>
</tr>
<tr>
<td>🍃</td>
<td>B07</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>117</td>
</tr>
<tr>
<td>🍃</td>
<td>B07</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>137</td>
</tr>
</tbody>
</table>

**NOTES**
- 🍃 PREDICTED TOTAL NOISE CREATED 79/03/16.
- 🍃 PREDICTED SEP NOISE 79/03/16.
- 🍃 PREDICTED EDGE NOISE 79/03/16.
- 🍃 PREDICTED NN NOISE 79/03/16.
- 🍃 PREDICTED MIXING NOISE 79/03/16.
**PREDICTION FOR GSRA TYPE AIRPLANE, BRAKE RELEASE-INBOARD ENGINE**

**Graph Description:**

- **Graph Title:** 1/3 octave band spectra re 100 micropascal.
- **Y-axis:** Frequency (Hz)
- **X-axis:** Frequency (Hz)
- **Graph Symbols:**
  - ●: dBOB
  - △: BKRL
  - •: Lm
  - ○: DUE

**Data Table:**

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NO.</th>
<th>X-UCER</th>
<th>CONO.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>●</td>
<td>BOB</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>153</td>
<td></td>
</tr>
<tr>
<td>△</td>
<td>BOB</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>133</td>
<td></td>
</tr>
<tr>
<td>•</td>
<td>BOB</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>○</td>
<td>BOB</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>133</td>
<td></td>
</tr>
<tr>
<td>△</td>
<td>BOB</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>153</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

- PREDICTED TOTAL NOISE CREATED: 79/03/16.
- PREDICTED TBL NOISE: 79/03/16.
- PREDICTED SEP NOISE: 79/03/16.
- PREDICTED EDGE NOISE: 79/03/16.
- PREDICTED NN NOISE: 79/03/16.
- PREDICTED MIXING NOISE: 79/03/16.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE-INBOARD ENGINE

PLOT X-DUCER COND. ALT. SPEED NI VMIX USBFA OVERALL
SYMBOL NO. NO. [FT] [FPS] [RPM] [FPS] [DEG] [DB]
ô 809 BKRL 137
ô 809 BKRL 0
ô 809 BKRL 115
ô 809 BKRL 116
ô 809 BKRL 137

NOTES
ô PREDICTED TOTAL NOISE, CREATED 79/03/16.
ô PREDICTED SEP NOISE 79/03/16.
ô PREDICTED EDGE NOISE 79/03/16.
ô PREDICTED NN NOISE 79/03/16.
ô PREDICTED MIXING NOISE 79/03/16.
PREDICTION FOR OSRA TYPE AIRPLANE. BRAKE RELEASE - INBOARD ENGINE

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>X-DUCER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>V01</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>150</td>
</tr>
<tr>
<td>▼</td>
<td>V01</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>129</td>
</tr>
<tr>
<td>□</td>
<td>V01</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>108</td>
</tr>
<tr>
<td>◇</td>
<td>V01</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>147</td>
</tr>
<tr>
<td>△</td>
<td>V01</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>146</td>
</tr>
</tbody>
</table>

NOTES
- PREDICTED TOTAL NOISE CREATED 79/03/16.
- PREDICTED TBL NOISE 79/03/16.
- PREDICTED SEP NOISE 79/03/16.
- PREDICTED EDGE NOISE 79/03/16.
- PREDICTED NN NOISE 79/03/16.
- PREDICTED MIXING NOISE 79/03/16.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE-INBOARD ENGINE

1/3 OCTAVE BAND ACCEL DB RE 200 PICO-MICRO-G

FREQUENCY [HZ]

| PLOT X-UCER COND. ALT. SPEED NI VMIX USBFA OVERALL |
|---------|---------|---------|---------|---------|---------|---------|
| SYMBOL  | NO.     | NO.     | [FT]    | [FPS]   | [RPM]   | [FPS]   | [DB]    |
| 0       | F04     | BKRL    |         |         |         |         | 159     |
| ▼       | F04     | BKRL    |         |         |         |         | 137     |
| □       | F04     | BKRL    |         |         |         |         | 96      |
| ◯       | F04     | BKRL    |         |         |         |         | 96      |
| ○       | F04     | BKRL    |         |         |         |         | 140     |
| ▲       | F04     | BKRL    |         |         |         |         | 159     |

NOTES
- PREDICTED TOTAL NOISE CREATED 79/03/16.
- PREDICTED TBL NOISE 79/03/16.
- PREDICTED SEP NOISE 79/03/16.
- PREDICTED EDGE NOISE 79/03/16.
- PREDICTED NN NOISE 79/03/16.
- PREDICTED MIXING NOISE 79/03/16.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE - INBOARD ENGINE

FREQUENCY [HZ]

1/3 OCTAVE BAND LEVEL DB RE 200 MICROBAR

PLOT X-DECER COND. ALT. SPEED NH VMIX USBFA OVERALL

SYMBOL NO. NO. [FT] [FPS] [RPM] [FPS] [DEG] [DB]

○ FOS BKRL 159
◇ FOS BKRL 137
□ FOS BKRL 104
◊ FOS BKRL 107
△ FOS BKRL 140
△ FOS BKRL 159

NOTES
○ PREDICTED TOTAL NOISE CREATED 79/03/16.
◇ PREDICTED TBL NOISE 79/03/16.
□ PREDICTED SEP NOISE 79/03/16.
◊ PREDICTED EDGE NOISE 79/03/16.
△ PREDICTED NN NOISE 79/03/16.
△ PREDICTED MIXING NOISE 79/03/16.
### Plot Table

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NO.</th>
<th>NO.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>F06</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>159</td>
</tr>
<tr>
<td>▼</td>
<td>F06</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>137</td>
</tr>
<tr>
<td>□</td>
<td>F06</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>107</td>
</tr>
<tr>
<td>□</td>
<td>F06</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>97</td>
</tr>
<tr>
<td>△</td>
<td>F06</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>140</td>
</tr>
</tbody>
</table>

### Diagram

The diagram illustrates the prediction for a 1/3 octave band spectrum of noise for an OSRA-type airplane with brake release-inboard engine. The x-axis represents frequency in Hz, and the y-axis shows the noise level in decibels relative to 1 microbar. The plot includes symbols for different conditions and noise predictions, each associated with specific values and dates: 79/03/16.

### Notes
- PREDICTED TOTAL NOISE, CREATED: 79/03/16.
- PREDICTED TBL NOISE: 79/03/16.
- PREDICTED SEP NOISE: 79/03/16.
- PREDICTED EDGE NOISE: 79/03/16.
- PREDICTED NN NOISE: 79/03/16.
- PREDICTED MIXING NOISE: 79/03/16.

---

149  \[\text{L BUTZEL/ 03/19/79}\]
PREDICTION FOR OSRA TYPE AIRPLANE. USB-50-OUTBOARD ENGINE

PLOT  X-OUCER  COND.  ALT.  SPEED  M1  VMIX  USOFA  OVERALL
SYMBOL  NO.  NO.  (FT)  (FPS)  (RPM)  (FPS)  (OEG)  (OBL)
○  B01  ST50  129
▼  B01  ST50  102
□  B01  ST50  95
◆  B01  ST50  83
◊  B01  ST50  106
△  B01  ST50  129

NOTES
○  PREDICTED TOTAL NOISE CREATED  79/03/22.
▼  PREDICTED TBL NOISE  79/03/22.
□  PREDICTED SEP NOISE  79/03/22.
◆  PREDICTED EDGE NOISE  79/03/22.
◊  PREDICTED NN NOISE  79/03/22.
△  PREDICTED MIXING NOISE  79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-OUTBOARD ENGINE

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>PLOT X-DUCER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>⊙</td>
<td>B02</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>▼</td>
<td>B02</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>□</td>
<td>B02</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>94</td>
</tr>
<tr>
<td>◊</td>
<td>B02</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>☆</td>
<td>B02</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>105</td>
</tr>
<tr>
<td>△</td>
<td>B02</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>120</td>
</tr>
</tbody>
</table>

NOTES
⊙ PREDICTED TOTAL NOISE CREATED 79/03/22.
▼ PREDICTED TBL NOISE 79/03/22.
□ PREDICTED SEP NOISE 79/03/22.
◊ PREDICTED EDGE NOISE 79/03/22.
☆ PREDICTED NN NOISE 79/03/22.
△ PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-OUTBOARD ENGINE

PLOT  X-UCER  COND.  ALT.  SPEED  h  YMIX  USBA  OVERALL
SYMBOL  NO.  NO.  FT  FPS  RPM  FPS  PDF  ODB

○  B03  ST50  120  100  110  87  102  126
△  B03  ST50  100  100  110  87  102  126
□  B03  ST50  120  100  110  87  102  126
□  B03  ST50  120  100  110  87  102  126
△  B03  ST50  120  100  110  87  102  126
△  B03  ST50  120  100  110  87  102  126

NOISES
○  PREDICTED TOTAL NOISE CREATED 79/03/22.
△  PREDICTED TBL NOISE 79/03/22.
□  PREDICTED SEP NOISE 79/03/22.
□  PREDICTED EDGE NOISE 79/03/22.
○  PREDICTED NN NOISE 79/03/22.
△  PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-OUTBOARD ENGINE

1/3 OCTAVE BAND SPL dB RE: 200 MICRO-PASCAL

FREQUENCY [HZ]

PLOT X-OUTER COND. ALT. SPEED N1 VMIX USBFA OVERALL SYMBOL NO. NO. [FT] [FPS] [RPM] [FPS] [DEG] [DB]

◊ B04 $T50
▼ B04 $T50
□ B04 $T50
∴ B04 $T50
○ B04 $T50
△ B04 $T50

NOTES

◊ PREDICTED TOTAL NOISE CREATED 79/03/22.
▼ PREDICTED TBL NOISE 79/03/22.
□ PREDICTED SEP NOISE 79/03/22.
∴ PREDICTED EDGE NOISE 79/03/22.
○ PREDICTED NN NOISE 79/03/22.
△ PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-OUTBOARD ENGINE

PLOT X-UCER COND. ALT. SPEED MI VMIX USBFA OVERALL
SYMBOL NO NO [FT] [FPM] [FPS] [RPM] [FPS] [DEG] [DB]

-  B05  ST50  125
-  B05  ST50  101
-  B05  ST50  90
-  B05  ST50  89
-  B05  ST50  103
-  B05  ST50  125

NOTES
- PREDICTED TOTAL NOISE CREATED 79/03/22.
- PREDICTED TBL NOISE 79/03/22.
- PREDICTED SEP NOISE 79/03/22.
- PREDICTED EDGE NOISE 79/03/22.
- PREDICTED NN NOISE 79/03/22.
- PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE. USB=50-OUTBOARD ENGINE

PLOT X-DOUCER COND. ALT. SPEED M1 VMIX USBFA OVERALL
SYMBOL NO. NO. [FT] [FPS] [RPM] [FPS] [DEG] [DB]
☐ 806 150 10 101 101 123
△ 806 150 10 101 101 123
□ 806 150 10 101 101 123
○ 806 150 10 101 101 123
△ 806 150 10 101 101 123

NOTES
☐ PREDICTED TOTAL NOISE CREATED 79/03/22.
△ PREDICTED TBL NOISE 79/03/22.
□ PREDICTED SEP NOISE 79/03/22.
○ PREDICTED EDGE NOISE 79/03/22.
△ PREDICTED NN NOISE 79/03/22.
△ PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, USB-50-OUTBOARD ENGINE

PLOT X-DECER COND. ALT. SPEED NI VMIX USBFA OVERALL
SYMBOL NO. NO. (FT) [FPS] [RPM] [FPS] [DEG] [DB]

- BOB ST50 121
- BOB ST50 101
- BOB ST50 81
- BOB ST50 95
- BOB ST50 100
- BOB ST50 121

NOTES
- PREDICTED TOTAL NOISE, CREATED 79/03/22.
- PREDICTED TOL NOISE 79/03/22.
- PREDICTED SEP NOISE 79/03/22.
- PREDICTED EDGE NOISE 79/03/22.
- PREDICTED NN NOISE 79/03/22.
- PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE. USB=50-OUTBOARD ENGINE

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NO.</th>
<th>NO.</th>
<th>[FT]</th>
<th>[FPS]</th>
<th>[RPM]</th>
<th>[FPS]</th>
<th>[Deg]</th>
<th>[DBI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>☼</td>
<td>009</td>
<td>515</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>121</td>
</tr>
<tr>
<td>▼</td>
<td>009</td>
<td>515</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>101</td>
</tr>
<tr>
<td>▲</td>
<td>009</td>
<td>515</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>90</td>
</tr>
<tr>
<td>◆</td>
<td>009</td>
<td>515</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>△</td>
<td>009</td>
<td>515</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>121</td>
</tr>
</tbody>
</table>

NOTES
- ☼ PREDICTED TOTAL NOISE CREATED 79/03/22.
- ▼ PREDICTED TBL NOISE 79/03/22.
- ▲ PREDICTED SEP NOISE 79/03/22.
- ◆ PREDICTED EDGE NOISE 79/03/22.
- △ PREDICTED NN NOISE 79/03/22.
- △ PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-OUTBOARD ENGINE

### Table:

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>X-UCER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>VMIX</th>
<th>USGFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>V01</td>
<td>ST50</td>
<td></td>
<td></td>
<td>128</td>
<td></td>
<td>117</td>
</tr>
<tr>
<td>▽</td>
<td>V01</td>
<td>ST50</td>
<td></td>
<td></td>
<td>102</td>
<td></td>
<td></td>
</tr>
<tr>
<td>▼</td>
<td>V01</td>
<td>ST50</td>
<td></td>
<td></td>
<td>92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>◤</td>
<td>V01</td>
<td>ST50</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>◤</td>
<td>V01</td>
<td>ST50</td>
<td></td>
<td></td>
<td>127</td>
<td></td>
<td></td>
</tr>
<tr>
<td>△</td>
<td>V01</td>
<td>ST50</td>
<td></td>
<td></td>
<td>117</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes:

- ○: PREDICTED TOTAL NOISE, CREATED
- ▽: PREDICTED TBL NOISE
- ▼: PREDICTED SEP NOISE
- ◤: PREDICTED EDGE NOISE
- ◤: PREDICTED MY NOISE
- △: PREDICTED MIXING NOISE

159
**PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-OUTBOARD ENGINE**

<table>
<thead>
<tr>
<th>PLOT SYMBOL</th>
<th>X-DOUCER</th>
<th>COND. NO.</th>
<th>ALT. NO.</th>
<th>SPEED MPH</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>VO2</td>
<td>150</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td>124</td>
</tr>
<tr>
<td>▼</td>
<td>VO2</td>
<td>150</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>□</td>
<td>VO2</td>
<td>150</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td>98</td>
</tr>
<tr>
<td>○</td>
<td>VO2</td>
<td>150</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td>83</td>
</tr>
<tr>
<td>☉</td>
<td>VO2</td>
<td>150</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td>119</td>
</tr>
<tr>
<td>△</td>
<td>VO2</td>
<td>150</td>
<td></td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td>122</td>
</tr>
</tbody>
</table>

**NOTES**
- **O** PREDICTED TOTAL NOISE, CREATED 79/03/22.
- **▼** PREDICTED TBL NOISE 79/03/22.
- **□** PREDICTED SEP NOISE 79/03/22.
- **○** PREDICTED EDGE NOISE 79/03/22.
- **☉** PREDICTED NN NOISE 79/03/22.
- **△** PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-OUTBOARD ENGINE

FREQUENCY (HZ)

1/3 OCTAVE BAND SPL RE 200 MICROBAR

PLOT X-ACCELEROMETER COND. ALT. SPEED N1 VMIX USBFA OVERALL

SYMBOL NO. NO. (FTL) (FPS) (RPM) (FPS) (DEF) (DB)

○ F01 ST50 127
▼ F01 ST50 102
□ F01 ST50 94
◊ F01 ST50 88
○ F01 ST50 110
△ F01 ST50 127

NOTES

PREDECTED TOTAL NOISE, CREATED 79/03/22.
PREDECTED TBL NOISE 79/03/22.
PREDECTED SEP NOISE 79/03/22.
PREDECTED EDGE NOISE 79/03/22.
PREDECTED NN NOISE 79/03/22.
PREDECTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, USB=50-OUTBOARD ENGINE

PLOT X-DUCER COND. ALT. SPEED NI VMIX USBFA OVERALL
SYMBOL NO. NO. (FT) (FPS) (RPM) (FPS) (DEG) (DB)
○ F02 ST50 131
■ F02 ST50 102
□ F02 ST50 111
△ F02 ST50 93
◇ F02 ST50 113
△ F02 ST50 131

NOTES
○ PREDICTED TOTAL NOISE CREATED 79/03/22.
■ PREDICTED TBL NOISE 79/03/22.
□ PREDICTED SEP NOISE 79/03/22.
◇ PREDICTED EDGE NOISE 79/03/22.
△ PREDICTED NN NOISE 79/03/22.
△ PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE. USB=50-OUTBOARD ENGINE

1/3 OCTAVE BAND SPL DB RE 200 MICRO-PER-Bar

FREQUENCY (HZ)

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>X-DUCER NO.</th>
<th>COND. NO.</th>
<th>ALT. (FT)</th>
<th>SPEED (FPS)</th>
<th>N1 (RPM)</th>
<th>VMIX (FPS)</th>
<th>USBFA</th>
<th>OVERALL (DB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>●</td>
<td>F03</td>
<td>S150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>142</td>
</tr>
<tr>
<td>▽</td>
<td>F03</td>
<td>S150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>▼</td>
<td>F03</td>
<td>S150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>123</td>
</tr>
<tr>
<td>◇</td>
<td>F03</td>
<td>S150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>101</td>
</tr>
<tr>
<td>○</td>
<td>F03</td>
<td>S150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>126</td>
</tr>
<tr>
<td>△</td>
<td>F03</td>
<td>S150</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>142</td>
</tr>
</tbody>
</table>

NOISES

● PREDICTED TOTAL NOISE CREATED 79/03/22.
▽ PREDICTED TBL NOISE 79/03/22.
▼ PREDICTED SEP NOISE 79/03/22.
◇ PREDICTED EDGE NOISE 79/03/22.
○ PREDICTED NN NOISE 79/03/22.
△ PREDICTED MIXING NOISE 79/03/22.

163 L. BUTZEL/ 03/23/20
PREDICTION FOR OSRA TYPE AIRPLANE, USB-50-OUTBOARD ENGINE

PLOT X-DUCER COND. ALT. SPEED NI VMIX USBFA OVERALL

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NO.</th>
<th>NO.</th>
<th>F.T.</th>
<th>FPS</th>
<th>RPM</th>
<th>FPS</th>
<th>DEG</th>
<th>DB</th>
</tr>
</thead>
<tbody>
<tr>
<td>○</td>
<td>F04</td>
<td>S150</td>
<td></td>
<td>128</td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
<tr>
<td>▽</td>
<td>F04</td>
<td>S150</td>
<td></td>
<td>102</td>
<td></td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>△</td>
<td>F04</td>
<td>S150</td>
<td></td>
<td>97</td>
<td></td>
<td></td>
<td></td>
<td>97</td>
</tr>
<tr>
<td>◇</td>
<td>F04</td>
<td>S150</td>
<td></td>
<td>77</td>
<td></td>
<td></td>
<td></td>
<td>77</td>
</tr>
<tr>
<td>◆</td>
<td>F04</td>
<td>S150</td>
<td></td>
<td>107</td>
<td></td>
<td></td>
<td></td>
<td>107</td>
</tr>
<tr>
<td>▲</td>
<td>F04</td>
<td>S150</td>
<td></td>
<td>128</td>
<td></td>
<td></td>
<td></td>
<td>128</td>
</tr>
</tbody>
</table>

NOTES
○ PREDICTED TOTAL NOISE CREATED 79/03/22.
▽ PREDICTED TOL NOISE 79/03/22.
△ PREDICTED SEP NOISE 79/03/22.
◇ PREDICTED EDGE NOISE 79/03/22.
◆ PREDICTED NN NOISE 79/03/22.
▲ PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE. USB=50-OUTBOARD ENGINE

- **Plot X-ducer Cond. Alt. Speed Mi. VMix USBFA Overall**
  - **Symbol** | **No.** | **No.** | **[Ft]** | **[FPS]** | **[RPM]** | **[FPS]** | **[Deg]** | **[DB]**
  - ○ | F05 | ST50 | | | | | | 132
  - ▼ | F05 | ST50 | | | | | | 102
  - □ | F05 | ST50 | | | | | | 119
  - ◇ | F05 | ST50 | | | | | | 83
  - ◊ | F05 | ST50 | | | | | | 111
  - ▲ | F05 | ST50 | | | | | | 132

- **Noises**
  - ○ PREDICTED TOTAL NOISE . CREATED 79/03/22.
  - ▼ PREDICTED TBL NOISE 79/03/22.
  - □ PREDICTED SEP NOISE 79/03/22.
  - ◇ PREDICTED EDGE NOISE 79/03/22.
  - ◊ PREDICTED NN NOISE 79/03/22.
  - ▲ PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, USB-50-OUTBOARD ENGINE

1/3 OCTAVE BAND SPL (+100 PICO-Bar)

FREQUENCY (HZ)

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>X-DUCER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>F06</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>146</td>
</tr>
<tr>
<td>V</td>
<td>F06</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>102</td>
</tr>
<tr>
<td>□</td>
<td>F06</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>145</td>
</tr>
<tr>
<td>◊</td>
<td>F06</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>93</td>
</tr>
<tr>
<td>●</td>
<td>F06</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>121</td>
</tr>
<tr>
<td>△</td>
<td>F06</td>
<td>ST50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>140</td>
</tr>
</tbody>
</table>

NOTES
- PREDICTED TOTAL NOISE CREATED 79/03/22.
- PREDICTED TBL NOISE 79/03/22.
- PREDICTED SEP NOISE 79/03/22.
- PREDICTED EDGE NOISE 79/03/22.
- PREDICTED NN NOISE 79/03/22.
- PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE-OUTBOARD ENGINE

PLOT X-DECER COND. ALT. SPEED N1 VMIX USFB A OVERALL

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NO.</th>
<th>NO.</th>
<th>FT.</th>
<th>FPS</th>
<th>RPM</th>
<th>FPS</th>
<th>DEG</th>
<th>DB</th>
</tr>
</thead>
<tbody>
<tr>
<td>o</td>
<td>BO1</td>
<td>BKRL</td>
<td>135</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▼</td>
<td>BO1</td>
<td>BKRL</td>
<td>135</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>□</td>
<td>BO1</td>
<td>BKRL</td>
<td>135</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▲</td>
<td>BO1</td>
<td>BKRL</td>
<td>135</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>o</td>
<td>BO1</td>
<td>BKRL</td>
<td>135</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTES

- PREDICTED TOTAL NOISE CREAT 79/03/22.
- PREDICTED SEP NOISE 79/03/22.
- PREDICTED EDGE NOISE 79/03/22.
- PREDICTED NN NOISE 79/03/22.
- PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE-OUTFBOARD ENGINE

PLOT X-ORDER COND. ALT. SPEED NI VMIX USBFA OVERALL SYMBOL
1 134 0 107 113 134
2 B02 BKRL B02 BKRL B02 BKRL B02 BKRL

NOTES
1 PREDICTED TOTAL NOISE CREATED 79/03/22.
2 PREDICTED SEP NOISE 79/03/22.
3 PREDICTED EDGE NOISE 79/03/22.
4 PREDICTED NN NOISE 79/03/22.
5 PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE-OUTBOARD ENGINE

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>X-UCER</th>
<th>NO.</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>○</td>
<td>003</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>132</td>
<td></td>
</tr>
<tr>
<td>▼</td>
<td>003</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>□</td>
<td>003</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>114</td>
<td></td>
</tr>
<tr>
<td>×</td>
<td>003</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>111</td>
<td></td>
</tr>
<tr>
<td>○</td>
<td>003</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>132</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES**
- ○: PREDICTED TOTAL NOISE, CREATED 79/03/22.
- ▼: PREDICTED SEPARATE NOISE 79/03/22.
- □: PREDICTED EDGE NOISE 79/03/22.
- ×: PREDICTED NN NOISE 79/03/22.
- ○: PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE. BRAKE RELEASE - OUTBOARD ENGINE

PLOT SYMBOL | X-DUCTER NO. | COND. NO. | ALT. (FT) | SPEED (FPS) | NI (RPM) | VMIX (FPS) | USBFA | OVERALL (DB) |
-------------|--------------|-----------|-----------|-------------|-----------|------------|--------|-------------|
○            | B04          | BKRL      |           |             |           |            |        | 133         |
▼            | B04          | BKRL      |           |             |           |            |        | 104         |
□            | B04          | BKRL      |           |             |           |            |        | 111         |
★            | B04          | BKRL      |           |             |           |            |        | 133         |

NOTES
○ PREDICTED TOTAL NOISE CREATED 79/03/22.
▼ PREDICTED SEP NOISE 79/03/22.
□ PREDICTED EDGE NOISE 79/03/22.
★ PREDICTED NN NOISE 79/03/22.
○ PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE BRAKE RELEASE-OUTBOARD ENGINE

![Graph showing frequency vs. 1/3 octave band levels in dB re 280 microbar.](image)

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NO.</th>
<th>NO.</th>
<th>FT</th>
<th>FPS</th>
<th>RPM</th>
<th>FPS</th>
<th>DEG</th>
<th>DB</th>
</tr>
</thead>
<tbody>
<tr>
<td>⊙</td>
<td>BOS</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>132</td>
</tr>
<tr>
<td>▼</td>
<td>BOS</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>105</td>
</tr>
<tr>
<td>□</td>
<td>BOS</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>111</td>
</tr>
<tr>
<td>◊</td>
<td>BOS</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>132</td>
</tr>
</tbody>
</table>

NOTES
⊙ PREDICTED TOTAL NOISE CREATED 7/3/22.
▼ PREDICTED SEP NOISE 7/3/22.
□ PREDICTED EDGE NOISE 7/3/22.
◊ PREDICTED NN NOISE 7/3/22.
◊ PREDICTED MIXING NOISE 7/3/22.
PREDICTION FOR OSRA TYPE AIRPLANE. BRAKE RELEASE-OUTBOARD ENGINE

PLOT

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>X-DUCER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>▼</td>
<td>B06</td>
<td>BKRL</td>
<td></td>
<td></td>
<td>131</td>
<td></td>
<td></td>
<td>131</td>
</tr>
<tr>
<td>▼</td>
<td>B06</td>
<td>BKRL</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>△</td>
<td>B06</td>
<td>BKRL</td>
<td></td>
<td></td>
<td>114</td>
<td></td>
<td></td>
<td>114</td>
</tr>
<tr>
<td>○</td>
<td>B06</td>
<td>BKRL</td>
<td></td>
<td></td>
<td>109</td>
<td></td>
<td></td>
<td>109</td>
</tr>
<tr>
<td>□</td>
<td>B06</td>
<td>BKRL</td>
<td></td>
<td></td>
<td>131</td>
<td></td>
<td></td>
<td>131</td>
</tr>
</tbody>
</table>

NOTES

- PREDICTED TOTAL NOISE CREATED 79/03/22.
- PREDICTED SEP NOISE 79/03/22.
- PREDICTED EDGE NOISE 79/03/22.
- PREDICTED NN NOISE 79/03/22.
- PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OISRA TYPE AIRPLANE, BRAKE RELEASE-OUTBOARD ENGINE

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>X-UCER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>MI</th>
<th>VMIX</th>
<th>USBF</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>B07</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>130</td>
</tr>
<tr>
<td>V</td>
<td>B07</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>110</td>
</tr>
<tr>
<td>□</td>
<td>B07</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>108</td>
</tr>
<tr>
<td>◊</td>
<td>B07</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>130</td>
</tr>
</tbody>
</table>

NOTES
- PREDICTED TOTAL NOISE: CREATED 79/03/22.
- PREDICTED SEP NOISE: 79/03/22.
- PREDICTED EDGE NOISE: 79/03/22.
- PREDICTED NN NOISE: 79/03/22.
- PREDICTED MIXING NOISE: 79/03/22.
# Prediction for Osra Type Airplane, Brake Release - Outboard Engine

## Graphical Representation

![Graph](image)

### Table: Prediction Data

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Plot Type</th>
<th>Cond. No.</th>
<th>Alt. (ft)</th>
<th>Speed (fps)</th>
<th>N1 (RPM)</th>
<th>VMix</th>
<th>USBA</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>☄️</td>
<td>Predicted Total Noise</td>
<td>808</td>
<td>BKRL</td>
<td>110</td>
<td>900</td>
<td>100</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>⬇️</td>
<td>Predicted Sep Noise</td>
<td>808</td>
<td>BKRL</td>
<td>110</td>
<td>900</td>
<td>100</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>□</td>
<td>Predicted Edge Noise</td>
<td>808</td>
<td>BKRL</td>
<td>110</td>
<td>900</td>
<td>100</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>⭕</td>
<td>Predicted NN Noise</td>
<td>808</td>
<td>BKRL</td>
<td>110</td>
<td>900</td>
<td>100</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>⭗</td>
<td>Predicted Mixing Noise</td>
<td>808</td>
<td>BKRL</td>
<td>110</td>
<td>900</td>
<td>100</td>
<td>130</td>
<td></td>
</tr>
</tbody>
</table>

### Notes

- ☄️ Predicted Total Noise Created: 79/03/22.
- ⬇️ Predicted Sep Noise: 79/03/22.
- □ Predicted Edge Noise: 79/03/22.
- ⭕ Predicted NN Noise: 79/03/22.
- ⭗ Predicted Mixing Noise: 79/03/22.

---

174

L Dutzel, 03/23/20
PREDICTION FOR OSRA TYPE AIRPLANE BRAKE RELEASE - OUTBOARD ENGINE

NOTES

PREDICTED TOTAL NOISE CREATED 79/03/22.
PREDICTED SEP NOISE 79/03/22.
PREDICTED EDGE NOISE 79/03/22.
PREDICTED NN NOISE 79/03/22.
PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE-OUTBOARD ENGINE

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NO.</th>
<th>X-OUER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>⊙</td>
<td>W01</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>136</td>
</tr>
<tr>
<td>▼</td>
<td>W01</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>□</td>
<td>W01</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>135</td>
</tr>
<tr>
<td>◎</td>
<td>W01</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>125</td>
</tr>
</tbody>
</table>

NOTES
⊙ PREDICTED TOTAL NOISE CREATED 79/03/22.
▼ PREDICTED SEP NOISE 79/03/22.
□ PREDICTED EDGE NOISE 79/03/22.
◎ PREDICTED NN NOISE 79/03/22.
◇ PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE-OUTBOARD ENGINE

![Graph showing noise levels over frequency](chart.png)

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>X-DOUCER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>NI</th>
<th>VMIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>≈</td>
<td>F04</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>136</td>
</tr>
<tr>
<td>▼</td>
<td>F04</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>□</td>
<td>F04</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>◊</td>
<td>FO4</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>117</td>
</tr>
<tr>
<td>O</td>
<td>F04</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>135</td>
</tr>
</tbody>
</table>

**NOTES**
- PREDICTED TOTAL NOISE CREATED 79/03/22.
- PREDICTED SEP NOISE 79/03/22.
- PREDICTED EDGE NOISE 79/03/22.
- PREDICTED NN NOISE 79/03/22.
- PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE. BRAKE RELEASE-OUTBOARD ENGINE

FREQUENCY (HZ)

1/3 OCTAVE BAND SPECTRAL DB RE 200 MICROP.

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>NO.</th>
<th>X-UCER</th>
<th>COND.</th>
<th>ALT.</th>
<th>SPEED</th>
<th>MIX</th>
<th>USBFA</th>
<th>OVERALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>F05</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>139</td>
</tr>
<tr>
<td>▼</td>
<td>F05</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>□</td>
<td>F05</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>◇</td>
<td>F05</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>121</td>
</tr>
<tr>
<td>O</td>
<td>F05</td>
<td>BKRL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>139</td>
</tr>
</tbody>
</table>

NOISES

1 PREDICTED TOTAL NOISE CREATED 79/03/22.
2 PREDICTED SEP NOISE 79/03/22.
3 PREDICTED EDGE NOISE 79/03/22.
4 PREDICTED NN NOISE 79/03/22.
5 PREDICTED MIXING NOISE 79/03/22.
PREDICTION FOR OSRA TYPE AIRPLANE, BRAKE RELEASE - OUTBOARD ENGINE

PLOT | X-UCER | COND. | ALT. | SPEED | NM | VMIX | USBFA | OVERALL
-----|--------|-------|------|-------|----|------|-------|-------
 1   | F06    | BKRL  |      |       |    |      | 153   |       
 2   | F06    | BKRL  |      |       |    |      | 99    |       
 3   | F06    | BKRL  |      |       |    |      | 92    |       
 4   | F06    | BKRL  |      |       |    |      | 137   |       
 5   | F06    | BKRL  |      |       |    |      | 153   |       

NOTES
- PREDICTED TOTAL NOISE CREATED 79/03/22.
- PREDICTED SEP NOISE 79/03/22.
- PREDICTED EDGE NOISE 79/03/22.
- PREDICTED NN NOISE 79/03/22.
- PREDICTED MIXING NOISE 79/03/22.