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Tyannia Program
Experience Additions

I Basic circular body alone

45° Wing - A Wing low - Wing forward 1"
1 Basic Body B1
2 Primary addition B3
3 Advanced addition B2
4 Reduced addition B4
5 Non circular B5

55° Wing - Wing high - Wing forward 1"
1 Circular basic body B1
2 Primary addition B3
3 Advanced addition B2
4 Reduced addition B4

300° Wing - Wing low - Wing forward
1 Circular basic body B1
2 Advanced addition B2

60° Wing - Wing low - Wing forward
1 Circular basic body B1
2 Advanced addition B2
At station 18
\[ \lambda = 1.61 \]
\[ B = 0.84, C = 107 \]
\[ H = 267 \]

At \( x/l_c = 0.707 \)
\[ x = 114 \]
\[ y = 1.89 \]

At \( x/l_c = 0.38 \)
\[ x = 61 \]
\[ y = 2.47 \]

At \( x/l_c = 0.924 \)
\[ x = 149 \]
\[ y = 1.02 \]

At station 27
\[ \lambda = 162 \]
\[ H = 162 \]

At \( x/l_c = 0.707 \)
\[ x = 116 \]
\[ y = 116 \]

At \( x/l_c = 0.38 \)
\[ x = 62 \]
\[ y = 150 \]

At \( x/l_c = 0.924 \)
\[ x = 150 \]
\[ y = 62 \]
Modifications for supersonic additions.

Remove 1" from top of fuselage.

Remove 1/2" from bottom of 60° wing end block.

Remove 1/2" from top and bottom of unswept wing end block.

Make shims.
\[
\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1 \quad y = \frac{b}{a} \sqrt{a^2 - x^2}
\]

\[
\left(\frac{x}{a}\right)^2 + \left(\frac{y}{b}\right)^2 = 1
\]
Fuselage \( L = 4.8 + 31.7 = 36.5 \)

Distance from wing to nose

\[
\begin{array}{c}
49 \\
43.5 \\
5.5 \\
7.6 \pm \\
13.1 \pm \\
\hline
16.00
\end{array}
\]
The Effects of a Special Fuselage Shaping on the Lift-to-Drag of a Supersonic Transport Configuration by Richard T. Whitcomb

Summary
tip station

C = 2.85
**SPECIAL SUPERSONIC ADDITION**

Circular from stat 0 to 4; 27 to 47.25
Elliptical from stat 5 to 17.5
Special cross sections from 18 to 26

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