ENGINE RANGE FACTOR

Mo = 0.98
ALTITUDE 36,089 TO 45,000 FT

RELATIVE RANGE FACTOR
(V/SFC) / (V/SFC)_{REF}

BYPASS RATIO

STF329
CF6-6(E)
CF6-50C
JT9D-15

JT3D-7
JT3D-1
JT8D-1
JT8D-15

PR70-GEN-21231
RELATIONSHIP OF NET ENGINE FRONTAL AREA TO FUSELAGE AREA

Approximate limit of area available in fuselage to semi-submerge the engines

Approximate limit of area available to area rule fuselage with external nacelles

\[ M_0 = 0.98 \]

Altitude 36,089 to 45,000 ft

270 passengers
4430 sq ft wing area
460,000 lb cruise weight

Bypass ratio
NACELLE FRONTAL AREA REQUIREMENTS

\[ A_0 = \frac{\text{ENGINE AIRFLOW}}{\text{MASS FLOW PER UNIT AREA AT } M_0} \]

5 IN. CLEARANCE BETWEEN COWL AND ENGINE

\[ \frac{A_0}{A_{\text{MAX}}} \]

CONSTANT COMPRESSOR FACE MACH = 0.52

"O" BYPASS RATIO = 6.0

"\(\Delta\)" BYPASS RATIO = 1.3

FREESTREAM MACH NUMBER
ENGINE MAXIMUM CROSS-SECTIONAL AREA
PER UNIT THRUST

Mo = 0.98
ALTITUDE: 36,089 to 45,000 FT

MAXIMUM
AREA PER
UNIT THRUST

\[ \frac{A_{\text{MAX}}}{FN/\delta} \text{ FT}^2 \] \text{ lb}

BYPASS RATIO

- STF 329
- JT3D-7
- CF6-6(E)
- JT3D-1
- CF6-50C
- JT8D-1
- JT9D-15
- JT8D-15