

CHAPTER

6



MAINTENANCE MANUAL

CHAPTER 6

DIMENSIONS AND AREAS

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DIMENSIONS AND AREAS

1. Dimensions and Areas

NOTE: The following dimensions and areas are approximate.

A. Wing

Wing Area, Including Ailerons, Flaps and 323 Square Feet of Body	2892 Square Feet ▷ 3010 Square Feet ▷
Span.	142 Feet 5 Inches ▷ 145 Feet 9 Inches ▷
Root Chord.	406.682 Inches ▷ 471.000 Inches ▷
Tip Chord (Construction Tip).	112 Inches
Taper Ratio (Tip Chord/Basic Chord)323
Taper Ratio (Tip Chord/Root Chord).275
Incidence Root.	+2°
Dihedral.	7°
Sweep Back C/4.	35°
Aspect Ratio.	7.056
Mean Aerodynamic Chord.	272.294 Inches
Leading Edge of MAC is Located at Body Station.	762.97

B. Flap Area

Inboard T.E. Slotted Flap	218.0 Square Feet ▷ 241.9 Square Feet ▷
Outboard T.E. Slotted Flap.	162.1 Square Feet
Wing T.E. Fillet Flap	56.0 Square Feet ▷ 72.26 Square Feet ▷
TOTAL T.E. AREA	436.1 Square Feet ▷ 476.26 Square Feet ▷
Leading Edge Flaps.	26.8 Square Feet ▷ 154.4 Square Feet ▷

▷ Turbojet airplanes

▷ Turbofan airplanes



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C. Control Surfaces

Total Aileron Area Aft of Hinge Line	
Inboard Aileron, Including 5.8 Square Feet of Tab Area.	40.4 Square Feet
Outboard Aileron, Including 5.5 Square Feet of Tab Area.	<u>80.6 Square Feet</u>
TOTAL	121.0 Square Feet
Horizontal Tail Area Total.	
Stabilizer, to Elevator Hinge Line, Including 60.9 Square Feet of Fuselage.	474.0 Square Feet
Elevator Aft of Hinge Line Including 18.0 Square Feet of Total Area.	151.0 Square Feet
Span.	45 Feet 8 Inches
Vertical Fin Area Total (Not Including Dorsal Fin).	
Dorsal Fin.	8.7 Square Feet
Rudder, Aft of Hinge Line	101.9 Square Feet
Ventral Fin	46.0 Square Feet ▷

▷ TURBOJET AIRPLANES



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D. Body

Length.	145 Feet 6 Inches
Width	12 Feet 4 Inches
Cross Section Vertical Height	14 Feet 2-1/2 Inches

E. Landing Gear

Tread, Main Gear.	22 Feet 1 Inch
Wheel Base, Nose to Main Gear	59 Feet
Main Gear, Wheels and Tires	46 x 16 Type VII
Nose Gear, Wheels and Tires	39 x 13 Type VII

2. Conversion Formulae

A. Wing

(1) The following formulae may be used to convert from wing station to wing spar station and from wing spar station to wing station.

(a) Wing Sta. and Front Spar Sta.

1) Inbd of wing sta. 360

$$\begin{aligned} W. Sta. &= (F.S. Sta. + .6547) (.9813715) \\ F.S. Sta. &= W. Sta. (1.01898210) - .6547 \end{aligned}$$

2) Outbd of wing sta. 360

$$\begin{aligned} W. Sta. &= F.S. sta. (.9831260) \\ F.S. Sta. &= W. Sta (1.0171636) \end{aligned}$$

(b) Wing Sta. and Rear Spar Sta.

1) Inbd of wing sta. 360

$$\begin{aligned} W. Sta. &= (R.S. Sta + .6164) (.99829082) \\ R.S. Sta. &= W. Sta. (1.0017121) - .6164 \end{aligned}$$

2) Wing sta. 360 to wing sta. 725.236

$$W. Sta. = R.S. sta.$$

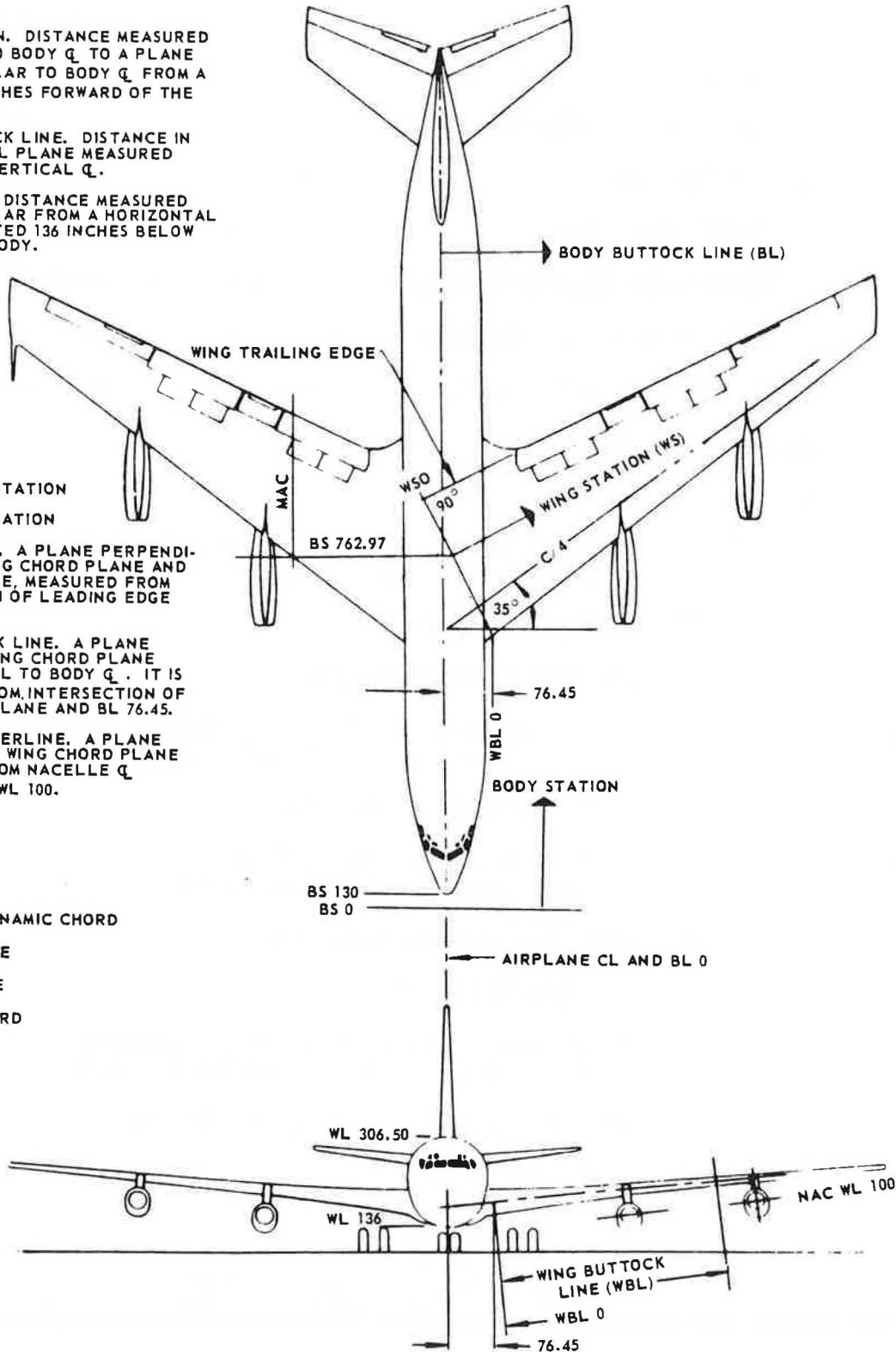
3) Outbd of wing sta. 725.236

$$\begin{aligned} W. Sta. &= (R.S. Sta.) (.996005065) + 725.236 \\ R.S. Sta. &= 1.00401096 (W. Sta. - 725.236) \end{aligned}$$

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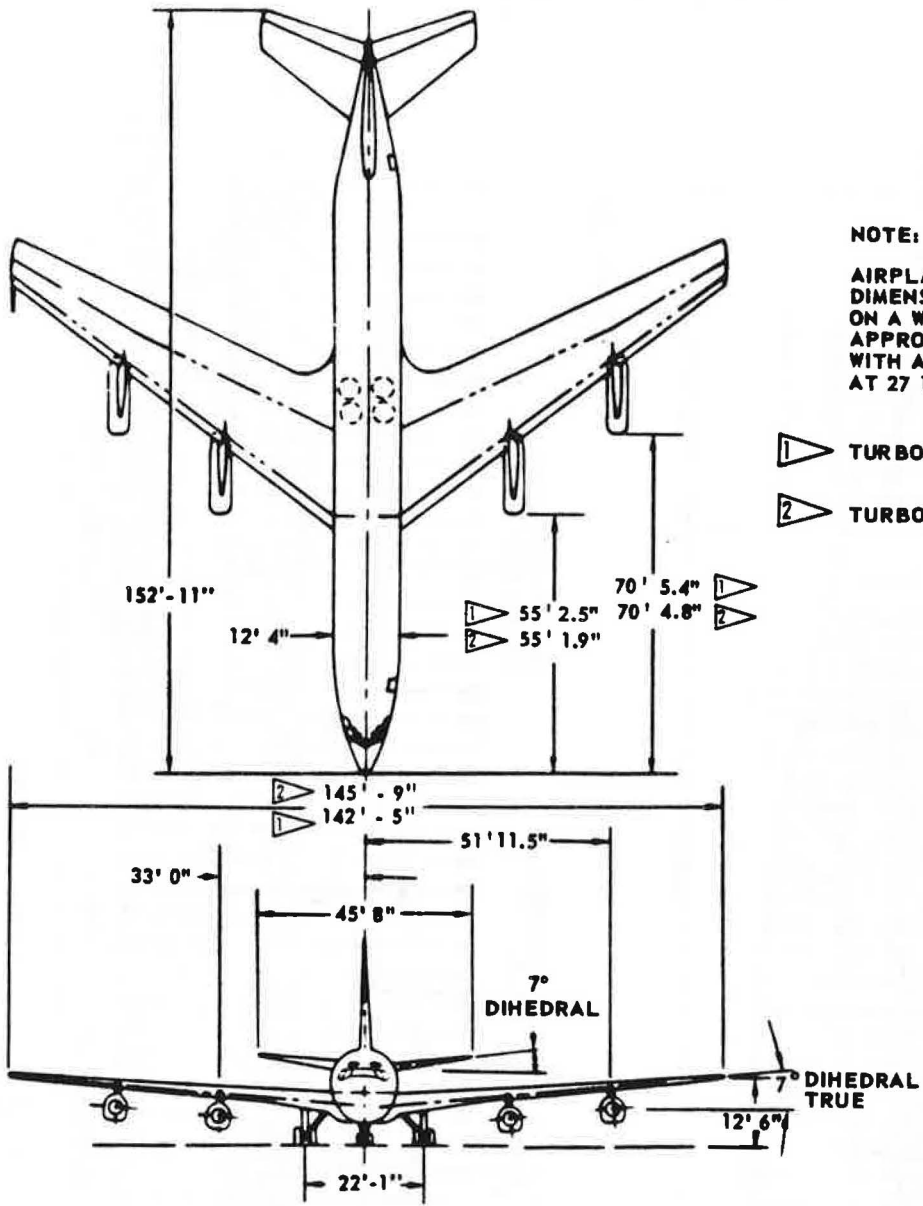
- BS BODY STATION. DISTANCE MEASURED PARALLEL TO BODY \mathcal{C} TO A PLANE PERPENDICULAR TO BODY \mathcal{C} FROM A POINT 130 INCHES FORWARD OF THE NOSE.
- BL BODY BUTTOCK LINE. DISTANCE IN A HORIZONTAL PLANE MEASURED FROM BODY VERTICAL \mathcal{C} .
- WL WATER LINE. DISTANCE MEASURED PERPENDICULAR FROM A HORIZONTAL PLANE LOCATED 136 INCHES BELOW BOTTOM OF BODY.

- FSS FRONT SPAR STATION
- RSS REAR SPAR STATION
- WS WING STATION. A PLANE PERPENDICULAR TO WING CHORD PLANE AND TRAILING EDGE, MEASURED FROM INTERSECTION OF LEADING EDGE AND BL 76.45.
- WBL WING BUTTOCK LINE. A PLANE NORMAL TO WING CHORD PLANE AND PARALLEL TO BODY \mathcal{C} . IT IS MEASURED FROM INTERSECTION OF WING CHORD PLANE AND BL 76.45.
- NAC WL NACELLE WATERLINE. A PLANE PARALLEL TO WING CHORD PLANE MEASURED FROM NACELLE \mathcal{C} WHICH IS NAC WL 100.
- TYP TYPICAL
- MAX MAXIMUM
- MIN MINIMUM
- MAC MEAN AERODYNAMIC CHORD
- TE TRAILING EDGE
- LE LEADING EDGE
- C/4 QUARTER CHORD



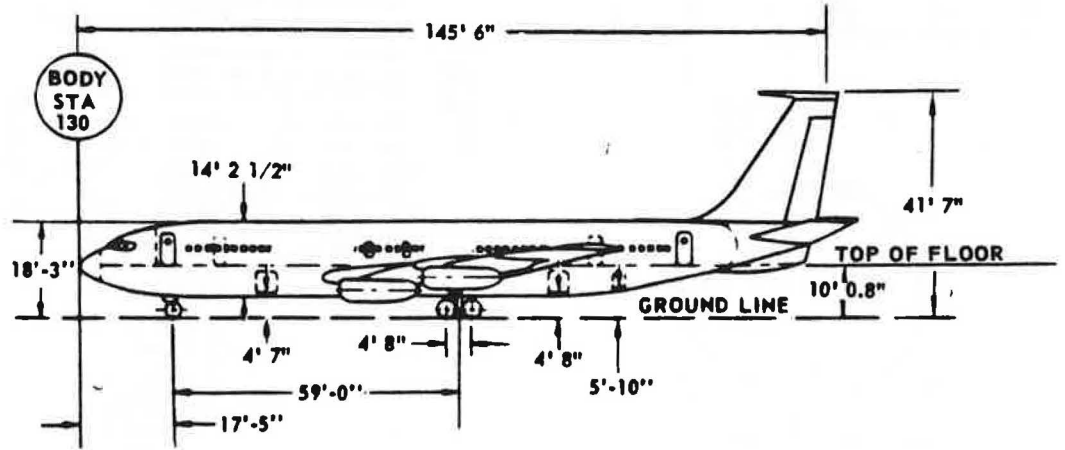
Abbreviations
Figure 1

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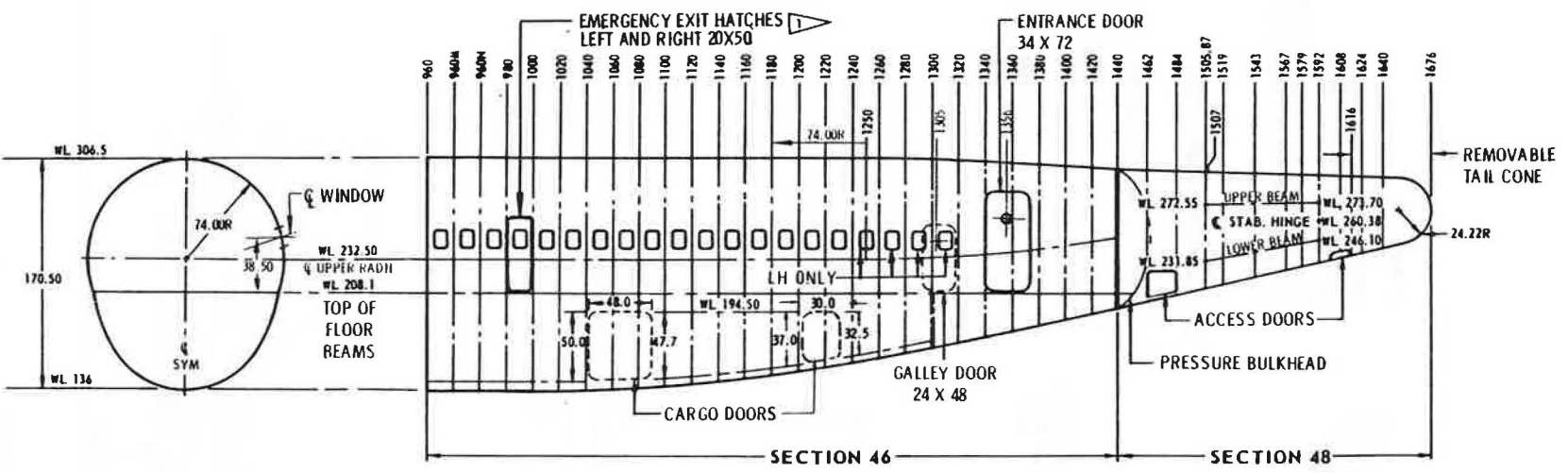


NOTE:
 AIRPLANE TO GROUND
 DIMENSIONS ARE BASED
 ON A WEIGHT OF
 APPROXIMATELY 172,000 LBS
 WITH A CENTER OF GRAVITY
 AT 27 1/2% OF MAC.

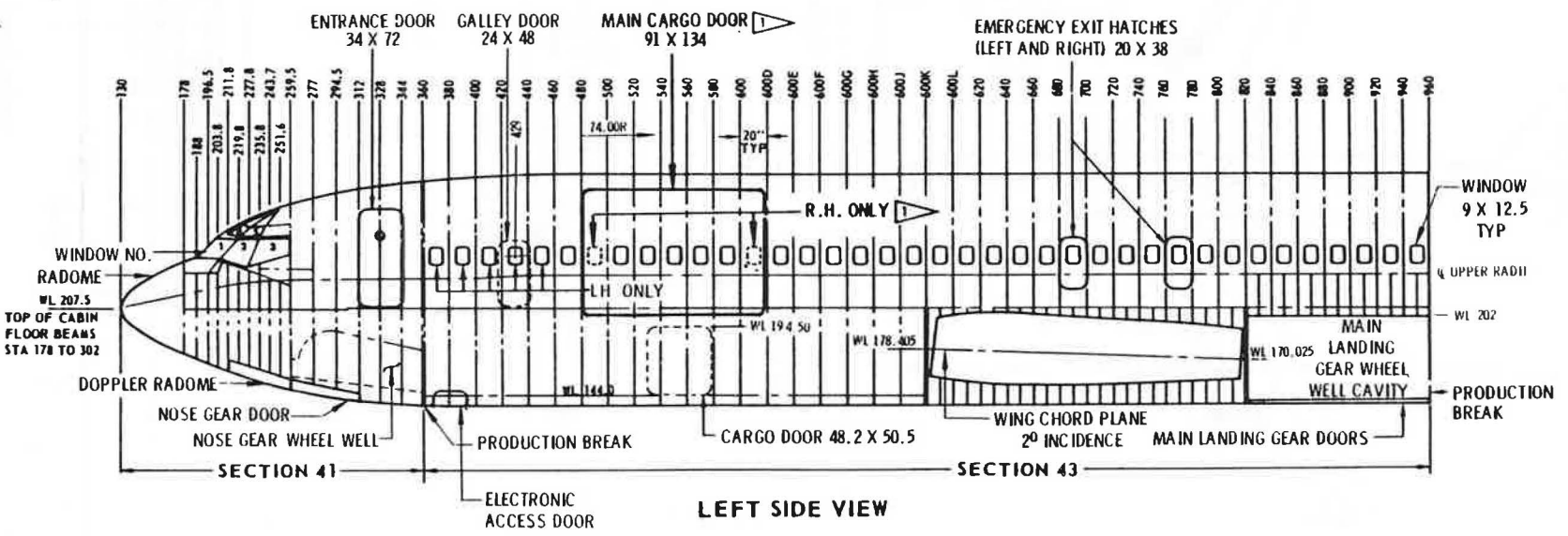
- 1 TURBOJET AIRPLANES
- 2 TURBOFAN AIRPLANES



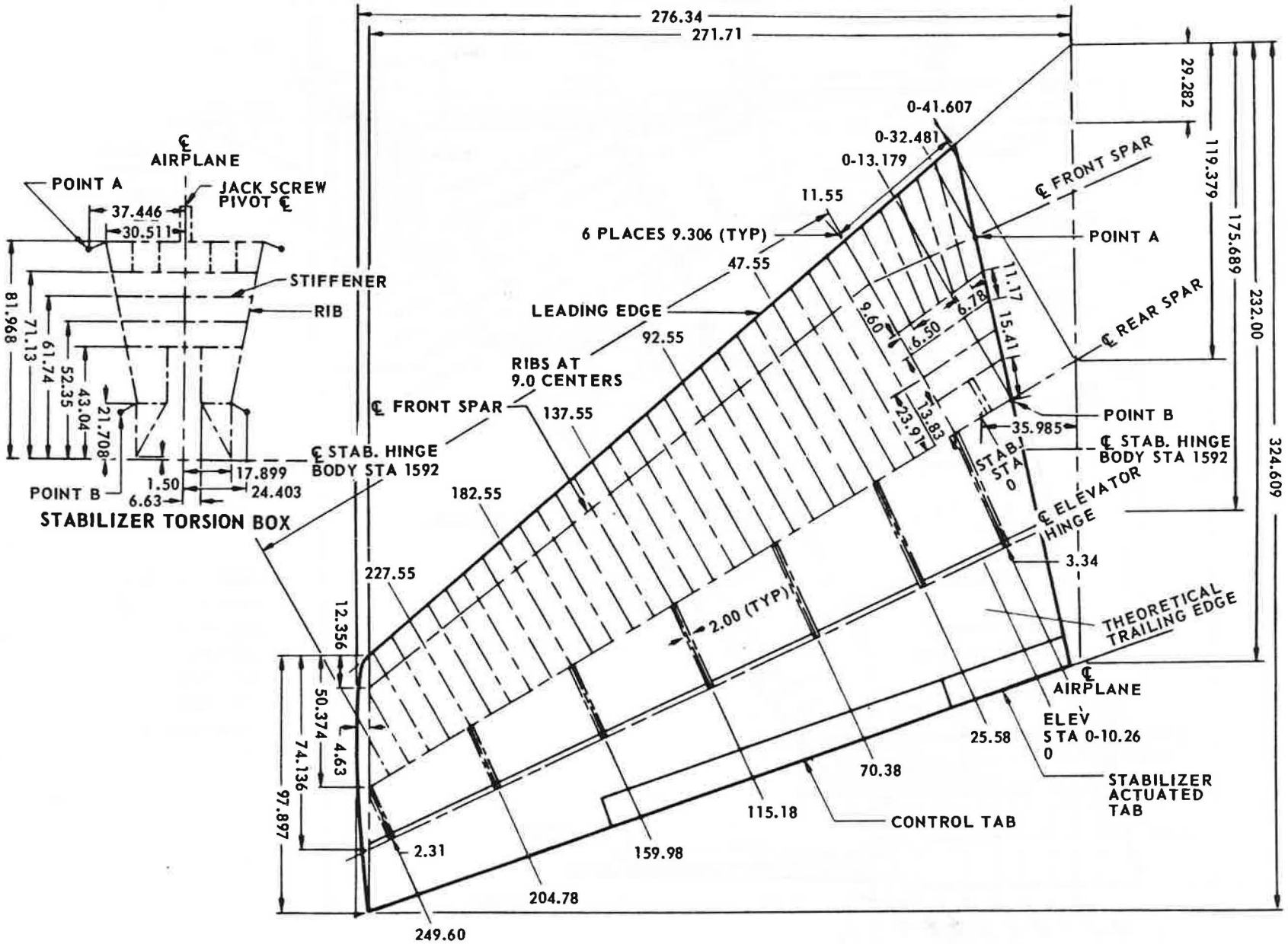
Principal Dimensions
 Figure 2



1 00-SJH



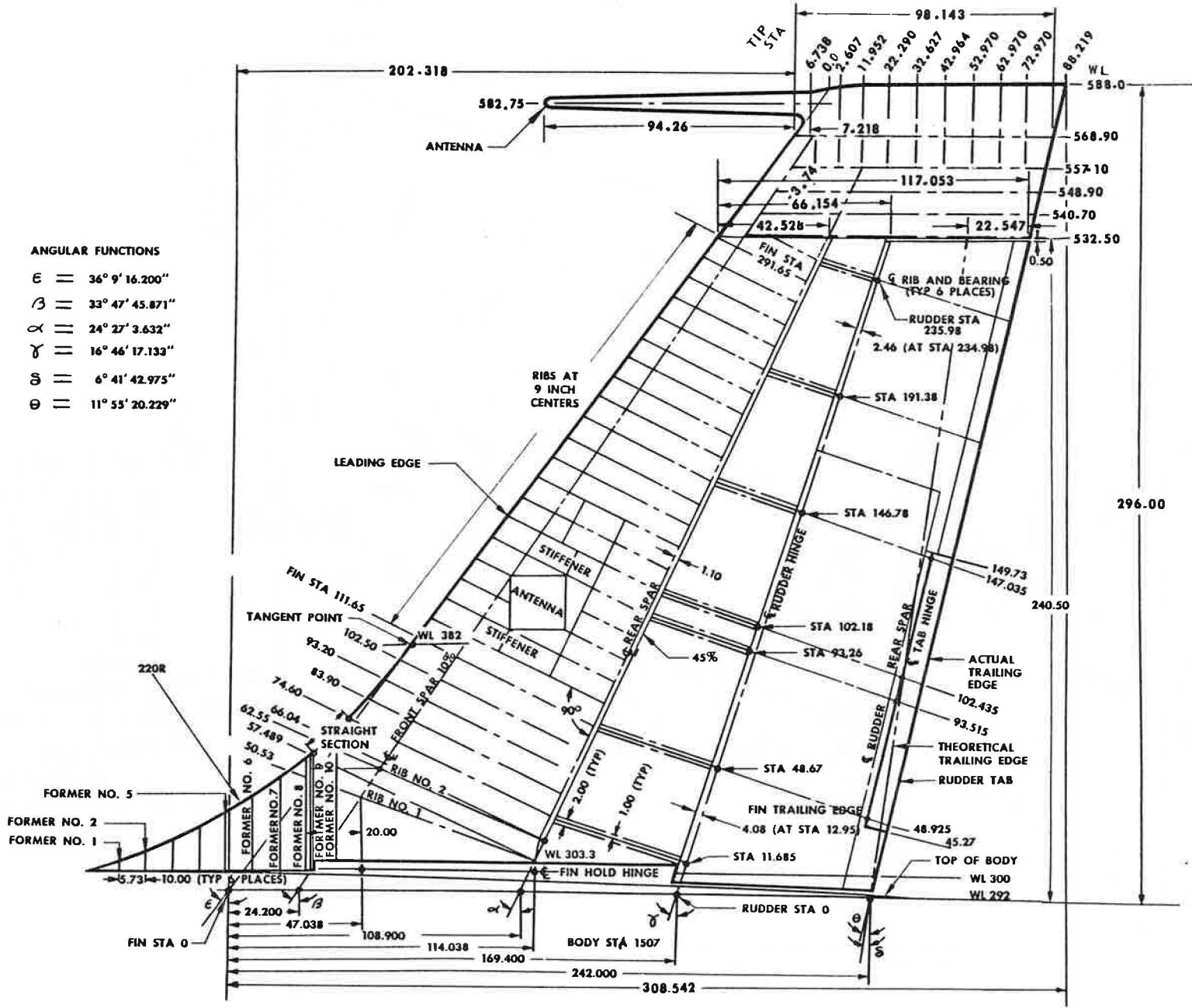
Fuselage Centerline Diagram
Figure 3



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 March 15/59
 Stabilizer and Elevator Centerline Diagram
 Figure 4

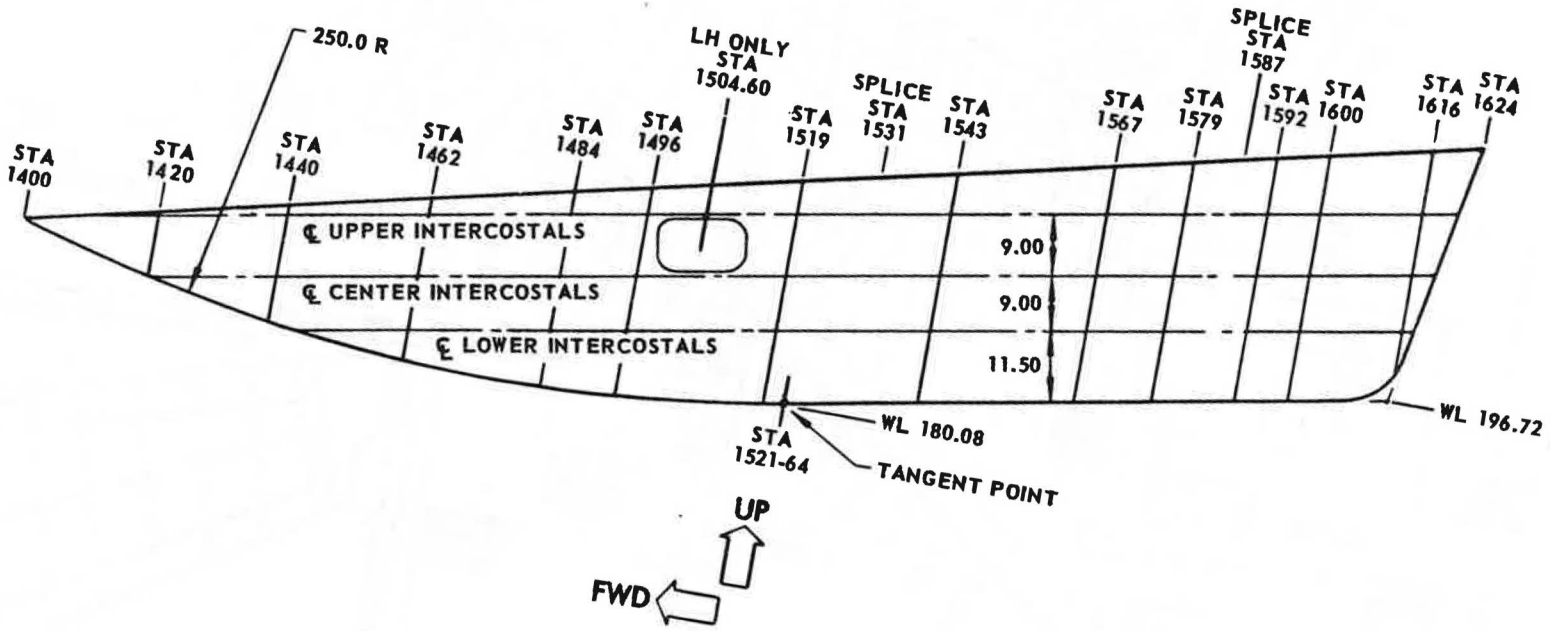
Fin Centerline Diagram
Figure 5

ANGULAR FUNCTIONS
 $\epsilon = 36^{\circ} 9' 16.200''$
 $\beta = 33^{\circ} 47' 45.871''$
 $\alpha = 24^{\circ} 27' 3.632''$
 $\gamma = 16^{\circ} 46' 17.133''$
 $\delta = 6^{\circ} 41' 42.975''$
 $\theta = 11^{\circ} 55' 20.229''$



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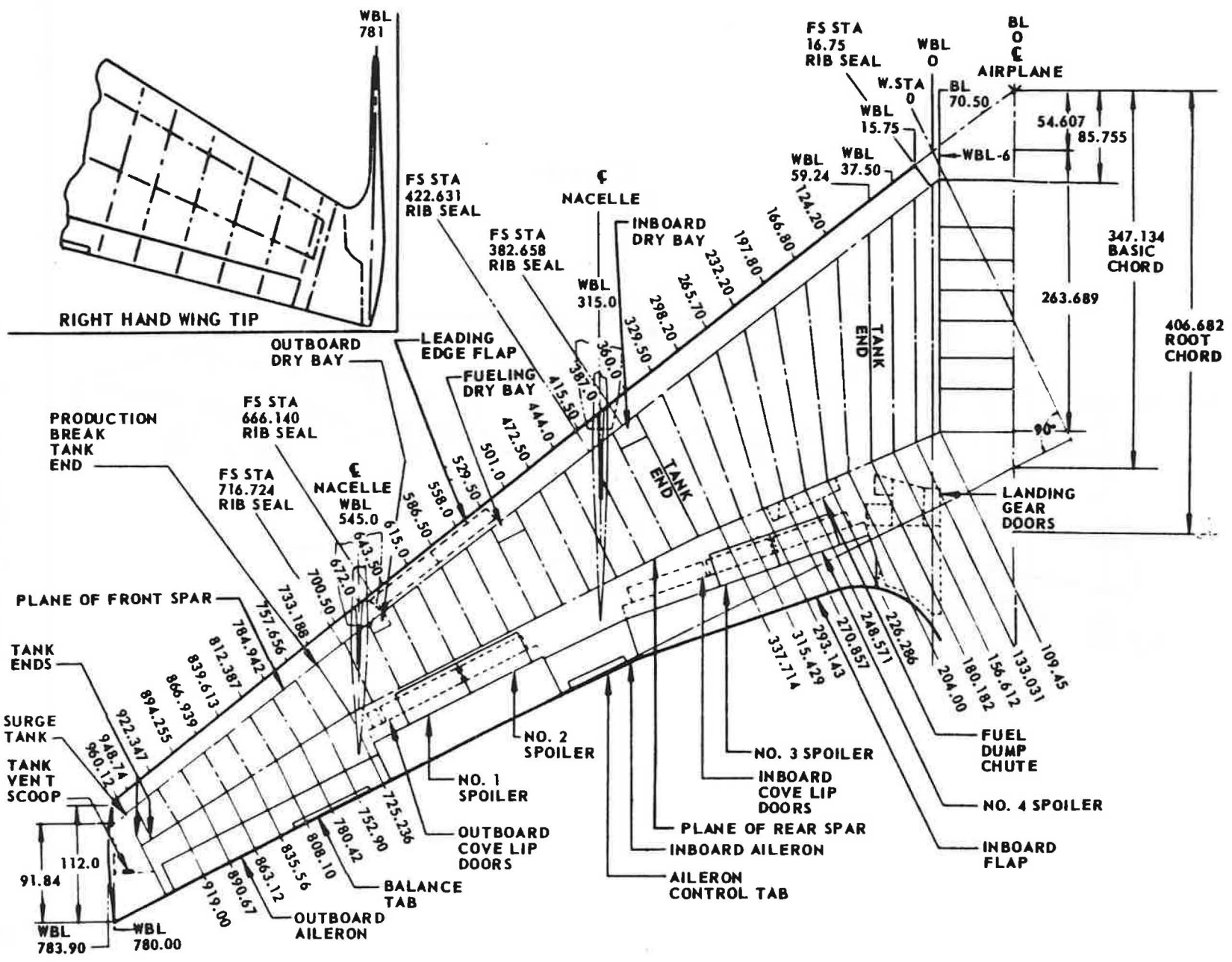
Ventral Fin Centerline Diagram
Figure 6



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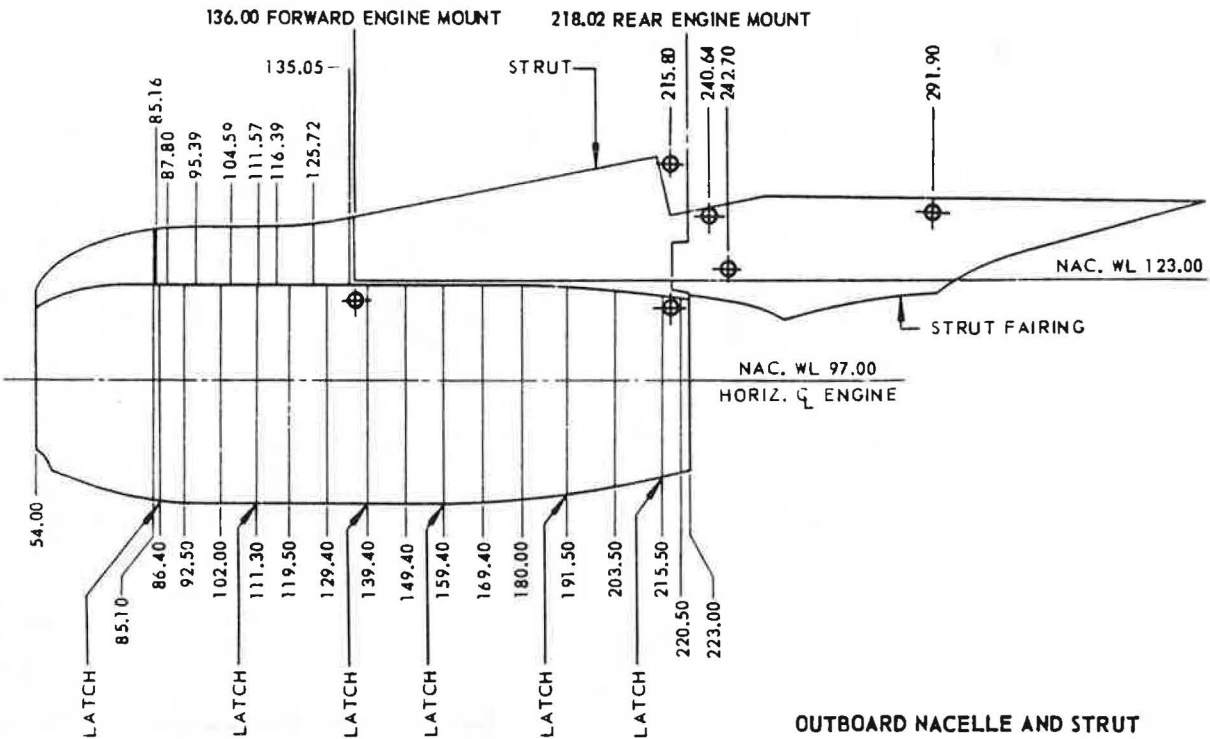
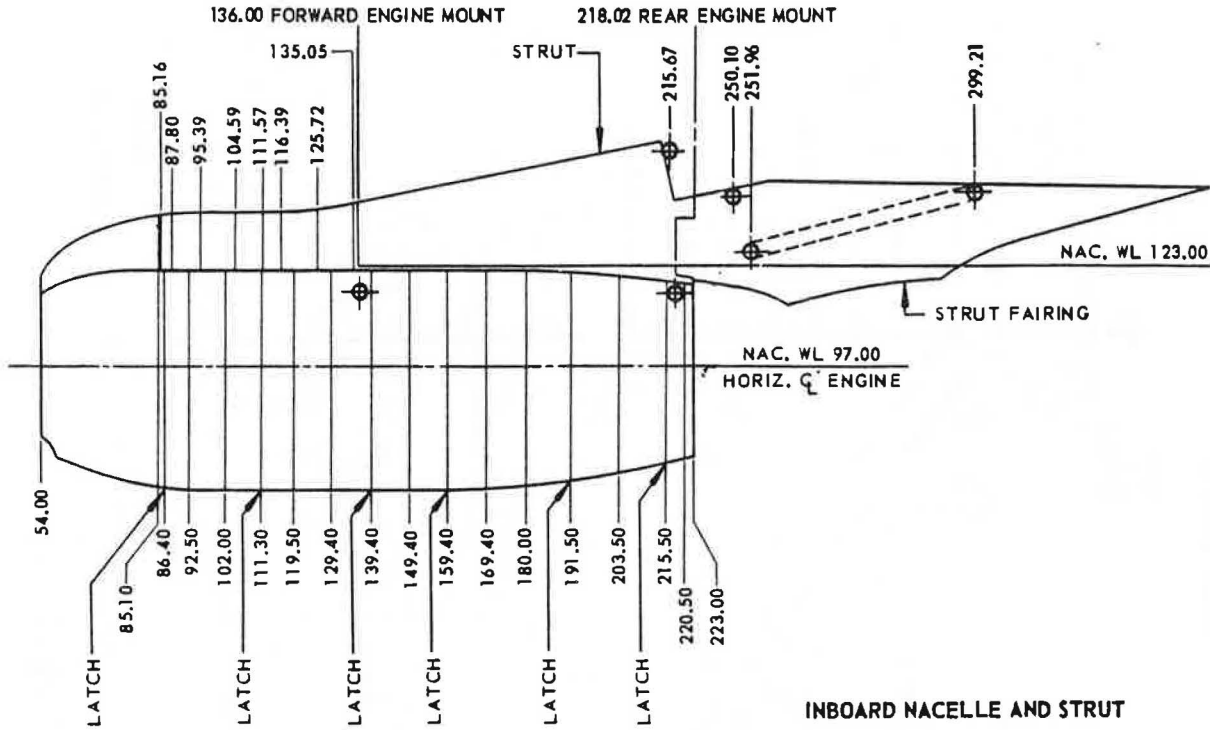
Wing Centerline Diagram
Figure 7



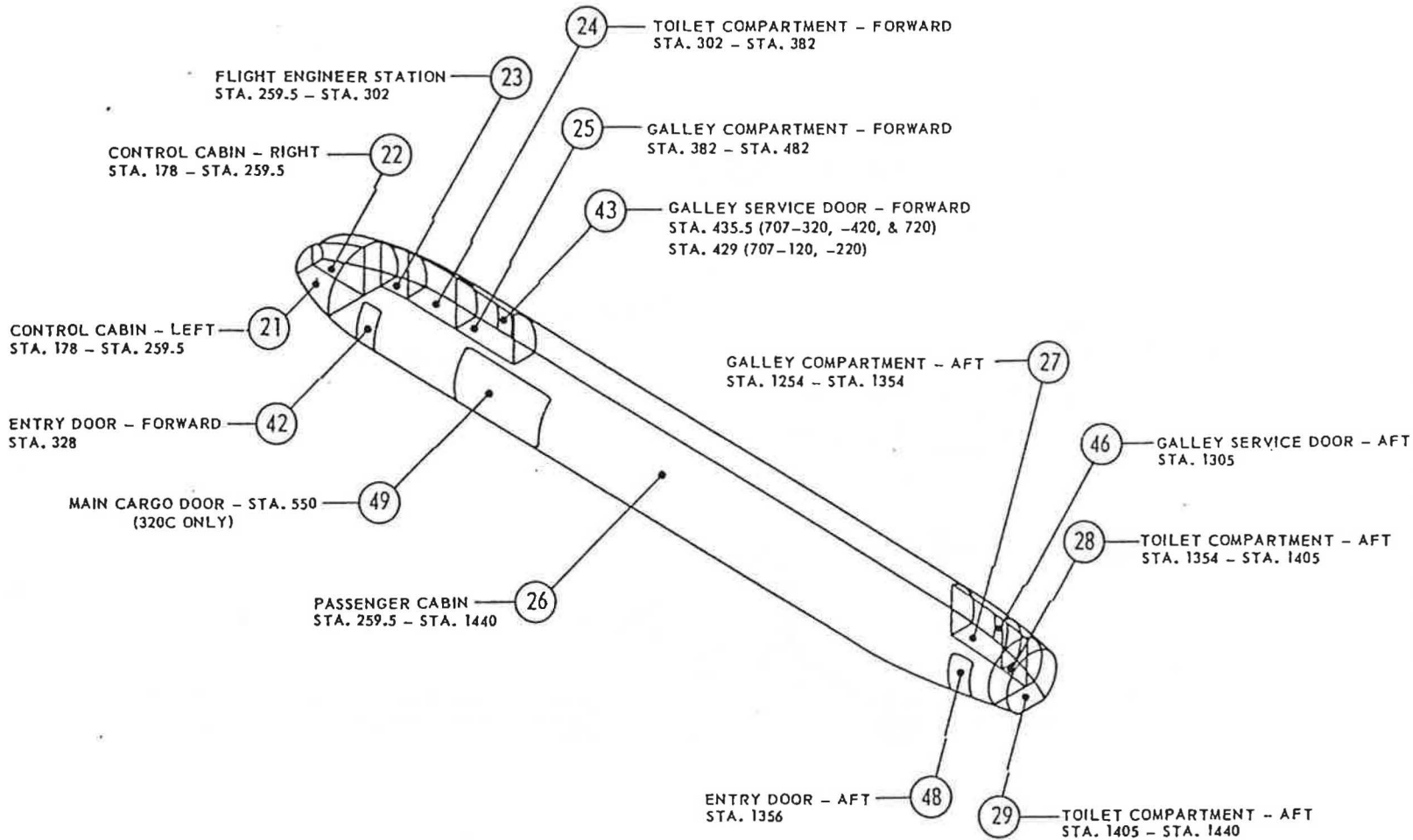
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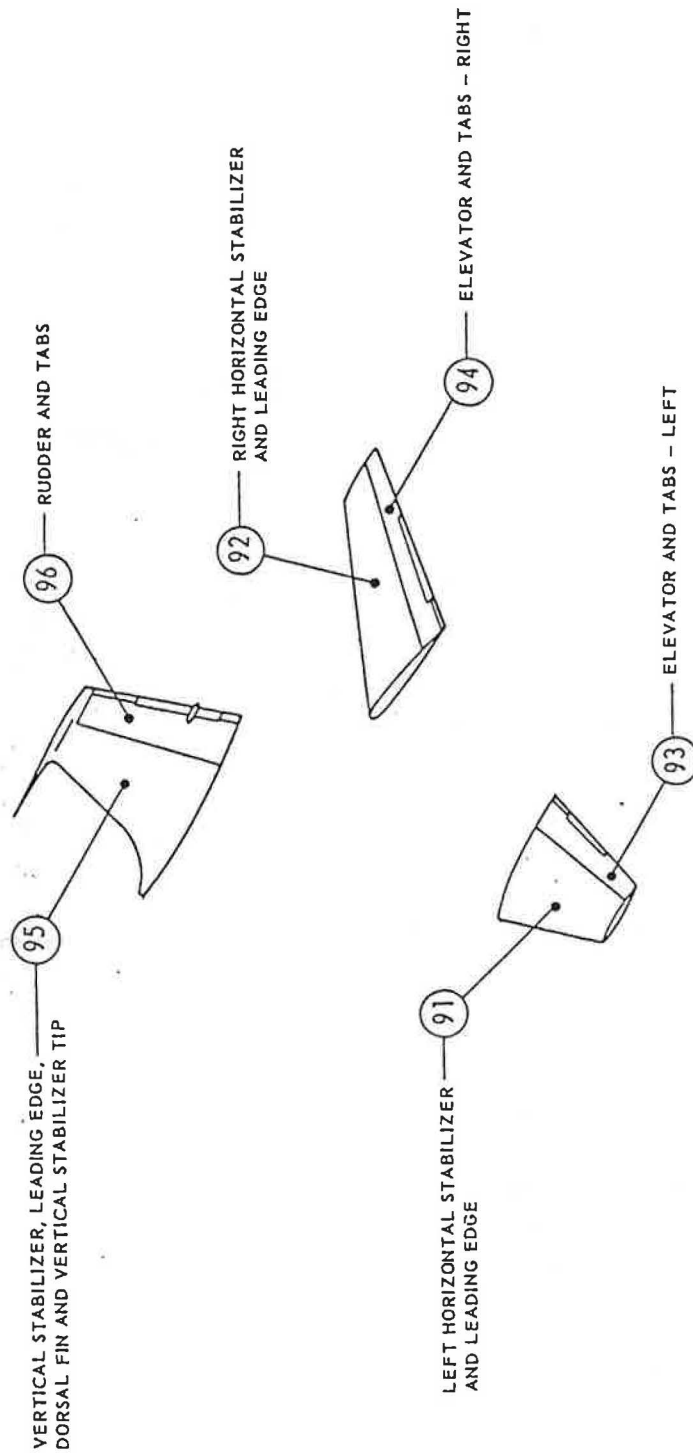
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EFFECTIVITY



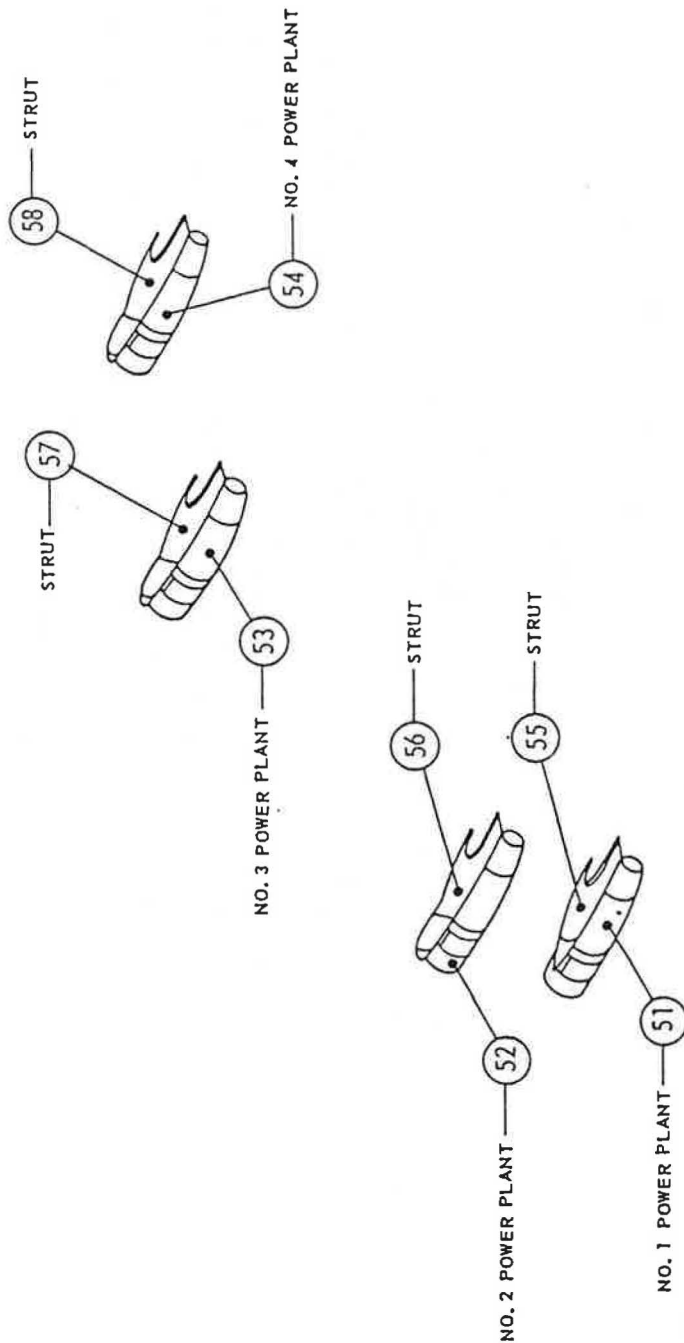
Nacelle and Strut Centerline Diagram
Figure 9



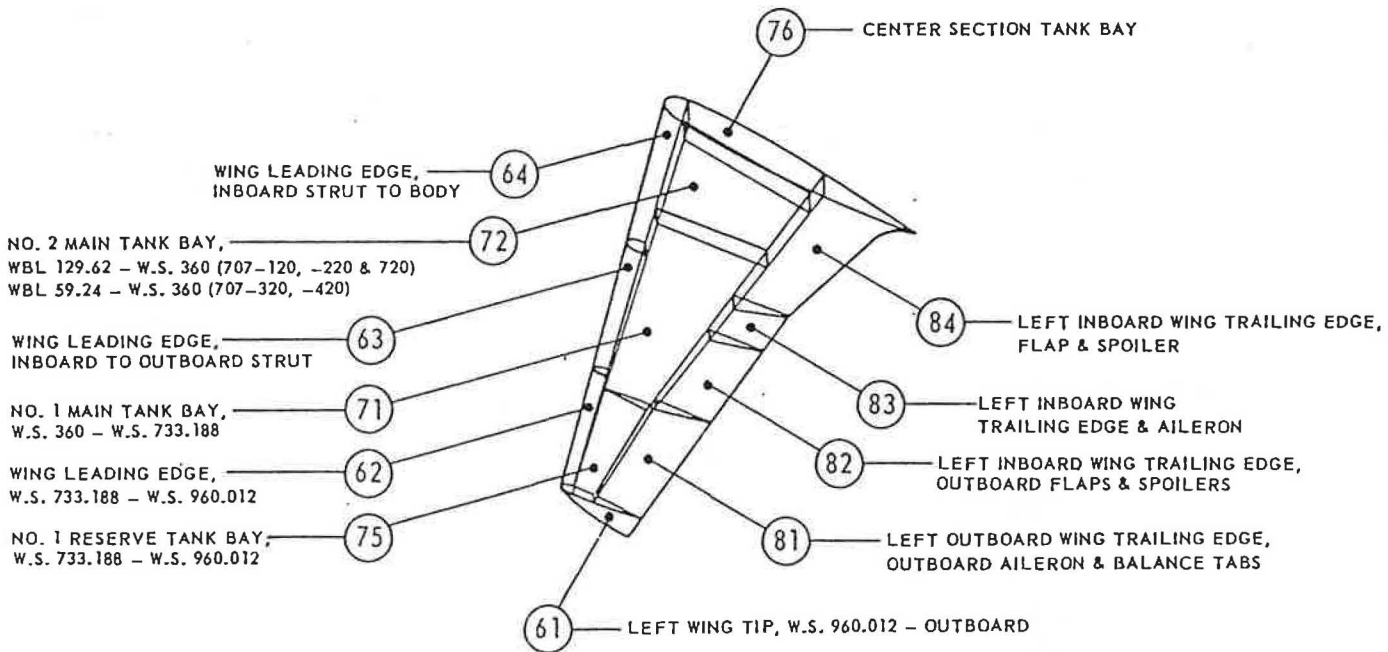
Upper Half of Fuselage - Zone 2
Figure 12



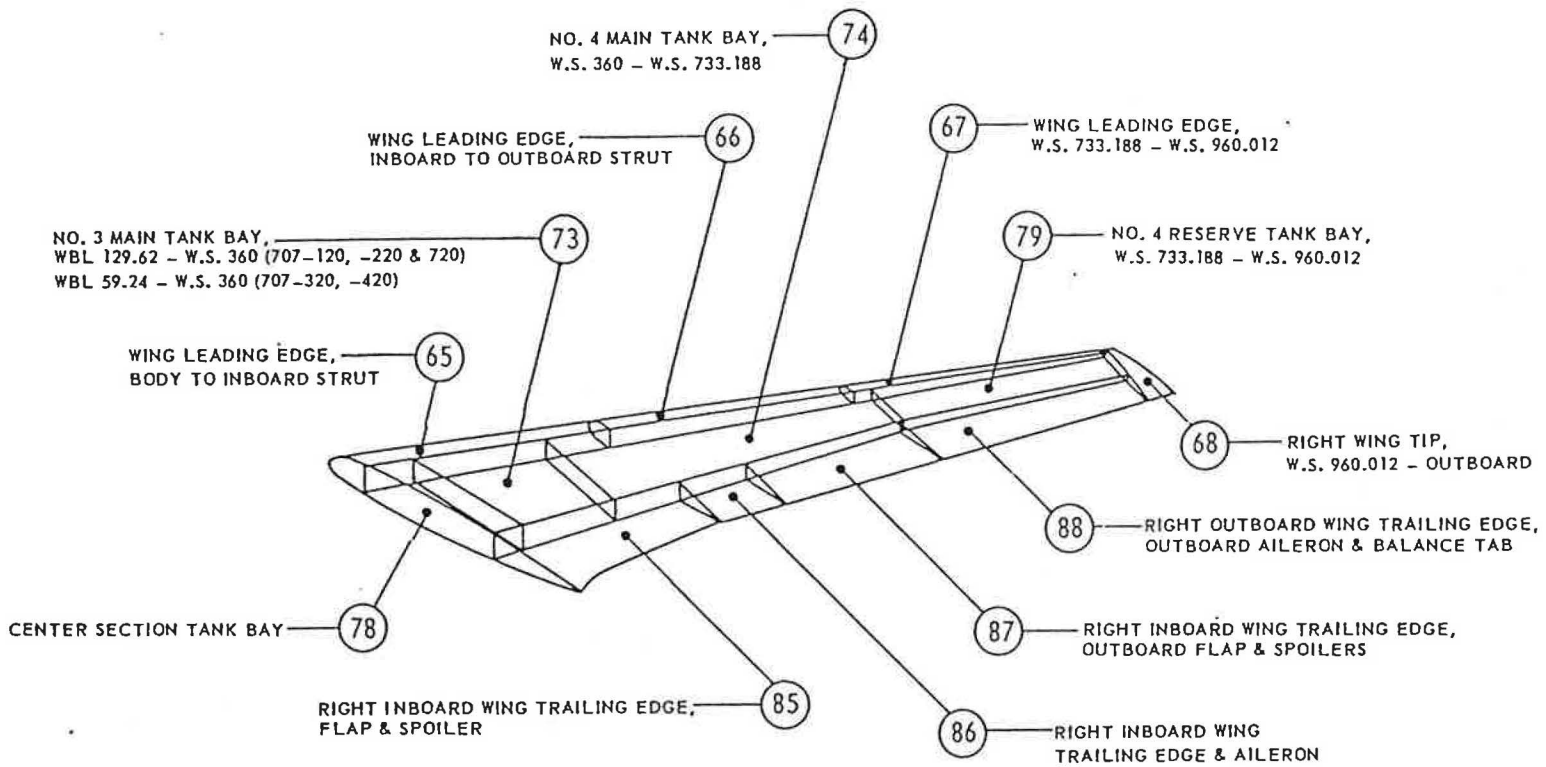
Empennage - Zone 3
 Figure 13



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 Figure 14



Left Wing - Zone 5
Figure 15



Right Wing - Zone 6
 Figure 16

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