

DIMENSIONS AND AREAS - COMPONENT LOCATION

EFFECTIVITY: ACFT MODEL(S) EMB-145

1. General

- A. This section gives the aircraft primary dimensions, the reference planes shown by the station diagrams, the external access doors and panels, and the aircraft zoning.

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2. Reference Planes and Lines

A. For an easy and fast identification and location of the aircraft components, the primary lines and reference planes are given here ([Figure 101](#)).

B. Definitions and Abbreviations

(1) Fuselage

- (a) STA X - Fuselage station. A plane perpendicular to the fuselage centerline where “X” shows the distance in millimeters from the plane to the aircraft nose, where X = 0.
- (b) STA Y - Station Y. A vertical plane parallel to the fuselage centerline where “Y” shows the distance in millimeters from the plane to the fuselage centerline, where Y = 0.
- (c) STA Z - Station Z. A horizontal plane parallel to the fuselage centerline, where “Z” shows the distance in millimeters from the plane to the fuselage centerline, where Z = 0.
- (d) BHD, FR - Bulkhead or frame. A fuselage structural element perpendicular to the centerline. The identification numbers start from the nose, where FR 0 is found.

(2) Vertical Stabilizer

- (a) STA ZV - Vertical stabilizer station. A horizontal plane parallel to the fuselage centerline where ZV = 0.
- (b) STA \overline{ZV} - Rudder I station. A plane perpendicular to the rudder I hinge line measured from the intersection of the hinge line and the fuselage centerline, where ZV = 0.
- (c) STA $\overline{\overline{ZV}}$ - Rudder II station. A plane perpendicular to the rudder II hinge line measured from the intersection of the hinge line and the fuselage centerline, where ZV = 0.
- (d) AUX SPAR - Auxiliary spar.

(3) Horizontal Stabilizer

- (a) YH STA - Horizontal stabilizer station. A vertical plane parallel to the fuselage centerline measured from YH = 0.
- (b) \overline{YH} STA - Elevator station. A plane perpendicular to the elevator hinge line measured from the intersection of the hinge line and STA YH = 0, where STA \overline{YH} = 0.

(4) Wing

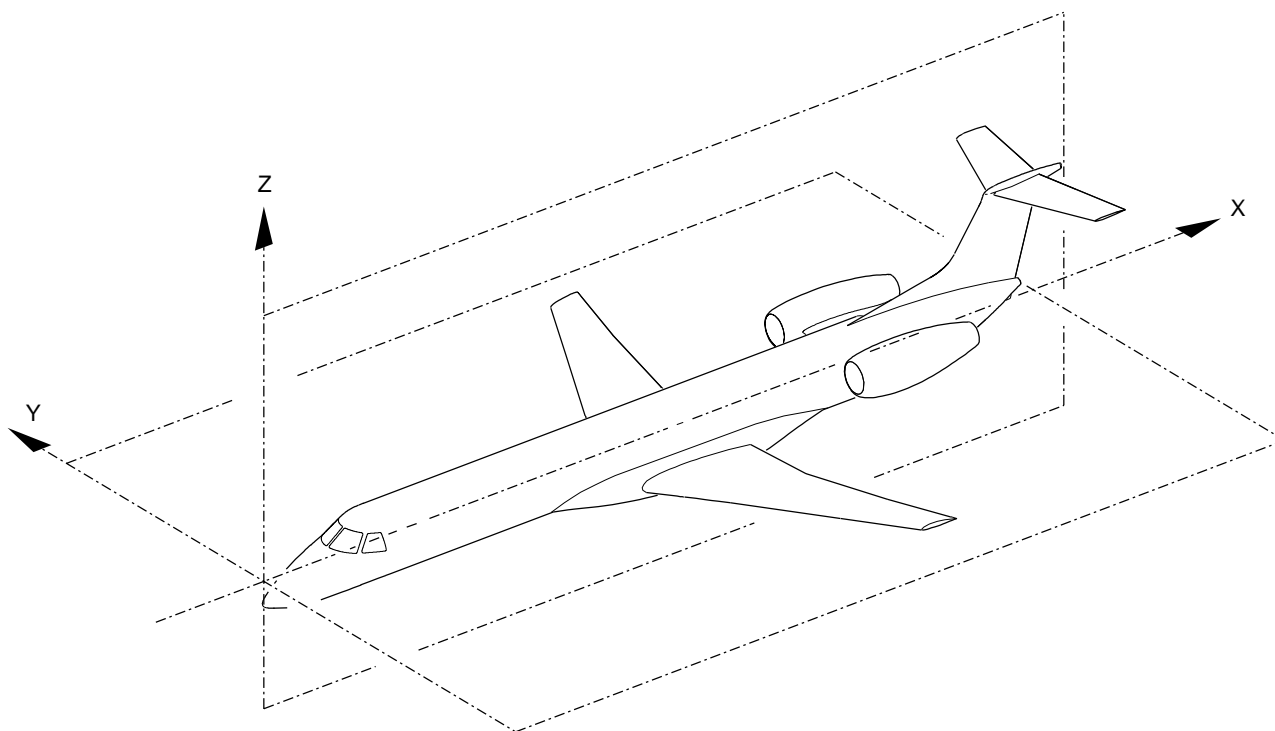
- (a) STA YA - Wing Station. A vertical plane parallel to the fuselage centerline, measured from STA YA = 0.0 through YA = 9905.0.
- (b) RIB - Wing rib. A wing structural element. The identification numbers go from rib 1 to rib 25.

(5) Nacelle



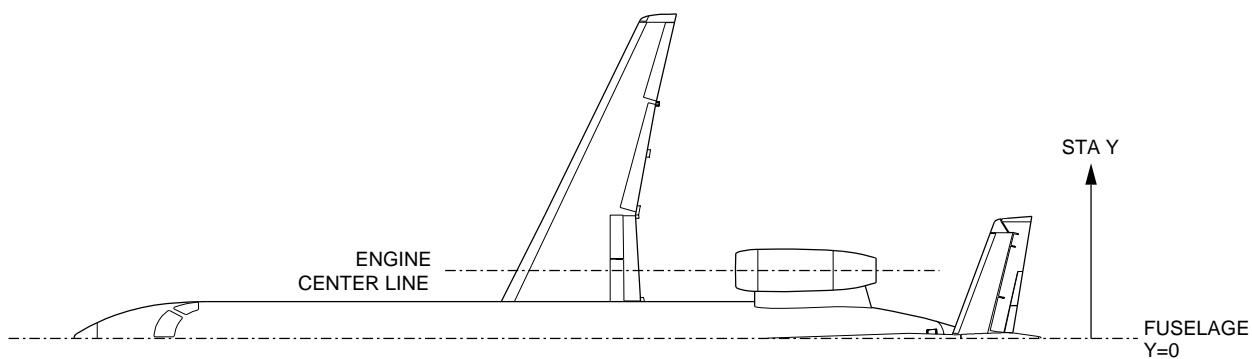
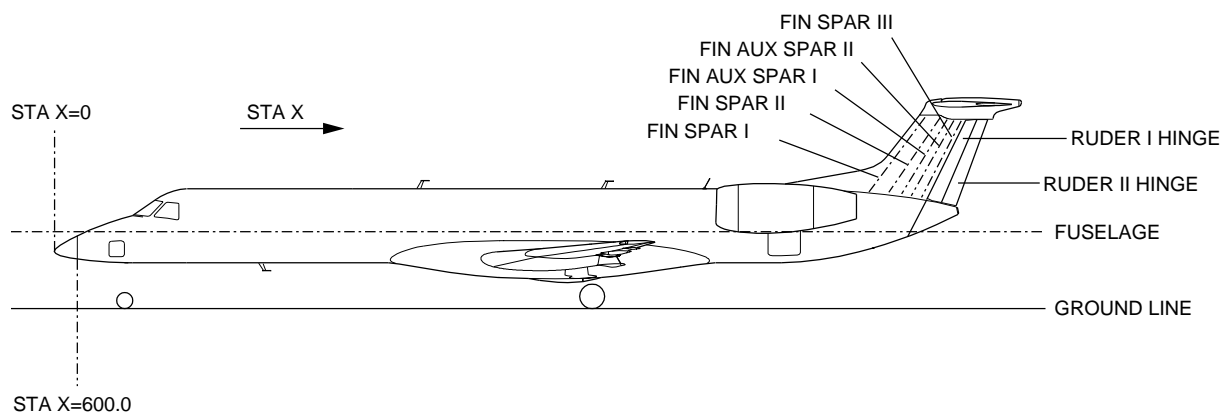
- (a) STA XN - Nacelle Station. A plane perpendicular to the engine centerline, measured from STA XN = 0.0 through XN = 4543.81.
- (6) Pylon
 - (a) STA YP - Pylon Station. A plane perpendicular to the pylon reference plane (PRP), measured from YP = 0.0 through YP = 976.0.

EFFECTIVITY: ALL
Reference Planes and Lines
Figure 101 - Sheet 1



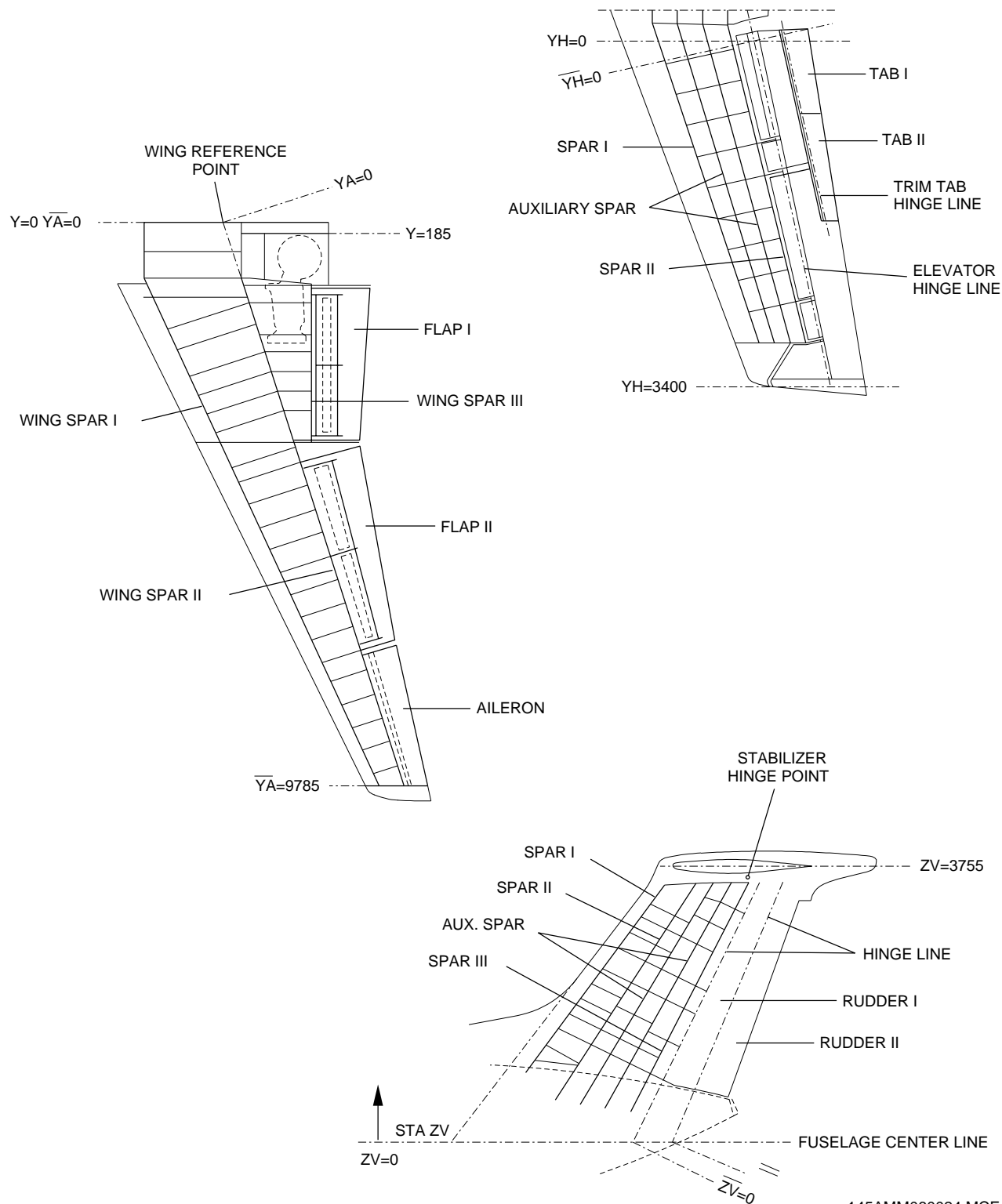
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EFFECTIVITY: ALL
Reference Planes and Lines
Figure 101 - Sheet 2



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EFFECTIVITY: ALL
Reference Planes and Lines
Figure 101 - Sheet 3

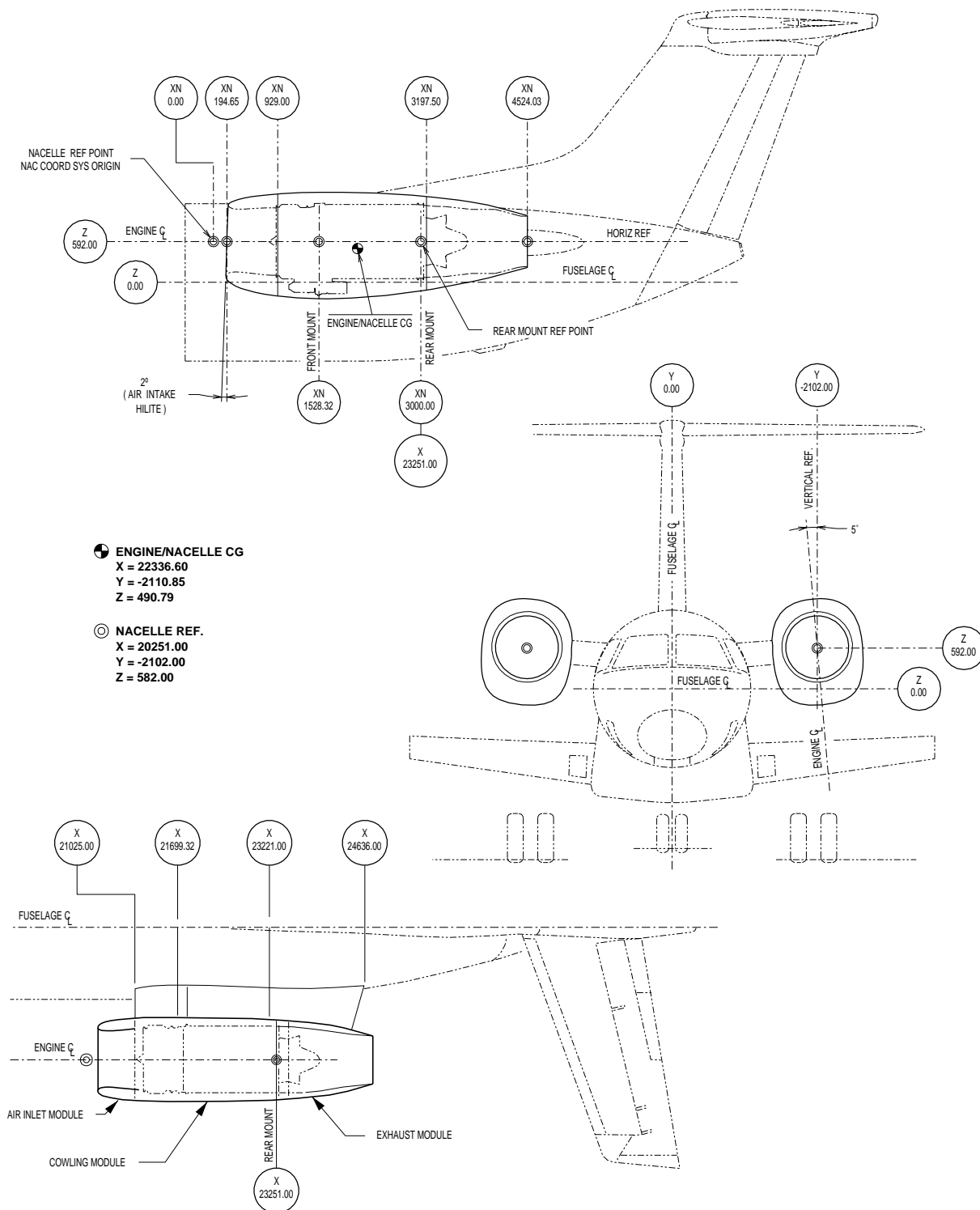


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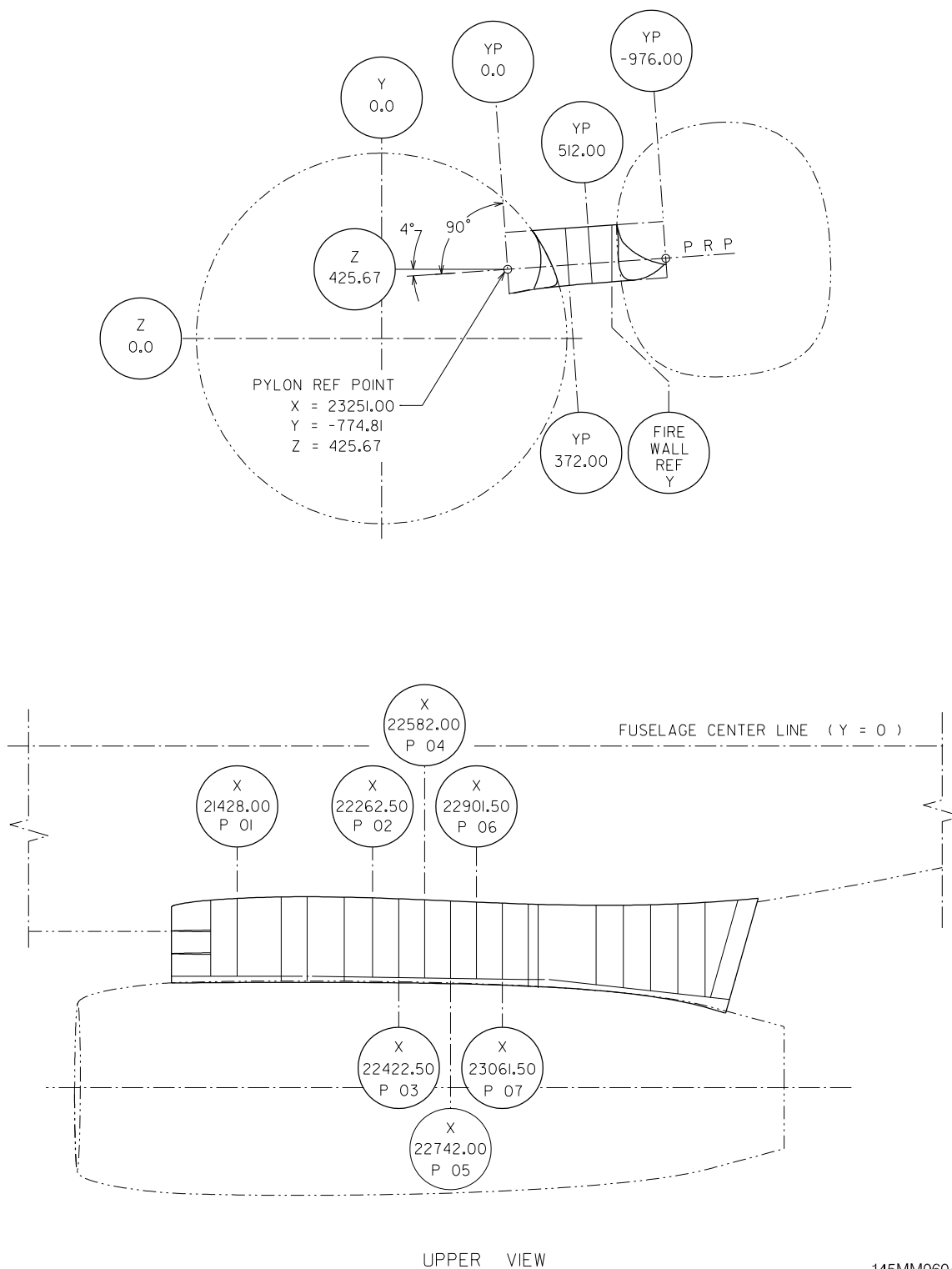
Reference Planes and Lines

Figure 101 - Sheet 4



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EFFECTIVITY: ALL
Reference Planes and Lines
Figure 101 - Sheet 5

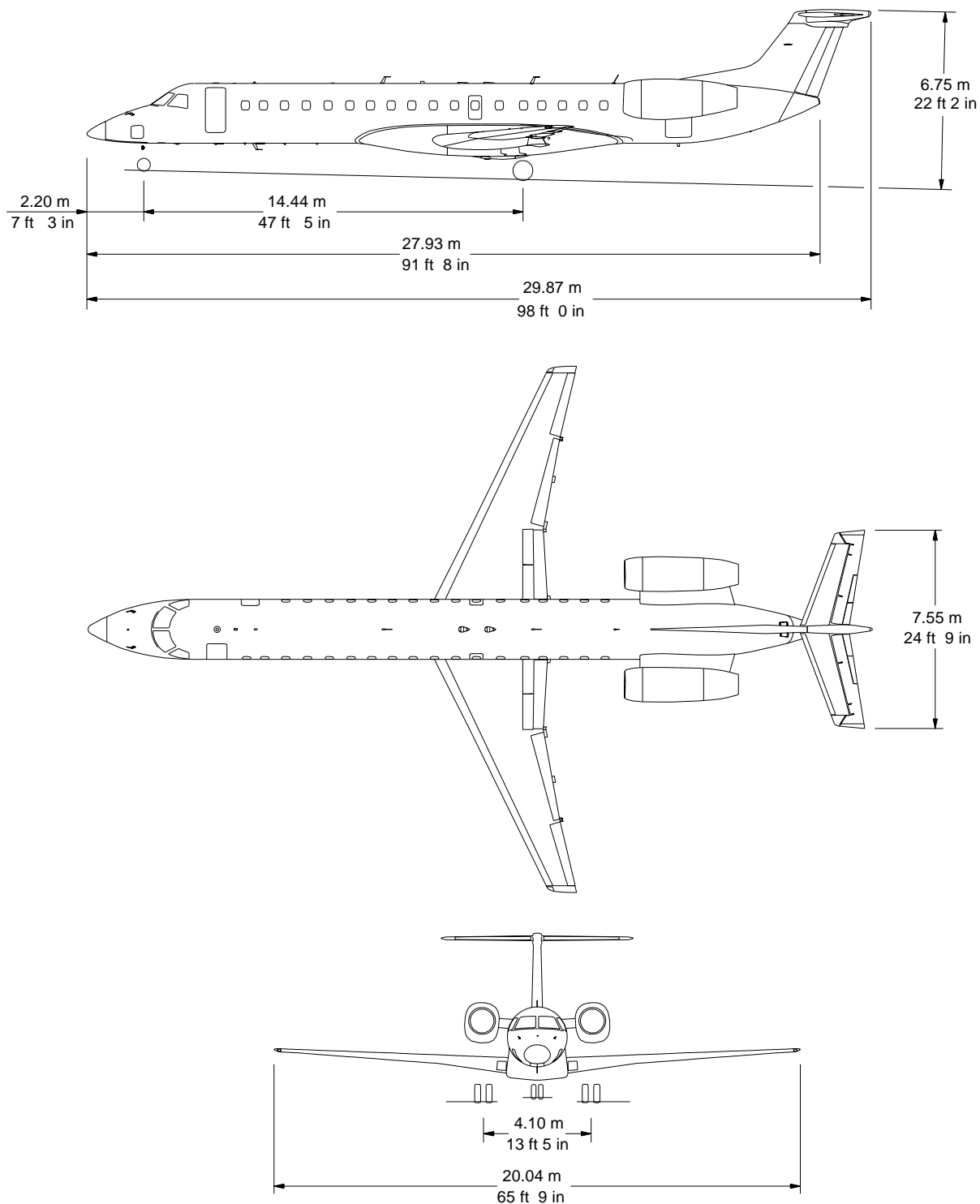


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3. Major Dimensions

- A. [Figure 102](#) shows the total length, width, height, and the distance between the wheel base and the track.

EFFECTIVITY: ALL
Aircraft Dimensions
Figure 102



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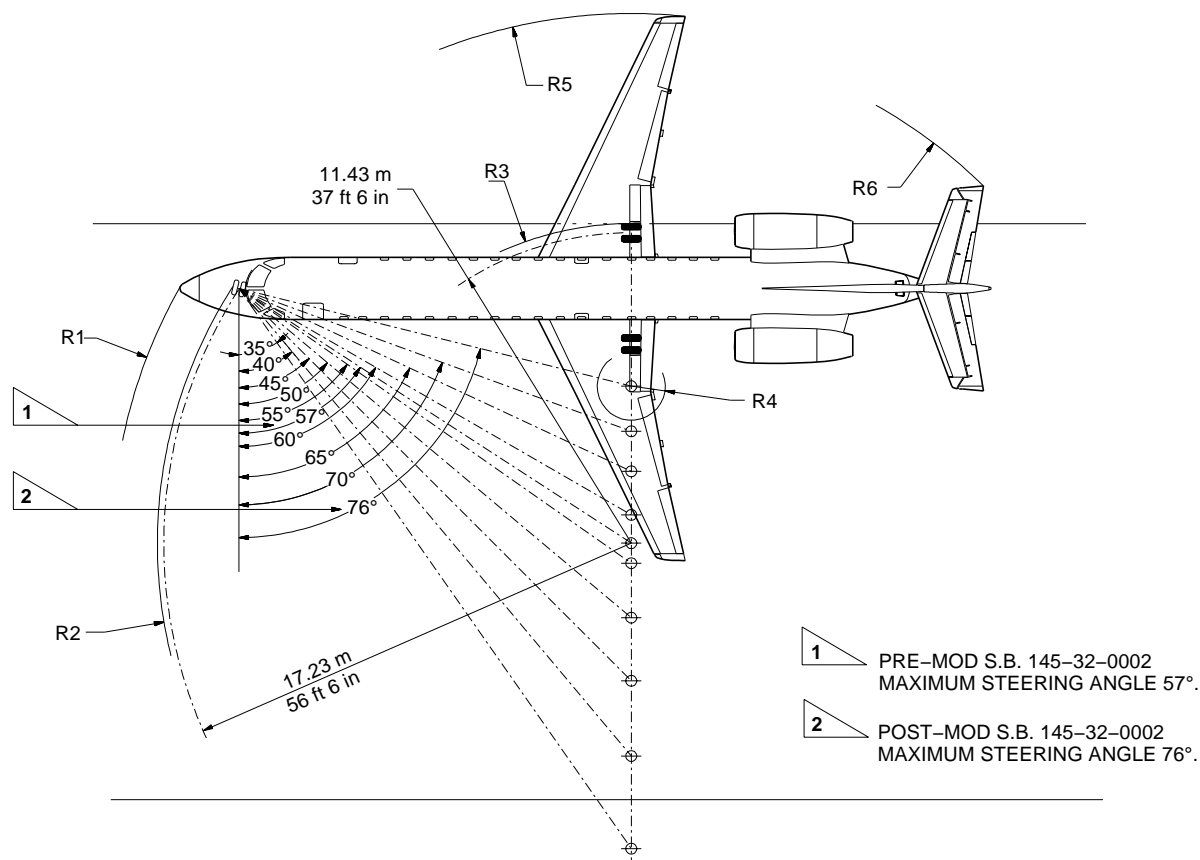
4. Towing and Taxiing Radii

- A. [Figure 103](#) shows the maximum turning angle of the nose gear wheel and the clearance necessary for the minimum turning radii on the ground.

EFFECTIVITY: ALL

Turning Radii

Figure 103



TURNING CENTERS

STEERING ANGLE	NOSE R1		NOSE GEAR R2		OUTBOARD GEAR R3		INBOARD GEAR R4		RIGHT WINGTIP R5		RIGHT TAILTIP R6	
35°	26.56 m	87 ft 2 in	25.41 m	83 ft 4 in	23.02 m	75 ft 6 in	18.25 m	59 ft 10 in	30.72 m	100 ft 9 in	27.64 m	90 ft 8 in
40°	23.99 m	78 ft 8 in	22.70 m	74 ft 6 in	19.60 m	64 ft 4 in	14.84 m	48 ft 8 in	27.31 m	89 ft 7 in	24.68 m	80 ft 11 in
45°	22.07 m	72 ft 5 in	20.66 m	67 ft 9 in	16.83 m	55 ft 3 in	12.07 m	39 ft 7 in	24.55 m	80 ft 6 in	22.37 m	73 ft 4 in
50°	20.61 m	67 ft 7 in	19.08 m	62 ft 7 in	14.51 m	47 ft 7 in	9.74 m	31 ft 11 in	22.23 m	72 ft 11 in	20.52 m	67 ft 4 in
55°	19.48 m	63 ft 11 in	17.86 m	58 ft 7 in	12.50 m	41 ft 0 in	7.74 m	25 ft 5 in	20.24 m	66 ft 5 in	19.00 m	62 ft 4 in
57°	19.11 m	62 ft 8 in	17.45 m	57 ft 3 in	11.77 m	38 ft 7 in	7.00 m	23 ft 0 in	19.51 m	64 ft 0 in	18.47 m	60 ft 7 in
60°	18.62 m	61 ft 1 in	16.90 m	55 ft 5 in	10.73 m	35 ft 2 in	5.96 m	19 ft 6 in	18.47 m	60 ft 7 in	17.75 m	58 ft 3 in
65°	17.95 m	58 ft 11 in	16.16 m	53 ft 0 in	9.12 m	29 ft 11 in	4.35 m	14 ft 3 in	16.88 m	55 ft 4 in	16.69 m	54 ft 9 in
70°	17.44 m	57 ft 2 in	15.6 m	51 ft 2 in	7.64 m	25 ft 1 in	2.87 m	9 ft 5 in	15.4 m	50 ft 7 in	15.8 m	51 ft 10 in
76°	17.01 m	55 ft 9 in	15.11 m	49 ft 7 in	5.99 m	19 ft 8 in	1.25 m	4 ft 1 in	13.77 m	45 ft 2 in	14.92 m	48 ft 11 in

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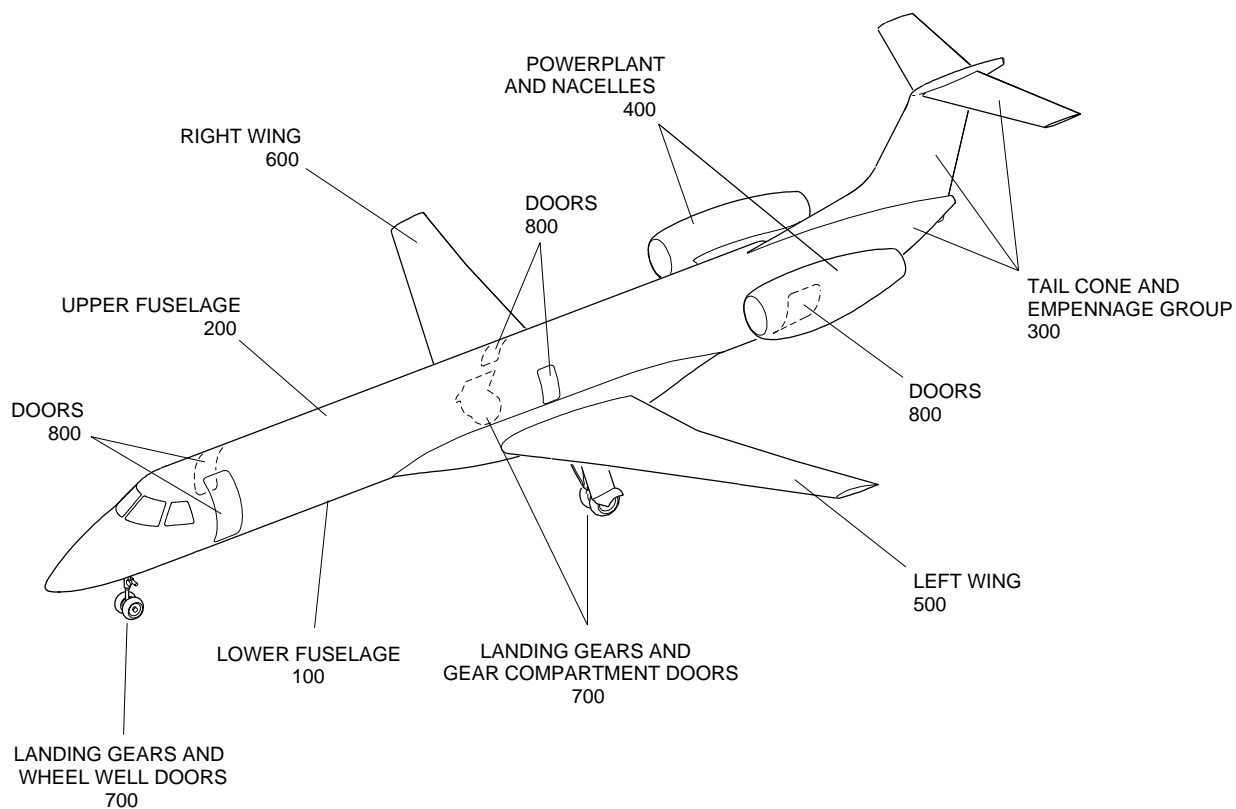
5. Zoning

- A. The aircraft is divided into zones for maintenance planning and to make the maintenance easier. [Figure 104](#) identifies the major zones.

EFFECTIVITY: ALL

Aircraft Zoning

Figure 104



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