Aerolineas Argentinas

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CHAPTER 06 – DIMENSIONS AND AREAS

TABLE OF CONTENTS

DIMENSIONS AND AREAS - MAINTENANCE PRACTICES

1. General
   A. This chapter contains information on principle dimensions for the wing, ailerons, flaps, horizontal stabilizer surfaces, vertical stabilizer surfaces, and body; areas for the wing and tail surfaces; and station diagrams for the wing, vertical tail surfaces, and engine nacelle.
   B. Abbreviation terms used in defining the dimension, areas and stations are listed in the following paragraphs.
2. Abbreviations
   A. The airplane is divided into reference planes, designated as stations, waterlines and buttock lines, measured in inches. This provides a means of quickly identifying the location of components, the center of gravity and the distribution of the weight (Fig. 201).
   B. Body
      (1) B STA
         (a) Body Station. The plane perpendicular and measured parallel to the body centerline from a point 130 inches forward of the nose.
      (2) BBL
         (a) Body Buttock Line. The plane measured perpendicular to the body vertical centerline plane, BBL 0.00.
      (3) BWL
         (a) Body Waterline. The plane measured perpendicular to a horizontal plane located 148.5 inches below the body, BWL 0.00.
      (4) BRP
         (a) Body Reference Plane. The horizontal plane, Body Waterline 208.1, at the top surface of the floor beams.
   C. Vertical Stabilizer
      (1) Fin Sta
         (a) Vertical Stabilizer Station. The plane perpendicular to the centerline of the vertical stabilizer rear spar. Distance is measured from Fin Station 0.00, the intersection of the leading edge line extension and the fin waterline 0.00.
      (2) Fin WL
         (a) Vertical Stabilizer Waterline. A horizontal plane measured parallel to a Body Waterline. Fin Waterline 0.00 is Body Waterline 300.50.
      (3) Fin LE Sta
         (a) Vertical Stabilizer Leading Edge Station. A plane perpendicular to the vertical stabilizer leading edge, measured from the fin leading edge station 0.00, the intersection of the leading edge line extension and the vertical stabilizer waterline 0.00.

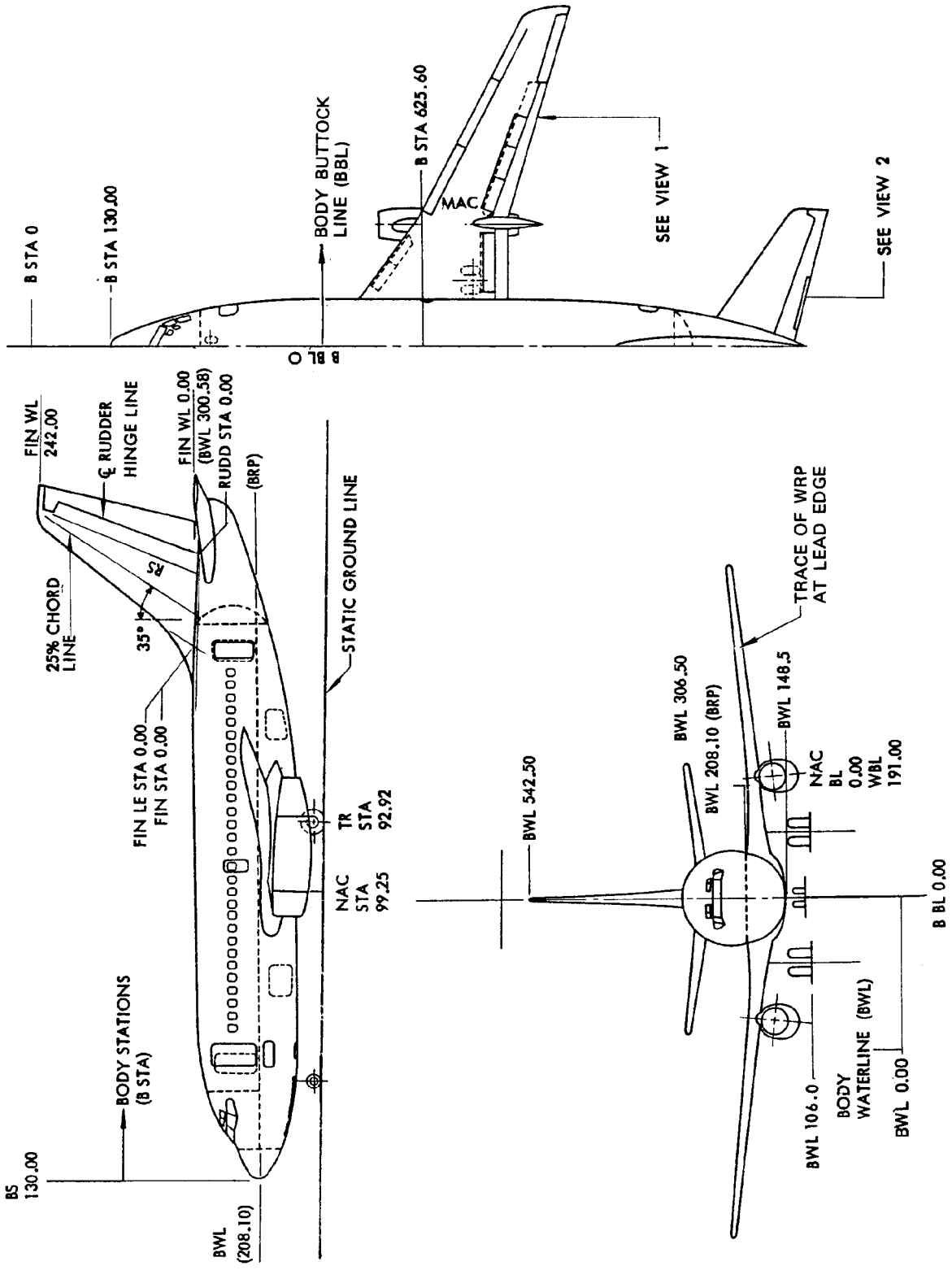
(4) Rud Sta
  (a) Rudder Station. A plane perpendicular to the rudder hinge centerline, measured from Rudder Station 0.00, the intersection of the rudder hinge centerline and vertical stabilizer waterline 0.00.

D. Horizontal Stabilizer
(1) Stab Sta
  (a) Horizontal Stabilizer Station. A plane perpendicular to stabilizer chord plane and plane of stabilizer rear spar, measured from stabilizer station 0.00, the intersection of the leading edge and stabilizer buttock line 0.00.
(2) SCP
  (a) Stabilizer Chord Plane. A plane through the trailing and leading edges of the stabilizer airfoil.
(3) Stab BL
  (a) Horizontal Stabilizer Buttock Line. A plane perpendicular to stabilizer chord plane and parallel to the trace of a body centerline. It is measured from stabilizer Buttock Line 0.00, the intersection of stabilizer chord plane and body buttock line 0.00.
(4) Stab RS
  (a) Horizontal Stabilizer Rear Spar. A principal spanwise transverse member of the stabilizer wing structure.
(5) Stab LE Sta
  (a) Horizontal Stabilizer Leading Edge Station. A plane perpendicular to the horizontal stabilizer leading edge, measured from the Stabilizer Leading Edge Station 0.00, the intersection of the leading edge line extension and stabilizer buttock line 0.00.
(6) Elev Sta
  (a) Elev Sta Elevator Station. A plane perpendicular to the elevator hinge centerline measured from the intersection of elevator hinge centerline and stabilizer buttock line 0.00.

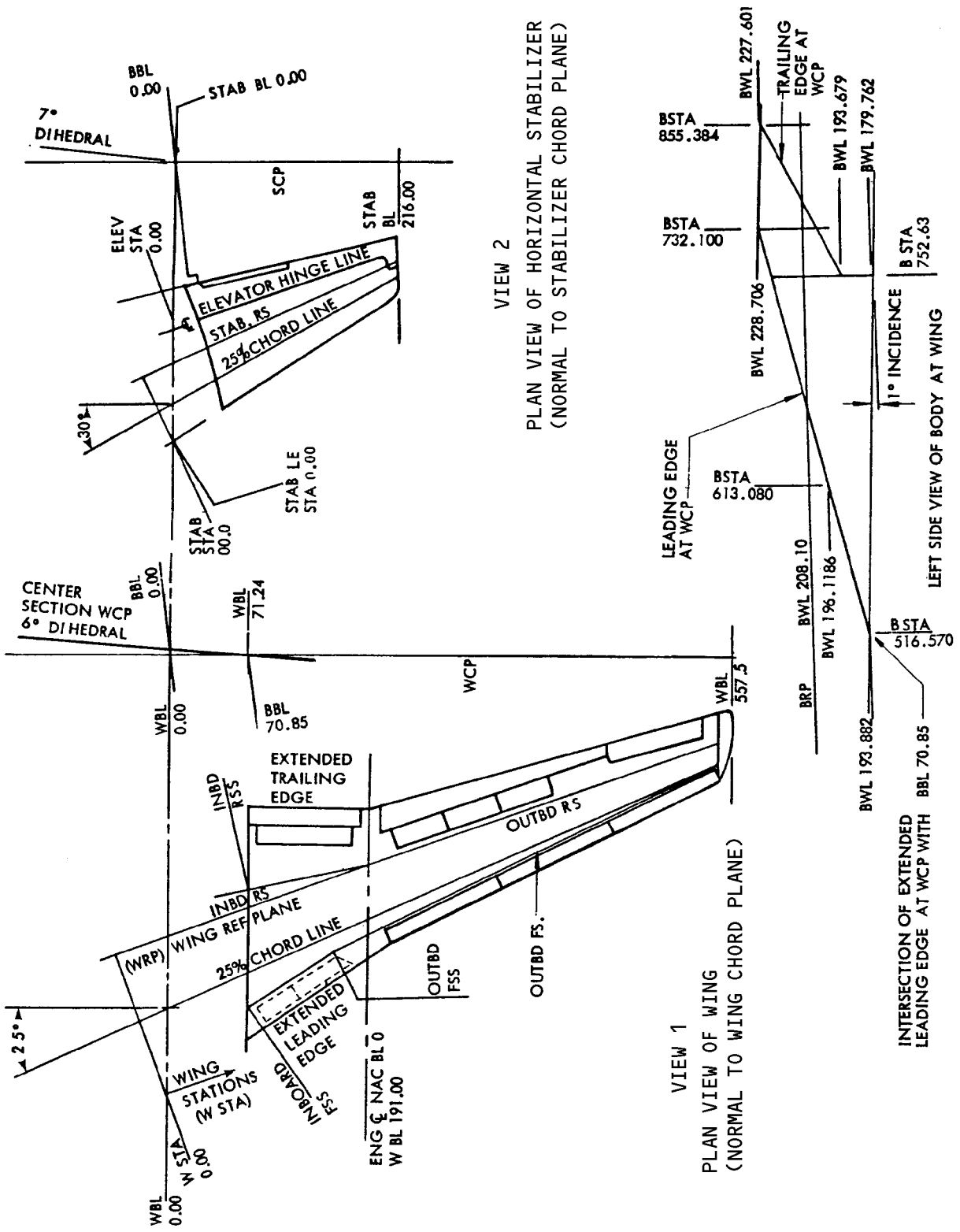
E. Wing
(1) MAC
  (a) Mean Aerodynamic Chord. The chord of a section of an imaginary airfoil on the wing which would have vectors throughout the flight range identical to those of the actual wing.
(2) WCP
  (a) Wing Chord Plane. A plane through the trailing and leading edges of the wing airfoil.
(3) WRP
  (a) Wing Reference Plane. The outboard rear spar plane projected inboard.

(4) W Sta
  (a) Wing Station. A plane perpendicular to wing chord plane and plane of wing reference plane (Outbd RS), measured from intersection of extended leading edge and wing buttock line 0.00.
(5) WBL
  (a) Wing Buttock Line. A plane perpendicular to wing chord plane and parallel to the trace of a body centerline. It is measured from intersection of wing chord plane and body buttock line 0.00.
(6) FS or RS
  (a) Wing Front Spar or Rear Spar. A principal spanwise transverse member of the wing structure.
(7) FSS or RSS
  (a) Front or Rear Spar Station. A plane perpendicular to wing chord plane and plane of the front or rear spar.

F. Nacelle
(1) Nac BL
  (a) Nacelle Buttock Line. A plane parallel to a wing buttock line. Nacelle buttock line 0.00 is equivalent to wing buttock line 191.00.
(2) Nac WL
  (a) Nacelle Waterline. A plane 1° 38' down from the wind chord plane, measured 32.250 inches down from the wing chord plane at nacelle station 63.47 the plane is Nac WL 100.
(3) Nac Sta
  (a) Nacelle Station. Distance measured parallel to nacelle CL from a point 63.47 inches forward of the nacelle.
(4) TR Sta
  (a) Thrust Reverser Station. Distance measured parallel to thrust reverser centerline on a plane perpendicular to thrust reverser centerline from a point 92.92 inches forward of the thrust reverser.
(5) TRWL
  (a) Thrust Reverser Waterline. A plane 3° up from nacelle waterline. Thrust reverser waterline 100 intersects nacelle waterline 100 at thrust reverser station 96.47.



Abbreviations
Figure 201 (Sheet 1)



Abbreviations
Figure 201 (Sheet 2)

PRINCIPAL DIMENSIONS AND AREAS - MAINTENANCE PRACTICES

1. General
   A. Dimensions are included for the wing, ailerons, flaps, horizontal stabilizer surfaces, vertical stabilizer surfaces and body. Areas are included for the wing and tail surfaces (Fig. 201).
2. Dimensions
   A. Length (overall) - 100 feet 2 inches
   B. Width (overall) - 93 feet
   C. Height (vertical stabilizer tip, top of fairing to ground) - 37 feet
   D. Wing:
      (1) Root Chord (theoretical, at body centerline) - 288.09 inches
      (2) Basic Chord (theoretical) - 185.60 inches
      (3) Tip Chord (theoretical) - 63.29 inches
      (4) Platform Taper Ratio
      (5) Tip Chord/Basic Chord - 0.34
      (6) Tip Chord/Root Chord - 0.22
      (7) Dihedral (wing chord plane with respect to body reference plane) - 6 degrees
      (8) Incidence - 1 degree
      (9) Sweepback (25 percent chord line) - 25 degrees
      (10) Aspect Ratio - 8.83
      (11) Mean Aerodynamic Chord (basic wing only) - 134.46 inches
      (12) Body Station at 0% MAC - 625.60
   E. Ailerons:
      (1) Span - 109.57 inches
   F. Flaps:
      (1) Inboard Flaps
         (a) Type - Triple Slotted
         (b) Span - 123.38 inches
      (2) Outboard Flaps
         (a) Type - Triple Slotted
         (b) Span - 194.80 inches
      (3) Leading Edge
         (a) Type - 2 position
         (b) Span - 106.70 inches
   G. Slats:
      (1) Span (total) - 385.36 inches
   H. Spoilers:
      (1) Span (total) - 157.40 inches
   I. Horizontal Stabilizer Surfaces:
      (1) Span - 428.78 inches
      (2) Root Chord (theoretical, at body centerline) - 151 inches
      (3) Tip Chord (theoretical) - 60 inches
      (4) Sweepback (25 percent chord line) - 30 degrees

(5) Dihedral (chord plane with respect to body reference plane) - 7 degrees
(6) Incidence (variable) - 3 degrees up to 14 degrees down
(7) Aspect Ratio - 4.04

J. Vertical Stabilizer Surface:
(1) Height - 242 inches
(2) Root Chord (theoretical, leading edge at body station 971.81) - 205 inches
(3) Tip Chord (theoretical) - 62 inches
(4) Sweepback (25 percent chord line) - 35 degrees
(5) Aspect Ratio - 1.81

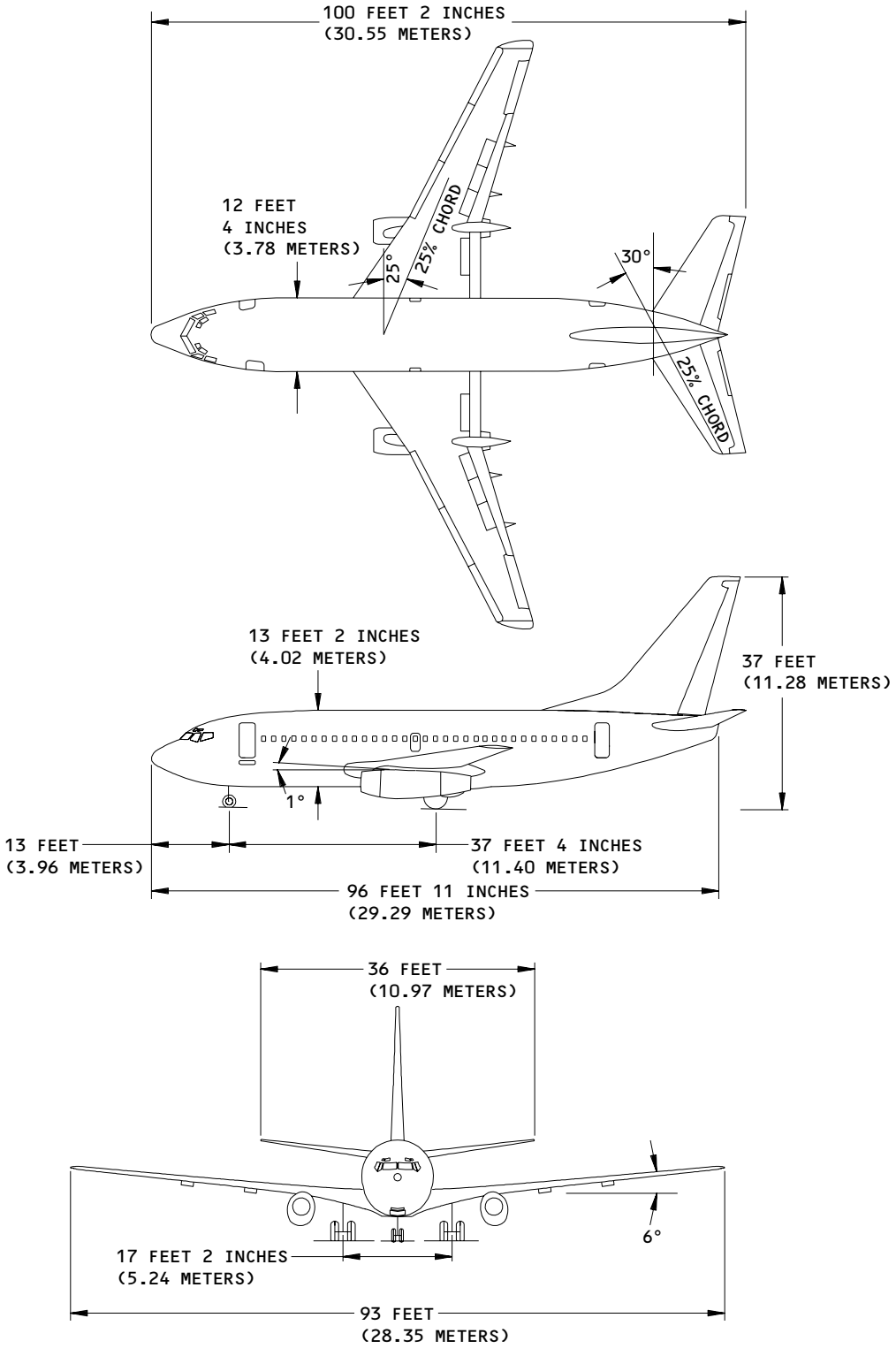
K. Fuselage:
(1) Height of body reference plane (top of floor beam WL 208.1) above ground at main gear - 102.10 inches
(2) Angle of body reference plane with respect to ground line - 0° 58 minutes (nose down) *[1]
(3) Body Station at main gear wheel center - 698
(4) Height (maximum cross section) - 158 inches
(a) Above body reference plane - 98.40 inches
(b) Below body reference plane - 59.60 inches
(5) Height to centerline of windows above body reference plane - 38 inches
(6) Length - 1167 inches
(7) Width (maximum width 24.40 inches above body reference plane) - 148 inches

L. Landing Gear:
(1) Main Wheel Tread - 206 inches
(2) Wheel Base - 448 inches
(3) Main Gear, wheels and tires - 40 x 14
(4) Nose Gear, wheels and tires - 24 x 7.7

3. Areas
A. Wing (basic) - 943.70 square feet
B. Wing (exposed, including trailing and leading edge extensions) - 980 square feet
C. Flaps
(1) Trailing Edge (retracted) - 96.26 square feet
(2) Trailing Edge (extended) - 181.26 square feet
D. Ailerons (total, both sides aft of hinge line, including 3.88 square feet of tab area aft of tab hinge line) - 26.90 square feet
E. Horizontal tail surfaces (total, including area within fairing) - 312 square feet

F. Vertical tail surface (total) - 224.35 square feet

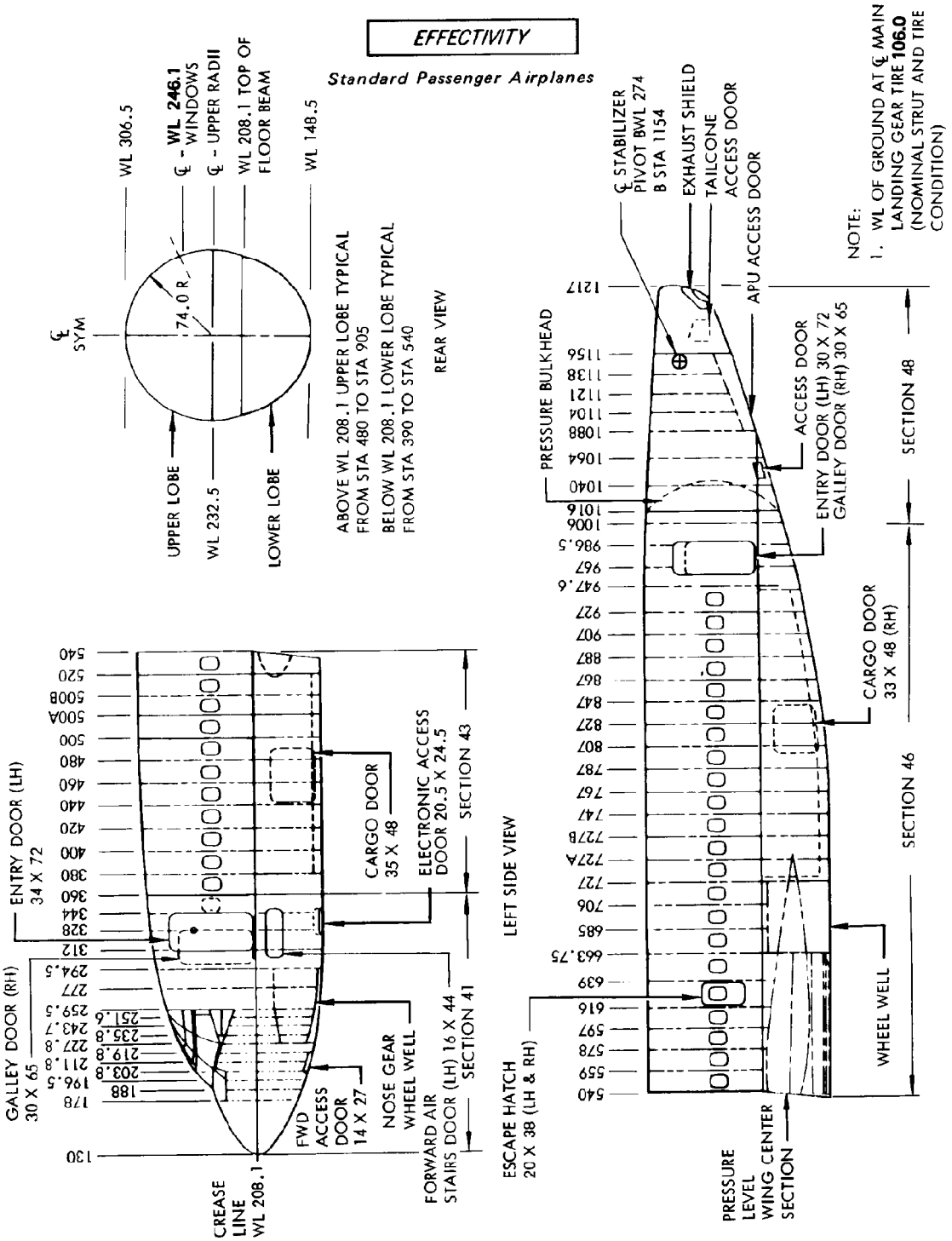
*[1] Based on 10.000 inches rolling radius (2.50 inches strut extension) for the nose gear and 16.50 inches rolling radius (1.00 inch strut extension) for the main gear. The rolling radius for either gear is determined by measuring from the center of the hub to the ground, while the airplane is in a taxi condition.



Principal Dimensions
Figure 201

EFFECTIVITY

Standard Passenger Airplanes



Body Station Diagram
Figure 201

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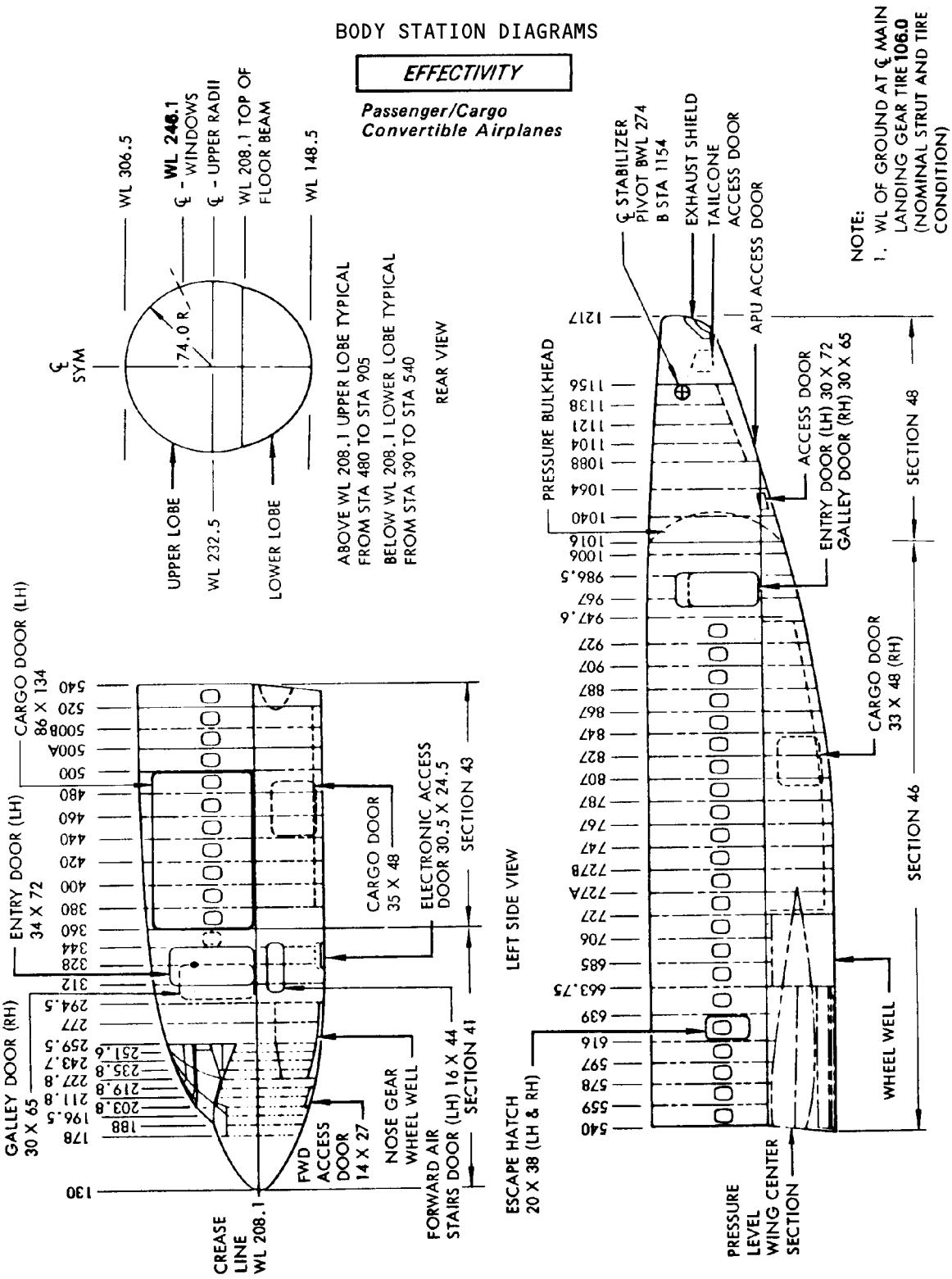
BODY STATION DIAGRAMS

EFFECTIVITY

Passenger/Cargo
Convertible Airplanes



Body Station Diagram
Figure 201

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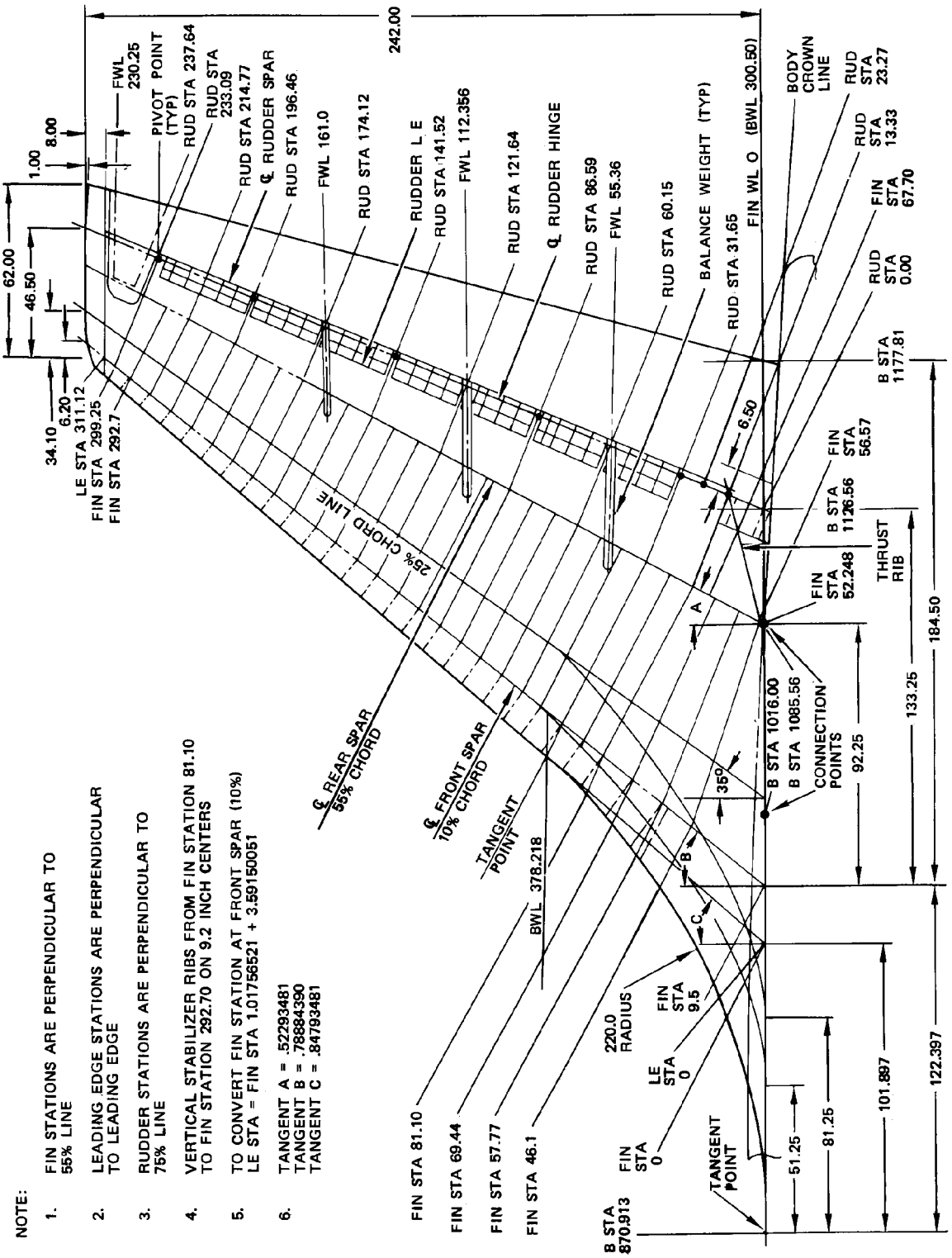
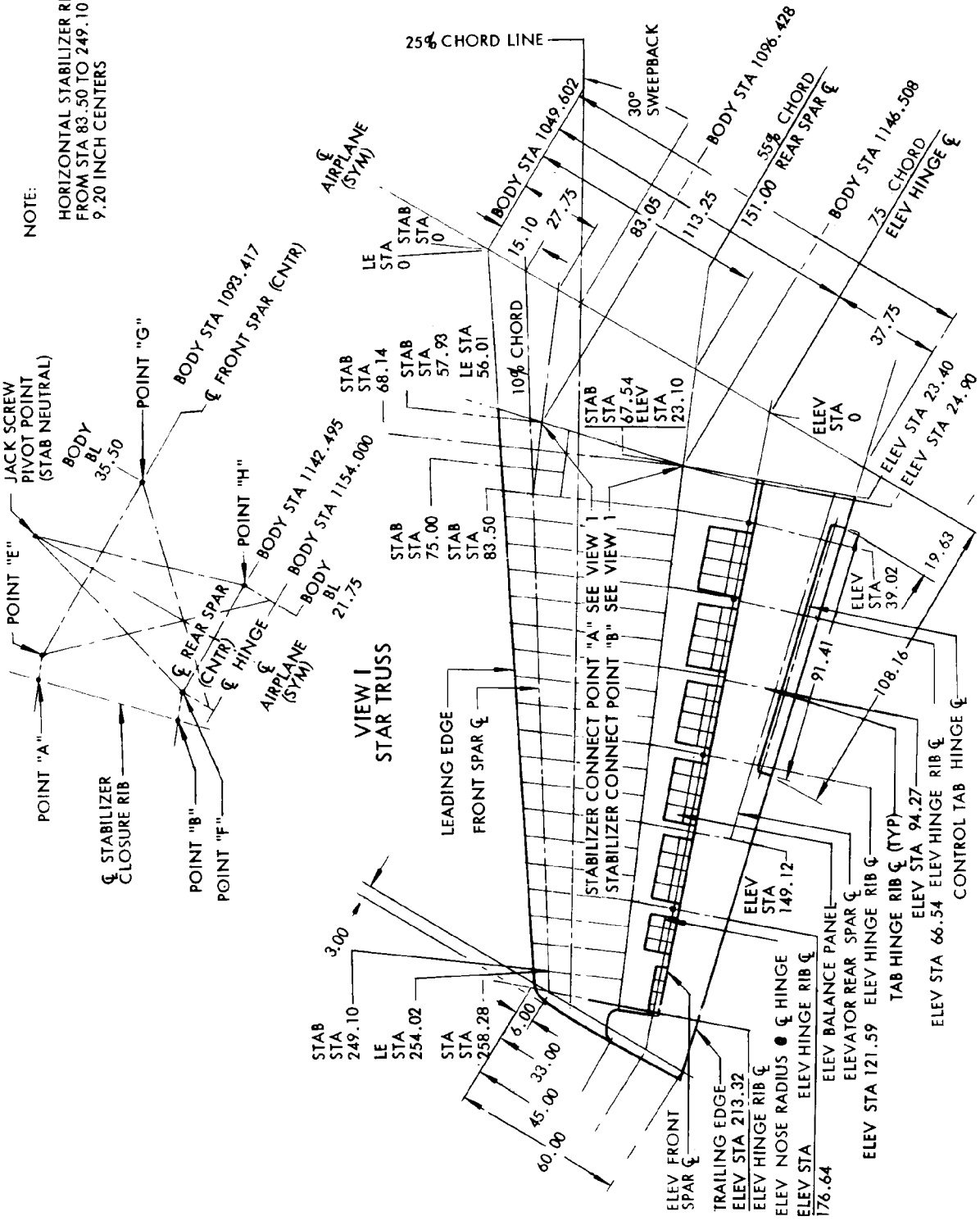


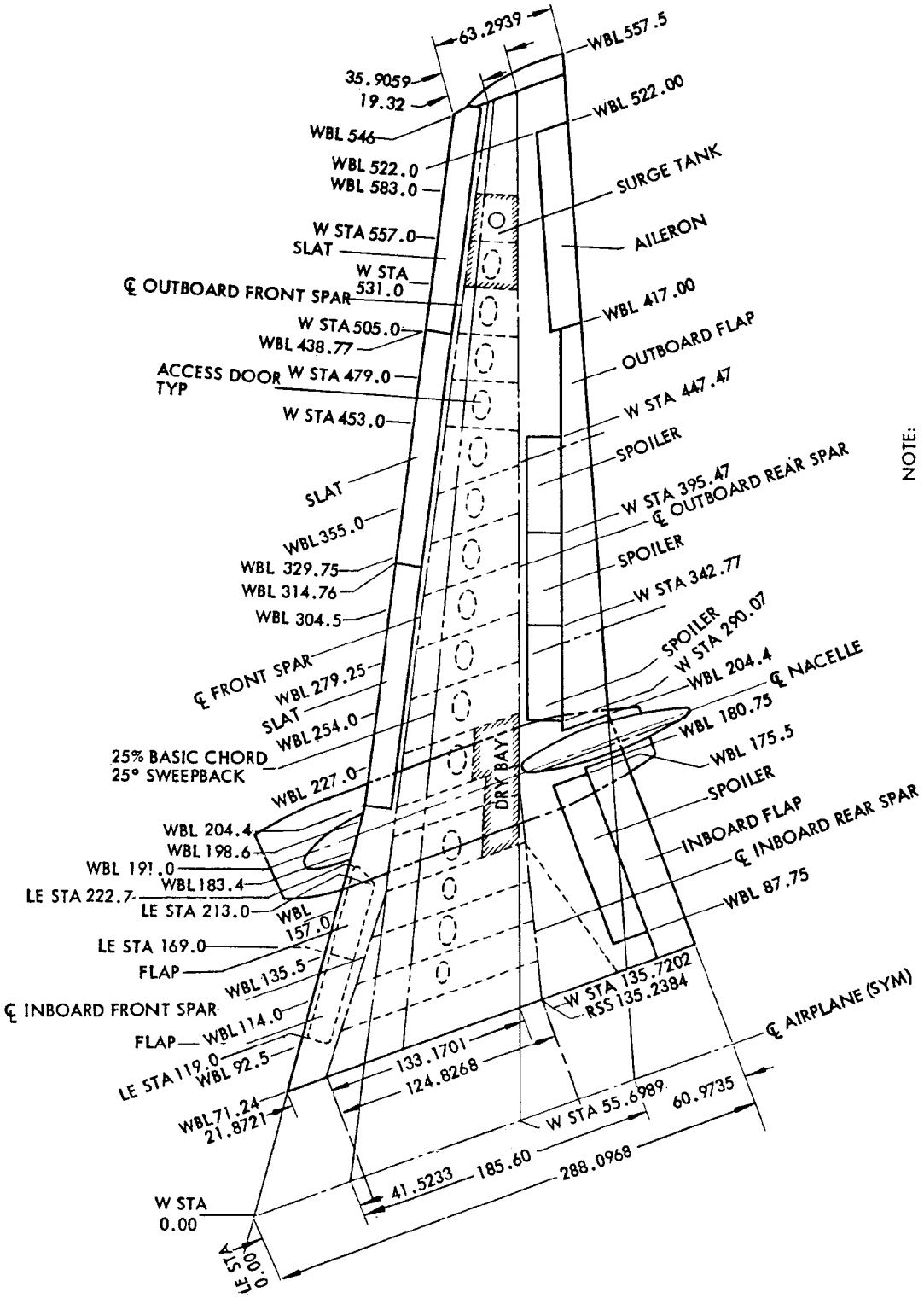
Vertical Stabilizer and Rudder Station Diagram
Figure 201

HORIZONTAL STABILIZER AND ELEVATOR STATION DIAGRAMS



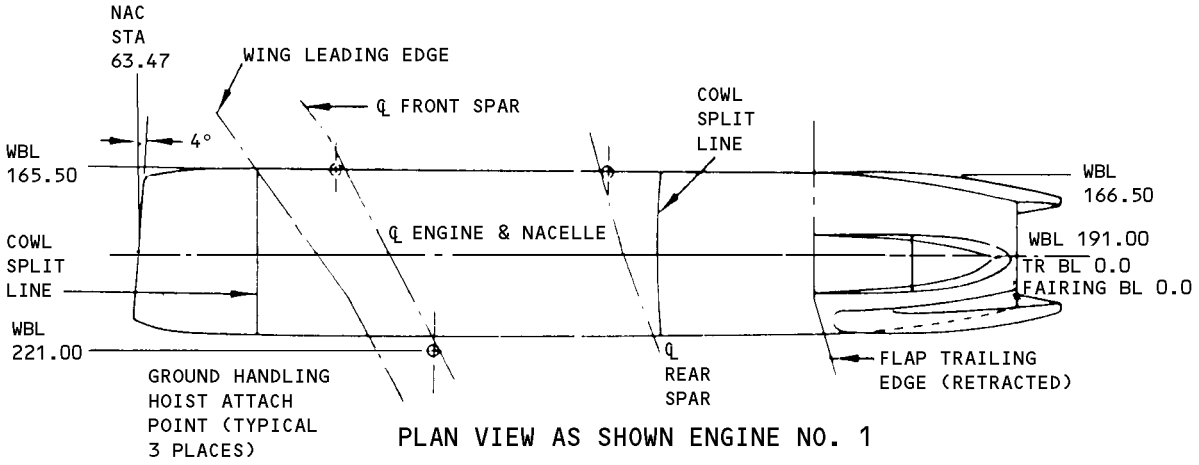
Horizontal Stabilizer and Elevator Station Diagram
Figure 201

WING STATION DIAGRAMS

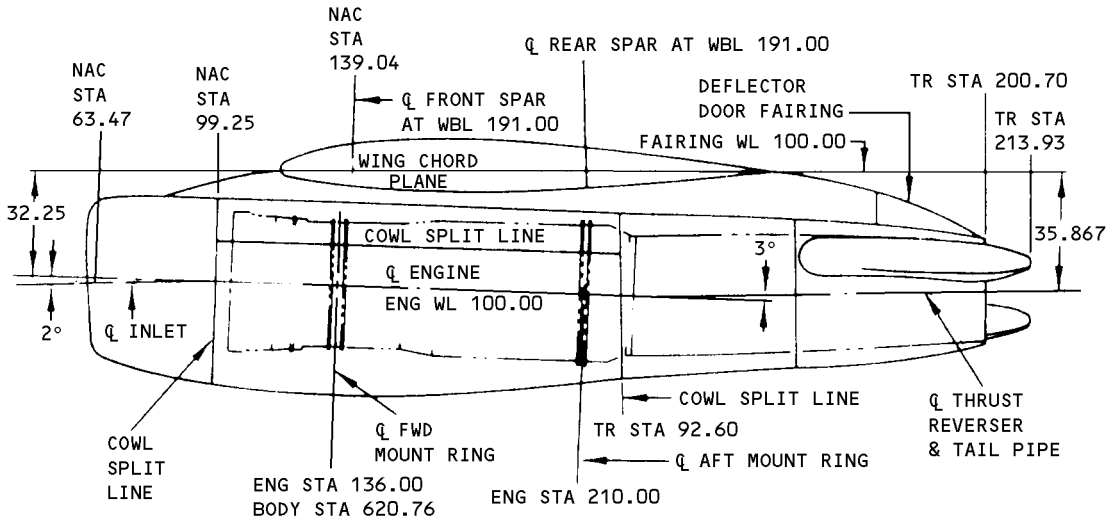


NOTE:
1. BASIC LEADING EDGE ANGLE TAN = .52230862
2. SEMI SPAN 46.50 FEET

Wing Station Diagram
Figure 201



PLAN VIEW AS SHOWN ENGINE NO. 1



LEFT VIEW OF ENGINE NO. 1

Engine and Nacelle Station Diagram
Figure 201