757

with RB211 and PW2000 powerplants

General Familiarization

by Steve Oebermann

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DETAILS:
This book is a study guide for the Boeing 757 Aircraft and includes ATA chapters 71-80 for both the RB-211 and PW-2000 powerplants. This book is a great tool for review, refresher, new hires, prerequisite training, and preparation for systems level classes. There are many benefits for students, technicians, teachers, MRO training departments, and airlines alike. With self-paced study, training time does not need to conflict with your billable time.

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Self Paced Training Study Guide

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The General Familiarization that this course provides can serve as the springboard for Systems classes and a deeper level of detail. Just contact AeroEd and we will get you started. For the incremental cost of the program you will receive the following items in the Certification Packet: a set of tests or online test login, a registration number, and an online account to track your chapter scores and mastery results. Upon successful completion, you will receive a Certificate of Completion and registration information for the FAA AMT Awards Program.

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B757 GENERAL FAMILIARIZATION SELF-PACED

This course covers an overview of the Mechanical Systems to include: Description and Operation, Controls and Indications, Component Location, & Servicing.

OBJECTIVES

Upon completion of this training, using the study guide provided and appropriate Maintenance Manuals, the student will be able to:

1) Describe the safety precautions to be observed when working on or near the aircraft and its systems.

2) Describe the locations of principle components.

3) Describe the normal functions of each major system, including terminology and nomenclature.

4) Using the proper maintenance manual reference, perform all aircraft system servicing tasks.

5) Interpret reports provided by the crew members.

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757 GENERAL FAMILIARIZATION SELF-PACED
ATA 06

MANUAL ARRANGEMENT AND NUMBERING SYSTEM

The Maintenance Manual is divided into chapters and groups of chapters. Each group and every chapter has a tab provided for ease of location. The chapterization separates the manual into the primary functions and systems of the airplane. The chapters are further divided into sections and subjects to provide for subsystem and individual unit breakout. Each chapter, section and subject is identified by an assigned number. Each page carries the assigned subject number, page number, page code and the revision date.

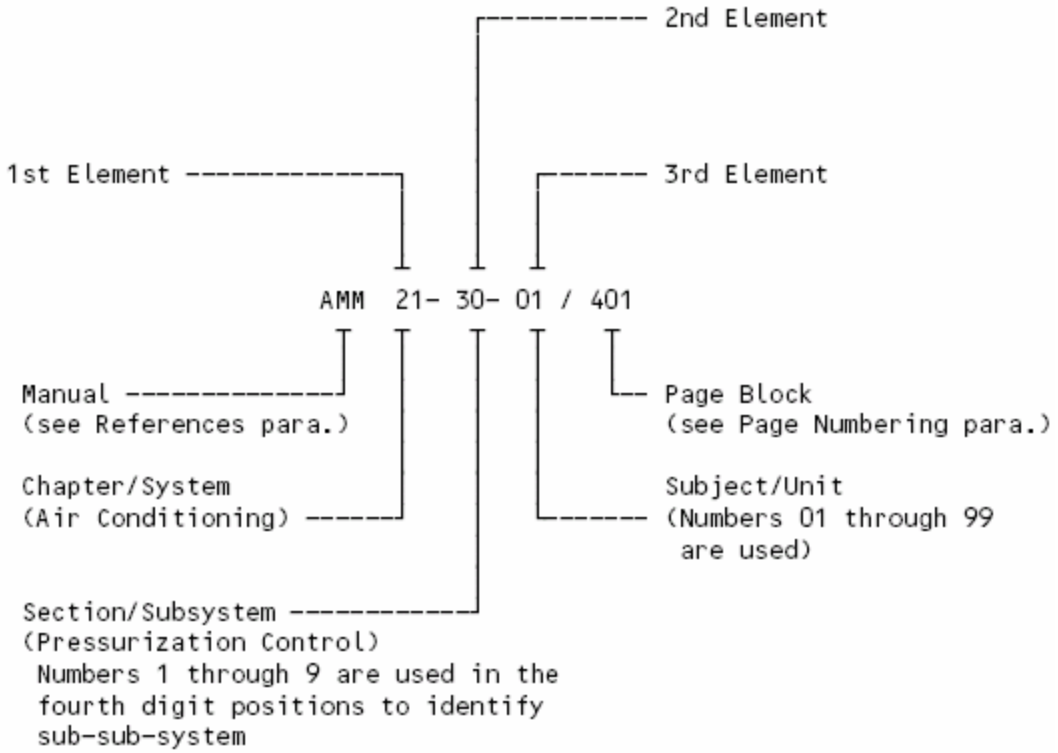
In addition, the Power Plant chapters are issued in a self-contained set or sets (as applicable, if you have more than one engine type in your model fleet). These pages are further identified by an engine sub-logo, for example PW2000 SERIES ENGINES or RB211-535 SERIES ENGINES, placed to the right of the Maintenance Manual logo at the top of the page. The numbering system is described in detail in the paragraphs that follow.

Chapter Numbering

Chapterization of the maintenance manual has provided a functional breakdown of the entire airplane. The chapter breakdown numbering system uses a three element number (XX-XX-XX). It provides for dividing the material into Chapters, Sections, and Subjects.

The three elements of the indicator each contain two digits.

For example:



Chapter Numbering (Continued):

The chapter number (1st element) and the first number of the section number (2nd element) are assigned by ATA Specification No. 100. Material which is applicable to a system as a whole uses zeros in the 2nd and 3rd elements of the numbers. That is, the chapter number followed by "-00-00".

For example:

AMM 22-00-00/001 (Auto Flight) is used for general description information which provides an outline breakdown of the sections in the chapter.

Effectivity and Configuration Numbering

On each page, there is effectivity data at the lower, inner margin (Fig. 1). When a page applies to all airplanes, the word ALL is in the effectivity block. If the data does not apply to all airplanes, then the effectivity will be one of these types:

1. Physical description - A description of the differences that you can see.

   When a physical description is used, a reference to the applicable service bulletin and PRR (production change) are provided when that is possible. This is done primarily for the benefit of airline engineering, and maintenance planning groups.

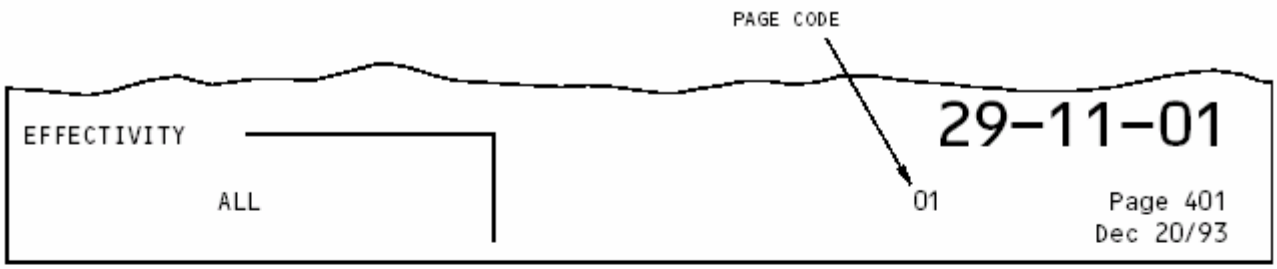
   For example: AIRPLANES WITH VALVE INSTALLED AWAY FROM THE FILTER (POST-SB 28A-17 OR PRR 54009) AIRPLANES WITH VALVE INSTALLED NEAR THE FILTER (PRE-SB 28A-17)

2. Component dash number - The last digits of the identification number that are on an electrical box.

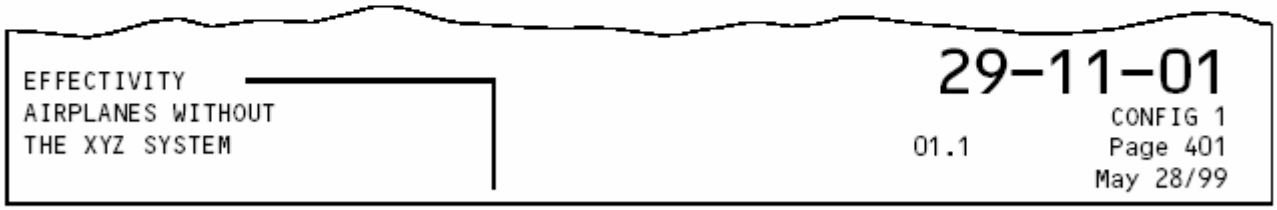
3. Airplane effectivity numbers - The airline three-letter code, and the numbers or letters that Boeing and each airline agreed on to identify each airplane. If the effectivity is applicable to all subsequent airplanes, the last digits will be 999.

   For example: 205-999 indicates airplane 205 and all subsequent airplanes.

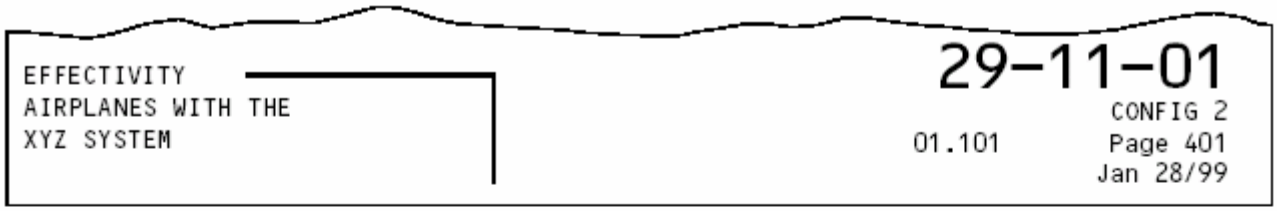
   Each paragraph can have an effectivity. Each effectivity is in upper-case letters, on the first line of the paragraph.



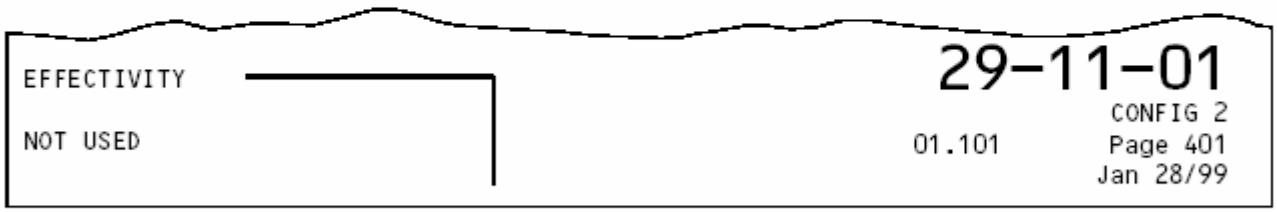
NON-CONFIG PROCEDURE EXAMPLE



CONFIG 1 PROCEDURE EXAMPLE



CONFIG 2 PROCEDURE EXAMPLE



CONFIG – NOT USED EXAMPLE

Effectivity, Page Code and Configuration Procedure Examples
Figure 1

Effectivity and Configuration Numbering (Continued):

When effectivity differences are extensive and the preceding method becomes cumbersome and distracting from the continuity of subject matter, new page blocks are created. These added page blocks are identified by the addition of a configuration code (CONFIG) immediately above the page number. A previously issued page block is re-issued to incorporate the configuration code as shown in Fig. 1. Configuration codes are issued at page block level only. They are usually used when a change to the airplane results in a major change to the manual. Configuration codes are typically used when there are multiple configurations of page block applicable to a customer's fleet.

In some instances, you can have CONFIGs that are provided as place holders. These procedures will be indicated as "NOT USED" in the effectivity block in the lower left corner of the page (Fig. 1).

For the effectivity information in the power plant (70 series) chapters of the manual, two situations can exist. The word ALL placed in the effectivity block on a page means that the page pertains to either all airplanes or all engines, whichever the case may be. When the effectivity is limited to a system or component that remains with the airplane during the power plant replacement, the effectivity is expressed in a manner described in the preceding paragraphs. When a manual section, page, step or illustration is limited to an engine type or component, the effectivity is given using the engine model, physical difference, or part number.

The word "ALL" in the effectivity block on a page means that the page pertains to all airplanes (if you have only one engine type in your model fleet) or 2) All engines (if you have multiple engine types in your model fleet), whichever the case may be.

Page Numbering

Each page block has its own page numbers. The page numbers are in the lower right corner of each page. The page blocks categorize the tasks that they contain. The page blocks are defined by ATA Specification 100:

NOMENCLATURE	PAGE BLOCK
DESCRIPTION AND OPERATION (D&O)	1 to 99
FAULT ISOLATION (FI)	101 to 199
MAINTENANCE PRACTICES (MP)	201 to 299
SERVICING (SRV)	301 to 399
REMOVAL/INSTALLATION (R/I)	401 to 499
ADJUSTMENT/TEST (A/T)	501 to 599
INSPECTION/CHECK (I/C)	601 to 699
CLEANING/PAINTING (C/P)	701 to 799
APPROVED REPAIRS (AR)	801 to 899

When it is convenient for the user to have different types of tasks in one page block, MAINTENANCE PRACTICES, the 201-to-299 page block, is used.

LIST OF ABBREVIATIONS

A/C: air conditioning
A/G: air/ground
A/L: auto land
A/P: autopilot
A/S: airspeed
A/T: auto throttle, adjustment/test
ABNORM: abnormal
AC: alternating current
ACARS ARINC: Communications Addressing and Reporting System
ACCEL: acceleration, accelerate
ACM: air cycle machine
ADC: air data computer
ADF: automatic direction finder
ADI: attitude director indicator
ADP: air driven pump, air driven hydraulic pump
ADV: advance
AFCS: automatic flight control system
AGL: above ground level
AI: anti-ice
AIDS: aircraft integrated data system
AIL: aileron
ALT: altitude
ALTM: altimeter
ALTN: alternate
ALTNT: alternate
AMB: ambient
AMM: Airplane Maintenance Manual
ANN: announcement
ANNUNC: annunciator
ANT: antenna
AOA: angle of attack
APB: auxiliary power breaker
APD: approach progress display
APL: airplane
APPR: approach
APPROX: approximately
APU: auxiliary power unit
ARINC: Aeronautical Radio Incorporated
ARINC IO ARINC: I/O error
ARNC STP ARINC I/O UART: data strip error
ASA: auto land status annunciator
ASP: audio selector panel
ASYM: asymmetrical

ATC: air traffic control
ATC/DABS: air traffic control/discrete address beacon system
ATT: attitude
ATTND: attendant
AUTO: automatic
AUX: auxiliary
AVM: airborne vibration monitor
B/CRS: back course
BARO: barometric
BAT: battery
BFO: beat frequency oscillator
BITE: built-in test equipment
BK: brake
BKGRD: background
BPCU: bus power control unit
BRKR: breaker
BRT: bright
BTB: bus tie breaker
BTL: bottle
C/B: circuit breaker
C: center
°C: degrees Centigrade
CADC: central air data computer
CAPT: captain
CB: circuit breaker
CCA: central control actuator
CCW: counterclockwise
CDU: control display unit
CH: channel
CHAN : channel
CHG: change
CHR: chronograph
CHRGR: charger
CK: check
CKT: circuit
CL: close
CLB: climb
CLR: clear
CLSD: closed
CMD: command
CMPTR: computer
CNX: cancelled

REFERENCE PLANES AND LINES

The airplane is divided into reference planes (stations), waterlines and buttock lines. These are measured in inches from fixed points of reference. This provides a means of quickly identifying the location of components, the center of gravity and the distribution of the weight.

Standard Abbreviations and Definitions

Fuselage

B STA, BS, or STA: Body (Fuselage) Station.
This is a plane perpendicular to the fuselage centerline, It is located 159.00 inches forward of the nose.

BBL or BL: Body (Fuselage) Buttock Line.
This is a vertical plane parallel to the fuselage vertical centerline plane, BBL 0.00 located by its distance outboard from the fuselage centerline plane.

BRP: Body (Fuselage) Reference Plane.
This is a plane perpendicular to the BBL plane and passes through the top of the main deck floor beams (BWL 208.10).

BWL or WL: Body (Fuselage) Waterline.
This is a plane perpendicular to the BBL plane. It is located by its distance from a parallel imaginary plane (BWL 0.00). BWL 0.00 is 133.00 inches below the lowest fuselage surface.

LBL: Left Buttock Line

RBL: Right Buttock Line

Wing

FS: The principal spanwise transverse member of the wing structure.
It is perpendicular to the wing reference plane.

ISS: Inboard Slat Stations.
These are planes perpendicular to inboard leading edge slats. They are measured from the intersection of the slat rotation axis and a plane perpendicular to the wing reference plane.

LES: Leading Edge Station.
These are planes perpendicular to the wing reference plane and the leading edge. They are measured from the intersection of the leading edge extension and the wing buttock line 0.00.

Wing Definitions (Continued):

MAC: Mean Aerodynamic Chord.
This is the chord of a section of an imaginary airfoil which would have vectors throughout the flight range identical to those of the actual wing.

OSS: Outboard Slat Stations.
These are planes perpendicular to the outboard leading edge slats. They are measured from the intersection of the slat rotation axis and a plane perpendicular to the wing reference plane.

RS: See definition for FS.

W STA or WS: Wing Station.
These are planes perpendicular to the wing reference plane and the plane of the outboard rear spar. They are measured from the intersection of the extended leading edge and wing buttock line 0.00.

WBL: Wing Buttock Line.
This is a plane perpendicular to the wing reference plane and parallel to the trace of the fuselage centerline. It is measured from intersection of wing reference plane and body buttock line 0.00.

WRP: Wing Reference Plane.
This is the datum plane of the wing. It is inclined up 5 degrees with respect to the BWL plane and passes through the intersection of the BBL 0.00 and BWL 178.187909.

WTS: Wing Tip Station.
This is a plane perpendicular to the wing reference plane and wing buttock line 0.00. It is measured from the intersection of the leading edge and wing buttock line 0.00.

Vertical Stabilizer

ASS: Auxiliary Spar Station.
This is a plane perpendicular to the vertical stabilizer auxiliary spar. It is measured from the Auxiliary Spar Station 0.00, intersection of the auxiliary spar centerline extension and body waterline 228.99 (757 ROOT CHORD).

Vertical Stabilizer (Continued):

FIN STA: Fin Station.
This is a plane perpendicular to the centerline of the vertical stabilizer rear spar. It is measured from Fin Station 0.00, intersection of rear spar centerline extension and body waterline 228.99 (757 ROOT CHORD).

FSS: Front Spar Station.
This is a plane perpendicular to the vertical stabilizer front spar. It is measured from the fin front spar station 0.00, intersection waterline 228.99 (757 ROOT CHORD).

LES: Leading Edge Station.
These are planes perpendicular to the vertical stabilizer leading edge. They are measured from the leading Edge Station 0.00, intersection of the leading edge line extension and body waterline 228.99 (757 ROOT CHORD).

LFFS: Lower Front Spar Station.
These are planes perpendicular to the vertical stabilizer lower front spar. They are measured from the Lower Front Spar Station 0.00, intersection of the lower front spar centerline extension and body waterline 228.99 (757 ROOT CHORD).

RUD STA: Rudder Station.
These are planes perpendicular to the rudder hinge centerline. They are measured from Rudder Station 0.00, intersection of rudder hinge centerline and body waterline 228.99 (757 ROOT CHORD).

Horizontal Stabilizer

AUX SPAR STA: Auxiliary Spar Station.
These are planes perpendicular to the horizontal stabilizer auxiliary spar. They are measured from Auxiliary Spar Station 0.00, intersection of auxiliary spar extension and stabilizer buttock line 0.00.

ELEV STA: Elevator Station.
These are planes perpendicular to the elevator hinge centerline. They are measured from the intersection of elevator hinge centerline and stabilizer buttock line 0.00.

Horizontal Stabilizer (Continued):

FS STA: Front Spar Station.
These are planes perpendicular to the horizontal stabilizer front spar. They are measured from Front Spar Station 0.00, intersection of front spar and trace of body buttock line 0.00 at horizontal stabilizer reference plane.

HSBL: Stabilizer Buttock Line.
This is a plane perpendicular to the horizontal stabilizer reference plane and parallel to the trace of the fuselage centerline. It is measured from stabilizer buttock line 0.00, intersection of horizontal stabilizer reference plane and body buttock line 0.00.

HSRP: Horizontal Stabilizer Reference Plane.
This is the datum plane of the horizontal stabilizer. It is inclined 7° up with respect to the BWL plane and passes through the intersection of the BBL 0.00 and BWL 238.015 planes.

LE STA: Leading Edge Station.
This is a plane perpendicular to the horizontal stabilizer leading edge. It is measured from Stabilizer Leading Edge Station 0.00, intersection of leading edge line extension and stabilizer buttock line 0.00.

RS STA: Rear Spar Station.
This is a plane perpendicular to the horizontal stabilizer rear spar. It is measured from Rear Spar Station 0.00, intersection of rear spar and trace of body buttock line 0.00 at horizontal stabilizer reference plane.

STAB STA: Stabilizer Station. This is a plane perpendicular to the stabilizer rear spar and the horizontal stabilizer reference plane. Stabilizer station 0.00 is at the intersection of the leading edge extension, body buttock line 0.00 and the horizontal stabilizer reference plane.

Power Plant

PPBL: Power Plant Buttock Line.
This is a plane perpendicular to the wing reference plane. It is measured from a parallel plane (PPBL 0.00) that intersects the WBL 255.0 plane at the wing leading edge and angles 1.5 degrees inboard just forward of the wing leading edge.

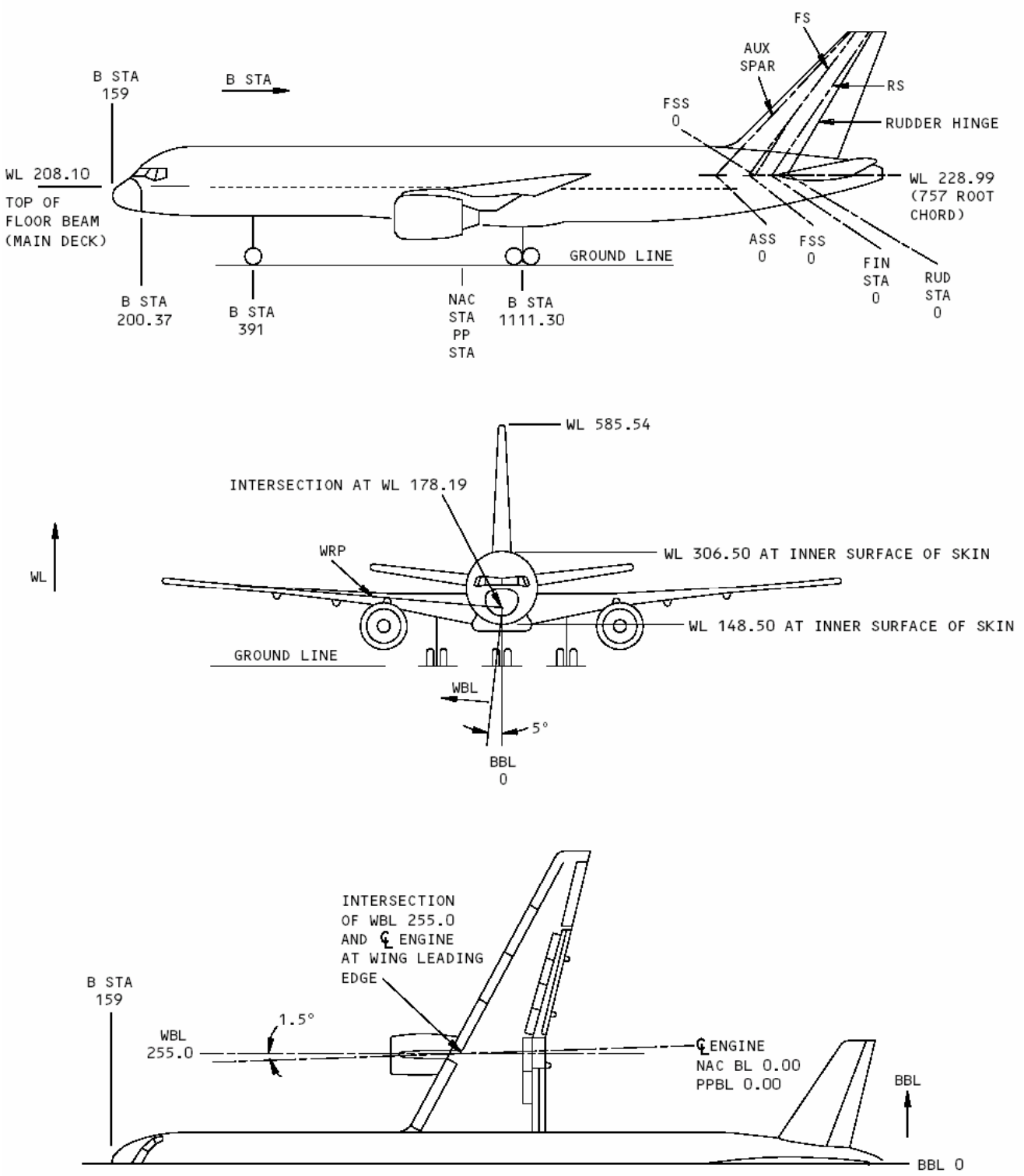
Power Plant (Continued):

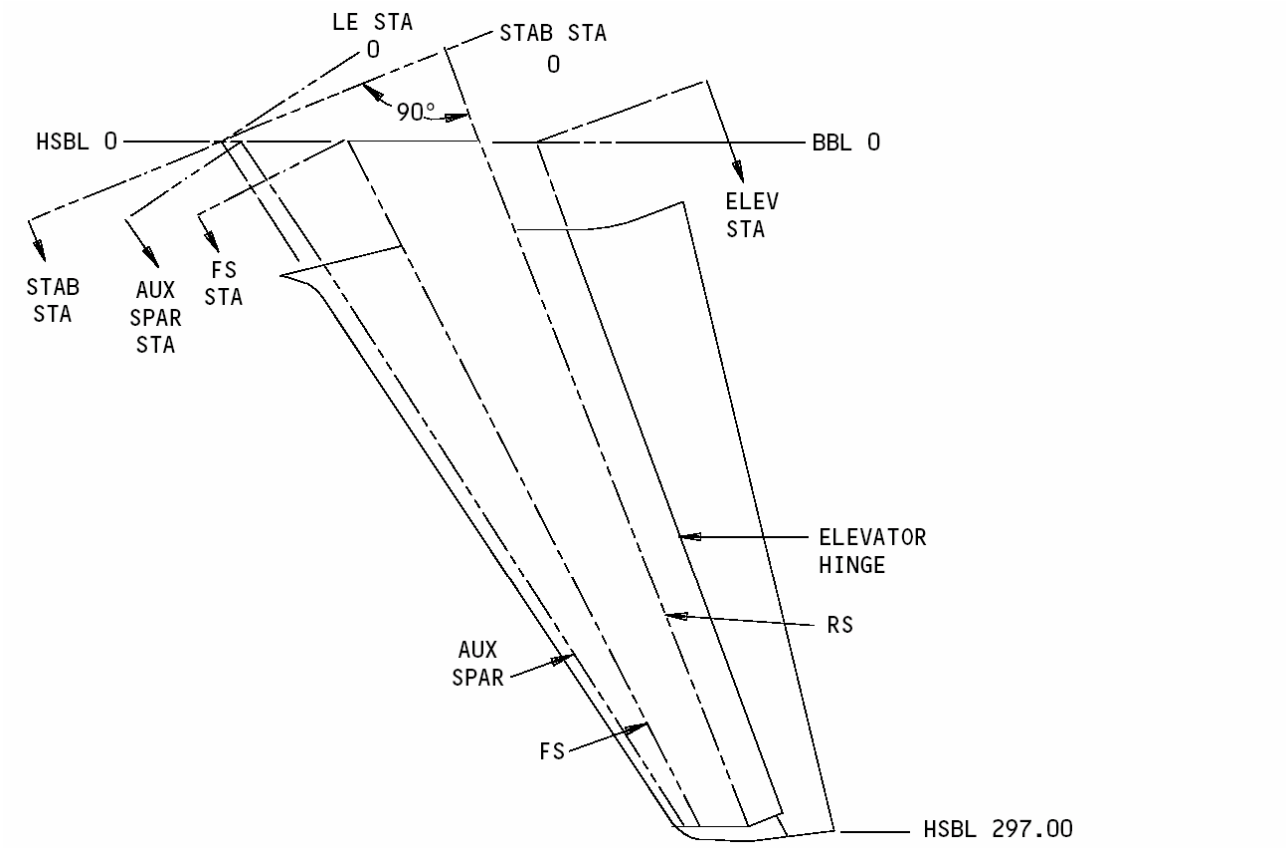
PPWL: Power Plant Waterline.

This is a plane perpendicular to the PPBL datum plane and inclined 2.4072 degrees upward from the wing reference plane. The PP WL 100.00 (centerline of engine) is measured 61.70 inches down from the wing leading edge at WBL 255.00.

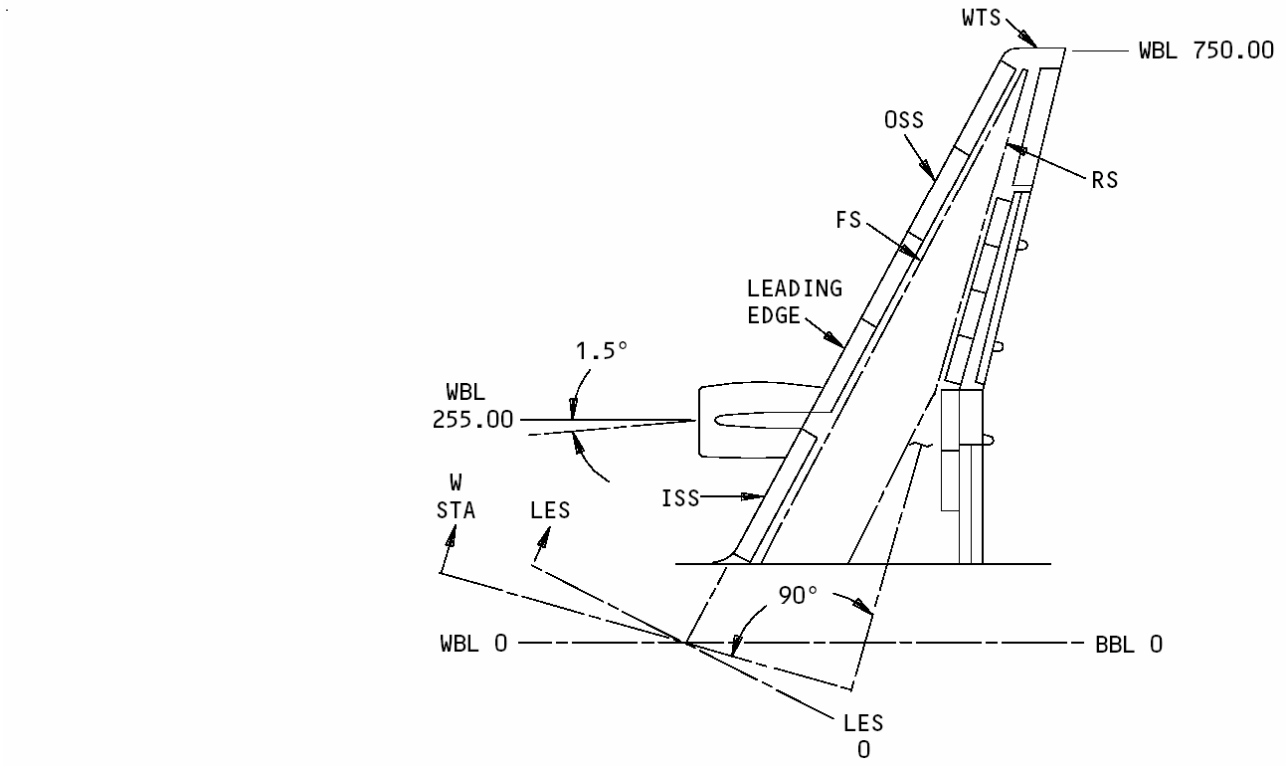
PPS: or PPSTA Power Plant Station.

This is a plane perpendicular to the engine centerline. The zero position is located 72.30 inches forward of the forward edge of the fan cowl panel.

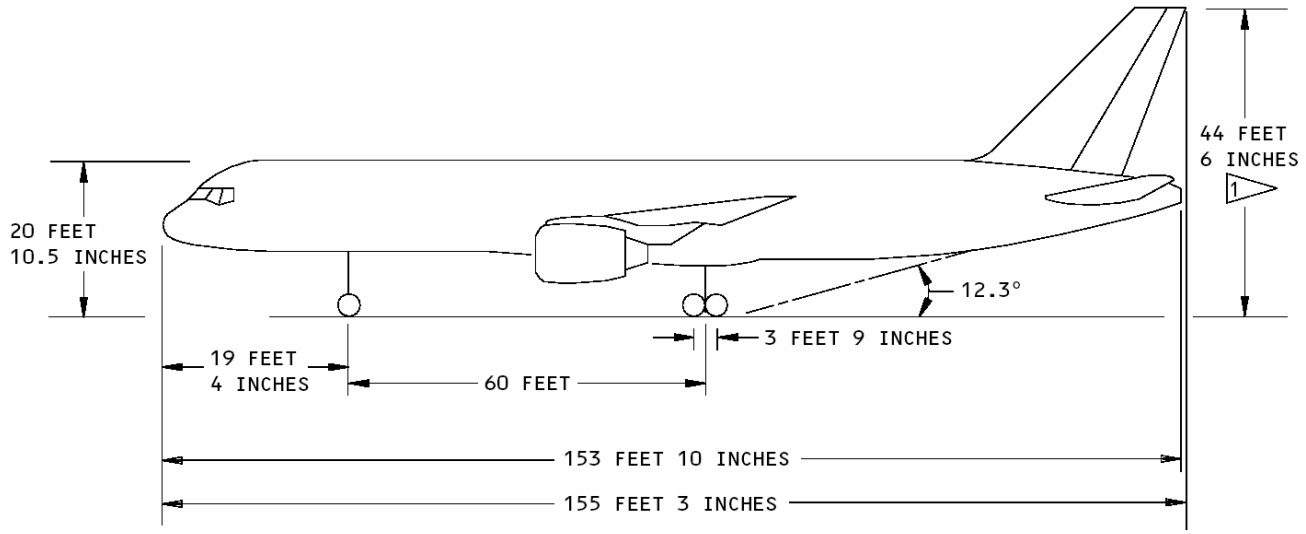


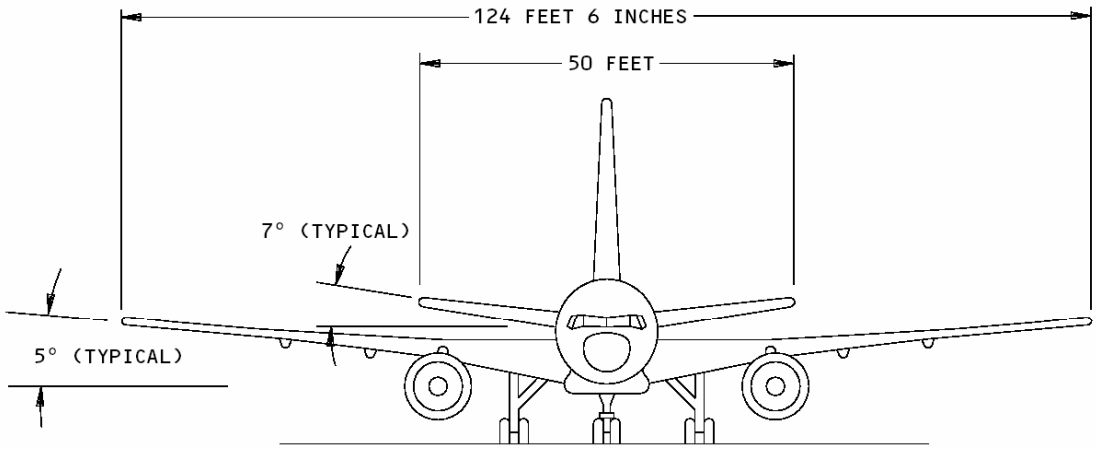


PLAN VIEW OF HORIZONTAL STABILIZER



PRIMARY AIRCRAFT DIMENSIONS





1 DIMENSION VARIES WITH C.G. LOCATION AND LOADING