

A350
TECHNICAL TRAINING MANUAL
MAINTENANCE COURSE - T1+T2 - RR Trent XWB
AIRCRAFT GENERAL INTRODUCTION Level 1

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AIRCRAFT GENERAL INTRODUCTION LEVEL 1

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AIRCRAFT GENERAL INTRODUCTION (1)

Overview

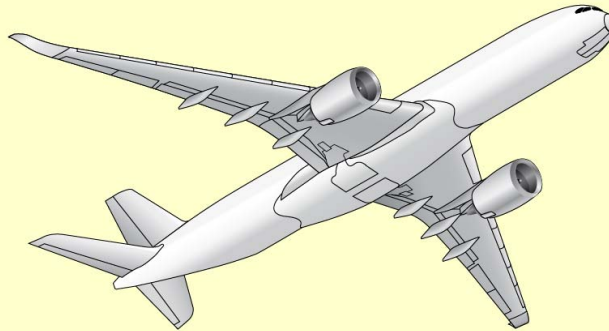
This general introduction gives data about the A350:

- Aircraft presentation
- Aircraft family
- Aircraft dimensions
- Aircraft general layout
- Aircraft weights.

**AIRCRAFT
PRESENTATION**

**AIRCRAFT
FAMILY**

**AIRCRAFT
DIMENSIONS**



A350 XWB GENERAL PRESENTATION

**AIRCRAFT
WEIGHTS**

**AIRCRAFT
GENERAL
LAYOUT**

OVERVIEW

AIRCRAFT GENERAL INTRODUCTION (1)

Aircraft Presentation - Presentation

Function/Description

The aircraft definition includes:

- An airframe made of different types of materials with a large percentage of carbon composites
- Maximum cabin comfort
- Wide cross-section
- Improved cabin atmosphere
- Easy cabin reconfiguration
- Optimised seat rails
- Quick fasteners
- Advanced cockpit
- 6 interchangeable LCD (Liquid Crystal Display) display units
- Basic 180 min ETOPS (Extended Range Operations for Two Engine Aeroplanes) certification and 350 min with the full ETOPS options package
- Advanced wing design
- Advanced aerodynamics
- Adaptive high-lift systems
- A380 experience in aircraft systems
- Use of EHA (Electro-Hydrostatic Actuator)/EBHA (Electrical Backup Hydraulic Actuator)
- IMA (Integrated Modular Avionics)
- Advanced engines, twin engines
- Less fuel consumption
- Low maintenance cost
- Low environmental impact.

CARBON COMPOSITE AIRFRAME

EXTENSIVE USE OF CARBON COMPOSITE ON AIRCRAFT

MAXIMUM CABIN COMFORT

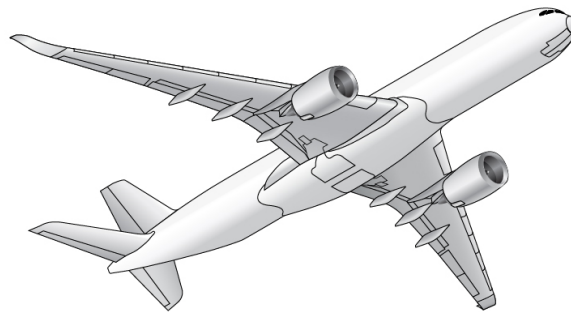
-WIDE CROSS-SECTION
-IMPROVED CABIN ATMOSPHERE

EASY CABIN RECONFIGURATION

-OPTIMISED SEAT RAILS
-QUICK FASTENERS

ADVANCED COCKPIT

6 INTERCHANGEABLE LCD DISPLAY UNITS


ADVANCED ENGINES

-LESS FUEL CONSUMPTION
-LOW MAINTENANCE COSTS
-LOW ENVIRONMENTAL IMPACT

SYSTEMS: A380 AND BEYOND

-USE OF EHA/EBHA
-IMA

ADVANCED WING DESIGN

-ADVANCED AERODYNAMICS
-ADAPTIVE HIGH-LIFT SYSTEMS

ENHANCED ETOPS CAPABILITIES

ETOPS 180 MIN

EBHA: Electrical Backup Hydraulic Actuator
EHA: Electro-Hydrostatic Actuator
ETOPS: Extended Range Operations for Two Engine Aeroplanes

IMA: Integrated Modular Avionics
LCD: Liquid Crystal Display

AIRCRAFT PRESENTATION - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT GENERAL INTRODUCTION (1)

Aircraft Family - Presentation

Function/Description

The A350 XWB family has three aircraft standards: A350-900, A350-800 and A350-1000.

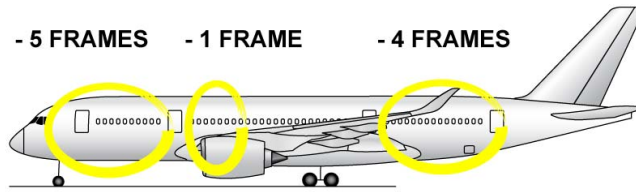
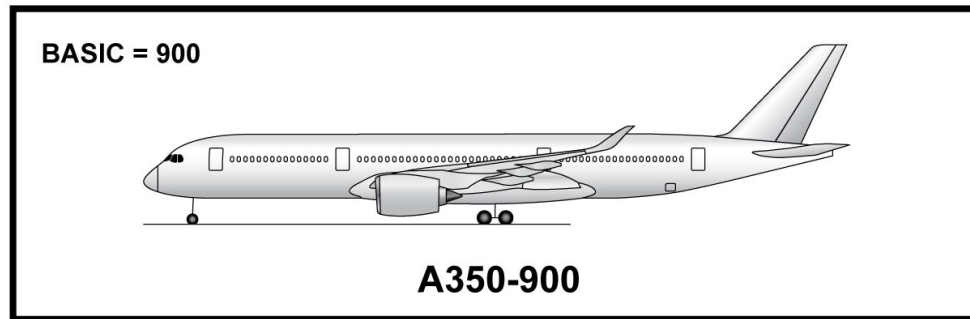
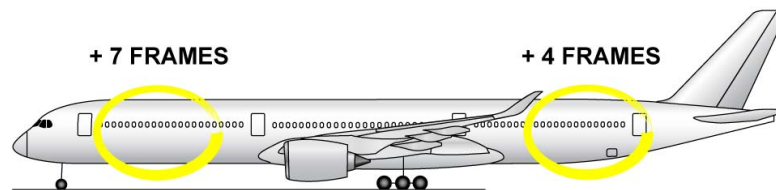
The A350-900 is the basic aircraft standard.

The A350-800 is shorter than the A350-900:

- Minus 5 frames in the forward fuselage part
- Minus 1 frame in the main fuselage part
- Minus 4 frames in the aft fuselage part.

The A350-1000 is longer than the A350-900:

- Plus 7 frames in the forward fuselage part
- Plus 4 frames in the aft fuselage part.


A350-800

A350-900

A350-1000
AIRCRAFT FAMILY - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT GENERAL INTRODUCTION (1)

Aircraft Dimensions - Presentation

Function/Description

All the dimensions are given for a maximum aircraft-weight configuration.

NOTE: Aircraft dimensions are given in meters, feet and inches.

The dimensions of the A350-900 are:

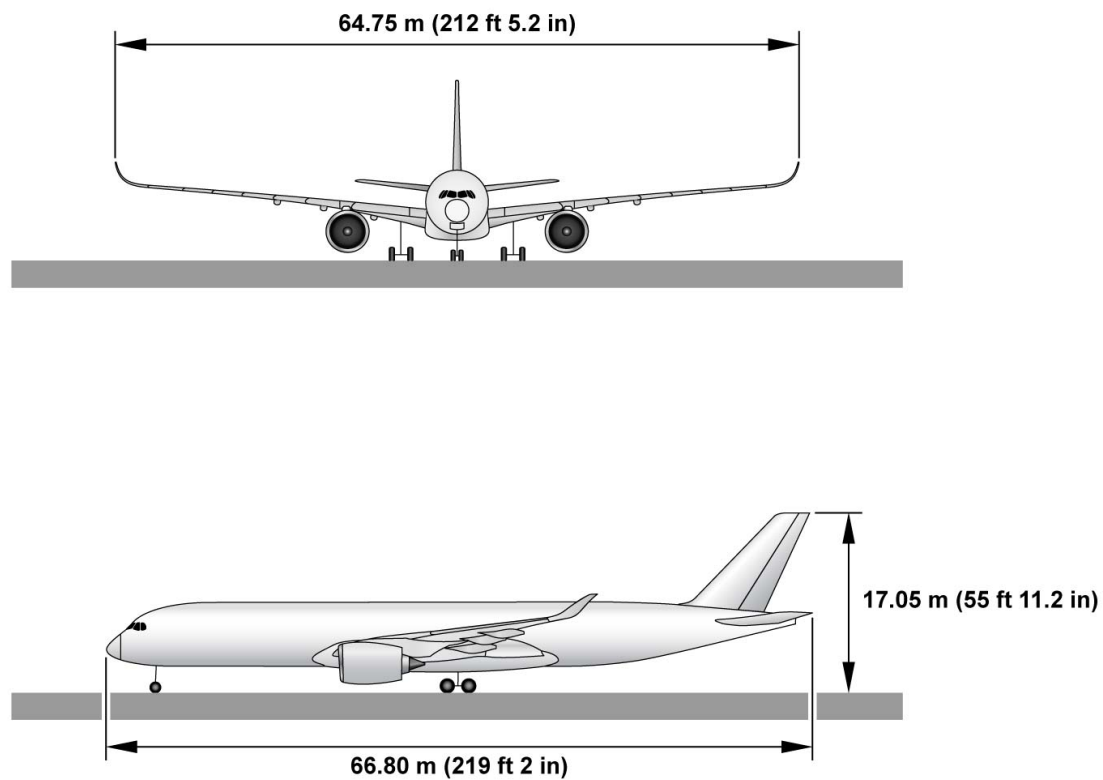
- Length: 66.80 m (219 ft 2 in)
- Width: 64.75 m (212 ft 5.2 in)
- Height: 17.05 m (55 ft 11.2 in).

The dimensions of the A350-800 are:

- Length: 60.45 m (198 ft 3.9 in)
- Width: 64.75 m (212 ft 5.2 in)
- Height: 17.05 m (55 ft 11.2 in).

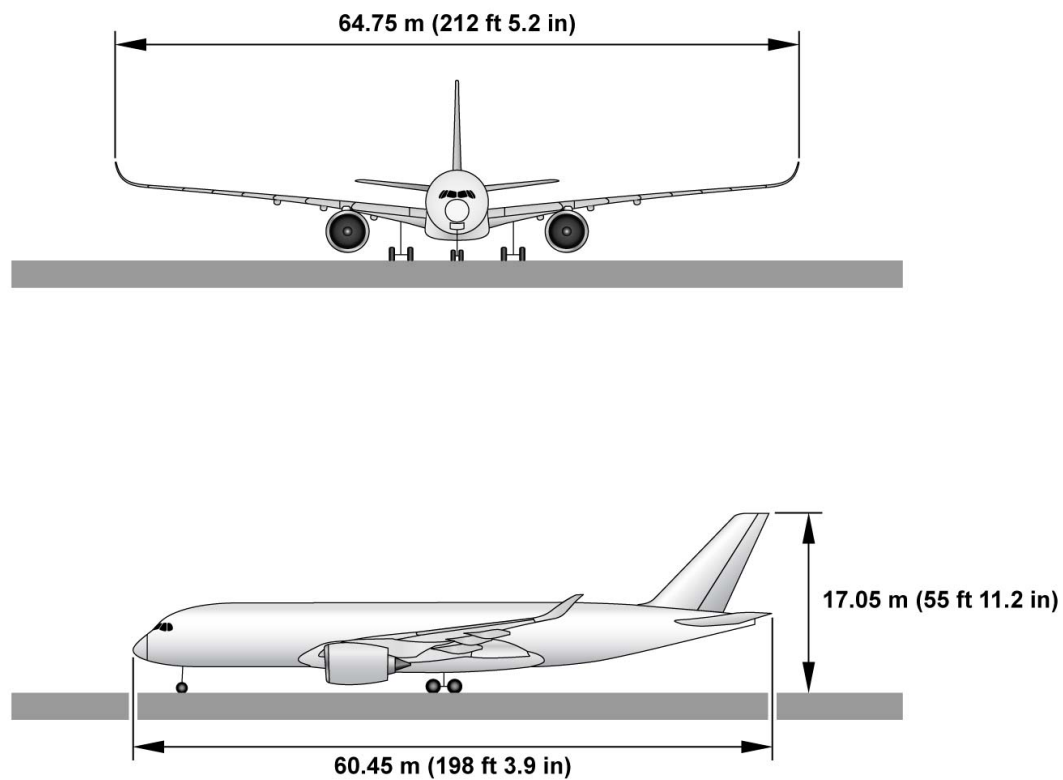
The dimensions of the A350-1000 are:

- Length: 73.88 m (242 ft 4.5 in)
- Width: 64.75 m (212 ft 5.2 in)
- Height: 17.08 m (56 ft 0.3 in).



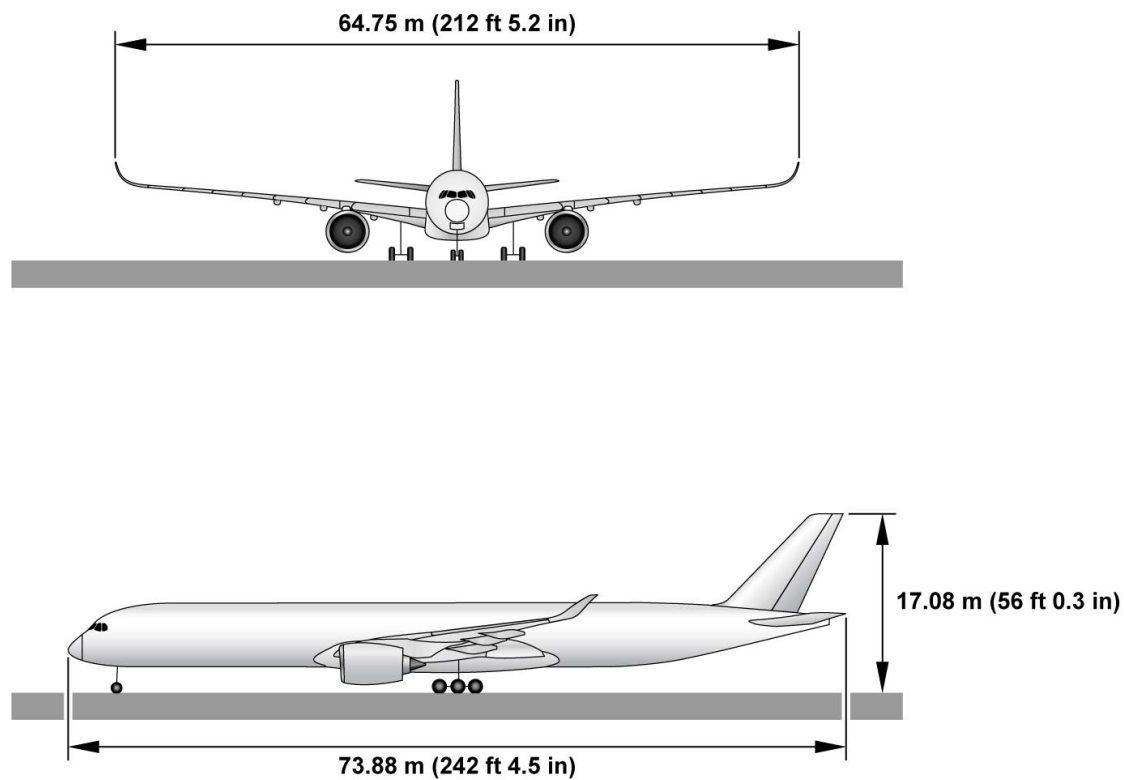
A350-900 AIRCRAFT DIMENSIONS

AIRCRAFT DIMENSIONS - PRESENTATION - FUNCTION/DESCRIPTION



A350-800 AIRCRAFT DIMENSIONS

AIRCRAFT DIMENSIONS - PRESENTATION - FUNCTION/DESCRIPTION



A350-1000 AIRCRAFT DIMENSIONS

AIRCRAFT DIMENSIONS - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT GENERAL INTRODUCTION (1)

Aircraft General Layout - Presentation

Function/Description

Engine power ratings

The engines for each standard have different power ratings for maximum performance:

- 84 Klbf for A350-900
- 75 Klbf for A350-800
- 97 Klbf for A350-1000.

Landing gear wheels

The A350-800 and A350-900 have 10 wheels.

The A350-1000 has 14 wheels.

Pressurized areas

The pressurized areas are:

- The cockpit
- The passenger compartment
- The cargo compartment.

Cabin layout

There are 2 different classes: Business Class (6 across) and the Economy Class (9 across).

The A350-900 has a capacity of 315 passengers:

- 48 Business Class
- 267 Economy Class.

The A350-800 has a capacity of 276 passengers:

- 36 Business Class
- 240 Economy Class.

The A350-1000 has a capacity of 369 passengers:

- 54 Business Class
- 315 Economy Class.

Cargo compartment

There are 3 different cargo compartments: the forward cargo compartment, the aft cargo compartment and the bulk cargo compartment.

The cargo compartment capacity is:

- 11 pallets and 36 containers for the A350-900
- 9 pallets and 28 containers for the A350-800
- 14 pallets and 44 containers for the A350-1000.

Doors

For all versions:

There are 4 passenger doors on each side of the aircraft.

The forward and the aft cargo doors are on the right side. The bulk cargo door is on the left side.

Avionics Compartments

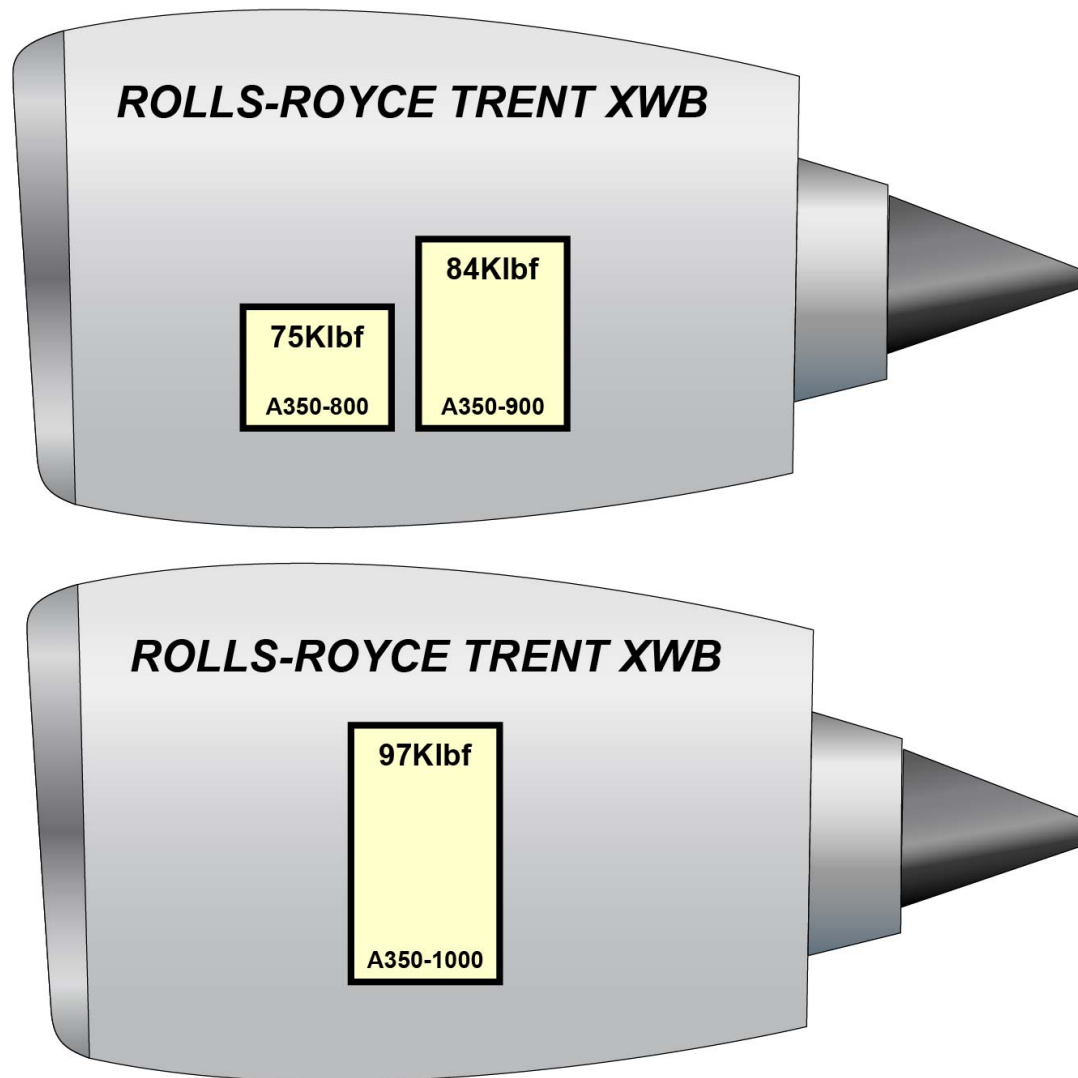
There are 2 major avionics compartments:

-The Main Avionics Compartment where most of the aircraft computers are racked on three main avionics shelves (1000VU, 1100VU and 1200VU) and two main electrical shelves (Electrical Power Distribution Center EPDC1 and EPDC 2).

It is located under the cockpit, from which a direct access is possible as well as from the outside or from the forward cargo compartment.

-The Aft Avionics Compartment is limited to two shelves, the In-flight Entertainment Center (IFEC) and the Connectivity Rack.


They are installed in the aft cabin underfloor compartment and are accessible from the bulk cargo compartment via a maintenance door.




AIRCRAFT GENERAL LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM01P1LEVEL0101

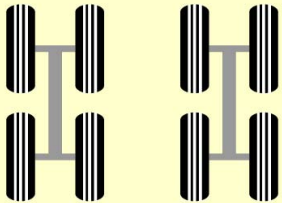
NOSE GEAR WHEELS

MODEL	CONFIGURATION
A350-800 A350-900	

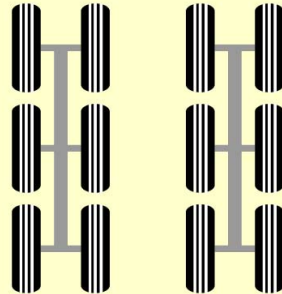
NOSE GEAR WHEELS

MODEL	CONFIGURATION
A350-1000	

MAIN GEAR WHEELS

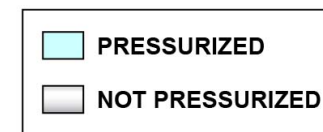
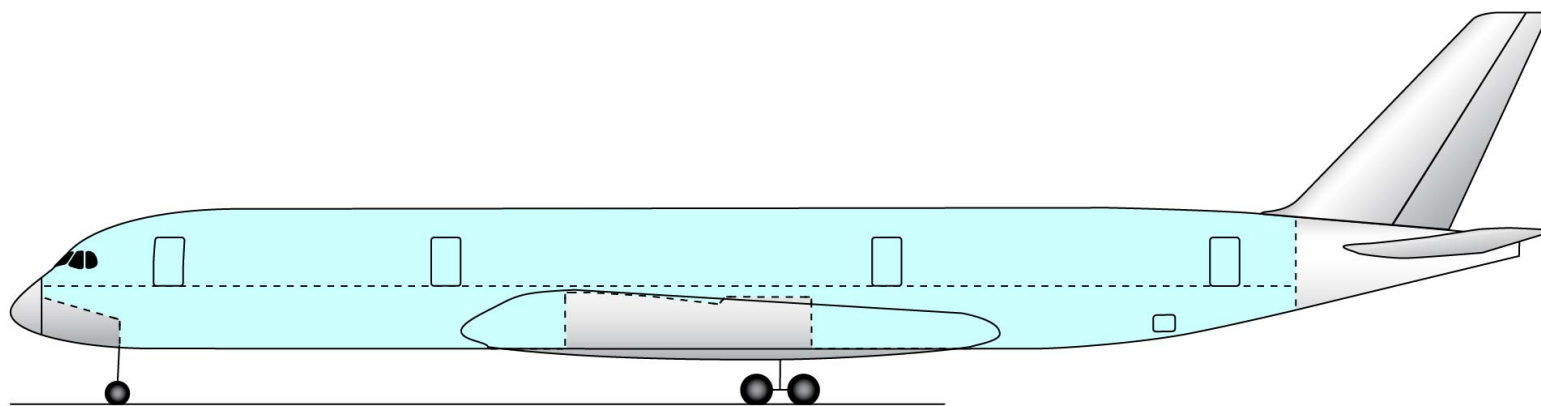
MODEL	CONFIGURATION
A350-800 A350-900	

MAIN GEAR WHEELS

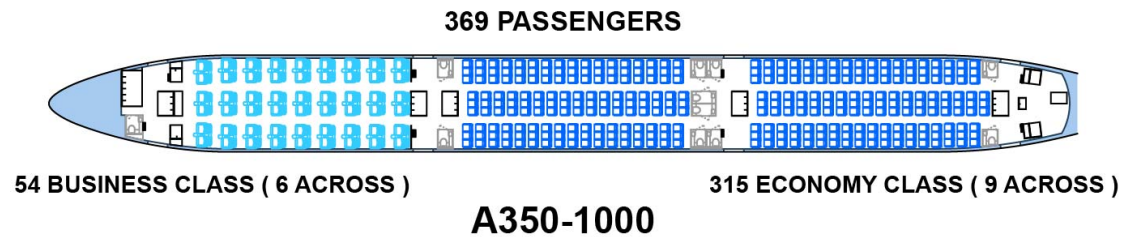
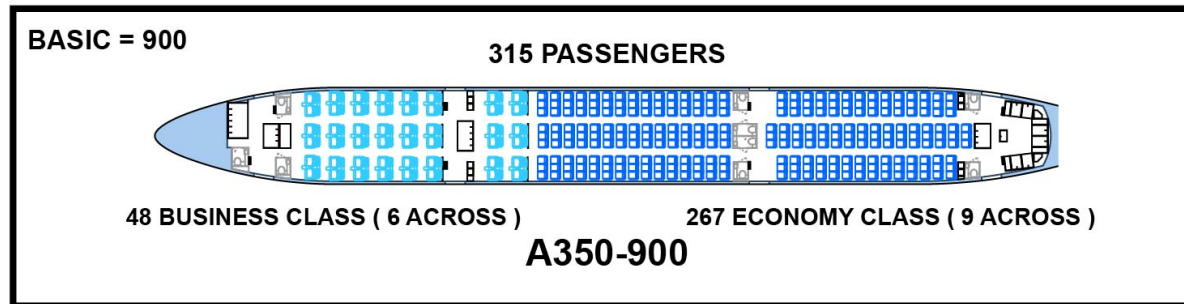
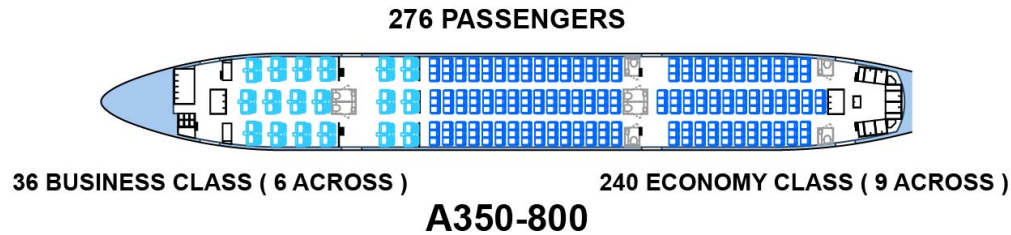
MODEL	CONFIGURATION
A350-1000	

V1813401 - V01T0M0 - VM01P1LEVEL0101

AIRCRAFT GENERAL LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION

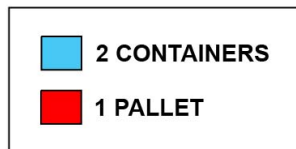
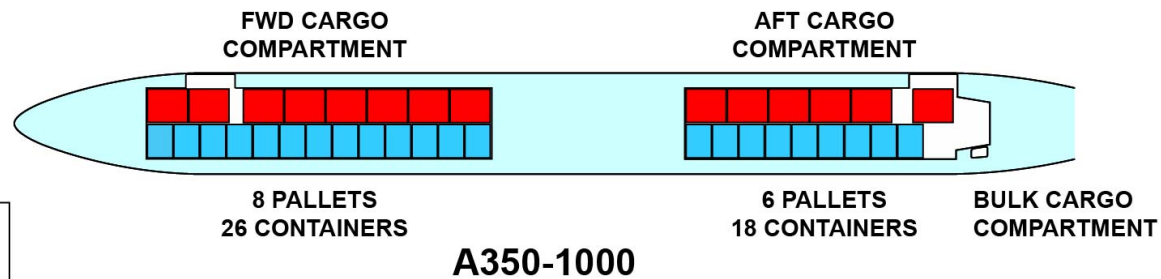
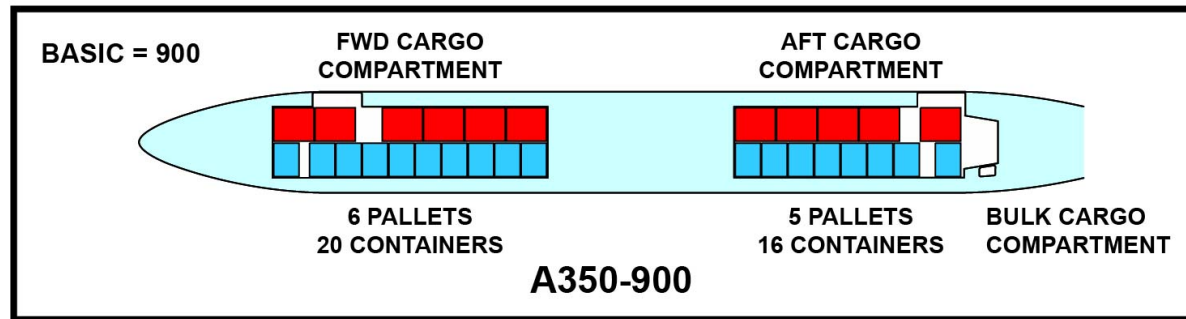
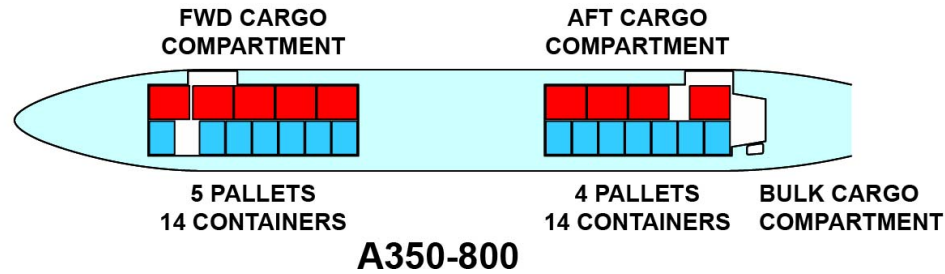
**AIRCRAFT GENERAL LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION**

V1813401 - V01T0M0 - VM01P1LEVEL0101



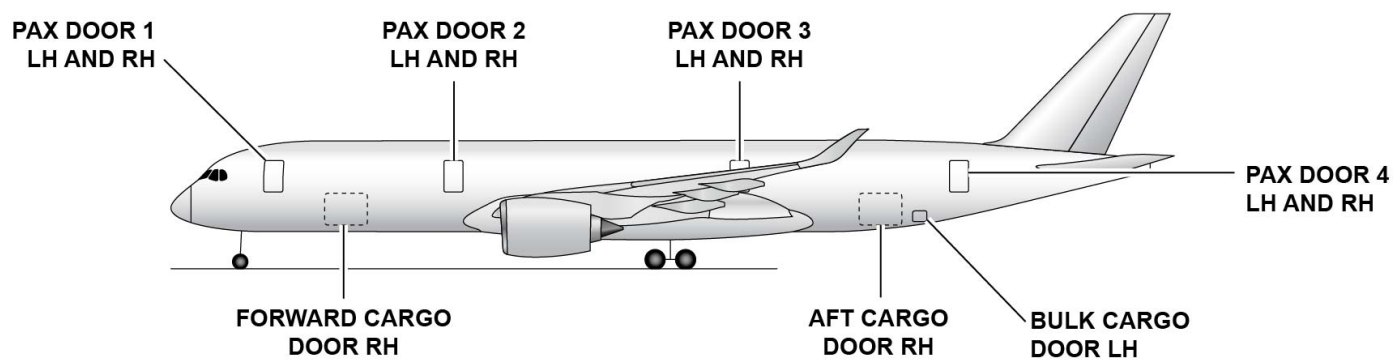
AIRCRAFT GENERAL LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM01P1LEVEL0101



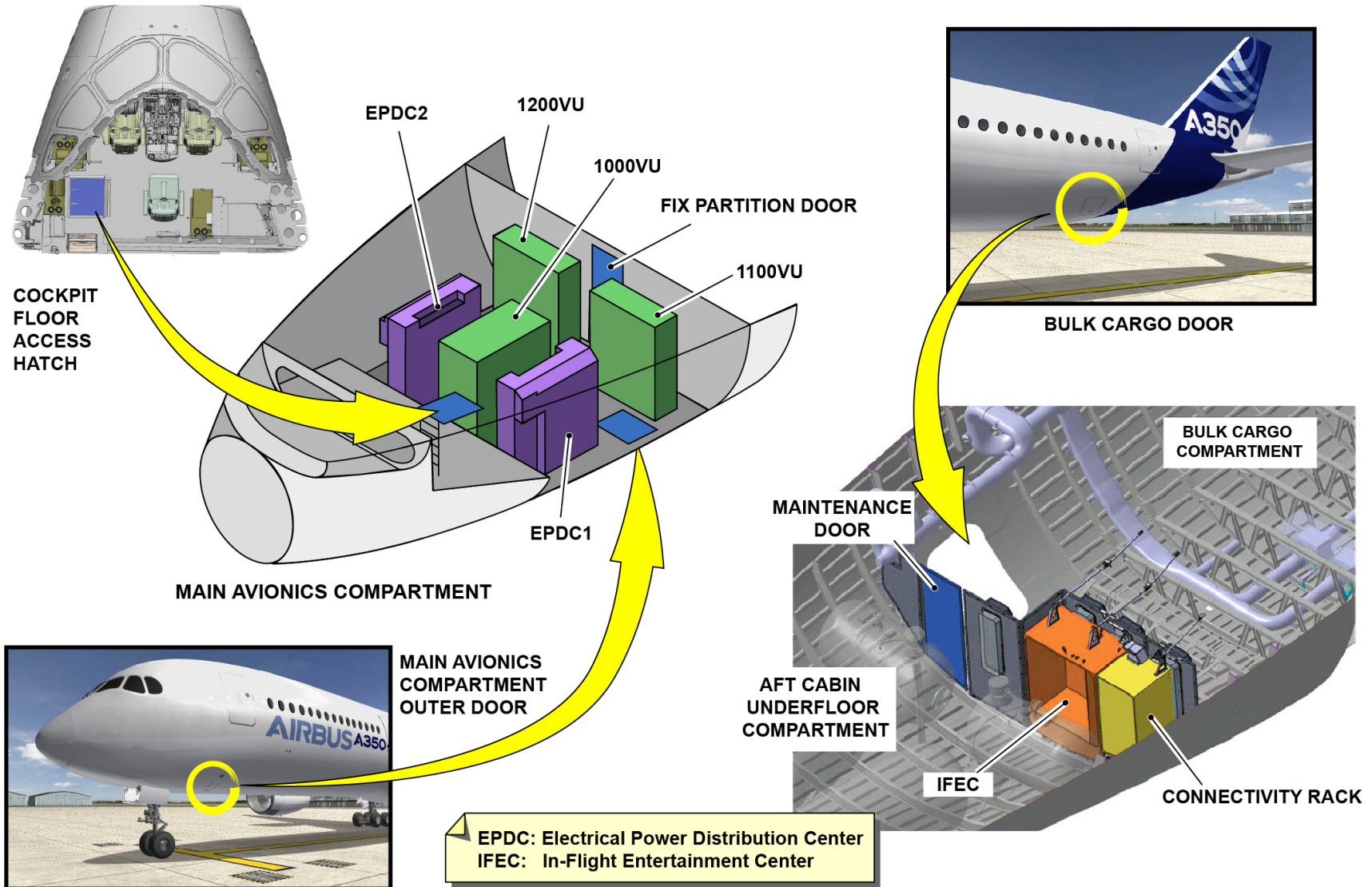
AIRCRAFT GENERAL LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM01P1LEVEL0101



A350 DOORS LOCATIONS

AIRCRAFT GENERAL LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION



AIRCRAFT GENERAL LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM01P1LEVEL0101

AIRCRAFT GENERAL INTRODUCTION (1)

Aircraft Weights - Presentation

Function/Description

Aircraft weights

Each aircraft standard has different maximum weights related to its operating configuration and environment.

NOTE: Weights are given in kilograms and in pounds.

The A350-900 maximum weights are:

- The Maximum Taxi Weight (MTW): 268900kg
- The Maximum Take-off Weight (MTOW): 268000kg
- The Maximum Landing Weight (MLW): 205000kg
- The Maximum Zero Fuel Weight (MZFW): 192000kg.

The A350-800 maximum weights are:

- The Maximum Taxi Weight (MTW): 248900kg
- The Maximum Take-off Weight (MTOW): 248000kg
- The Maximum Landing Weight (MLW): 190000kg
- The Maximum Zero Fuel Weight (MZFW): 178000kg.

The A350-1000 maximum weights are:

- The Maximum Taxi Weight (MTW): 308900kg
- The Maximum Take-off Weight (MTOW): 308000kg
- The Maximum Landing Weight (MLW): 233000kg
- The Maximum Zero Fuel Weight (MZFW): 220000kg.

Aircraft fuel quantities

NOTE: The aircraft fuel quantities are given in liters and in US gallons.

The A350-900 fuel quantity is 138000l .

The A350-800 fuel quantity is 138000l .

The A350-1000 fuel quantity is 156000l .

MODEL	MAXIMUM TAXI WEIGHT (MTW)	MAXIMUM TAKE-OFF WEIGHT (MTOW)	MAXIMUM LANDING WEIGHT (MLW)	MAXIMUM ZERO FUEL WEIGHT (MZFW)
A350-800	248 900 kg	248 000 kg	190 000 kg	178 000 kg
A350-900	268 900 kg	268 000 kg	205 000 kg	192 000 kg
A350-1000	308 900 kg	308 000 kg	233 000 kg	220 000 kg

MODEL	FUEL QUANTITIES
A350-800	138 000 l (36 460 US gal)
A350-900	138 000 l (36 460 US gal)
A350-1000	156 000 l (41 210 US gal)

AIRCRAFT WEIGHTS - PRESENTATION - FUNCTION/DESCRIPTION

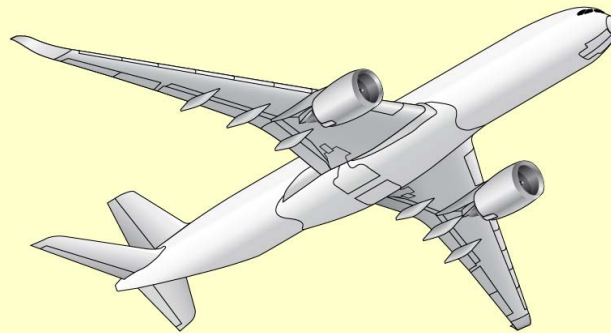
AIRCRAFT STATIONS, ZONING AND IDENTIFICATION INTRODUCTION (1)**Overview**

The general section about the aircraft includes:

- The aircraft stations
- The aircraft zones
- The Functional Item Number (FIN)
- The Radio Frequency Identification (RFID).

**AIRCRAFT
STATIONS**

**AIRCRAFT
ZONES**



A350 XWB STATIONS, ZONING AND IDENTIFICATION

**RADIO
FREQUENCY
IDENTIFICATION**

**FUNCTIONAL
ITEM
NUMBER**

OVERVIEW

AIRCRAFT STATIONS, ZONING AND IDENTIFICATION INTRODUCTION (1)

Aircraft Stations - Presentation

Function/Description

The fuselage structure has frames.

There is one station for each frame.

To measure the fuselage station, the reference used is the X datum line. The station 0 (X=0) is the reference line for all structural measurements.

This reference is on the X axis, installed 5340mm forward of the radome.

The fuselage station number shows the distance of a cross section from the X=0 in millimeters.

The wing structure has ribs.

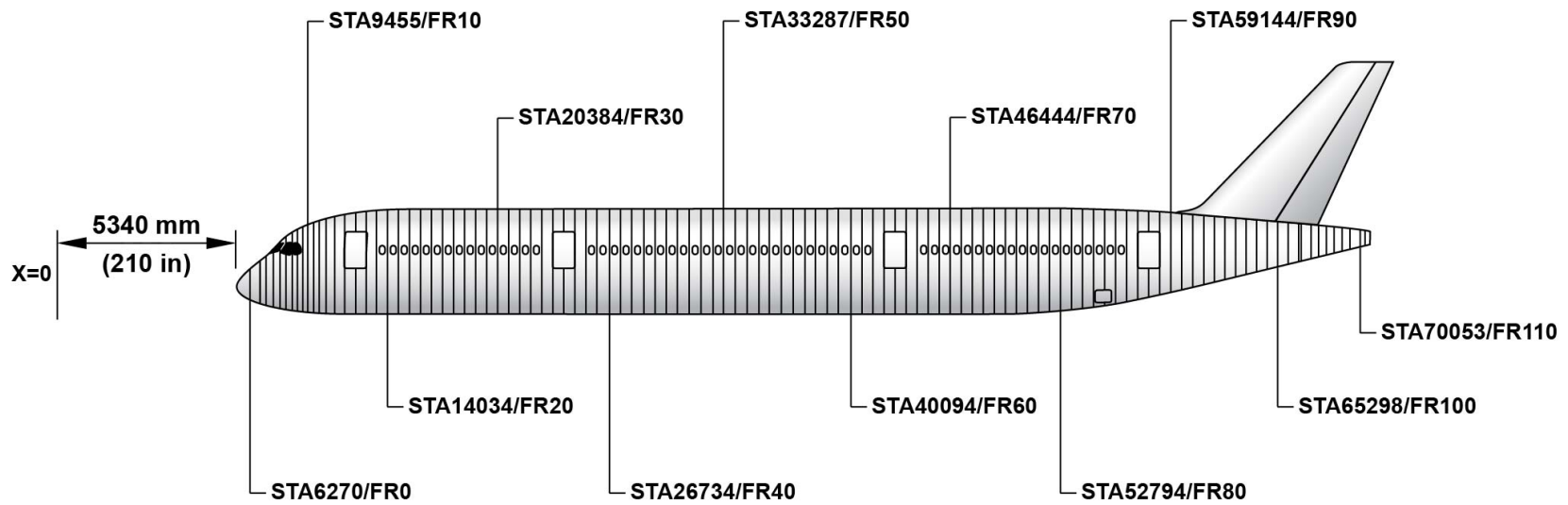
There is one station for each rib.

All stations are parallel to the X axis of the aircraft.

The station 0 is for RIB1.

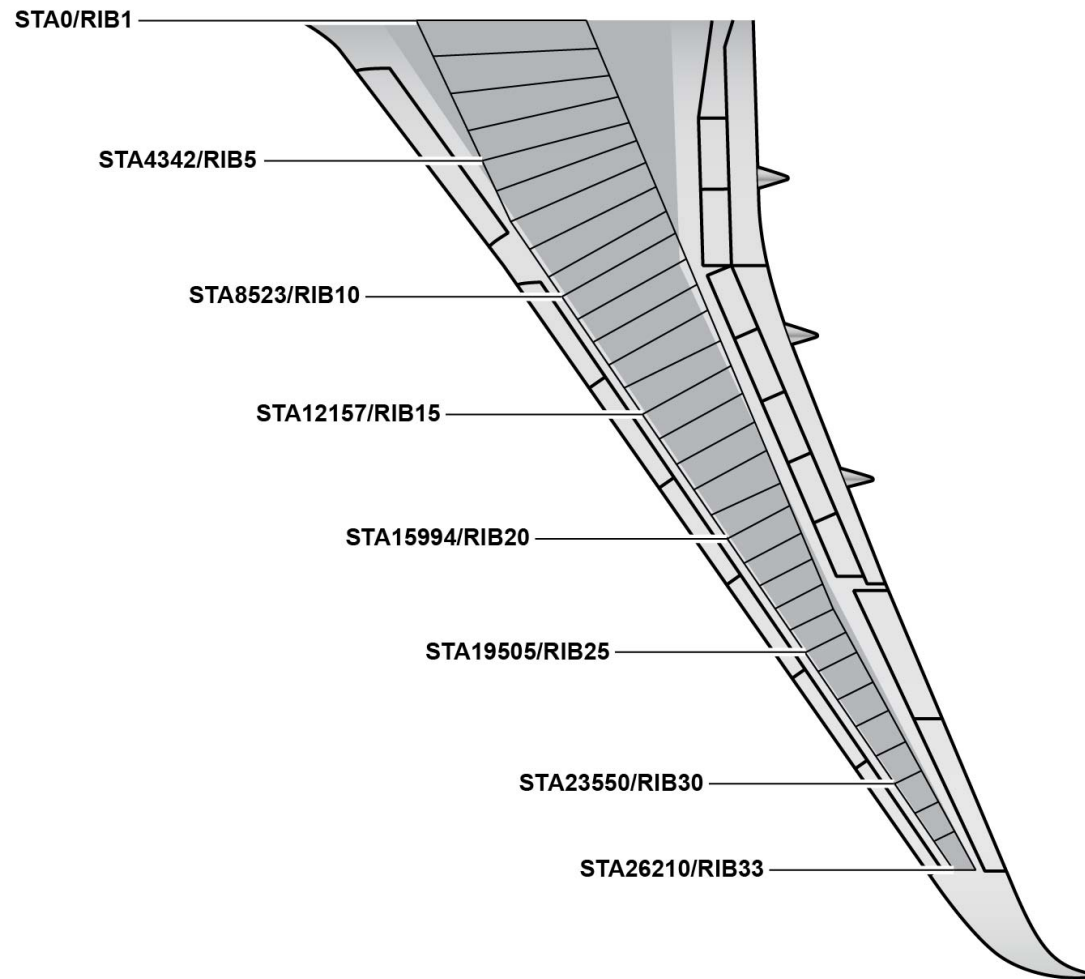
All measurements are:

- At 90 degrees to RIB1
- Measured between RIB1 and the intersection of each rib datum with the front spar datum.



AIRCRAFT STATIONS - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM02P1ILEVEL0101



AIRCRAFT STATIONS - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM02P1LEVEL0101

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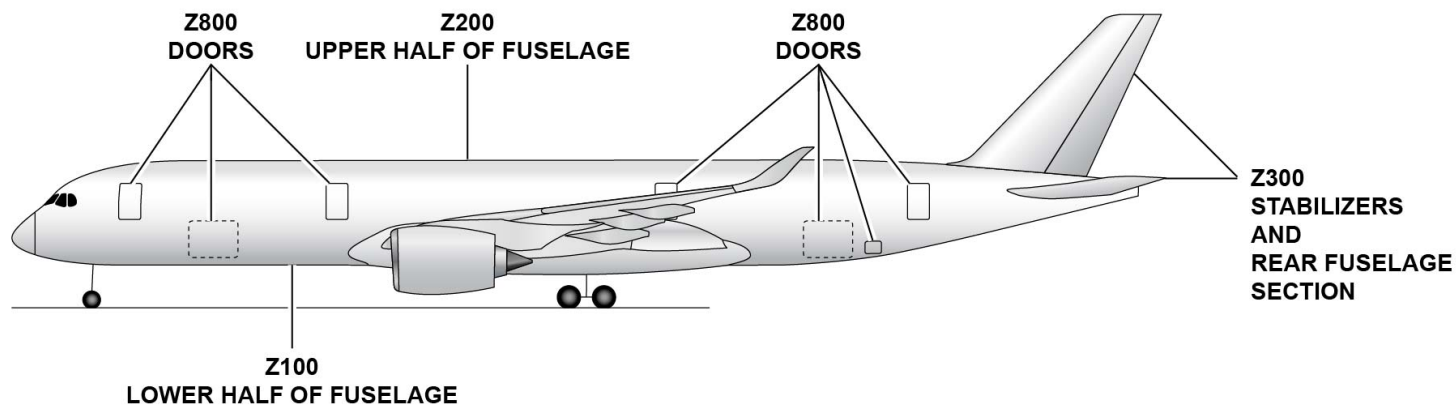
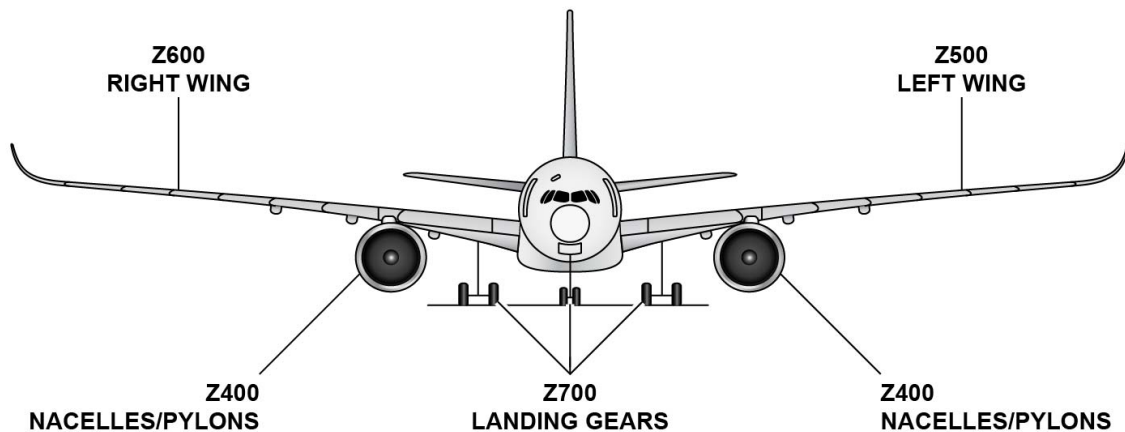
AIRCRAFT STATIONS, ZONING AND IDENTIFICATION INTRODUCTION (1)**Aircraft Zones - Presentation****Function/Description**

The aircraft is divided into zones to help maintenance and component location.

Each aircraft area is identified by a major zone ("hundreds" zone).

The aircraft is divided into 8 major zones:

- 100 Lower half of fuselage
- 200 Upper half of fuselage
- 300 Stabilizers and rear fuselage section
- 400 Nacelles/Pylons
- 500 Left wing
- 600 Right wing
- 700 Landing gears
- 800 Doors.



AIRCRAFT ZONES - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM02P1LEVEL0101

AIRCRAFT STATIONS, ZONING AND IDENTIFICATION INTRODUCTION (1)

Functional Item Number (FIN) - Presentation

Function/Description

Each item of equipment on the aircraft is identified by a different Functional Item Number (FIN).

The basic element of the FIN is a two-letter code that shows which system/circuit the equipment is a part of (for example, 4GG4 in which GG is the code for a mechanical system/circuit).

For electrical equipment, the FIN is almost the same as a mechanical FIN, but the second letter of the system/circuit identifier becomes a Q (for example, GQ).

A prefix and a suffix are added to this code to give the identification of each item of equipment.

The prefixes give the sequence number (4 digits).

The suffixes identify components which have the same function in the same circuit.

As a general rule, the suffixes identify the location side of the component. An even-number suffix identifies a component on the right hand side and an odd-number suffix identifies a component on the left hand side.

NOTE: Some FIN numbers (access panels, access doors...) obey different rules. They are identified by a five-character code (3 digits and 2 letters).

Example: 534AB

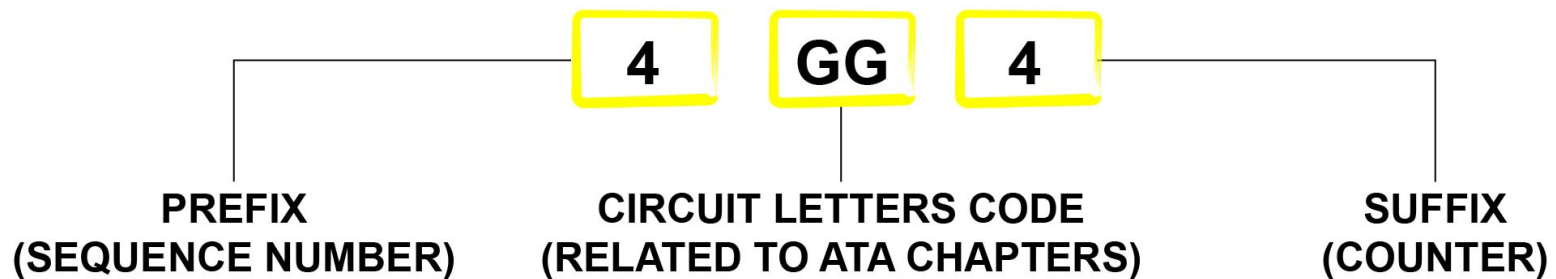
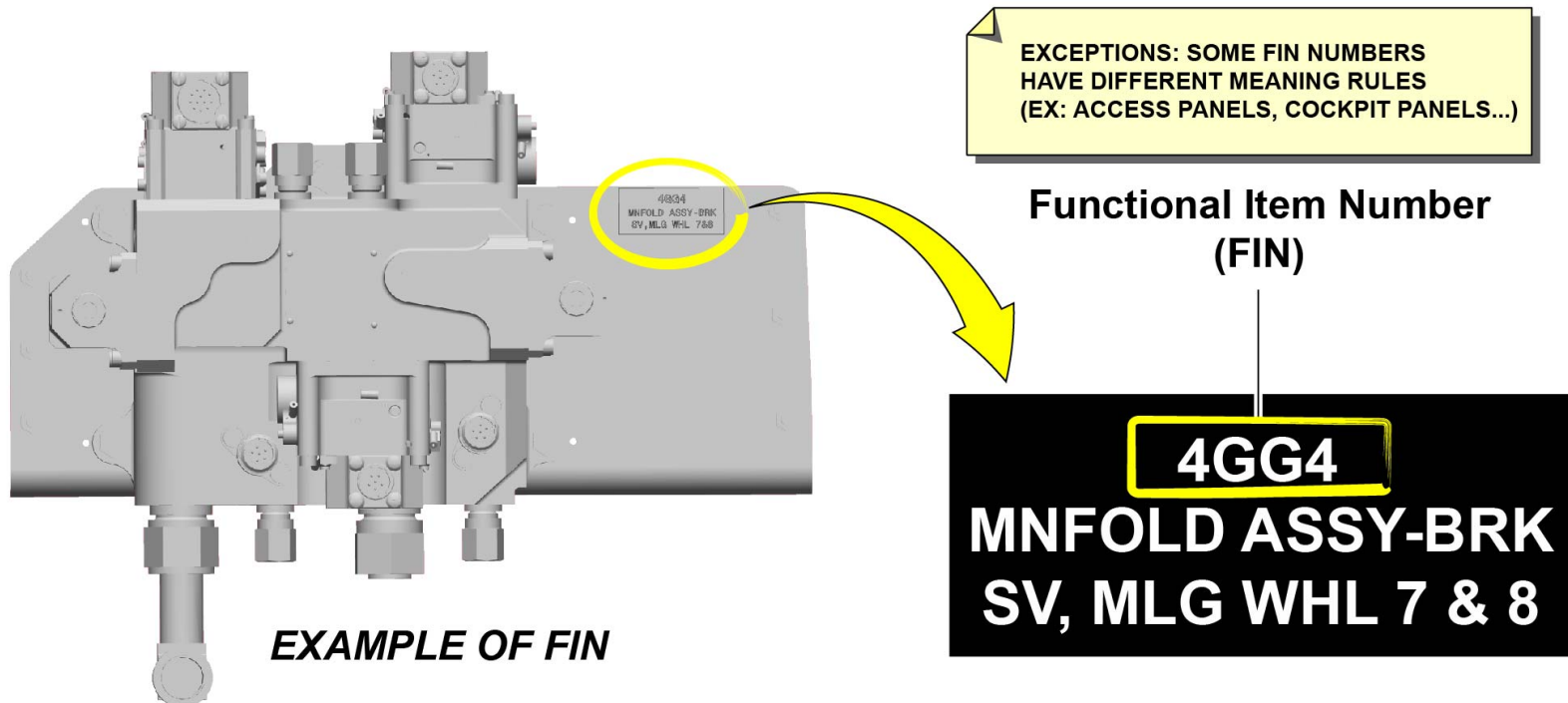
The first digit identifies the major zone (e.g. 500).

The second digit identifies the major sub-zone (e.g. 530).

The third digit identifies the unit zone (e.g. 534).

The first letter gives the sequence identification and starts with the letter A. On the wing, this digit is increased from inboard to outboard.

The second letter gives the location in the zone (e.g. B = Bottom).



FUNCTIONAL ITEM NUMBER (FIN) - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT STATIONS, ZONING AND IDENTIFICATION INTRODUCTION (1)**Radio Frequency Identification (RFID) - Presentation****Function/Description**

All the LRUs have a tag in which there is a micro-chip to identify them (designation, P/N, etc ...).

Those tags are based on the Radio Frequency Identification (RFID) technology.

The data contained in this micro-chip are read (or written) with a reader (RFID reader/writer).

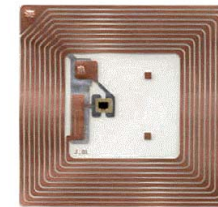
Radio Frequency Identification (RFID)

- MICRO-CHIP IN A TAG TO STORE, TRANSMIT AND RECEIVE DATA (DESIGNATION, P/N, ETC...)
- DATA ON TAG IS READ (OR WRITTEN) AUTOMATICALLY WHEN TAG NEAR READER
- MULTIPLE TAGS READOUT AT SAME TIME
- DOES NOT INCLUDE COMPUTER SOFTWARE CONFIGURATION

RFID



**TAGS (TRANSPONDER)
INSTALLED ON LRUs**



AUTOMATIC DATA EXCHANGE



LRU: Line Replaceable Unit

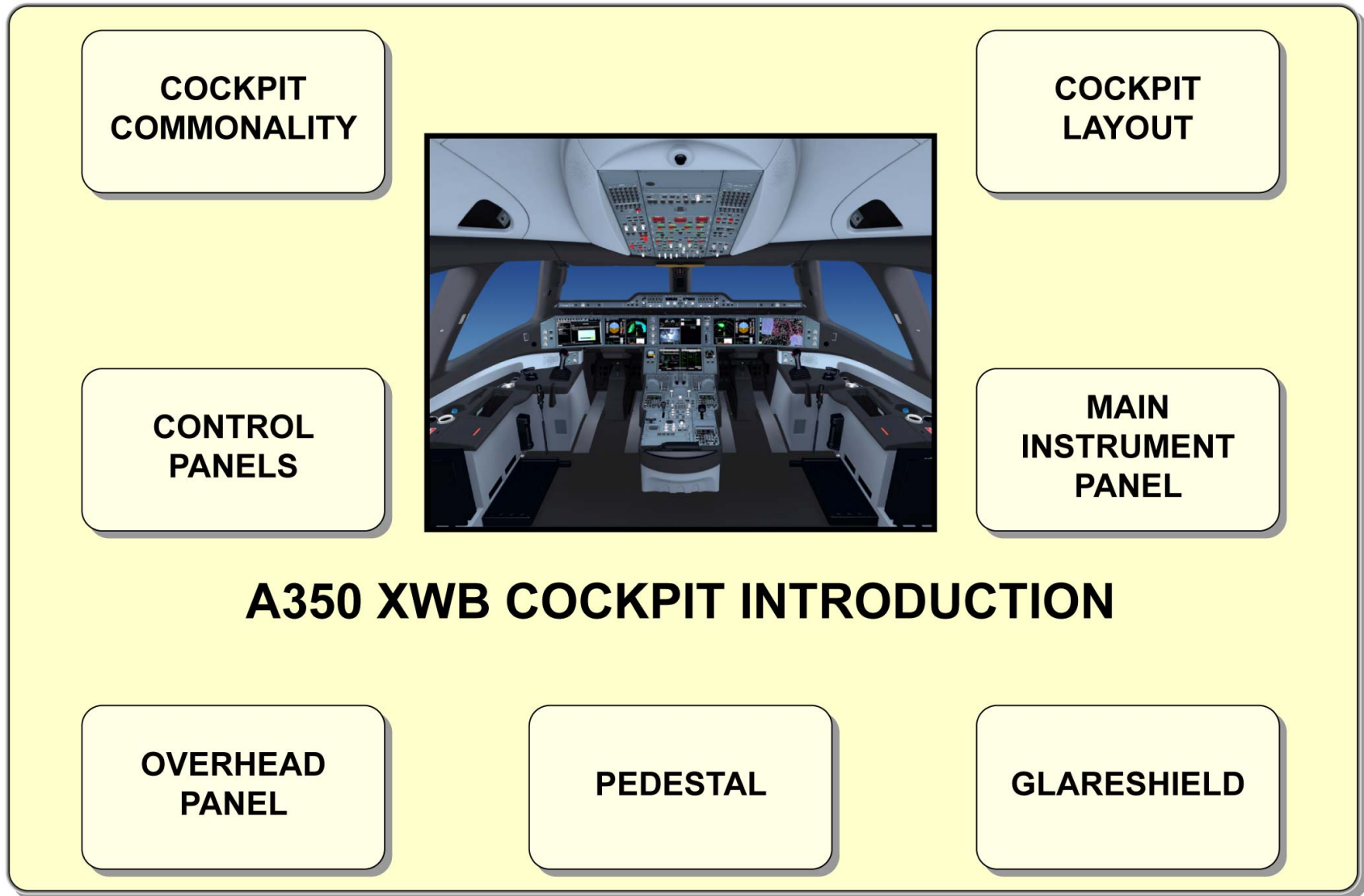
RADIO FREQUENCY IDENTIFICATION (RFID) - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT COCKPIT INTRODUCTION (1)

Overview

This topic gives data about the A350 cockpit and includes:

- The cockpit commonality
- The cockpit layout
- The main instrument panel
- The glareshield
- The pedestal
- The overhead panel
- The control panels.



A350 XWB COCKPIT INTRODUCTION

OVERVIEW

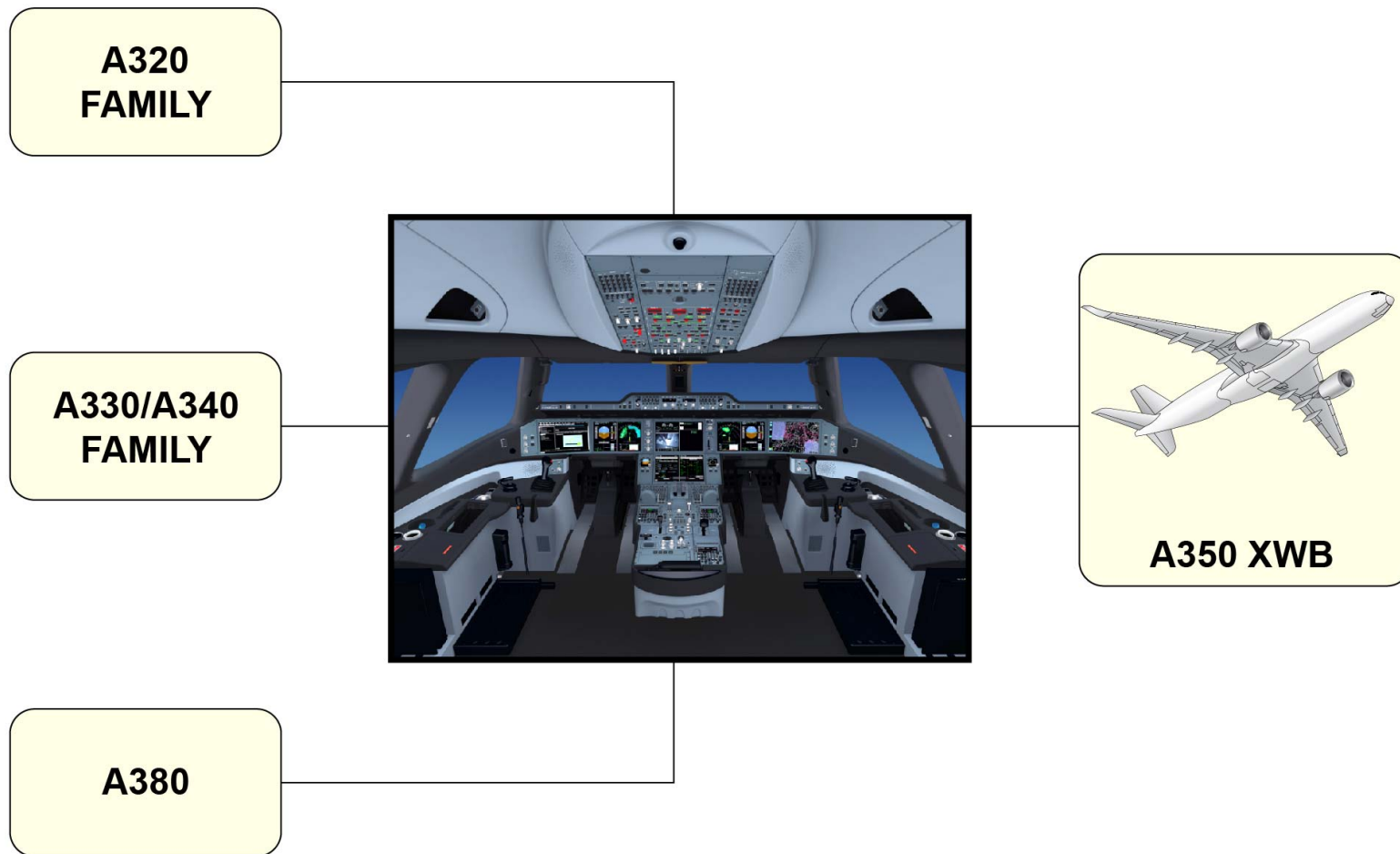
V1813401 - V01T0M0 - VM03P1LEVEL0101

AIRCRAFT COCKPIT INTRODUCTION (1)

Cockpit Commonality - Presentation

Function/Description

The A350 general cockpit layout is the same as for the 320 family, A330/A340 family and A380.

**COCKPIT COMMONALITY - PRESENTATION - FUNCTION/DESCRIPTION**

V1813401 - V01T0M0 - VM03P1LEVEL0101

AIRCRAFT COCKPIT INTRODUCTION (1)

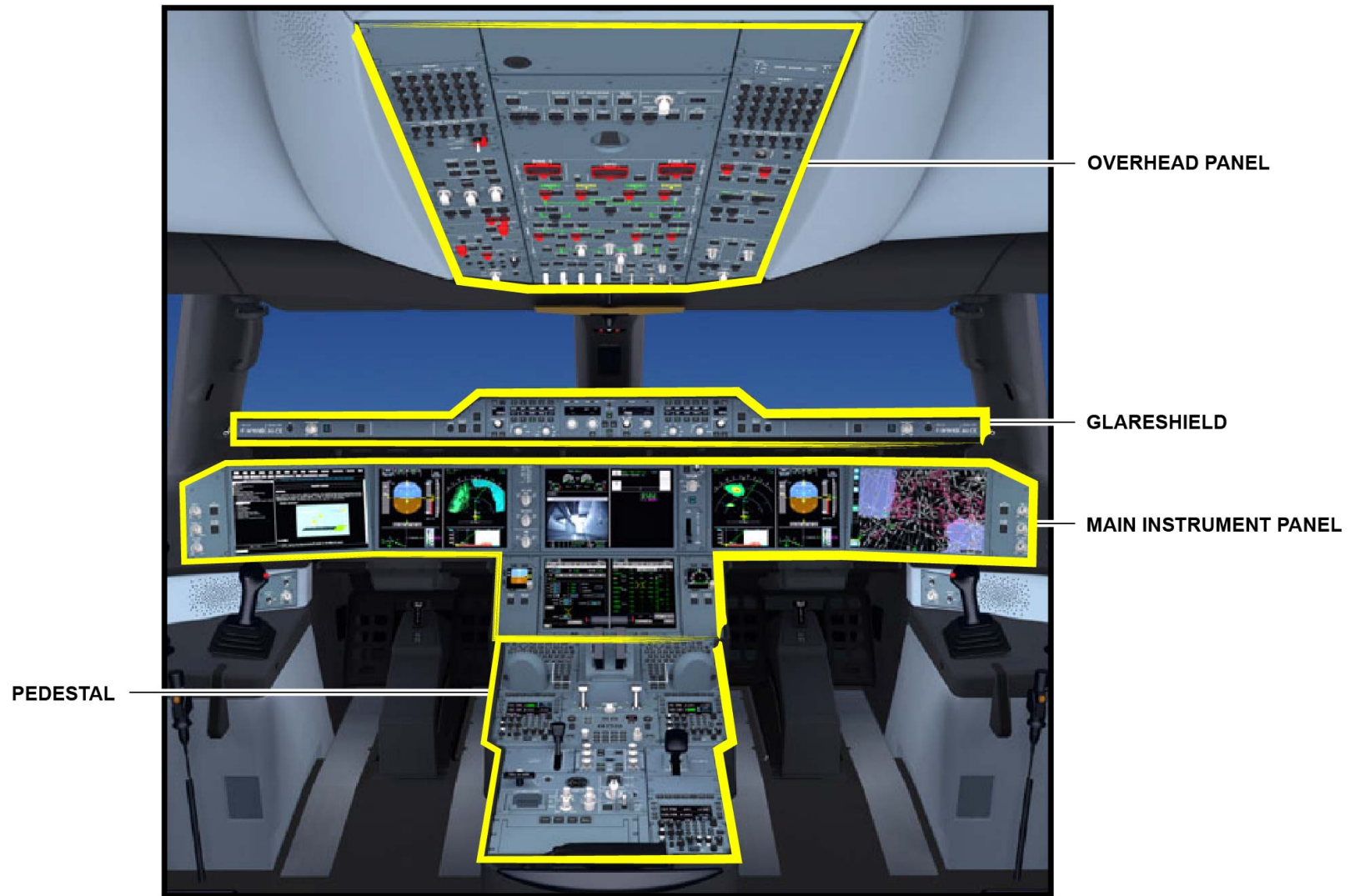
Cockpit Layout - Presentation

Function/Description

This topic shows the different panels in the cockpit:

- The overhead panel
- The glareshield
- The main instrument panel
- The pedestal.

All the A/C system controls are installed for easy access by the two flight crew members.



COCKPIT LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM03P1LEVEL0101

AIRCRAFT COCKPIT INTRODUCTION (1)

Main Instrument Panel - Presentation

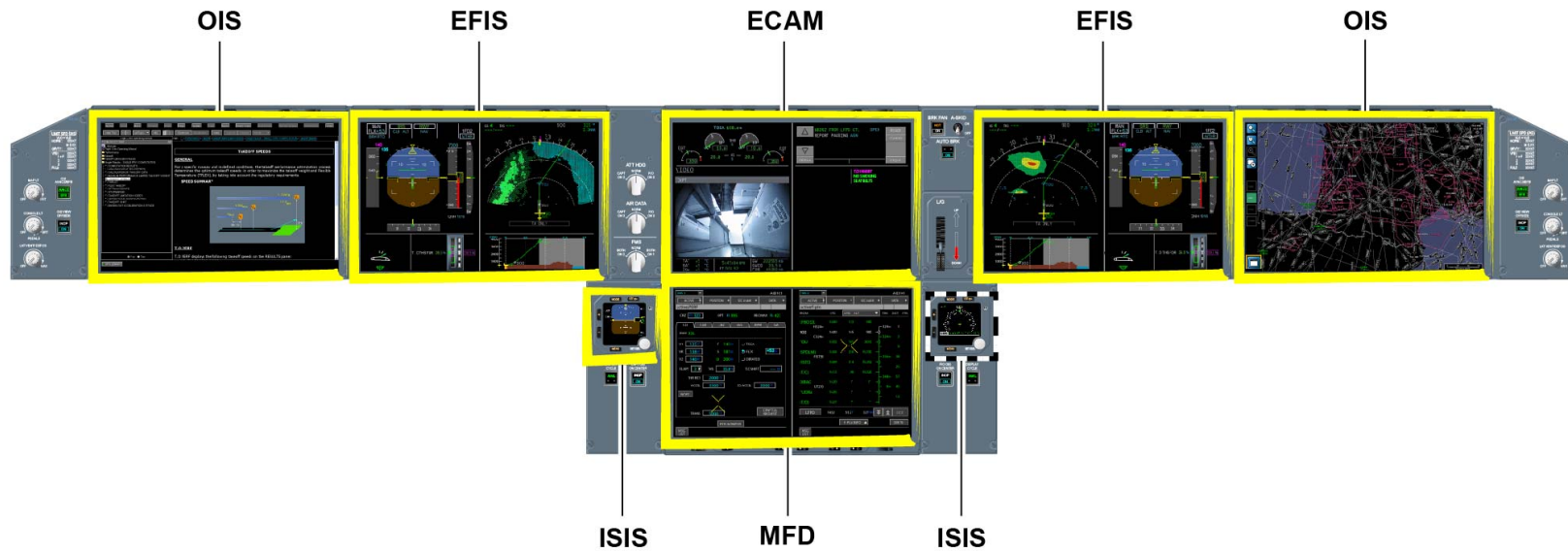
Function/Description

The main instrument panel includes six interchangeable Liquid Crystal Display Units (LCDUs). These are all the same and include:

- Two Electronic Flight Instrument Systems (EFIS)
- Electronic Centralized Aircraft Monitoring (ECAM)
- Two Multifunction Displays (MFDs)
- Two Onboard Information Systems (OIS) related to position and reconfigurations.

The Integrated Standby Instrument System (ISIS) is on the front panel.

NOTE: The ISIS on the RH side is optional.



ECAM: Electronic Centralized Aircraft Monitoring
EFIS: Electronic Flight Instrument System
ISIS: Integrated Standby Instrument System
MFD: MultiFunction Display System
OIS: Onboard Information System

MAIN INSTRUMENT PANEL - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT COCKPIT INTRODUCTION (1)

Glareshield - Presentation

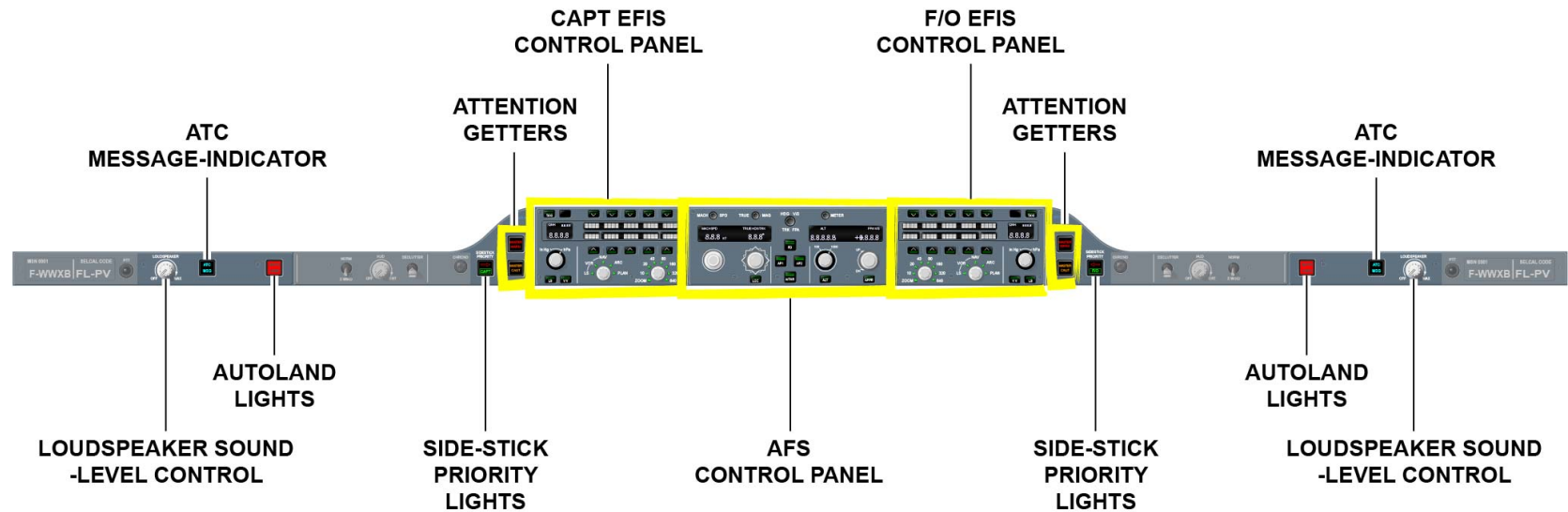
Function/Description

The glareshield is immediately below the windshield. It includes an Automatic Flight System (AFS) control panel and two Electronic Flight Instrument System (EFIS) control panels.

The two sides of the glareshield have many indication devices (attention getters):

- The master warning and caution lights
- The side-stick priority controls
- The autoland lights.

At each end of the glareshield, a loudspeaker sound-level control-knob and an Air Traffic Control (ATC) message-indicator are installed.



AFS: Automatic Flight System
ATC: Air Traffic Control
EFIS: Electronic Flight Instrument System

GLARESHIELD - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM03P1LEVEL0101

AIRCRAFT COCKPIT INTRODUCTION (1)

Pedestal - Presentation

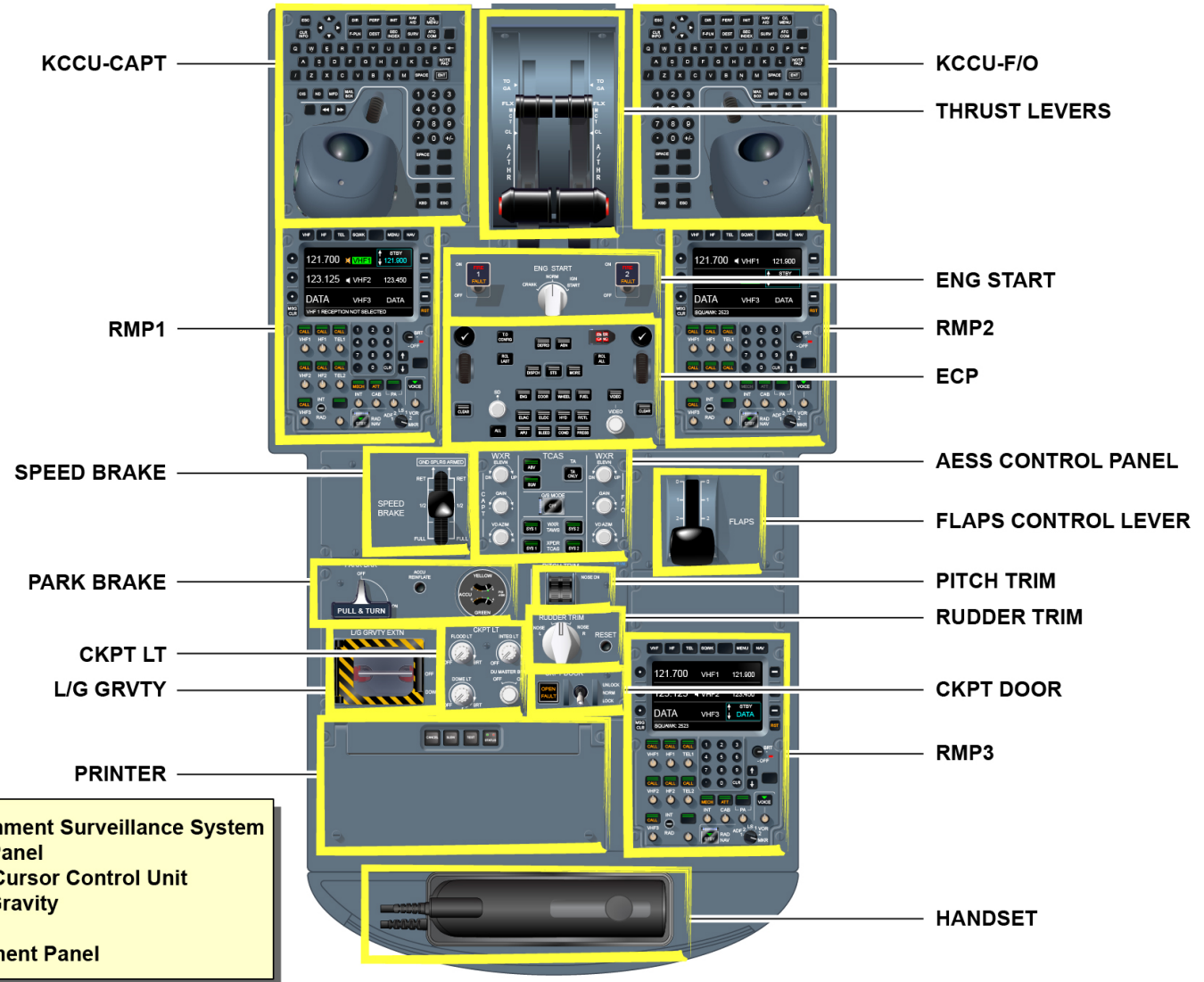
Function/Description

The primary controls on the pedestal are related to the engines and engine thrust, communications, navigation and A/C configuration.

The pedestal includes two Keyboard and Cursor Control Units (KCCUs) for display control and interactivity.

NOTE: There are no more hand wheels. These are replaced by switches to manually set the position of the:

- Keyboard and Cursor Control Units (KCCU)
- New generation of Radio Management Panel (RMP)
- Surveillance control panel
- Trimmable Horizontal Stabilizer (THS).



AESS: Aircraft Environment Surveillance System
ECP: Ecam Control Panel
KCCU: Keyboard and Cursor Control Unit
L/G GRVTY: Landing Gear Gravity
LT: Light
RMP: Radio Management Panel

PEDESTAL - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM03P1LEVEL0101

AIRCRAFT COCKPIT INTRODUCTION (1)

Overhead Panel - Presentation

Function/Description

Most of the A/C system controls are on the overhead panel.

This is a standard layout, with a new generation of Integrated Control Panel (ICP).

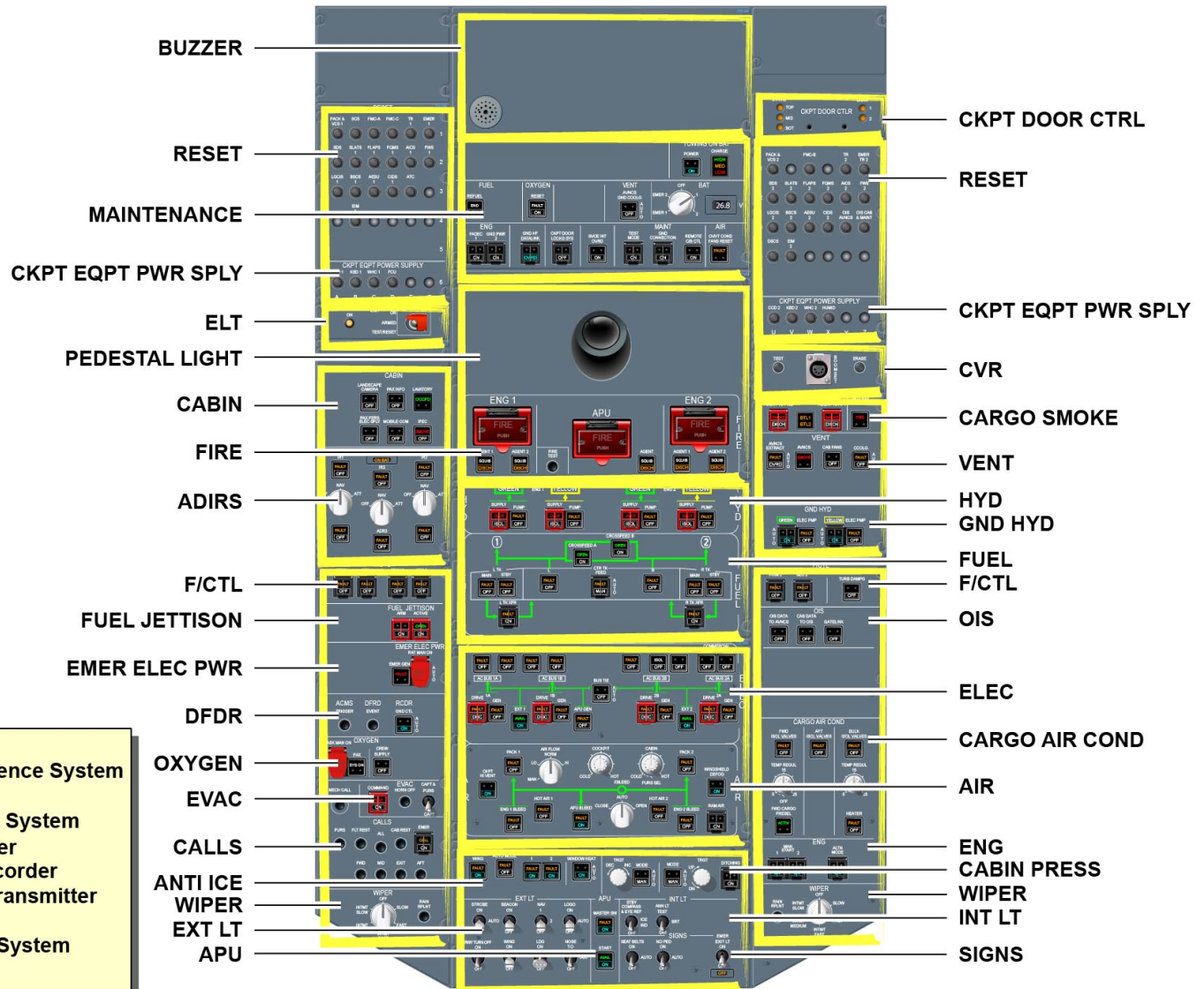
For each system, the controls are on one control panel. These panels are installed to make normal and abnormal procedures easy and intuitive and thus keep crew errors to a minimum.

The main system controls are on the center of the overhead panel and the other controls are on the sides.

The systems most frequently used by the flight crew members are installed on the lower section.

There are no more circuit breakers in the cockpit, but system resets can be done from reset panels/switches.

The upper area is for maintenance. Thus, on-ground maintenance operations can be done on some systems.



ADIRS: Air Data/Inertial Reference System
 APU: Auxiliary Power Unit
 CDLS: Cockpit Door Locking System
 CVR: Cockpit Voice Recorder
 DFDR: Digital Flight Data Recorder
 ELT: Emergency Locator Transmitter
 F/CTL: Flight Controls
 OIS: Onboard Information System

OVERHEAD PANEL - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM03P1LEVEL0101

AIRCRAFT COCKPIT INTRODUCTION (1)

Control Panels - Presentation

Function/Description

As for the A380, the A350 includes a new generation of cockpit control panels, Integrated Control Panels (ICPs) referred to as "VM".

The ICPs supply the crew with an A/C systems interface which mixes digital and non-digital technologies.

This concept decreases weight, because it uses less wiring and gives better maintainability because of better reliability.

NOTE: The standard VUs are kept. They use mature non-digital technology for some critical A/C systems.

VM
(NEW TECHNOLOGY)

BENEFITS

- LESS WIRING
- WEIGHT SAVING
- RELIABILITY IMPROVED
- MAINTAINABILITY IMPROVED

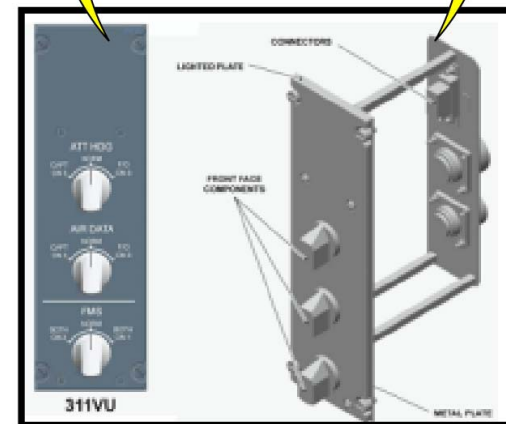


225VM

- INTERFACE CREW WITH A/C SYSTEMS
- DIGITAL AND NON-DIGITAL MIXED TECHNOLOGY

VU
(CONVENTIONAL TECHNOLOGY)

MATURE TECHNOLOGY



311VU

- INTERFACE CREW WITH A/C SYSTEMS
- NON-DIGITAL TECHNOLOGY

CONTROL PANELS - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM03P1LEVEL0101

AIRCRAFT DOCUMENTATION INTRODUCTION (1)

Overview

The aircraft documentation introduction includes:

- AirN@v products
- AirN@v accesses
- The new concept for documentation
- Maintenance and operational documentation hyperlinks
- The access philosophy for business categories
- Scheduled/unscheduled maintenance documentation.

**AIRNAV
PRODUCTS**

**AIRNAV
ACCESSES**

**NEW CONCEPT
FOR
DOCUMENTATION**

A350 XWB DOCUMENTATION INTRODUCTION

**SCHEDULED/
UNSCHEDULED
MAINTENANCE
DOCUMENTATION**

**ACCESS
PHILOSOPHY
FOR
BUSINESS
CATEGORIES**

**MAINTENANCE
AND
OPERATIONAL
DOCUMENTATION
HYPERLINKS**

OVERVIEW

AIRCRAFT DOCUMENTATION INTRODUCTION (1)

AirN@v Products - Presentation

Function/Description

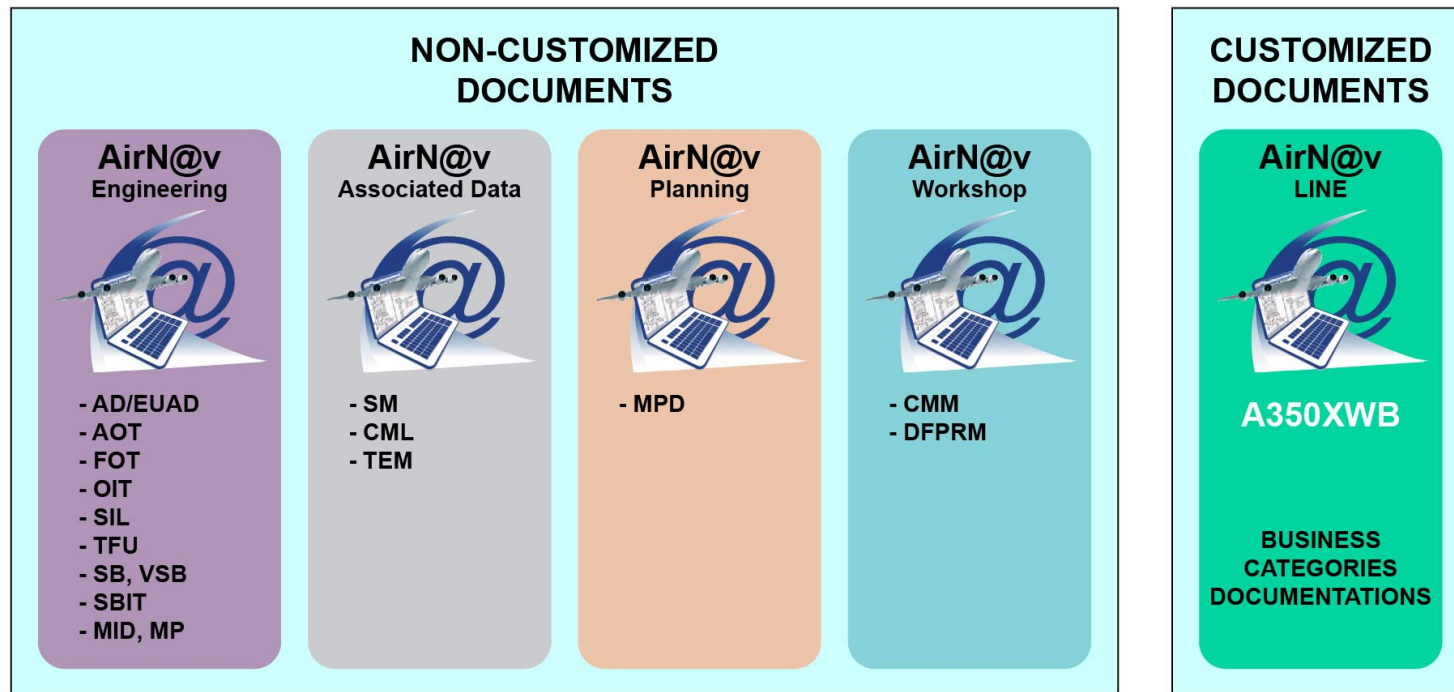
AirN@v has five applications, one customized and four non-customized.

The customized application is AirN@v LINE, which contains the new business categories for the documentation.

NOTE: Applicability is given for Manufacturer Serial Numbers (MSN), not for Fleet Serial Numbers (FSN).

The non-customized applications are:

- AirN@v engineering, which includes the:
 - Airworthiness Directive (AD)
 - European Union Airworthiness Directive (EUAD)
 - All Operators Telex (AOT)
 - Flight Operations Telex (FOT)
 - Operator Information Telex (OIT)
 - Service Information Letter (SIL)
 - Technical Follow-up (TFU)
 - Service Bulletin (SB)
 - Vendor Service Bulletin (VSB)
 - Service Bulletin Information Telex (SBIT)
 - Modification Information Document (MID)
 - Modification Proposal (MP).
- AirN@v associated data, which includes the:
 - Standards Manual (SM)
 - Consumable Material List (CML)
 - Illustrated Tool and Equipment Manual (TEM).
- AirN@v planning, which includes the Maintenance Planning Document (MPD)
- AirN@v workshop, which includes the:
 - Component Maintenance Manual (CMM)
 - Duct and Fuel Pipe Repair Manual (DFPRM).



AD: Airworthiness Directive	MPD: Maintenance Planning Document
AOT: All Operators Telex	OIT: Operator Information Telex
CML: Consumable Material list	SB: Service Bulletin
CMM: Component Maintenance Manual	SBIT: Service Bulletin Information Telex
DFPRM: Duct and Fuel Pipe Repair Manual	SIL: Service Information Letter
EUAD: European Union AD	SM: Standards Manual
FOT: Flight Operations Telex	TEM: Illustrated Tool and Equipment Manual
MID: Modification Information Document	TFU: Technical Follow-up
MP: Modification Proposal	VSB: Vendor Service Bulletin

AIRN@V PRODUCTS - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT DOCUMENTATION INTRODUCTION (1)

AirN@v Accesses - Presentation

Function/Description

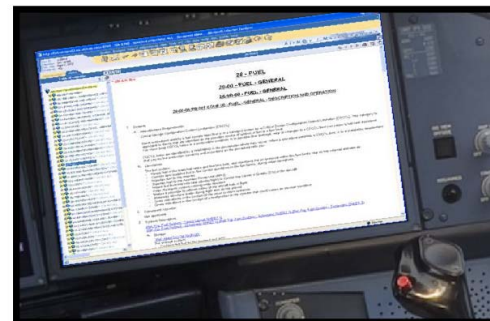
There is more than one procedure to get access to AirN@v data:

- On-line from AIRBUSWorld, which is updated by Airbus
- Access directly on the aircraft with on-board terminals
- Access from a standalone PC
- On-line access from an airline intranet.

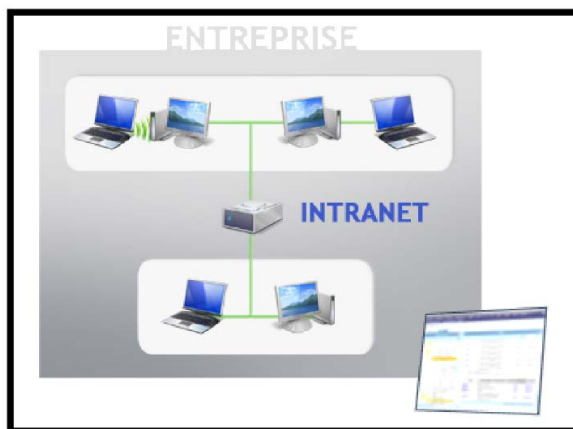
ON-LINE FROM AIRBUSWorld



ACCESS ON THE A/C



ON-LINE FROM AIRLINE INTRANET



ACCESS FROM STANDALONE PC



AIRN@V ACCESSES - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM04P1LEVEL0101

AIRCRAFT DOCUMENTATION INTRODUCTION (1)

New Concept for Documentation - Presentation

Function/Description

For the A350 XWB, the concept of manuals (ATA standard) used until this time is replaced. The documentation is put into business categories to agree with the S1000D standard.

Because of this, as an alternative to manuals (AMM, TSM,...) Airbus supplies data modules (System Description, Maintenance Procedure, Fault reporting,...) which are parts of the business categories directly related to the job.

All the manuals that were included in AirN@v Maintenance (ATA standard) become part of AirN@v LINE (S1000D standard) as business categories, not as manuals.

The MPD, that was part of AirN@v planning as a manual, is also replaced in the S1000D standard by the scheduled tasks business category.



MANUALS	BUSINESS CATEGORIES
AMM Aircraft Maintenance Manual	SYSTEMS DESCRIPTIONS MAINTENANCE PROCEDURES
TSM Trouble Shooting Manual	FAULT REPORTING FAULT ISOLATION
IPC Illustrated Parts Catalog	MAINTENANCE IPD Illustrated Parts Data
WDM Wiring Diagram manual	SCHEMATICS DIAGRAMS WIRING DIAGRAMS
ESPM Electrical Standard Practices Manual AMM ATA 20	STANDARD PRACTICES - ELECTRICAL STANDARD PRACTICES - MECHANICAL
SRM Structural Repair Manual	STRUCTURAL REPAIR IPD STRUCTURAL REPAIR INSTRUCTIONS
NTM Nondestructive Testing Manual	NDT Non-Destructive Test
MPD Maintenance Planning Document	SCHEDULED TASKS



AirN@v: ACCESS TO MANUALS REPLACED BY ACCESS TO BUSINESS CATEGORIES.

NEW CONCEPT FOR DOCUMENTATION - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM04P1LEVEL0101

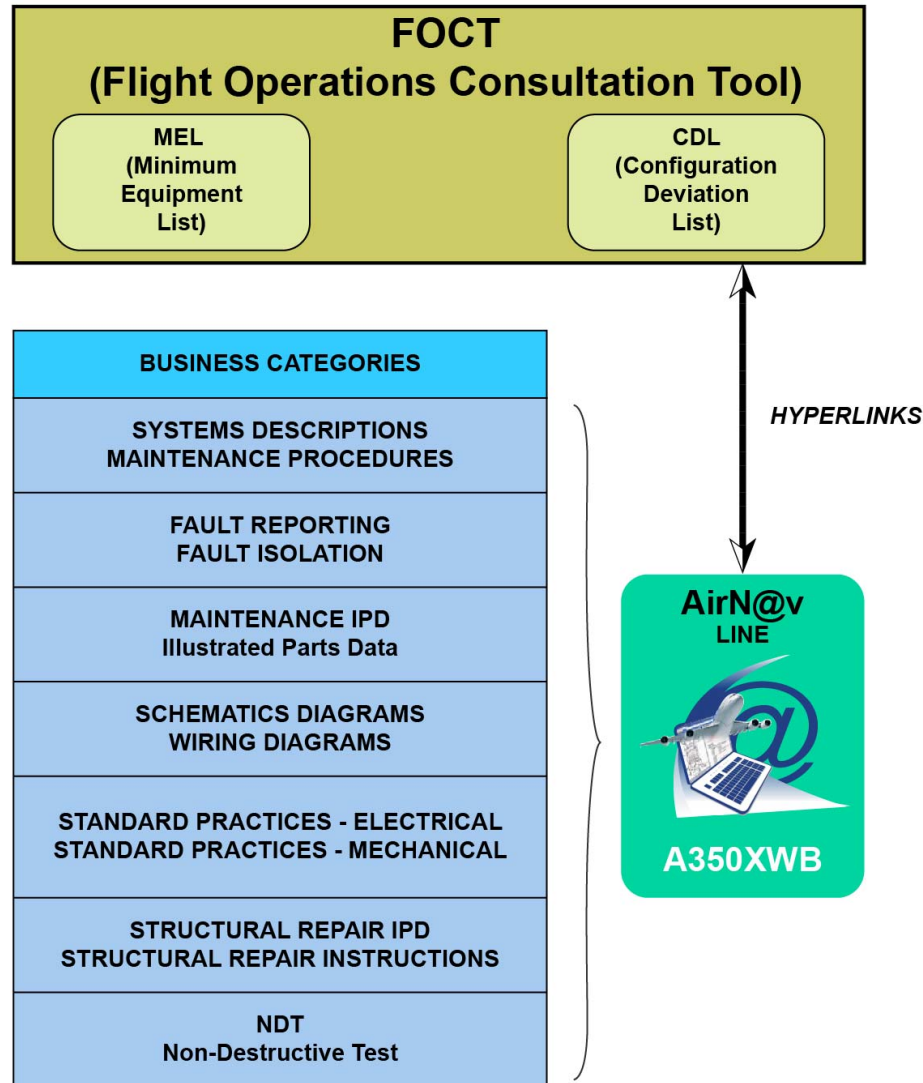
AIRCRAFT DOCUMENTATION INTRODUCTION (1)

Maintenance and Operational Documentation Hyperlinks - Presentation

Function/Description

The A350 XWB AirN@v LINE product includes hyperlinks between the maintenance documentation and the operational documentation of the Flight Operations Consultation Tool (FOCT) (for example, from the Minimum Equipment List (MEL) to the maintenance procedures for deactivation procedures).

This makes it easier to use the documents, the result of which is a time gain during maintenance operations in transit.



MAINTENANCE AND OPERATIONAL DOCUMENTATION HYPERLINKS - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT DOCUMENTATION INTRODUCTION (1)

Access Philosophy for Business Categories - Presentation

Function/Description

The S1000D standard uses a new concept: The business categories concept which replaces the manuals. The result of this change is a new AirN@v graphical interface and organization.

To get access to the different business categories:

- Get access to the given BAABI item and make your selection
- Make your selection of the necessary business category
- Look at the related data as for a standard manual.

BUSINESS CATEGORIES ACCESS

- 01 - CERTIFICATION DOCUMENTS
- 02 - MISCELLANEOUS ((EG : CERTIF, D))
- 03 - MISCELLANEOUS ((EG : AJC SPEC, GENERAL DESIGN, D))
- 05 - TIME LIMITS - MAINTENANCE CHECKS
- 06 - DIMENSIONS AND AREAS ✓
- 07 - LIFTING AND SHORING
- 08 - LEVELING AND WEIGHING ✓
- 09 - TOWING AND TAXING
- 10 - PARKING, MOORING, STORAGE AND RETURN TO SERVICE
- 11 - PLACARDS AND MARKINGS- ✓
- 12 - SERVICING
- 20 - STANDARD PRACTICES - AIRFRAME
- 21 - AIR CONDITIONING ✓
- 22 - AUTO FLIGHT ✓
- 23 - COMMUNICATIONS ✓
- 24 - ELECTRICAL POWER
- 25 - EQUIPMENT/FURNISHINGS
- 26 - FIRE PROTECTION
- 27 - FLIGHT CONTROLS ✓
- 28 - FUEL
- 29 - HYDRAULIC POWER ✓
 - 29 - 1 - HYDRAULIC POWER - MAIN ✓
 - 29 - 11 - GREEN MAIN HYDRAULIC POWER ✓
 - 29 - 12 - BLUE MAIN HYDRAULIC POWER ✓
 - 29 - 13 - YELLOW MAIN HYDRAULIC POWER ✓
 - 29 - 13 - YELLOW MAIN HYDRAULIC POWER ✓
 - 29 - 13 - 35 - VALVE - FLUID SAMPLING, YELLOW/HP BELLY FAIRING MANIFOLD ✓
 - 29 - 13 - 36 - MANIFOLD/SELF SEALING GROUND CONNECTOR - YELLOW - ✓
 - 29 - 13 - 38 - SUCTION LINE-ENGINE ✓
 - 29 - 13 - 39 - SLIDING UNION - YELLOW ✓
 - 29 - 13 - 41 - RESERVOIR - YELLOW ✓
 - 29 - 13 - 42 - ACCUMULATOR - POWER, YELLOW ✓
 - 29 - 13 - 43 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
 - 29 - 13 - 44 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
 - 29 - 13 - 45 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
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 - 29 - 13 - 88 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
 - 29 - 13 - 89 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
 - 29 - 13 - 90 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
 - 29 - 13 - 91 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
 - 29 - 13 - 92 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
 - 29 - 13 - 93 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
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 - 29 - 13 - 95 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
 - 29 - 13 - 96 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
 - 29 - 13 - 97 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
 - 29 - 13 - 98 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
 - 29 - 13 - 99 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓
 - 29 - 13 - 100 - FILTER ELEMENT/BOWL - ENGINE PUMP CASE DRAIN ✓

AT COMPONENT LEVEL

Functional Area

Function
MAINTENANCE IPD
MAINTENANCE PROCEDURES

ACCESS PHILOSOPHY FOR BUSINESS CATEGORIES - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM04P1LEVEL0101

ADOC N@vigator - Simple user

AIRBUS | ADOC N@vigator

System ▾ Baskets ▾ Search ▾ Ref Data ▾ FIN/Part/Wire ▾ Advanced ▾ Figure ▾ Troubleshooting ▾ Dynamic Wiring ▾ Help ▾

01 - CERTIFICATION DOCUMENTS
 02 - MISCELLANEOUS ((EG : CERTIF, D))
 03 - MISCELLANEOUS ((EG : AJC SPEC, GENERAL DESIGN, D))
 05 - TIME LIMITS - MAINTENANCE CHECKS
 06 - DIMENSIONS AND AREAS
 07 - LIFTING
 08 - LEVELING
 09 - TOWING
 10 - PARKING
 11 - PLACARD
 12 - SERVICE
 20 - STANDARD
 21 - AIR COND
 22 - AUTO FEED
 23 - COMMUNICATIONS
 24 - ELECTRICAL
 25 - EQUIPMENT
 26 - FIRE PROTECTION
 27 - FLIGHT CONTROLS
 28 - FUEL SYSTEMS
 29 - HYDRAULIC SYSTEMS
 29 - 1 - HYDRAULIC SYSTEMS
 29 - 13 - YELLOW MAIN HYDRAULIC POWER

29-13-42-01-ACCUMULATOR INSTL- Zone(s) : 144

FIG - ITEM	PART NUMBER	NOMENCLATURE
01	010L2911037020000	.CUSHION *LM*
01	020ASNA0032H120	.CLAMP
01	030ABS0114V4-19	.BOLT
01	040NAS1149C0432R	.WASHER
01	050299000-1	.ACCUMULATOR- 6000JM3 HYD POWER

TASK 29-13-42-000-801-A
 Removal of the Yellow Power Accumulator
 FIN : 6000JM3

WARNING: OBEY THE HYDRAULIC SAFETY PROCEDURES. WORK ON THE HYDRAULIC SYSTEMS CAN BE DANGEROUS.

WARNING: MAKE SURE THAT THE SAFETY DEVICES AND THE WARNING NOTICES ARE IN POSITION BEFORE YOU START A TASK ON THE AIRCRAFT.

NEAR:

- THE FLIGHT CONTROLS
- THE FLIGHT CONTROL SURFACES
- THE LANDING GEAR AND RELATED DOORS
- COMPONENTS THAT MOVE.

MOVEMENT OF COMPONENTS CAN KILL OR CAUSE INJURY TO PERSONS AND CAN CAUSE DAMAGE.

WARNING: YOU MUST PUT ON AND ATTACH A SAFETY HARNESS BEFORE YOU START WORK:

- IN THE NLG, WLG OR BLG BAYS
- ON THE THS OR IN THE REAR FUSELAGE
- ON TOP OF THE WINGS OR PYLONS.

WITHOUT A SAFETY HARNESS, YOU CAN FALL. THIS CAN KILL YOU OR CAUSE YOU INJURY.

1. Reason for the Job
 Self explanatory

2. Job Set-up Information

Functional Area

Function
MAINTENANCE IPD
MAINTENANCE PROCEDURES

DM Code | **Title** | **Issue ...**

A350-ZZ-29-13-42-MXAAA-5I	Removal of the Yellow Power Ac...	Dec 01/08
A350-ZZ-29-13-42-MXAAA-7I	Installation of the Yellow Power A...	Aug 01/09

ACCESS PHILOSOPHY FOR BUSINESS CATEGORIES - PRESENTATION - FUNCTION/DESCRIPTION

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AIRCRAFT DOCUMENTATION INTRODUCTION (1)

Scheduled / Unscheduled Maintenance Documentation - Presentation

Function/Description

Maintenance operations on the aircraft can be:

- Scheduled maintenance
- Unscheduled maintenance.

Scheduled maintenance

The AirN@v application related to scheduled maintenance is AirN@v planning. It includes the Scheduled tasks business category which is related to the MPD.

Maintainability documents are:

- Certification Maintenance Requirements (CMR)
- Maintenance Review Board Reports (MRBR)
- Airworthiness Limitation Sections (ALS).

In-service return documents are:

- All Operators Telexes (AOT)
- Service Information Letters (SIL)
- Service Bulletins (SB)
- Airworthiness Directives (AD).

This maintenance planning document identifies all the tasks to be done on the aircraft with their related intervals, for nominal aircraft operability and airworthiness.

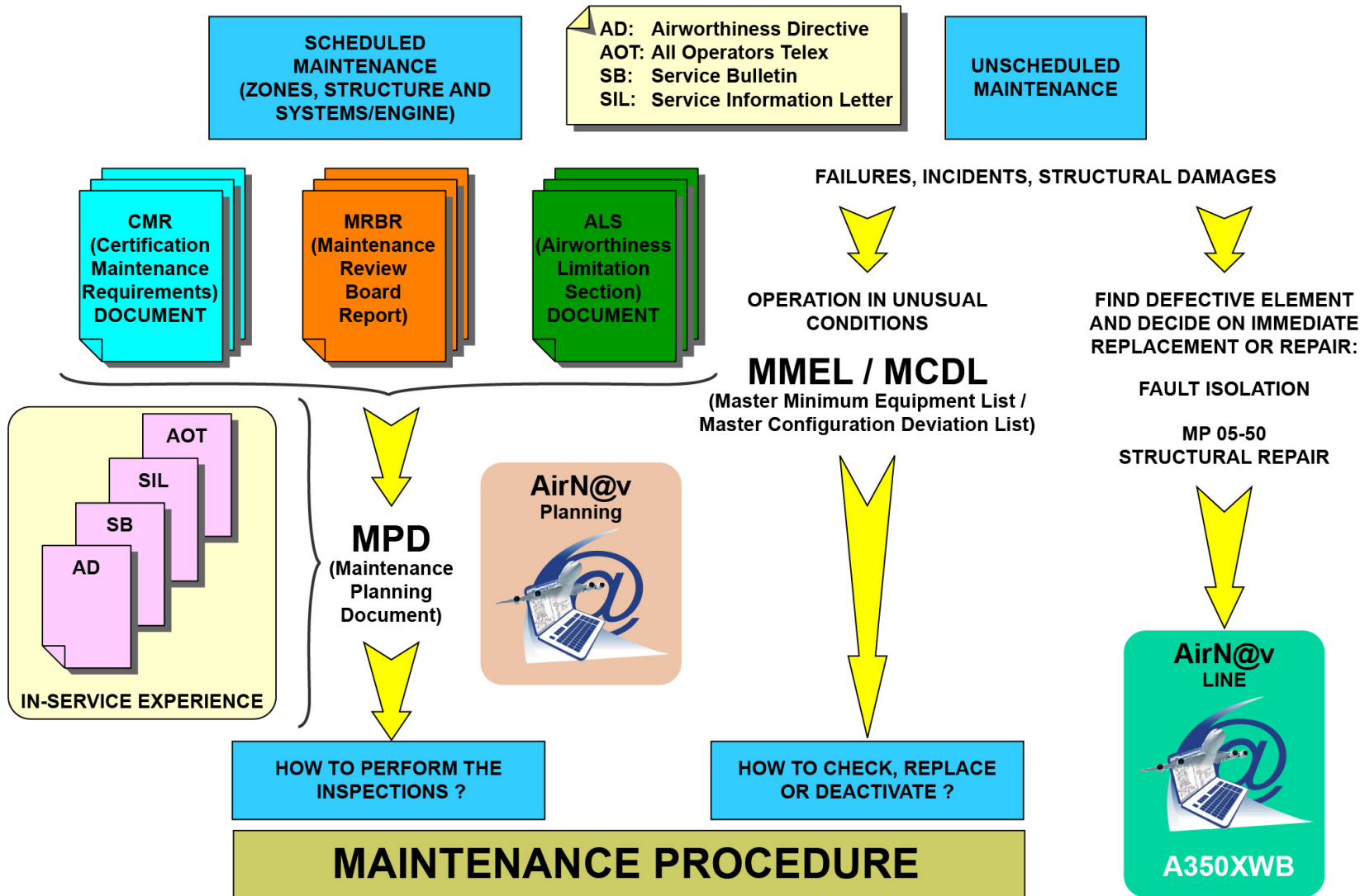
Unscheduled maintenance

Unscheduled maintenance is the result of unscheduled events for example failures, incidents and structural damage.

There are two possible strategies for unscheduled events:

- Operation in unusual conditions, which uses the Master Minimum Equipment List (MMEL) and Master Configuration Deviation List (MCDL) documents with inspections or deactivation procedures
- Troubleshooting and repair.

For these two strategies, the AirN@v LINE application is the only tool used to do inspections/deactivations or troubleshooting and repair procedures.



SCHEDULED / UNSCHEDULED MAINTENANCE DOCUMENTATION - PRESENTATION - FUNCTION/DESCRIPTION

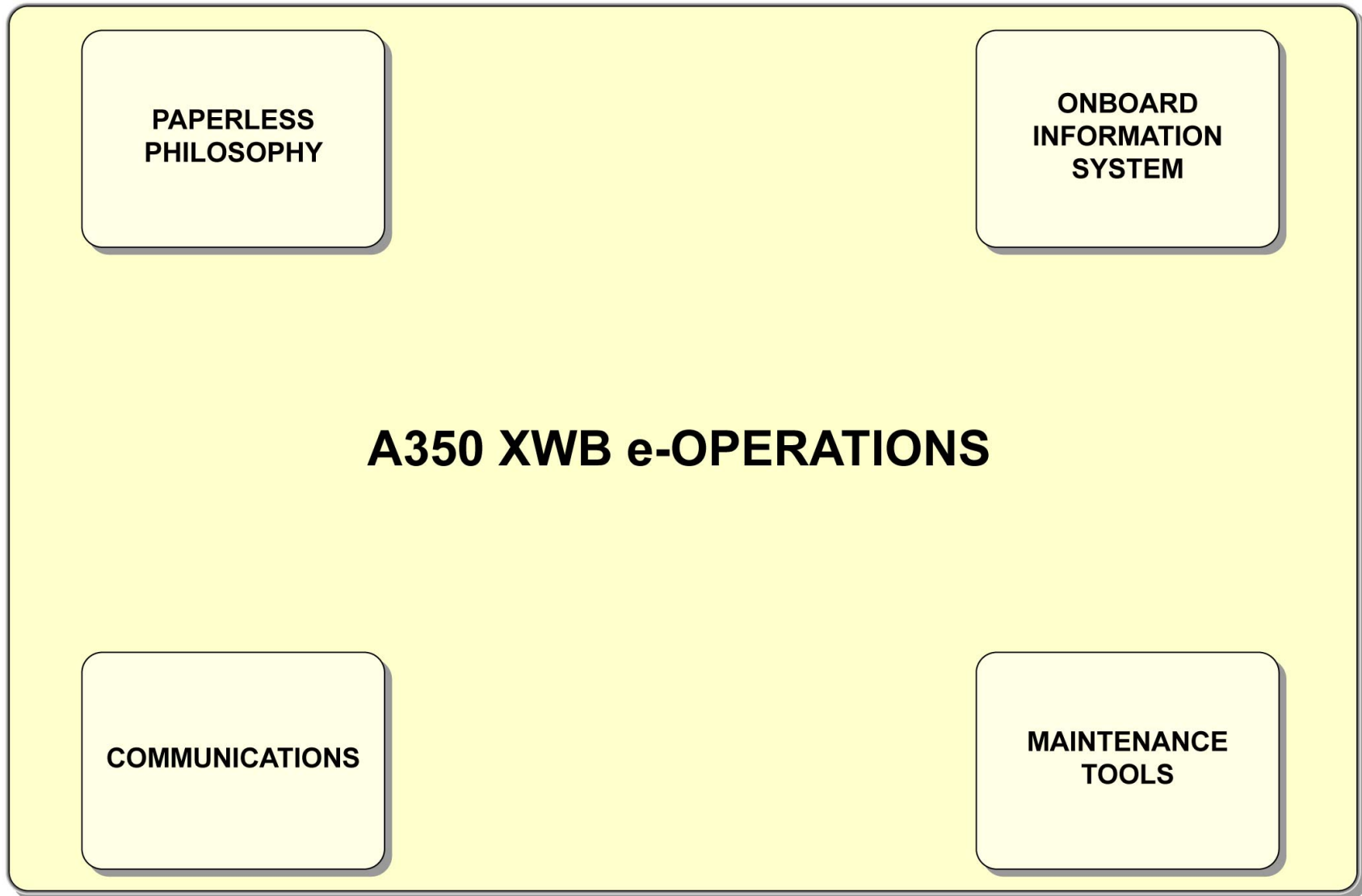
V1813401 - V01T0M0 - VM04P1LEVEL0101

AIRCRAFT E-OPERATIONS INTRODUCTION (1)

Overview

This chapter gives data about:

- The paperless philosophy
- The Onboard Information System (OIS)
- Maintenance tools
- Communications.



OVERVIEW

AIRCRAFT E-OPERATIONS INTRODUCTION (1)

Paperless Philosophy - Presentation

Function/Description

Paper documentation is replaced by an electronic library which is hosted in the Onboard Information System (OIS).

With this electronic library, the flight crew can easily find the applicable operational information in the:

- Flight Crew Operating Manual (FCOM)
- Flight Manual (FM)
- Minimum Equipment List (MMEL)
- Configuration Deviation List (CDL).

It gives access to data related to the mission, communications and performance computation, the function of which is to decrease the flight crew workload.

With this electronic library, flight and maintenance crew members have access to the electronic logbook.

The E-library also hosts the AirN@v LINE application, where the crew can directly get access to most of the electronic maintenance business categories.

The AirN@v LINE application contains:

- System descriptions/Maintenance procedures
- Fault reporting/Fault isolation
- Maintenance illustrated parts data
- Schematics diagrams/Wiring diagrams
- STD practices - Electrical/Mechanical
- Structural repair illustrated parts data/Structural repair instructions
- Non-Destructive Tests (NDT).

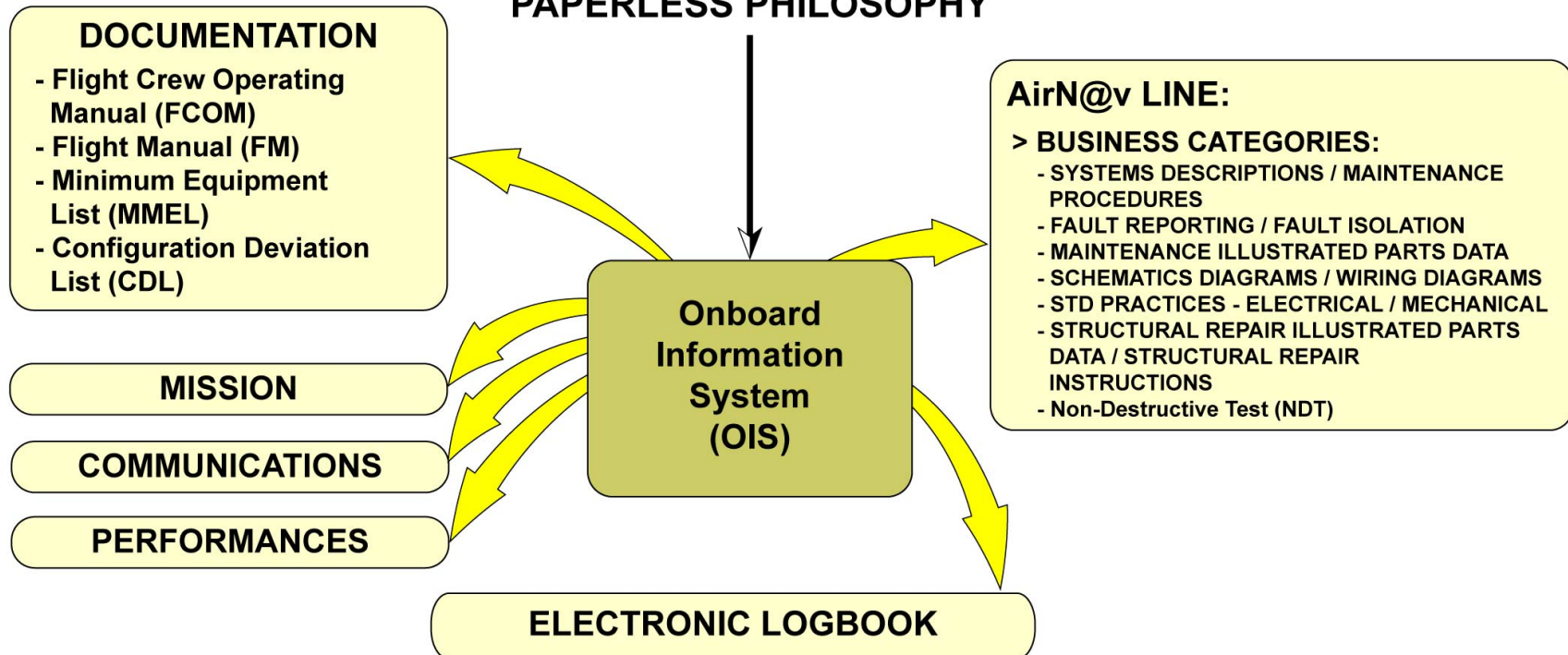


**FLIGHT
CREW**



**MAINTENANCE
CREW**

PAPERLESS PHILOSOPHY



PAPERLESS PHILOSOPHY - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM05P1LEVEL0101

AIRCRAFT E-OPERATIONS INTRODUCTION (1)

Onboard Information System (OIS) - Presentation

Function/Description

The Onboard Information System (OIS) makes the electronic library available for the flight and maintenance crew.

Its function is to make airline operations and passenger services better and minimum paper documentation for Flight Operations.

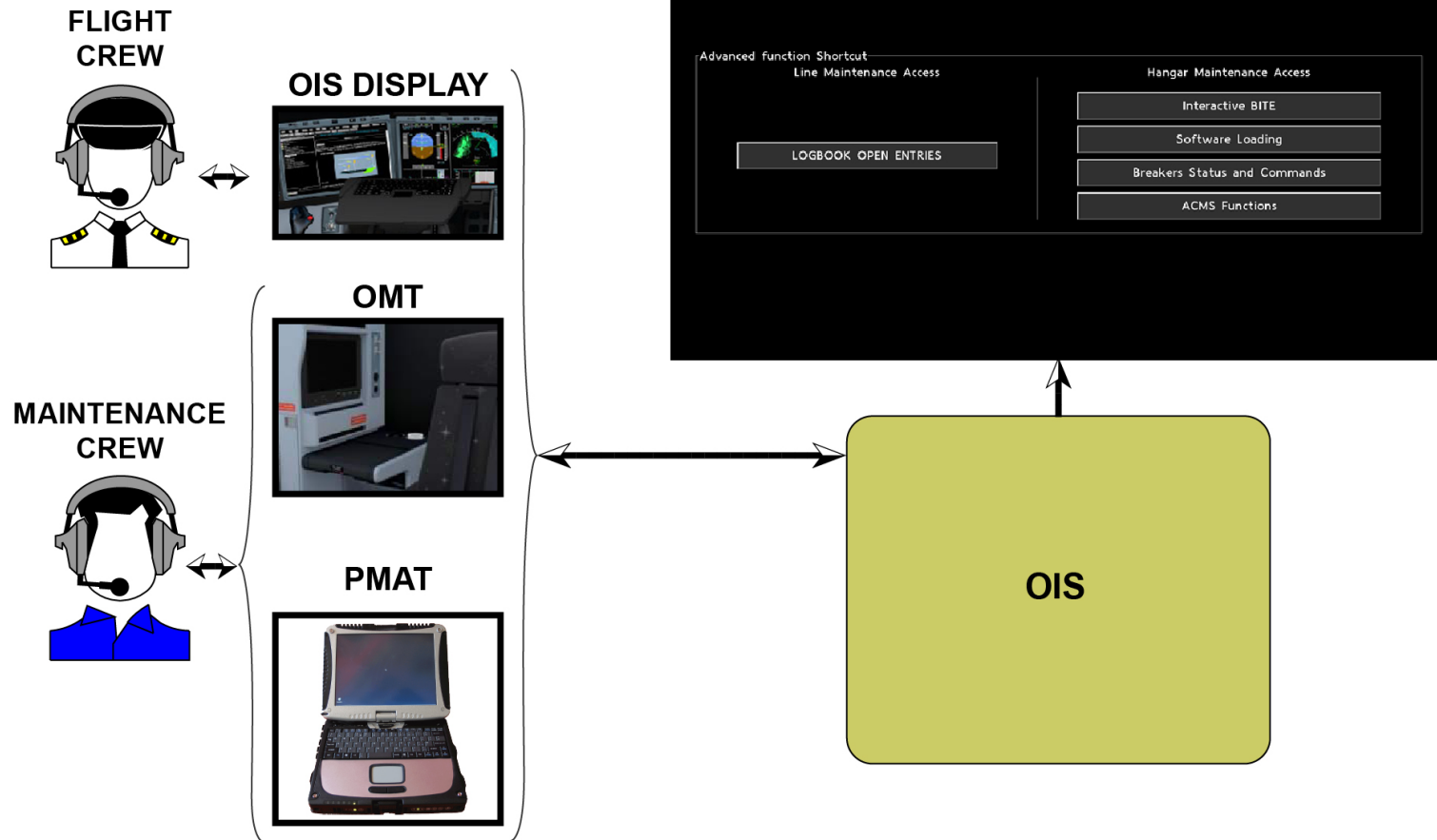
The flight crew uses the OIS display to get access to the OIS.

The maintenance crew uses the Onboard Maintenance Terminal (OMT) to get access to the OIS.

The maintenance documentation and applications are also available from the Portable Multipurpose Access Terminal (PMAT) or the OIS displays.

The flight and maintenance crew get access to e-documentation or applications related to an electronic menu by the selection of Maintenance or Flight OPS.

OIS: Onboard Information System
OMT: Onboard Maintenance Terminal
PMAT: Portable Multipurpose Access Terminal



ONBOARD INFORMATION SYSTEM (OIS) - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM05P1LEVEL0101

AIRCRAFT E-OPERATIONS INTRODUCTION (1)

Maintenance Tools - Presentation

Function/Description

The function of these maintenance tools is to make maintenance better on the A350 and to decrease A/C operational costs.

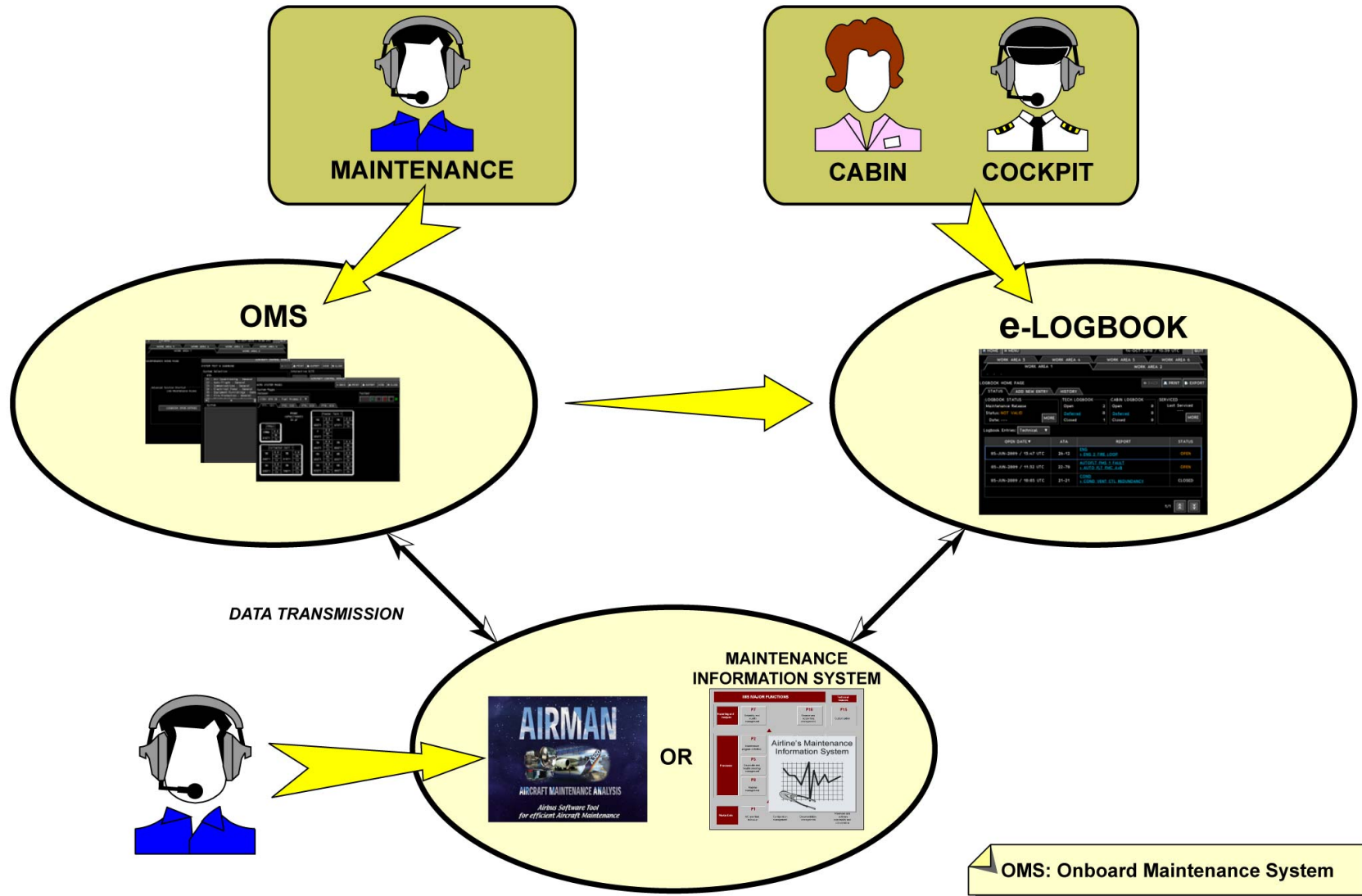
The primary maintenance tools on the A350 are:

- The Onboard Maintenance System (OMS)
- The e-Logbook, available on board or on the ground
- The Airman or airline's maintenance information system, which is ground-based software dedicated to the best possible maintenance of Fly-by-wire Airbus aircraft.

There are three profiles that have access to the OMS and the e-Logbook:

- Flight crew
- Cabin crew
- Maintenance.

Only maintenance have access to the Airman.



V1813401 - V01T0M0 - VM05P1LEVEL0101

AIRCRAFT E-OPERATIONS INTRODUCTION (1)

Communications - Presentation

Function/Description

The functions of the communication system are:

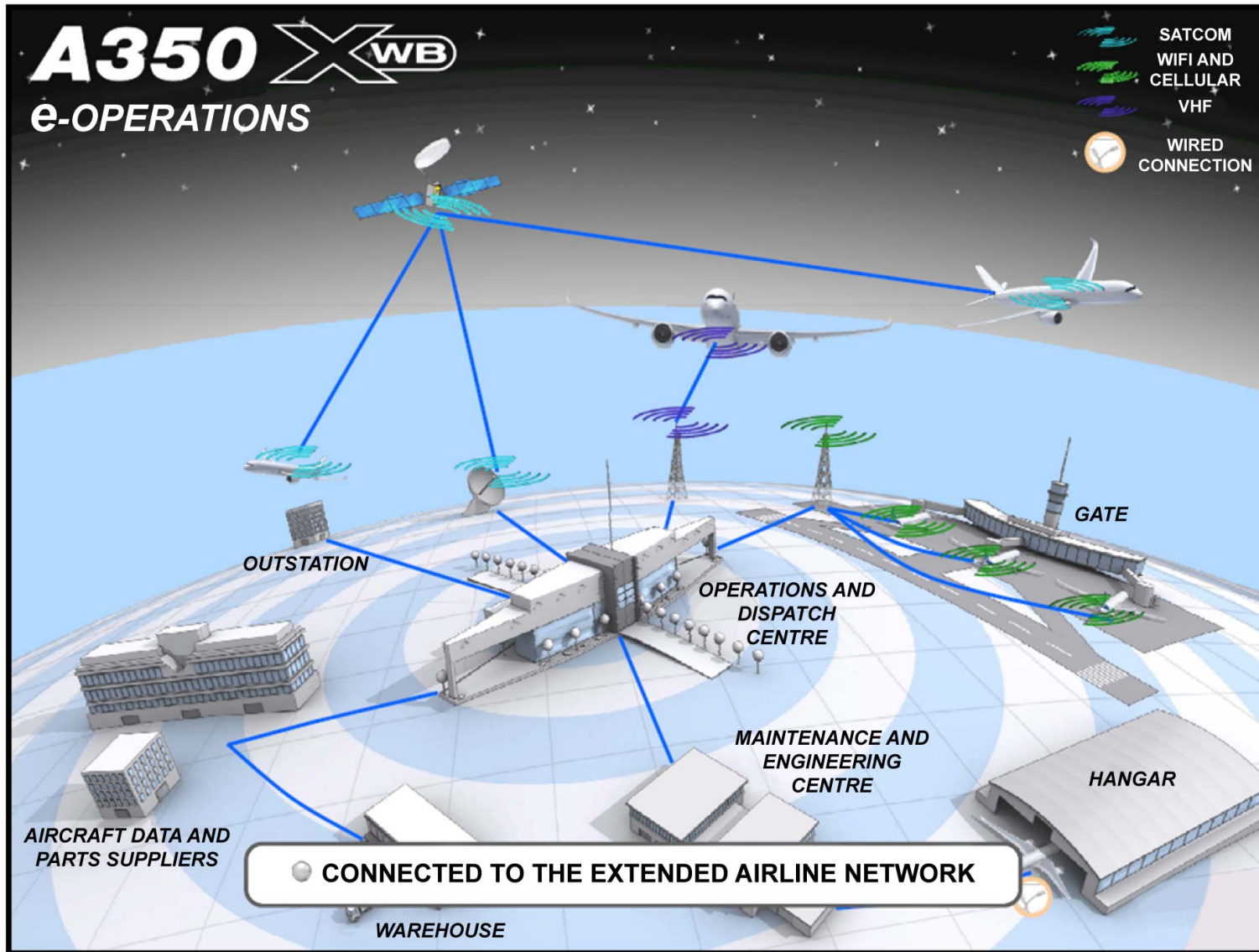
- To give communication means
- To monitor audio and video.

The A350 has new functions for communication with the extended airline network.

In flight, the A/C uses the Very High Frequency (VHF) or SATellite COMmunication (SATCOM).

On the ground, Wifi, wired connection and cellular communications are also available.

These communications help to make aircraft operation and maintenance faster and more satisfactory, because there are better links between the aircraft and the ground facilities.



COMMUNICATIONS - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM05P1LEVEL0101

AIRCRAFT SAFETY PRECAUTIONS INTRODUCTION (1)

Overview

This topic gives data about general safety precautions.



A350 XWB SAFETY PRECAUTIONS INTRODUCTION

OVERVIEW

AIRCRAFT SAFETY PRECAUTIONS INTRODUCTION (1)

Function/Description - Presentation

When you do work on or around the aircraft, you must know all the cautions and warnings.

To prevent all safety risks, you must obey all the safety precautions given in the business categories documentation.

You must also obey the local regulations (national regulations, airline rules and airport rules).

These safety precautions prevent:

- Injuries to persons (Warning)
- Damage to the aircraft and to the Ground Support Equipment (GSE) (Caution).



FUNCTION/DESCRIPTION - PRESENTATION

V1813401 - V01T0M0 - VM06P1LEVEL0101

AIRCRAFT SAFETY PRECAUTIONS INTRODUCTION (1)

Maintenance Practices - Maintenance

Warnings and Cautions in Maintenance Procedures

When you do a maintenance procedure, obey the instructions in the warnings and cautions.

WARNING: Gives the materials, processes, methods, procedures or limits that you must use or obey to prevent the injury or death of persons.

CAUTION: Gives the methods and procedures that you must obey to prevent damage to the equipment.

CAUTION: GIVES THE METHODS AND PROCEDURES THAT YOU MUST OBEY TO PREVENT DAMAGE TO THE EQUIPMENT.

WARNING: GIVES THE MATERIALS, PROCESSES, METHODS, PROCEDURES OR LIMITS THAT YOU MUST USE OR OBEY TO PREVENT THE INJURY OR DEATH OF PERSONS.

4. Procedure

A. Add Oil to the APU Oil Reservoir

WARNING USE THE CORRECT PERSONAL PROTECTION. OIL CAN HAVE ADDITIVE CALLED TRICRESYL PHOSPHATE IN IT. THIS CHEMICALS IS AN ASPHYSIANT, IT IS POISONOUS AND CAN BE ABSORBED THROUGH THE SKIN. USE CARE WHEN ENGINE OIL IS DRAINED. HOT OIL CAN POSSIBLY CAUSE BAD BURNS.

CAUTION MAKE SURE THAT ALL PLUMBING IS FREE FROM OBSTRUCTION.

(1) Do an oil level check on the oil sight glass.

NOTE: If the oil level is at the FULL mark on the sight glass, do not add oil to the APU oil reservoir.

(2) Put the container in position below the APU gear box to collect oil leakage.

(3) Make sure that the oil scupper and the oil filler cap are clean. Make them clean with a lint-free cloth, if they are dirty.

(4) Open the oil filler cap.

MAINTENANCE PRACTICES - MAINTENANCE - WARNINGS AND CAUTIONS IN MAINTENANCE PROCEDURES

AIRCRAFT SAFETY PRECAUTIONS INTRODUCTION (1)

Safety Precautions - Maintenance

Electrical Power and Electrostatic Charges

Electrical power and electrostatic charges can cause injury to maintenance personnel and damage to the components.

To prevent this:

- Earth the aircraft.
- Do a check of component bounding.
- Obey the discharge time delay for some equipment.
- Be careful with energized components.
- De-energize the system if necessary.

Radio Frequencies

Radio frequencies can cause radiation of persons and damage and fire.

To prevent this:

- Obey the precautions related to safety areas.
- Obey the precautions related to the operational area.

The primary sources of radio frequencies are:

- Weather radar
- High Frequency antennas.

Movable Parts

Movable parts can cause bad injury to persons and damage to the aircraft and/or GSE.

To prevent this:

- Obey the precautions related to safety areas.
- Do inhibition and/or de-activation tasks.

The primary movable parts are:

- Flight control surfaces
- Thrust reversers
- Doors
- Landing gears

- Auxiliary Power Unit (APU) air inlet flap
- Air-conditioning system elements (fuselage and wing root).

Noise

Noise can cause damage to hearing.

To prevent this:

- Use protection for your ears.
- Obey the precautions related to safety areas.

The primary sources of noise are:

- The engines
- The APU
- The air conditioning system
- The hydraulic power system.

Suction and Exhaust Areas

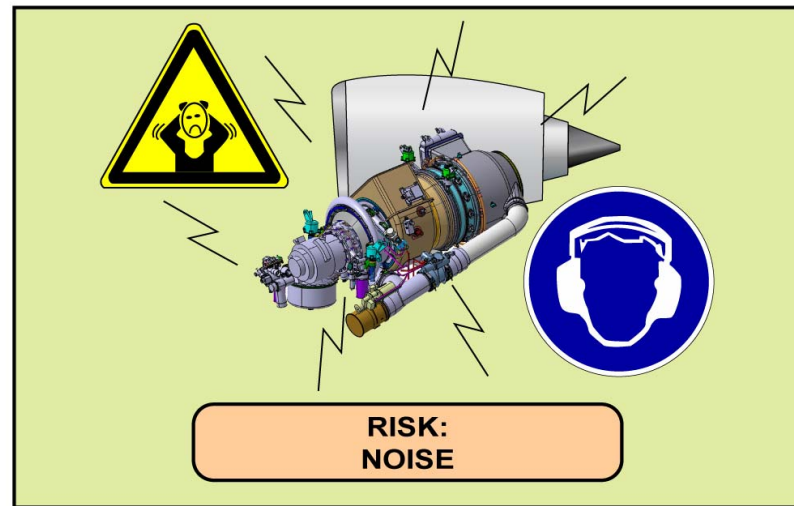
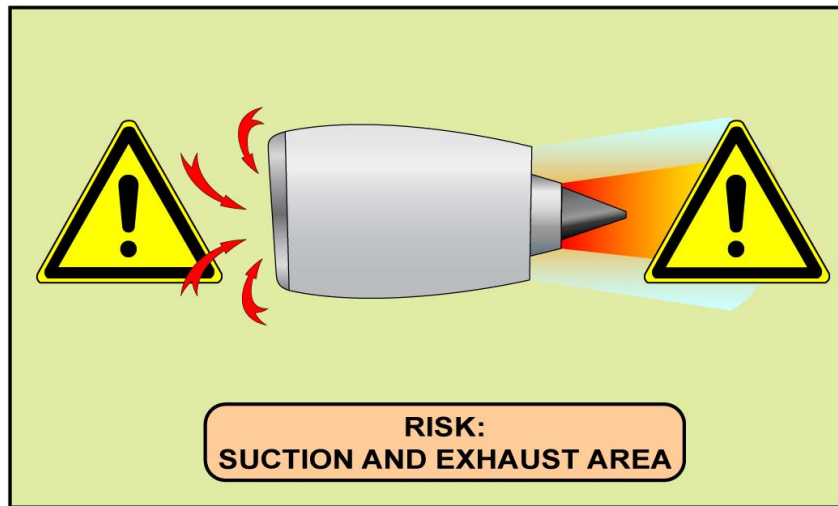
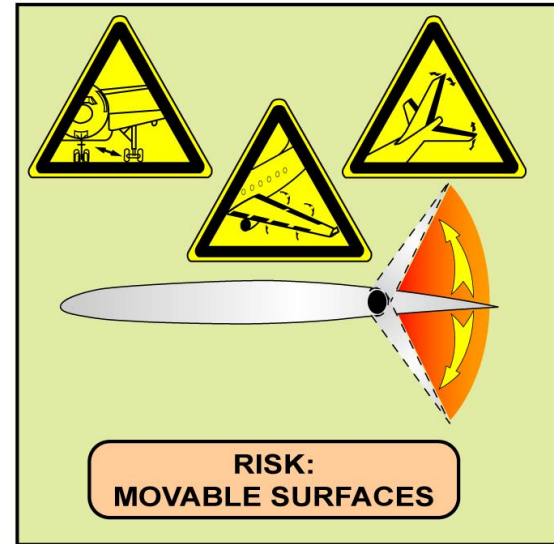
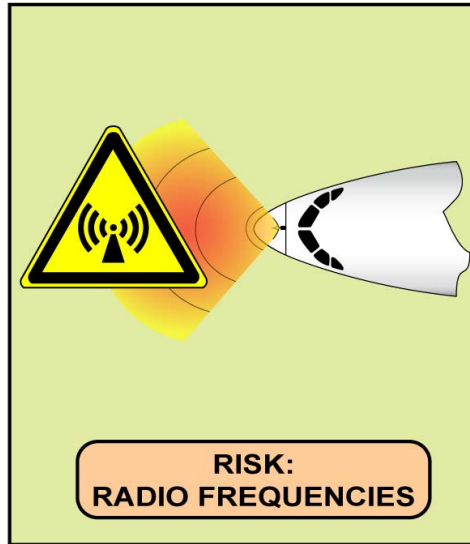
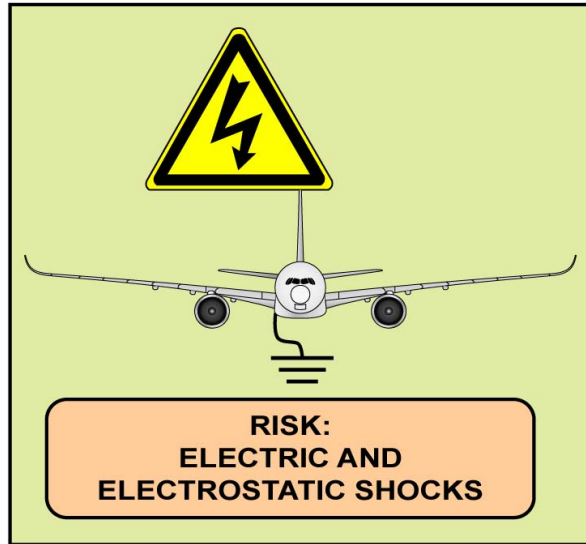
The suction and exhaust areas can cause bad injury to persons and damage to the aircraft and/or GSE.

To prevent this:

- Obey the precautions related to safety areas.
- Keep the areas clear.

The primary suction and exhaust sources are:

- The engines
- The APU
- The air conditioning/supplemental cooling system.



SAFETY PRECAUTIONS - MAINTENANCE - ELECTRICAL POWER AND ELECTROSTATIC CHARGES ... SUCTION AND EXHAUST AREAS

AIRCRAFT SAFETY PRECAUTIONS INTRODUCTION (1)

Safety Precautions - Maintenance (continued)

Pressurized Systems

Pressurized liquid, air, hydraulic and gas systems can cause bad injury to persons and damage to the aircraft and/or GSE.

To prevent this:

- Do a check of component pressurization when an indication is available.
- Depressurize the system when possible.
- If this is not possible, be careful when you do work with pressurized components.

The primary pressurized systems are:

- The pneumatic system
- The air conditioning/supplemental cooling system
- The hydraulic power system
- The fire extinguishing system
- The oxygen system.

Special precautions are necessary with the cabin and cargo doors.

To prevent bad injury, before you open the cabin and/or cargo doors, do a check to see if the residual cabin pressure light is off.

For the escape slides, before you open the cabin doors, do a check to see if the emergency-escape slide light is off.

Flammable and Explosive Products

Flammable and explosive products can cause fire and explosions and thus injury to persons and damage to the equipment.

To prevent this:

- Obey the precautions related to safety areas.
- Make sure that you have the applicable fire-extinguishing equipment.
- Obey the instructions related to items not permitted (cigarettes, phones, cameras).

The flammable and explosive product is the fuel.

Poisonous Products

Different fluids used to operate aircraft systems can cause injury to persons and damage to the aircraft.

Engine fuel and oils are poisonous if you breathe the fumes or get them in your mouth and they cause environmental pollution.

To prevent this:

- Use the applicable protective equipment.
- Be careful when you do work with these products.
- Obey the cleaning procedures after you use these products.
- Do not discard these products, put them in containers for recycling or retreatment.

The type of injury to persons or damage to an aircraft caused by a solvent is related to its composition. You must always obey the safety precautions given in the instructions for use.

The type of injury to persons caused by carbon dust is related to different properties such as carbon fiber size, exposure time, etc. To prevent this, use protective clothing.

Hot Components and Fluids

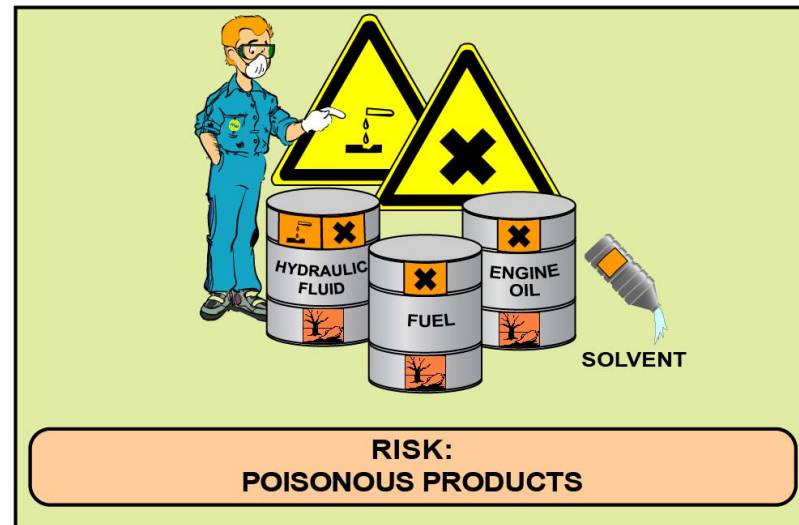
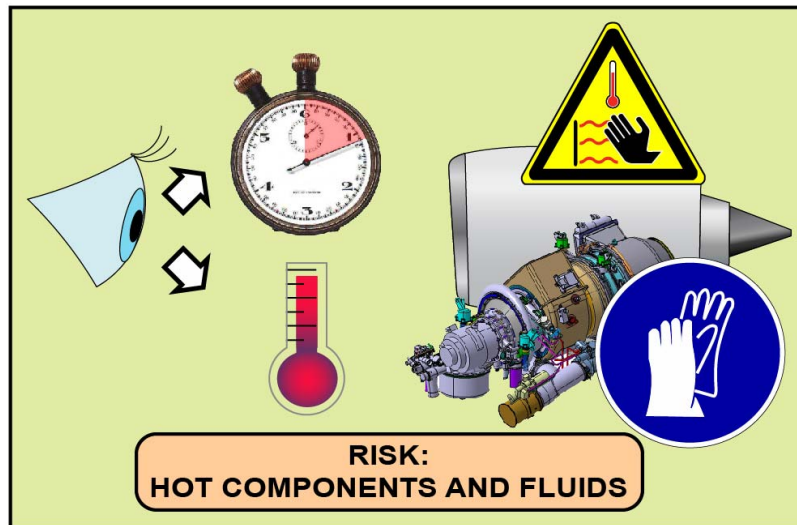
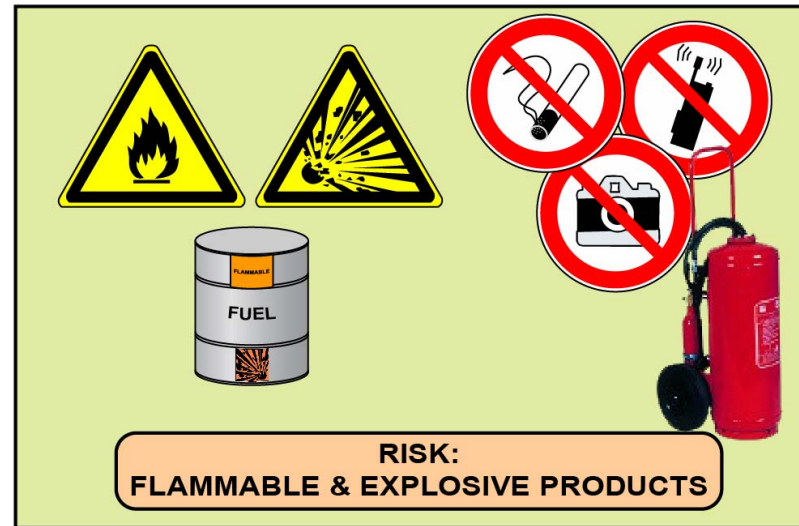
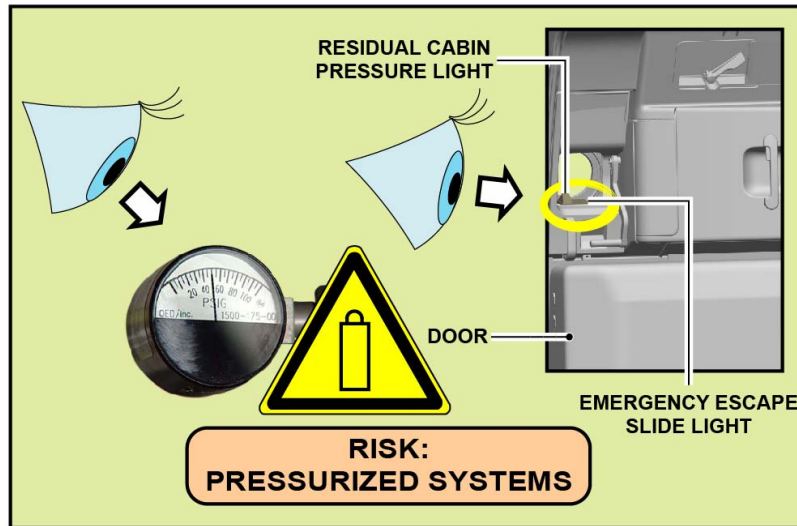
Hot components and fluids can cause bad burns and fires.

To prevent this:

- Use the applicable protective equipment.
- Obey the time delay to let components become cool.
- Obey the precautions related to safety areas.
- Do a check of the component temperature when an indication is available.

The primary systems for hot sources are:

- The engine system
- The pneumatic system
- The APU
- The landing gear system
- The hydraulic power system
- The air conditioning system.



SAFETY PRECAUTIONS - MAINTENANCE - PRESSURIZED SYSTEMS ... HOT COMPONENTS AND FLUIDS

V1813401 - V01T0M0 - VM06P1LEVEL0101

AIRCRAFT SAFETY PRECAUTIONS INTRODUCTION (1)**Safety Precautions - Maintenance (continued)****Heavy Components**

When you move heavy components, this can cause injury to you or other persons because of the weight, or if they fall, and can also cause damage to the aircraft.

To prevent this, use:

- A correct body posture to lift heavy components
- Special GSE
- Special hoisting points installed on the A/C
- Do not walk below an elevated load.

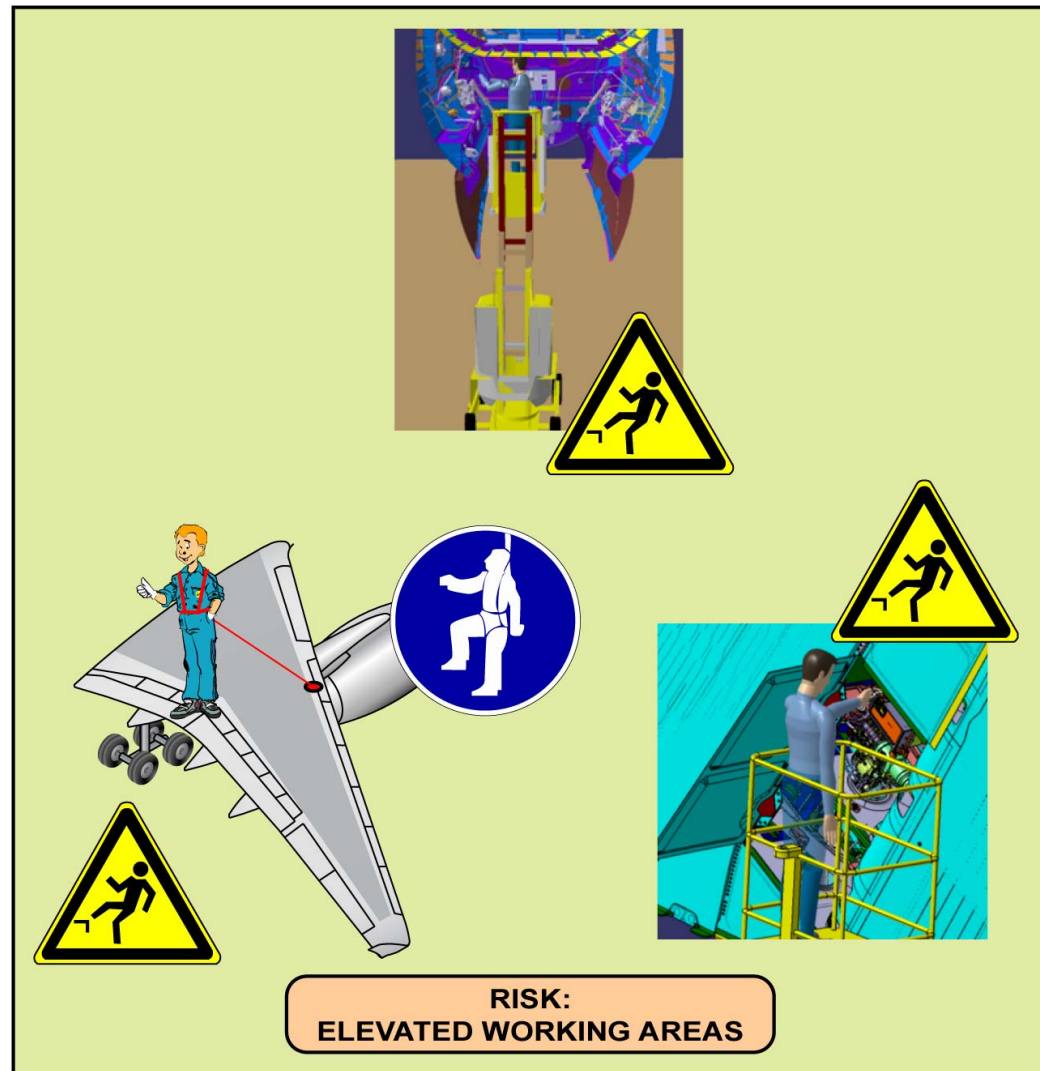
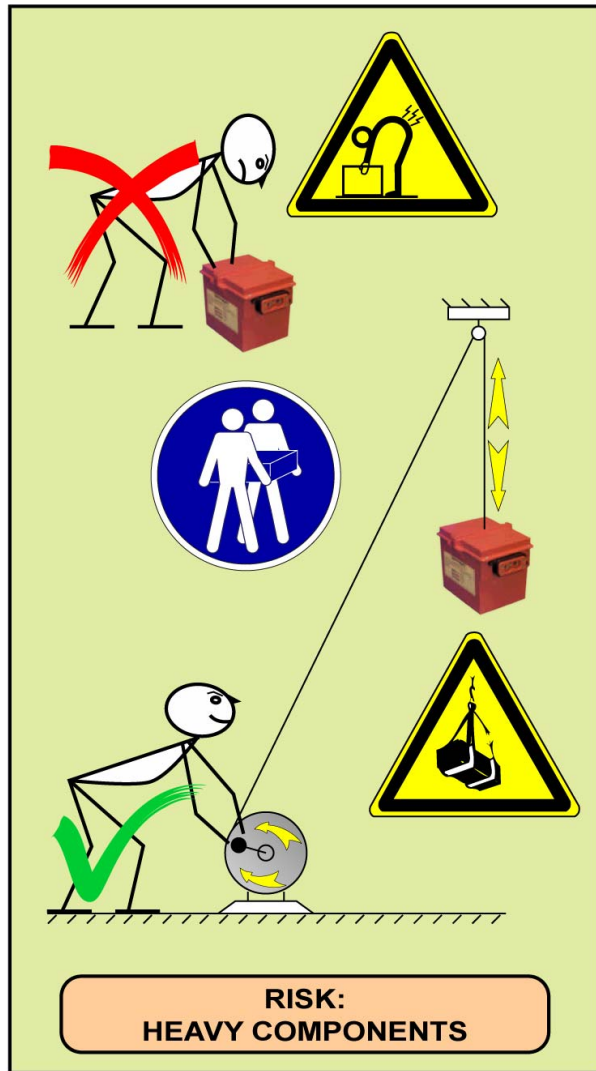
Elevated Work Areas

Persons or items of equipment that fall from elevated positions can cause bad injury to other persons and damage to the aircraft.

To prevent this, you must use:

- Safety points
- Safety handles
- Safety harnesses
- The correct platforms.

Read the manufacturers instructions for the platform. You must know the applicable local regulations.



SAFETY PRECAUTIONS - MAINTENANCE - HEAVY COMPONENTS & ELEVATED WORK AREAS

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AIRCRAFT SAFETY PRECAUTIONS INTRODUCTION (1)

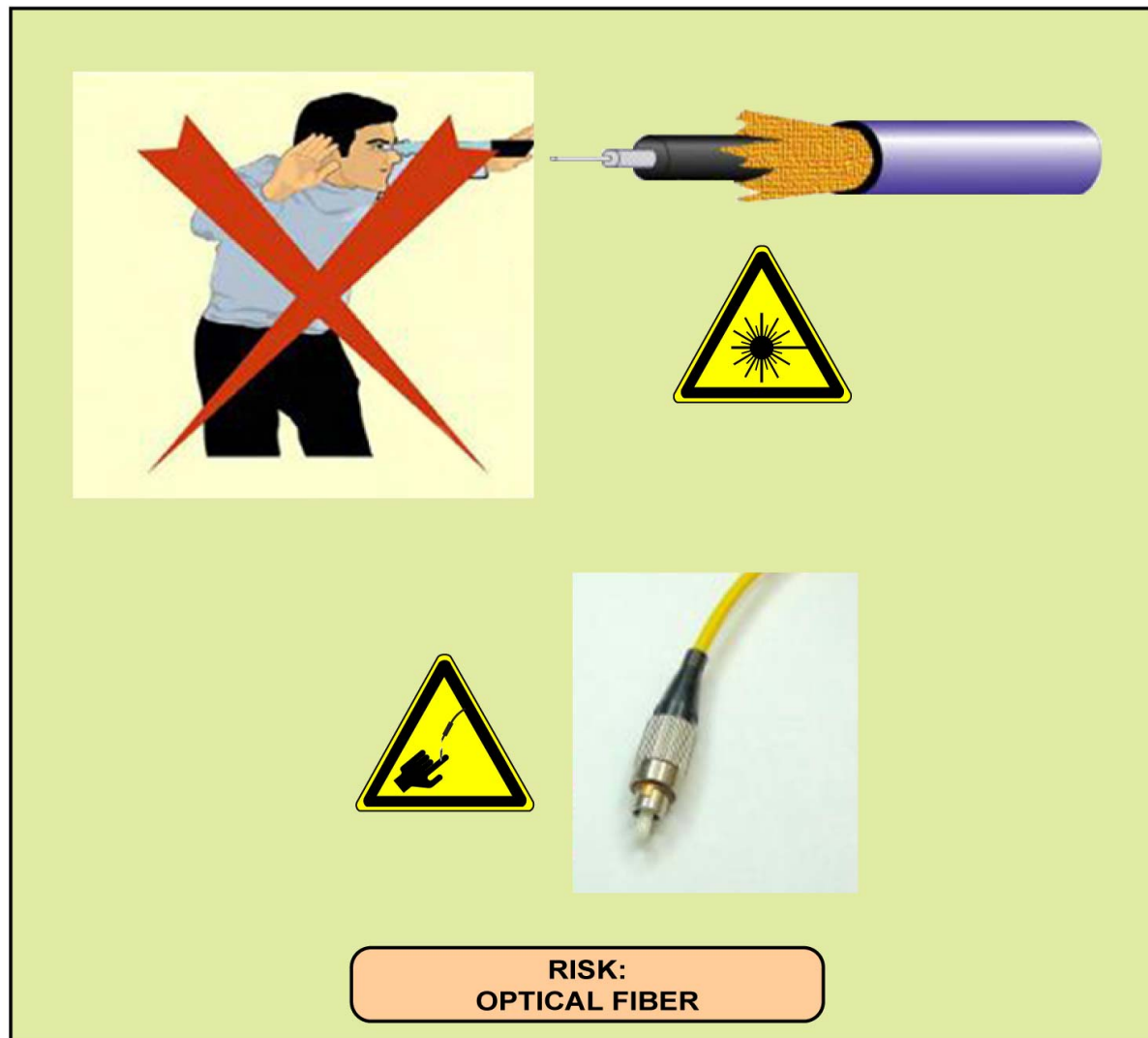
Safety Precautions - Maintenance (continued)

Optical Fiber

Optical fiber can cause injury to persons.

To prevent this:

- DO NOT LOOK INTO THE END OF A FIBER-OPTIC CABLE. THERE IS A RISK OF LASER RADIATION, WHICH YOU WILL NOT SEE. LASER RADIATION IS DANGEROUS FOR YOUR EYES.
- MAKE SURE THAT NO OPTICAL FIBER PIECES GO INTO YOUR SKIN.



SAFETY PRECAUTIONS - MAINTENANCE - OPTICAL FIBER

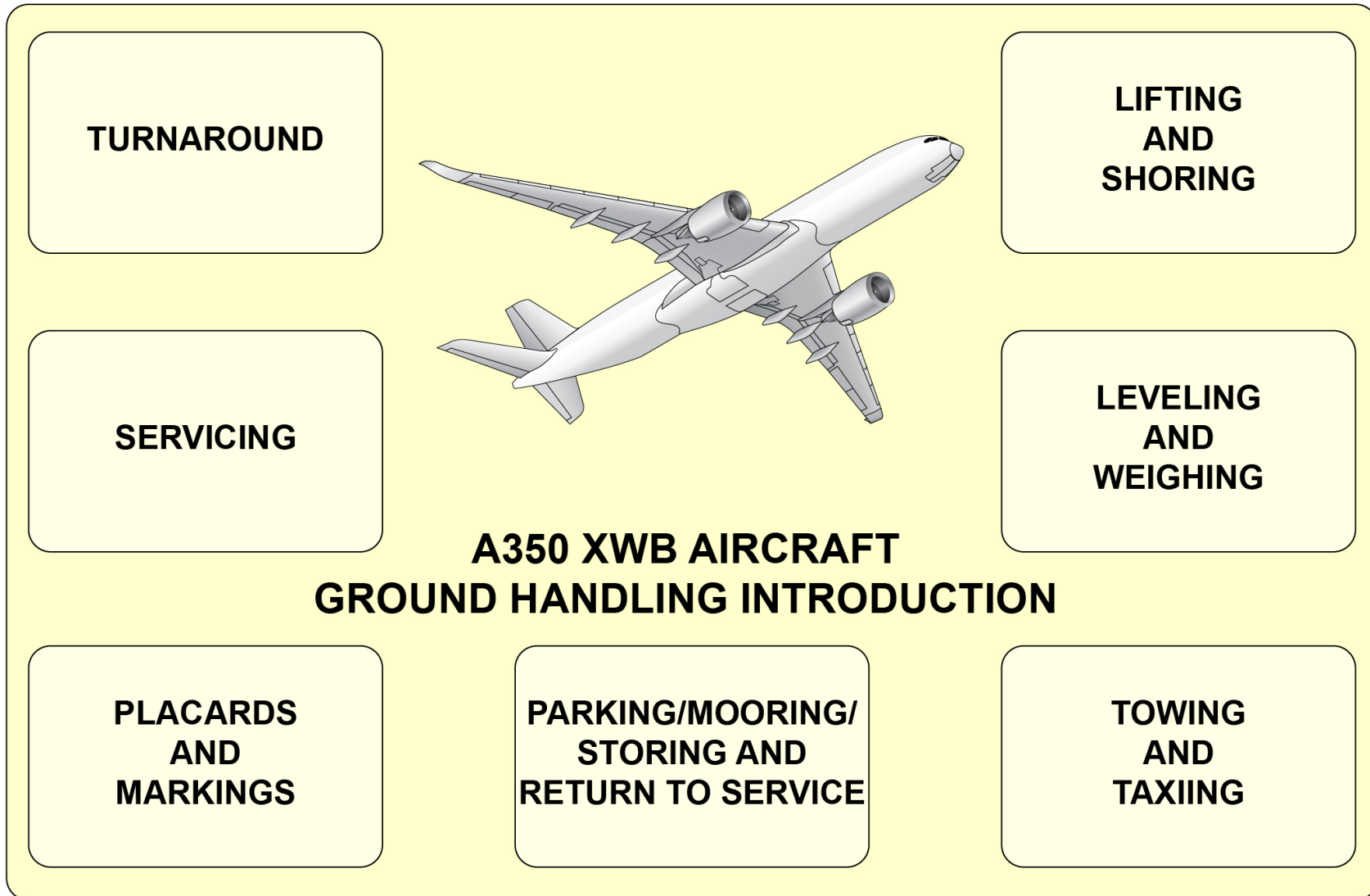
V1813401 - V01T0M0 - VM06P1LEVEL0101

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Overview

This chapter gives the A350 ground handling procedures and includes:

- Turnaround
- Lifting and Shoring
- Leveling and Weighing
- Towing and Taxiing
- Parking / Mooring, Storing and Return to Service
- Placards and Markings
- Servicing



OVERVIEW

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Turnaround - Presentation

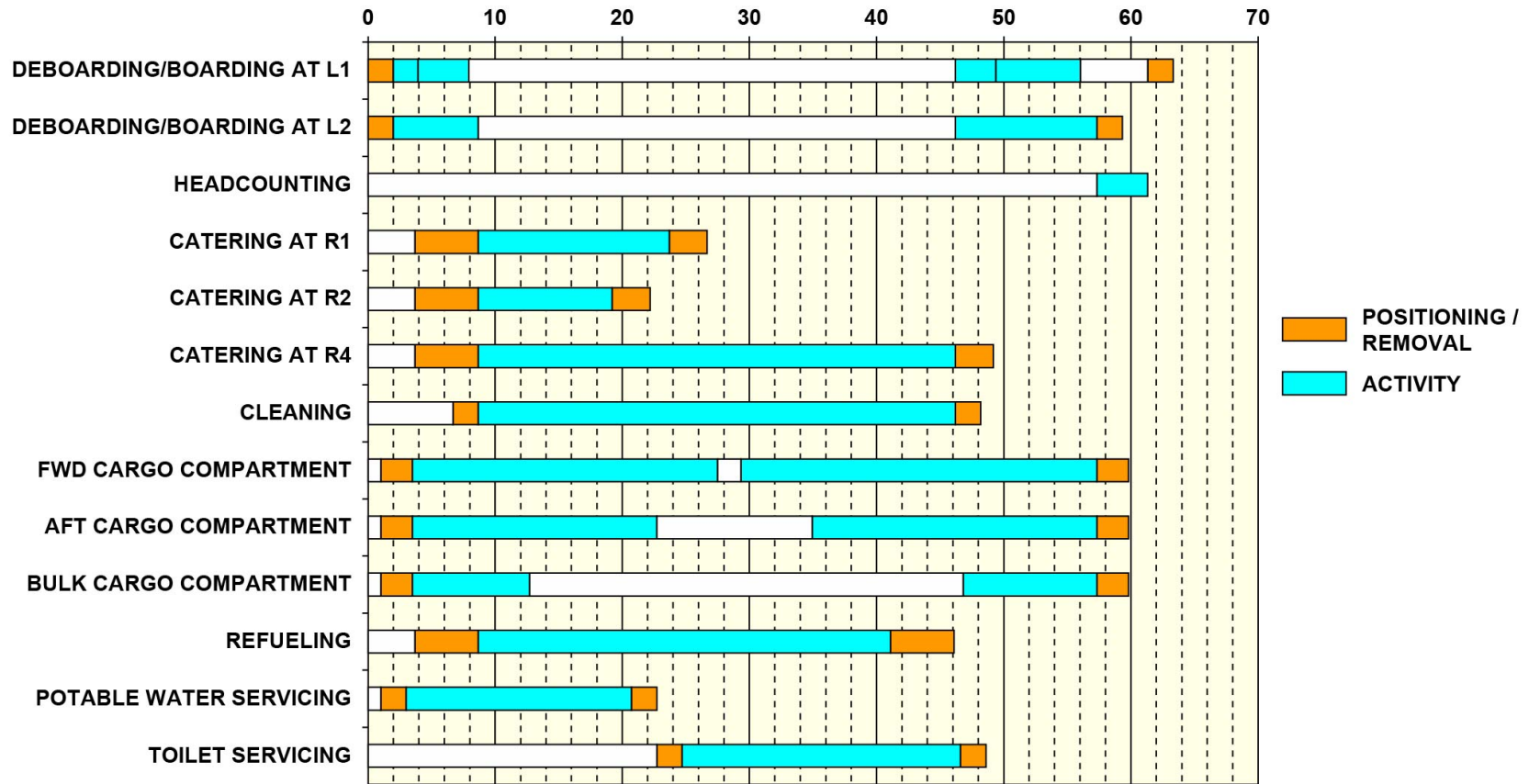
Function/Description

For the A350-900, the minimum Turnaround Time is 63 minutes.

The A350 has a typical ramp layout that includes:

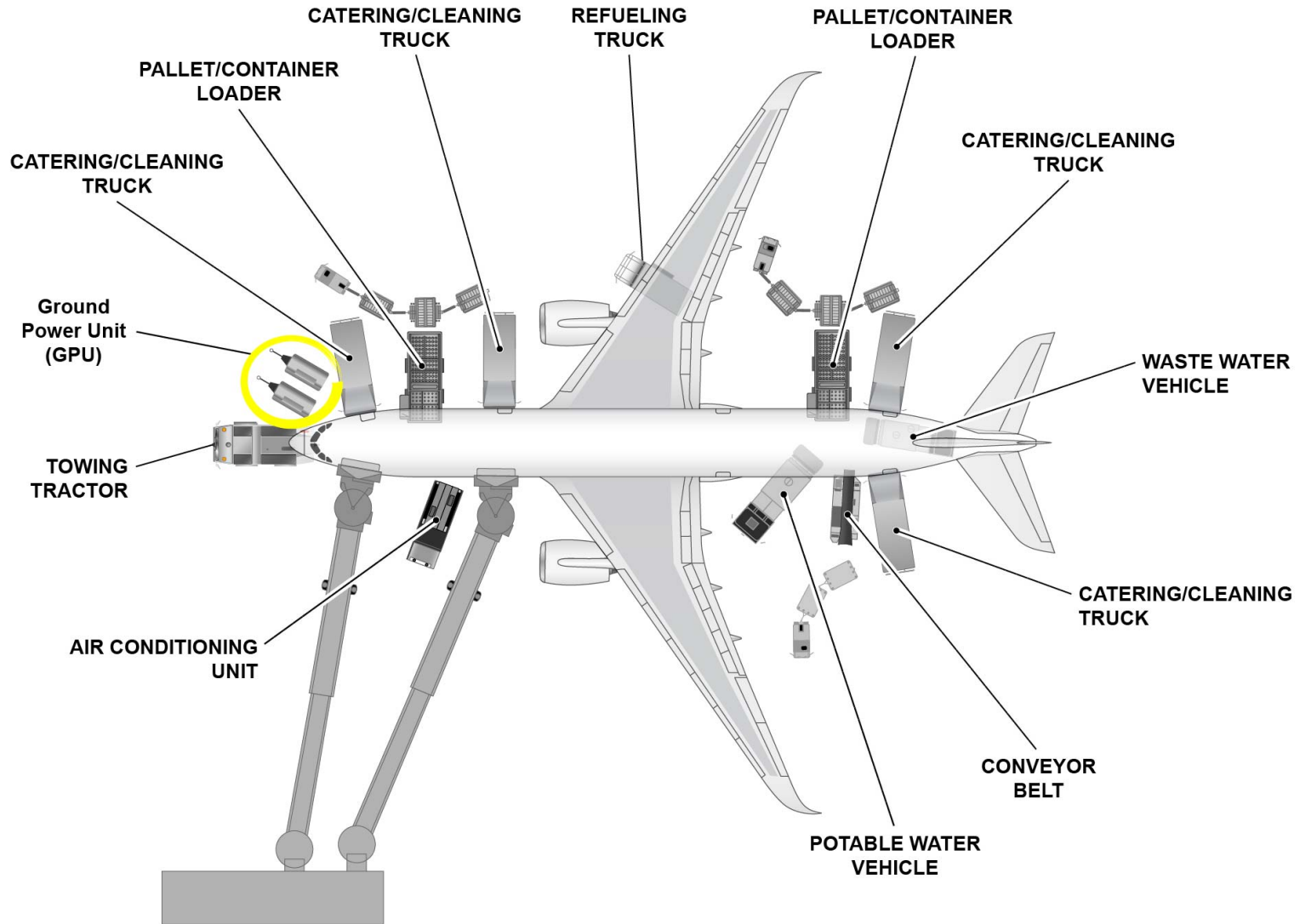
- The external ground power units
- The catering/cleaning trucks
- The pallet/container loader
- The refueling truck
- The waste water vehicle
- The conveyor belt
- The potable water vehicle
- An air conditioning unit.

TURNAROUND TIME: 63 MINUTES



TURNAROUND - PRESENTATION - FUNCTION/DESCRIPTION

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TURNAROUND - PRESENTATION - FUNCTION/DESCRIPTION

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AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Lifting and Shoring - Presentation

Function/Description

You can lift the aircraft on jacks for maintenance operations. The data is given in aircraft breakdown 07-11-00.

To release mechanical stress on the fuselage and wings, you must do aircraft shoring before structural repairs. The data is given in aircraft breakdown 07-20-00.

Location

The aircraft has three primary jacking points:

- Below the forward fuselage, aft of the Nose Landing Gear (NLG) and on the left side of the fwd fuselage
- Below each wing.

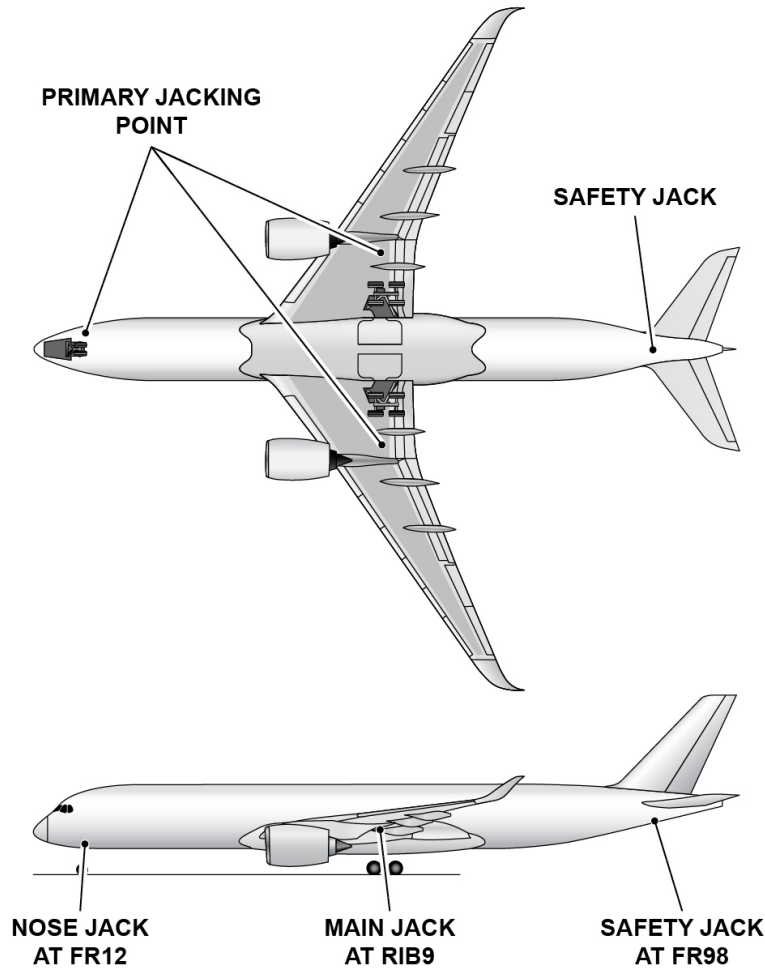
A safety stay point is below aft fuselage for safety, to prevent tail tipping caused by the accidental movement of the aircraft center of gravity.

Shoring points are located on dedicated frames and ribs given in MP 07-20-00.

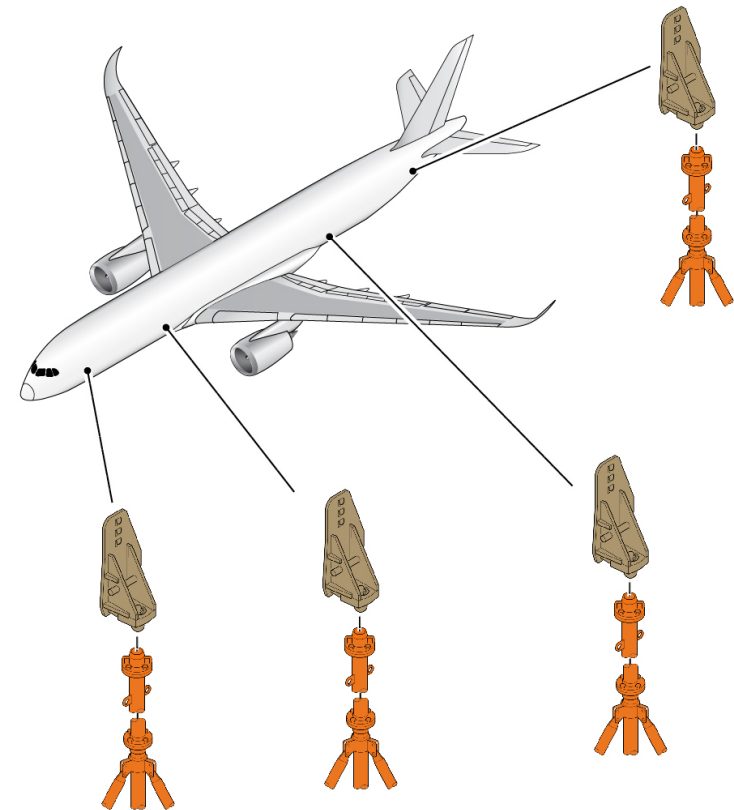
Tools

Specific adaptors are necessary to lift the aircraft. A spherical nose jack adaptor and two wing jack adaptors are used between the aircraft jacking points and the jack. A spherical adaptor is used with the safety stay.

There are special shoring kits for aircraft shoring.



INFORMATION RELATED TO JACKING ARE GIVEN IN ATA 07-11-00



SHORING KIT PRINCIPLE

INFORMATION RELATED TO SHORING ARE GIVEN IN ATA 07-20-00

LIFTING AND SHORING - PRESENTATION - FUNCTION/DESCRIPTION ... TOOLS

V1813401 - V01T0M0 - VM07P1LEVEL0101

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Leveling and Weighing - Presentation

Function/Description

There are three alternative procedures to make the aircraft level:

- Quick leveling procedure with Air Data/Inertial Reference System (ADIRS) from the Onboard Maintenance terminal (OMT)
- Quick leveling procedure with a spirit level in the passenger compartment
- Quick leveling procedure with a spirit level in the forward cargo compartment

You can weigh the aircraft with:

- The aircraft on jack
- The aircraft on its wheels

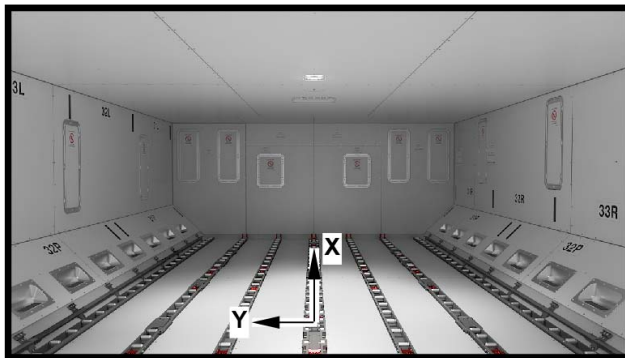
A scale is put below each landing gear to weigh the aircraft. The total scaling gives the final weight of the aircraft.



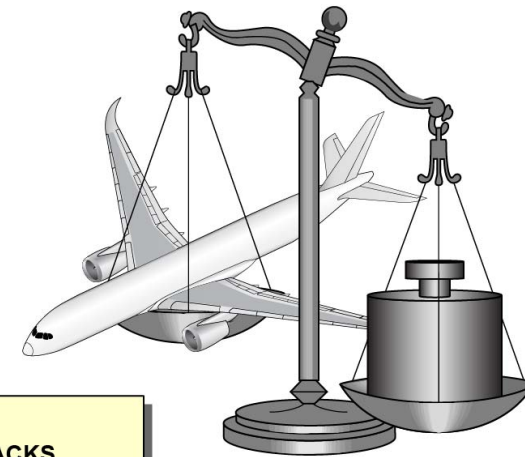
**AIRCRAFT QUICK LEVELING IN CABIN
(WITH SPIRIT LEVEL)**



**AIRCRAFT QUICK LEVELING FROM THE COCKPIT
(WITH THE ONBOARD MAINTENANCE TERMINAL)**



**AIRCRAFT QUICK LEVELING IN FORWARD CARGO
(WITH SPIRIT LEVEL)**



2 METHODS:
 - AIRCRAFT ON JACKS
 - AIRCRAFT ON ITS WHEELS.

AIRCRAFT WEIGHING

LEVELING AND WEIGHING - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM07P1LEVEL0101

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Towing and Taxiing - Presentation

Function/Description

You can tow aircraft with:

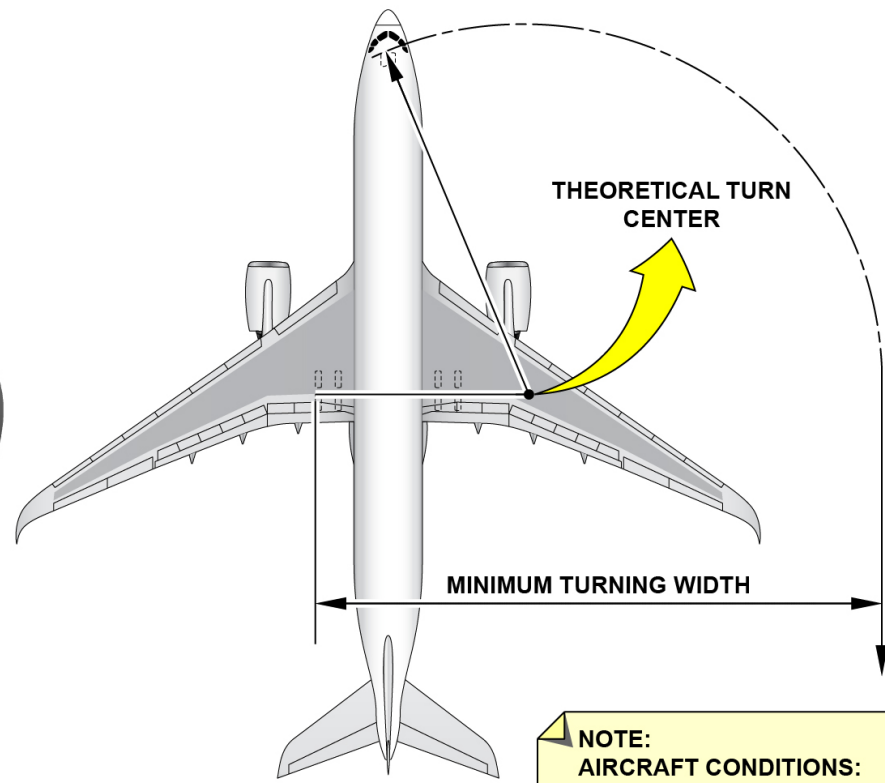
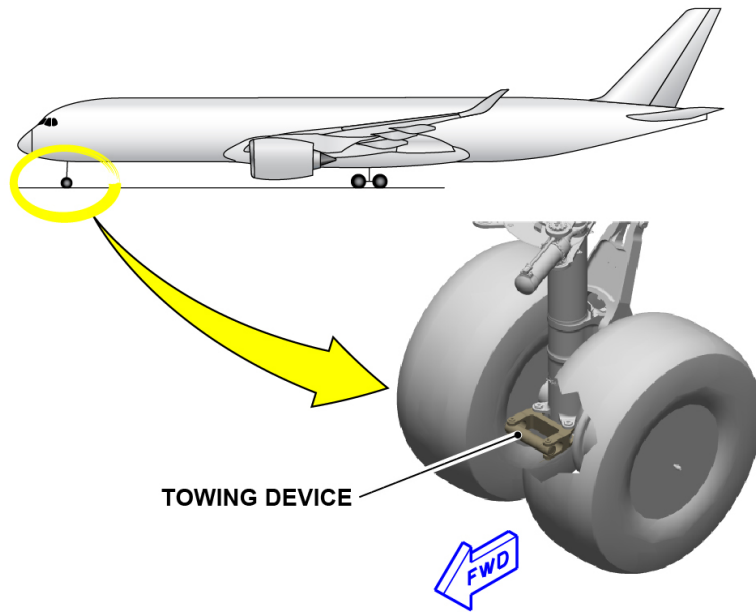
- A towbar
- A towbarless tractor.

You must connect the towbar to the Nose Landing Gear (NLG) structure.

NOTE: The data related to towing is in aircraft breakdown 07-11-00. There is a new function for the A350 XWB to make towing easier when the aircraft is electrically supplied by the battery only. The graphic that follows shows the aircraft turning capability in good operating conditions.

Safety Precautions

Each person in the aircraft must be in a seat with their seat belts attached during towing and taxiing operations (low-speed operations included).



INFORMATION RELATED TO TOWING IS GIVEN IN ATA 09-10-00

NOTE:
AIRCRAFT CONDITIONS:
SYMMETRIC THRUST AND
NO BRAKING

EACH PERSON IN THE AIRCRAFT IS IN A SEAT AND SEAT BELTS ARE ATTACHED DURING TOWING AND TAXIING OPERATIONS (LOW-SPEED OPERATIONS INCLUDED).

WARNING

MINIMUM TURNING WIDTH	
A350-800	46.0 m (150 ft 11.0 in)
A350-900	51.0 m (167 ft 3.9 in)
A350-1000	56.0 m (183 ft 8.7 in)

TOWING AND TAXIING - PRESENTATION - FUNCTION/DESCRIPTION & SAFETY PRECAUTIONS

AIRCRAFT GROUND HANDLING INTRODUCTION (1)


Parking and Mooring - Presentation

Function/Description

Maintenance procedure (MP) of Chapter 10-11 includes parking procedures related to the number of days or weeks with the conditions in which an aircraft must be parked. These procedures include:

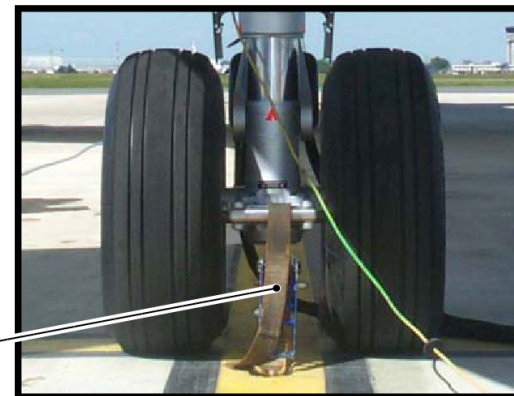

- Parking of the aircraft in flight-ready condition
- Ground checks during parking
- Return to operation after parking
- Renewal parking procedures.

Maintenance procedure (MP) of Chapter 10-20 includes the mooring procedure to prevent movement of aircraft when it is not stable in high winds. The aircraft is moored at the nose landing gear level with a mooring kit.


PARKING


REFER TO MP 10-11-00 FOR THE TASK DESCRIPTION OF:

- PARKING OF THE AIRCRAFT IN FLIGHT-READY CONDITION
- GROUND CHECKS DURING PARKING
- RETURN TO OPERATION AFTER PARKING
- RENEWAL PARKING PROCEDURES.


MOORING

MOORING KIT


REFER TO MP 10-20-00 FOR MOORING TASK DESCRIPTION

PARKING AND MOORING
PARKING AND MOORING - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM07P1LEVEL0101

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Storage and Return to Service - Presentation

Function/Description

The storage procedure for a period of not more than 6 months (Ref. MP 10-31-00) includes these reference procedure:

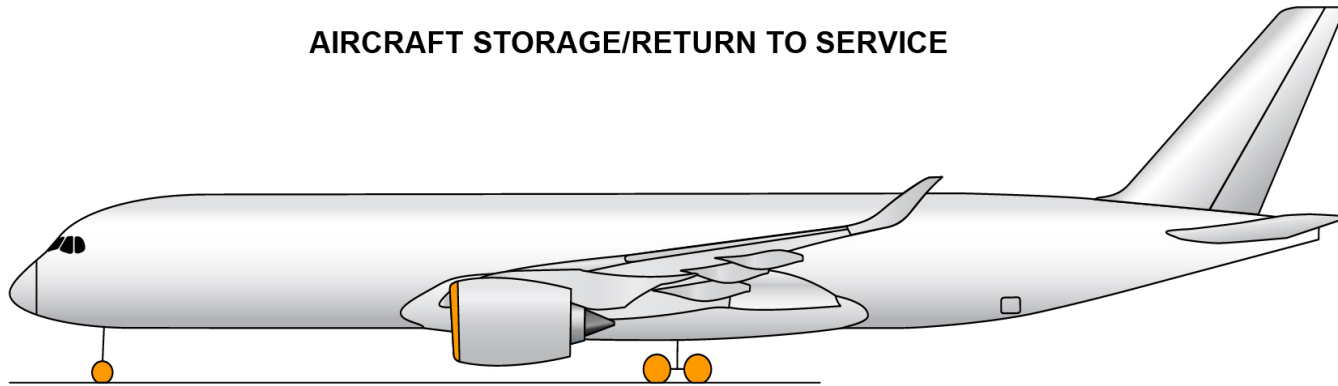

- Periodic ground checks during storage at 7-day intervals, at 15-day intervals, at 1-month intervals and at 3-month intervals (Ref. MP 10-31-00)
- Return to operation after storage (Ref. MP 10-40-00)
- Renewal of storage procedure for a period of not more than 6 months only one more time (Ref. MP 10-31-00).

CAUTION: DURING THIS PROCEDURE:

MAKE SURE THAT THE LANDING GEAR GROUND IS SAFETIED AND THAT THE LOCKING DEVICES AND WHEEL CHOCKS ARE IN POSITION.

KEEP THE ACCESS PLATFORM AT A SUFFICIENT DISTANCE FROM THE AIRCRAFT (IN WIND, SHOCK ABSORBER REBOUND CAN CAUSE MOVEMENT OF THE AIRCRAFT).

CAUTION: DURING STORAGE OR PARKING PERIODS, DO NOT STOP OR CHANGE THE MAINTENANCE PROGRAM WITHOUT LOCAL AUTHORITY APPROVAL. THE MAINTENANCE CALENDAR CLOCK CONTINUES DURING THESE PERIODS.

AIRCRAFT STORAGE/RETURN TO SERVICE



REFER TO MP 10-31-00 FOR STORAGE PROCEDURE
REFER TO MP 10-40-00 FOR RETURN TO SERVICE PROCEDURE

DURING THIS PROCEDURE:

- MAKE SURE THAT THE LANDING GEAR GROUND IS SAFETIED AND THAT THE LOCKING DEVICES AND WHEEL CHOCKS ARE IN POSITION.
- KEEP THE ACCESS PLATFORM AT A SUFFICIENT DISTANCE FROM THE AIRCRAFT (IN WIND, SHOCK ABSORBER REBOUND CAN CAUSE MOVEMENT OF THE AIRCRAFT).



DURING STORAGE OR PARKING PERIODS, DO NOT STOP OR CHANGE THE MAINTENANCE PROGRAM WITHOUT LOCAL AUTHORITY APPROVAL. THE MAINTENANCE CALENDAR CLOCK CONTINUES DURING THESE PERIODS.


STORAGE AND RETURN TO SERVICE - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Placards and Markings - Presentation

Function/Description

Commercial transport aircraft have a large number of markings and placards on their outside surface and inside the cabin. Their purpose is to:

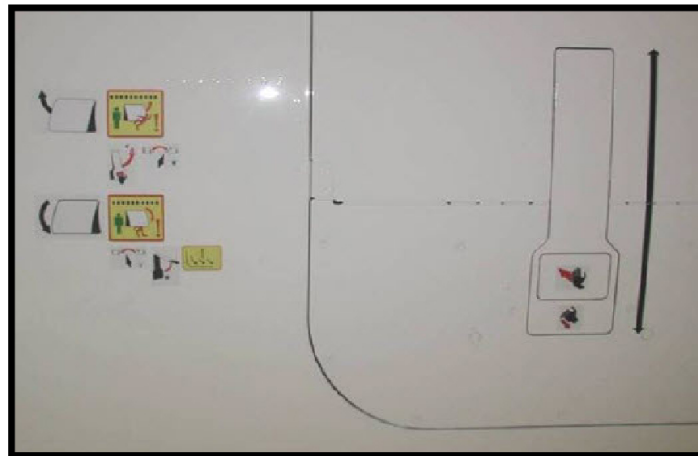
- Give warning about the dangers
- Give instructions
- Give the location of equipment.

Markings and placards are written for targeted populations, which can be from different cultures and with different skills.

Internal instructions remain as written markings.

Placards that use pictograms help:

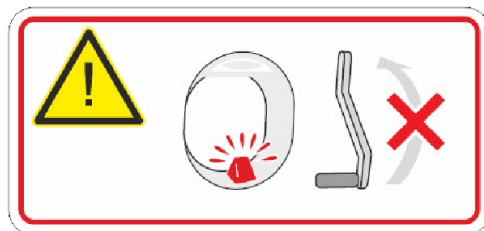
- To prevent the problem of accurate precise translations for many languages
- To remove ambiguities in verbal phrases and their interpretation
- To decrease the work to keep placards and manuals consistent
- To get a fleet-wide commonality
- To decrease training for crews because of the similarity with non-aviation symbols
- To make new placards not necessary after operator change
- To give aid to dyslexic people to get the information
- To make placards easier to read at a distance and in bad lighting condition.



CARGO DOOR OPENING/CLOSING PICTOGRAM



INTERNAL INSTRUCTIONS



CABIN RESIDUAL PRESSURE PICTOGRAM



LIFE VEST LOCATION PICTOGRAM

- NO NEED FOR TRANSLATION
- EASY INTERPRETATION
- SIMILARITY WITH NON-AVIATION SYMBOLS
- FLEET-WIDE COMMONALITY
- DYSLEXIC PEOPLE CAN RECEIVE THE INFORMATION
- COST SAVING
- BETTER LEGIBILITY (DISTANCE, POOR LIGHTING)

PLACARDS AND MARKINGS - PRESENTATION - FUNCTION/DESCRIPTION

V1813401 - V01T0M0 - VM07P1LEVEL0101

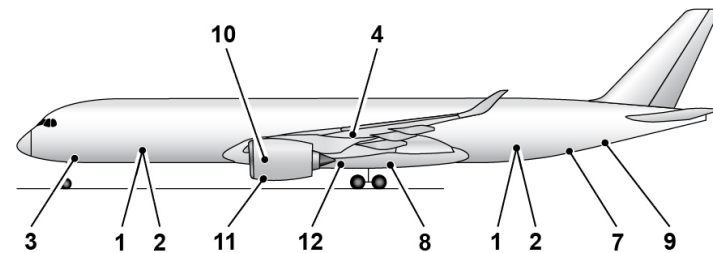
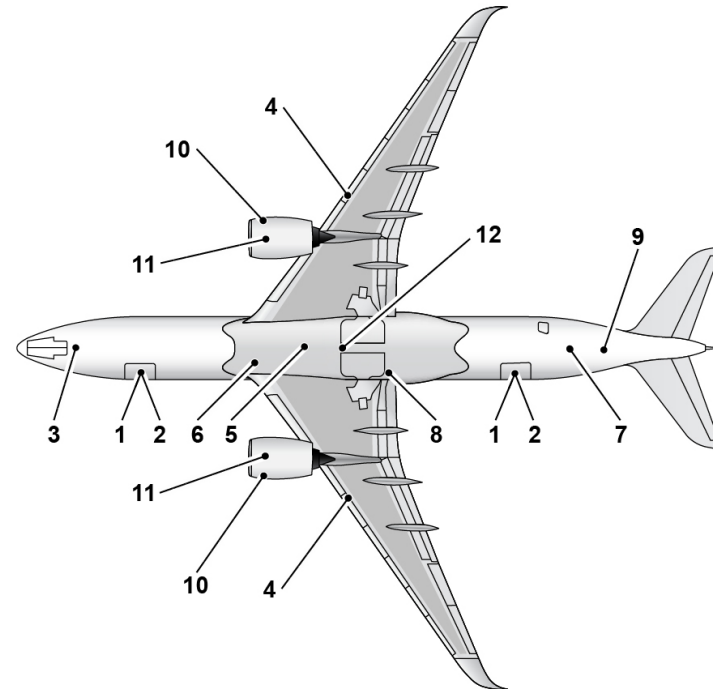
AIRCRAFT GROUND HANDLING INTRODUCTION (1)**Servicing - Presentation****Location**

The illustration shows the external standard service-points for the A350.

These service points are:

- The cargo control panel
- The cargo door control panel
- The electrical ground power
- The fuel couplings
- The high pressure air
- The low pressure air
- The potable water
- The refuel/defuel control panel
- The water waste
- The engine oil servicing
- The Variable Frequency Generator (VFG) oil servicing
- The hydraulic servicing panels.

- 1 - CARGO CONTROL PANEL
- 2 - CARGO-DOOR CONTROL PANEL
- 3 - ELECTRICAL GROUND POWER
- 4 - FUEL COUPLINGS
- 5 - HIGH PRESSURE AIR
- 6 - LOW PRESSURE AIR
- 7 - POTABLE WATER
- 8 - REFUEL/DEFUEL CONTROL PANEL
- 9 - WASTE WATER
- 10 - ENGINE OIL SERVICING
- 11 - VFG OIL SERVICING
- 12 - HYDRAULIC SERVICING



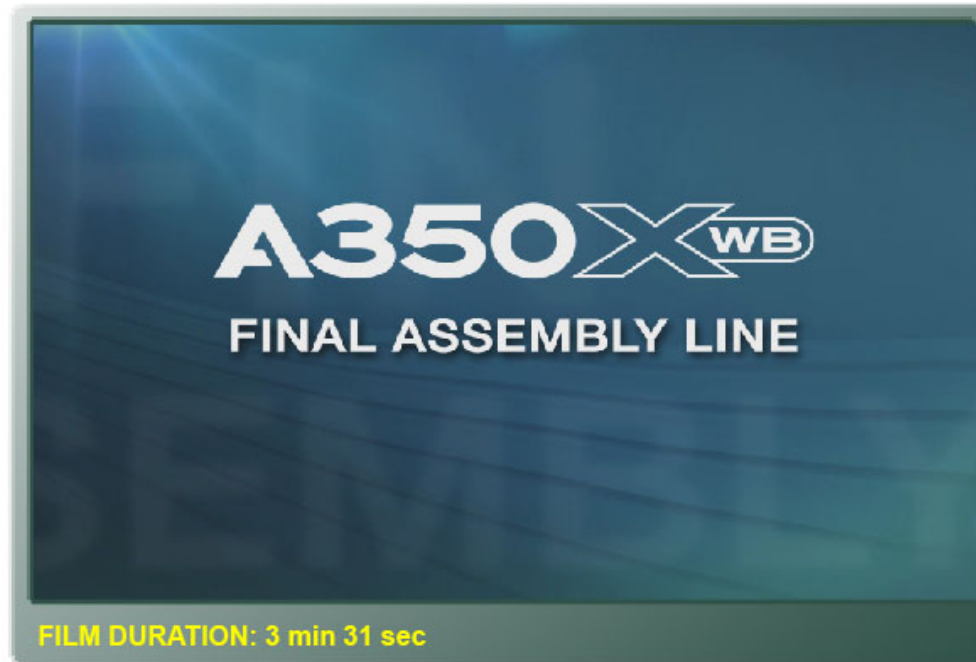
VFG: Variable Frequency Generator

SERVICING - PRESENTATION - LOCATION

V1813401 - V01T0M0 - VM07P1LEVEL0101

FINAL ASSEMBLY LINE PRESENTATION (1)**Final Assembly Line Presentation**

V1813401 - V01T0M0 - VM08P1LEVEL0101



FINAL ASSEMBLY LINE PRESENTATION

V1813401 - V01T0M0 - VM08P1LEVEL0101



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STM
REFERENCE V1813401
OCTOBER 2013
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