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

This document must be used for training purposes only

Under no circumstances should this document be used as a reference

It will not be updated.

AIRBUS Environmental Recommendation
Please consider your environmental responsability before printing this document.

AIRCRAFT GENERAL INTRODUCTION LEVEL 1

V2414251 - V00T0MM0

AIRCRAFT GENERAL INTRODUCTION (1)

Overview

This general introduction gives data about the A350:
- Aircraft presentation
- Aircraft family
- Aircraft dimensions
- Aircraft general layout
- Aircraft weights.

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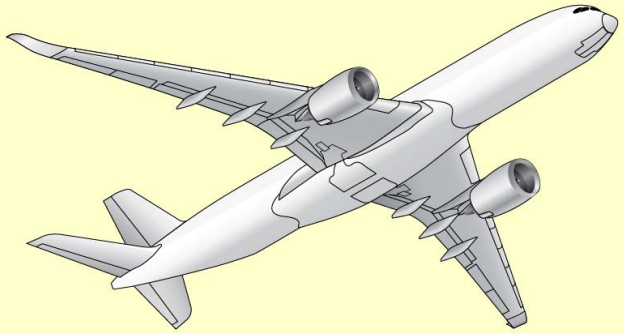
AIRCRAFT PRESENTATION

AIRCRAFT FAMILY

AIRCRAFT DIMENSIONS



A350 XWB GENERAL PRESENTATION

AIRCRAFT WEIGHTS

AIRCRAFT GENERAL LAYOUT

OVERVIEW

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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
- Better cabin atmosphere
- Easy cabin reconfiguration:
- Optimized seat rails
- Quick fasteners
- Advanced cockpit:
- 6 interchangeable Liquid Crystal Display (LCD) 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:
- Electro-Hydrostatic Actuators (EHA)/Electrical Backup Hydraulic Actuators (EBHAs)
- Integrated Modular Avionics (IMA)
- Advanced engines, twin engines:
- Less fuel consumption
- Low maintenance cost
- Low environmental impact.

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CARBON COMPOSITE AIRFRAME

EXTENSIVE USE OF CARBON COMPOSITE ON AIRCRAFT

MAXIMUM CABIN COMFORT

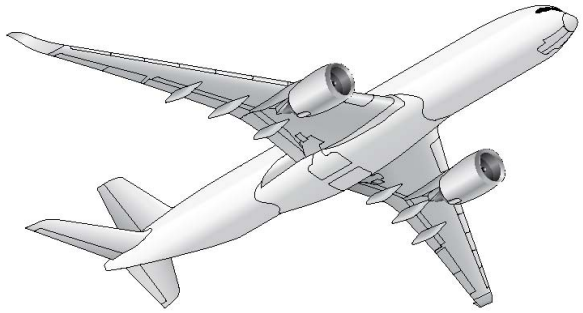
-WIDE CROSS-SECTION
-BETTER CABIN ATMOSPHERE

EASY CABIN RECONFIGURATION

-OPTIMIZED 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 6 frames in the forward fuselage part
- Plus 5 frames in the aft fuselage part.

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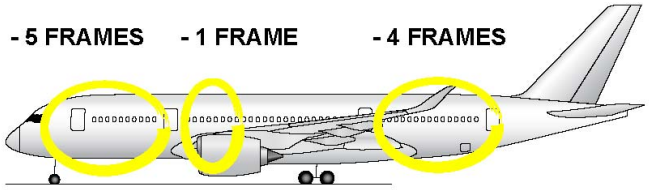
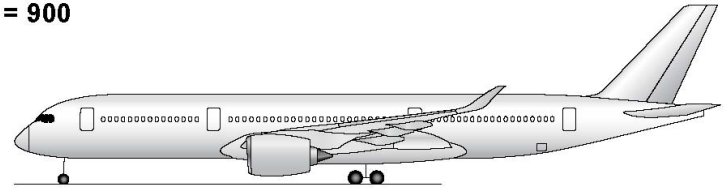
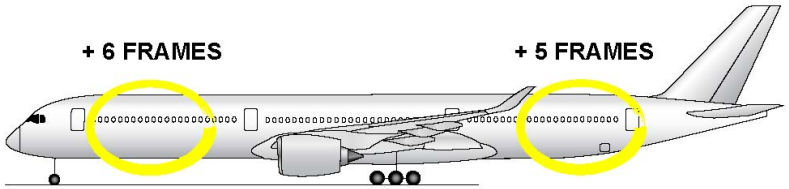


A350-800

BASIC = 900



A350-900



A350-1000

AIRCRAFT FAMILY - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT GENERAL INTRODUCTION (1)

Aircraft Dimensions - Presentation

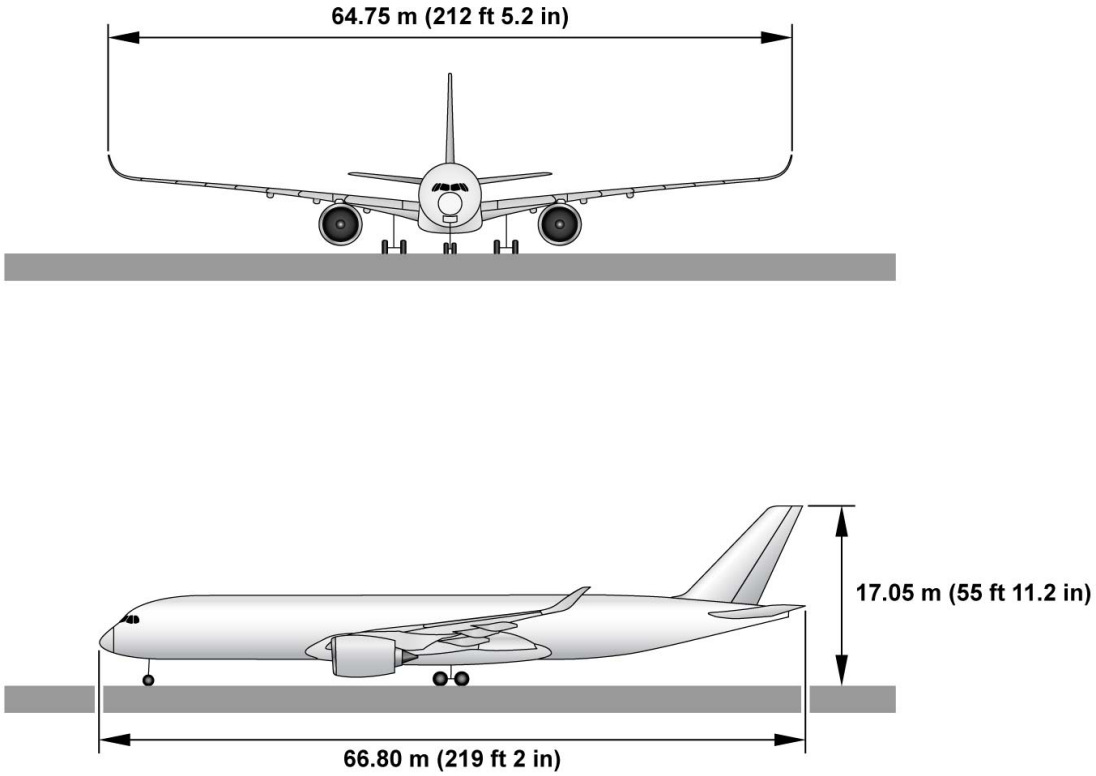
Function/Description

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

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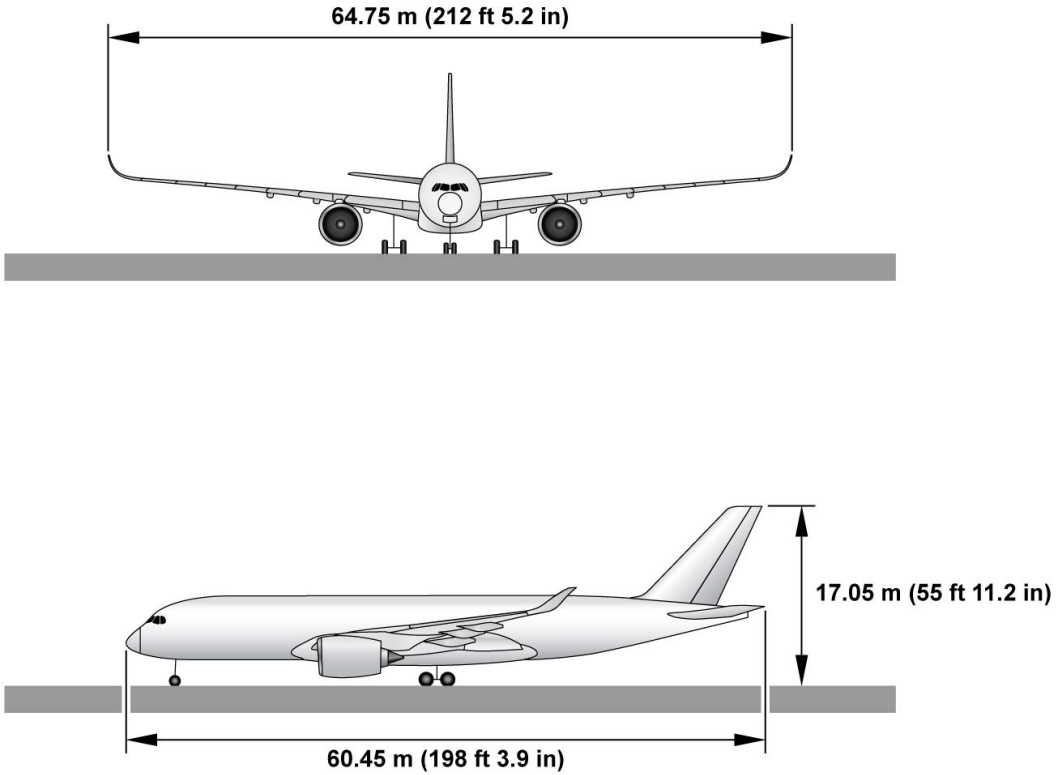
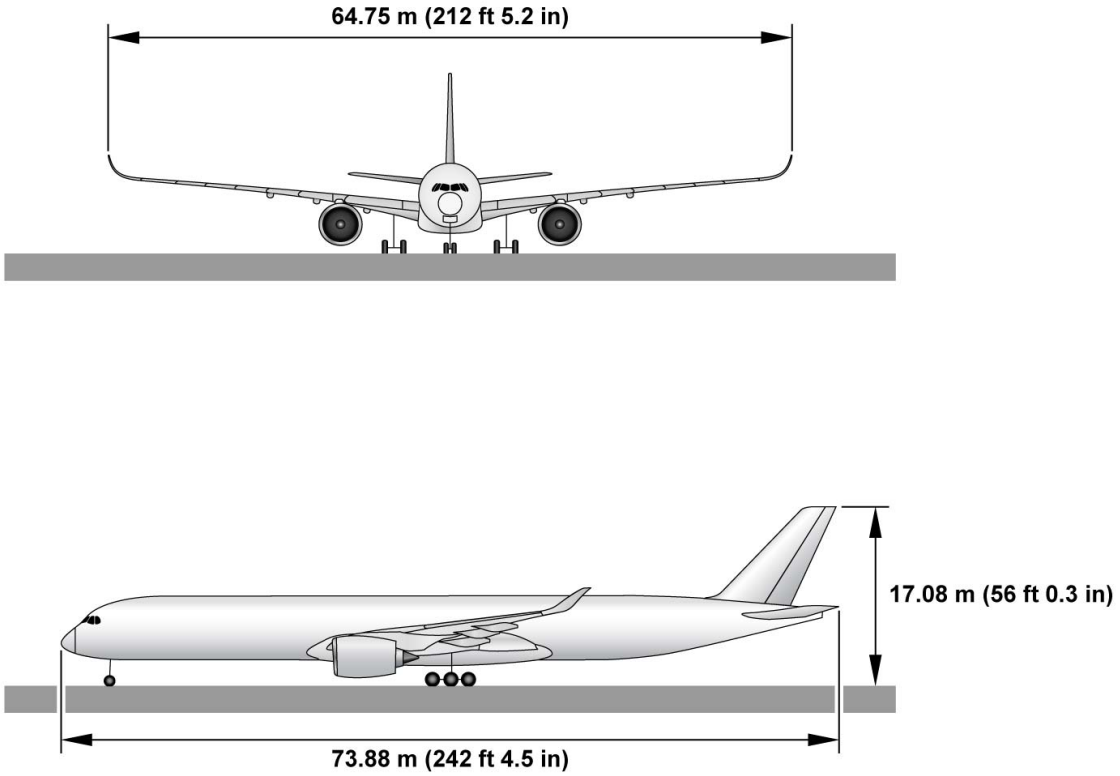


A350-800 AIRCRAFT DIMENSIONS

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 compartments
There are 3 different cargo compartments:
- The forward cargo compartment
- The aft cargo compartment
- 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 four 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 installed on three main avionics shelves (1000VU, 1100VU and 1200VU) and two main electrical shelves (for Electrical Power Distribution Centers EPDC1 and EPDC2).

The main avionics compartment is below the cockpit. Direct access to the main avionics compartment is possible from the cockpit or from the outside or the from the forward cargo compartment.
- The aft cabin underfloor compartment contains only two shevles: The In-Flight Entertainment Center (IFEC) rack and the connectivity rack. Access to the aft cabin underfloor compartment is possible from the bulk cargo compartment through a maintenance door.

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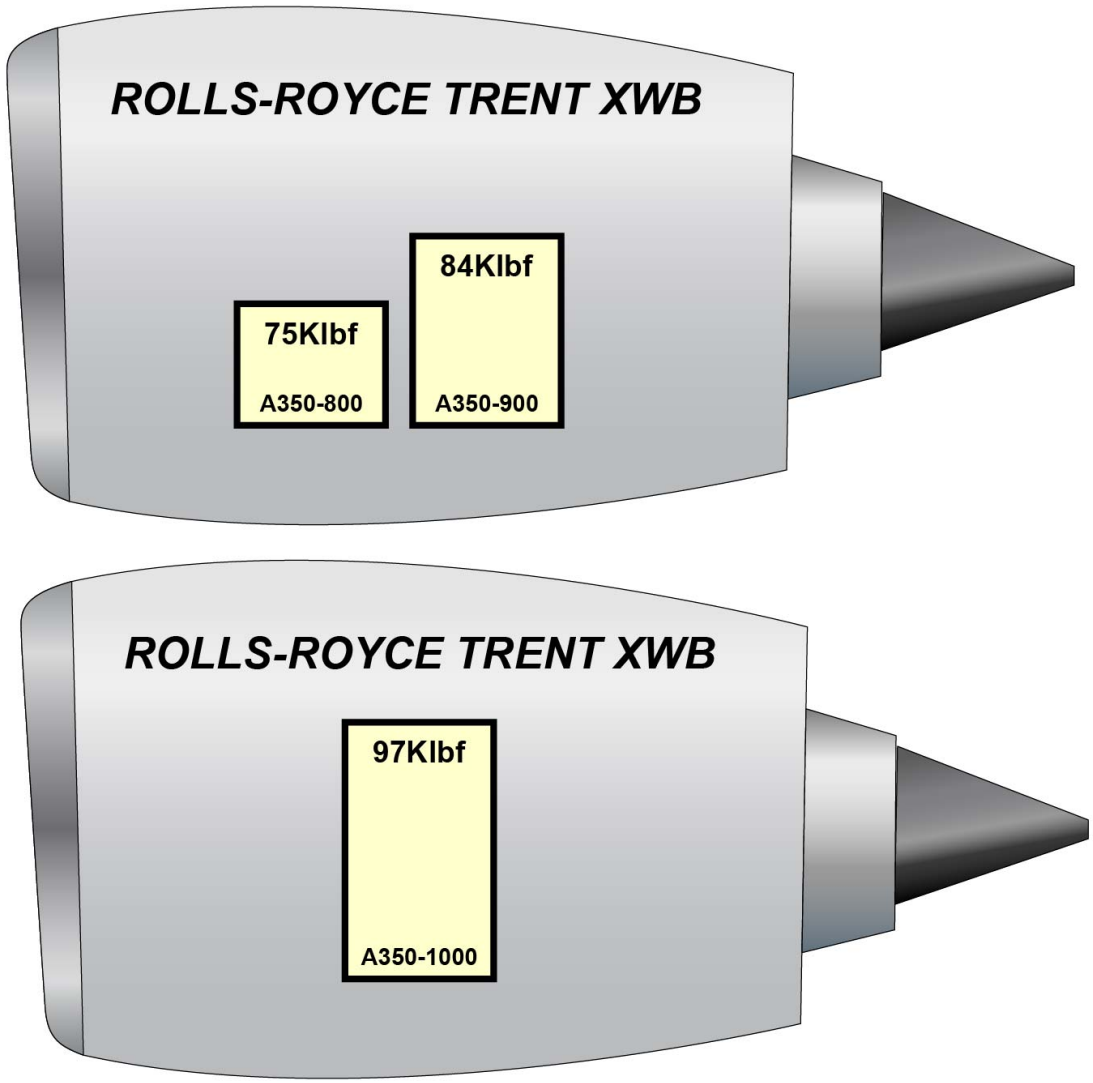


AIRCRAFT GENERAL LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION

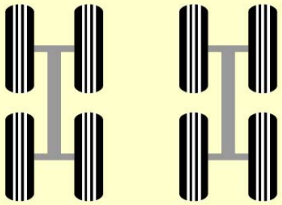
NOSE GEAR WHEELS

MODEL	CONFIGURATION
A350-800 A350-900	

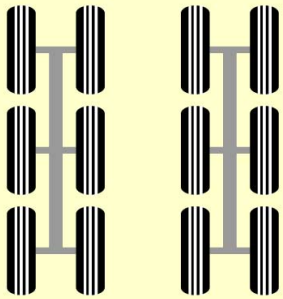
NOSE GEAR WHEELS

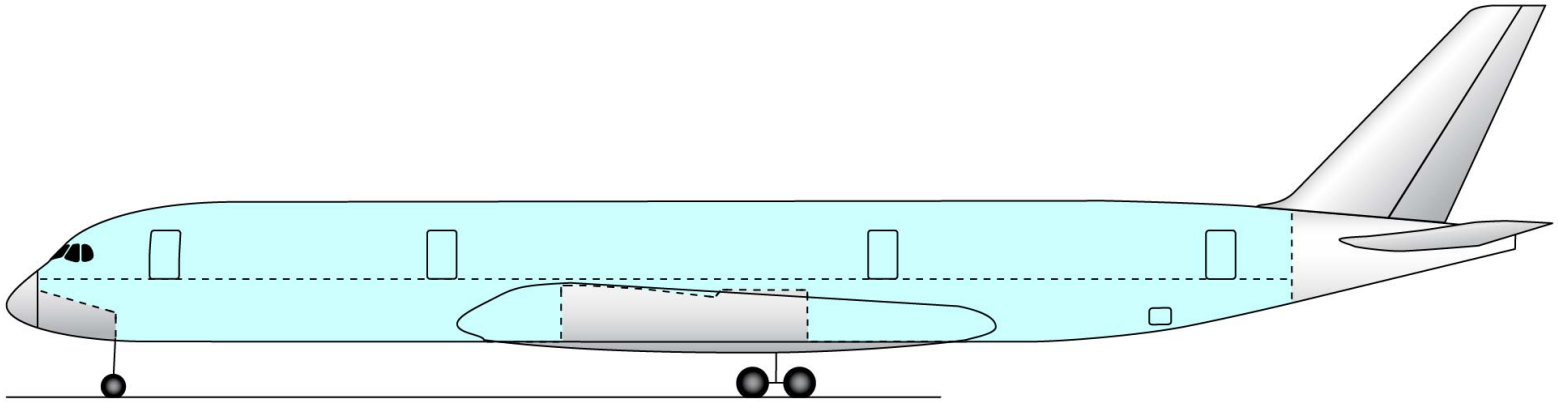
MODEL	CONFIGURATION
A350-1000	

MAIN GEAR WHEELS

MODEL	CONFIGURATION
A350-800 A350-900	

MAIN GEAR WHEELS

MODEL	CONFIGURATION
A350-1000	



AIRCRAFT GENERAL LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION

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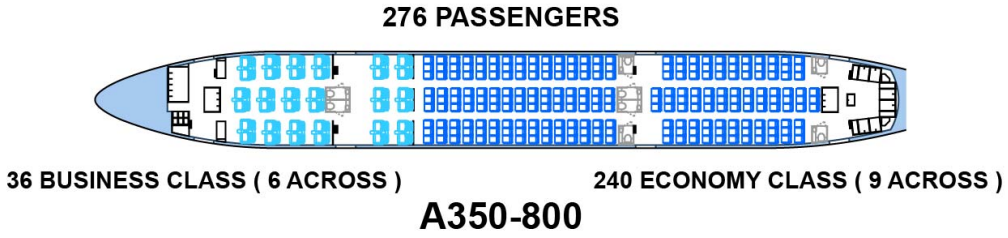
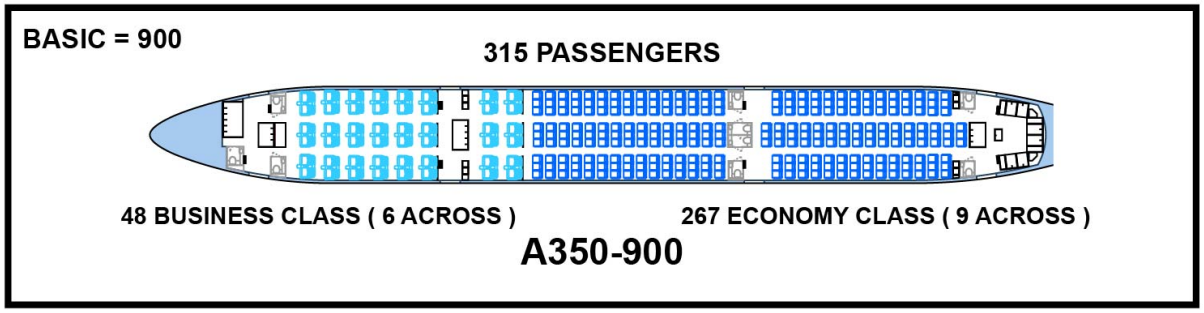
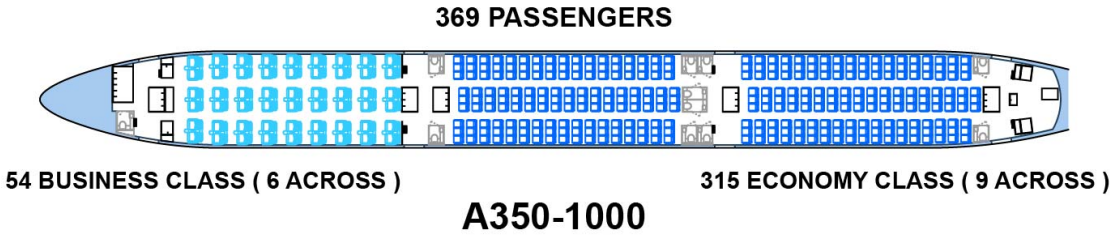
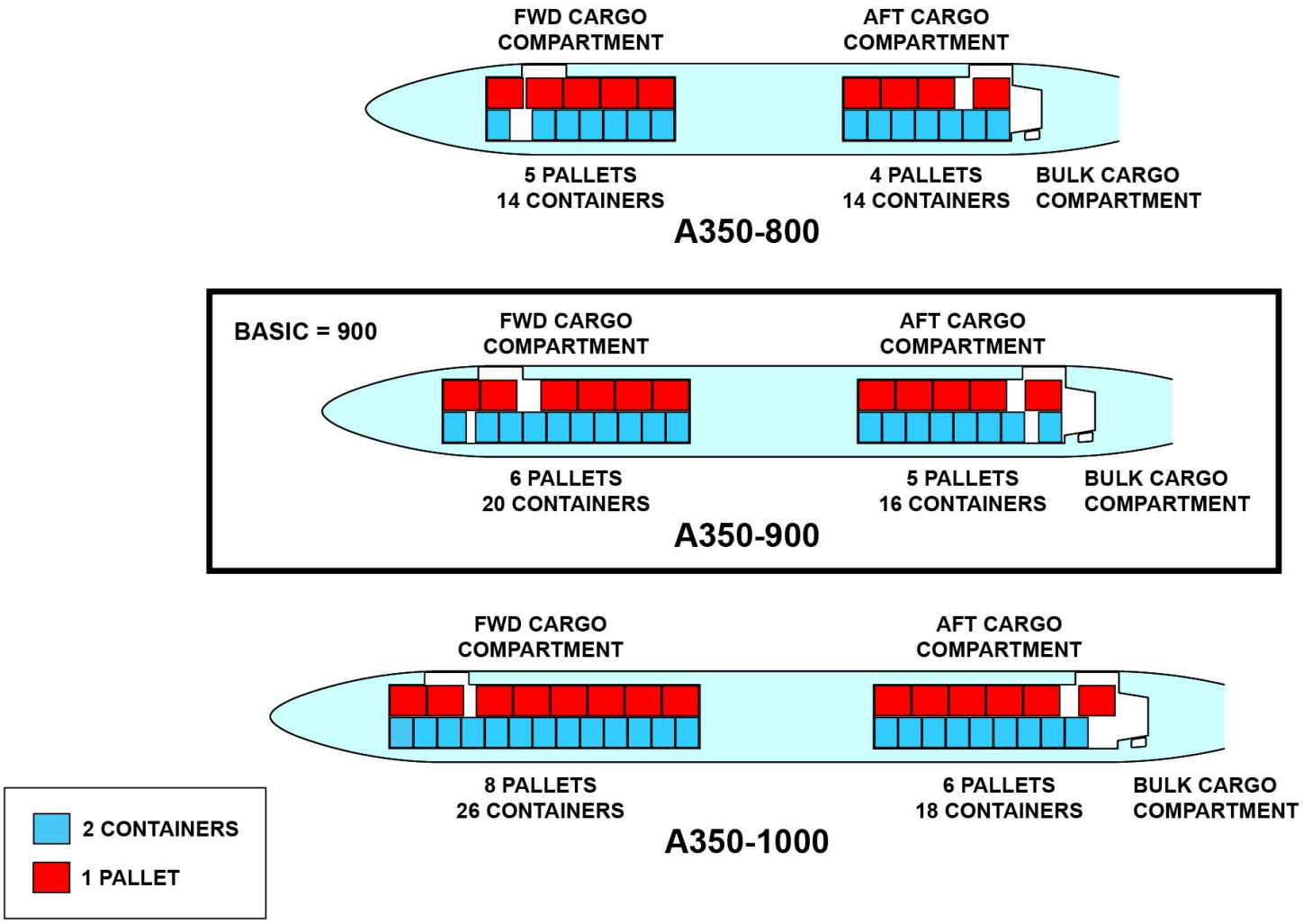


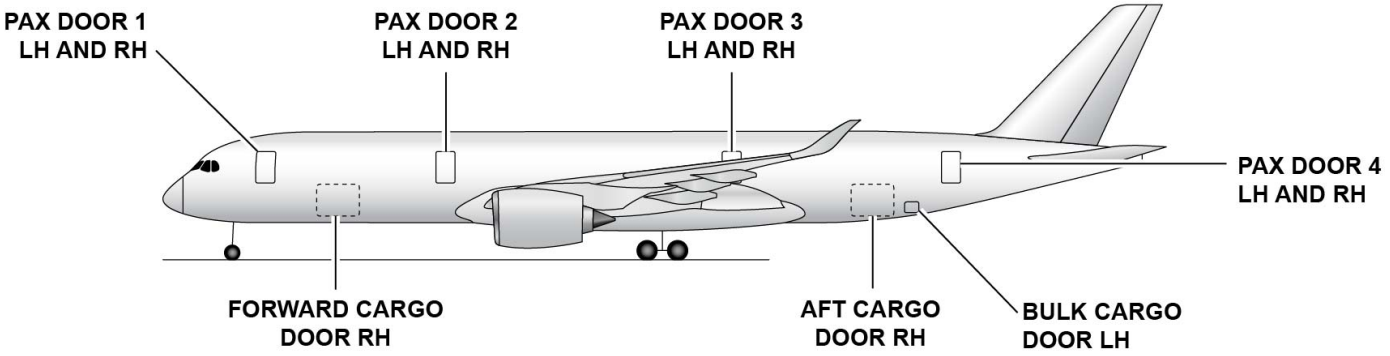




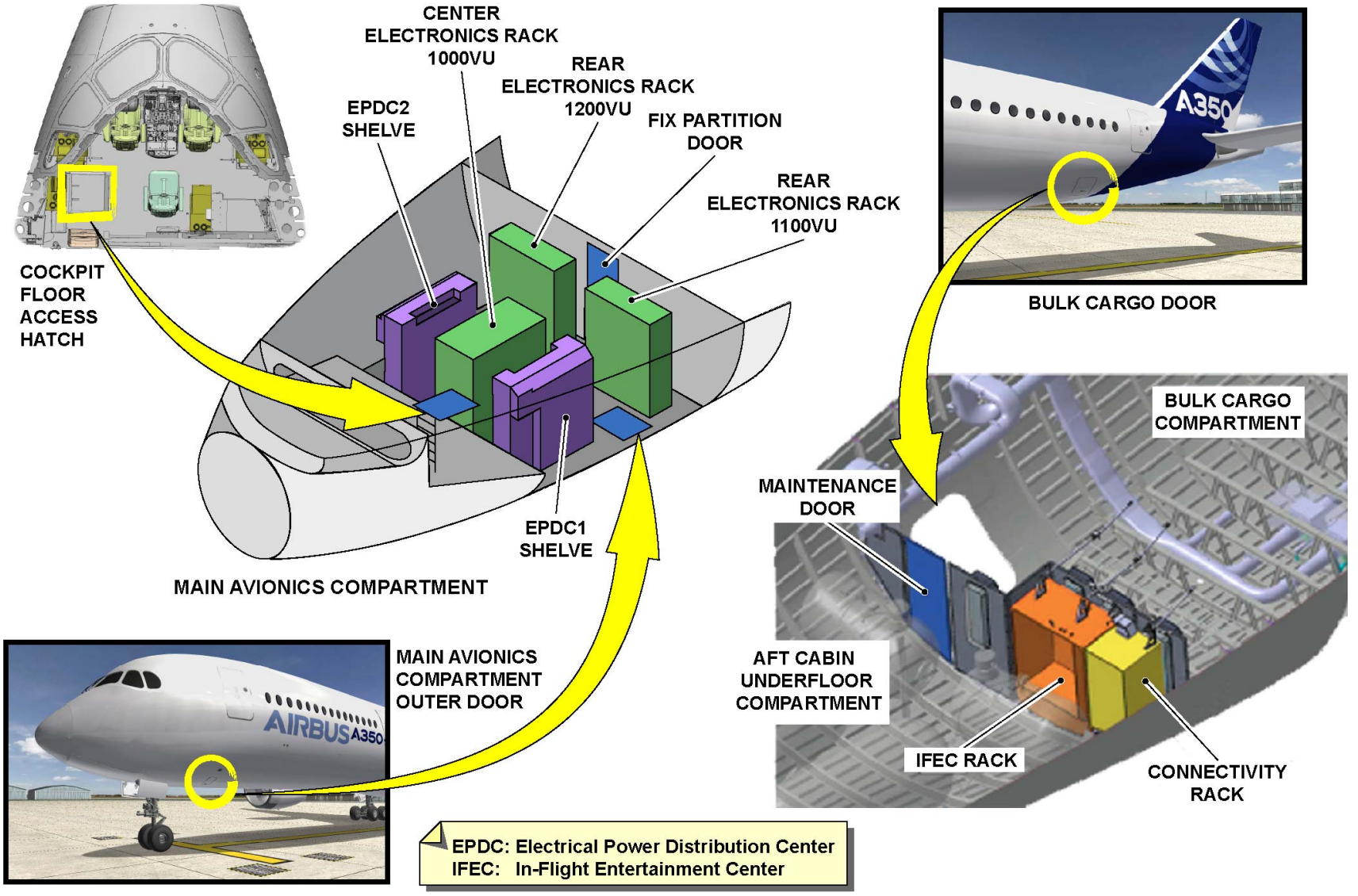
AIRCRAFT GENERAL LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION



AIRCRAFT GENERAL LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION



A350 DOORS LOCATIONS



AIRCRAFT GENERAL LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION

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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.
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
The A350-900 fuel quantity is 138000l .
The A350-800 fuel quantity is 138000l .
The A350-1000 fuel quantity is 156000l .

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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

This section gives data about:
- The aircraft stations
- The aircraft zones
- The Functional Item Number (FIN)
- The Radio Frequency Identification (RFID).

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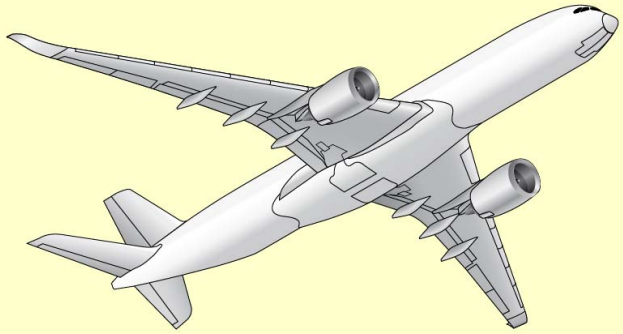
AIRCRAFT STATIONS

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 stations, the reference is the X datum line.
Station 0 (X=0) is the reference line for all structural measurements.
This reference is on the X axis, 5340mm forward of the radome.
The fuselage station number shows the distance of a cross section from X=0 in millimeters.
The wing structure has ribs.
There is one station for each rib.
All the stations are parallel to the X axis of the aircraft.
Station 0 is at RIB1.
All measurements are:
- At 90 degrees to RIB1
- Between RIB1 and the intersection of each rib datum with the front spar datum.

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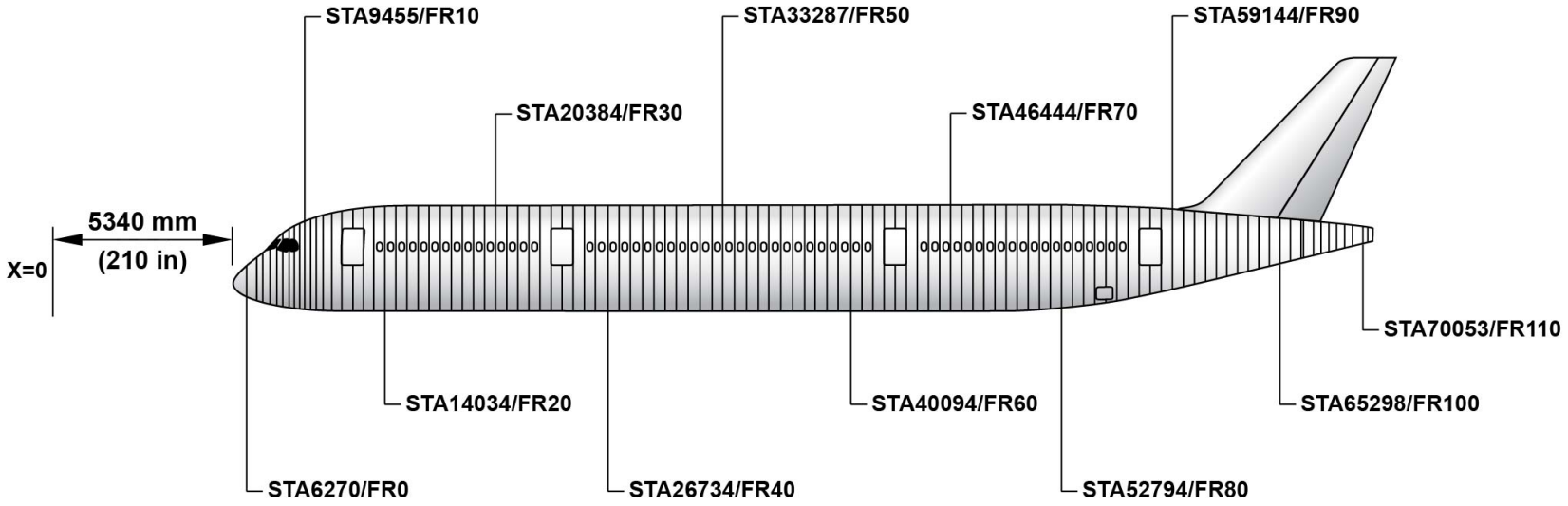
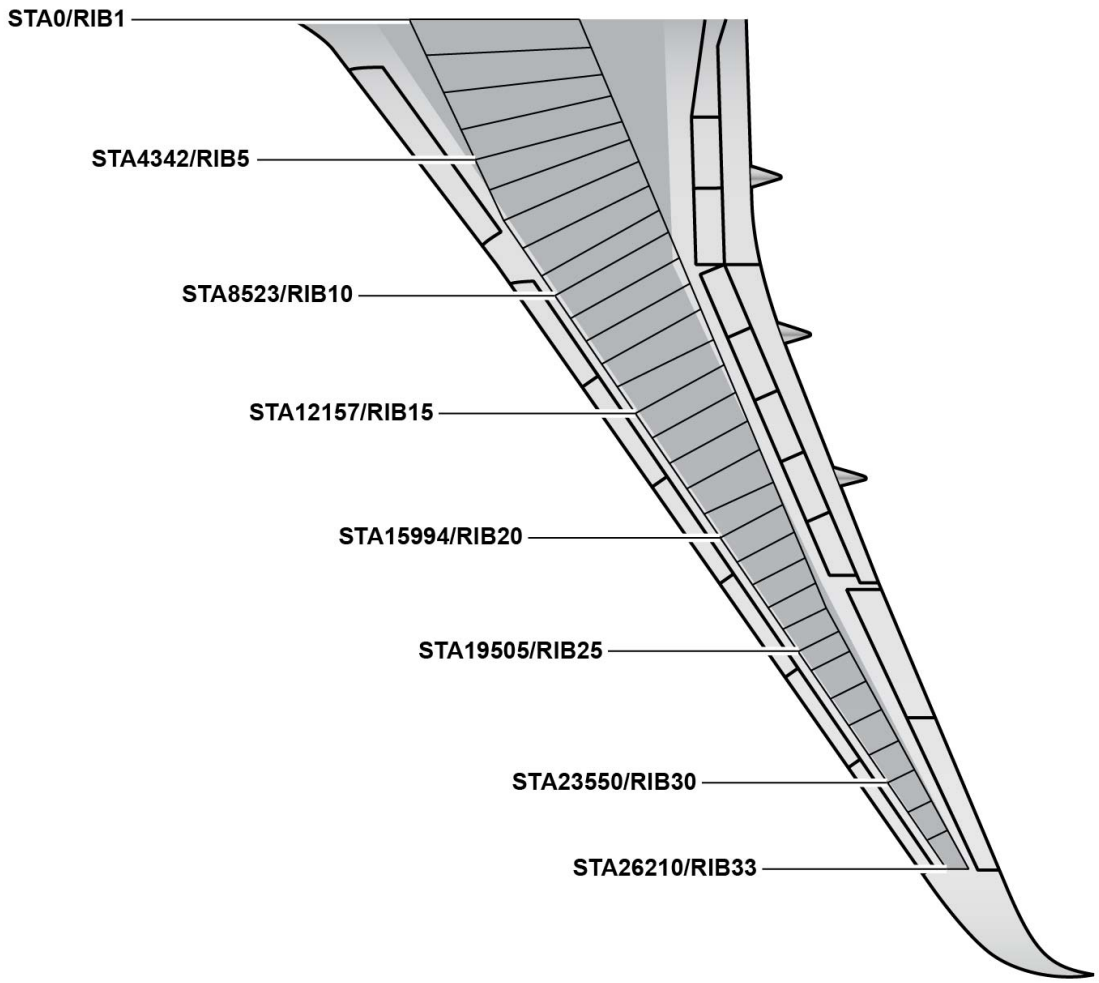


AIRCRAFT STATIONS - PRESENTATION - FUNCTION/DESCRIPTION



AIRCRAFT STATIONS - PRESENTATION - FUNCTION/DESCRIPTION

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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 eight major zones:
- 100 Lower half of the fuselage
- 200 Upper half of the fuselage
- 300 Stabilizers and rear fuselage section
- 400 Nacelles/pylons
- 500 Left wing
- 600 Right wing
- 700 Landing gears
- 800 Doors.

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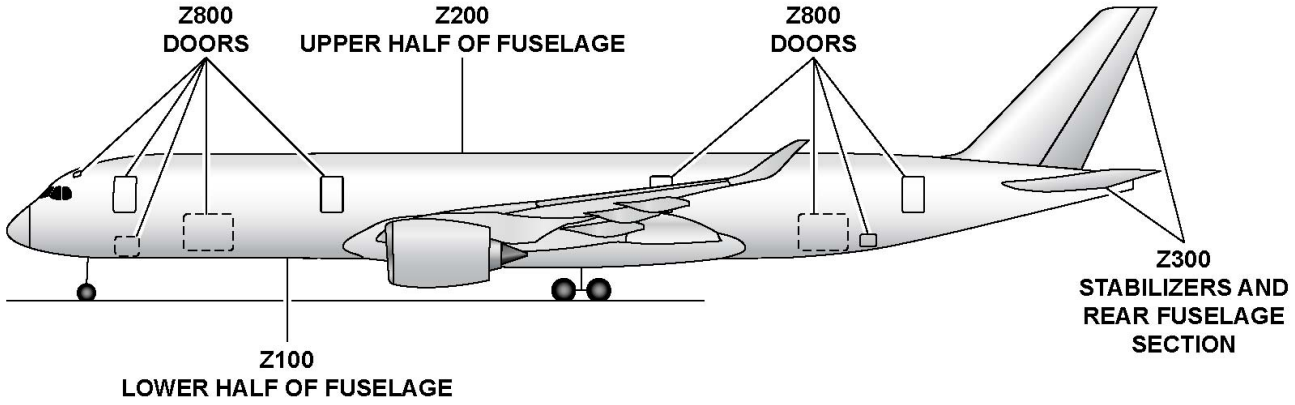

AIRCRAFT ZONES - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT STATIONS, ZONING AND IDENTIFICATION INTRODUCTION (1)

Functional Item Number (FIN) - Presentation

Function/Description

Each item of equipment on the aircraft has a Functional Item Number (FIN).
The basic part 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 is a Q (for example, GQ).
The code also has a prefix and a suffix 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 show which side the component is on: an even-number suffix identifies a component on the right side and an odd-number suffix identifies a component on the left side.

NOTE: Some FIN numbers (access panels, access doors, etc.) obey different rules. They are a five-character code (3 digits and 2 letters), for example: 534AB.
- The first digit identifies the main zone (e.g. 500).
- The second digit identifies the main sub-zone (e.g. 530).
- The third digit identifies the unit zone (e.g. 534).
- The first letter gives the sequence identification (this starts with the letter A). On the wing, this letter increases from inboard to outboard.
- The second letter gives the location in the zone (e.g. B = Bottom).

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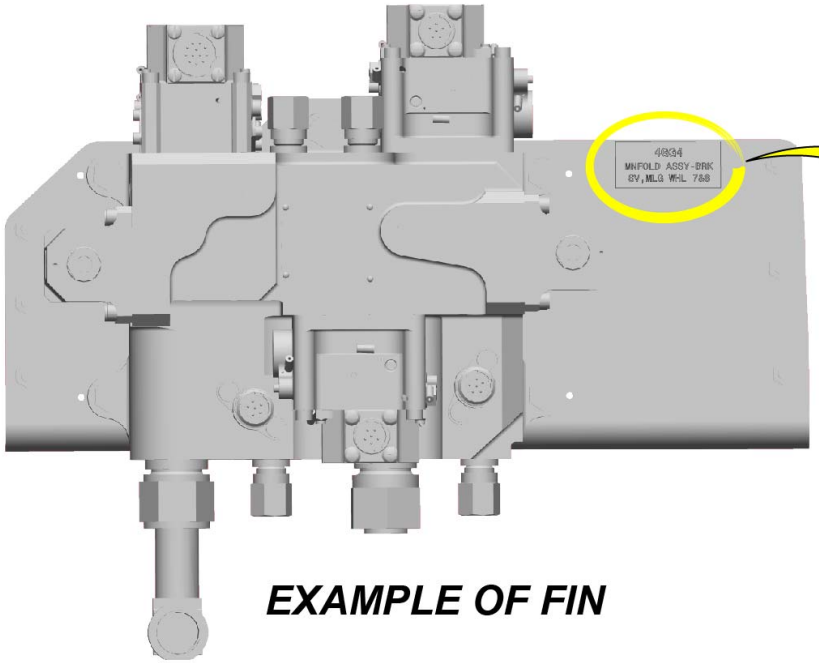


EXAMPLE OF FIN

EXCEPTIONS: SOME FIN NUMBERS HAVE DIFFERENT MEANING RULES (EX: ACCESS PANELS, COCKPIT PANELS...)

Functional Item Number (FIN)

4GG4
MNFOLD ASSY-BRK
SV, MLG WHL 7 & 8

4 — **PREFIX (SEQUENCE NUMBER)**

GG — **CIRCUIT LETTERS CODE (RELATED TO ATA CHAPTERS)**

4 — **SUFFIX (COUNTER)**

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

AIRCRAFT STATIONS, ZONING AND IDENTIFICATION INTRODUCTION (1)

Radio Frequency Identification (RFID) - Presentation

Function/Description

All the Line Replaceable Units (LRUs) have a tag that contains a micro-chip to identify them (designation, P/N, etc.).
These tags use Radio Frequency Identification (RFID) technology.
The data contained in the micro-chips is read (or written) with a reader (RFID reader/writer).

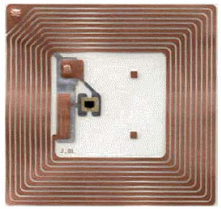
Radio Frequency Identification (RFID)

- 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 cockpit and includes:
- The cockpit commonality
- The cockpit layout
- The main instrument panel
- The glareshield
- The center pedestal
- The overhead panel
- The control panels.

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COCKPIT COMMONALITY

COCKPIT LAYOUT

CONTROL PANELS

MAIN INSTRUMENT PANEL

A350 XWB COCKPIT INTRODUCTION

OVERHEAD PANEL

CENTER PEDESTAL

GLARESHIELD

OVERVIEW

AIRCRAFT COCKPIT INTRODUCTION (1)

Cockpit Commonality - Presentation

Function/Description

The A350 general cockpit layout is based on a typical Airbus layout.

COCKPIT COMMONALITY - PRESENTATION - FUNCTION/DESCRIPTION

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 center pedestal.

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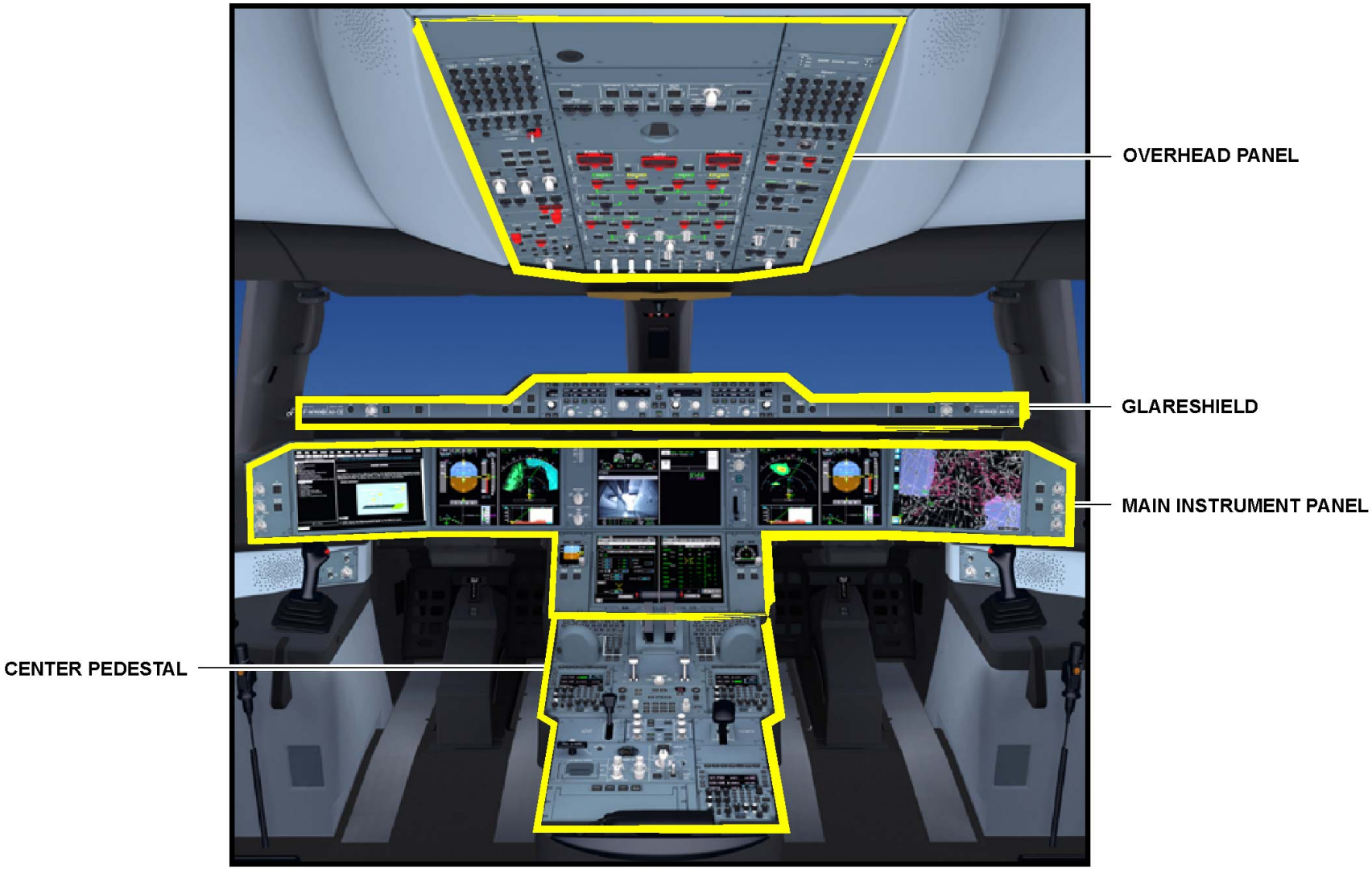

COCKPIT LAYOUT - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT COCKPIT INTRODUCTION (1)

Main Instrument Panel - Presentation

Function/Description

The main instrument panel includes six interchangeable Liquid Crystal Display units (LCD units). These are all the same and include:
- Two Electronic Flight Instrument System (EFIS) displays
- Electronic Centralized Aircraft Monitoring (ECAM) displays
- Multifunction Displays (MFDs)
- Two Onboard Information System (OIS) displays related to position and reconfigurations.

The Integrated Standby Instrument System (ISIS) indicator is on the front of the main instrument panel.

NOTE: The ISIS indicator on the right side is optional.

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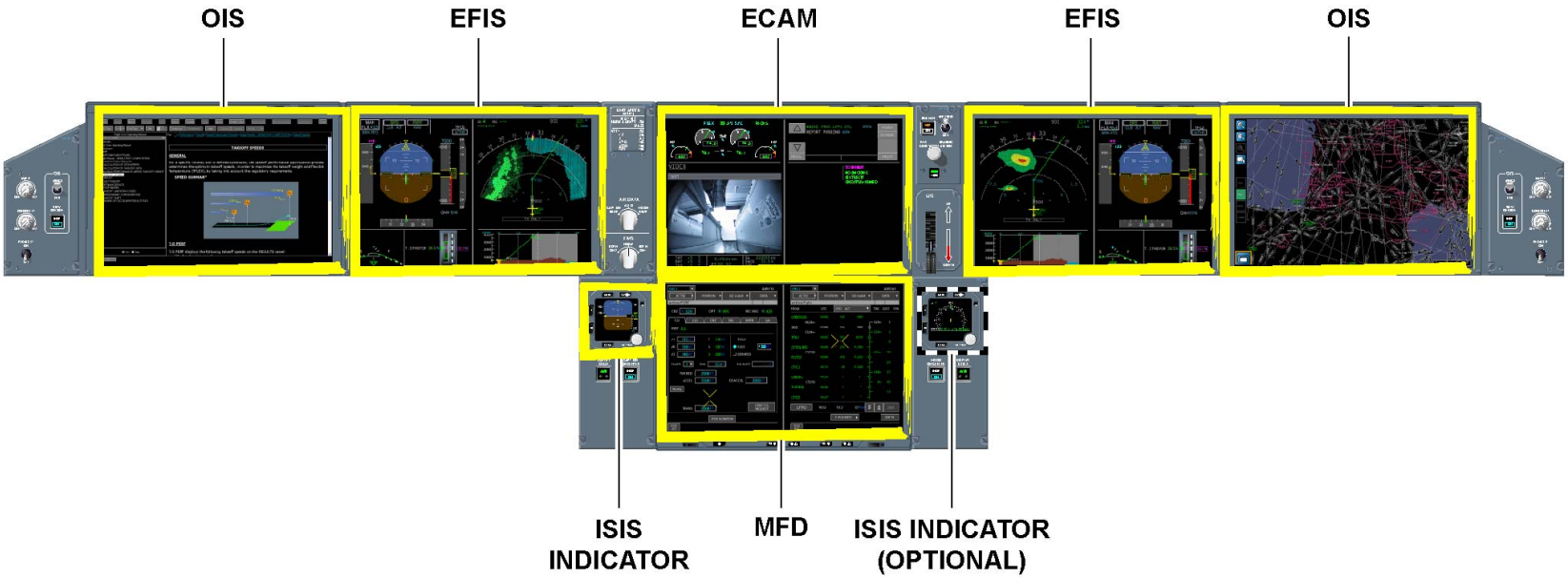


ECAM: Electronic Centralized Aircraft Monitoring
EFIS: Electronic Flight Instrument System
ISIS: Integrated Standby Instrument System
MFD: MultiFunction Display
OIS: Onboard Information System

MAIN INSTRUMENT PANEL - PRESENTATION - FUNCTION/DESCRIPTION

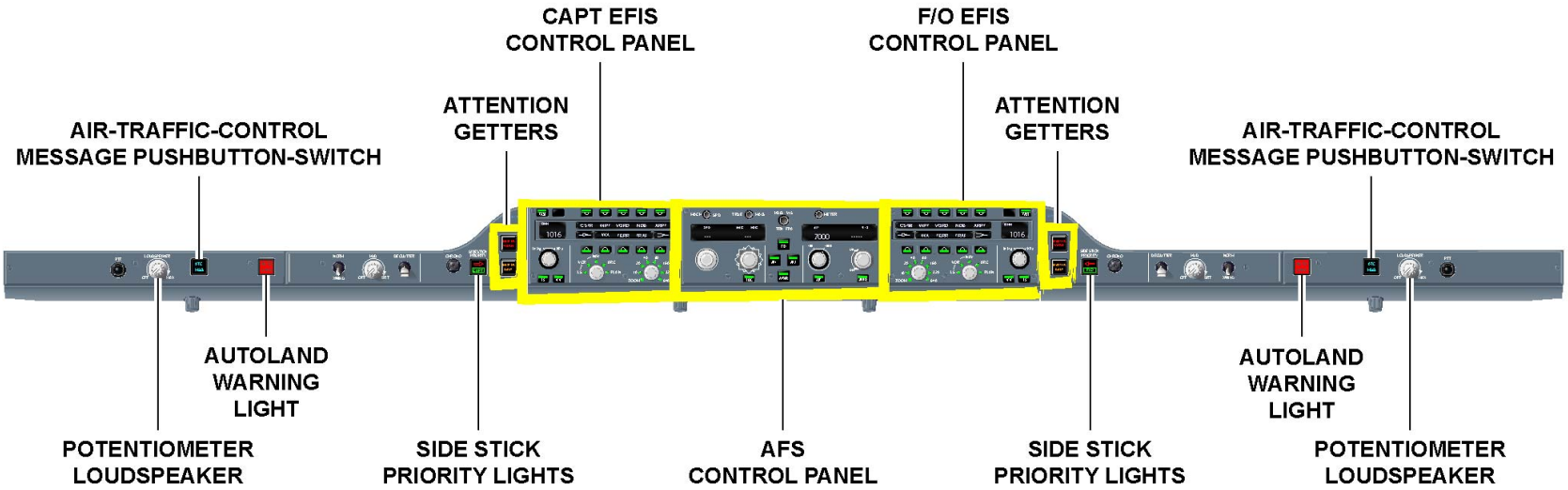
AIRCRAFT COCKPIT INTRODUCTION (1)

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 WARN and MASTER CAUT pushbutton switches
- The side-stick priority lights
- The WARN LT-AUTOLAND warning lights.

At each end of the glareshield, a POT-LOUDSPEAKER potentiometer and an ATC MSG pushbutton switch are installed.



AFS: Automatic Flight System
EFIS: Electronic Flight Instrument System

GLARESHIELD - PRESENTATION - FUNCTION/DESCRIPTION

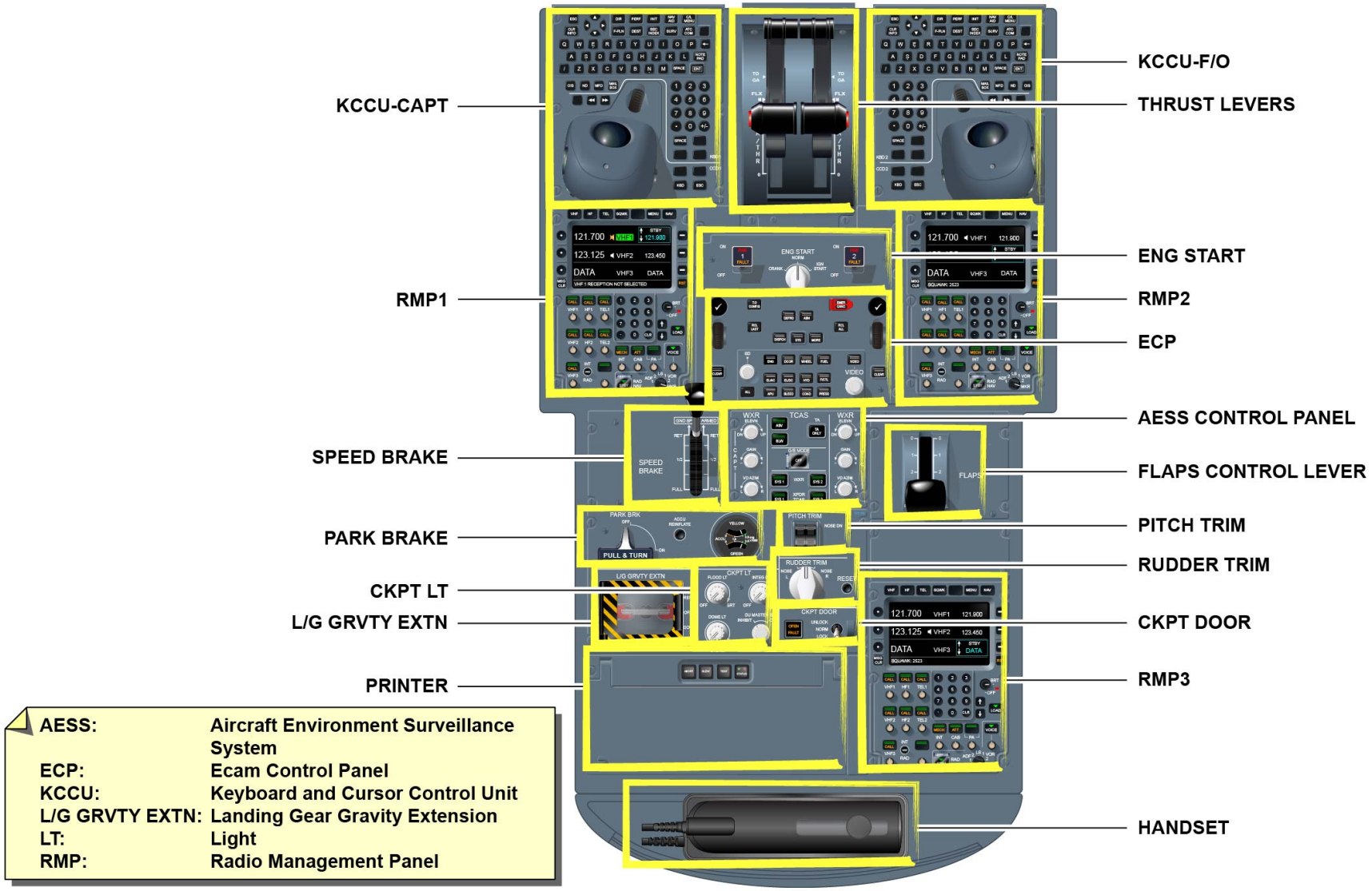
V2414251 - V00T0MM0 - VM03P1LEVEL0101

AIRCRAFT COCKPIT INTRODUCTION (1)

Center Pedestal - Presentation

Function/Description

The primary controls on the center pedestal are related to the engines and engine thrust, communications, navigation and aircraft configuration.
The center pedestal includes two Keyboard and Cursor Control Units (KCCUs) for display control and interactivity.



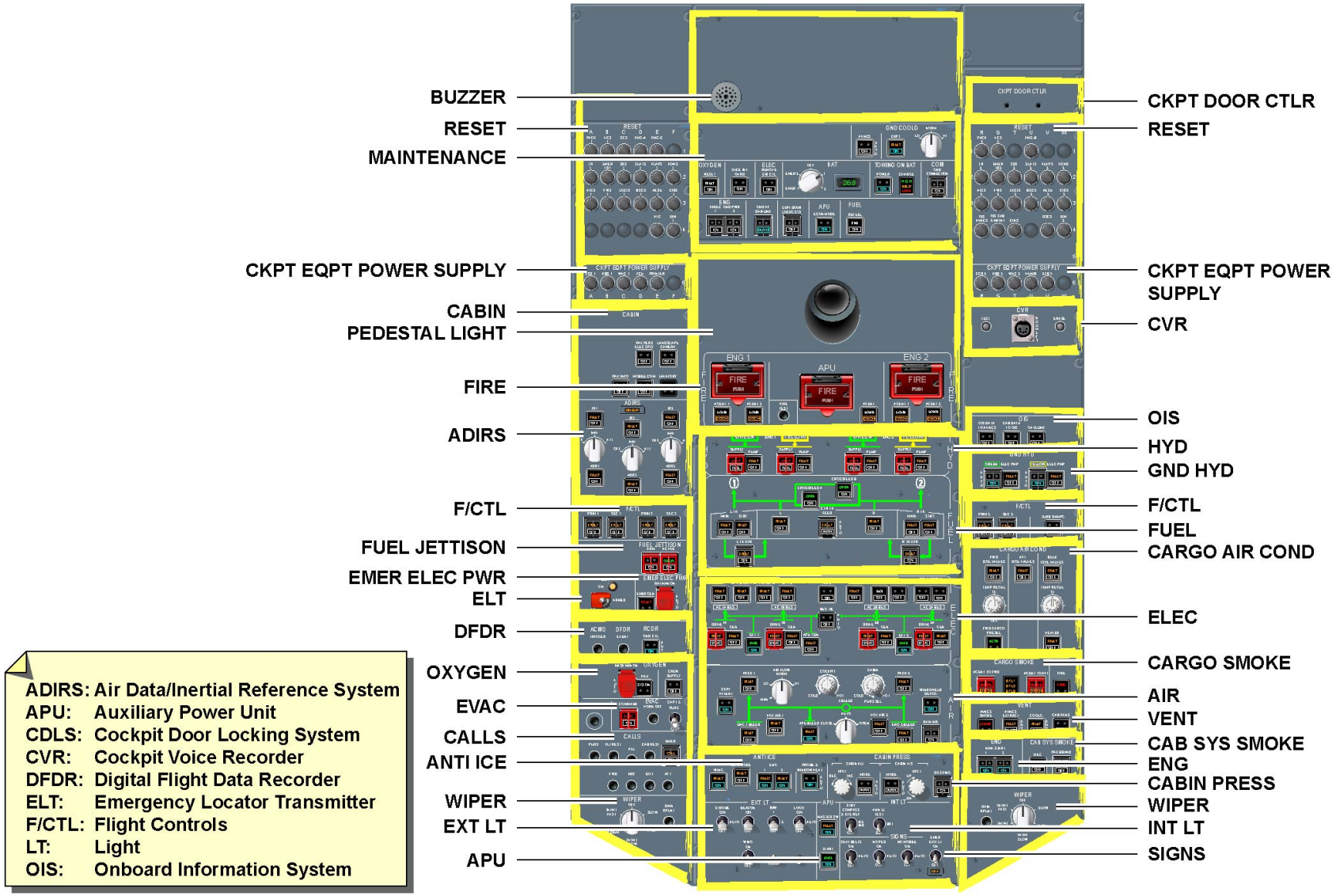
CENTER PEDESTAL - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT COCKPIT INTRODUCTION (1)

Overhead Panel - Presentation

Function/Description

Most of the aircraft system controls are on the overhead panel.
This is a standard layout that uses Integrated Control Panels (ICPs).
For each system, the controls are on one ICP. The ICPs 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 at the bottom part of the overhead panel.
There are no more circuit breakers in the cockpit, but system resets can be done from RESET panels/switches.
The top part of the overhead panel is for maintenance. Thus, on-ground maintenance operations can be done on some systems.



OVERHEAD PANEL - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT COCKPIT INTRODUCTION (1)

Control Panels - Presentation

Function/Description

The A350 includes ICPs referred to as "VMs".
The ICPs are part of an aircraft system interface that uses digital and non-digital technologies.
This concept decreases weight, because it uses less wiring and gives better maintainability.
VUs are also installed. They use standard non-digital technology for some critical aircraft systems.

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VM
(NEW TECHNOLOGY)

BENEFITS

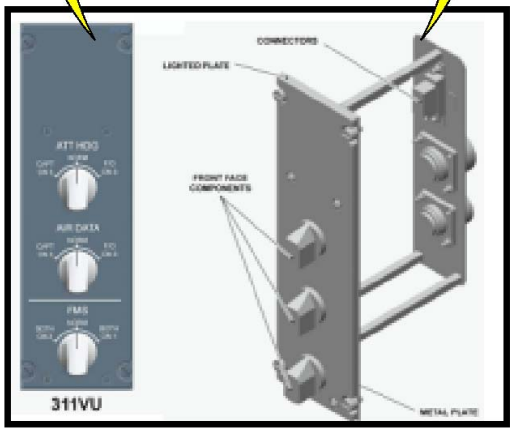
- LESS WIRING
- WEIGHT SAVING
- MAINTAINABILITY IMPROVED

225VM

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

VU
(CONVENTIONNAL TECHNOLOGY)

MATURE TECHNOLOGY



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

CONTROL PANELS - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT DOCUMENTATION INTRODUCTION (1)

Overview

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

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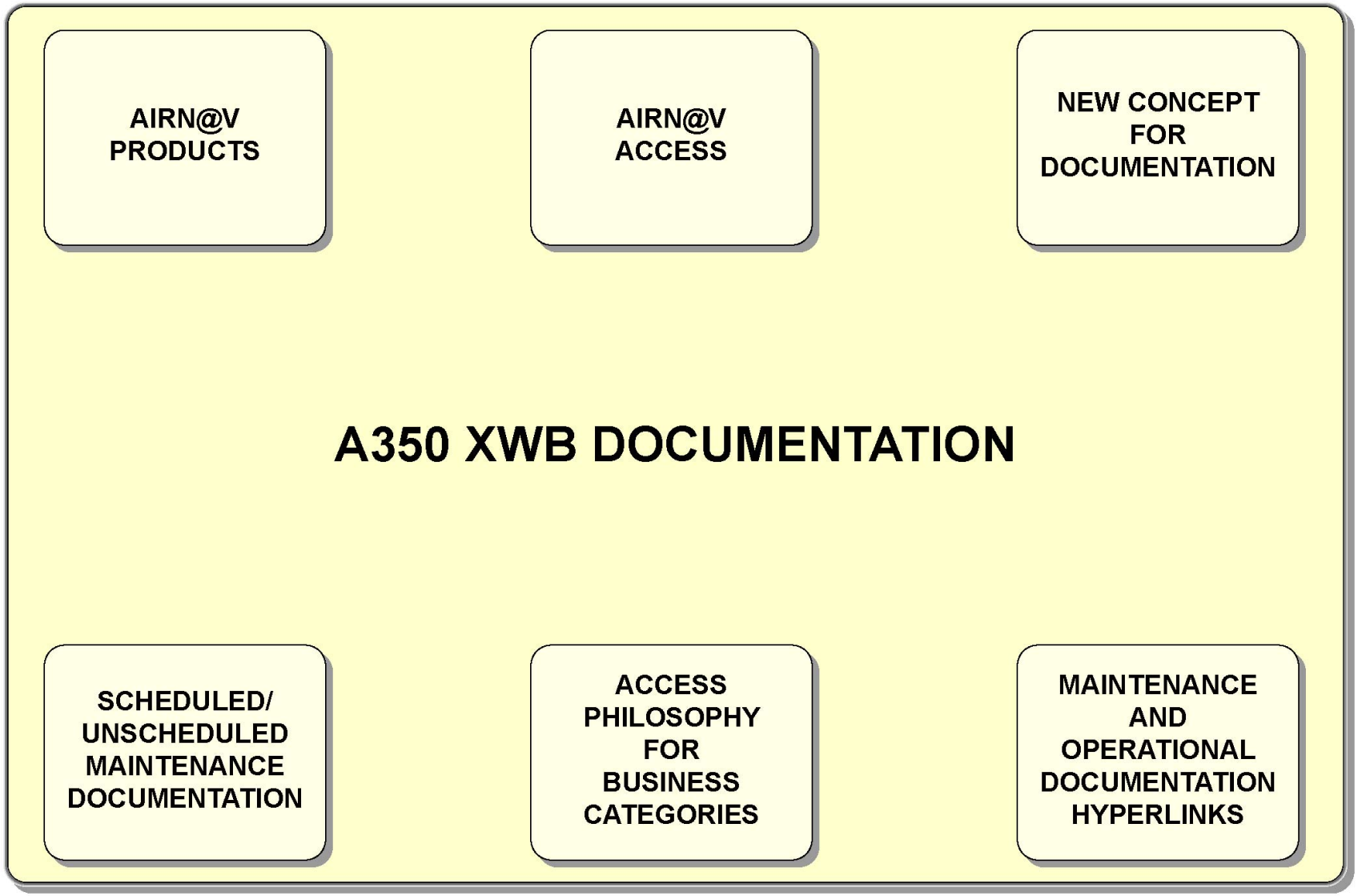

AIRN@V PRODUCTS
AIRN@V ACCESS
NEW CONCEPT FOR DOCUMENTATION
A350 XWB DOCUMENTATION
SCHEDULED/ UNSCHEDULED MAINTENANCE DOCUMENTATION
ACCESS PHILOSOPHY FOR BUSINESS CATEGORIES
MAINTENANCE AND OPERATIONAL DOCUMENTATION HYPERLINKS

OVERVIEW

AIRCRAFT DOCUMENTATION INTRODUCTION (1)

AirN@v Products - Presentation

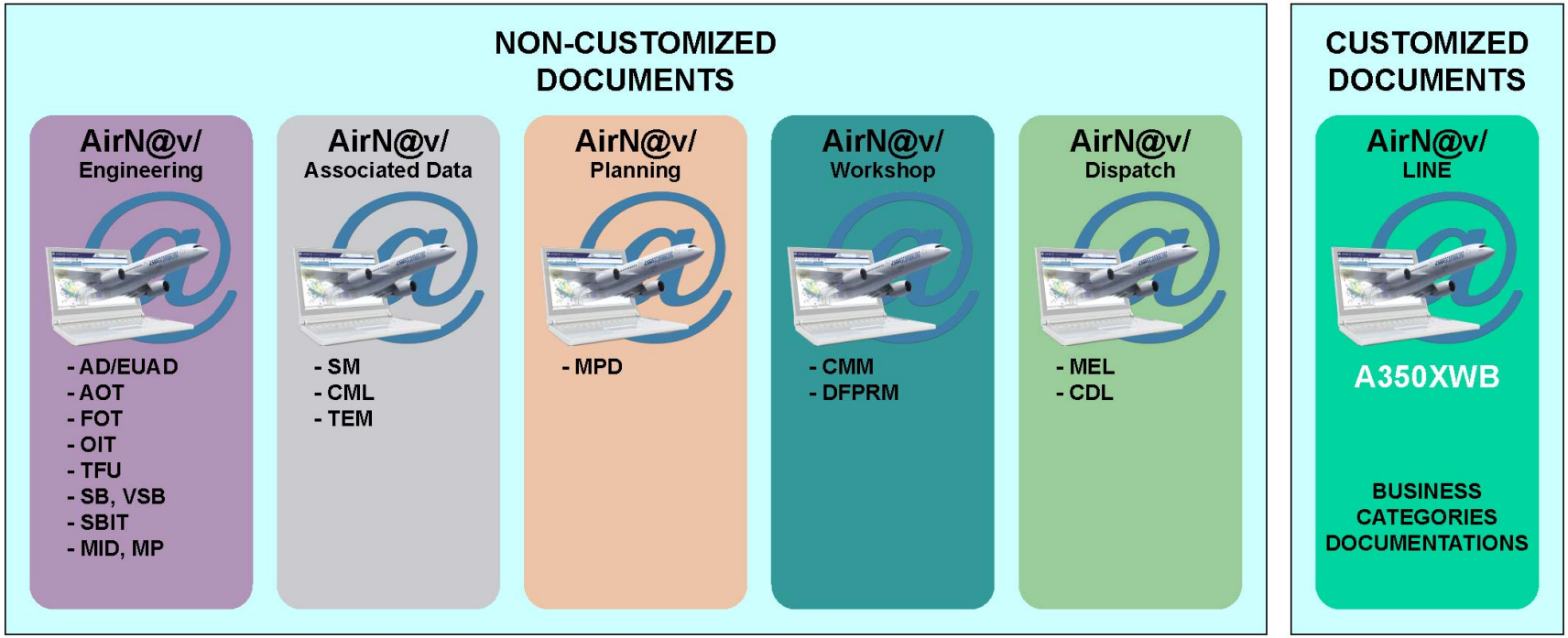
Function/Description

AirN@v has six applications, one customized and five 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)
- 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).
- AirN@v/Dispatch, which includes the:
- Minimum Equipment List (MEL)
- Configuration Deviation List (CDL).



AD:	Airworthiness Directive	MP:	Modification Proposal
AOT:	All Operators Telex	MPD:	Maintenance Planning Document
CDL:	Configuration Deviation List	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	SM:	Standards Manual
EUAD:	European Union AD	TEM:	Illustrated Tool and Equipment Manual
FOT:	Flight Operations Telex	TFU:	Technical Follow-up
MEL:	Minimum Equipment List	VSB:	Vendor Service Bulletin
MID:	Modification Information Document		

AIRN@V PRODUCTS - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT DOCUMENTATION INTRODUCTION (1)

AirN@v Access - Presentation

Function/Description

There is more than one procedure to get access to AirN@v data:
- On-line access from AIRBUSWorld, which is updated by Airbus
- Access directly on the aircraft from on-board terminals
- Access from a standalone PC
- On-line access from an airline intranet.

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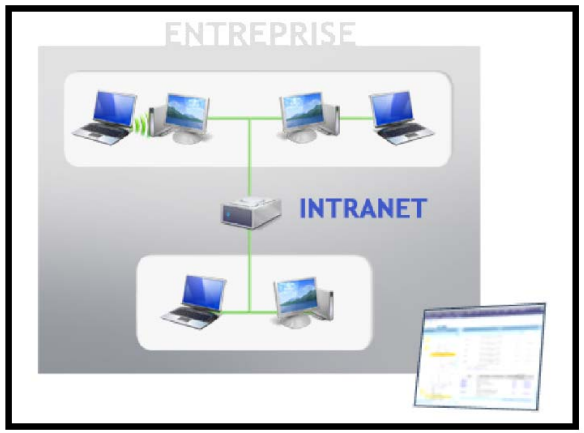
ON-LINE FROM AIRBUSWorld

ACCESS ON THE A/C

ON-LINE FROM AIRLINE INTRANET



ACCESS FROM STANDALONE PC

AIRN@V ACCESS - PRESENTATION - FUNCTION/DESCRIPTION

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 Isolation,...) 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.

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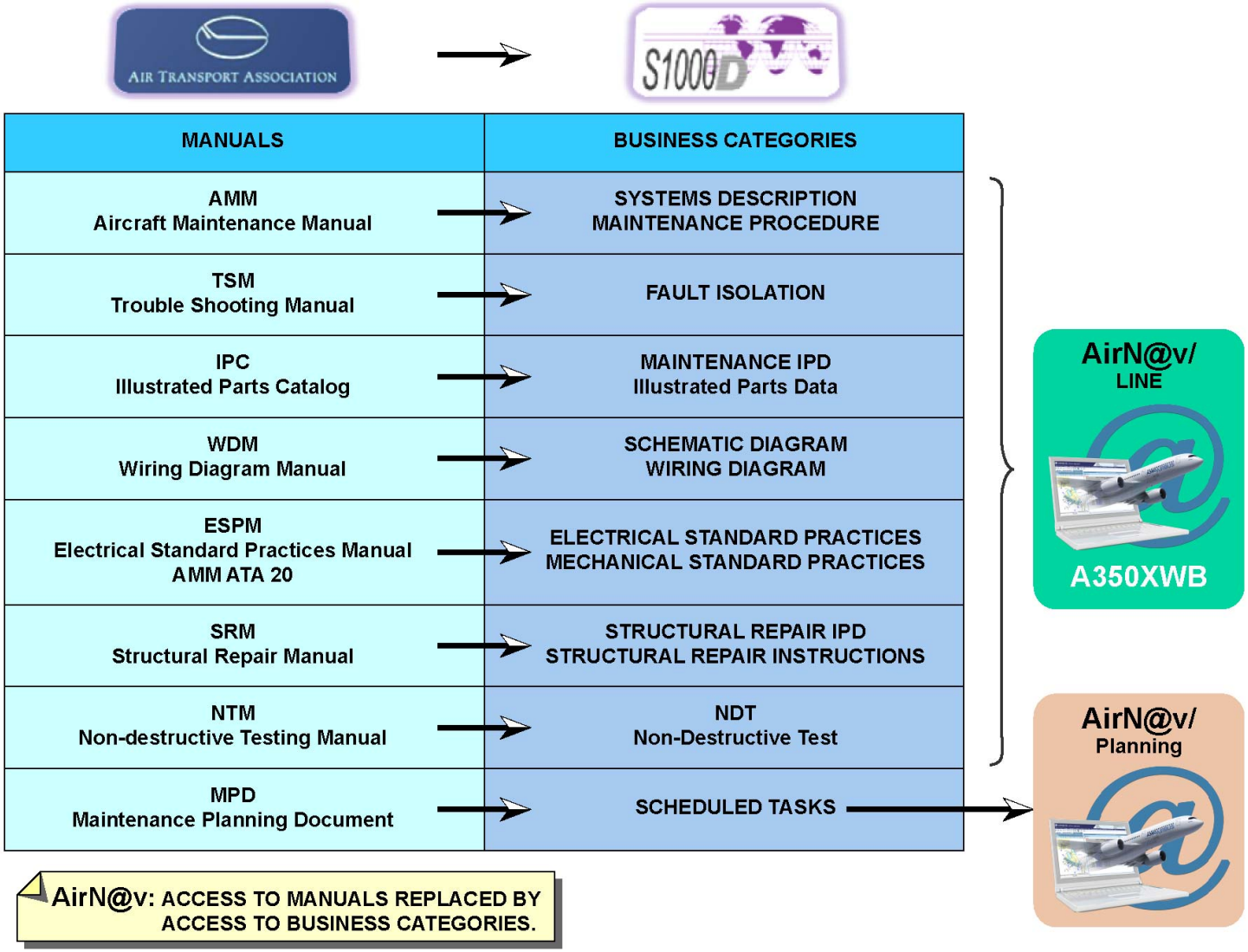


NEW CONCEPT FOR DOCUMENTATION - PRESENTATION - FUNCTION/DESCRIPTION

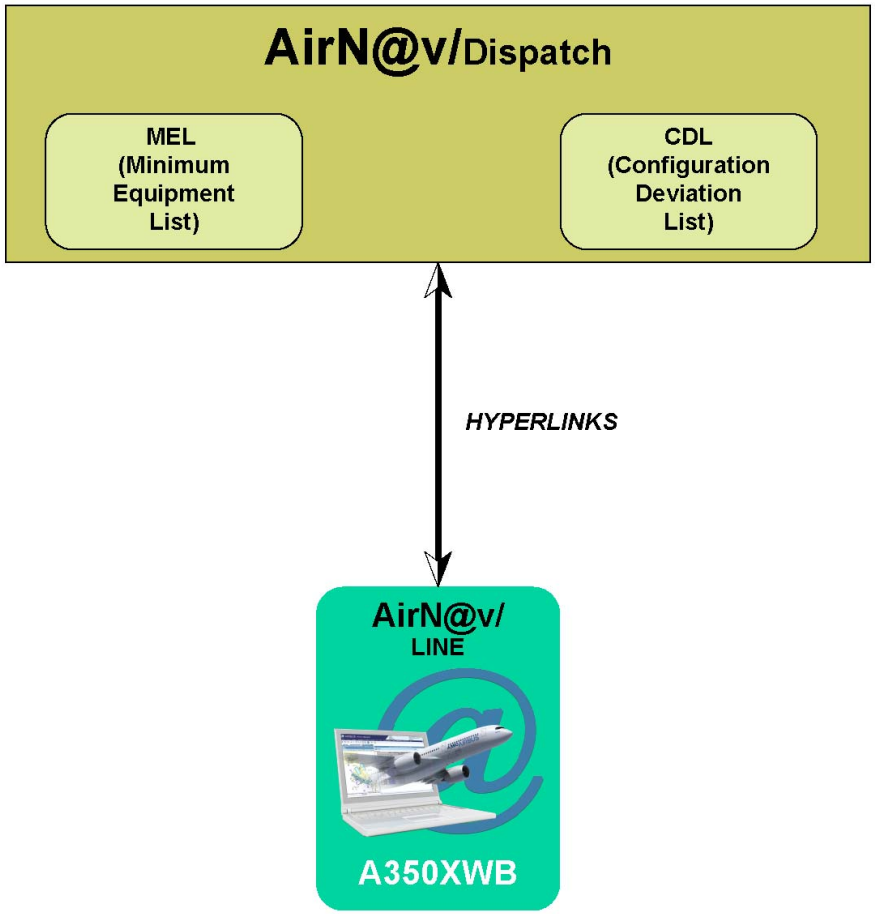
V2414251 - V00T0MM0 - VM04P1LEVEL0101

AIRCRAFT DOCUMENTATION INTRODUCTION (1)

Maintenance and Operational Documentation Hyperlinks - Presentation

Function/Description

AirN@v/Dispatch includes hyperlinks with AirN@v/Line to get an easier access to the maintenance deactivation procedures.



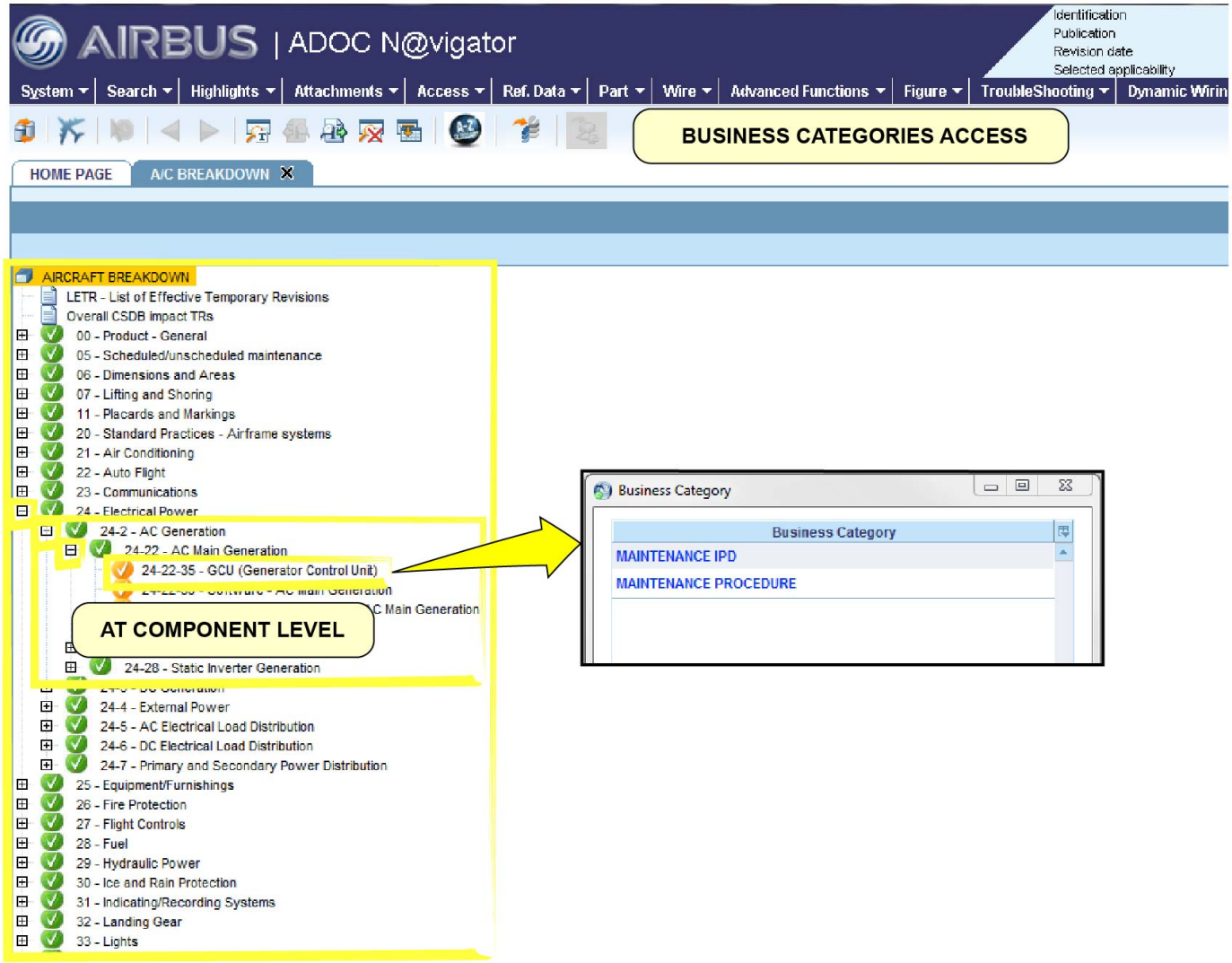
MAINTENANCE AND OPERATIONAL DOCUMENTATION HYPERLINKS - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT DOCUMENTATION INTRODUCTION (1)

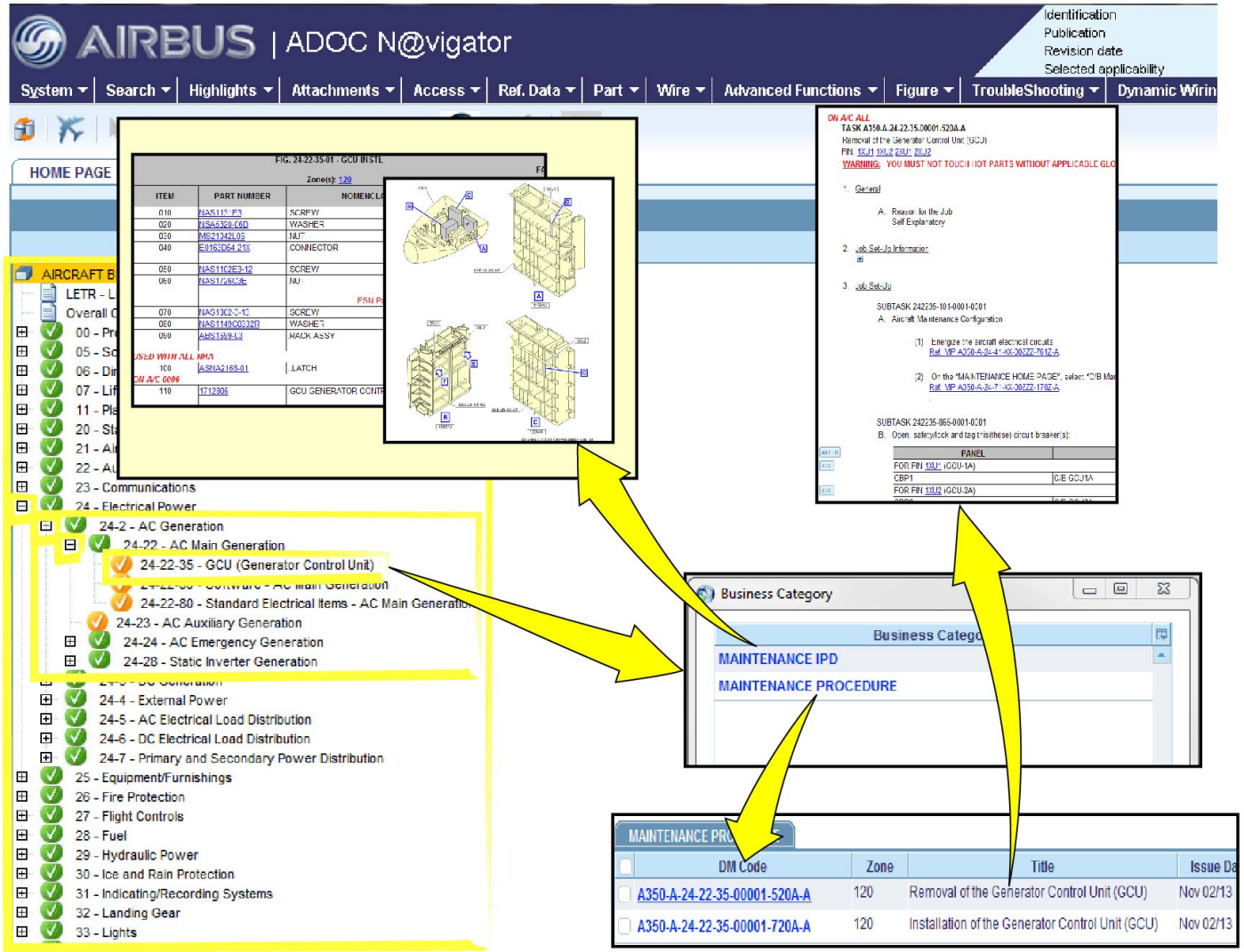
Access Philosophy for Business Categories - Presentation

Function/Description

The S1000D standard uses a new concept: the business category 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.
- Make your selection of the necessary business category.
- Look at the related data as for a standard manual.



ACCESS PHILOSOPHY FOR BUSINESS CATEGORIES - PRESENTATION - FUNCTION/DESCRIPTION



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 Bulletins (SB)
- Airworthiness Directives (AD).

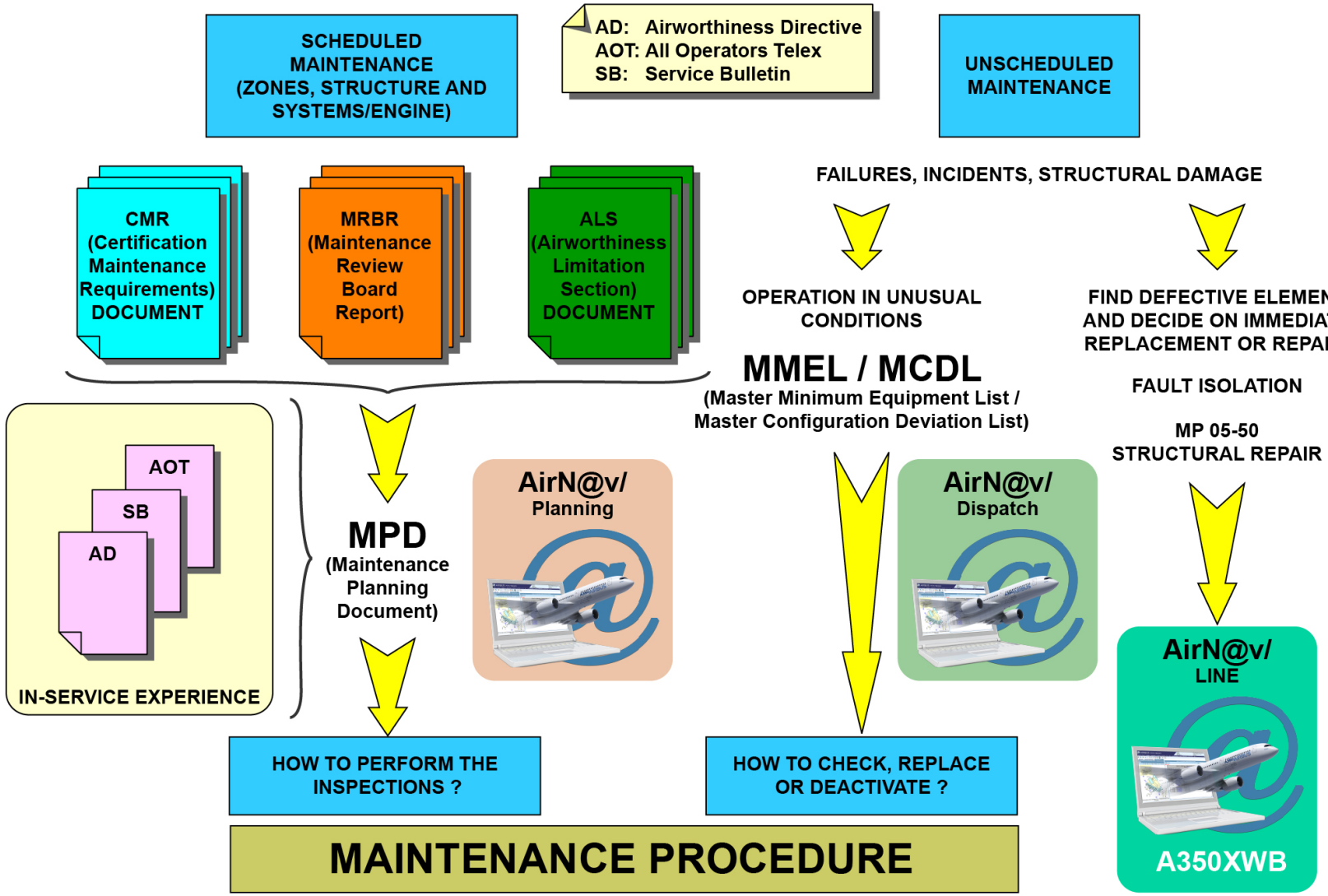
This maintenance planning document identifies all the tasks to be done on the aircraft with their related intervals, for nominal aircraft operability and airworthiness.

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

AIRCRAFT E-OPERATIONS INTRODUCTION (1)

Overview

This chapter gives data about:
- The paperless philosophy
- The Onboard Information System (OIS)
- Datalink communications.

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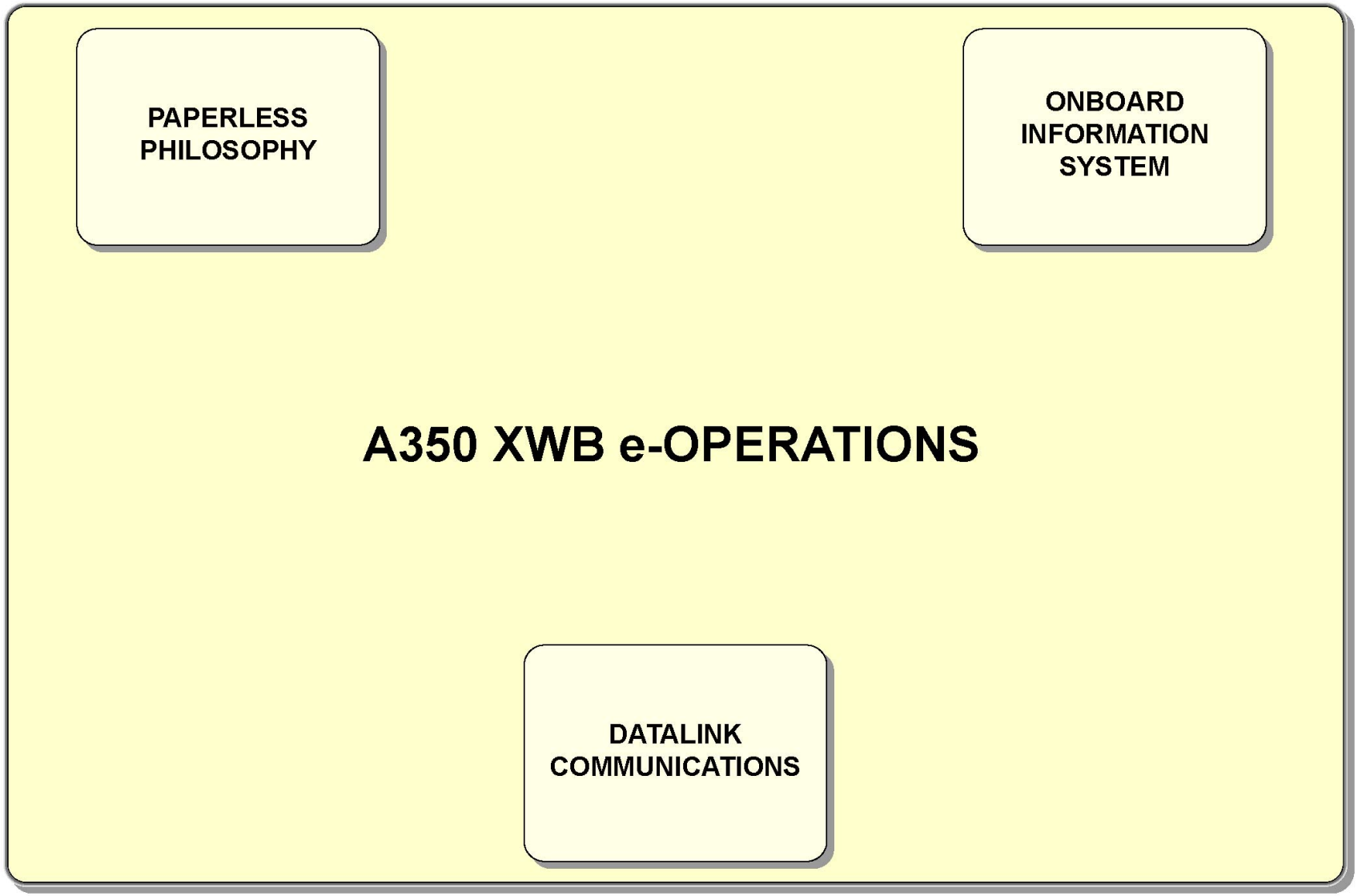
PAPERLESS PHILOSOPHY
ONBOARD INFORMATION SYSTEM
A350 XWB e-OPERATIONS
DATALINK COMMUNICATIONS

OVERVIEW

AIRCRAFT E-OPERATIONS INTRODUCTION (1)

Paperless Philosophy - Presentation

Function/Description

Paper documentation is replaced by an electronic library for operational and maintenance documentation. The electronic library is hosted in the Onboard Information System (OIS).
With the operational documentation, the flight crew can easily find the applicable information in the:
- Flight Crew Operating Manual (FCOM)
- Flight Manual (FM)
- Master Minimum Equipment List (MMEL)
- Master Configuration Deviation List (MCDL).

It gives access to data related to the mission, communications and performance computation.
The maintenance crew can directly get access to most of the maintenance documentation with the AirN@v/Line application which contains the following business categories:
- System Description and Maintenance Procedure
- Fault Isolation
- Maintenance Illustrated Parts Data (IPD)
- Schematics Diagram/Wiring Diagram
- Standard Practices - Electrical/Mechanical
- Structural Repair Illustrated Parts Data (IPD)/Structural Repair Instructions
- Non-Destructive Test (NDT).

PAPERLESS PHILOSOPHY

OPERATIONAL DOCUMENTATION
- Flight Crew Operating Manual (FCOM)
- Flight Manual (FM)
- Master Minimum Equipment List (MMEL)
- Master Configuration Deviation List (MCDL)

MAINTENANCE DOCUMENTATION
AirN@v/LINE
> BUSINESS CATEGORIES:
- SYSTEM DESCRIPTION/MAINTENANCE PROCEDURE
- FAULT ISOLATION
- MAINTENANCE Illustrated Parts Data (IPD)
- SCHEMATICS DIAGRAM/WIRING DIAGRAM
- STANDARD PRACTICES - ELECTRICAL/ MECHANICAL
- STRUCTURAL REPAIR Illustrated Parts Data (IPD)/STRUCTURAL REPAIR INSTRUCTIONS
- Non-Destructive Test (NDT)

Onboard Information System (OIS)

MISSION

COMMUNICATIONS

PERFORMANCE

PAPERLESS PHILOSOPHY - PRESENTATION - FUNCTION/DESCRIPTION

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 crew and maintenance crew.
Its function is to make airline operations and passenger services better and with a minimum of 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 crew and maintenance crew get access to e-documentation or to applications related from an electronic menu by the selection of flight or maintenance operations.

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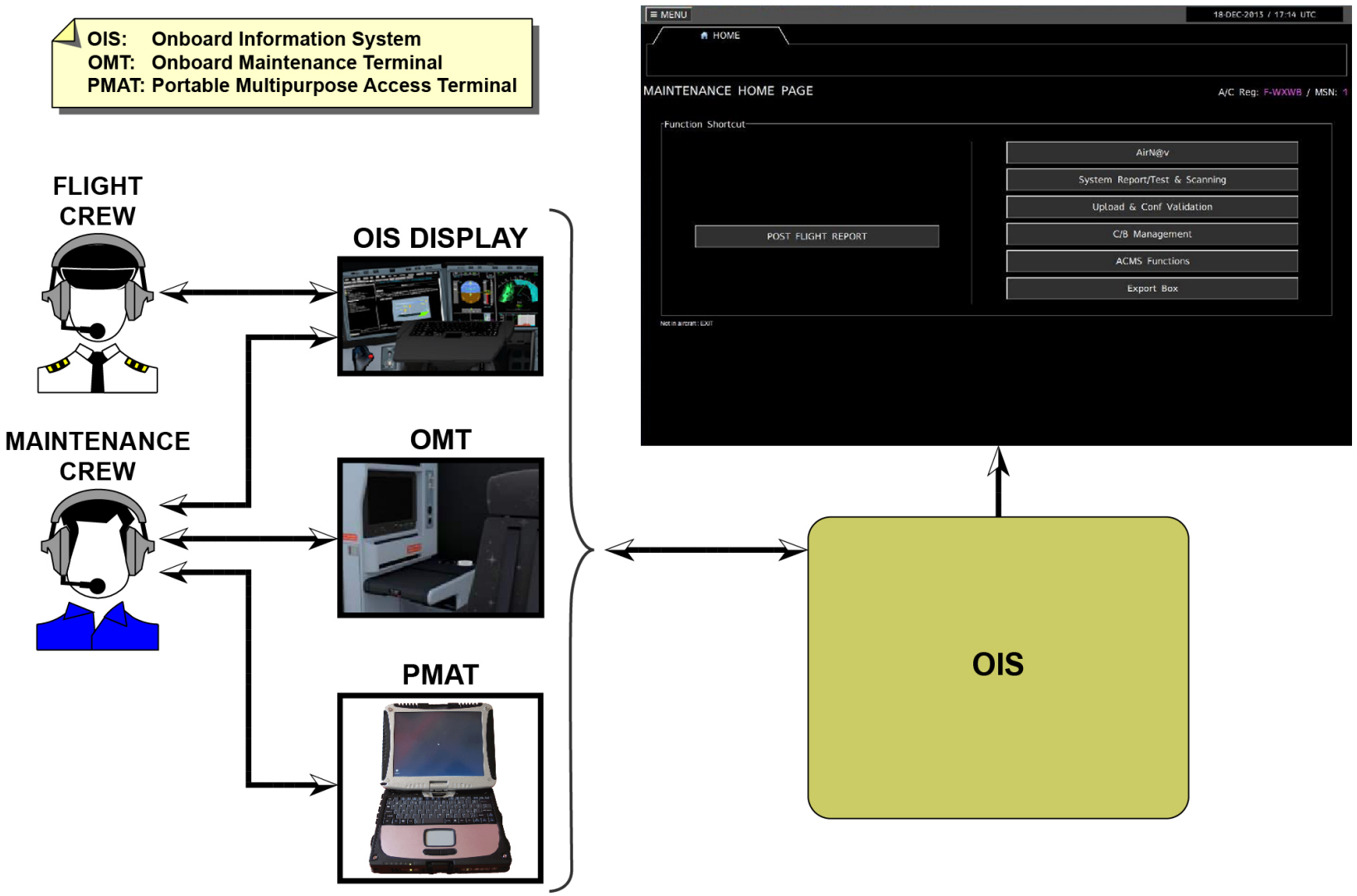

ONBOARD INFORMATION SYSTEM (OIS) - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT E-OPERATIONS INTRODUCTION (1)

Datalink Communications - Presentation

Function/Description

In flight, the aircraft uses the High Frequency (HF), the Very High Frequency (VHF) or SATellite COMmunication (SATCOM) for datalink communications.
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.

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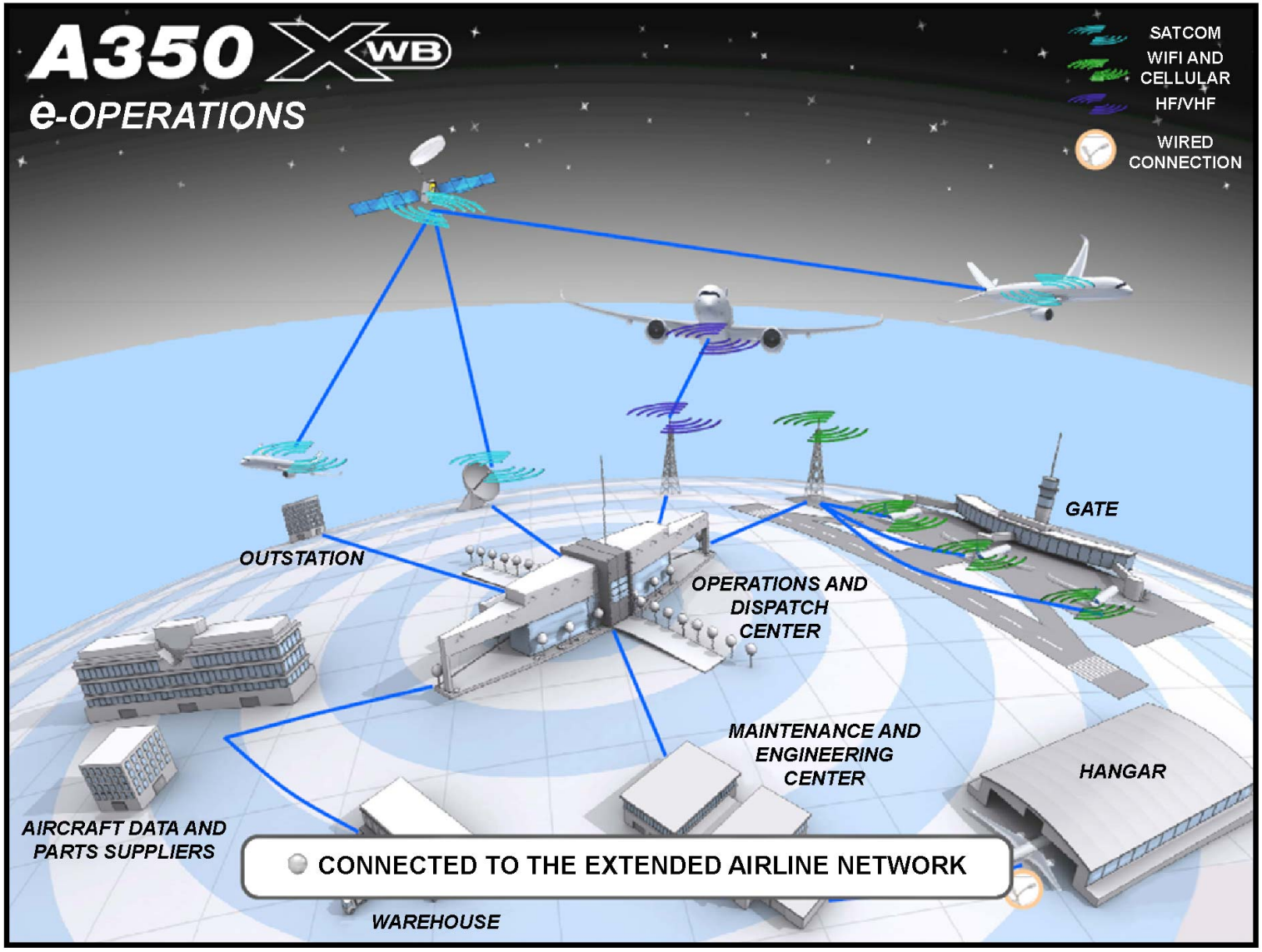

DATALINK COMMUNICATIONS - PRESENTATION - FUNCTION/DESCRIPTION

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, it is necessary that:
- You obey all the safety precautions given in the business categories documentation.
- You 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 Ground Support Equipment (GSE) (Caution).

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FUNCTION/DESCRIPTION - PRESENTATION

AIRCRAFT SAFETY PRECAUTIONS INTRODUCTION (1)

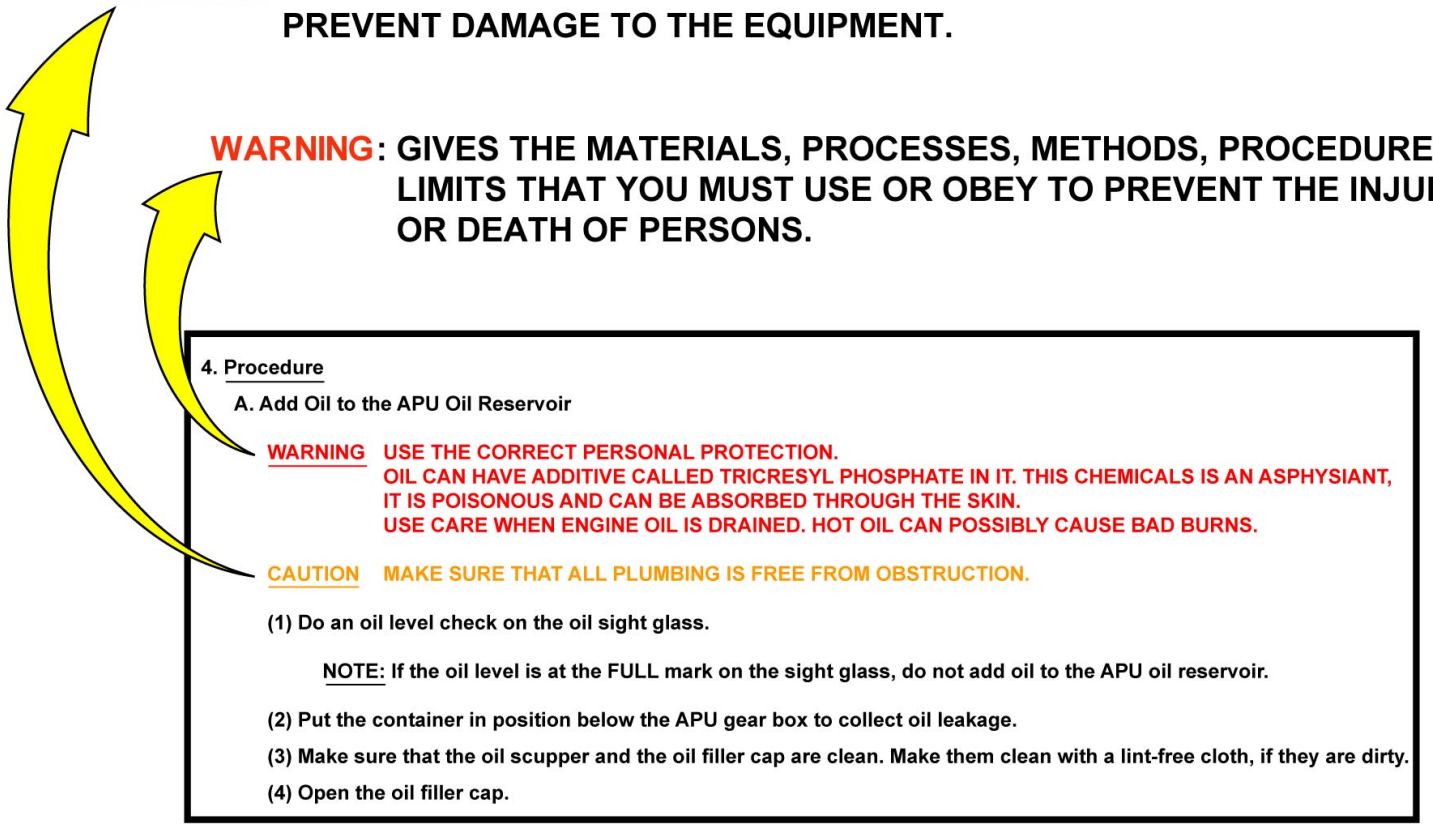
Maintenance Practices - Maintenance

Warnings and Cautions in Maintenance Procedures

When you do a maintenance procedure, it is necessary to obey the instructions given in the warnings and the 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 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, it is necessary to obey the precautions that follow:
- The aircraft must be earthed.
- The component bonding check must be completed.
- You must obey the discharge time delay applicable to some equipment.
- You must be careful when you work with energized components.
- If necessary, the system must be de-energized.

Radio Frequencies

Radio frequencies can cause radiation, which can cause injury to persons and/or cause fire and/or damage to equipment.
To prevent this, it is necessary to obey the precautions that follow:
- You must obey the precautions related to the safety areas.
- You must obey the precautions related to the operational areas.

The primary sources of radio frequencies are:
- The weather radar
- The High Frequency (HF) antennas.

Movable Parts

Movable parts can cause injury to persons and damage to the aircraft and/or GSE.
To prevent this, it is necessary to obey the precautions that follow:
- You must obey the precautions related to the safety areas.
- Inhibition and/or de-activation tasks must be done.

The primary movable parts are:
- The flight control surfaces
- The thrust reversers
- The doors
- The landing gears
- The Auxiliary Power Unit (APU) air-inlet flap
- The air-conditioning system elements (fuselage and wing root).

Noise

Noise can cause damage to hearing.
To prevent this, it is recommended to use ear protections and to 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 injury to persons and damage to the aircraft and/or GSE.
To prevent this, it is necessary to obey the precautions that follow:
- You must obey the precautions related to the safety areas.
- The areas must be kept clear.

The primary suction and exhaust sources are:
- The engines
- The APU
- The air conditioning/supplemental cooling system.

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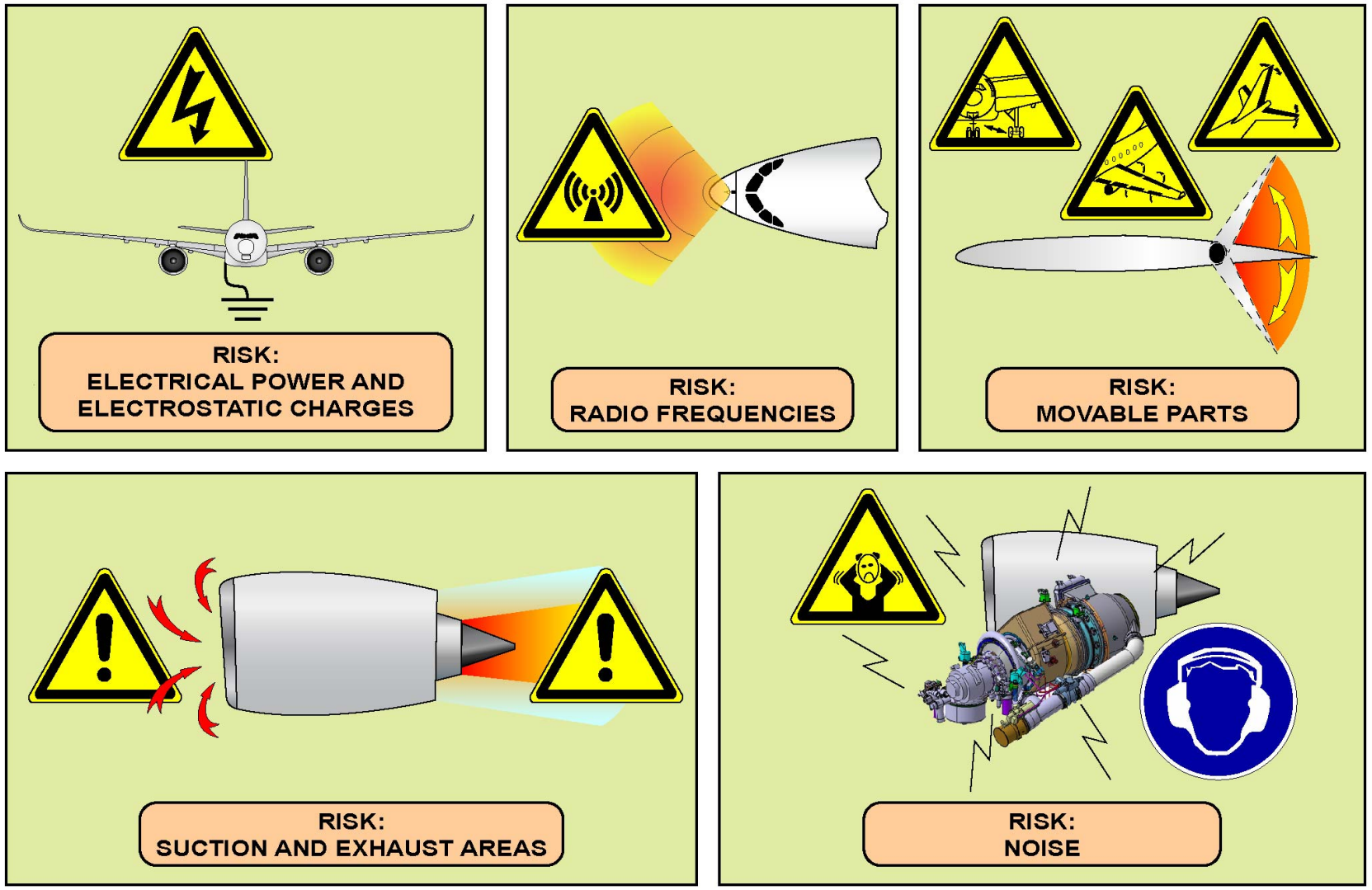


SAFETY PRECAUTIONS - MAINTENANCE - ELECTRICAL POWER AND ELECTROSTATIC CHARGES ... SUCTION AND EXHAUST AREAS

AIRCRAFT SAFETY PRECAUTIONS INTRODUCTION (1)

Safety Precautions - Maintenance (continued)

Pressurized Systems

Pressurized liquid, air, hydraulic and gas systems can cause injury to persons and damage to the aircraft and/or GSE.
To prevent this, it is recommended to:
- Do a check of the component pressurization when an indication is available.
- To depressurize the system when possible.
- Be careful when you do work with pressurized components when the system is not depressurized.

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 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 cause injury to persons and damage to equipment.
To prevent this, it is necessary to obey the precautions that follow:
- You must obey the precautions related to the safety areas.
- The applicable fire-extinguishing equipment must be available.
- You must obey the instructions related to the items that are not permitted (cigarettes, phones, cameras).

The flammable and explosive product is the fuel.

Poisonous Products

Different fluids used to operate the 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 can cause environmental pollution.
To prevent this, it is necessary to obey the precautions that follow:
- You must use the applicable protective equipment.
- You must obey the material manufacturer's instructions and the local regulations when you do work with these products.
- After you use these products, you must obey the applicable cleaning procedures.
- You must not discard these products. You must put them in containers for recycling or retreatment.

The type of injury to persons or damage to 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, you must wear protective clothing.

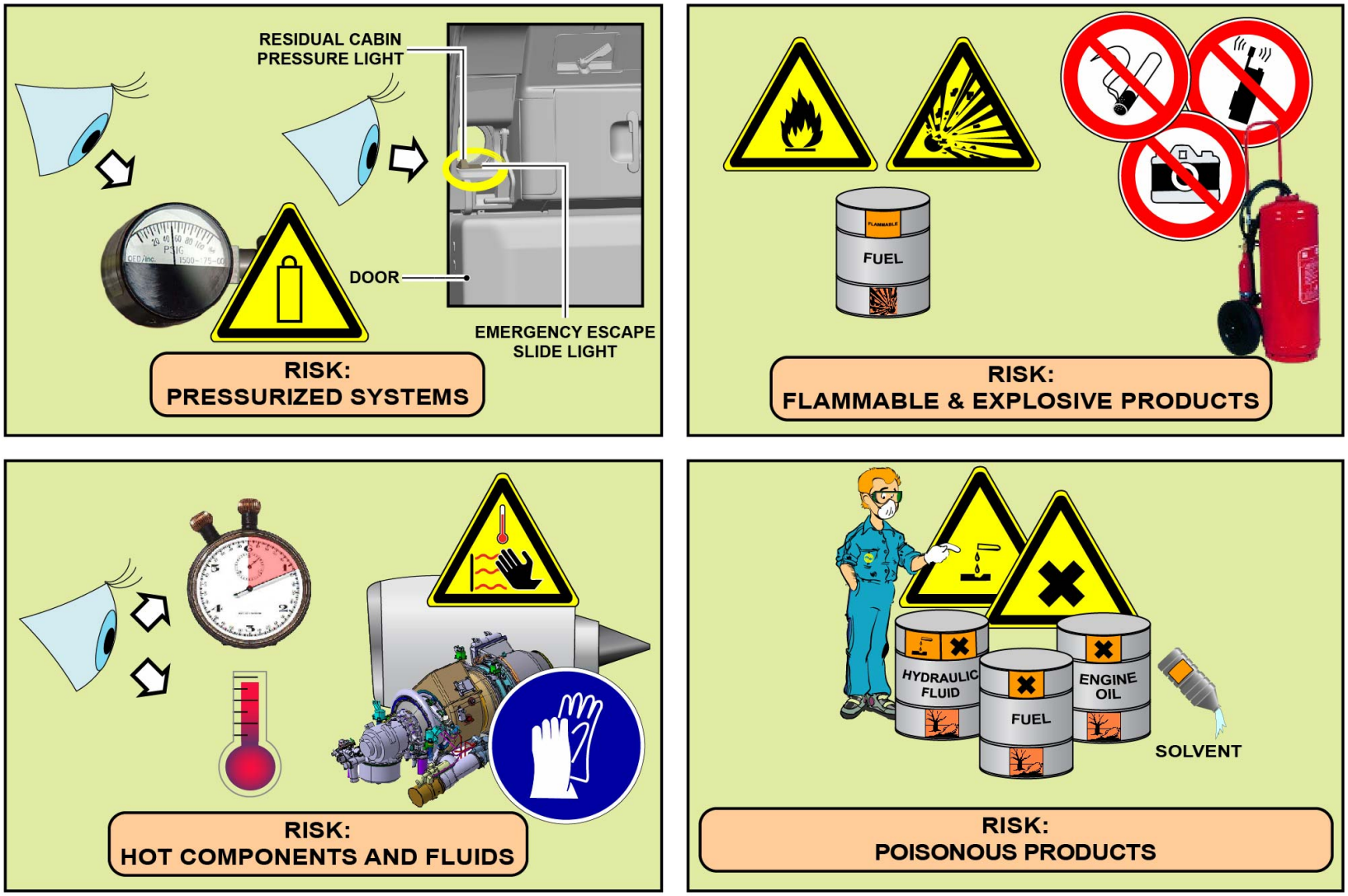
Hot Components and Fluids

Hot components and fluids can cause burns and fires.
To prevent this, it is necessary to obey the precautions that follow:
- You must use the applicable protective equipment.
- You must obey the applicable time delay to let components become cool.
- You must obey the precautions related to the safety areas.
- You must do a check of the component temperature when an indication is available.

The primary systems that contain hot sources are:
- The engine system
- The pneumatic system
- The APU

V2414251 - V00T0MM0 - VM06P1LEVEL0101

- The landing gear system
- The hydraulic power system
- The air conditioning system.



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

V2414251 - V00T0MM0 - VM06P1LEVEL0101

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AIRCRAFT SAFETY PRECAUTIONS INTRODUCTION (1)

Safety Precautions - Maintenance (continued)

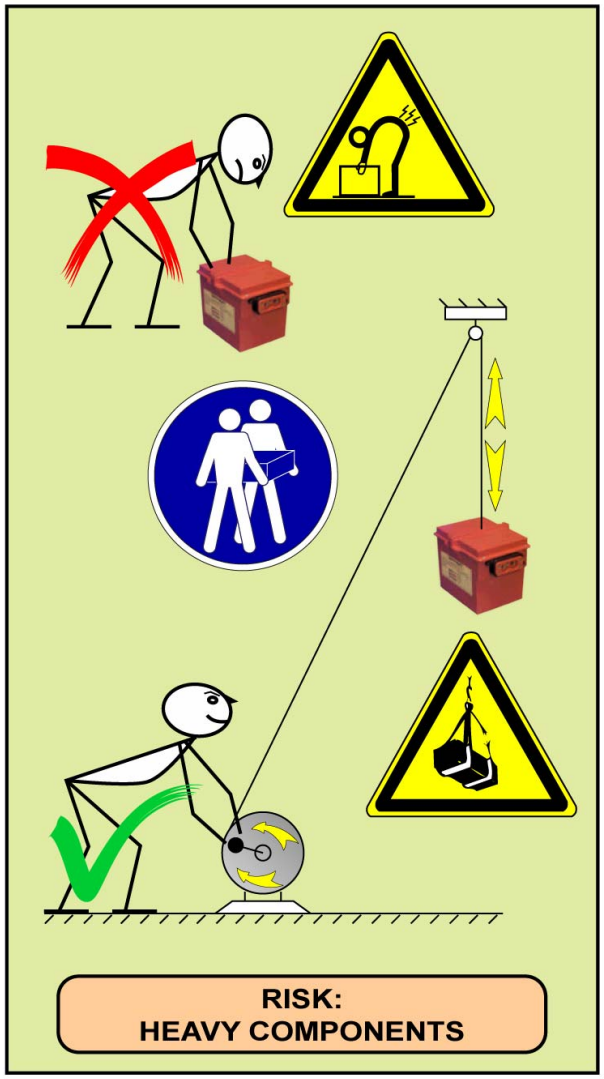
Heavy Components

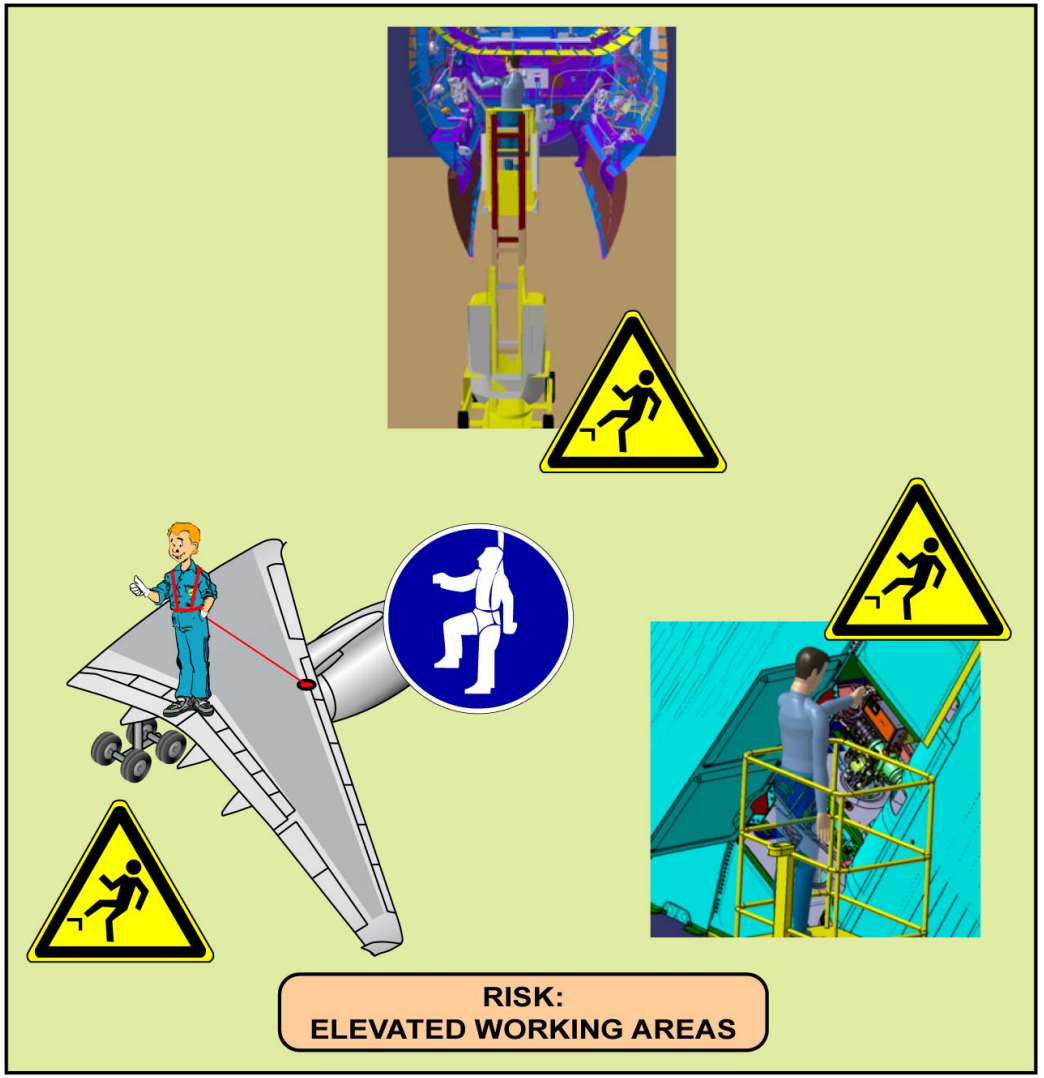
When you move heavy components, there is a risk of injury to you or other persons because of their weight or if they fall. There is also a risk of damage to the aircraft.
To prevent this, it is necessary to obey the precaution that follow:
- You must use a correct body posture to lift heavy components.
- You must use special GSE, when applicable.
- You must use the special hoisting points installed on the aircraft, when applicable.
- It is not permitted to walk below a lifted load.

Elevated Work Areas

Persons or items of equipment that fall from high positions can cause injury to other persons and damage to the aircraft.
To prevent this, it is necessary to obey the precautions that follow:
- You must use the safety points.
- You must use the safety handles.
- You must use the safety harnesses.
- You must use the correct platforms.

Read the manufacturer's instructions for the platform. You must know the applicable local regulations.





SAFETY PRECAUTIONS - MAINTENANCE - HEAVY COMPONENTS & ELEVATED WORK AREAS

AIRCRAFT SAFETY PRECAUTIONS INTRODUCTION (1)

Safety Precautions - Maintenance (continued)

Optical Fiber

Optical fiber can cause injury to persons.
It is dangerous to look into the end of a fiber-optic cable. There is a risk of laser radiation which the operator will not see.
Laser radiation is dangerous for the eyes.
It is also important that you do not get optical fiber pieces below your skin.

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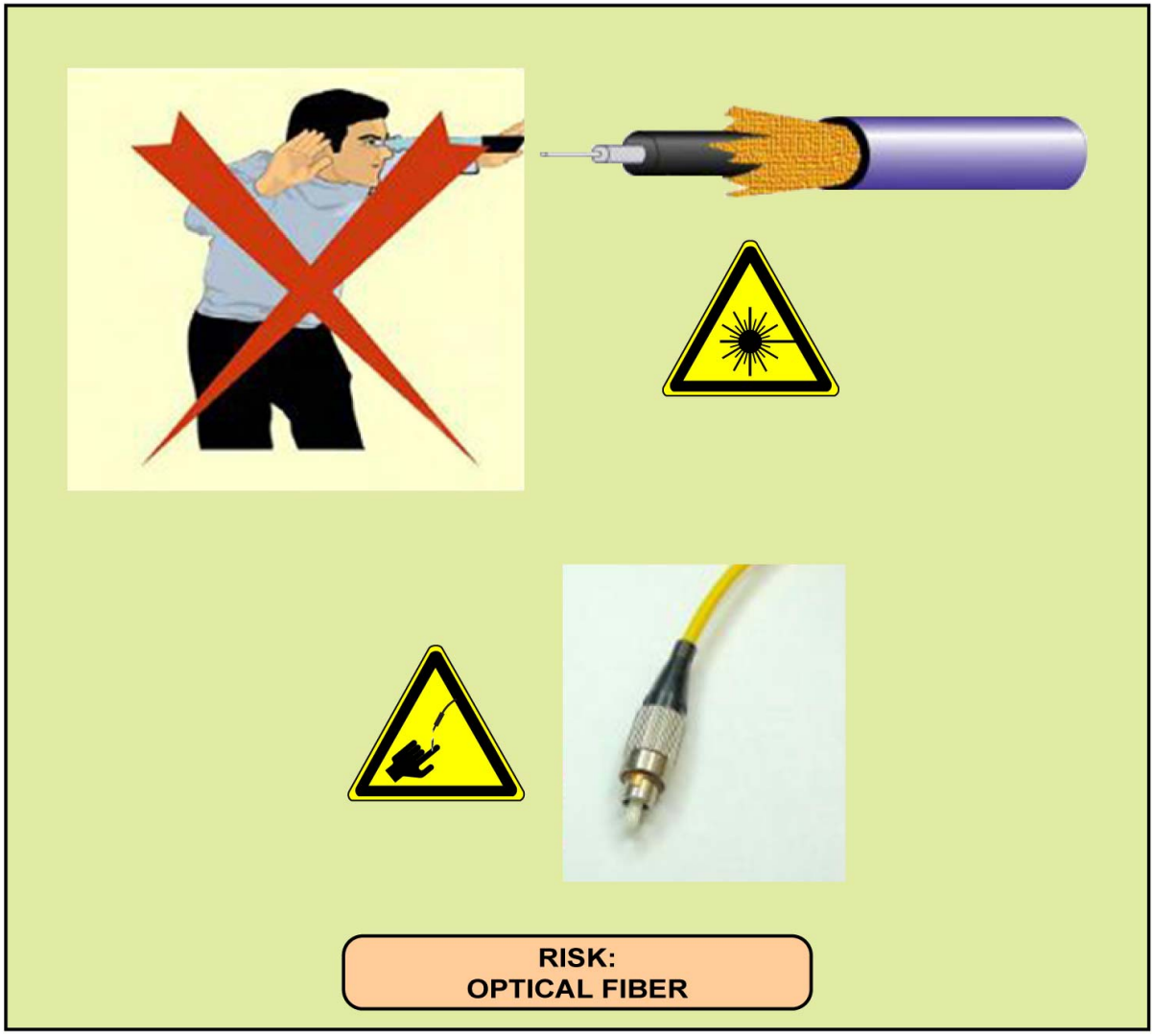

SAFETY PRECAUTIONS - MAINTENANCE - OPTICAL FIBER

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Overview

This section gives data about the ground handling procedures and includes:
- Turnaround
- Lifting and Shoring
- Leveling and Weighing
- Towing and Taxiing
- Parking/Mooring, Storage, and Return to Service
- Placards and Markings
- Servicing.

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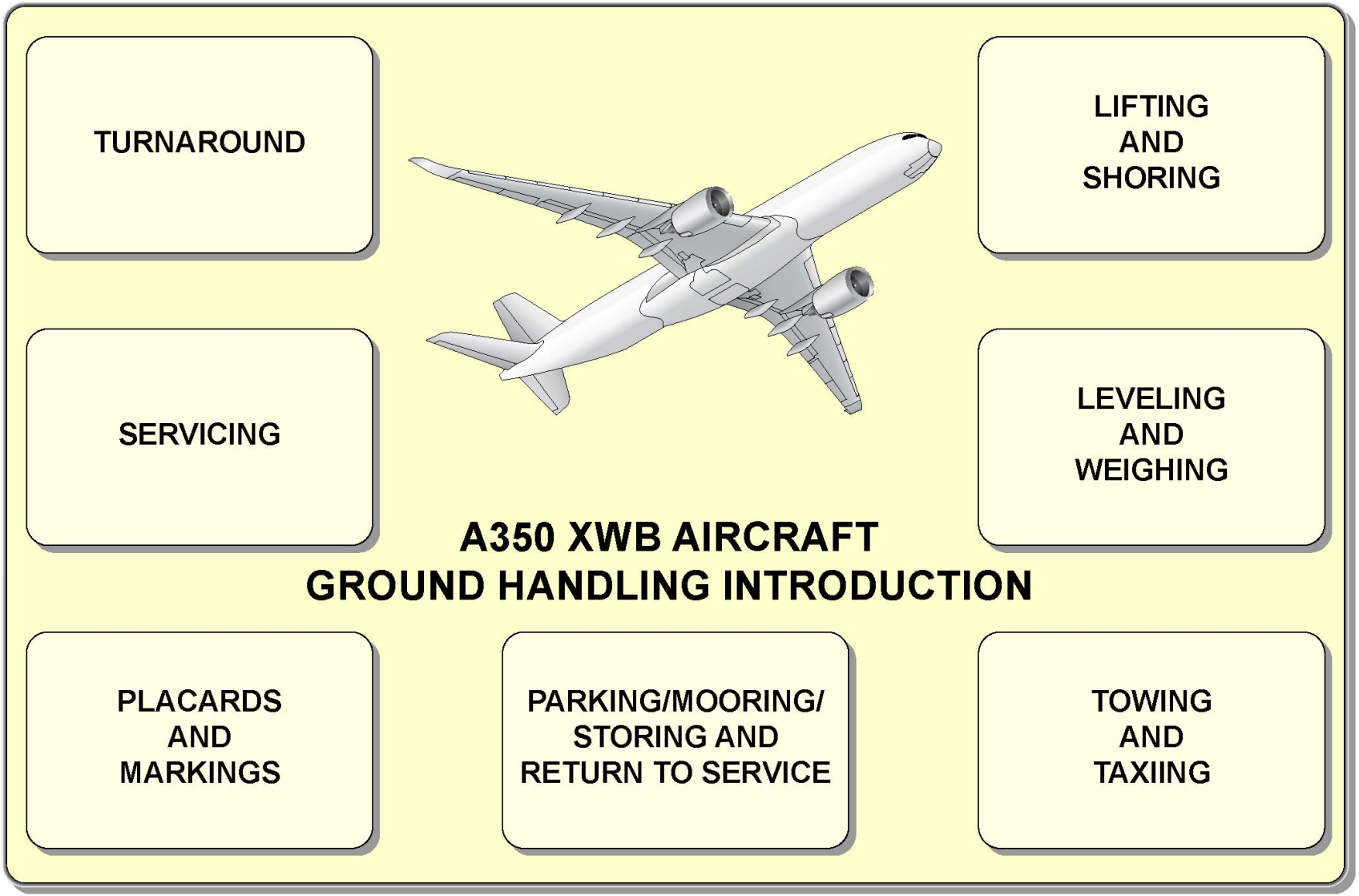

OVERVIEW

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AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Turnaround - Presentation

Function/Description

The standard turnaround time is approximately 60 minutes.
The A350 has a typical ramp layout and includes:
- External Ground Power Units (GPU)
- Catering/cleaning trucks
- A pallet/container loader
- Refueling trucks
- A waste water vehicle
- A conveyor belt
- A potable water vehicle
- An air conditioning unit.

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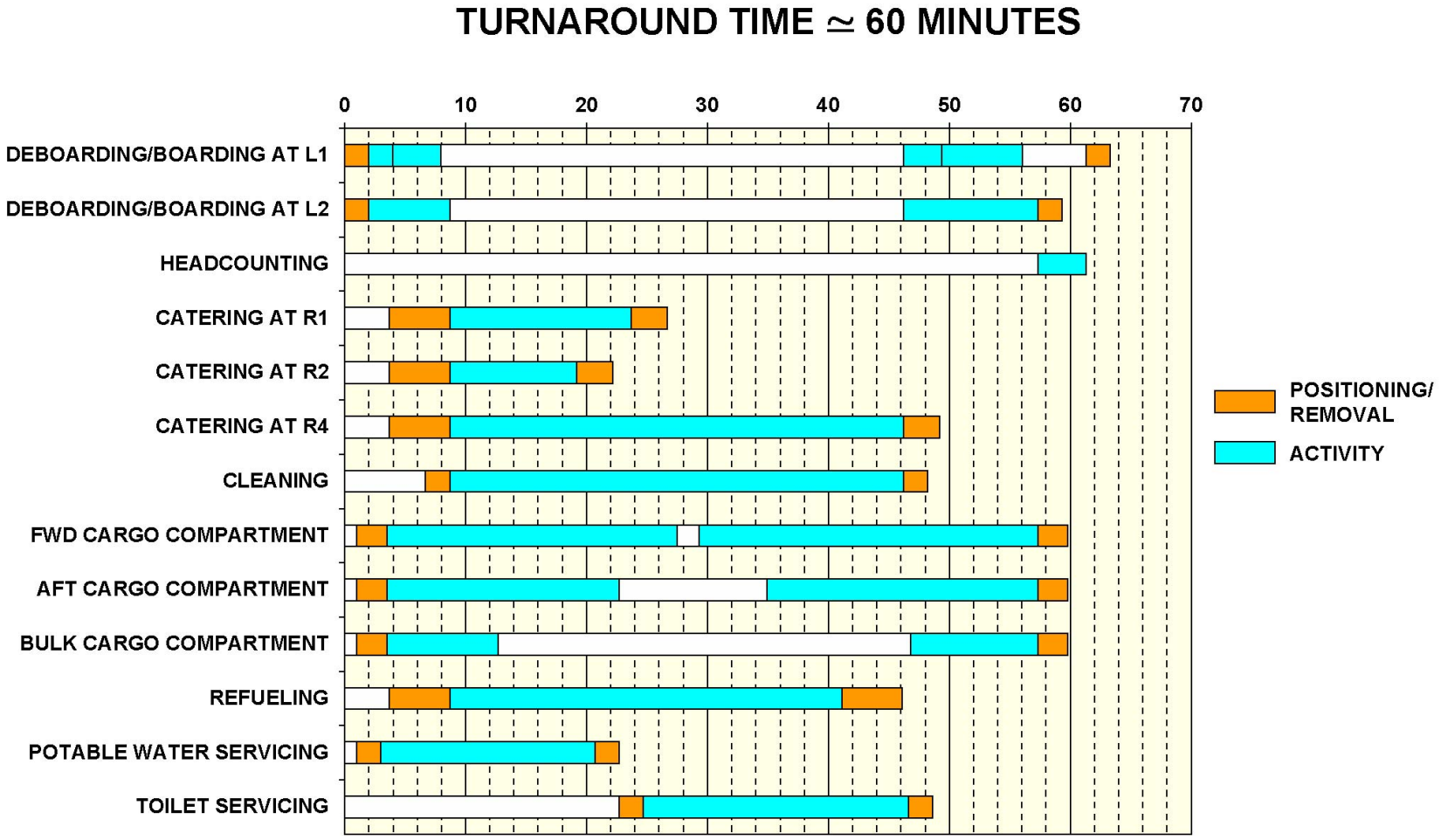
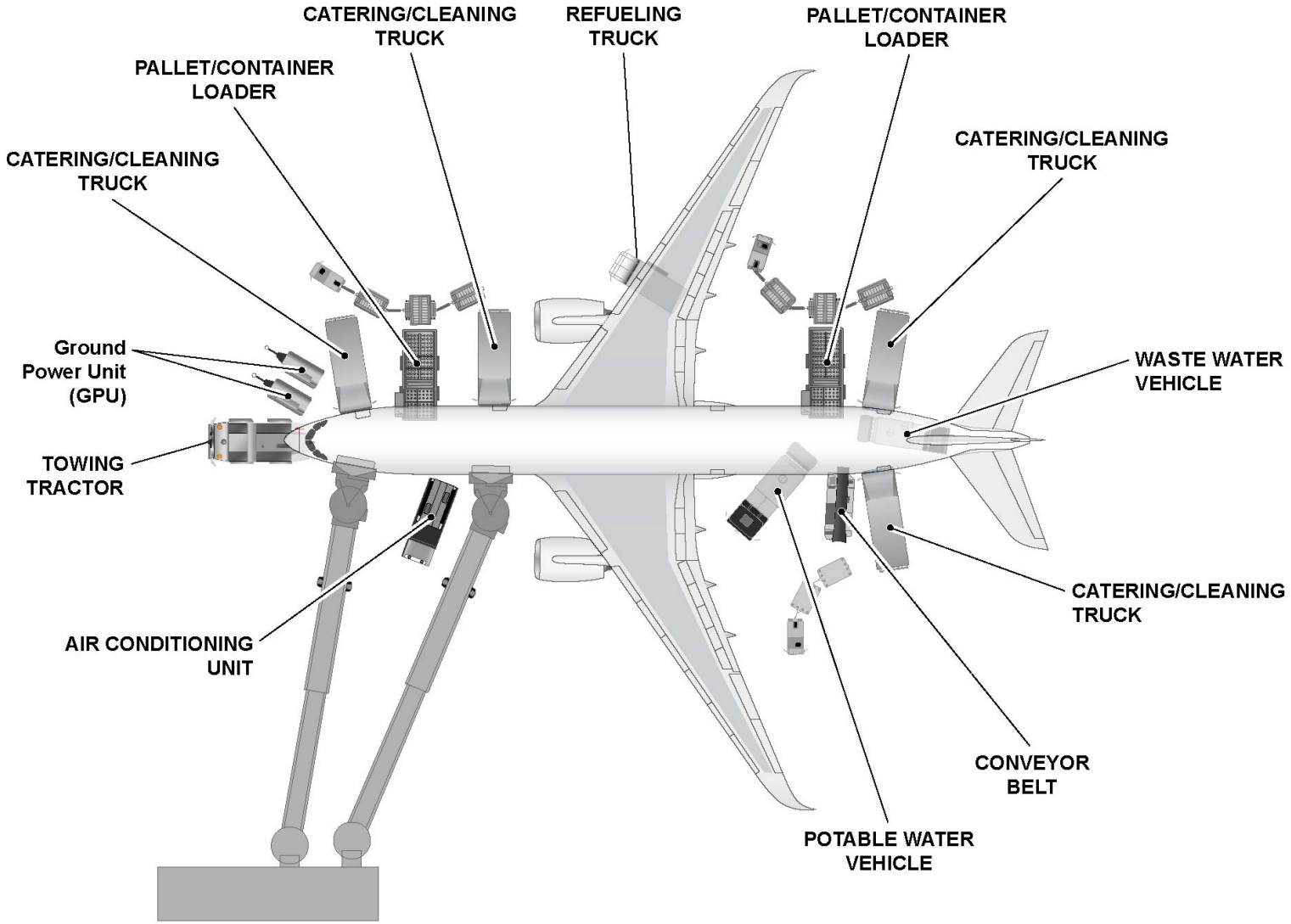


TURNAROUND - PRESENTATION - FUNCTION/DESCRIPTION



TURNAROUND - PRESENTATION - FUNCTION/DESCRIPTION

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AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Lifting and Shoring - Presentation

Function/Description

The aircraft can be lifted on jacks for maintenance operations.

NOTE: The data related to lifting is given in ATA chapter 07-11-00. To release mechanical stress on the fuselage and wings, aircraft shoring must be done before structural repairs.

NOTE: The data related to shoring is given in ATA chapter 07-20-00.

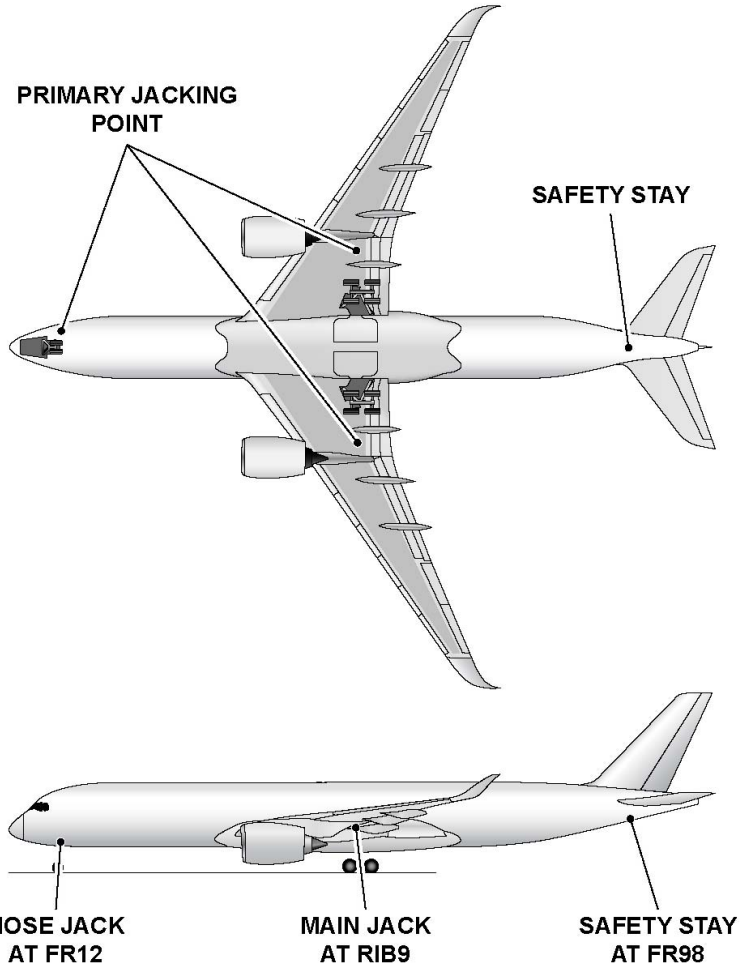
Location

The aircraft has three primary jacking points:
- Below the forward fuselage, on the left side, aft of the Nose Landing Gear (NLG)
- Below each wing.

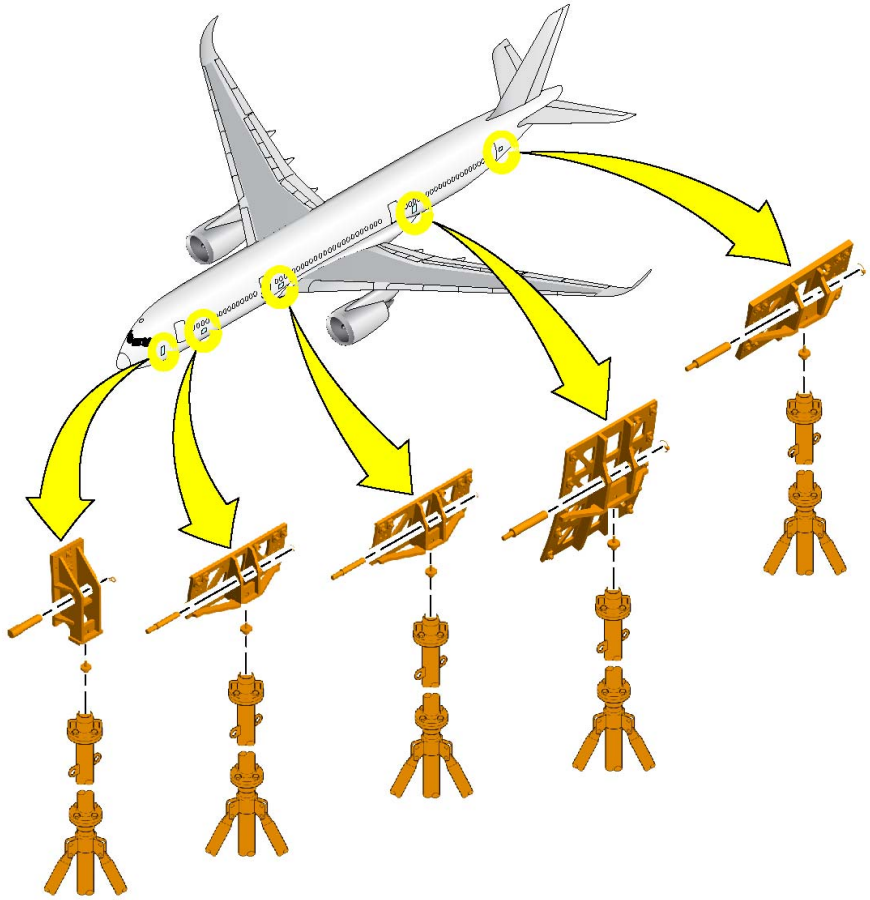
There is a safety stay point below the aft fuselage for safety, to prevent tail tipping caused by accidental movement of the aircraft Center of Gravity (CG).
There are shoring points on dedicated frames and ribs. The location of these shoring points are given in ATA chapter 07-20-00.

Tools - Maintenance

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.



THE DATA RELATED TO JACKING IS GIVEN IN ATA CHAPTER 07-11-00



SHORING KIT PRINCIPLE

THE DATA RELATED TO SHORING IS GIVEN IN ATA CHAPTER 07-20-00

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Leveling and Weighing - Presentation

Function/Description

There are three alternative procedures to make the aircraft level:
- Quick leveling procedure 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.

NOTE: The data related to leveling is given in ATA chapter 08-20-00.

You can weigh the aircraft with:
- The aircraft on jack
- The aircraft on wheels.

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

NOTE: The data related to weighing is given in ATA chapter 08-10-00.

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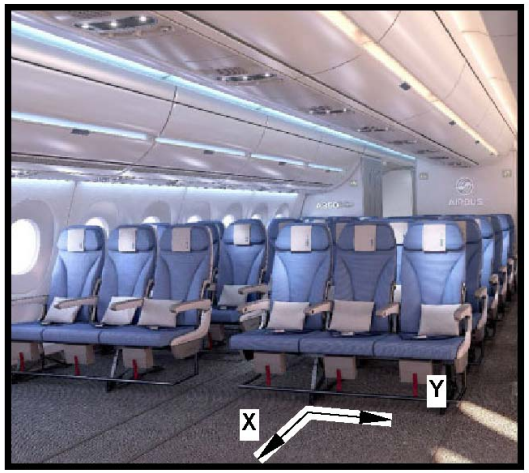
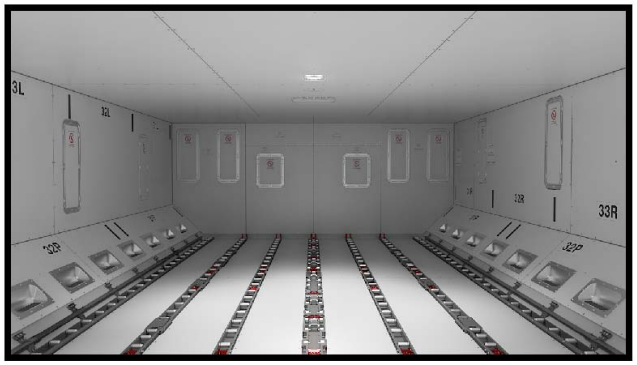


AIRCRAFT QUICK LEVELING IN CABIN
(WITH SPIRIT LEVEL)

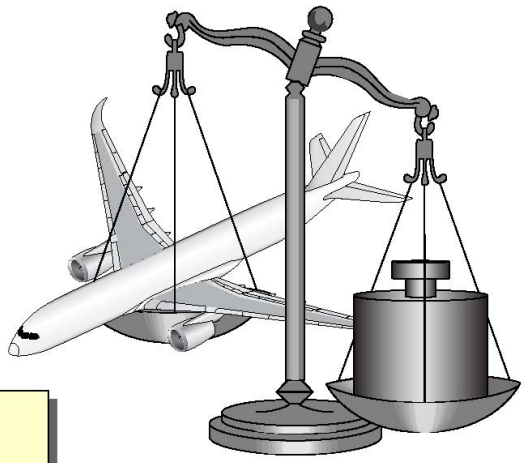
THE DATA RELATED TO LEVELING IS GIVEN IN ATA CHAPTER 08-20-00

THE DATA RELATED TO WEIGHING IS GIVEN IN ATA CHAPTER 08-10-00

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

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Towing and Taxiing - Presentation

Function/Description

You can tow the aircraft with:
- A towbar
- A towbarless tractor.

You must connect the towbar to the NLG structure.

NOTE: The data related to towing is given in ATA chapter 09-10-00. There is a new function for the A350 XWB to make towing easier when the aircraft is electrically energized by the battery only. The graphic that follows shows the aircraft turning capability in good operating conditions.

NOTE: The data related to taxiing is given in ATA chapter 09-20-00.

Safety Precautions - Maintenance

If you are in the aircraft during towing and taxiing operations (low-speed operations included), you must be in a seat with your seat belt attached. If you do not obey this instruction, injury can occur.

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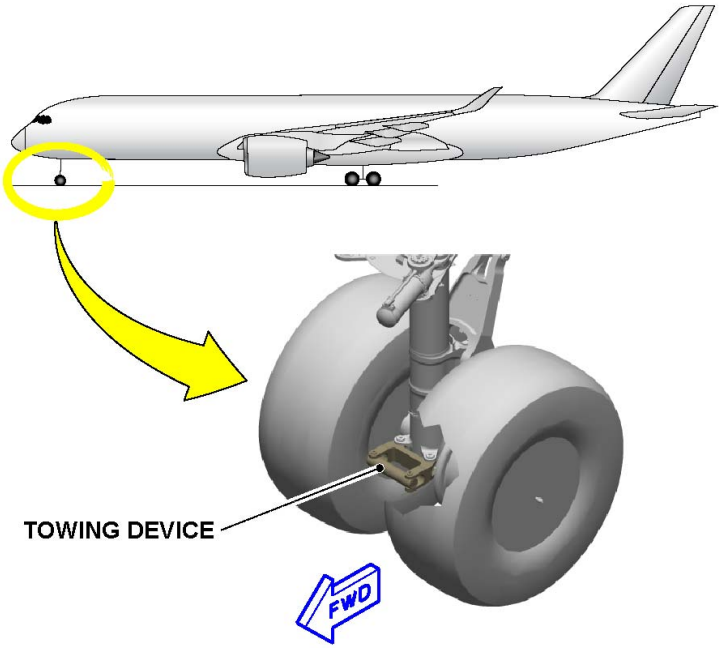

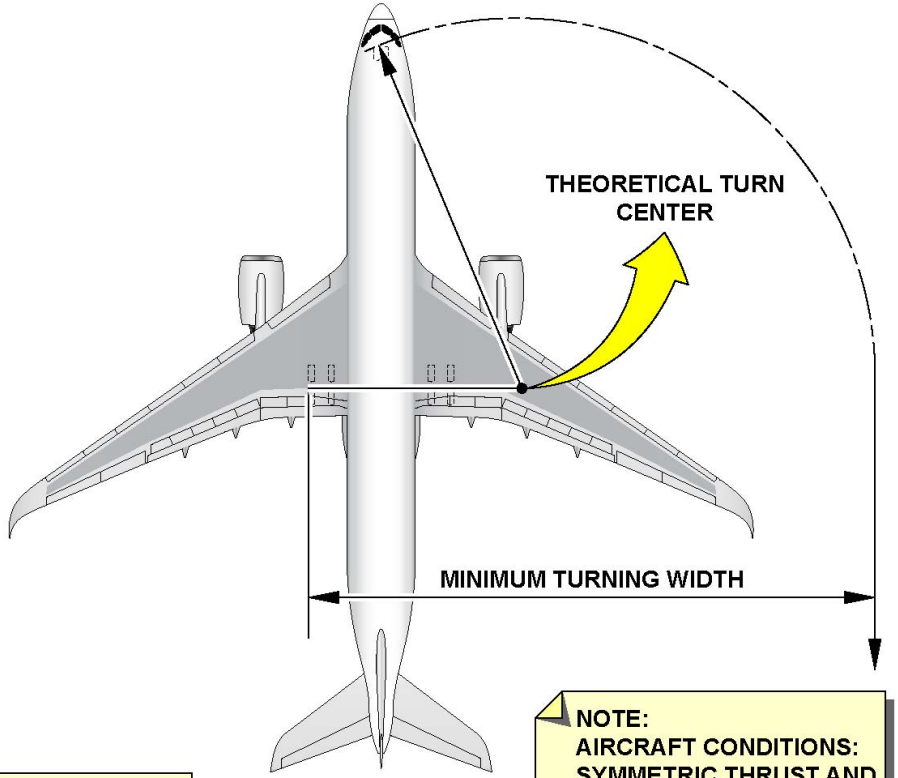

NOTE:
AIRCRAFT CONDITIONS:
SYMMETRIC THRUST AND NO BRAKING

THE DATA RELATED TO TOWING IS GIVEN IN ATA CHAPTER 09-10-00

THE DATA RELATED TO TAXIING IS GIVEN IN ATA CHAPTER 09-20-00

IF YOU ARE IN THE AIRCRAFT DURING TOWING AND TAXIING OPERATIONS (LOW-SPEED OPERATIONS INCLUDED), YOU MUST BE IN A SEAT WITH YOUR SEAT BELT ATTACHED.
IF YOU DO NOT OBEY THIS INSTRUCTION, INJURY CAN OCCUR.

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 & SAFETY PRECAUTIONS - MAINTENANCE

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Parking and Mooring - Presentation

Function/Description

ATA chapter 10-11-00 includes parking procedures that give the number of days or weeks and 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 of parking procedures.

ATA chapter 10-20-00 includes the mooring procedure to prevent movement of the aircraft when it is not stable in high wind conditions. The aircraft is moored at the NLG level with a mooring kit.

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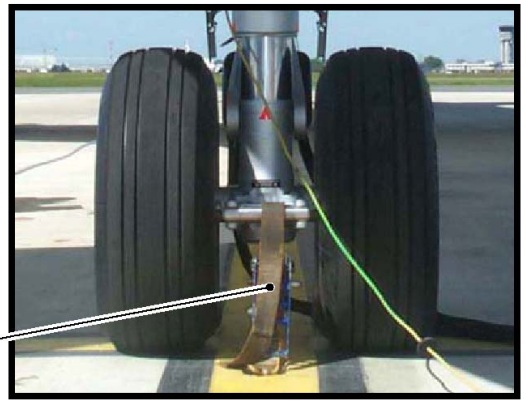
PARKING

REFER TO ATA CHAPTER 10-11-00 FOR:
-PARKING OF THE AIRCRAFT IN FLIGHT-READY CONDITION
-GROUND CHECKS DURING PARKING
-RETURN TO OPERATION AFTER PARKING
-RENEWAL PARKING PROCEDURES.



MOORING KIT

MOORING

REFER TO ATA CHAPTER 10-20-00 FOR MOORING PROCEDURE

PARKING AND MOORING

PARKING AND MOORING - PRESENTATION - FUNCTION/DESCRIPTION

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 (refer to ATA chapter 10-31-00) includes these reference procedures:
- Periodic ground checks during storage 7-day intervals, 15-day intervals, 1-month intervals and 3-month intervals (refer to ATA chapter 10-31-00)
- Return to operation after storage (refer to ATA chapter 10-40-00)
- Renewal of storage procedure for a period of not more than 6 months only one more time (refer to ATA chapter 10-31-00).

NOTE: During storage or parking periods, it is not permitted to stop or change the maintenance program without local authority approval. The maintenance calendar clock continues during these periods.

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AIRCRAFT STORAGE/RETURN TO SERVICE

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

NOTE:
DURING STORAGE OR PARKING PERIODS, IT IS NOT PERMITTED TO 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

V2414251 - V00T0MM0 - VM07P1LEVEL0101

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Placards and Markings - Presentation

Function/Description

Commercial transport aircraft have a large number of markings and placards on their external surface and in the cabin. Their function is to:

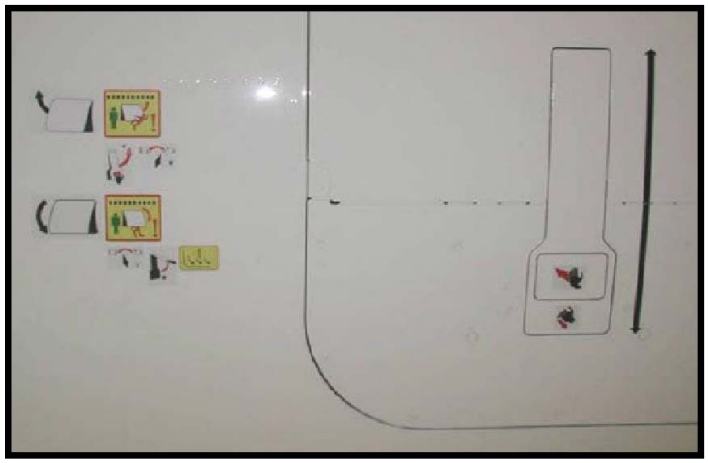
- Give warnings about dangers
- Give instructions
- Give the location of equipment.

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

The internal instructions are given as written markings.

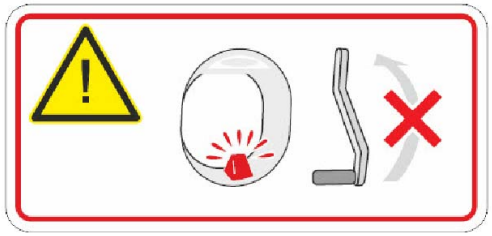
Placards that use pictograms help to:

- Prevent the problem of accurate translation for many languages.
- Remove ambiguities in verbal phrases and their interpretation.
- Decrease the work to keep placards and manuals consistent.
- Get a fleet-wide commonality.
- Decrease training for crews because of the similarity with non-aviation symbols.
- Make new placards not necessary after operator change.
- Give aid to dyslexic people to get the information.
- Make placards easier to read at a distance and in bad lighting conditions.



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
- BETTER LEGIBILITY (DISTANCE, POOR LIGHTING)

PLACARDS AND MARKINGS - PRESENTATION - FUNCTION/DESCRIPTION

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Servicing - Presentation

Location

The illustration shows the external standard service-points.
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 waste water
- The Engine oil servicing
- The Variable Frequency Generator (VFG) oil servicing
- The hydraulic service panels.

V2414251 - V00T0MM0 - VM07P1LEVEL0101

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

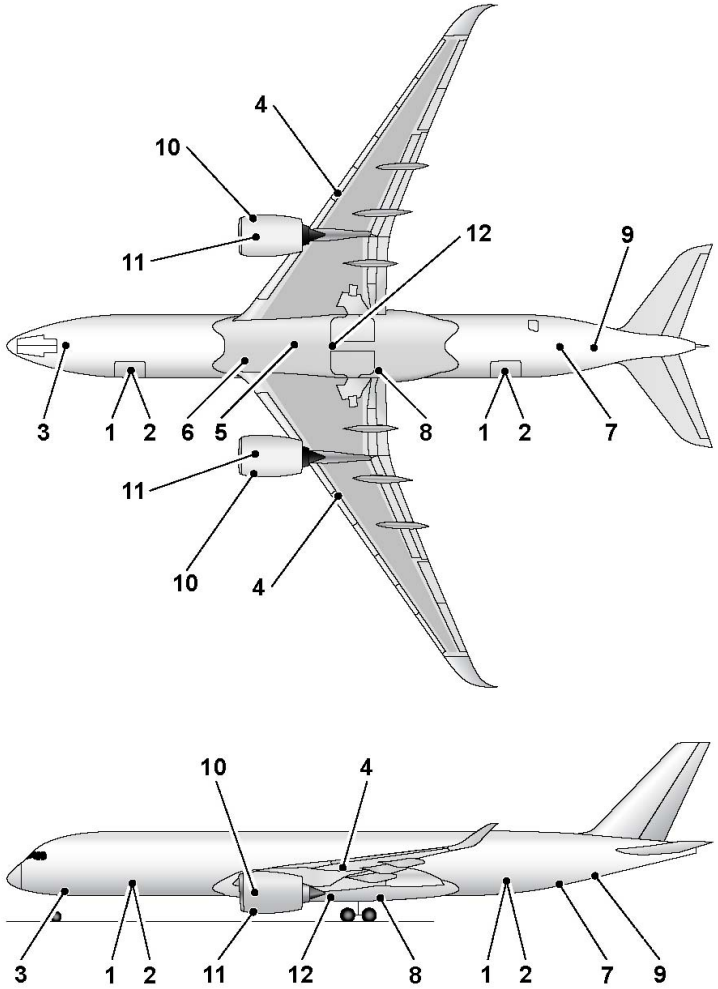
9 - WASTE WATER

10 - ENGINE OIL SERVICING

11 - VFG OIL SERVICING

12 - HYDRAULIC SERVICING

VFG: Variable Frequency Generator



SERVICING - PRESENTATION - LOCATION

AIRCRAFT GROUND HANDLING INTRODUCTION (1)

Maintenance Practices - Maintenance

Do not release products such as oil, fuel, solvents or lubricants in trash bins, soil or into the water network (drains, gutters, rain water, waste water, etc.).
Collect the different waste fluids in special waste disposal containers related to each type of waste fluid.
Each product must be stored in an applicable and special cabinet or room such as a fire-resistant and sealed cupboard.
Do not use the Auxiliary Power Unit (APU) if APU bleed air is not necessary. Stop the ground service equipment (GPU, air conditioning cart, etc...) if you do not do work with this equipment or if no persons are in the aircraft.

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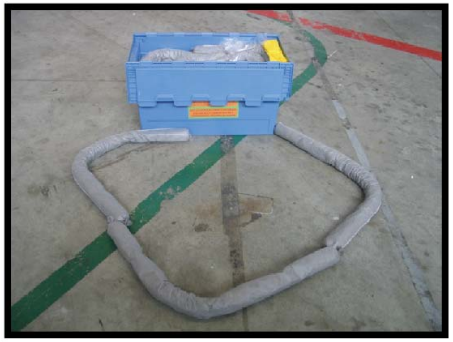
LIMIT GAS EMISSIONS



FLUID SPILL CLEANUP KIT

AVOID FLUID SPILLAGE
USE APPROPRIATE STORAGE EQUIPMENT FOR CHEMICAL PRODUCTS
LIMIT AIR POLLUTION (EXHAUST SMOKE, GAS EMISSIONS...)

STORE PRODUCTS IN APPROPRIATE CONTAINER/CUPBOARD/ROOM

USE SPECIFIC WASTE DISPOSAL CONTAINERS

SORT WASTE FLUIDS IN CONTAINERS

MAINTENANCE PRACTICES - MAINTENANCE

TURNAROUND PRESENTATION (1)

Turnaround Presentation

TURNAROUND PRESENTATION

FINAL ASSEMBLY LINE PRESENTATION

Final Assembly Line Presentation

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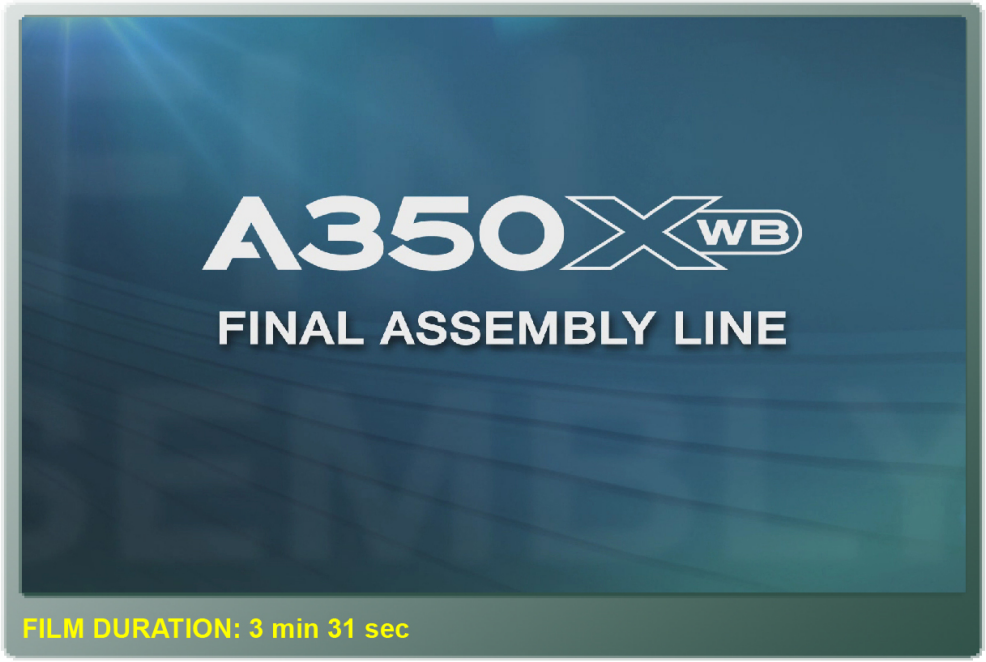

FINAL ASSEMBLY LINE PRESENTATION

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