



A380

Facility Planning Manual Maintenance Facility Planning MFP

PRELIMINARY ISSUE

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*AN EADS JOINT COMPANY
WITH BAE SYSTEMS*

MAINTENANCE FACILITY PLANNING

HIGHLIGHTS

PRELIMINARY ISSUE - JAN 30/04

Description of technical changes :

<u>SECTION</u>	<u>PAGE(S)</u>	<u>REASON FOR CHANGE</u>
LEP	P1 to P3	Revised to reflect this revision indicating new, revised and/or deleted pages.
T0C	P1 to P3	Revised to reflect this revision.
0-1	P1	Revised paragraph "Correspondence"
0-2	P1 to P2	Revised pages to reflect this revision
0-3	P1 to P2	Revised pages to reflect this revision
1-0	P1	Revised pages to reflect this revision
1-6	P1 to P3	New section "Wing Ribs/Stations"
1-9	P2 to P3	Updated figures "Ground Clearances"
1-10	P11 to P12 P14 to P16	Added complementary dimensions on figures "Door clearances - cargo compartment doors".
1-16	P1 to P10	New section "Wing Profile"
2-8	P3	Revised "Turning Radii tables" : updated values
3-0	P1	Revised pages to reflect this revision
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3-18	P1	New section "Landing Gear Maintenance Pits"
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MAINTENANCE FACILITY PLANNING

INTRODUCTION

1. PURPOSE

This A380 MAINTENANCE FACILITY PLANNING (MFP) manual is issued for the A380-800 and A380-800F series aircraft to provide preliminary data needed by airlines for maintenance facilities planning.

The A380-800 is a subsonic, very long range, very high capacity, civil transport aircraft.

There are two models in the A380-800 series :

- A380-841 model equipped with Rolls-Royce Trent 970 engine,
- A380-861 model equipped with Engine Alliance GP 7270 engine.

The A380-800F is a subsonic, very long range, civil freighter aircraft.

There are two models in the A380-800F series :

- A380-843F model equipped with Rolls-Royce Trent 977 engine,
- A380-863F model equipped with Engine Alliance GP 7277 engine.

In this manual, effectivity is managed as follows :

- by default, the data is effective for all A380-800 and A380-800F models,
- "A380-800/800F models" indicates that the related data or page is effective for all A380-800 and A380-800F models,
- "A380-800 models" restricts the effectivity of the related data or page to the A380-841 and A380-861 models,
- "A380-800F models" restricts the effectivity of the related data or page to the A380-843F and A380-863F models,
- the mention of a specific model (e.g. A380-841 model, A380-863F model, etc.) restricts the effectivity of the related data or page to that specific model.

The data contained in this manual is preliminary data and may be subject to change.

2. CORRESPONDENCE

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MAINTENANCE FACILITY PLANNING

3. CONTENTS

This manual comprises 5 sections :

Section 0 : INTRODUCTION

Section 1 : GENERAL INFORMATION

This section contains general dimensional and other basic data.

It covers :

- aircraft dimensions,
- zoning, fuselage frame and wing stations,
- cross-sections and profile for fuselage, wings and tail,
- ground clearances and travel limits of movable parts,
- aircraft center of gravity limits and aircraft attitude.

Section 2 : TERMINAL AND RAMP

This section contains the ground equipment required for the aircraft servicing at turn-round stations.

It covers :

- suggested servicing arrangement around the aircraft,
- estimated servicing times for turn-round,
- ground service connections and locations with their characteristics,
- cargo compartment loading and unloading,
- ground maneuvering capabilities and characteristics.

Section 3 : LINE MAINTENANCE AND HANGAR

This section outlines the technical data and requirements related to maintenance functions, regardless of whether these would be performed inside or outside the hangar or on the ramp.

It includes :

- description of the main aircraft systems,
- the aircraft jacking, leveling and the landing gear lifting,
- the main removable components weight and handling,
- the suggested hangar arrangement with the corresponding workstands.

Section 4 : COMPONENT REPAIR/OVERHAUL AND FUNCTIONAL TEST

This section contains the data and requirements relative to aircraft components repair/overhaul and functional testing.

Section 5 : VENDORS LIST

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5-1	Vendors Information

MAINTENANCE FACILITY PLANNING

GLOSSARY

1. List of Abbreviations

A/C	Aircraft
APU	Auxiliary Power Unit
ATA	Air Transport Association of America
BLG	Body Landing Gear
CAS	Calibrated Air Speed
CG	Center of Gravity
C/L	Center Line
FAA	Federal Aviation Administration
FDL	Fuselage Datum Line
FR	Frame
FSTE	Full Size Trolley Equivalent
FWD	Forward
GPU	Ground Power Unit
GSE	Ground Support Equipment
IERA	Instrument, Electric, Radio and navigation, Avionic
ISA	International Standard Atmosphere
L	Left
LPS	Last Pax Seating
MAC	Mean Aerodynamic Chord
MAX	Maximum
MIN	Minimum
MLW	Maximum Design Landing Weight
MRW	Maximum Design Ramp Weight
MTOW	Maximum Design Take-Off Weight
MTW	Maximum Design Taxi Weight
MZFW	Maximum Design Zero Fuel Weight
NDT	Non-Destructive Test
NLG	Nose Landing Gear
OAT	Outside Air Temperature
OWE	Operating Weight Empty
PAX	Passenger
PB/D	Passenger Boarding/Deboarding
R	Right
RC	Reference Chord
SLS	Sea Level Static condition
STA	Station
TBD	To Be Determined
TBIL	To Be Issued Later
ULD	Unit Load Device
US	United States
VF	Variable Frequency
Vref	Landing reference speed
WLG	Wing Landing Gear

MAINTENANCE FACILITY PLANNING**2. Units of Measurement**

°	degree (angle)
%	percent
°C	degree Celsius
°F	degree Fahrenheit
bar	bar
cm	centimeter
deg	degree (angle)
ft	foot
ft/s	foot per second
ft/s ²	foot per second squared
ft ²	square foot
ft ³	cubic foot
in	inch
kg	kilogram
kg/l	kilogram per liter
km/h	kilometer per hour
kt	knot
kVA	kiloVolt Ampere
l	liter
l/m ²	liter per square meter
lb/in ²	pound per square inch
lb	pound
lm/m ²	lumen per square meter
m	meter
m/s	meter per second
m ²	square meter
m ³	cubic meter
m ³ /h	cubic meter per hour
min	minute
mm	millimeter
nm	nautical mile
psi	pound-force per square inch
t	tonne
US gal	United States gallon

MAINTENANCE FACILITY PLANNING

3. Design Weight Terminology

Maximum Design Ramp Weight (MRW) :

Maximum weight for ground maneuver (including weight of taxi and runup fuel) as limited by aircraft strength and airworthiness requirements. It is also called Maximum Design Taxi Weight (MTW).

Maximum Design Landing Weight (MLW) :

Maximum weight for landing as limited by aircraft strength and airworthiness requirements.

Maximum Design Takeoff Weight (MTOW) :

Maximum weight for takeoff as limited by aircraft strength and airworthiness requirements. (This is the maximum weight at start of the take-off run).

Maximum Design Zero Fuel Weight (MZFW) :

Maximum permissible weight of the aircraft less usable fuel.

Operating Weight Empty (OWE) :

Weight of structure, powerplant, furnishings, systems, and other items of equipment that are an integral part of a particular aircraft configuration plus the operator's items.

The operator's items are the flight and cabin crew and their baggage, unusable fuel, engine oil, emergency equipment, toilet chemical and fluids, galley structure, catering equipment, seats, documents, etc.

Maximum Payload :

Maximum Design Zero Fuel Weight (MZFW) minus Operating Weight Empty (OWE).

Maximum Seating Capacity :

Maximum number of passengers specifically certified or anticipated for certification.

Maximum Cargo Volume :

Maximum usable volume available for cargo.

Usable Fuel :

Fuel available for aircraft propulsion.

MAINTENANCE FACILITY PLANNING

SECTION 1 - GENERAL INFORMATION

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	Airplane Overall Dimensions and Outline Basic Reference Drawing	1-1
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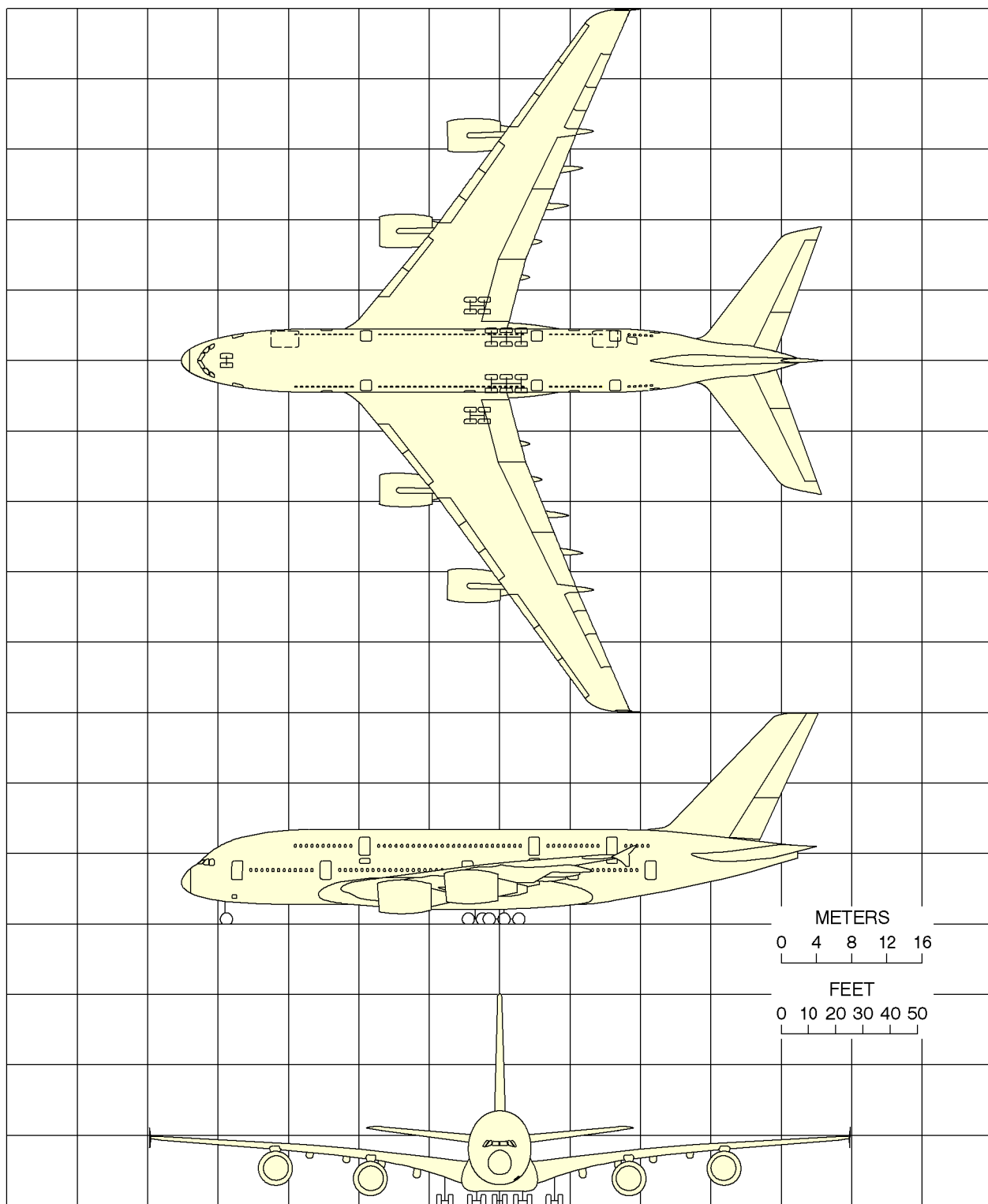
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AIRPLANE OVERALL DIMENSIONS AND OUTLINE

BASIC REFERENCE DRAWING

This section gives the airplane overall dimensions and outline basic reference drawing.

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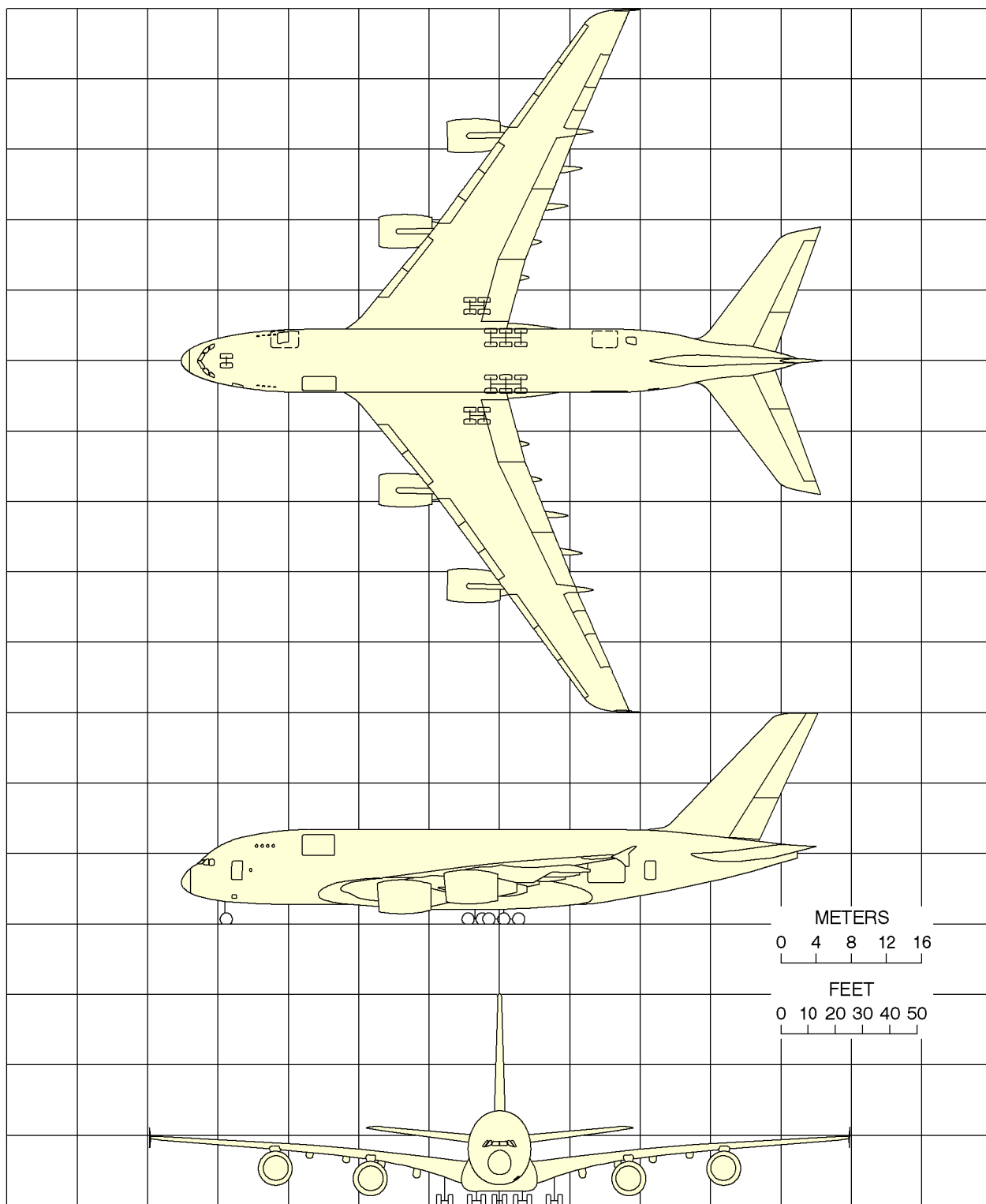


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**Airplane Overall Dimensions and
Outline Basic Reference Drawing
A380-800 Models**

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**Airplane Overall Dimensions and
Outline Basic Reference Drawing
A380-800F Models**

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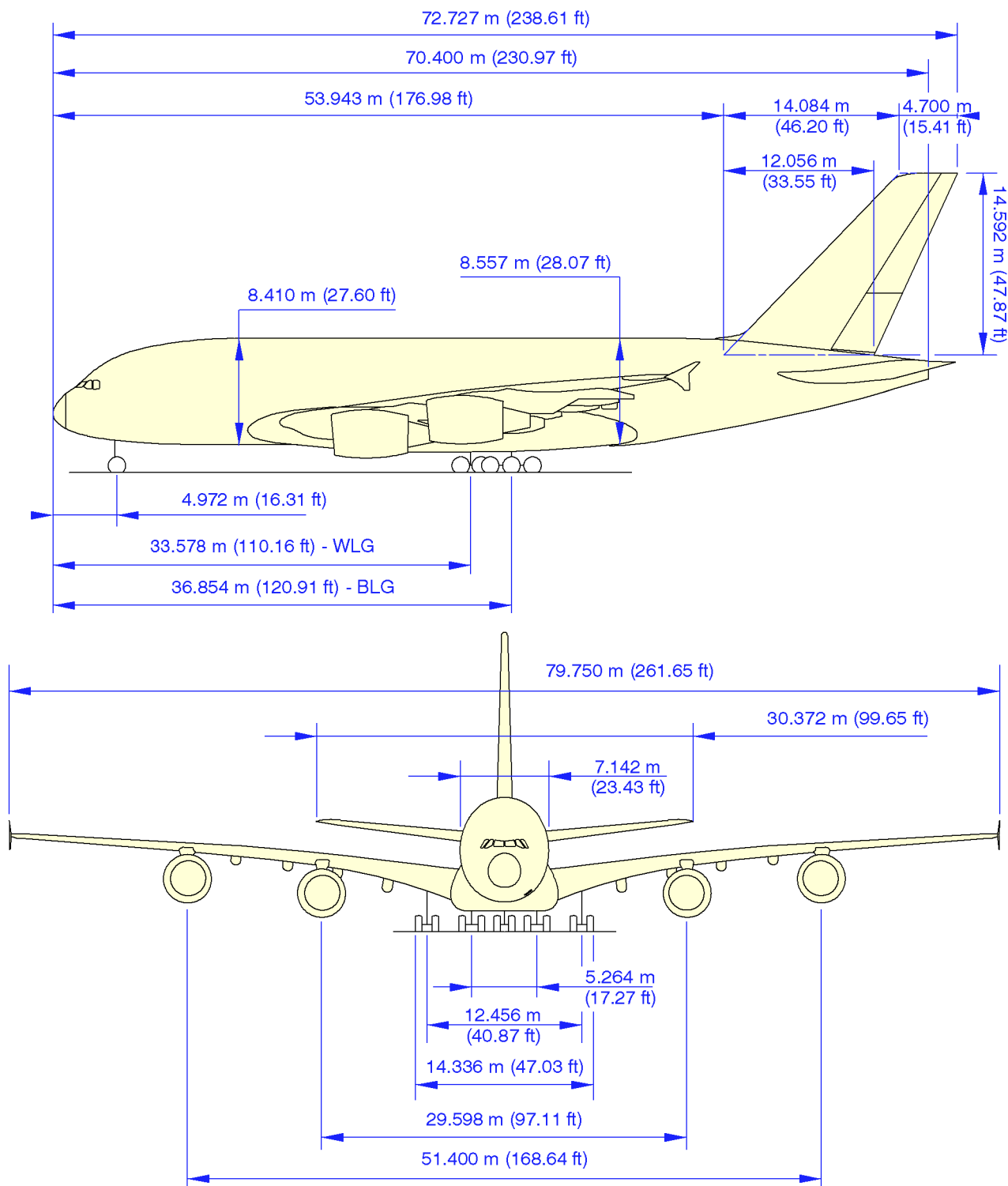
AIRPLANE DIMENSIONS

This section gives the airplane dimensions.



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Airplane Dimensions (sheet 1/2)
A380-800/800F Models

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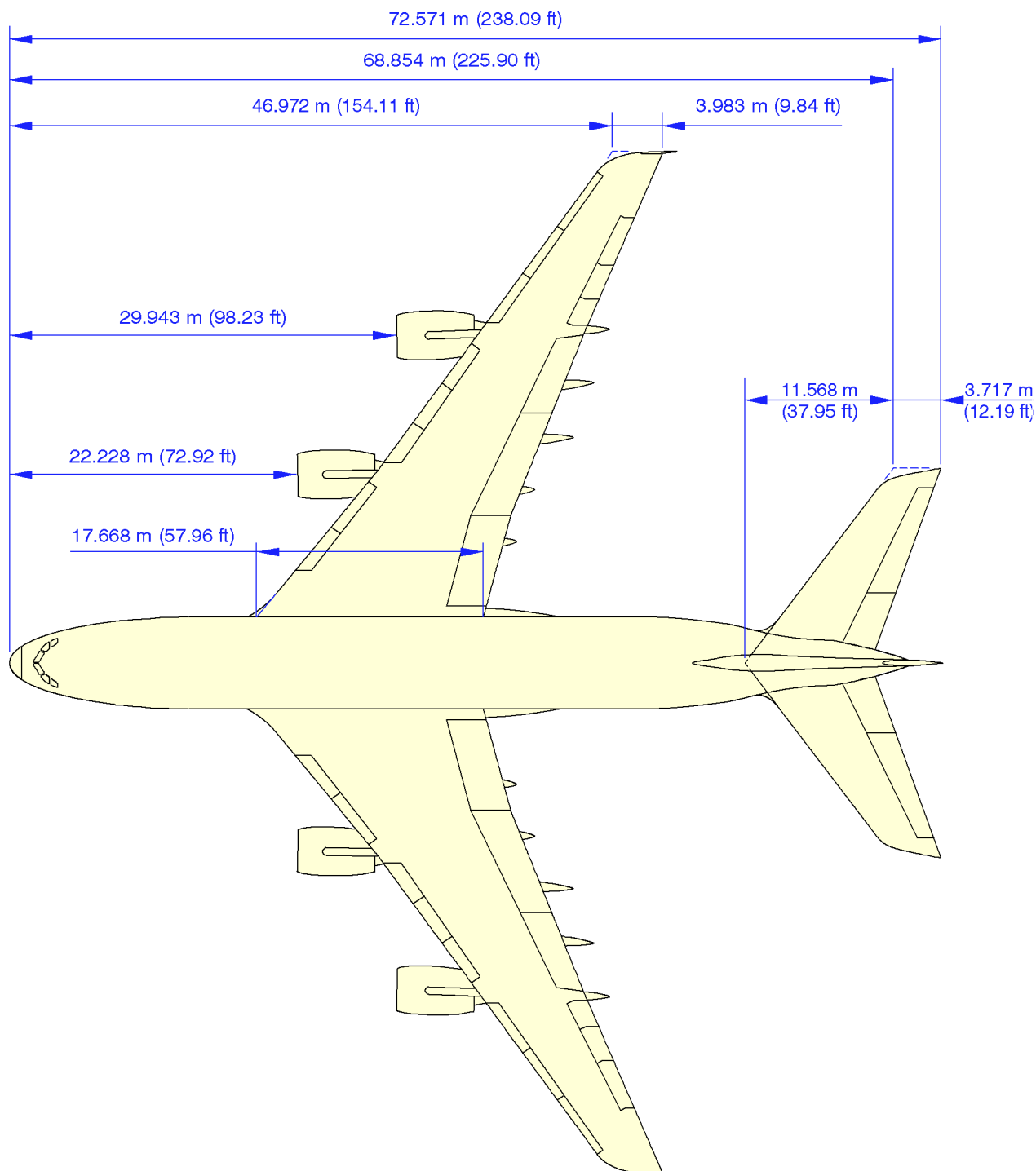
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NOTE: FOR DOOR DIMENSIONS AND LOCATION, SEE SECTION 1-10.

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Airplane Dimensions (sheet 2/2)
A380-800/800F Models

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MAINTENANCE FACILITY PLANNING

GENERAL AIRPLANE CHARACTERISTICS

This section gives the general airplane characteristics data.



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Airplane Model		A380-841	A380-861
Engines		TRENT 970	GP 7270
Maximum Design Ramp Weight (MRW)	kilograms	562 000	562 000
	pounds	1 238 998	1 238 998
Maximum Design TakeOff Weight (MTOW)	kilograms	560 000	560 000
	pounds	1 234 588	1 234 588
Maximum Design Landing Weight (MLW)	kilograms	386 000	386 000
	pounds	850 984	850 984
Maximum Design Zero Fuel Weight (MZFW)	kilograms	361 000	361 000
	pounds	795 869	795 869
Operating Weight Empty (OWE) - Typical	kilograms	280 713	280 724
	pounds	618 866	618 890
Maximum Payload	kilograms	84 320	84 140
	pounds	185 893	185 496
Standard Seating Capacity	Three-Class	555 (1)	555 (1)
Usable Fuel Capacity	liters	315 289	315 289
	US gallons	83 290	83 290
	kilograms (density = 0.785 kg/l)	247 502	247 502
	pounds	545 648	545 648
Volume of cargo compartments (2)	cubic meters	175.2	175.2
	cubic feet	6187	6187

NOTE : (1) 555 pax :

- main deck : First Class 22 and Tourist Class 334
- upper deck : Business Class 96 and Tourist Class 103

(2) Volume of cargo compartments :

- lower deck forward cargo compartment
(usable containerised volume) : 89.4 m³ (3 157 ft³)
- lower deck aft cargo compartment
(usable containerised volume) : 71.5 m³ (2 525 ft³)
- lower bulk cargo compartment
(usable volume) : 14.3 m³ (505 ft³)

General Airplane Characteristics Data
A380-800 Models



MAINTENANCE FACILITY PLANNING

Airplane Model		A380-843F	A380-863F
Engines		TRENT 977	GP 7277
Maximum Design Ramp Weight (MRW)	kilograms	592 000	592 000
	pounds	1 305 136	1 305 136
Maximum Design TakeOff Weight (MTOW)	kilograms	590 000	590 000
	pounds	1 300 727	1 300 727
Maximum Design Landing Weight (MLW)	kilograms	427 000	427 000
	pounds	941 374	941 374
Maximum Design Zero Fuel Weight (MZFW)	kilograms	402 000	402 000
	pounds	886 258	886 258
Operating Weight Empty (OWE) - Typical	kilograms	251 900	252 080
	pounds	555 344	555 741
Maximum Payload	kilograms	150 100	149 920
	pounds	330 913	330 517
Usable Fuel Capacity	liters	315 289 (2)	315 289 (2)
	US gallons	83 290	83 290
	kilograms (density = 0.785 kg/l)	247 502	247 502
	pounds	545 648	545 648
Volume of cargo compartments (1)	cubic meters	952.3	952.3
	cubic feet	33 630	33 630

NOTE : (1) Volume of cargo compartments :

- lower deck forward cargo compartment
(usable containerised volume) : 89.4 m³ (3 157 ft³)
- lower deck aft cargo compartment
(usable containerised volume) : 71.5 m³ (2 525 ft³)
- lower bulk cargo compartment
(usable volume) : 18.4 m³ (650 ft³)
- main deck cargo compartment
(usable palletized volume) : 516 m³ (18 222 ft³)
- upper deck cargo compartment
(usable palletized volume) : 257 m³ (9 075 ft³)

(2) Usable fuel capacity with center tank : 355 850 L (94 005 US gal)

General Airplane Characteristics Data
A380-800F Models

MAINTENANCE FACILITY PLANNING

ZONING

1. General

This section provides the zone division/delimitation.

2. Aircraft Zoning

A. Identification Method

(1) Zones identification is based on ATA 100 Specification.

(2) The aircraft is broken down into Zones identified, each, by a three-digit number where the first digit (hundreds) corresponds to the Major Zones, the second digit (tens) corresponds to the Major Sub-Zones and the third digit (units) corresponds to the Zones.

B. Identification of Major Zones, Major Sub-Zones and Zones

Locations and boundaries of the Major Zones and Major Sub-Zones are illustrated on the following pages.

NOTE : Locations and boundaries of the zones are not given in this manual.

(1) Major Zones (hundreds)

(a) Major Zones boundaries are identified by :

- Frame/Stations/Sringers for fuselage.
- Ribs for wings and vertical/horizontal tail.
- Stations for nacelle and pylon.

(b) The Major Zones are :

- 100 Lower part of fuselage (below main deck floor lower datum), including radome to forward face of aft pressure bulkead.
- 200 Upper part of fuselage (above main deck floor lower datum) to forward face of aft pressure bulkead.
- 300 Stabilizer and fuselage rear section from rear of aft pressure bulkead (including rudder and elevators).
- 400 Powerplants, nacelles and pylons.
- 500 Left wing.
- 600 Right wing.
- 700 Landing gear and landing gear doors.
- 800 Passenger/crew doors, cargo compartment doors, emergency exits and pressurized maintenance doors.

MAINTENANCE FACILITY PLANNING

(2) Major Sub-Zones (tens)

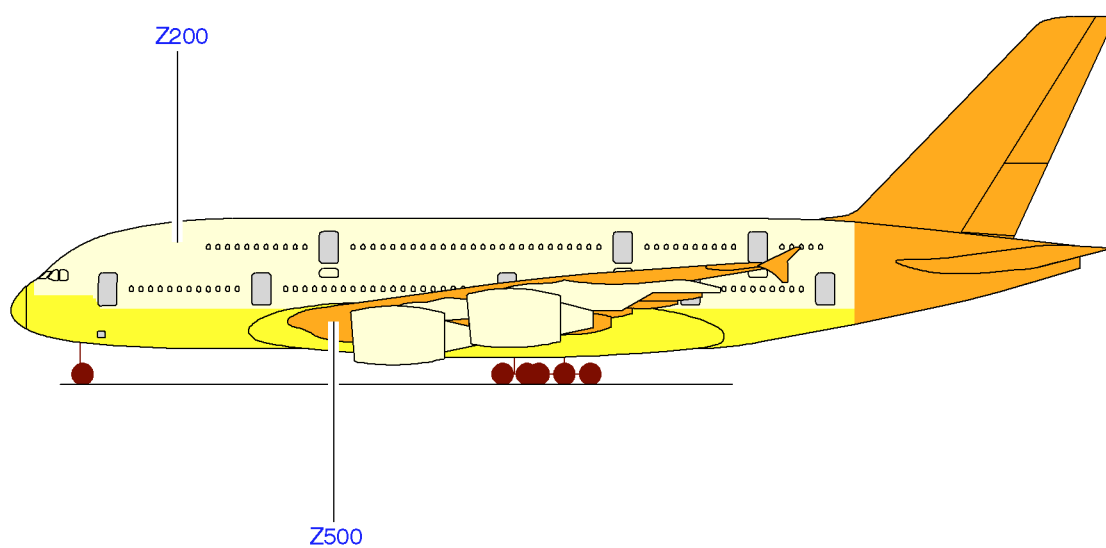
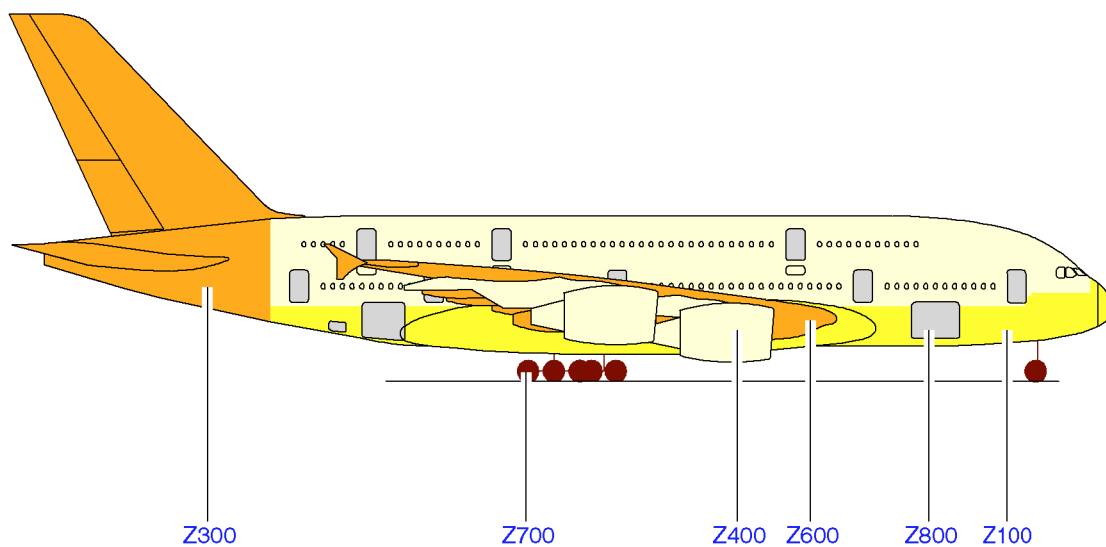
- (a) These are divisions of the Major Zones, eg : 100 divided into 110, 120, 130, 140, etc.
- (b) The sequence of Major Sub-Zones numbering for fuselage runs from the front to the rear.

(3) Zones (units)

- (a) These are divisions of Major Sub-Zones, eg : 120 divided into 121, 122, 123, etc.
- (b) The sequence of Zones for fuselage runs from inboard to outboard, front to rear in the wing, forward to aft and away from the floor line in the fuselage and from root to tip in the vertical tail.
- (c) Whenever feasible odd numbers are allocated to the zones left of fuselage or nacelle centerlines and even numbers to zones to the right.

NOTE : If no side differentiation is needed (eg. : pylon, bilge area), the old numbering for "center zones" is used.

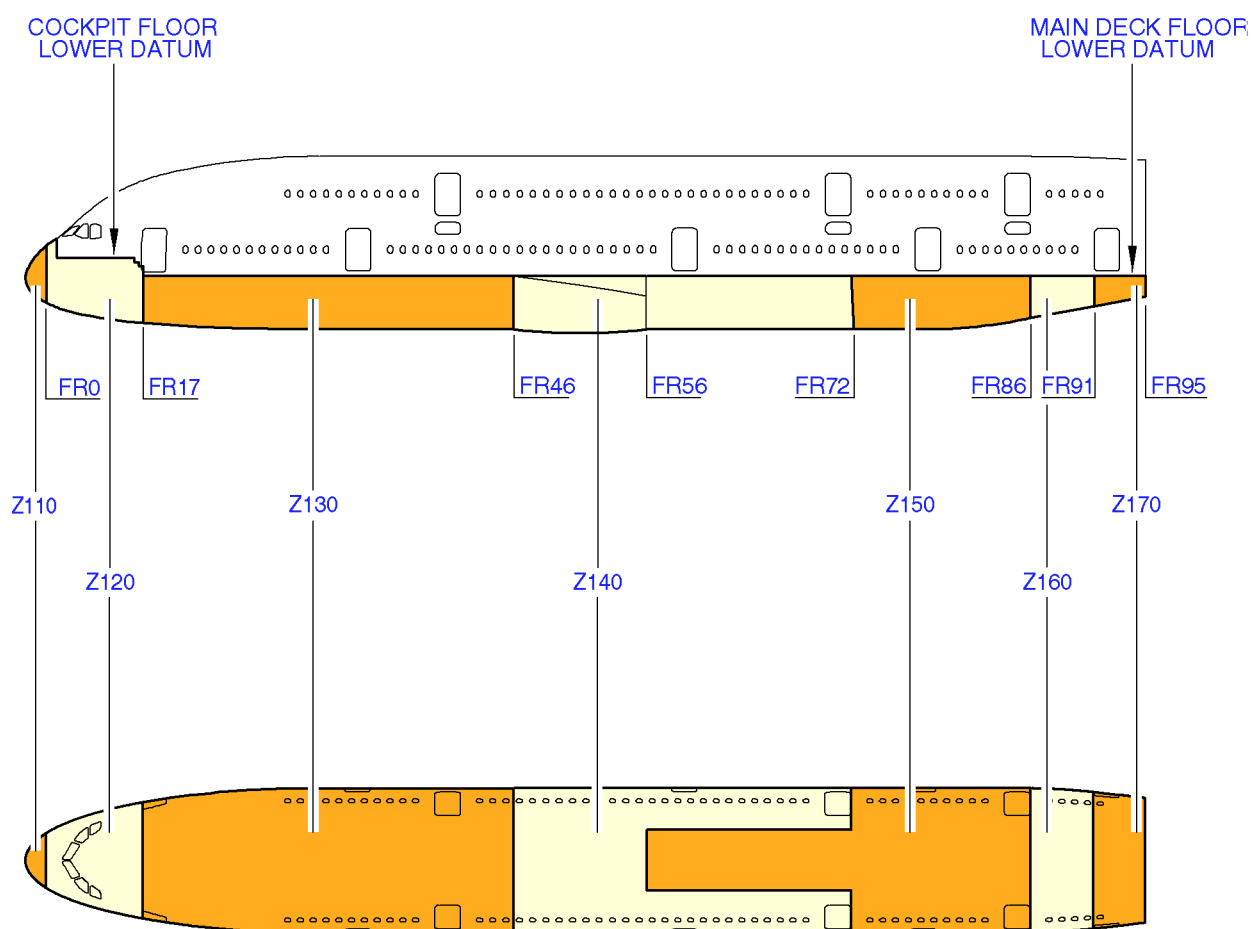
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Major Zones
A380-800 Models

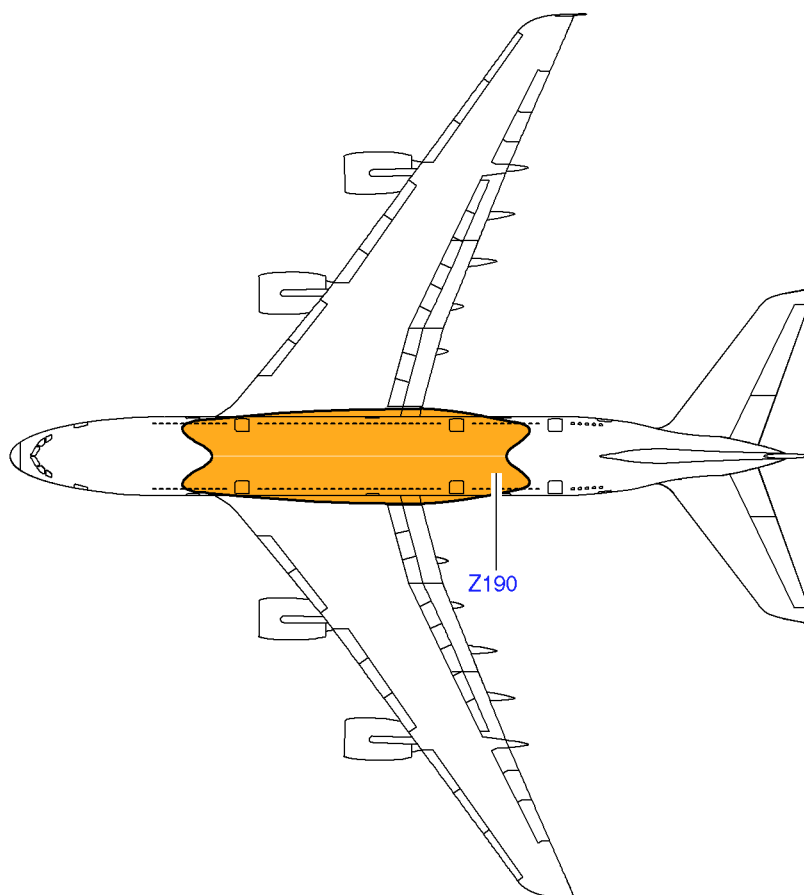
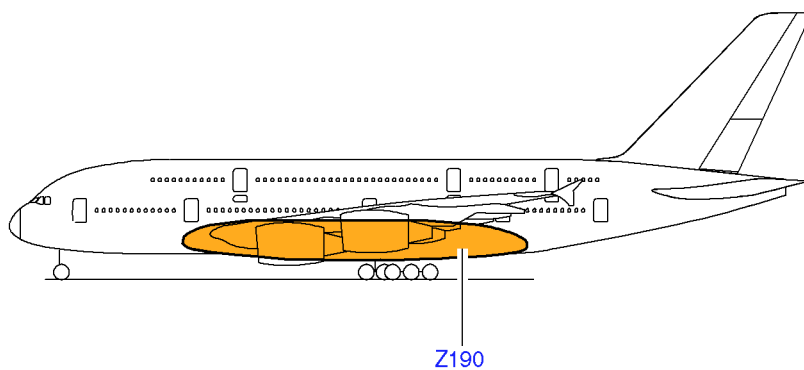
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Major Sub-Zones
Zone 100 (Sheet 1/2)
A380-800 Models

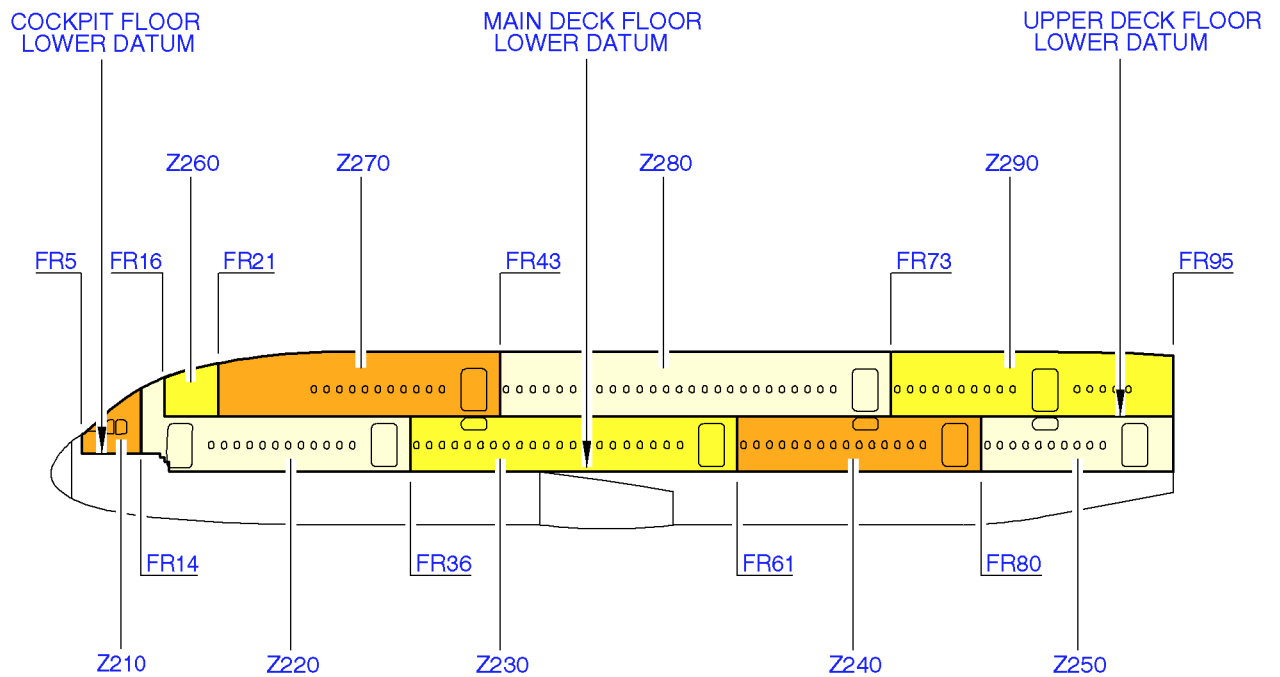
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Major Sub-Zones
Zone 100 (Sheet 2/2)
A380-800 Models

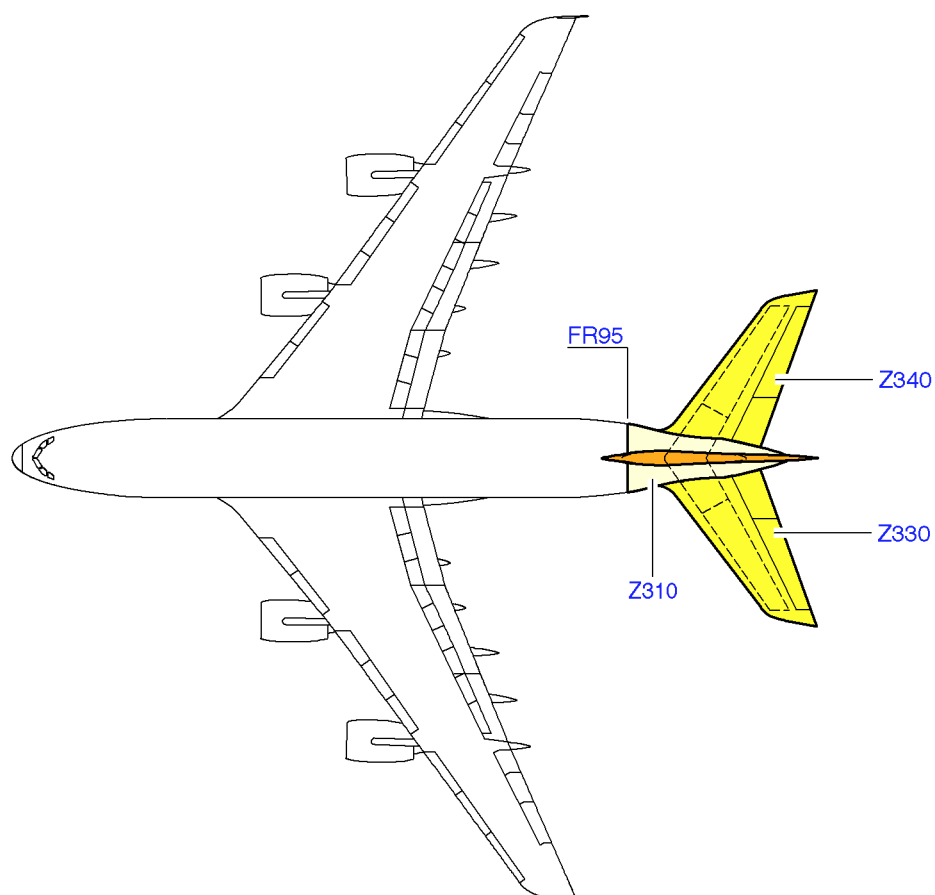
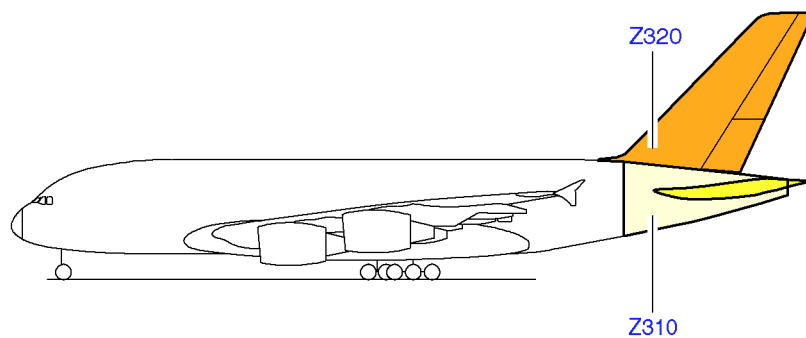
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Major Sub-Zones
Zone 200
A380-800 Models

MAINTENANCE FACILITY PLANNING



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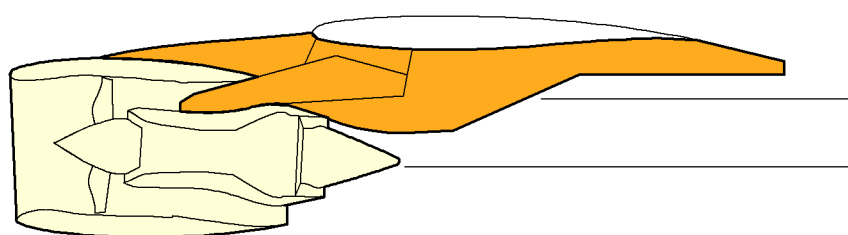
Major Sub-Zones
Zone 300
A380-800/800F Models

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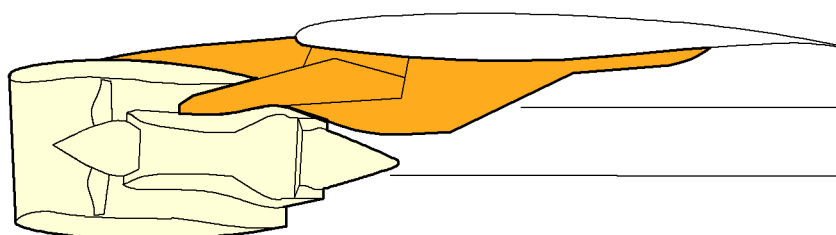
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MAINTENANCE FACILITY PLANNING



OUTBOARD

LEFT WING (ENGINE 1)	RIGHT WING (ENGINE 4)
Z450	Z480
Z410	Z440



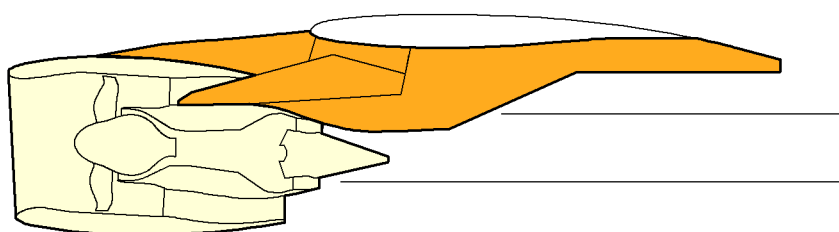
INBOARD

LEFT WING (ENGINE 2)	RIGHT WING (ENGINE 3)
Z460	Z470
Z420	Z430

Major Sub-Zones
Zone 400 – TRENT 970/977 Engines
A380-841/843F Models

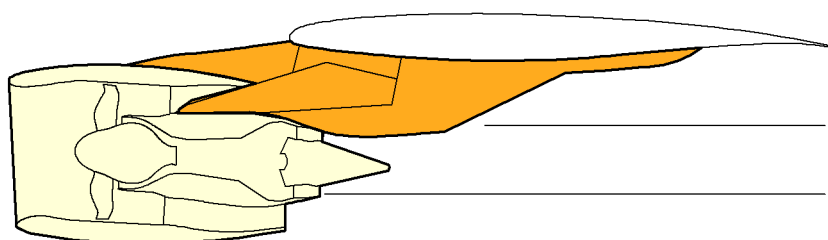
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MAINTENANCE FACILITY PLANNING



OUTBOARD

LEFT WING (ENGINE 1)	RIGHT WING (ENGINE 4)
Z450	Z480
Z410	Z440



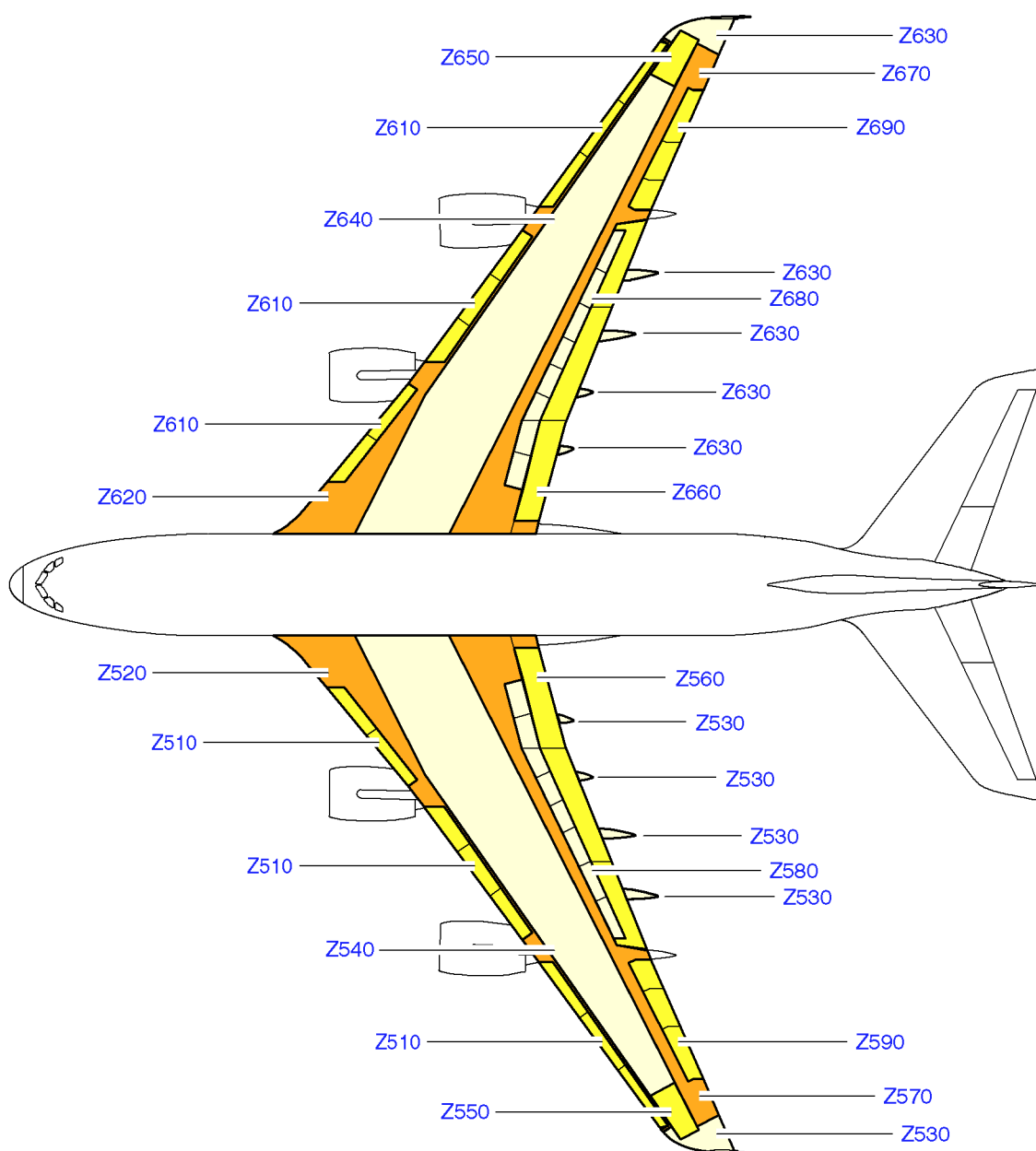
INBOARD

LEFT WING (ENGINE 2)	RIGHT WING (ENGINE 3)
Z460	Z470
Z420	Z430

Major Sub-Zones
Zone 400 - GP 7270/7277
A380-861/863F Models

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MAINTENANCE FACILITY PLANNING



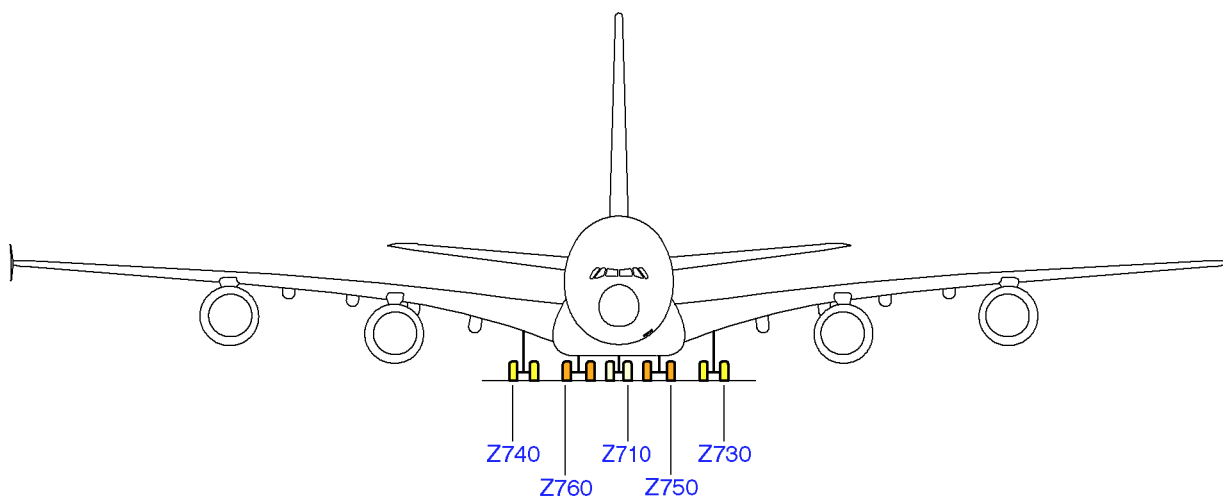
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Major Sub-Zones
Zone 500/600
A380-800/800F Models

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Major Sub-Zones
Zone 700
A380-800/800F Models

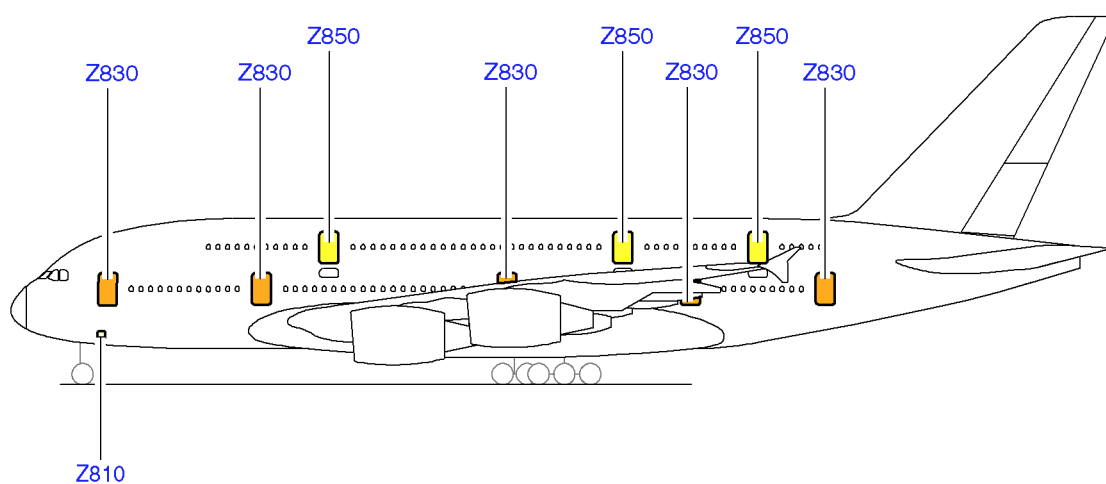
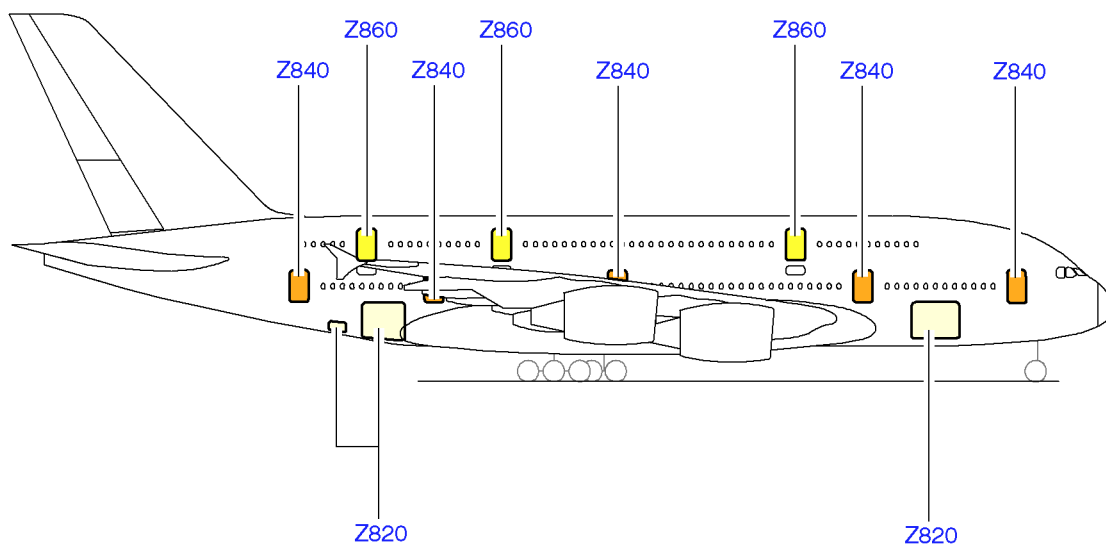
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MAINTENANCE FACILITY PLANNING



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Major Sub-Zones
Zone 800
A380-800 Models

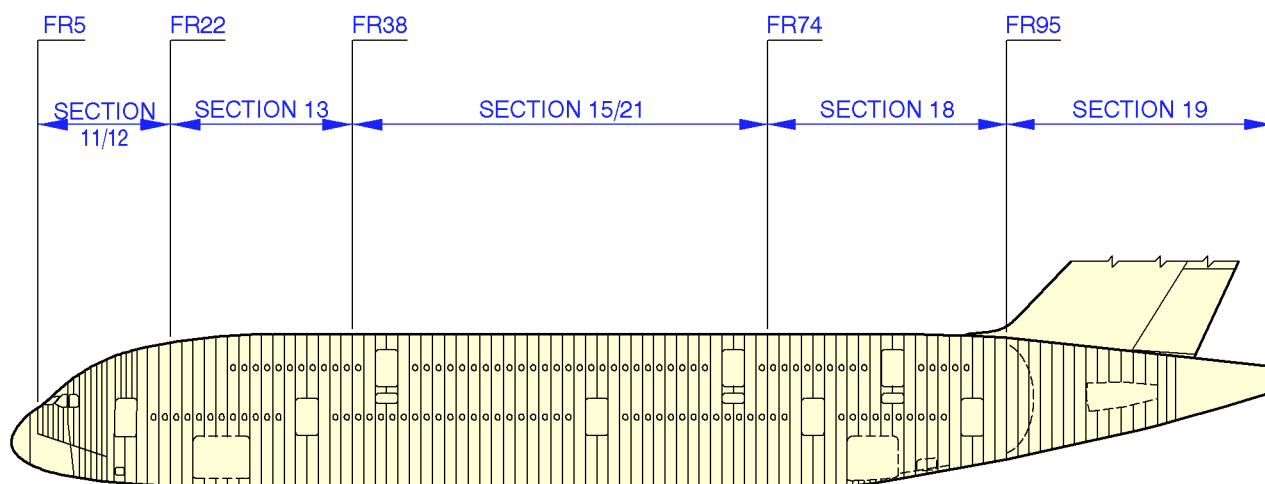
MAINTENANCE FACILITY PLANNING

FUSELAGE FRAMES/STATIONS

This section gives the fuselage frame stations measured along X datum at 7330 mm from the nose.

The stations (STA) are given in millimeters without conversion.

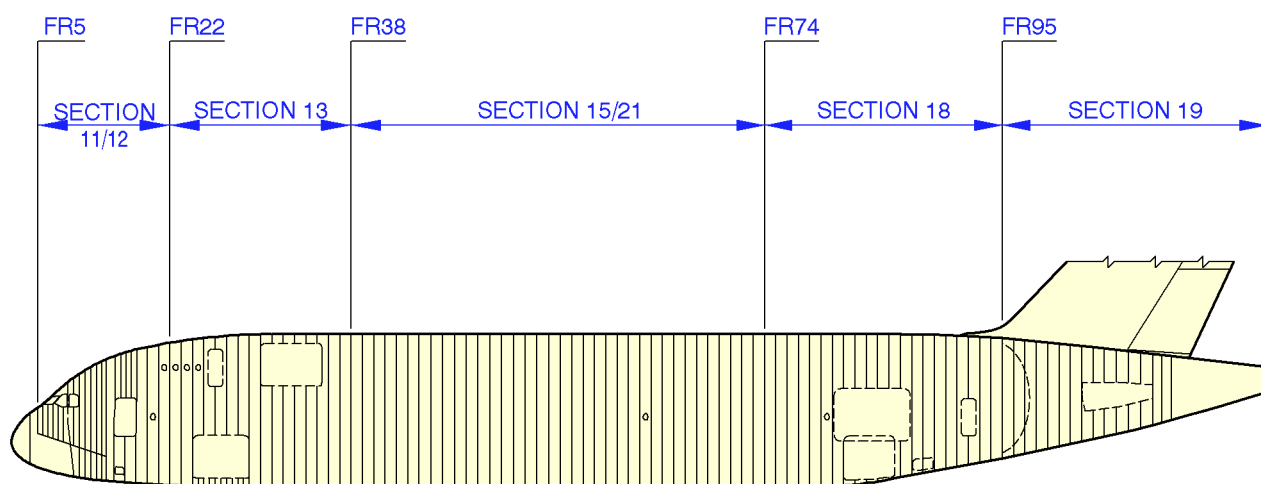
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Fuselage Frames/Stations
Sections Identification
A380-800 Models

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Fuselage Frames/Stations
Sections Identification
A380-800F Models

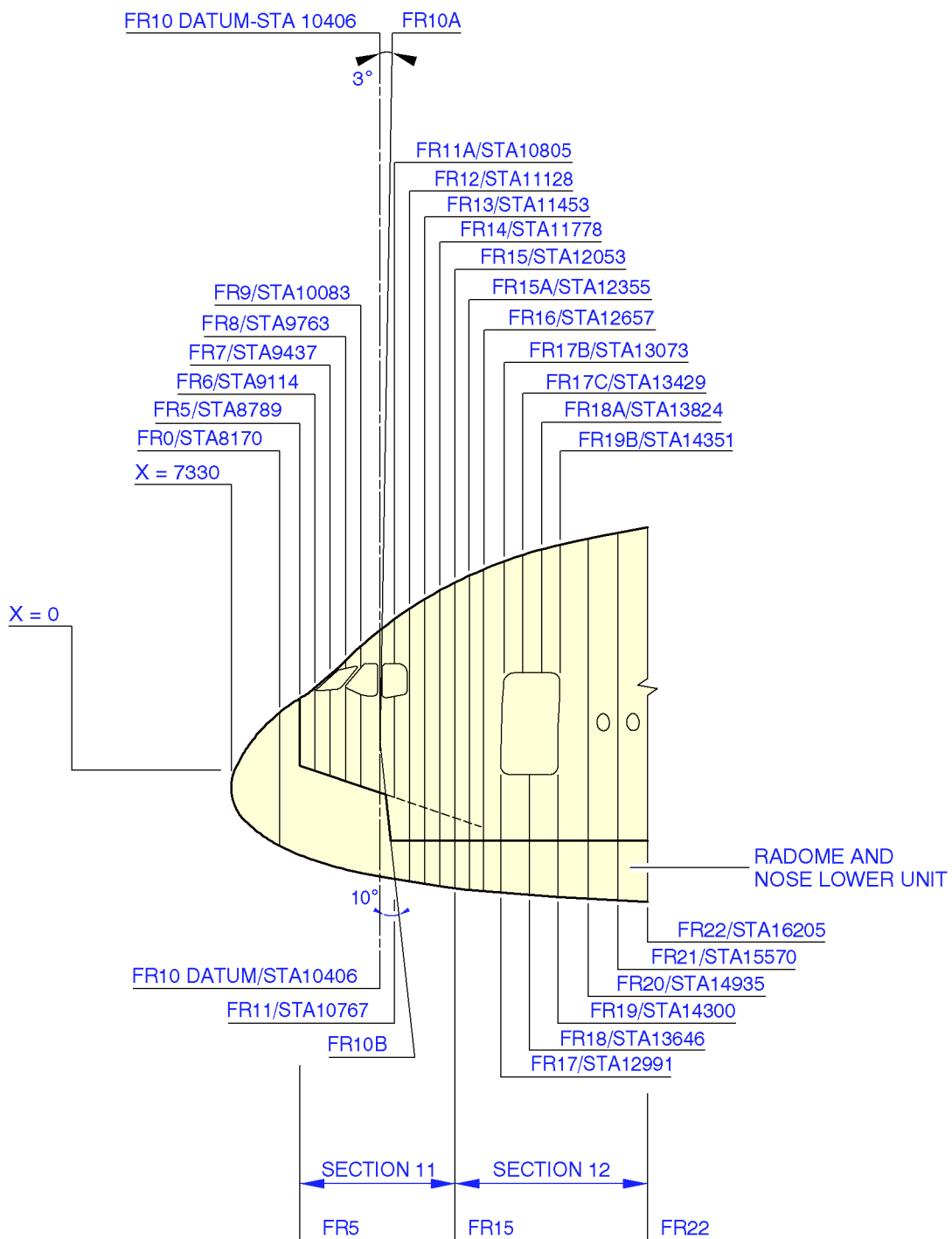
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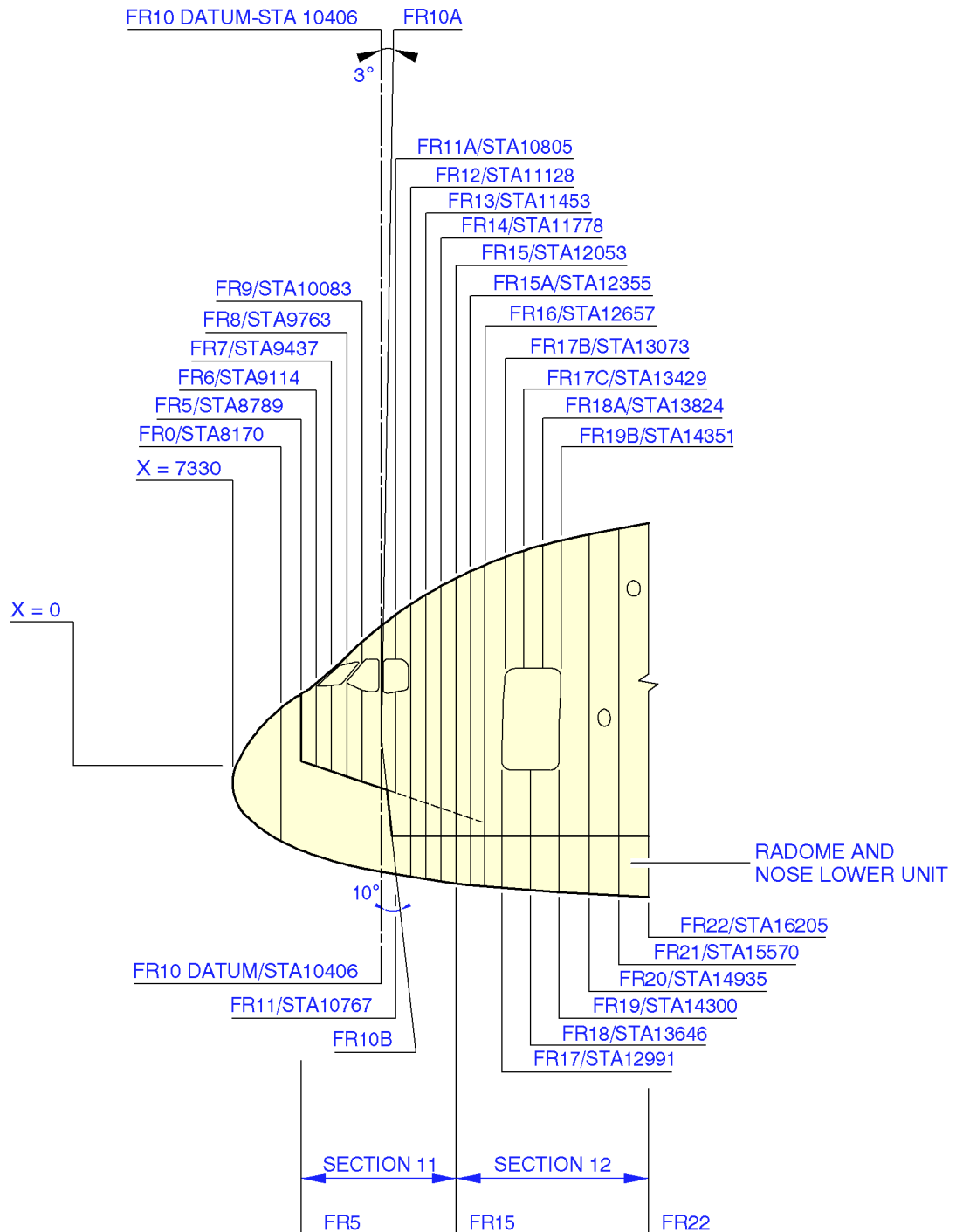
MAINTENANCE FACILITY PLANNING



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Fuselage Frames/Stations
Section 11/12
A380-800 Models

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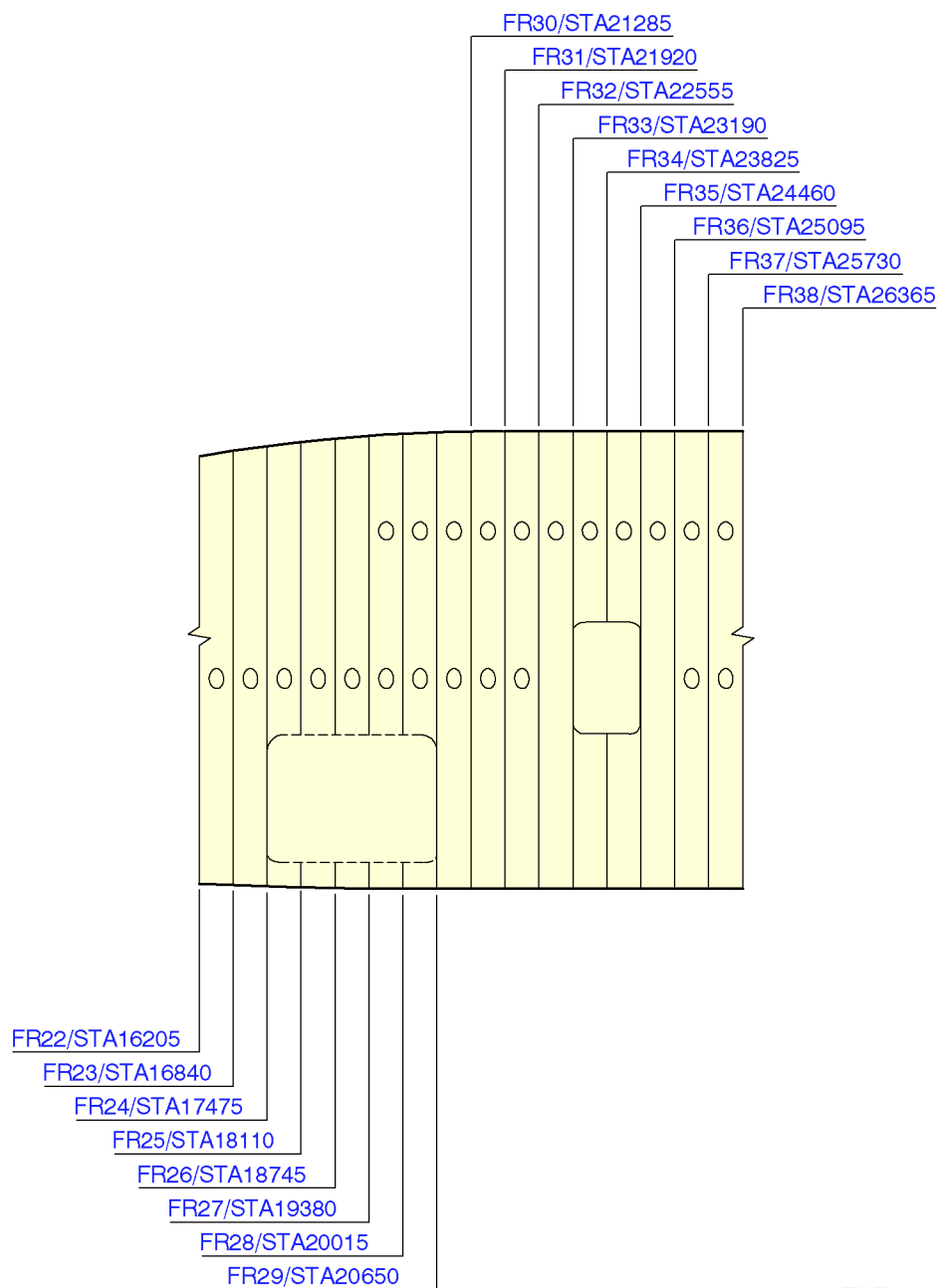
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Fuselage Frames/Stations
Section 11/12
A380-800F Models



PRELIMINARY DATA

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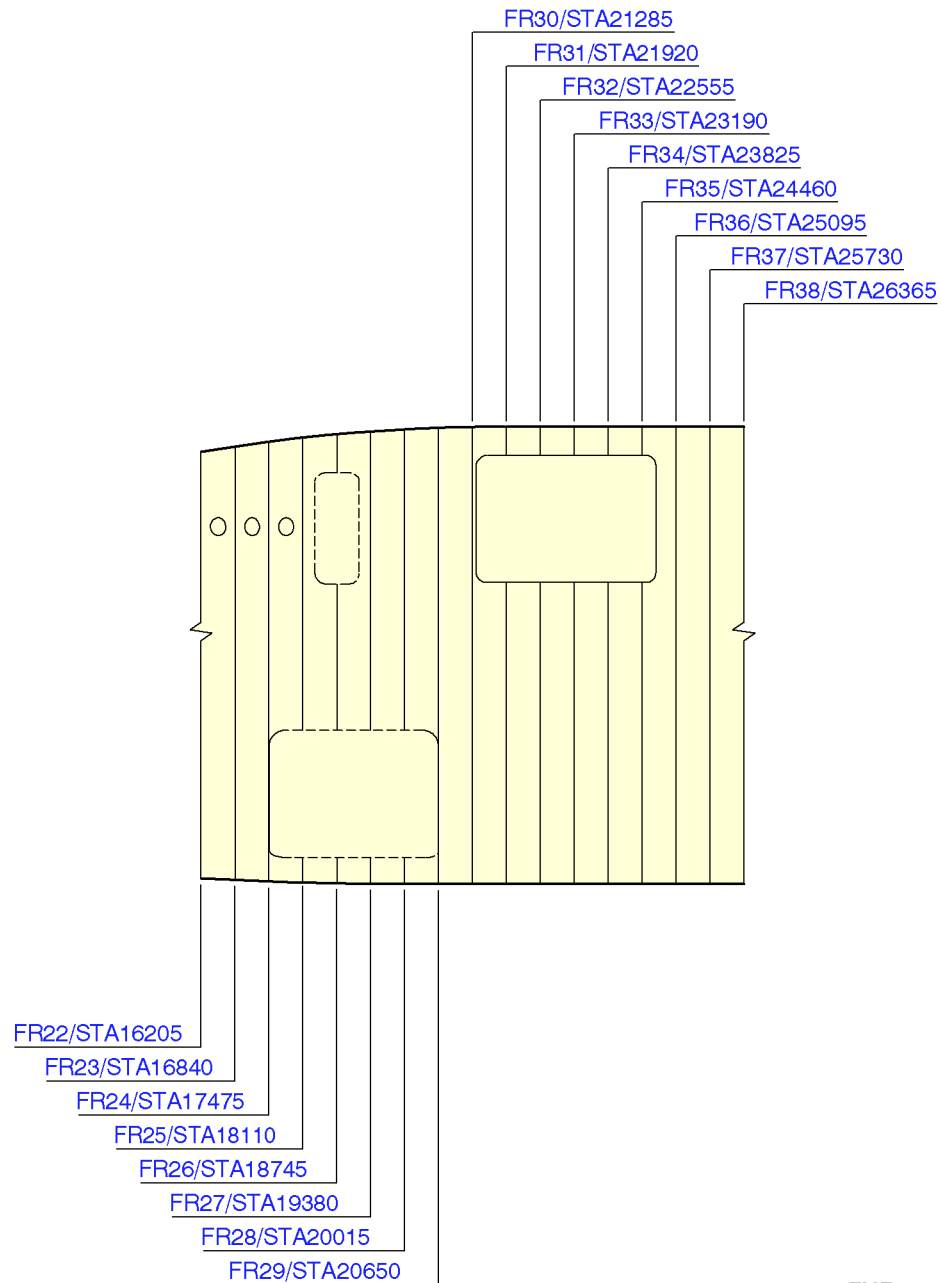
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Fuselage Frames/Stations
Section 13
A380-800 Models



PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



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Fuselage Frames/Stations
Section 13
A380-800F Models

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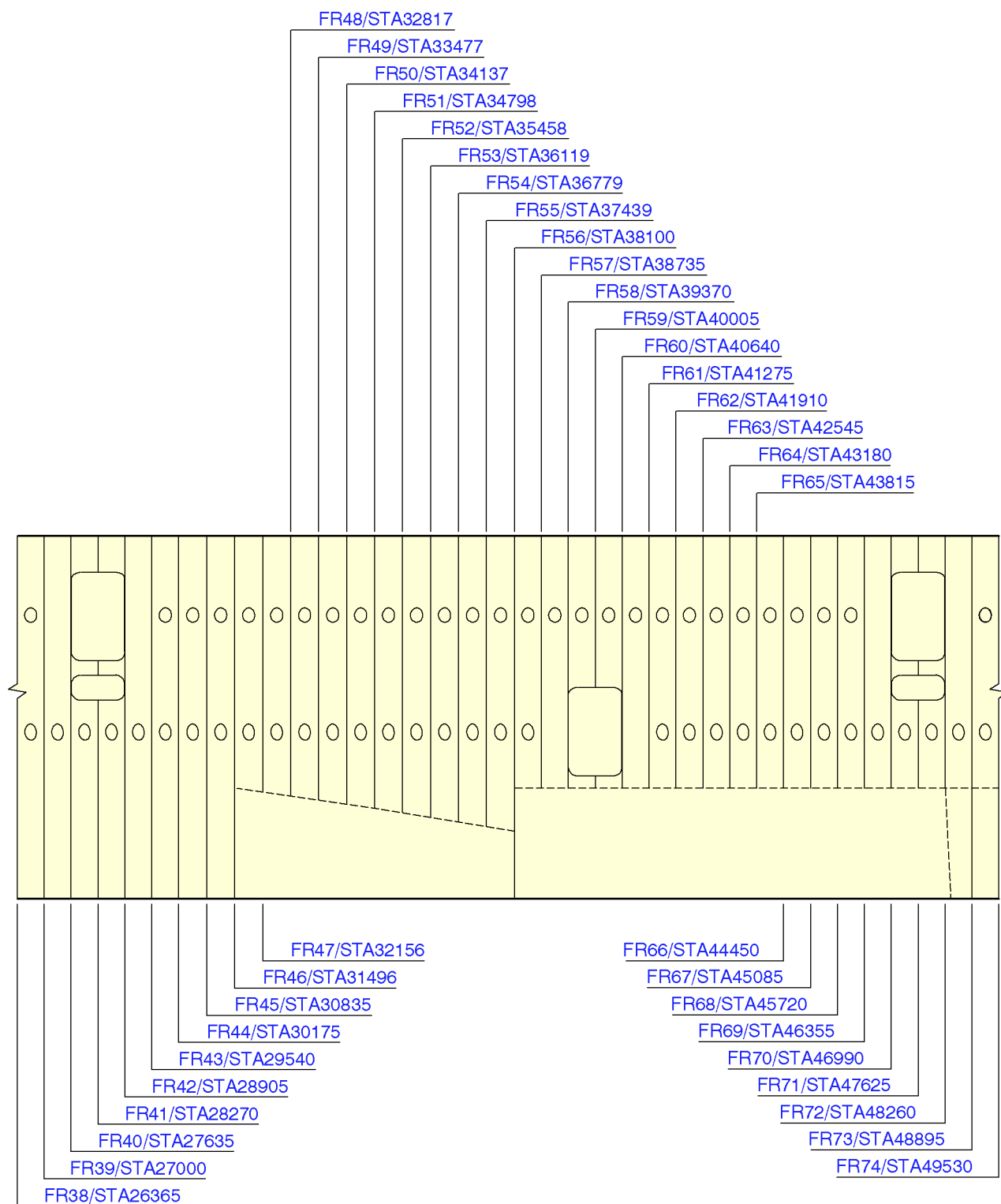
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PRELIMINARY DATA

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Fuselage Frames/Stations
Section 15/21
A380-800 Models

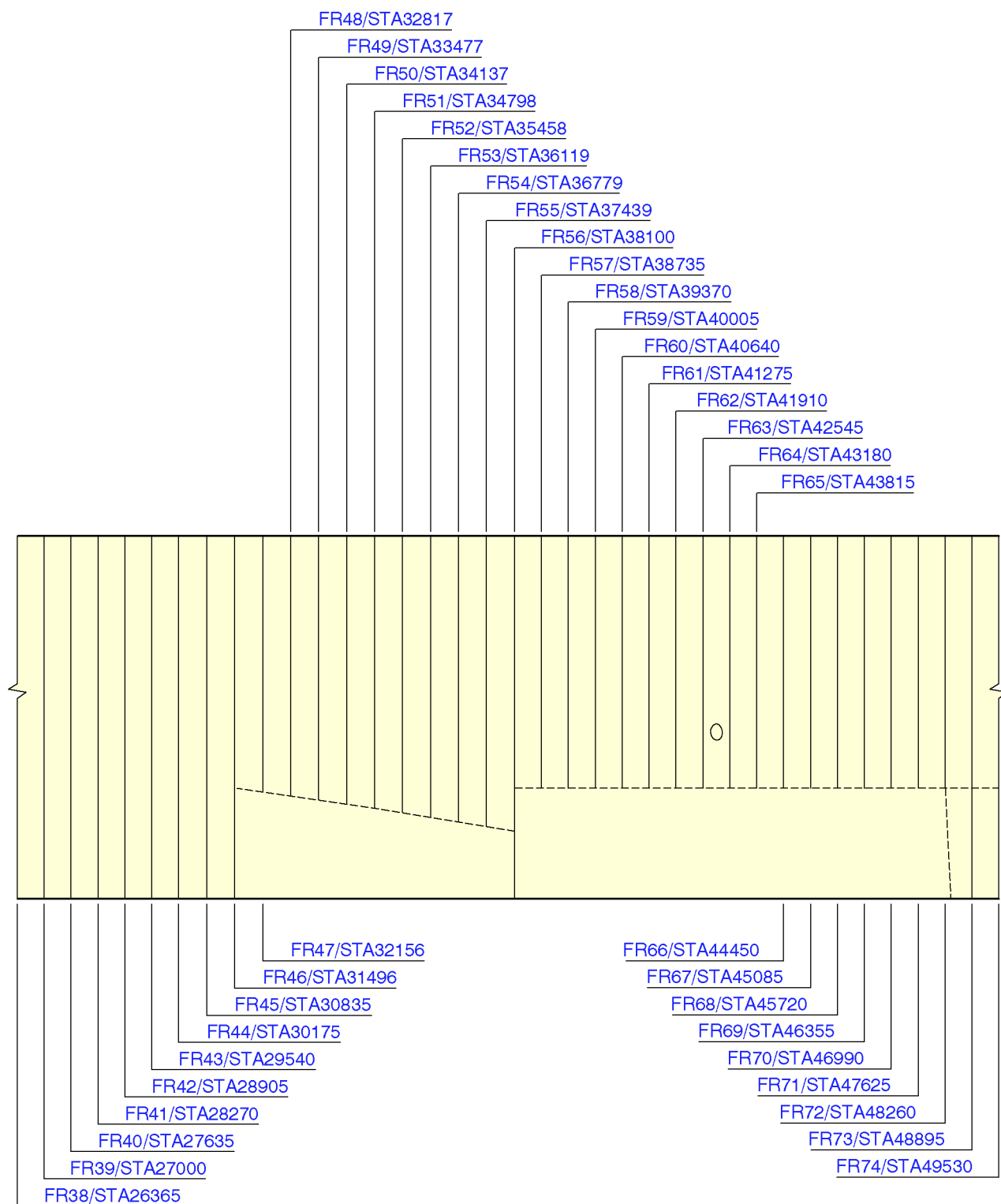
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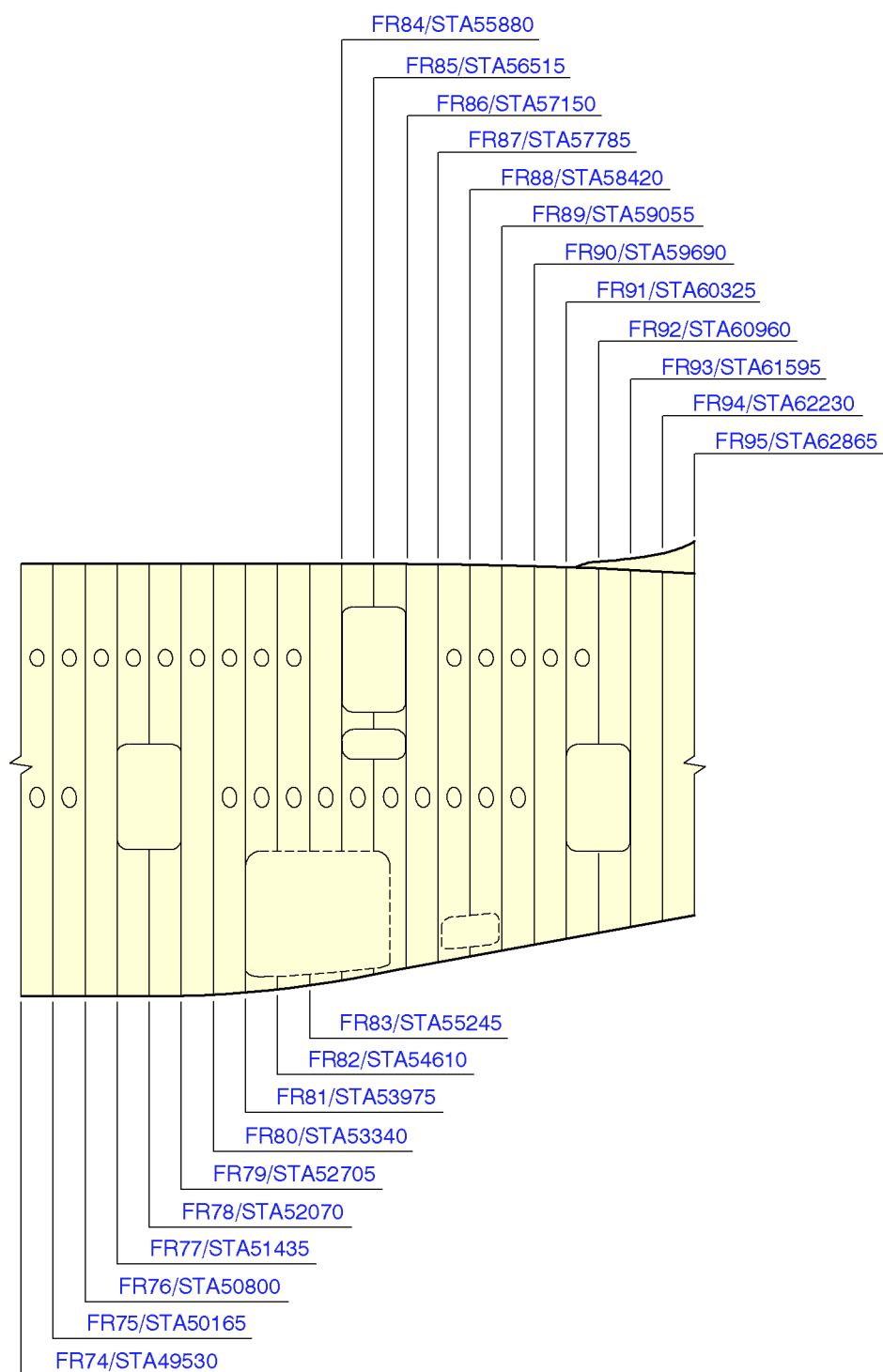
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Fuselage Frames/Stations
Section 15/21
A380-800F Models



PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



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Fuselage Frames/Stations
Section 18
A380-800 Models

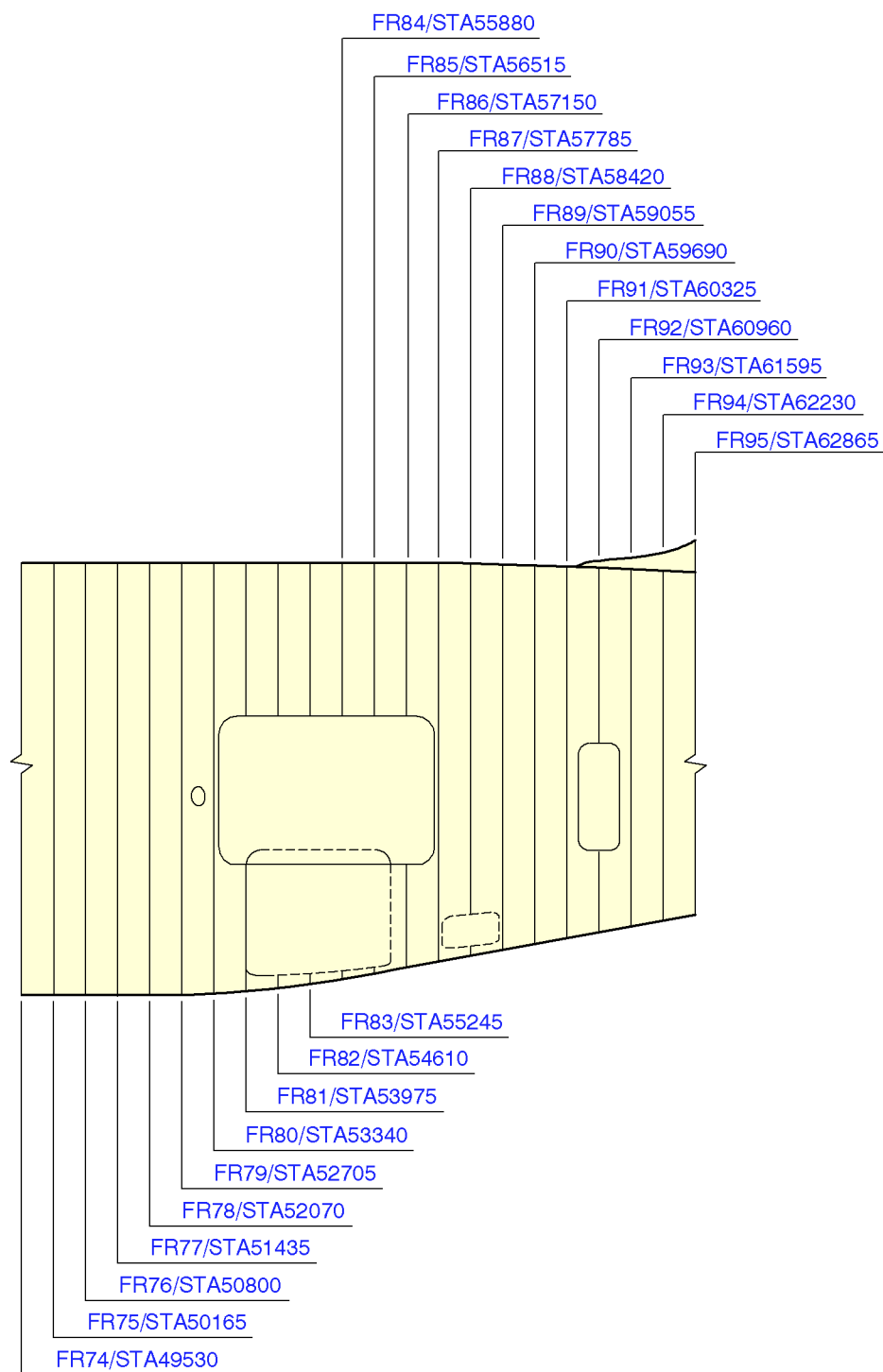
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PRELIMINARY DATA

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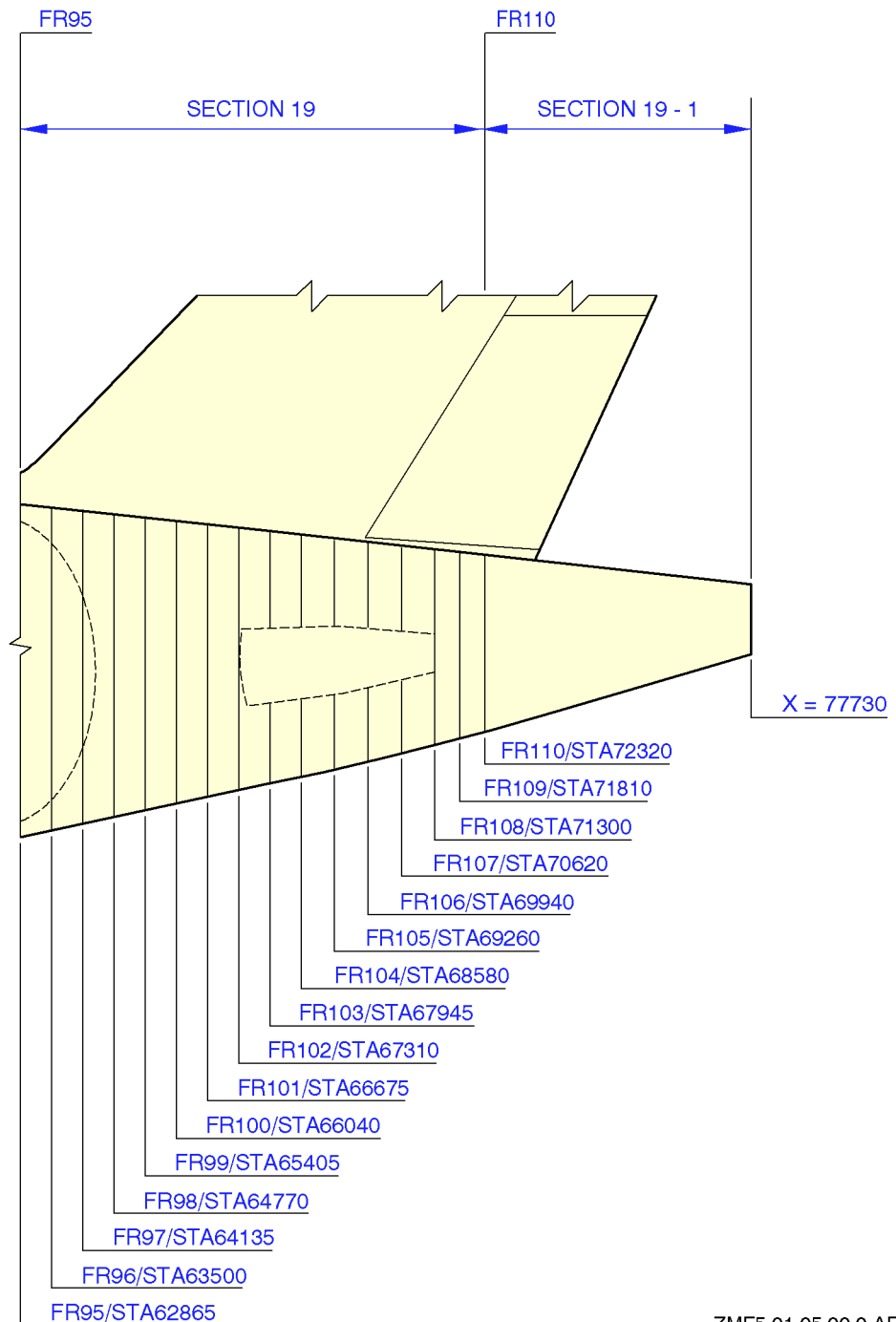
Fuselage Frames/Stations
Section 18
A380-800F Models

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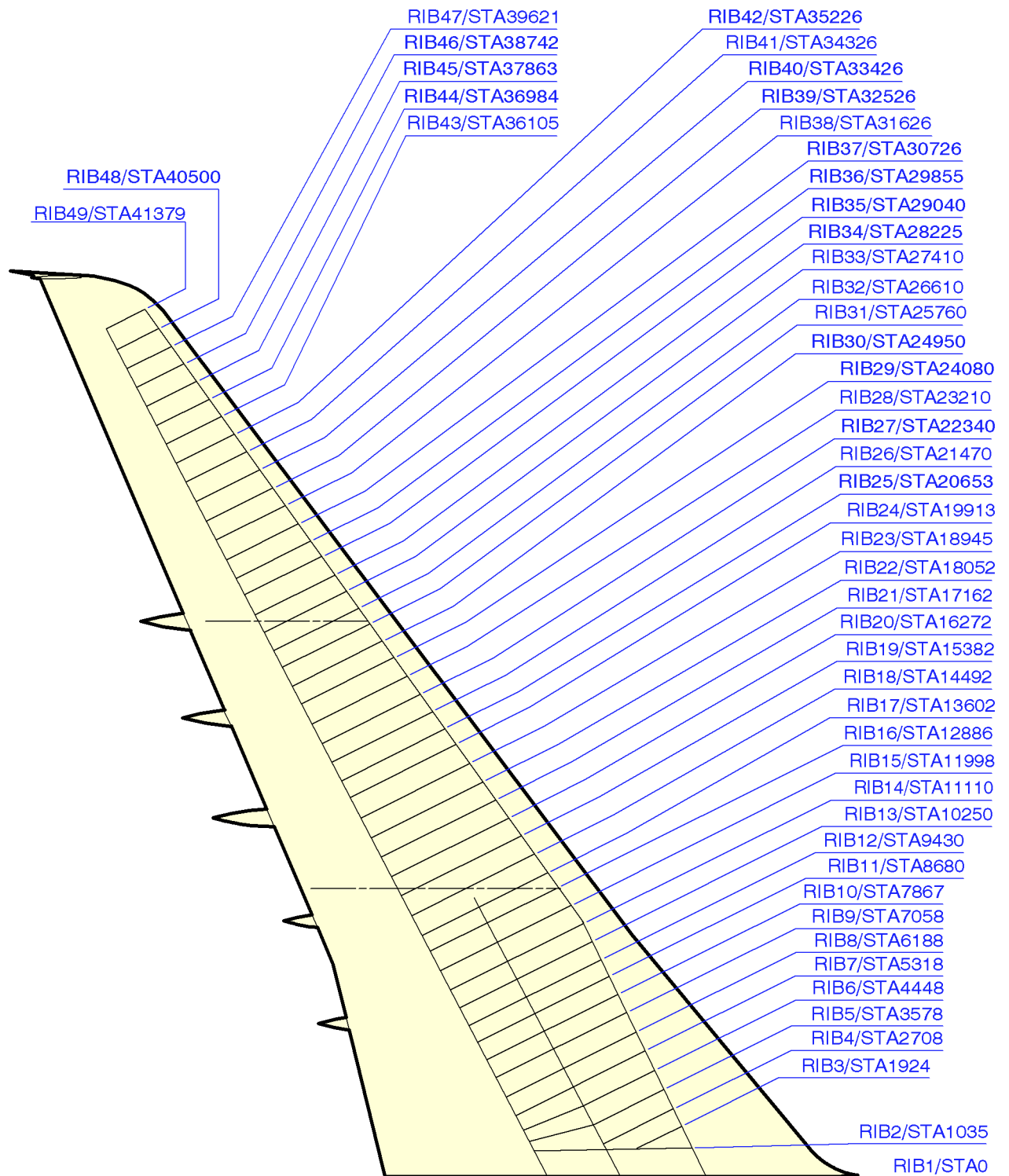
Fuselage Frames/Stations
Section 19
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

WING RIBS/STATIONS

This section shows wing ribs/stations and dimensions.

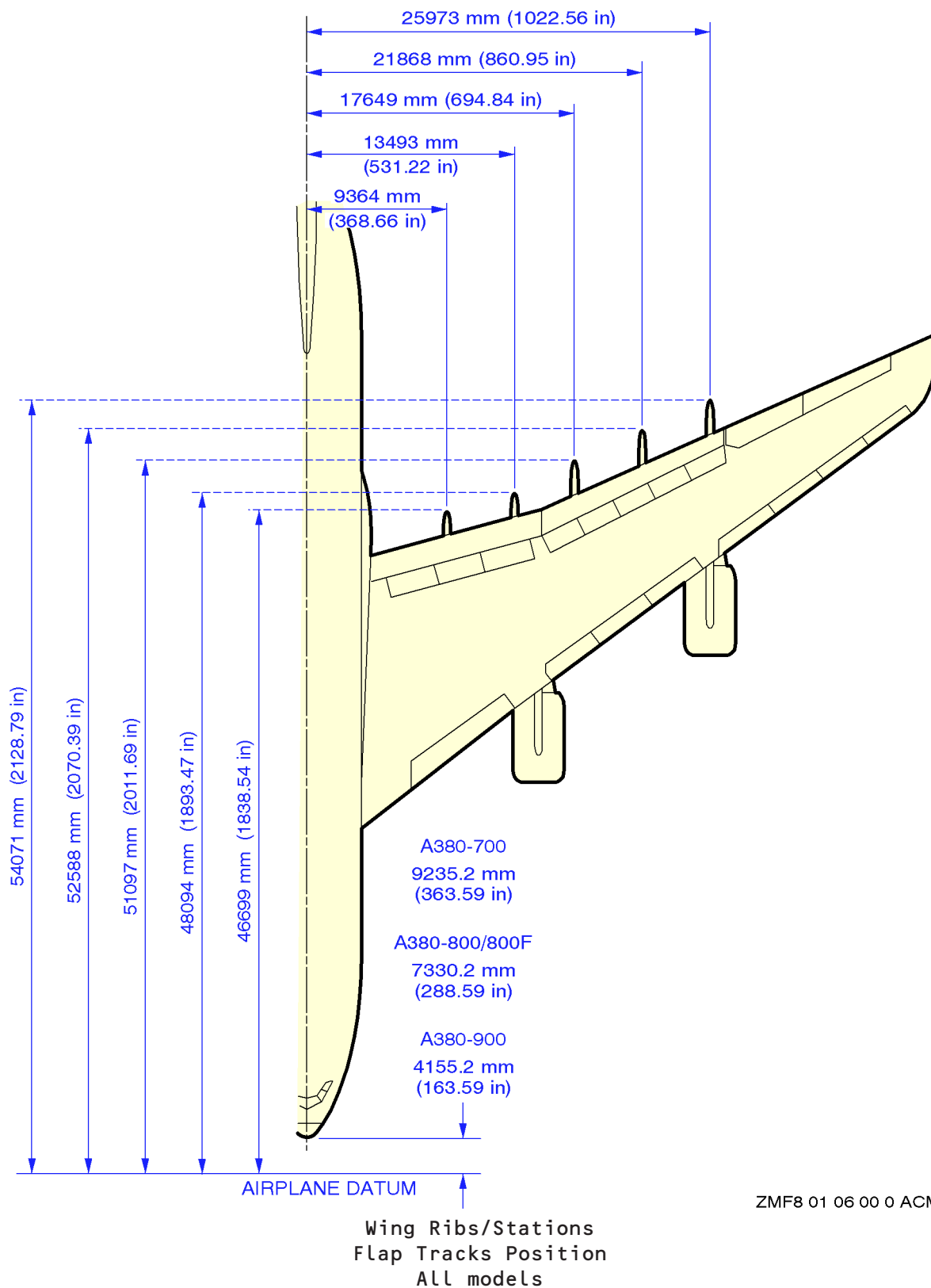
MAINTENANCE FACILITY PLANNING



ZMF8 01 06 00 0 AAM0 00

Wing Ribs/Stations
All models

MAINTENANCE FACILITY PLANNING



ZMF8 01 06 00 0 ACM0 00

MAINTENANCE FACILITY PLANNING

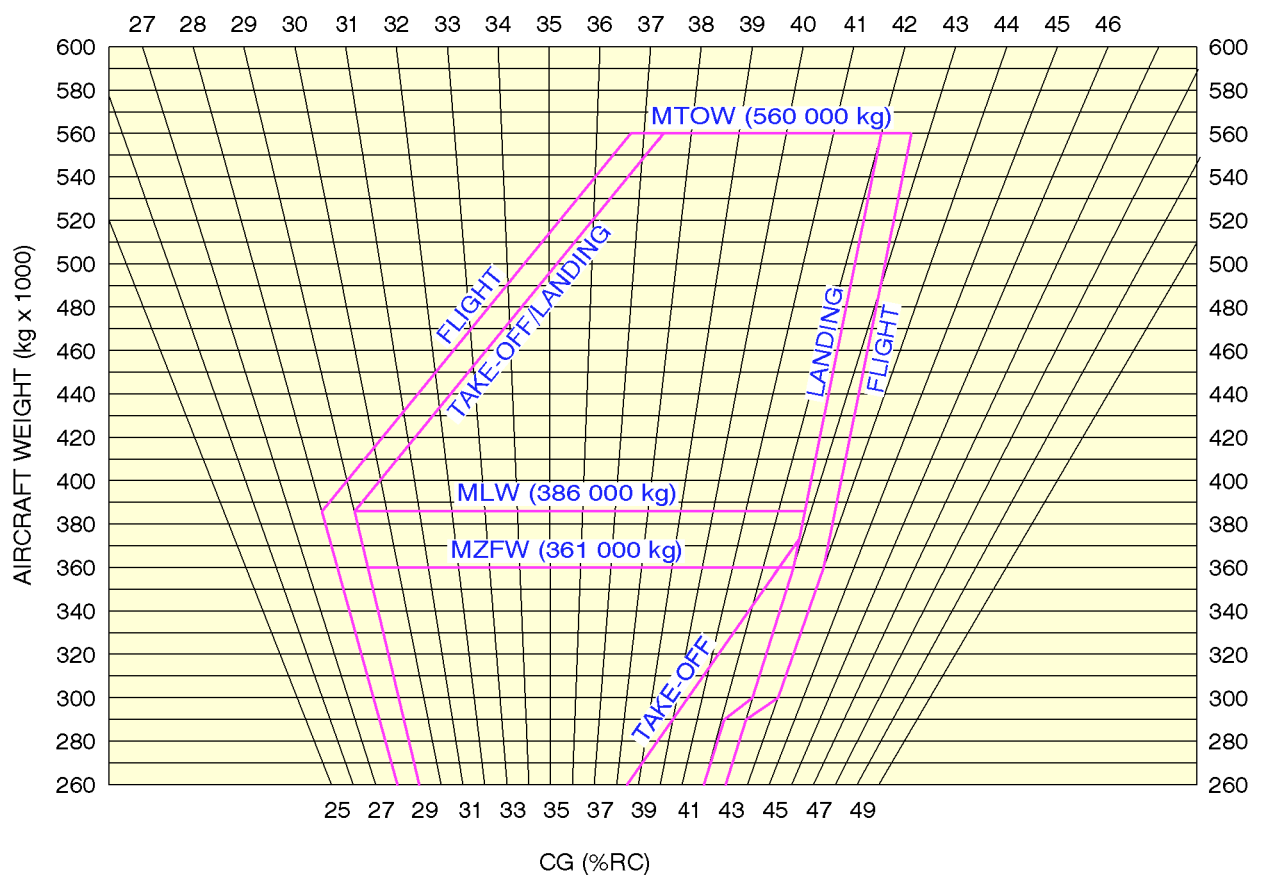
CENTER OF GRAVITY LIMITS

This section gives the center of gravity limits.



PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



ZMF8 01 08 00 0 AAM0 03

Center of Gravity Limits
A380-800 Models

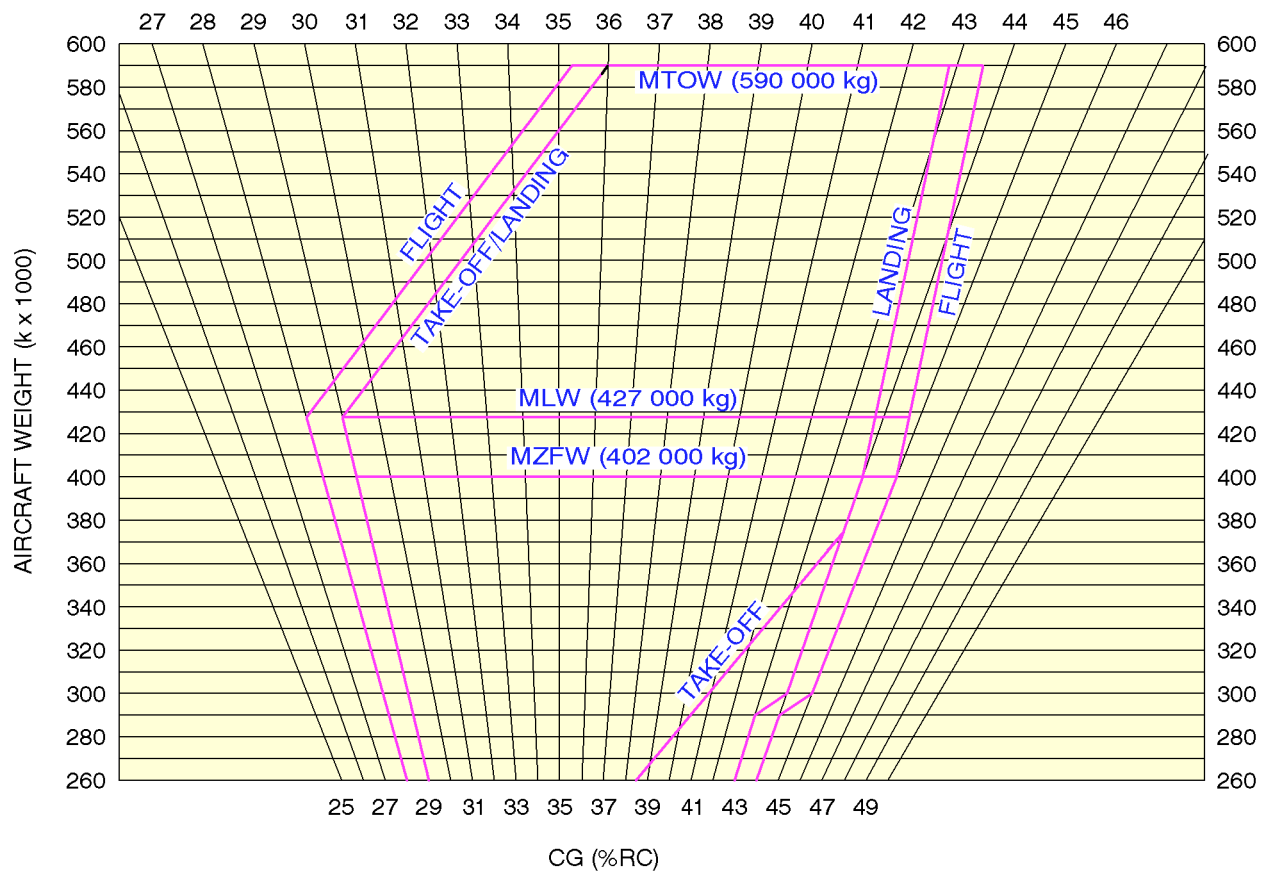
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1-8
Page 2
JUL 01/02



PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



ZMF8 01 08 00 0 ACM0 03

Center of Gravity Limits
A380-800F Models

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Page 3
JUL 01/02

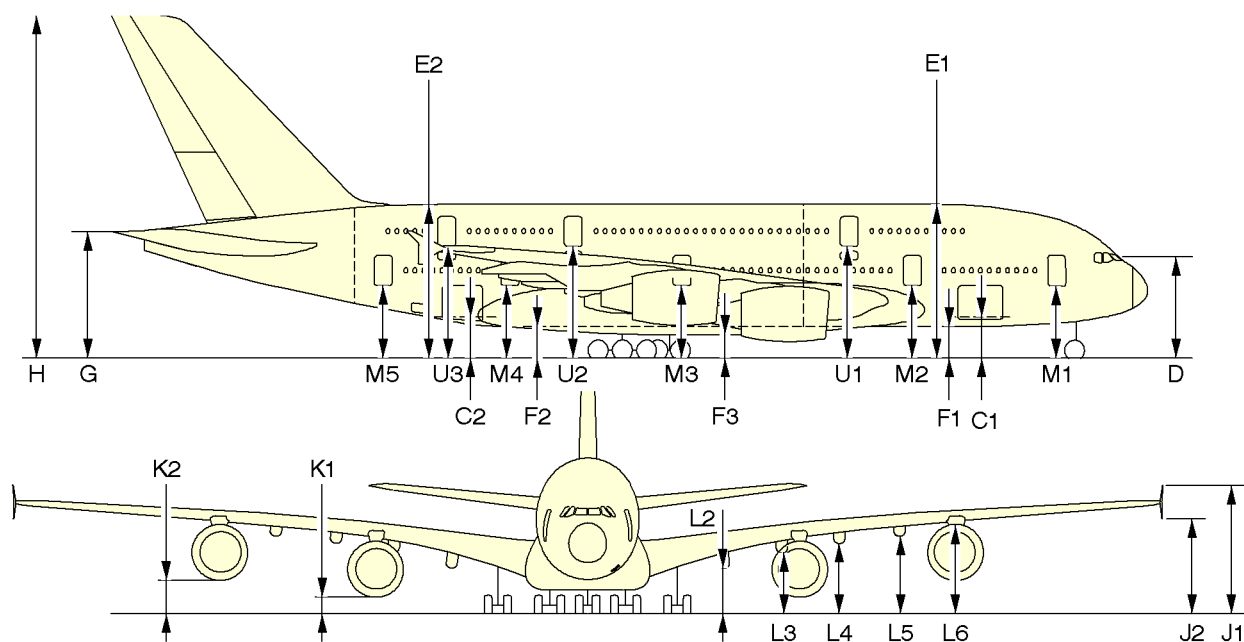
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MAINTENANCE FACILITY PLANNING

GROUND CLEARANCES

This section gives the heights of various points of the aircraft, above the ground, for different aircraft configurations.
Dimensions in the tables are approximate and will vary with tire type and conditions.

MAINTENANCE FACILITY PLANNING



A/C CONFIGURATION	MRW (562t) FWD CG		MRW (562t) AFT CG		290t AFT CG (43%)		290t MID CG (36.5%)		A/C JACKED FDL = 7.3 m (23.95 ft)	
	m	ft	m	ft	m	ft	m	ft	m	ft
C1	3.01	9.88	3.06	10.04	3.23	10.60	3.17	10.40	5.22	17.13
C2	3.09	10.14	3.04	9.97	3.20	10.50	3.26	10.70	5.22	17.13
D	7.14	23.43	7.21	23.65	7.39	24.25	7.30	23.95	9.32	30.58
E1	10.77	35.34	10.81	35.47	10.98	36.02	10.94	35.89	12.92	42.39
E2	10.85	35.60	10.80	35.43	10.95	35.93	11.02	36.15	12.92	42.39
F1	2.36	7.74	2.40	7.87	2.57	8.43	2.53	8.30	4.51	14.80
F2	2.29	7.51	2.24	7.35	2.40	7.87	2.45	8.04	4.37	14.34
F3	1.67	5.48	1.66	5.45	1.82	5.97	1.83	6.00	3.78	12.40
G	9.22	30.25	9.11	29.89	9.25	30.35	9.38	30.77	11.24	36.88
H	24.19	79.36	24.08	79.00	24.22	79.46	24.35	79.89	26.21	85.99
J1	TO BE ISSUED LATER									
J2										
K1										
K2										
L2										
L3										
L4										
L5										
L6										
M1	5.08	16.67	5.14	16.86	5.32	17.45	5.24	17.19	7.25	23.79
M2	5.10	16.73	5.14	16.86	5.31	17.42	5.27	17.29	7.25	23.79
M3	5.14	16.86	5.13	16.83	5.29	17.36	5.30	17.39	7.25	23.79
M4	5.17	16.96	5.13	16.83	5.28	17.32	5.33	17.49	7.25	23.79
M5	5.19	17.03	5.12	16.80	5.27	17.29	5.35	17.55	7.25	23.79
U1	7.86	25.79	7.89	25.89	8.06	26.44	8.03	26.35	10.00	32.80
U2	7.91	25.95	7.88	25.85	8.04	26.38	8.07	26.48	10.00	32.80
U3	7.93	26.02	7.88	25.85	8.03	26.35	8.09	26.54	10.00	32.80

NOTE: MAXIMUM JACKING WEIGHT = 333 700 kg

ZMF8 01 09 00 0 AAM0 02

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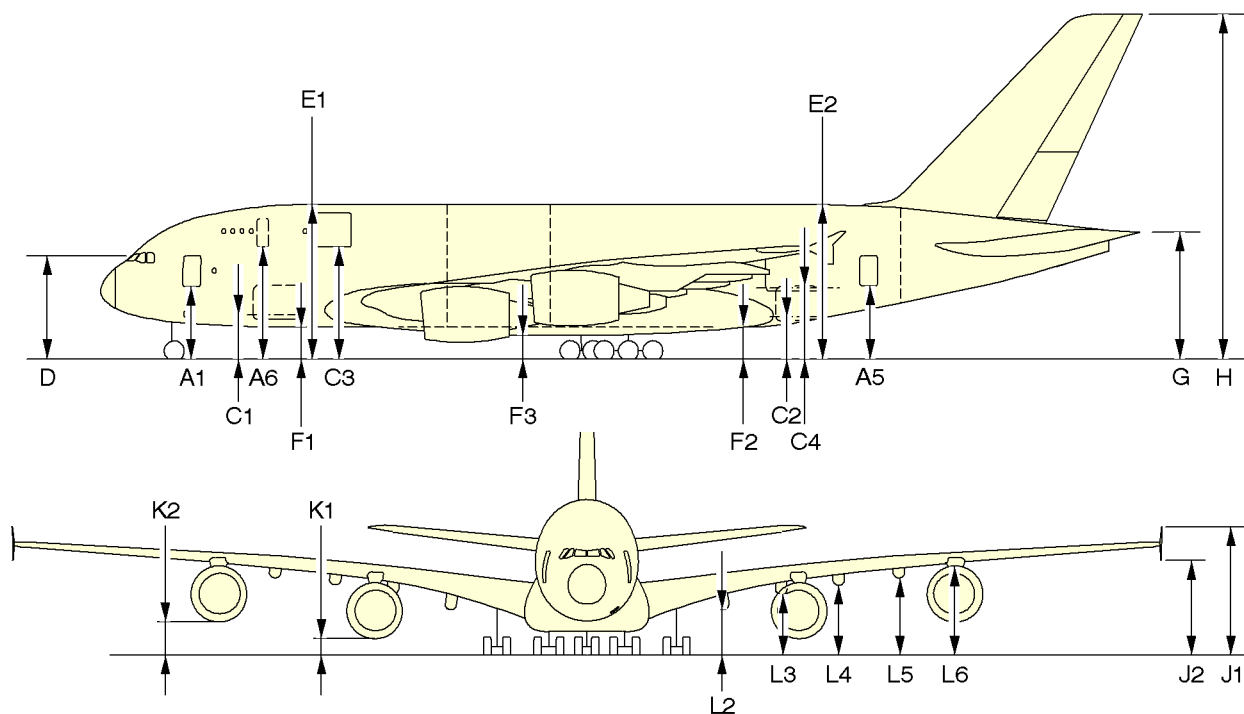
Ground Clearances
A380-800 Models

R

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Page 2
JAN 30/04

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MAINTENANCE FACILITY PLANNING



A/C CONFIGURATION	MRW FWD CG		MRW AFT CG		300t AFT CG		OWE MID CG		A/C JACKED FDL = 7.2 m (23.6 ft)	
	m	ft	m	ft	m	ft	m	ft	m	ft
A1	5.09	16.7	5.18	17.0	5.40	17.7	TO BE ISSUED LATER	TO BE ISSUED LATER	7.15	23.5
A5	5.13	16.8	5.06	16.6	5.20	17.1			7.15	23.5
A6	7.85	25.8	7.92	26.0	8.13	26.7			9.90	32.5
C1	3.07	10.1	3.14	10.3	3.35	11.0			5.12	16.8
C2	3.09	10.2	3.05	10.0	3.20	10.5			5.12	16.8
C3	7.97	26.2	8.03	26.3	8.23	27.0			10.02	32.9
C4	5.12	16.8	5.08	16.7	5.22	17.1			7.15	23.5
D	7.16	23.5	7.26	23.8	7.48	24.5			9.22	30.2
E1	10.77	35.3	10.83	35.5	11.04	36.2			12.82	42.1
E2	10.80	35.4	10.75	35.3	10.89	35.7			12.82	42.1
F1	2.36	7.8	2.43	8.0	2.63	8.6			4.41	14.5
F2	2.24	7.3	2.20	7.2	2.35	7.7			4.27	14.0
F3	1.64	5.4	1.65	5.4	1.82	6.0			3.68	12.1
G	9.13	30.0	9.01	29.5	9.11	29.9			11.14	36.6
H	24.10	79.1	23.98	78.7	24.08	79.0			26.11	85.7
J1	TO BE ISSUED LATER									
J2	TO BE ISSUED LATER									
K1	TO BE ISSUED LATER									
K2	TO BE ISSUED LATER									
L2	TO BE ISSUED LATER									
L3	TO BE ISSUED LATER									
L4	TO BE ISSUED LATER									
L5	TO BE ISSUED LATER									
L6	TO BE ISSUED LATER									

ZMF8 01 09 00 0 ACM0 01

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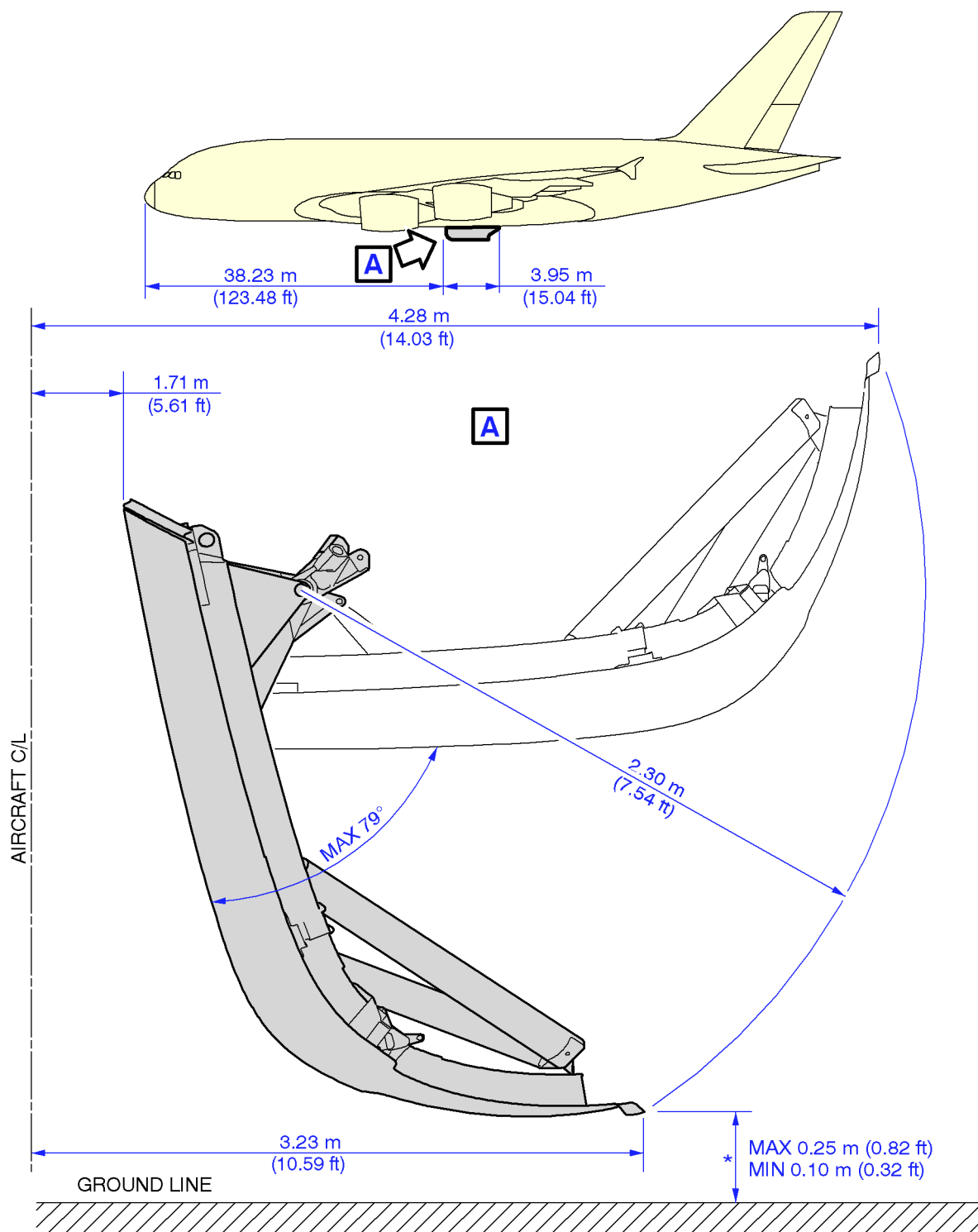
Ground Clearances
A380-800F Models

R

1-9
Page 3
JAN 30/04

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MAINTENANCE FACILITY PLANNING

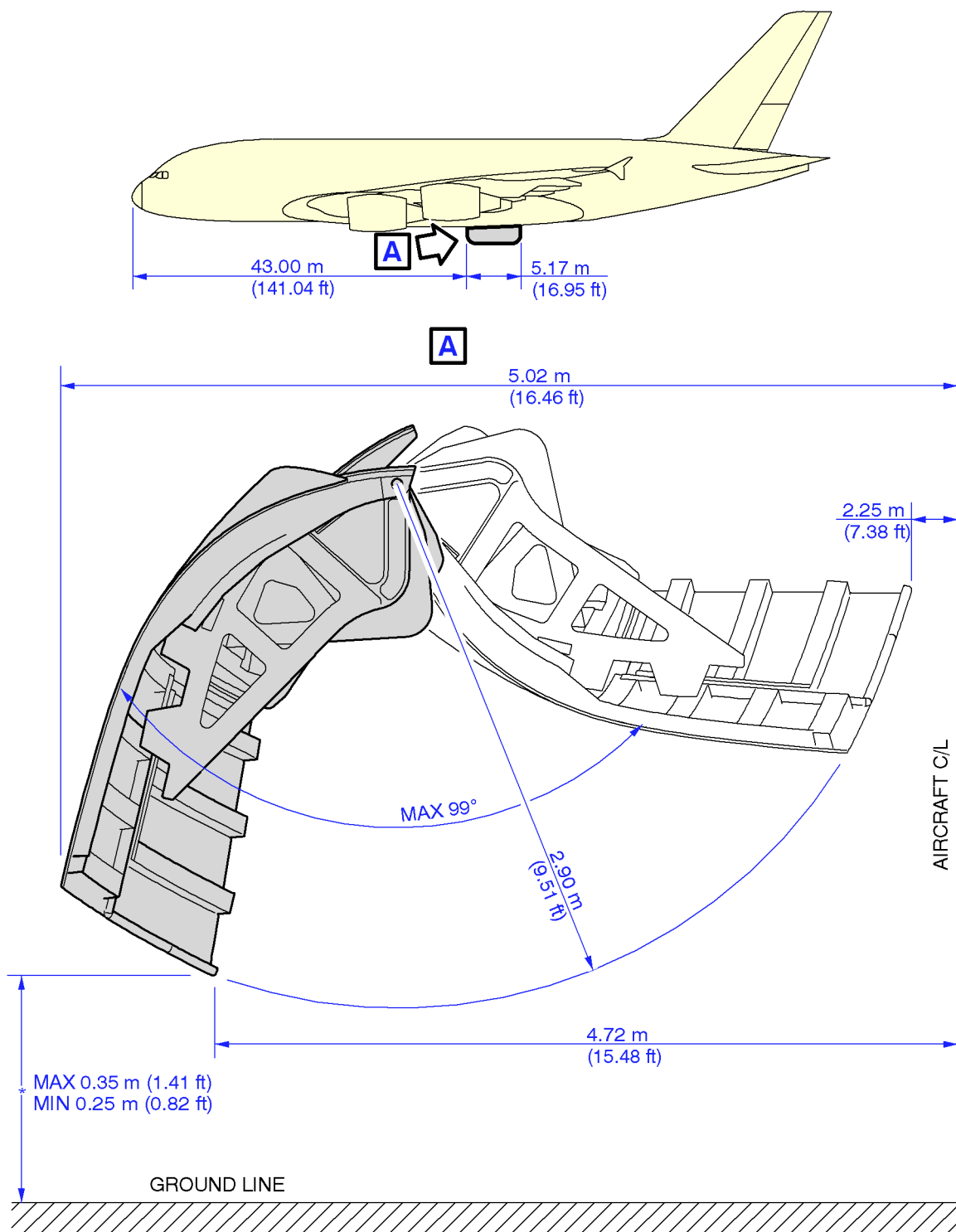


* DEPENDING ON CG POSITION AND AIRCRAFT WEIGHT

ZMF0 01 09 00 0 AAM0 00

Ground Clearances
Wing Landing Gear Doors
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

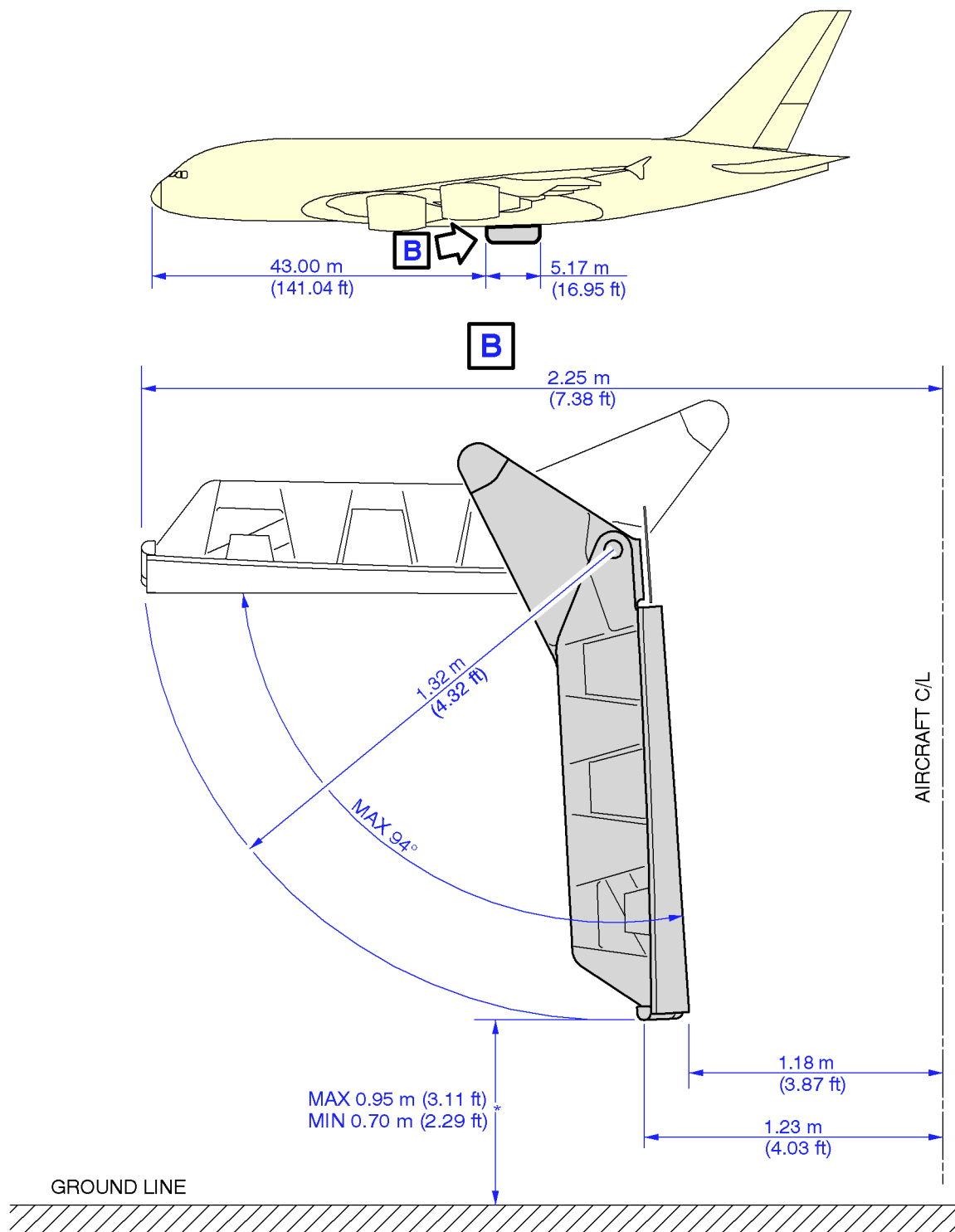


* DEPENDING ON CG POSITION AND AIRCRAFT WEIGHT

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Ground Clearances
Body Landing Gear Doors (Sheet 1/2)
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

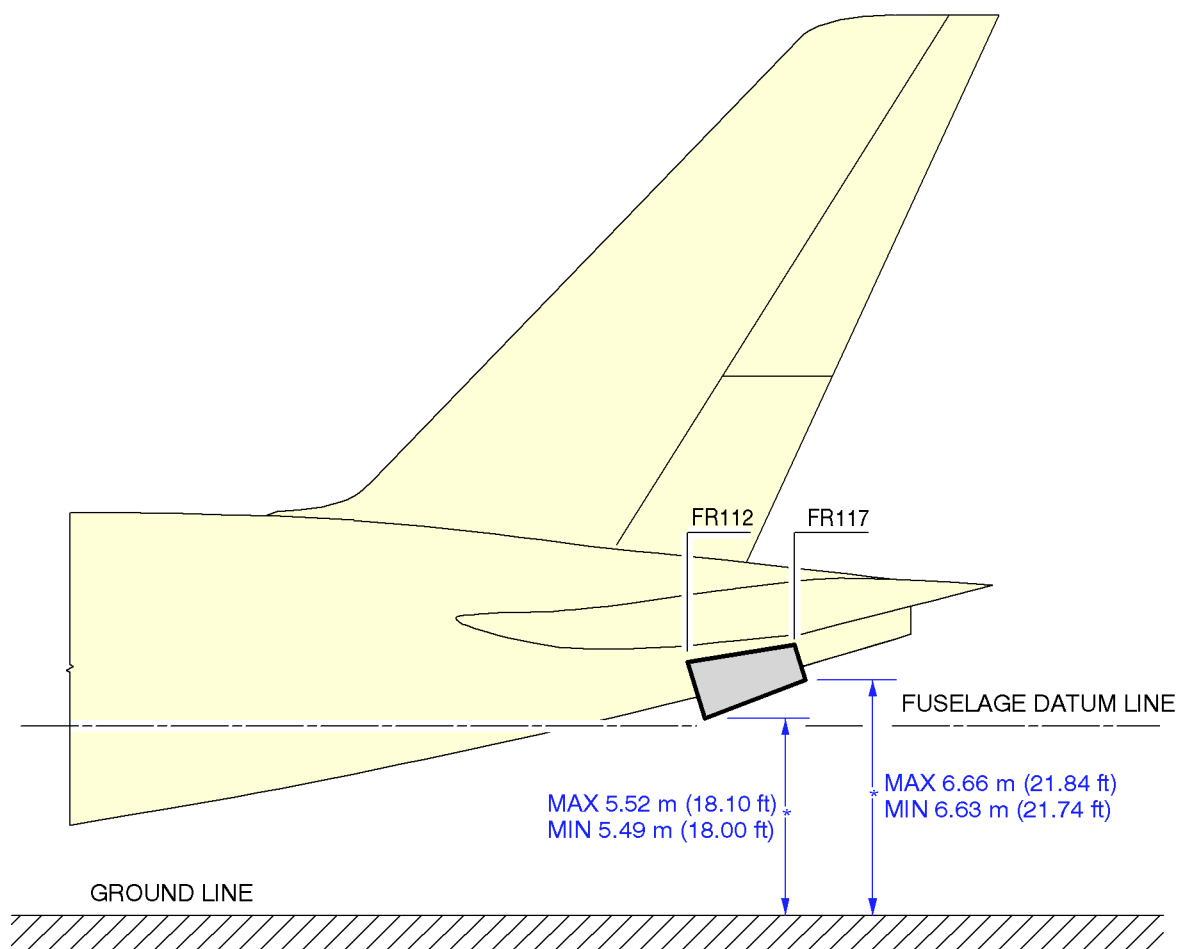


* DEPENDING ON CG POSITION AND AIRCRAFT WEIGHT

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Ground Clearances
Body Landing Gear Doors (Sheet 2/2)
A380-800/800F Models

MAINTENANCE FACILITY PLANNING



* DEPENDING ON CG POSITION AND AIRCRAFT WEIGHT

ZMF5 01 09 00 0 AEM0 00

Ground Clearances
APU Gear Doors
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

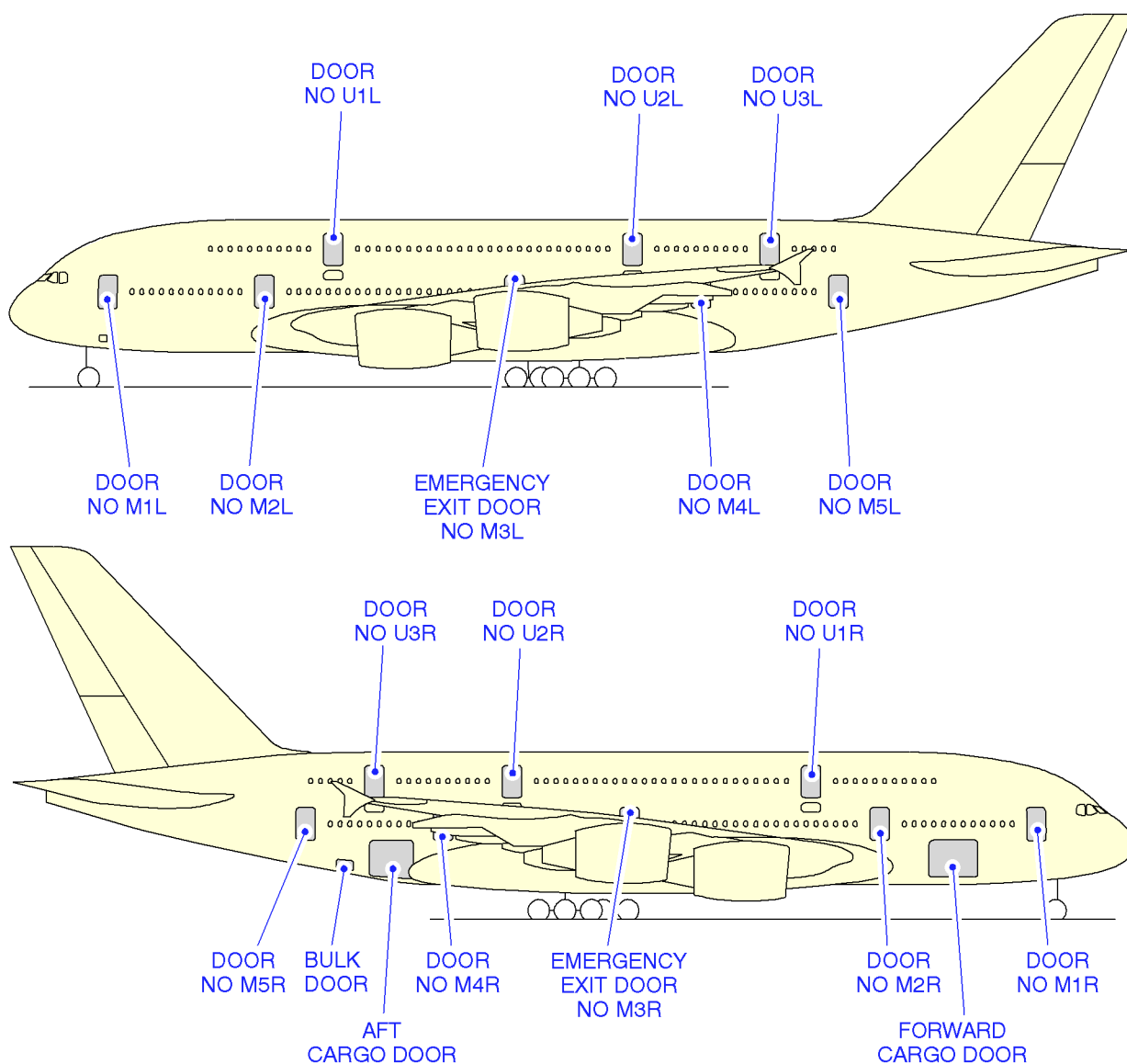
DOOR CLEARANCES

This section gives the identification/location, dimensions and clearances of :

- passenger/crew doors (passenger A/C)
- courrier/crew doors (freighter A/C)
- cargo compartment doors
- emergency exit doors.

NOTE : For ground clearances of door stills, refer to Section 1-9.

MAINTENANCE FACILITY PLANNING



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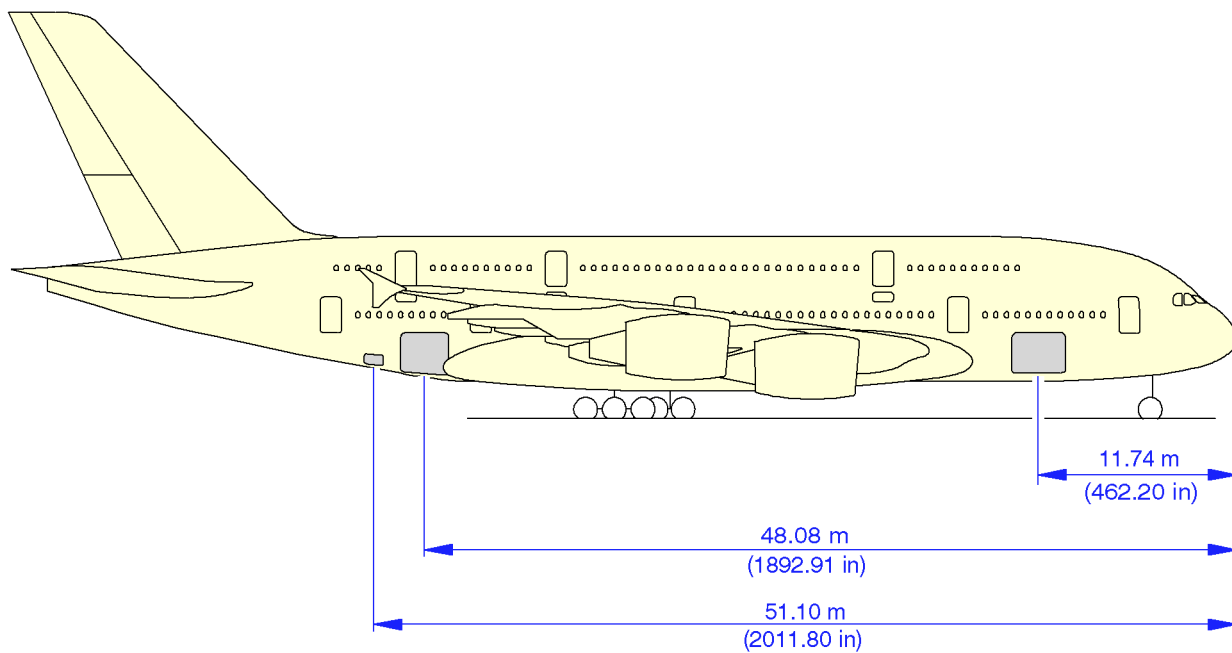
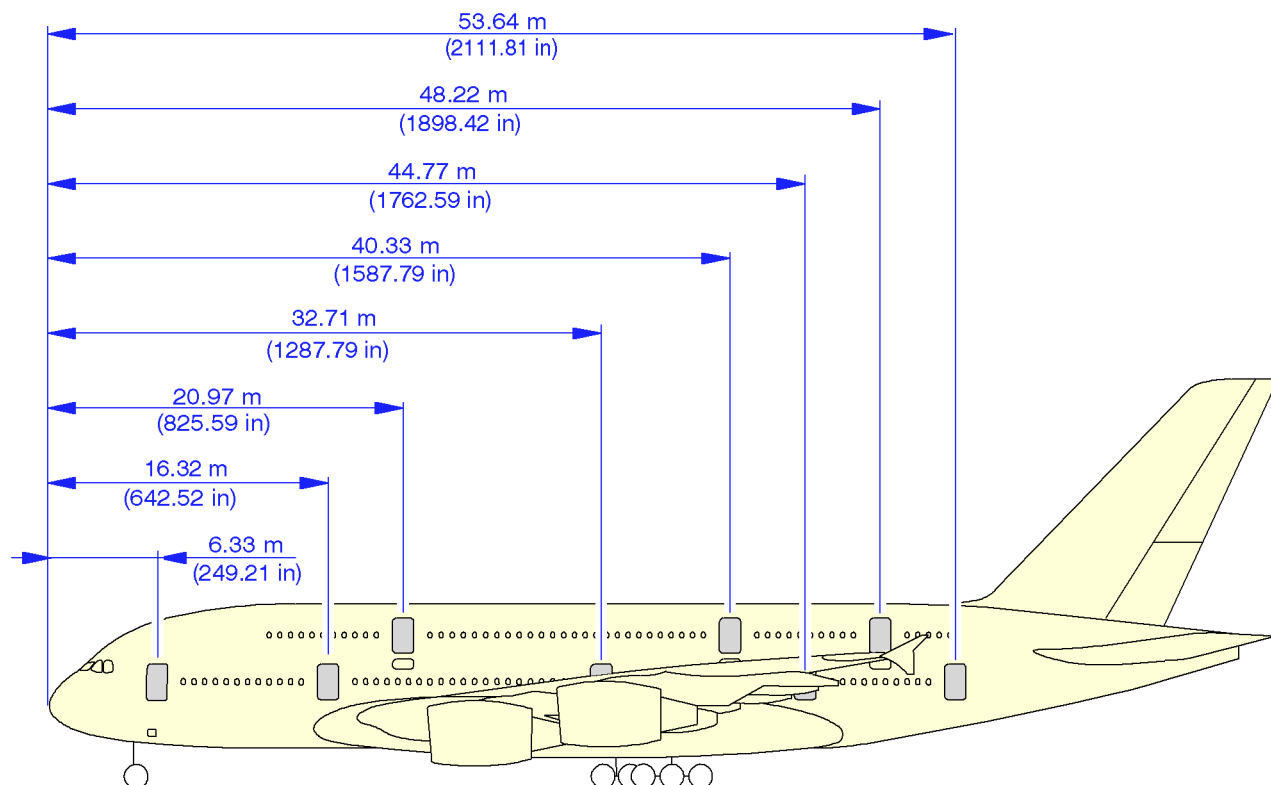
Door Clearances
Door Location (Sheet 1/2)
A380-800 Models

R

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1-10
Page 2
OCT 15/03

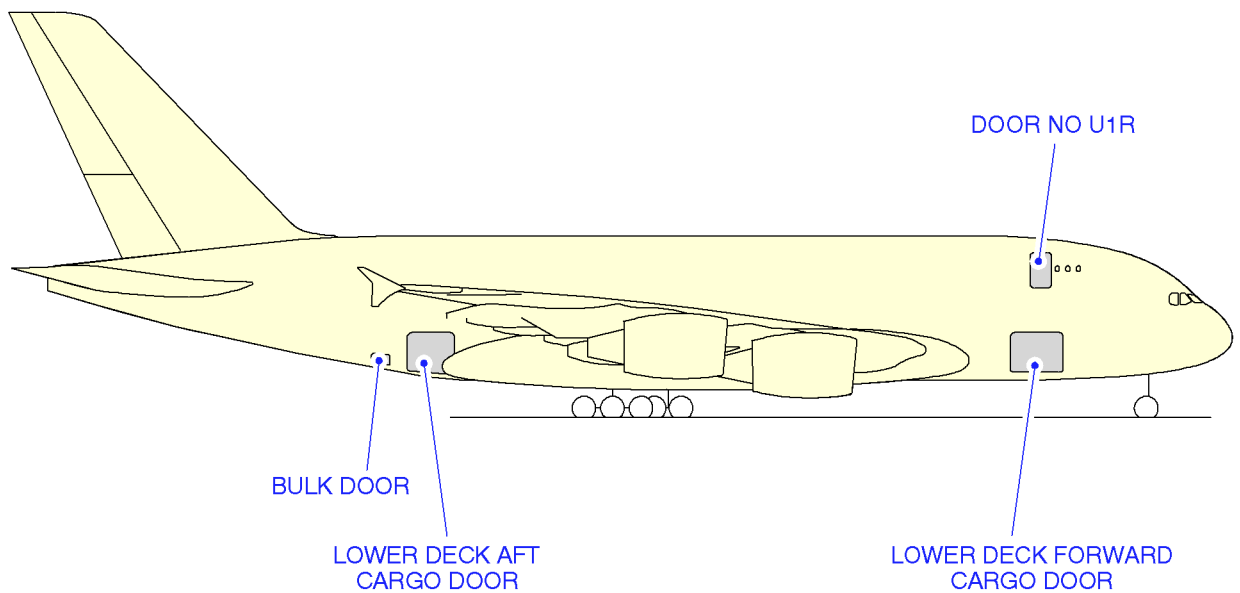
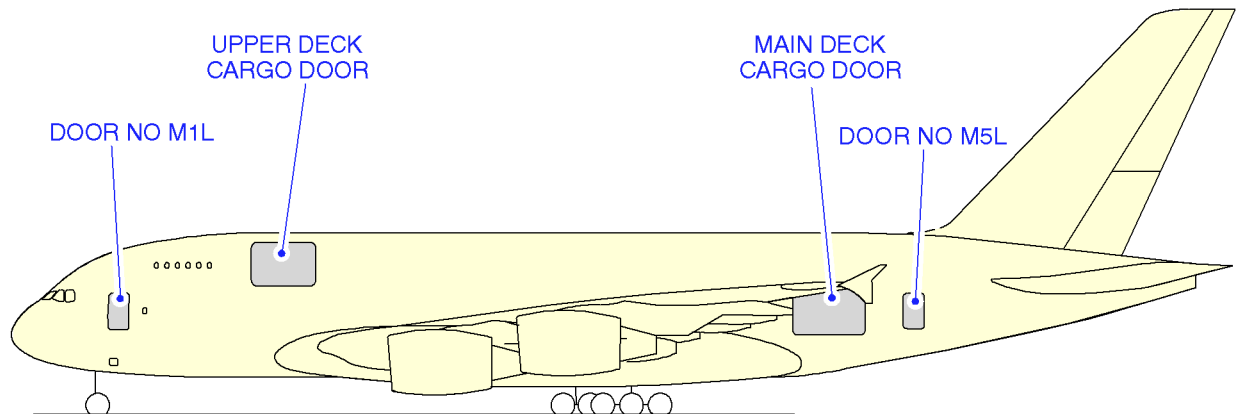
MAINTENANCE FACILITY PLANNING



ZMF6 01 10 00 0 ACM0 00

Door Clearances
Door Location (Sheet 2/2)
A380-800 Models

MAINTENANCE FACILITY PLANNING



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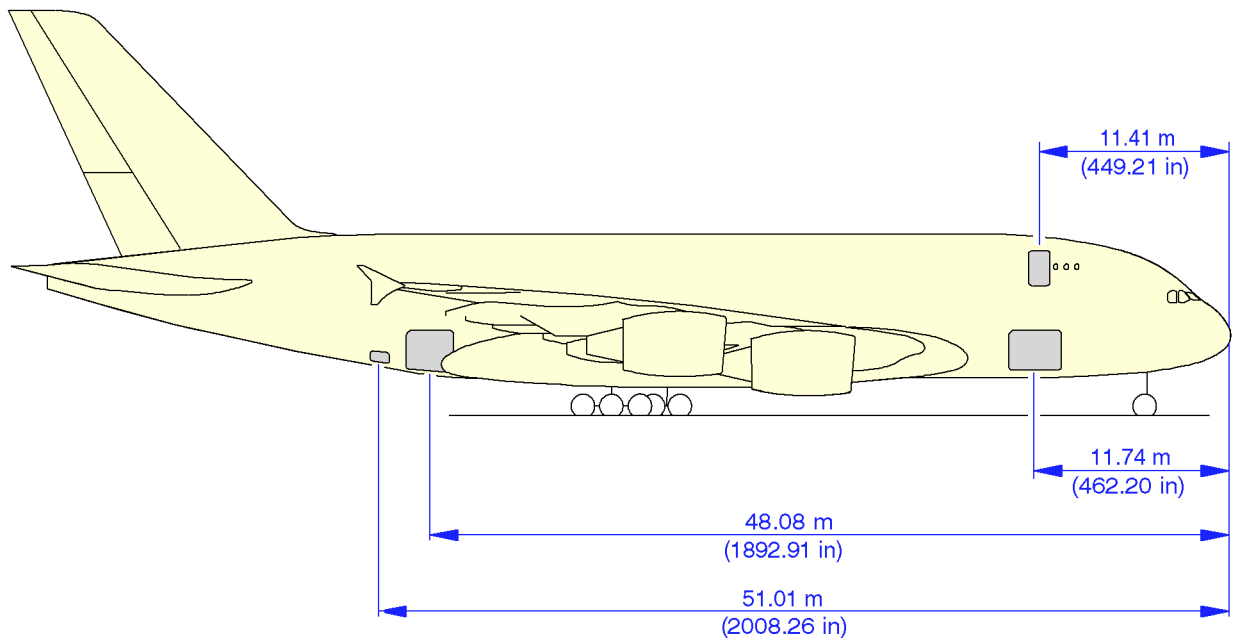
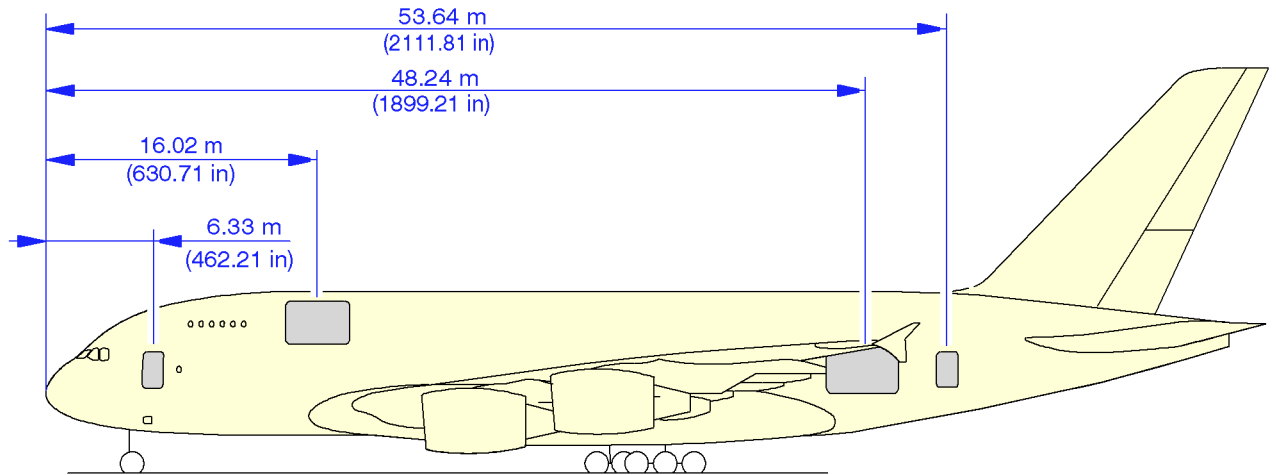
Door Clearances
Door Location (Sheet 1/2)
A380-800F Models

R
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MAINTENANCE FACILITY PLANNING



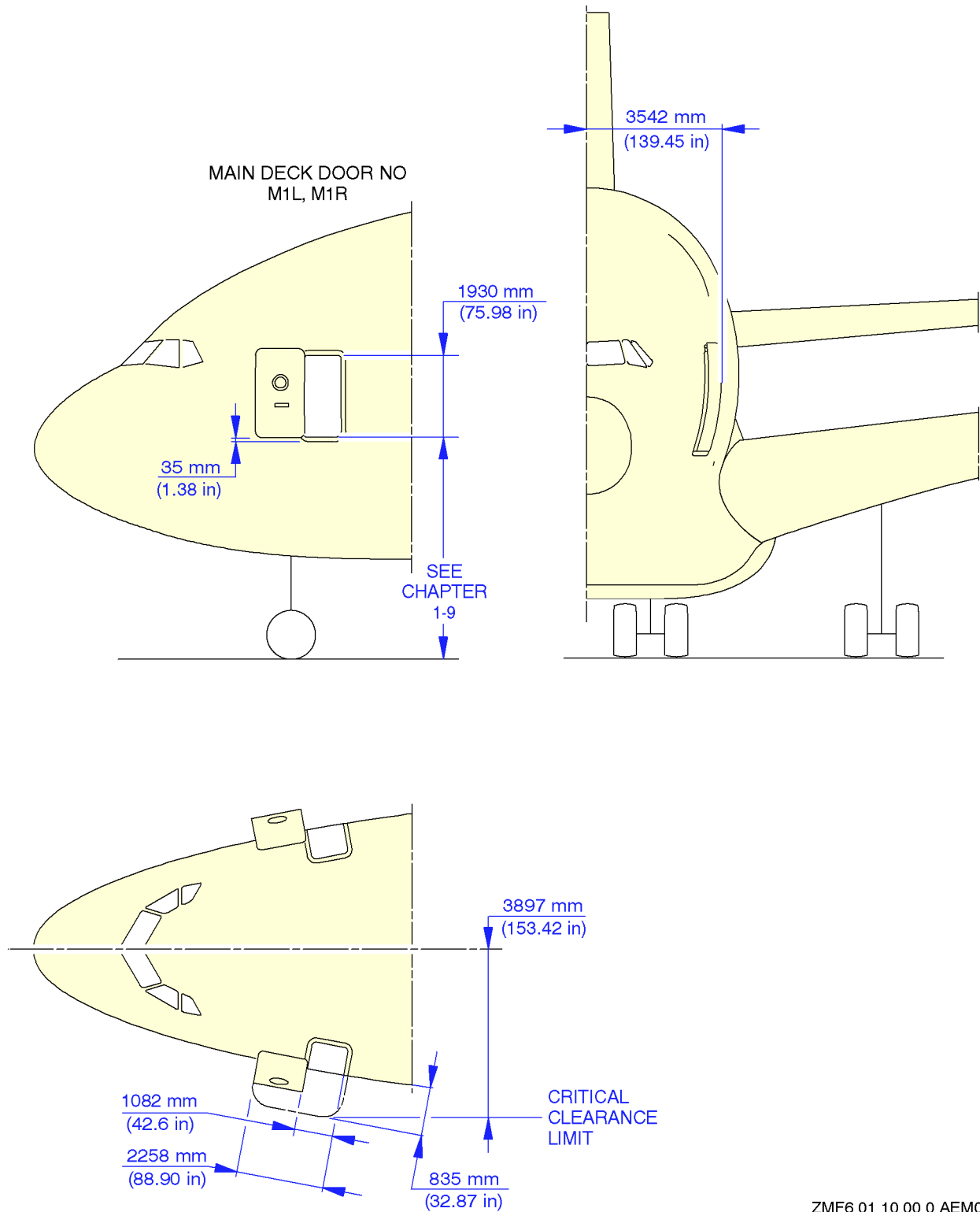
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Door Clearances
Door Location (Sheet 2/2)
A380-800F Models

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MAINTENANCE FACILITY PLANNING



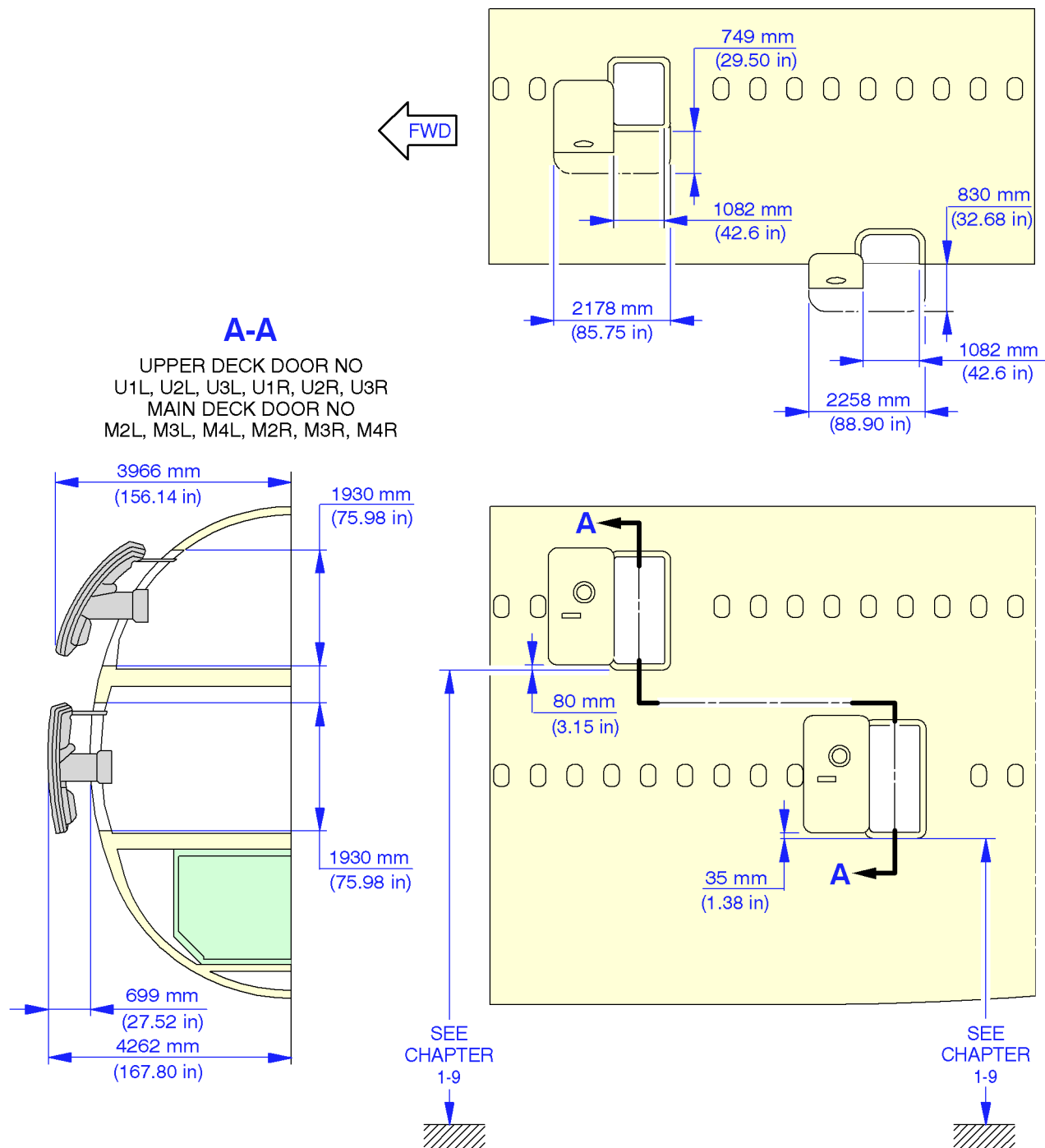
ZMF6 01 10 00 0 AEM0 01

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**Door Clearances
Forward Doors**

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MAINTENANCE FACILITY PLANNING



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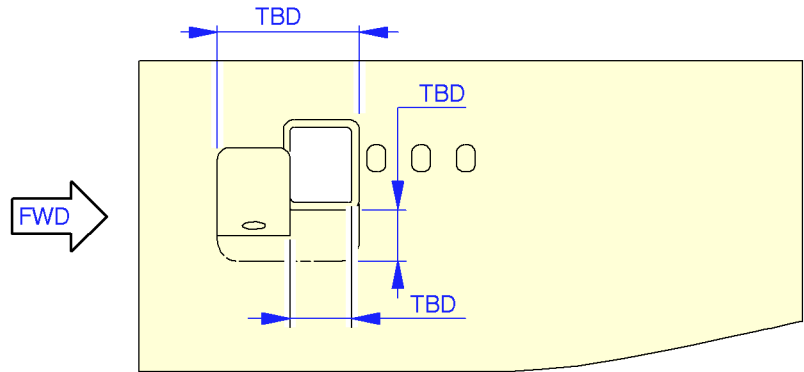
Door Clearances
Main and Upper Deck Doors
A380-800 Models

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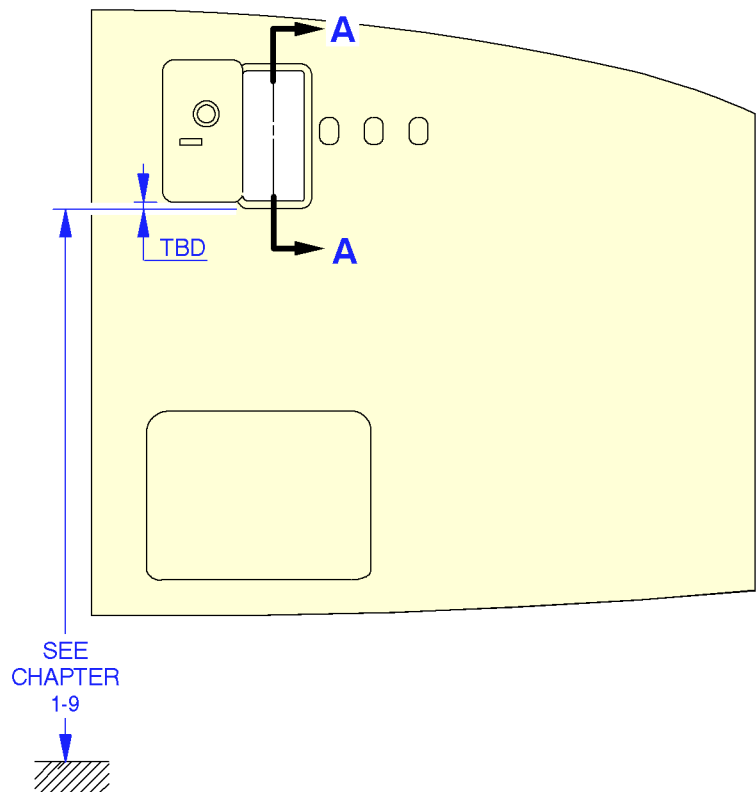
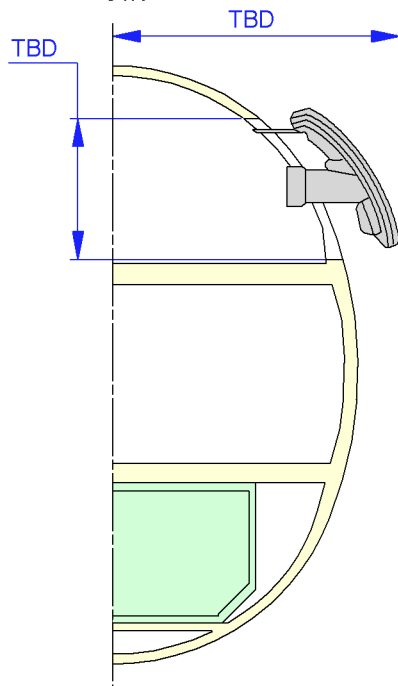
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OCT 15/03

MAINTENANCE FACILITY PLANNING



A-A
UPPER DECK DOOR NO
U1R



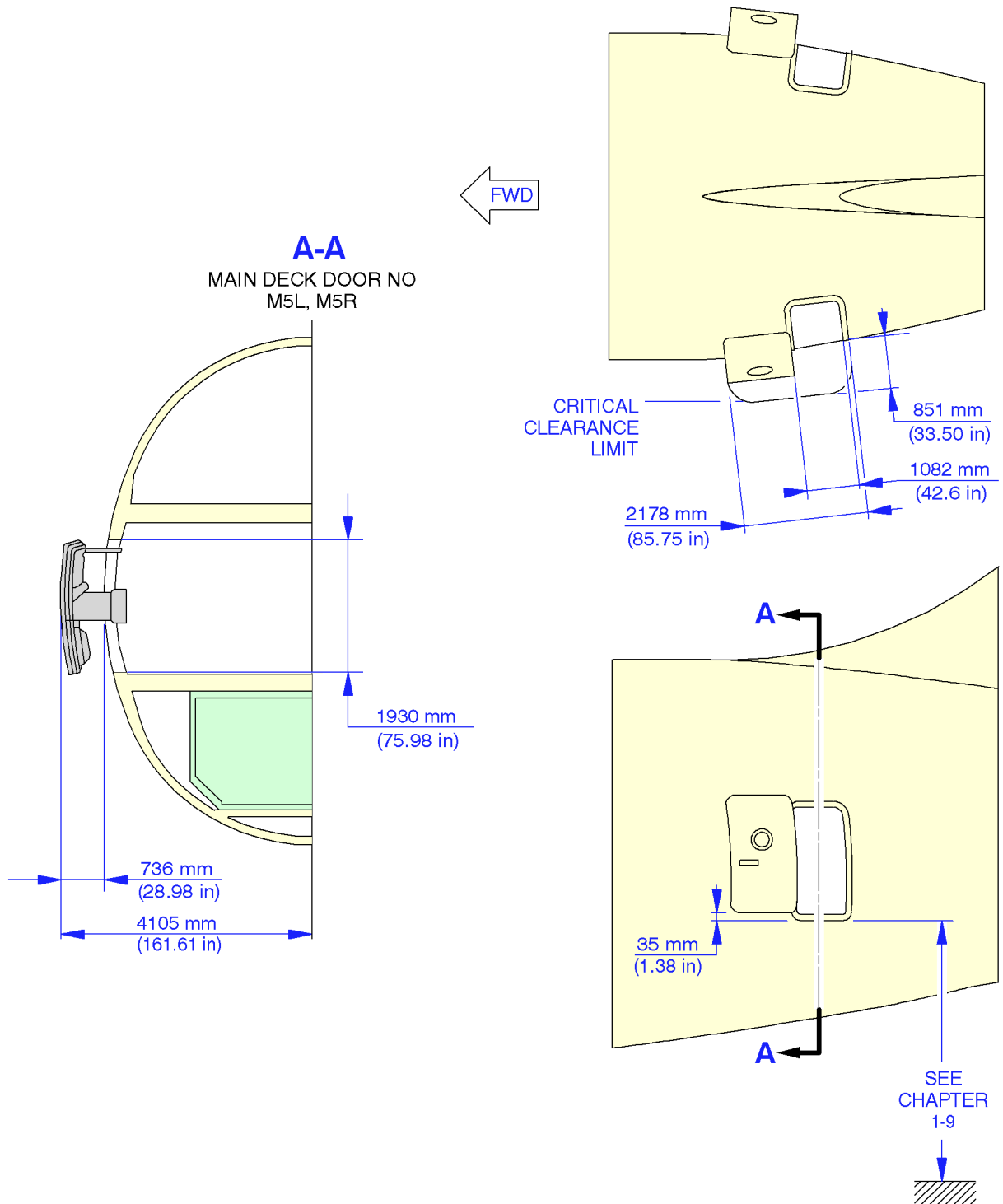
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Door Clearances
Main and Upper Deck Doors
A380-800F Models

R

MAINTENANCE FACILITY PLANNING



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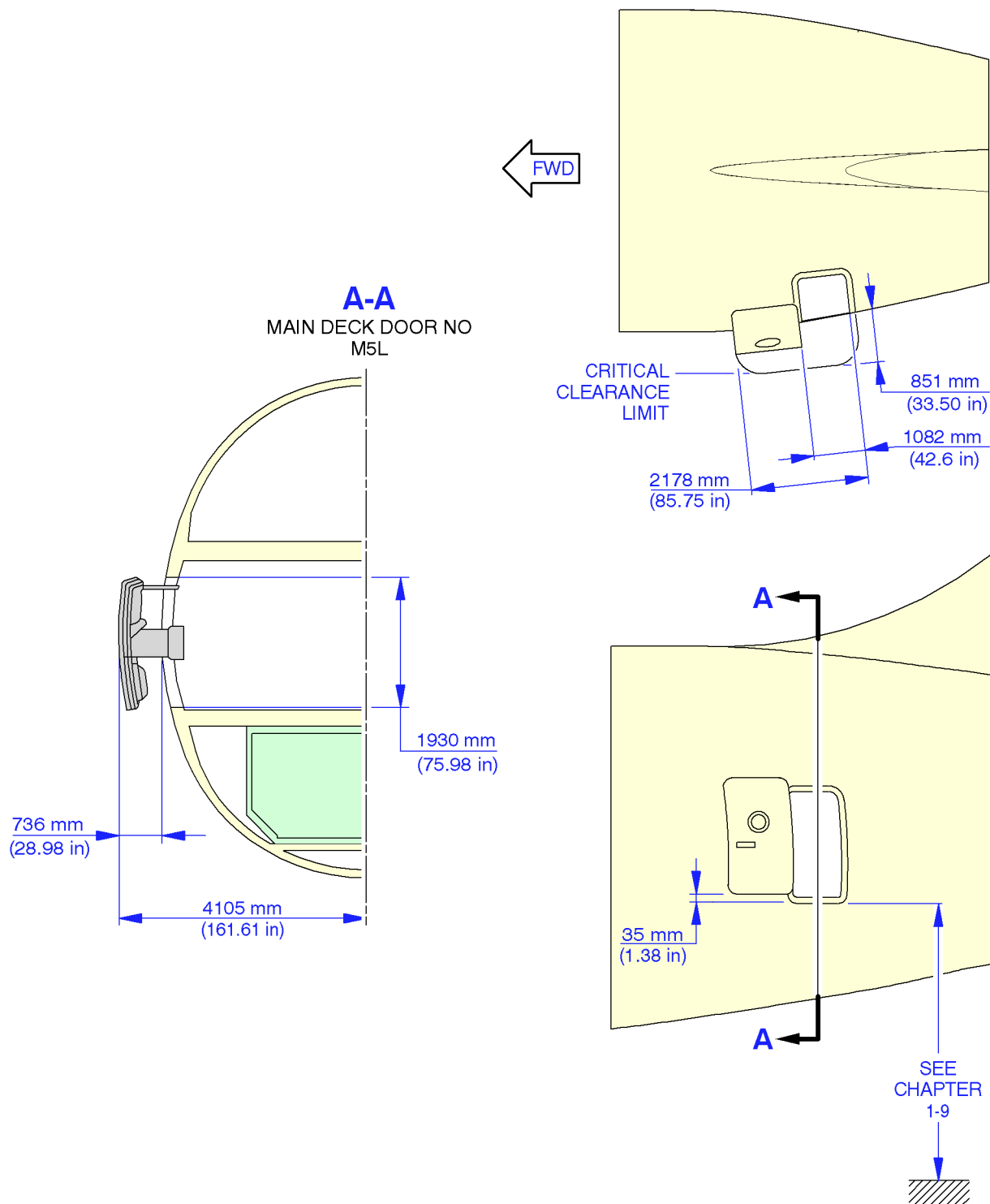
Door Clearances
Aft Doors
A380-800 Models

R

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1-10
Page 9
OCT 15/03

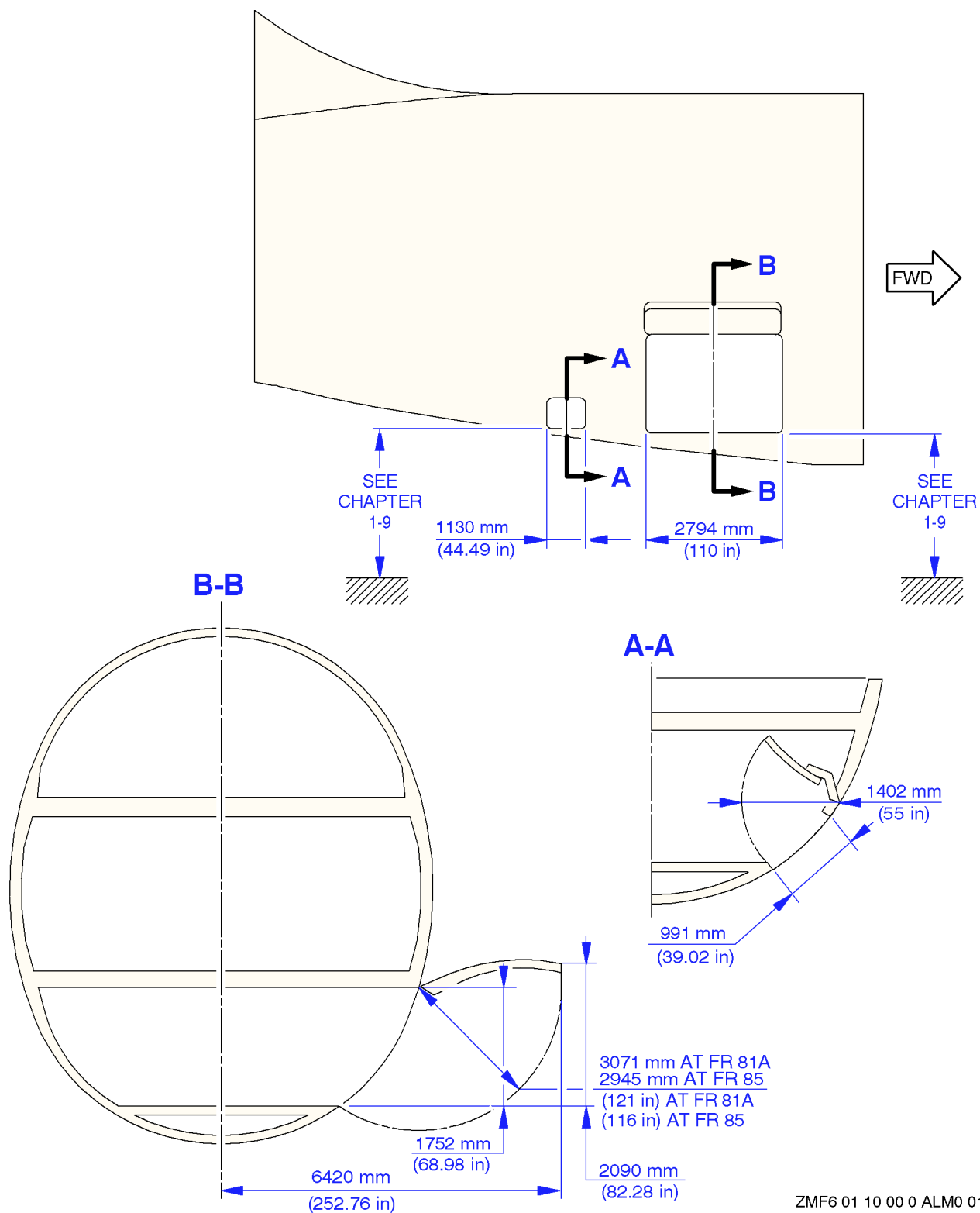
MAINTENANCE FACILITY PLANNING



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Door Clearances
Aft Doors
A380-800F Models

MAINTENANCE FACILITY PLANNING



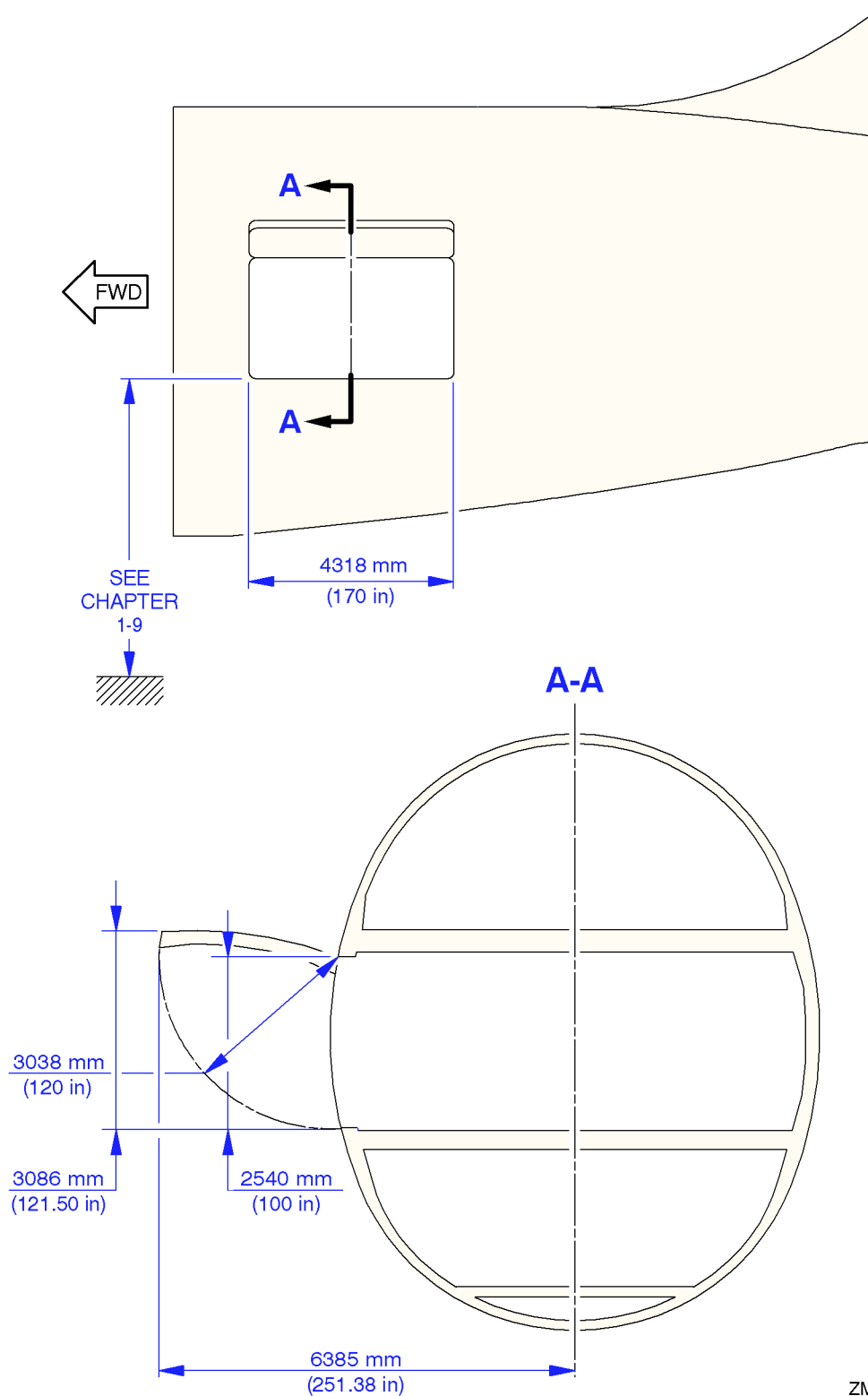
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Door Clearances
Aft Cargo Compartment Doors
A380-800 Models

R

MAINTENANCE FACILITY PLANNING



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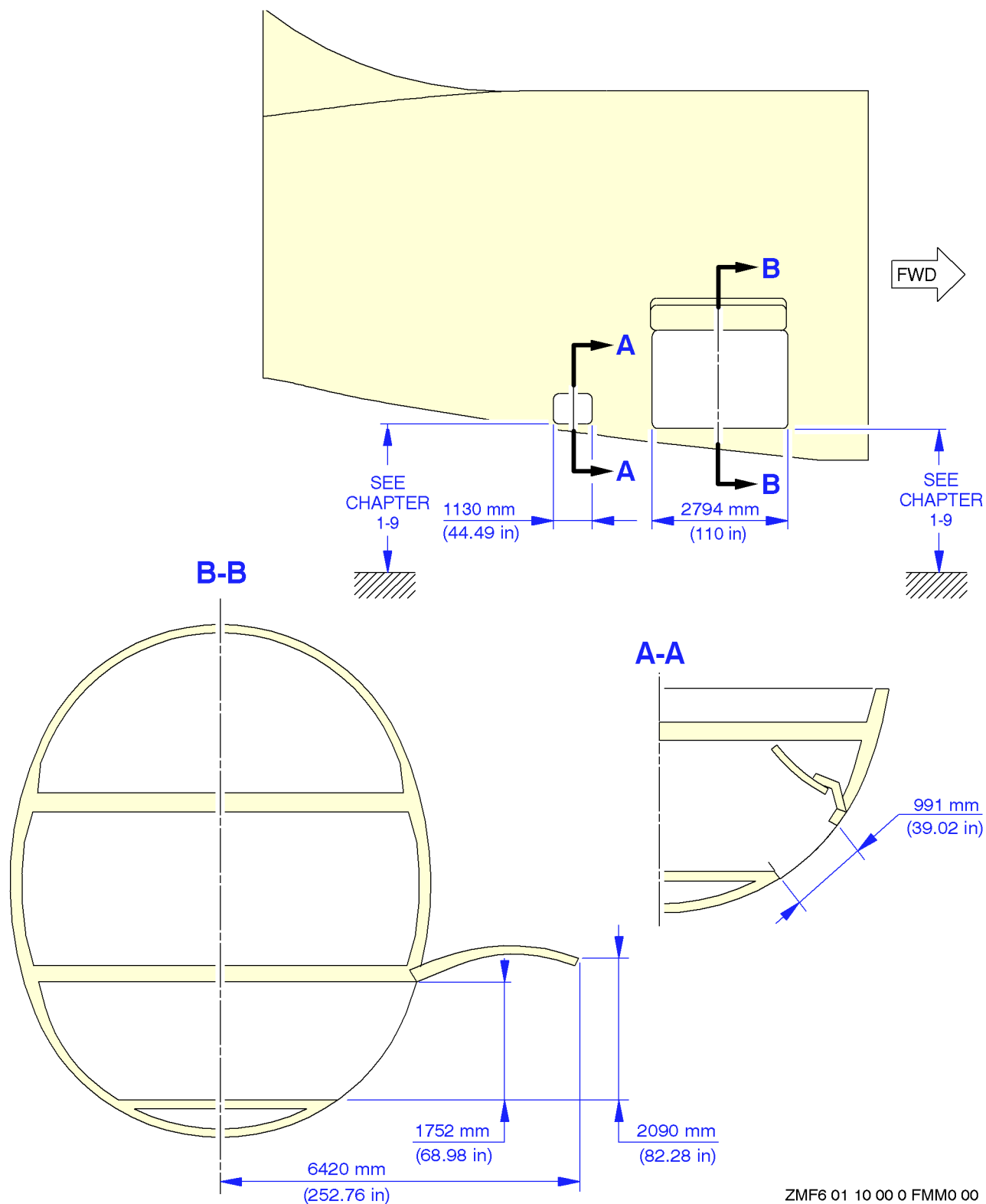
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Door Clearances
Aft Cargo Compartment Doors (Sheet 1/2)
A380-800F Models

R

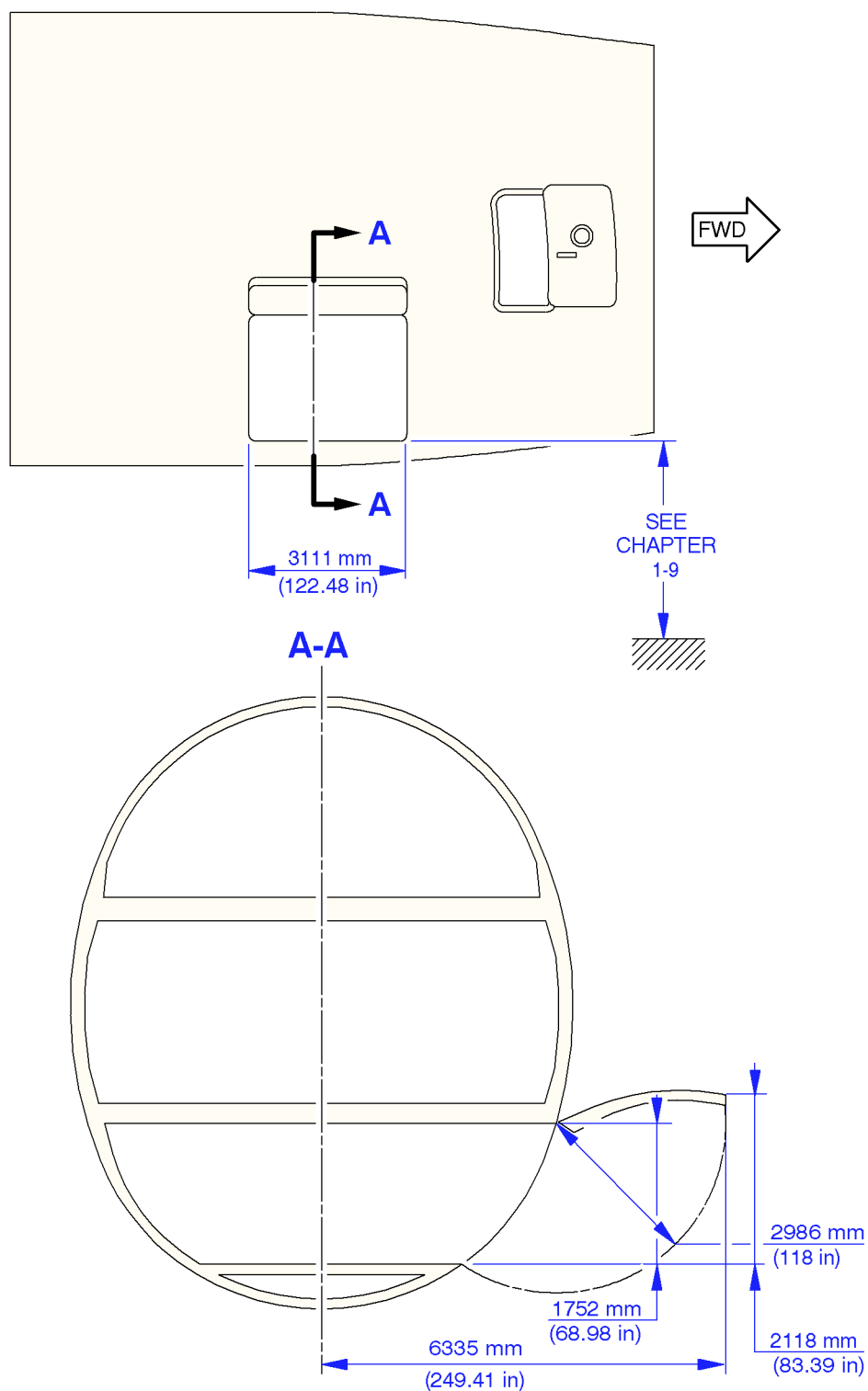
1-10
 Page 12
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MAINTENANCE FACILITY PLANNING



Door Clearances
Aft Cargo Compartment Doors (Sheet 2/2)
A380-800F Models

MAINTENANCE FACILITY PLANNING



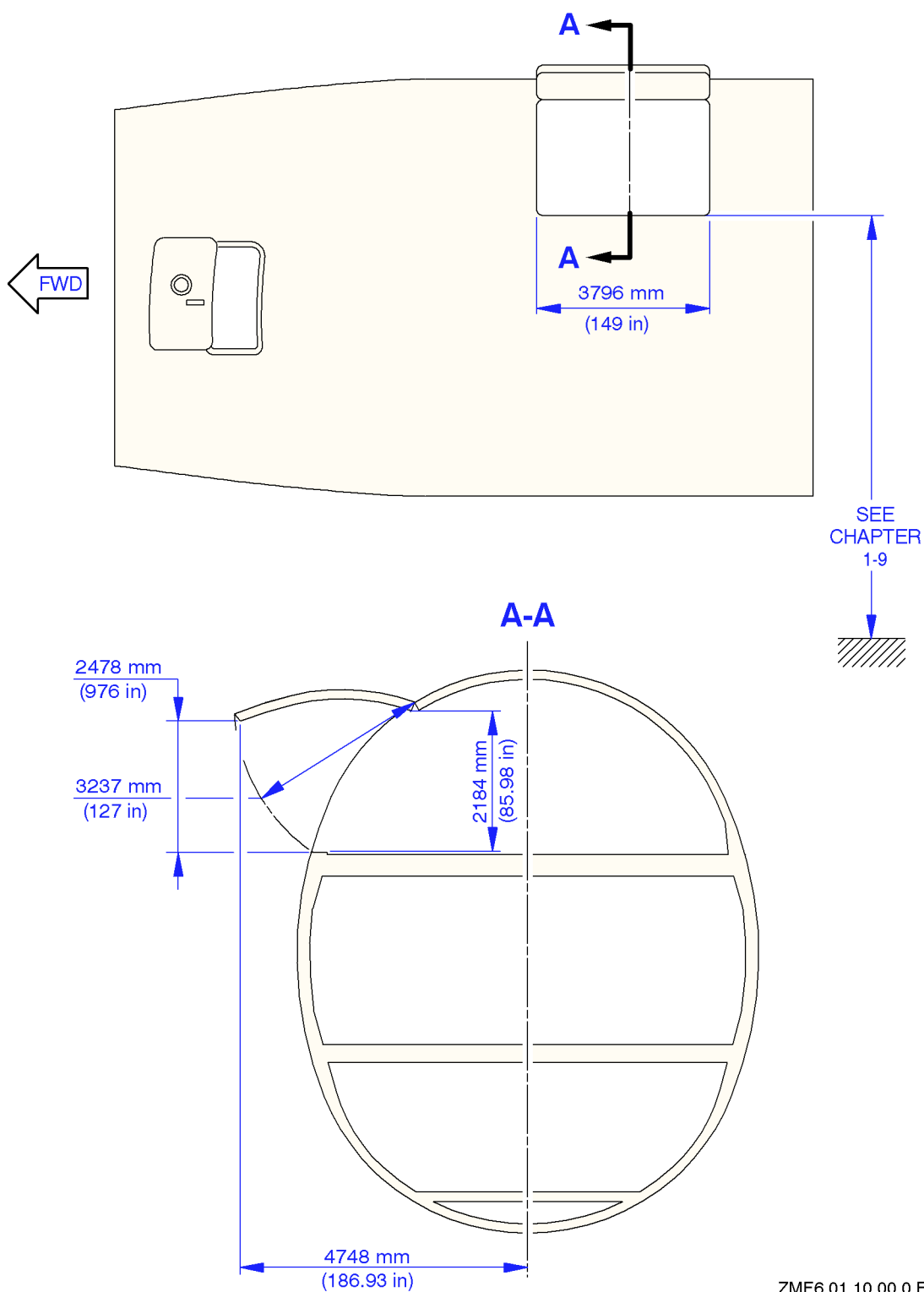
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Door Clearances
Forward Cargo Compartment Doors
A380-800 Models

R

MAINTENANCE FACILITY PLANNING



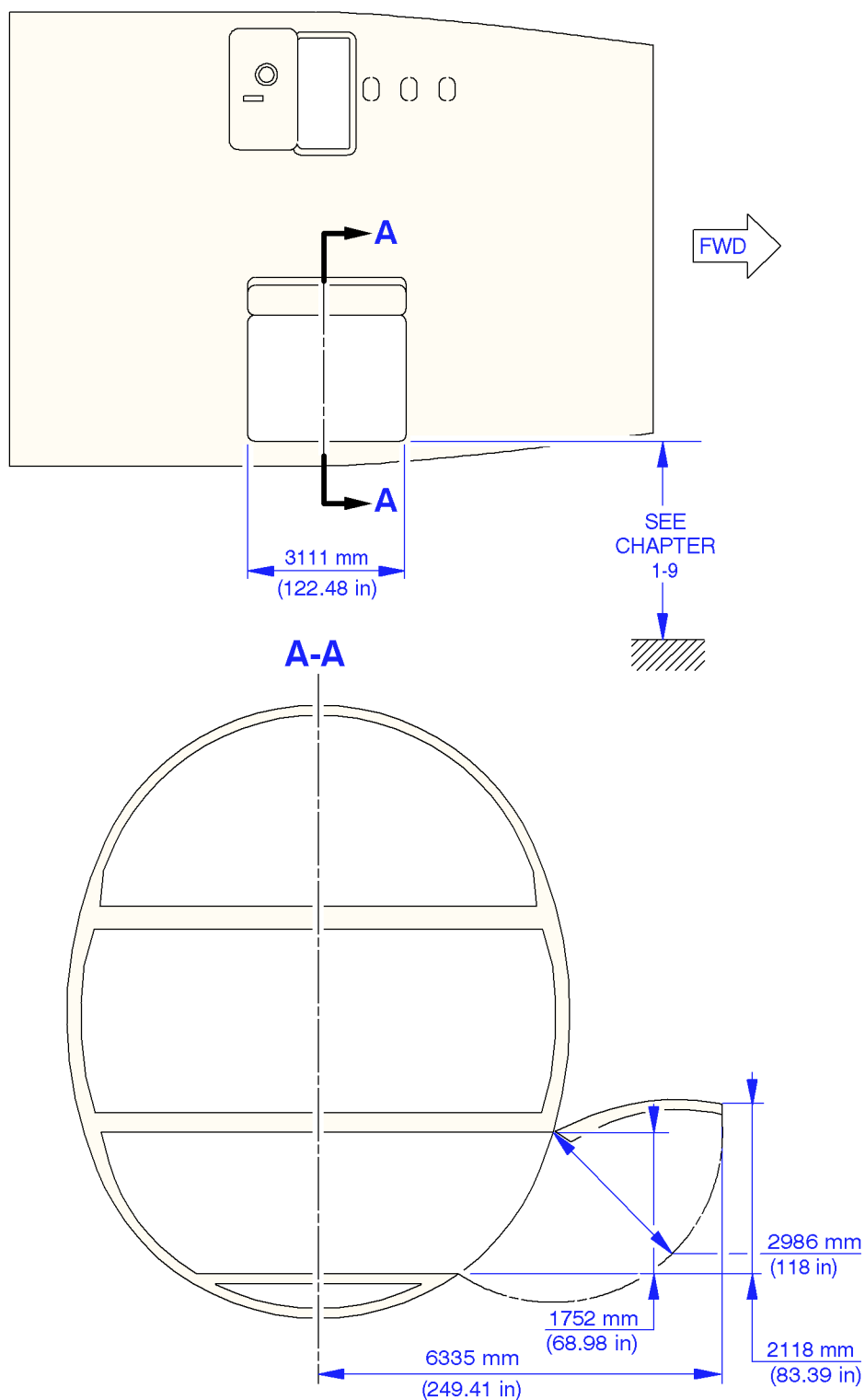
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Door Clearances
Forward Cargo Compartment Doors (Sheet 1/2)
A380-800F Models

R

MAINTENANCE FACILITY PLANNING



ZMF6 01 10 00 0 FPM0 02

Door Clearances
Forward Cargo Compartment Doors (Sheet 2/2)
A380-800F Models

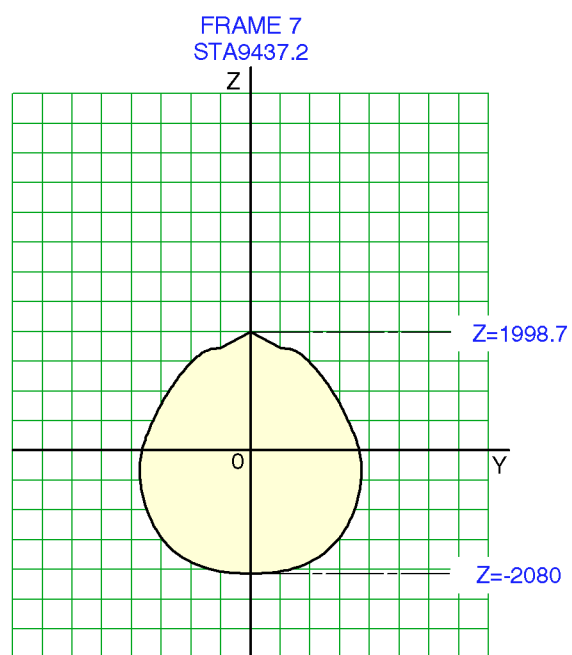
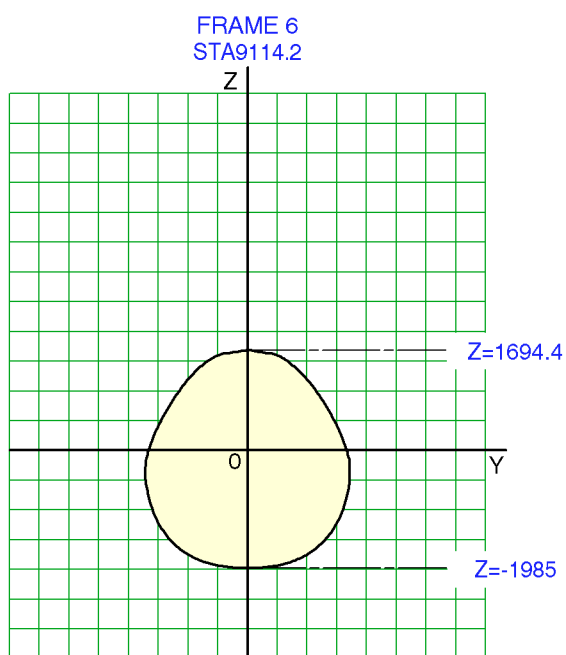
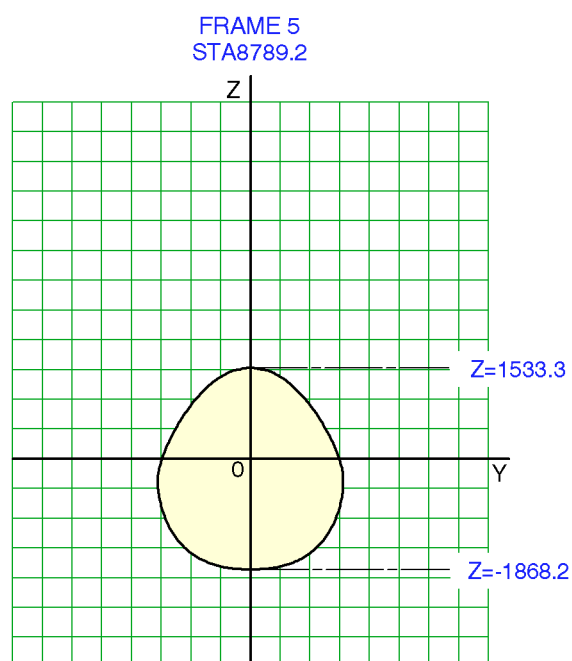
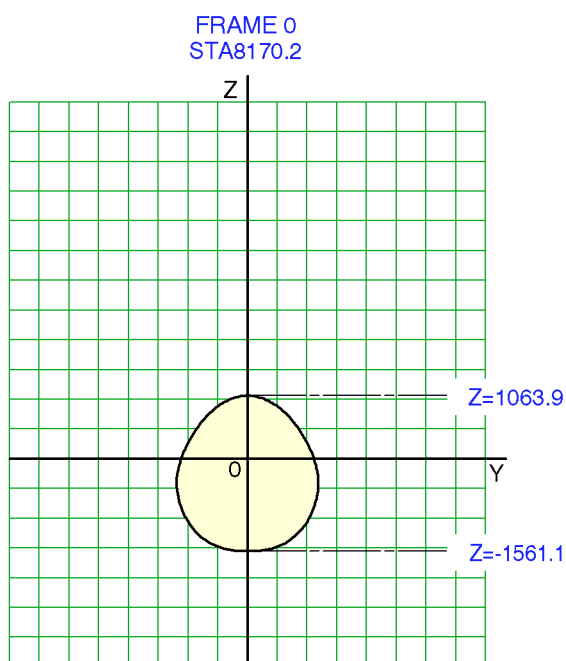
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MAINTENANCE FACILITY PLANNING

FUSELAGE CROSS-SECTIONS

MAINTENANCE FACILITY PLANNING



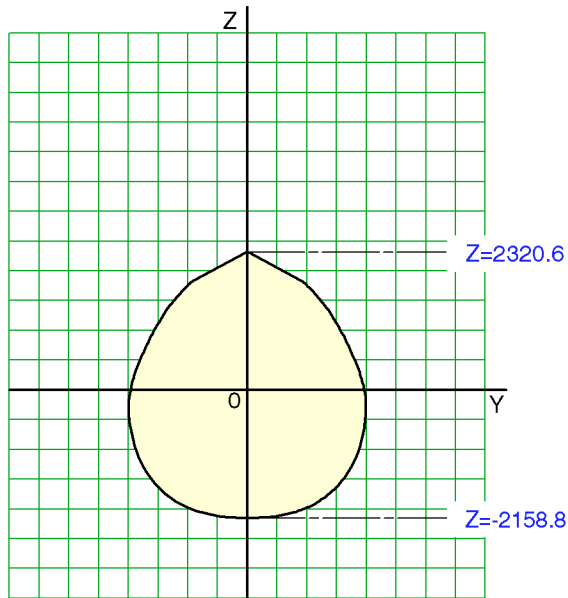
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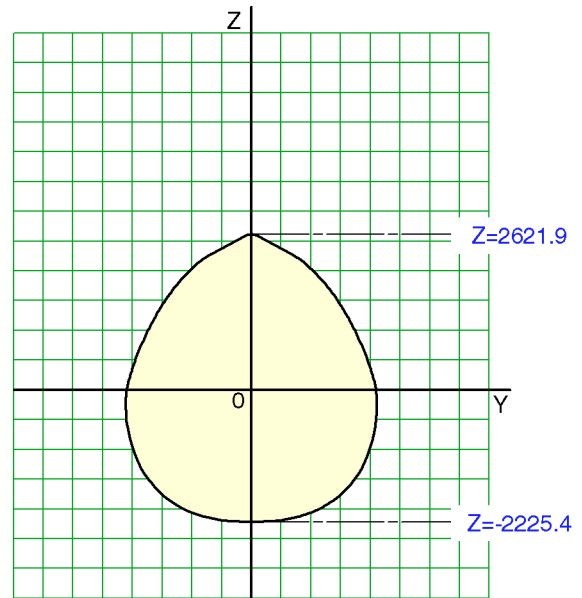
Fuselage Cross-Section
Section 11/12
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

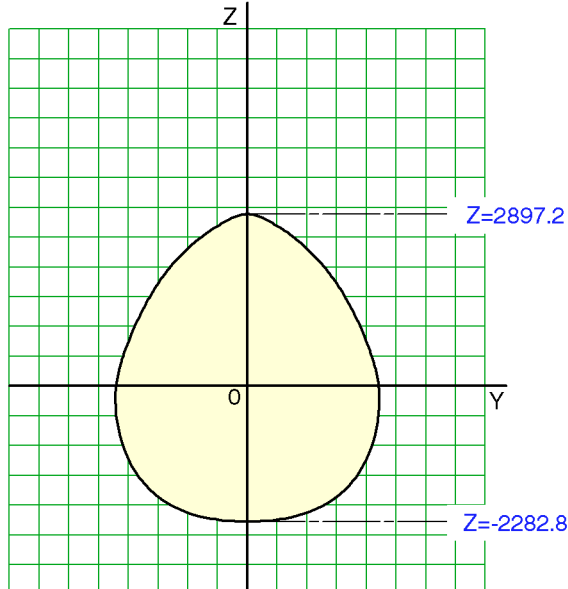
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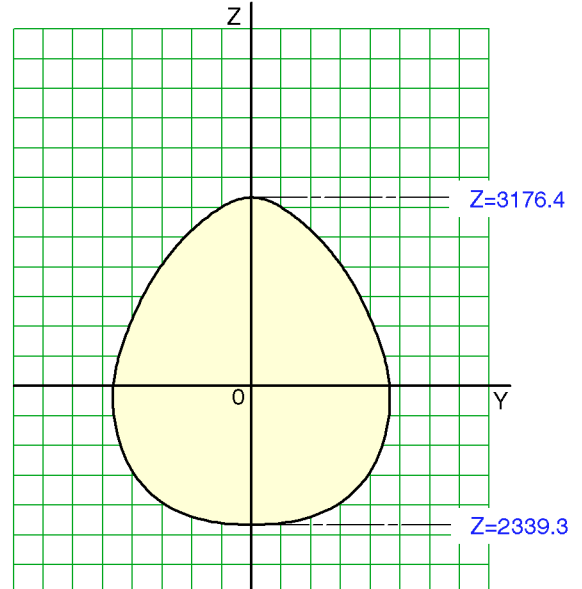
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FRAME 10
STA10406.2



FRAME 11
STA10805.2



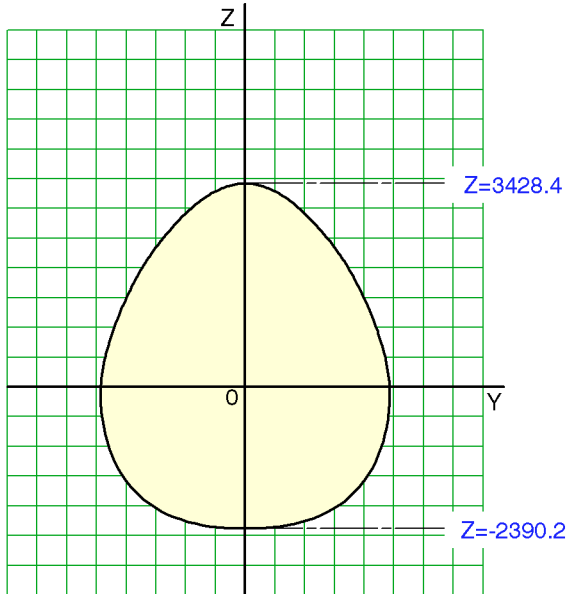
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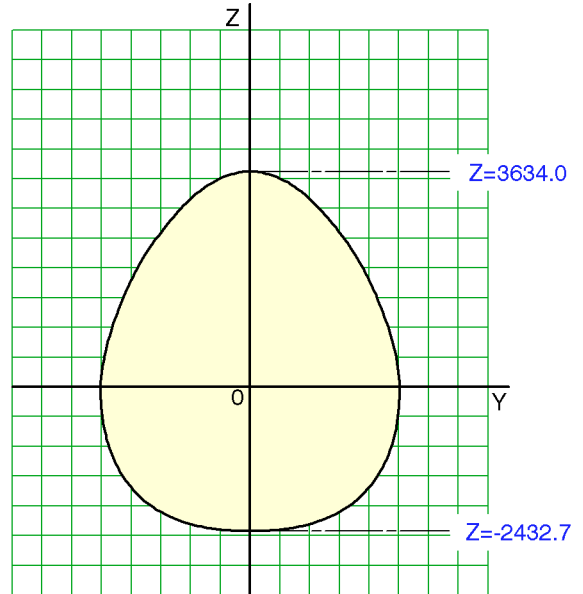
Fuselage Cross-Sections
Section 11/12
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

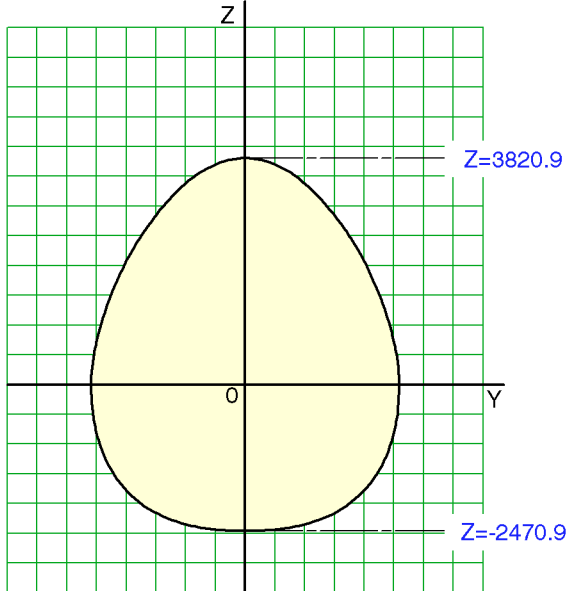
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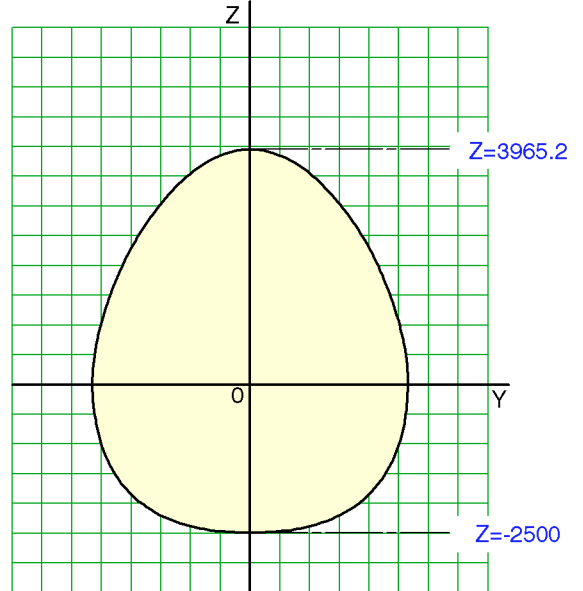
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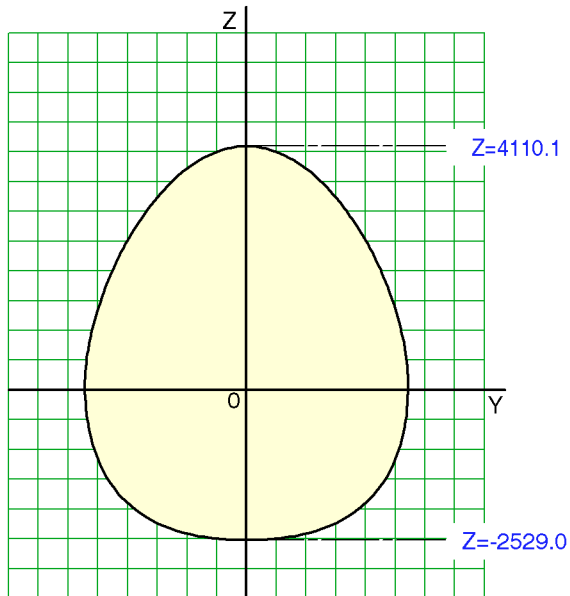
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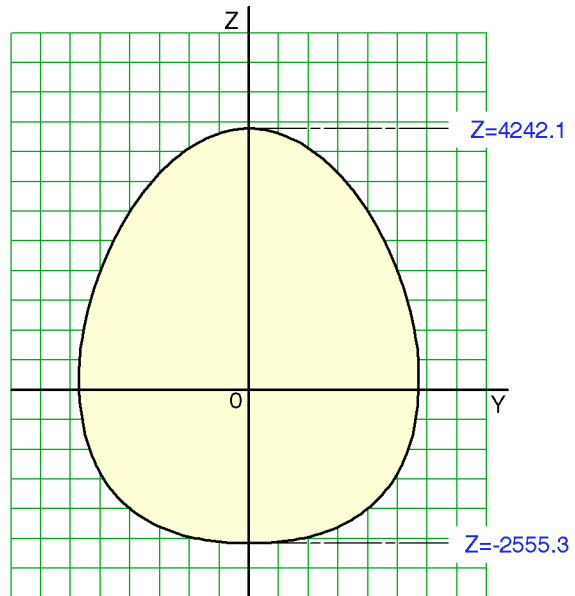
Fuselage Cross-Section
Section 11/12
380-800/800F Models

MAINTENANCE FACILITY PLANNING

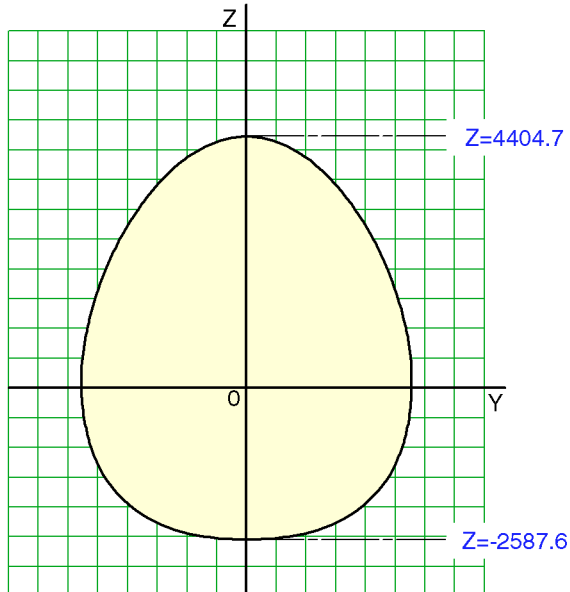
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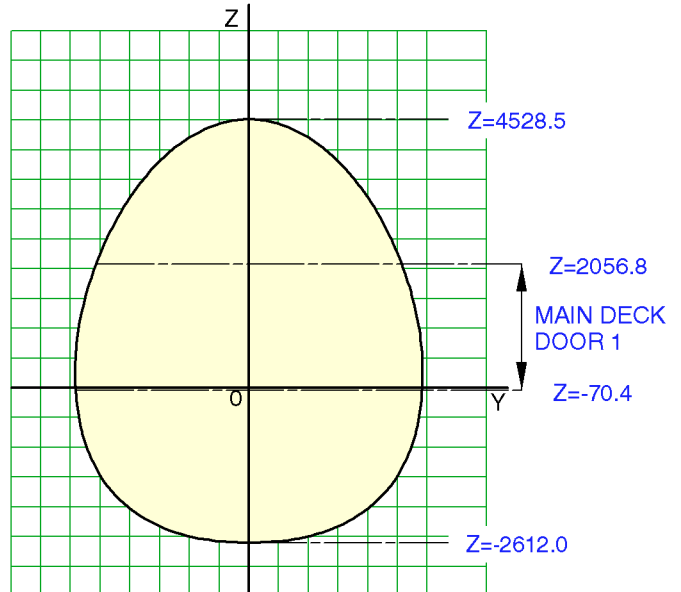
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FRAME 17B
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FRAME 17C
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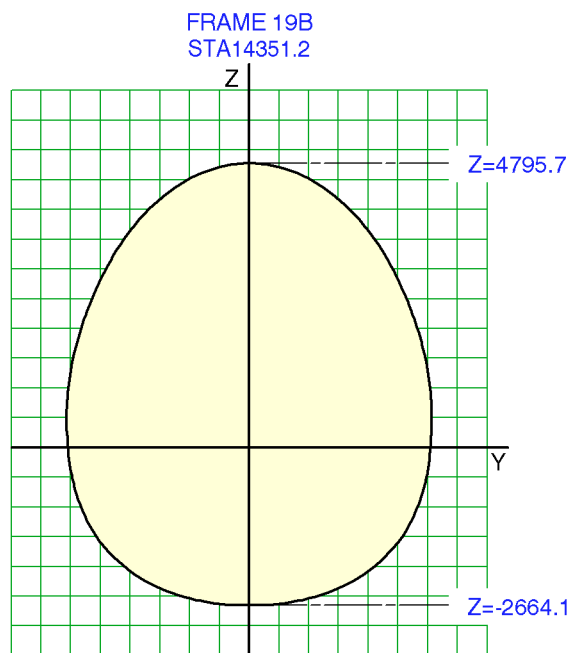
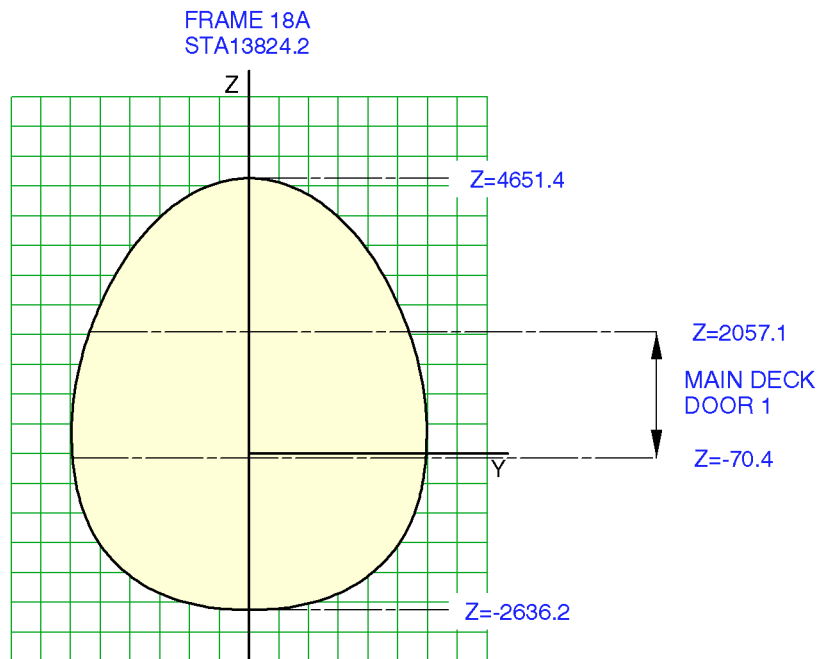


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Fuselage Cross-Section
Section 11/12
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

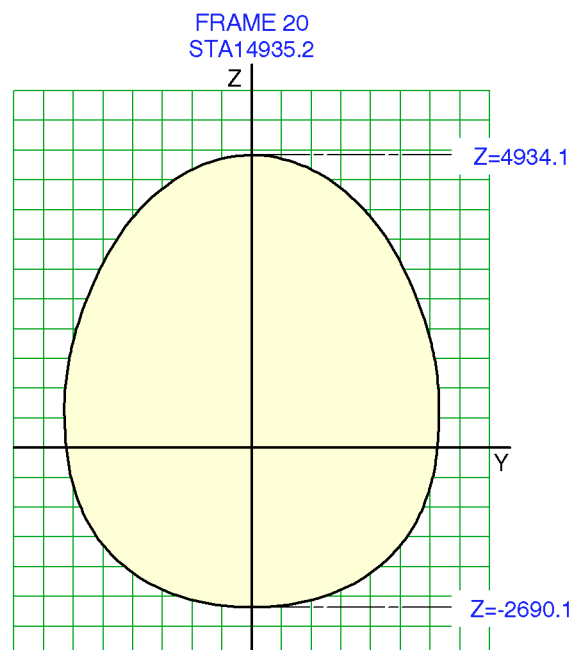
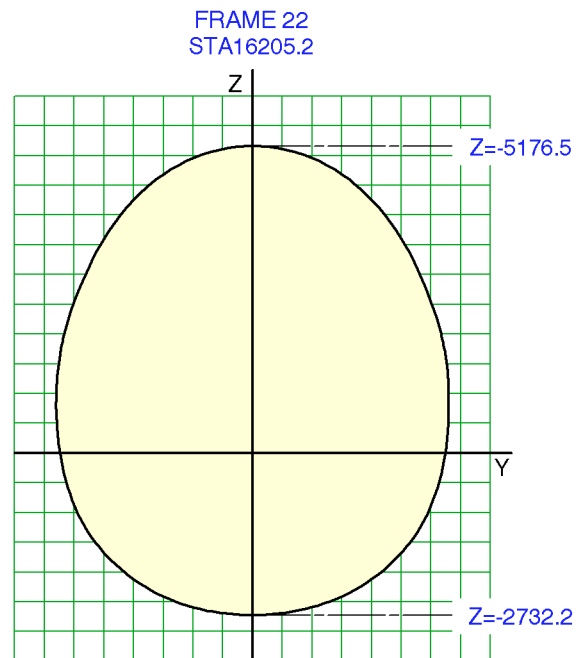
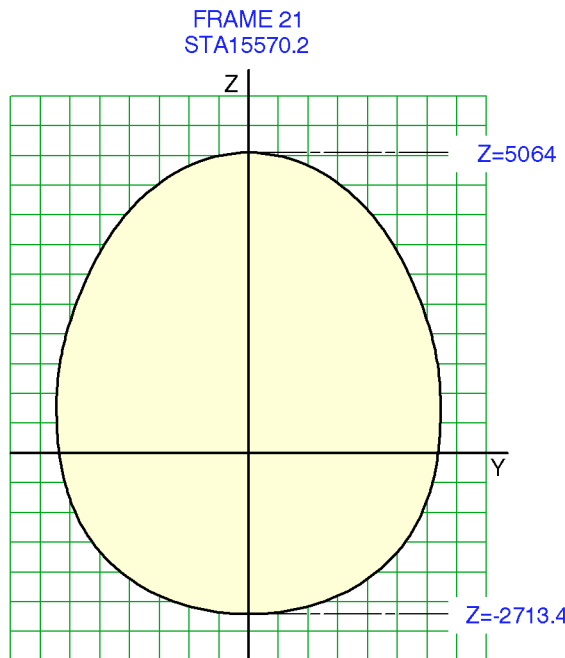


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Fuselage Cross-Section
Section 11/12
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

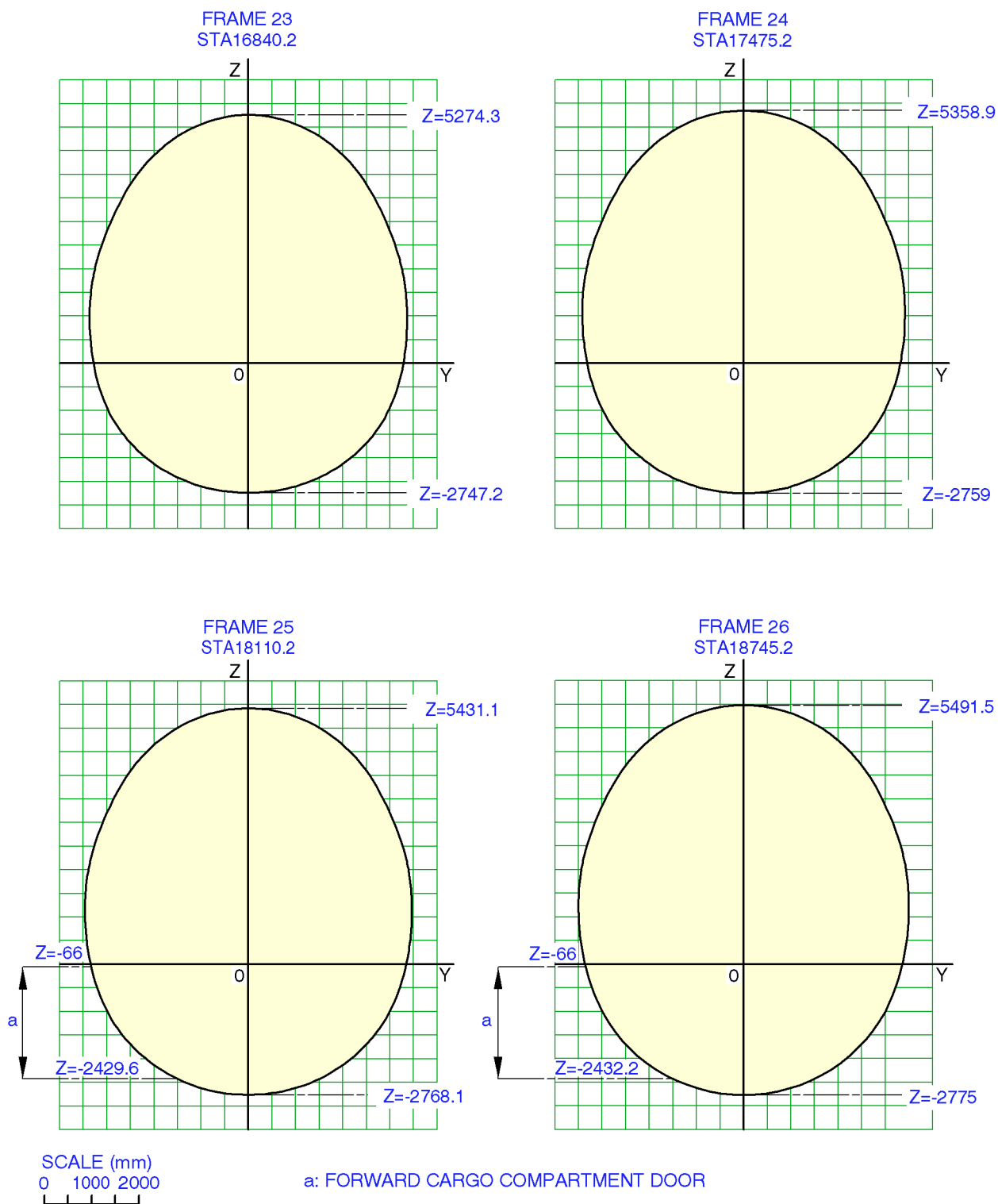


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Fuselage Cross-Section
Section 11/12
A380-800/800F Models

MAINTENANCE FACILITY PLANNING



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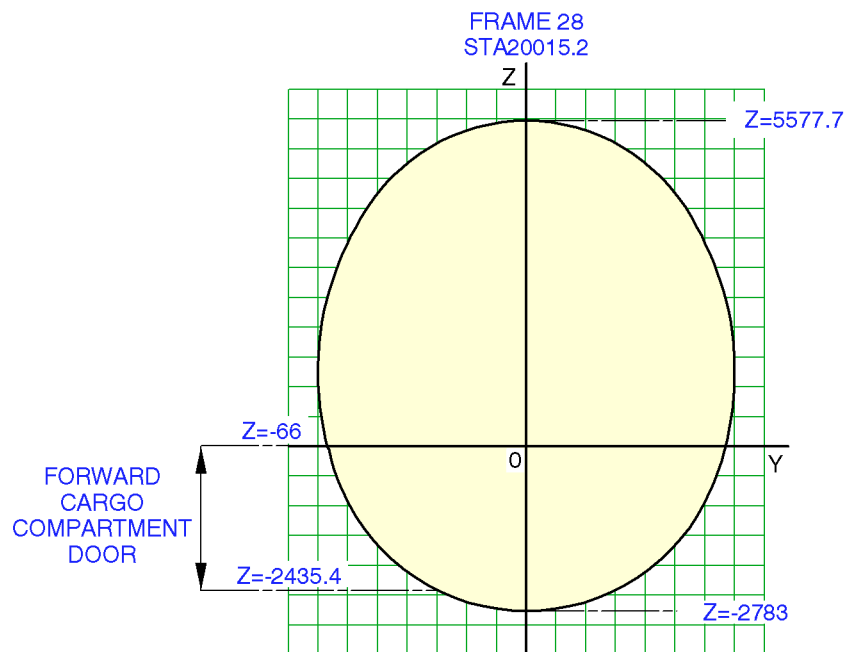
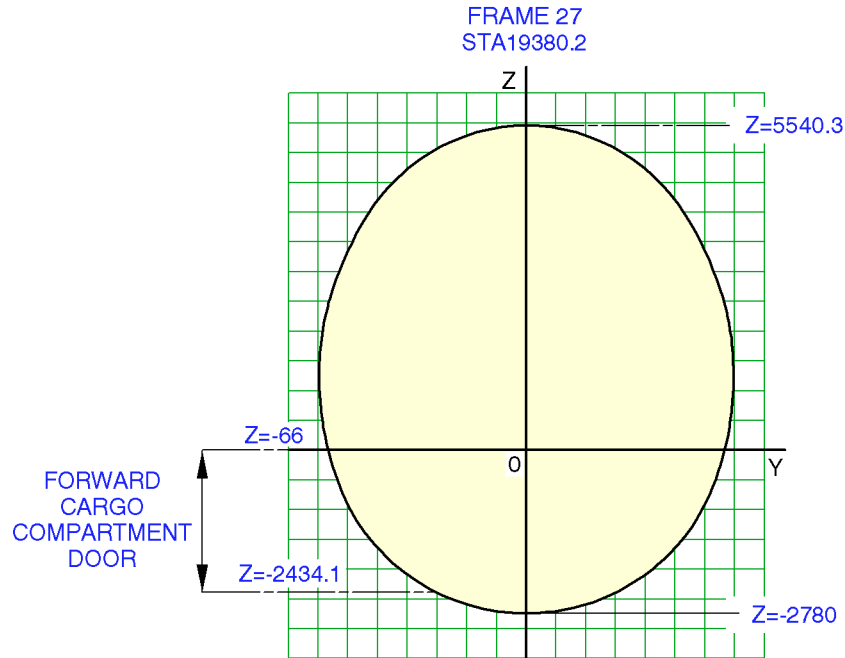
Fuselage Cross-Section
Section 13
A380-800 Models

MAINTENANCE FACILITY PLANNING

To Be Issued Later

Fuselage Cross-Section
Section 13
A380-800F Models

MAINTENANCE FACILITY PLANNING



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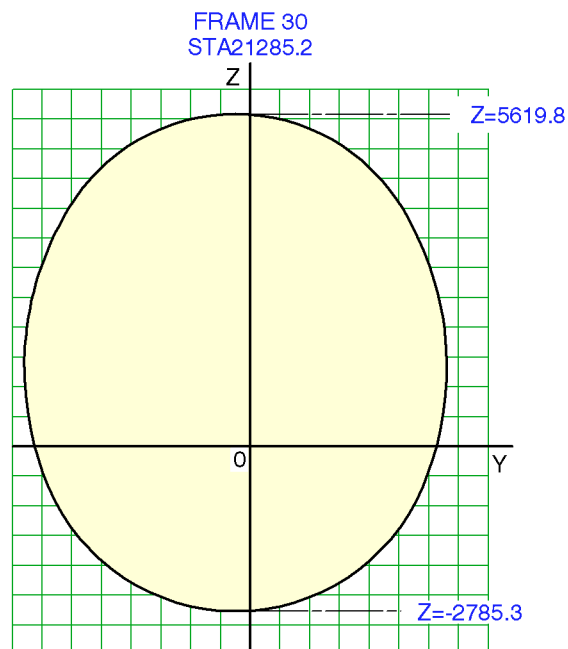
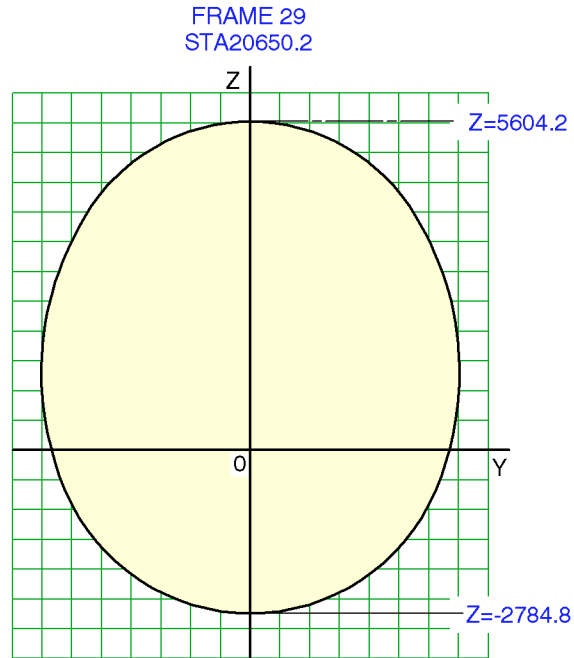
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Section 13
A380-800 Models

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TBIL

Fuselage Cross-Section
Section 13
A380-800F Models

MAINTENANCE FACILITY PLANNING



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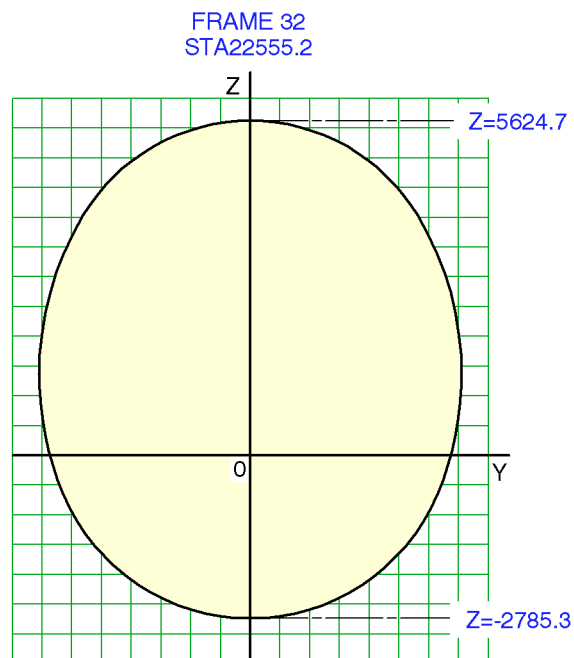
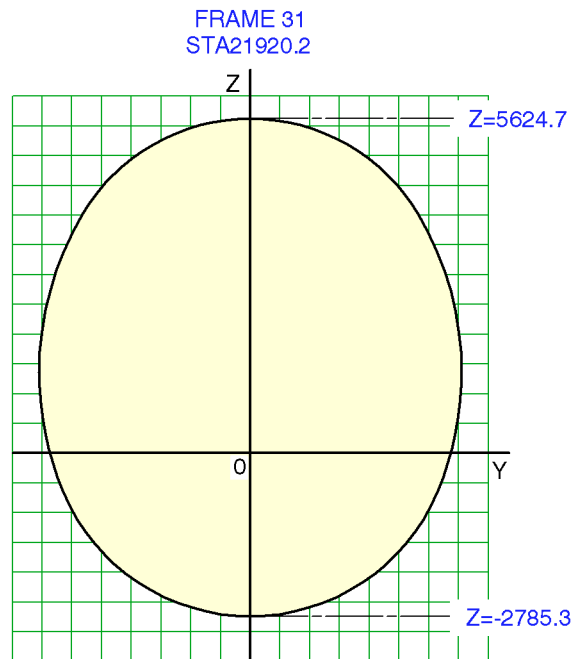
Fuselage Cross-Section
Section 13
A380-800 Models

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Fuselage Cross-Section
Section 13
A380-800F Models

MAINTENANCE FACILITY PLANNING



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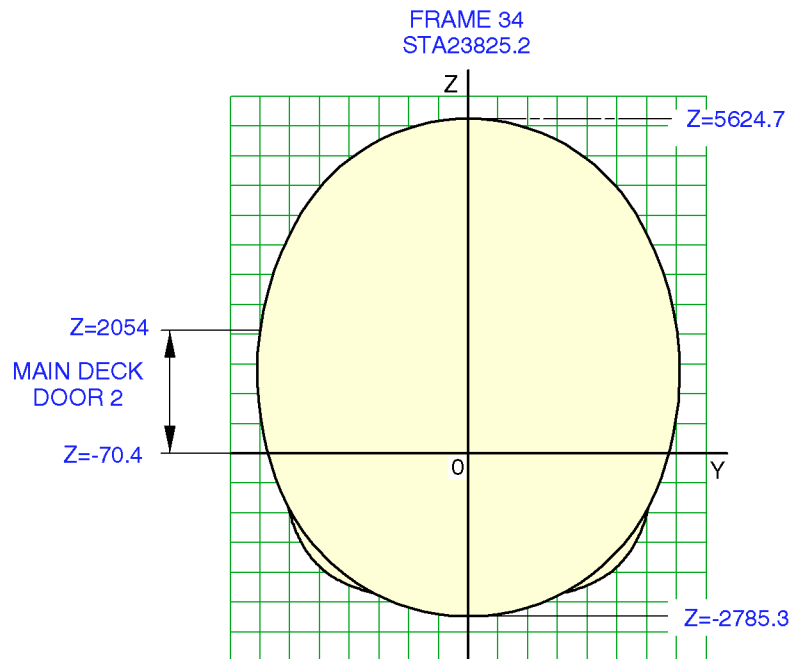
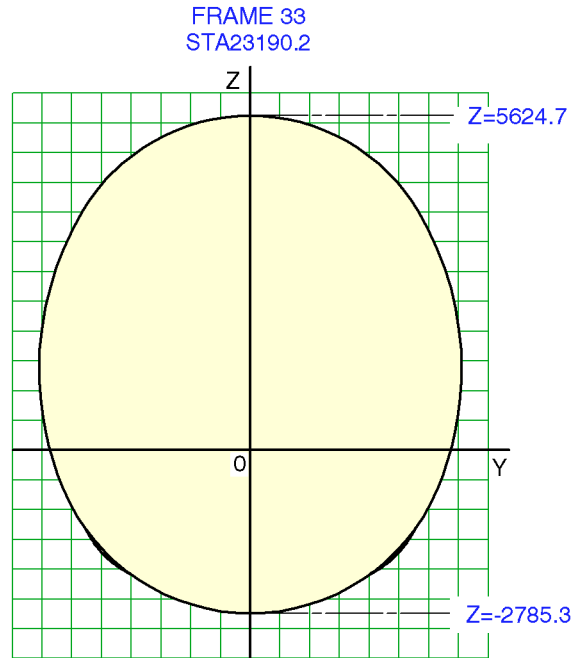
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Section 13
A380-800 Models

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Fuselage Cross-Section
Section 13
A380-800F Models

MAINTENANCE FACILITY PLANNING



SCALE (mm)
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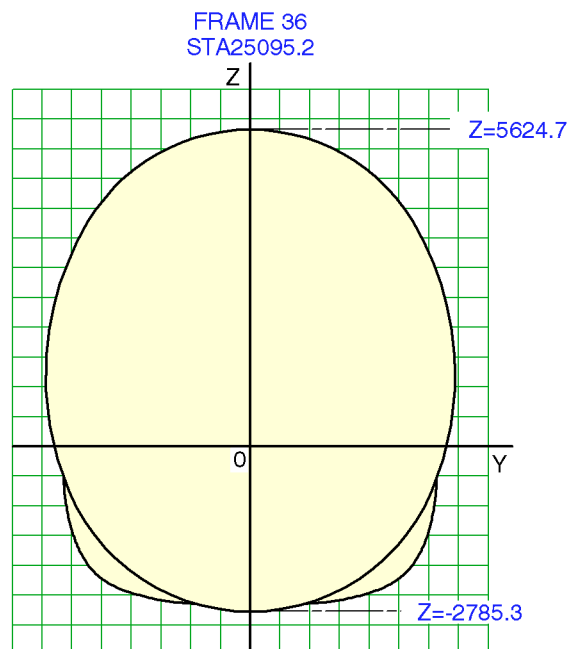
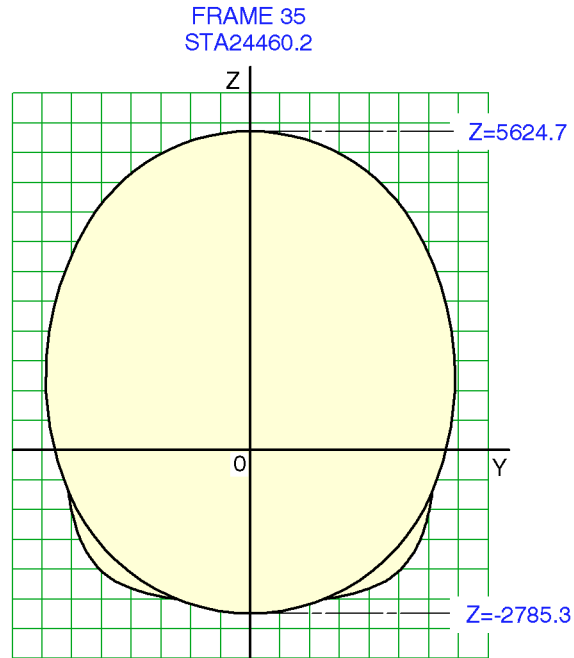
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Section 13
A380-800 Models

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Fuselage Cross-Section
Section 13
A380-800F Models

MAINTENANCE FACILITY PLANNING



SCALE (mm)
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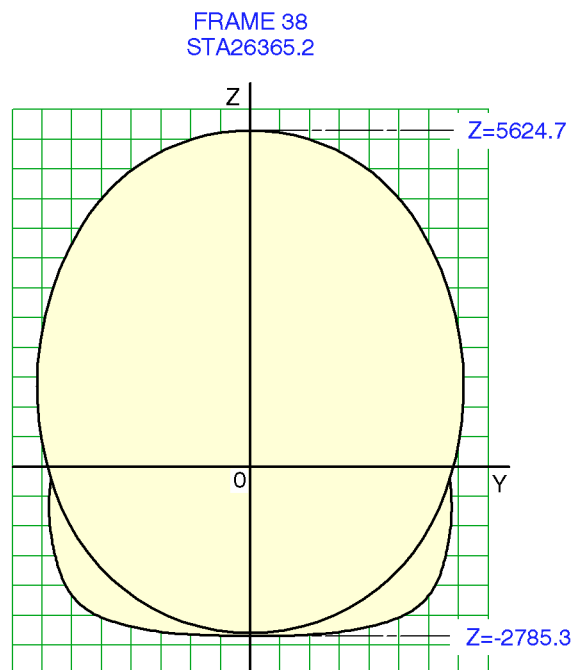
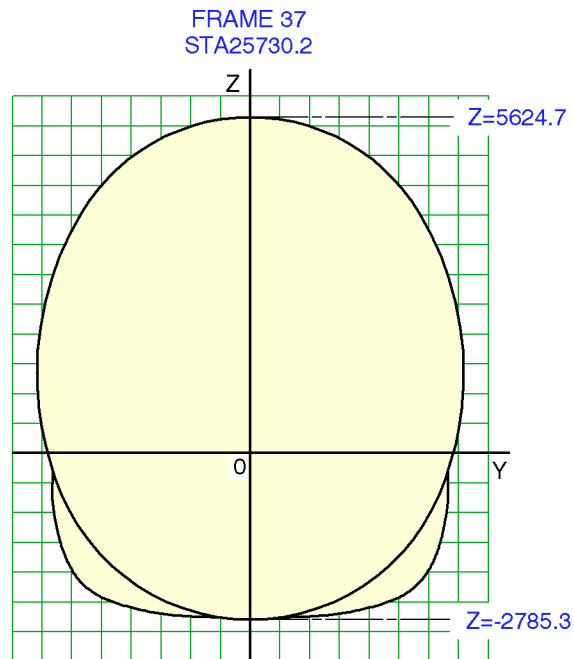
Fuselage Cross-Section
Section 13
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Fuselage Cross-Section
Section 13
A380-800F Models

MAINTENANCE FACILITY PLANNING



SCALE (mm)
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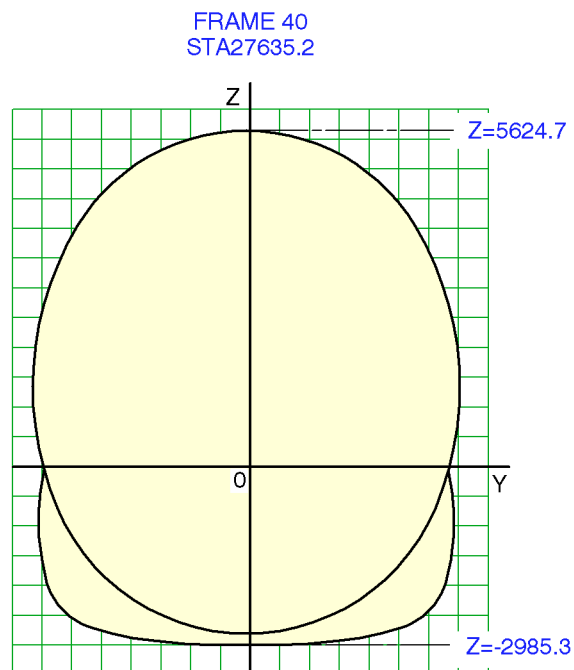
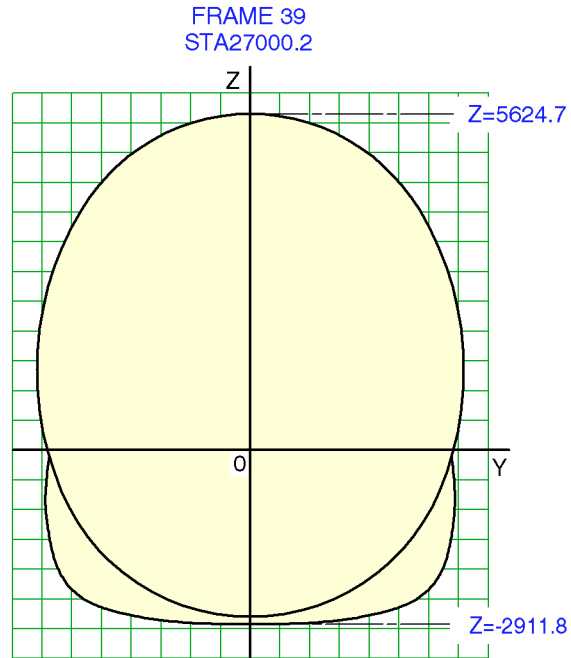
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Section 13
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Fuselage Cross-Section
Section 13
A380-800F Models

MAINTENANCE FACILITY PLANNING



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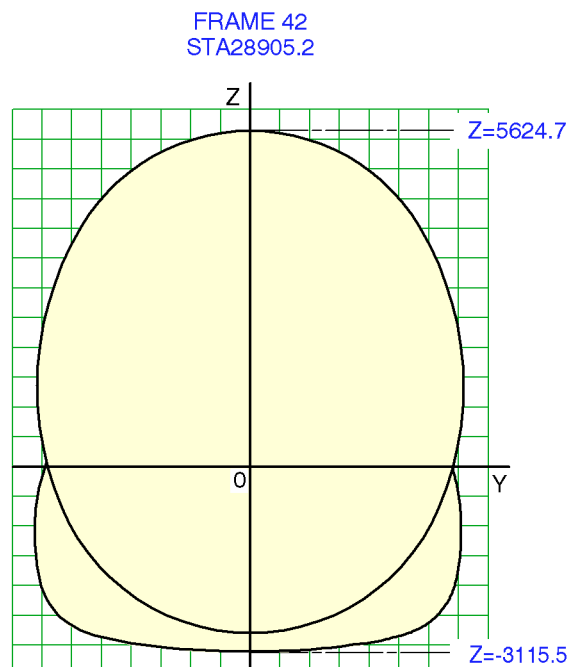
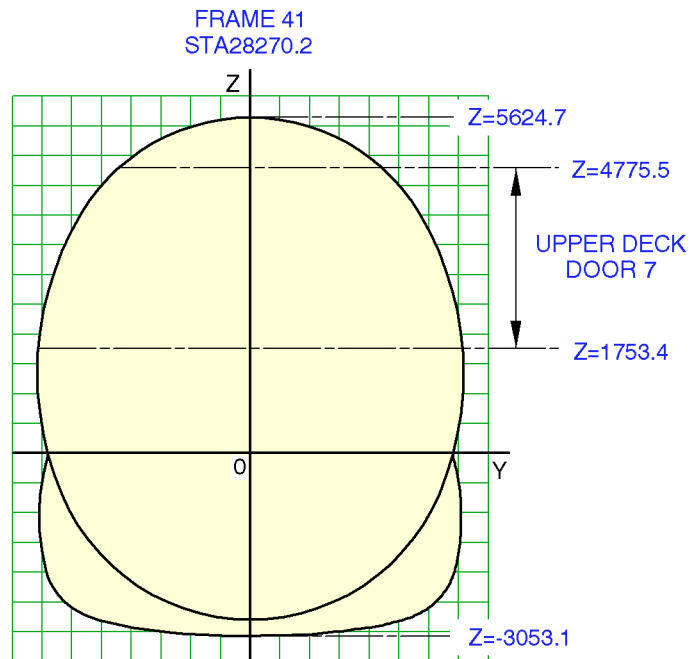
Fuselage Cross-Section
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Fuselage Cross-Section
Section 15/21
A380-800F Models

MAINTENANCE FACILITY PLANNING



SCALE (mm)
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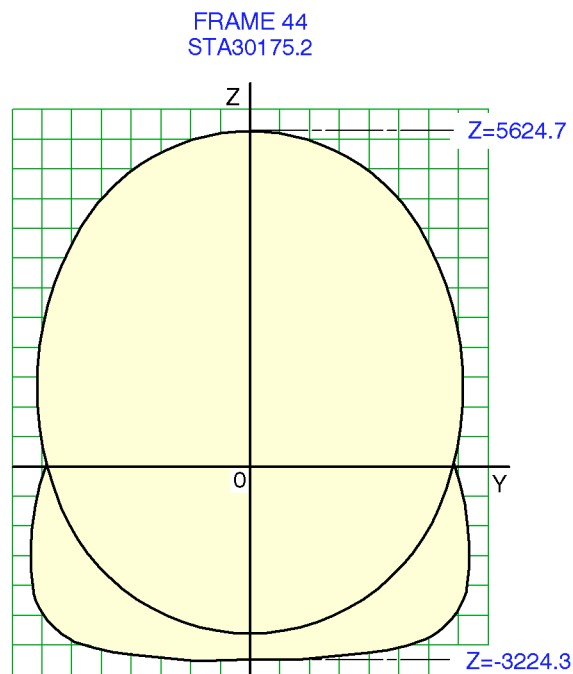
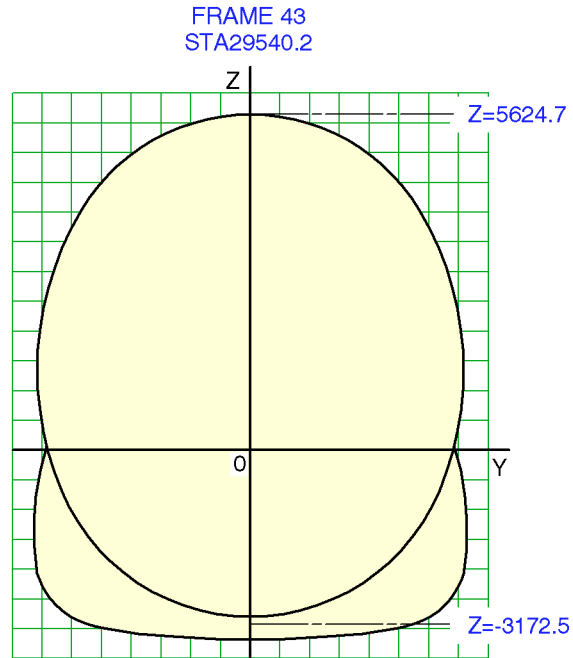
Fuselage Cross-Section
Section 15/21
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Fuselage Cross-Section
Section 15/21
A380-800F Models

MAINTENANCE FACILITY PLANNING



SCALE (mm)
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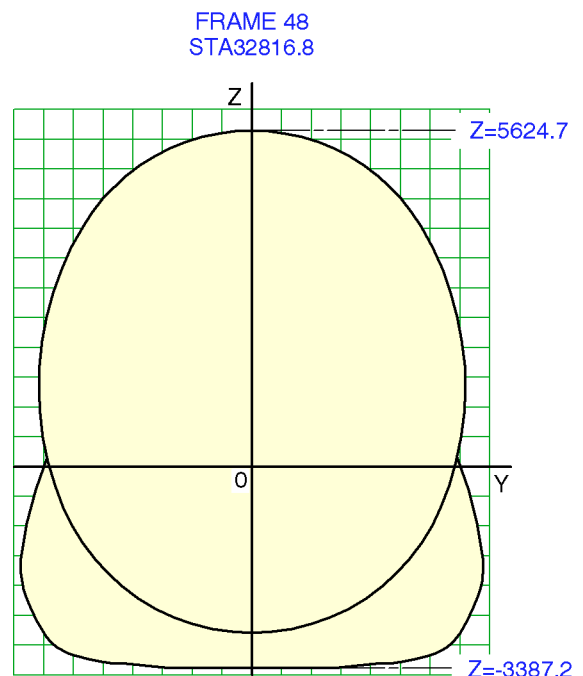
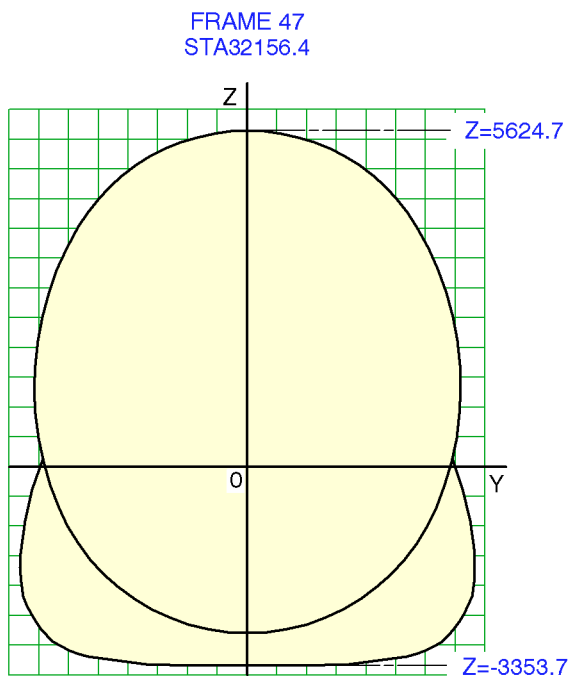
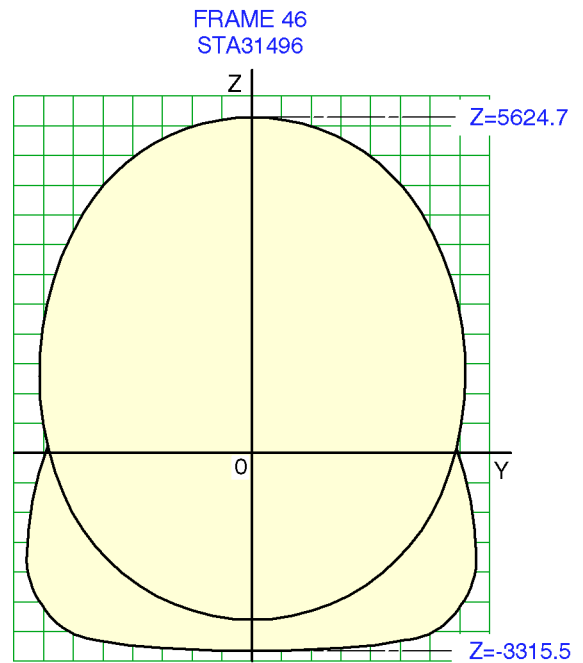
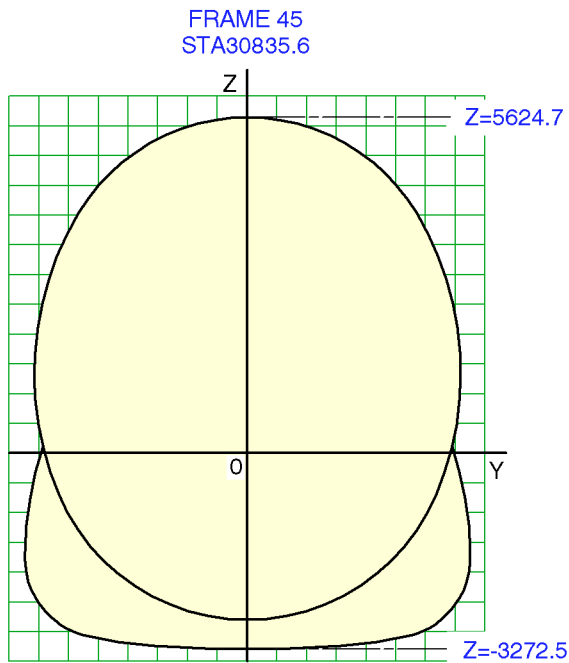
Fuselage Cross-Section
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Fuselage Cross-Section
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SCALE (mm)
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Fuselage Cross-Section
Section 15/21
A380-800 Models

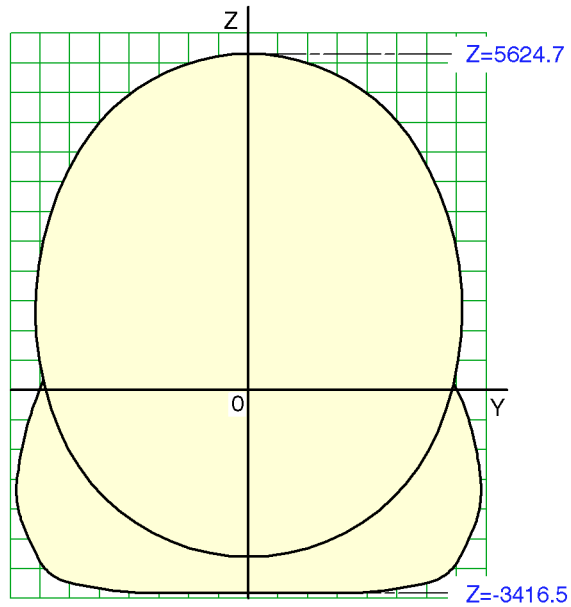
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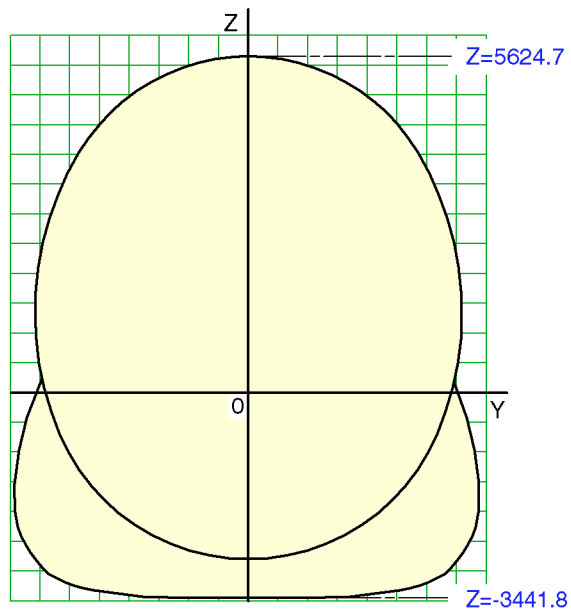
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Section 15/21
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FRAME 50
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SCALE (mm)
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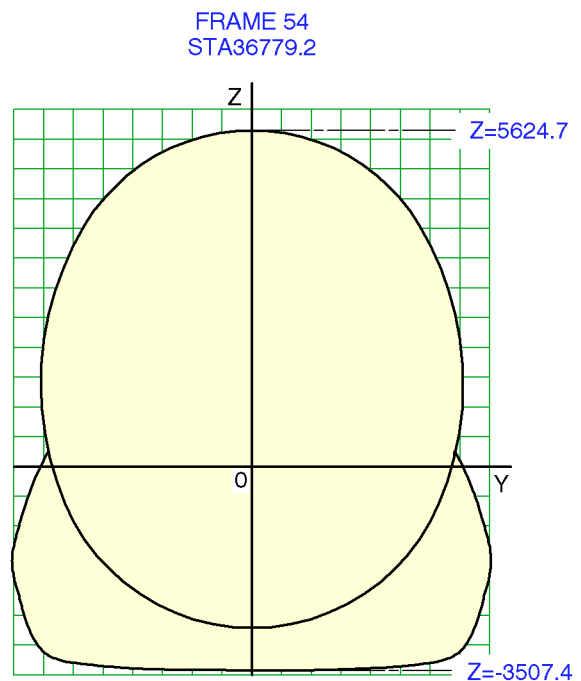
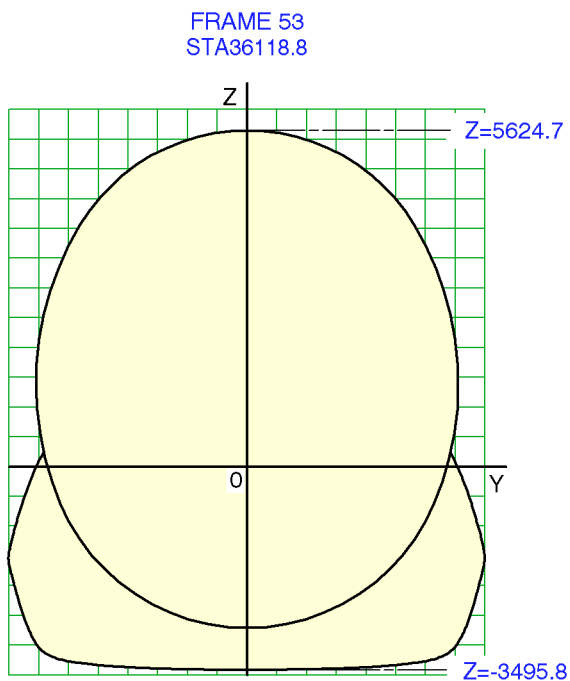
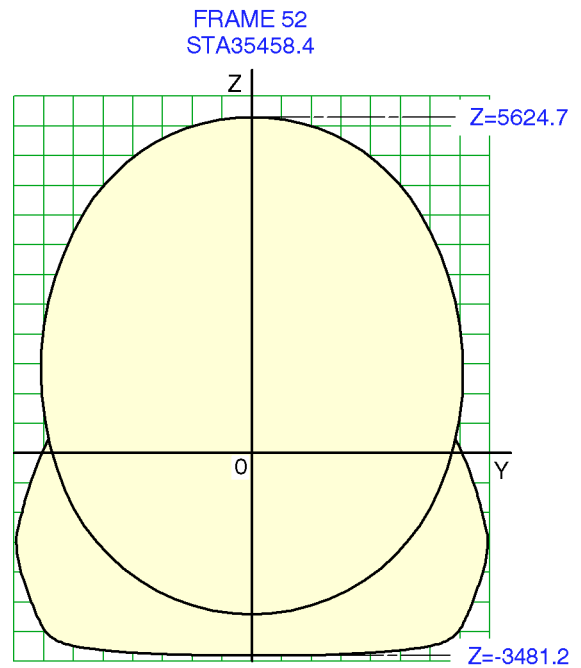
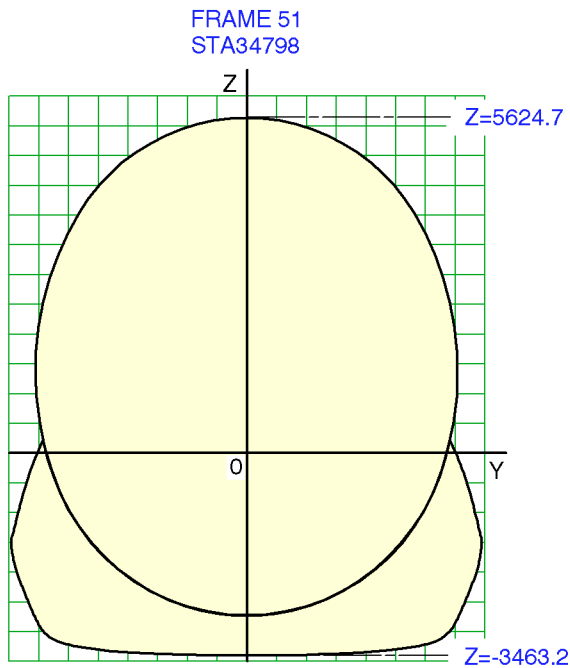
Fuselage Cross-Section
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Fuselage Cross-Section
Section 15/21
A380-800F Models

MAINTENANCE FACILITY PLANNING



SCALE (mm)
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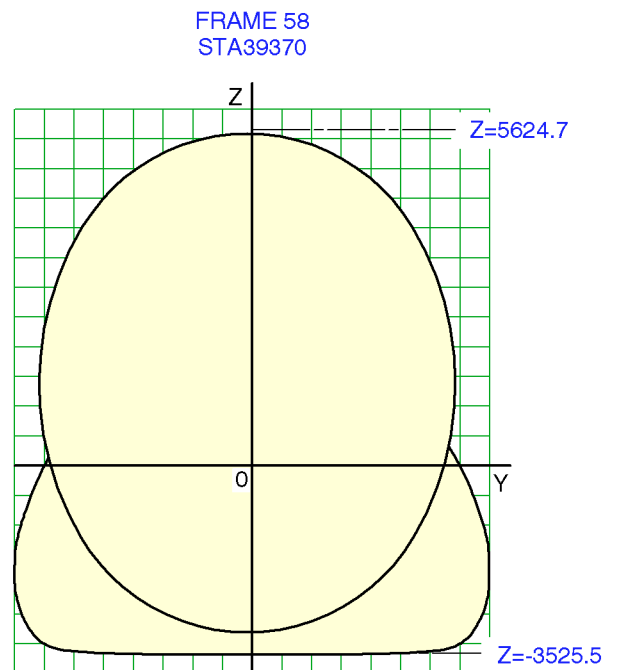
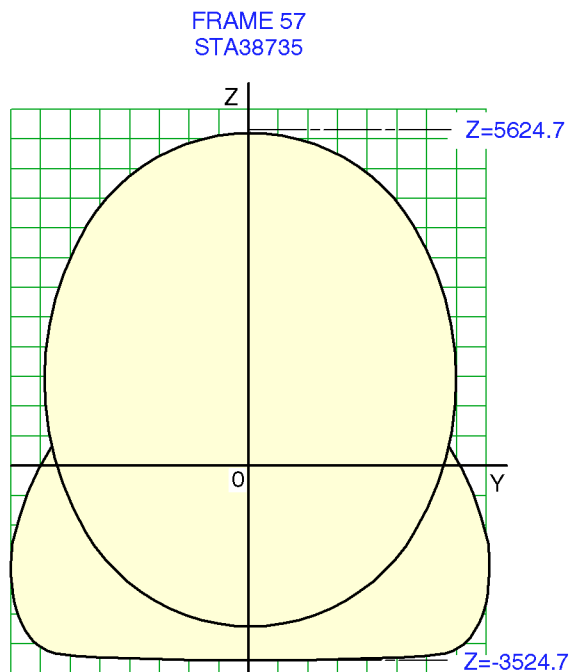
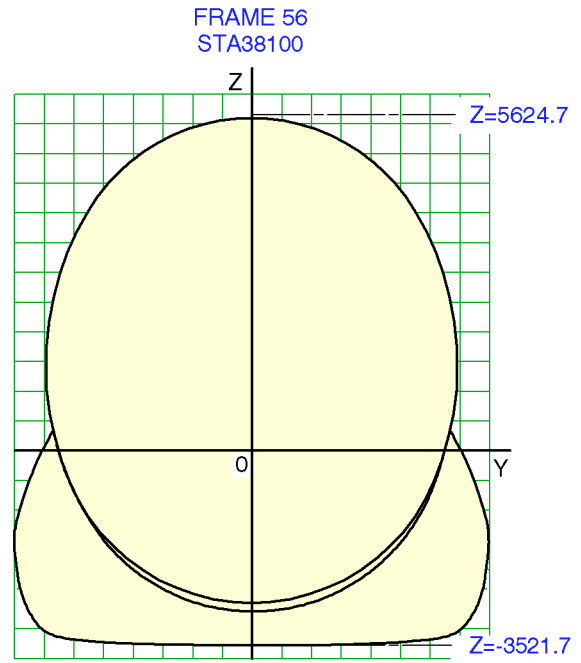
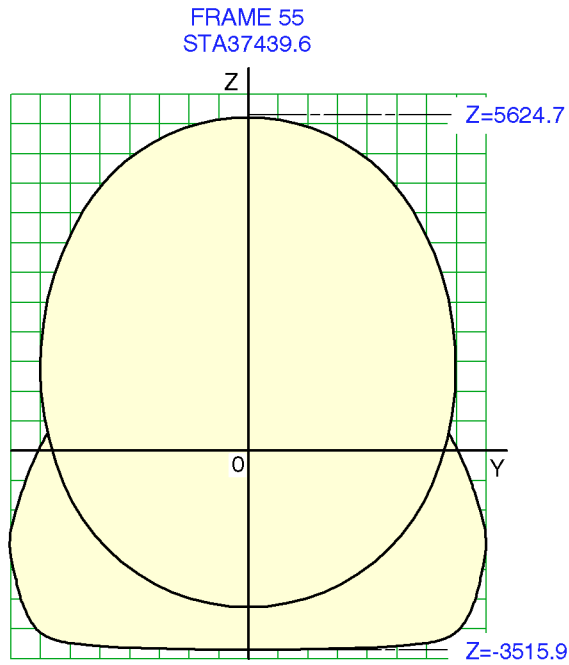
Fuselage Cross-Section
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Fuselage Cross-Section
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MAINTENANCE FACILITY PLANNING



SCALE (mm)
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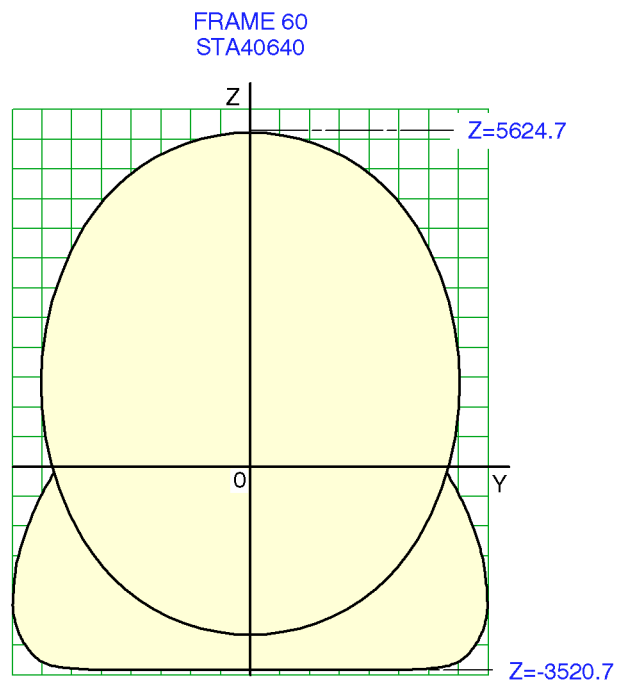
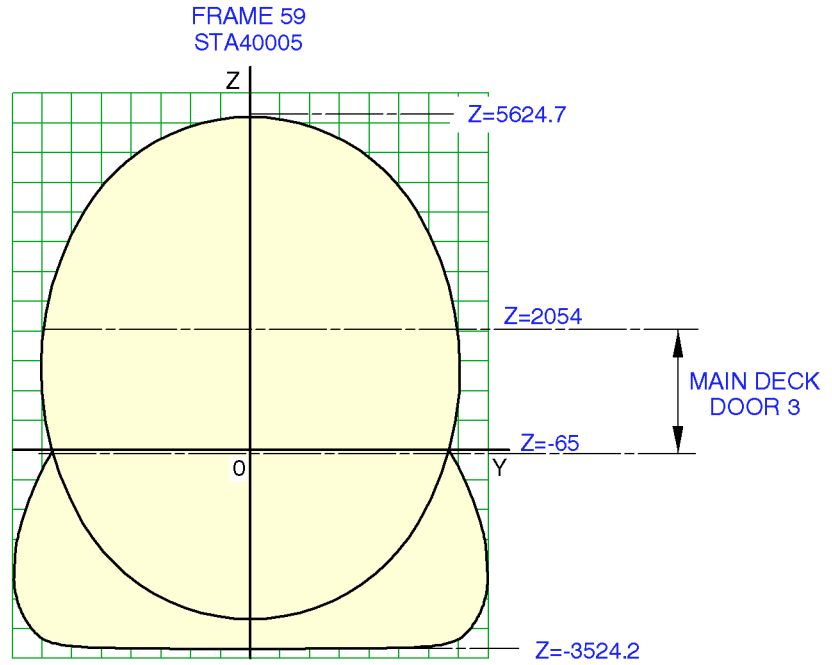
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Fuselage Cross-Section
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SCALE (mm)
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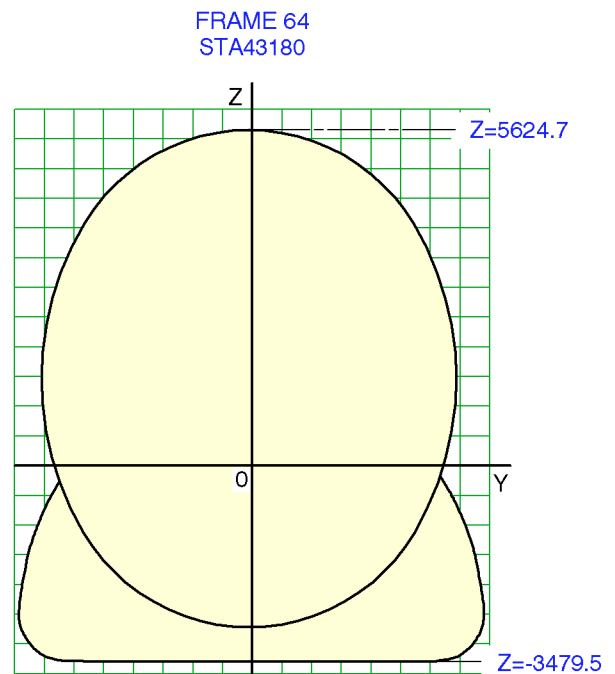
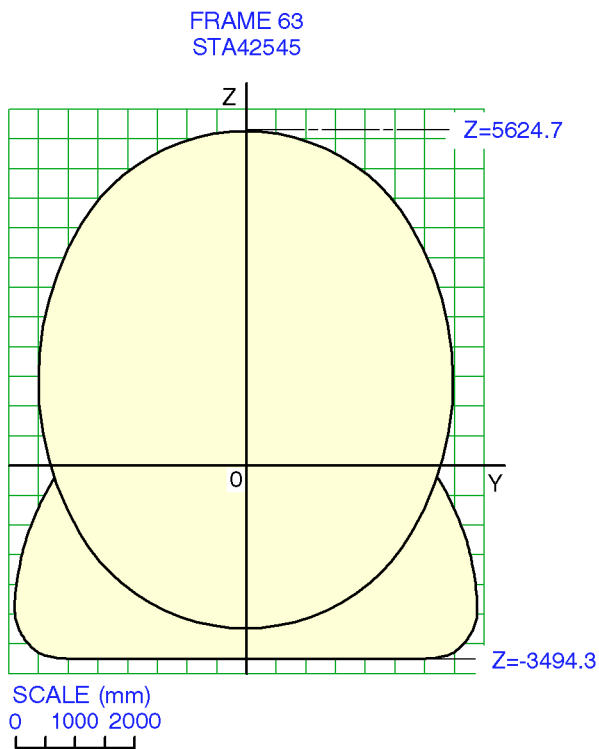
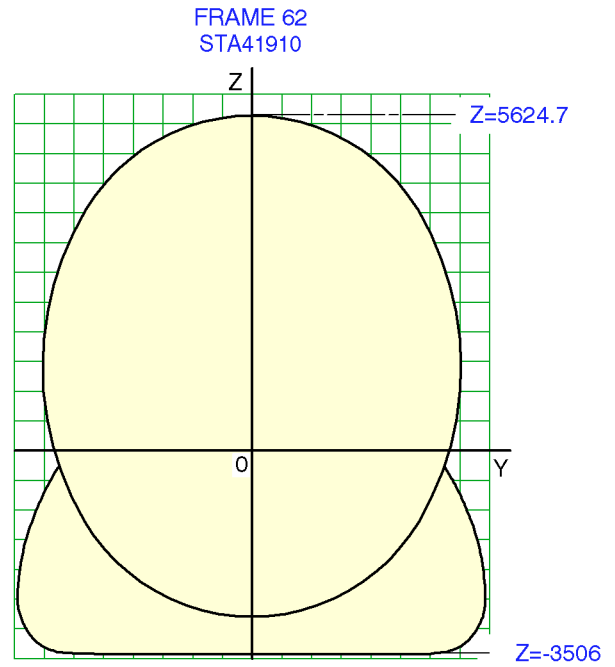
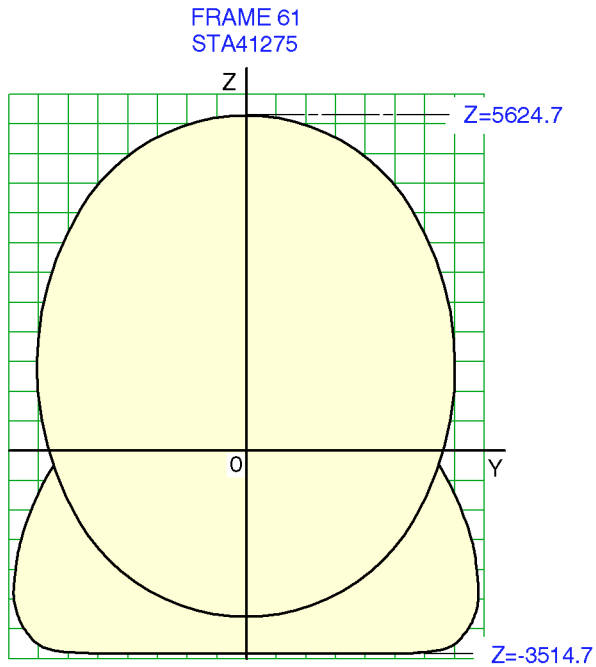
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Fuselage Cross-Section
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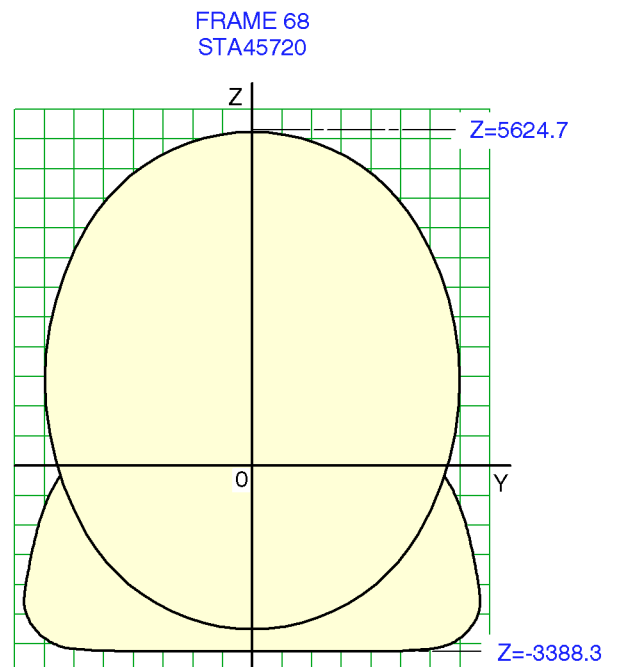
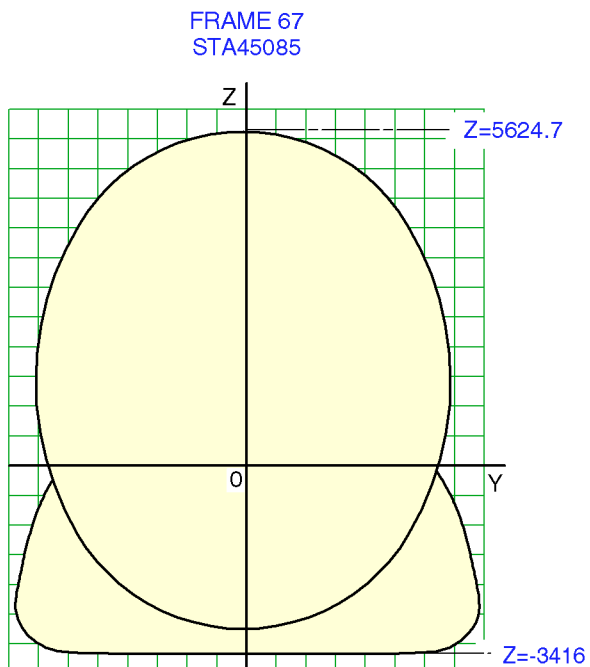
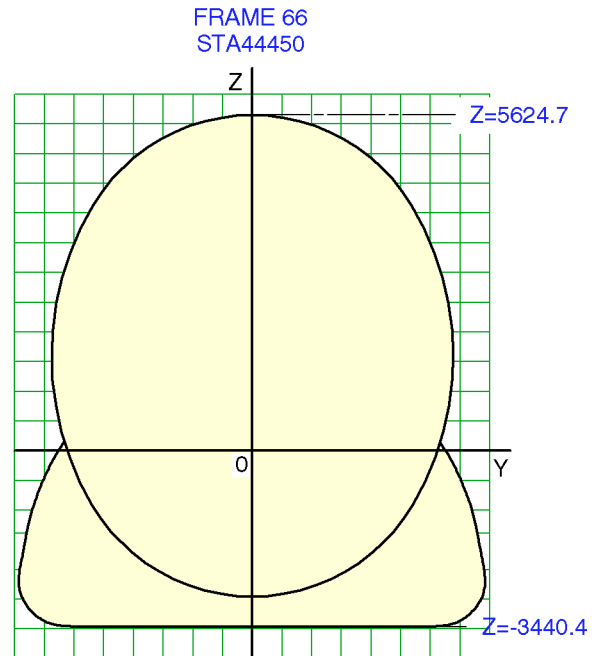
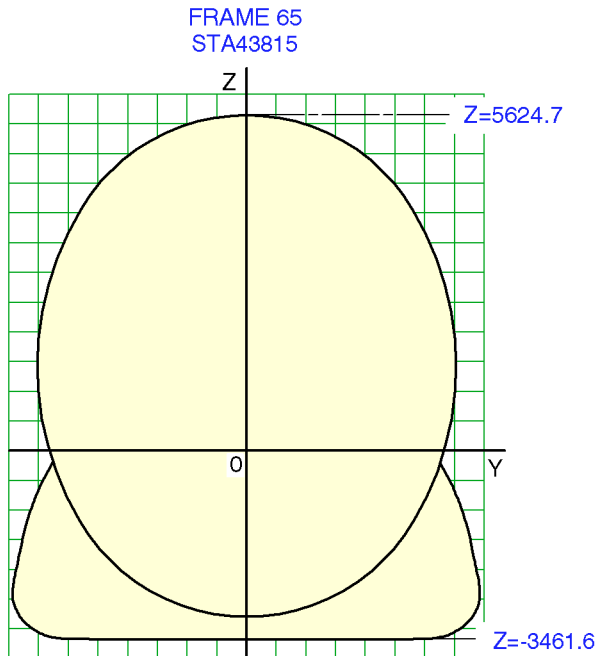
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SCALE (mm)
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Fuselage Cross-Section
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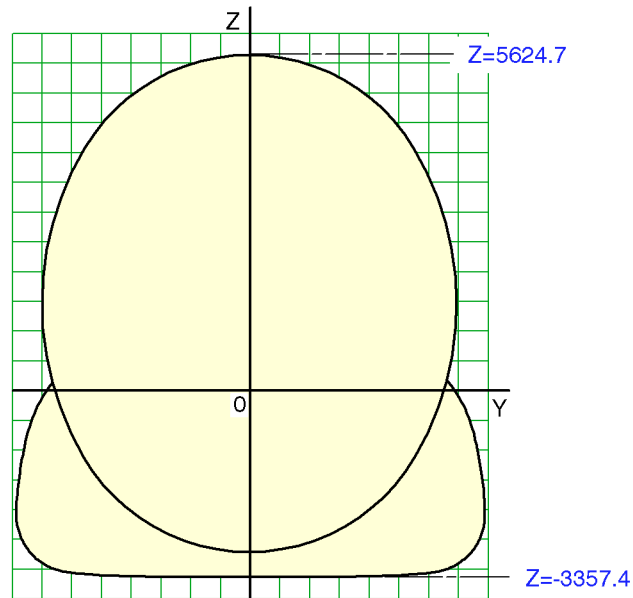
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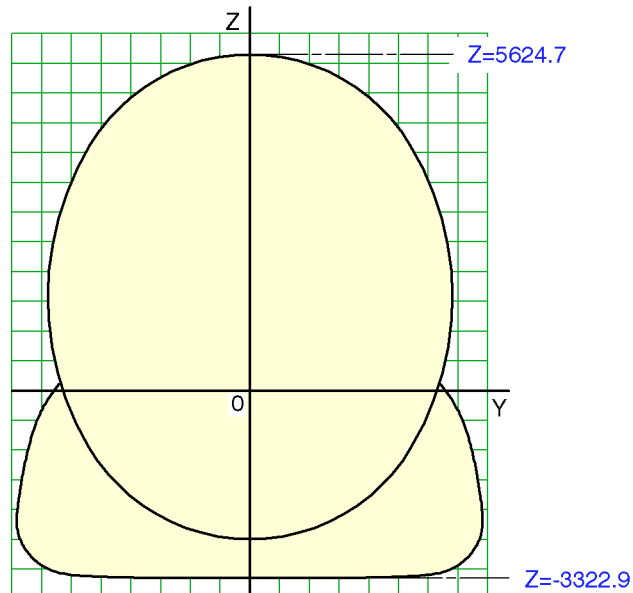
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STA46255



FRAME 70
STA46990



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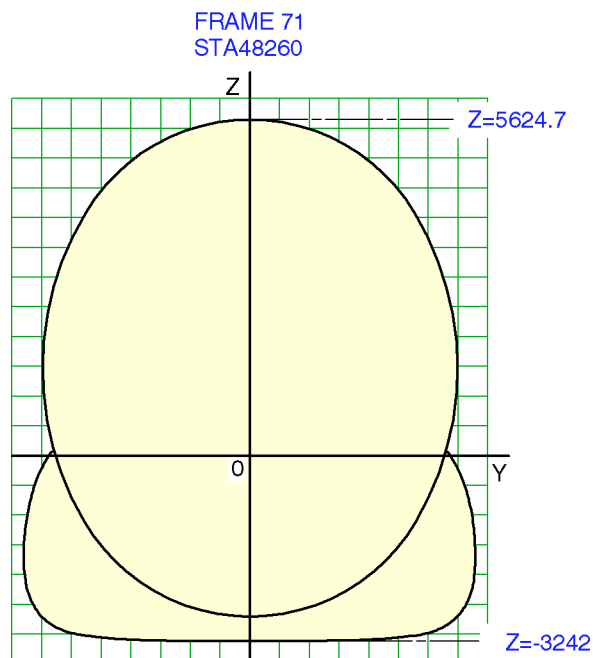
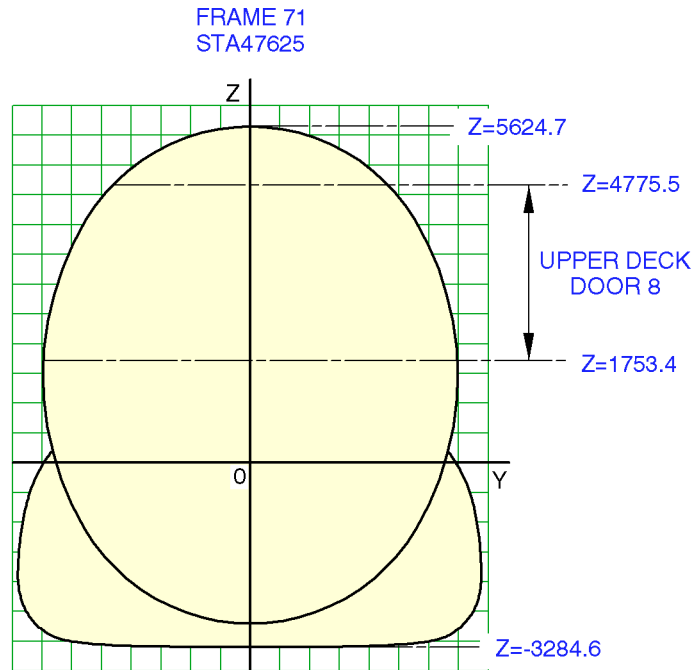
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SCALE (mm)
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Fuselage Cross-Section
Section 15/21
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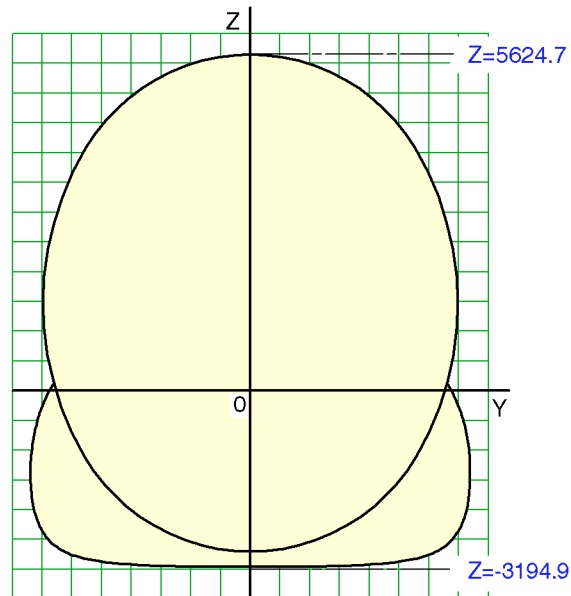
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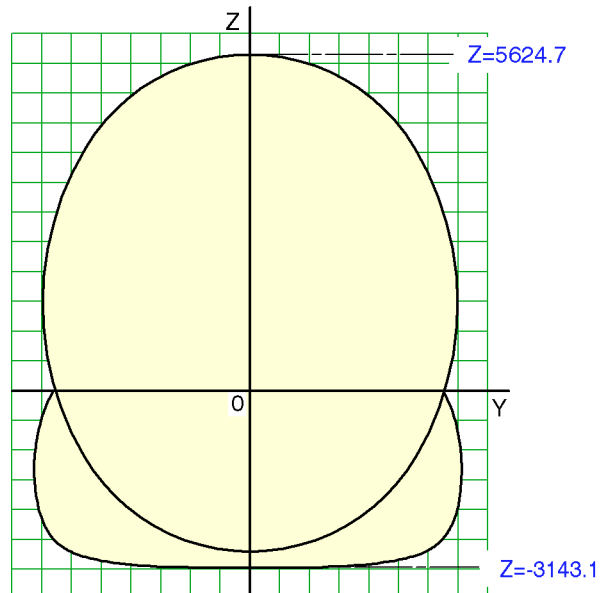
Fuselage Cross-Section
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FRAME 74
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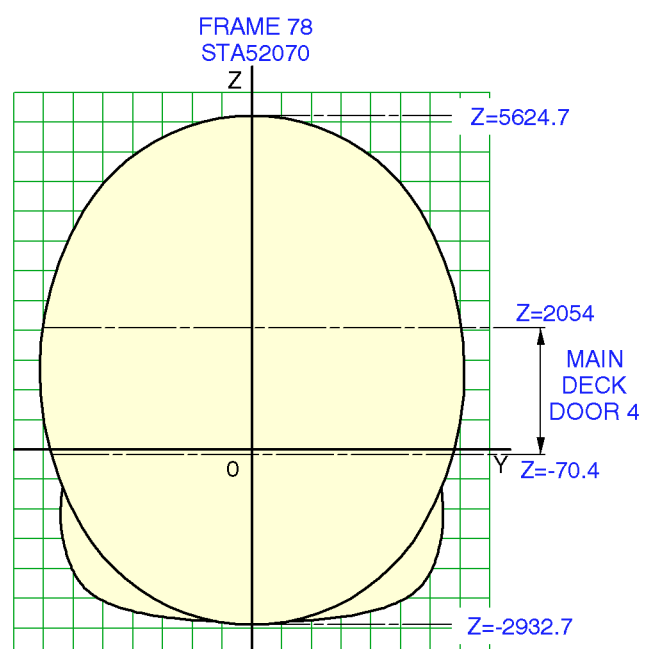
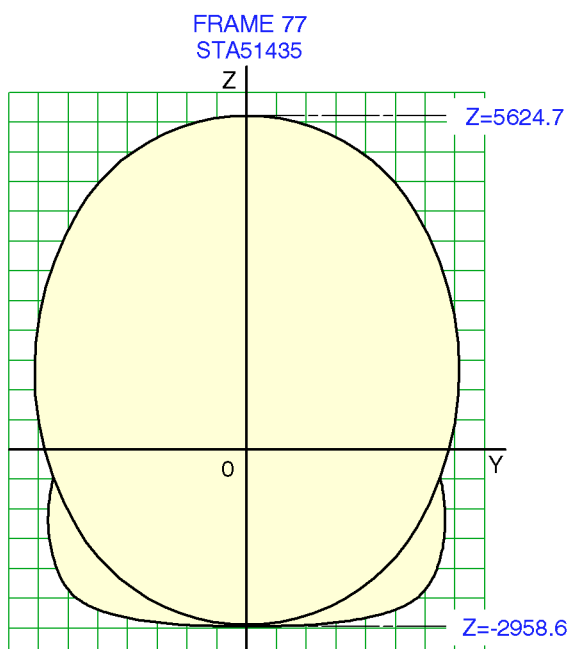
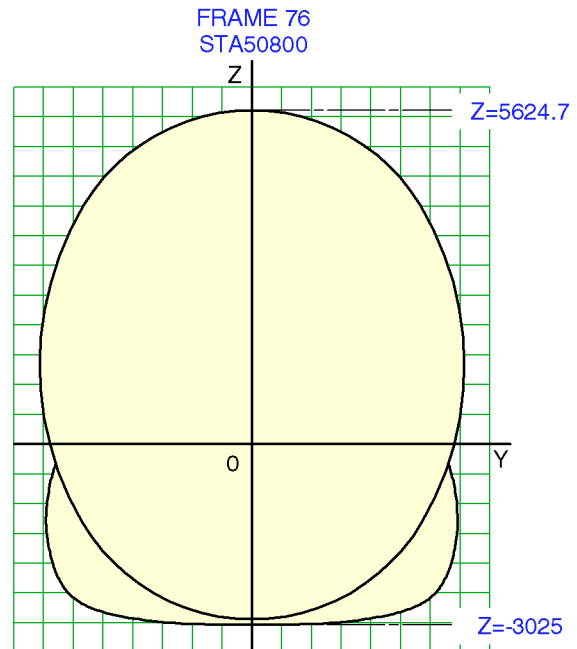
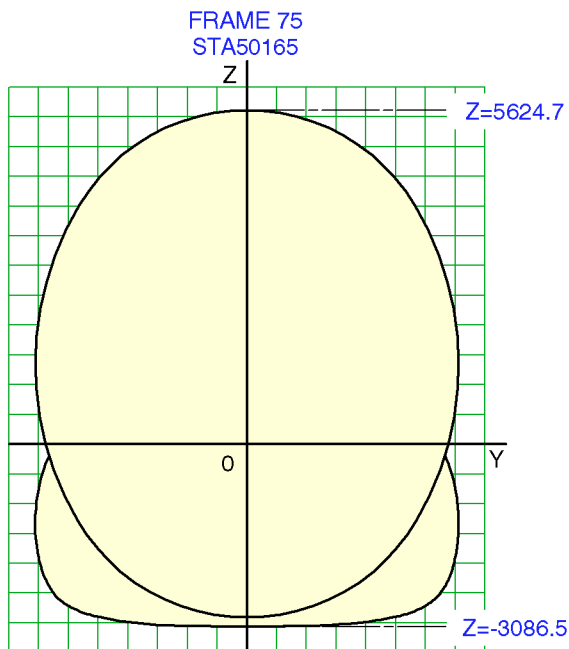
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SCALE (mm)
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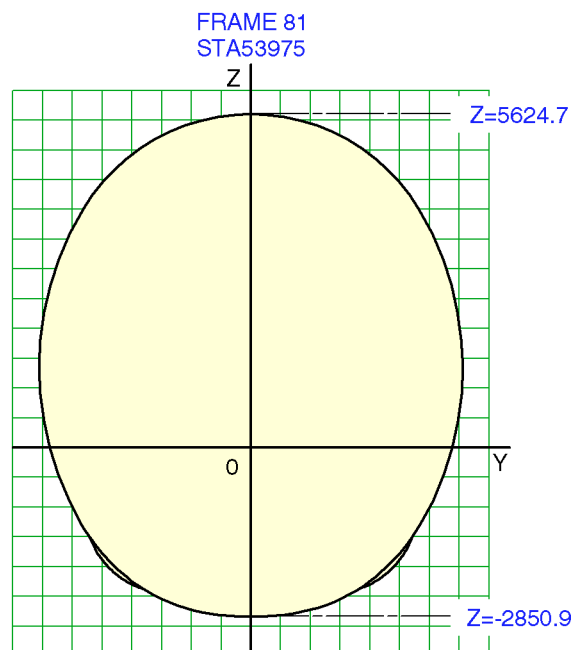
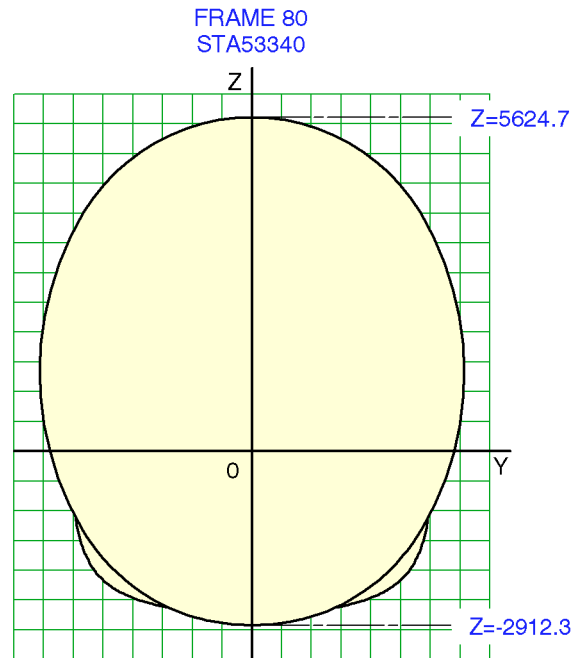
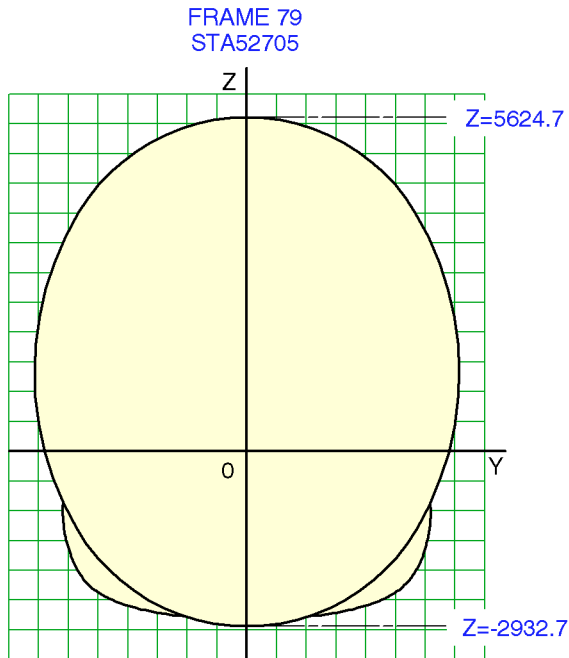
Fuselage Cross-Section
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Fuselage Cross-Section
Section 18
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SCALE (mm)
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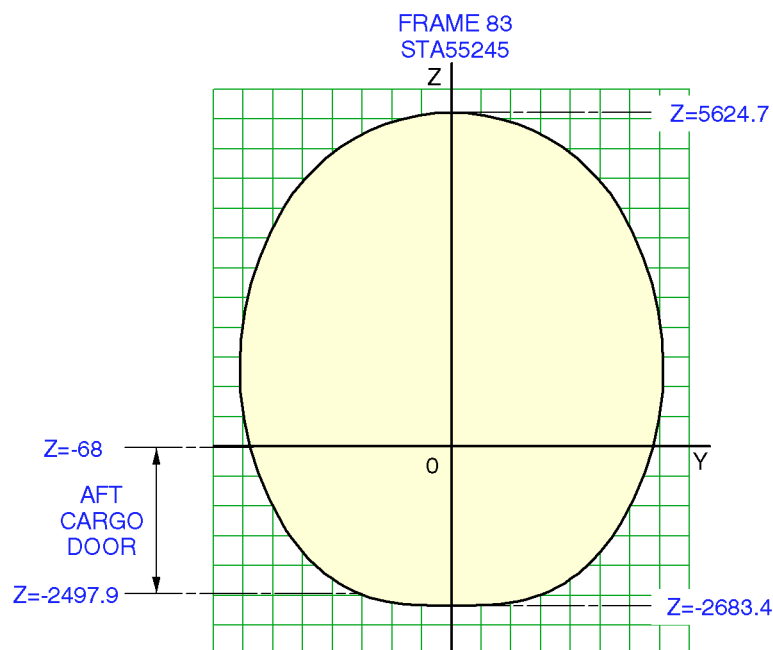
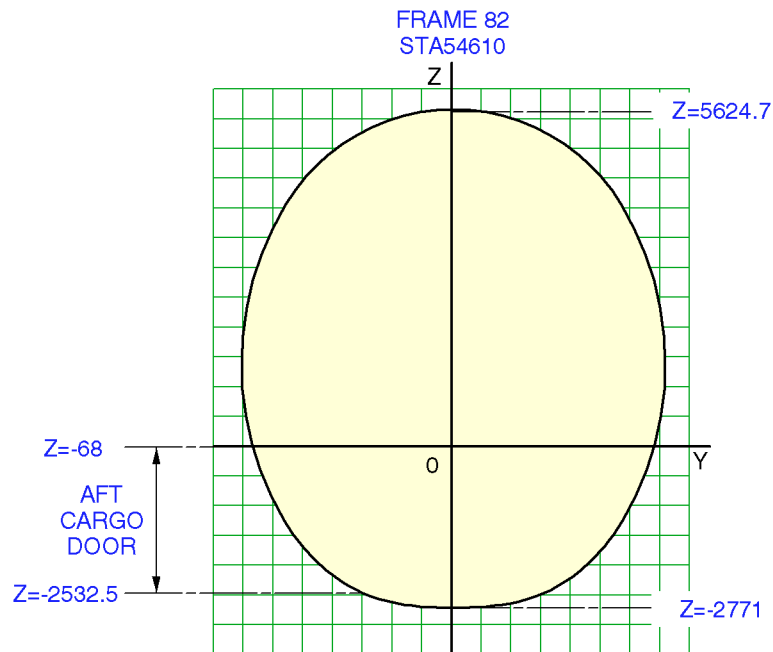
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Fuselage Cross-Section
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MAINTENANCE FACILITY PLANNING



SCALE (mm)
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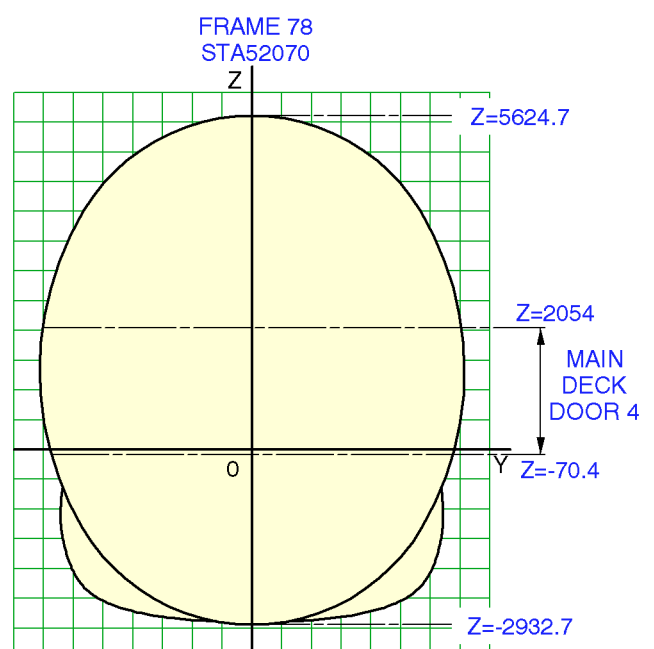
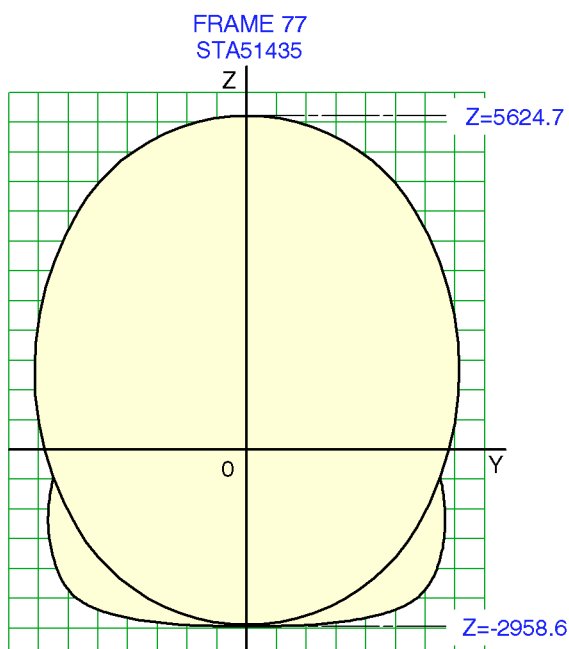
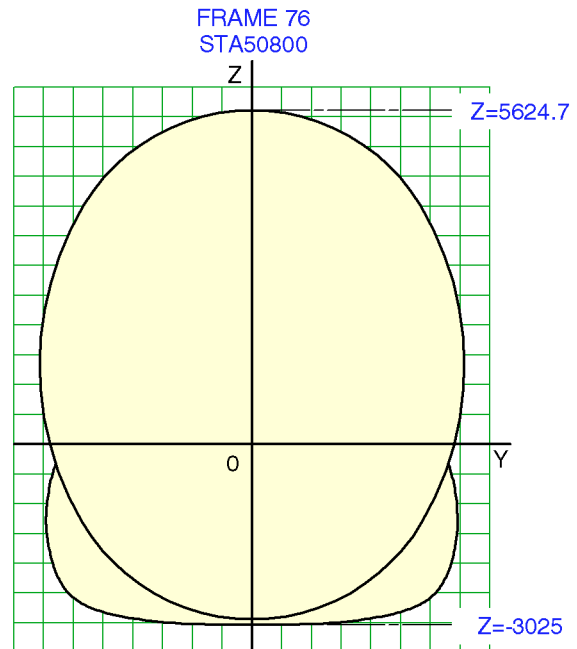
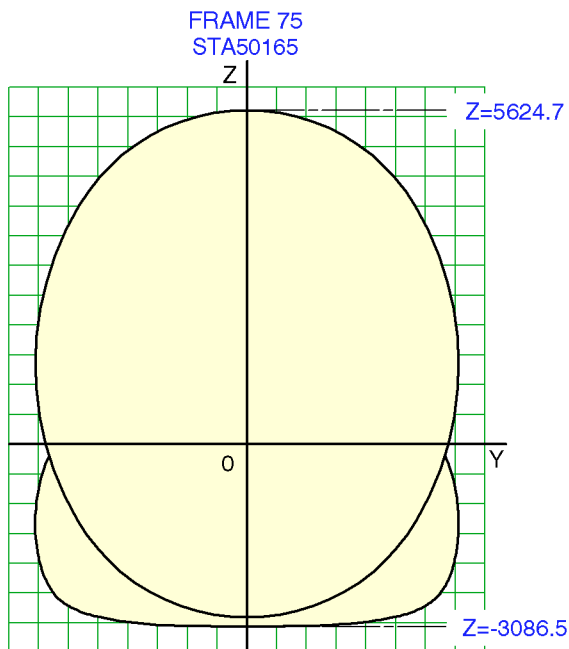
Fuselage Cross-Section
Section 18
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Fuselage Cross-Section
Section 18
A380-800F Models

MAINTENANCE FACILITY PLANNING



SCALE (mm)
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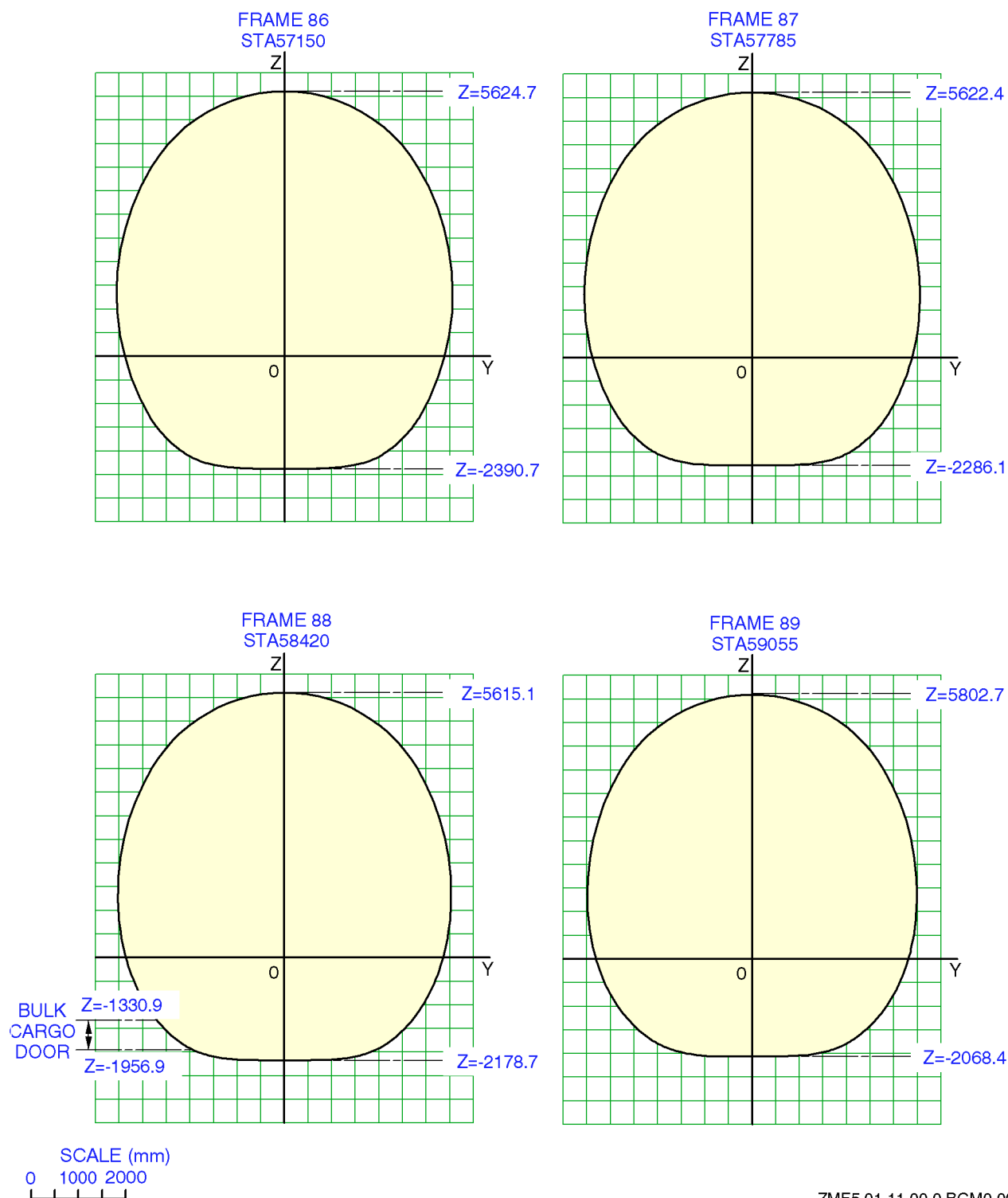
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Section 18
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Fuselage Cross-Section
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A380-800F Models

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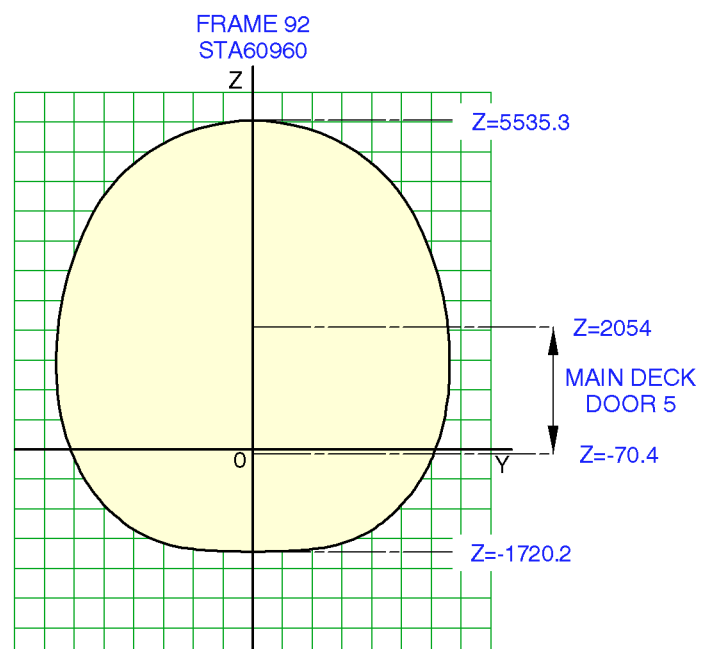
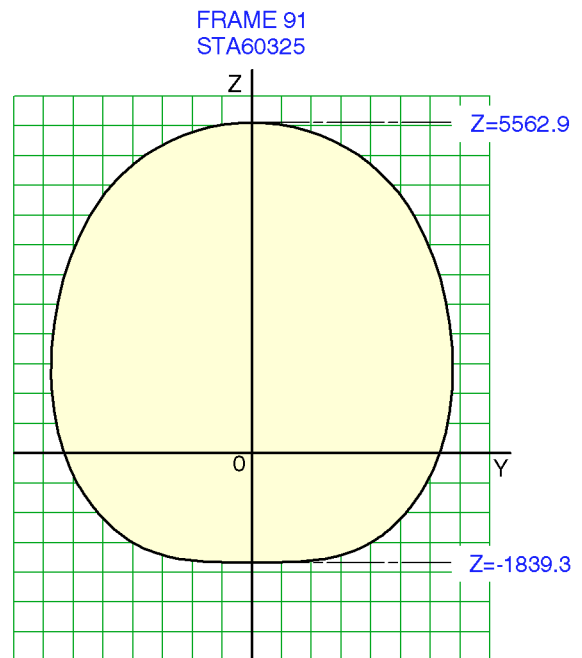
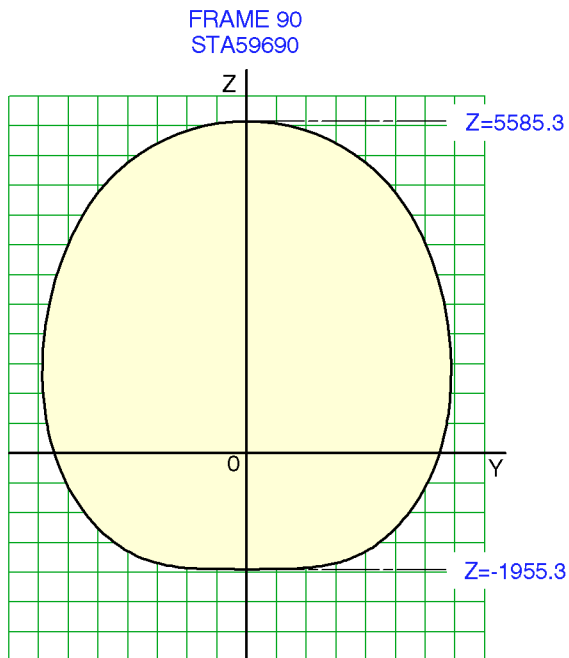
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Section 18
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Fuselage Cross-Section
Section 18
A380-800F Models

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SCALE (mm)
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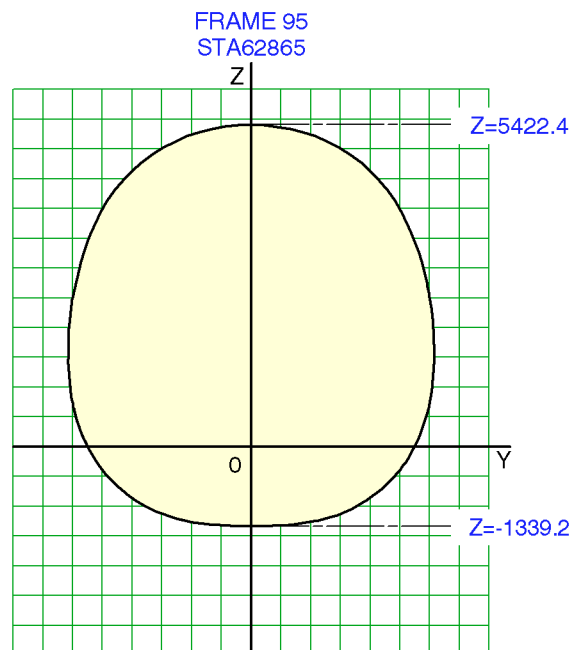
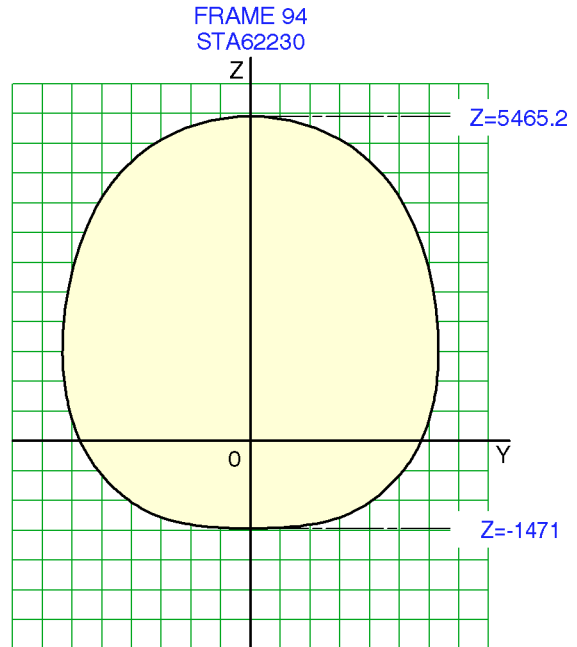
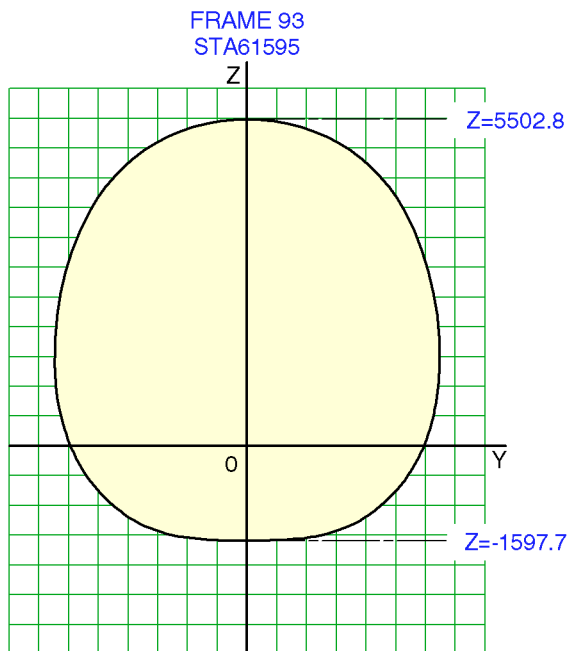
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SCALE (mm)
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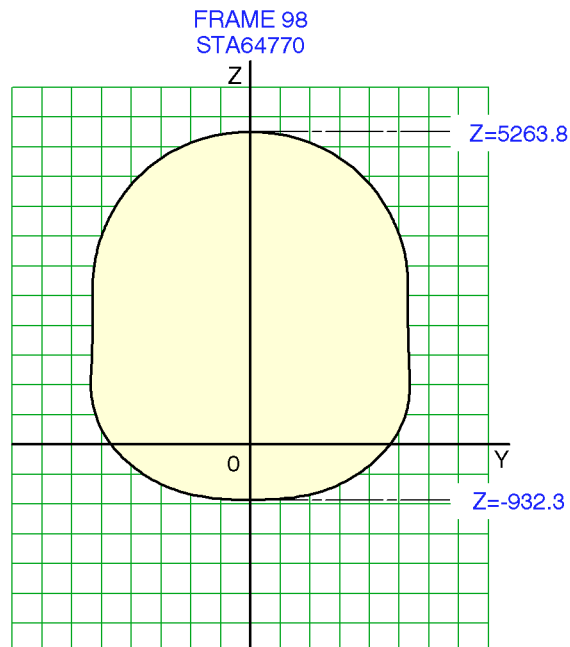
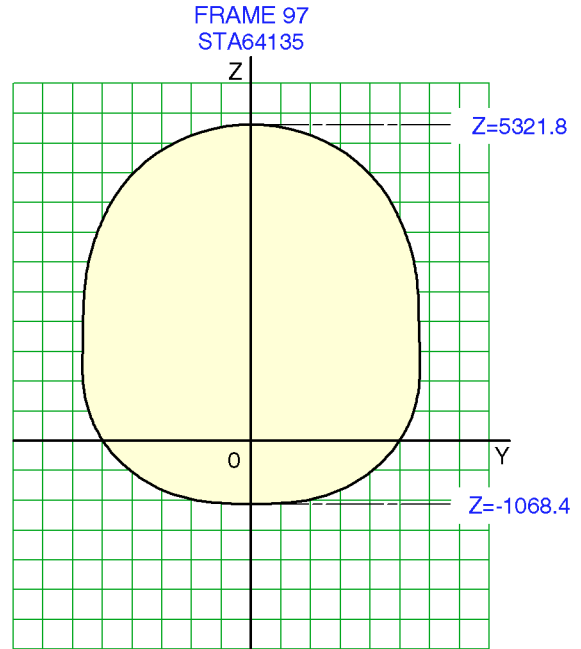
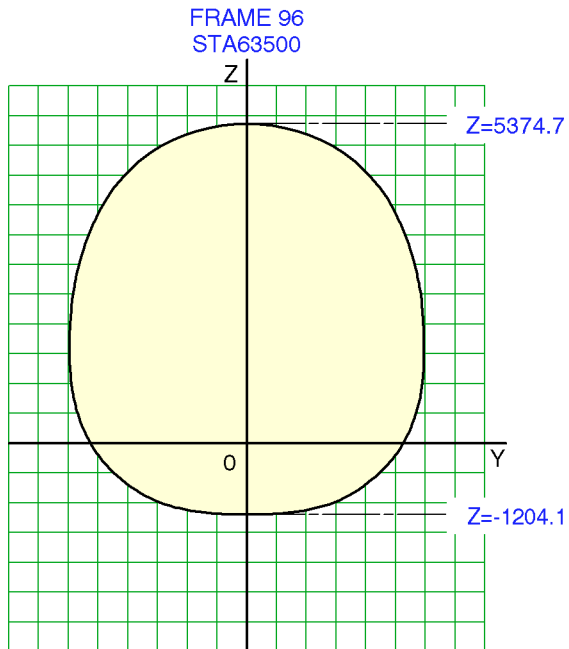
Fuselage Cross-Section
Section 18
A380-800 Models

MAINTENANCE FACILITY PLANNING

TBIL

Fuselage Cross-Section
Section 18
A380-800F Models

MAINTENANCE FACILITY PLANNING

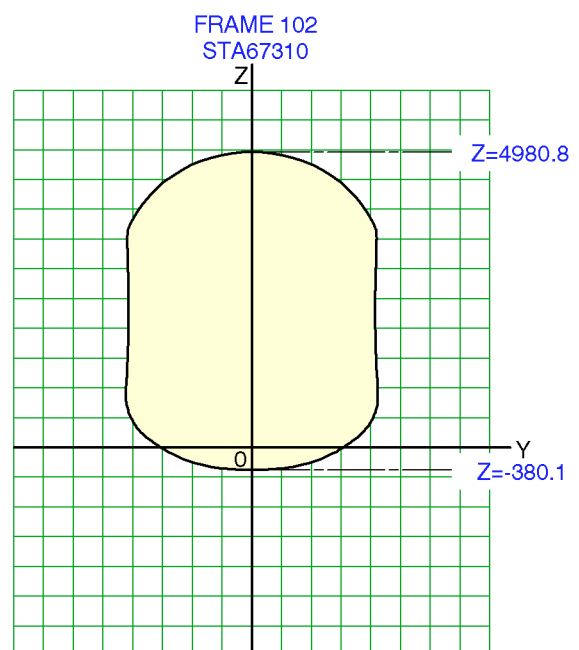
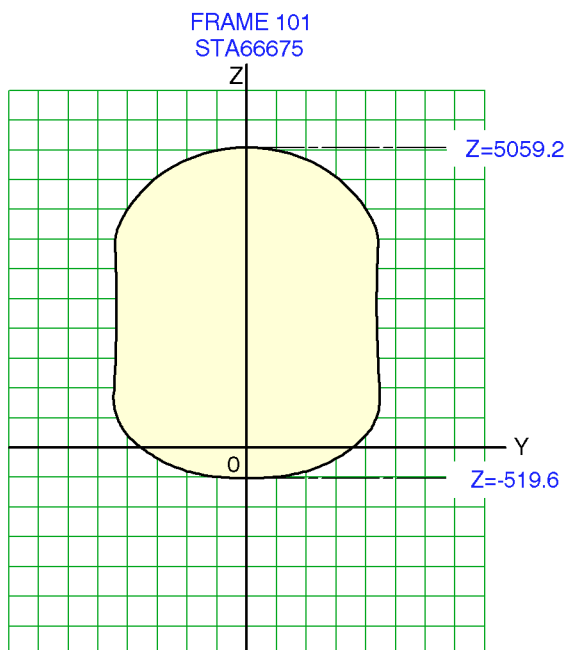
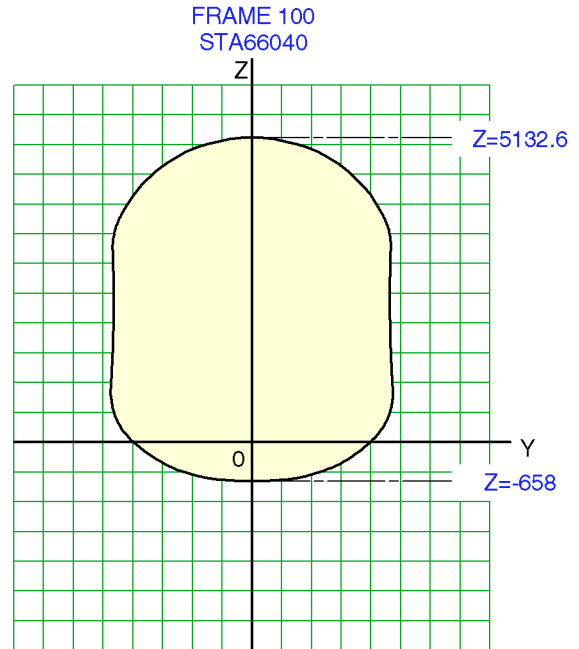
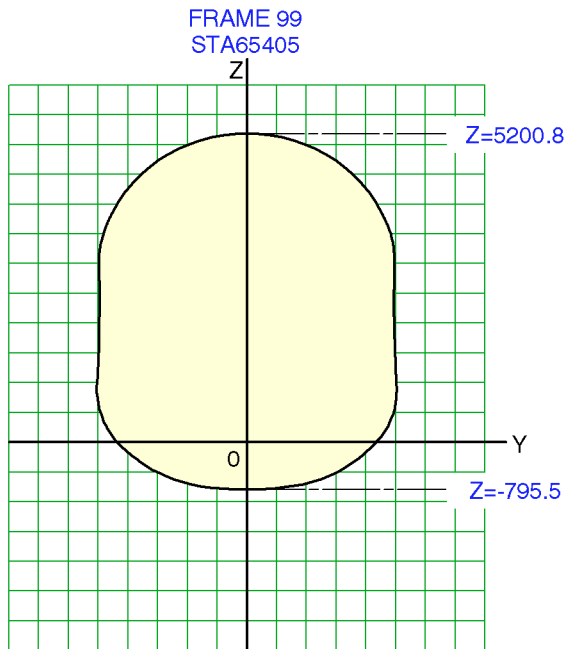


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Fuselage Cross-Section
Section 19
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

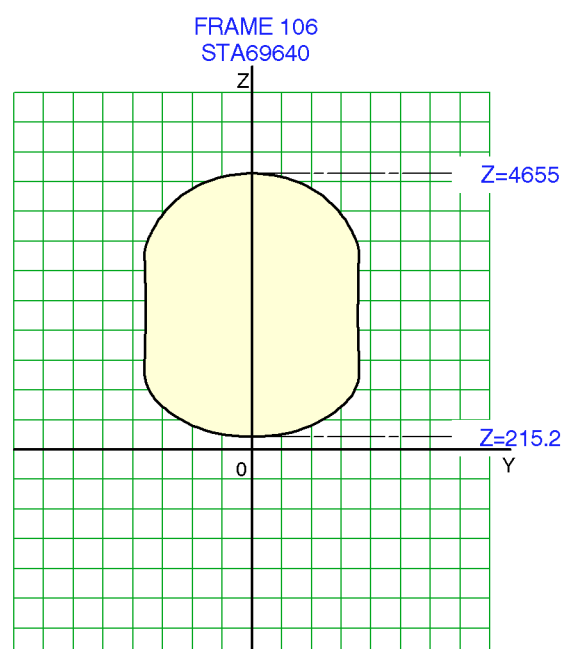
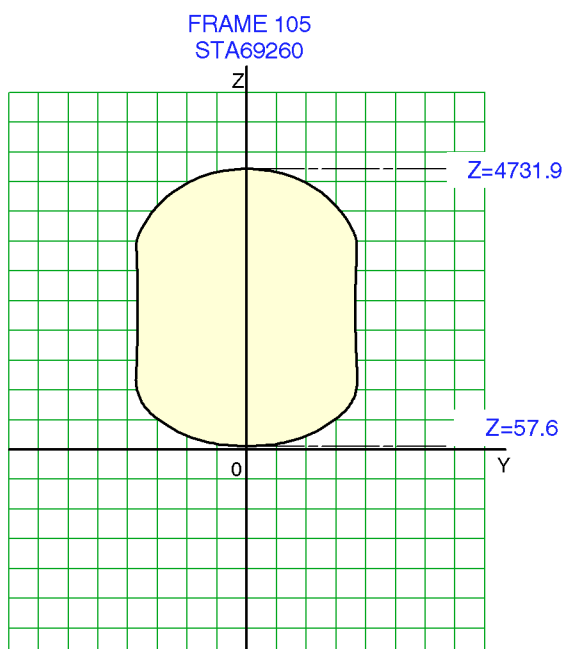
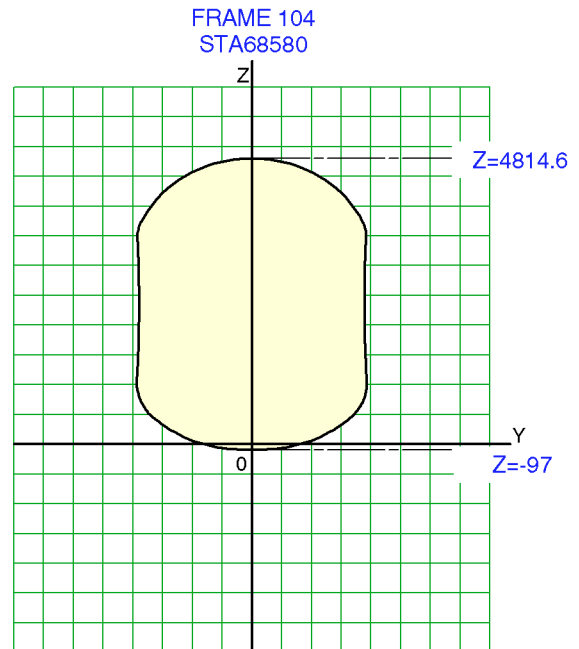
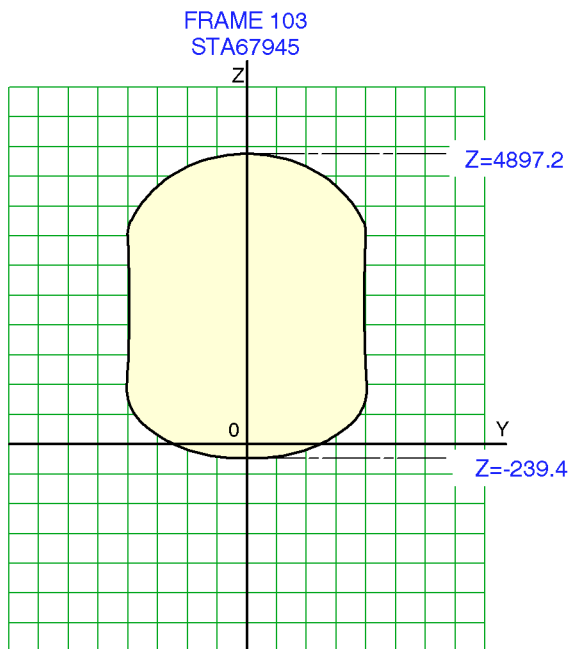


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Fuselage Cross-Section
Section 19
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

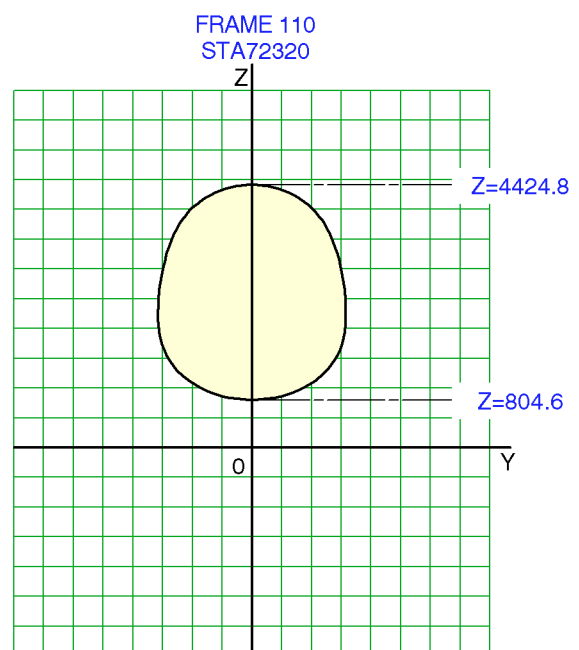
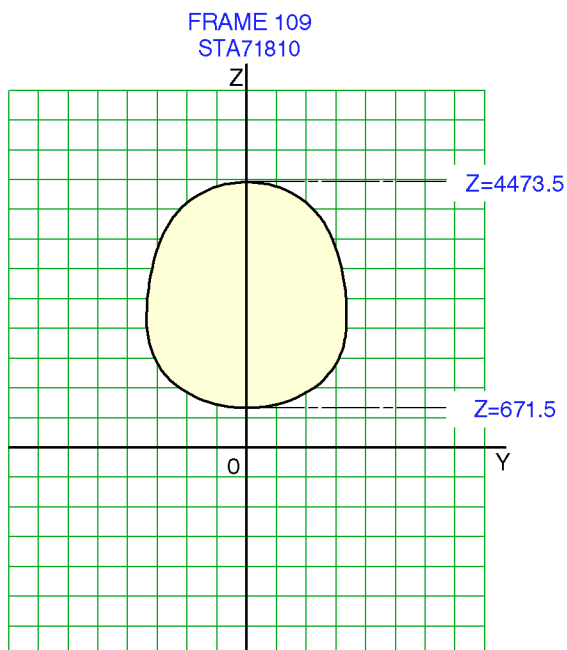
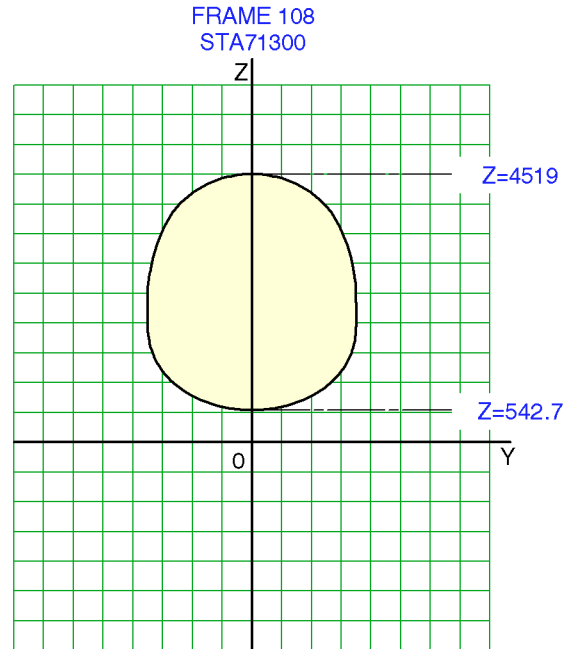
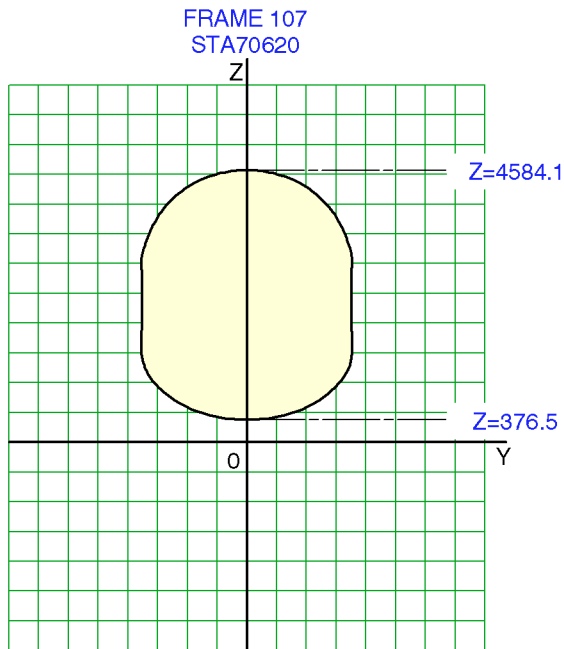


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Fuselage Cross-Section
Section 19
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

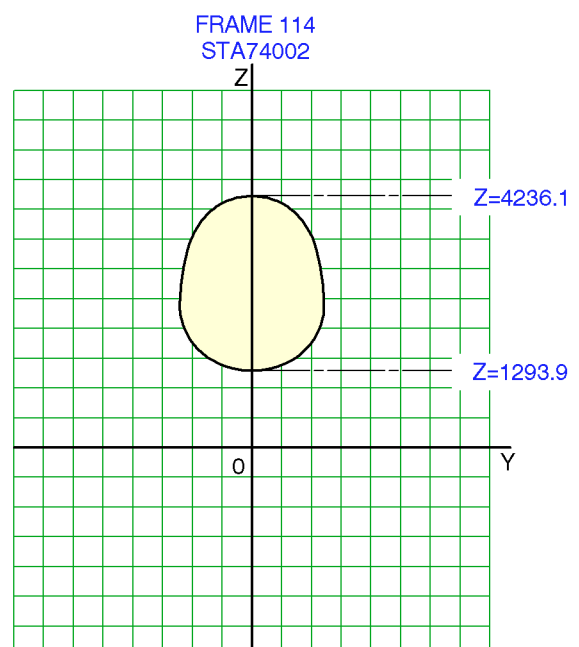
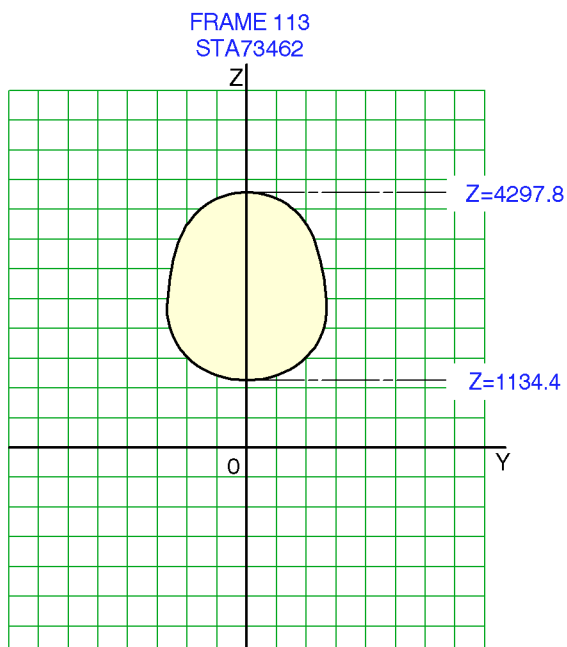
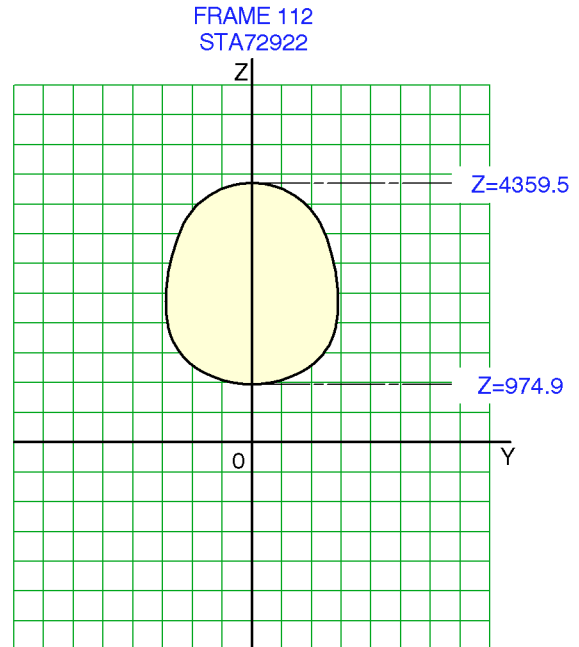
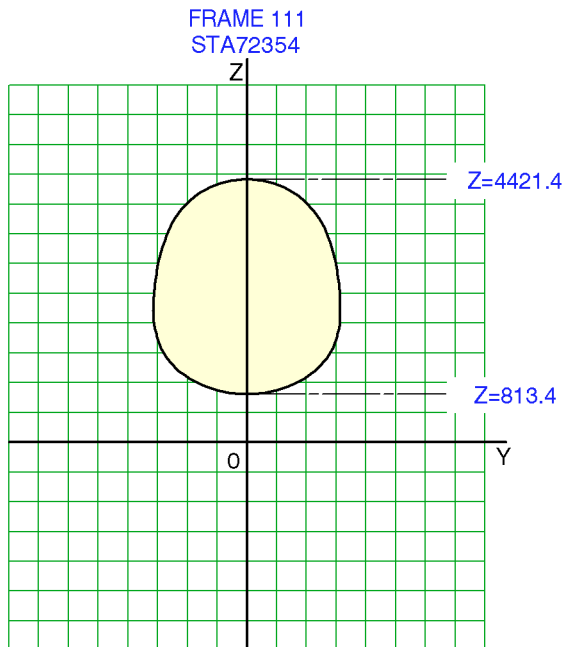


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Fuselage Cross-Section
Section 19
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

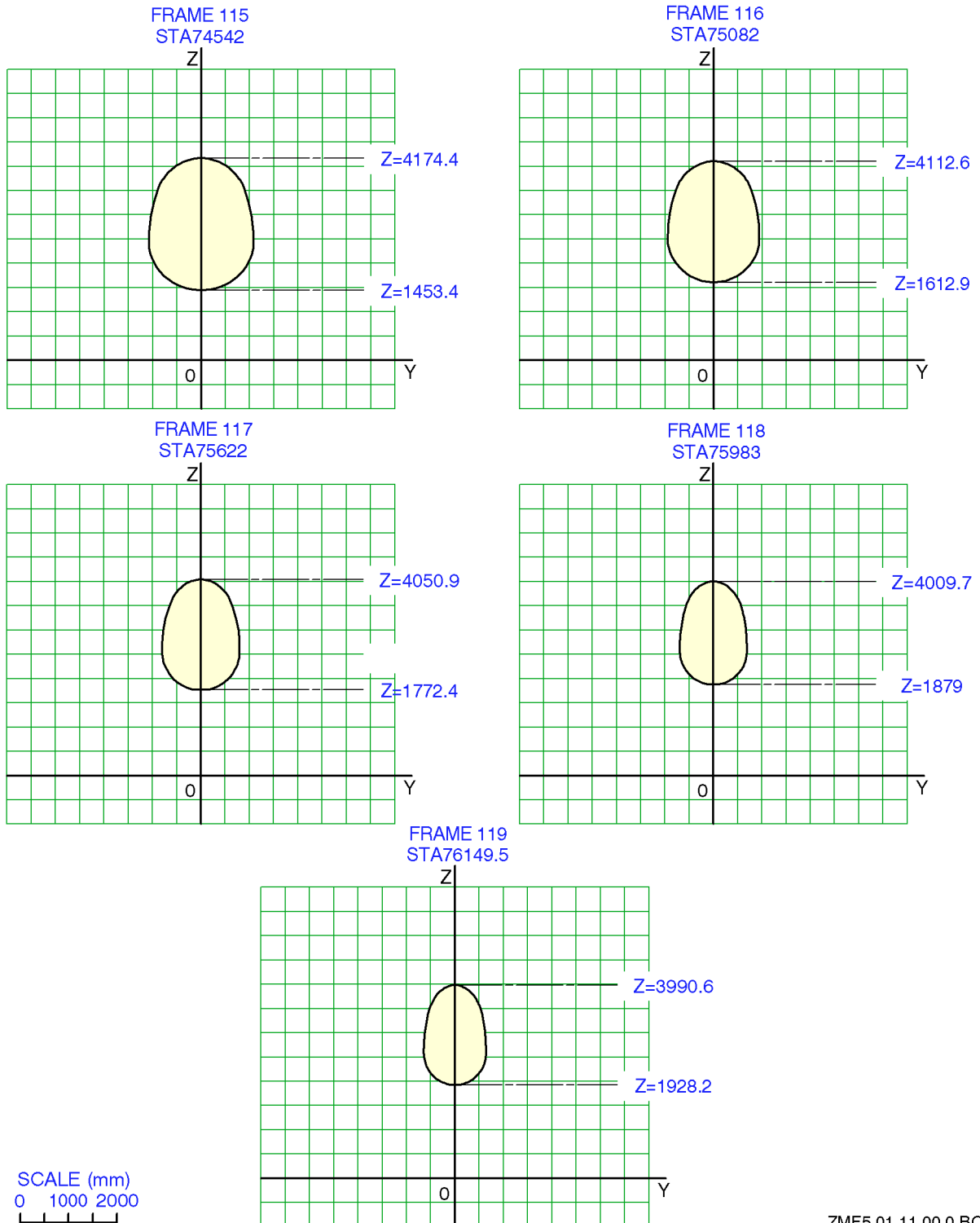


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Fuselage Cross-Section
Section 19.1
A380-800/800F Models

MAINTENANCE FACILITY PLANNING



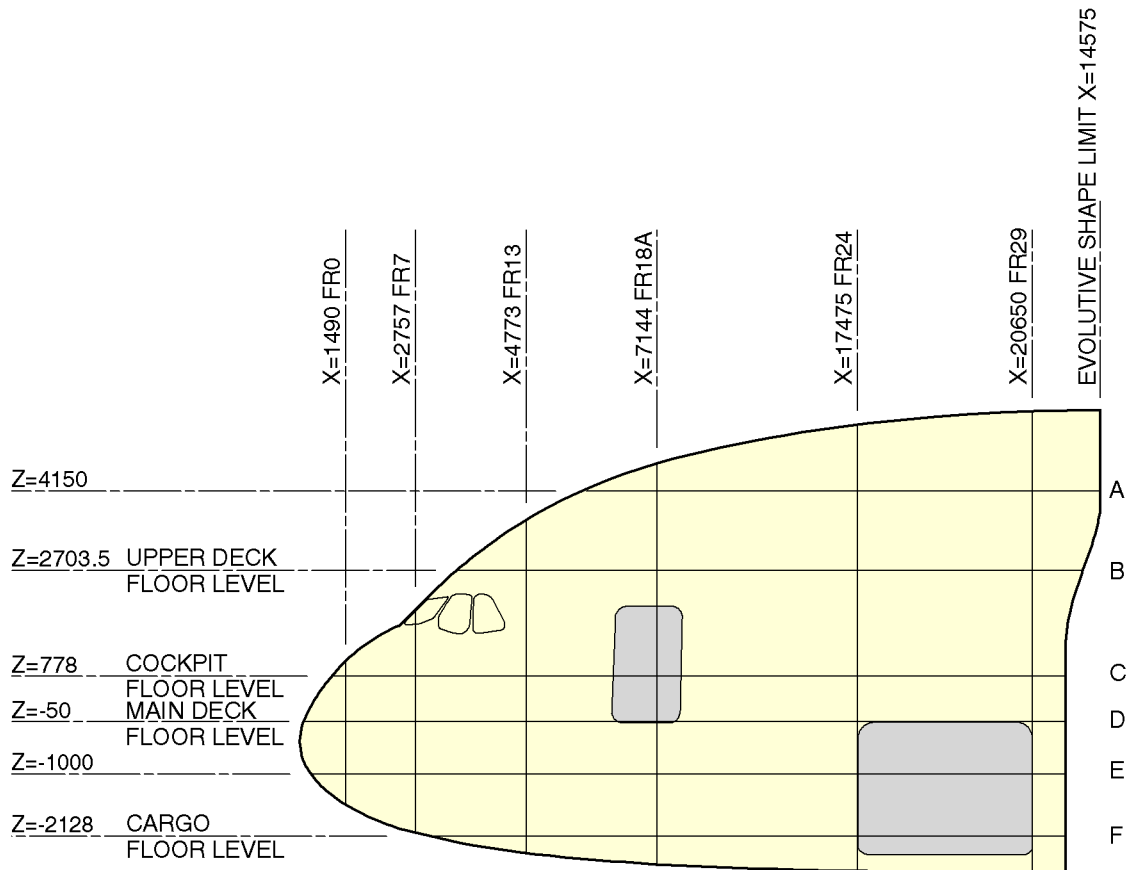
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**Fuselage Cross-Section
Section 19.1
A380-800/800F Models**

MAINTENANCE FACILITY PLANNING

NOSE CONTOURS

MAINTENANCE FACILITY PLANNING



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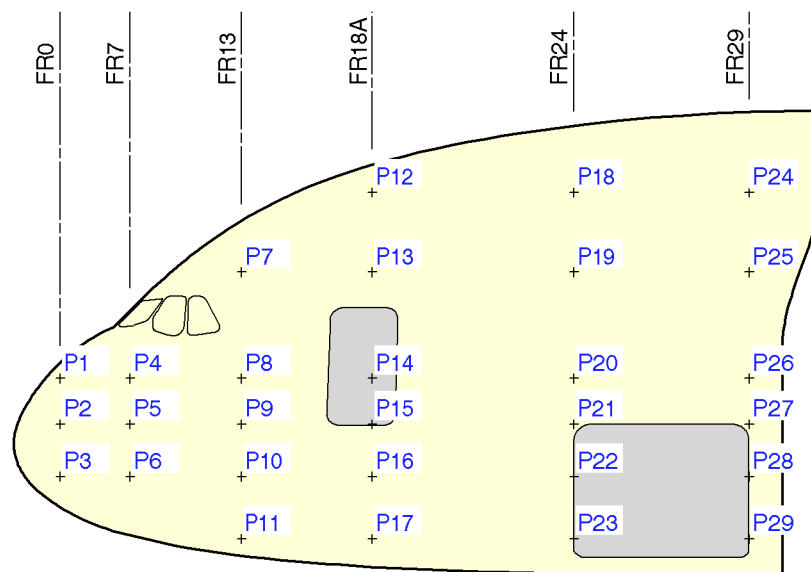
Nose Contours
Level Positions
A380-800 Models

MAINTENANCE FACILITY PLANNING

TBIL

Nose Contours
Level Positions
A380-800F Models

MAINTENANCE FACILITY PLANNING



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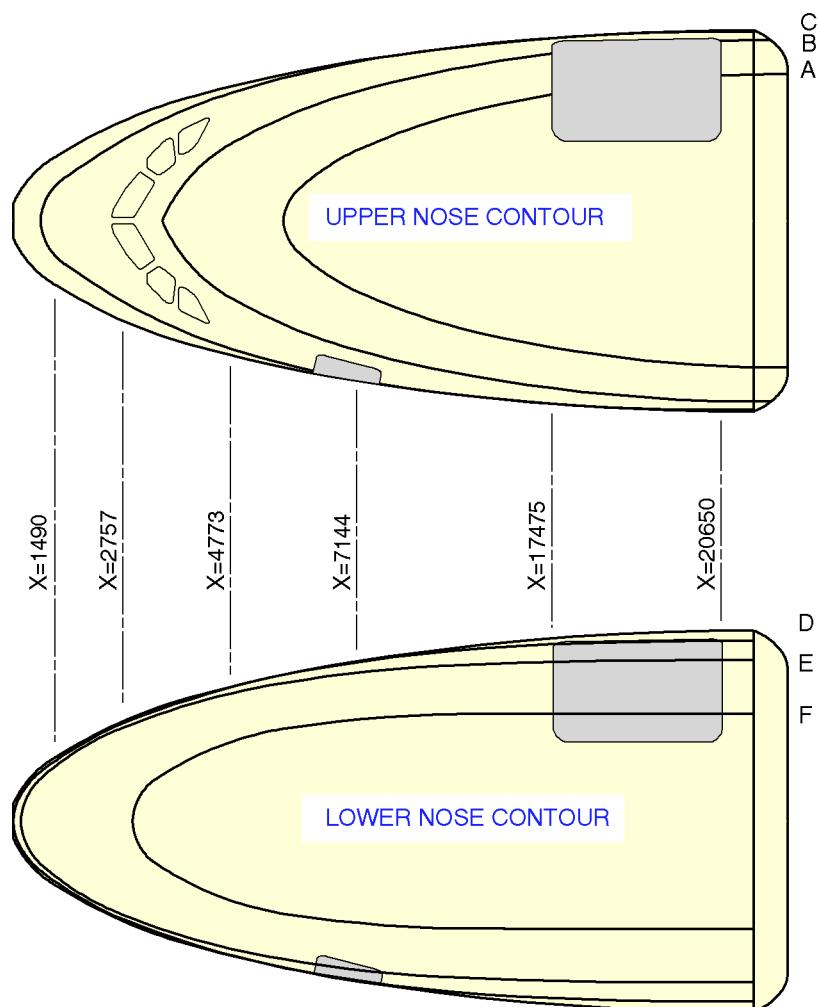
Nose Contours
A380-800 Models

MAINTENANCE FACILITY PLANNING

TBIL

Nose Contours
A380-800F Models

MAINTENANCE FACILITY PLANNING



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Nose Contours
A380-800 Models

MAINTENANCE FACILITY PLANNING

TBIL

Nose Contours
A380-800F Models

MAINTENANCE FACILITY PLANNING

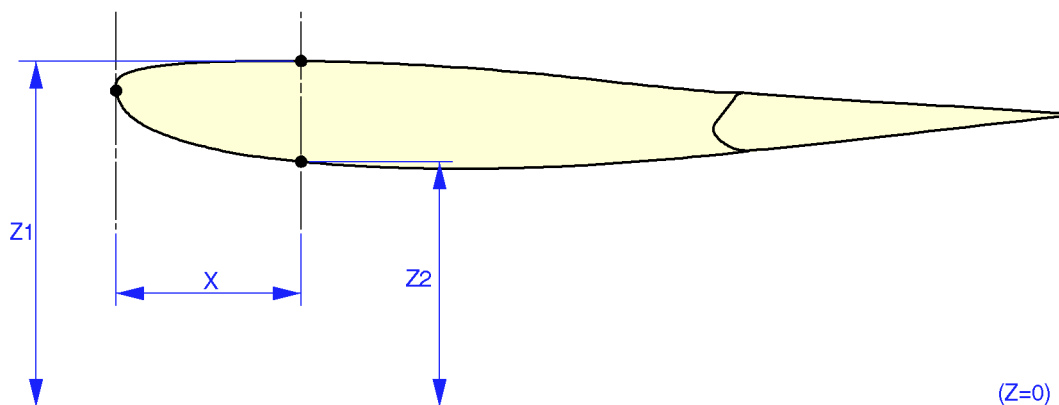
HORIZONTAL STABILIZER CONTOURS

Horizontal stabilizer contours shown in this subject have been selected to assist in designing stands or equipment. These levels provide access to important maintenance areas such as servo controls, elevator hinges, trimmable horizontal stabilizer hinges, leading edge, trailing edge.

The contours given are on the surface of body skin ; clearance space allowances will have to be made as required.

Ground clearance will depend on whether the airplane is on jacks or on wheels and in this case what the CG and weight conditions are.

MAINTENANCE FACILITY PLANNING

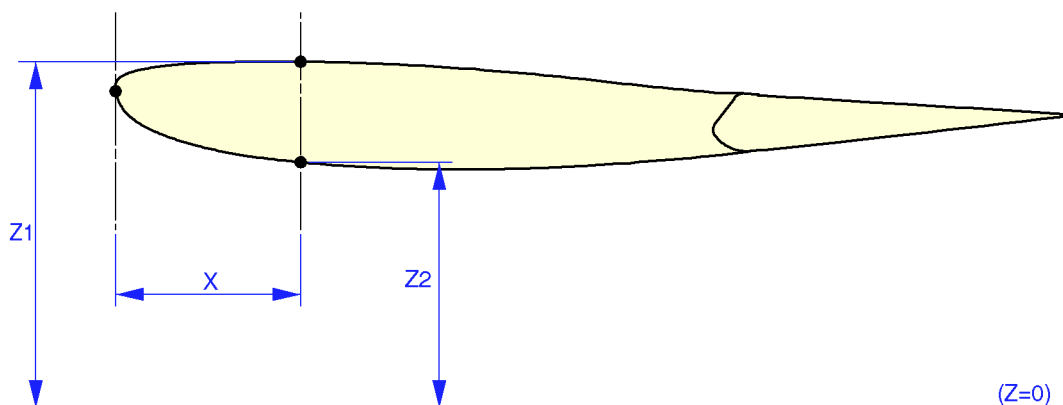


Y		X							
mm		0		750		1500		2250	
in		0		29.53		59.06		88.58	
		Z1	Z2	Z1	Z2	Z1	Z2	Z1	Z2
mm	2500	2671	2671	2957	2221	2983	2114	2970	2060
in	98.43	105.14	105.14	116.40	87.46	117.43	83.23	116.92	81.10
mm	3500	2782	2782	3030	2290	3051	2237	3036	2204
in	137.80	109.55	109.55	119.30	90.15	120.11	88.08	119.53	86.78
mm	4500	2894	2894	3107	2503	3123	2408	3107	2362
in	177.17	113.92	113.92	122.33	98.53	122.95	94.81	122.34	92.98
mm	5500	3003	3003	3187	2635	3199	2546	3184	2503
in	216.54	118.22	118.22	125.47	103.75	125.96	100.25	125.34	98.55
mm	6500	3108	3108	3281	2755	3289	2670	3270	2630
in	255.91	122.37	122.37	129.16	108.45	129.49	105.11	128.74	103.55
mm	7500	3213	3213	3376	2872	3380	2791	3357	2755
in	295.28	126.51	126.51	132.93	113.07	133.08	109.87	132.15	108.45
mm	8500	3319	3319	3472	2989	3471	2912	3442	2879
in	334.65	130.65	130.65	136.69	117.69	136.65	114.64	135.52	113.36
mm	9500	3424	3424	3567	3107	3561	3033	3526	3005
in	374.02	134.80	134.80	140.42	122.32	140.18	119.42	138.84	118.30
mm	10500	3529	3529	3661	3225	3649	3155	3609	3131
in	413.39	138.94	138.94	144.14	126.95	143.67	124.21	142.08	123.26
mm	11500	3634	3634	3755	3342	3737	3277	3689	3257
in	452.76	143.08	143.08	147.83	131.59	147.12	129.00	145.24	128.24
mm	12500	3739	3739	3848	3460	3823	3399	3767	3385
in	492.13	147.22	147.22	151.50	136.23	150.51	133.81	148.29	133.26
mm	13500	3825	3825	3923	3567	3891	3514	3825	3511
in	531.50	150.60	150.60	154.45	140.42	153.20	138.35	150.57	138.23

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Horizontal Stabilizer Contours
A380-800/800F Models
(Sheet 1)

MAINTENANCE FACILITY PLANNING

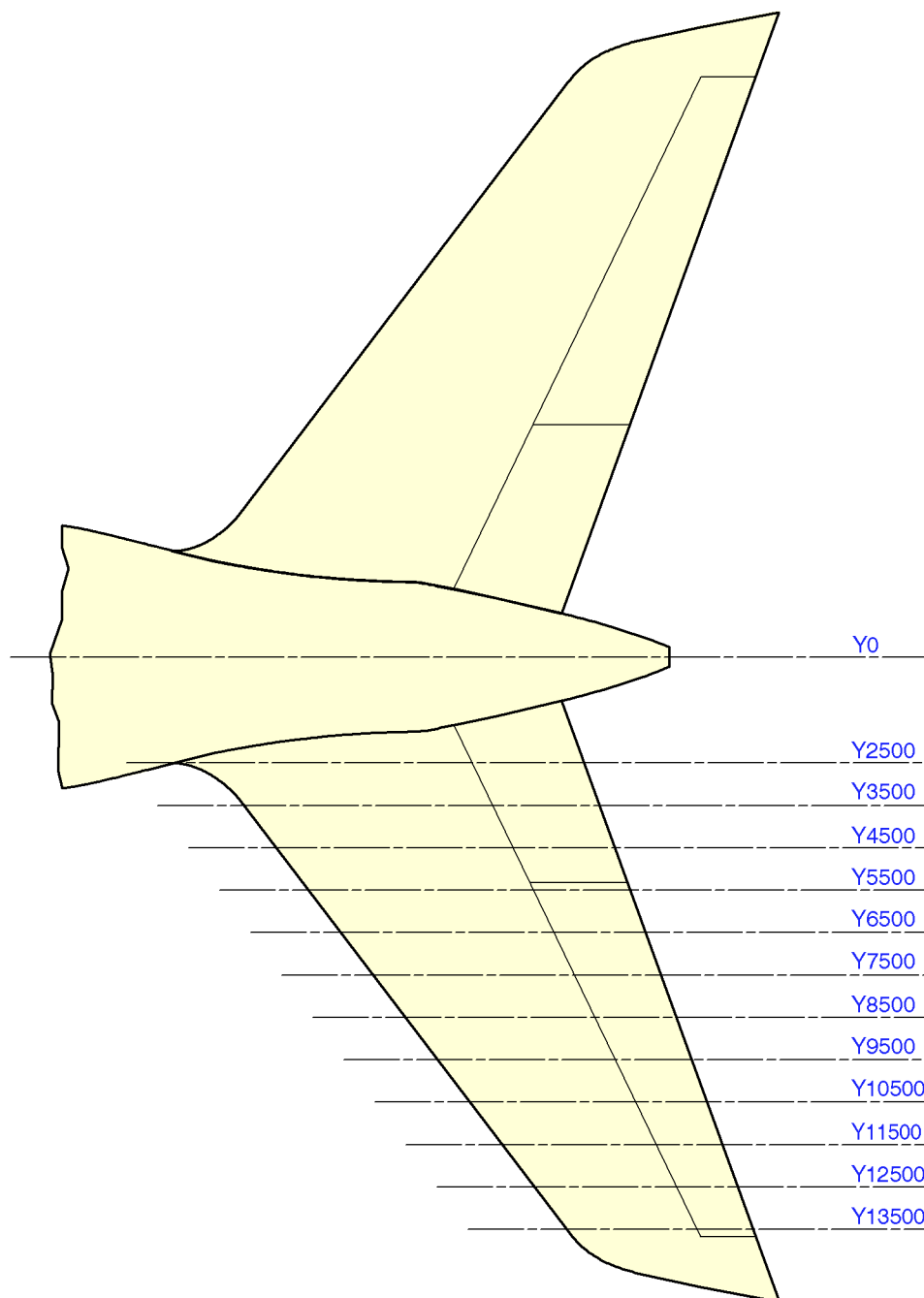


Y		X							
mm		3000		3750		4500		5250	
in		118.11		147.64		177.17		206.69	
		Z1	Z2	Z1	Z2	Z1	Z2	Z1	Z2
mm	2500	2931	2039	2875	2046	2807	2077	2735	2130
in	98.43	115.41	80.29	113.18	80.55	110.51	81.79	107.68	83.84
mm	3500	2998	2195	2943	2213	2876	2264	2805	2364
in	137.80	118.03	86.43	115.86	87.14	113.21	89.12	110.43	93.07
mm	4500	3071	2346	3016	2357	2948	2392	2880	2445
in	177.17	120.90	92.37	118.76	92.80	116.06	94.17	113.37	96.26
mm	5500	3148	2490	3093	2504	3022	2541	2957	2595
in	216.54	123.95	98.05	121.79	98.59	118.98	100.06	116.42	102.15
mm	6500	3230	2621	3170	2640	3097	2681	3035	2735
in	255.91	127.18	103.20	124.81	103.92	121.91	105.55	119.50	107.70
mm	7500	3312	2750	3245	2774	3172	2819	3114	2874
in	295.28	130.38	108.27	127.74	109.20	124.89	110.98	122.60	113.16
mm	8500	3391	2880	3318	2909	3249	2957	3192	3012
in	334.65	133.49	113.38	130.61	114.52	127.90	116.42	125.68	118.59
mm	9500	3468	3010	3390	3045	3326	3095	3269	3149
in	374.02	136.52	118.52	133.47	119.87	130.93	121.84	128.70	123.97
mm	10500	3542	3142	3464	3181	3402	3231	3343	3284
in	413.39	139.44	123.71	136.40	125.23	133.95	127.21	131.63	129.29
mm	11500	3613	3275	3539	3317	3477	3366	---	---
in	452.76	142.26	128.93	139.34	130.59	136.91	132.52	---	---
mm	12500	3684	3408	3614	3452	3550	3499	---	---
in	492.13	145.04	134.19	142.28	135.89	139.76	137.74	---	---
mm	13500	3743	3544	3676	3588	---	---	---	---
in	531.50	147.35	139.52	144.74	141.28	---	---	---	---

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Horizontal Stabilizer Contours
A380-800/800F Models
(Sheet 2)

MAINTENANCE FACILITY PLANNING



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Horizontal Stabilizer Contours
Level Positions

MAINTENANCE FACILITY PLANNING

TAIL CONTOURS

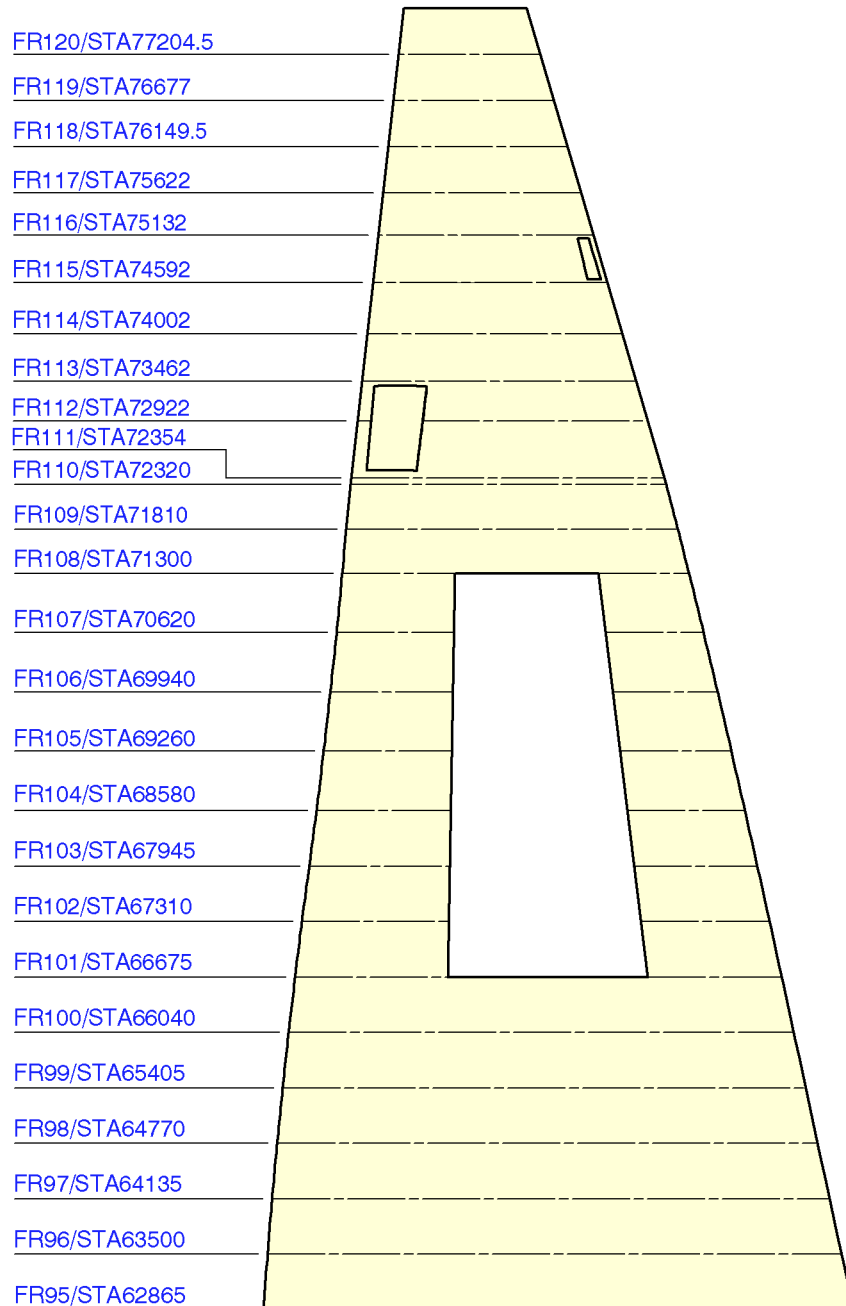
Tail contours shown in this section have been selected to assist in designing stands or equipment.

The levels provide access to maintenance areas such as APU, aft passenger/crew doors.

The contours given are on the surface of body skin ; clearance allowances will have to be made as required.

Ground clearances will depend on whether the airplane is on jacks or on wheels in this last case what the C.G and weight conditions are.

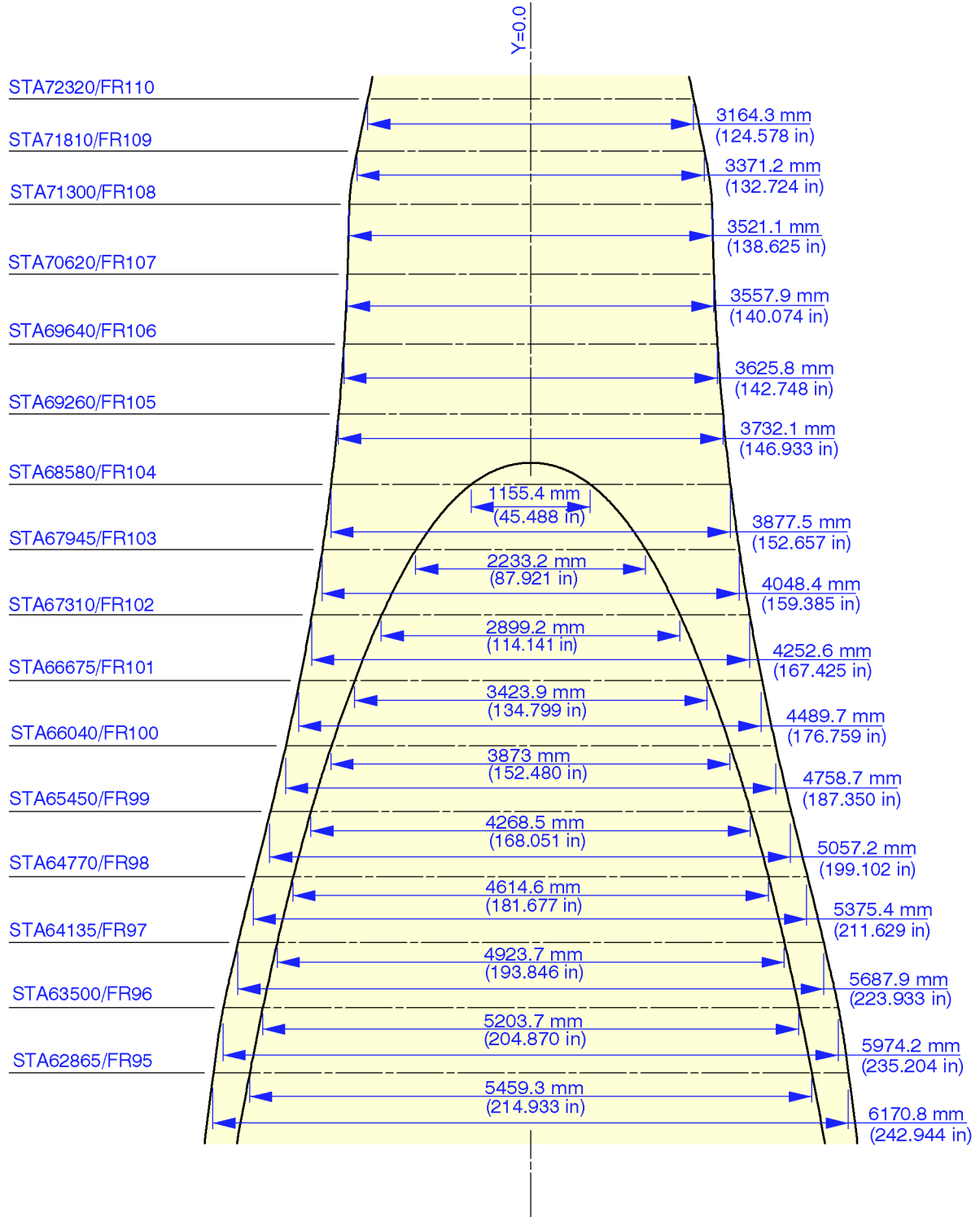
MAINTENANCE FACILITY PLANNING



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Tails Contours
A380-800/800F Models

MAINTENANCE FACILITY PLANNING



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Tails Contours
Level Position
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

WING PROFILE

1. General

Positions and dimensions of the wing ribs, from the centerline of the aircraft are given in Figures 1 and 2.

Figure 2 also shows a typical aerofoil cross-section with dimensions for Y and Z.

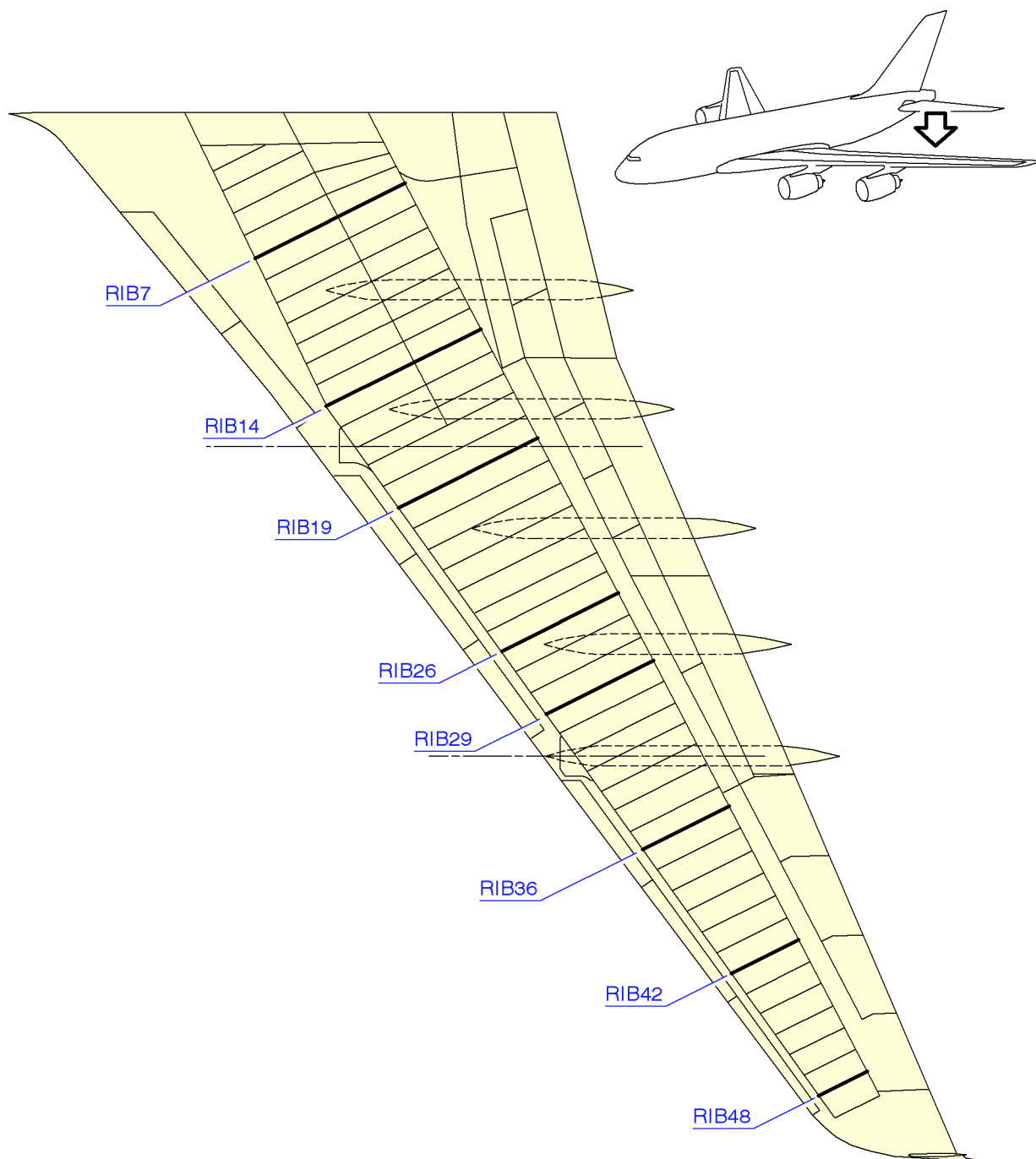
The selection of these rib positions along the wing is to give the aircraft operator the necessary heights to make aircraft servicing stands, supports or trestles.

The dimensions for the wing profiles (dimensions Y and Z) at each of the rib positions are given in para. 2. to 9.

These dimensions (when plotted from datum VZ0) give the shape of the aerofoil cross-section and full slope of the wing from wingtip to wingroot.

All the dimensions for the profiles are taken from the local datum position (at the wing leading edge, with the slats retracted) and from the horizontal datum VZ0.

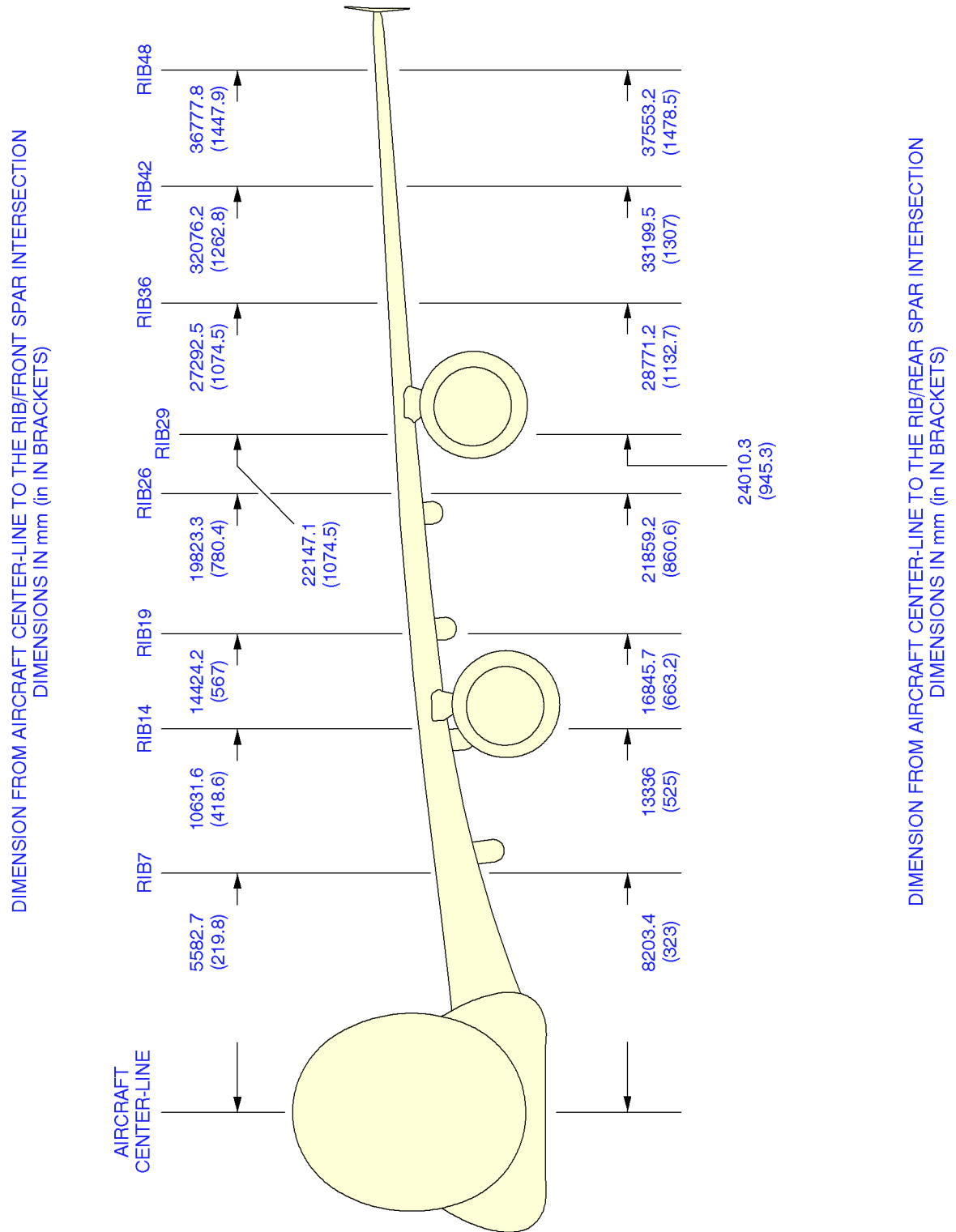
MAINTENANCE FACILITY PLANNING



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Wing Profile, Rib Locations
Fig. 1

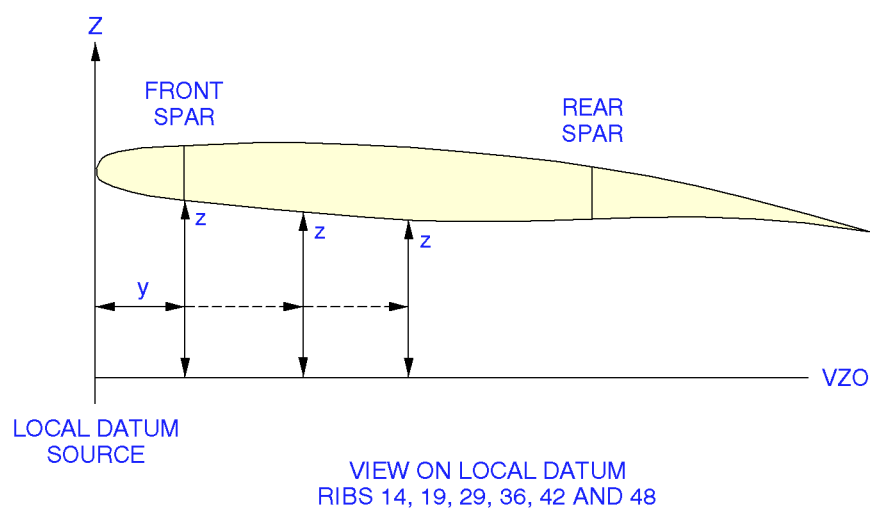
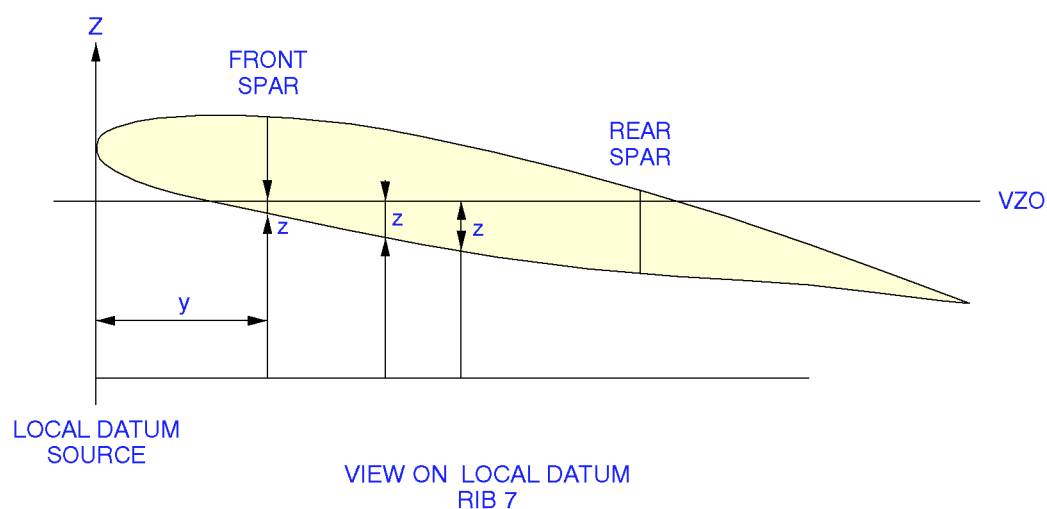
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Wing Profile - Rib Position
Fig. 2

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MAINTENANCE FACILITY PLANNING



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Wing Profile

MAINTENANCE FACILITY PLANNING

2. RIB 7

Intersection of Front Spar and rib 7.

Source of Local datum for rib 7.

Skin Profile Points to Local Datum

X	X	Y	Y	Z
mm	in	mm	in	
2746.23	108.12	- 228.28	- 8.99	0
3056.71	120.34	- 295.96	- 11.65	0
3367.68	132.59	- 361.41	- 14.23	0
3679.15	144.85	- 424.45	- 16.71	0
3991.12	157.13	- 484.90	- 19.09	0
4303.61	169.43	- 542.68	- 21.37	0
4616.57	181.75	- 597.79	- 23.54	0
4929.98	194.09	- 650.33	- 25.60	0
5243.77	206.45	- 700.49	- 27.58	0
5557.90	218.81	- 748.55	- 29.47	0
5872.30	231.19	- 794.74	- 31.29	0
6186.95	243.58	- 839.27	- 33.04	0
6501.81	255.98	- 882.23	- 34.73	0
6816.89	268.38	- 923.59	- 36.36	0
7132.19	280.79	- 963.20	- 37.92	0
7447.74	293.22	- 1000.79	- 39.40	0
7763.55	305.65	- 1036.09	- 40.79	0
8079.64	318.10	- 1068.81	- 42.08	0
8396.00	330.55	- 1098.80	- 43.26	0
8712.61	343.02	- 1126.08	- 44.33	0

MAINTENANCE FACILITY PLANNING

3. RIB 14

Intersection of Front Spar and rib 14.

Source of Local datum for rib 14.

Skin Profile Points to Local Datum

X	X	Y	Y	Z
mm	in	mm	in	
1357.81	53.46	974.01	38.35	0
1672.93	65.86	917.43	36.12	0
1988.25	78.28	861.91	33.93	0
2303.97	90.71	808.69	31.84	0
2620.15	103.16	758.35	29.86	0
2936.75	115.62	710.65	27.98	0
3253.66	128.10	665.07	26.18	0
3570.82	140.58	621.31	24.46	0
3888.24	153.08	579.46	22.81	0
4205.98	165.59	540.05	21.26	0
4524.09	178.11	503.88	19.84	0
4842.65	190.66	471.76	18.57	0
5161.63	203.21	444.34	17.49	0
5481.01	215.79	421.92	16.61	0
5800.70	228.37	404.52	15.93	0
6120.61	240.97	391.71	15.42	0
6440.66	253.57	382.90	15.07	0
6760.78	266.17	377.46	14.86	0
7080.94	278.78	374.54	14.75	0
7401.10	291.38	373.01	14.69	0

MAINTENANCE FACILITY PLANNING

4. RIB 19

Intersection of Front Spar and rib 19.

Source of Local datum for rib 19.

Skin Profile Points to Local Datum

X	X	Y	Y	Z
mm	in	mm	in	
1208.34	47.57	1430.76	56.33	0
1490.67	58.69	1384.62	54.51	0
1773.38	69.82	1340.85	52.79	0
2056.60	80.97	1300.54	51.20	0
2340.38	92.14	1264.43	49.78	0
2624.70	103.33	1232.80	48.54	0
2909.48	114.55	1205.61	47.47	0
3194.63	125.77	1182.68	46.56	0
3480.08	137.01	1163.72	45.82	0
3765.74	148.26	1148.42	45.21	0
4051.57	159.51	1136.49	44.74	0
4337.51	170.77	1127.69	44.40	0
4623.53	182.03	1121.98	44.17	0
4909.59	193.29	1119.41	44.07	0
5195.66	204.55	1120.16	44.10	0
5481.71	215.82	1124.09	44.26	0
5767.72	227.08	1130.67	44.51	0
6053.68	238.33	1138.95	44.84	0
6339.62	249.59	1147.76	45.19	0
6625.58	260.85	1155.96	45.51	0

MAINTENANCE FACILITY PLANNING

5. RIB 26

Intersection of Front Spar and rib 26.

Source of Local datum for rib 26.

Skin Profile Points to Local Datum

X	X	Y	Y	Z
mm	in	mm	in	
1078.37	42.46	1926.80	75.86	0
1342.52	52.86	1888.34	74.34	0
1607.23	63.28	1853.93	72.99	0
1872.47	73.72	1823.99	71.81	0
2138.20	84.18	1798.63	70.81	0
2404.32	94.66	1777.83	69.99	0
2670.76	105.15	1761.59	69.35	0
2937.44	115.65	1750.03	68.90	0
3204.29	126.15	1743.34	68.64	0
3471.22	136.66	1741.76	68.57	0
3738.13	147.17	1745.42	68.72	0
4004.91	157.67	1754.31	69.07	0
4271.48	168.17	1768.29	69.62	0
4537.75	178.65	1787.01	70.35	0
4803.74	189.12	1809.53	71.24	0
5069.53	199.59	1834.22	72.21	0
5335.34	210.05	1858.72	73.18	0
5601.37	220.53	1880.68	74.04	0

MAINTENANCE FACILITY PLANNING

6. RIB 29

Intersection of Front Spar and rib 29.

Source of Local datum for rib 29.

Skin Profile Points to Local Datum

X	X	Y	Y	Z
mm	in	mm	in	
1023.63	40.30	2111.24	83.12	0
1317.16	51.86	2069.15	81.46	0
1611.41	63.44	2032.40	80.02	0
1906.44	75.06	2002.66	78.84	0
2202.15	86.70	1980.57	77.98	0
2498.30	98.36	1965.59	77.39	0
2794.70	110.03	1956.84	77.04	0
3091.22	121.70	1953.66	76.92	0
3387.74	133.38	1955.80	77.00	0
3684.18	145.05	1963.33	77.30	0
3980.43	156.71	1976.28	77.81	0
4276.40	168.36	1994.49	78.52	0
4572.05	180.00	2017.36	79.42	0
4867.48	191.63	2043.06	80.44	0
5162.95	203.27	2068.22	81.43	0

7. RIB 36

Intersection of Front Spar and rib 36.

Source of Local datum for rib 36.

Skin Profile Points to Local Datum

X	X	Y	Y	Z
mm	in	mm	in	
905.61	36.96	2510.61	102.47	0
1139.12	46.49	2479.20	101.19	0
1372.92	56.04	2450.08	100.00	0
1607.16	65.60	2424.69	98.97	0
1841.91	75.18	2404.70	98.15	0
2077.11	84.78	2390.91	97.59	0
2312.59	94.39	2383.03	97.27	0
2548.18	104.01	2380.19	97.15	0
2783.78	113.62	2381.50	97.20	0
3019.34	123.24	2386.46	97.41	0
3254.81	132.85	2394.74	97.74	0
3490.16	142.46	2405.81	98.20	0
3725.40	152.06	2418.94	98.73	0
3960.57	161.66	2433.33	99.32	0
4195.75	171.25	2447.71	99.91	0

MAINTENANCE FACILITY PLANNING

8. RIB 42

Intersection of Front Spar and rib 42.

Source of Local datum for rib 42.

Skin Profile Points to Local Datum

X	X	Y	Y	Z
mm	in	mm	in	
799.38	31.47	2862.47	112.70	0
1076.17	42.37	2831.00	111.46	0
1353.12	53.27	2801.03	110.28	0
1630.57	64.20	2776.08	109.29	0
1908.64	75.14	2759.57	108.64	0
2187.13	86.11	2753.27	108.40	0
2465.66	97.07	2756.86	108.54	0
2743.96	108.03	2769.03	109.02	0
3021.90	118.97	2787.73	109.75	0
3299.67	129.91	2808.93	110.59	0

9. RIB 48

Intersection of Front Spar and rib 48.

Source of Local datum for rib 48.

Skin Profile Points to Local Datum

X	X	Y	Y	Z
mm	in	mm	in	
698.44	27.50	3158.68	124.36	0
889.44	35.02	3139.88	123.62	0
1080.60	42.54	3122.74	122.94	0
1272.02	50.08	3109.03	122.40	0
1463.74	57.63	3100.28	122.06	0
1655.63	65.18	3097.23	121.94	0
1847.53	72.74	3099.73	122.04	0
2039.29	80.29	3107.32	122.34	0
2230.84	87.83	3119.28	122.81	0
2422.17	95.36	3134.28	123.40	0

MAINTENANCE FACILITY PLANNING

SECTION 2 - TERMINAL AND RAMP

<u>Subject</u>	<u>Table Of Contents</u>	<u>Section</u>
	Table Of Contents	2-0
	Airplane Servicing Arrangement	2-1
	Terminal Operation	2-2
	Ground Service Connections and Locations	2-3
	Interior Arrangements	2-4
	Escape Slides/Rafts	2-5
R	Galleys	2-6
	Cargo Compartments - Loading and Unloading	2-7
	Ground Maneuvering	2-8
	Airplane Parking	2-9
	Towing (TBIL)	2-10
	Operating Conditions	2-11

MAINTENANCE FACILITY PLANNING

AIRPLANE SERVICING ARRANGEMENT

This section provides typical ramp layouts, showing the various GSE items in position during typical turn-round scenarios.

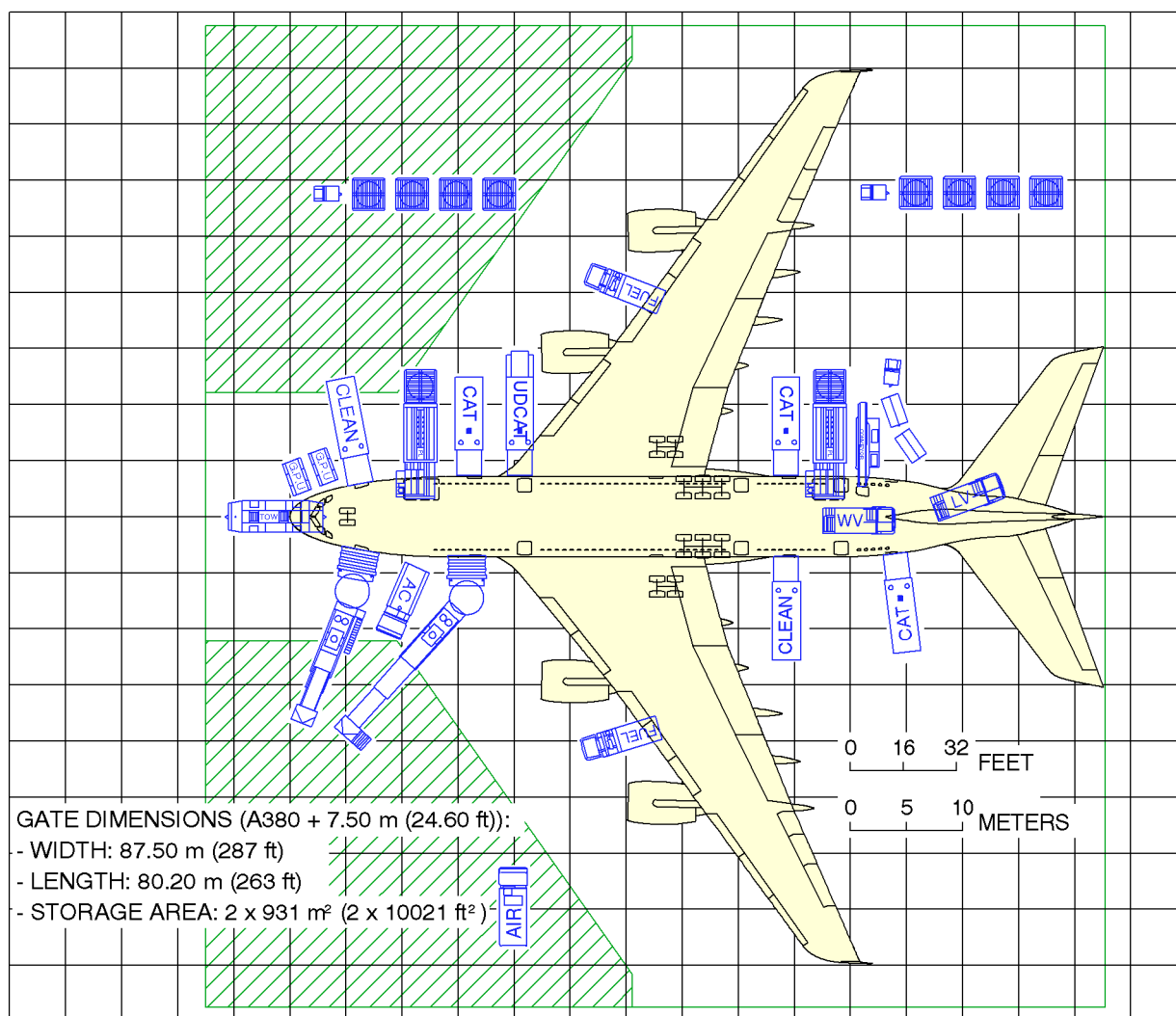
These ramp layouts show typical arrangements only. Each operator will have its own specific requirements/regulations for the positioning and operation on the ramp.

For each ramp layout, the associated typical turn-round time is given in a Chart in the section 2-2.

MAINTENANCE FACILITY PLANNING

AC: AIR COND UNIT
AIR: AIR START UNIT
CAT: CATERING VEHICLE
CLEAN: CLEANING VEHICLE
CONVEYOR: CONVEYOR BELT
FUEL: FUEL HYDRANT DISPENSER

GPU: GROUND POWER UNIT
LV: LAVATORY VEHICLE
PL: PALLET/CONTAINER LOADER
TOW: TOWING TRACTOR
WV: POTABLE WATER VEHICLE



RL28/B1A/800/STD

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R
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R

Typical Ramp Layout - Two Bridges
Standard Servicing Via Main and Upper Decks
A380-800 Models

R

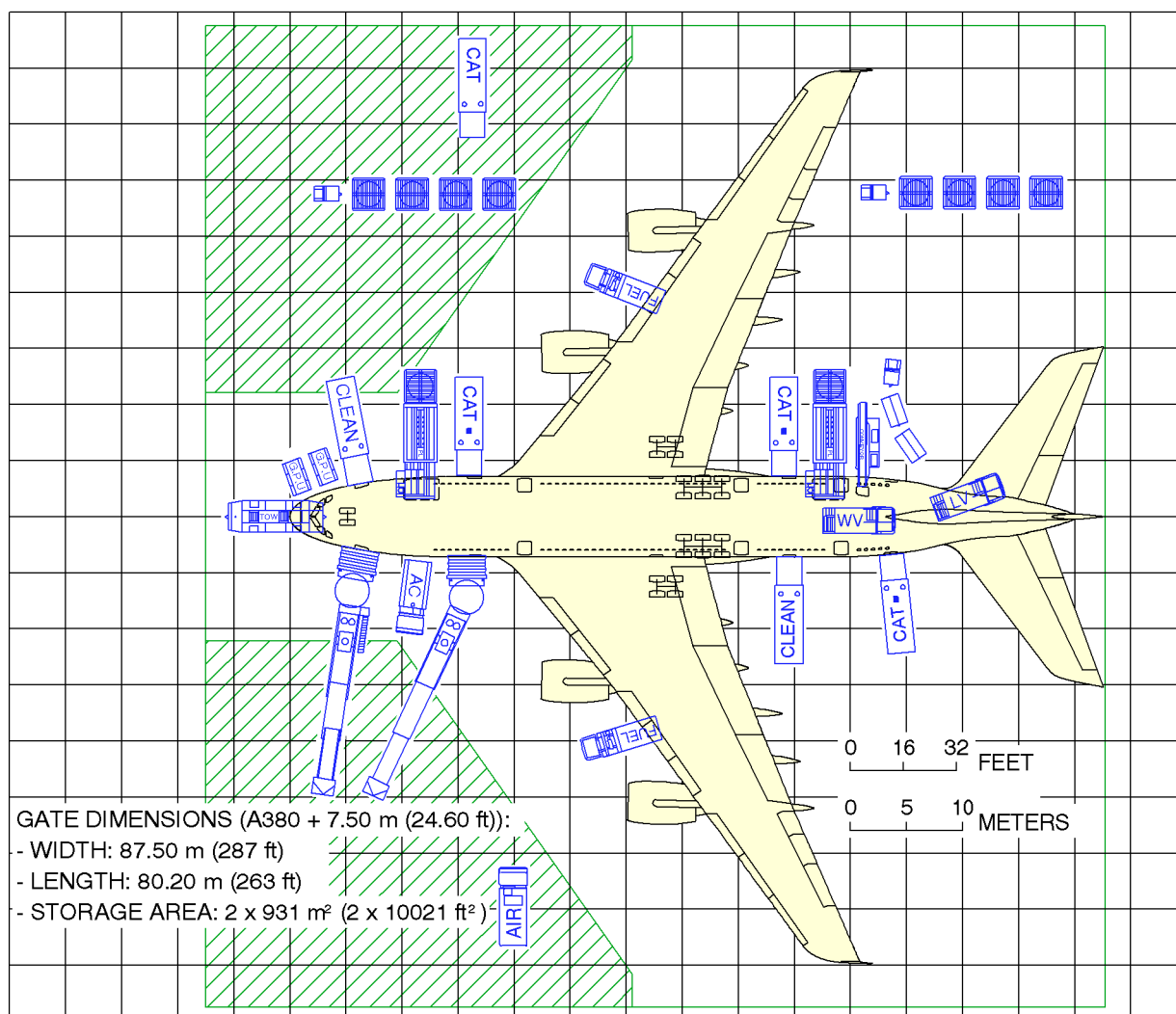
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2-1
Page 2
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MAINTENANCE FACILITY PLANNING

AC: AIR COND UNIT
 AIR: AIR START UNIT
 CAT: CATERING VEHICLE
 CLEAN: CLEANING VEHICLE
 CONVEYOR: CONVEYOR BELT
 FUEL: FUEL HYDRANT DISPENSER

GPU: GROUND POWER UNIT
 LV: LAVATORY VEHICLE
 PL: PALLET/CONTAINER LOADER
 TOW: TOWING TRACTOR
 WV: POTABLE WATER VEHICLE



RL01/B1A/800/STD

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R
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R

Typical Ramp Layout - Two Bridges
 Servicing Via Main Deck
 A380-800 Models

R

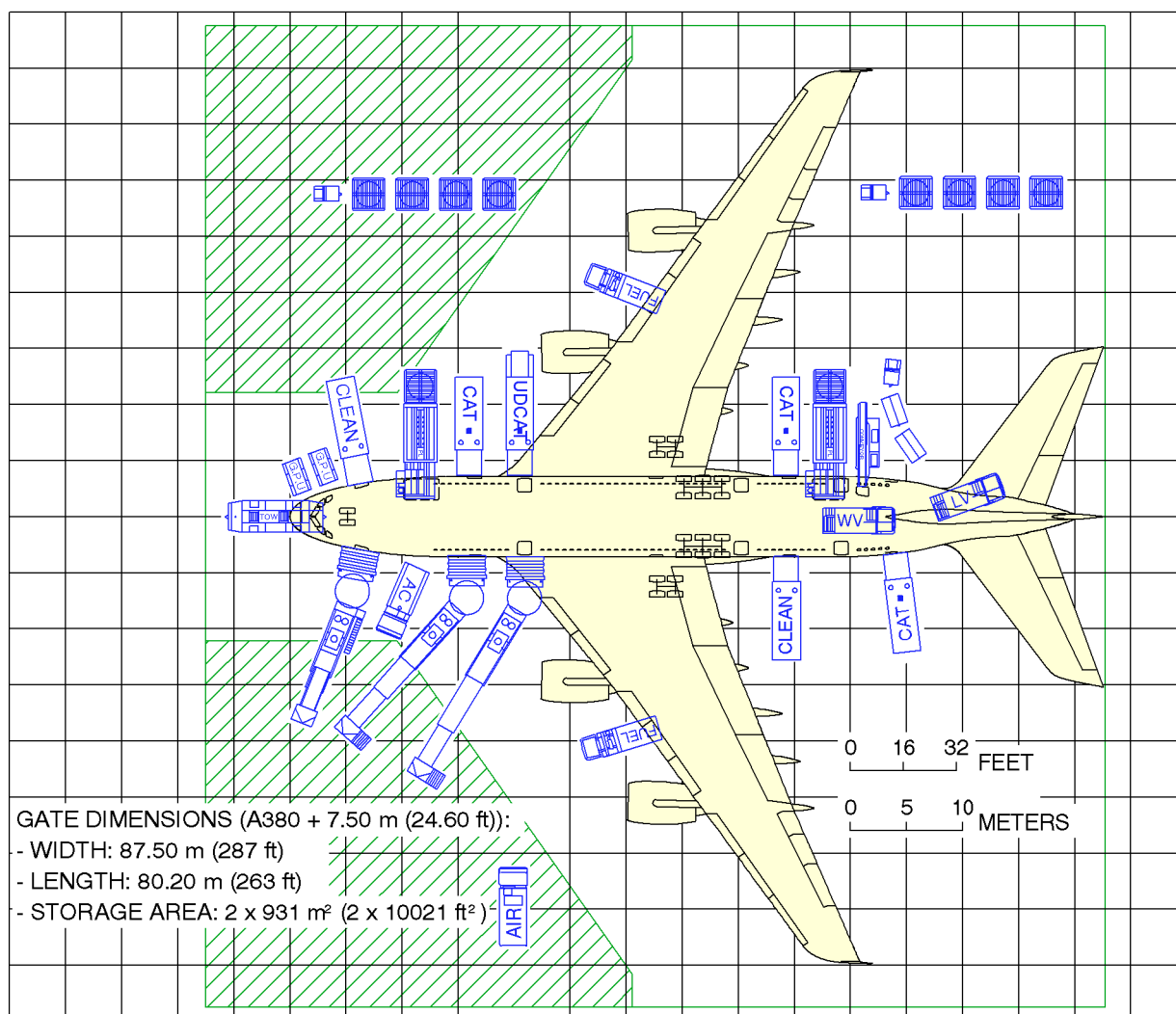
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2-1
 Page 3
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MAINTENANCE FACILITY PLANNING

AC: AIR COND UNIT
 AIR: AIR START UNIT
 CAT: CATERING VEHICLE
 CLEAN: CLEANING VEHICLE
 CONVEYOR: CONVEYOR BELT
 FUEL: FUEL HYDRANT DISPENSER

GPU: GROUND POWER UNIT
 LV: LAVATORY VEHICLE
 PL: PALLET/CONTAINER LOADER
 TOW: TOWING TRACTOR
 WV: POTABLE WATER VEHICLE



RL02/B1A/800/STD

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R
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R

Typical Ramp Layout - Three Bridges
 Servicing Via Main and Upper Decks
 A380-800 Models

R

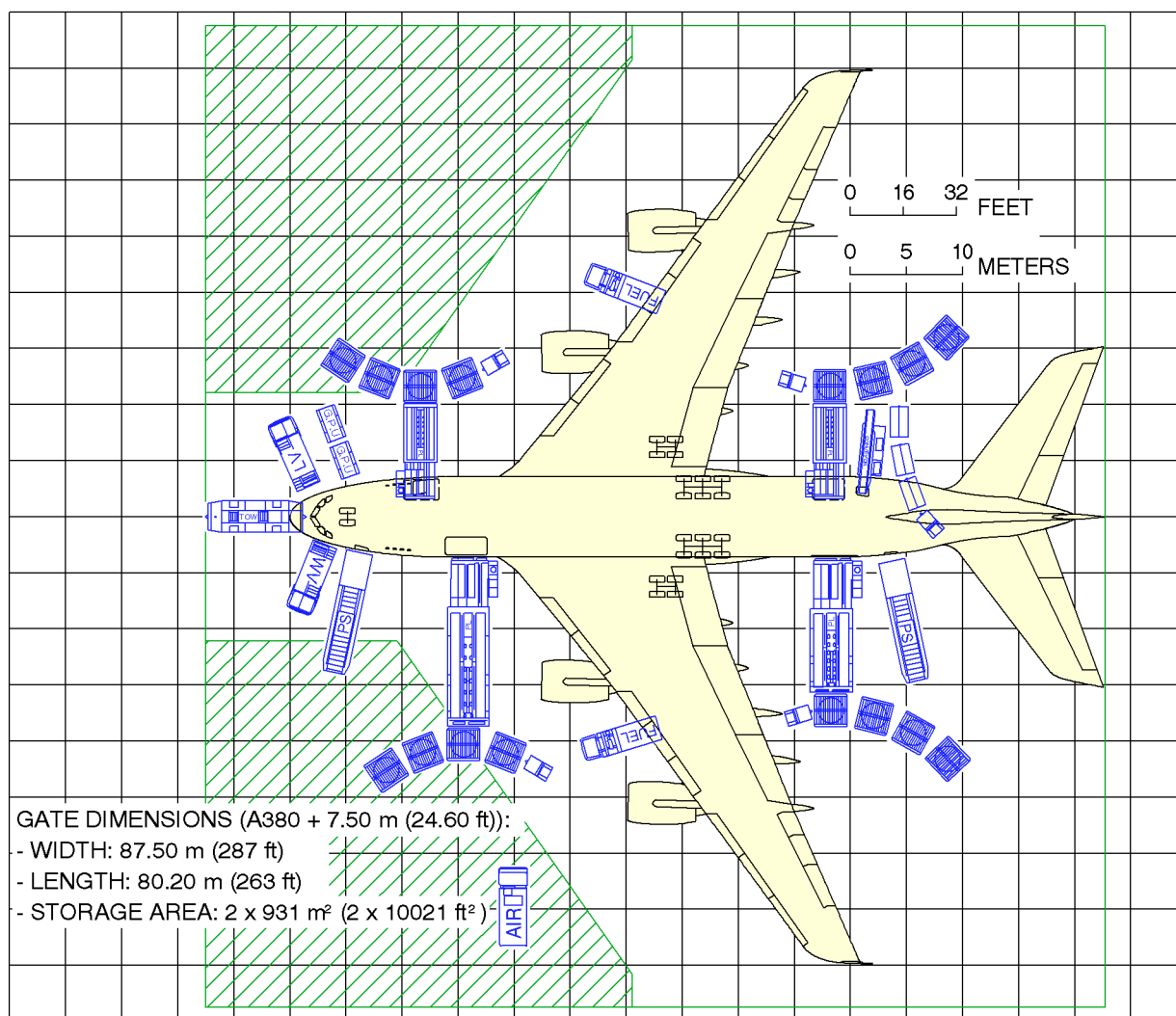
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2-1
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MAINTENANCE FACILITY PLANNING

AC: AIR COND UNIT
 AIR: AIR START UNIT
 CONVEYOR: CONVEYOR BELT
 FUEL: FUEL HYDRANT DISPENSER
 GPU: GROUND POWER UNIT

LV: LAVATORY VEHICLE
 PL: PALLET/CONTAINER LOADER
 PS: PASSENGER STAIRS
 TOW: TOWING TRACTOR
 WV: POTABLE WATER VEHICLE



RL04/B1/800F/STD

ZMF5 02 01 00 0 CCM0 01

R
R

Typical Ramp Layout
 A380-800F Models

R

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MAINTENANCE FACILITY PLANNING

TERMINAL OPERATION

This section provides typical turn-round time charts showing the typical times for ramp activities during aircraft turn-round.

Actual times may vary due to each operator's specific practice and operating conditions.

For each turn-round time chart, the associated typical ramp layout is given in section 2-1.

MAINTENANCE FACILITY PLANNING

ASSUMED TURN-ROUND TIME PARAMETERS

PASSENGER BOARDING/DEBOARDING (PB/D) → 100% (555 pax) passenger exchange :

- Doors (type A – 42" wide) used : M1L and M2L (main deck) and U1R (upper deck).
- PB/D rate : boarding = 15 pax/min / deboarding = 25 pax/min
- Last Pax Seating Allowance (LPS) = + 4 min
- 60" stair flow rate : up-flow = 14 pax/min / down-flow = 18 pax/min

CARGO → Full LD-3 exchange (22 + 16) LD-3 and bulk exchange of 2 000 kg (4 409 lb) :

- LD-3 off-loading/loading times :
off-loading = 1.4 min/LD-3 / loading = 1.7 min/LD-3
- Pallet loading times :
off-loading = 2.5 min/pallet / loading = 2.9 min/pallet
- bulk off-loading/loading times :
off-loading = 9.2 min/t / loading = 10.5 min/t

REFUELLING → Block fuel for Nominal Range through 4 nozzles :

- 255 000 liters (67 364 US gallons) at 40 psi (48 min)
- dispenser positioning or removal = 3 min (fuel truck change) / if any = 5 min

CLEANING → Full cleaning :

- Crew adapted to match catering time

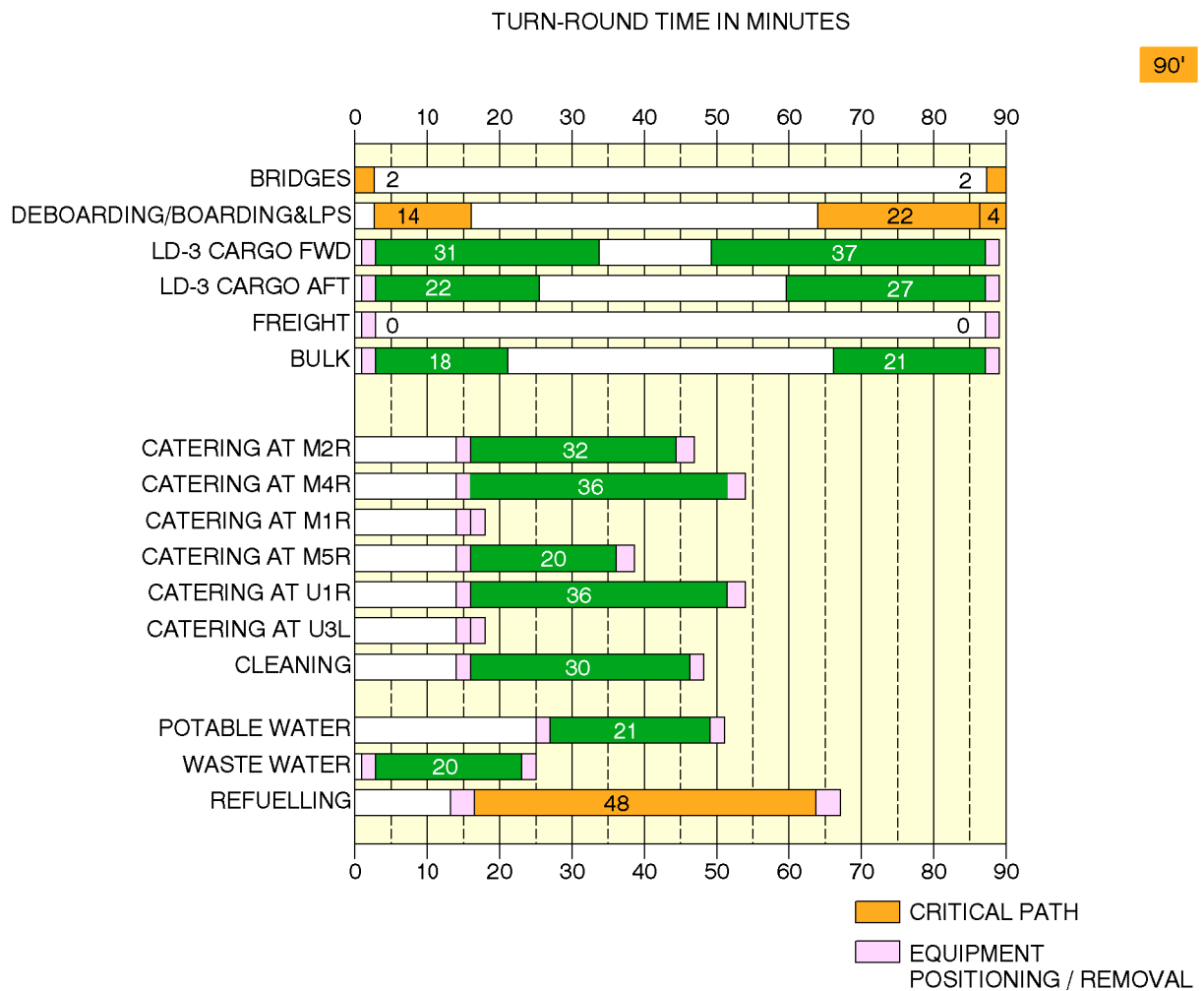
CATERING → Full catering :

- average truck capacity = 30 Full Size Trolley Equivalent (FSTE)
- simultaneous catering and PB/D = not represented
- inbound/outbound FSTE = mixed in the same truck
- FSTE exchange time :
 - dedicated door-galley = 1.5 min/FSTE
 - cart circulation (1 seat zone) = + 0.5 min/FSTE
 - cart circulation (> 1 seat zone) = + 1.0 min/FSTE
 - via lift :
 - dedicated door to single lift = 2.0 min/FSTE

GROUND HANDLING/SERVICING

- start of operations :
 - bridges = t0 = 0
 - others = t0 + 1 min
- vehicle positioning/removal = 2 min (fuel truck excluded)
- upper deck vehicle positioning/removal = 3 min
- clearance between GSE = 0.5 m (20 in)
- Ground Power Unit (GPU) = up to 4 × 90 kVA
- air conditioning = two carts
- potable water (standard/option) = 1 875/2 500 liters (495/660 US gal) at 87.5 l/min (23 US gal/min).
- waste water = discharge and rinsing
- dollies per tractor = 4 to 6

MAINTENANCE FACILITY PLANNING



DB1A

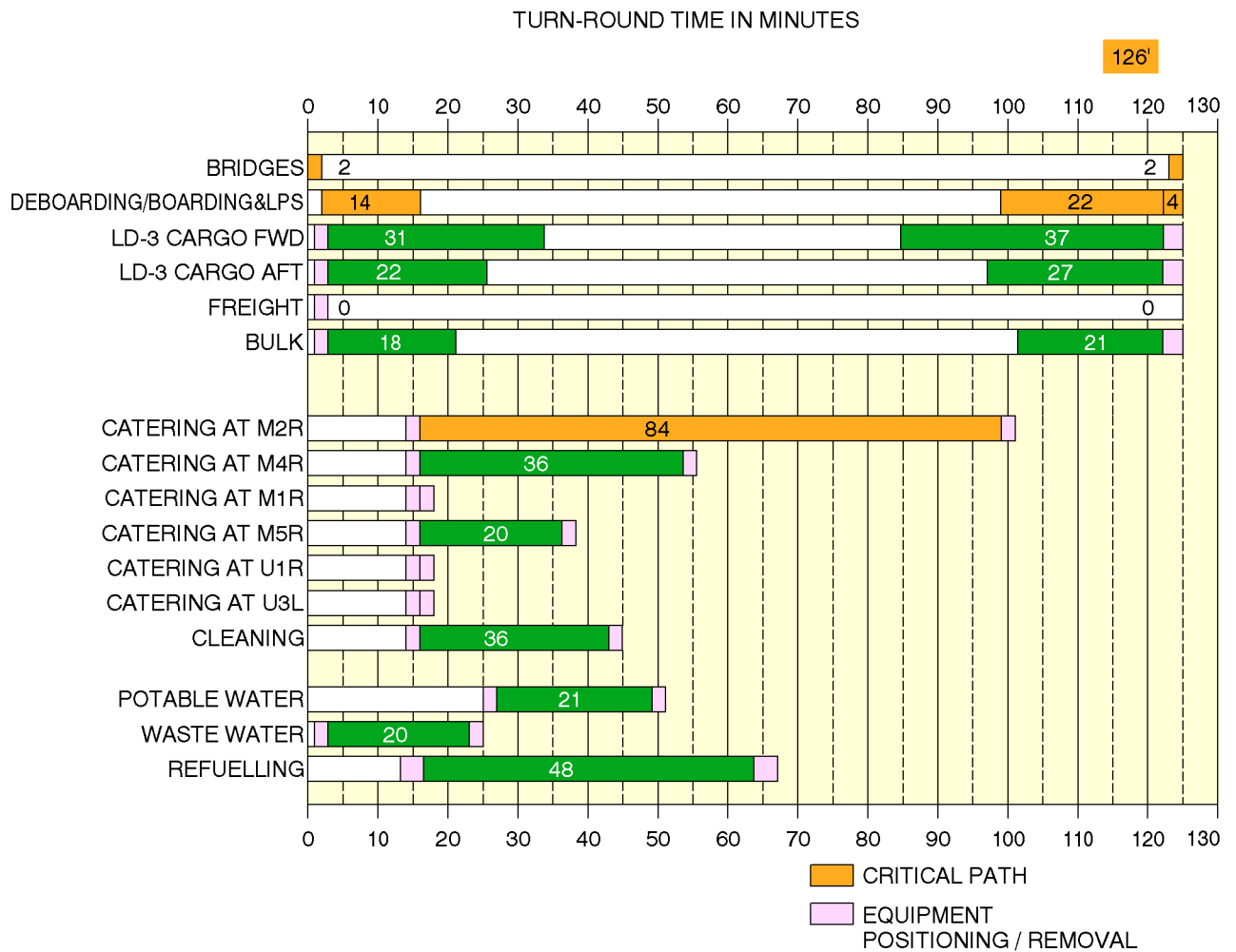
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Typical Turn-Round Time - Two Bridges
Standard Servicing Via Main and Upper Decks
A380-800 Models

R

MAINTENANCE FACILITY PLANNING



NOTE: IF REQUIRED, THE A380 CABIN LAYOUT CAN BE OPTIMIZED TO GIVE SHORTER TURN-ROUND TIME WITH ONLY MAIN DECK ACCESS

DB1A

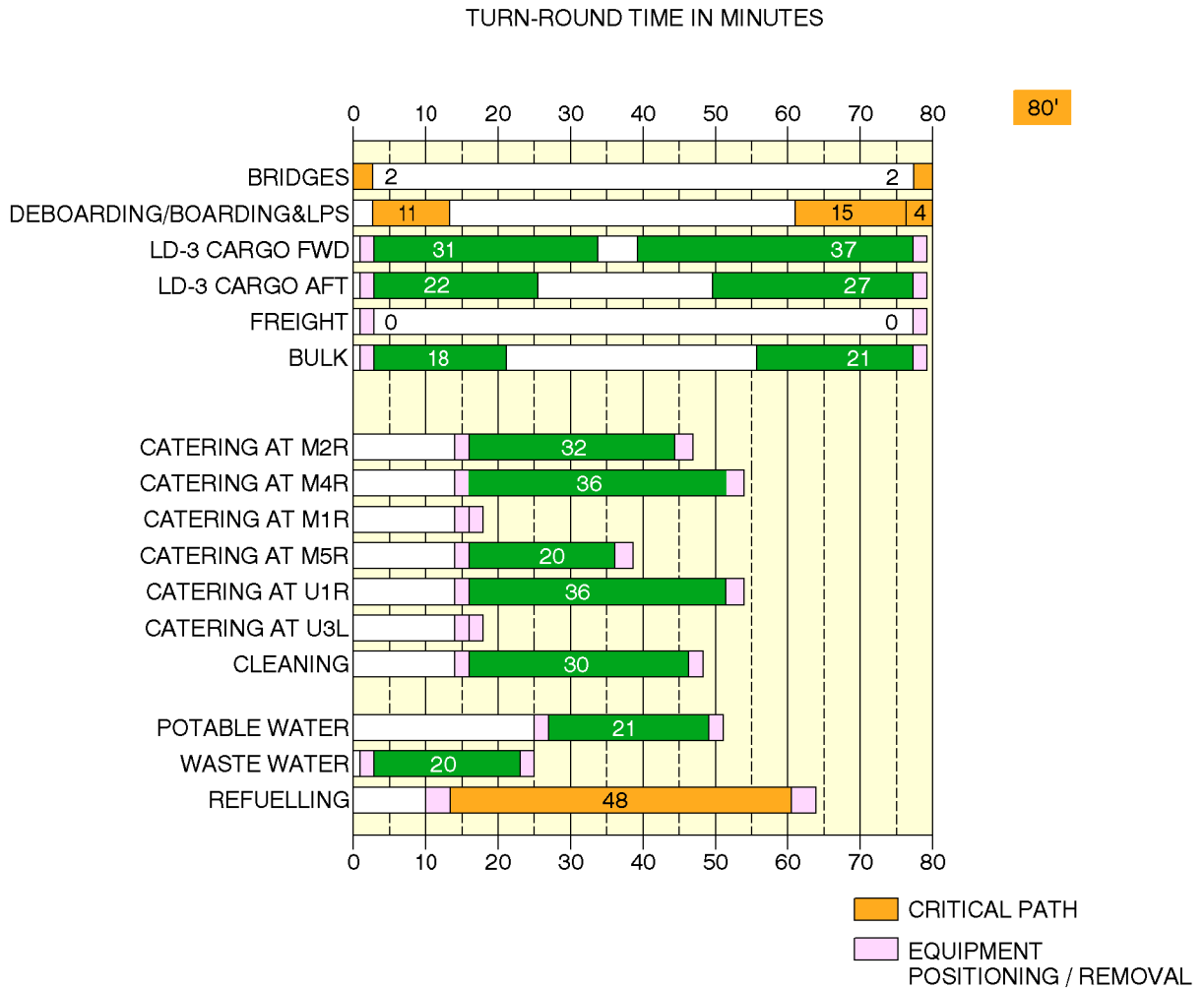
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Typical Turn-Round Time - Two Bridges
Servicing Via Main Deck
A380-800 Models

R

MAINTENANCE FACILITY PLANNING



DB1A

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Typical Turn-Round Time - Three Bridges
Servicing Via Main and Upper Decks
A380-800 Models

R

MAINTENANCE FACILITY PLANNING

The A380-800F can achieve turn-round times of 120 ± 20 minutes depending on ULD layouts on the three decks.

NOTE : These values are similar to other wide-body freighter aircraft in similar operating conditions.

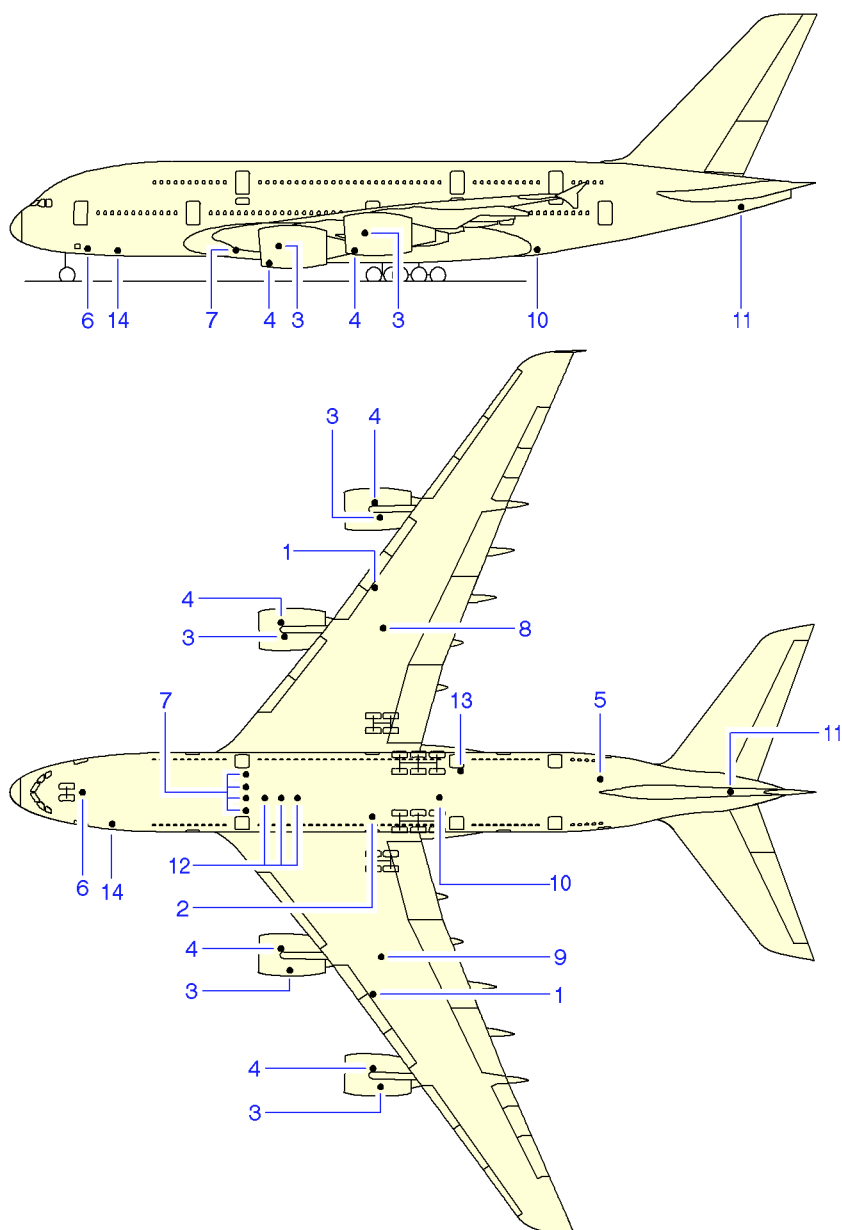
Typical Turn-Round Time
A380-800F Models

MAINTENANCE FACILITY PLANNING

GROUND SERVICE CONNECTIONS AND LOCATIONS

This section gives the ground service connections and locations.

MAINTENANCE FACILITY PLANNING



- | | |
|---------------------------------------------------------------------------------------------|---------------------------------------|
| 1 - PRESSURE REFUEL CONNECTORS | 8 - YELLOW HYDRAULIC GROUND CONNECTOR |
| 2 - HYDRAULIC RESERVOIR SERVICING PANEL
(RESERVOIR FILLING AND RESERVOIR PRESSURISATION) | 9 - GREEN HYDRAULIC GROUND CONNECTOR |
| 3 - ENGINE OIL FILLING | 10 - POTABLE WATER SERVICE PANEL |
| 4 - VF GENERATOR OIL FILLING | 11 - APU OIL FILLING |
| 5 - TOILET AND WASTE SERVICE PANEL | 12 - HIGH PRESSURE AIR ENGINE START |
| 6 - GROUND ELECTRICAL POWER | 13 - REFUEL/DEFUEL CONTROL PANEL |
| 7 - LOW PRESSURE PRECONDITIONED AIR | 14 - OXYGEN SYSTEM |

DB1A

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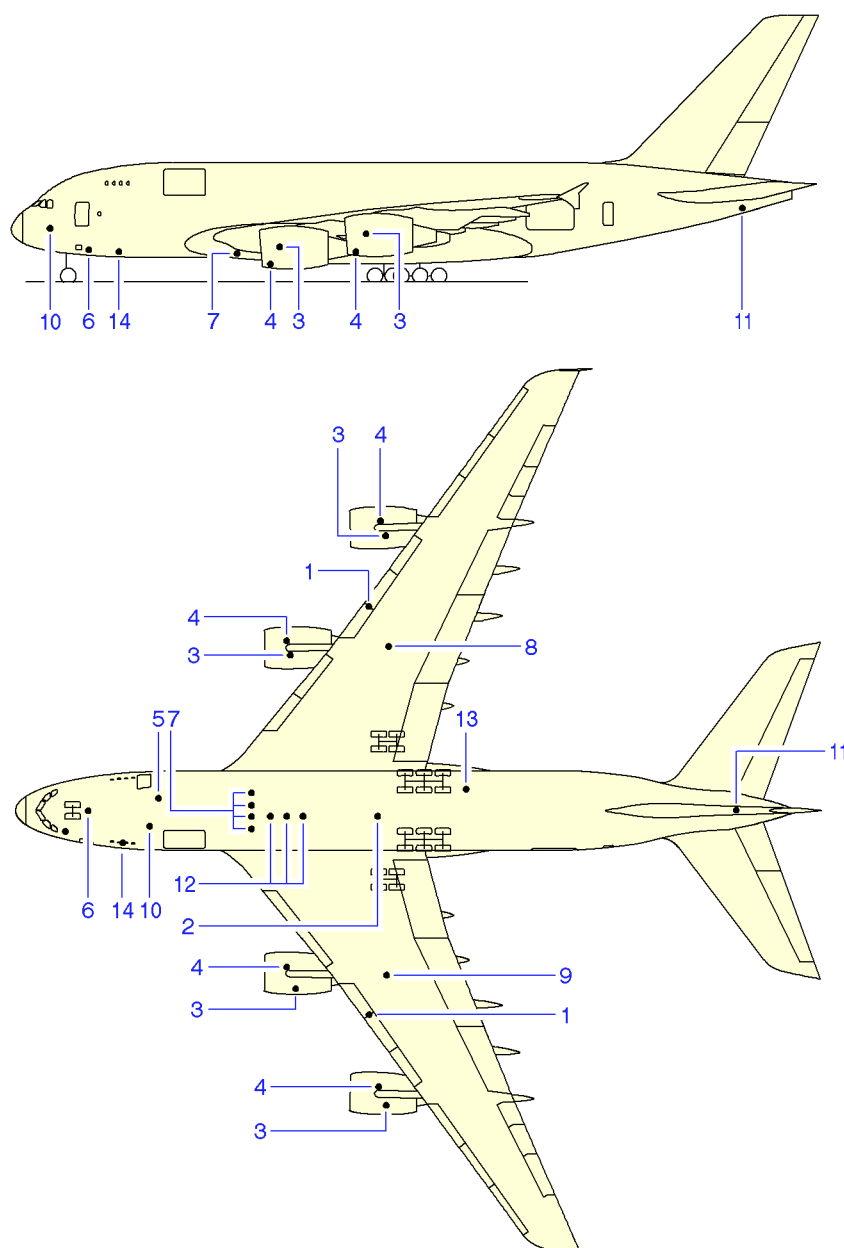
Ground Service Connections Layout
A380-800 Models

R

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MAINTENANCE FACILITY PLANNING



- | | |
|---------------------------------------------------------------------------------------------|---------------------------------------|
| 1 - PRESSURE REFUEL CONNECTORS | 8 - YELLOW HYDRAULIC GROUND CONNECTOR |
| 2 - HYDRAULIC RESERVOIR SERVICING PANEL
(RESERVOIR FILLING AND RESERVOIR PRESSURISATION) | 9 - GREEN HYDRAULIC GROUND CONNECTOR |
| 3 - ENGINE OIL FILLING | 10 - POTABLE WATER SERVICE PANEL |
| 4 - VF GENERATOR OIL FILLING | 11 - APU OIL FILLING |
| 5 - TOILET AND WASTE SERVICE PANEL | 12 - HIGH PRESSURE AIR ENGINE START |
| 6 - GROUND ELECTRICAL POWER | 13 - REFUEL/DEFUEL CONTROL PANEL |
| 7 - LOW PRESSURE PRECONDITIONED AIR | 14 - OXYGEN SYSTEM |

DB1A

ZMF5 02 03 00 0 BAM0 01

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R

Ground Service Connections Layout
A380-800F Models

R

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Page 3
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MAINTENANCE FACILITY PLANNING

HYDRAULIC SYSTEM

A. Doors description :

- Green hydraulic ground connectors :
(Access door 198CB)
- Yellow hydraulic ground connector :
(Access door 198JB)
- Hydraulic Reservoir Servicing Panel :
(Access door 197CB)

DISTANCE : Meters (ft)			
AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM GROUND
	R SIDE	L SIDE	
34.67 (113.7)		14.90 (48.88)	5.08 (16.66)
34.67 (113.7)	14.90 (48.88)		5.08 (16.66)
30.17 (98.98)		2.34 (7.67)	1.71 (5.61)

- (1) Reservoir pressurization
 - one connector TBD, 1/4 in.
- (2) Reservoir filling
 - one connector AE96993E, 1/4 in.



MAINTENANCE FACILITY PLANNING

ELECTRICAL SYSTEM

A. Ground Service Panel for External Electrical Power Receptacles :

- Right side access door : 134AR

- Left side access door : 134AL

DISTANCE : Meters (ft)			
AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM GROUND
	R SIDE	L SIDE	
5.99 (19.65)	0.45 (1.47)		2.59 (8.49)
5.99 (19.65)		0.45 (1.47)	2.59 (8.49)

- (1) External Power Receptacles :
- four standard ISO R461 receptacles - 90 KVA each.
- (2) Power supply :
- three phase, 115V, 360-800 Hz.
- (3) Electrical connectors for servicing :
AC outlets : HUBBEL 5258
DC outlets : HUBBEL 7472
Vacuum cleaner outlets : HUBBEL 5258



MAINTENANCE FACILITY PLANNING

FUEL SYSTEM

A. Ground Service Panel for :

- Refuel/Defuel control panel :
(Access door 199KB)

DISTANCE : Meters (ft)			
AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM GROUND
	R SIDE	L SIDE	
45.74 (150.06)	2.59 (8.49)		2.98 (9.77)

B. Refuel/Defuel connectors

- refuel/defuel coupling, left
(Access door 522GB)
- refuel/defuel coupling, right
(Access door 622GB)

31.89 (104.62)		17.97 (58.95)	5.77 (18.93)
31.89 (104.62)	17.97 (58.95)		5.77 (18.93)

- (1) Refuel/Defuel couplings :
 - standard ISO R45, 2.5 in., two per wing
- (2) Refuel pressure :
 - max. pressure : 3.45 bar (50 psi)

MAINTENANCE FACILITY PLANNING

PNEUMATIC SYSTEM

A. Low Pressure Air Connectors for Preconditioned Air :

- access doors 191GB, 191JB

- access doors 192HB, 192KB

DISTANCE : Meters (ft)			
AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM GROUND
	R SIDE	L SIDE	
22.13 (72.6)		1.21 (3.97)	2.08 (6.82)
22.13 (72.6)	1.21 (3.97)		2.08 (6.82)

(1) Connectors :

- four standard MS33562 (IS01034), 8 in.

B. High Pressure Air Connectors for Cabin Heating, Cooling and Engine Starting :

- access doors 193BB

DISTANCE : Meters (ft)			
AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM GROUND
	R SIDE	L SIDE	
25.37 (83.23)		3.4 (11.15)	1.82 (5.97)

(1) Connectors :

- three standard MS33740 (IS02026), 3 in.



MAINTENANCE FACILITY PLANNING

POTABLE WATER SYSTEM

A. Potable Water Ground Service Panel :

- access door 199NB

DISTANCE : Meters (ft)			
AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM GROUND
	R SIDE	L SIDE	
43.67 (143.27)		0.37 (1.21)	2.13 (6.99)

(1) Connectors :

- 3/4 in.

(2) Capacity :

- standard configuration - six tanks : 1700 l (449 USgal)
- optional : 2266 l (598 USgal)

(3) Filling pressure :

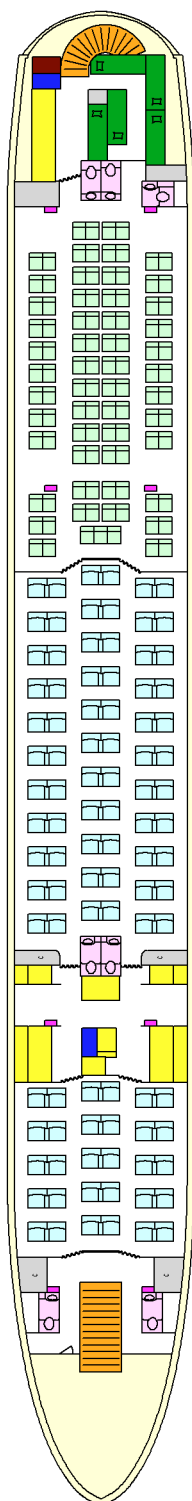
- 50 lbf/in² (345 kPa)

MAINTENANCE FACILITY PLANNING

INTERIOR ARRANGEMENTS

This section gives the standard interior arrangements.

MAINTENANCE FACILITY PLANNING



UPPER DECK

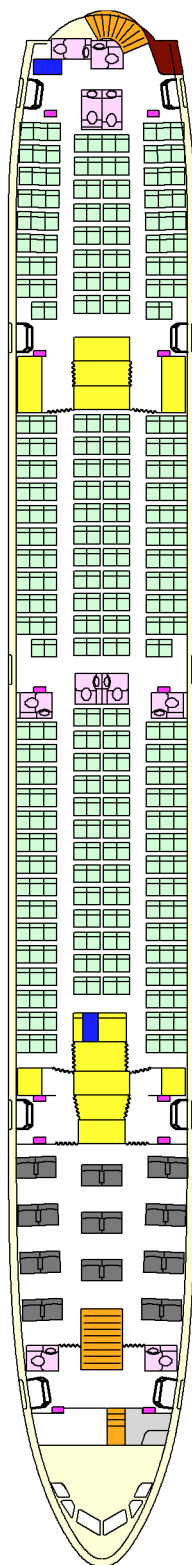
PASSENGER SEATS UPPER DECK (199 TOTAL)

- BUSINESS CLASS 96 SEATS
- TOURIST CLASS 103 SEATS
- ATTENDANT SEATS 8
- COAT STOWAGE 6
- GALLEYS 8
- LAVATORIES 7
- STOWAGES 1
- LIFT 2
- STAIRS 2
- CREW REST BUNKS 5

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Interior Arrangements - Plan View
Standard Configuration (Sheet 1/2)
A380-800 Models

MAINTENANCE FACILITY PLANNING



MAIN DECK

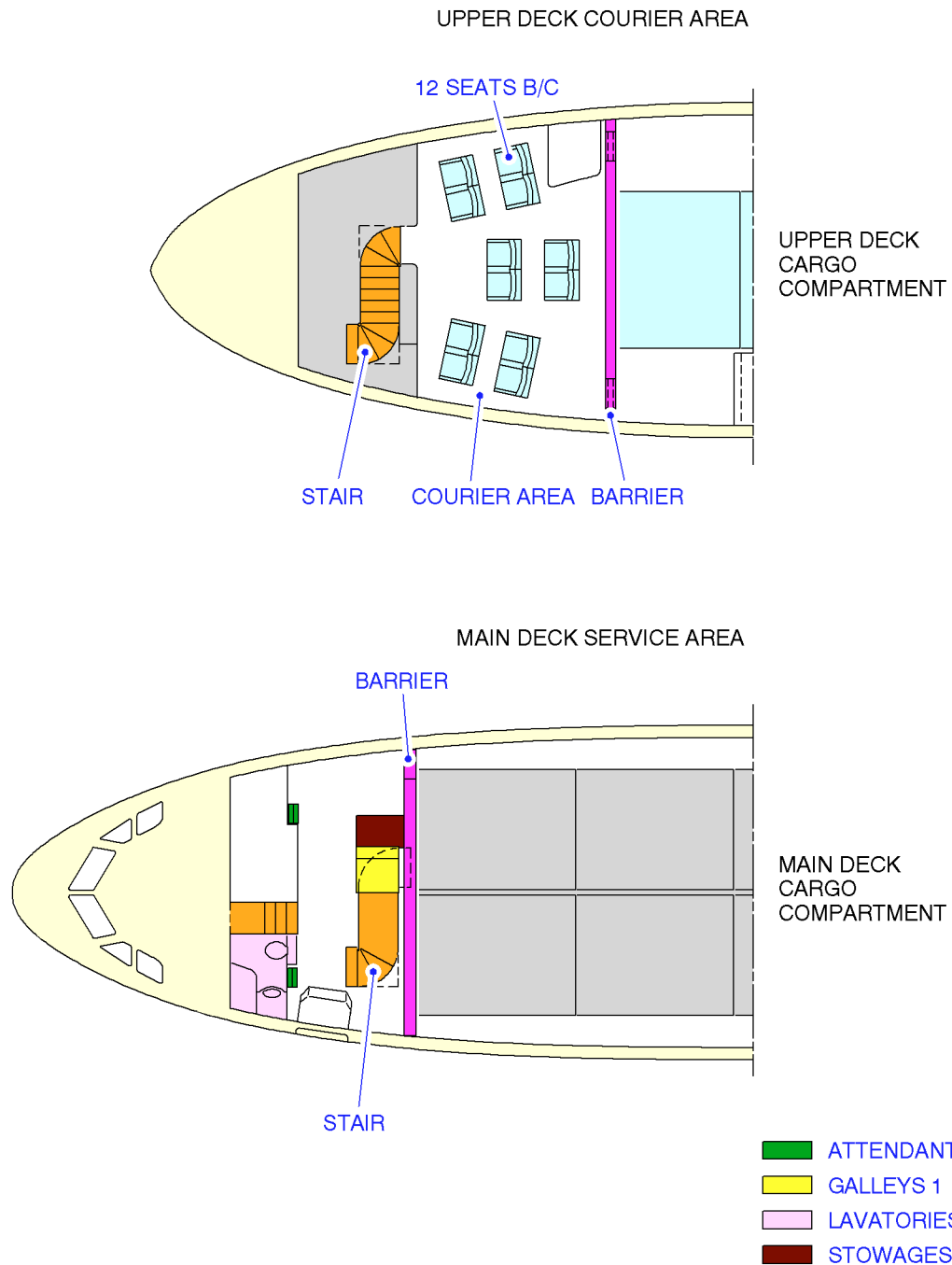
PASSENGER SEATS MAIN DECK (356 TOTAL)

- FIRST CLASS 22 SEATS
- TOURIST CLASS 334 SEATS
- ATTENDANT SEATS 12
- COAT STOWAGE 1
- GALLEYS 9
- LAVATORIES 10
- STOWAGES 1
- LIFT 2
- STAIRS 2

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Interior Arrangements - Plan View
Standard Configuration (Sheet 2/2)
A380-800 Models

MAINTENANCE FACILITY PLANNING



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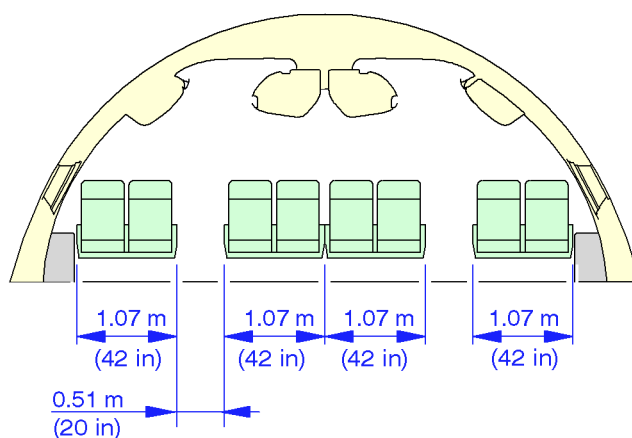
Interior Arrangements - Plan View
Standard Configuration
A380-800F Models

R
R
R

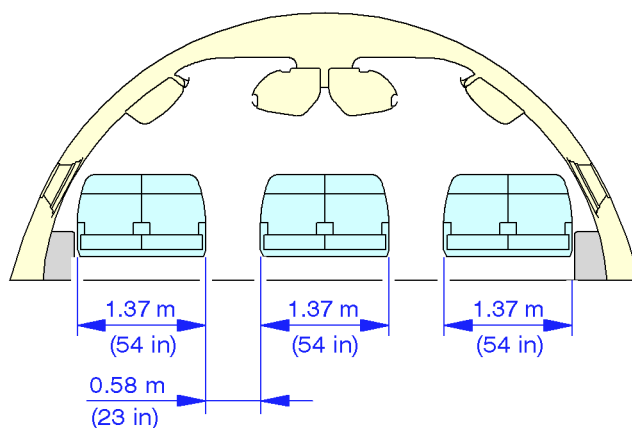
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MAINTENANCE FACILITY PLANNING

UPPER DECK
TOURIST CLASS 8 ABREAST



UPPER DECK
BUSINESS CLASS 6 ABREAST

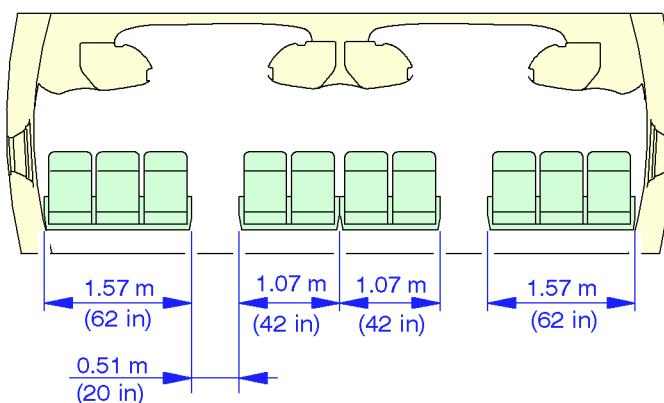


Interior Arrangements - Cross-section
Typical Configuration (Sheet 1/2)
A380-800 Models

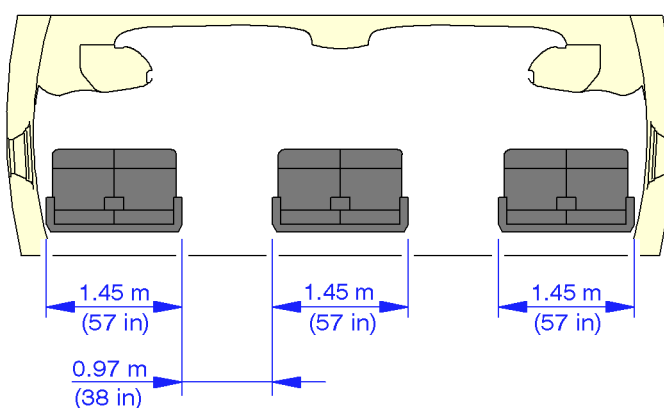
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MAINTENANCE FACILITY PLANNING

MAIN DECK
TOURIST CLASS 10 ABREAST



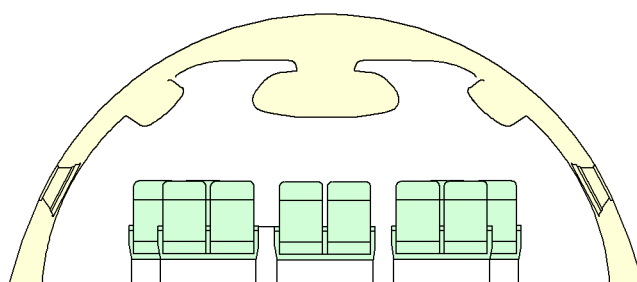
MAIN DECK
FIRST CLASS 6 ABREAST



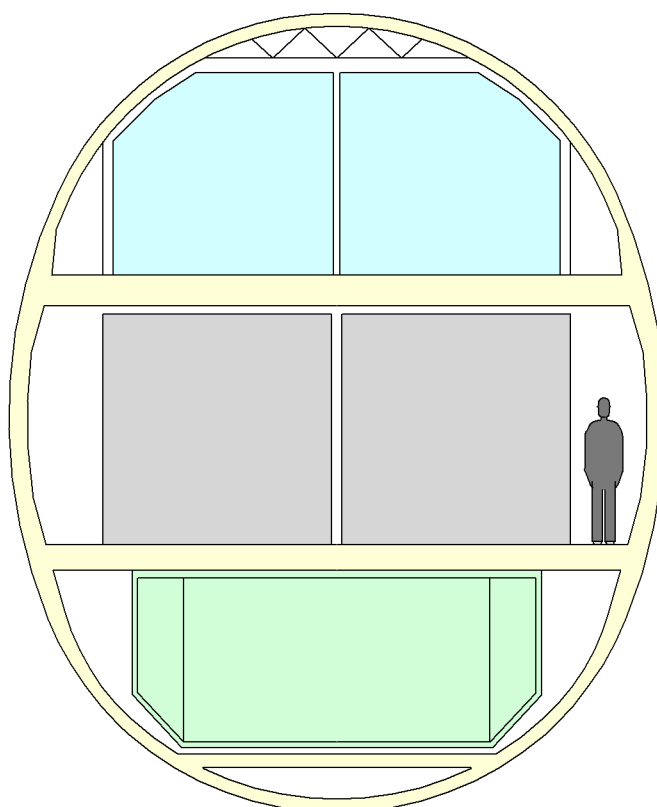
Interior Arrangements - Cross-section
Typical Configuration (Sheet 2/2)
A380-800 Models

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MAINTENANCE FACILITY PLANNING



UPPER DECK
COURIER AREA



UPPER DECK
CARGO COMPARTMENT

MAIN DECK
CARGO COMPARTMENT

LOWER DECK
CARGO COMPARTMENT

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R

Interior Arrangements - Cross-section
Typical Configuration
A380-800F Models

R

MAINTENANCE FACILITY PLANNING

ESCAPE SLIDES/RAFTS

This section gives the location of cabin escape facilities and related clearances (TBIL).

A. Location

(1) A380-800 Models

Escape facilities are provided at the following locations :

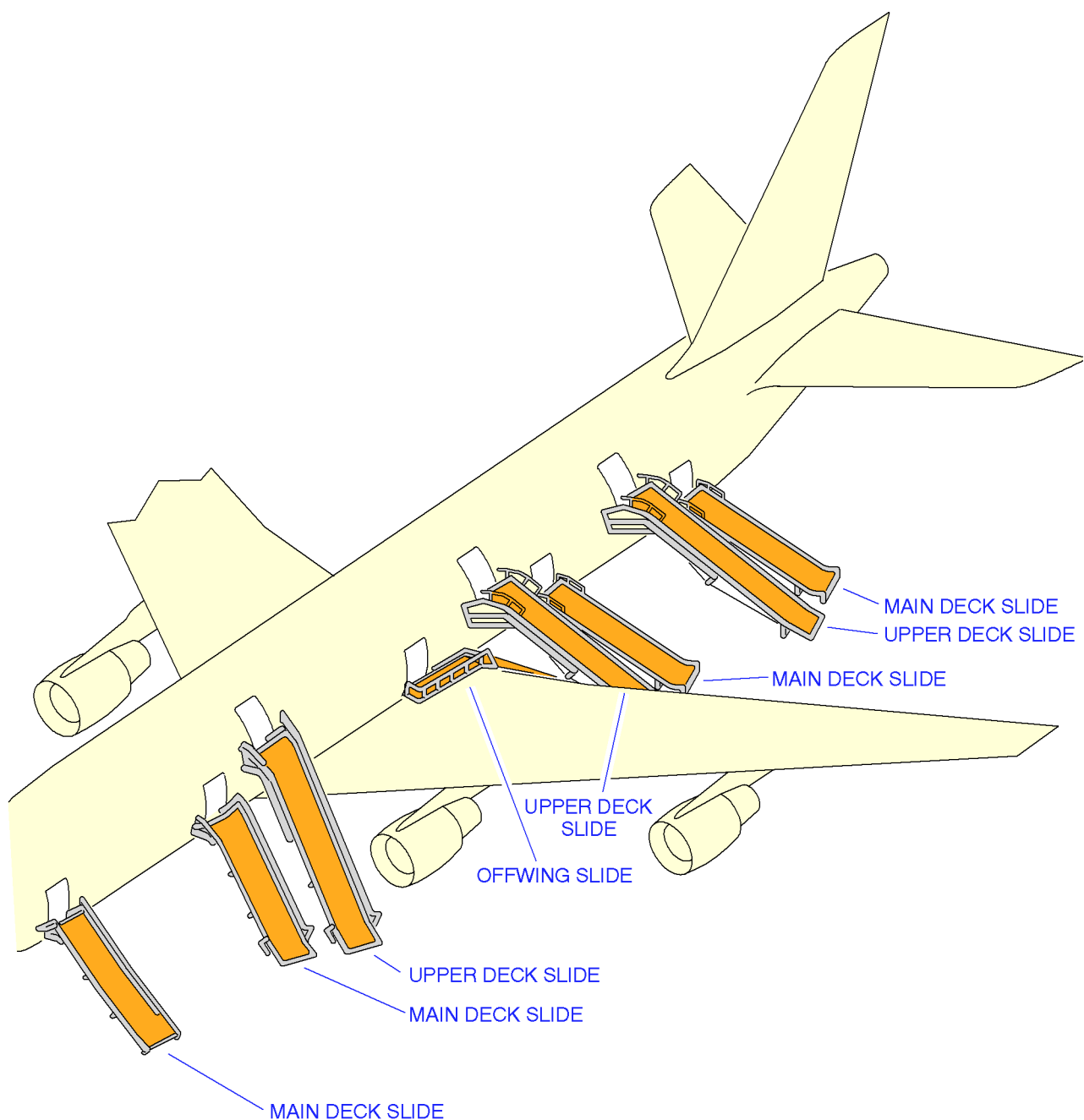
- (a) Upper deck evacuation :
 - one slide-raft at each passenger/crew door (total six)
- (b) Main deck evacuation :
 - one slide-raft at each passenger/crew door (total eight)
 - one slide for each emergency exit door (total two). The slides are housed in the belly fairing for off-the-wing evacuation.

(2) A380-800F Models

Escape facilities are provided at the following locations :

- (a) Upper deck evacuation :
 - one slide-raft at emergency exit door
- (b) Main deck evacuation :
 - one slide-raft at each forward courier/crew door (total two).

MAINTENANCE FACILITY PLANNING



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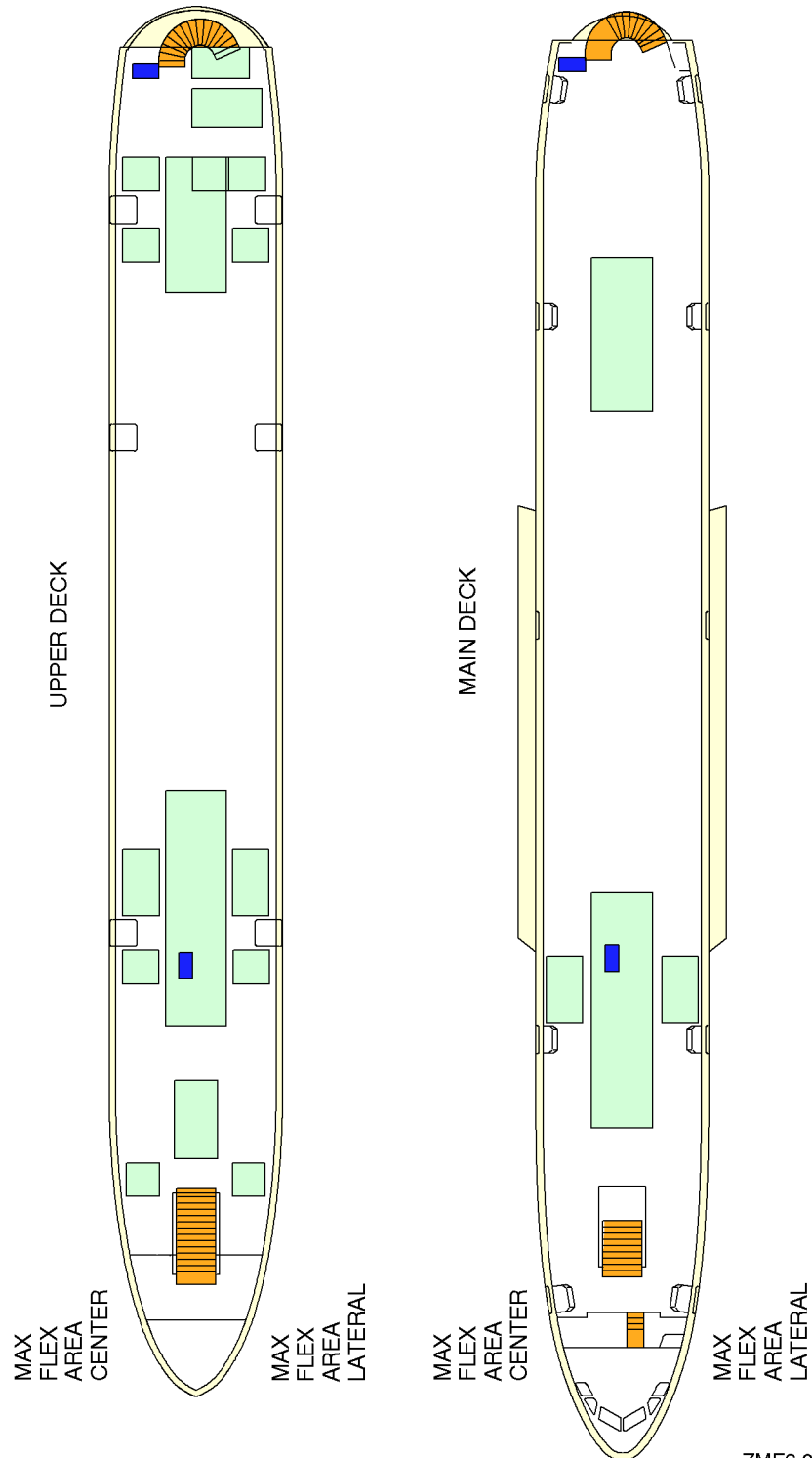
Escape Slides/Rafts
Location
A380-800 Models

MAINTENANCE FACILITY PLANNING

GALLEYS

MAINTENANCE FACILITY PLANNING

FLEXIBLE INSTALLATION ZONES FOR TRANSVERSAL GALLEYS

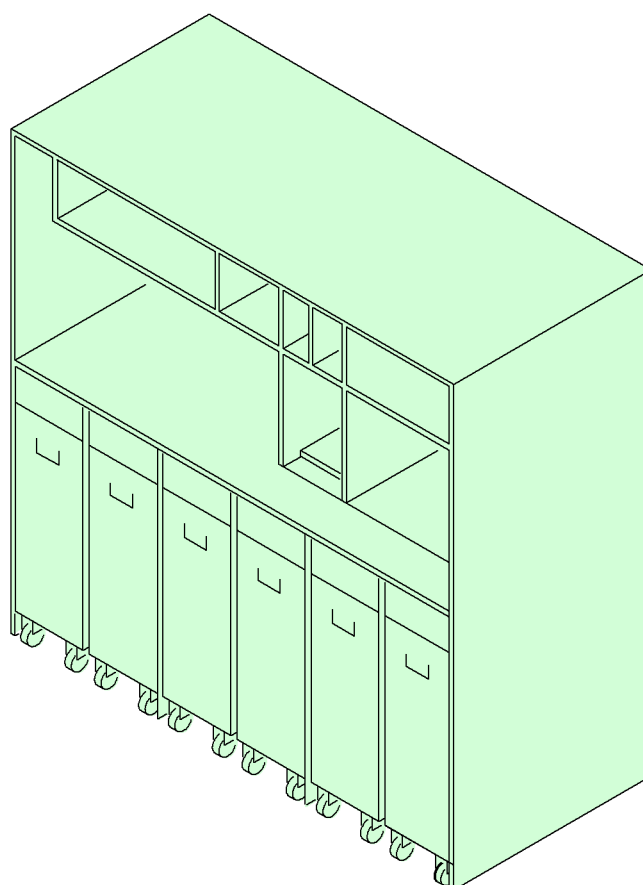


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General Location of
Transversal Galleys
A380-800 Models

MAINTENANCE FACILITY PLANNING

TRANSVERSAL GALLEY MODUL

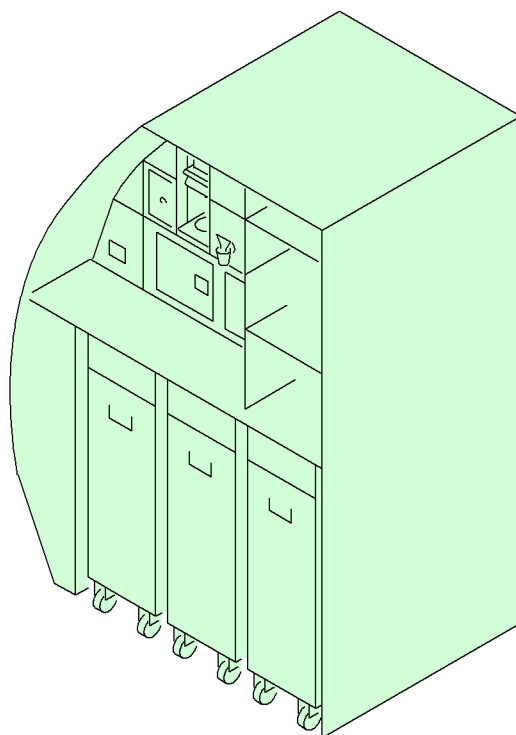


General Layout
Transversal Galley
A380-800 Models

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MAINTENANCE FACILITY PLANNING

TRANSVERSAL GALLEY MODUL

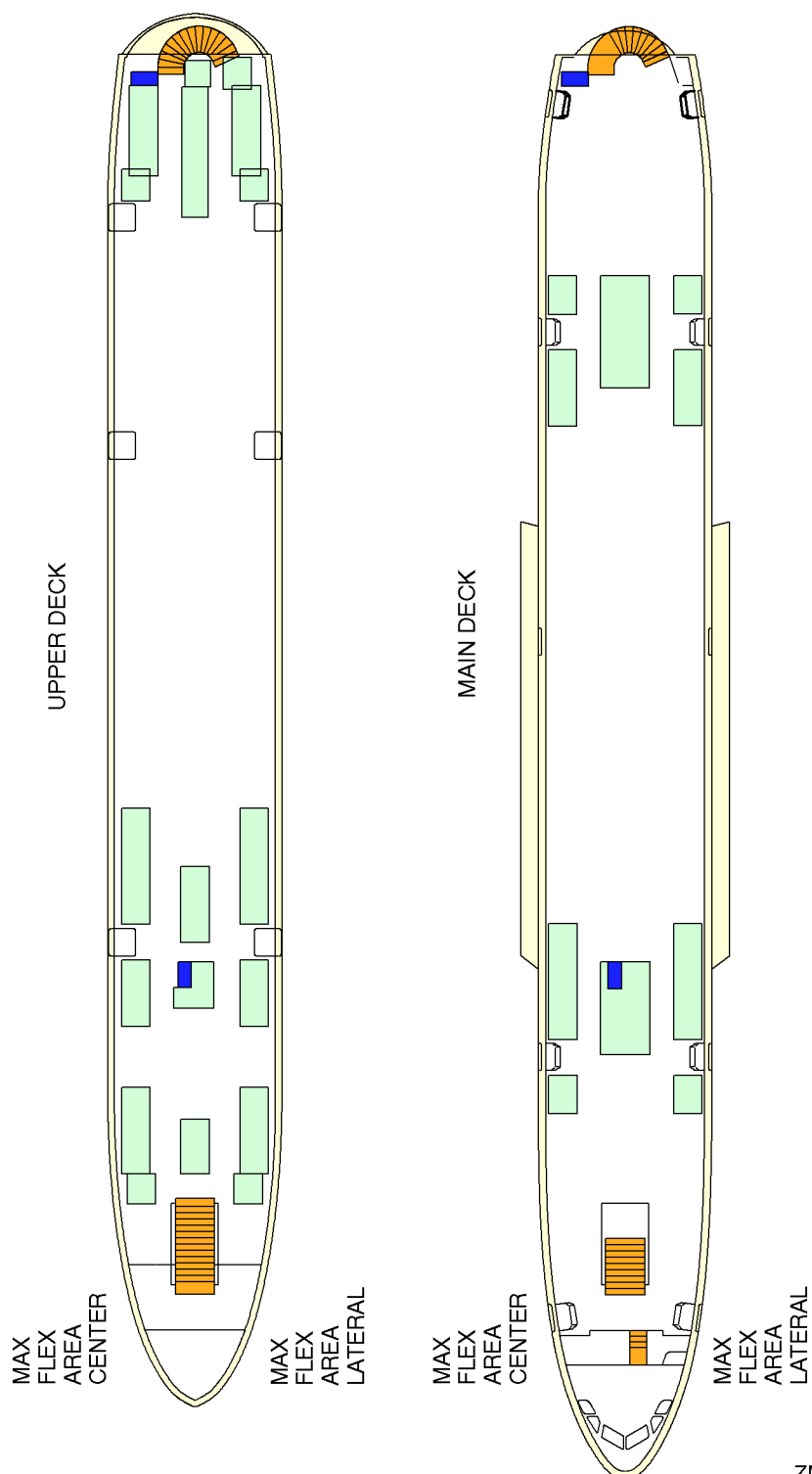


General Layout
Transversal Galley
A380-800 Models

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MAINTENANCE FACILITY PLANNING

FLEXIBLE INSTALLATION ZONES FOR LONGITUDINAL GALLEYS

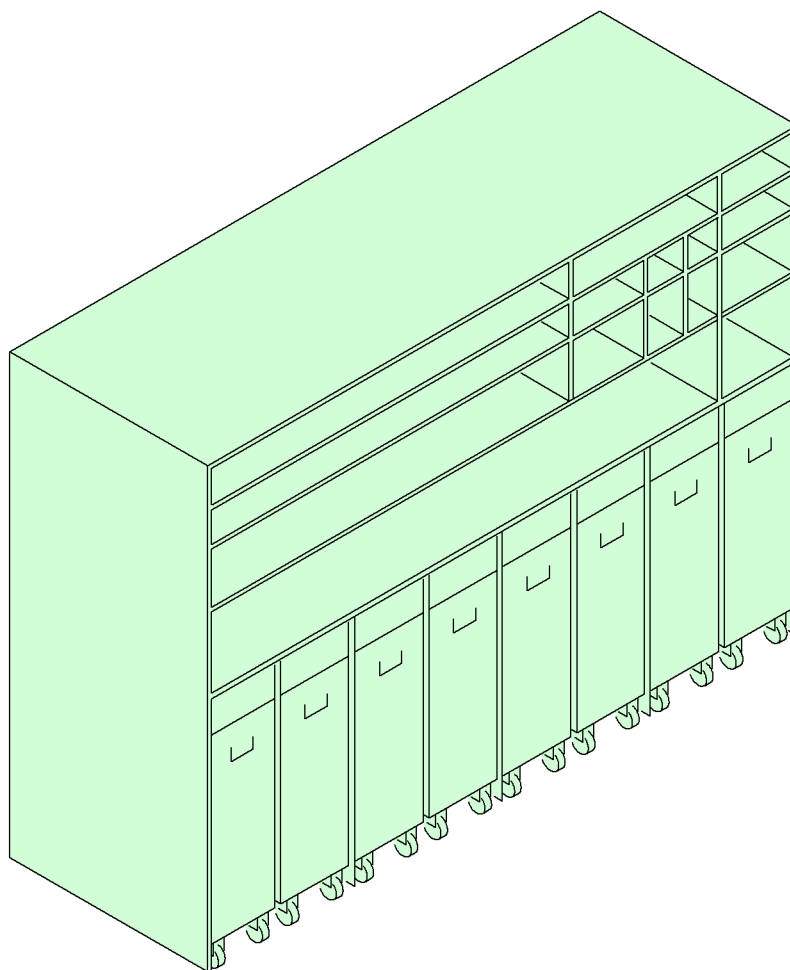


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General Location of
Longitudinal Galleys
A380-800 Models

MAINTENANCE FACILITY PLANNING

LONGITUDINAL GALLEY MODUL

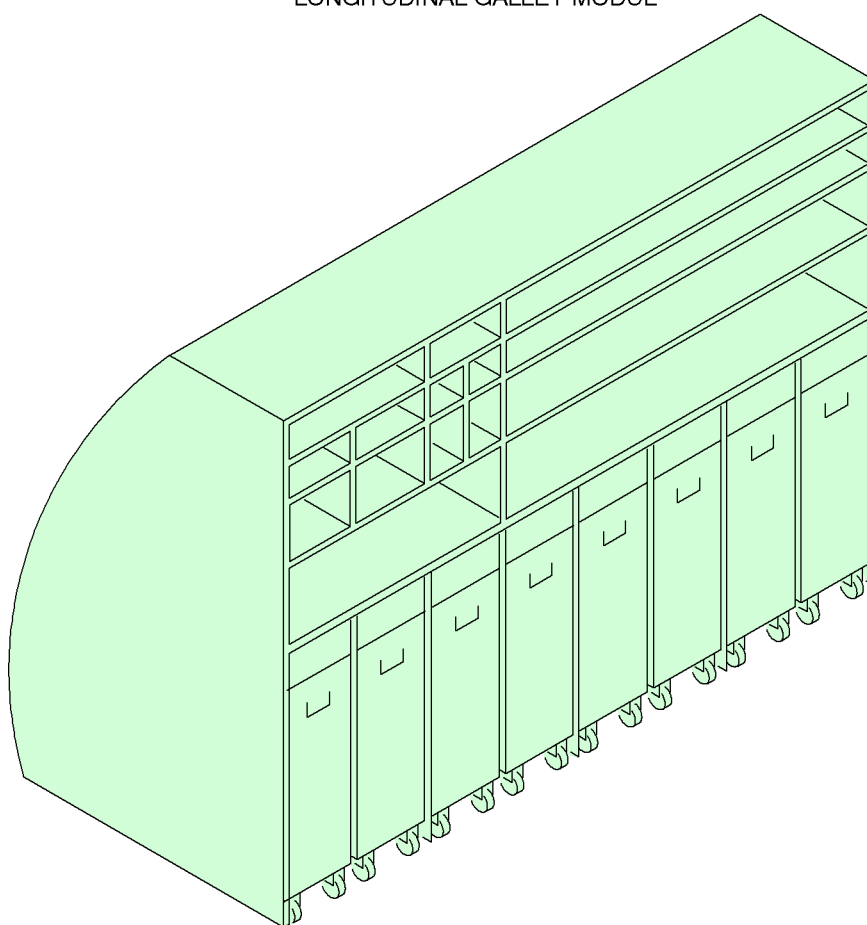


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General Layout
Longitudinal Galley
A380-800 Models

MAINTENANCE FACILITY PLANNING

LONGITUDINAL GALLEY MODUL



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General Layout
Longitudinal Galleys
A380-800 Models

MAINTENANCE FACILITY PLANNING

CARGO COMPARTMENTS

LOADING AND UNLOADING

This section gives information related to cargo compartment location/dimensions and loading.

NOTE : For cargo door clearances, refer to Section 1-10.

A. Arrangements

(1) A380-800 Models

There are three cargo compartments (forward, aft and bulk), all located on the lower deck.

(2) A380-800F Models

There are five cargo compartments as follows :

- three lower deck cargo compartments (forward, aft and bulk),
- one main deck cargo compartment,
- one upper deck cargo compartment.

B. Loading/Unloading

All the cargo compartments can be used independently within the overall weight and performance limitations of the aircraft.

All the cargo compartments (except the lower deck bulk cargo compartment) are equipped for semi-automatic power assisted cargo handling.

(1) Lower deck forward and aft cargo compartments (A380-800/800F Models)

These compartments can accommodate the following Unit Load Devices (ULDs) :

- Half-size containers,
- Full-size containers,
- 60.4 in x 61.5 in pallets,
- 60.4 in x 125 in pallets,
- 88 in x 125 in pallets,
- 96 in x 125 in pallets.

(2) Lower deck bulk cargo compartment (A380-800/800F Models)

This compartment can accommodate bulk cargo and/or be used for the transportation of live animals (as limited by the compartment's characteristics and conditions).

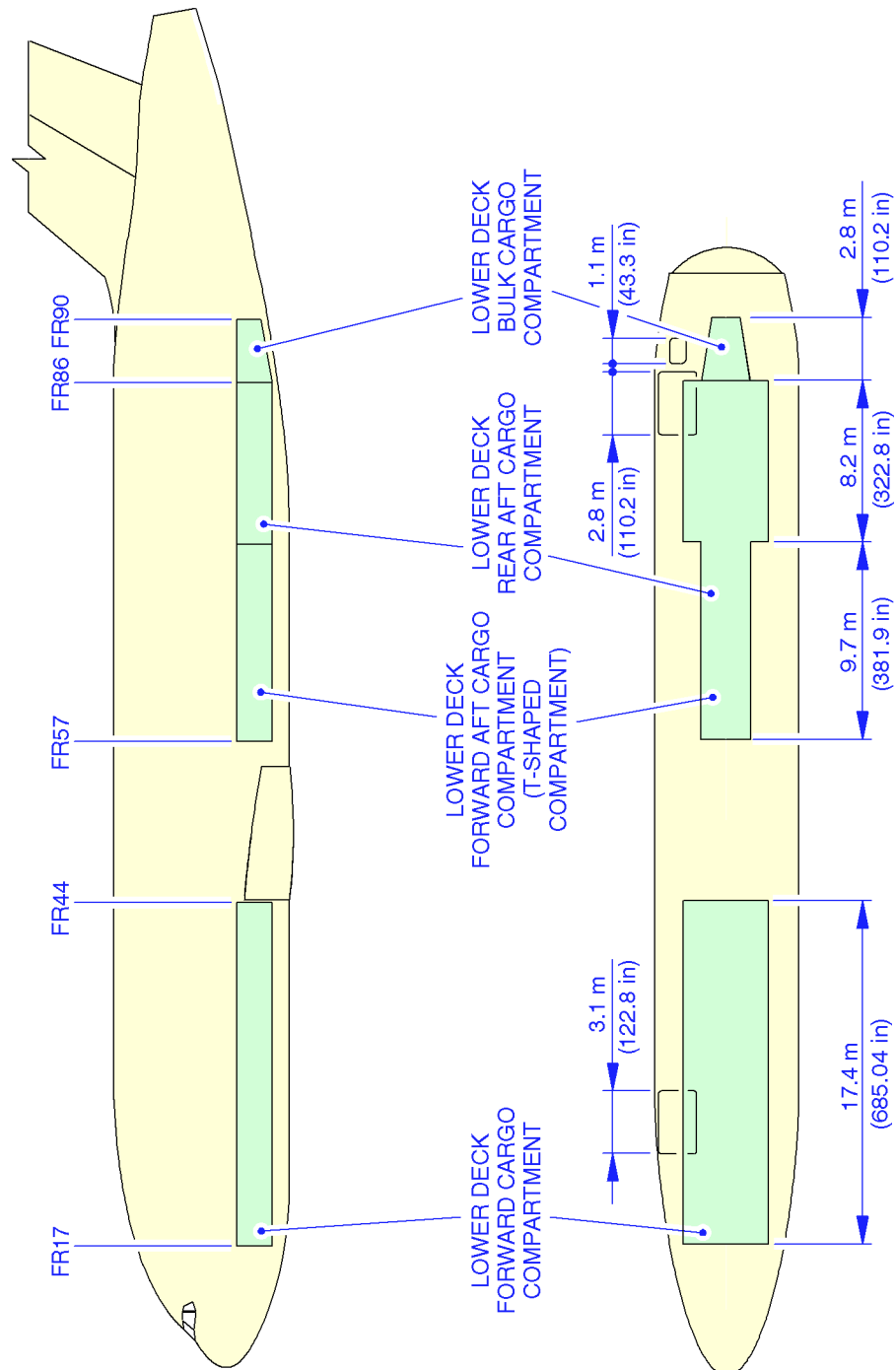
R The usable volume is approximately 18.4 m³ (650 ft³) for the A380-800F
R model, and 14.3 m³ (505 ft³) for the A380-800 model.

(3) Main and upper deck cargo compartments (A380-800F Models)

These compartments can accommodate the following Unit Load Devices (ULDs) :

- 96 in x 125 in containers,
- 96 in x 125 in pallets.

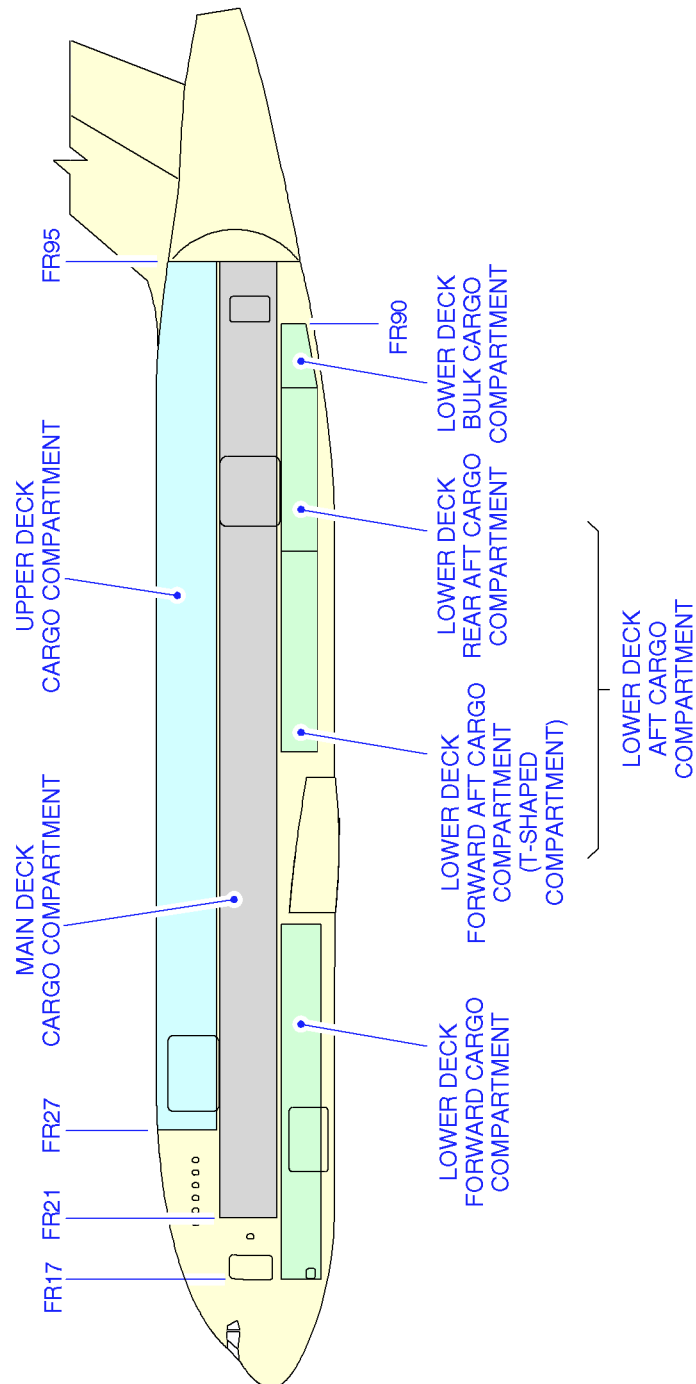
MAINTENANCE FACILITY PLANNING



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**Cargo Compartments
Location and Dimensions
A380-800 Models**

MAINTENANCE FACILITY PLANNING



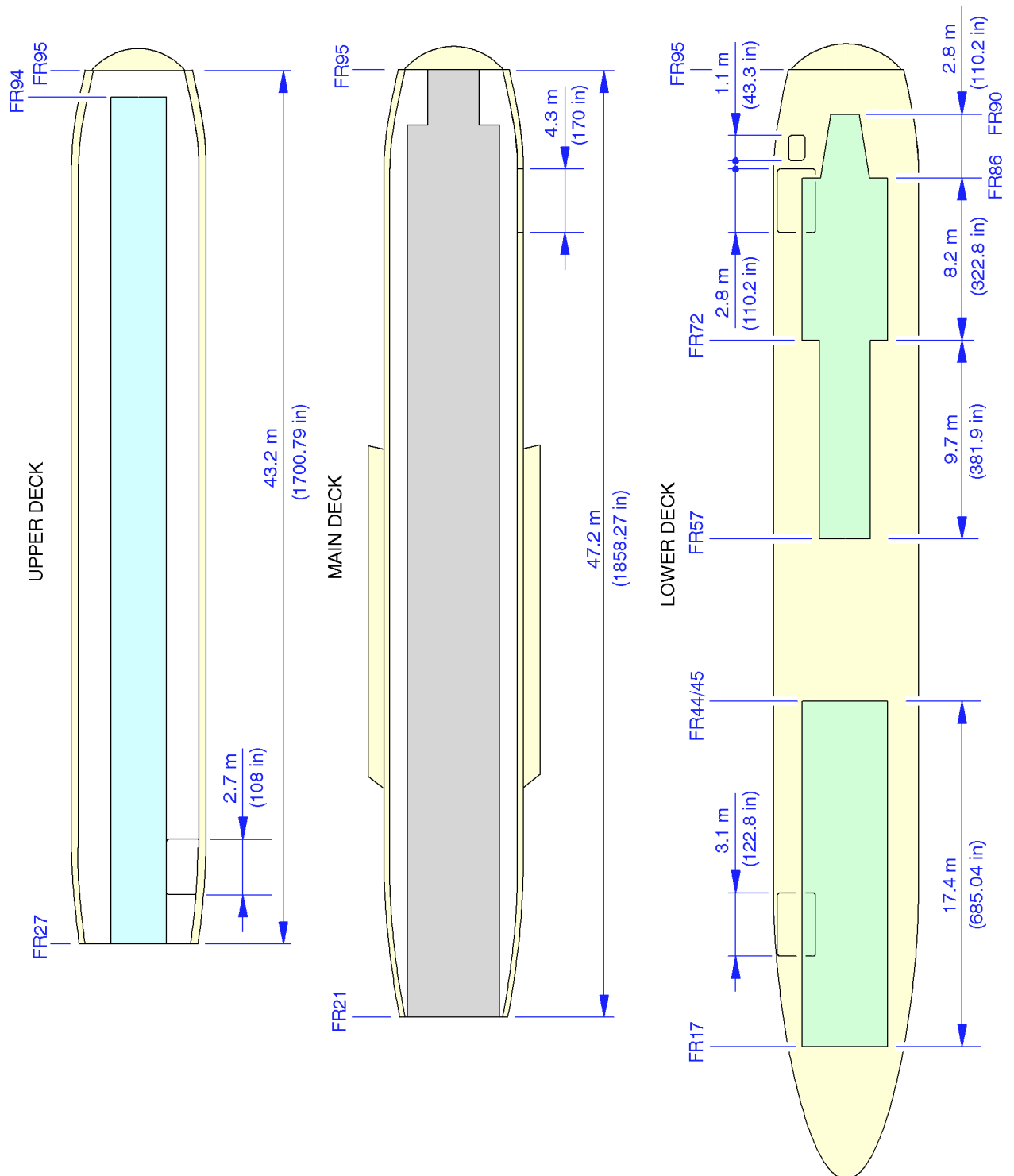
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Cargo Compartments
Location and Dimensions (Sheet 1/2)
A380-800F Models

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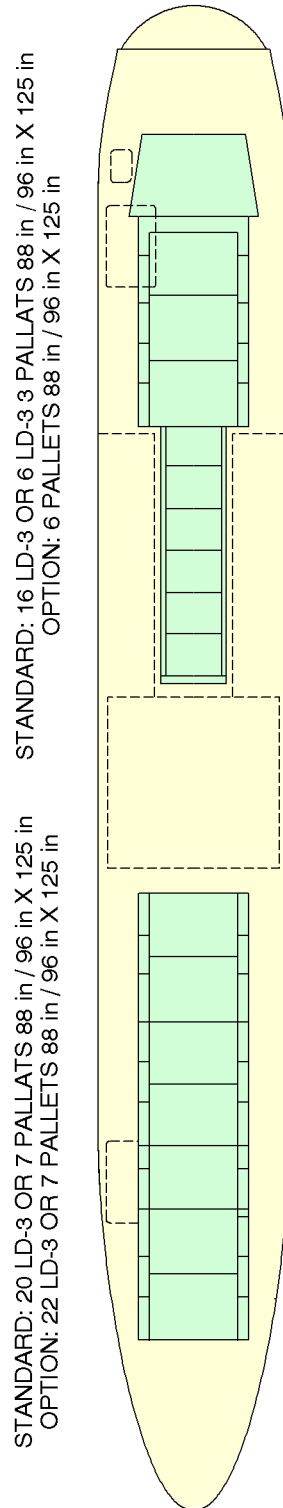
MAINTENANCE FACILITY PLANNING



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Cargo Compartments
Location and Dimensions (Sheet 2/2)
A380-800F Models

MAINTENANCE FACILITY PLANNING



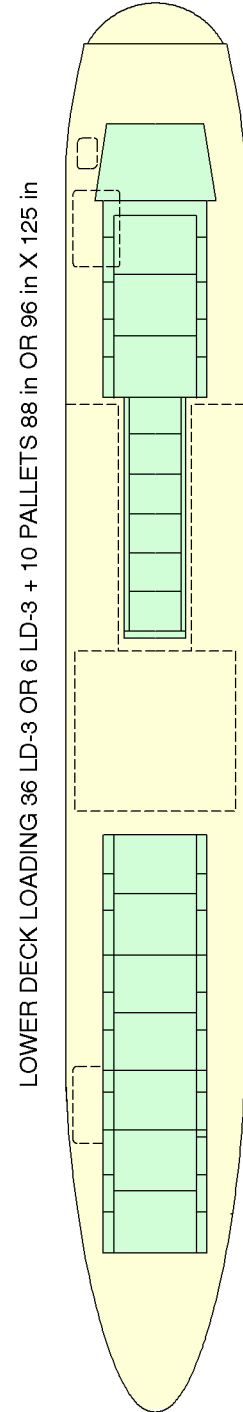
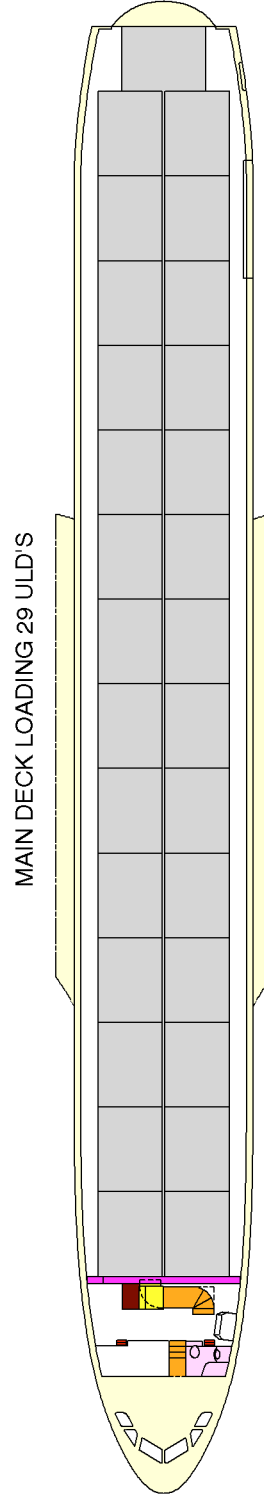
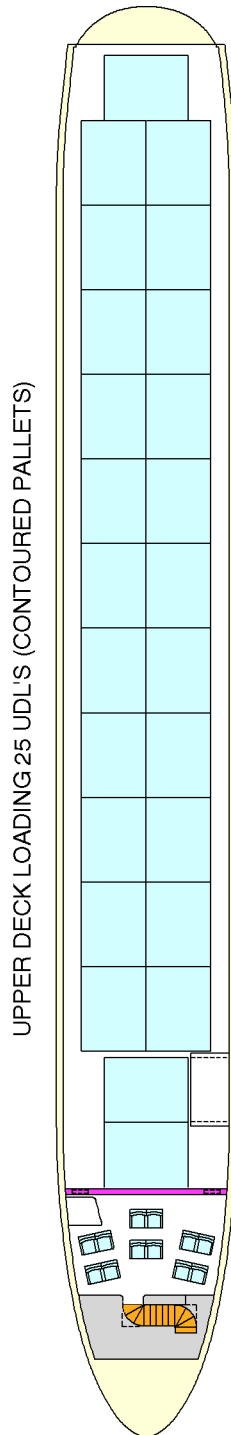
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**Cargo Compartments
Loading Combinations
A380-800 Models**

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MAINTENANCE FACILITY PLANNING



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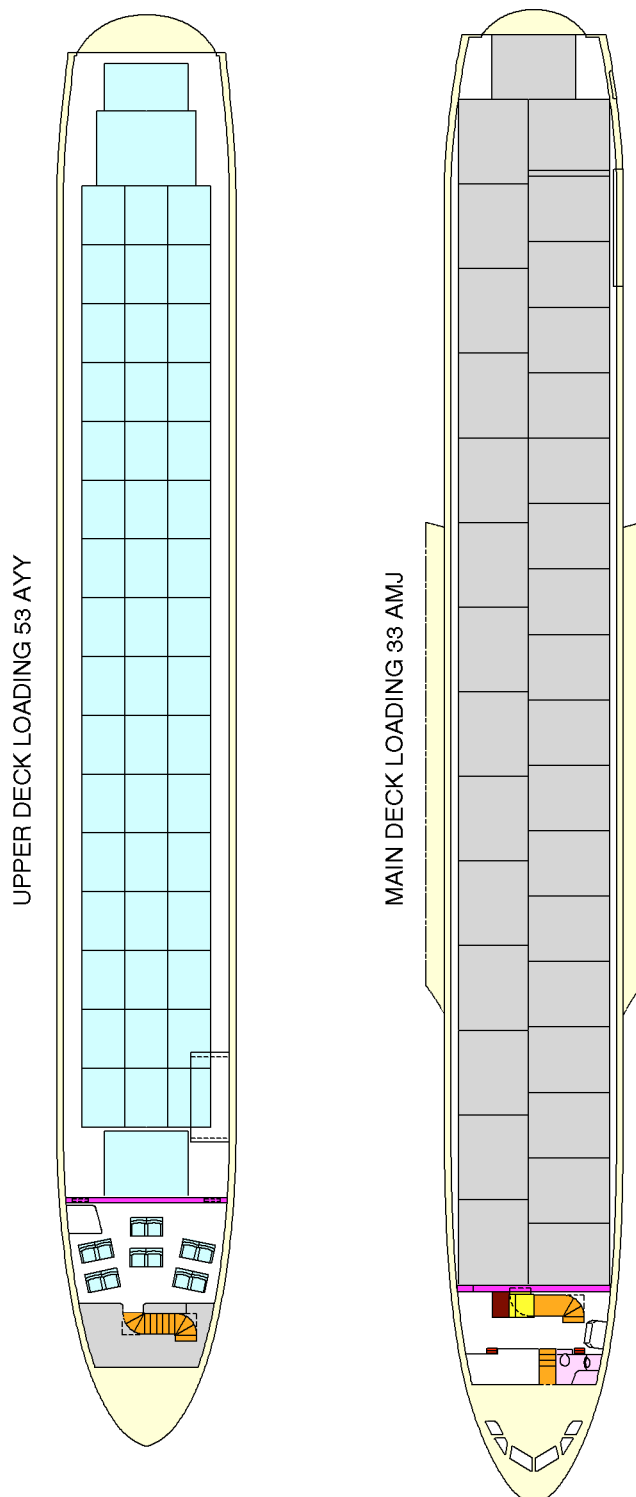
Cargo Compartments
Loading Combinations
A380-800F Models

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Page 6
OCT 15/03

MAINTENANCE FACILITY PLANNING



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Cargo Compartments
Loading Combinations
A380-800F Models

MAINTENANCE FACILITY PLANNING

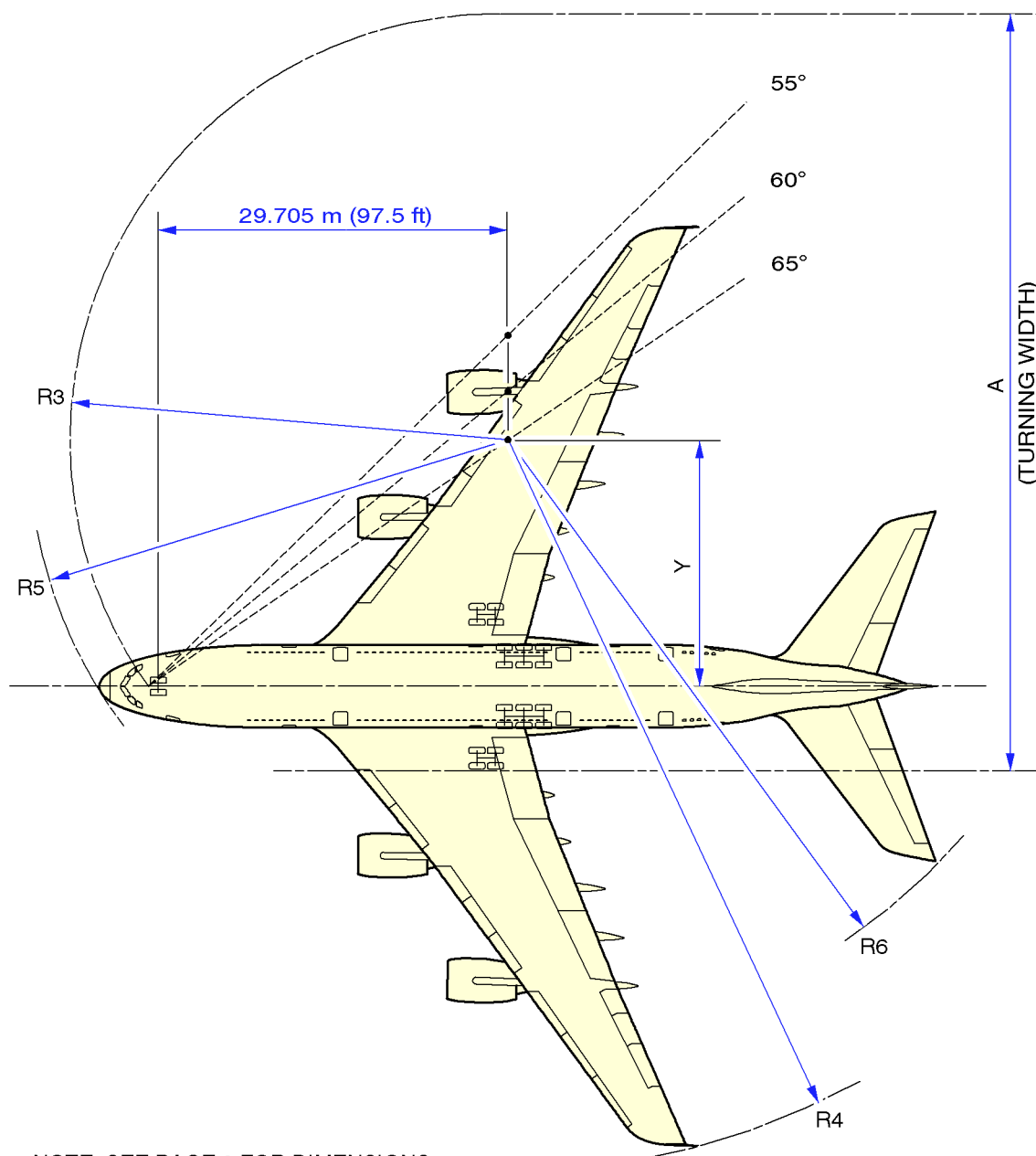
GROUND MANEUVERING

This section provides airplane turning capability and maneuvering characteristics.

For ease of presentation, this data has been determined from the theoretical limits imposed by the geometry of the aircraft, and where noted, provides for a normal allowance for tire slippage. As such, it reflects the turning capability of the aircraft in favorable operating circumstances. This data should only be used as guidelines for the method of determination of such parameters and for the maneuvering characteristics of this aircraft type.

In the ground operating mode, varying airline practices may demand that more conservative turning procedures be adopted to avoid excessive tire wear and reduce possible maintenance problems. Airline operating techniques will vary in the level of performance, over a wide range of operating circumstances throughout the world. Variations from standard aircraft operating patterns may be necessary to satisfy physical constraints within the maneuvering area, such as adverse grades, limited area or high risk of jet blast damage. For these reasons, ground maneuvering requirements should be coordinated with the using airlines prior to layout planning.

MAINTENANCE FACILITY PLANNING



NOTE: SEE PAGE 3 FOR DIMENSIONS

ZMF8 02 08 00 0 AAM0 01

Turning Radii
A380-800/800F Models



PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

Type of Turn	NLG Angle	Effective Steering Angle	Y		A		R3		R4		R5		R6	
			m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
1	70°	69.8°	10.93	35.9	50.73	166.4	32.64	107.1	53.61	175.9	36.5	119.7	45.9	150.6
2	65°	51.2°	23.49	77.1	69.19	227.0	38.54	126.4	65.73	215.7	41.7	136.8	54.3	178.2
2	60°	49.9°	24.76	81.2	71.33	234.0	39.4	129.3	66.94	219.6	42.49	139.4	55.16	181.0
2	55°	47.2°	27.26	89.4	75.5	247.7	41.07	134.8	69.34	227.5	44.03	144.4	56.97	186.9
2	50°	43.8°	30.83	101.2	81.59	267.7	43.6	143.0	72.8	238.8	46.35	152.1	59.65	195.7
2	45°	40.0°	35.27	115.7	89.37	293.2	46.92	154.0	77.11	253.0	49.45	162.2	63.12	207.1
2	40°	35.7°	41.22	135.2	100.04	328.2	51.65	169.4	82.9	272	53.89	176.8	67.93	222.9
2	35°	31.3°	48.98	160.7	114.3	375.0	58.16	190.8	90.49	296.9	60.08	197.1	74.46	244.3
2	30°	26.7°	59.5	195.2	134.09	439.9	67.42	221.2	100.82	330.8	69.0	226.4	83.64	274.4
2	25°	22.0°	74.7	245.1	163.23	535.5	81.36	266.9	115.79	379.9	82.55	270.8	97.37	319.5
2	20°	17.1°	98.89	324.4	210.34	690.1	104.28	342.1	139.73	458.4	105.07	344.7	119.95	393.5

A380-800

Type of Turn	NLG Angle	Effective Steering Angle	Y		A		R3		R4		R5		R6	
			m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
1	70°	69.5°	11.08	36.3	50.97	167.2	32.73	107.4	53.75	176.3	36.54	119.9	45.98	150.9
2	65°	54.9°	20.65	67.7	64.79	212.6	36.98	121.0	62.96	206.6	40.27	132.1	52.22	171.3
2	60°	53.3°	22.02	72.3	67.02	219.9	37.82	124.1	64.27	210.9	41.05	134.7	53.14	174.3
2	55°	50.2°	24.67	80.9	71.31	233.9	39.47	129.5	66.81	219.2	42.54	139.6	55.0	180.5
2	50°	46.2°	28.35	93.0	77.45	254.1	41.93	137.6	70.37	230.9	44.79	147.0	57.72	189.4
2	45°	42°	32.93	108.1	85.34	280.0	45.23	148.4	74.82	245.5	47.85	157.0	61.23	200.9
2	40°	37.5°	38.78	127.2	95.69	314.0	49.75	163.2	80.5	264.1	52.07	170.8	65.89	216.2
2	35°	32.8°	46.25	151.7	109.31	358.6	55.9	183.4	87.8	288.1	57.9	189.9	72.1	236.5
2	30°	28°	56.21	184.4	127.92	419.7	64.55	211.8	97.57	320.1	66.19	217.2	80.7	264.8
2	25°	23.2°	70.31	230.7	154.83	508.0	77.35	253.8	111.45	365.7	78.61	257.9	93.33	306.2
2	20°	18.3°	92.12	302.2	197.15	646.8	97.87	321.1	133.01	436.4	98.72	323.9	113.53	372.5

A380-800F

NOTE:

TYPE 1 TURNS USE:

ASYMMETRIC THRUST - BOTH ENGINES ON THE INSIDE OF THE TURN TO BE AT IDLE THRUST

DIFFERENTIAL BRAKING - BRAKING APPLIED TO THE WING GEAR WHEELS ON THE INSIDE OF THE TURN.

TYPE 2 TURNS USE:

SYMMETRIC THRUST AND NO BRAKING.

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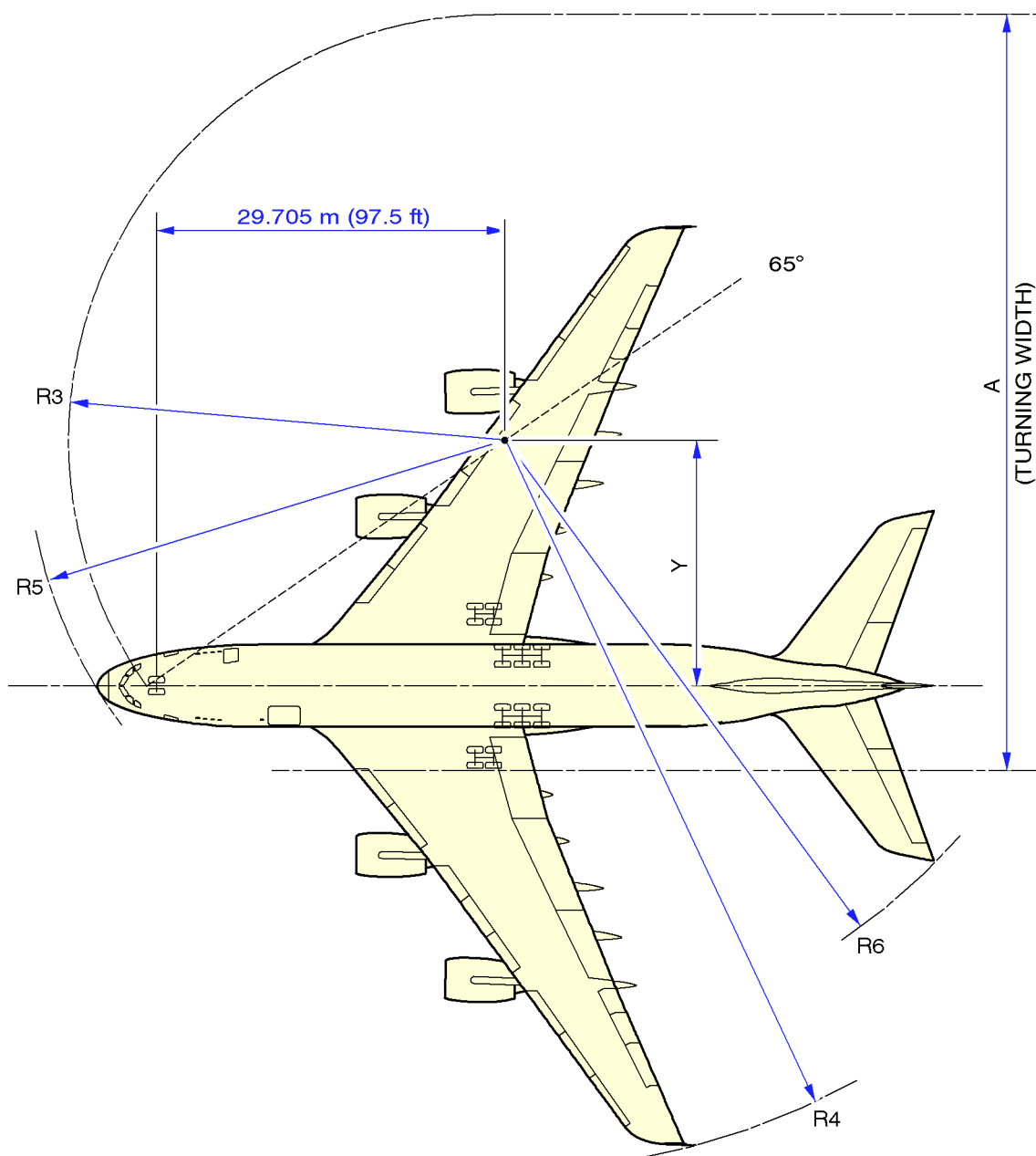
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RTurning Radii
A300-800/800F Models

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MAINTENANCE FACILITY PLANNING



NOTE: SEE PAGE 5 FOR DIMENSIONS

ZMF8 02 08 00 0 AEM0 02

Minimum Turning Radii
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

NLG Angle	Effective Steering Angle	Y		A		R3		R4		R5		R6	
		m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
78°	73.7°	8.53	28.0	47.55	156.0	31.85	104.5	51.34	168.5	35.86	117.7	44.57	146.2

NOTE: TURN PERFORMED WITH ASYMMETRIC THRUST (IDLE THRUST ON BOTH ENGINES ON INSIDE OF TURN) AND DIFFERENTIAL BRAKING (BRAKING APPLIED TO ALL WING AND BODY GEAR WHEELS ON ONE SIDE OF AIRCRAFT)

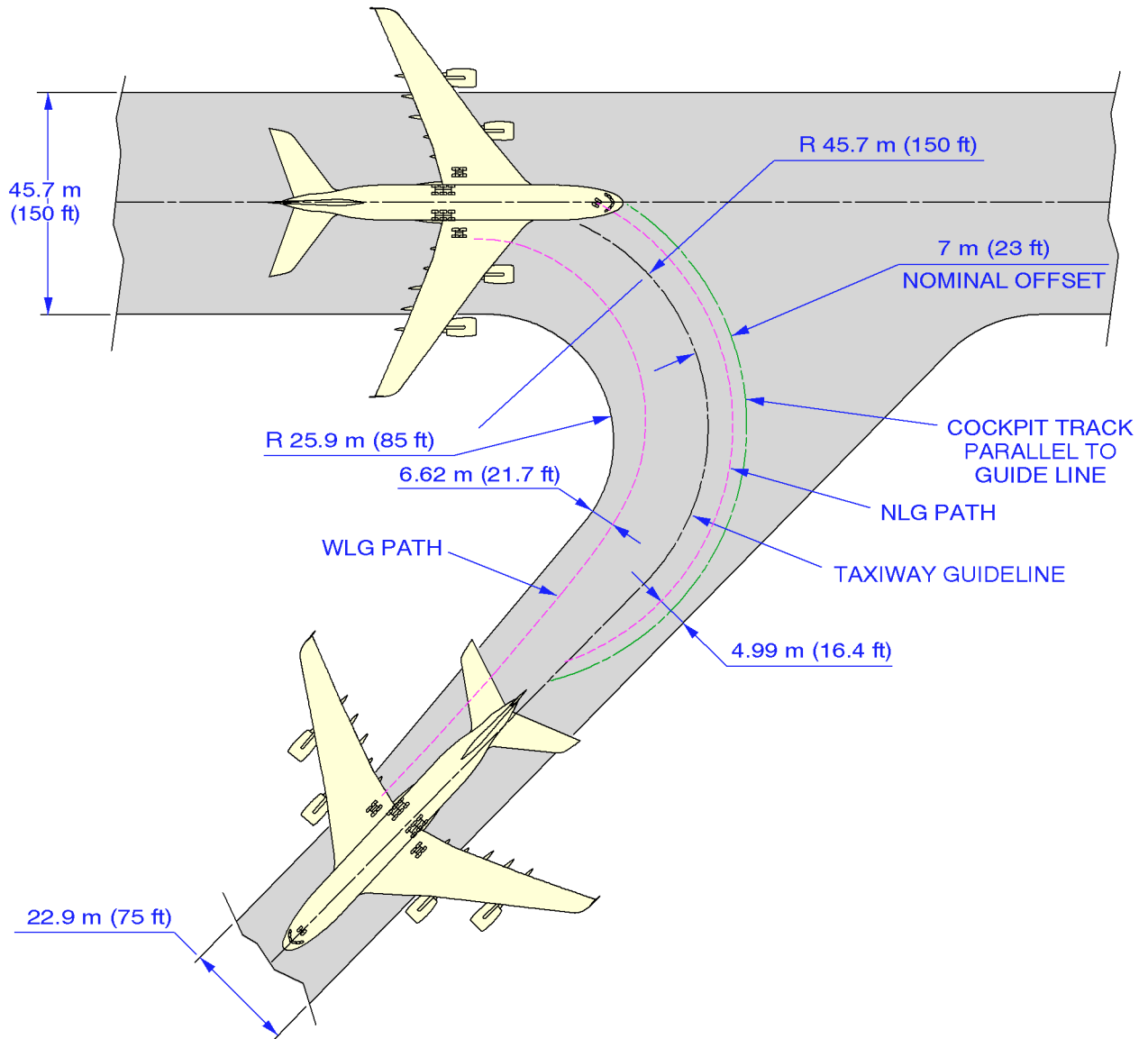
NLG Angle	Effective Steering Angle	Y		A		R3		R4		R5		R6	
		m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
65°	53.7°	21.34	70.0	65.75	215.7	37.24	122.2	63.66	208.8	40.57	133.1	52.77	173.1

NOTE: TURN PERFORMED WITH SYMMETRIC THRUST AND NO BRAKING

ZMF8 02 08 00 0 AGM0 00

Minimum Turning Radii
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

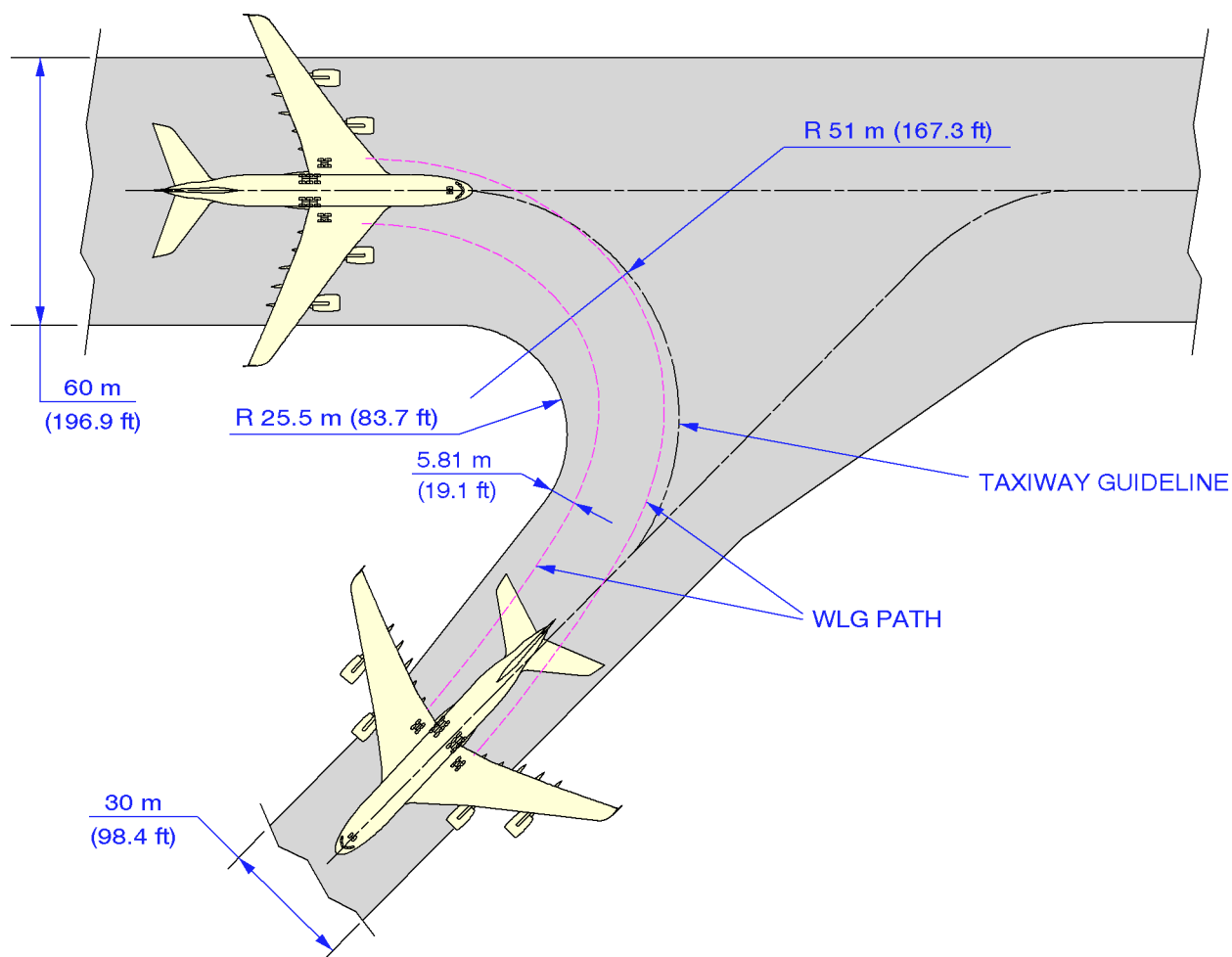


NOTE: FAA GROUP V JUDGEMENTAL OVERSTEER METHOD

ZMF8 02 08 00 0 AJM0 02

135 Deg. Turn - Runway to Taxiway
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

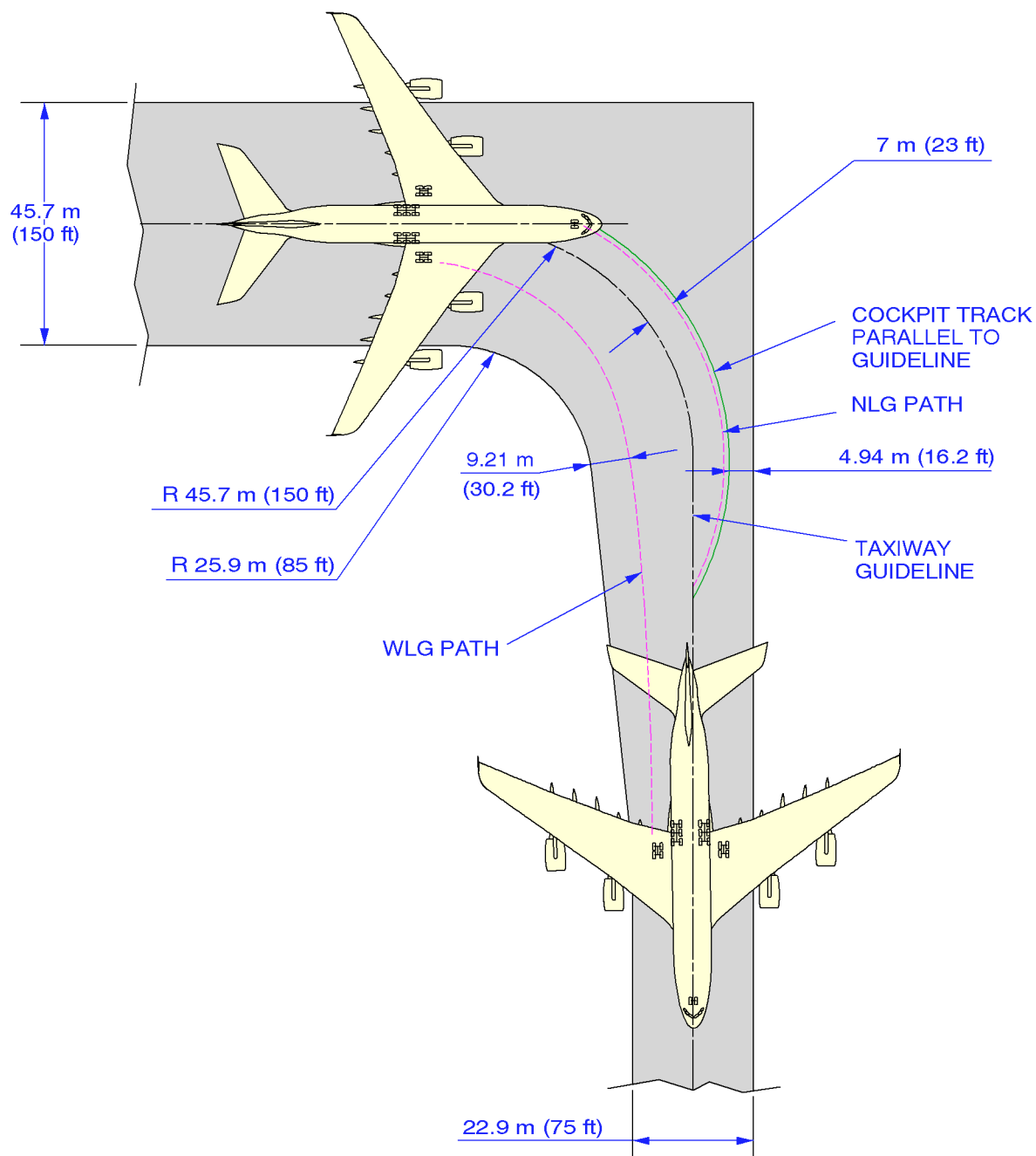


NOTE: FAA GROUP VI COCKPIT TRACKS CENTRELINE METHOD

ZMF8 02 08 00 0 ABM0 00

135 Deg. Turn - Runway to Taxiway
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

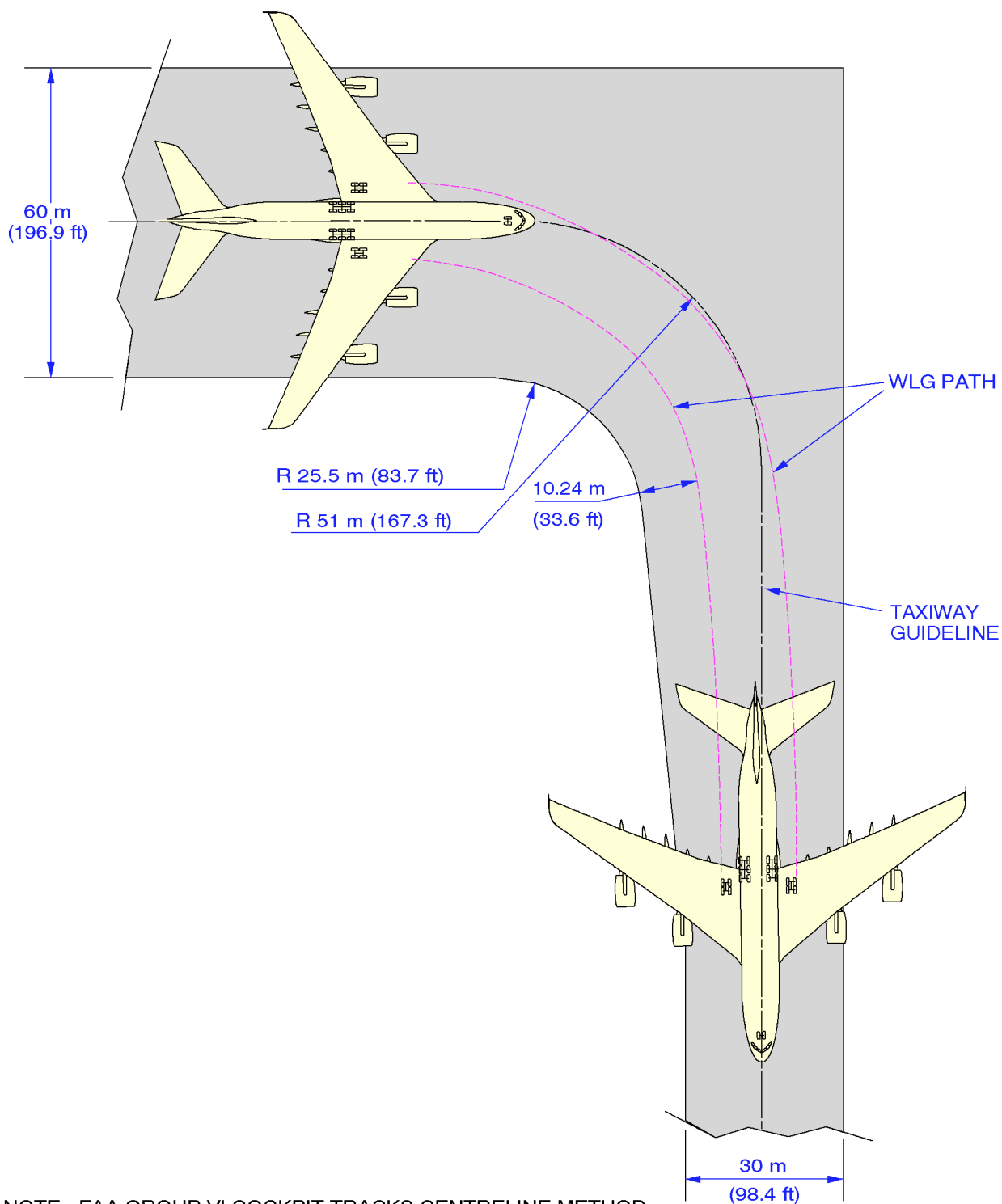


NOTE: FAA GROUP V JUDGEMENTAL OVERSTEER METHOD

ZMF8 02 08 00 0 ALMO 02

90 Deg. Turn - Runway to Taxiway
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

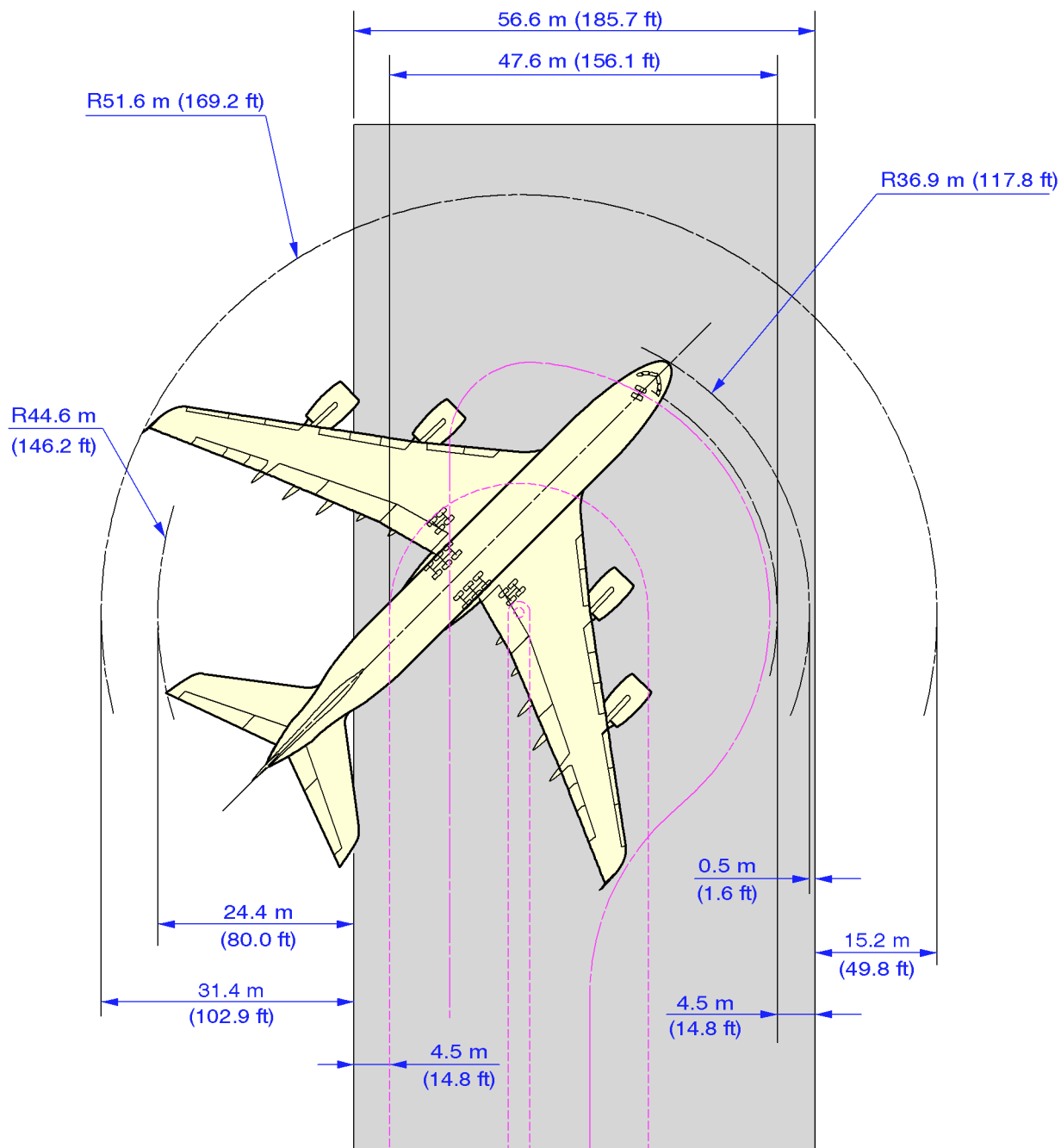


NOTE: FAA GROUP VI COCKPIT TRACKS CENTRELINE METHOD

ZMF8 02 08 00 0 AFM0 00

90 Deg. Turn - Runway to Taxiway
A380-800/800F Models

MAINTENANCE FACILITY PLANNING



NOTE: 78° NOSE GEAR STEERING ASYMMETRIC THRUST AND BRAKING

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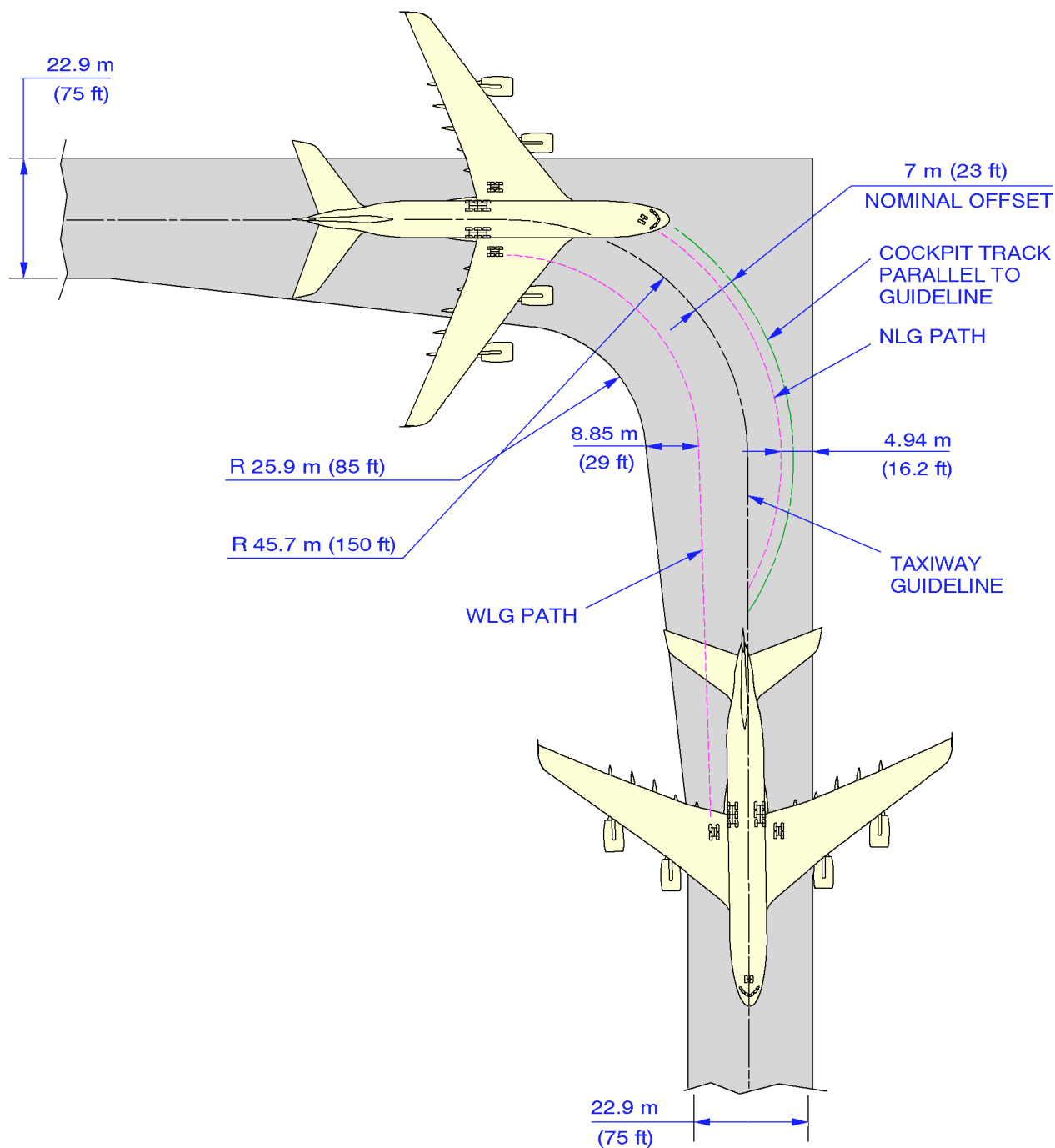
**180 Deg. Turn on a Runway
A380-800/800F Models**

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Page 10
OCT 15/03

MAINTENANCE FACILITY PLANNING

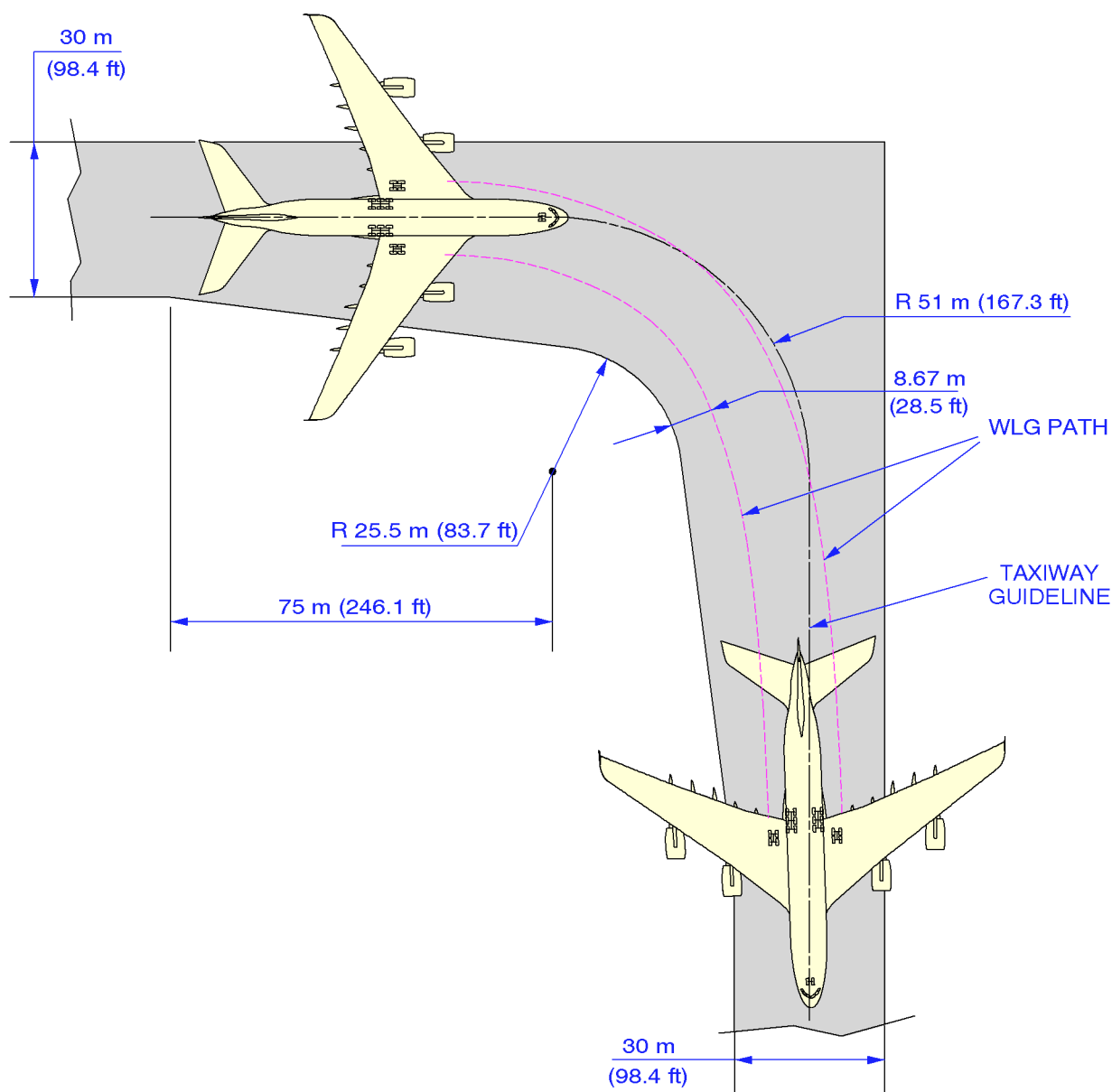


NOTE: FAA GROUP V JUDGEMENTAL OVERSTEER METHOD

ZMF8 02 08 00 0 AQM0 02

90 Deg. Turn - Taxiway to Taxiway
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

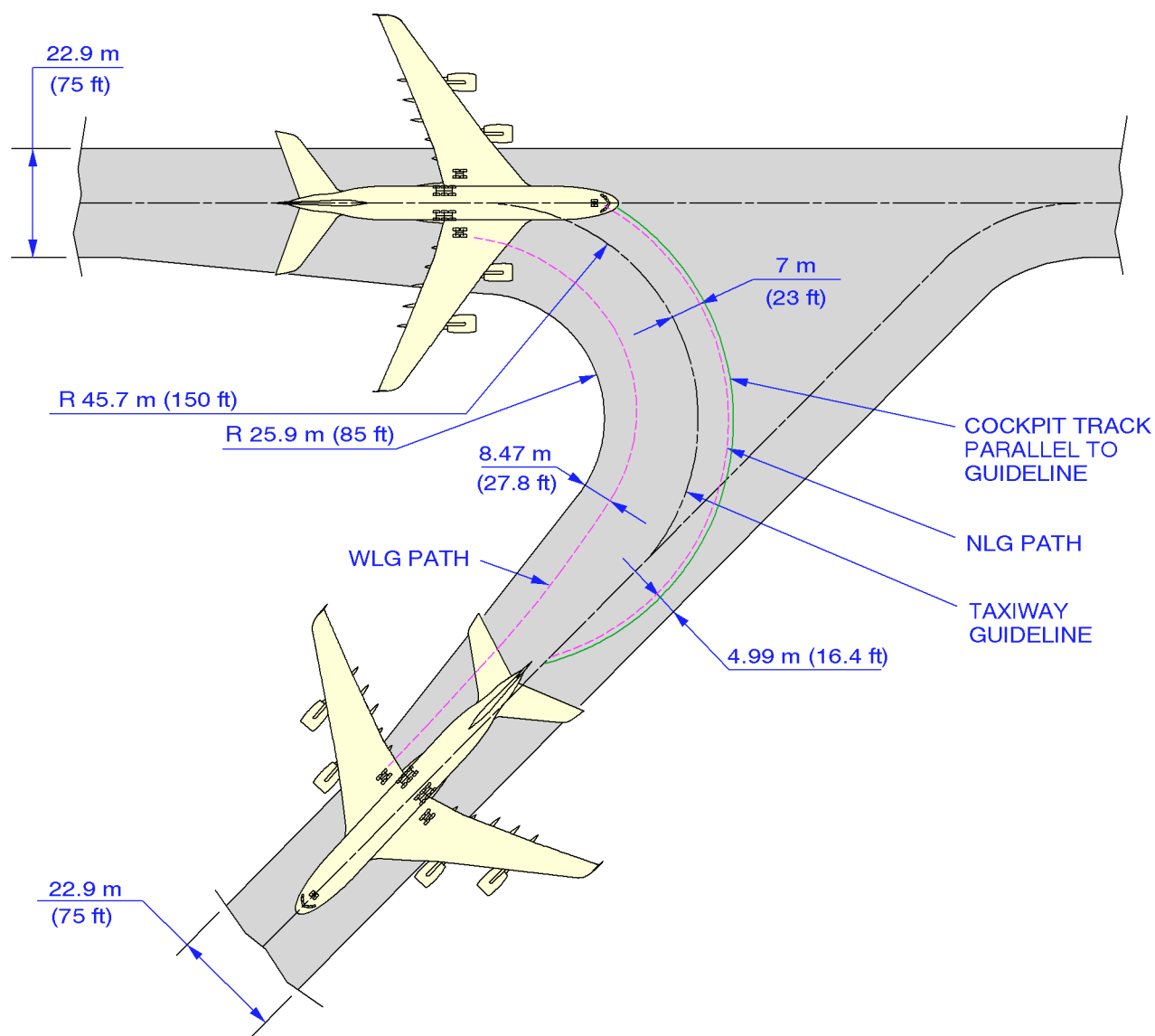


NOTE: FAA GROUP VI COCKPIT TRACKS CENTRELINE METHOD

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90 Deg. Turn - Taxiway to Taxiway
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

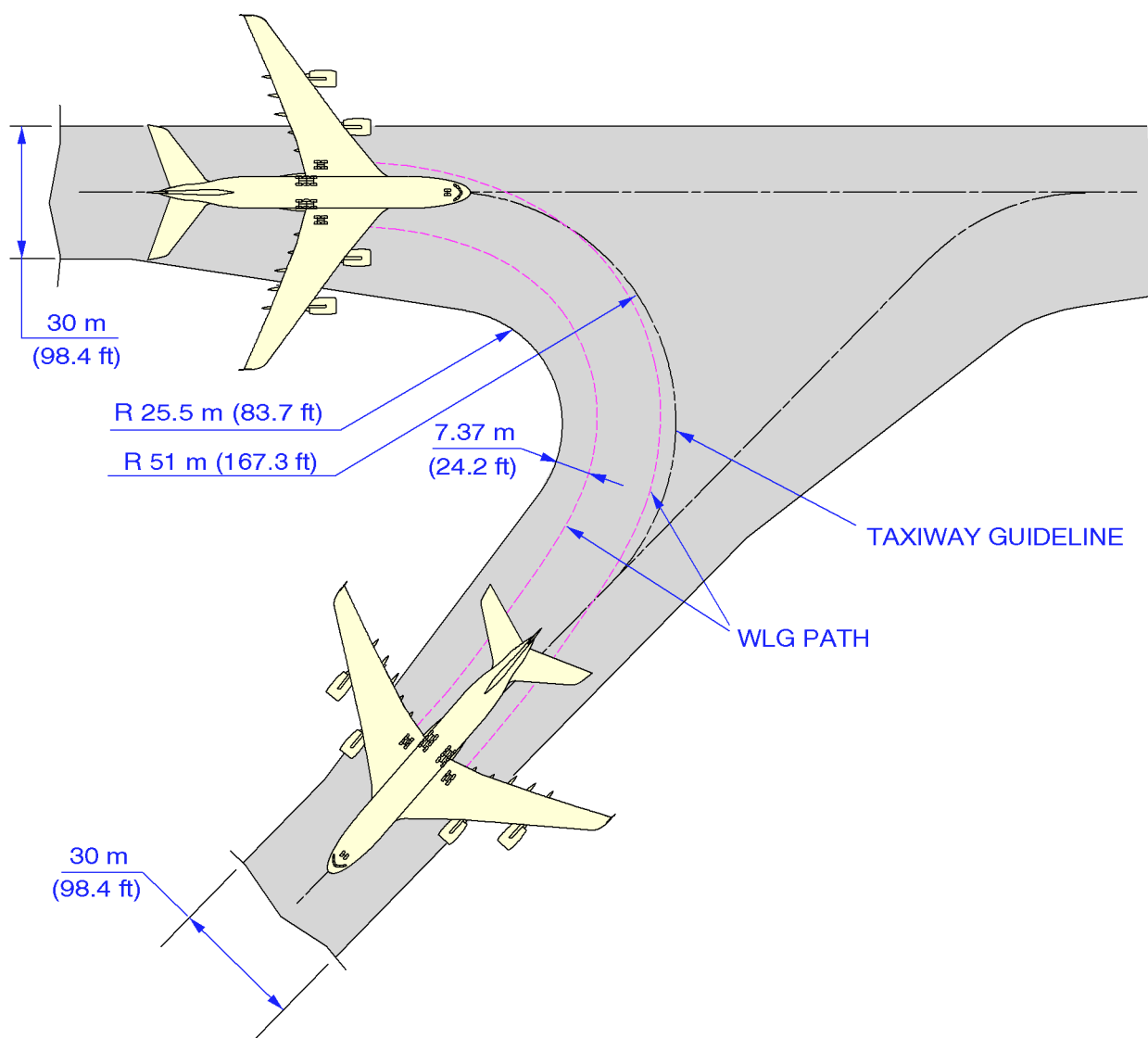


NOTE: FAA GROUP V JUDGEMENTAL OVERSTEER METHOD

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135 Deg. Turn - Taxiway to Taxiway
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

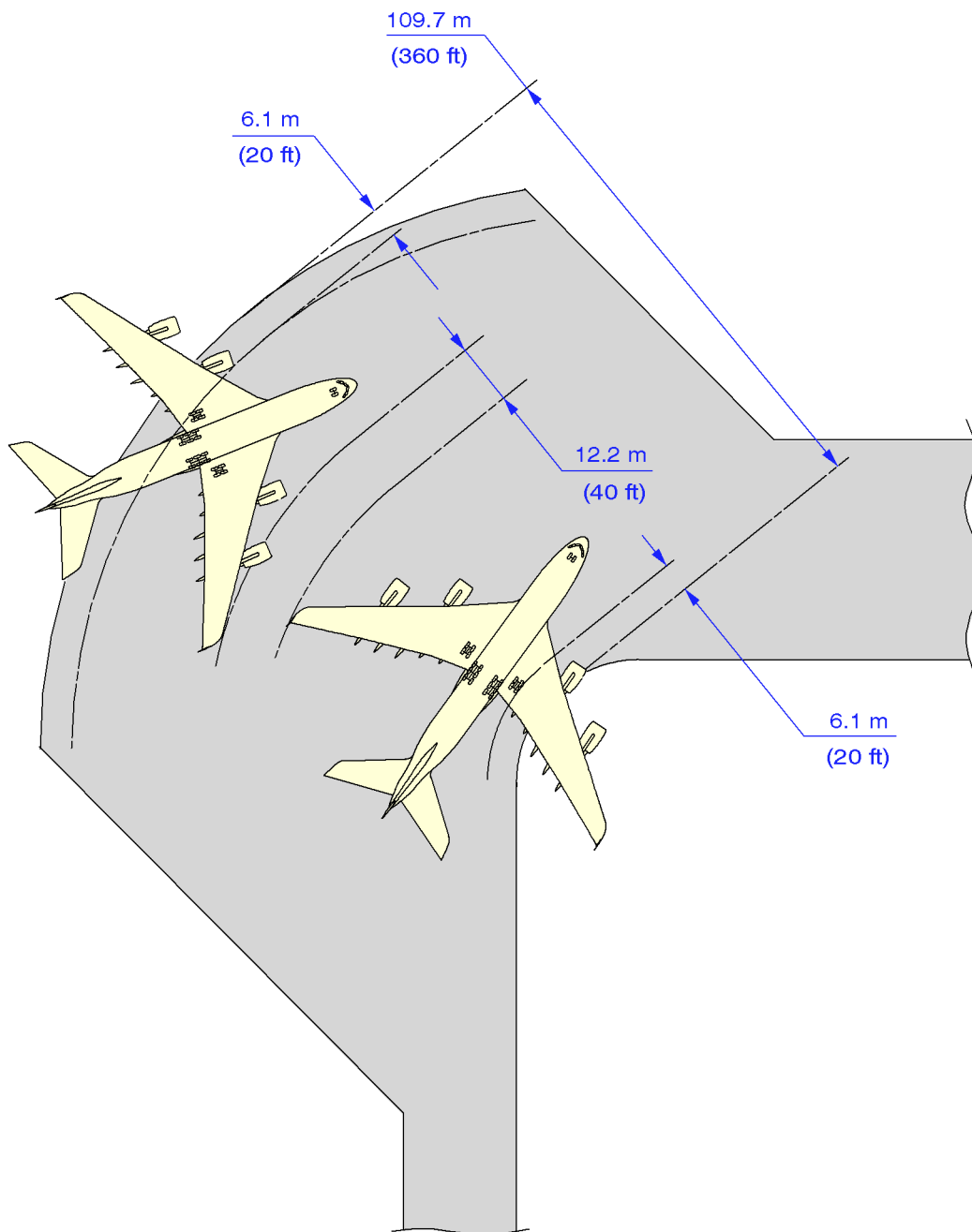


NOTE: FAA GROUP VI COCKPIT TRACKS CENTRELINE METHOD

ZMF8 02 08 00 0 ADM0 00

135 Deg. Turn - Taxiway to Taxiway
A380-800/800F Models

MAINTENANCE FACILITY PLANNING



NOTE: COORDINATE WITH USING AIRLINE FOR SPECIFIC PLANNED OPERATING PROCEDURE

ZMF8 02 08 00 0 AUM0 01

Runway Holding Bay (Apron)
A380-800/800F Models

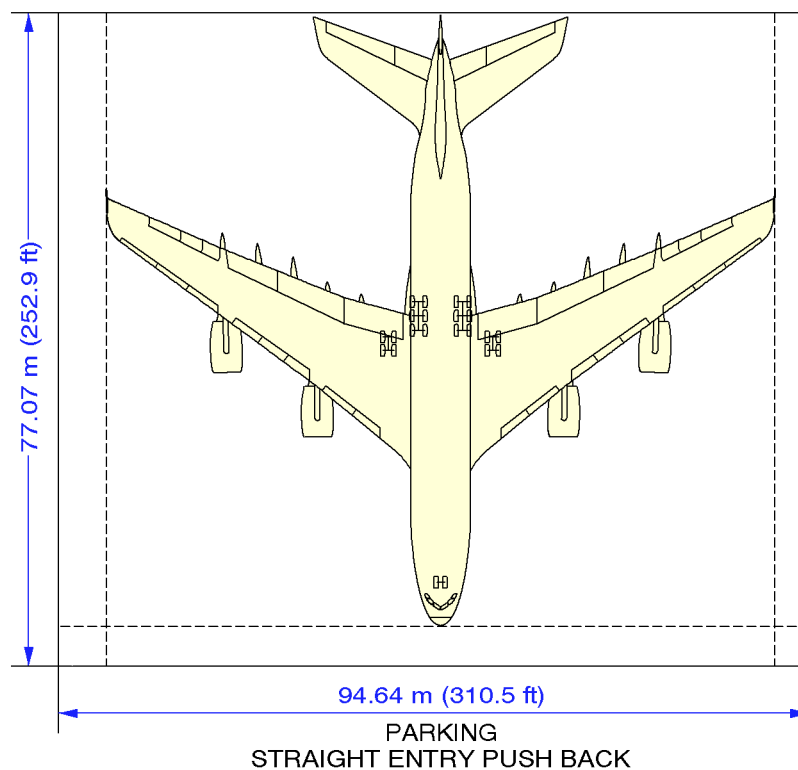
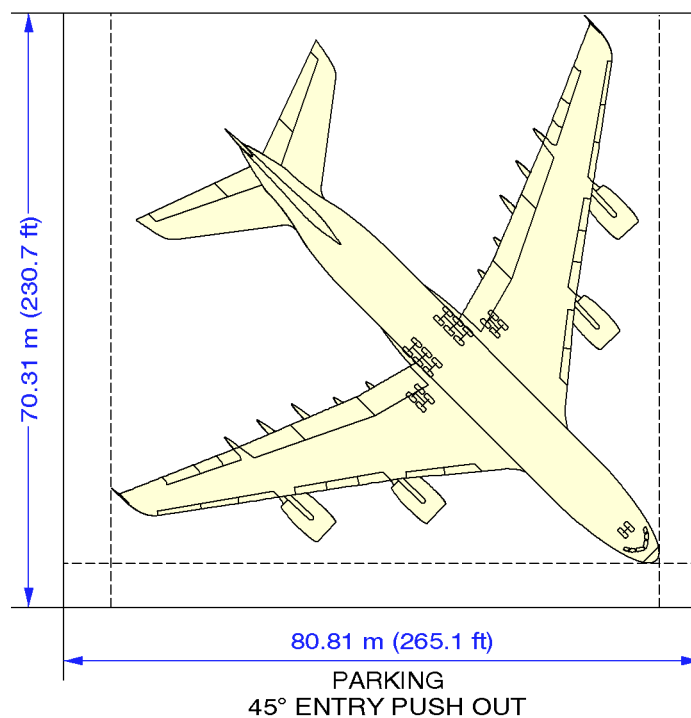
MAINTENANCE FACILITY PLANNING

AIRPLANE PARKING

The following figures and charts show the rectangular space required for parking against the terminal building :

- Steering Geometry : Page 2
- Minimum Parking Space Requirements : Page 3

MAINTENANCE FACILITY PLANNING



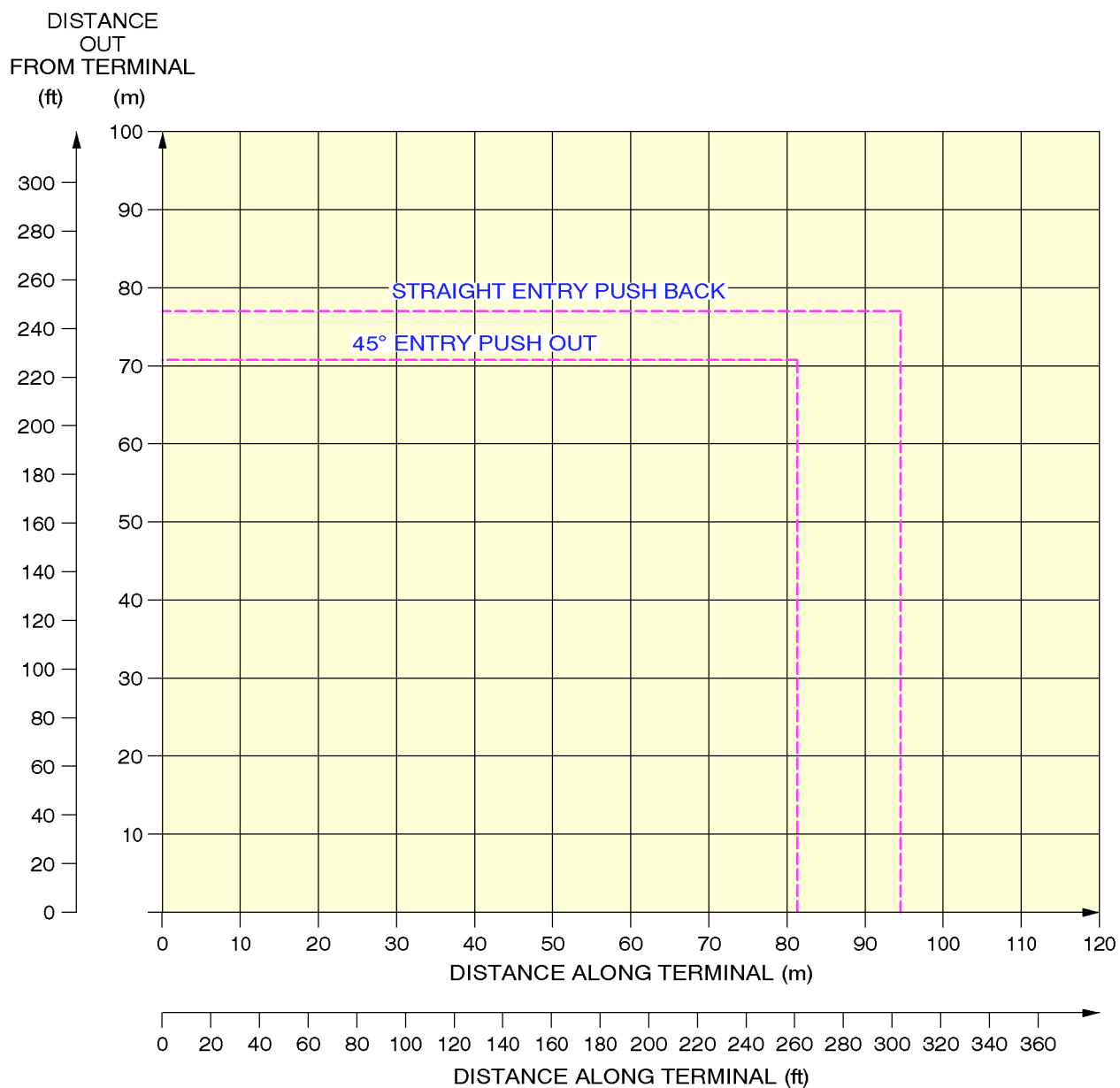
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Airplane Parking
Steering Geometry
A380-800/800F Models



PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING



ZMF8 02 09 00 0 ACM0 02

Airplane Parking
Minimum Parking Space Requirements
A380-800/800F Models

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JUL 01/02

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MAINTENANCE FACILITY PLANNING

OPERATING CONDITIONS

1. Engine Operating Conditions

The illustrations show the exhaust characteristics relative to :

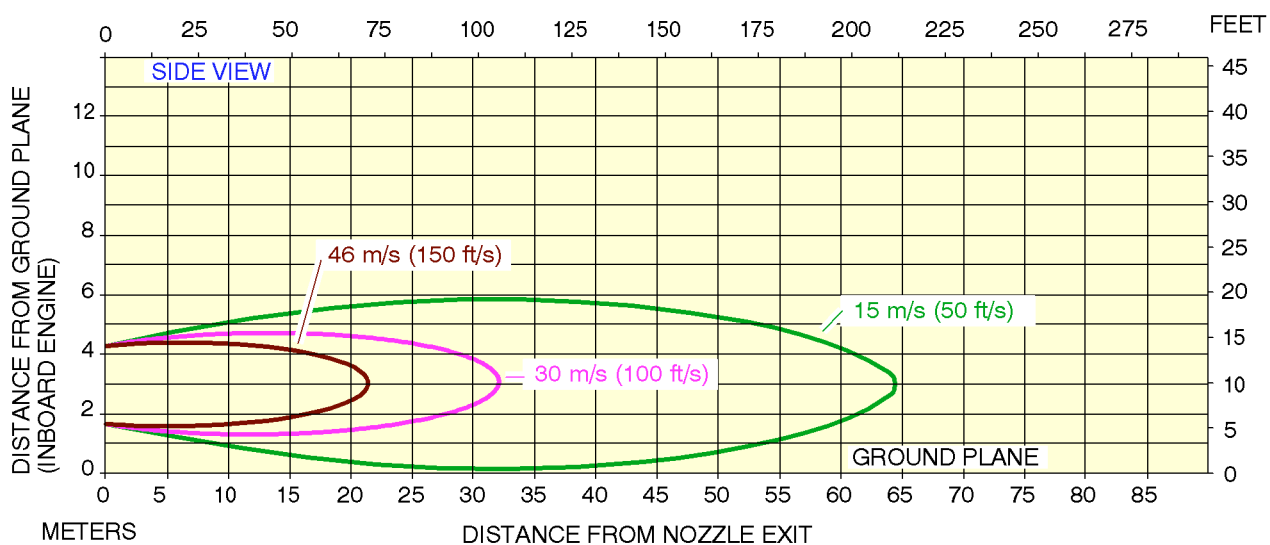
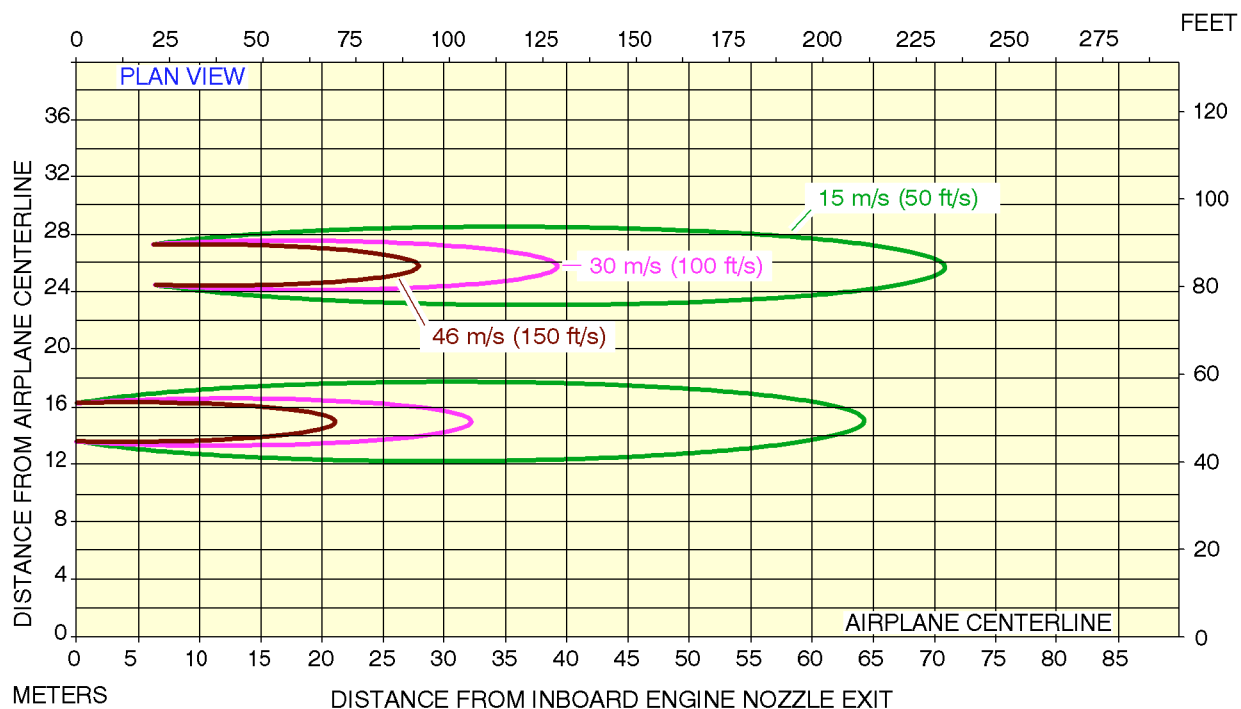
- exhaust velocities and temperatures,
- airport and community noise data (TBIL),
- danger areas (TBIL).

2. APU Operating Conditions

The illustration shows the exhaust characteristics relative to :

- exhaust velocities (TBIL) and temperatures.

MAINTENANCE FACILITY PLANNING



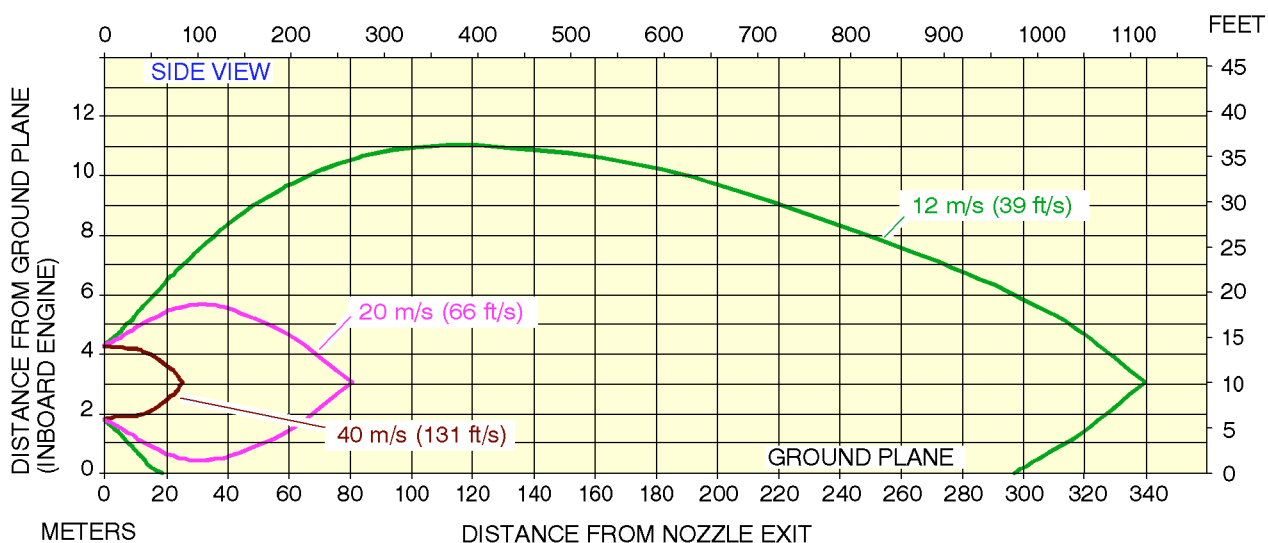
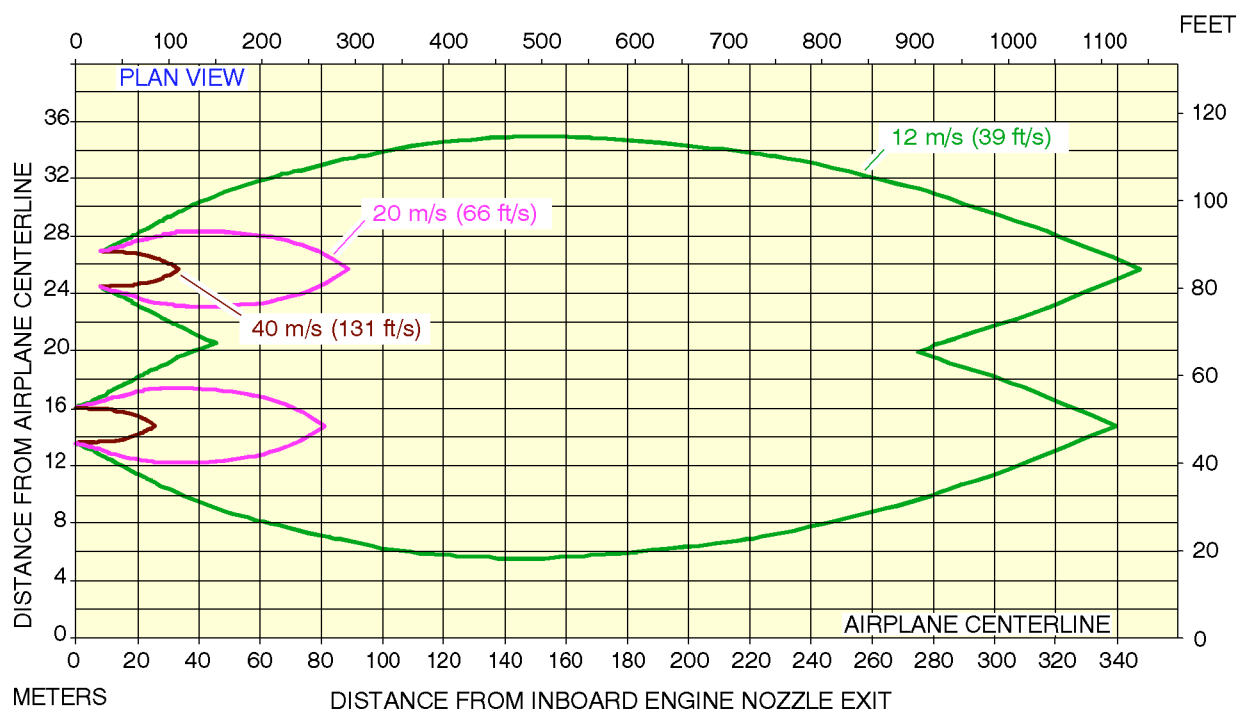
NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA + 15° C (59° F)
- NO WIND

ZMF5 02 11 00 0 RAM0 00

Engine Exhaust Velocities
Ground Idle Power - TRENT 970/977 Engines
A380-841/843F Models

MAINTENANCE FACILITY PLANNING



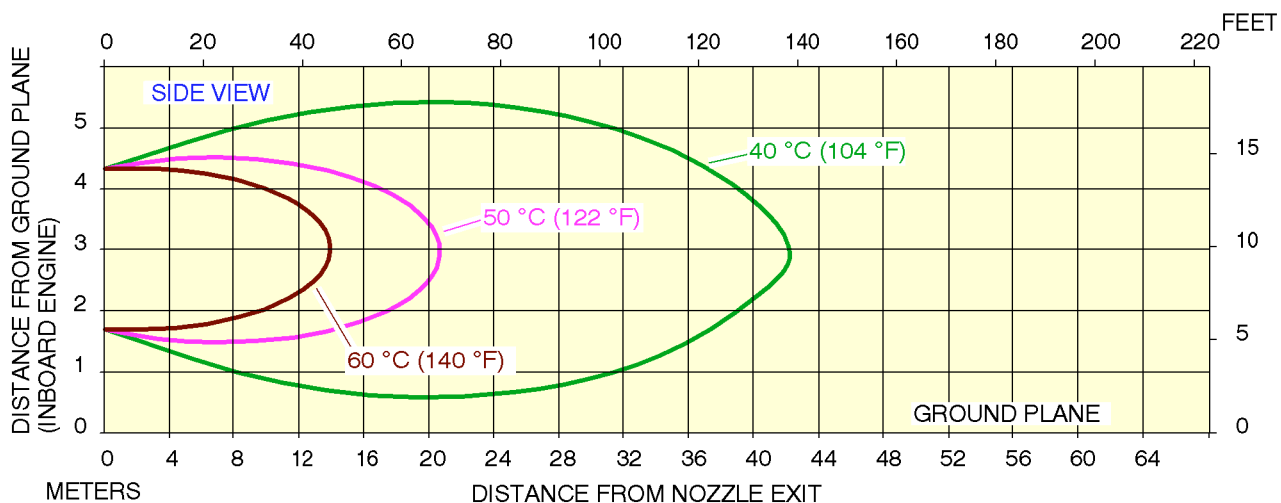
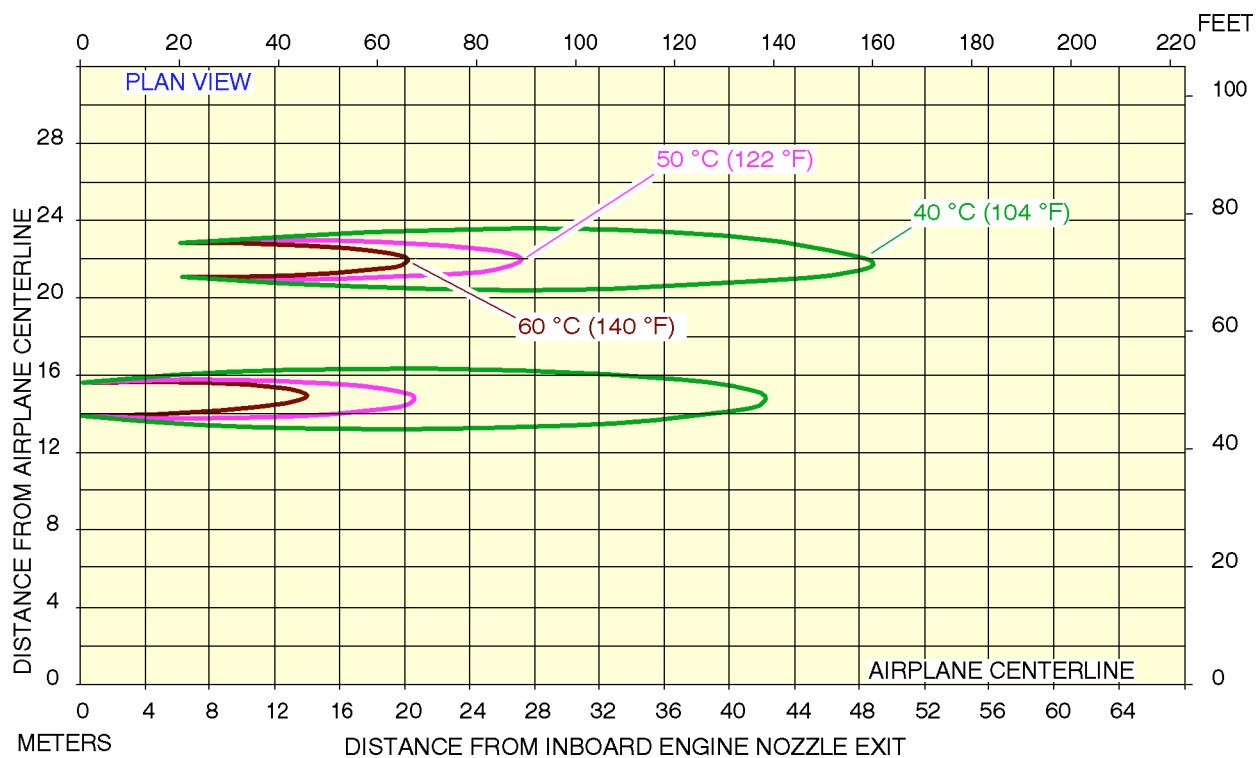
NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GAM 00

Engine Exhaust Velocities
Ground Idle Power – GP 7270/7277 Engines
A380-861/863F Models

MAINTENANCE FACILITY PLANNING



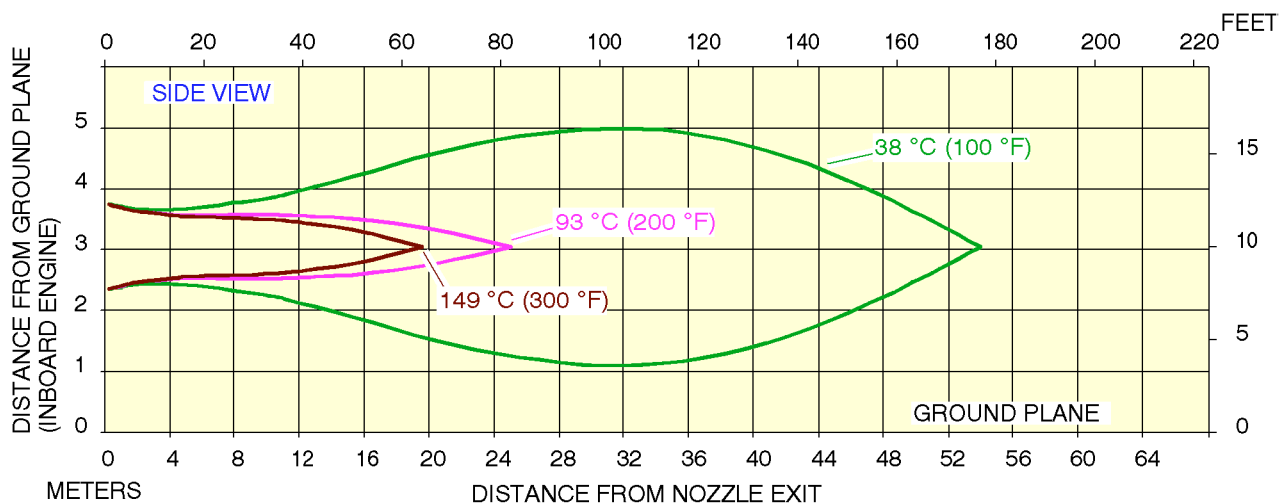
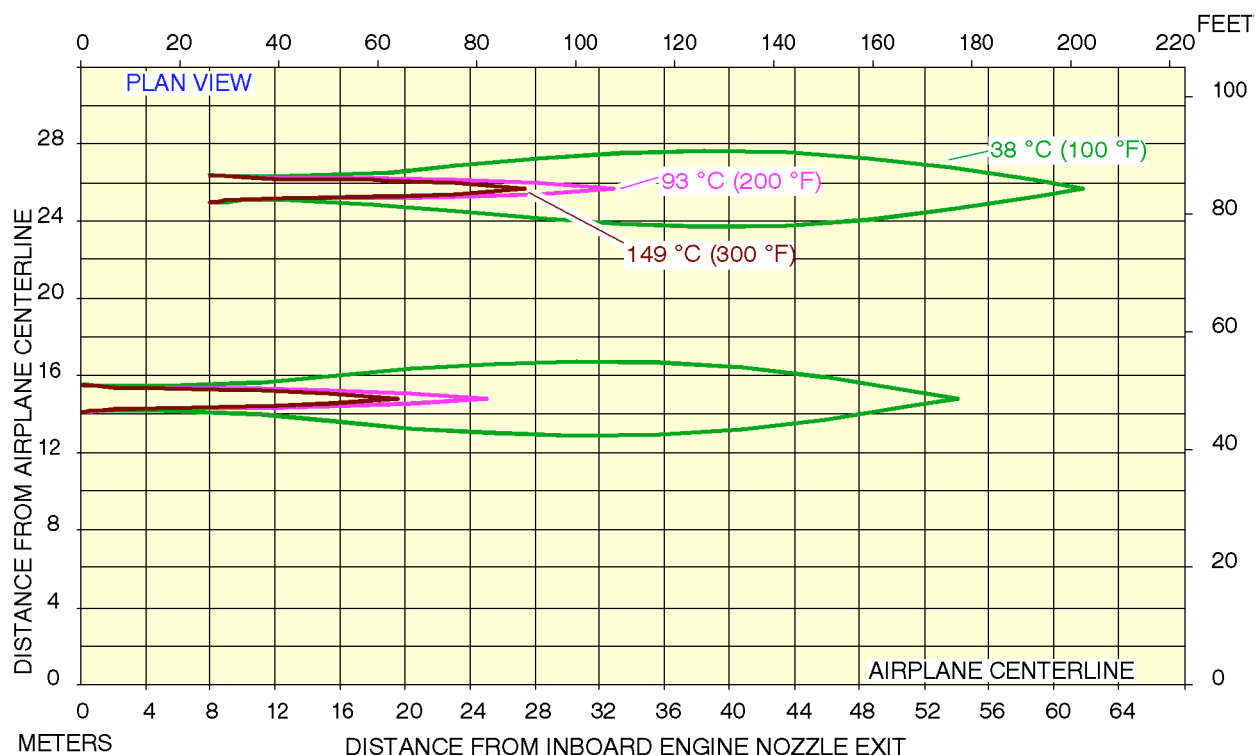
NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F)
- NO WIND

ZMF5 02 11 00 0 RBM0 00

Engine Exhaust Temperatures
Ground Idle Power - TRENT 970/977 Engines
A380-841/843F Models

MAINTENANCE FACILITY PLANNING



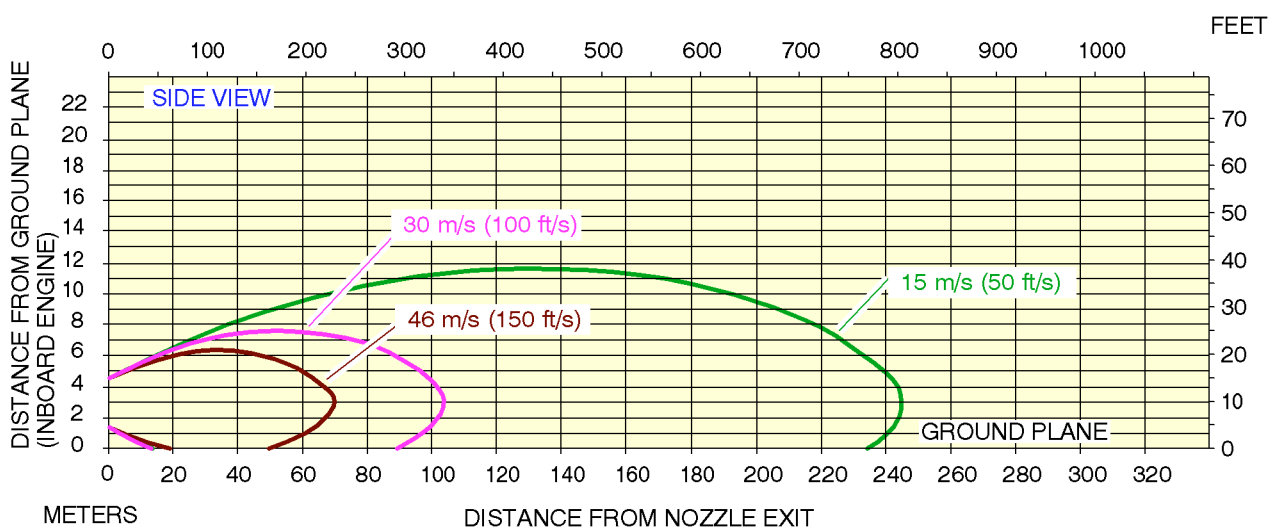
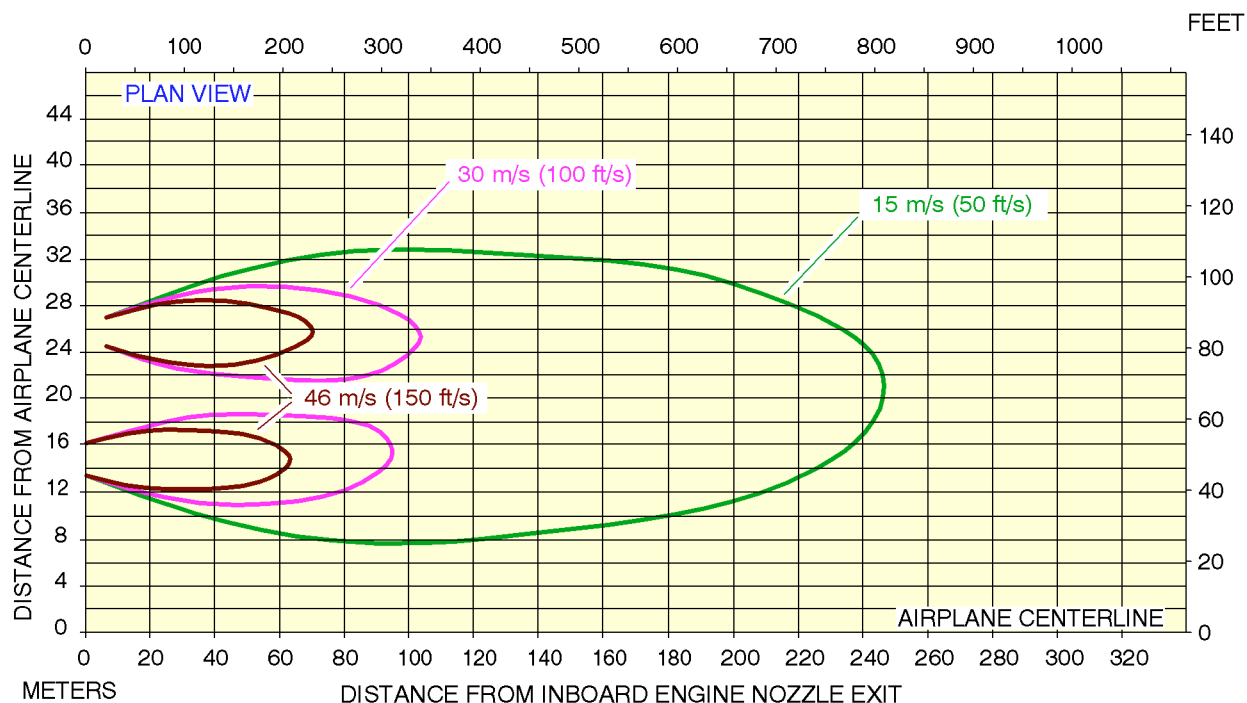
NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GBM0 00

Engine Exhaust Temperatures
Ground Idle Power – GP 7270/7277 Engines
A380–861/863F Models

MAINTENANCE FACILITY PLANNING



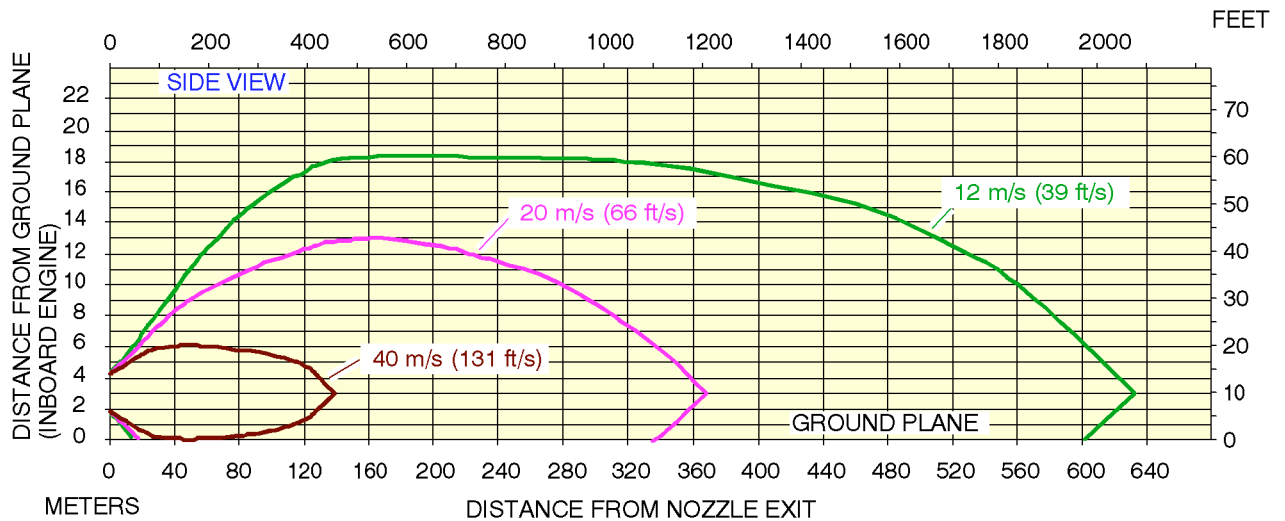
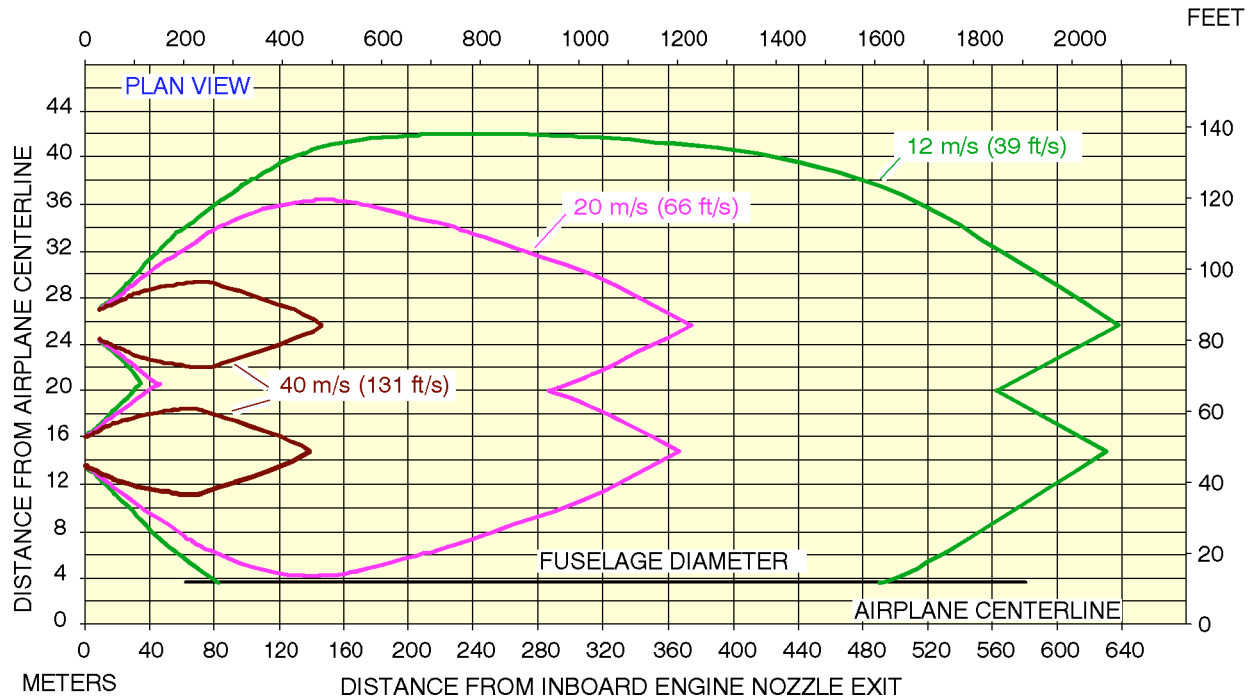
NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F) CONDITIONS
- NO WIND

ZMF5 02 11 00 0 RCM0 00

Engine Exhaust Velocities
Breakaway Power – TRENT 970 Engines
A380-841 Model

MAINTENANCE FACILITY PLANNING



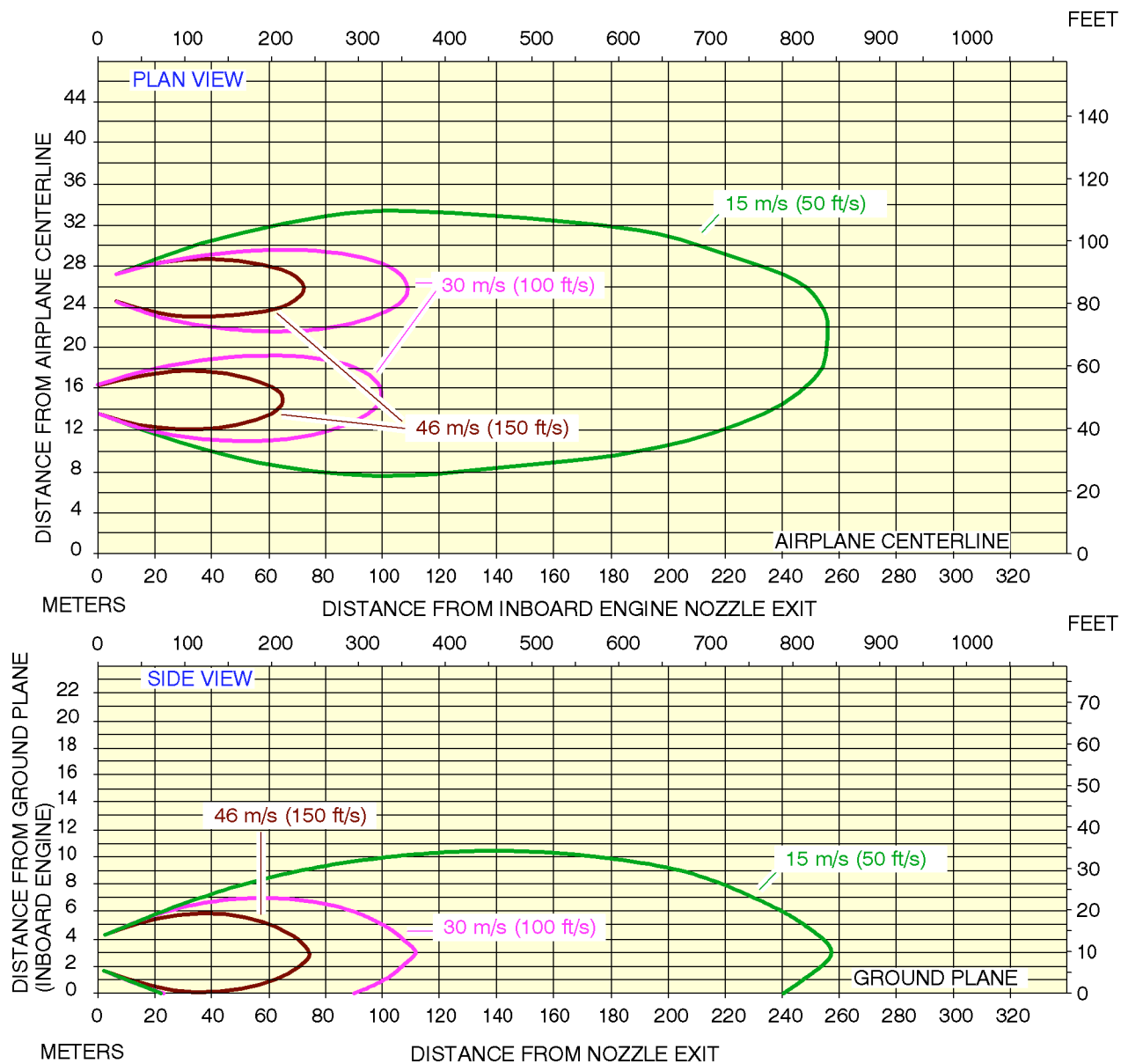
NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GCM0 00

Engine Exhaust Velocities
Breakaway Power - GP 7270 Engines
A380-861 Model

MAINTENANCE FACILITY PLANNING



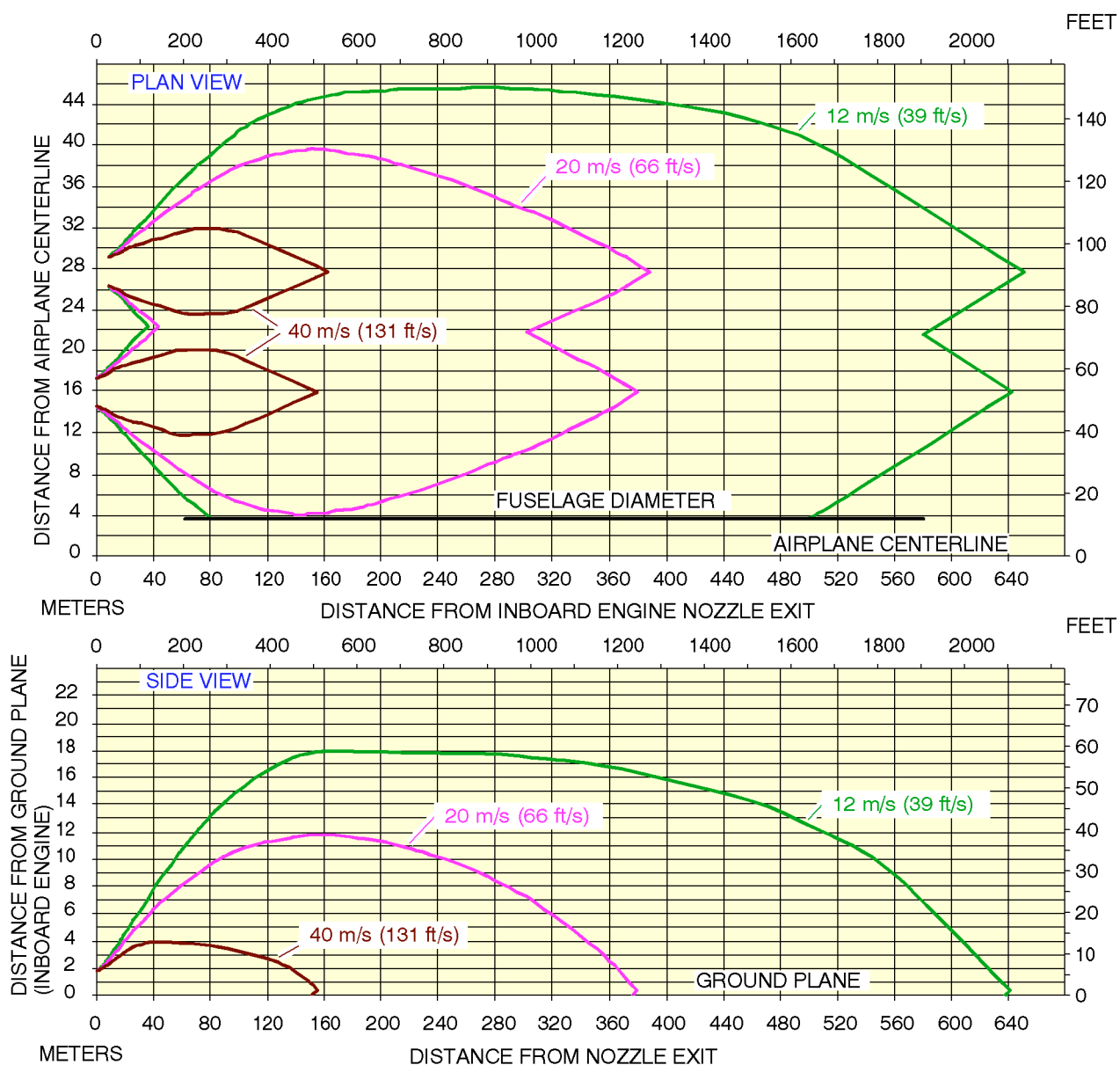
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- SEA LEVEL STATIC CONDITIONS
- ISA + 15 °C (59 °F) CONDITIONS
- NO WIND

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Engine Exhaust Velocities
Breakaway Power - TRENT 977 Engines
A380-843F Model

MAINTENANCE FACILITY PLANNING



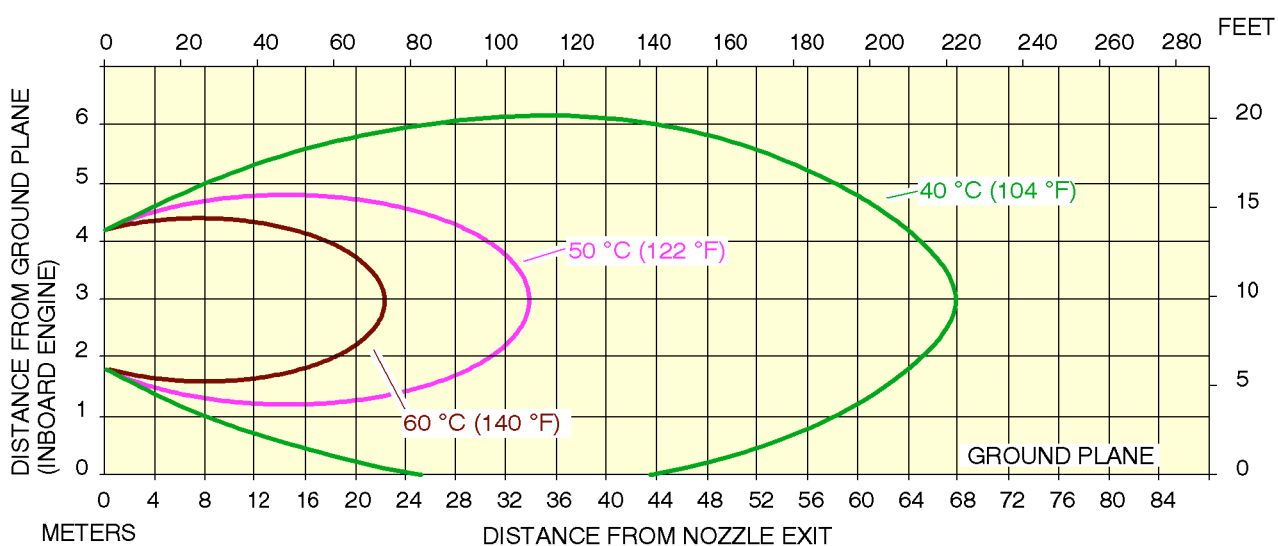
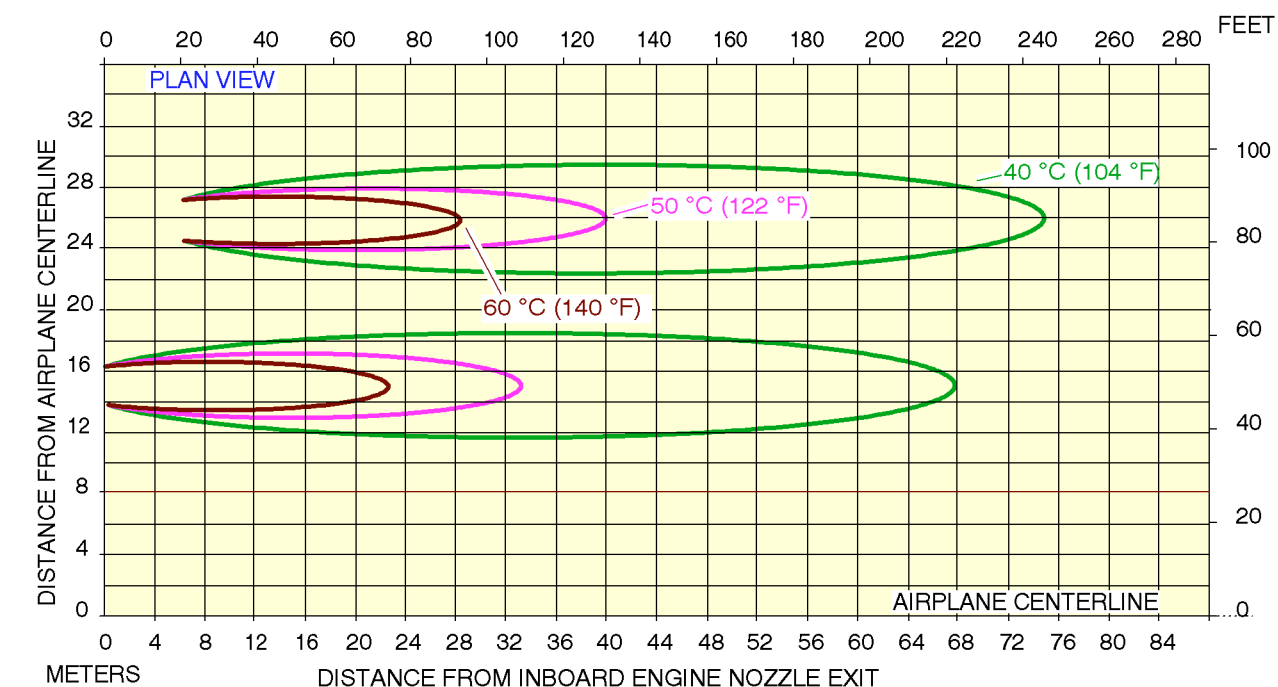
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- 20 kt (37 km/h) HEADWIND

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Engine Exhaust Velocities
 Breakaway Power - GP 7277 Engines
 A380-863F Model

MAINTENANCE FACILITY PLANNING



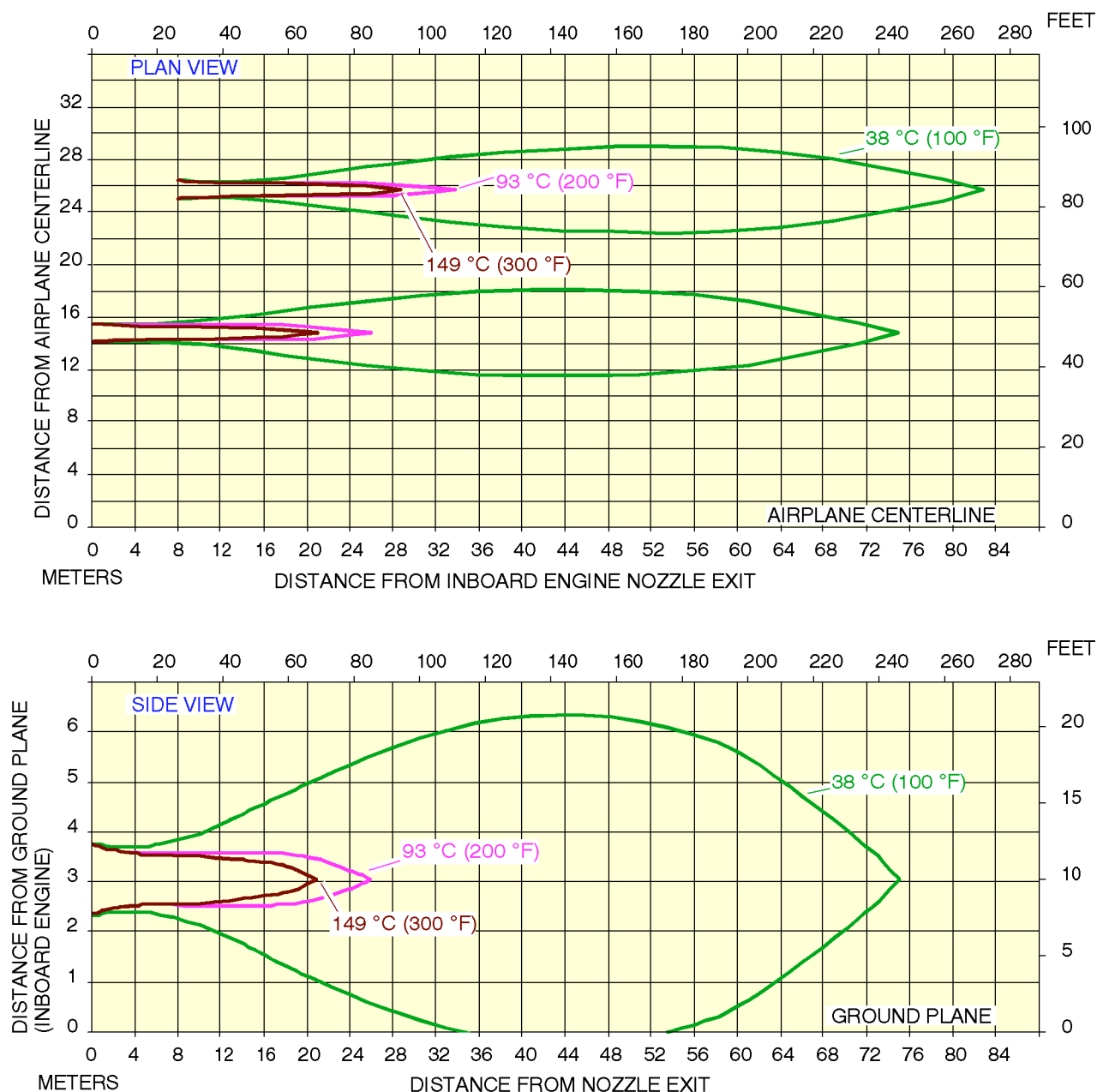
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Engine Exhaust Temperatures
Breakaway Power – TRENT 970 Engines
A380-841 Model

MAINTENANCE FACILITY PLANNING



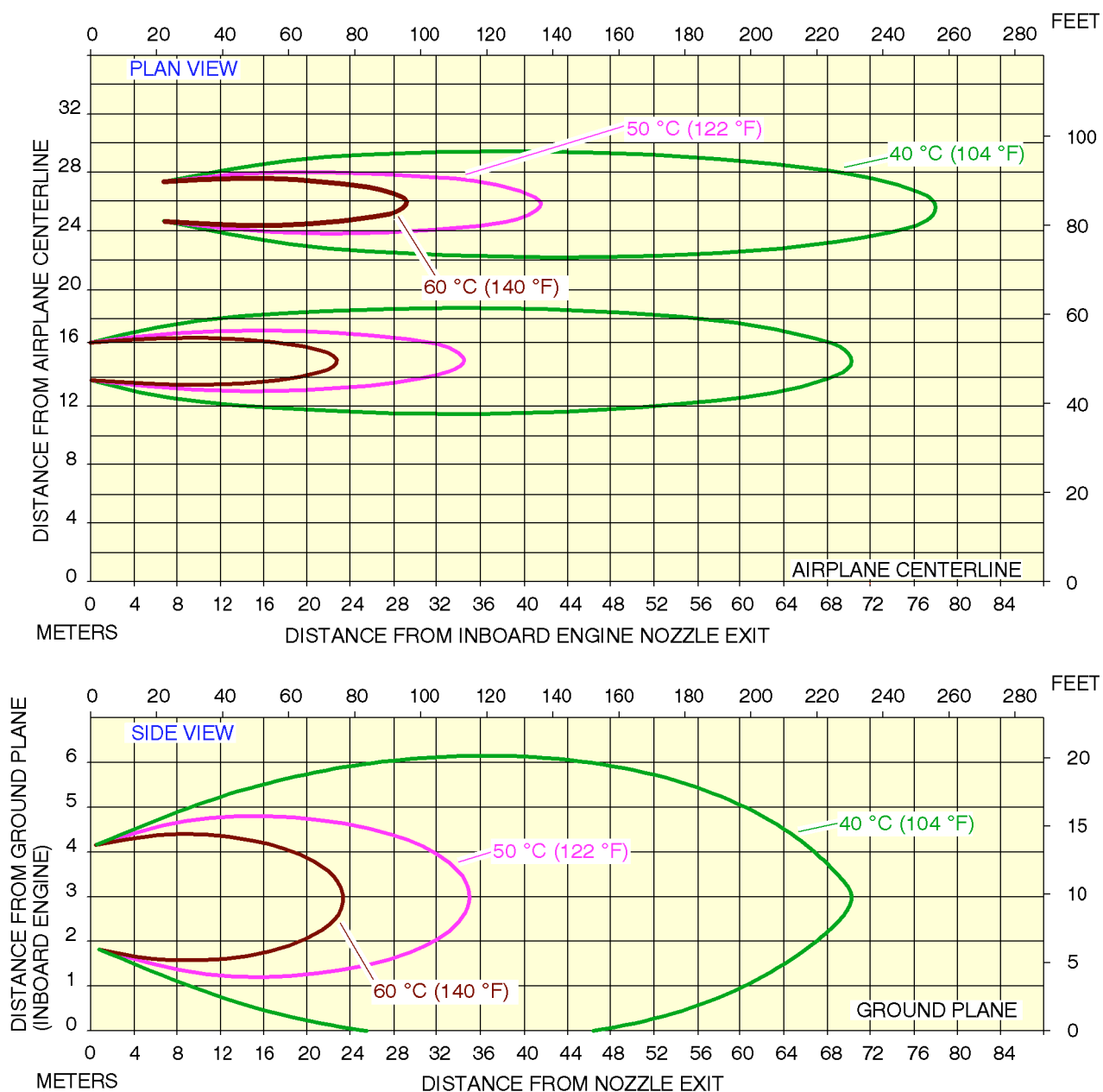
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Engine Exhaust Temperatures
Breakaway Power – GP 7270 Engines
A380-861 Model

MAINTENANCE FACILITY PLANNING



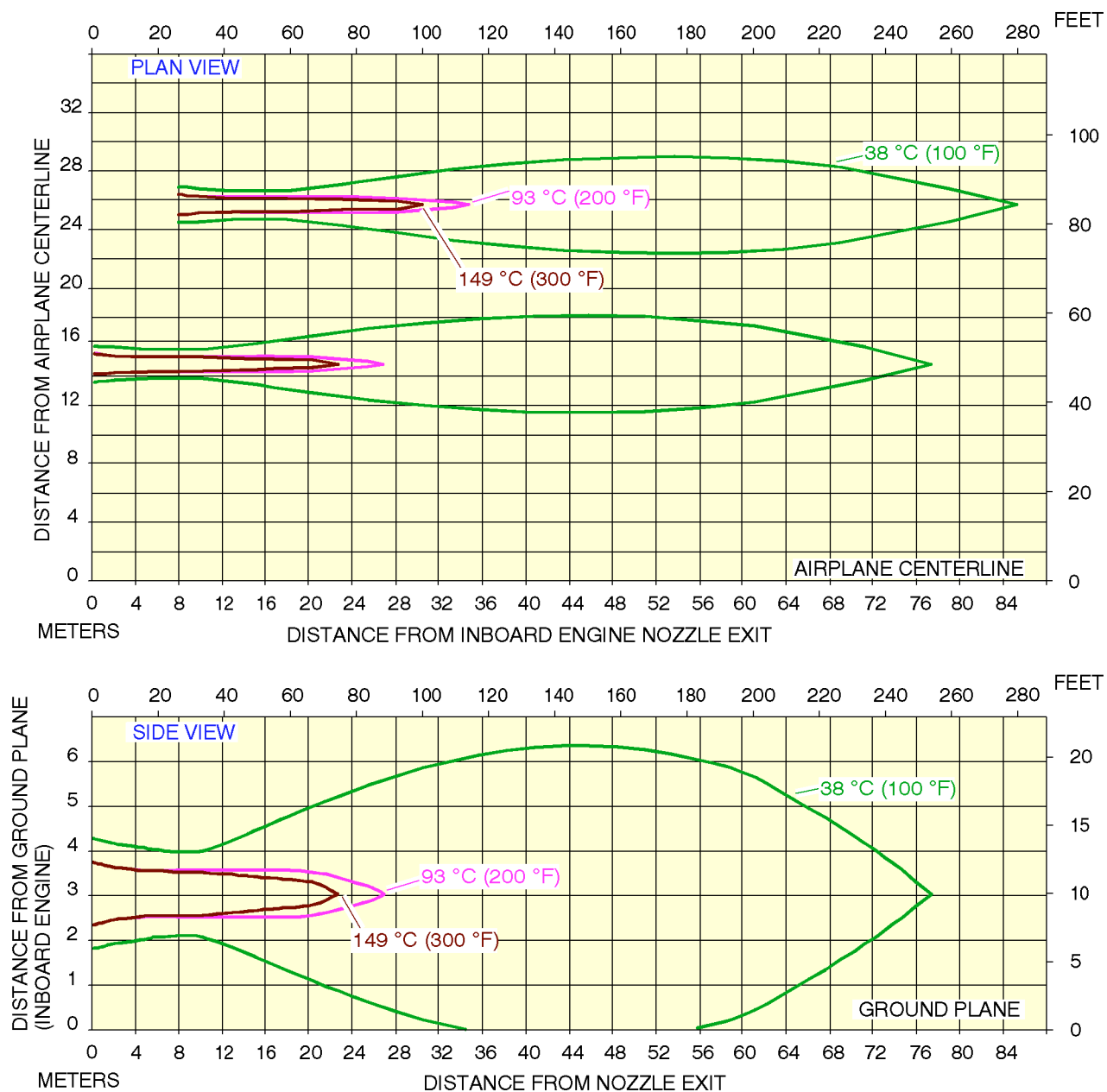
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Engine Exhaust Temperatures
Breakaway Power – TRENT 977 Engines
A380-843F Model

MAINTENANCE FACILITY PLANNING



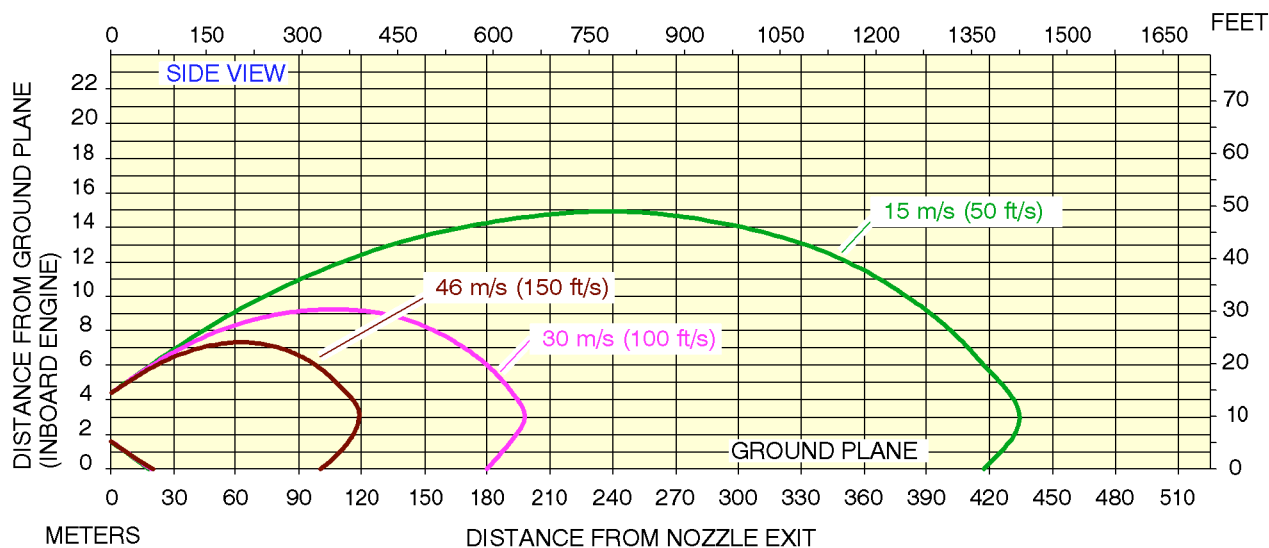
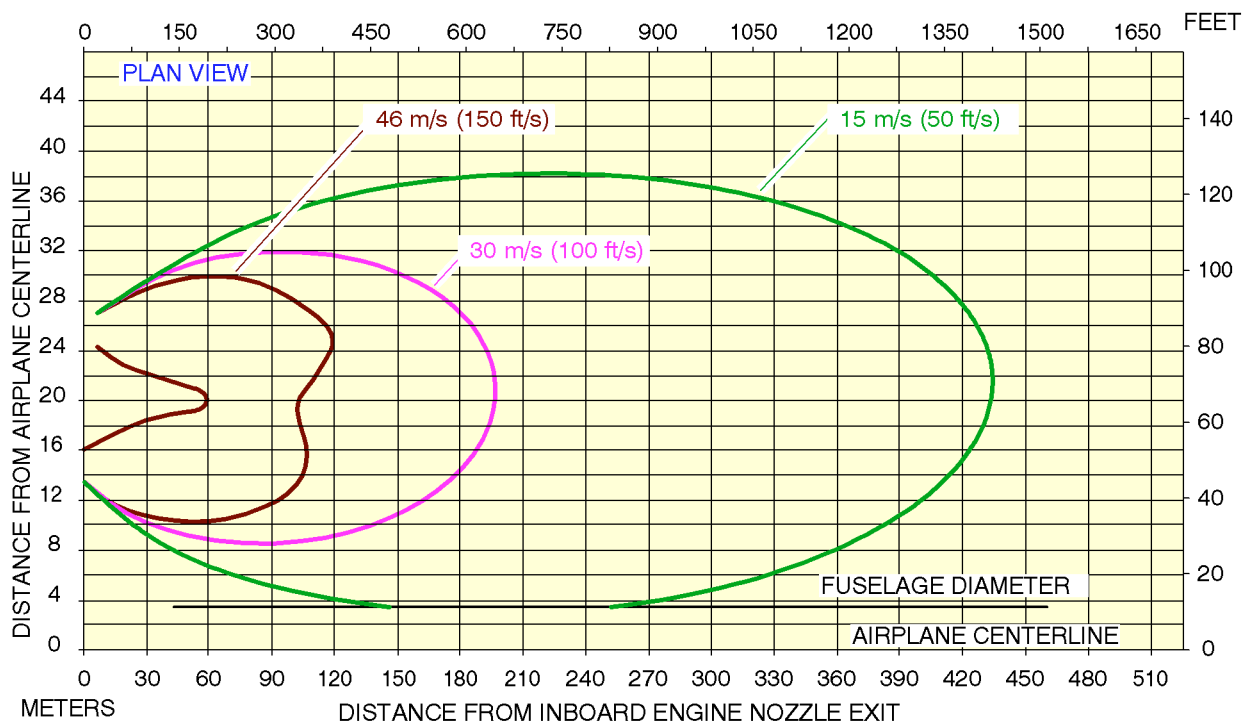
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- 20 kt (37 km/h) HEADWIND

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Engine Exhaust Temperatures
 Breakaway Power - GP 7277 Engines
 A380-863F Model

MAINTENANCE FACILITY PLANNING



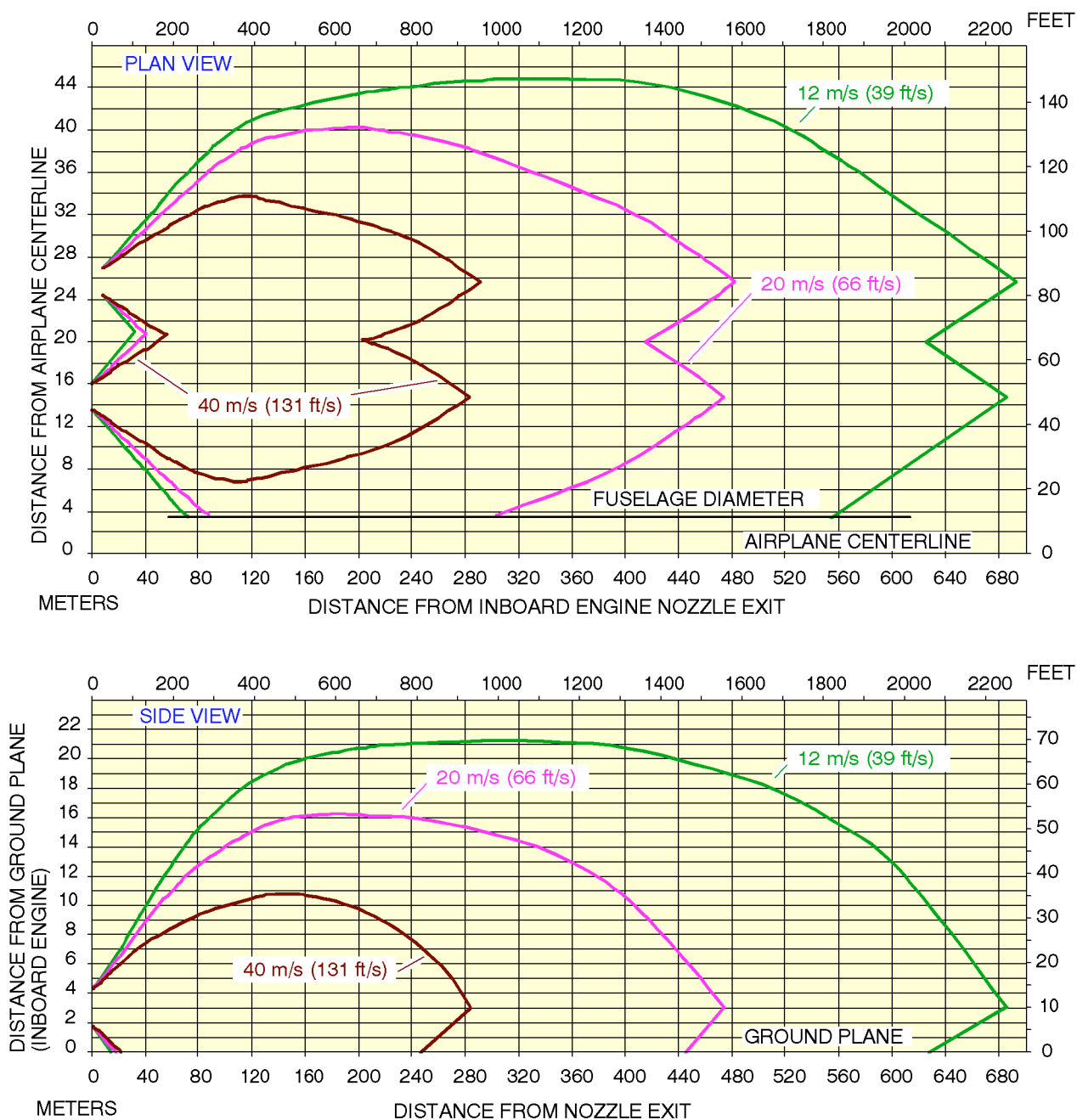
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- NO WIND

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Engine Exhaust Velocities
Max. Take-Off Power - TRENT 970 Engines
A380-841 Model

MAINTENANCE FACILITY PLANNING



NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

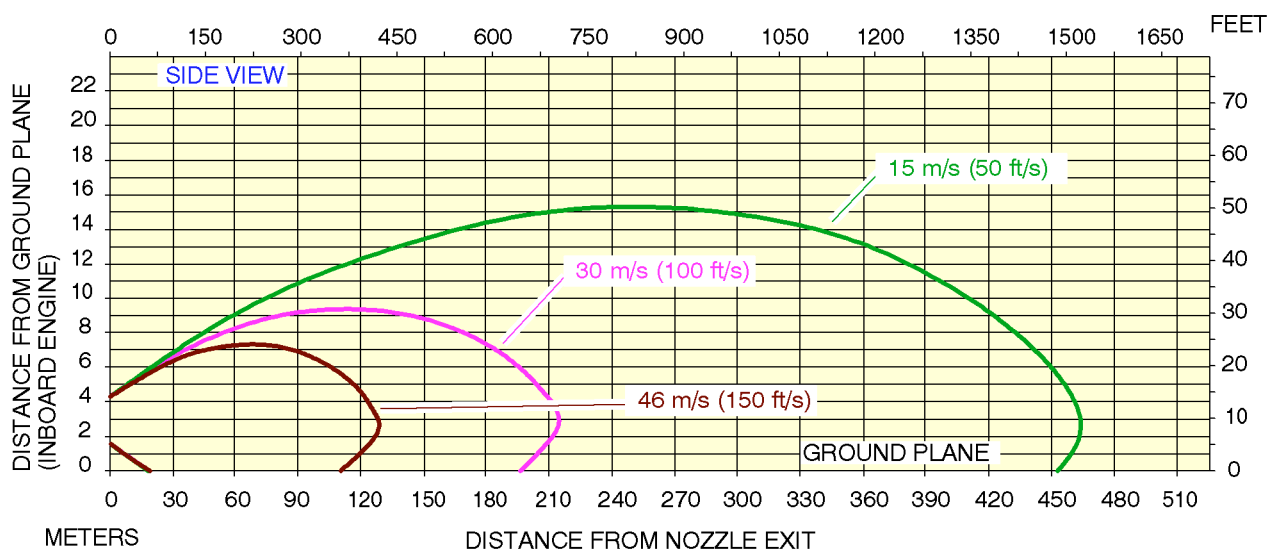
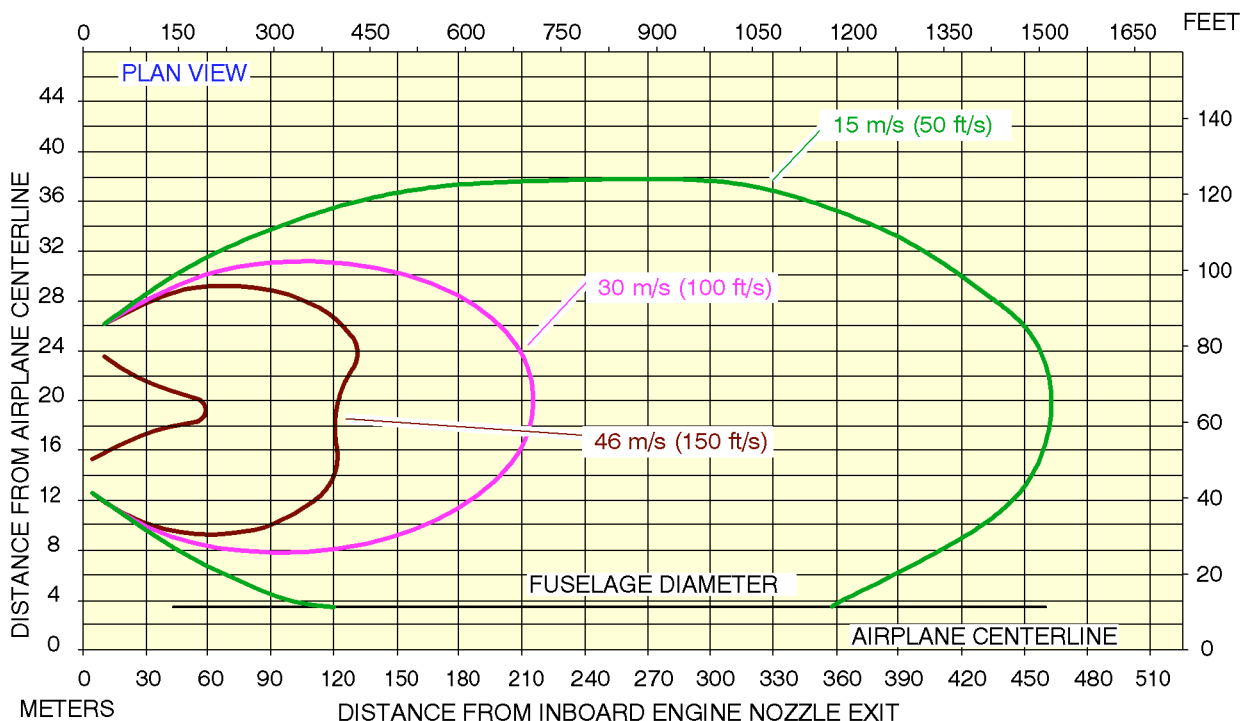
- SEA LEVEL STATIC CONDITIONS
- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GGM0 00

Engine Exhaust Velocities
 Max. Take-Off Power - GP 7270 Engines
 A380-861 Model

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MAINTENANCE FACILITY PLANNING



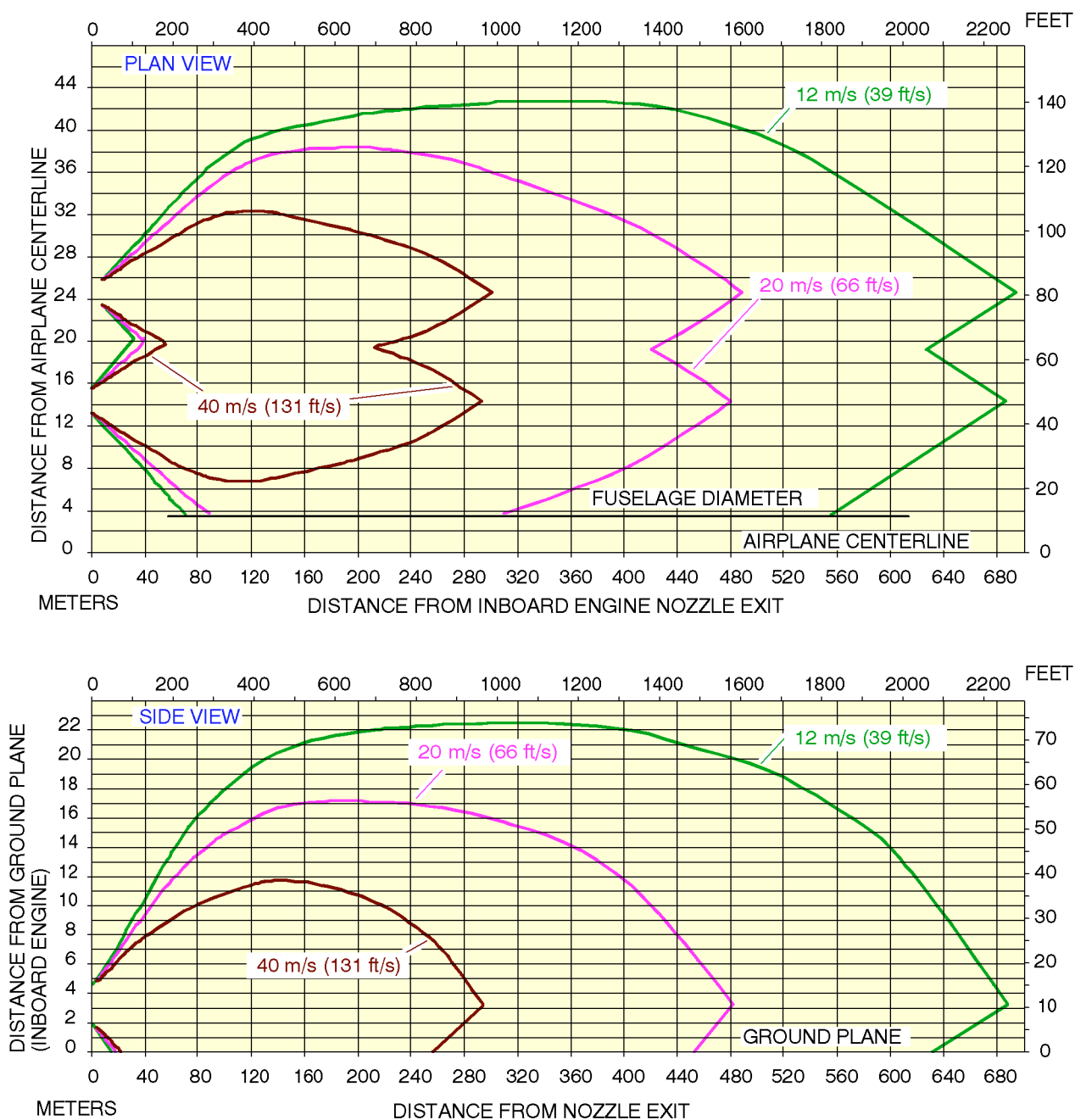
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- NO WIND

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Engine Exhaust Velocities
Max. Take-Off Power - TRENT 977 Engines
A380-843F Model

MAINTENANCE FACILITY PLANNING



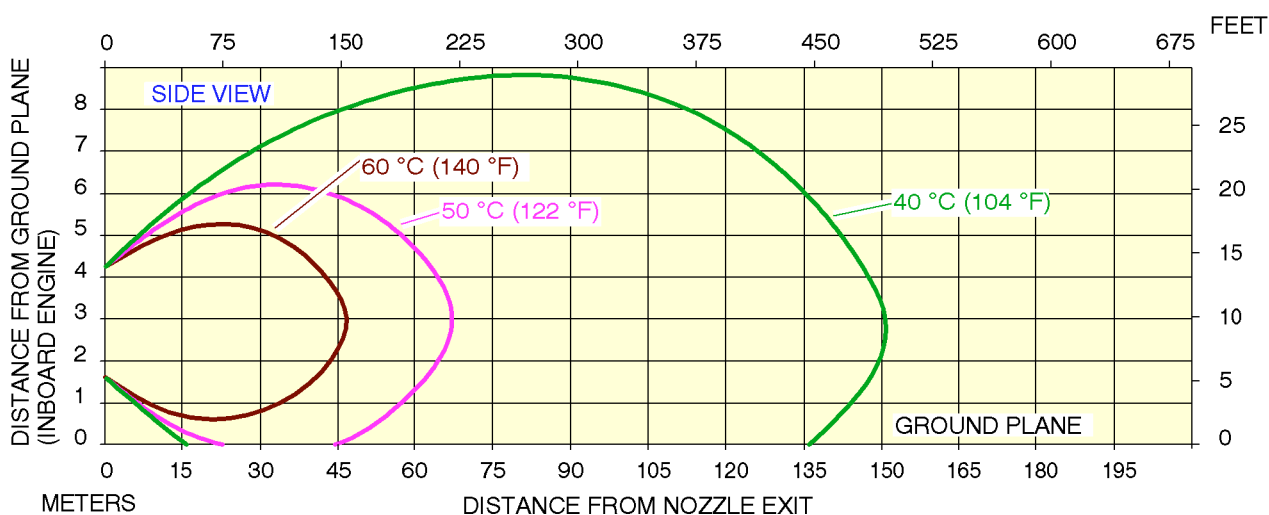
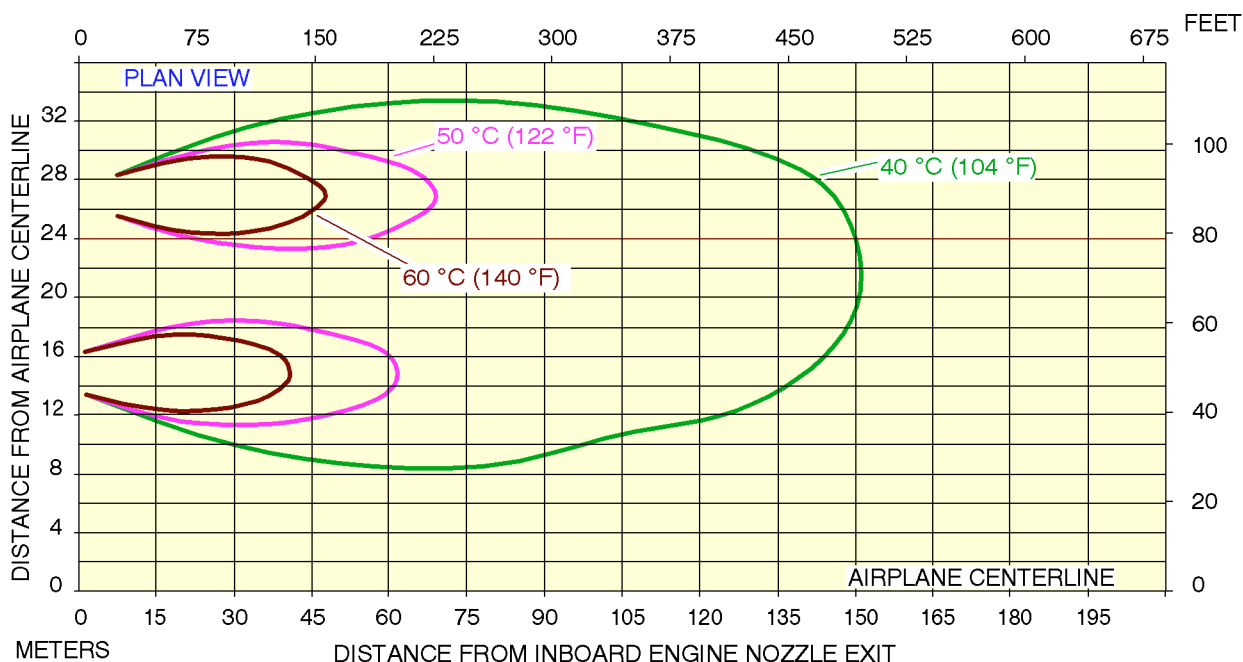
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- 20 kt (37 km/h) HEADWIND

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Engine Exhaust Velocities
Max. Take-Off Power - GP 7277 Engines
A380-863F Model

MAINTENANCE FACILITY PLANNING

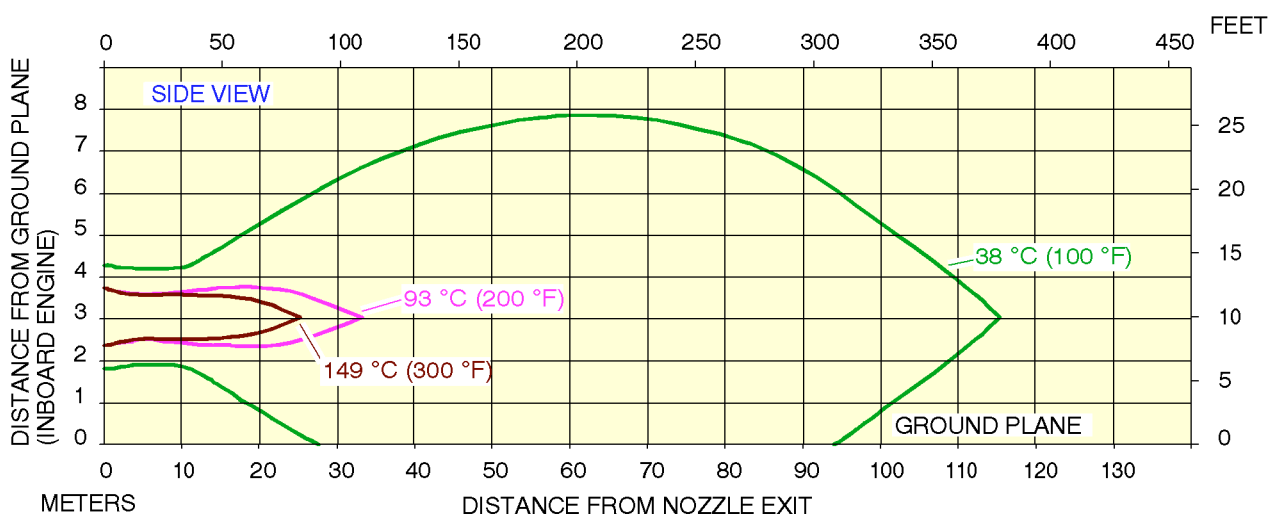
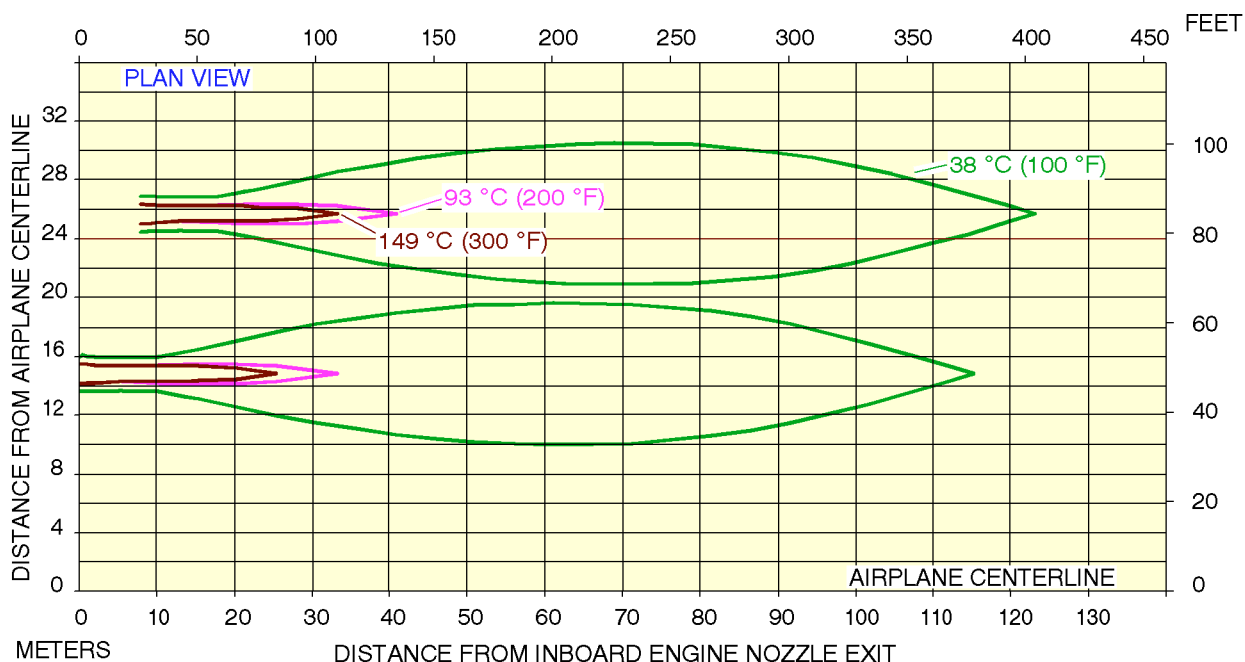


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 - NO WIND

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Engine Exhaust Temperatures
 Max. Take-Off Power – TRENT 970 Engines
 A380-841 Model

MAINTENANCE FACILITY PLANNING



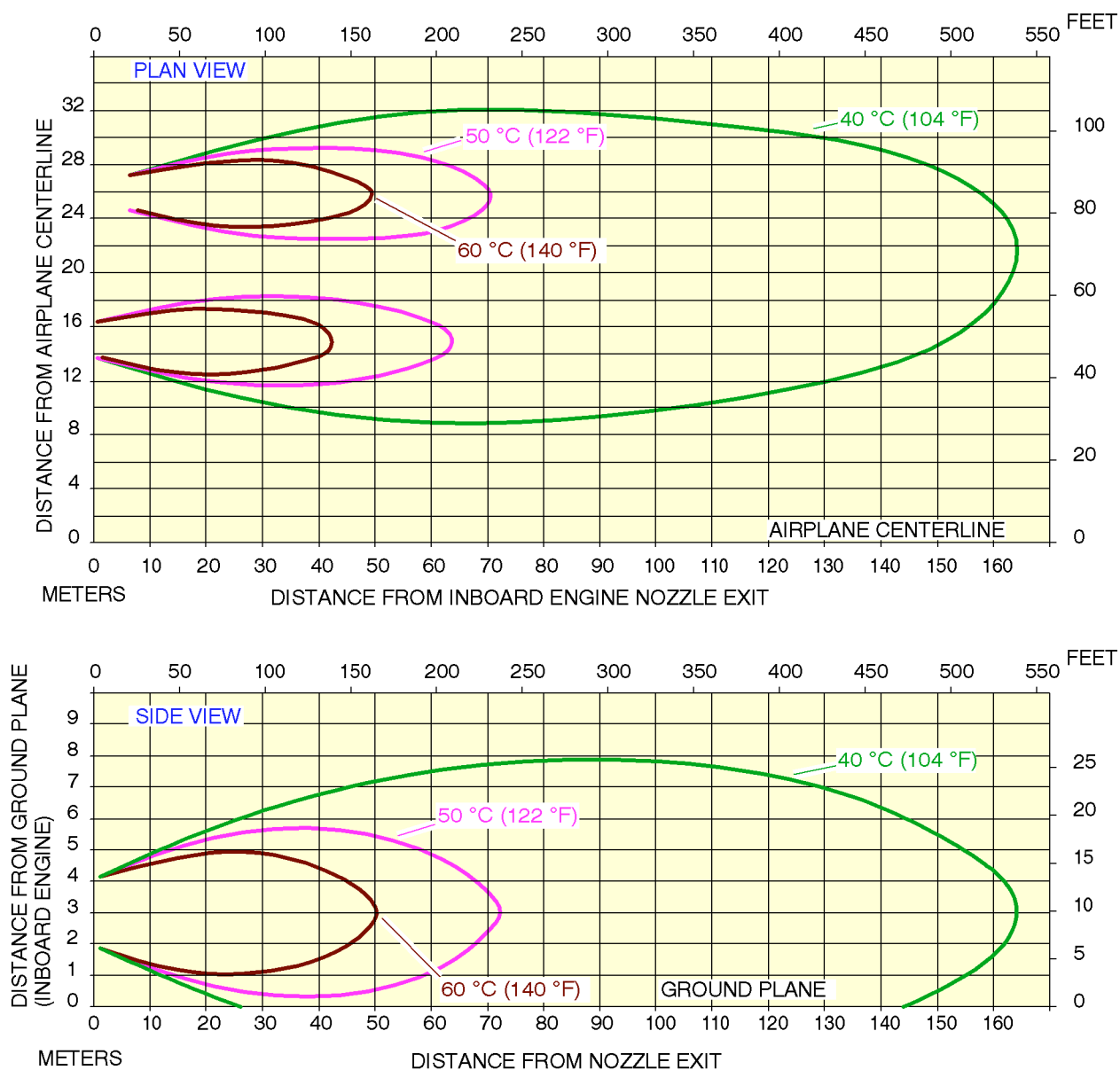
NOTE: THE DATA GIVEN IS BASED ON THE FOLLOWING ASSUMPTIONS:

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- 20 kt (37 km/h) HEADWIND

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Engine Exhaust Temperatures
Max. Take-Off Power - GP 7270 Engines
A380-861 Model

MAINTENANCE FACILITY PLANNING



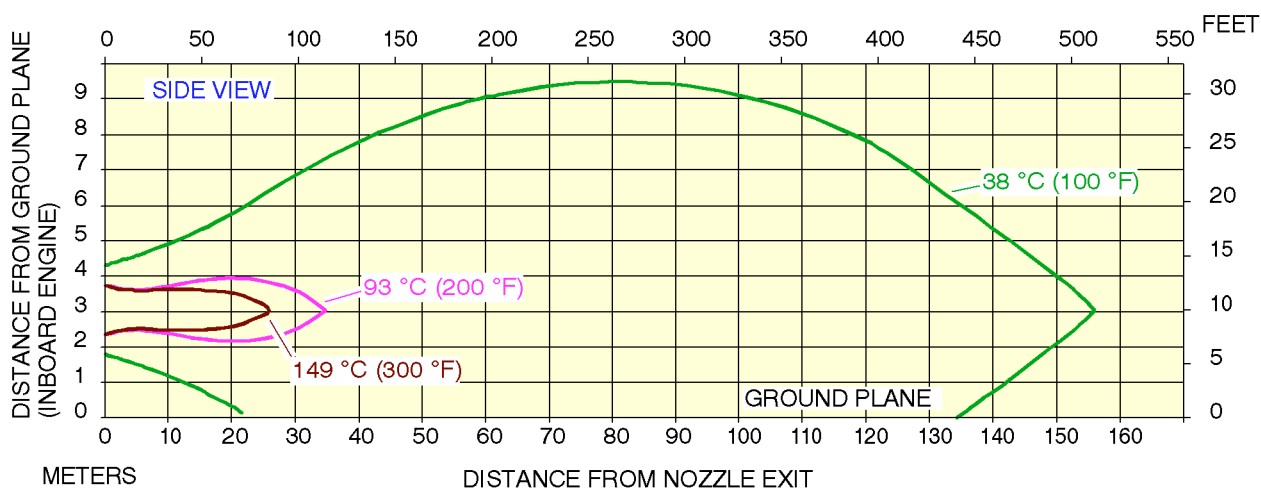
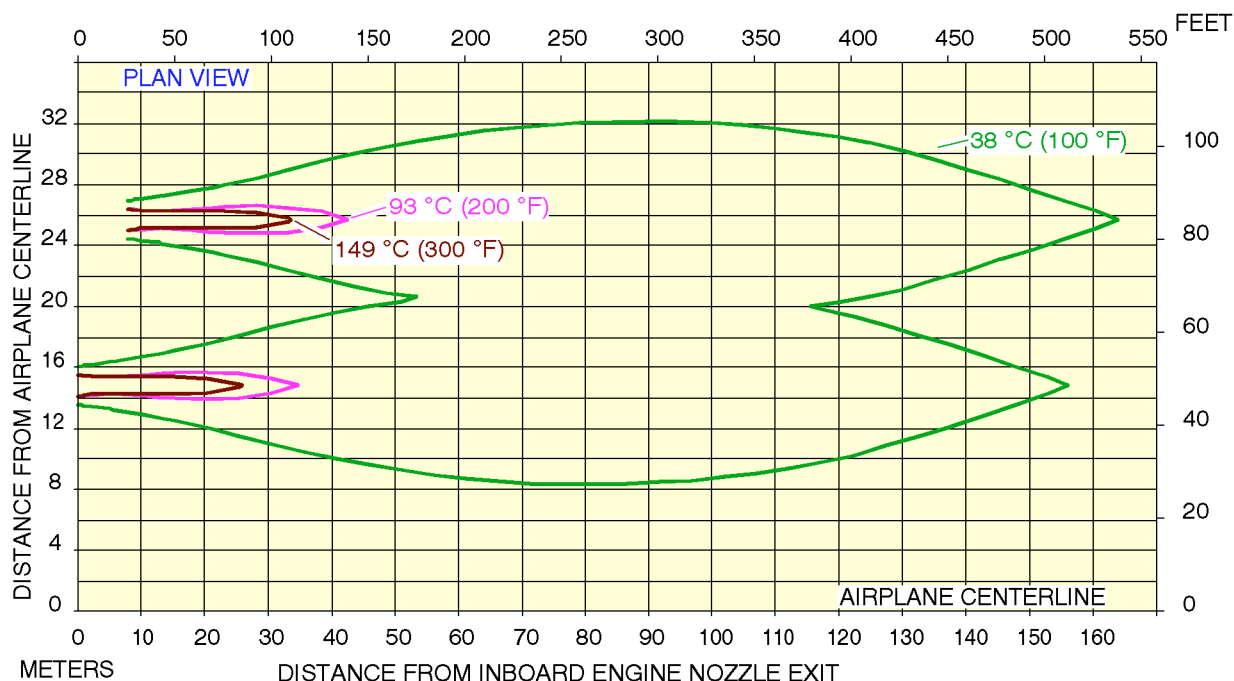
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- NO WIND

ZMF5 02 11 00 0 RKM0 00

Engine Exhaust Temperatures
Max. Take-Off Power - TRENT 977 Engines
A380-843F Model

MAINTENANCE FACILITY PLANNING



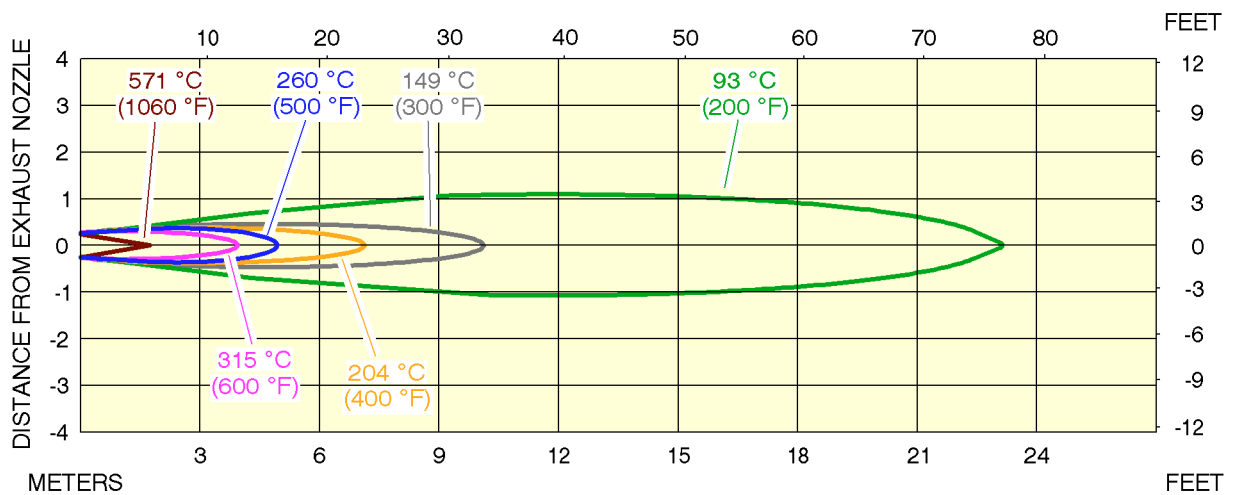
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- ISA CONDITIONS
- 20 kt (37 km/h) HEADWIND

ZMF5 02 11 00 0 GKM0 00

Engine Exhaust Temperatures
Max. Take-Off Power - GP 7277 Engines
A380-863F Model

MAINTENANCE FACILITY PLANNING



ZMF6 02 11 00 0 AAM0 00

APU Exhaust Velocities (TBIL) and Temperatures
PW 980A APU
A380-800/800F Models

MAINTENANCE FACILITY PLANNING

SECTION 3 - LINE MAINTENANCE AND HANGAR

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MAINTENANCE FACILITY PLANNING

AIRPLANE MAINTENANCE JACKING

1. Aircraft Jacking Points for Maintenance

A. General

- (1) The A380 aircraft can be jacked :
- at not more than the maximum permitted aircraft weight for jacking and,
 - within the limits of the permissible wind speed when the aircraft is jacked outside a closed environment.

B. Primary jacking Points

- (1) The aircraft are provided with three primary jacking points (Ref. Fig 001) :
- one located under the forward fuselage,
 - two located under the wings (one under each wing).
- (2) Three jack adapters (ground equipment) are used as intermediary parts between the aircraft jacking points and the jacks (Ref. Fig. 002) :
- one male spherical jack adapter at the forward fuselage,
 - two female jack pad adapters at the wings (one at each wing).

C. Auxiliary stabilizing Point (Safety point)

- (1) When the aircraft is on jacks, a safety stay is installed under the aft fuselage (Ref. Fig. 001) to prevent tail tipping caused by accidental displacement of the aircraft center of gravity.
- (2) The safety point must not be used for lifting the aircraft.
- (3) One male spherical stay adapter (ground equipment) is used as intermediary part between the aircraft safety point and the stay.

2. Jacks and Safety Stay Specifications (Ref. Fig. 003)

A. Jacks Specifications

	Capacity (min.)	Full extended (min.)	Fully retracted (min.)
Forward Jack	51000 daN	4600 mm	1900 mm
	114652 lbf	181.10 in.	74.80 in.
Wing jacks	190000 daN	7100 mm	4000 mm
	427137 lbf	279.5 in.	157.48 in.

- (1) In fully retracted position (jack stroke at minimum), the height of the jacks is such that they may be placed beneath the airplane under the most adverse conditions, namely, tires deflated and chock absorbers depressurized and, in addition, with a sufficient clearance between the aircraft jacking point and the jack upper end.

MAINTENANCE FACILITY PLANNING

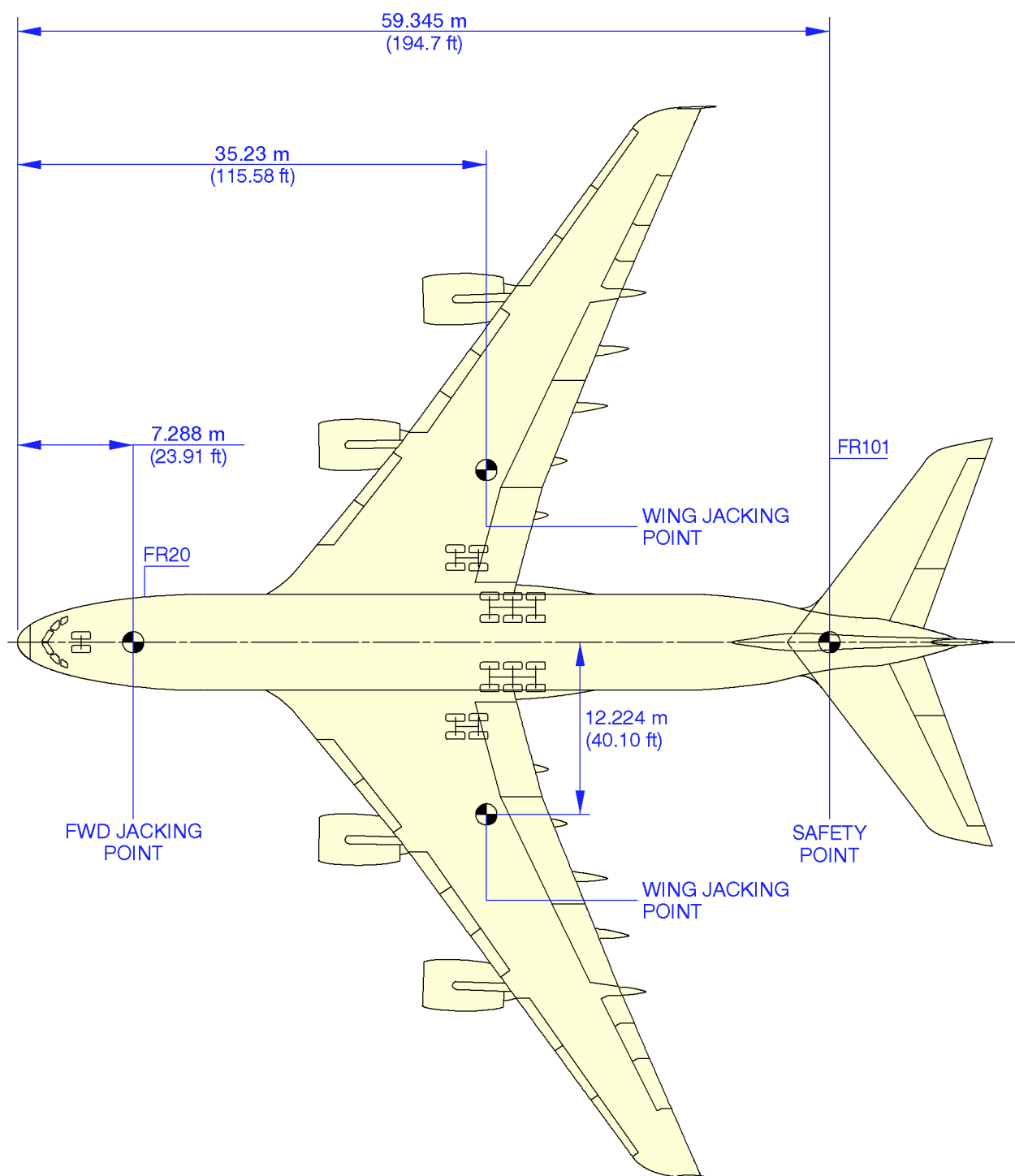
- (2) The jacks stroke enables the aircraft to be jacked up so that the Fuselage Datum Line (FDL) may be positioned up to 7300 mm (23.95 ft) from the ground to allow all required maintenance procedure and in particular, the Landing Gear shock absorbers removal/installation.

B. Safety stay Specifications

	Capacity (min.)	Full extended (min.)	Fully retracted (min.)
Safety stay	12000 daN	6700 mm	5000 mm
	26977 lbf	263.77 in.	196.85 in.

- (1) The stay stroke enables the aircraft tail to be supported up to the Fuselage Datum Line (FDL) positioned at 7300 mm (23.95 ft) from the ground.

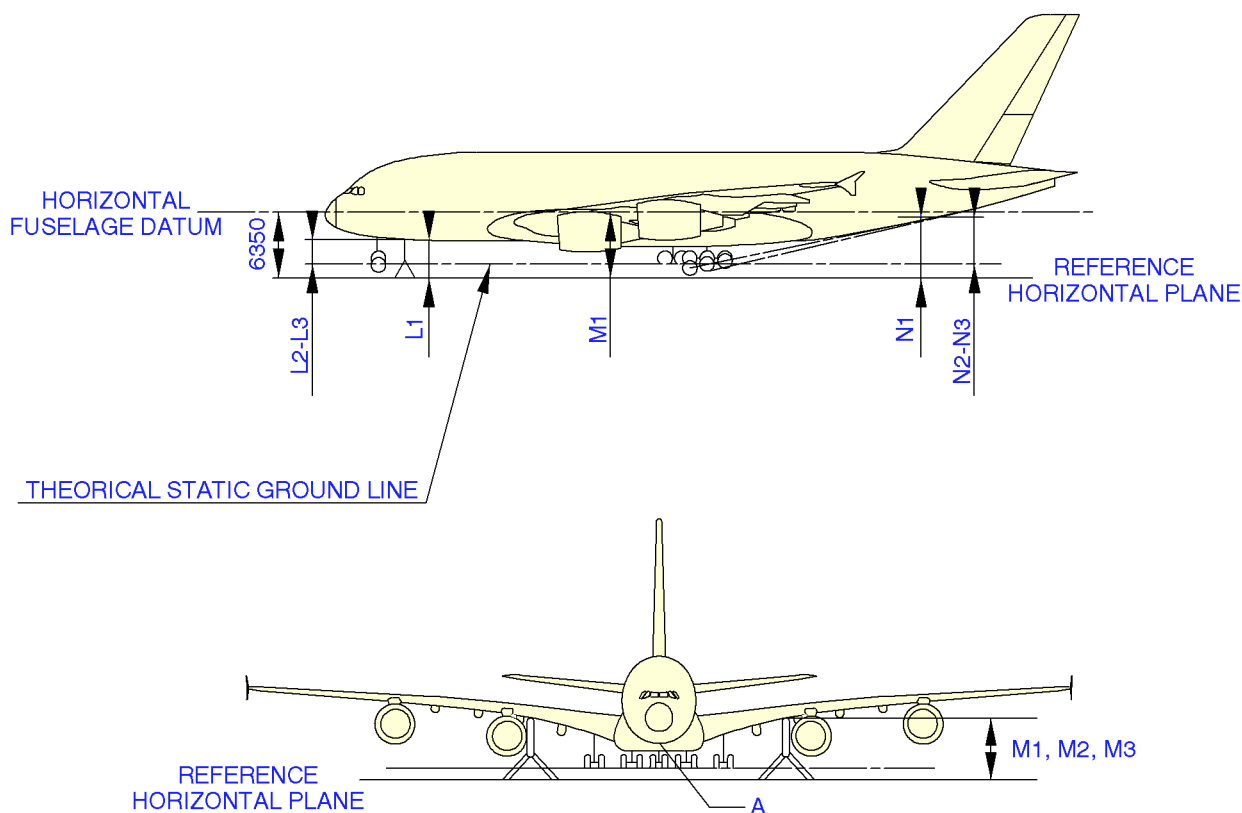
MAINTENANCE FACILITY PLANNING



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Location of the Jacking and Safety points
Figure 001
A380-800 Model

MAINTENANCE FACILITY PLANNING



L1 M1 N1	AIRCRAFT ON JACKS - FUSELAGE REFERENCE PARALLEL TO GROUND AT 6350 MM (20.83 ft)** - SHOCK ABSORBER EXTENDED - STANDARD TIRES **NOTE: FOR REMOVAL/INSTALLATION OF THE LANDING GEAR THE FUSELAGE REFERENCE MUST BE AT 7300 mm (23.95 ft)								
L2 M2 N2	AIRCRAFT ON WHEELS - SHOCK ABSORBER DEFLATED - DEFLATED TIRES								
L3 M3 N3	AIRCRAFT ON WHEELS - AT MAXIMUM PERMITTED WEIGHT FOR JACKING (333700 kg - 735682 lb) - STANDARD TIRES								
	L1	M1	N1	L2	M2	N2	L3	M3	N3
mm	3673	6283	5790	1937	4399	4064	2354	4893	4498
in	144.60	247.36	227.95	76.25	173.18	160	92.67	192.63	177.08

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Jacking design
Figure 002
A380-800 Model

MAINTENANCE FACILITY PLANNING

FLIGHT CONTROLS

1. General

There are two types of flight controls :

- the Primary controls
- the Secondary controls.

A. Primary Controls

- (1) The roll control is achieved on each wing by the inner and outer aileron complemented with six spoilers.
- (2) The yaw control is achieved by a rudder attached to the vertical stabilizer with a hinge.
- (3) The pitch control is achieved by two elevators attached to the Trimmable Horizontal Stabilizer (THS) (trim function) with hinges.

B. Secondary Controls

The lift augmenting is achieved by the surfaces on each wing as follows :

- two trailing edge flaps
- seven leading edge slats
- two ailerons which droop when the flaps are extended.

2. Operation

A. Roll Control

Hydraulic servo controls, which receive electrical signals and are independently supplied, operate the spoilers and ailerons.

Two servo controls are on each aileron and one on each spoiler. Signals by the side stick controllers are analyzed by the electrical control computers which give the calculated control surface position.

B. Yaw Controls

The rudder is operated by three independently supplied hydraulic servo-controls. The servo-controls receive signals through interconnected pedals by a single cable. The single cable runs up to a spring-loaded artificial feed unit. Yaw trim is signalled from a switch located on the center pedestal and analyzed by the flight augmentation computers which control the rudder trim actuator.

MAINTENANCE FACILITY PLANNING

C. Pitch Control

The two elevators are operated by independent hydraulic servo controls. The servo controls are operated hydraulically and controlled electrically with hydraulic pressure. Two servo controls are installed on each elevator.

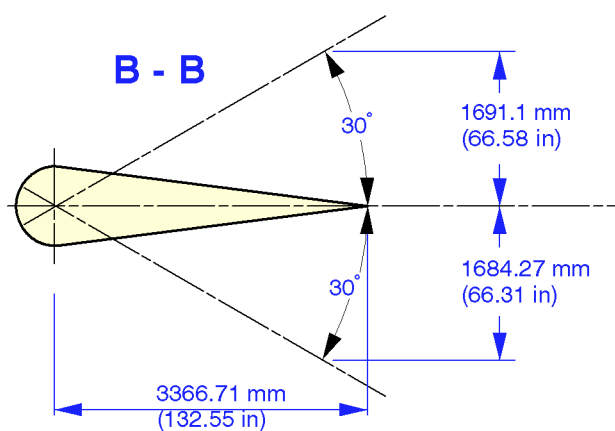
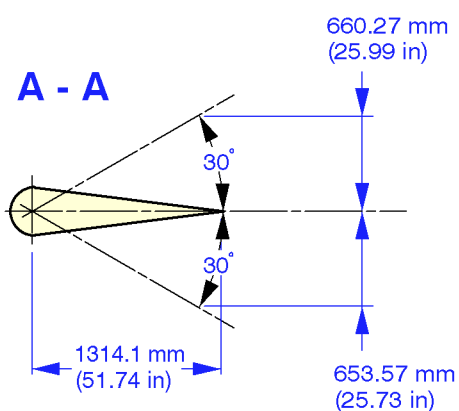
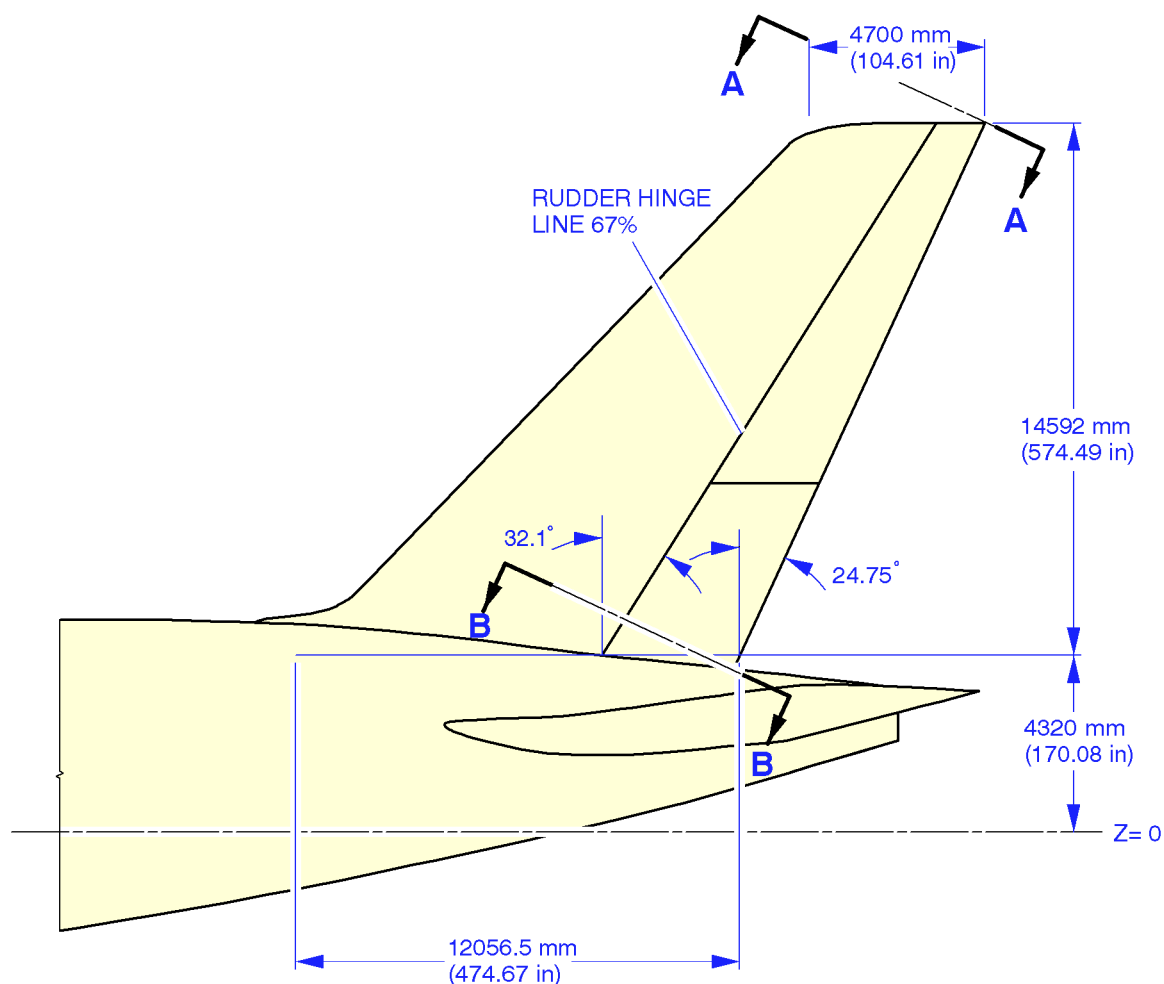
Pitch trim is provided by adjustment of the Trimmable Horizontal Stabilizer (THS). Control of the THS position can be achieved automatically in the normal (electrical) operating mode, via the elevator and the Aileron computer, or mechanically by operation of the interconnected handwheels located on the center pedestal.

D. Lift Augmentation

Each trailing edge flap moves by means of the carriages. The flaps are actuated by a power control unit which has two hydraulic motors which drive the rotary actuator by means of a shaft transmission.

Each leading edge slat moves by means of the tracks. The slats are actuated by a power control unit which has two hydraulic motors. The two hydraulic motors drive the rotary actuator by means of a shaft transmission.

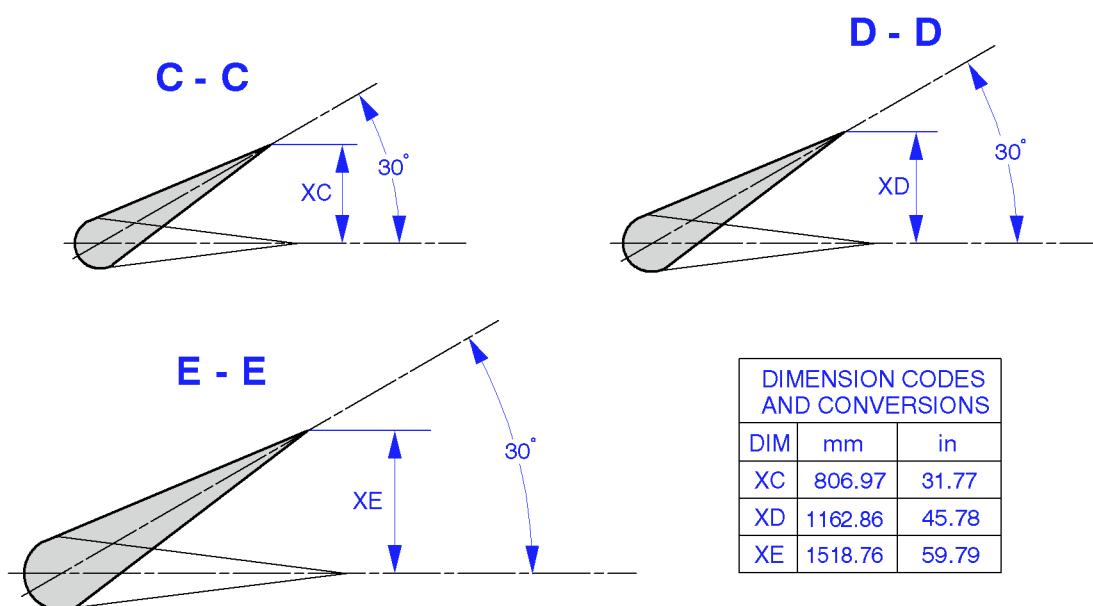
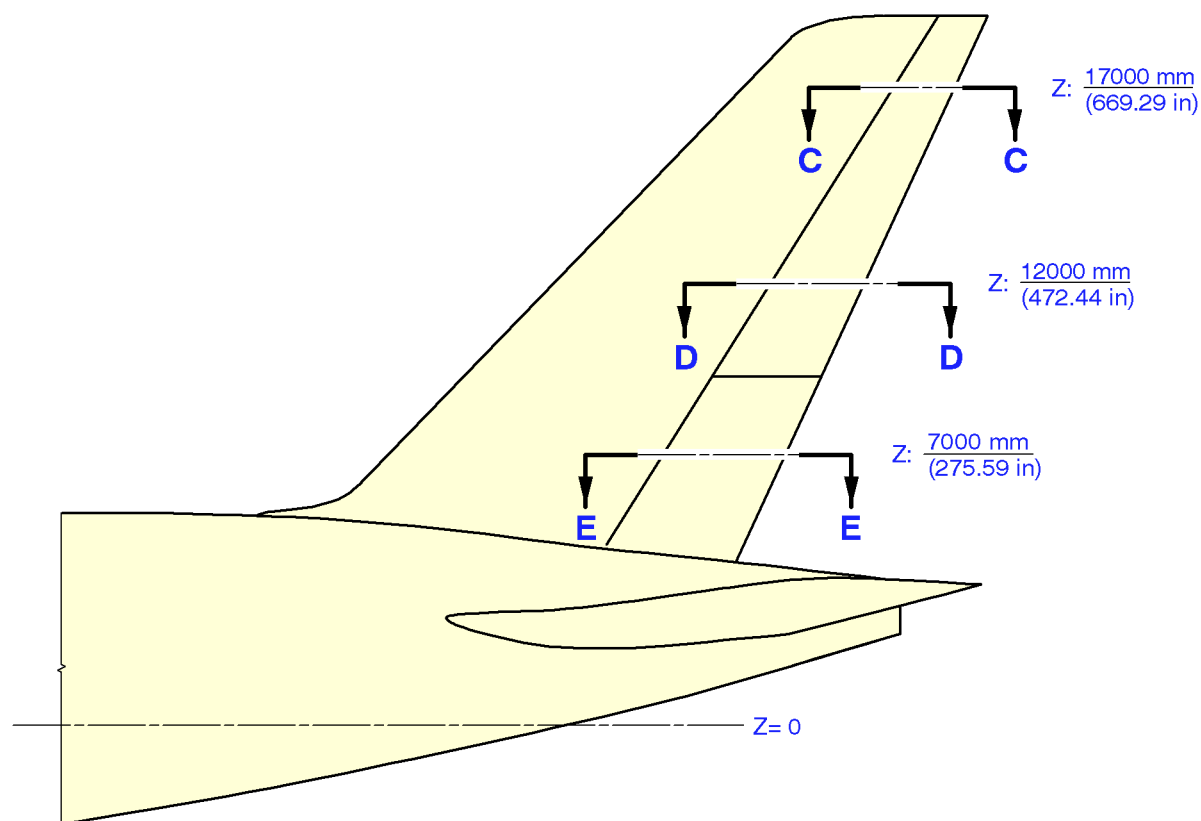
MAINTENANCE FACILITY PLANNING



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Control Surface Travel - Rudder
A380-800/800F Models
(Sheet 1)

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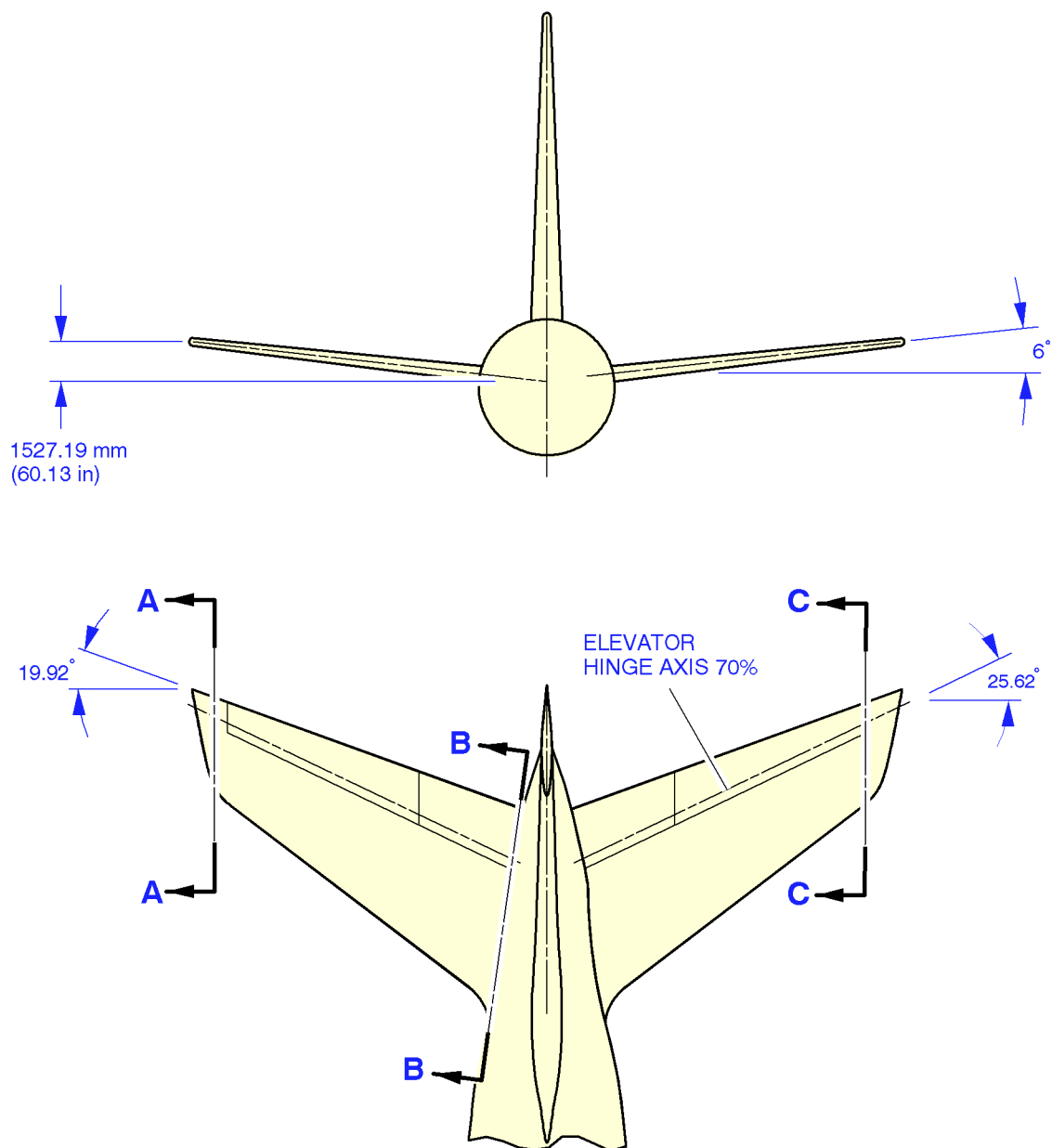


DIMENSION CODES AND CONVERSIONS		
DIM	mm	in
XC	806.97	31.77
XD	1162.86	45.78
XE	1518.76	59.79

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Control Surface Travel - Rudder
A380-800/800F Models
(Sheet 2)

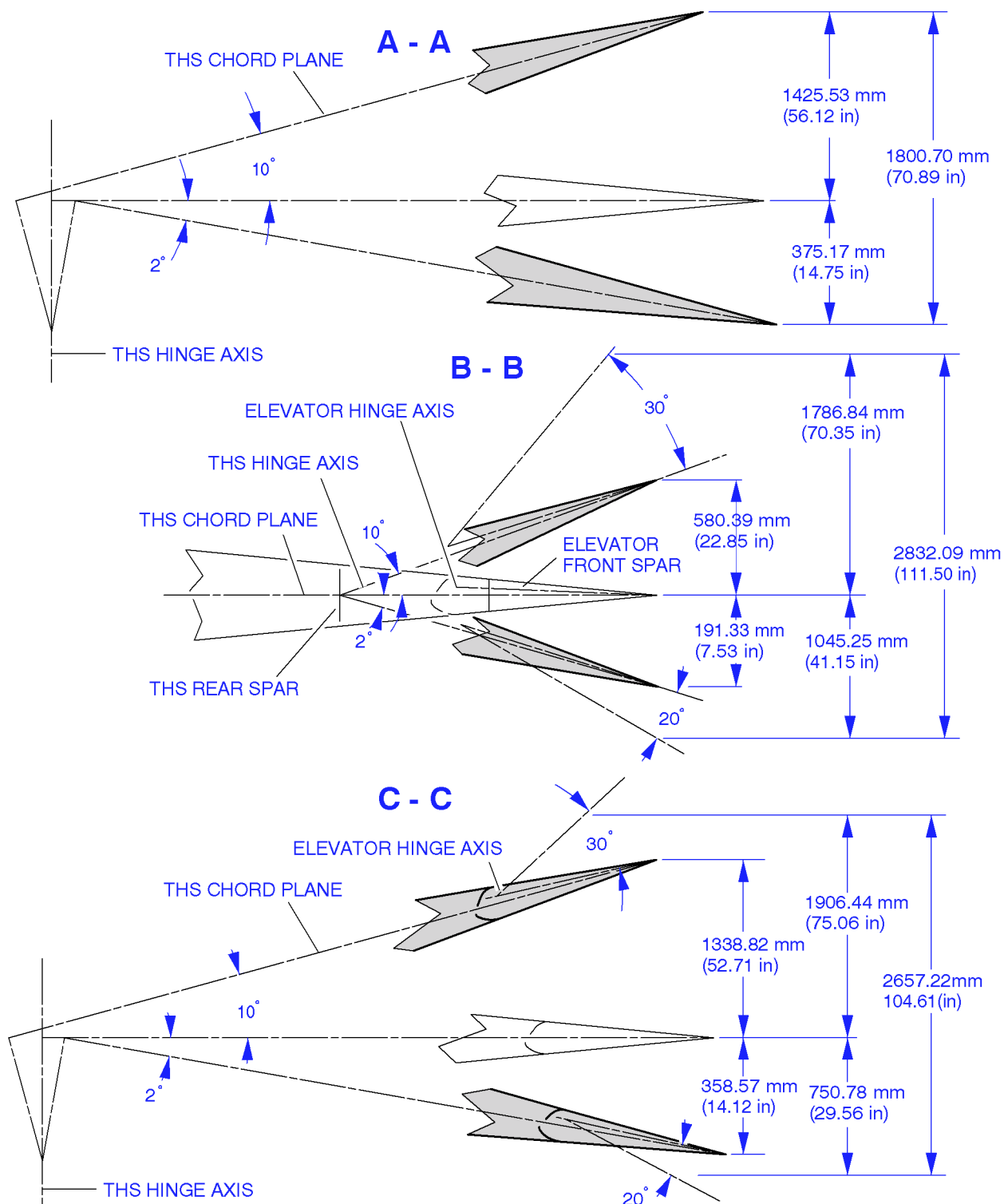
MAINTENANCE FACILITY PLANNING



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Control Surface Travel - Trimmable Horizontal
Stabilizer and Elevator - A380-800/800F Models
(Sheet 1)

MAINTENANCE FACILITY PLANNING



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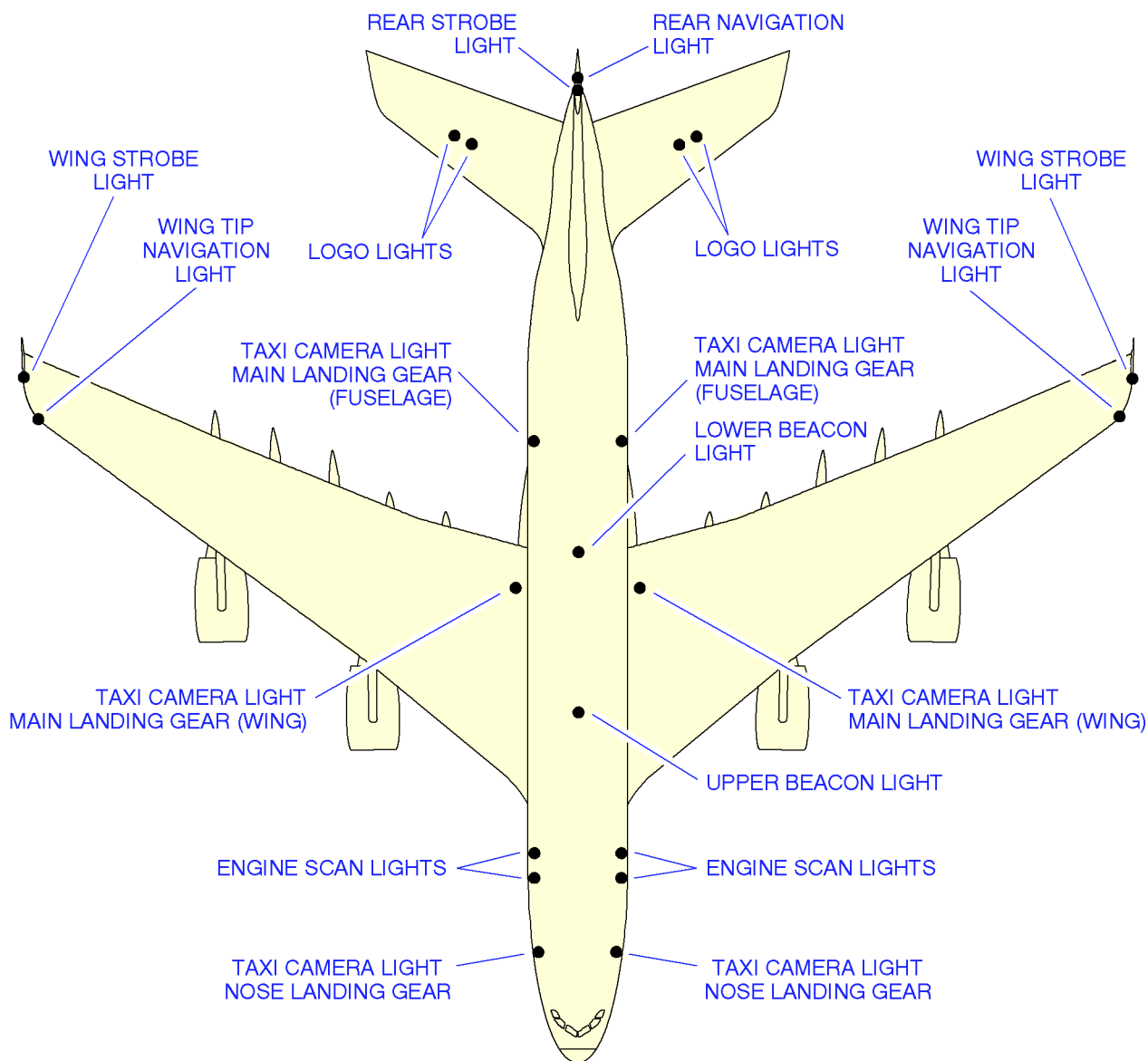
Control Surface Travel - Trimmable Horizontal
Stabilizer and Elevator - A380-800/800F Models
(Sheet 2)

MAINTENANCE FACILITY PLANNING

EXTERIOR LIGHTING

This section gives the location of the aircraft exterior lighting.

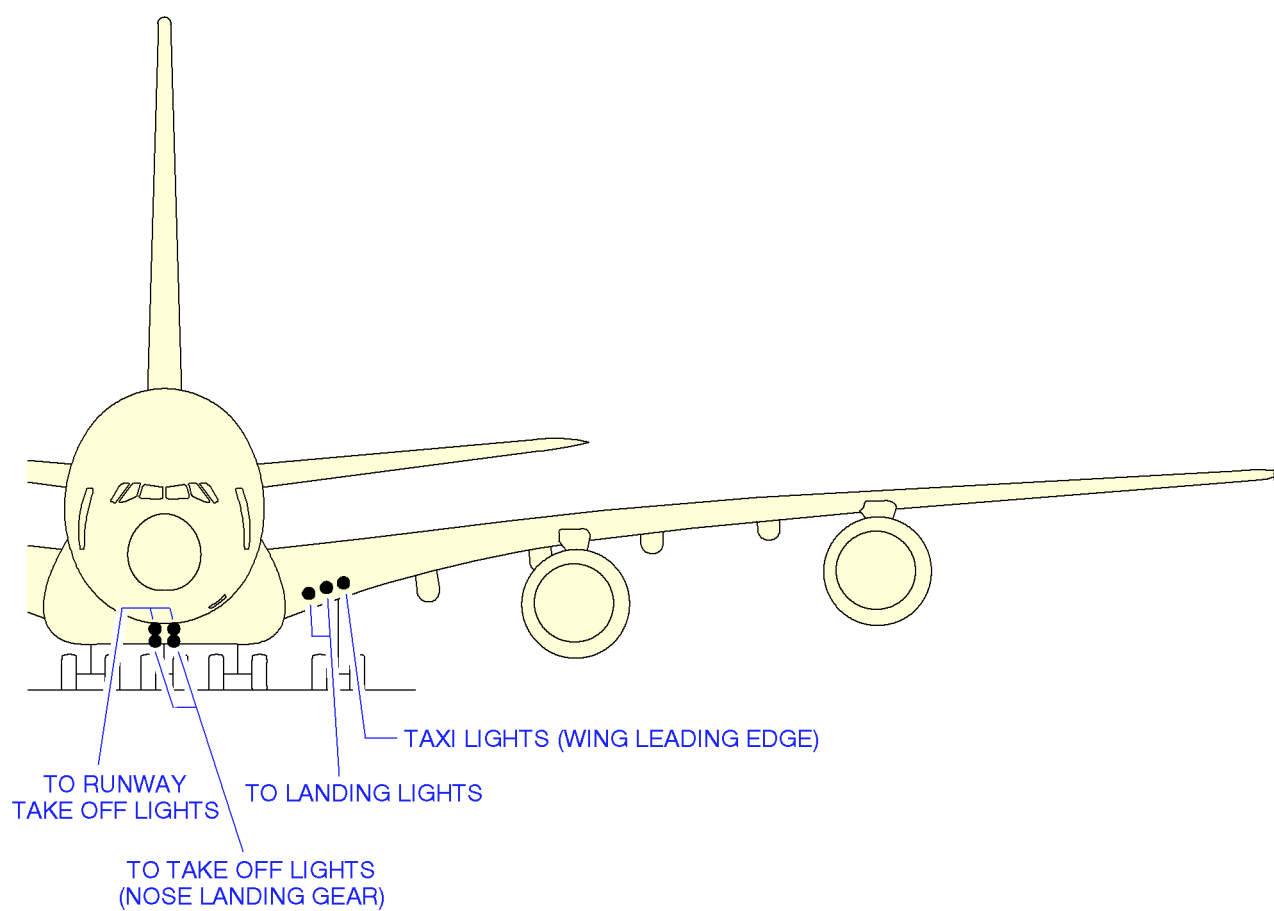
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Exterior Lighting Available in Flight (Sheet 1/2)
A380-800/800F Models

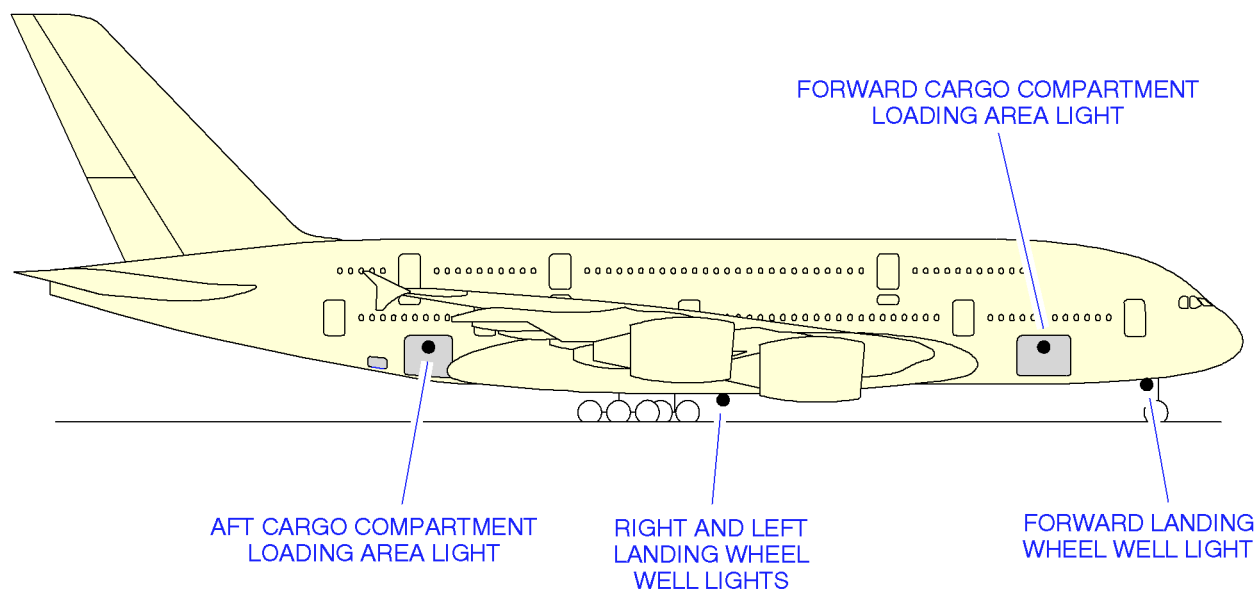
MAINTENANCE FACILITY PLANNING



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Exterior Lighting Available in Flight (Sheet 2/2)
A380-800/800F Models

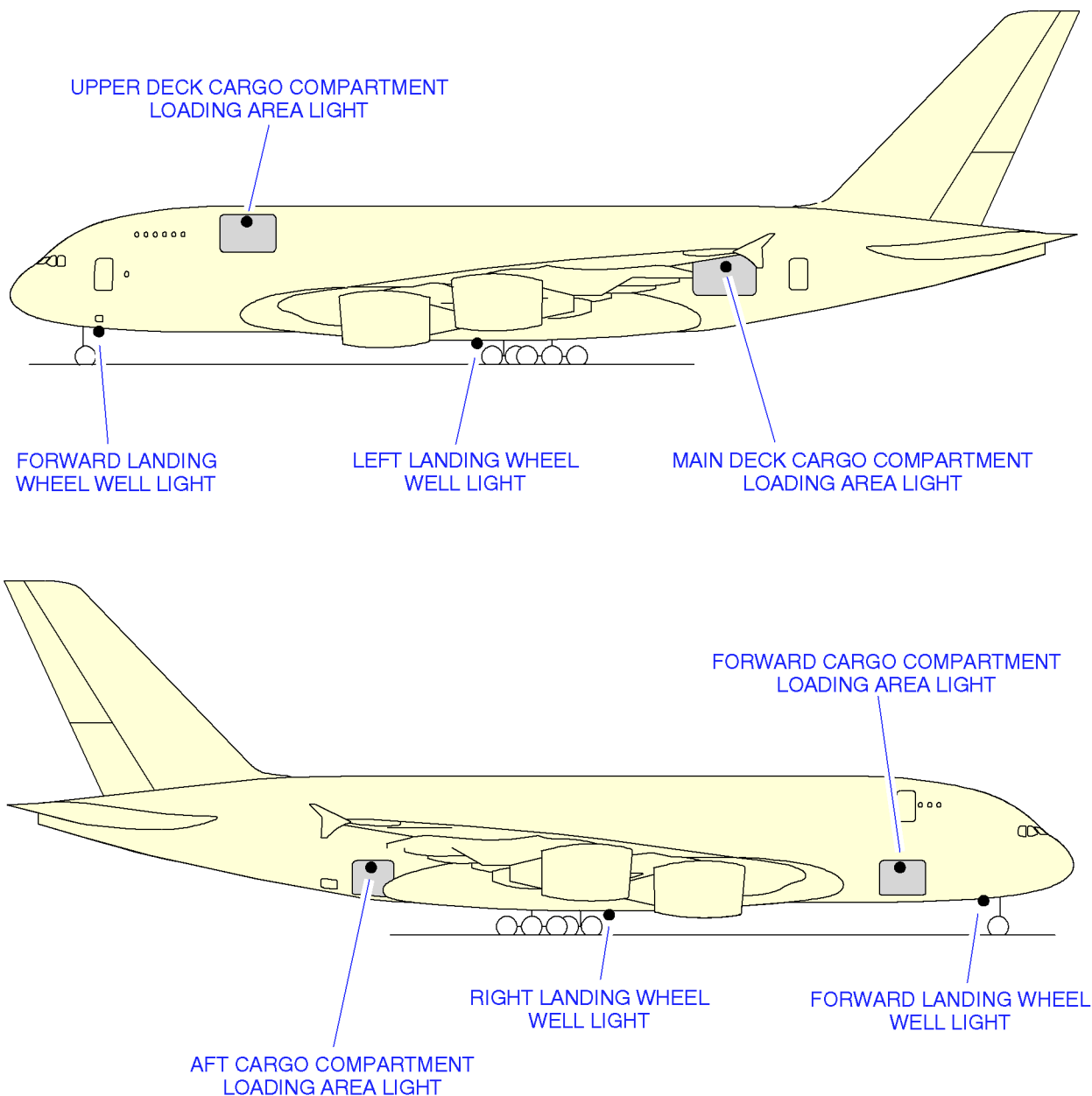
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Exterior Lighting for Ground Use
A380-800 Models

MAINTENANCE FACILITY PLANNING



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Exterior Lighting of for Ground Use
A380-800F Models

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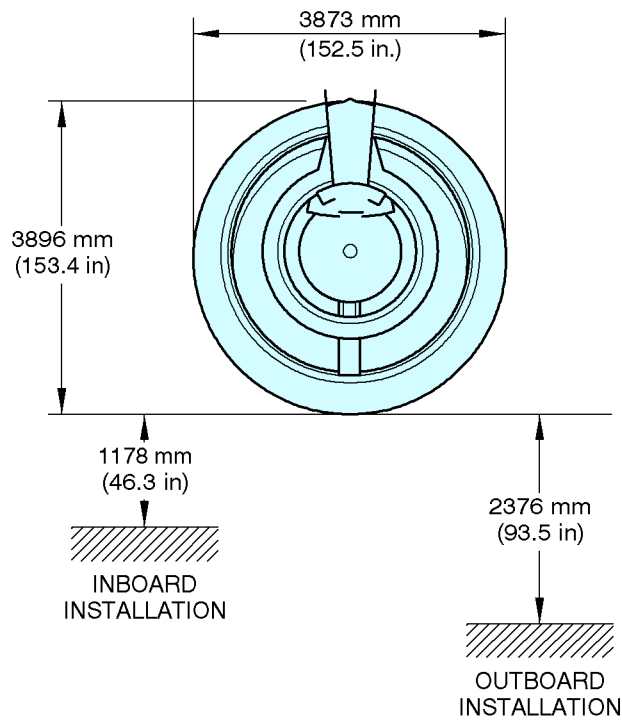
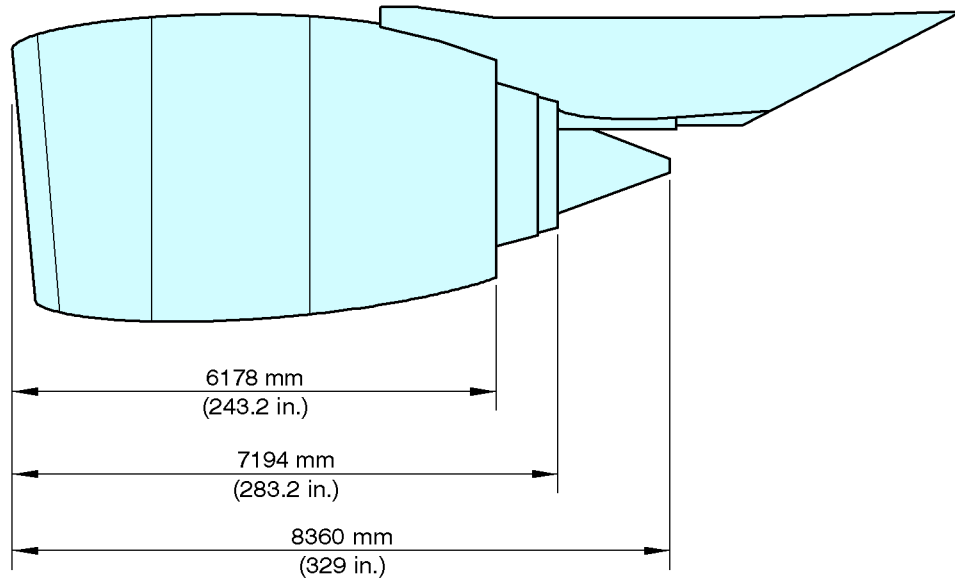
MAINTENANCE FACILITY PLANNING

POWER PLANT HANDLING

1. Dimensions

This section contains data necessary for determining the platforms and associated facilities required for power plant handling.

MAINTENANCE FACILITY PLANNING



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Engine Dimensions
RB211 - Trent Engine

MAINTENANCE FACILITY PLANNING

To Be Issued Later

Nacelle Dimensions
RB211 – Trent Engine

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To Be Issued Later

Fan Cowls
RB211 – Trent Engine

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To Be Issued Later

Thrust Reverser Halves
RB211 – Trent Engine

MAINTENANCE FACILITY PLANNING

COMPONENT WEIGHTS

1. General

This topic details the weights of the primary removable components on the A380 aircraft for models -800 and -800F.

Weights in para. A are for components fitted to each wing.

All weights are approximate values and are given in kg (lb).

A. Wing

(1) Slats:

Model -800/Model -800F

Droop Nose 1	219 kg (482 lb)/221 kg (487 lb)
Droop Nose 2	200 kg (441 lb)/202 kg (445 lb)
Slat 2	148 kg (326 lb)/149 kg (328 lb)
Slat 3	145 kg (319 lb)/146 kg (322 lb)
Slat 4	150 kg (330 lb)/152 kg (335 lb)
Slat 5	131 kg (288 lb)/132 kg (291 lb)
Slat 6	115 kg (253 lb)/116 kg (255 lb)
Slat 7	108 kg (238 lb)/109 kg (240 lb)

(2) Flaps:

Inner	656 kg (1446 lb)/687 kg (1514 lb)
Midboard	681 kg (1501 lb)/709 kg (1563 lb)
Outer	395 kg (870 lb)/410 kg (904 lb)

(3) Tracks:

Model -800/Model -800F

Equipped Track 1	212 kg (467 lb)/229 kg (505 lb)
Equipped Track 2	455 kg (1003 lb)/478 kg (1053 lb)
Equipped Track 3	366 kg (807 lb)/383 kg (844 lb)
Equipped Track 4	343 kg (756 lb)/360 kg (793 lb)
Equipped Track 5	334 kg (736 lb)/350 kg (771 lb)
Equipped Track 6	192 kg (423 lb)/198 kg (436 lb)

All Models

Flap Track Fairing 2 (LH wing)*	209 kg (460 lb)
Flap Track Fairing 2 (RH wing)	179 kg (394 lb)
Flap Track Fairing 3	139 kg (306 lb)
Flap Track Fairing 4	149 kg (328 lb)
Flap Track Fairing 5	139 kg (306 lb)
Flap Track Fairing 6	89 kg (196 lb)

* RAT installed.

MAINTENANCE FACILITY PLANNING**(4) Ailerons:**

All Models

Inner	215 kg (474 lb)
Midboard	235 kg (518 lb)
Outer	256 kg (564 lb)

(5) Spoilers:

Spoiler 1	96 kg (211 lb)
Spoiler 2	91 kg (200 lb)
Spoiler 3	77 kg (169 lb)
Spoiler 4	84 kg (185 lb)
Spoiler 5	77 kg (169 lb)
Spoiler 6	85 kg (187 lb)
Spoiler 7	79 kg (174 lb)
Spoiler 8	78 kg (172 lb)

MAINTENANCE FACILITY PLANNING

B. Landing gear

To Be Issued Later

MAINTENANCE FACILITY PLANNING

C. Fuselage

(1) Nose Fuselage:

All Models

Radome	60 kg (132 lb)
Windshield panel	36 kg (79 lb)
Lateral Sliding Window panel	21 kg (46 lb)
(including mechanism)	46 kg (101 lb)
Lateral Fixed Window panel	21 kg (46 lb)

(2) Passenger Doors and associated slides

- Main Deck:

Door n° M1 + Slide	125 kg (275 lb) + 102 kg (225 lb)
Door n° M2 + Slide	122 kg (269 lb) + 96 kg (216 lb)
Door n° M3 + Slide	118 kg (260 lb) + 85 kg (187 lb)
Door n° M4 + Slide	122 kg (269 lb) + 88 kg (194 lb)
Door n° M5 + Slide	124 kg (273 lb) + 88 kg (194 lb)

- Upper Deck:

Door n° U1 + Slide	125 kg (275 lb) + 136 kg (299 lb)
Door n° U2 + Slide	125 kg (275 lb) + 134 kg (295 lb)
Door n° U3 + Slide	125 kg (275 lb) + 134 kg (295 lb)

(3) Cargo Doors:

Forward Cargo Door	300 kg (661 lb)
Aft Cargo Door	270 kg (595 lb)
Bulk Cargo Door	40 kg (88 lb)
Upper Deck Cargo Door	410 kg (904 lb)
Main Deck Cargo Door	470 kg (1036 lb)

(4) Rear fuselage section 19.1:

Structure	433 kg (954 lb)
Systems	236 kg (520 lb)

(5) Miscellaneous:

All Models

Nose Landing gear doors:

- forward (each)	58 kg (128 lb)
- rear (each)	25.5 kg (56 lb)

Body Landing gear doors

TBD

Wing Landing gear doors

TBD

MAINTENANCE FACILITY PLANNING

Control Units:

- Flaps	TBD
- Slats	TBD

Air Conditionning Pack (one side)	397 kg (875 lb)
-----------------------------------	-----------------

APU access door	TBD
APU exhaust	96 kg (211 lb)
APU electrical system	49 kg (108 lb)

MAINTENANCE FACILITY PLANNING

D. Stabilizers

(1) Vertical tail:

ALL Models

Box (equipped without rudder)	2491 kg (5491 lb)
Rudder	693 kg (1527 lb)
Leading edge	171 kg (377 lb)
Dorsal fin	25 kg (55 lb)
Tip	30 kg (66 lb)
Fuselage fairing	62 kg (136 lb)

(2) Horizontal Tail:

Box	3982 kg (8778 lb)
Outer elevator	388 kg (855 lb)
Inner elevator	508 kg (1119 lb)
Leading edge	467 kg (1029 lb)
Trailing edge	688 kg (1516 lb)
Tip	100 kg (220 lb)
Fuselage fairing	TBD
Miscellaneous	114 kg (251 lb)
Systems	241 kg (531 lb)

MAINTENANCE FACILITY PLANNING**E. Miscellaneous**

Ram air turbine assembly	TBD
Battery	TBD
Engine fire extinguisher bottle	TBD
Pneumatic system bleed air precooler	TBD

F. Engine and nacelle

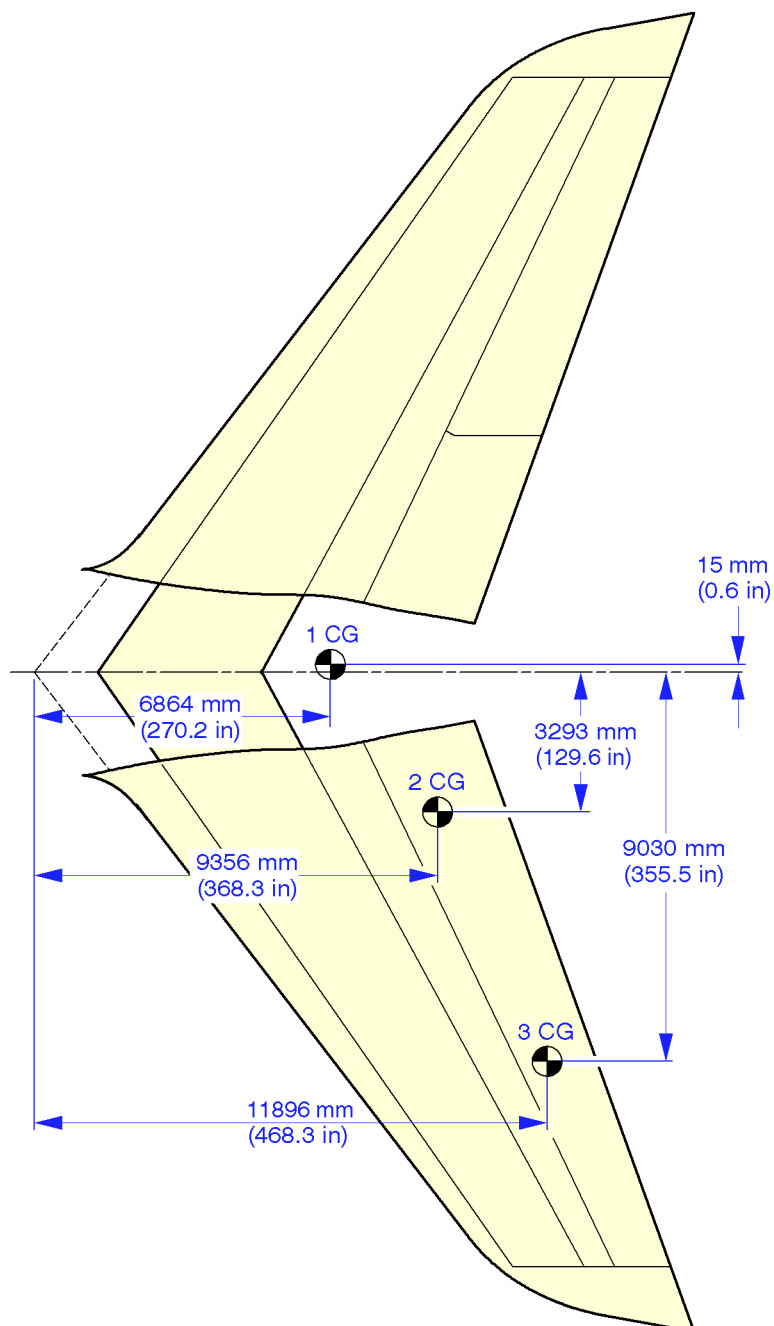
Engine	TBD
Inlet Cowl	TBD
Fan Cowl	TBD
Thrust Reverser	TBD
Primary Nozzle	TBD
Pylon (Outer)	TBD
Pylon (Inner)	TBD

MAINTENANCE FACILITY PLANNING

COMPONENT HANDLING

Section 3-16 gives the information on dimensions and on the Center of Gravity (C.G.) locations of the various control surfaces. All the dimensions are in millimeters and inches.

MAINTENANCE FACILITY PLANNING

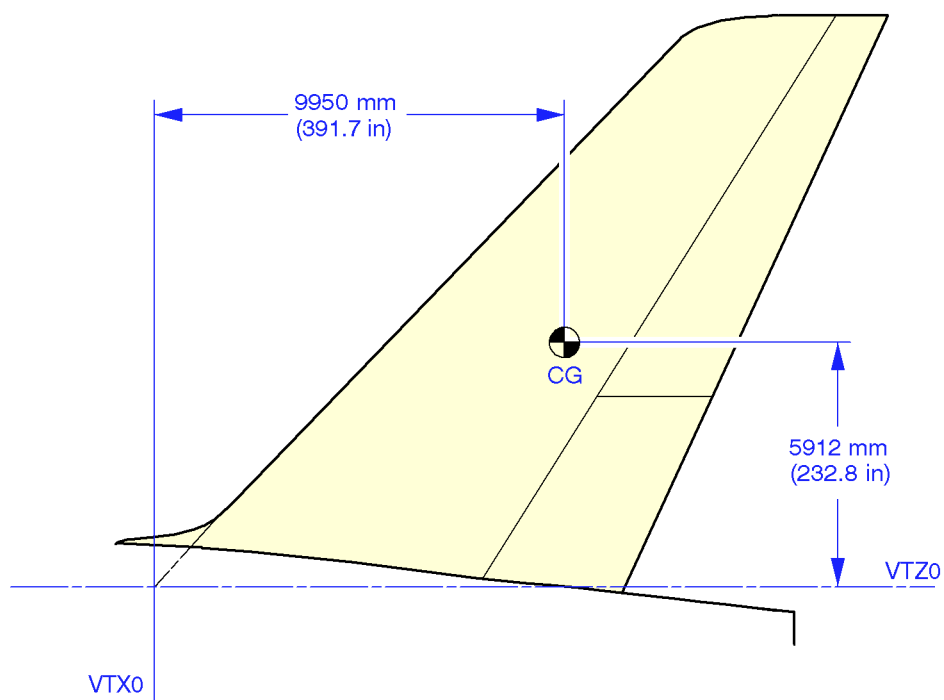


1. CG POSITION OF HORIZONTAL STABILIZER WITHOUT THE ELEVATORS
2. CG POSITION OF THE INNER ELEVATOR
3. CG POSITION OF THE OUTER ELEVATOR

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**Horizontal Stabilizer
CG Location**

MAINTENANCE FACILITY PLANNING

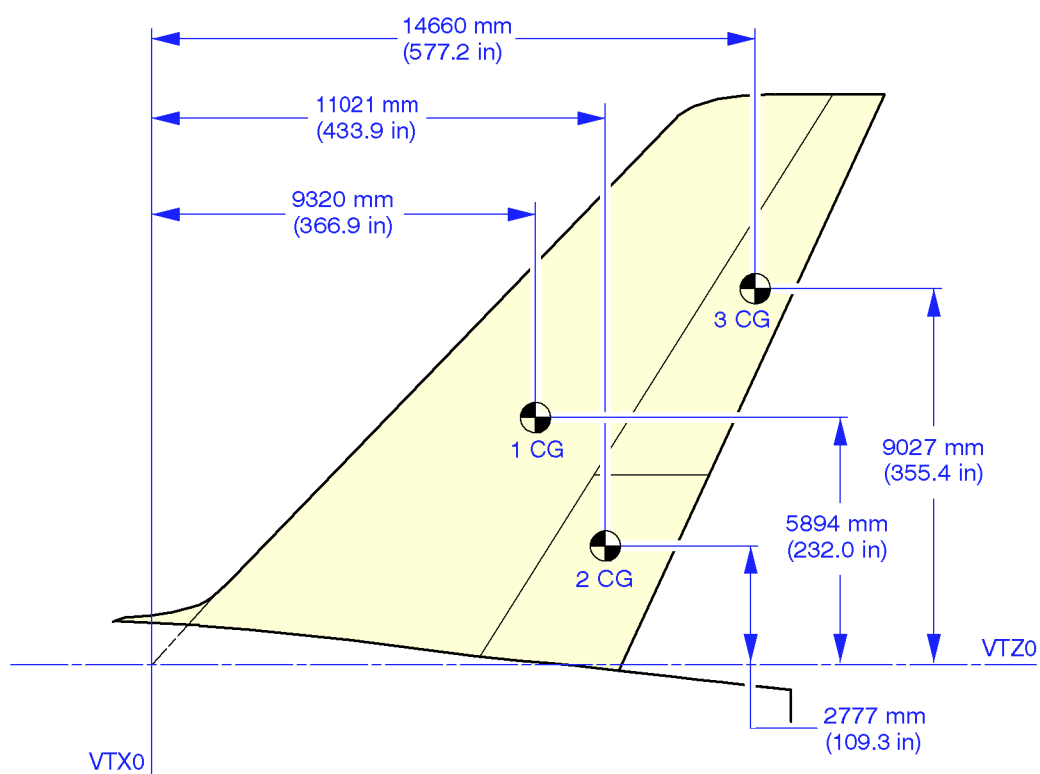


CG POSITION OF THE VERTICAL STABILIZER WITH
THE RUDDER AND WITH THE DORSAL FIN

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Vertical Stabilizer and Rudder
CG Location

MAINTENANCE FACILITY PLANNING

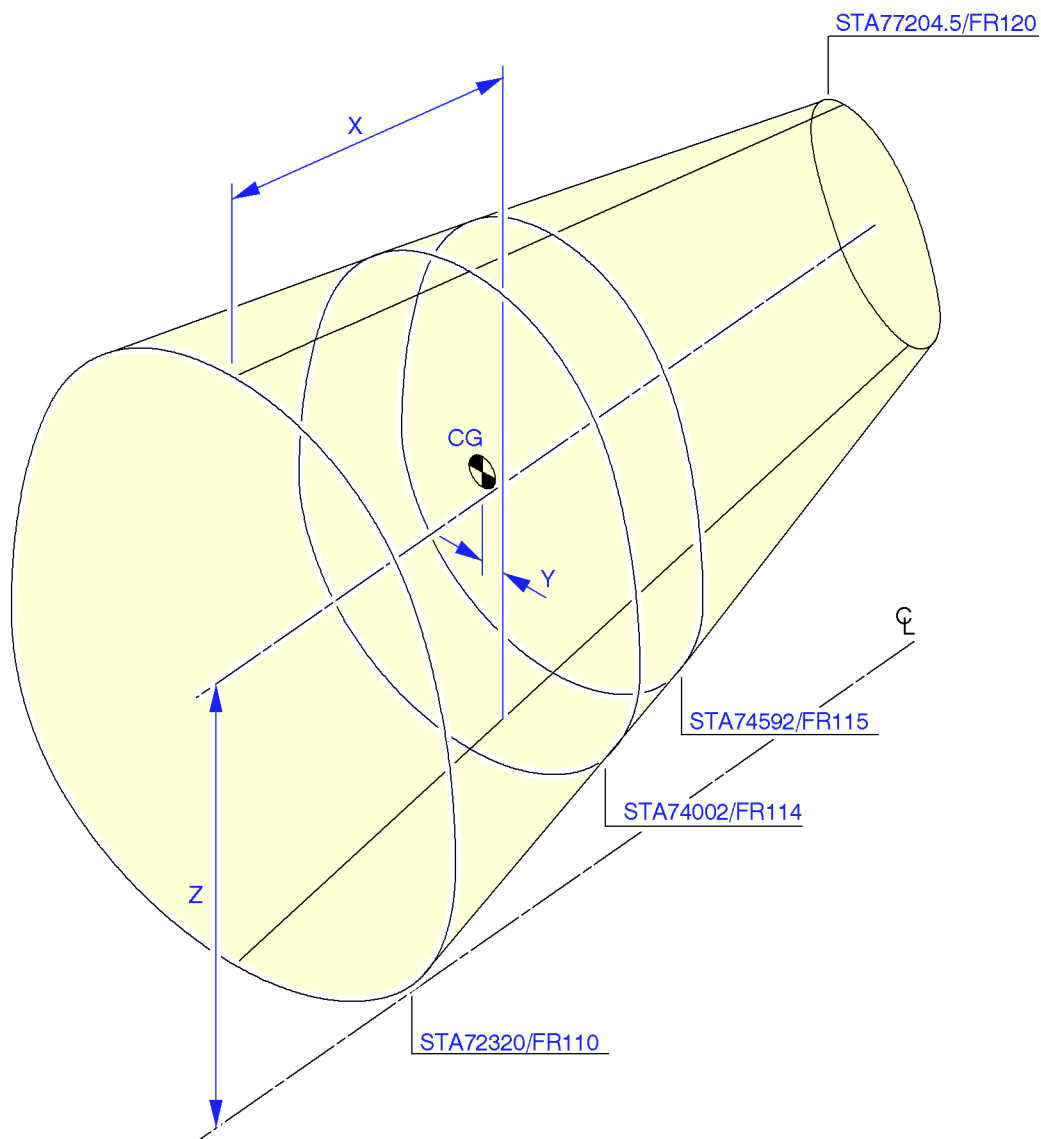


1. CG POSITION OF THE VERTICAL STABILIZER
WITHOUT THE RUDDER AND DORSAL FIN
2. CG POSITION OF THE UPPER RUDDER
3. CG POSITION OF THE LOWER RUDDER

ZMF0 03 16 00 0 ACM0 00

**Vertical Stabilizer and Rudder
CG Location**

MAINTENANCE FACILITY PLANNING



	WITH APU GENERATOR		WITHOUT APU GENERATOR	
	mm	in	mm	in
X	2066	81.34	2146	84.49
Y	22	0.87	35	1.38
Z	2420	95.28	2609	102.72

ZMF0 03 16 00 0 AGM0 00

Tail cone
CG Location

MAINTENANCE FACILITY PLANNING

SUGGESTED HANGAR ARRANGEMENT

The purpose of a maintenance hangar is to provide a weather-safe space for aircraft servicing, maintenance and repair activities. It may also include space for aircraft component workshops, support equipment and administrative facilities.

Maintenance hangar planning should take the following factors into consideration :

- level of maintenance to be performed,
- capacity including storage space,
NOTE : The number of hangar bays depends on :
 - fleet size,
 - aircraft utilization,
 - maintenance check intervals,
 - number of aircraft requiring maintenance action at the same time,
 - maintenance check elapsed time,
 - working hours available.
- local labor regulations,
- clearances : external (e.g. hangar doors) and internal (e.g. for aircraft jacking),
- tractor drive-through capability,
- special features (see paragraph A.),
- ground support equipment (see paragraph B.),
- environmental control (lighting/heating/air conditioning) : temperature (hot or cold climate), dust or humidity, prevailing winds,
NOTE : Hangar lighting levels should be 75 footcandles (800 lm/m²).
- structural materials/design (the roof is the most expensive part of the hangar),
- security,
- safety equipment and fire protection (see paragraph C.),
- local building codes,
- site location with respect to :
 - aprons, taxiways, runways,
 - electromagnetic constraints.
- geotechnical investigation,
- extension capability.

A. Special Features :

- Cranes,
- landing gear maintenance pits,
- mezzanine,
- fixed work stands,
- aircraft cleaning, stripping and painting capabilities,
- drainage,
- ventilation (work in fuel tank),
- pneumatic, electrical and hydraulic connections,
- computer system (aircraft maintenance and planning).

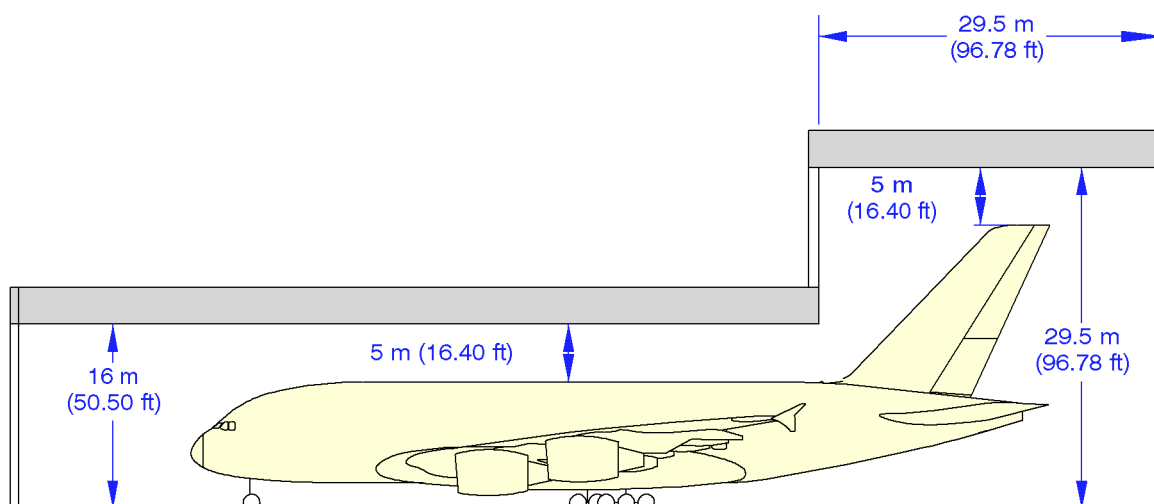
MAINTENANCE FACILITY PLANNING**B. Ground Support Equipment :**

- Air conditioning unit,
- nitrogen cart,
- oxygen cart,
- hydraulic rig,
- air starter unit,
- air compressor,
- electrical ground power unit,
- fuel tank ventilation unit,
- lavatory service unit,
- tractor,
- tow bars,
- engine cradles and trolleys (engine Removal/Installation),
- mobile maintenance docks/platforms,
- jacks,
- elevating platforms,
- stairways,
- access steps,
- mobile scissor platform,
- weighing devices,
- storage racks.

C. Safety Equipment and Fire Equipment :

- safety harnesses with damping device,
- explosive atmosphere detection devices,
- sprinkler network using a mixture of water and emulsifying agent,
NOTE : Quantity required is 10 l/m² per minute minimum.
Water storage tanks should have enough capacity for one hour's use.
- foam spray gun(s) using same mixture as the sprinkler system,
NOTE : Minimum flow rate : 200 m³/h.
- portable fire-fighting devices using dry chemical (powder), water or CO₂.

MAINTENANCE FACILITY PLANNING

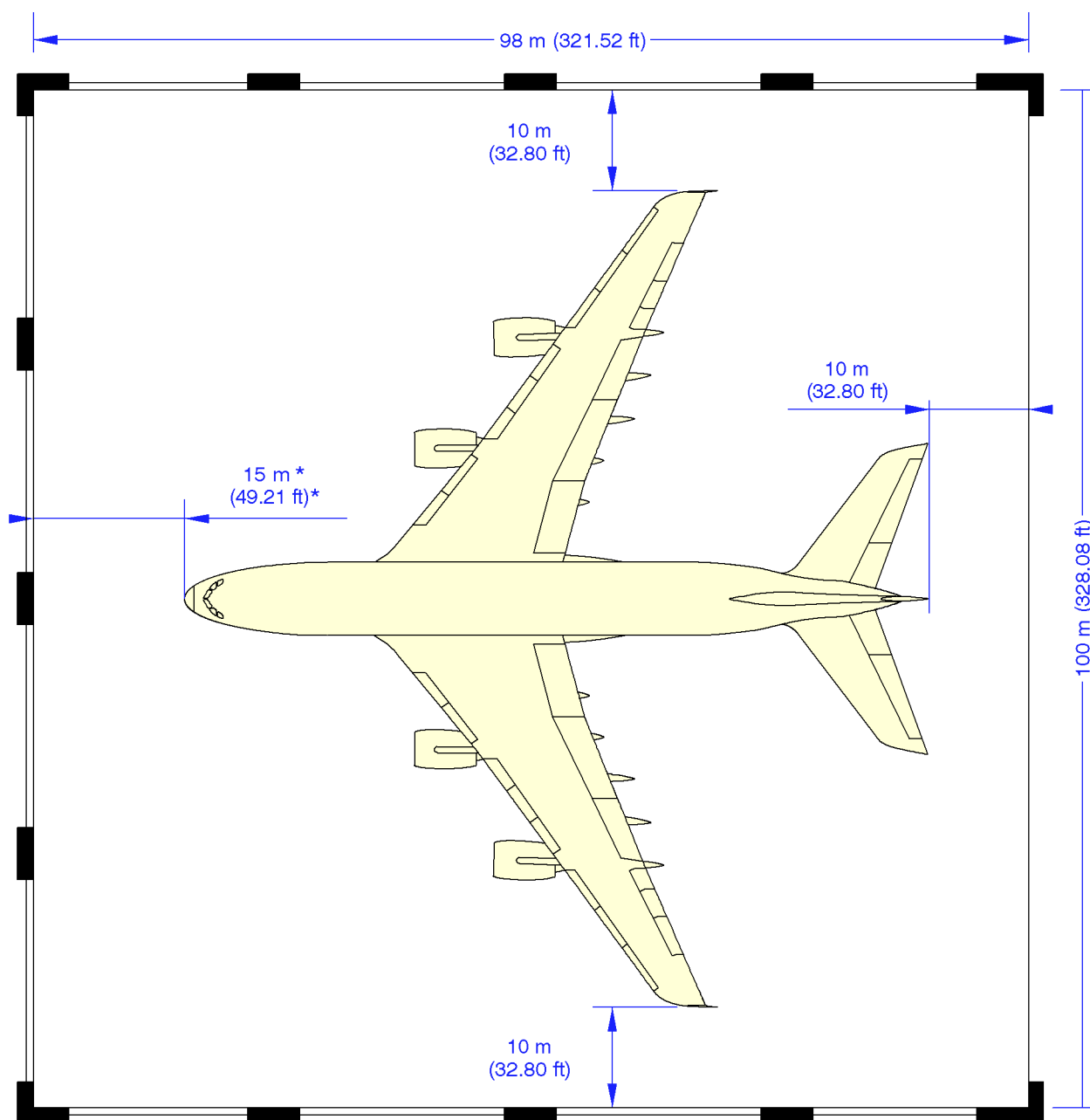


Suggested Hangar Arrangement
Nose-in Position (Sheet 1/2)
A380-800/800F Models

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MAINTENANCE FACILITY PLANNING

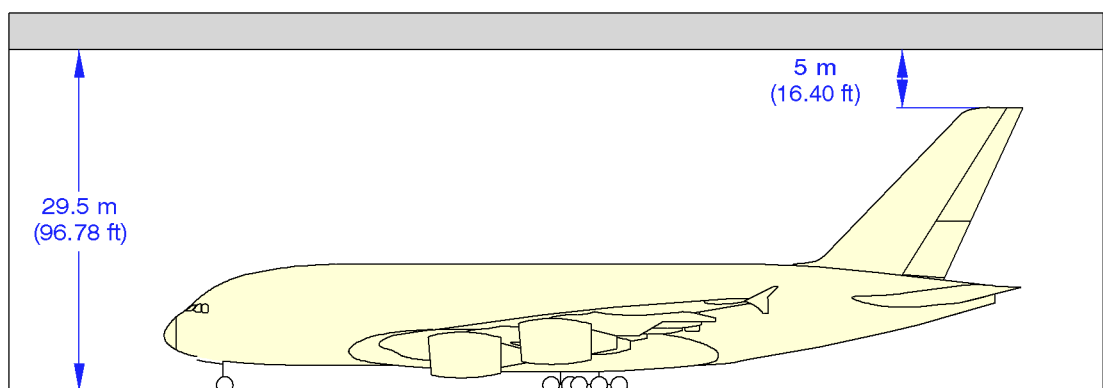
* : MINIMUM NECESSARY DISTANCE TO MOVE AWAY A TRACTOR WITH A TOW BAR



ZMF5 03 17 00 0 ABM0 00

Suggested Hangar Arrangement
Nose-in Position (Sheet 2/2)
A380-800/800F Models

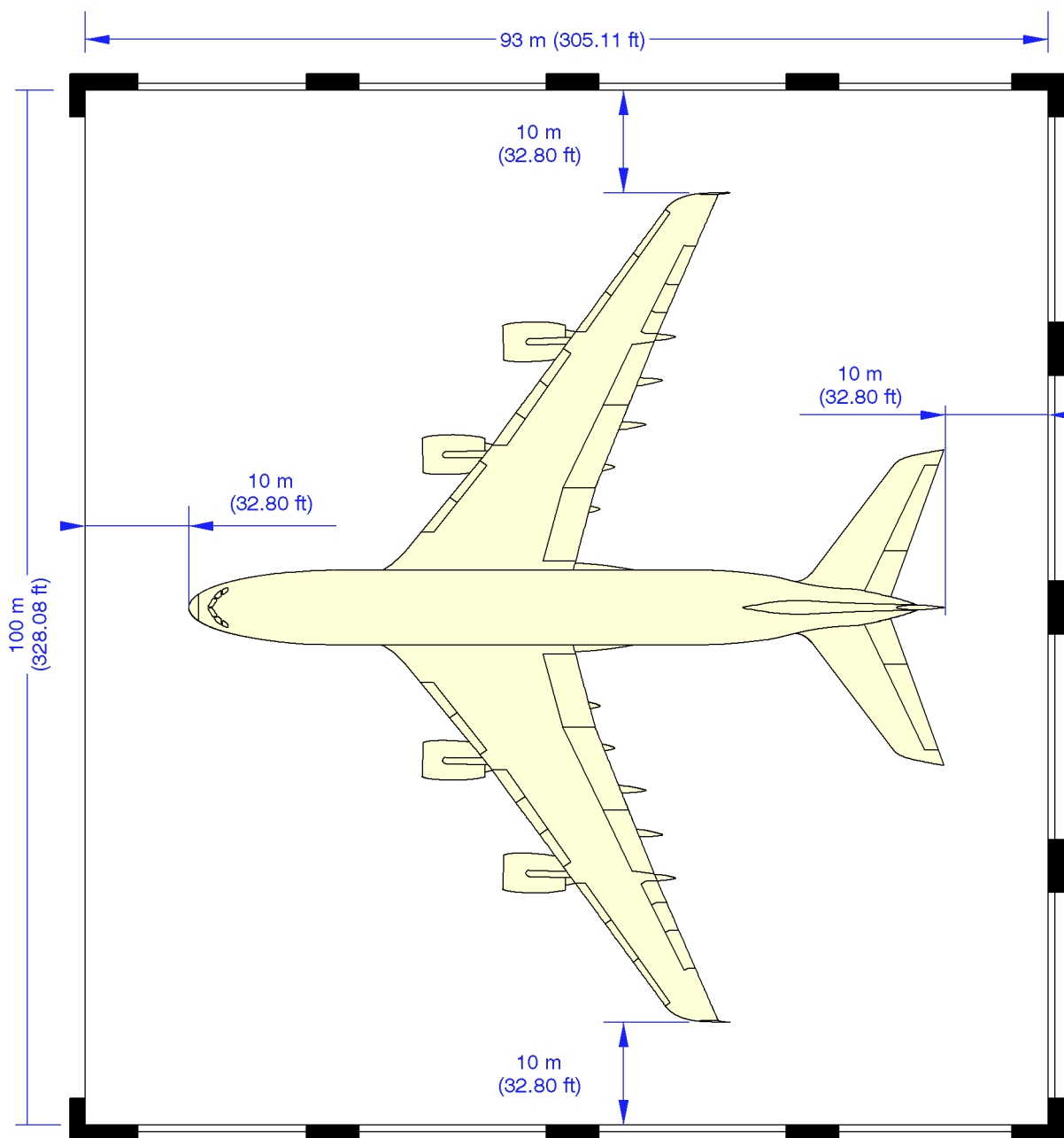
MAINTENANCE FACILITY PLANNING



Suggested Hangar Arrangement
Tail-in Position (Sheet 1/2)
A380-800/800F Models

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MAINTENANCE FACILITY PLANNING



ZMF5 03 17 00 0 BBM0 00

**Suggested Hangar Arrangement
Tail-in Position (Sheet 2/2)
A380-800/800F Models**

MAINTENANCE FACILITY PLANNING

LANDING GEAR MAINTENANCE PITS

Landing Gear maintenance pits are not required for the removal of the shock absorbers.

The shock absorber can be removed when the wheels, brakes and bogie are removed, and with :

- the aircraft on jacks
- the Fuselage Horizontal Datum 7.2 m above the ground
- the appropriate equipment available.

MAINTENANCE FACILITY PLANNING

RECOMMENDED WORKSTANDS

The essential aspects that affect a decision to build a fixed dock or a movable dock are :

- the fleet size of one type of aircraft,
- the different types of aircraft in operation which demand the same hangar facilities,
- the hangar facilities must comply for both light maintenance or major maintenance.

It would appear logical to build a fixed dock facility where the fleet size of one type of aircraft provides for an adequate workload. This therefore implies that the fixed dock is in use most of the time.

When the fleet size is small or adaptability is required, movable workstands are more economic and proficient. Movable workstands are a facility that can be used for different types of aircraft.

Illustrations which show the movable workstands have been incorporated to help develop base facilities.

MAINTENANCE FACILITY PLANNING

Item	No. of	Description	Access to
1	4	Cargo Compartment Platform	Cargo Compartments
2	4	Engine Platform	Engine/Pylon/Radome Nose Landing Gear
3	1	WLG/BLG Compartment Platform	Wing and Body Landing Gear Compartments
4	1	Rear Fuselage Platform	Rear Fuselage
5	1	Hydraulic Platform-Giraffe	Vertical/Horizontal Stabilizer/APU Compartment/Fuselage
6	6	Pax Door Platform – Main and Upper Decks	Passenger Doors/Cabin/Flight Deck
7	1	Fuselage Platform	Fuselage
8	2	Inner Wing Platform	Wing Root and Flap/Slat System
9/10	4	Outer Wing Platform	Flap/Slat and Spoiler System

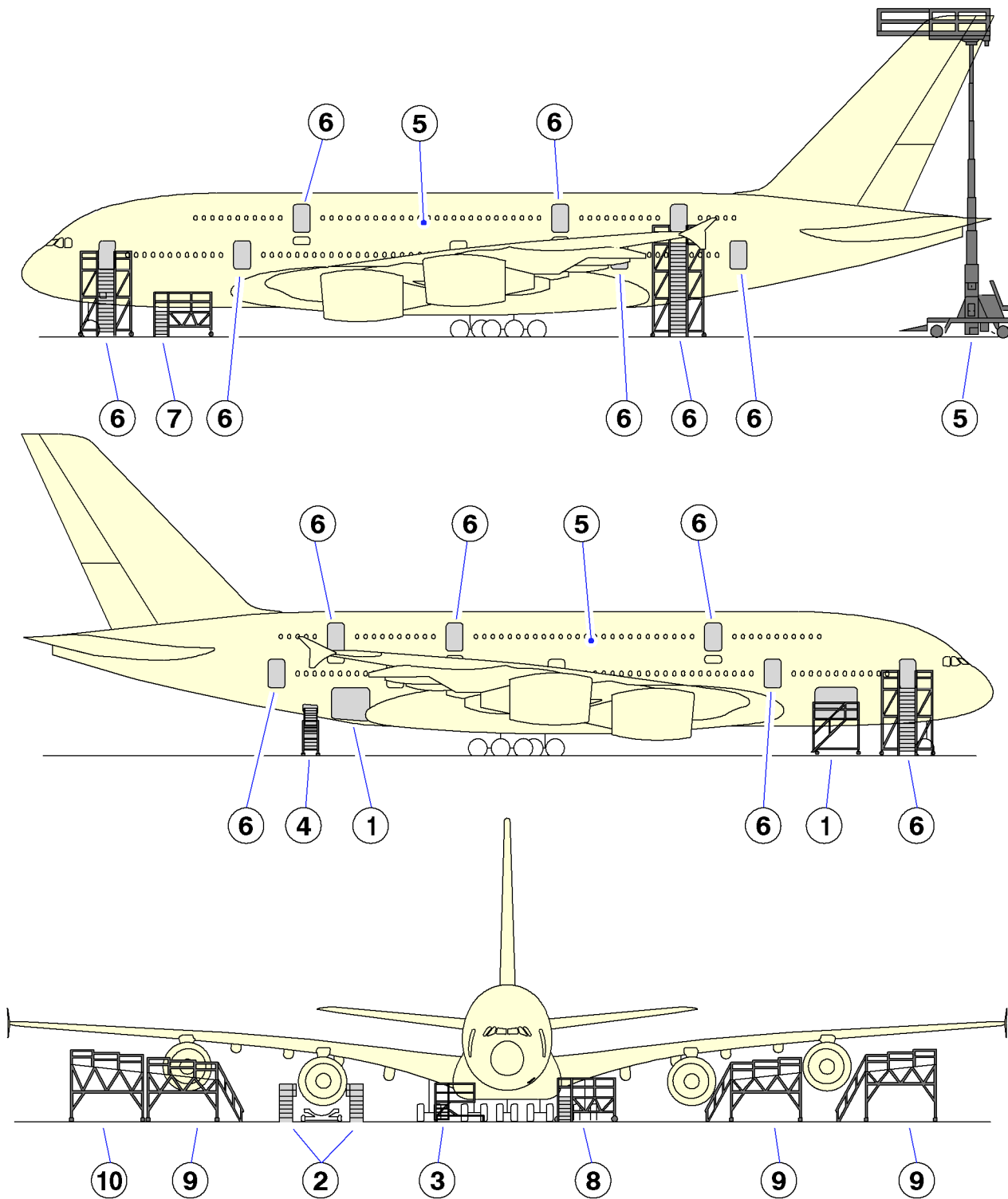
Summary of Recommended Movable Workstands
Aircraft on Wheels
A380-800 Models

MAINTENANCE FACILITY PLANNING

Item	No. of	Description	Access to
1	4	Cargo Compartment Platform	Cargo Compartments
2	4	Engine Platform	Engine/Pylon/Radome Nose Landing Gear
3	1	WLG/BLG Compartment Platform	Wing and Body Landing Gear Compartments
4	1	Rear Fuselage Platform	Rear Fuselage
5	1	Hydraulic Platform-Giraffe	Vertical/Horizontal Stabilizer/APU Compartment/Fuselage
6	2	Pax Door Platform – Main and Upper Decks	Passenger Doors/Cabin/Flight Deck
7	1	Fuselage Platform	Fuselage
8	2	Inner Wing Platform	Wing Root and Flap/Slat System
9/10	4	Outer Wing Platform	Flap/Slat and Spoiler System

Summary of Recommended Movable Workstands
Aircraft on Wheels
A380-800F Models

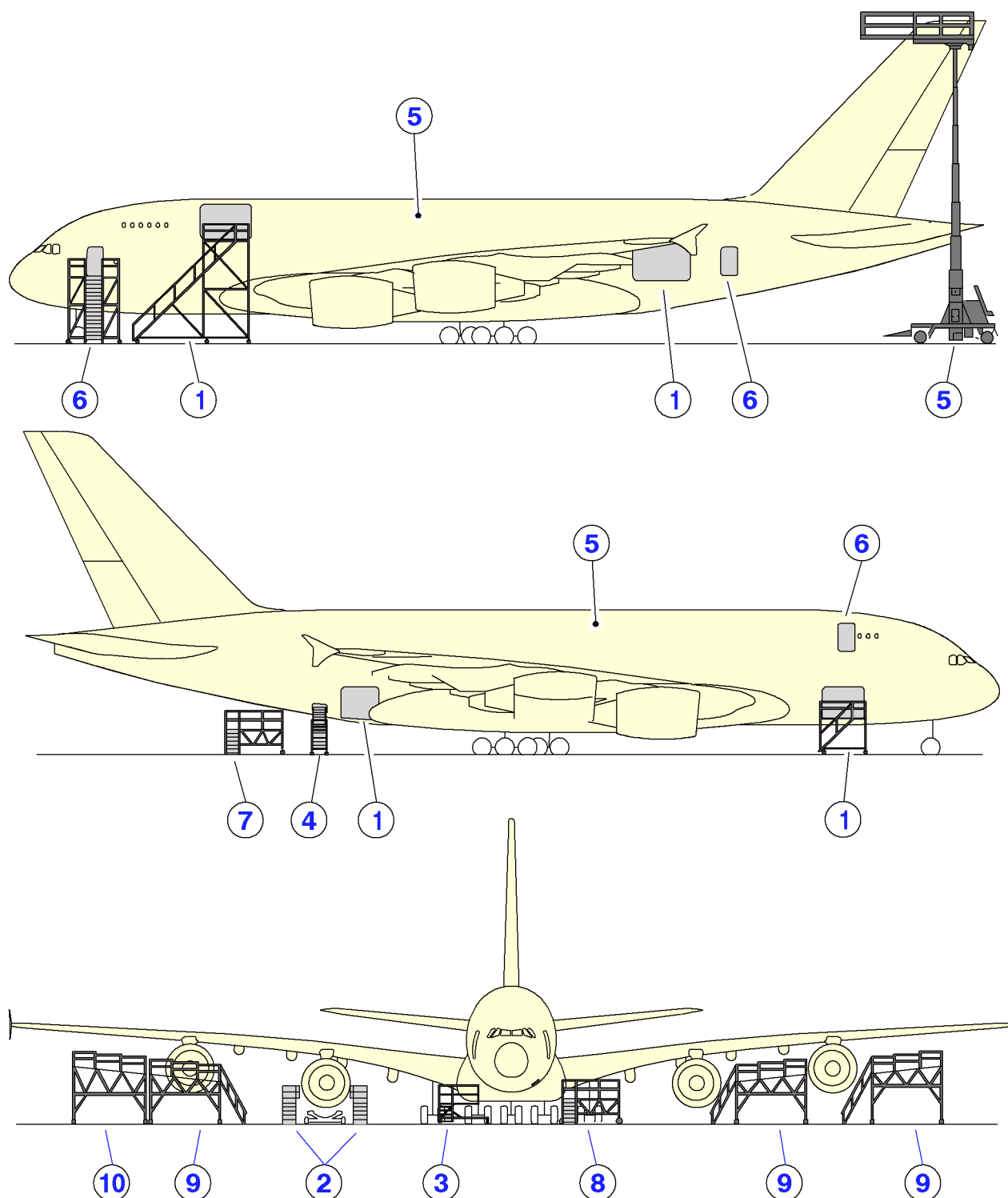
MAINTENANCE FACILITY PLANNING



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General Arrangement A380-800 Models

MAINTENANCE FACILITY PLANNING



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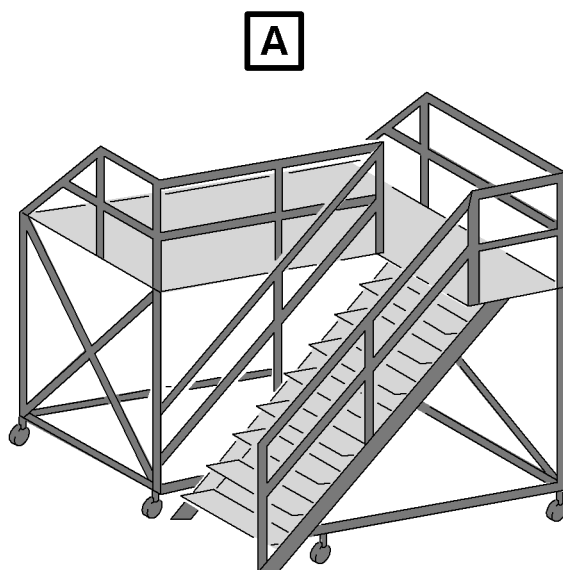
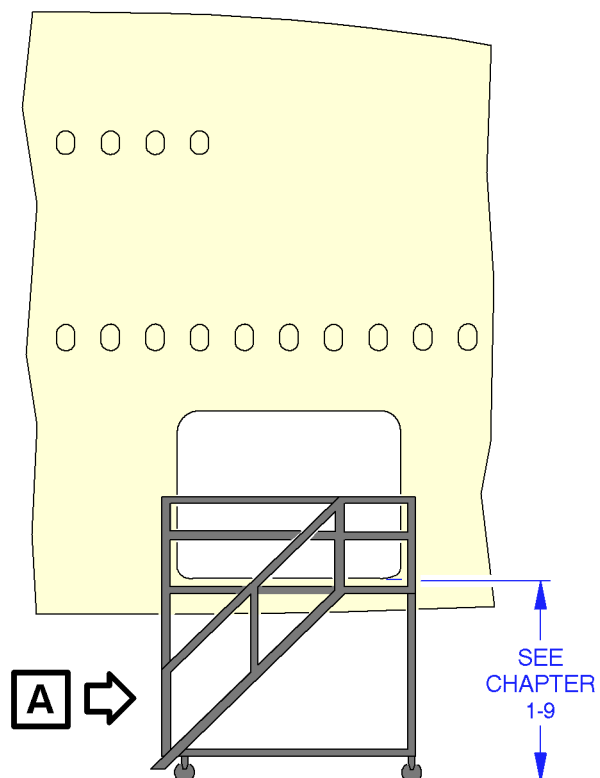
General Arrangement
A380-800F Models

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Page 5
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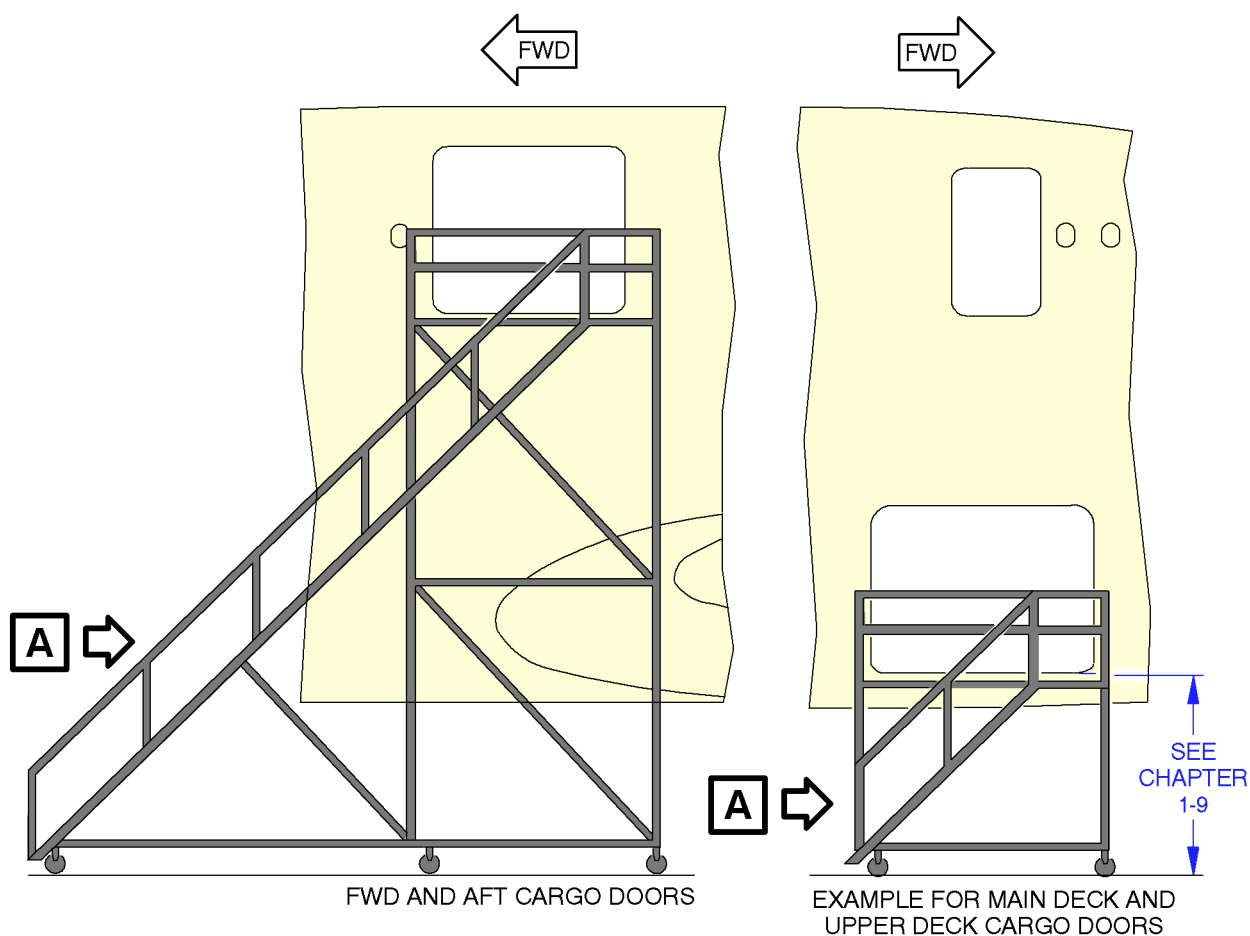
MAINTENANCE FACILITY PLANNING



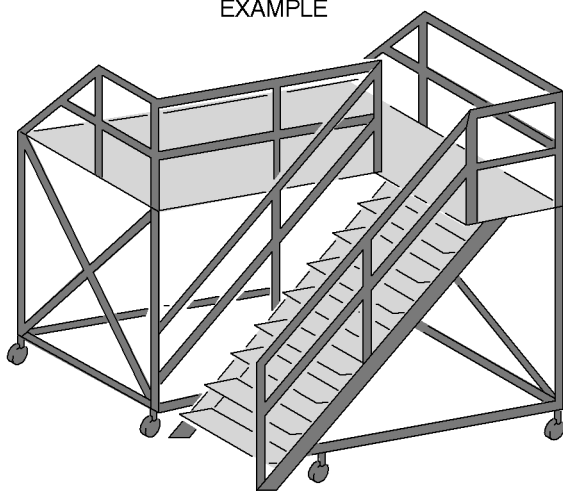
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**Cargo Compartment Platform
A380-800 Models**

MAINTENANCE FACILITY PLANNING



A
EXAMPLE

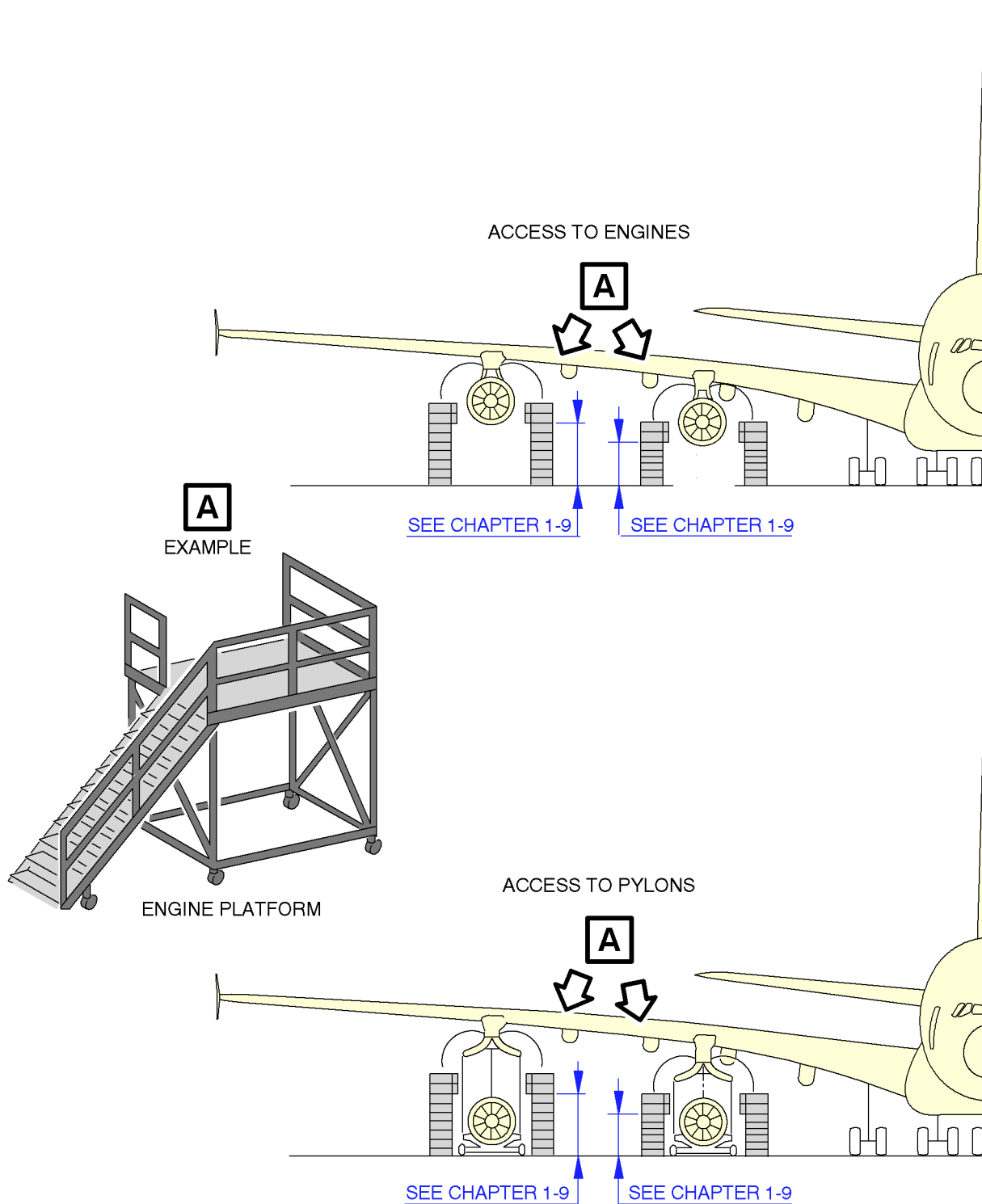


CARGO COMPARTMENT PLATFORM

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Cargo Compartment Platform
A380-800F Models

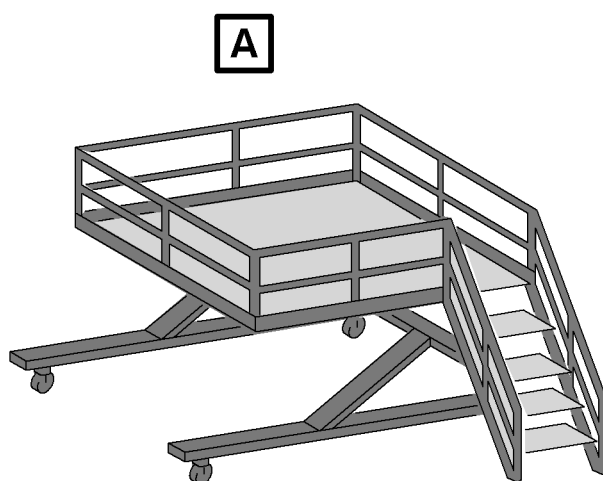
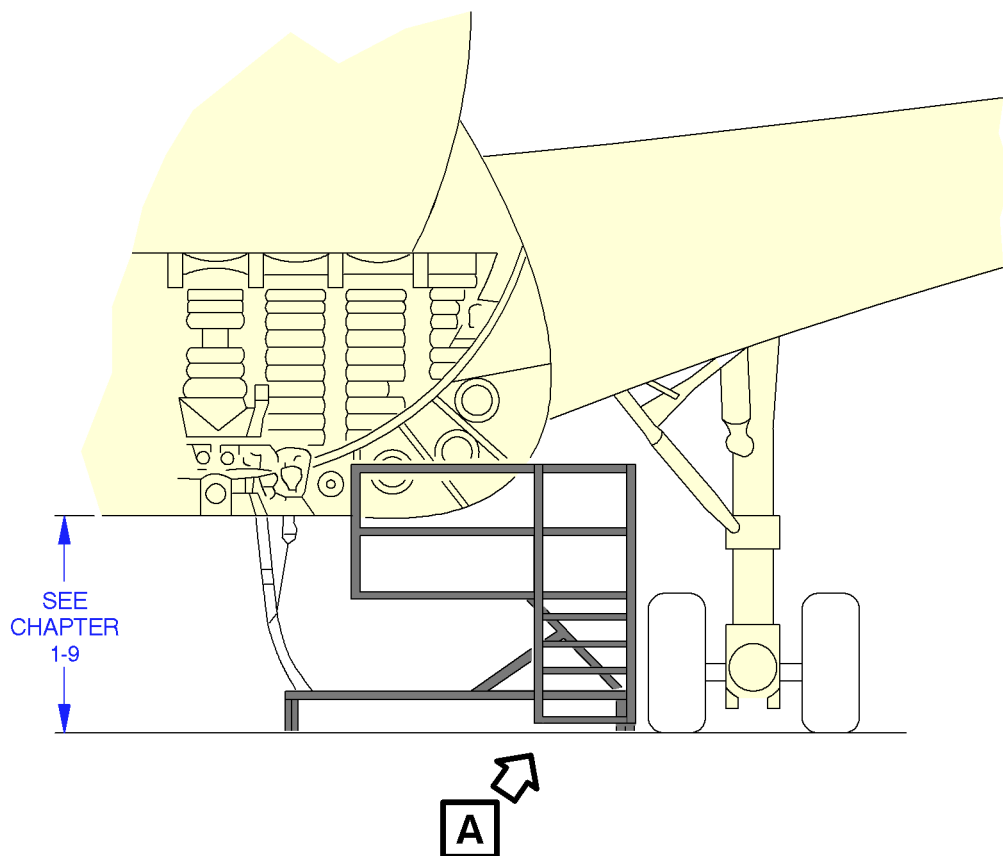
MAINTENANCE FACILITY PLANNING



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Engine Platform

MAINTENANCE FACILITY PLANNING

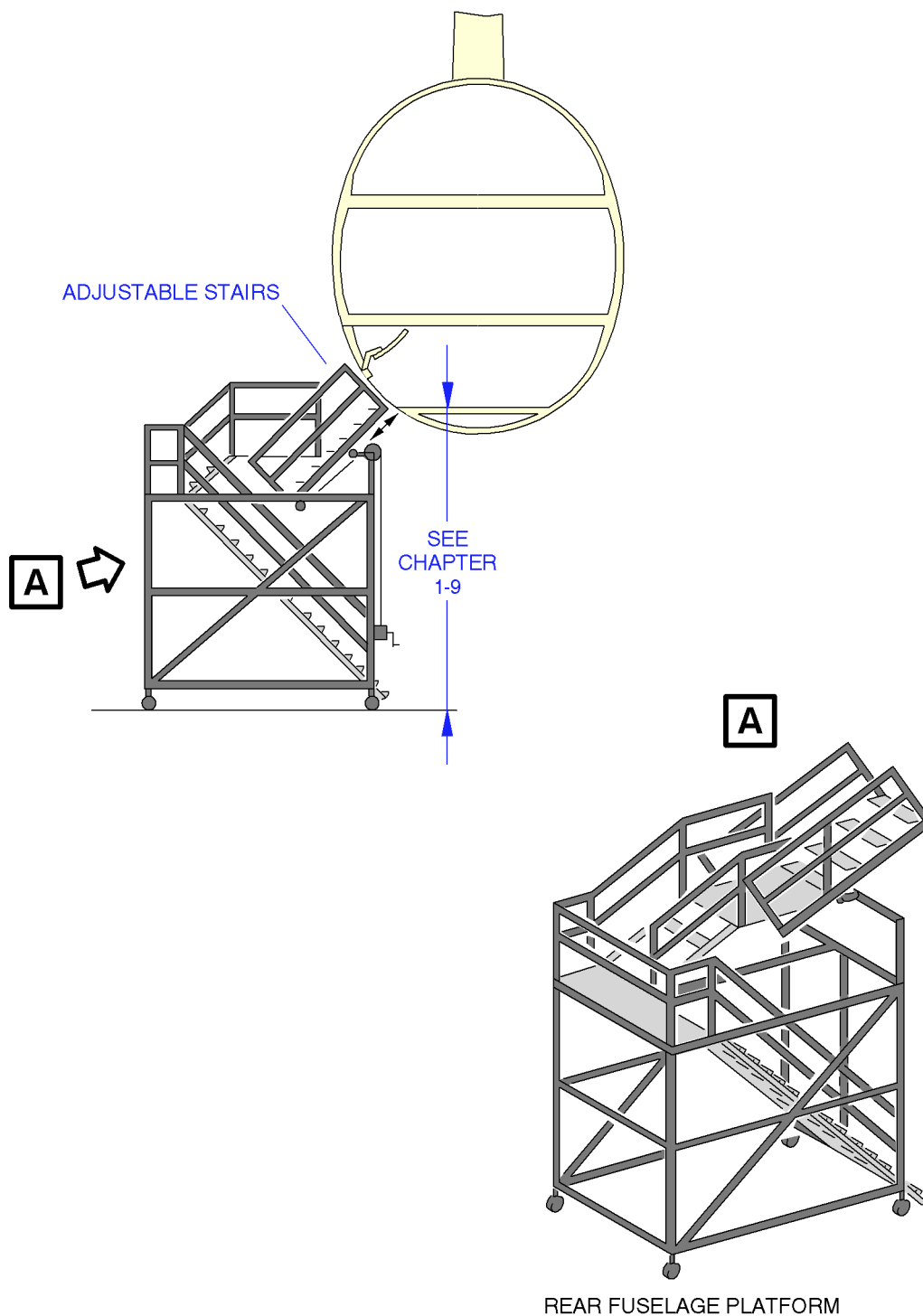


BLG/WLG COMPARTMENT PLATFORM

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WLG/BLG Compartment Platform

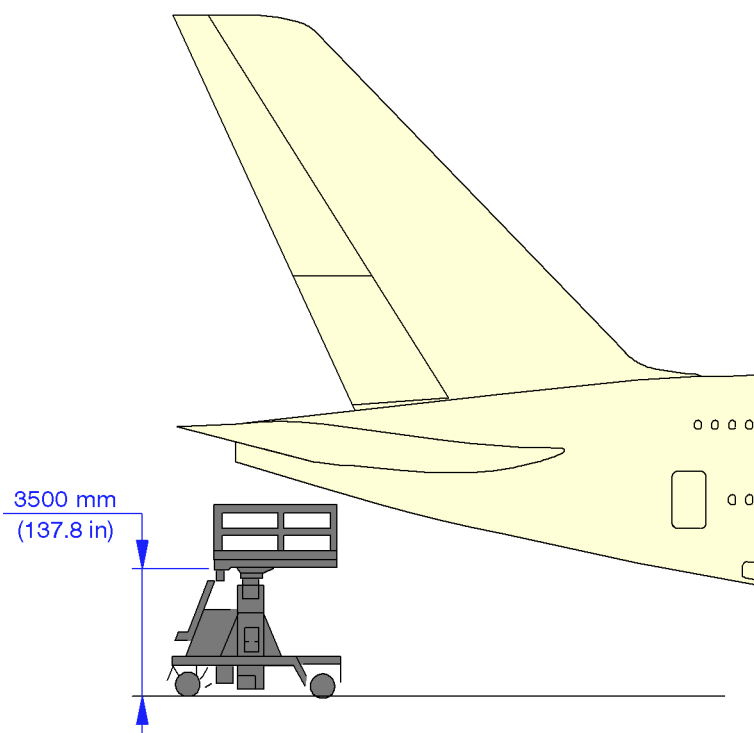
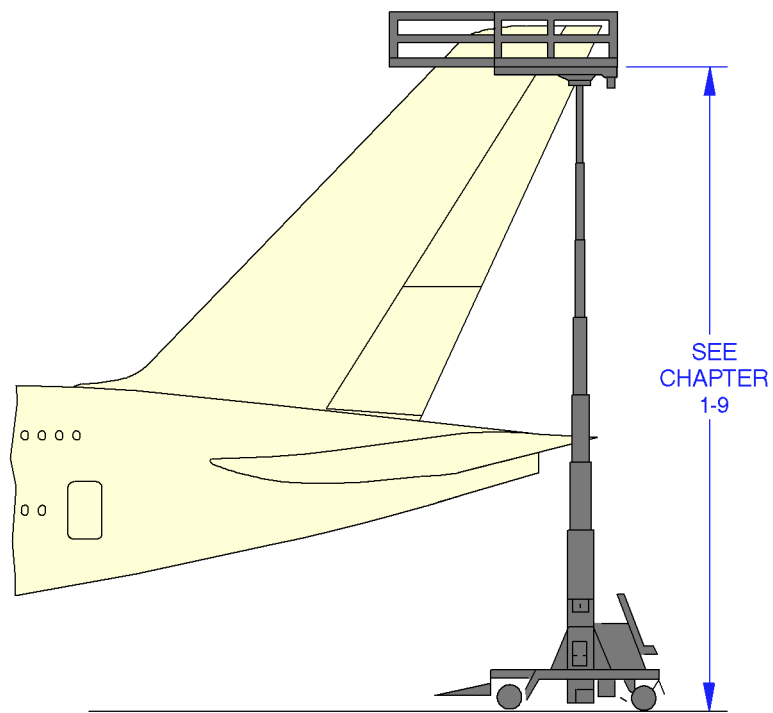
MAINTENANCE FACILITY PLANNING



ZMF6 03 19 00 0 AJM0 00

Rear Fuselage Platform

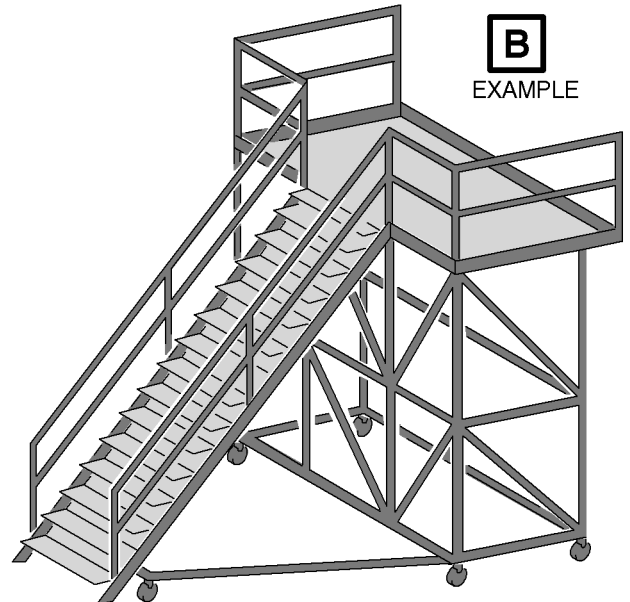
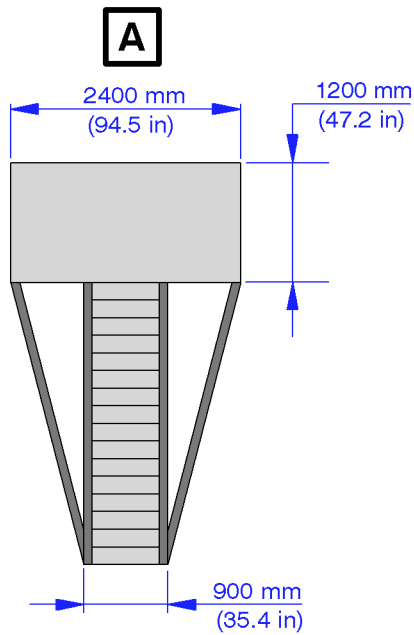
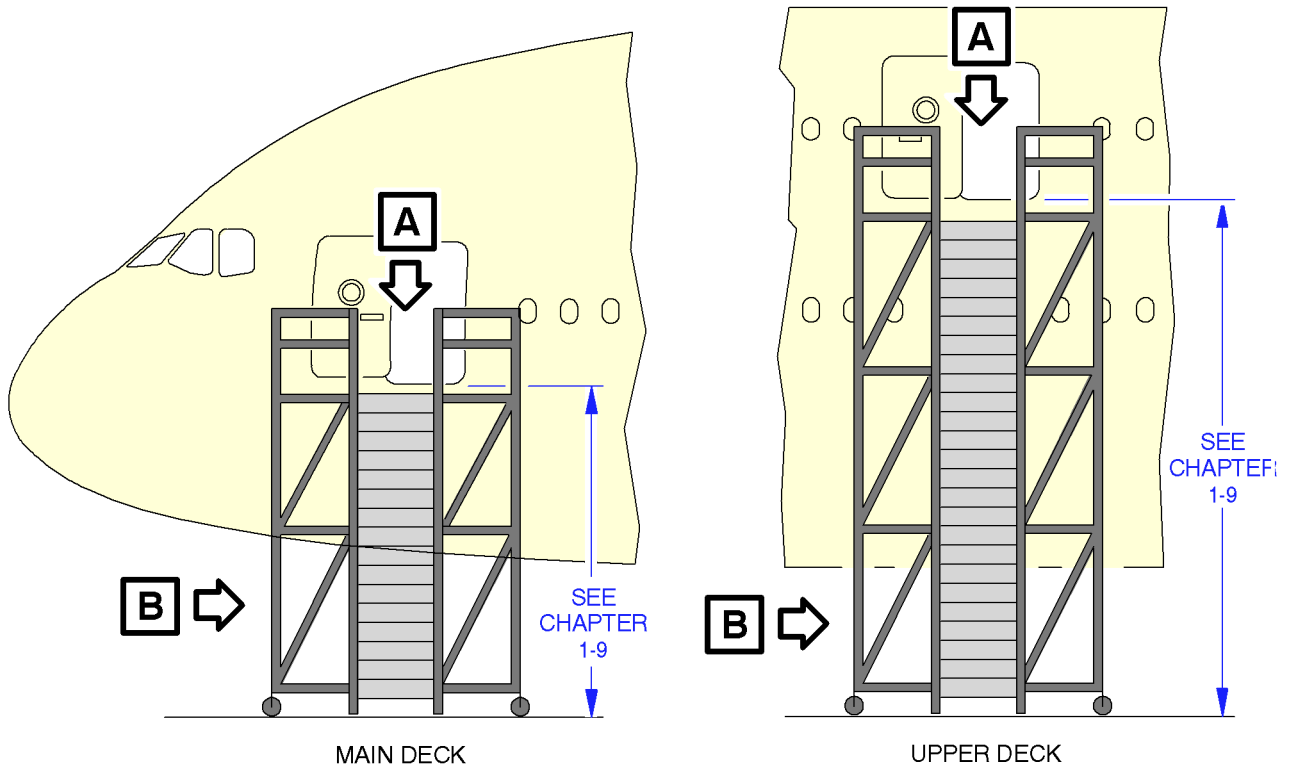
MAINTENANCE FACILITY PLANNING



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Hydraulic Platform - Giraffe

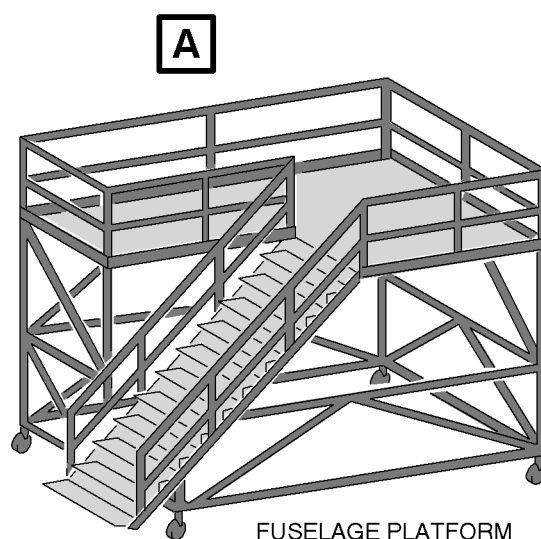
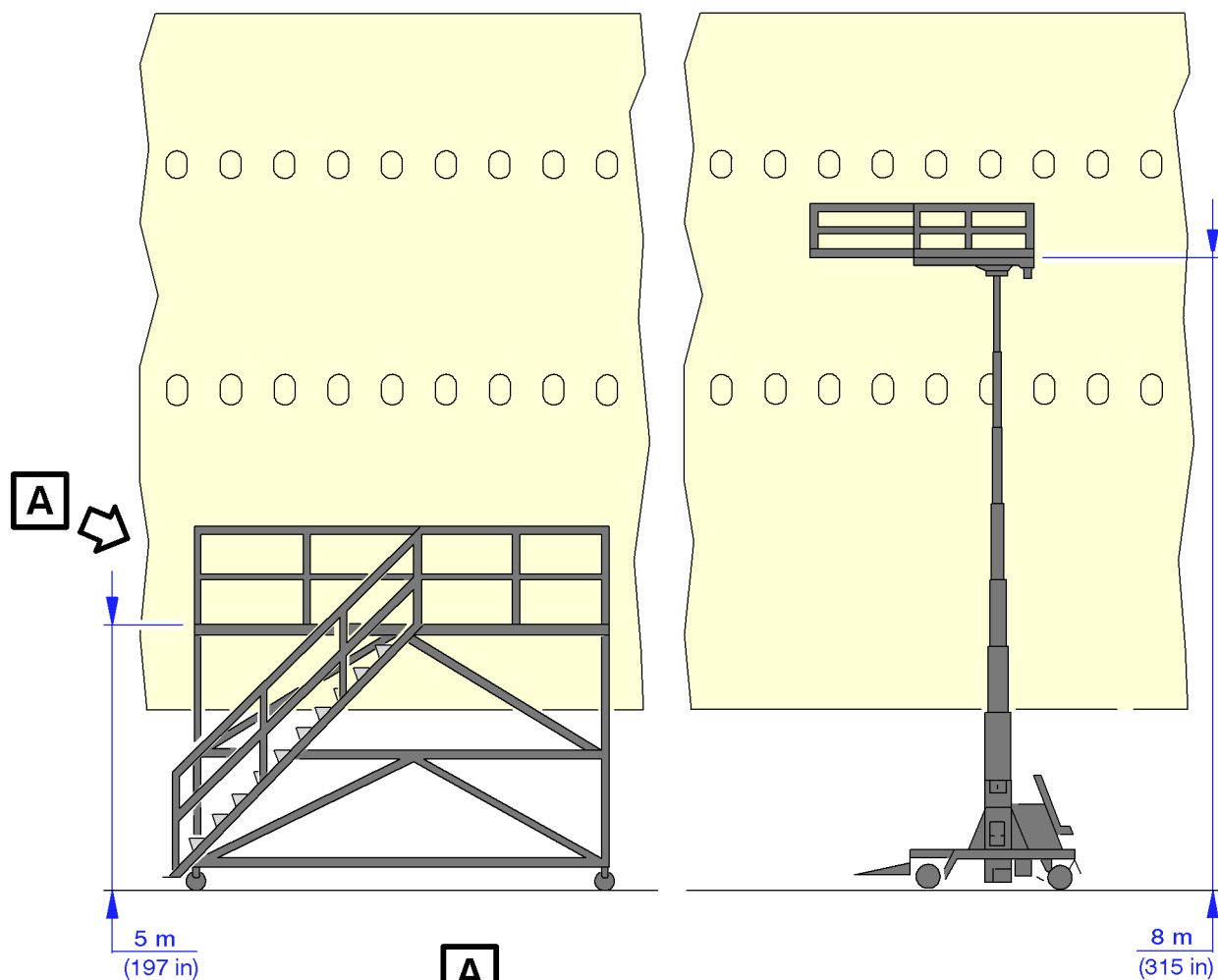
MAINTENANCE FACILITY PLANNING



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Pax Door Platform - Main and Upper Decks

MAINTENANCE FACILITY PLANNING

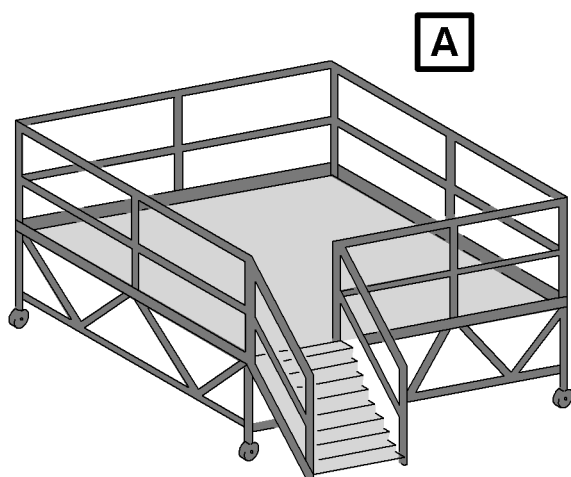
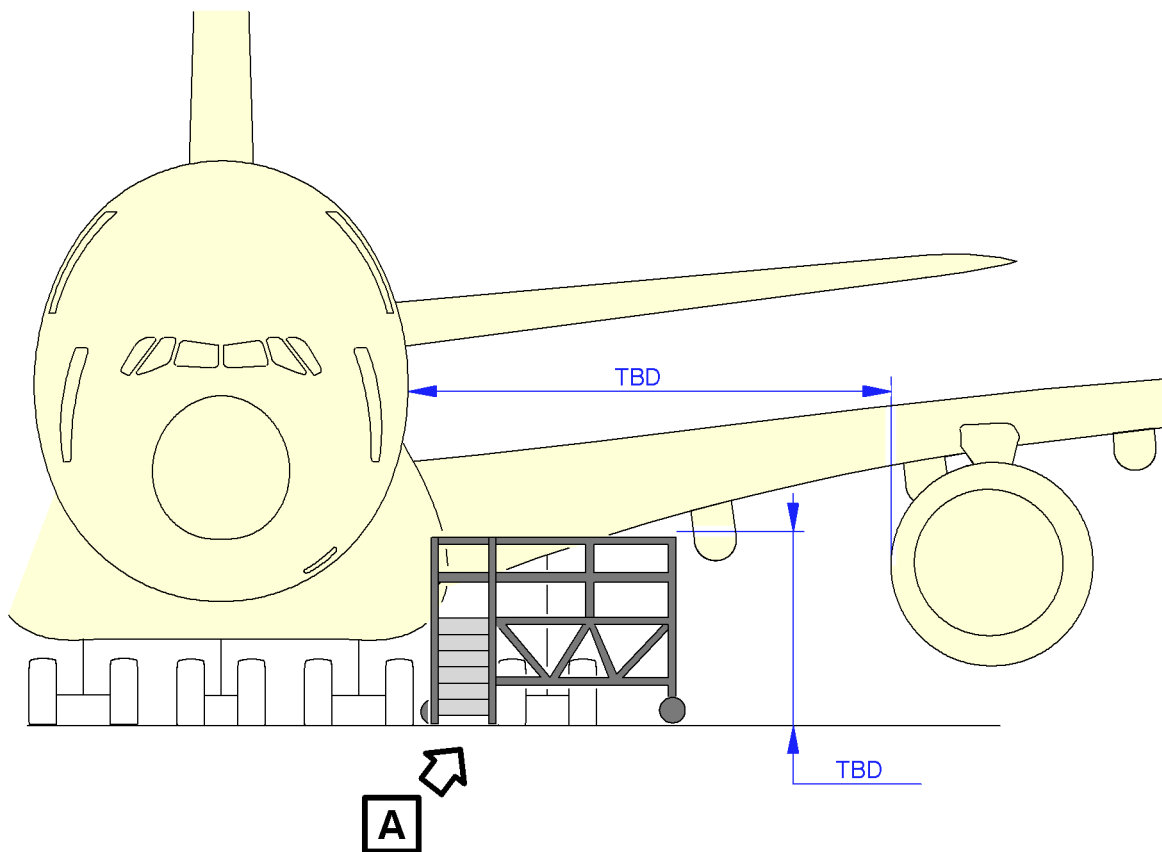


FUSELAGE PLATFORM

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Fuselage Platform

MAINTENANCE FACILITY PLANNING

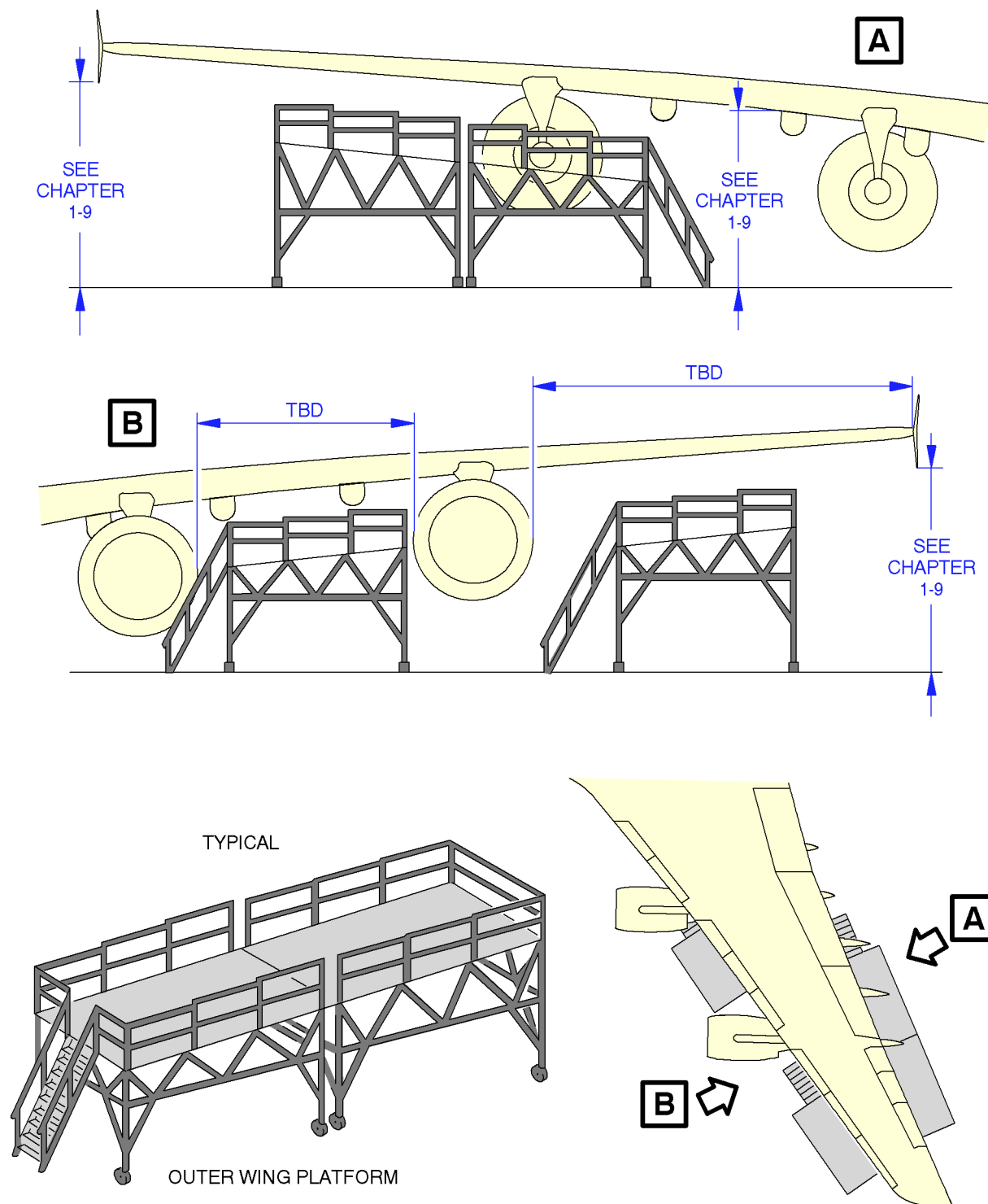


INNER WING PLATFORM

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Inner Wing Platform

MAINTENANCE FACILITY PLANNING



ZMF6 03 19 00 0 ATM0 00

Outer Wing Platform

MAINTENANCE FACILITY PLANNING

SECTION 4 - COMPONENT REPAIR/OVERHAUL AND FUNCTIONAL TEST

<u>Subject</u>	<u>Table Of Contents</u>	<u>Section</u>
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Calibration Shop (TBIL)		4-2
VFG Generator Shop		4-3
Composite Repair Shop		4-4
Electrical Accessories Shop		4-5
Electrical Wire Marking Shop (TBIL)		4-6
Engine and APU Shop		4-7
Fuel Component Shop		4-8
Hydraulic Component Shop		4-9
I E R A Shop		4-10
Interior Equipment Shop		4-11
Laboratory Test of Fluids		4-12
Machine Shop		4-13
Sheet Metal Shop		4-14
NDT Shop		4-15
Painting Hall (TBIL)		4-16
Painting Shop		4-17
Pneumatic Component Shop		4-18
Life Jacket, Escape Slide/raft Shop		4-19
Surface Heat Treatment Shop		4-20
Tube Repair Shop		4-21
Tire/Wheel and Brake Shop		4-22

MAINTENANCE FACILITY PLANNING

WORKSHOPS

1. General

The workshops should be located as close as possible to the maintenance hangar. Certain support shops are closely associated with on-aircraft maintenance.

They should be designed to allow future extension of the Airline fleet and to accept test and repair of components coming from other Airlines. The capability and consequently the size of the shops will depend on the level of on and off-aircraft maintenance that they support.

They should be located in the same area and arrangement should consider the following:

- Rapid transit between hangar floor, workshops and stores.
- Minimal movement and minimal administrative tracking.
- Bring aircraft maintenance activities and workshops services "to the aircraft".

They could be divided/regrouped in three main activities:

A. Aircraft Maintenance

- Interior equipment shop
- Life jacket, slide/raft equipment shop
- Seat shop
- Sheet metal shop/Welding shop
- Machine shop
- Composite shop
- Tube repair shop
- Electrical wire marking shop.

B. Aircraft Components and Engines

(1) Avionic

- Battery shop
- CSD/IDG Generator shop
- Electrical accessories shop
- I.E.R.A. (Instrument, Electric, Radio and navigation, Avionic) shop.

(2) Hydro/mechanic

- Engine and APU shop
- Fuel components shop
- Hydraulic components shop
- Pneumatic components shop
- Tire/wheel and brake shop.

MAINTENANCE FACILITY PLANNING

C. Aircraft Support

- N.D.T. shop
- Calibration shop
- Laboratory test of fluids/metallurgical
- Painting shop
- Surface and heat treatment shop.

They should be at different floor level e.g.: wheel and brake, machine tool, surface protection... at ground level, cabin interior, safety equipment... at first floor.

Stores and offices should be air conditioned. Shop lighting should be 50 foot-candles (800 lumens/m²) with a 100 foot-candle local task lighting for inspection or detailed work. Non destructive test, composite repair, avionic shops and safety equipment shop should be equipped with air moisture and temperature control device.

MAINTENANCE FACILITY PLANNINGBATTERIES SHOP

The shop is dedicated to discharge, test, overhaul, build-up recharge and storage of wet cell and dry cell batteries installed on aircraft, trucks and ground support equipment.

Service facilities for nickel-cadmium batteries must be entirely separate from those for lead-acid batteries. Fumes from lead-acid batteries or small traces of sulfuric acid entering a nickel-cadmium battery can damage it permanently.

Temperature controlled 20 to 26°C

Work table with ceramic tile cover

Ventilation system: air extraction over work table

Storage racks

Wash basin minimum size 0.8 m long, 0.4 m large, 0.2 m deep with cold water tap

Explosion proof neon lamp with switch outside the room

Compressed air supply with nozzle, 2-3 bar

Demineralized/distilled water container

Charger analyzer

Safety equipment: adequate fire extinguisher, eye rinse device, rubber gloves.

Do not use petroleum spirits, trichloroethylene or other solvents for cleaning the battery.

Possible Vendors:

CHRISTIE ELECTRIC CORP.: GARDENA - CALIFORNIA - USA

SAFT: ROMAINVILLE - FRANCE

AERO QUALITY - STAMFORD CT USA - HESTON - ENGLAND

MAINTENANCE FACILITY PLANNING

CALIBRATION SHOP

To Be Issued Later



MAINTENANCE FACILITY PLANNING

VFG GENERATOR SHOP

The shop is dedicated to overhaul, test and repair all components of electrical generation system.

- VFG generator test stand
- VFG governor test stand
- Flushing cart IDG cooling system
- Standard and specific adapters
- Standard tools

CONTACT VENDOR FOR SPECIFICATIONS

Possible Vendors:

AVTRON - Cleveland - Ohio - USA
TESTFUCHS - A3812 Gross-Siegharts - AUSTRIA
TESTEK - Livonia - Michigan - USA

MAINTENANCE FACILITY PLANNINGCOMPOSITE REPAIR SHOP

The shop is dedicated to composite and fibreglass repair according to SRM procedures.

- The room or surrounding temperature has to remain between 18°C and 30°C (64-86°F) during the repair.
- The preparation area has to be dust cleaned (air filtration = 10 micron m) and dry.
- The relative humidity has not to be greater than 75 %.
- Condensation on the repair area has to be avoided.
- Environmental data: temperature and humidity, have to be recorded.

1. Paint Removal/cleaning

- A. Scraper
- B. Cutter
- C. Abrasive rotating disk
- D. Abrasive paper
- E. "Scotch brite" brown
- F. Ethyl acetate
- G. Demineralized water
- H. Tweezers

2. Machining/specific Tooling**A. Polymerized material****(1) Fibreglass/carbon**

- Drills has or carbide
- Diamante shark cutters: spot face cutter, rose countersink, cone countersink, circular saw cutter...
- Countersink micro stop 100° adjustable drive
- Pneumatic drilling machine
- Pneumatic router equipped with vacuum system
- Specific adaptors.

(2) Kevlar

- Specific twist cutter or alternate teeth carbide cutter
- Cutter
- Abrasive disk/paper.

(3) Honeycomb

- Diamante shark cutter
- Cutter
- Metal saw
- Abrasive disk/paper
- Adhesive tape double face.

MAINTENANCE FACILITY PLANNING**B. Prepreg/dry fabric****(1) Fibreglass/carbon**

- Scissors standard
- Cutter
- Templates

(2) Kevlar

- Specific ceramic scissors

C. GLARE**3. Standard Tools**

- A. Spatula
- B. High precision weighing device
- C. Squeegee
- D. Containers (for resin)
- E. Glass rods
- F. Plastic film
- G. Bottles
- H. Spring pin type clamps
- I. C Clamp
- J. Adhesive tape
- K. Syringe with hypodermic needle
- L. Gloves (rubber and cotton)
- M. Mask
- N. Pair of glasses
- O. Sanding block
- P. White ink "rotring"
- Q. Riveting machine for blind rivets

4. Heating and Pressure Equipment

- A. Hot bonding and vacuum control unit
- B. Heating blankets
- C. Anti humidity heat blankets or radiant panels
- D. Nylon vacuum bag films (3 grades)
- E. Breather fabrics
- F. Peel/bleed fabric
- G. Shrink tapes
- H. Perforated plastic film
- I. Mosite
- J. Sealant tape
- K. Oven
- L. Autoclave (1 m dia x 2.5 m)*

MAINTENANCE FACILITY PLANNING

5. Test Equipment

- A. Ultra sonic test equipment
- B. Tool for tap test
- C. Compression/traction and peeling testers**
- D. Lamp
- E. Inspection mirror

Possible Vendors:

GMI: 9, rue BUFFAULT - 75009 PARIS - FRANCE

TEL: 1 42821144

FAX: 1 42829838

*FRANCE AUTOCLAVE

2, allée Bernard Palissy - BP 115 - 26001 VALENCE FRANCE

TEL: 4 75 409277

FAX: 4 75 443966

*EFCO LTD

Forsyth road, SHEERWATER, WOKING. SURREY GU21 5RZ ENGLAND

TEL: (0483) 726 433

FAX: (0483) 773 818

*PEQUET TESSON

183, avenue du Général LECLERC - 78220 VIROLAY FRANCE

TEL: 1 30243800

FAX: 1 30243943

**ADAMEL LHOMARGY DIVISION D'INSTRUMENTS SA

15, avenue Jean JAURES BP 238 - 94203 IVRY/SEINE CEDEX FRANCE

TEL: 1 46701180

FAX: 1 46583514

**ZWICK FRANCE S.A.R.L. - BP 60044 - 95971 ROISSY AEROPORT CHARLES DE GAULLE CEDEX

Or ZAC Paris Nord II - 22, avenue des Nations - 93420 VILLEPINTE

TEL: 1 48 63 21 40

FAX: 1 48 63 84 31

**INSTRON S.A. - 11, Parc Club Ariane - 78284 GUYANCOURT CEDEX

TEL: 1 30 57 23 53

FAX: 1 30 64 67 11

**CARL SCHENCK AG - PO Box 4018 - D-6100 DARMSTADT 1

TEL: 6151/32-0

FAX: 6151/893686

**SCHENCK S.A. - Chemin Neuf - BP 17 - 78240 CHEMBOURCY

TEL: 1 39 79 79 00

FAX: 1 30 74 44 07

**LLOYD Instruments PLC - Whittle Avenue, Segensworth West, Fareham - Hants PO15 5SH - ENGLAND

TEL: 489 574221

FAX: 489 885118

**PRODEMAT Centre de Samourais - 2, allée Henri Georges Clouzot - BP 2029 - 69916 VILLERBANNE

TEL: 4 78 94 06 30

FAX: 4 78 94 95 53

MAINTENANCE FACILITY PLANNINGELECTRICAL ACCESSORIES SHOP

The shop is dedicated to the overhaul, test and repair of all aircraft electrical accessories.

- General test stand ac/dc power requirements
- Amplifier control test
- Test stand for lights
- Test stand coffee makers and refrigerators
- Functional test stand for linear actuators and control dampers
- Functional test stand for rotary actuators
- Test set static inverters.

Possible Vendor:

BAUER AEROSPACE: AVON - CONNECTICUT - USA
TESTFUCHS - A3812 Gross Siegharts - AUSTRIA

MAINTENANCE FACILITY PLANNING

ELECTRICAL WIRE MARKING SHOP

To Be Issued Later

MAINTENANCE FACILITY PLANNING

ENGINE AND APU SHOP

The shop is dedicated to disassembly/assembly (modules exchange) and repair engines and APU.

- Overhead cranes
- Specify Engine size and weight
- Specific jigs and tools
- Press
- Standard hand tools TO BE UPDATED ACCORDING TO VENDOR REQUIREMENTS
- Balancing machine: static and dynamic balance
- Grinding machine
- Plasma spray and welding machines

MAINTENANCE FACILITY PLANNING

FUEL COMPONENTS SHOP

The shop is dedicated to overhaul, test and repair all fuel system components.

- Universal main engine fuel control/accessories test stand
- Test stand
 - Specify maximum flow rate and pressure requirement
 - Fuel boost
 - Fuel pump
- Standard adapters and tools
- Low flow fuel accessory test stand.

Possible Vendors:

A.M.S.: FRESNES - FRANCE
AAI ACL TECHNOLOGIES: SANTA ANNA - CALIFORNIA - USA
BAUER AEROSPACE: AVON - CONNECTICUT - USA
AVTRON: CLEVELAND - OHIO - USA
TESTEK Inc: LIVONIA - MICHIGAN - USA
TESTFUCHS - A3812 Gross Siegharts - AUSTRIA

MAINTENANCE FACILITY PLANNINGHYDRAULIC COMPONENTS SHOP

The shop is dedicated to test bench capabilities for hydraulic fluids-Working and static tests-Overhaul, inspection and component replacement of most hydraulic actuators and accumulators.

- Hydraulic generation and accessory test bench
 - Specify maximum pressure and flow rate
 - Specify aircraft standard filtration
- Pump hydraulic test stand
- Servo valves and actuators test stand
- Standard adapters and tools.

Possible Vendors:

A.M.S.: FRESNES - FRANCE
AAI ACL TECHNOLOGIES: SANTA ANNA - CALIFORNIA - USA
BAUER AEROSPACE: AVON - CONNECTICUT - USA
TESTEK Inc: LIVONIA - MICHIGAN - USA
TESTFUCHS - A3812 Gross Siegharts - AUSTRIA
AVTRON: INDEPENDENCE - OHIO - USA

MAINTENANCE FACILITY PLANNING

I.E.R.A. SHOP

The I.E.R.A. shop is dedicated to the overhaul and repair of all Instruments, Electric components, Radio and Avionic equipments.

- Test bench radio
- Test bench vor/ils
- Test bench dme
- Test bench adf
- Test bench SATCOM
- Test bench Weather Radar

- Automatic Test Equipment
- Dedicated test equipment
- Personal computers
- Oscilloscopes
- Arinc reader/generators
- Magnetic tapes/disc/cassettes eraser (TBC)
- Data loaders

MAINTENANCE FACILITY PLANNING

INTERIOR EQUIPMENT SHOP

The shop is dedicated to carpet, seats and cabin panels and partitions repair and fabrication.

1. Cabin Interior

- Drilling machine
- Painting booth
- Washing booth
- Vacuum cleaner
- Binding machine
- Engraving machine
- Sewing machine
- Press, heat/vacuum pressure equipment
- Polishing windows machine
- Shear bench
- Oven
- Freezer
- Hand grinder
- Circular saw
- Sander belt
- Kevlar driller
- Cutting tools
- Work bench
- Standard hand tools.

2. Seats

- Sewing machine
- Drilling machine
- Bending machine
- Grinding wheel
- Belt grinder
- Circular saw
- Riveting gun
- Riveting block
- Work bench
- Standard hand tools.

No special tools or specific equipment are required for maintenance or overhaul work to be carried out on the passenger seats.

Standard tools are sufficient for these operations.

In addition to standard tools, only few specific tools or equipment are required for maintenance and overhaul work to be carried out on the pilot seats.

(Refer to relevant CMM)

MAINTENANCE FACILITY PLANNING

LABORATORY TEST OF FLUIDS

The laboratory is dedicated to analyse all fluids used on aircraft.

1. Hydraulic fluid – fire resistant – phosphoric ester based

Reference documents

- NSA307110
- AMM A300. CHAPTER 12.32.28
- SAE ARP 598
- SAE ARP 785
- NF T 60-100
- NF T 60-101
- NF T 60-112 (ASTM D974)
- NF T 20-052 (ASTM D1744)
- NAS 1638.

The values below represent the max. Allowable limits of the fluid in service. These limits are also specified in the aircraft maintenance manual.

- Viscosity
- Water content
- Density
- Acidity
- Chlorine content
- Conductivity
- Particles fluid contamination.

MAINTENANCE FACILITY PLANNING

MACHINE SHOP

Fabrication of all metallic parts involving milling boring and turning. All welding processes for all aircraft metals and alloys.

- Universal lathe 1.5 x 2 x 2
- Milling machine 1.6 x 0.4
- Boring machine 0.75 x 0.75 x 0.6
- Centerless grinding machine
- Cylindrical grinding machine
- Universal drilling machine
- Radial drilling machine
- Grinders
- Circular saws
- Hydraulic press (3 t)
- Drilling machines set
- Standard hand tools set
- Benches

MAINTENANCE FACILITY PLANNING

METAL SHOP

Manufacturing and repair of aircraft sheet metal parts and tools.

1. Sheet Metal Machines and Tools

- Roller forming machine (general rolling + double curvature forming)
- Cutting/shearing machine (aluminium and steel)
- Bending machine
- Folding/hydraulic press
- Nibbling machine
- Furnace (heat treatment)
- Freezer
- Tank/quench/water
- Belt grinder
- Circular saw
- Planer-joiner
- Pneumatic drilling machine/drills
- Riveting machine
- Work bench
- Welding equipment
- Notching machine
- Shrinking machine
- Standard hand tool set

MAINTENANCE FACILITY PLANNING

NDT SHOP

The shop is dedicated to perform all non destructive tests on aircraft and aircraft components.

1. Visual Inspection

- Borescope
- Fluorescent dye penetrant blacklight viewing
- Die penetrant developer viewing
- Magnifying glass
- Photograph means

2. Magnetoscopy

- Magnetoscope
- Accessories

3. Ultrasonic

- Ultrasonic test set
- Bonding test set
- Probes
- Measuring equipment
- Reference calibrations
- Calibration standards set

4. HF Eddy Current

- Eddy current test equipment
- Elotest
- Locators
- Probes
- Reference calibrations

5. X Ray

- X ray fix and mobile sets
- Development room and accessories

6. Miscellaneous

- De-magnetizer
- Detector magnetic crack
- Meter coating thickness
- Conductivity meter

MAINTENANCE FACILITY PLANNING

PAINTING HALL

To Be Issued Later

MAINTENANCE FACILITY PLANNINGPAINTING SHOP

The shop is dedicated for painting aircraft parts and components.

- Surface treatment rooms
 - Sand blasting
 - Washing
 - Decreasing
 - Phosphating cleaning
 - Drying
- Painting
 - Closed spray booth with downdraft ventilation
 - * With multiple working zones in line
 - * With ventilation zones
 - * With drying device + oven
 - Open booth with dry filter
 - Open "waterscreen" spray booth
 - Painting guns
 - Air compressed sources
 - Special room for product storage
 - Special room for paint preparation
 - Safety equipment: masks, gloves, gas detectors, fire extinguishers.

MAINTENANCE FACILITY PLANNING

PNEUMATIC COMPONENTS SHOP

The shop is dedicate to overhaul, test and repair all pneumatic components.

Workshop test conditions:

Atmospheric ambient pressure	: TBD
Ambient temperature	: TBD
Relative ambient humidity	: TBD
Dust	: normal protection (conventional dust cleaning at regular intervals)
Air source	:
Capable of supplying clean, dry	: CONTACT RELATED VENDORS FOR SPECIFICATIONS

NOTE : Hot air source: TBD.

Possible vendors:

- Test stands

BAUER AEROSPACE
AVON - CONNECTICUT - USA

TESTEK Inc
LIVONIA - MICHIGAN - USA

TESTFUCHS
A3812 Gross Siegharts - AUSTRIA

- Cleaning and drying equipment

CHAUMECA INTERNATIONAL
59020 LILLE CEDEX - FRANCE

LAUTRETTE INDUSTRIES SA
95102 ARGENTEUIL CEDEX - FRANCE

MAINTENANCE FACILITY PLANNINGLIFE RAFTS & SLIDE SHOPLIFE JACKET SHOP

The shop is dedicated to the periodic tests and repair of the on-board safety devices.

THE SHOP AREA MUST BE CLEAN AND COVERED WITH A TARPAULIN, CARPETING OR OTHER PROTECTIVE COVERING.

DO NOT WALK ON THE EQUIPMENT.

USE SPECIFIC SHOES.

1. Cleaning

- . Moderate duty : simple liquid detergent
- . Heavy duty : toluene (C₆H₅CH₃) and isopropyl alcohol (according to vendor equipment spec.)
- . Dry cleaning solvent for metal parts
- . Stiff bristle brush
- . Soft bristle brush
- . Brush paint
- . Gloves - Rubber.

2. Testing

- . Compressed air source (oil and moisture free, 20 micron filter) with pressure regulator.
- . Leak test solution. Ivory clear. Mild liquid detergent.
- . Soft bristle brush.
- . Barometer. Scale increments not more than 0.10 inches.
- . Thermometer. Scale increments not more than 1°.
- . Push/pull gage 0-50 lbs 0.5 Lbs graduations.
- . Stopwatch, plain timer. 1/10 Seconds graduations.
- . Manometer (water). 0-0.5 psig.
- . Manometer (meriam fluid). 0-6.4 psig. (0.01 graduation).
- . Manometer (digital pressure). 0-20 psig.
- . Test set slide raft batteries.
- . Tester inertia reels.
- . Weighing devices for bottles and cylinders.

MAINTENANCE FACILITY PLANNING

3. Disassembly/assembly/repair

- Neoprene strap
- Cotton clothes
- Scour cloth
- Talc or powdered soapstone
- Sealer heat poly bags
- Wrench open end set
- Crowfoot wrench set
- Hex key set
- Torque wrench. 0-80 in.Lb
- Strap wrench
- Crescent pliers
- Scissors. 5 inch blunt nose, plated
- Spatula (pusher)
- Hand roller
- Vacuum cleaner. Household type
- Chain vise
- High pressure cap (AN929-4)
- Cap filler valve (MS20813-1)
- Valve core extraction/insertion tools
(Specific. Vendor equipment items)
- O-ring installation tools (specific. Vendor equipment items)
- Heat gun
- Fixture check maximum envelope
- Sewing machine.

4. Ingredients

- Refer to vendor equipment recommendation.

5. Reconditioning

- Refer to reconditioning method described in relevant CMM.

MAINTENANCE FACILITY PLANNING

SURFACE AND HEAT TREATMENT SHOP

This shop is dedicated to surface and heat treatment.

1. Surface Treatment

Chemical cleaning baths

- Acid
- Alkaline descaler
- Alkaline permanganate
- Caustic cleaner
- Corrosion inhibitor
- Emulsion.

Hot water rinse bath

Cold water rinse bath

Chemical plating bath

- Cadmium
- Nickel
- Chromium
- Salt nitriding
- Alodine
- Chromate
- Phosphating
- Passivation
- Sulphuric/chromic acid anodisin.

Shot peening equipment

Sand blasting

2. Heat Treatment

Oven

Baths

Freezer

Standard tools

Liquid effluent decontamination system

Extracted effluvium washing system.

MAINTENANCE FACILITY PLANNING

TUBE REPAIR SHOP

The shop is dedicated to the repair and manufacturing of all kind of tubes.

1. Rigid tubes

A. Bending machine

Bending machines with internal mandrels shall be used. For each nominal diameter there must be several mandrels.

For titanium pipes it is recommended to use plastic mandrels.

B. Tube end forming device

C. Cutting, facing and deburring

Standard hacksaw, band saw, circular saw and conical milling cutter can be used.

D. Cleaning and degreasing

Standard equipment: compressed air, perchloroethylene vapour bath....

E. Test equipment

(1) Pressure test

Standard pressure test bench with capacity of TBD min. (Pressure test with gas and with liquid).

(2) Dimensions and shape check

Standard equipment + master, template....

F. Tube repair equipment

Refer to AMM chapter 20.23.11 for permaswage repair kit and harrison/sierracin (TO BE VERIFIED) fittings installation.

2. Flexible hoses

Due to very specific equipment necessary to manufacture or repair flexible hoses it is suggested to contact directly the vendors mentioned hereafter.



PRELIMINARY DATA

MAINTENANCE FACILITY PLANNING

Possible Vendors:

Rigid tubes

BONNAMY - 77176 SAVIGNY LE TEMPLE - FRANCE
FAX : (33) 1 60631030

MINGORI - 51206 EPERNAY - FRANCE
FAX : (33) 26550848

PARKER HANNIFIN CORPORATION - OHIO - USA
PHONE : (1) 216 531 3000

ADAMS BIRD INC - CALIFORNIA - USA
FAX : (1) 408 363 9814

Flexible hoses:

AEROQUIP CORPORATION
300 SOUTH EAST AVENUE
JACKSON - USA
FAX : (1) 517 787 5758

TITELEX CORP.
603 HENDEE STREET
SPRINGFIELD - USA
FAX : (1) 413 788 7593

MAINTENANCE FACILITY PLANNING

TIRE/WHEEL AND BRAKE SHOP

This shop is dedicated to complete overhaul, inspection, limited repair, component replacement, build-up and tests.

It is important to separate the work on brakes and wheels to "dirty" and "clean" procedures, because components that arrive to overhaul are dirty and dusty.

The performance of "dirty" and "clean" tasks is preferably in separate rooms.

1. Tire Shop

- Nitrogen bottles
- Pressure gauge
- Inflating gauge
- Inflating/deflating adapters
- Safety cage for tire pressure tests
- Storage racks.

2. Wheel Shop

"Dirty" work on wheel overhaul consists of disassembly of the wheel and rim-cleaning. Cleaning can be done manually: hot water high pressure washing device, combined with semi-automatic devices: solvent baths including treatment bath + rinsing bath + drying bath or with a "tunnel" type machine. Cleaning of small parts like bearings or bolts can be done using an ultrasonic washing module or a vertical agitation and total turbulence machine.

"Clean" procedures for wheels start NDT for crack detection. Eddy Current and ultrasonic testing devices can be used for this purpose.

NOTE : Complete process of wheel cleaning may include paint stripping which can be done using media plastic blasting equipment or solvent baths.

A. Standard equipment

- Tire bead breaker universal
- High pressure washing device
and
- Ultrasonic bath or vertical agitation machine for wheel bearing cleaning
- Hydraulic press
- Hand tool set
- Torque wrench
- Wheel support
- Trolley crane.

MAINTENANCE FACILITY PLANNING

B. Specific tools

According to the relevant CMM.

3. Brake shop

"Dirty" work on brake overhaul includes disassembly and cleaning of the brake. An intensive cleaning is necessary to avoid damages of the piston bearing, as the remaining dirt can create a leak when the pistons are repressed.

"Clean" procedures follow after the brakes has been visually inspected. Cleaning can be done using ultrasonic bath or vertical agitation and total turbulence machine.

The brake pistons are returned to their original position. When it has been accomplished, test for leak are performed.

A. Standard equipment

- Bath solvent cleaning
- Trolley crane
- Hydraulic test bench (315 bars)
- Dummy body for functioning test
- Tester brake unit spring tension
- Press for resetting the brake piston to the zero, position
- Hardness test machine.

Carbon brake disk repair
Subcontracted to specialized repair centre

B. Specific tools

According to the relevant CMM.

4. Storage

Aircraft tire storage conditions are determined by the tire manufacturers. There is no Airbus document dealing with this subject.

Tires should be stored in a cool, dry environment and protected from direct sunlight. Particular care should be taken to store tires away from fluorescent lights, electrical motor, battery chargers, electric welding equipment, electric generator since they all create ozone which cause a rapid ageing of rubber.

The store room temperature should be comprised between 0 and 40°C. Tires should be store vertically in a suitable rack, away from oil, grease, hydraulic fluid or other contaminants.



MAINTENANCE FACILITY PLANNING

Possible Vendors:

- Safety cage:

KUNZ GmbH - FAX: (49) 404 250 9531

TMH - FAX: (33) 494 08 20 87

- Cleaning equipment:

KARCHER - Type HDS801E - See local representative

- Ultrasonic washing machine:

CREST ULTRASONICS FRANCE - FAX: (33) 169 43 68 61

- Paint stripping:

VAPOR BLAST - FAX: (33) 130 69 09 27

- Painting booth:

OMNIA SECOMAT - FAX: (33) 545 20 51 80

- Standard equipment for wheels and brakes: Tires bead breaker, adapters, pressure test stand,

KUNZ GmbH

TMH

- Specific equipment and tools:

Contact directly the appropriate vendor: MHB or Bendix.

MAINTENANCE FACILITY PLANNING

SECTION 5 - VENDORS LIST

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MAINTENANCE FACILITY PLANNING

VENDORS INFORMATION

The vendors information is contained in the Vendors Information Manual (VIM) and in the Vendors Information Manual/Ground Support Equipment (VIM/GSE).

The Vendor Information Manual (VIM) gives contact names and addresses of AIRBUS equipment vendors and their product support organizations. This manual covers all aircraft types.

In addition the VIM/GSE gives contact names and addresses of Ground Support Equipment Vendors which fabricate market facilities or maintenance equipment to test or to overhaul the aircraft. It contains also the Vendors product support organizations. This manual covers all aircraft types.