A220

Master

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APP

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Issue No. 031

Publication No.: BD500-3AB48-32000-00

Manufacturer:

AIRBUS

Airbus Canada Limited Partnership
Customer Services
13100 Henri-Fabre Blvd., Mirabel, Quebec
Canada J7N 3C6

Applicable to: All

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Highlights

Issue 031

The listed changes are introduced in Issue 031, dated 2023-10-19, of this publication.

Data module code	Reason for change
BD500-A-J00-00-00-20AAB-018A-A	Changed Data Module To update to the A220 Aircraft Characteristics

Applicable to: All

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Technical Publications Comment form

AIRBUS A220

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Publication information

*Aircraft type:		*Aircraft model:	*Publication Module Code (PMC):
*Publication title/Issue:	*Media Type: ☐ Paper ☐ Web	*Data Module Code (DMC):	*DMC issue date:
Data module title:		Originator's reference number:	
*Comments:			
Reason for change:			
Reference data provided: ☐ Yes ☐ No Description:			

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Change record

Make sure that the previous issues have been incorporated.

Incorporated issues must be recorded with the date of incorporation and a signature.

Issue	Incorporated date	by (signature)	Issue	Incorporated date	by (signature)
001	Nov 04/2015	Initial issue	016	Dec 19/2019	Signature on file
002	Mar 08/2016	Signature on file	017	Jan 16/2020	Signature on file
003	Apr 20/2016	Signature on file	017-01	Feb 06/2020	Signature on file
004	May 20/2016	Signature on file	018	Feb 20/2020	Signature on file
005	Oct 06/2016	Signature on file	019	May 14/2020	Signature on file
006	Jun 15/2017	Signature on file	019-01	Jun 04/2020	Signature on file
007	Jan 25/2018	Signature on file	020	Jun 18/2020	Signature on file
007-01	Feb 22/2018	Signature on file	020-01	Jun 25/2020	Signature on file
008	Mar 15/2018	Signature on file	020-02	Jul 09/2020	Signature on file
008-01	Jun 07/2018	Signature on file	021	Jul 16/2020	Signature on file
009	Jun 14/2018	Signature on file	021-01	Aug 27/2020	Signature on file
009-01	Aug 23/2018	Signature on file	022	Sep 17/2020	Signature on file
010	Sep 20/2018	Signature on file	023	Oct 15/2020	Signature on file
010-01	Oct 04/2018	Signature on file	023-01	Feb 25/2021	Signature on file
011	Oct 18/2018	Signature on file	023-02	Mar 04/2021	Signature on file
011-01	Feb 21/2019	Signature on file	024-00	Mar 18/2021	Signature on file
012	Mar 14/2019	Signature on file	024-01	May 06/2021	Signature on file
012-01	May 30/2019	Signature on file	025	May 20/2021	Signature on file
013	Jun 20/2019	Signature on file	025-01	Jun 10/2021	Signature on file
013-01	Sep 05/2019	Signature on file	026	Jun 17/2021	Signature on file
014	Sep 19/2019	Signature on file	026-01	Sep 30/2021	Signature on file
014-01	Oct 31/2019	Signature on file	027	Oct 14/2021	Signature on file
014-02	Nov 07/2019	Signature on file	027-01	Mar 24/2022	Signature on file
015	Nov 14/2019	Signature on file	028	Apr 14/2022	Signture on file
015-01	Dec 12/2019	Signature on file	029	May 19/2022	Signature on file

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Change record

Make sure that the previous issues have been incorporated.

Incorporated issues must be recorded with the date of incorporation and a signature.

Issue	Incorporated date	by (signature)	Issue	Incorporated date	by (signature)
029-01	Oct 13/2022	Signature on file	000		
030-00	Oct 20/2022	Signature on file	000		
030-01	Sep 28/2023	Signature on file	000		
32-00	Oct 19/2023	Signature on file	000		
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List of effective data modules

The listed documents are included in Issue 031, dated 2023-10-19, of this publication.

C = Changed data module
N = New data module

Document title	Data module code		Issue date	No. of pages	Applicable to
A220-300 Aircraft Charact eristics - Introduction	BD500-A-J00-00-00-20AAB-018A-A	C	2023-09-15	3	55001-59999
Aircraft description - Technical data	BD500-A-J00-00-00-12AAB-030A-A		2022-05-12	38	55001-59999
Aircraft performance - Technical data	BD500-A-J00-00-00-13AAB-030A-A		2015-10-29	12	55001-59999
Ground maneuvering - Technical data	BD500-A-J00-00-00-19AAB-030A-A		2019-10-22	33	55001-59999
Terminal servicing - Technical data	BD500-A-J00-00-00-18AAB-030A-A		2022-09-30	40	55001-59999
Operating conditions - Technical data	BD500-A-J00-00-00-17AAB-030A-A		2020-07-08	12	55001-59999
Pavement data - Technical data	BD500-A-J00-00-00-11AAB-030A-A		2022-05-12	40	55001-59999
Derivative aircraft - Technical data	BD500-A-J00-00-00-22AAB-030A-A		2019-10-22	1	55001-59999
Scaled drawings - Technical data	BD500-A-J00-00-00-21AAB-030A-A		2019-10-22	2	55001-59999

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The listed documents are included in Issue 031, dated 2023-10-19, of this publication.

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A220-300 Aircraft Characteristics - Introduction

Applicability: 55001-59999

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List of tables

References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Scope of the publication

The A220-300 Aircraft Characteristics prepared by Airbus, contains general data on the airport facilities, ramp, and runway areas necessary to operate the Airbus BD-500-1A11 (A220-300).

Since operational practices vary among airlines, specific data should be coordinated with the user airlines prior to facility design. For additional information, please contact Airbus.

The content of this publication will change as options and aircraft changes occur. Make sure that you refer to the latest release of this publication.

If there is a difference between the data contained in this publication and that given by the local regulatory authority, the data from the local regulatory authority must be obeyed.

2 Publication organization

This publication is divided into eight sections:

- Aircraft description
- Aircraft performance
- Ground maneuvering
- Terminal servicing

- Operating conditions
- Pavement data
- Derivative aircraft
- Scaled drawings

3 Dimensions and weight

Linear dimensions given in this publication are in inches. The metric equivalents are given in parentheses ( ).

Weight measures is given in pound (lb) with the metric equivalent in parentheses ( ).

4 Correspondence

The publications change request form is available online and is used to request technical changes to rectify any errors, omissions, or procedural inconsistencies (if applicable), etc. using the Airbus A220 Interactive Electronic Technical Publication (IETP) viewer.

5 Translation of publication

If all or part of this publication is translated, the official version is the English language version by Airbus.

6 Standard term definitions

Maximum design Taxi Weight (MTW)	Maximum weight at which an aircraft can move safely on the ground. This includes the fuel for these displacements and the takeoff run.
Maximum design Landing Weight (MLW)	Maximum weight for landing as limited by aircraft strength and airworthiness requirement.
Maximum design Take-Off Weight (MTOW)	Maximum weight for take off as limited by aircraft strength and airworthiness requirements. This includes weight of fuel for taxi and run-up.
Operational Weight Empty (OWE)	Weight of structure, power plant, furnishings, systems, unusable fuel and other items of equipment that are a necessary part of a particular aircraft configuration. Also included are certain standard items, personnel, equipment and supplies necessary for full operations, but does not include usable fuel or payload.
Maximum design Zero Fuel Weight (MZFW)	Maximum weight permitted before usable fuel and other usable agents must be loaded in defined sections of the aircraft, as limited by strength and airworthiness requirements.
Maximum cargo volume	The maximum space available for cargo.
Maximum seating capacity	The maximum number of passengers permitted based on certification requirements.

Usable fuel Fuel available for aircraft propulsion and the Auxiliary Power Unit (APU).

7 Acronyms

The first time an acronym is used it will be defined, and all subsequent uses will be in blue. When you mouse over the acronym the definition will appear. Acronyms are not plural in this publication.

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Aircraft description - Technical data

Applicability: 55001-59999

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References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Aircraft characteristics

1.1 Introduction

This data module contains general data about the Airbus model BD-500-1A11 (A220-300) characteristics. The structural weight limits, such as maximum ramp weight, and zero fuel weight are dependent on configuration. Refer to each aircraft's specified Weight and Balance Manual (WBM) BD500-3AB48-32100-00 and weight and balance report for structural limits and other weight information.

Refer to Table 5 for general aircraft dimension.

Refer to Table 2 for the aircraft characteristics.

Refer to Table 3 for the system fluid capacities.

Refer to Table 4 for the service fluid capacities.

1.2 Aircraft characteristics

Table 2 Aircraft characteristics

Description	A220-300
Engines	2 Pure Power™ PW1521G[1]
Mode	Passenger
Standard seating capacity	140

Description	A220-300
Maximum Ramp Weight (MRW)	157,000 lb (71,214 kg)
Maximum Take-Off Weight (MTOW)	156,300 lb (70,896 kg)
Maximum Landing Weight (MLW)	134,500 lb (61,008 kg)
Maximum Zero Fuel Weight (MZFW)	128,000 lb (58,060 kg)
Minimum Flight Weight (MFW)	80,000 lb (36,287 kg)
Maximum fuel tank capacity	5,681 US gal (21 508 L)
Unusable fuel	220.5 lb (100 kg)
Maximum cargo volume - Overhead bins	332 ft³ (9,40 m³)
1 Optional engine model: PW1524G	

1.3 System fluid capacities

Table 3 System fluid capacities

Description	Volume	Weight
Engine fluids calculated with 8.24 lb/US gal (0.987 kg/L)		
Engine oil tank at 60 °F	6.5 US gal (24.4 L)	53.1 lb (24.1 kg)
Engine lines and internal engine oil	7.7 US gal (29.2 L)	63.5 lb (28.8 kg)
APU fluids calculated with 7.98 lb/US gal (0.956 kg/L)		
APU oil tank	1.94 US gal (7.3 L)	15.4 lb (7.0 kg)
APU lines and internal oil	0.84 US gal (3.2 L)	6.7 lb (3.0 kg)
Hydraulic fluids at 77 °F (25 °C) low density 8.20 lb/US gal (0.983 kg/L)		
System No. 1 reservoir	5.0 US gal (18.8 L)	40.8 lb (18.5 kg)
System No. 2 reservoir	4.3 US gal (16.4 L)	35.5 lb (16.55 kg)
System No. 3 reservoir	4.3 US gal (16.4 L)	35.5 lb (16.55 kg)
Systems and lines	39.8 US gal (150.6 L)	326.2 lb (147.9 kg)

1.4 Service fluid capacities

Table 4 Service fluid capacities

Description	Volume	Weight
Potable water at 60 °F (15,5 °C)		
Galley/Lavatory tank	42.0 US gal (159,0 L)	350.5 lb (159.0 kg)

Description	Volume	Weight
Chemical toilet fluid at 60 °F (15,5 °C)		
Waste tank	38 US gal (143.84 L)	316.54 lb (143.58 kg)

2 Aircraft dimensions

2.1 General aircraft dimensions

This section contains general data about the aircraft dimensions.

Table 5 General aircraft dimensions (A220-300)

Locator (refer to Fig. 1)	Value in. (cm)
A	1523.2 38689.28
B	146.500 (372.11)
C	461.900 (1173.23)
D	482.800 (1226.31)
E	Baseline 1377.300 (3498.34)
	Fuel loaded 1381.300 (3508.50)
F	961.4 (2441.96)
G	857.9 (2179.06)
H	1489.2 (3782.57)
J	783.2 (1989.33)
K	479.0 (1216.66)

Locator (refer to Fig. 1)	Value in. (cm)
L	172.4 (437.90)
M	513.3 (1303.78)
P	263.000 (668.02)
Q	96.500 (245.11)
R	162.2 (411.99)
S	198.5 (504.19)
T	267.900 (680.47)
U	97.7 (248.16)
V	194.6 (494.28)
W	133.4 (338.83)
X	27.200 (69.09)
Y	265.000 (673.10)
Z	602.6 (1530.60)
AA	0.477 Deg Nose down
BB	138.000 (350.52)

This data module contains data on the landing gear footprint.

Note

The values given change due to the variation of aircraft weight and gravity.

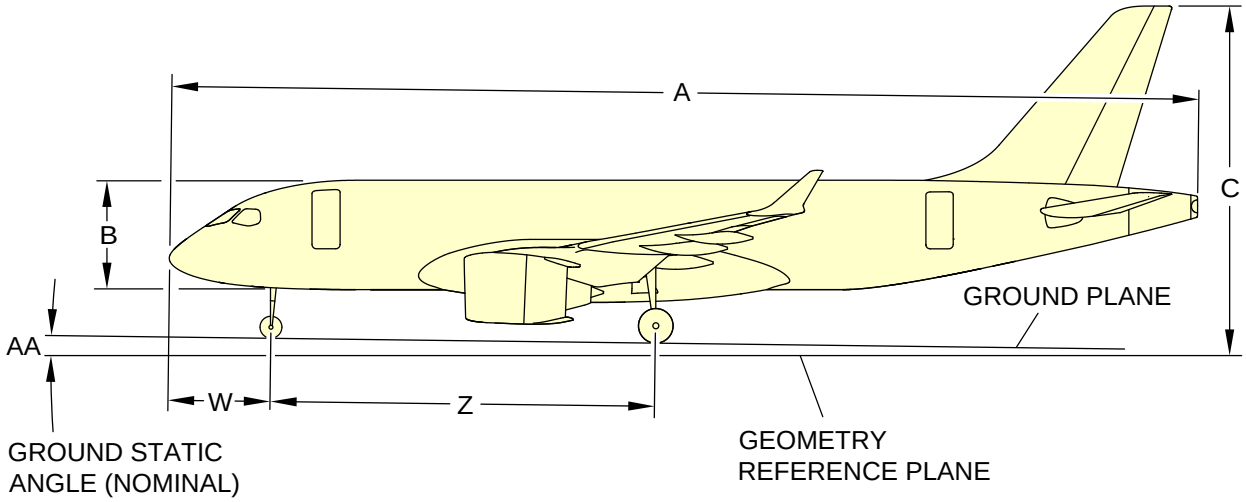

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Figure 1 General aircraft dimensions - (Sheet 1 of 2)

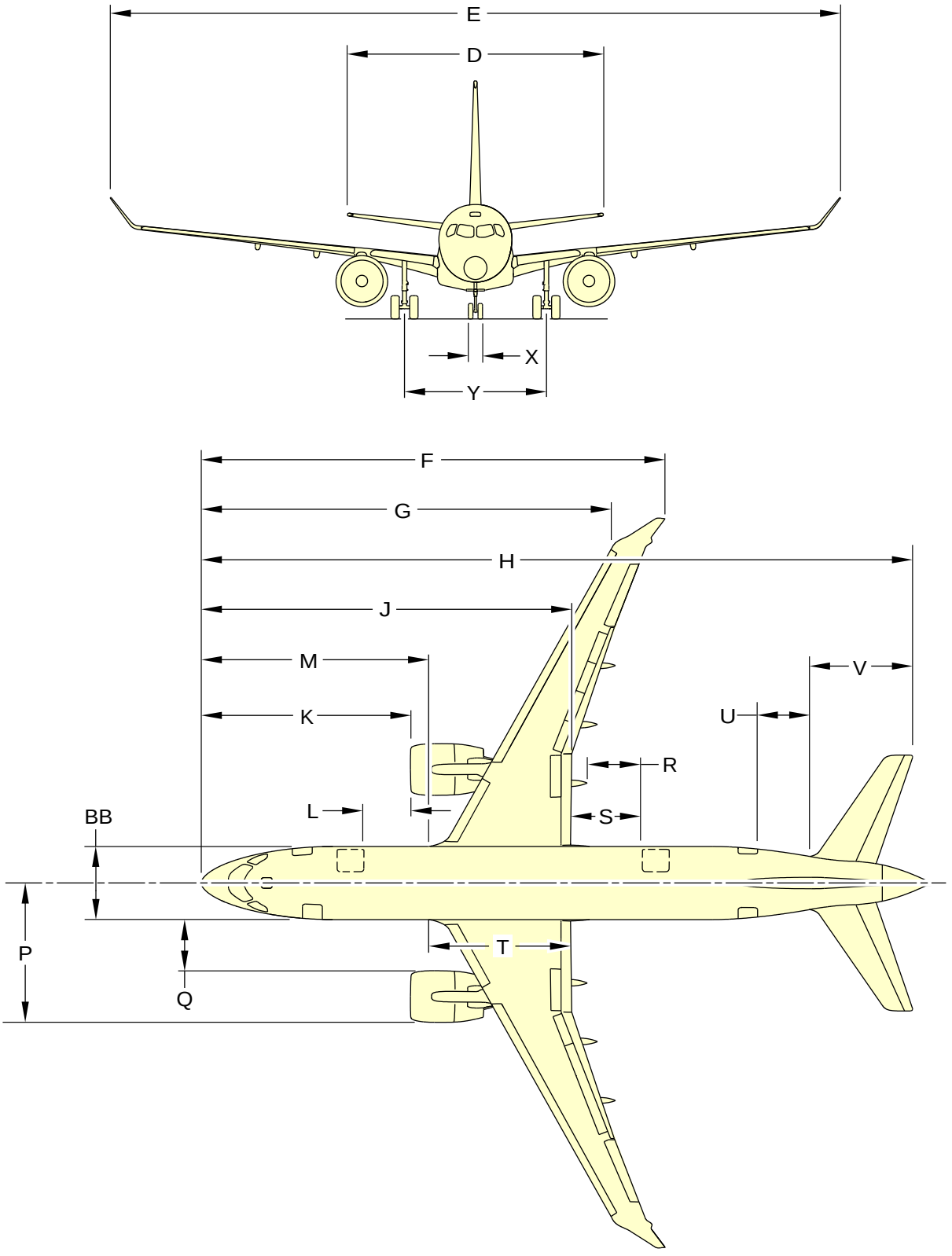

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Figure 1 General aircraft dimensions - (Sheet 2 of 2)

2.2 General aircraft area

Table 6 General aircraft area

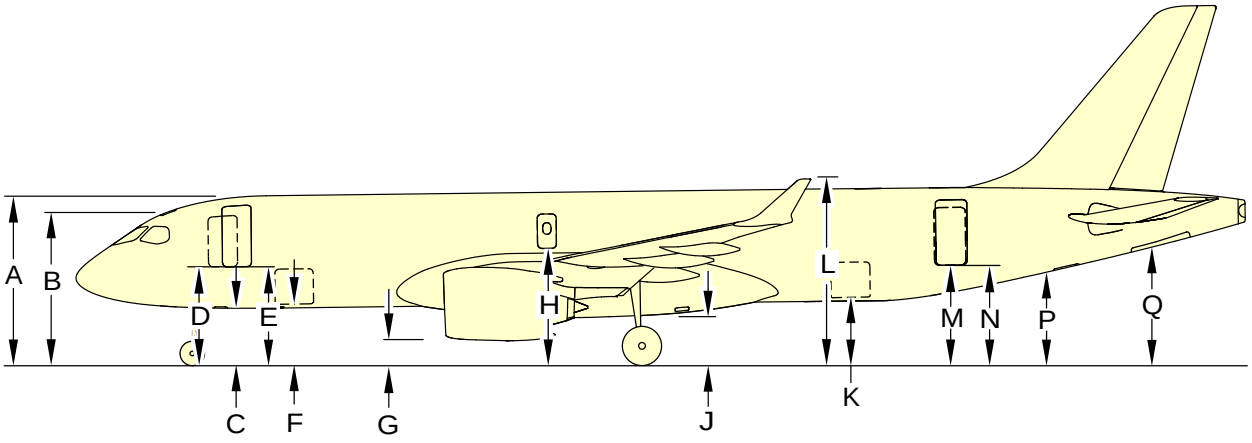
Description	A220-300
ESDU wing area (including ailerons, flaps, spoilers and area within the fuselage)	1209 ft² (112.3 m²)
Total horizontal stabilizer area (horizontal tail area and elevator area)	395 ft² (36.6 m²)
Total vertical stabilizer area (vertical tail area and rudder area)	304 ft² (28.2 m²)

3 Ground clearances

This section gives the height of various points of the aircraft, above the ground.

Dimensions in the tables are approximate and will vary with tire type, weight and balance and other special conditions.

3.1 Ground clearances



Dimensions	Minimum	Maximum
A	17 ft 5 in.(5,3 m)	17 ft 10 in.(5,4 m)
B	15 ft 8 in.(4,8 m)	16 ft 2 in.(4,9 m)
C	5 ft 3 in.(1,6 m)	5 ft 8 in.(1,7 m)
D	9 ft 9 in.(3,0 m)	10 ft 2 in.(3,1 m)
E	9 ft 9 in.(3,0 m)	10 ft 2 in.(3,1 m)
F	5 ft 6 in.(1,7 m)	5 ft11in.1,8 m)
G	1 ft 7 in.(0,5 m)	2 ft 0 in.(0,6 m)
H	11 ft 6 in.(3,5 m)	11 ft 11 in.(3,5 m)
J	4 ft 8 in.(1,4 m)	5 ft 1 in.(1,5 m)
K	6 ft 1 in.(1,8 m)	6 ft 7 in.(2,0 m)
L	19 ft 1 in.(5,8 m)	19 ft 18 in.(6,0 m)
M	10 ft 6 in.(3,2 m)	11 ft 2 in.(3,4 m)
N	10 ft 6 in.(3,2 m)	11 ft 2 in.(3,4 m)
P	9 ft 0 in.(2,8 m)	10 ft 1 in.(3,1 m)
Q	11 ft 8 in.(3,6 m)	12 ft 7 in.(3,8 m)

NOTES

Vertical clearances shown are the greatest possible variations in attitude due to the variation of aircraft weight and center of gravity.

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Figure 2 Ground clearances

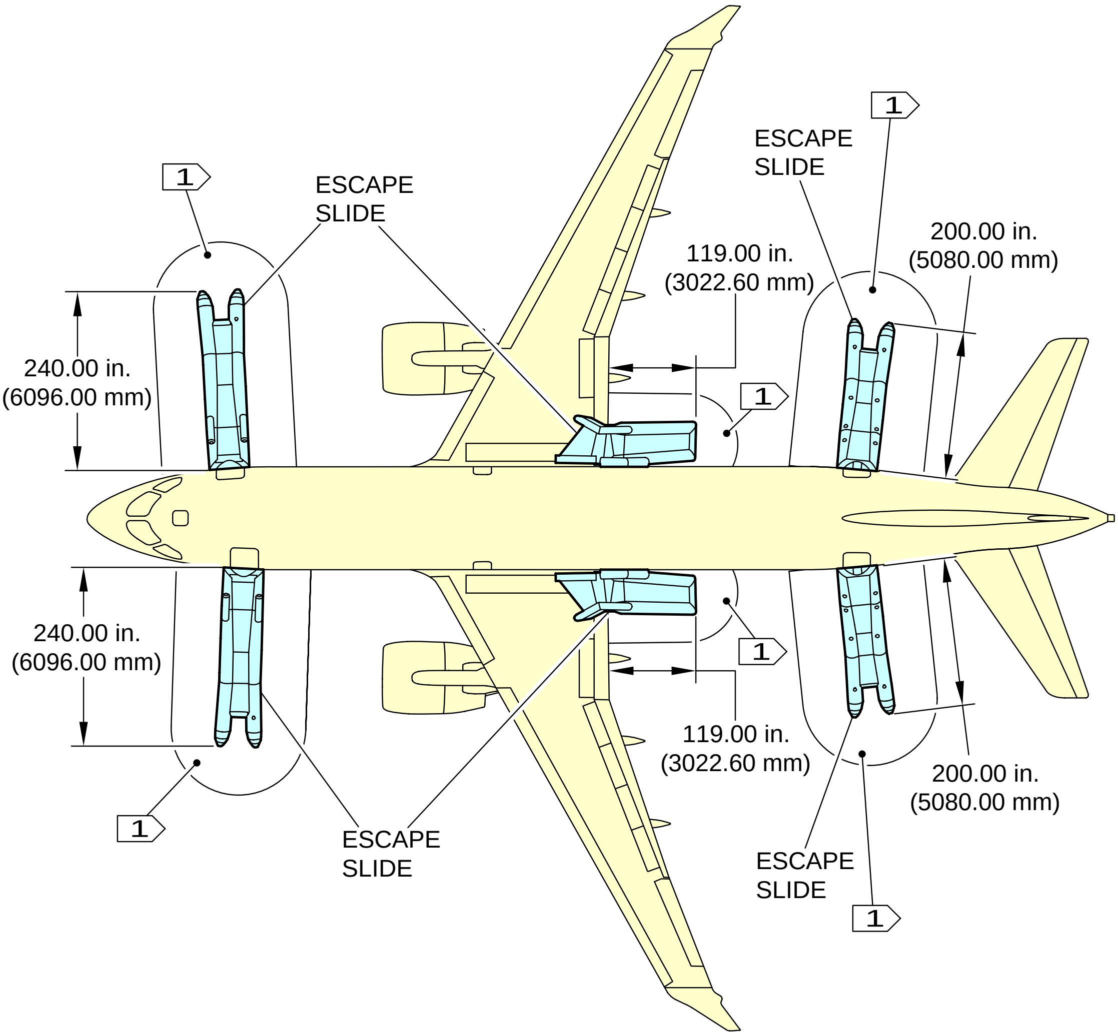
3.2 Ground clearances for evacuation slides

This section gives ground clearances for evacuation slides. Refer to Table 7 and Fig. 3 .

Table 7 Ground clearances for evacuation slides

Description	Dimensions
Forward Passenger Door (FPD) Slide	240 in. (6096 mm)
Forward Service Door (FSD) Slide	240 in. (6096 mm)
Aft Passenger Door (APD) Slide	200 in. (5080 mm)
Aft Service Door (ASD) Slide	200 in. (5080 mm)
Overwing Emergency Exit Door (OWEED) Single Lane Slides (Left & Right sides)	119 in. (3022.60 mm)
OWEED Dual Lane Slides (Left & Right sides)	139 in. (3530.60 mm)

(Sheet) Applicability: 55001-55002, 55010-55015, 55017-55033, 55035-55037, 55040, 55044-55049, 55058-55063, 55067-55070, 55074-55085, 55087-55093, 55096-55113, 55115-55120, 55122-55125, 55128, 55130, 55132, 55135-55138, 55142-55145, 55147-55148, 55150-55153, 55156, 55158, 55160-55161, 55164, 55166-55167, 55169-55170, 55172, 55175, 55178-55179, 55181, 55184, 55186, 55188-55190, 55192, 55194-55195, 55199, 55201-55209, 55211-55212, 55214, 55217, 55220, 55222, 55225-55226, 55228, 55231, 55234, 55236-55237, 55239, 55241, 55246, 55249-55254, 55256-55263, 55265-55269, 55271-55274, 55276-55277, 55279-55280, 55282, 55284-55285, 55287-55289, 55292-55293, 55295-55298, 55300-55301, 55306-55307, 55310, 55312-55315, 55318-55320, 55322, 55325-55326, 55328 and 55006-55007, 55053, 55056-55057, 55065-55066, 55072-55073 PRE BD500-256002



NOTE

1 Emergency evacuation ground area.

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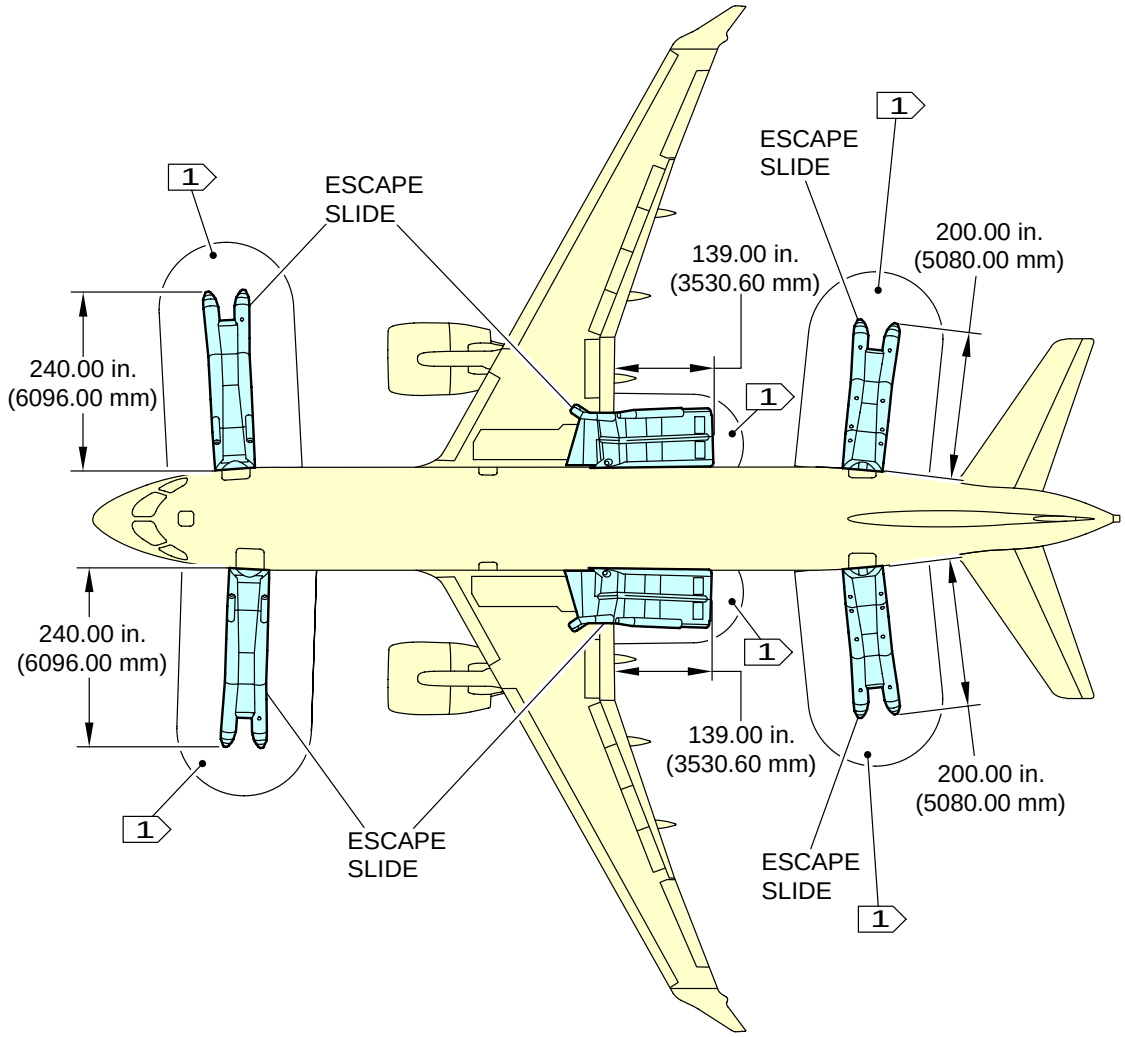
Figure 3 Ground clearances for evacuation slides - (Sheet 1 of 2)

(Sheet) Applicability: 55086, 55094-55095, 55114, 55121, 55126-55127, 55129, 55131, 55133-55134, 55139-55141, 55146, 55149, 55154-55155, 55157, 55159, 55162-55163, 55165, 55168, 55171, 55173-55174, 55176-55177, 55180, 55182-55183, 55185, 55187, 55191, 55193, 55196-55198, 55200, 55210, 55213, 55215-55216, 55218-55219, 55221, 55223-55224, 55227, 55229-55230, 55232-55233, 55235, 55238, 55240, 55242-55245, 55247-55248, 55255, 55264, 55270, 55275, 55278, 55281, 55283, 55286, 55290-55291, 55294, 55299, 55302-55305, 55308-55309, 55311, 55316-55317, 55321, 55323-55324, 55327, 55329 and 55003-55009, 55016, 55034, 55038-55039, 55041-55043, 55050-55057, 55064-55066, 55071-55073 POST BD500-256002



NOTE

1 Emergency evacuation ground area.

4 Layout of passenger compartment accommodation

The passenger compartment includes the galley area, lavatory, and passenger seating area. The galleys and utility areas are isolated from the passenger area by partitions and curtains. Refer to Fig. 4 .

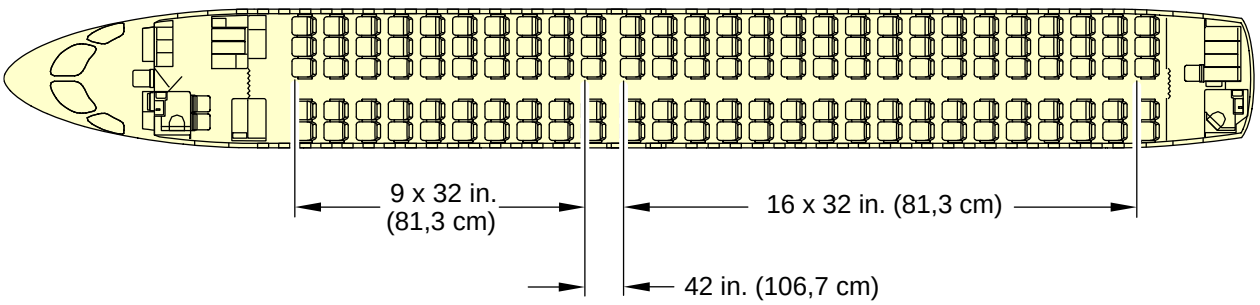


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Figure 4 Layout Of Passenger Accommodation (LOPA)

5 Passenger cross-section

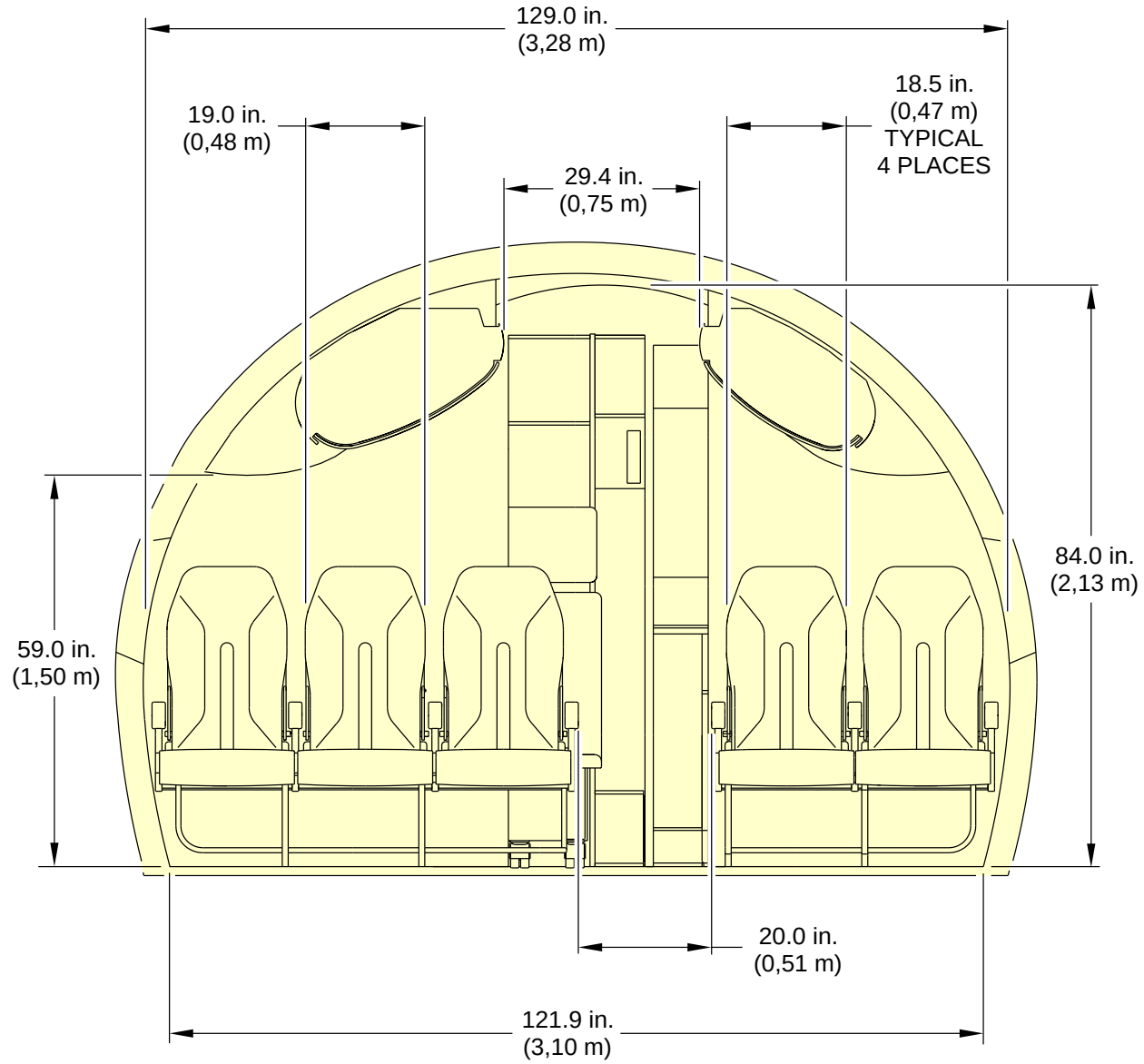

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Figure 5 Passenger cross-section (economy class)

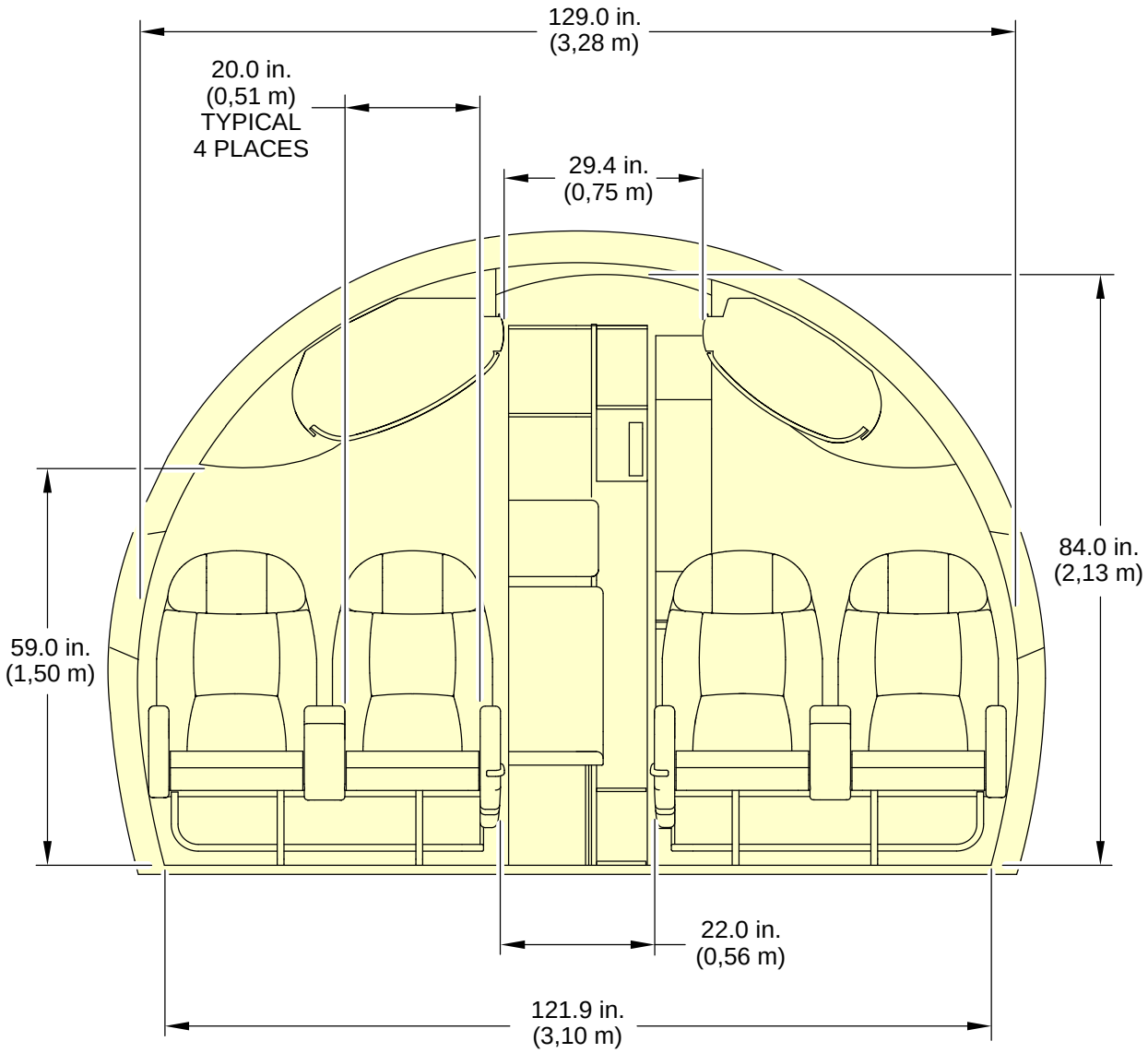

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Figure 6 Passenger cross-section (optional business class)

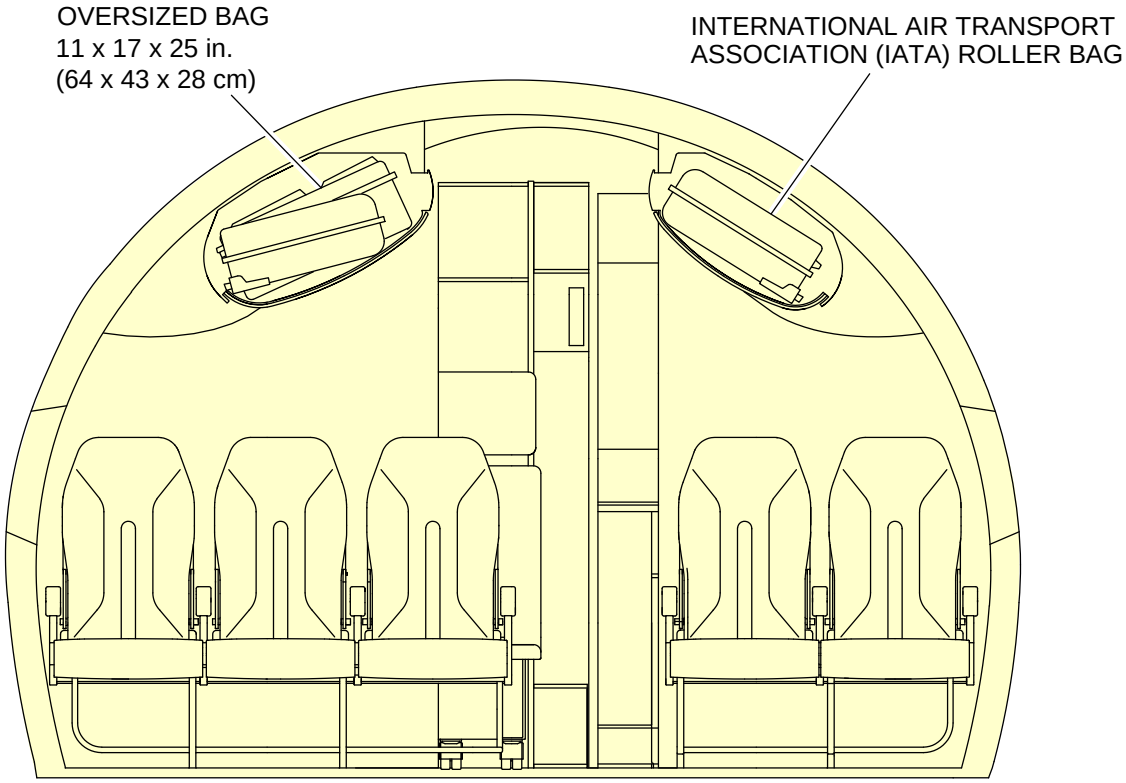

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Figure 7 Overhead stowage bins

6 Cargo compartment

Two under-floor cargo compartments are provided, each with a dedicated outward-opening access door. The forward compartment is positioned between the forward equipment compartment and the Environmental Control System (ECS) distribution bay. The aft compartment is positioned between the mid equipment compartment and the water system bay. Refer to Fig. 8

Both compartments are furnished with heavy duty floor panels and sidewall linings and are sealed to meet the requirements of a Class C compartment. Decompression and ventilation panels are provided as well. The compartment linings also incorporate provisions for compartment lighting, smoke detector, and fire extinguish.

The combined maximum weight loading of the cargo compartment is 11 139 lb (5052 kg).

6.1 Cargo door nets

Protective nets are provided at the door area of each cargo compartment to prevent baggage from fouling the door due to in-flight shifting of the loads. Refer to Fig. 9 .

6.2 Volumes – Cargo compartment

The estimated volume of the cargo compartments is based on geometric volume and accounts for the unusable area in the vicinity of the cargo doors. Table 8 lists the estimated wet volume of the cargo compartments.

Table 8 Cargo compartment volumes

Description	Usable Volume		Maximum load	
	ft^3	m^3	lb	kg
Fwd cargo compartment	447	12.65	5393	2446
Aft cargo compartment	523	14.81	5746	2606

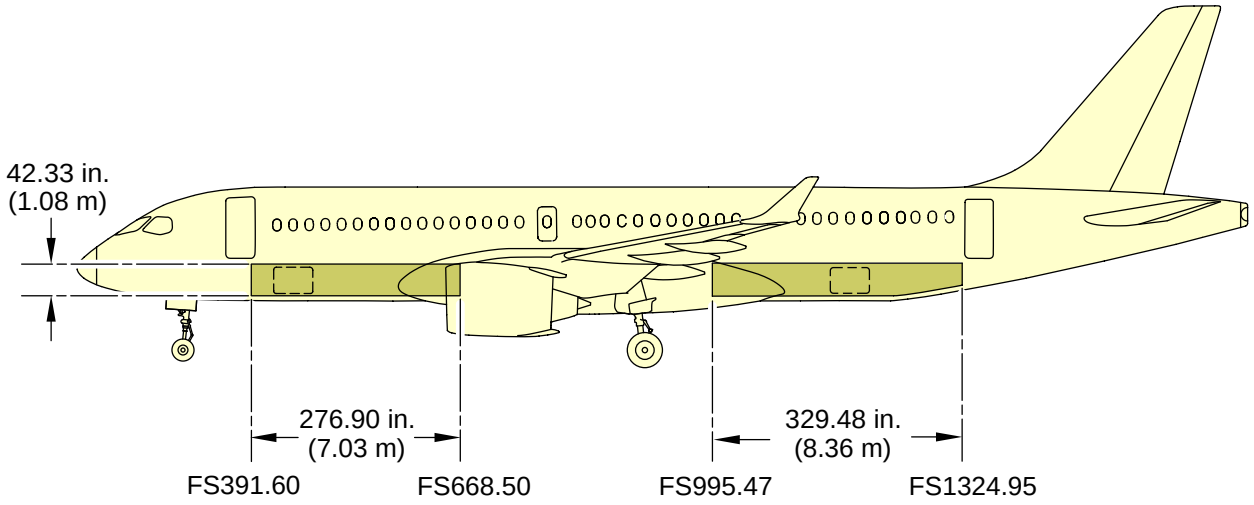

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Figure 8 Aircraft cargo side view - (Sheet 1 of 3)

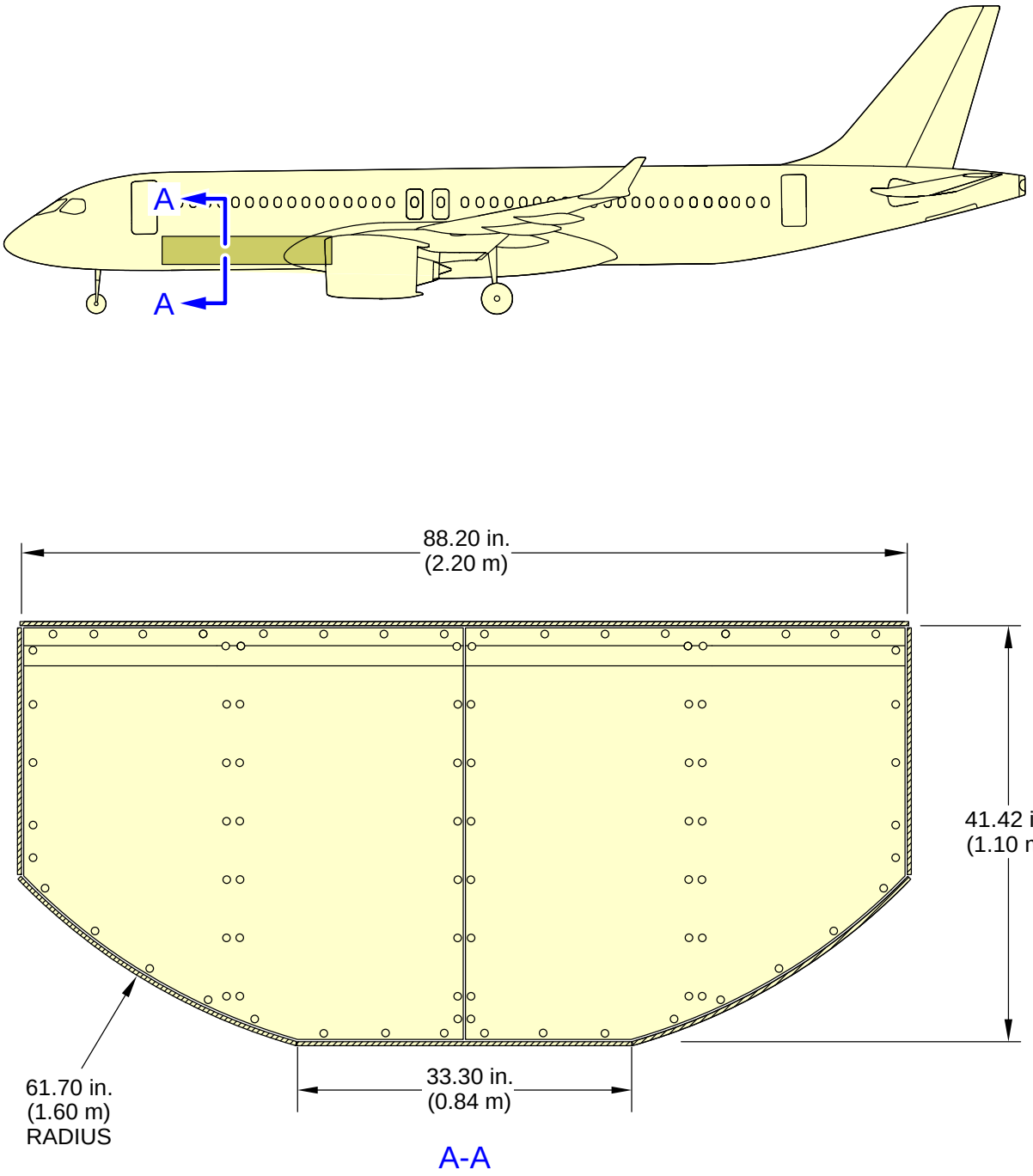

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Figure 8 Aircraft cargo side view - (Sheet 2 of 3)

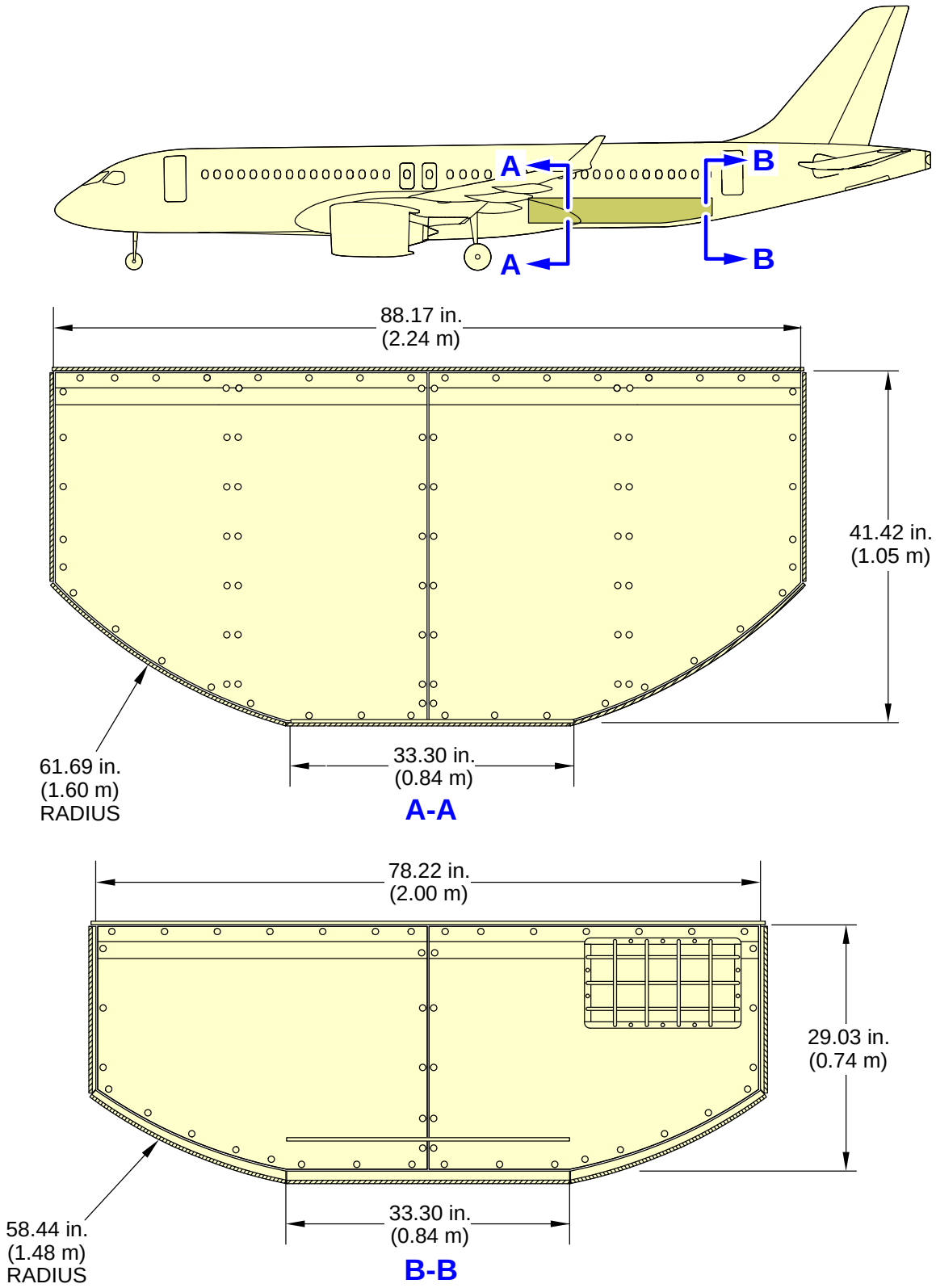

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Figure 8 Aircraft cargo side view - (Sheet 3 of 3)

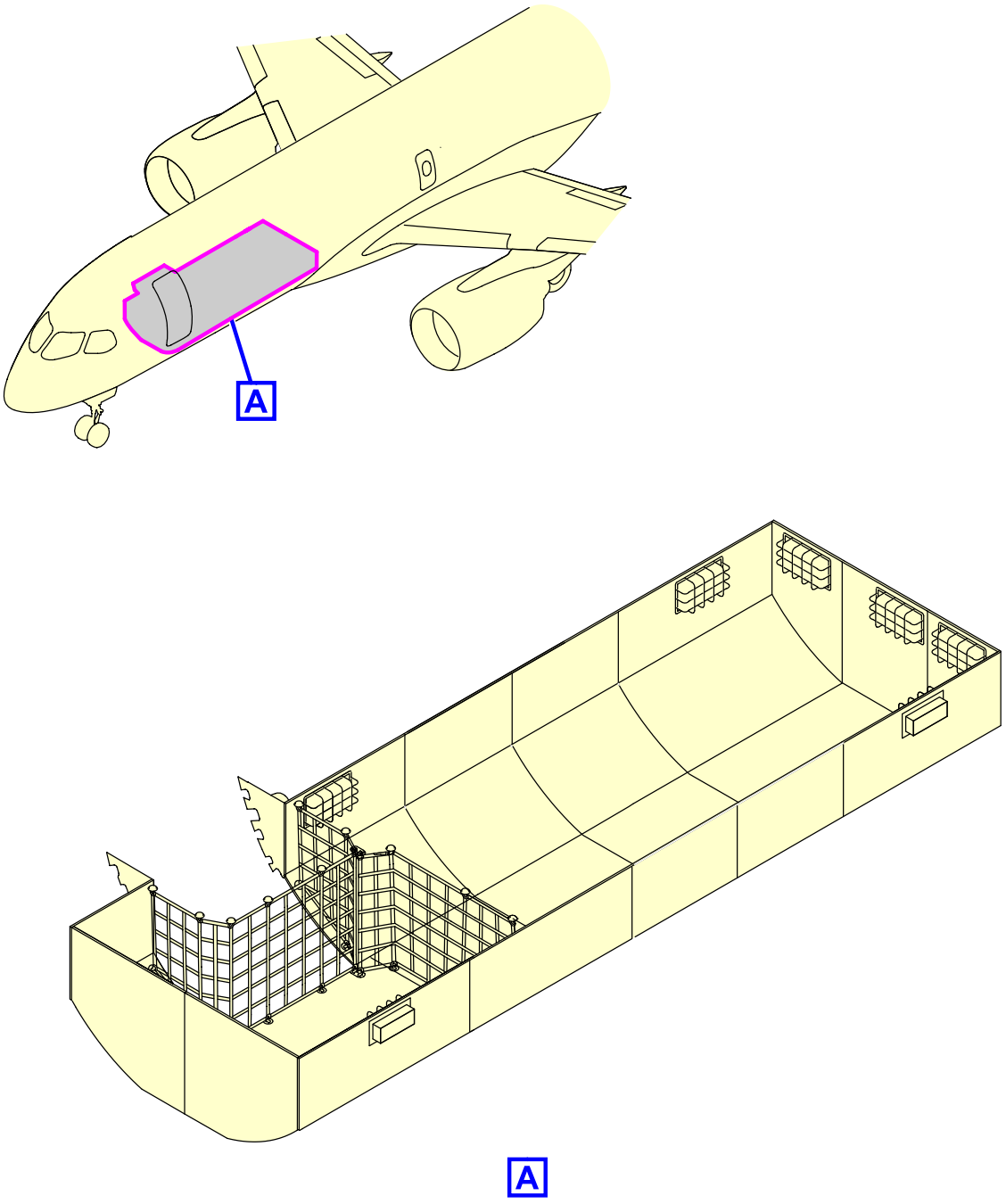

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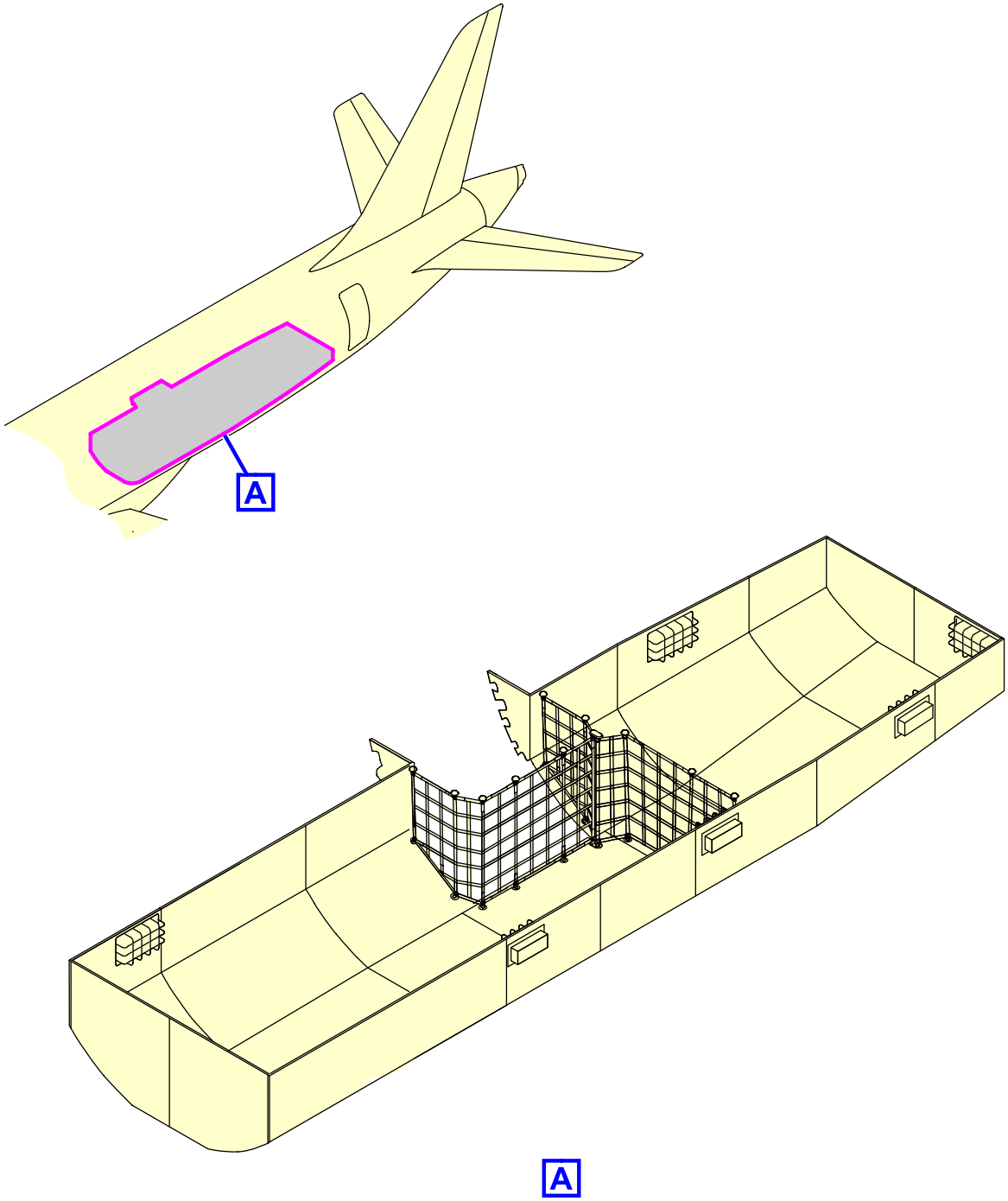
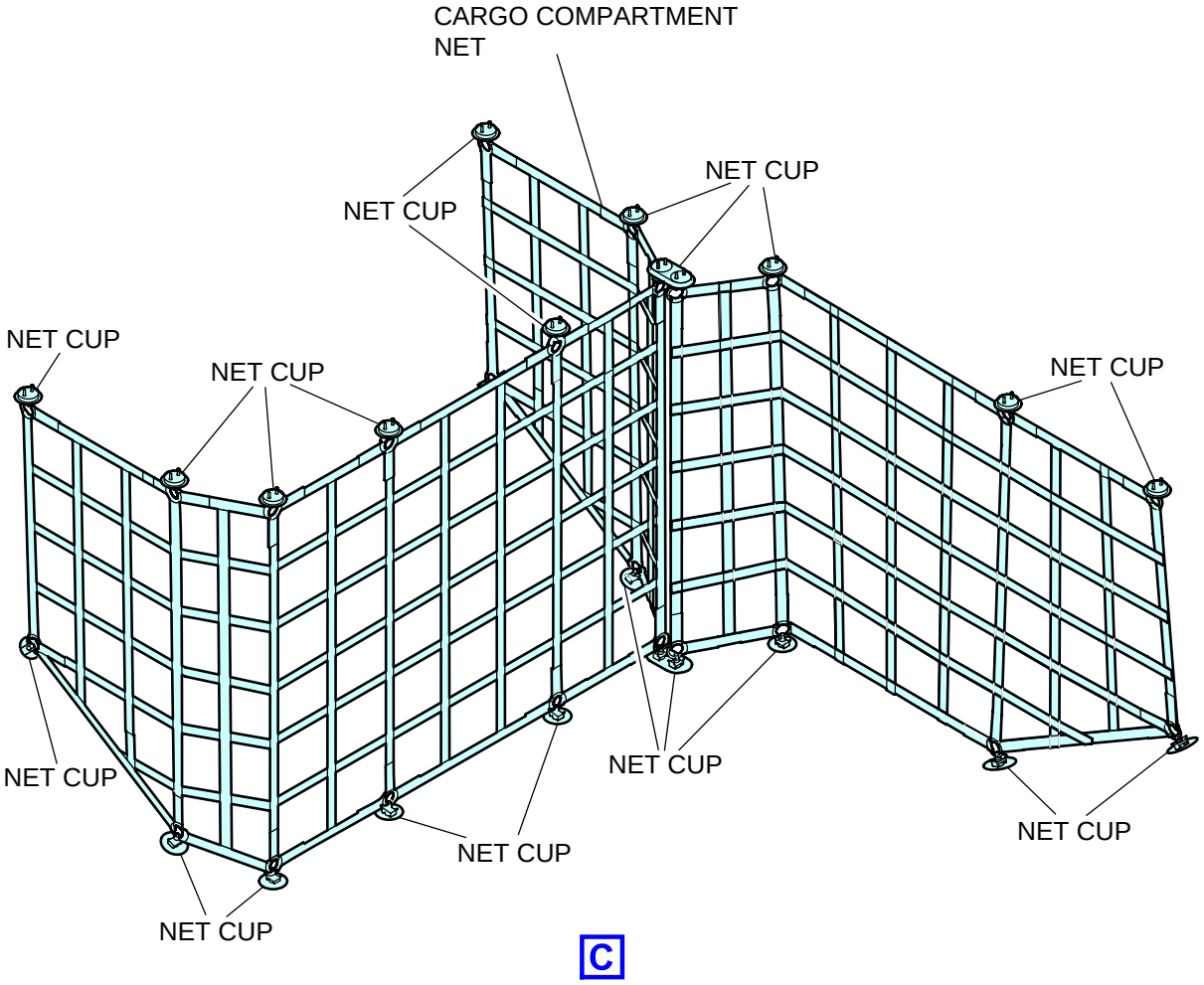
Figure 9 Cargo nets - (Sheet 1 of 3)



ICN-BD500-A-J084305-A-3AB48-24371-A-001-01

Figure 9 Cargo nets - (Sheet 2 of 3)



ICN-BD500-A-J502200-C-3AB48-17809-A-001-01

Figure 9 Cargo nets - (Sheet 3 of 3)

7 Door clearances and clear opening dimensions

A general description of the doors is as follows:

7.1 Passenger/Crew

Two semi-plug type doors on the left side of the aircraft provide access for passengers and crew. Door 1L is considered the primary entrance while door 2L provides a secondary entrance available for passenger loading/unloading as well as ground servicing.

Each door is classified as a type C floor level exit. Due to the sill height, every door incorporates an emergency evacuation slide system. In addition each one translates outwards from closed position, supported by a hinged arm to rest in open position.

Every door is operable from the exterior and interior of the aircraft and features an inspection window to allow verification of the outside conditions from the interior. The exterior operating handle has a linear motion and is interconnected to a vent flap system to provide pressure equalization between the aircraft and the ambient air prior to be opened.

Each door is fully lined and insulated to meet thermal and noise performance requirements.

For Passenger/Crew doors distance from the nose, refer to Fig. 11Fig. 12 . For aft passenger door opening and clearances, refer to Fig. 13 .

7.2 Emergency exit

The over-wing emergency exits are type III semi-plug type doors.

The exits are provided with an operating handle with removable cover and are fitted with a standard sized passenger compartment window. Each door is fully lined and insulated to meet thermal and noise performance requirements.

The door rotates upwards from the closed position, supported by a hinged arm to rest in open position. The door opening sequence is automatically supported by the energy stored in its own mechanism.

For emergency access to the passenger compartment, the doors may be opened from an exterior handle.

Due to the exit path height from the ground, an off-wing evacuation slide system is provided.

For over-wing emergency exits distance from the nose, refer to Fig. 11 . For doors dimensions, refer to Table 9 .

7.3 Flight compartment emergency exit

The flight compartment is outfitted with a single, inward-opening overhead escape hatch.

7.4 Cargo doors

Access doors are provided to allow cargo compartment loading and unloading.

The semi-plug forward and aft cargo doors are identical components, each hinged along the top edge of its frame.

Each door incorporates an exterior lock/unlock handle with linear motion that is interconnected to a vent flap system and provide pressure equalization between the aircraft and the ambient air prior to be opened.

An electrical actuation system with a switch panel, installed on the fuselage near each door, is provided to open and close the door.

Each door is fully lined and insulated to meet thermal and noise performance requirements.

For cargo doors distance from the nose, refer to Fig. 11 . For doors dimensions, refer to Table 9 . For forward cargo door opening and clearances, refer to Fig. 14 . For aft cargo door opening and clearances, refer to Fig. 15 .

7.5 Service doors

Two semi-plug type doors are provided on the right side of the aircraft to provide access for the forward (door 1R) and aft (door 2R) galley service areas.

Each door is classified as a type C floor level exit. Due to the sill height, each door incorporates an emergency evacuation slide system.

Each door translates outwards from the closed position, supported by a hinged arm and stabilizing system, to rest parallel to the fuselage in the open position.

Each door is operable from the exterior and interior of the aircraft and features an inspection window to allow verification of the outside conditions from the interior. The exterior operating handle has a linear motion and is interconnected to a vent flap system to provide pressure equalization between the aircraft and the ambient air prior to be opened.

Each door is fully lined and insulated to meet thermal and noise performance requirements.

For service doors distance from the nose, refer to Fig. 11 . For service doors dimensions, refer to Table 9 . For forward service door opening and clearances, refer to Fig. 16 . For aft service door opening and clearances, refer to Fig. 17 .

7.6 Forward avionics bay door

A plug-type door is provided in the forward fuselage to gain access to the pressurized forward equipment compartment. The door is fitted with a stowable operating handle.

For forward equipment compartment door distance from the nose, refer to and Fig. 11 . For dimensions, refer to Table 9 .

7.7 Mid avionics bay door

A plug-type door is provided in the mid fuselage to gain access to the pressurized mid equipment compartment. The door is fitted with a stowable operating handle.

For mid equipment compartment door distance from the nose, refer to Fig. 11 . For dimensions, refer to Table 9 .

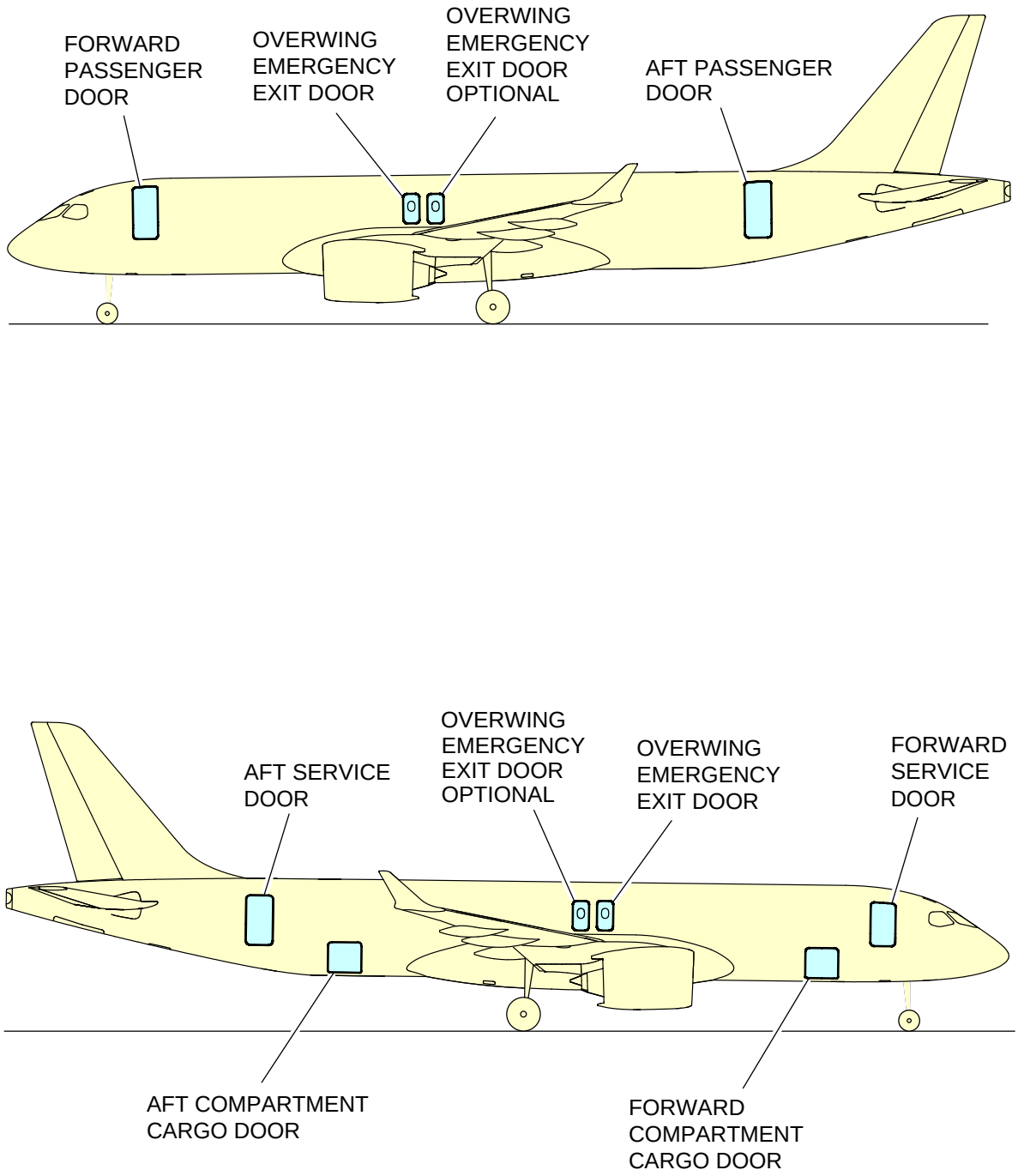
7.8 Aft equipment bay door

A door is provided in the aft fuselage to gain access to the unpressurized aft equipment compartment.

For aft equipment compartment door distance from the nose, refer to Fig. 11 . For dimensions, refer to Table 9 .

7.9 Doors identification

This section shows a general overview of the doors



ICN-BD500-A-J000000-A-3AB48-23217-A-001-01

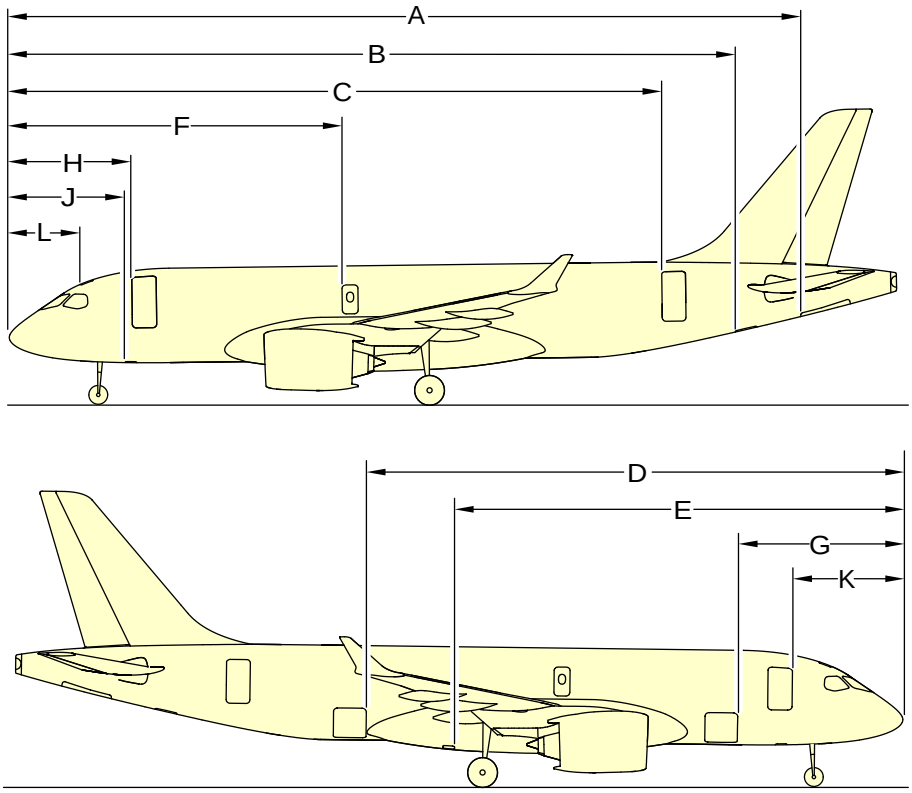
Figure 10 General door location

7.10 Access and exit doors dimensions

Table 9 Access and exit doors dimensions

Door	Height	Width
Main entrance door - Type C exit (door 1L)	6 ft 3 in. (1,9 m)	2 ft 6 in. (0,8 m)
Service door - Type C exit (door 1R)	5 ft 0 in. (1,5 m)	2 ft 6 in. (0,8 m)
Aft entrance door - Type C exit (door 2L)	6 ft 0 in. (1,8 m)	2 ft 6 in. (0,8 m)
Service door - Type C exit (door 2R)	5 ft 0 in. (1,5 m)	2 ft 6 in. (0,8 m)
Forward avionics bay door	2 ft 8 in. (0,81 m)	3 ft 8 in. (1,1 m)
Mid avionics bay door	2 ft 8 in. (0,81 m)	3 ft 8 in. (1,1 m)
Aft equipment bay door	3 ft 6 in. (1,08 m)	1 ft 11 in. (0,6 m)
Forward cargo compartment door	2 ft 8 in. (0,81 m)	3 ft 8 in. (1,1 m)
Aft cargo compartment door	2 ft 8 in. (0,81 m)	3 ft 8 in. (1,1 m)
Over-wing emergency exit	3 ft 6 in. (1,08 m)	1 ft 11 in. (0,59 m)
Flight compartment emergency exit	22 in. (0,559 m)	20 in. (0,508 m)

7.11 Door distance from nose



Dimensions	A220-300
A	114 ft 4 in. (34,85 m)
B	106 ft 1 in. (32,33 m)
C	96 ft 8 in. (29,46 m)
D	81 ft 7 in. (24,86 m)
E	64 ft 9 in. (19,74 m)
F	50 ft 1 in. (15,26 m)
G	21 ft 4 in. (6,5 m)
H	15 ft 10 in. (4,8 m)
J	15 ft 0 in. (4,6 m)
K	14 ft 3 in. (4,3 m)
L	9 ft 2 in. (2,8 m)

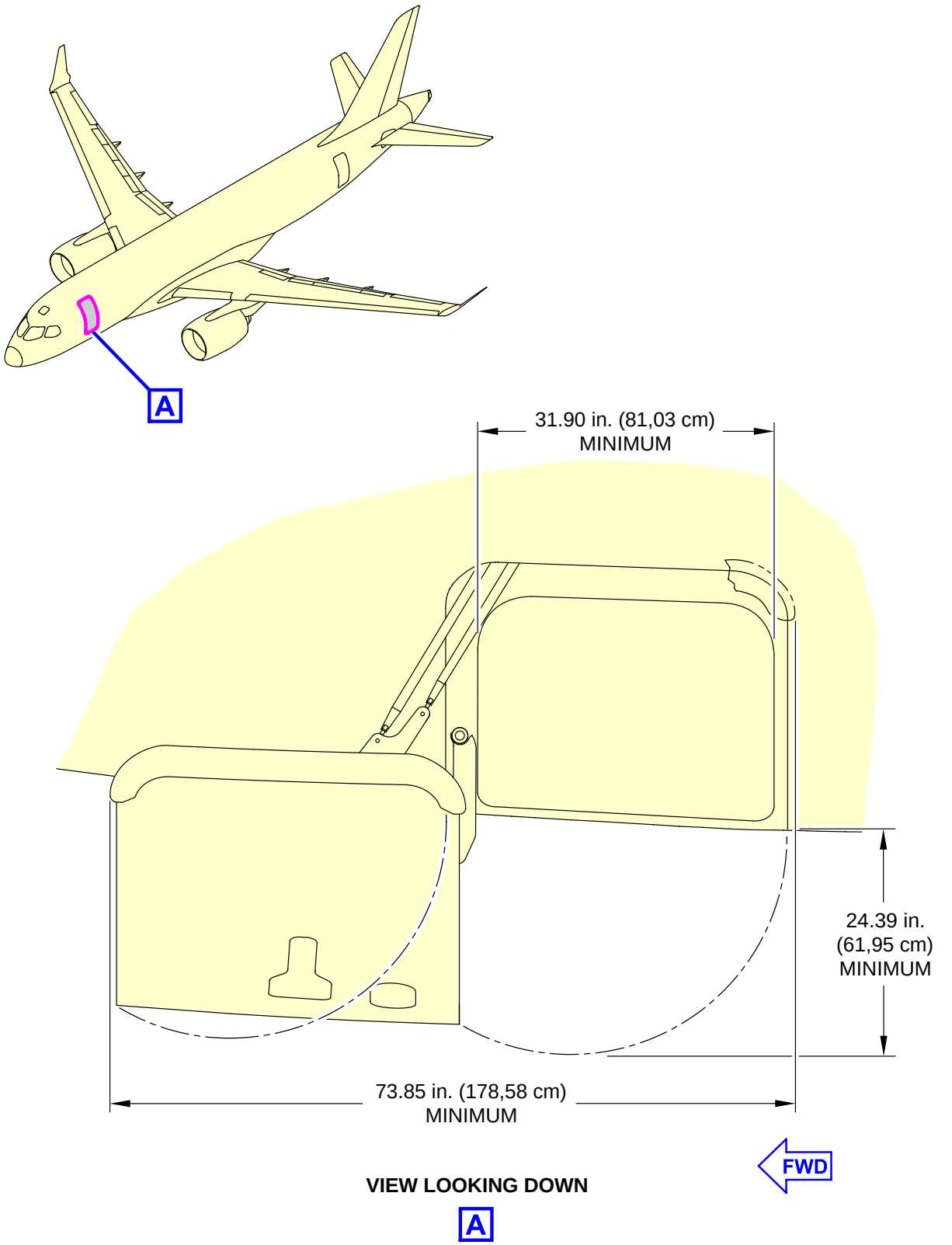
NOTE

The values shown are the greatest possible variations in attitude due to the variation of aircraft weight and gravity.

ICN-BD500-A-J000000-A-3AB48-21713-A-003-01

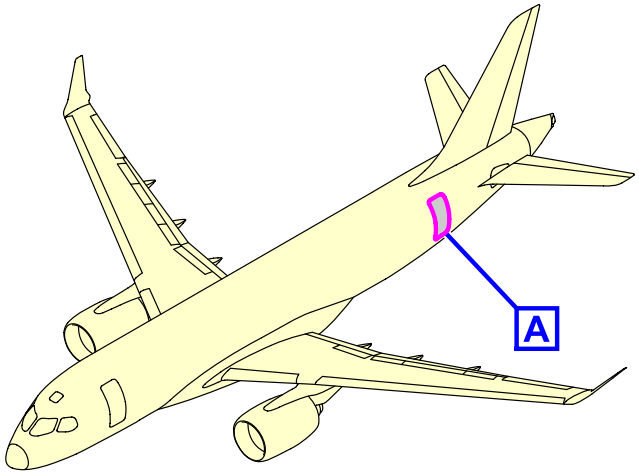
Figure 11 Door distance from nose

7.12 Door opening and clearance



ICN-BD500-A-J061100-A-3AB48-00103-A-003-01

Figure 12 Forward passenger door opening and clearances



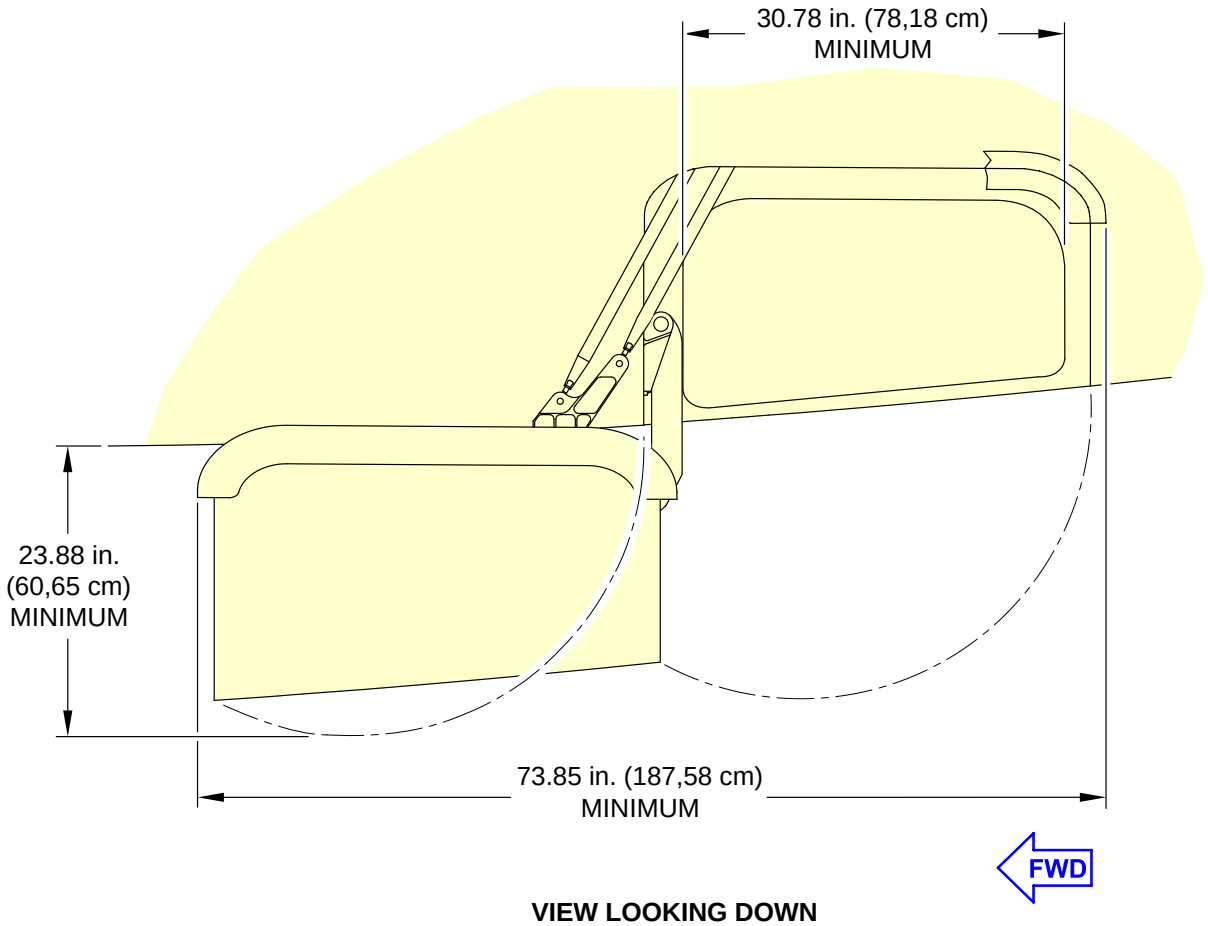


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Figure 13 Aft passenger door opening and clearances

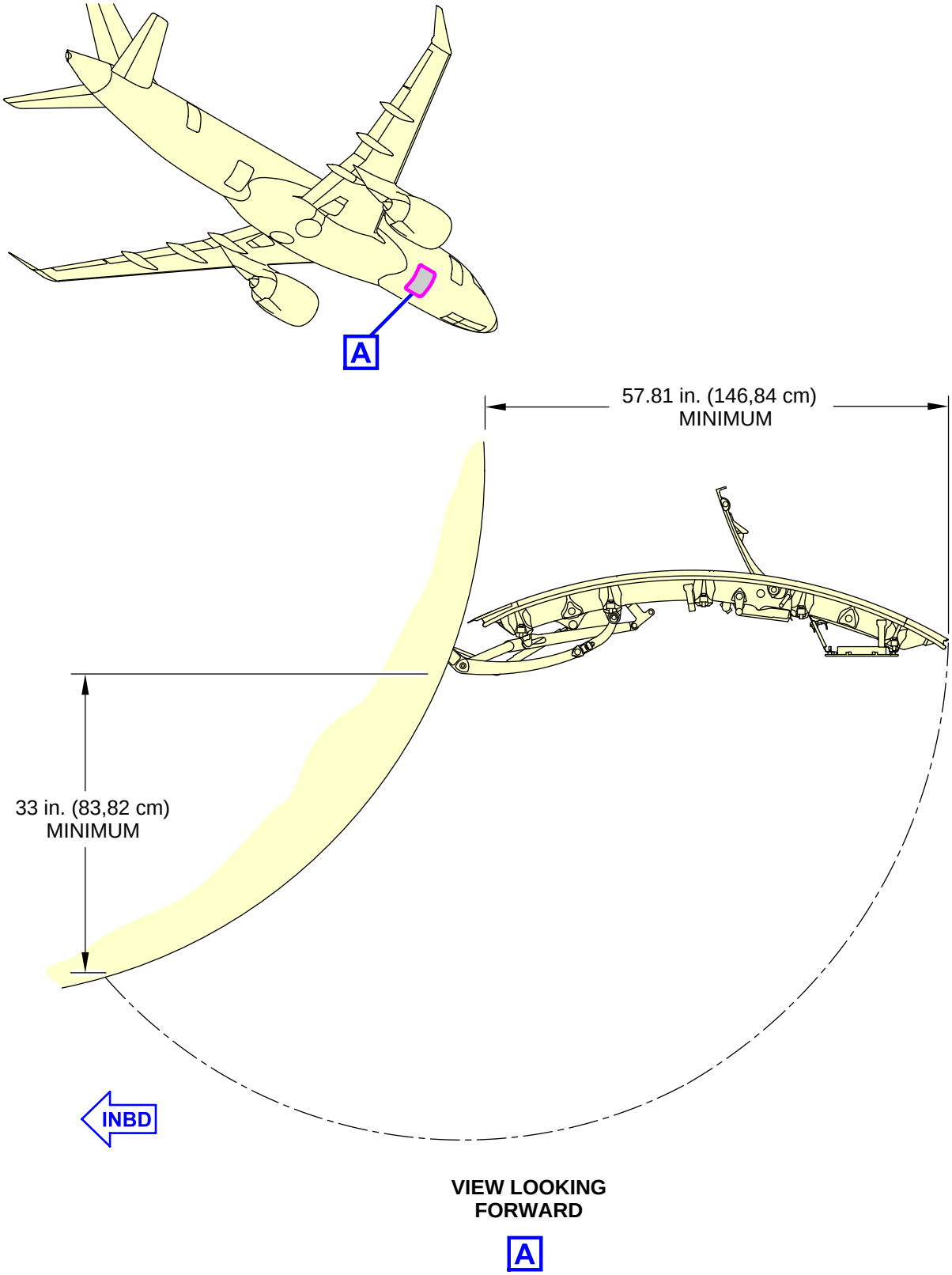

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Figure 14 Forward cargo compartment door opening and clearances

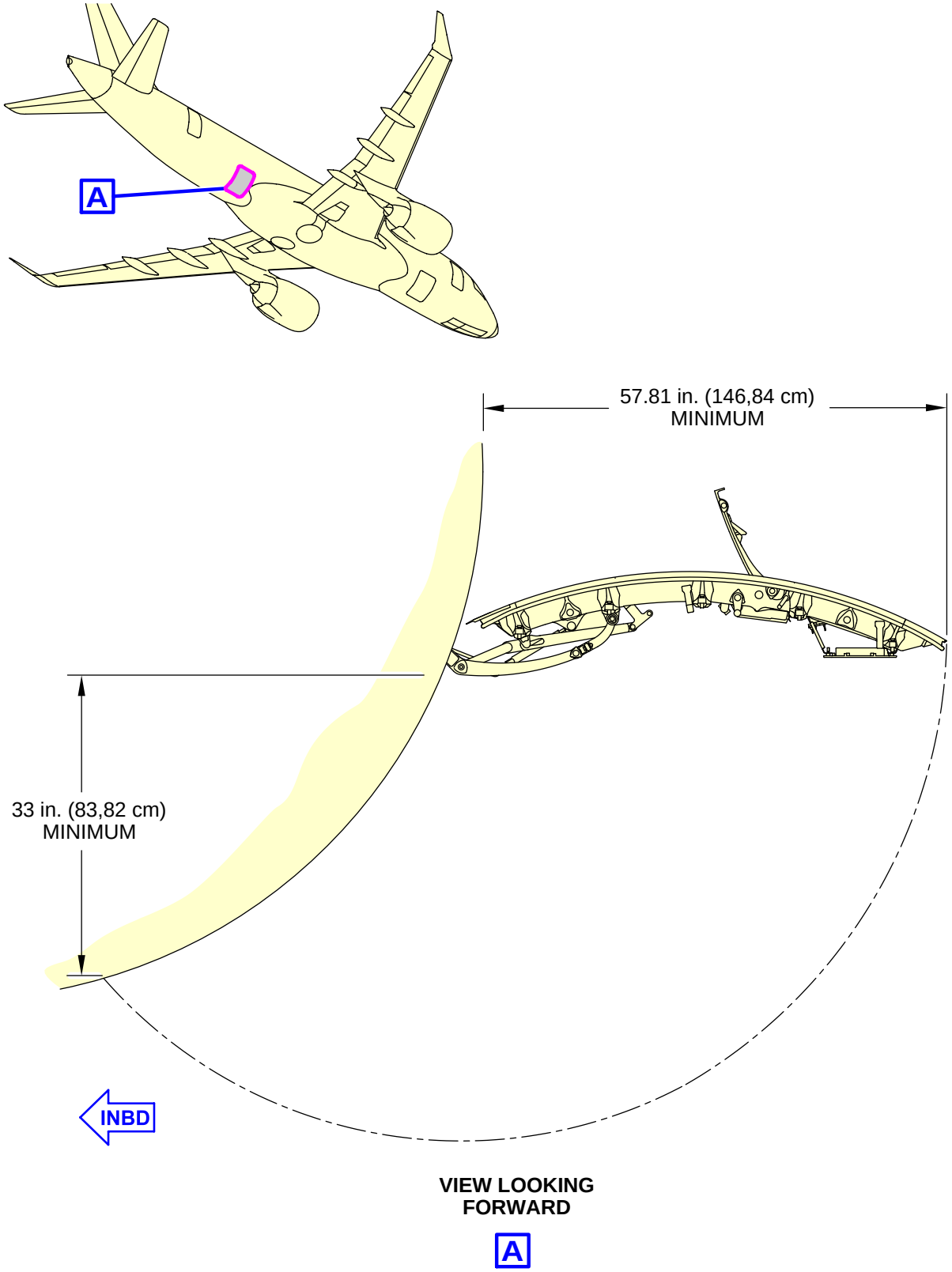

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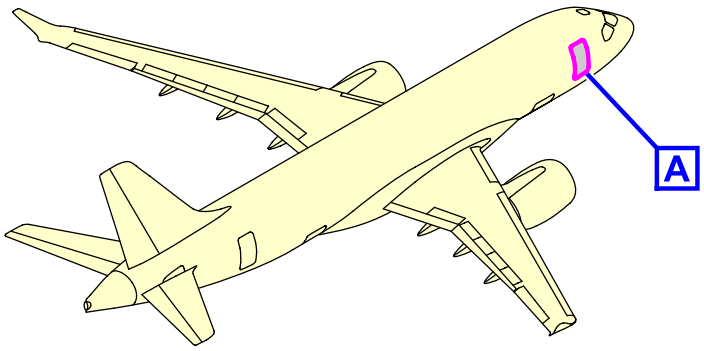
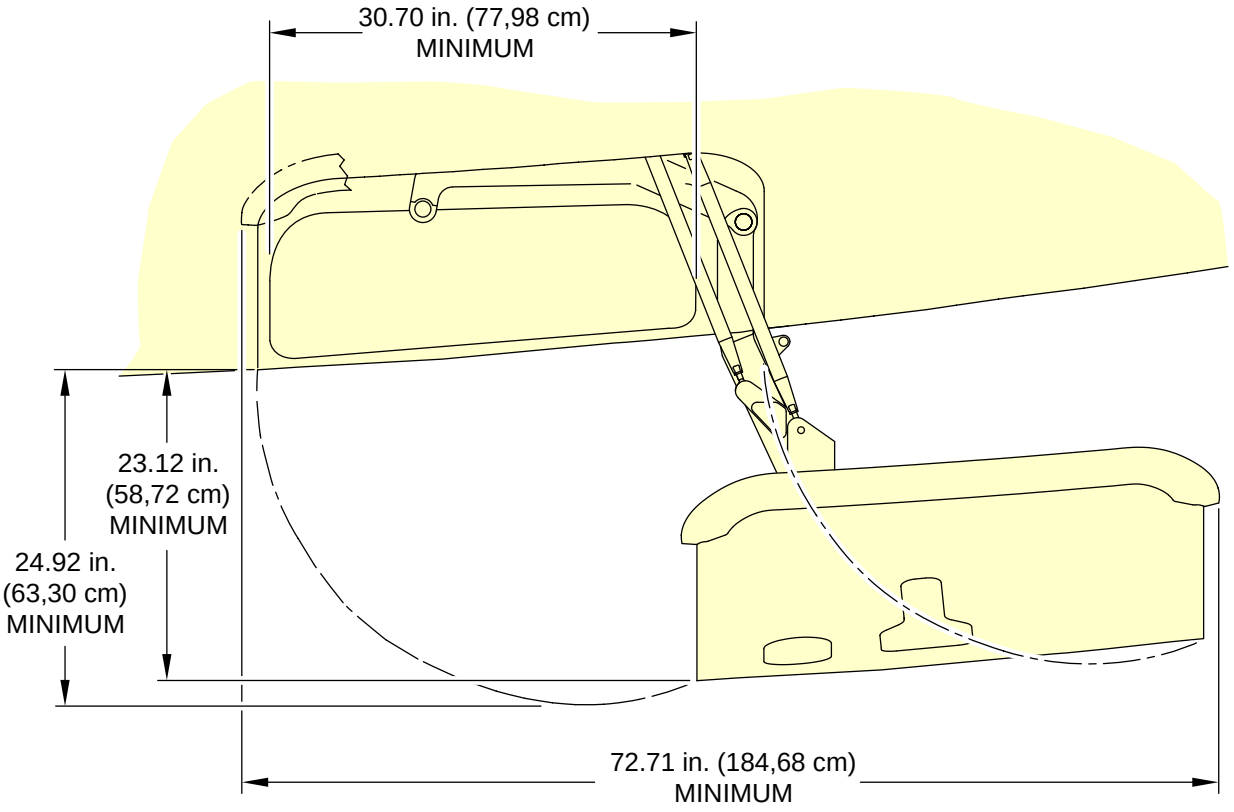
Figure 15 Aft cargo compartment door opening and clearances



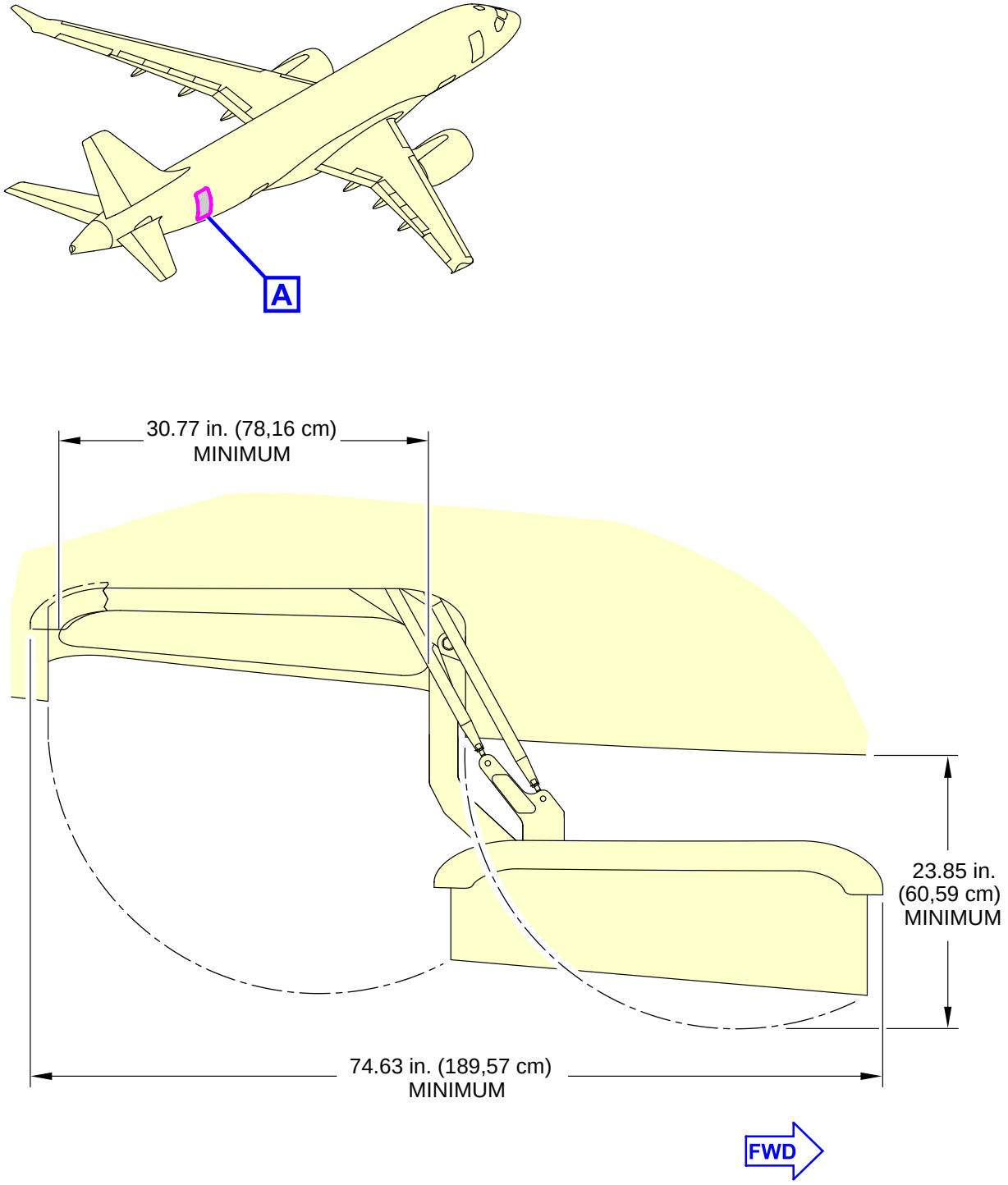


VIEW LOOKING DOWN

A

ICN-BD500-A-J061100-A-3AB48-00106-A-002-01

Figure 16 Forward service door opening and clearance



ICN-BD500-A-J061100-A-3AB48-00105-A-002-01

Figure 17 Aft service door opening and clearances

Aircraft performance - Technical data

Applicability: 55001-59999

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References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Introduction

This section gives data about:

- Payload/Range
- Takeoff field length requirements
- Landing field length requirements
- Landing reference speed

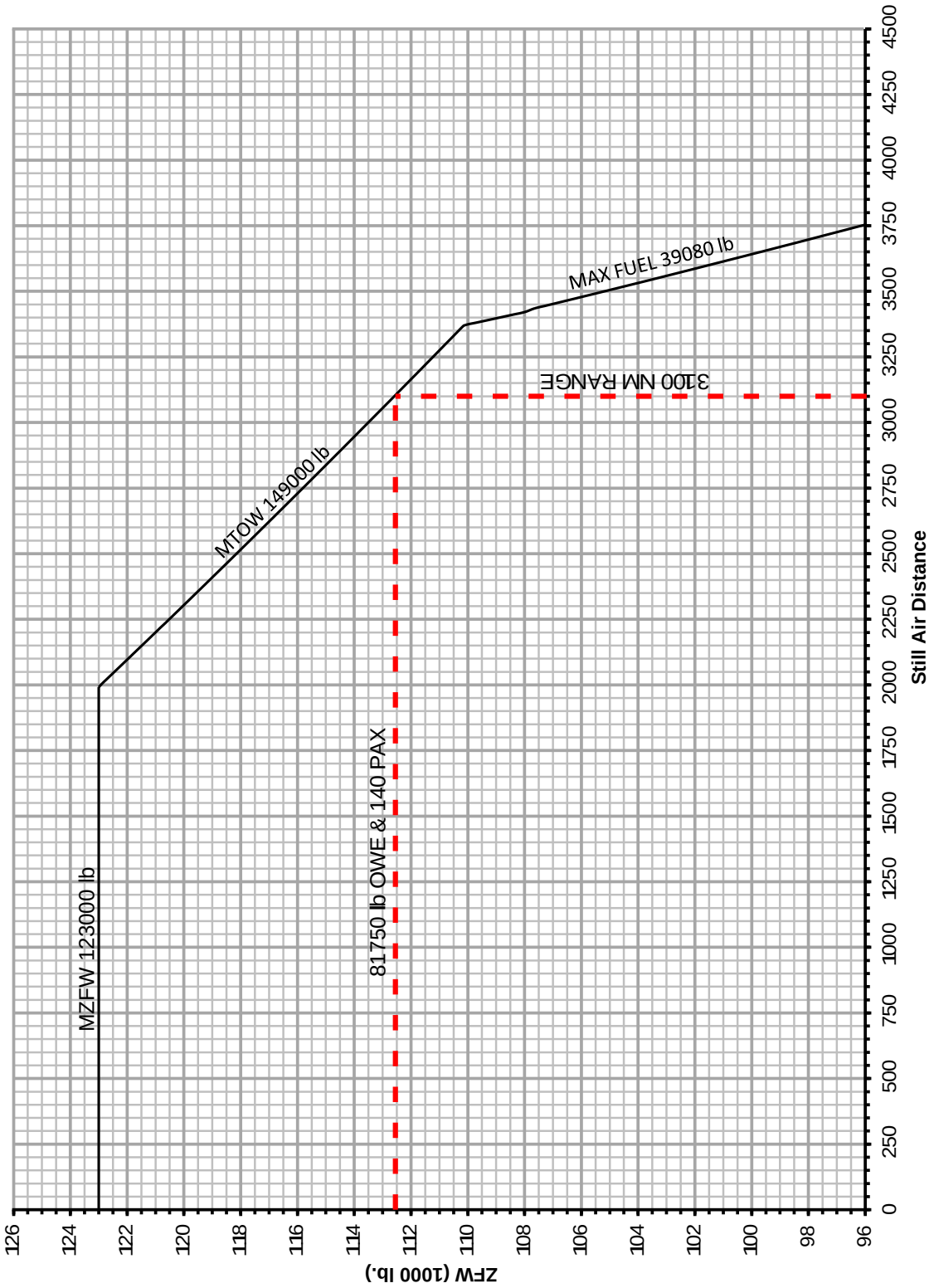
The table below provides standard day temperature for pressure altitudes.

Table 2 Standard day temperature chart

Altitude		Standard day temperature	
Feet (ft.)	Meters (m)	ºF	ºC
0	0	59	15
2000	610	51.9	11
4000	1220	44.7	7.1
6000	1830	37.6	3.1
8000	2440	30.5	-0.8
10000	3050	23.3	-4.8

2 Payload/Range

This section gives information about the payload/range at ISA conditions.



ICN-BD500-A-J000000-A-3AB48-25637-A-002-01

Figure 1 Zero Fuel Weight (ZFW) vs Range ISA

3 Takeoff field length requirements

For more information about aircraft performance, refer to the Aircraft Flight Manual (AFM) BD500–3AB48–32200-00.

For aircraft performance and field length requirements refer to:

- Fig. 2 for the takeoff field length ISA - PW1521G.
- Fig. 3 for the takeoff field length ISA +015°C - PW1521G.
- Fig. 4 for the takeoff field length ISA - PW1524G.
- Fig. 5 for the takeoff field length ISA +015°C - PW1524G.

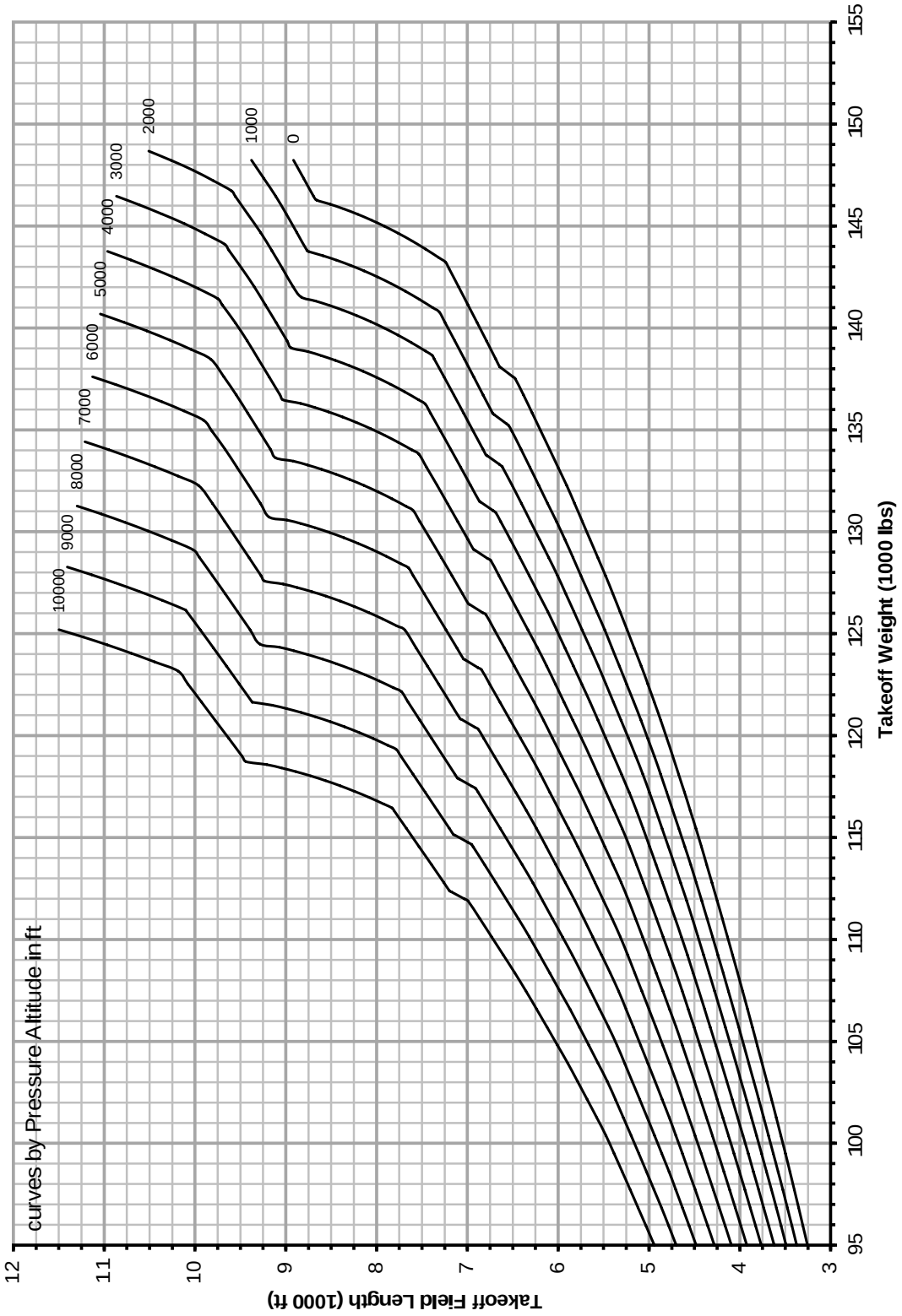


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Figure 2 Takeoff field length ISA - PW1521G

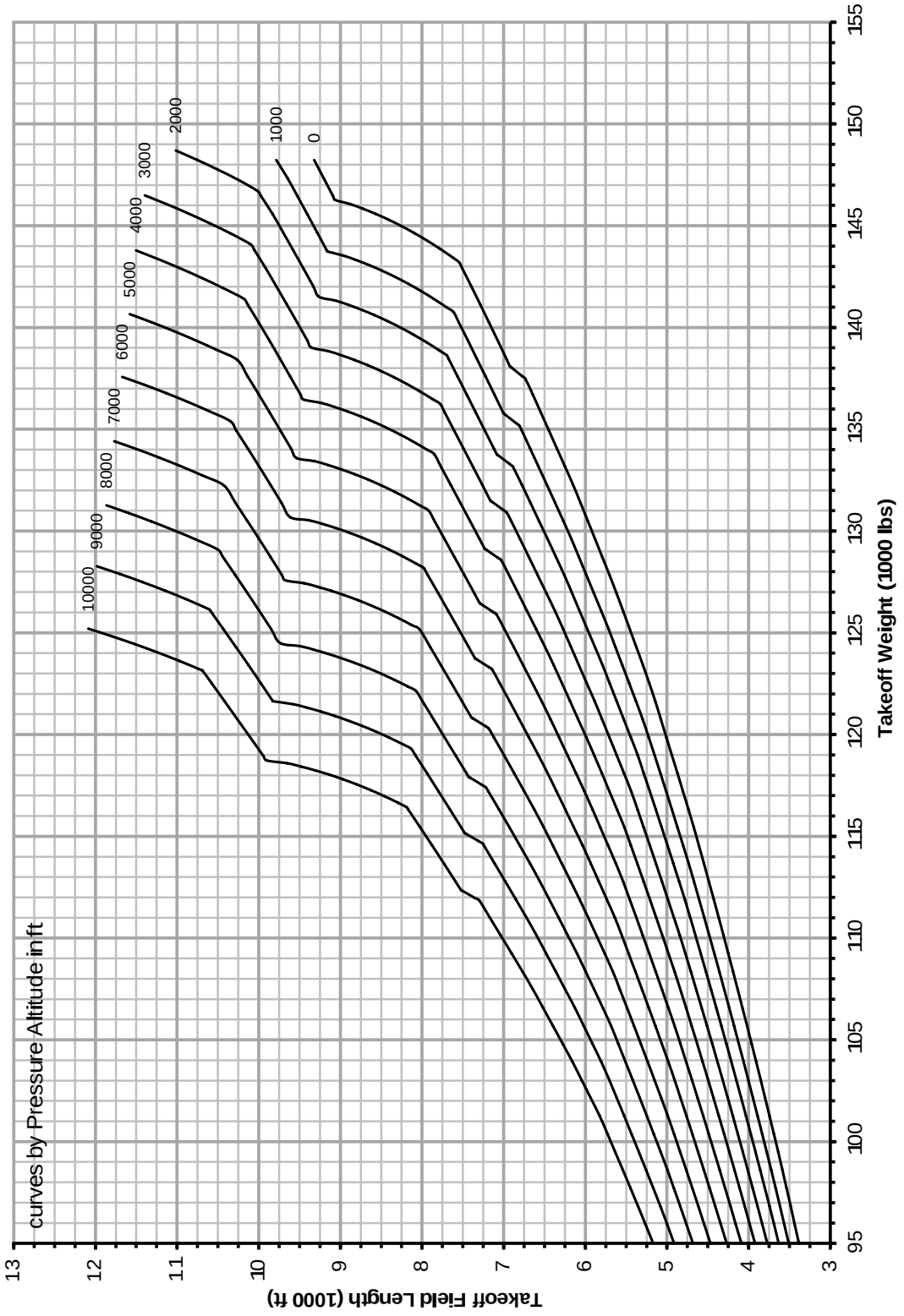

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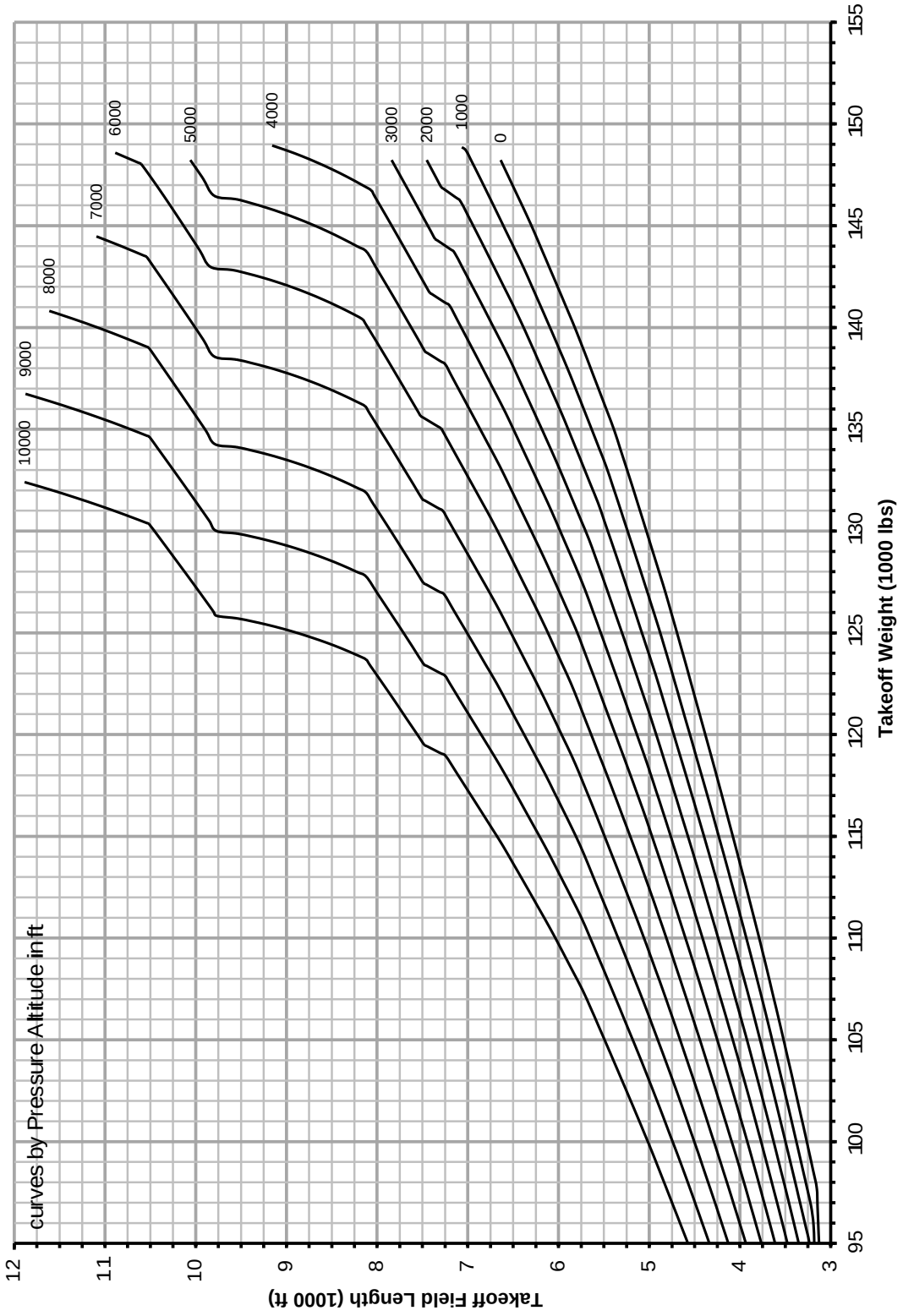
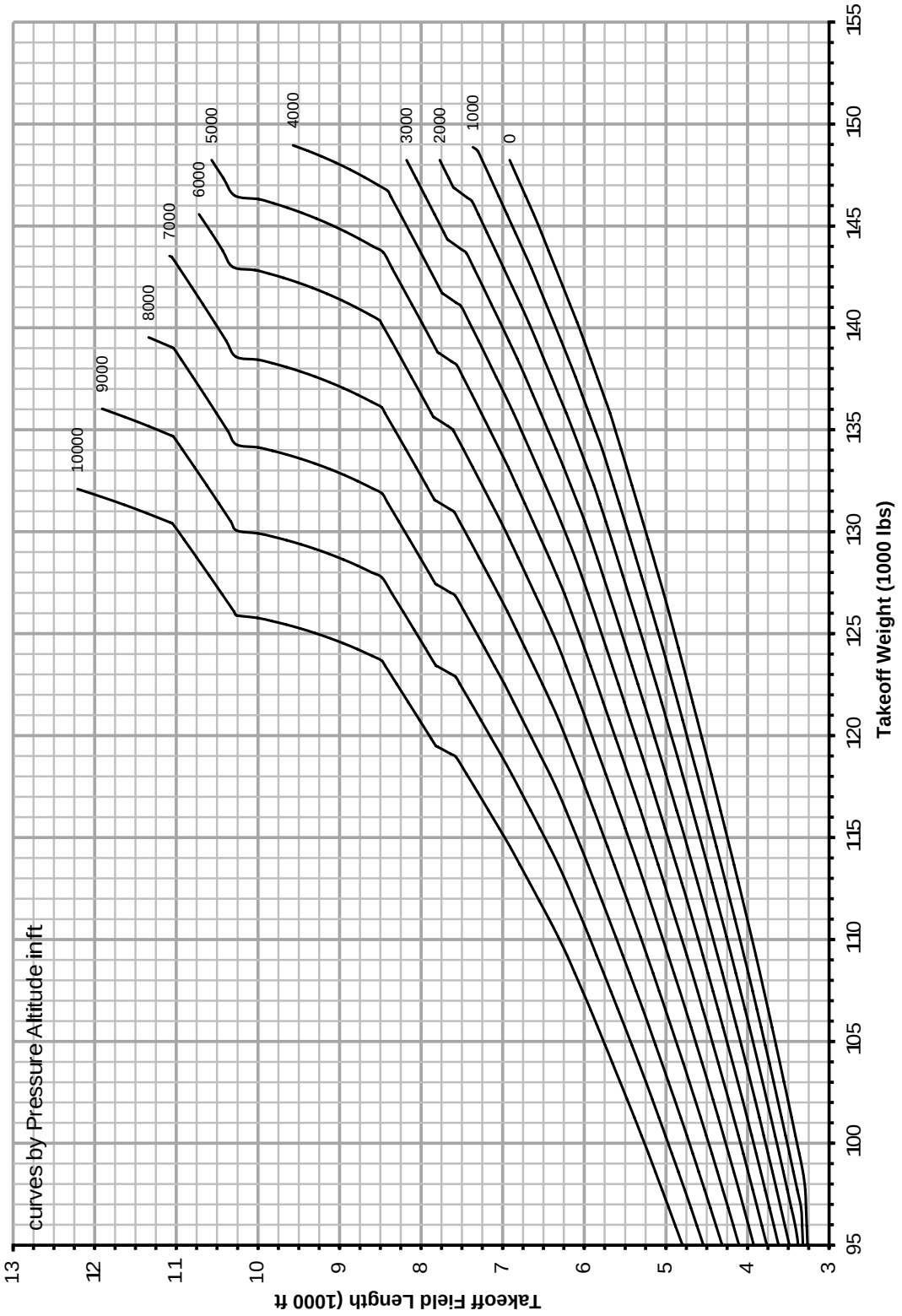
Figure 3 Takeoff field length ISA +15°C - PW1521G



ICN-BD500-A-J000000-A-3AB48-25638-A-001-01

Figure 4 Takeoff field length ISA - PW1524G



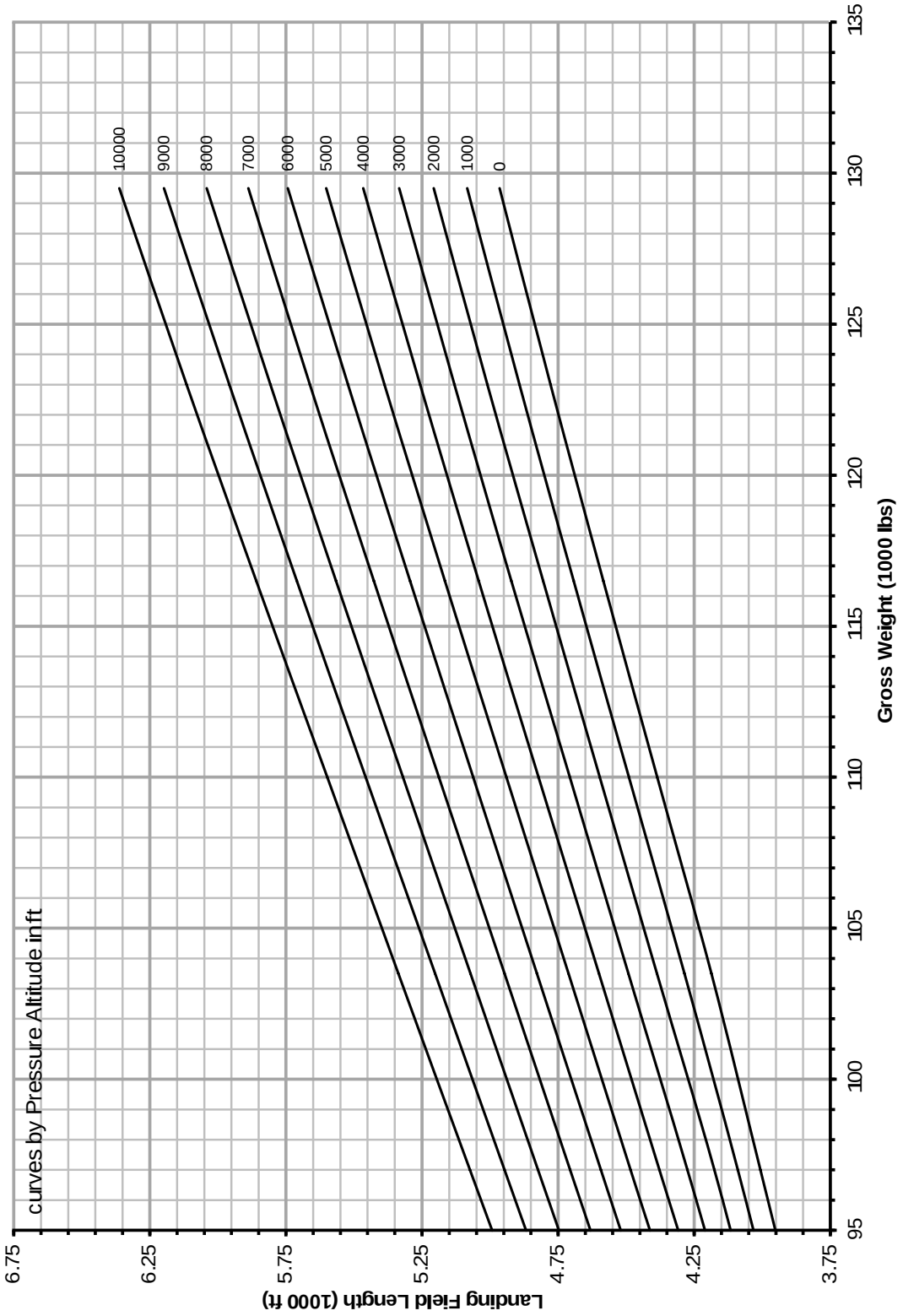
ICN-BD500-A-J000000-A-3AB48-01750-A-002-01

Figure 5 Takeoff field length ISA +15°C - PW1524G

4 Landing field length requirements

For more information about landing field, refer to the AFM BD500-3AB48-32200-00.

For landing field length requirements refer to Fig. 6 .

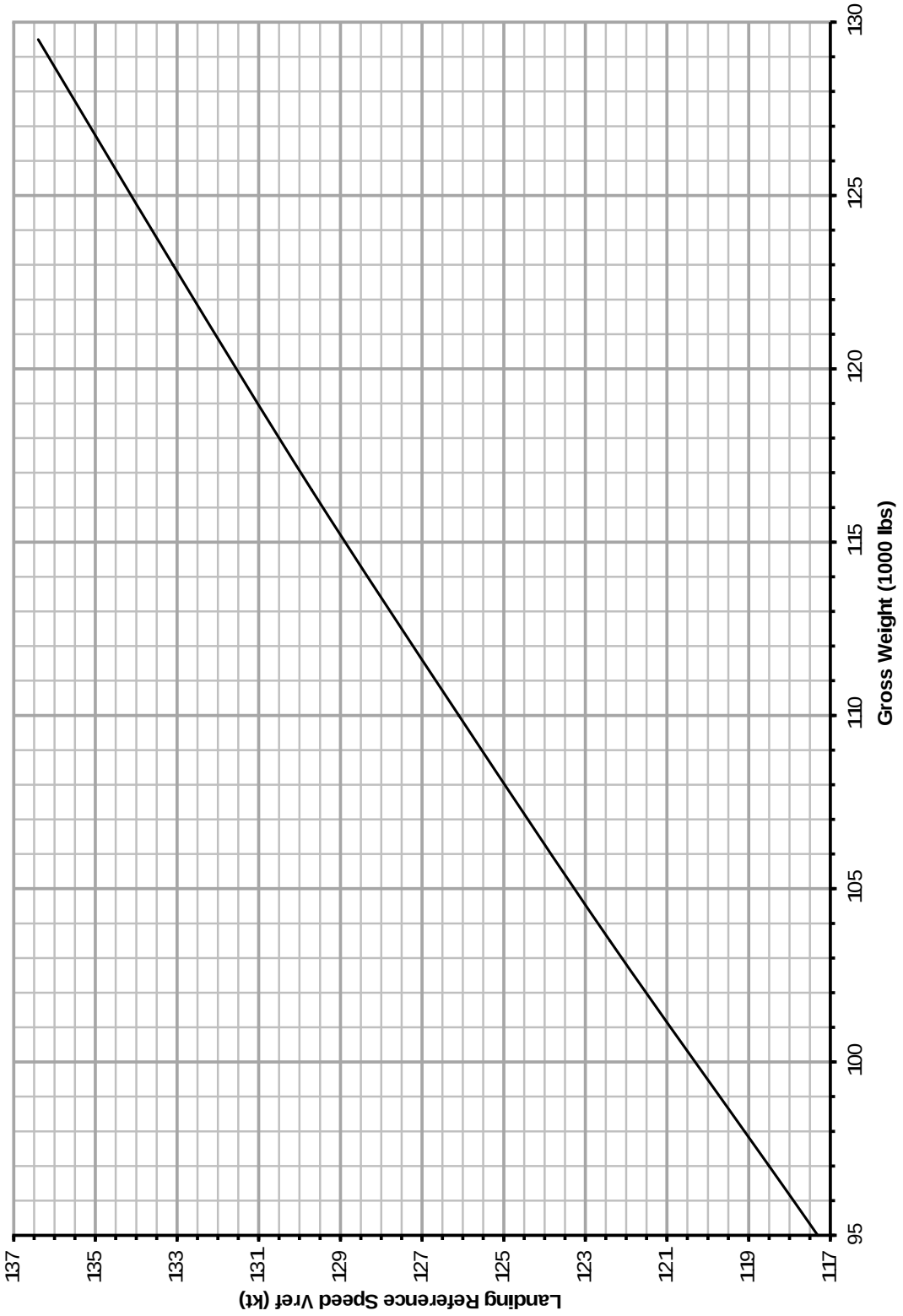


ICN-BD500-A-J000000-A-3AB48-01756-A-002-01

Figure 6 Landing field length - Dry runway

5 Landing reference speed

This section gives information about the landing reference speed.



ICN-BD500-A-J000000-A-3AB48-25639-A-002-01

Figure 7 Landing reference speed

Ground maneuvering - Technical data

Applicability: 55001-59999

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References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Turning radii

1.1 Introduction

This data module contains data about the aircraft turning capability and maneuvering characteristics on the ground. The data is based on aircraft performance in good conditions of operation.

Thus, the values must be considered theoretical and used only as an aid. Refer to Table 2 for the values to use with Fig. 1 for the turn radii with 3 degree slip angle.

1.2 Landing gear turning radii, including minimum turning radii

Table 2 A220-300 turning radii for various nose wheel angles

Turning angle (in degrees) with 3 degree tire slip	Turning center to aircraft center line (D)	Nose tip (R1)	Nose gear outside face (R2)	Main gear outside face (R3)	Wing tip (R4)	Empennage tip (R5)	Minimum theoretical pavement width for 180 degrees turn (Tw= R2+R3)
17	1961.5 in. (49822.10 mm)	2094.2 in. (53192.68 mm	2063.6 in. (52415.44 mm	2120.4 in. (53858.16 mm)	2659 in. (67538.60 mm)	2307.1 in. (58600.34 mm	4148 in. (105359.20 mm)
27	1177 in. (29895.80 mm)	1386.9 in. (35227.26 mm	1333.4 in. (33868.36 mm)	1335.8 in. (33929.32 mm)	1878.6 in. (47716.44 mm)	1576.4 in. (40040.56 mm	2669.2 in (67797.68 mm)
37	795.8 in. (20213.32 mm)	1082.4 in. (27492.96 mm	1008.9 in. (25626.06 mm)	954.7 in. (24249.38 mm)	1500.9 in. (38122.86 mm)	1245.2 in. (31628.08 mm	1963.6 in. (49875.44 mm)
47	559.2 in. (14203.68 mm)	922.5 in. (23431.5 mm)	832.4 in. (21142.96 mm)	718.1 in. (18239.74 mm)	1267.5 in. (32194.50 mm)	1056.8 in. (26842.72 mm	1550.5 in. (39382.70 mm)
57	389.4 in. (9890.76 mm)	830.6 in. (21097.24 mm	727.5 in. (18478.50 mm)	548.3 in. (13926.82 mm)	1100.9 in. (27962.86 mm)	935.1 in. (23751.54 mm	1275.8 in. (32405.32 mm)
67	254.6 in. (6466.84 mm)	776.5 in. (19723.10 mm)	663.9 in. (16863.06 mm)	413.4 in. (10500.36 mm)	969.4 in. (24622.76 mm)	850.3 in. (21597.60 mm)	1077.4 in. (27365.96 mm)
77	138.5 in. (3517.90 mm)	746.6 in. (18963.64 mm	627.9 in. (15948.66 mm	297.3 in. (7551.42 mm)	856.9 in. (21765.26 mm)	788.5 in. (20027.90 mm)	925.4 in. (23505.16 mm)

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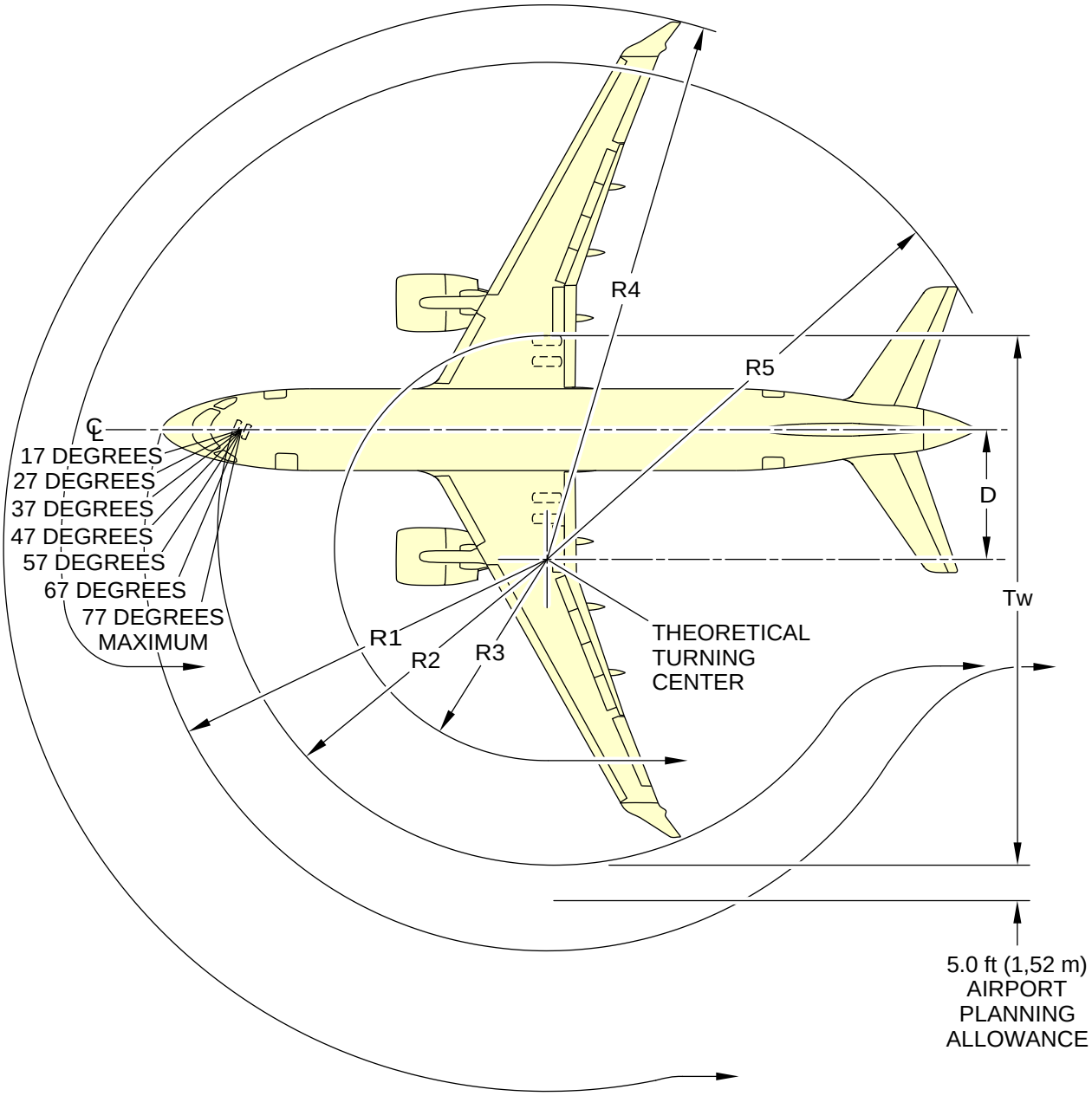


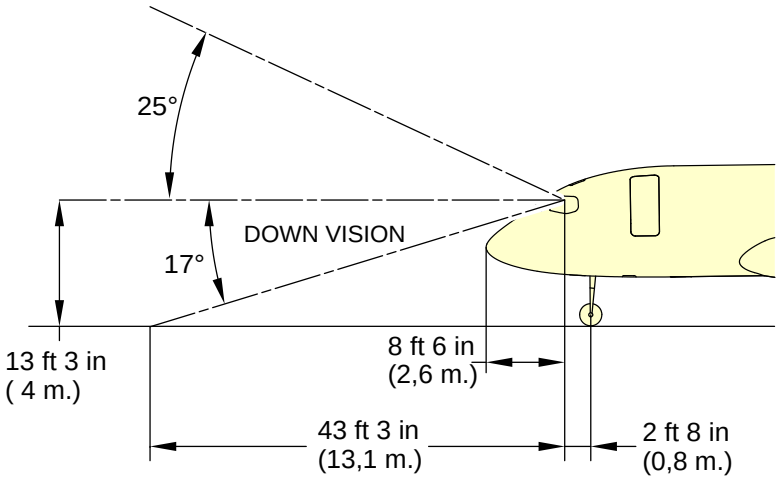
ICN-BD500-A-J092001-A-3AB48-00068-A-001-01

Figure 1 Turn radii

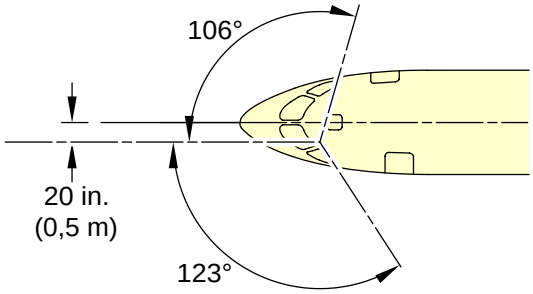
2 Visibility from cockpit in static position

This section contains data about the visibility from cockpit in static position for.

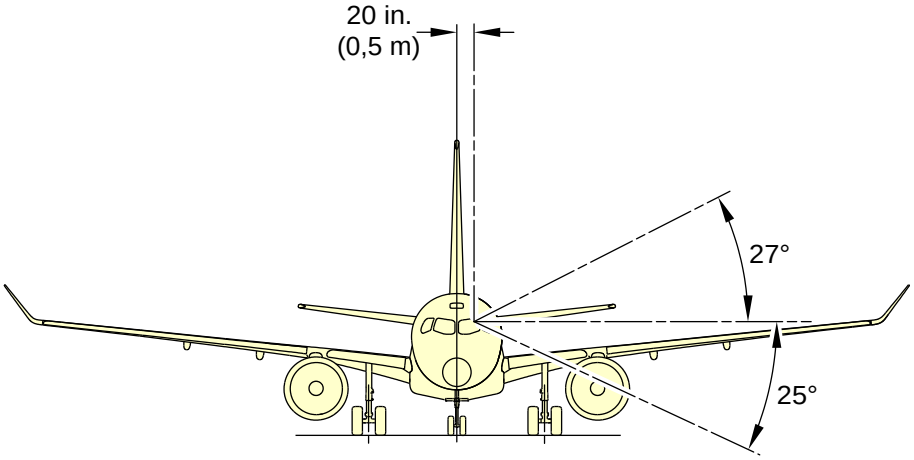
To see the diagram, refer to Fig. 3 .



VISUAL ANGLES IN VERTICAL PLANE THROUGH PILOT'S EYE POSITION



VISUAL ANGLES IN HORIZONTAL PLANE THROUGH PILOT'S EYE POSITION



VISUAL ANGLE IN A PLANE PERPEDNDICULAR TO LONGITUDINAL AXIS THROUGH PILOT'S EYE POSITION

NOTES

1. Not to be used for landing approach visibility.
2. Not scale.

ICN-BD500-A-J000000-A-3AB48-22579-A-001-01

Figure 2 Visibility from cockpit in static position

2.1 Clear areas of vision

To see the diagram, refer to Fig. 2 and Fig. 4 .

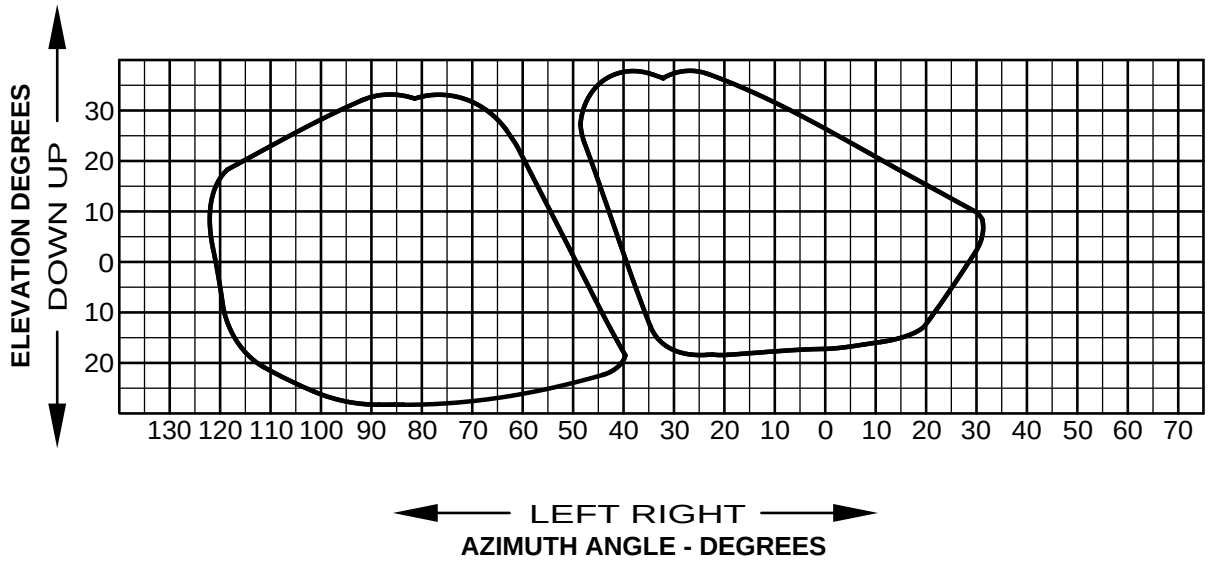


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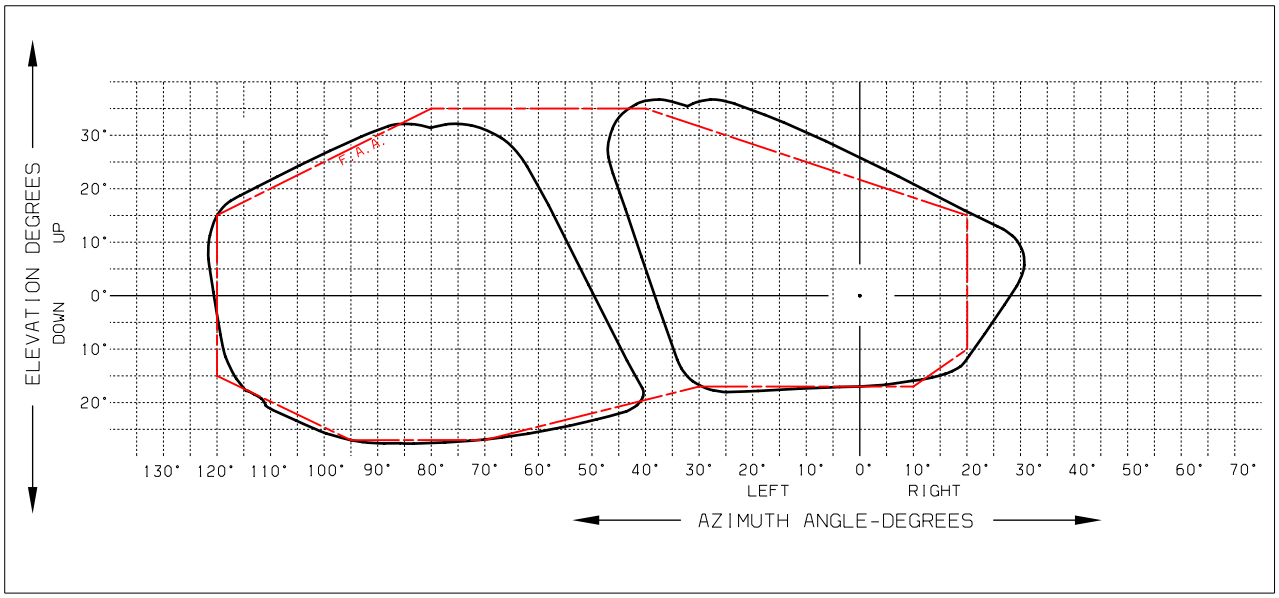
Figure 3 Clear areas of vision



ICN-BD500-A-J000000-A-3AB48-45615-A-001-01

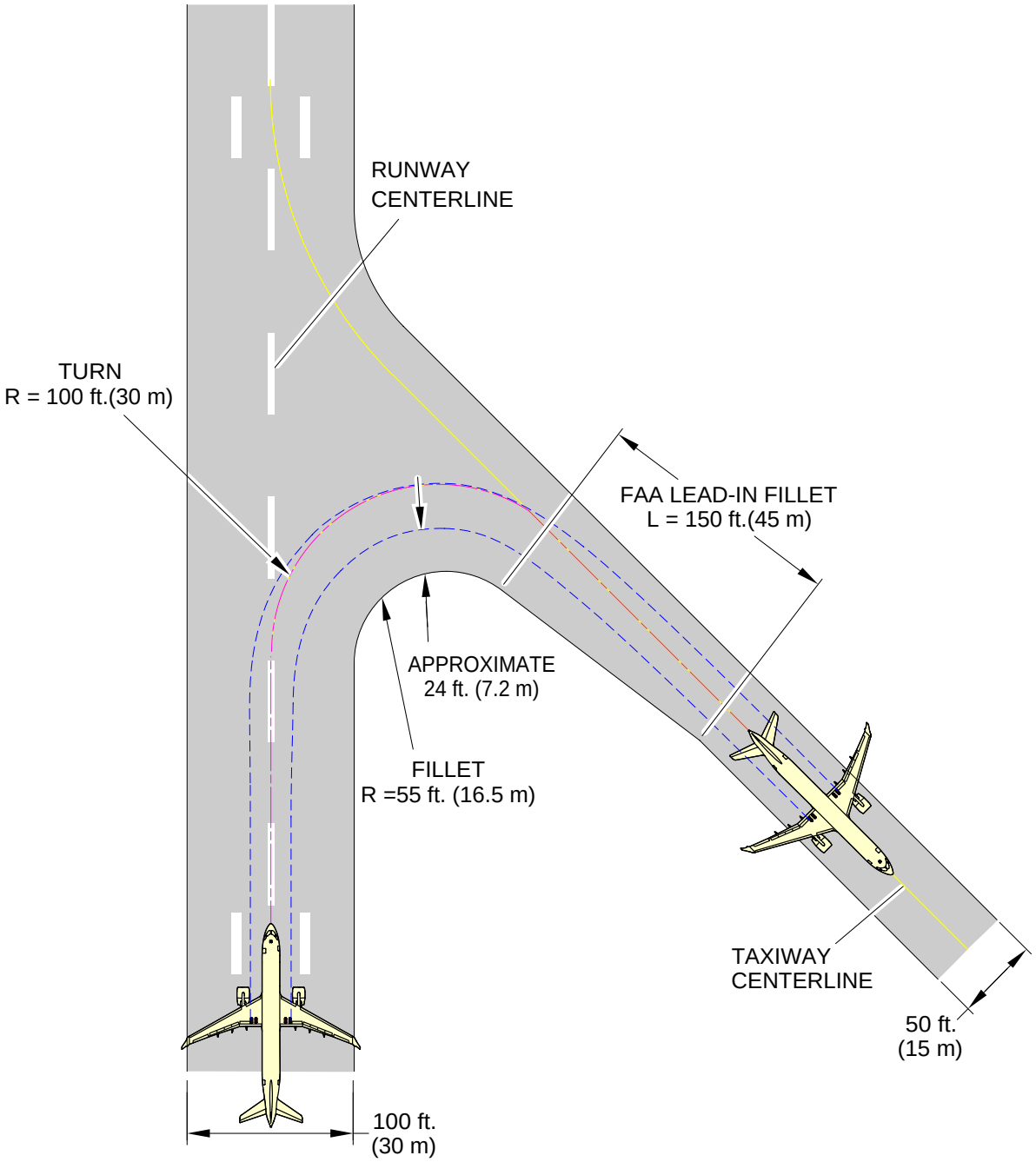
Figure 4 A220 Clear areas of vision

3 Runways and taxiways turn paths

This section contains data about the runways and taxiways turn paths.

3.1 More than 90° turn - Runway to taxiway - Cockpit over centerline method

To see the diagram, refer to Fig. 5 .



LEGEND

Nose gear.
Main gear.

NOTE

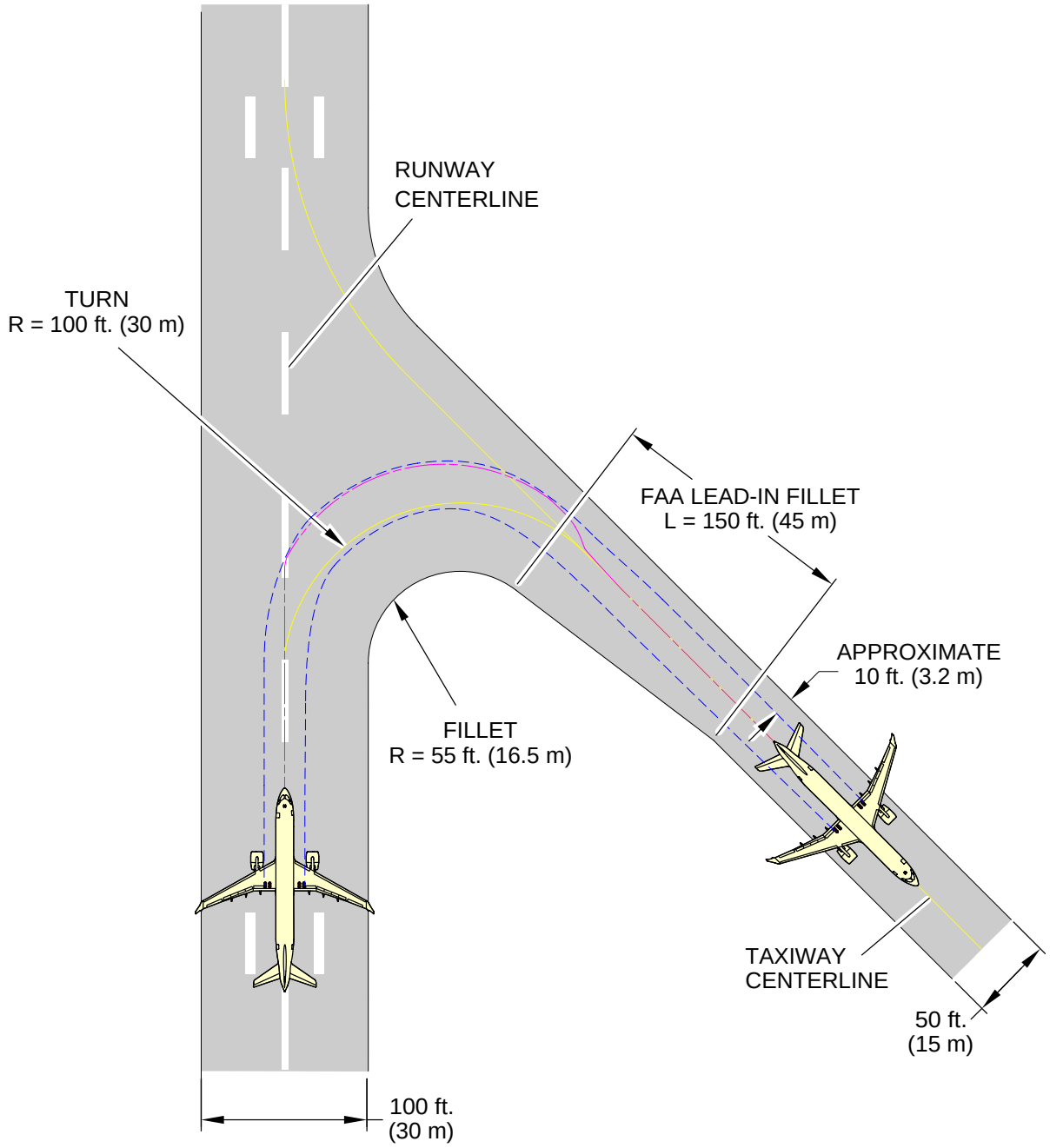
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-25563-A-001-01

Figure 5 More than 90° turn - Runway to taxiway - Cockpit over centerline method

3.2 More than 90° turn - Runway to taxiway - Oversteering method

To see the diagram, refer to Fig. 6 .



LEGEND

Nose gear.
Main gear.

NOTE

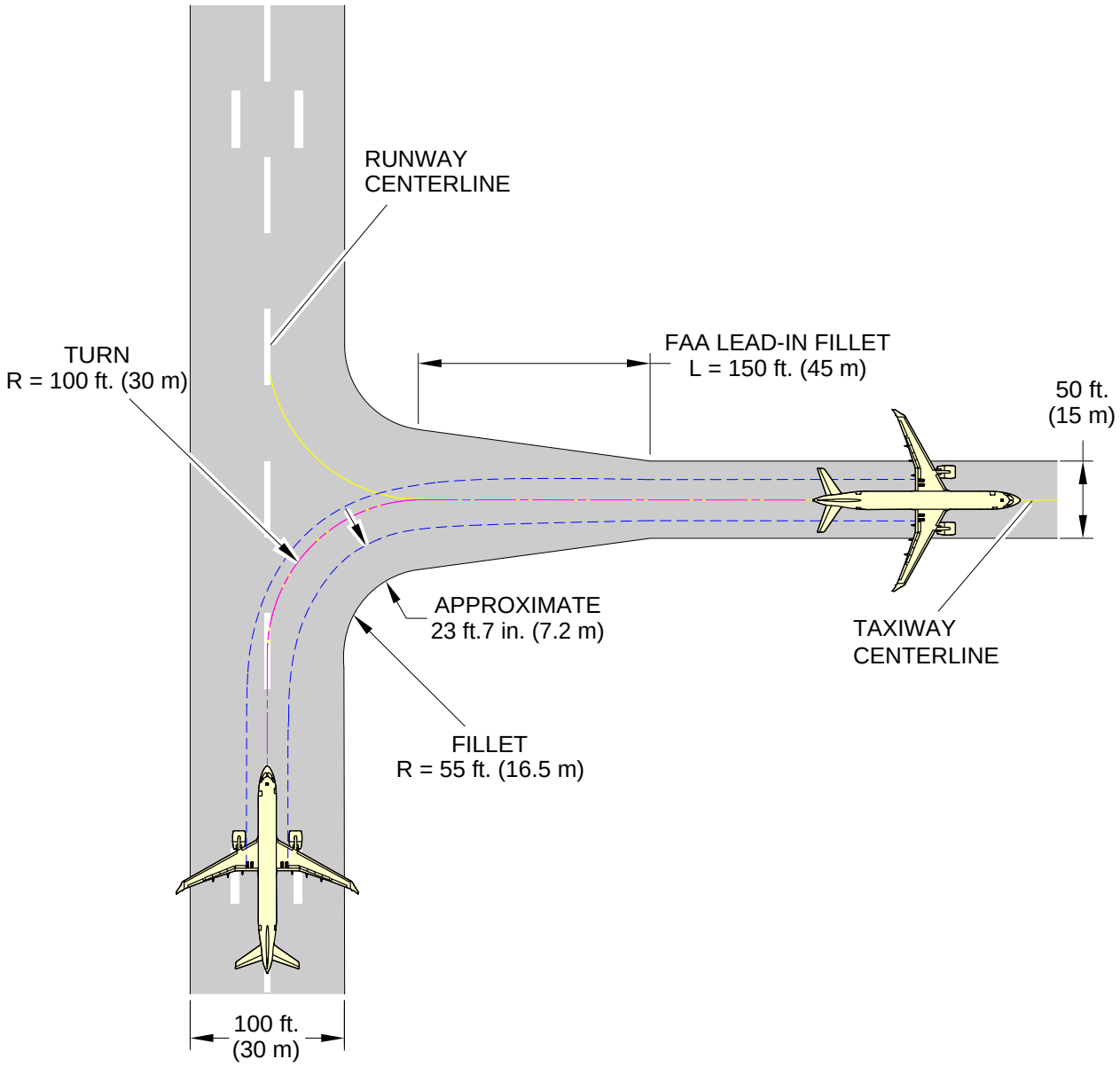
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-25564-A-001-01

Figure 6 More than 90° turn - Runway to taxiway - Oversteering method

3.3 90° turn - Runway to taxiway - Cockpit over centerline method

To see diagram, refer to Fig. 7 .



LEGEND

Nose gear.
Main gear.

NOTE

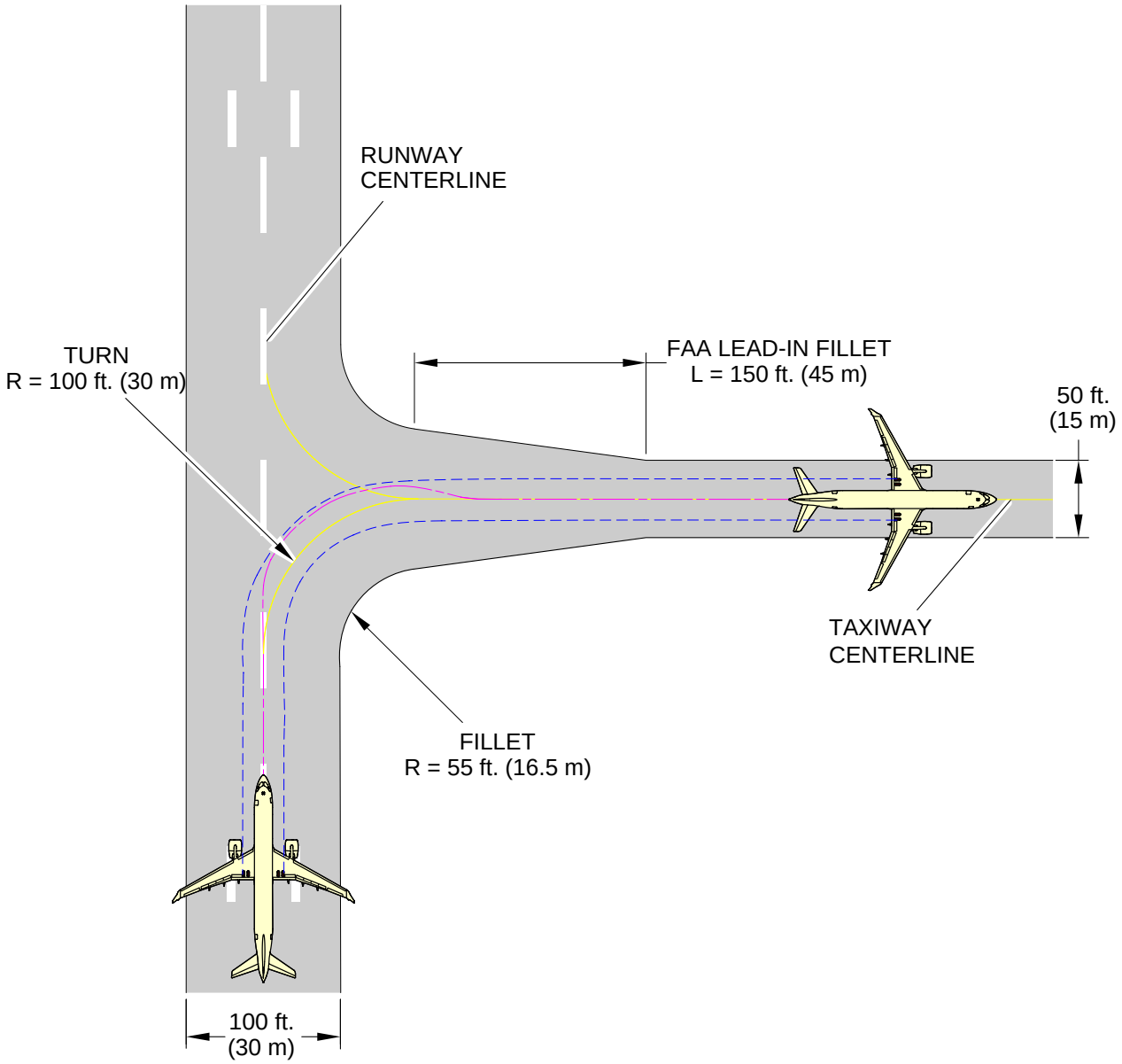
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-25565-A-001-01

Figure 7 90° turn - Runway to taxiway - Cockpit over centerline method

3.4 90° turn - Runway to taxiway - Oversteering method

To see the diagram, refer to Fig. 8 .



LEGEND

Nose gear.
Main gear.

NOTE

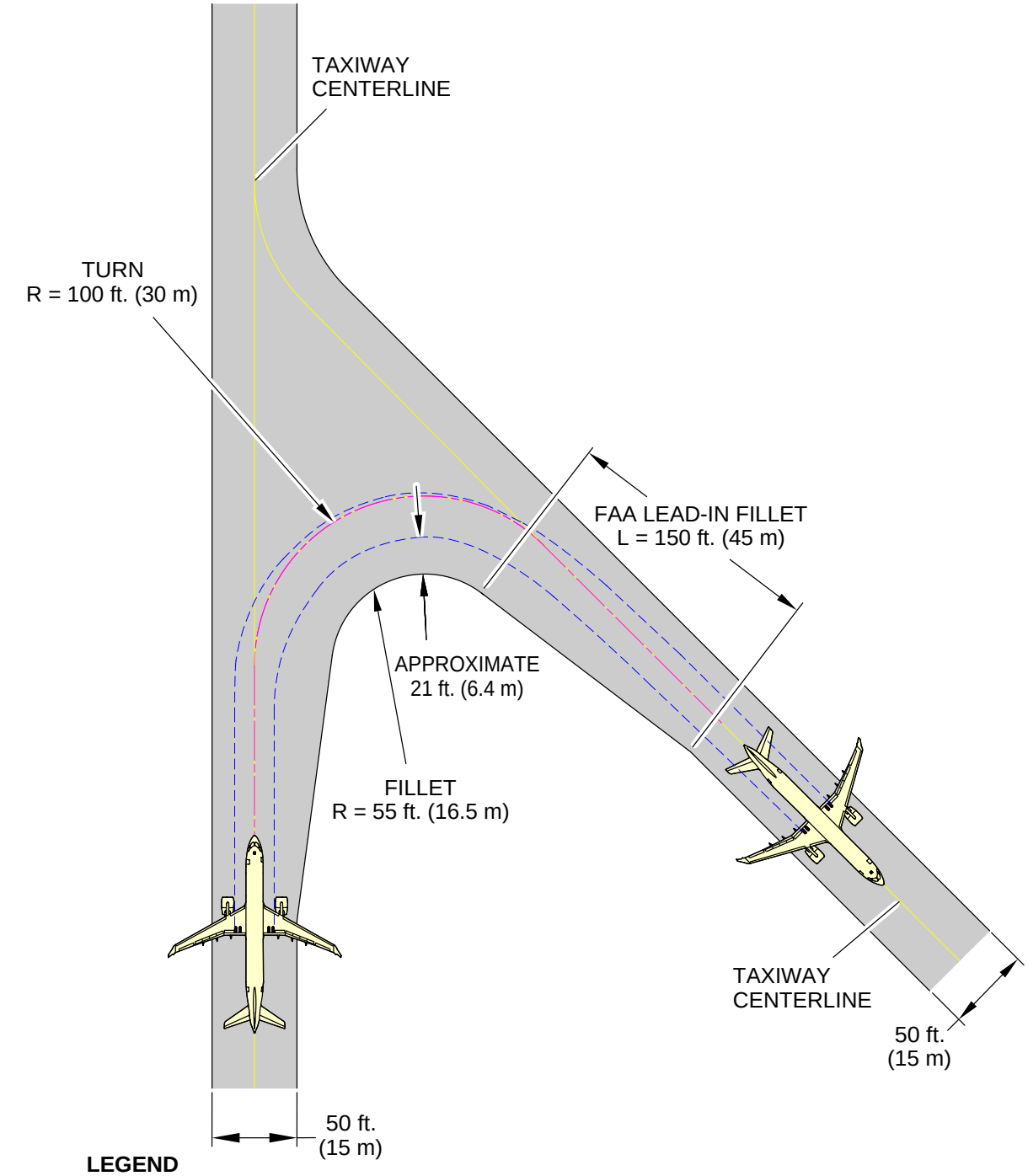
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-25566-A-001-01

Figure 8 90° turn - Runway to taxiway - Oversteering method

3.5 More than 90° turn - Taxiway to taxiway - Cockpit over centerline method

To see the diagram, refer to Fig. 9 .



LEGEND

Nose gear.
Main gear.

NOTE

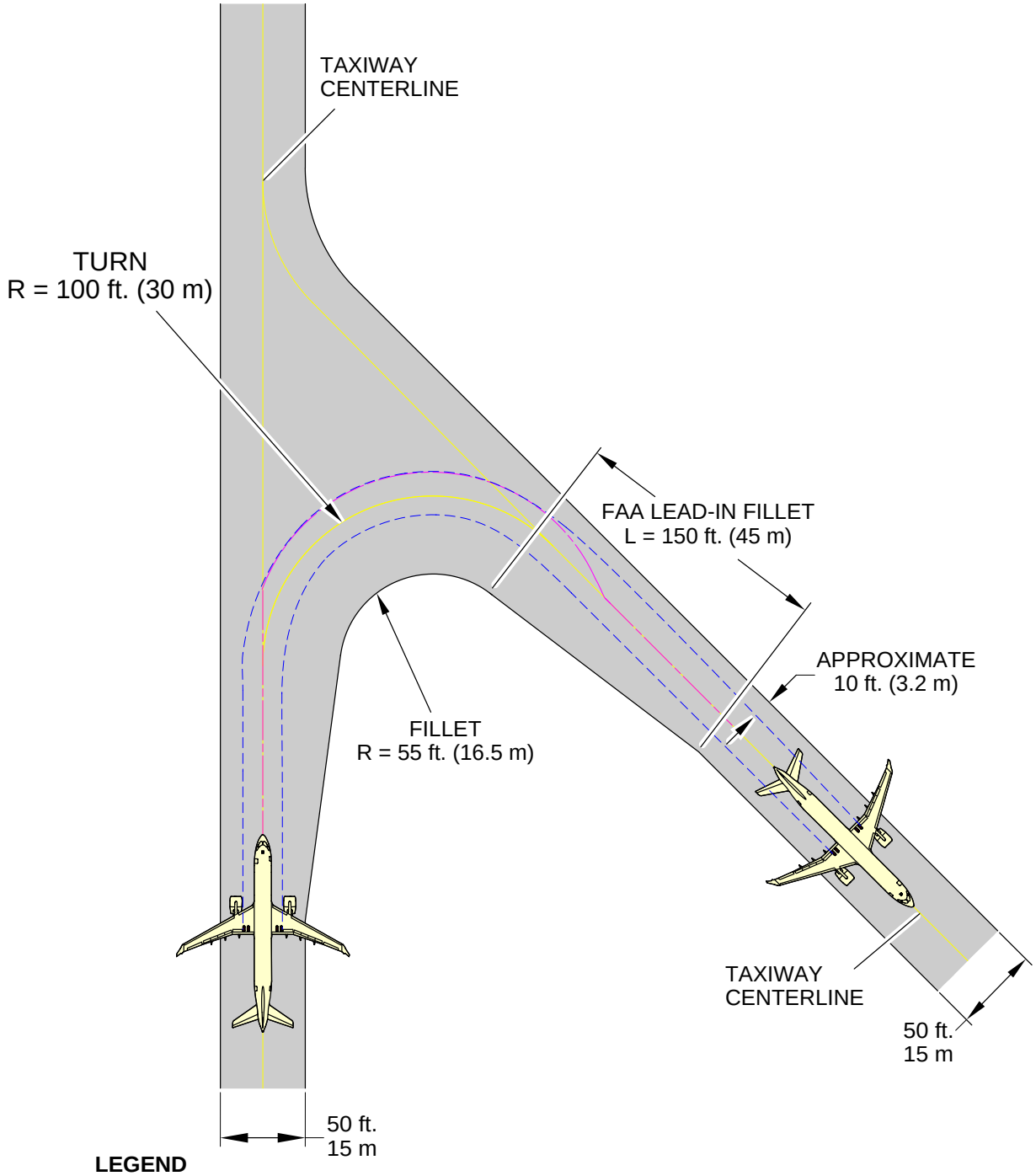
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-25567-A-001-01

Figure 9 More than 90° turn - Taxiway to taxiway - Cockpit over centerline method

3.6 More than 90° turn - Taxiway to taxiway - Oversteering method

To see the diagram, refer to Fig. 10 .



LEGEND

Nose gear.
Main gear.

NOTE

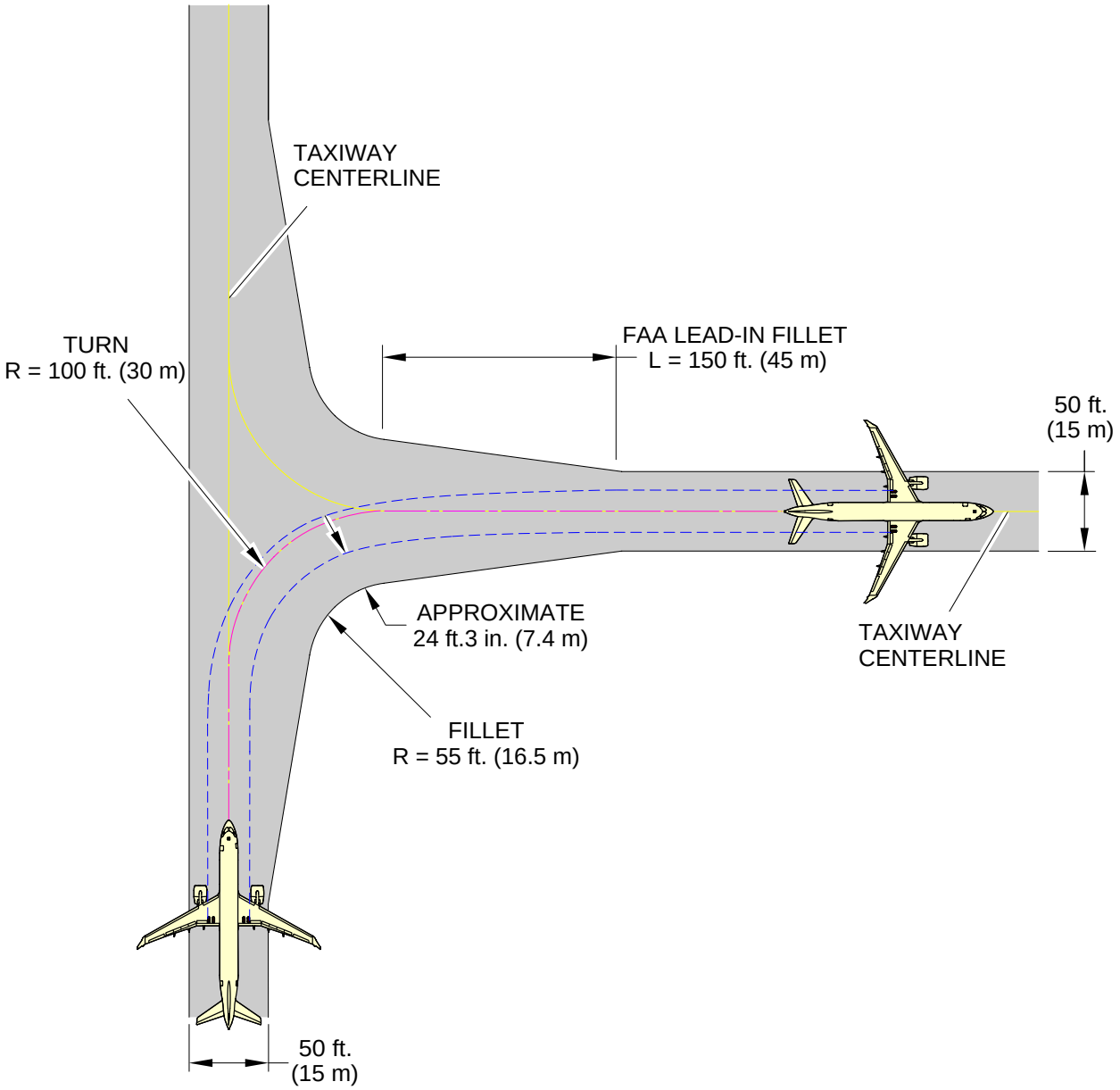
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-25568-A-001-01

Figure 10 More than 90° turn - Taxiway to taxiway - Oversteering method

3.7 90° turn - Taxiway to taxiway - Cockpit over centerline method

To see the diagram, refer to Fig. 11 .



LEGEND

Nose gear.
Main gear.

NOTE

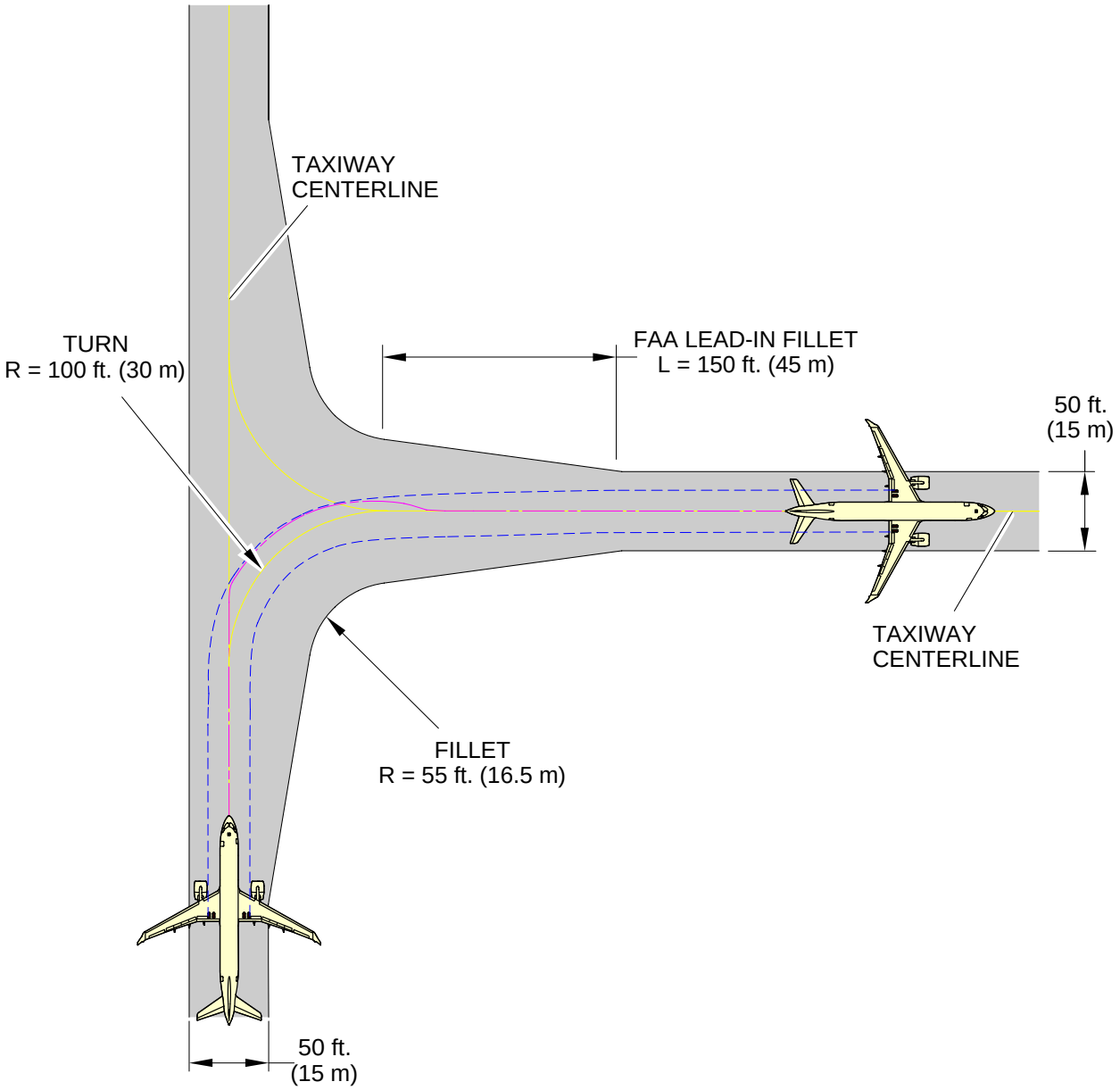
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-25569-A-001-01

Figure 11 90° turn - Taxiway to taxiway - Cockpit over centerline method

3.8 90° turn - Taxiway to taxiway - Oversteering method

To see the diagram, refer to Fig. 12 .



LEGEND

Nose gear.
Main gear.

NOTE

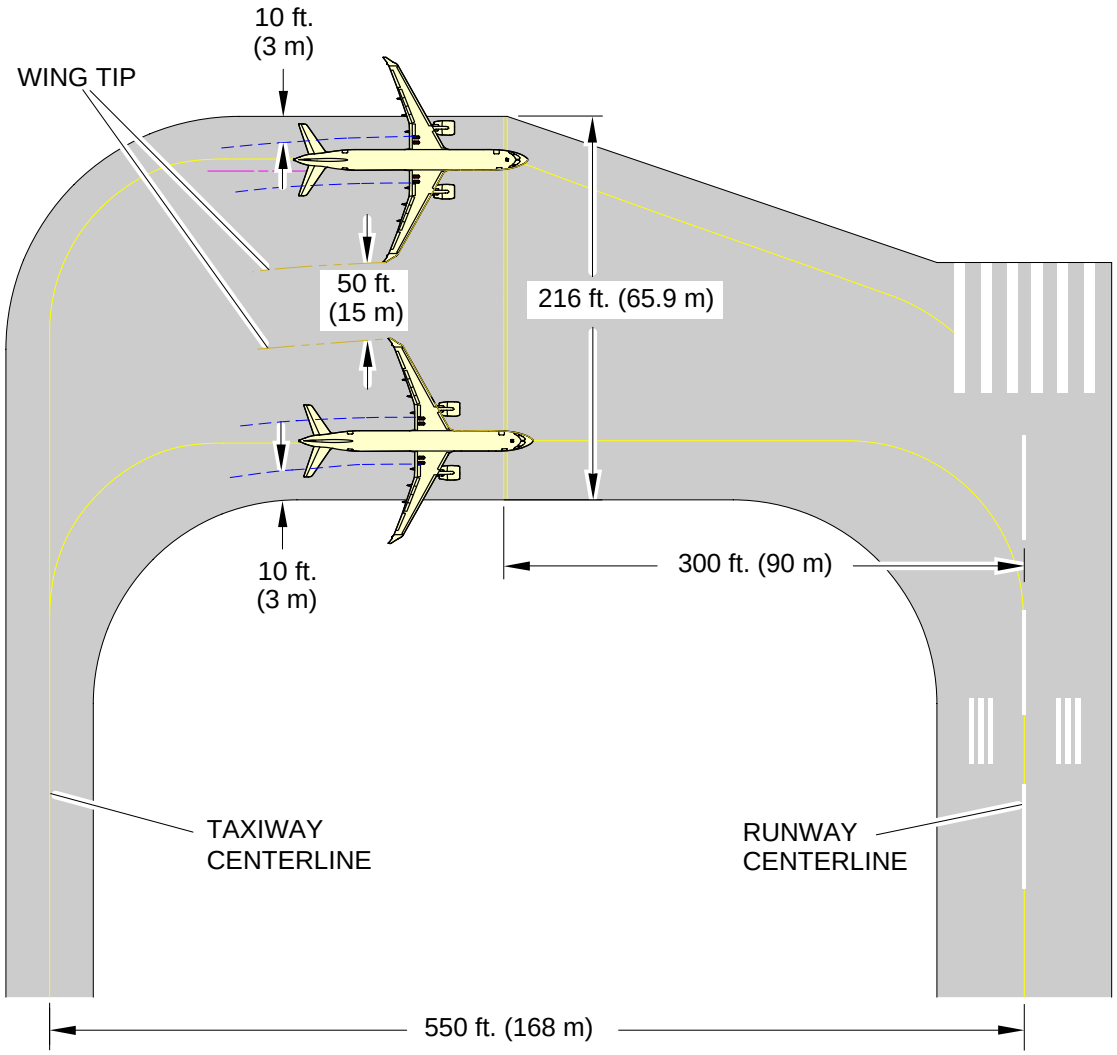
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-25570-A-001-01

Figure 12 90° turn - Taxiway to taxiway - Oversteering method

3.9 Runway holding bay (Apron)

To see the diagram, refer to Fig. 13



LEGEND

Nose gear.
Main gear.

NOTE

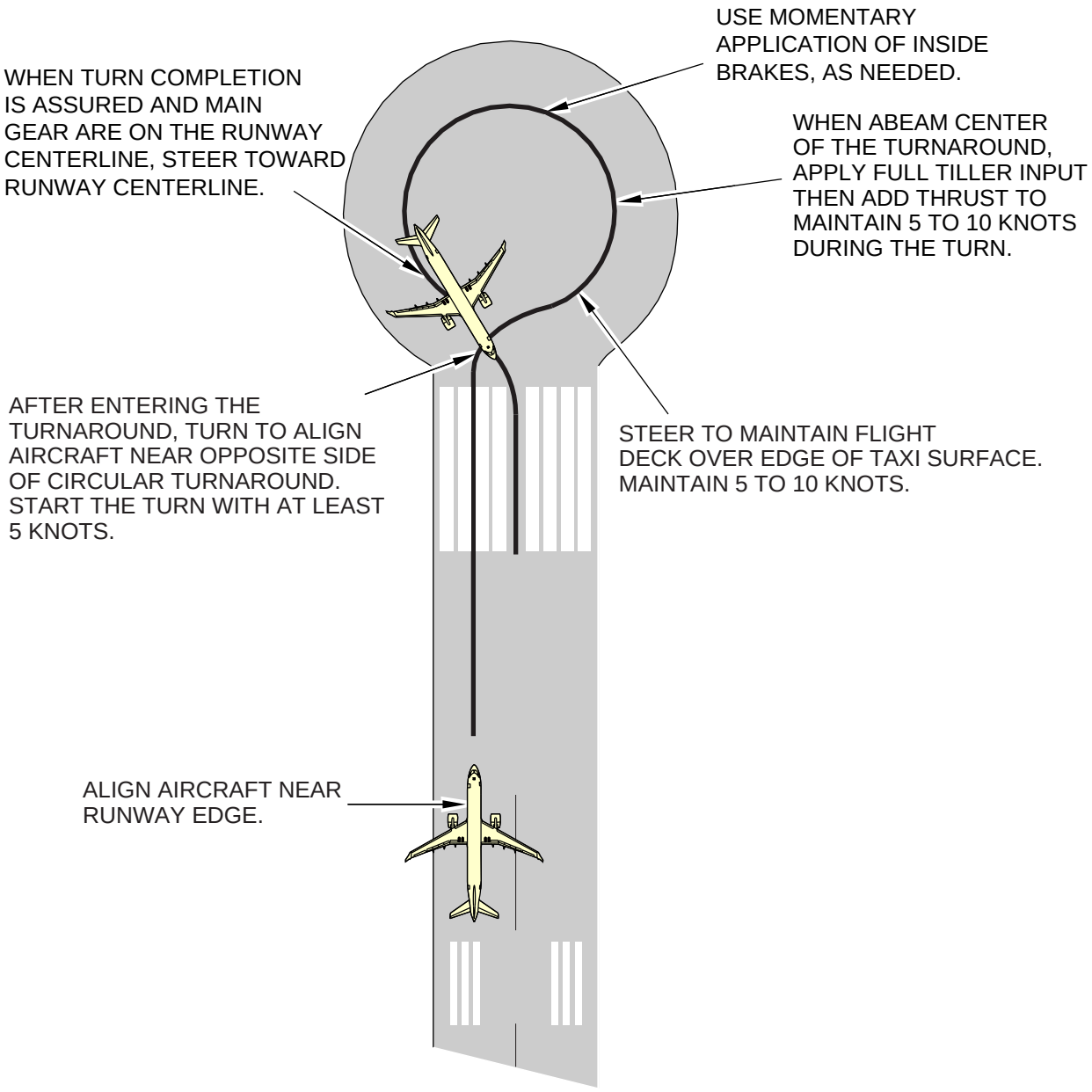
Coordinate with airline operator for the specific planned operating procedure.

ICN-BD500-A-J000000-A-3AB48-25571-A-001-01

Figure 13 Runway holding bay (Apron)

3.10 Hammerhead Turnaround

To see the diagrams, refer to Fig. 14 and Fig. 15 .

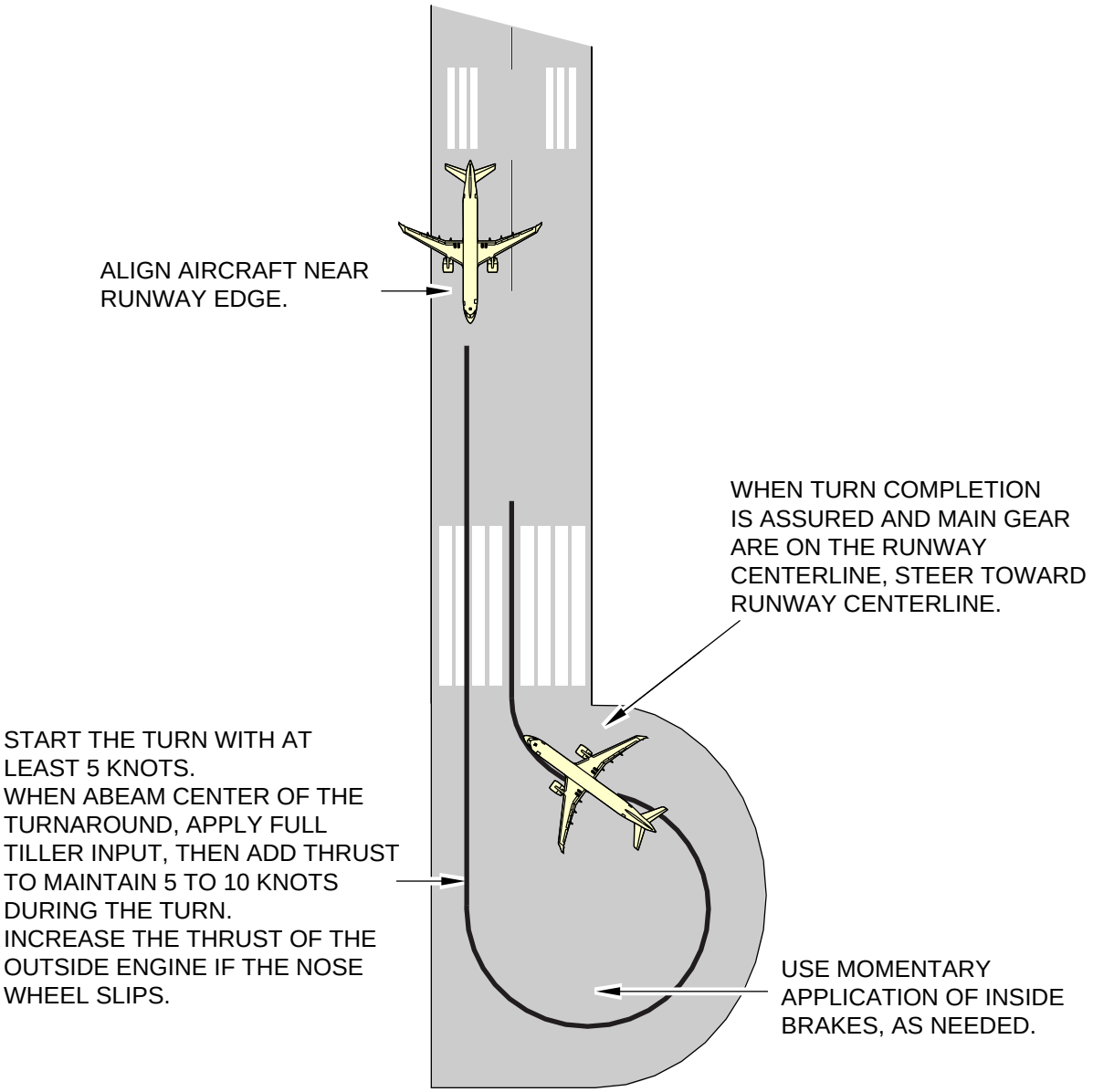


NOTE

Follow turnaround steering guidance cues if available.

ICN-BD500-A-J000000-A-3AB48-45728-A-001-01

Figure 14 Techniques when using a Hammerhead Turnaround



NOTE

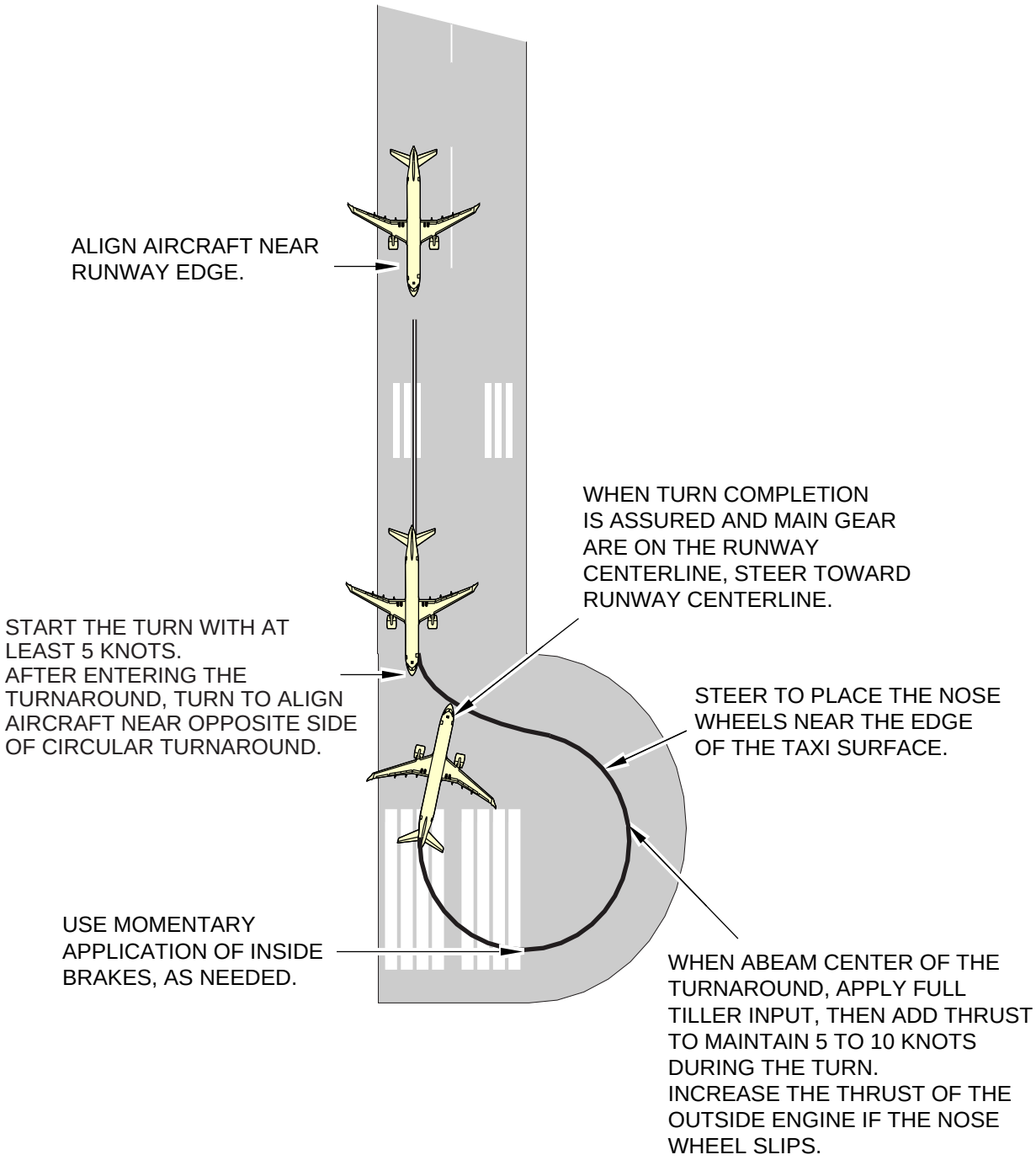
Follow turnaround steering guidance cues if available.

ICN-BD500-A-J000000-A-3AB48-45729-A-001-01

Figure 15 Techniques when using a Hammerhead Turnaround

3.11 180 Degree (Pivot) Turns in Less than 147.6 feet (45 m)

To see the diagram, refer to Fig. 16 .



NOTE

Follow turnaround steering guidance cues if available.

ICN-BD500-A-J000000-A-3AB48-45730-A-001-01

Figure 16 180 Degree (Pivot) Turns in Less than 147.6 feet / 45 m

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Terminal servicing - Technical data

Applicability: 55001-59999

Table of contents

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References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Introduction

This data module contains data related to the preparation of an aircraft for flight from a terminal. This data is provided to show the general types of tasks involved in terminal operations. Each airline has different operating conditions and practices, which can result in changes in the operating procedures and time intervals to do the tasks specified. Because of this, requirements for ground operations should be approved with the specified airline(s) before ramp planning is started. This section presents the following topics:

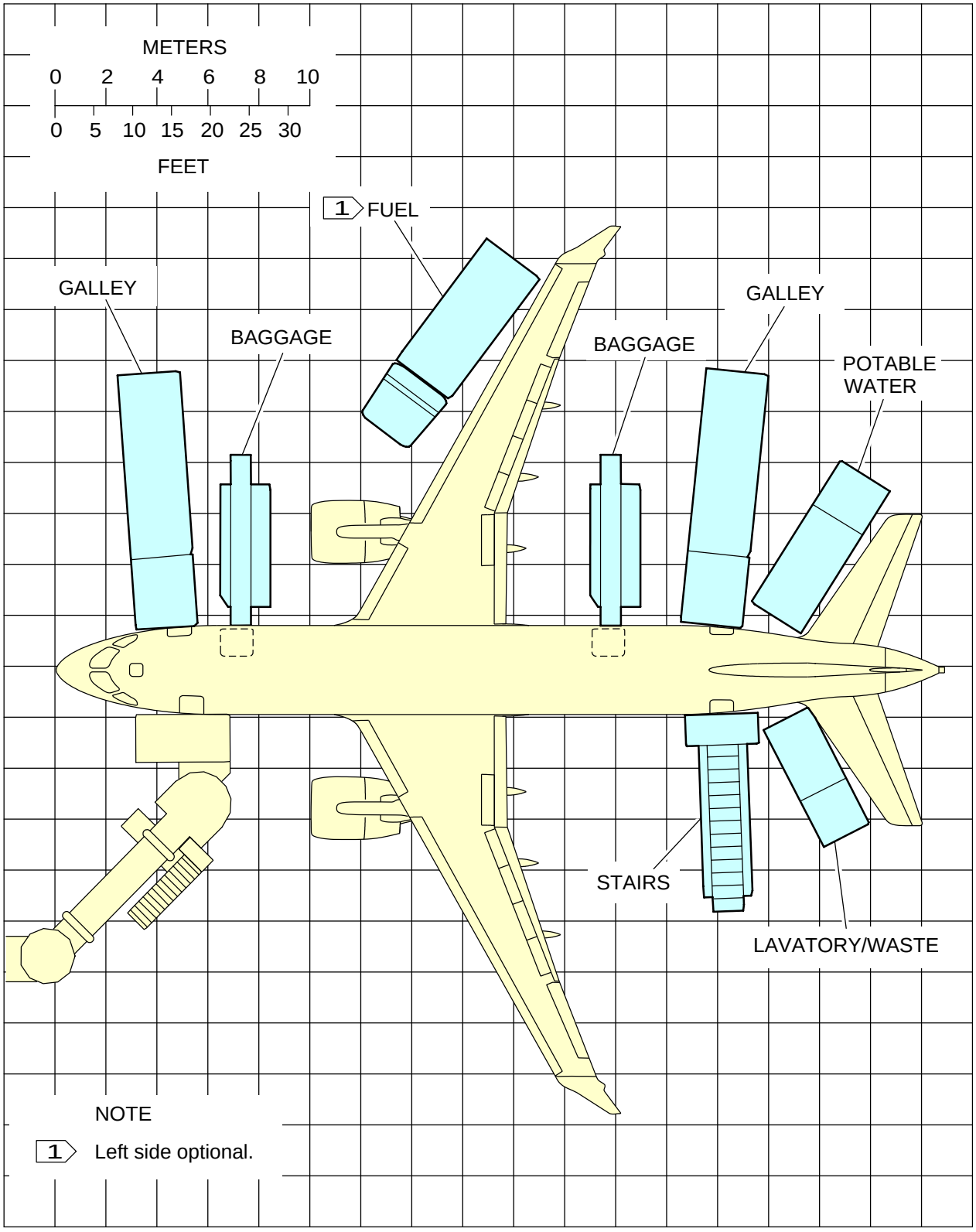
- Aircraft servicing arrangement
- Terminal operations
- Ground servicing connections
- Ground electrical power requirements
- Ground pneumatic power requirements – Engine starting
- Preconditioned airflow requirements – Air conditioning
- Ground towing requirements.

Note

All applicable procedures and limitations are provided in the Aircraft Maintenance Publication (AMP) BD500-3AB48-10200-00.

1.1 Aircraft servicing arrangement

Refer to Fig. 1 for the aircraft servicing arrangement.



ICN-BD500-A-J000000-A-3AB48-21739-A-001-01

Figure 1 Aircraft servicing arrangement

1.2 Terminal operations

Refer to refer to Fig. 2 for the turnaround station operations.

The turnaround time analysis is based on the following parameters:

- 100% Pax/baggage exchange
- 115 passengers (A220-300) (85% load factor) / 1 class / 1 door
- 2 Galley service trucks
- Water/Waste servicing is sequential
- Cabin servicing during available time
- Passenger deplane rate is 18 per minute per door
- Passenger boarding rate is 12 per minute per door
- 2 bulk-loading belt-loaders
- 59 bags forward / 79 bags aft (1.2 x 4 ft³ (1.2 X 0.11 m³) per passenger)
- Bag loading/unloading rates are 10 and 15 bags per minute
- Fuel loaded via one refuel/defuel adapter
- Refuel adapter rate at 50 psi (344.74 kPa) is as follows:
  1. When refueling tree (3) tanks simultaneously (the center tank and two wing tanks), the refuel rate is 260 gpm (984 L/min).
  2. When refueling two (2) wing tanks, the refuel rate is 140 gpm (530 L/min).
  3. When refueling the center tank only, the refuel rate is 140 gpm (530 L/min).
- Mission range is 1200 NM (2222.4 km)
- Refueling performed while deplaning/boarding.

Note

All equipment is assumed to function properly and weather condition to be normal. This data is provided to illustrate the general scope and type of operations involved in a terminal gate environment. Varying operating practices and circumstances may result in different task sequences and durations.

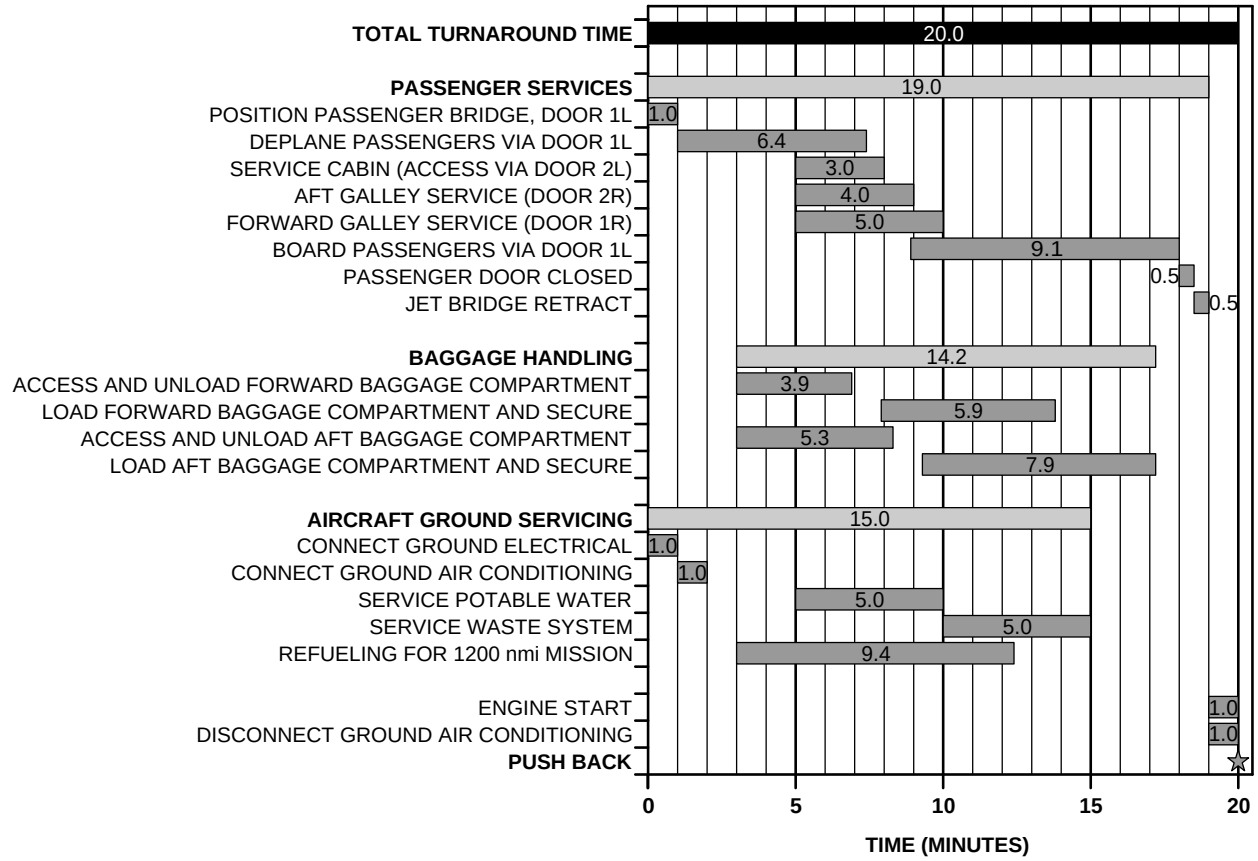


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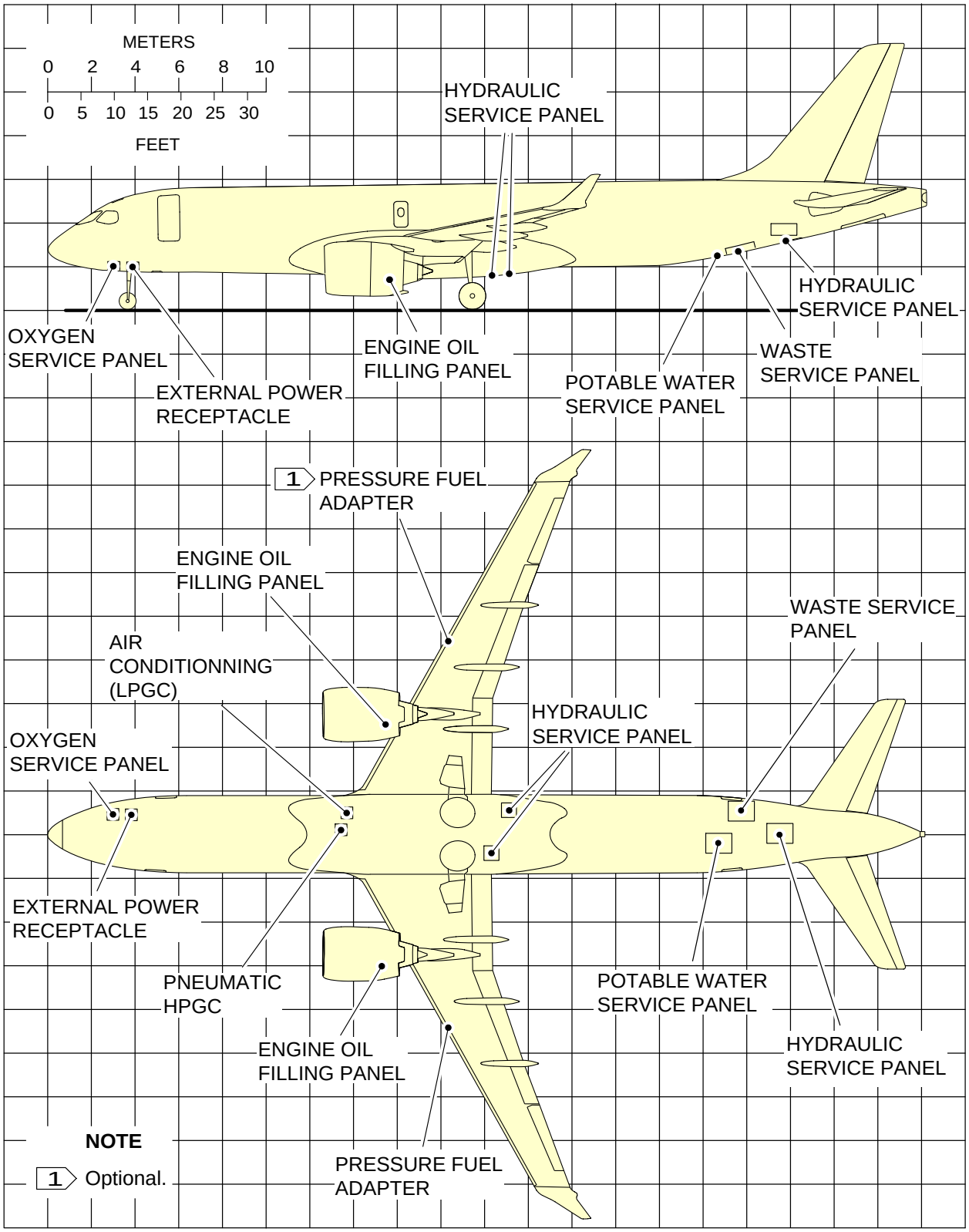
Figure 2 Turnaround time analysis

1.3 Ground servicing connections

Refer to Fig. 3 for the ground servicing connection points. For servicing procedures, refer to the AMP.

All servicing points are designed and positioned to consider accessibility and compatibility with industry standard vehicles and other Ground Support Equipment (GSE). All applicable procedures and limitations are provided in the AMP.



ICN-BD500-A-J000000-A-3AB48-25644-A-001-01

Figure 3 Ground servicing connections

Table 2 Hydraulic system

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
System # 1 Access door 195CB	67.96 (20.71)	-	3.93 (8.20)	5.82 (1.77)
System # 2 Access door 195AB	65.543 (19.98)	2.795 (0.85)	-	5.57 (1.70)
System # 3 Aft equipment bay door	107.42 (32.74)	On centerline of the aircraft		8.77 (2.67)

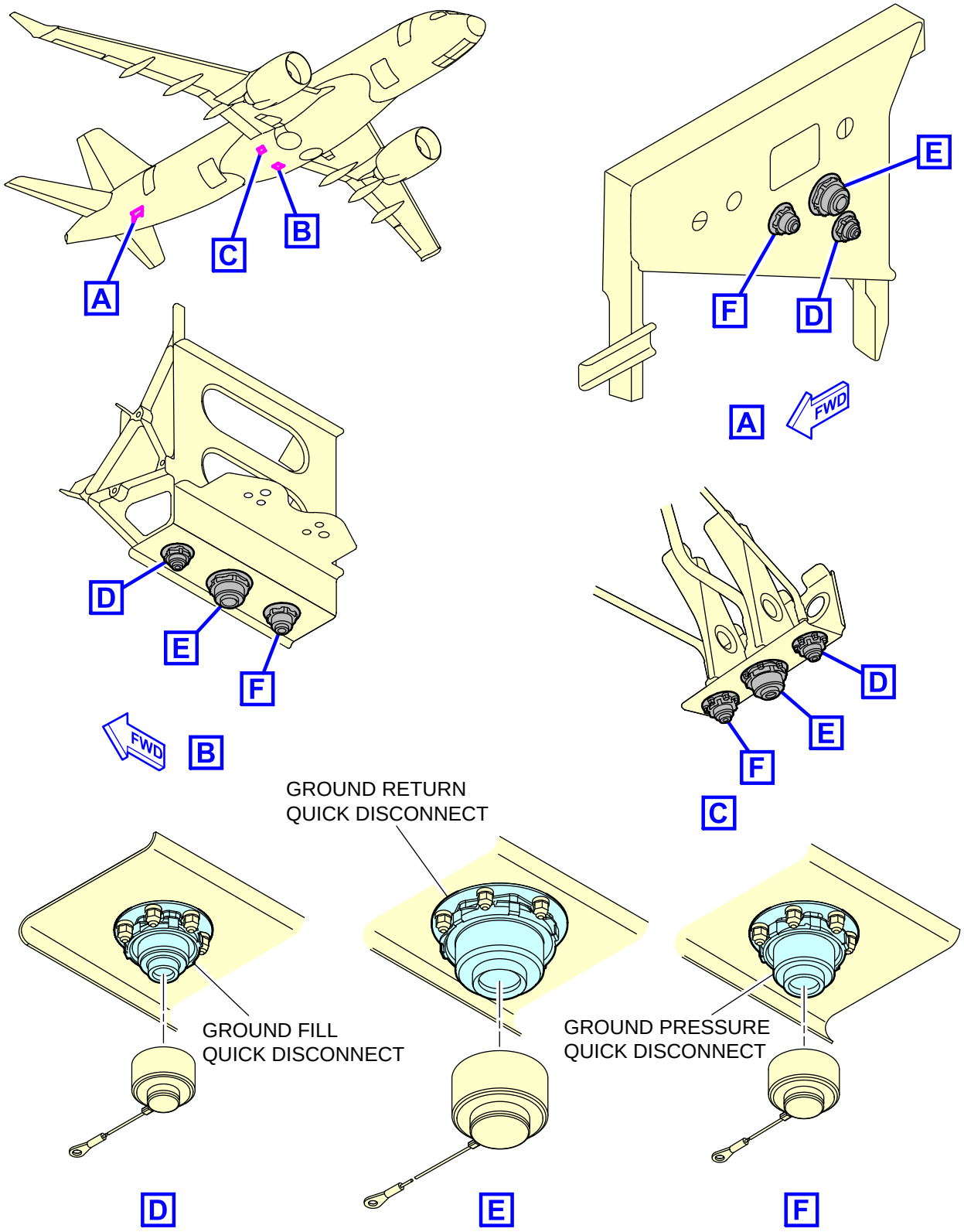
Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

Technical specifications

- Nominal pressure: 3000 psig (206.84 bar)
- Fitting connectors
  - Fitting dimension: Draining: 4 in. (10.16 cm)
  - Fitting dimension: Rinsing: 1 in. (2.54 cm)



ICN-BD500-A-J291400-C-3AB48-15827-A-001-01

Figure 4 Ground servicing system

Table 3 Hydraulic system - Accumulator charging

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Aft equipment bay door	107.42 (32.74)	On centerline of the aircraft		8.77 (2.67)

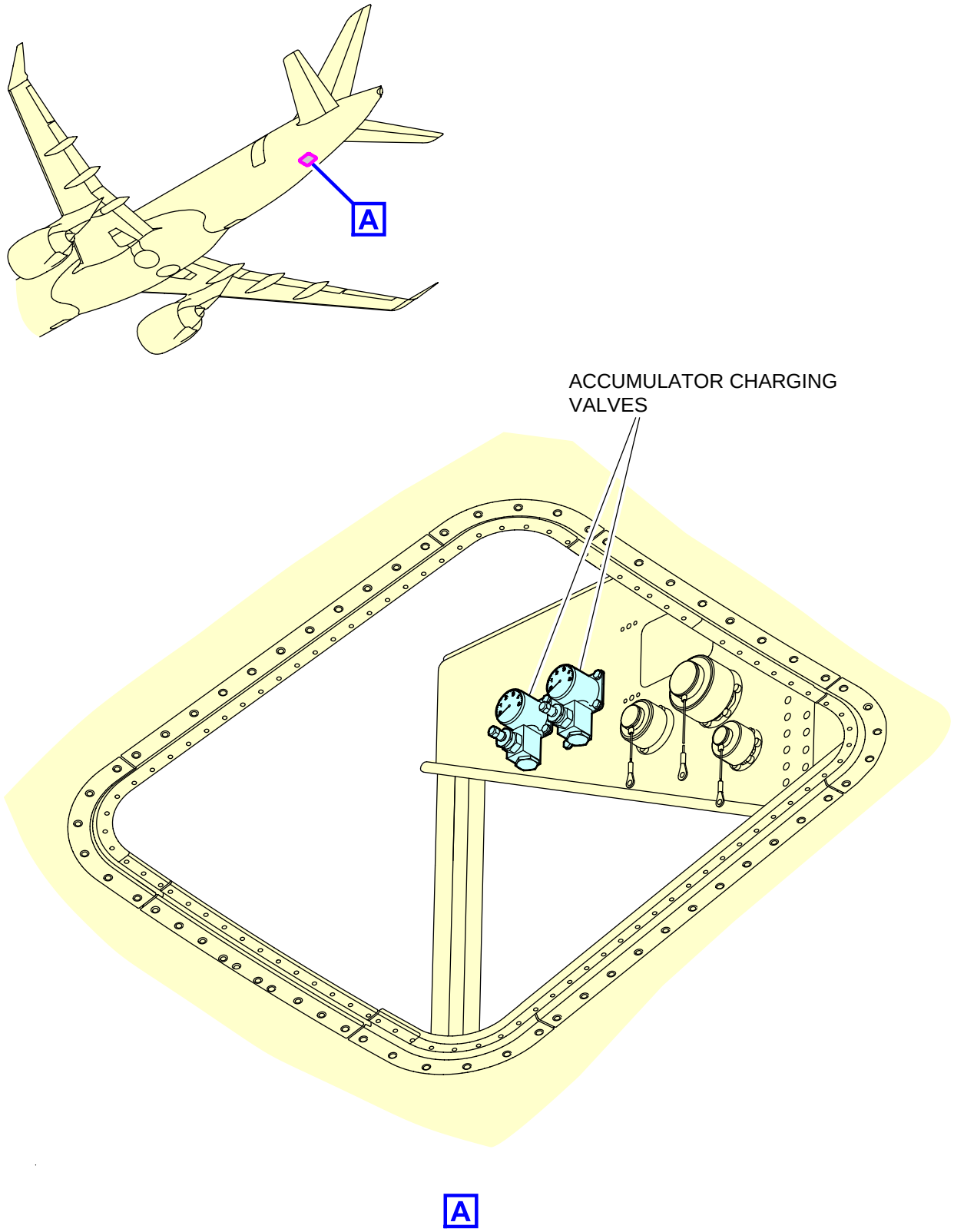
Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

Technical specifications

- Operating pressure: 3000 psig (206.84 bar)
- Accumulator pressure gauge range: 0 to 5000 psig (344.74 bar)
- Gauge accuracy: ±75 psig (5.17 bar)



ICN-BD500-A-J000000-A-3AB48-22071-A-001-01

Figure 5 Accumulator charging valves

Table 4 Waste system

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Access door 146BR	99.10 (30.21)	-	1.21 (0.37)	7.14 (2.18)

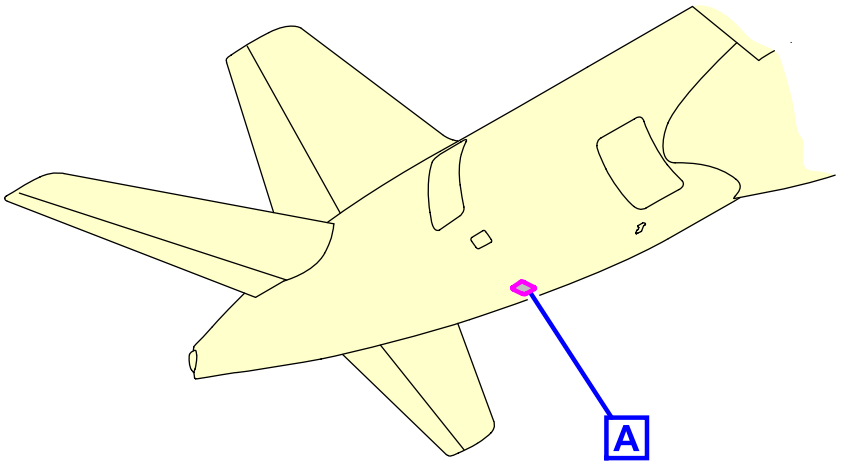
Note

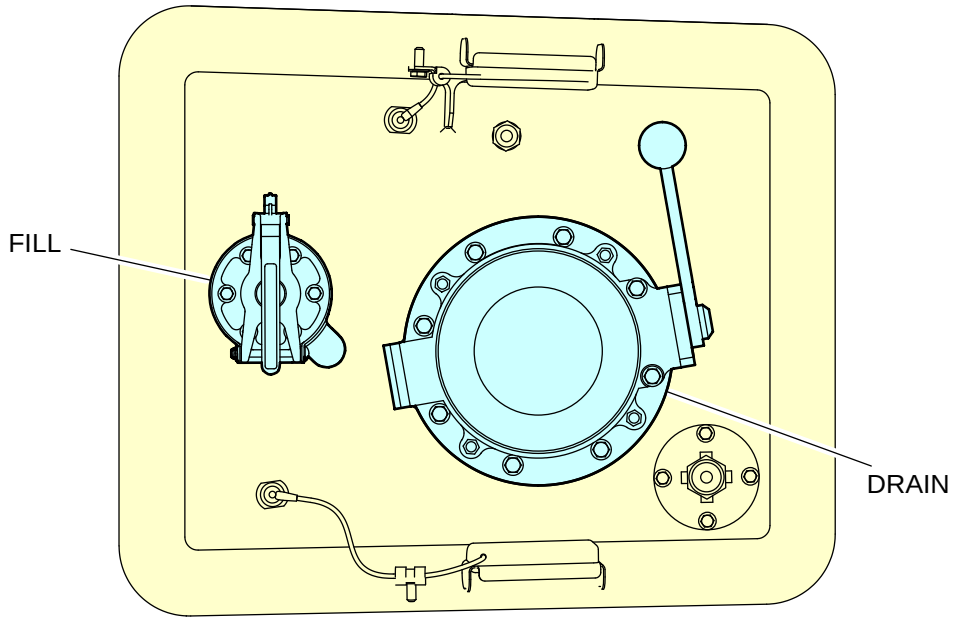
All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

Technical specifications

- Usable volume: 38 U.S. gal (143.85 L)
- Fitting connectors
  - Fitting dimension: Draining: 4 in. (10.16 cm)
  - Fitting dimension: Rinsing: 1 in. (2.54 cm)





WASTE ACCESS PANEL

A

ICN-BD500-A-J000000-A-3AB48-22008-A-001-01

Figure 6 Waste system access panel

Table 5 Potable water system

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Access door 146CR	97.05 (29.58)	3.661 (1.11)	-	7.75 (2.36)

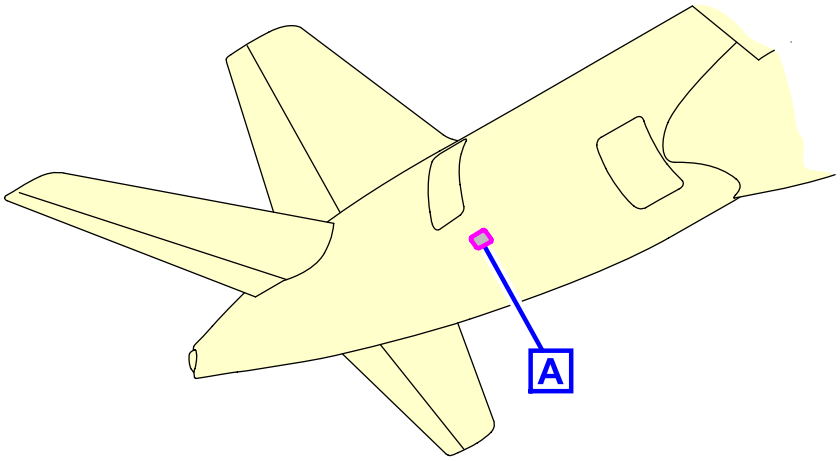
Note

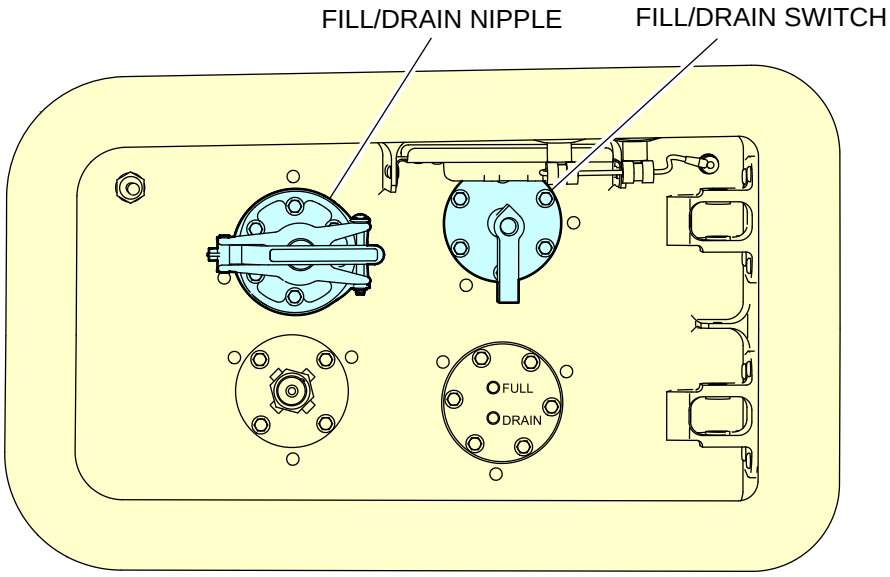
All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

Technical specifications

- Usable volume: 42 U.S. gal (158.99 L)
- Fitting dimension: Filling/Draining: 3/4 in. (1.905 cm)





POTABLE WATER SERVICE PANEL

A

ICN-BD500-A-J000000-A-3AB48-22007-A-001-01

Figure 7 Potable water system service panel

Table 6 Pneumatic system

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
LPGC Access door 191BB	44.76 (13.64)	-	4.33 (1.32)	5.30 (1.61)
HPGC Access door 191AB	44.38 (13.53)	-	1.30 (0.40)	4.62 (1.41)

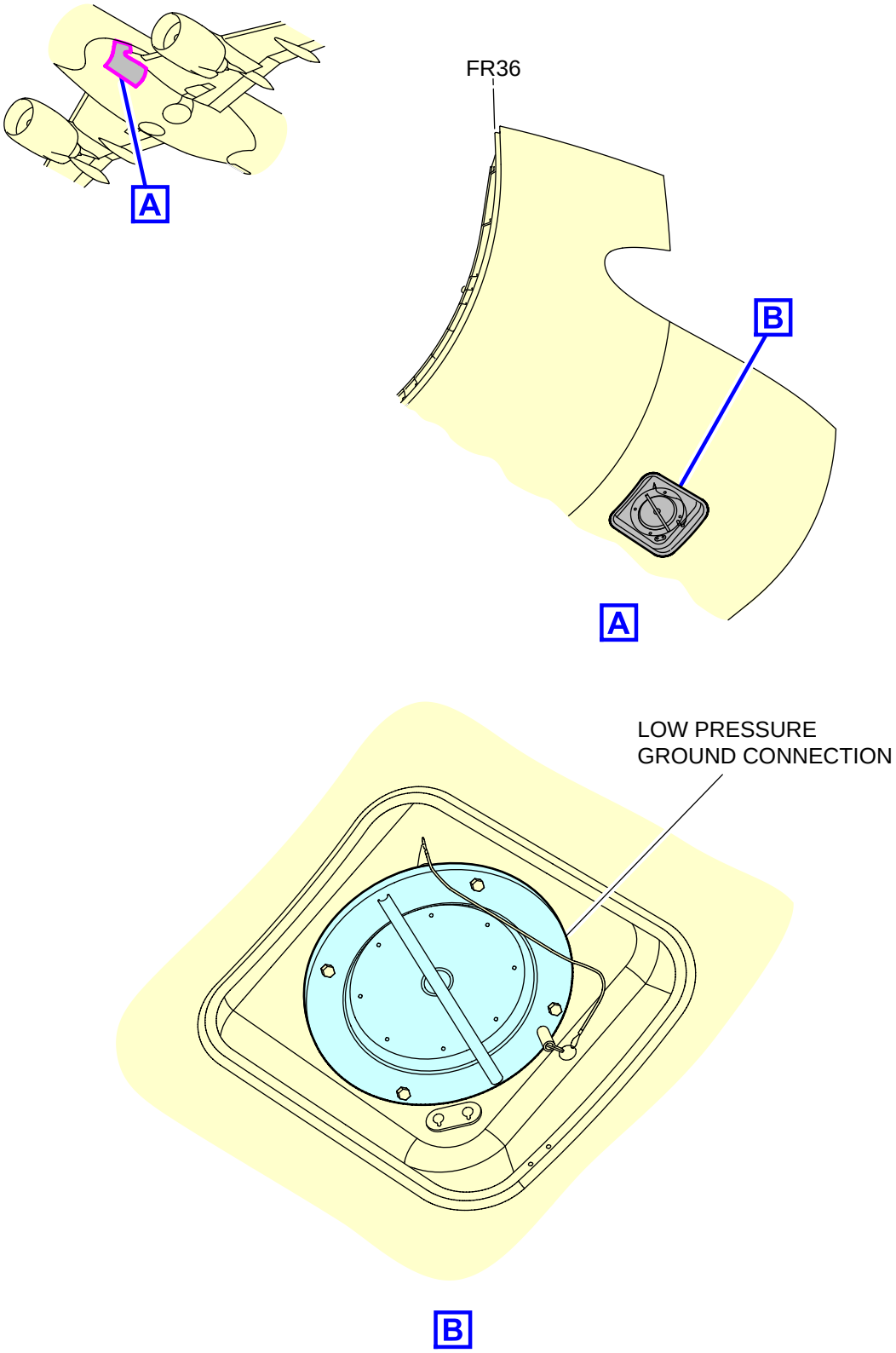
Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

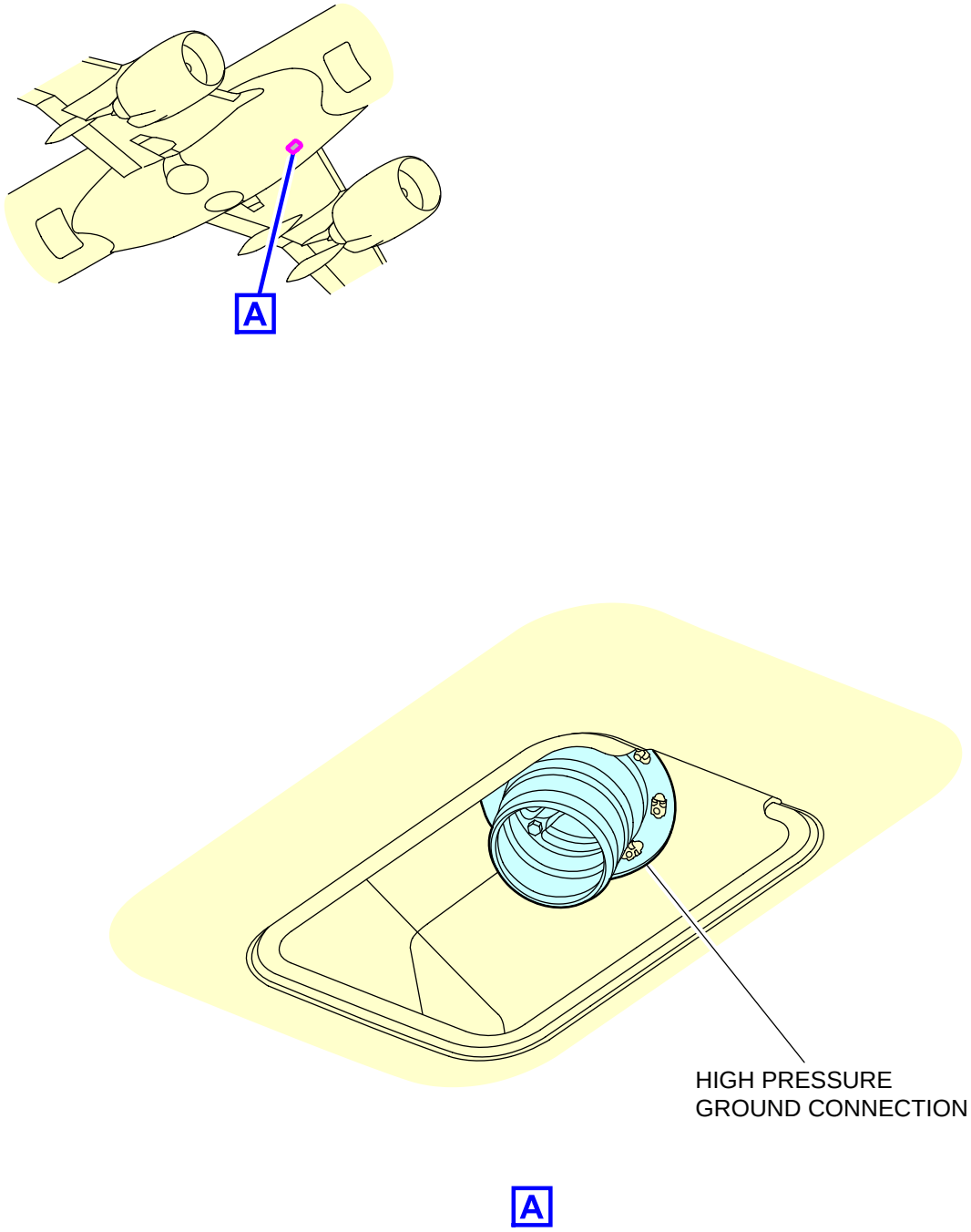
Technical specifications

- **Low Pressure Ground Connection (LPGC) Spec**
  - Discharge pressure range: 0.7 to 1.0 psig maximum (0.05 to 0.07 bar maximum)
  - Temp range: 41 to 122 °F maximum (5 to 50 °C maximum)
  - Max airflow: 140 lb/min
  - Fitting dimension: 8 in. (20.32 cm)
  - LP Ground Cart Standard pneumatic connection per ISO 1034 or MS 33562
- **High Pressure Ground Connection (HPGC) Spec**
  - Bleed pressure range: 30 to 45 psig maximum (2.07 to 3.10 bar maximum)
  - Bleed temperature range: 338 to 450 °F (170 to 232 °C)
  - Airflow range: 100 to 140 lb/min
  - Fitting dimension: 3 in. (7.62 cm)
  - HP Ground Cart Standard pneumatic connection per ISO 2026 or MS 33740



ICN-BD500-A-J212100-C-3AB48-19016-A-001-01

Figure 8 Low pressure ground system



ICN-BD500-A-J361500-C-3AB48-15114-A-001-01

Figure 9 High pressure ground system

Table 7 Electrical System

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Access door Access door 115DL	11.71 (3.57)	-	2.68 (0.82)	6.37 (1.94)

Note

All distances are approximate.

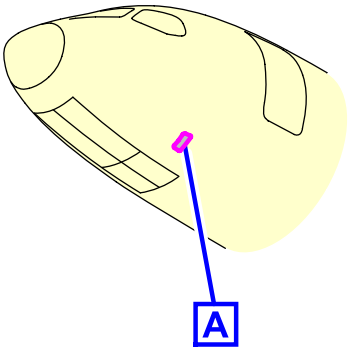
All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

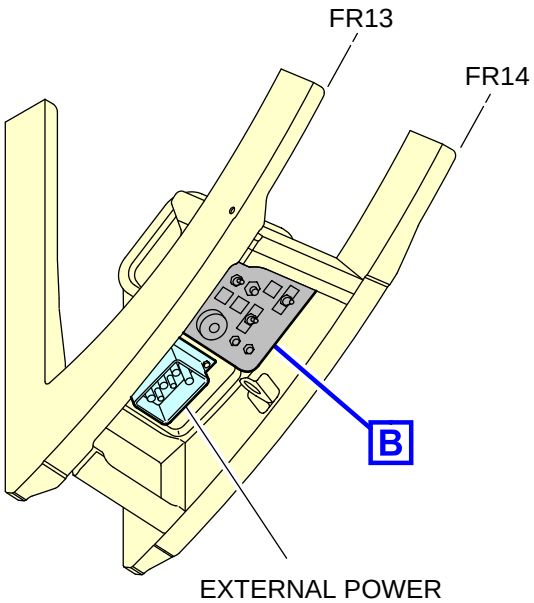
Technical specifications

- Power supply: 115 V Alternating Current (AC) External Power Receptacle

Note

For more specification about the electrical system, refer to Para. 1.4 .





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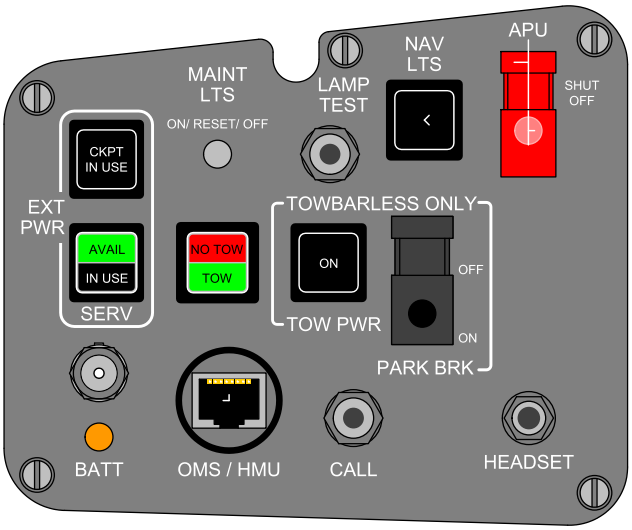


ELECTRICAL/TOWING SERVICE PANEL

B

ICN-BD500-A-J000000-A-3AB48-22070-A-001-01

Figure 10 Electrical service panel

Table 8 Oxygen system

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Access door 115CL	10.20 (3.11)	-	2.60 (0.79)	6.44 (1.96)

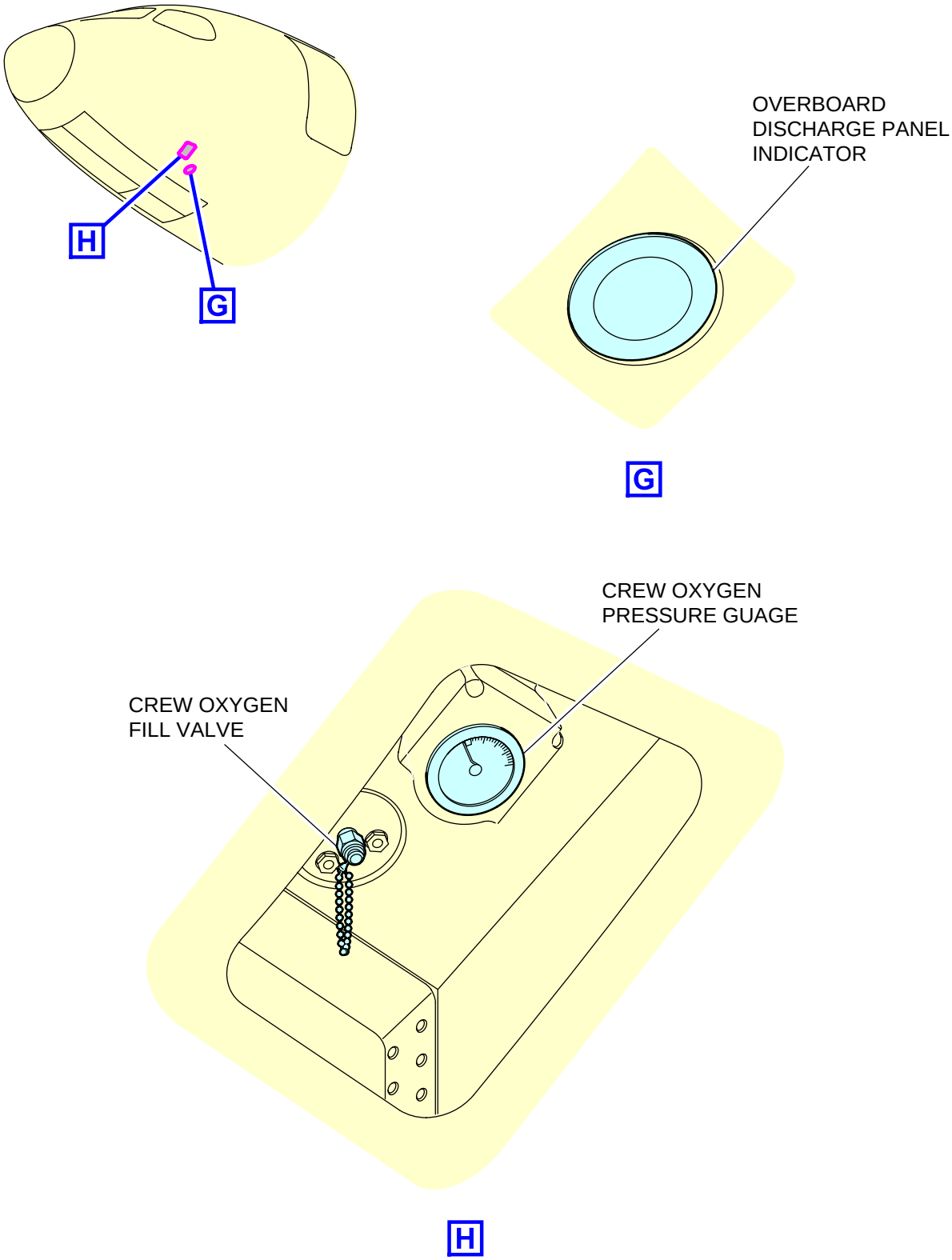
Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

Technical Specifications

- Nominal working pressure: 1850 psig (128 bar)
- Capacity: 77 ft³ (2180 L)



ICN-BD500-A-J351100-C-3AB48-20623-A-001-01

Figure 11 Crew oxygen system

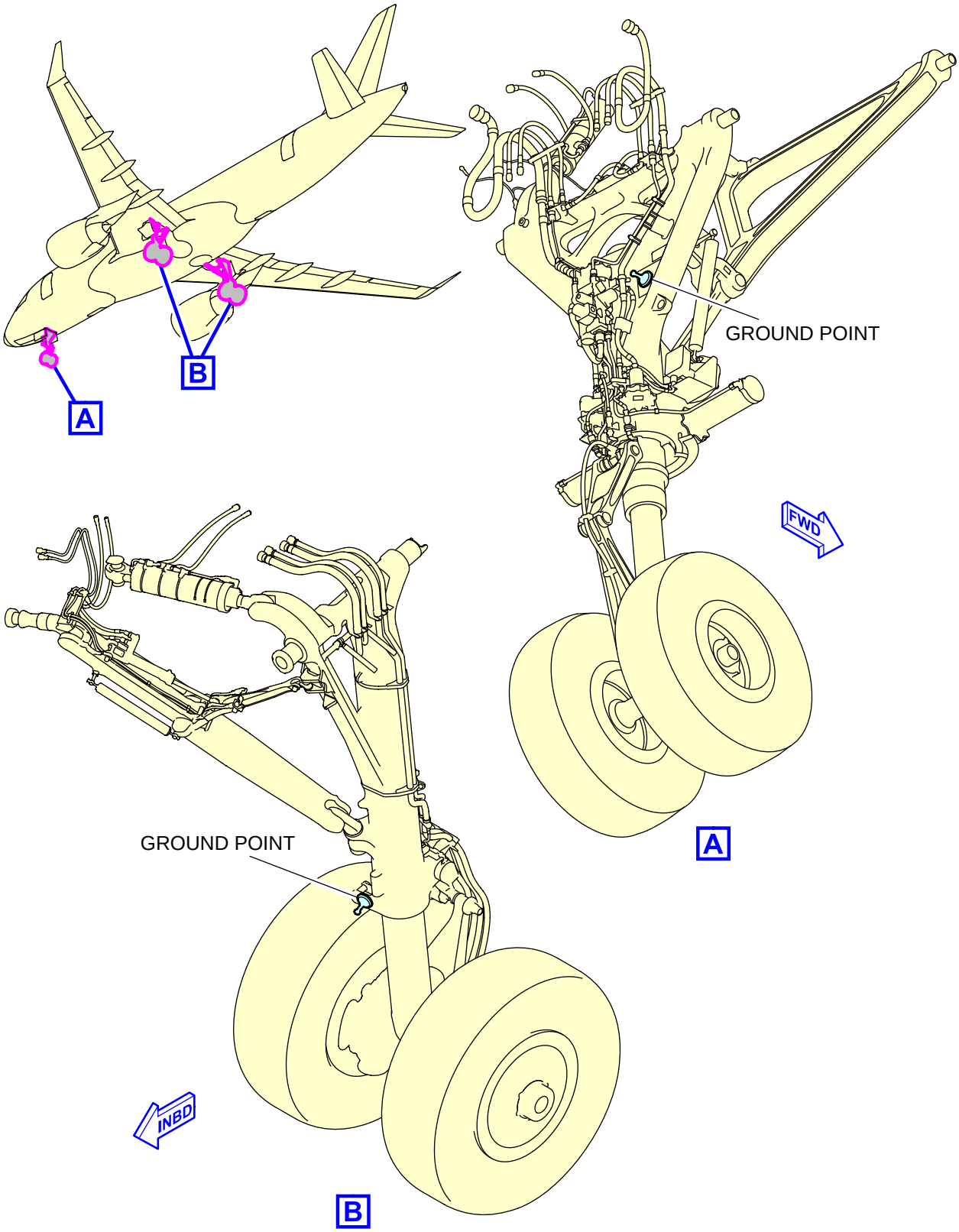
Table 9 Grounding points

Access	Aft of nose ft (m)	Position from aircraft Centerline RH side ft (m)	Mean height from ground ft (m)	LH side ft (m)
NLG leg	11.73 (3.58)	On aircraft centerline	5.00 (1.51)	
Left MLG leg	60.23 (18.36)	-	10.75 (3.27)	2.85 (0.87)
Right MLG leg	60.23 (18.36)	10.75 (3.27)	-	2.85 (0.87)
LH Refuel/Defuel Access door 621FB (Optional)	58.32 (17.78)	-	27.31 (8.32)	10.93 (3.33)
RH Refuel/Defuel Access door 521FB Fig. 13	58.32 (17.78)	27.31 (8.32)	-	10.93 (3.33)

Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.



ICN-BD500-A-J000000-A-3AB48-22049-A-001-01

Figure 12 Landing gears grounding points

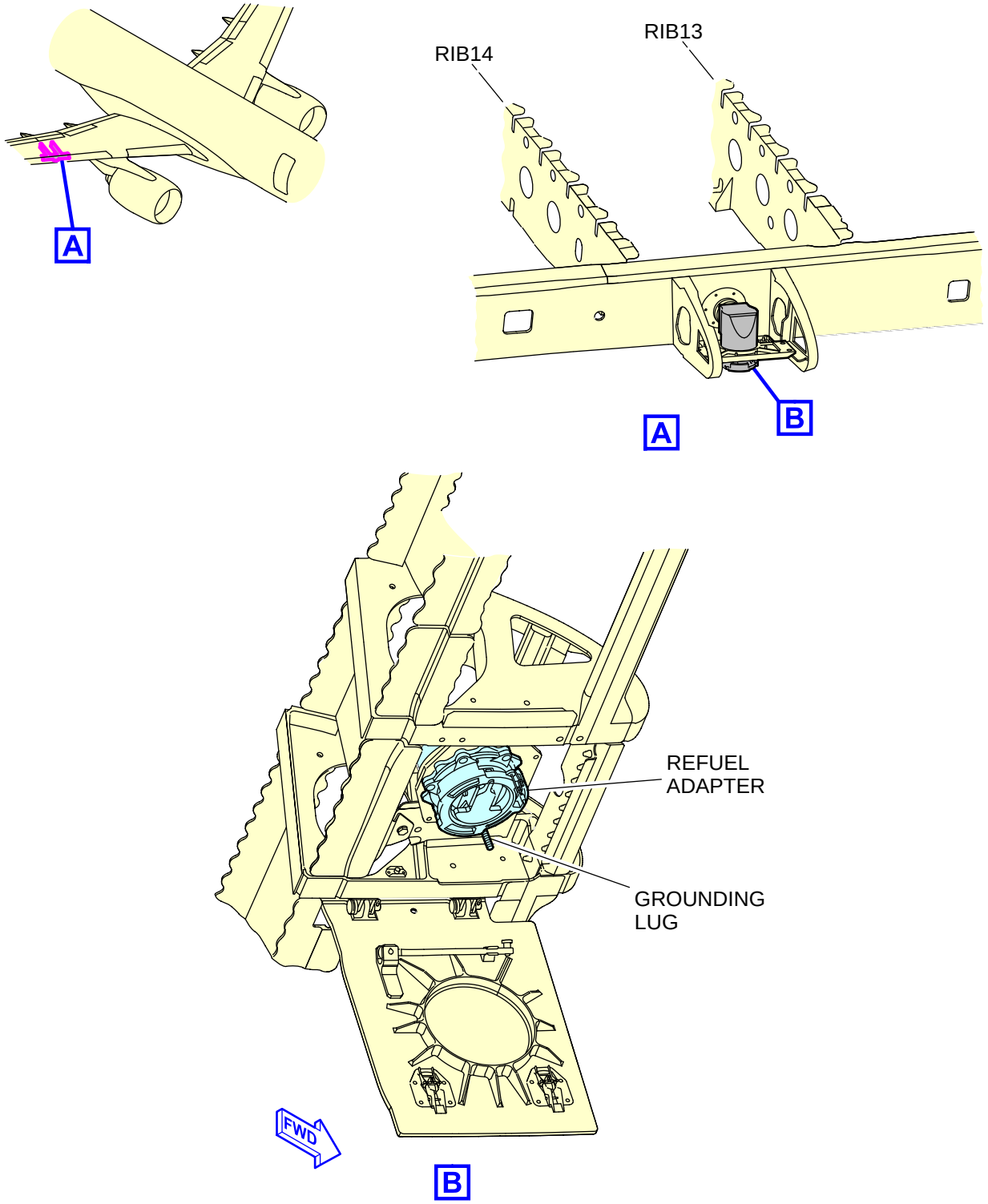
Table 10 Fuel system Refuel/Defuel adapter

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
LH Refuel/Defuel Access door 621FB (Optional)	58.32 (17.78)	-	27.31 (8.32)	10.93 (3.33)
RH Refuel/Defuel Access door 521FB	58.32 (17.78)	27.31 (8.32)	-	10.93 (3.33)

Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.



NOTES

1. Refuel adapter is optional on the left side.

ICN-BD500-A-J000000-A-3AB48-22099-A-002-01

Figure 13 Refuel adapter

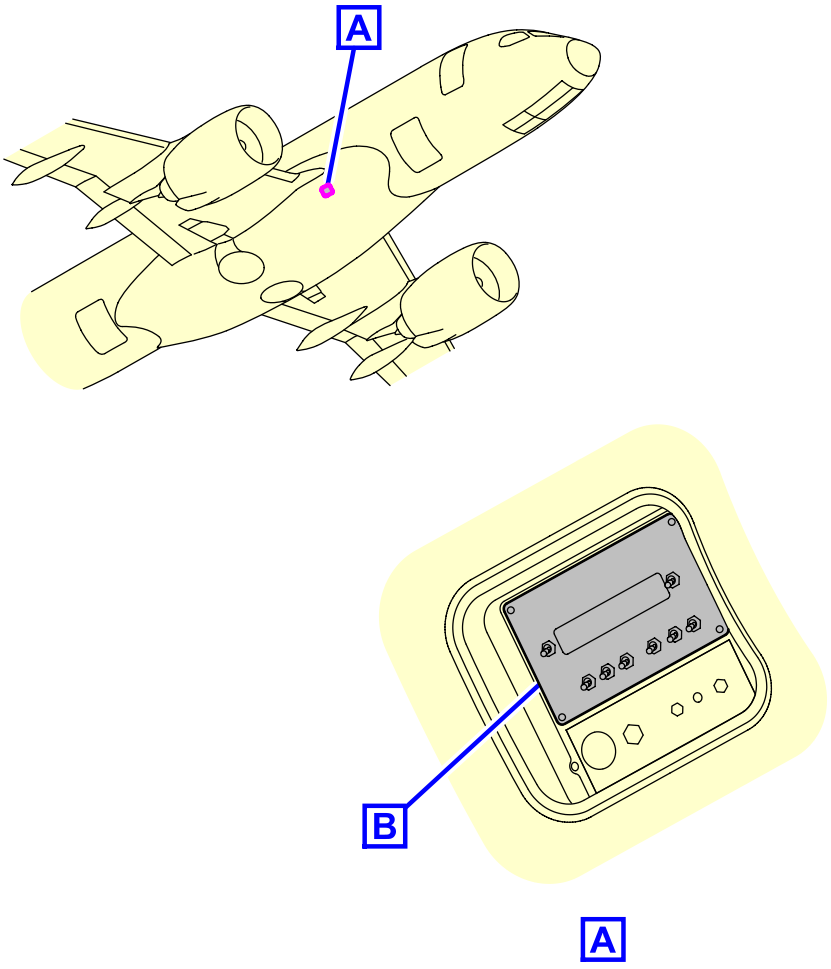
Table 11 Fuel system control panel

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Access door 192AB	42.76 (13.03)	4.98 (1.52)	-	6.12 (1.86)

Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.



REFUEL/DEFUEL CONTROL PANEL

ICN-BD500-A-J282300-C-3AB48-12260-A-001-01

Figure 14 Refuel/Defuel system

Table 12 Oil system

Access	Aft of nose ft (m)	Position from aircraft Centerline		Mean height from ground ft (m)
		RH side ft (m)	LH side ft (m)	
Engine Oil Filling Cap Access door (LH) 475CR (RH) 485CR	42.76 (13.03)	19.60 (5.97)	16.16 (4.93)	5.50 (1.68)

Note

All distances are approximate.

All height from ground distances are approximate and will vary with aircraft configuration and loading conditions.

Technical Specifications

- Oil tank capacity: 6.8 U.S. gal (25.7 L)

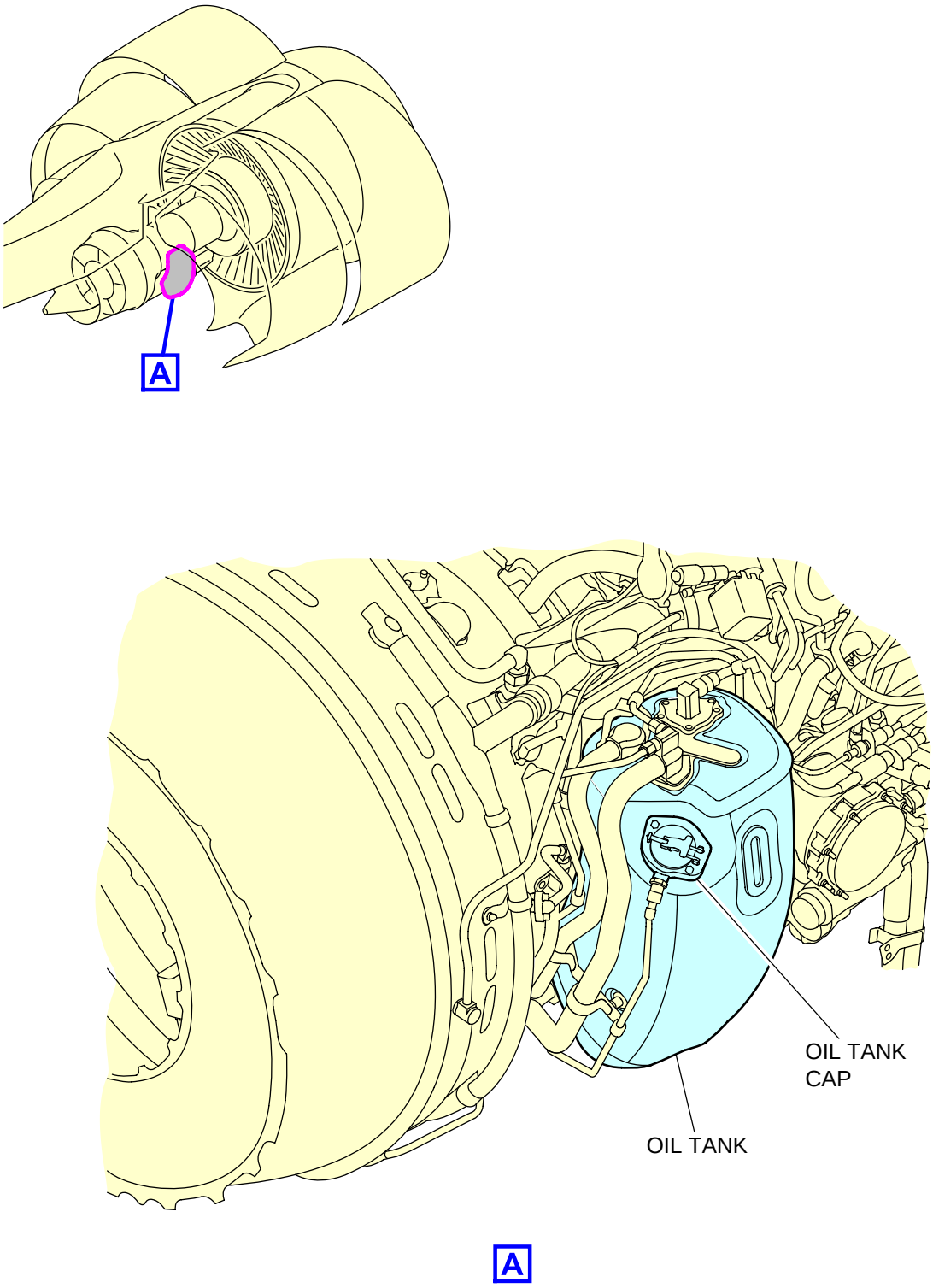


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Figure 15 Oil storage system

1.4 Ground electrical power requirements

The external power system is used to connect AC electrical power from a ground cart. There are no provisions to connect DC power from an external ground cart. External AC can be used to power the complete AC distribution system or only those buses that provide power to the passenger compartment.

Note

It is recommended to use ground cart standard 75 KVA and higher. Using ground cart 60 KVA standard can lead to the EICAS nuisance messages.

Note

When the external AC power is connected to the aircraft, both the AVAIL light on the electrical panel and on the electrical/towing service panel illuminate. The Bus Power Control Unit (BPCU) 1 energizes the External Line Contactor (ELC) to connect external power to the aircraft when the EXT PWR PBA in the flight compartment electrical panel is selected ON. The BPCU 1 also provides protection features to protect aircraft systems from potential permanent damage. Following aircraft power-up, several critical systems (Fly-By-Wire, Electrical and others) run their Power-Up Built-In Test (PBIT). The main purpose of PBITis to reduce the complexity of systems on-aircraft testing and removed failure dormancy, thereby decreasing the overall maintenance cost and reducing reliance upon external (pattern-programmed) test equipment for the operators. Any power interruption (Ground Power Unit (GPU) going offline or GPU power quality not meeting requirements) occurring during this critical phase may cause PBIT interruption and latch system failures which will require maintenance actions to clear. Depending on the latched faults, these power interruption events may potentially cause lengthy delays or flight cancellations which can negatively impact operators.

Refer to Table 13 for the external AC power requirements data.

Refer to Table 14 for the external power quality limitations data.

Refer to Table 15 for overcurrent protection ampere versus time delay.

Refer to Table 16 for overvoltage protection versus time delay.

Table 13 External AC power requirements

Voltage	Frequency
115 ±5 V	400 ±15 Hz

Table 14 External power quality limitations

Parameter	Setting limit	Response time
Overcurrent	Table 15	
Overvoltage (highest phase)	Table 16	
Redundant Overvoltage (highest phase)	130 ±3.3 V	0.75 ±0.055 sec
Undervoltage	107 ±2.0 V (lowest phase) or 108.5 ±2.0 V (3-phase average)	4.5 ±0.5 sec

Parameter	Setting limit	Response time
Overfrequency	418 ±2 Hz	4.5 ±0.5 sec
Underfrequency	382 ±2 Hz	4 ±0.5 sec
Phase sequence	A-B-C	0.1 sec
Open sequence	Lowest phase 15 ±5 A and other phase greater than 30 ±5 A	2.0 ±0.5 sec

Table 15 Overcurrent protection ampere versus time delay

Current (A)	Time (s)
230 ±12	300
336 ±12	11.75
337 ±12	11.05
346 ±12	9.4
355 ±12	8.2
370 ±12	6.75
380 ±12	6.1

Table 16 Overvoltage protection versus time delay

Voltage (V)	Time (s)
123	0.6
124	0.5
132	0.3
141	0.14
146	0.1
151	0.05

1.5 Engine starting pneumatic power requirements

The ground air supply requirements for engine starting are shown in Table 17 .

Conditions:

- Time allowed during start (to starter cutout) is 90 seconds
- Time-to-IDLE on ground is 45 seconds minimum
- No bleed air extraction is permitted during start sequence

Table 17 Ground pneumatic power requirements – Engine starting

ATS requirements	Inlet Pressure	Airflow
ISA day	45 psig 45 psia	150 lb/min 68.04 kg/min

1.6 Ground pneumatic power requirements

1.6.1 Heating

This section provides the ground pneumatic power requirements for heating the cabin

Refer to Fig. 16 for heating pull-up graphic.

Table 18 Ground air supply requirements for heating (Pull-up)

Requirements	Pressure	Airflow	Temperature
To cool cabin to 69.8 °F (21 °C) after 30 minutes Conditions - Outside air temperature: -104 °F (-40 °C) - Initial cabin and cockpit temperature: -9.4 °F (-23 °C) - Cockpit, FWD & AFT CABIN Temp Selector: Full Hot (86 °F (30 °C)) - Recirculation fan: On - No passenger	31 psig (45.7 psia)	203 lb/min (92.1 kg/min)	280 ºF (138 ºC)

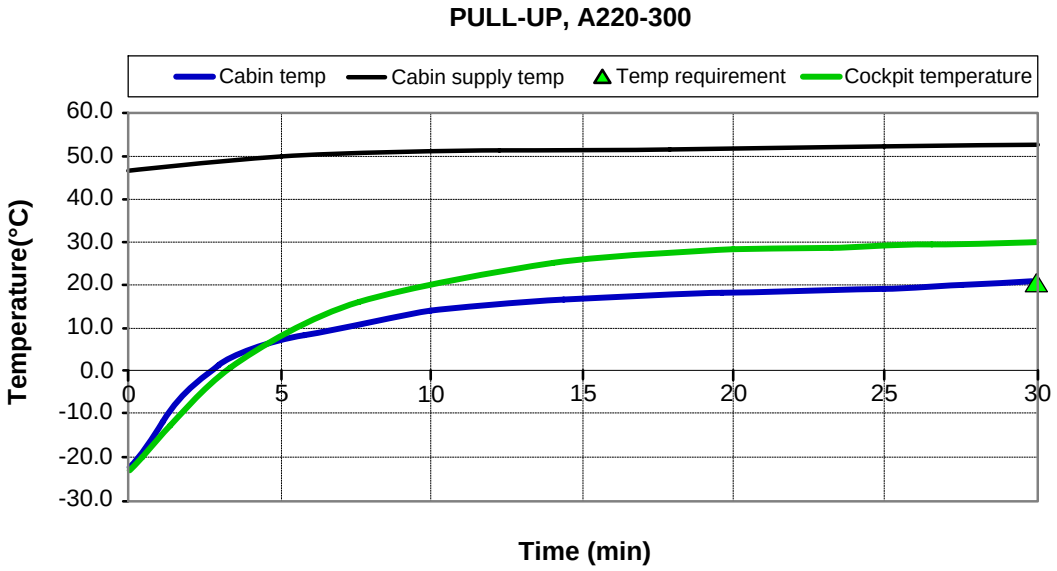

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Figure 16 Ground pneumatic requirements - Heating

Table 19 Ground air supply requirements for heating at a steady state

Requirements	Pressure	Airflow	Temperature
Conditions - Outside air temperature: -40 °F (-40 °C) - Steady state Cockpit & Cabin temperature: 75.2 °F (24 °C) - Cockpit, FWD & AFT CABIN Temp Selector: Mid selection (75.2 °F (24 °C)) - Recirculation fan: On - Trim air: On - 15 passengers	25.4 psig (40.1 psia)	166 lb/min (73.3 kg/min)	253 ºF (123 ºC)

1.6.2 Cooling

This section provides the ground pneumatic power requirements for cooling the cabin

Refer to Fig. 17 for the cooling pull-down graphic.

Table 20 Ground air supply requirements for cooling (Pull down)

Requirements	**Pressure**	**Airflow**	**Temperature**
To cool cabin to 80.6 °F (27 °C) after 30 minutes Conditions - Outside air temperature: 104 °F (40 °C) - Initial cabin and cockpit temperature: 114.8 °F (46 °C) - Cockpit, FWD & AFT CABIN Temp Selector: Full Cold (64.4 °F (18 °C)) - Recirculation fan: On - No passenger	38 psig (52.7 psia)	140 lb/min (63.5 kg/min)	437 ºF (225 ºC)

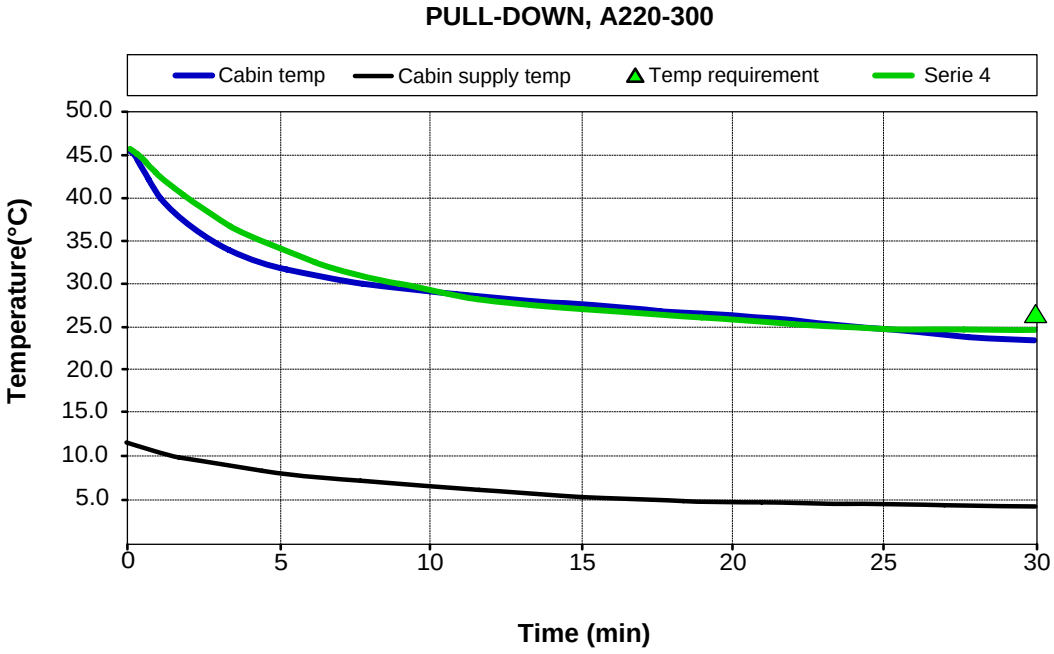

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Figure 17 Ground Pneumatic Requirements - Cooling

Table 21 Ground air supply requirements for cooling at a steady state

Requirements	Pressure	Airflow	Temperature
Conditions - Outside air temperature: 104 °F (40 °C) - Steady state Cockpit & Cabin temperature: 75.2 °F (24 °C) - Cockpit, FWD & AFT CABIN Temp Selector: Mid selection (75.2 °F (24 °C)) - Recirculation fan: On - Trim air: On - 130 passengers	31 psig (45.7 psia)	203 lb/min (92.1 kg/min)	280 ºF (138 ºC)

1.7 Preconditioned airflow requirements

The ground air supply requirements for air conditioning and airflow requirements are shown in Table 22 for the for the LPGC.

Table 22 Preconditioned airflow requirements

Requirements	**Pressure**	**Airflow**	**Temperature**
To cool cabin to 75.2 °F (24 °C) (recirculation fan on)	0.6 psig (4.1 kPa)	135 lb/min (61 kg/min)	41 ºF (5 ºC)
To heat cabin to 75.2 °F (24 °C) (recirculation fan on)	0.9 psig (6.2 kPa)	135 lb/min (61 kg/min)	104 ºF (40 ºC)

1.8 Ground towing requirements

The aircraft is designed with means for conventional or towbarless towing. Information and procedures can be found for both in the Aircraft Maintenance Manual (AMM) 09.

Status on towbarless towing equipment qualification can be found in CS-SL-09-10-0001.

1.9 Aircraft

This section shows the chart to determine the draw bar pull and tow tractor mass requirement as a function of the following physical characteristics:

- Model: A220-100
- Number of engines at idle
- Slope

The chart is based on the engine type with the highest idle thrust level. Refer to Fig. 18 and Fig. 19 .

1.10 Towbar design guidelines

The towbar shall comply with the standards that follow:

- SAE AS 1614 - Main Line Aircraft Towbar Attach Fitting Interface

- ISO 8267-1 - Aircraft - Towbar Attachment Fitting - Interface Requirements - Part 1: Main Line Aircraft
- ISO 9667 - Aircraft Ground Support Equipment - Towbar
- SAE ARP 1915 - Aircraft Towbar

Recommended references

- IATA Airport Handling Manual AHM 958 - Functional Specification for an Aircraft Towbar
- EN 12312-7, Aircraft Ground Support Equipment - Specific Requirements - Part 7 Aircraft movement Equipment

A conventional type towbar is required which should be equipped with a damping system (to protect the nose gear against jerks) and with towing shear pins:

- A traction shear pin calibrated at 17,400 lbs (77 394 N),
- - A torsion pin calibrated at 59 940 In-lbs (6 772 N-m)

The towing head is designed according to SAE AS 1614, cat I.

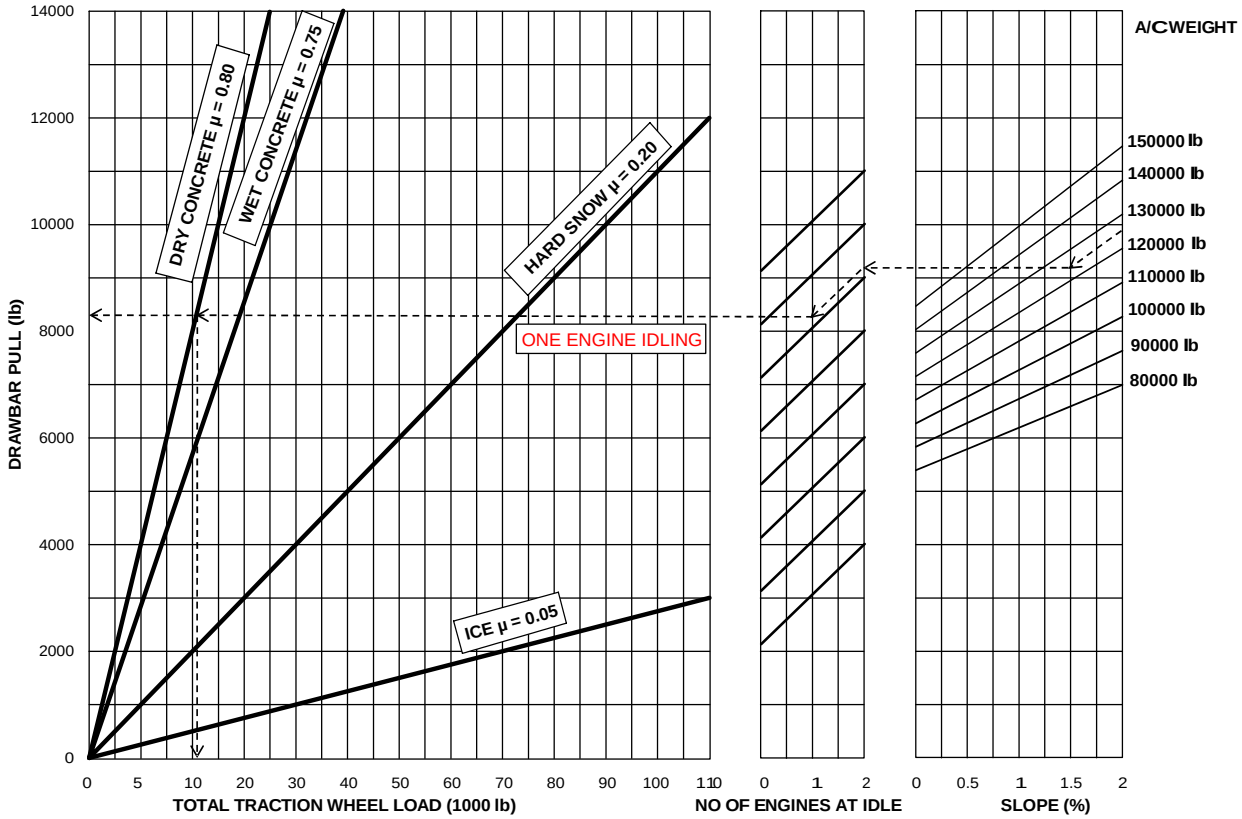
For towing and pushing operations, controls are provided to accommodate the following conditions:

- Aircraft not powered (see note below):
  A control panel is provided on the left side of the aircraft by the nose Nose Landing Gear (NLG). A push-button on the control panel can be toggled to engage power to begin the towing sequence (Navigation lights are lit automatically). The parking brake can be deactivated by way of a switch located on this panel. Annunciation lights on the NLG indicate when the parking brake is deactivated and the aircraft is ready for towing.

  Note

  Availability of the controls to facilitate towing the aircraft with the flight deck vacant does not constitute an approval to conduct such operations.

- Aircraft powered, and flight deck occupied:
  Two separate controls, one to deactivate the nose wheel steering, and one to deactivate the parking brake, are located in both the flight deck and on the control panel located in the vicinity of the nose landing gear. Headset jacks are provided on this control panel to allow for communication between personnel on the flight deck and on the ground. Annunciation lights on the control panel indicate when the aircraft is ready for towing.
  With the torque links connected, towing up to ±130 degrees nose wheel angle is possible.
  The ground towing requirements are described in the illustration below.
  For more information related to towing, refer to the AMP.



NOTES

1. Unusual breakaway conditions not reflected.
2. Estimated for rubber - tired tow vehicles.
3. Coefficient of friction (μ) approximate.
4. Example: At an aircraft gross weight of 125000lbs (56699 Kg), an uphill slope of 1.5%, with c engine ON and with a dry concrete surface, the corresponding draw bar pull or push required is (35.6 kN) and the total tractor weight of approximately 10 500 lbs (4762 Kg).

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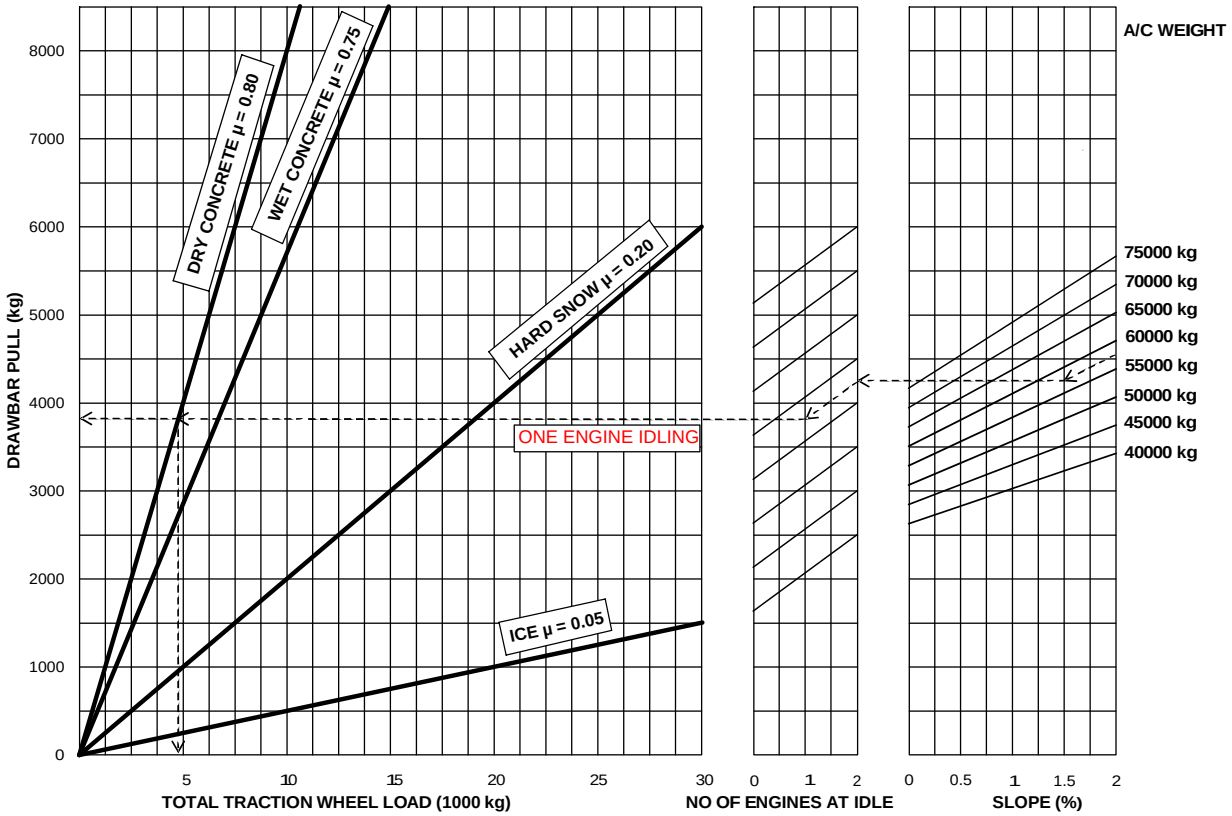
Figure 18 Ground towing requirements (imperial unit)



NOTES

1. Unusual breakaway conditions not reflected.
2. Estimated for rubber - tired tow vehicles.
3. Coefficient of friction (μ) approximate.
4. Example: At an aircraft gross weight of 125000lbs (56699 Kg), an uphill slope of 1.5%, with c engine ON and with a dry concrete surface, the corresponding draw bar pull or push required is (35.6 kN) and the total tractor weight of approximately 10 500 lbs (4762 Kg).

ICN-BD500-A-J000000-A-3AB48-22840-A-001-01

Figure 19 Ground towing requirements (metric unit)

Operating conditions - Technical data

Applicability: 55001-59999

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Table 1 References

Data Module/Technical Publication	Title
BD500-A-J71-00-00-00AAA-012A-A	Power plant - General warnings and cautions and related safety data

Description

1 Introduction

This data module gives data on the engine noise levels and the intake and exhaust dangerous areas during normal operations. This section is divided into the subsections that follow:

- Engine dangerous areas
- Engine exhaust velocities and temperatures
- Auxiliary Power Unit (APU)
- Engine noise levels

Aircraft operating conditions and noise are important to airport and community planners. While an airport is a major element in a community transportation system and is vital to it's growth, it must be a good neighbor. This can only be accomplished with proper planning. Because aircraft noise extends beyond the boundaries of the airport, it is vital to consider the impact on surroundings communities.

2 Engine dangerous areas

This section contains information about the danger areas of engines during a ground run up. Refer to BD500-A-J71-00-00-00AAA-012A-A for danger areas of engines.

3 Engine exhaust velocities and temperatures

This section shows the estimated engine exhaust plume velocity and temperature profiles during idle, breakaway, and maximum takeoff conditions.

The exhaust plume profiles are provided from the engine nozzle exit plane, assuming sea level, static, ISA condition, without any wind and bleed extraction. They do not take into account an engine-to-engine variation or engine deterioration and do not account for interaction with the fuselage, ground or other engine plume. Refer to Fig. 1 thru Fig. 6.

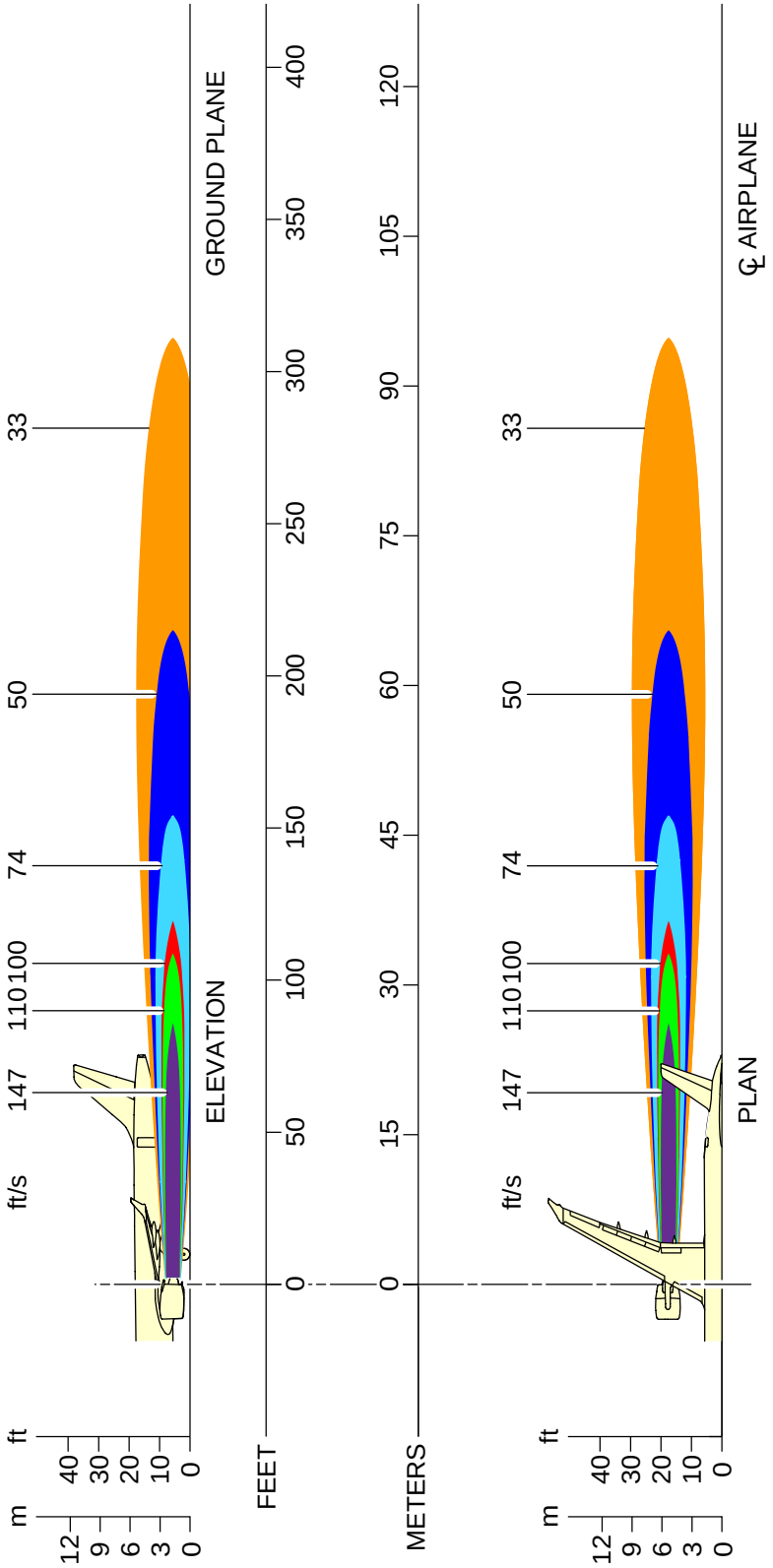

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Figure 1 Exhaust plume velocity profile / A220-300 Break-away thrust 3300 lbf

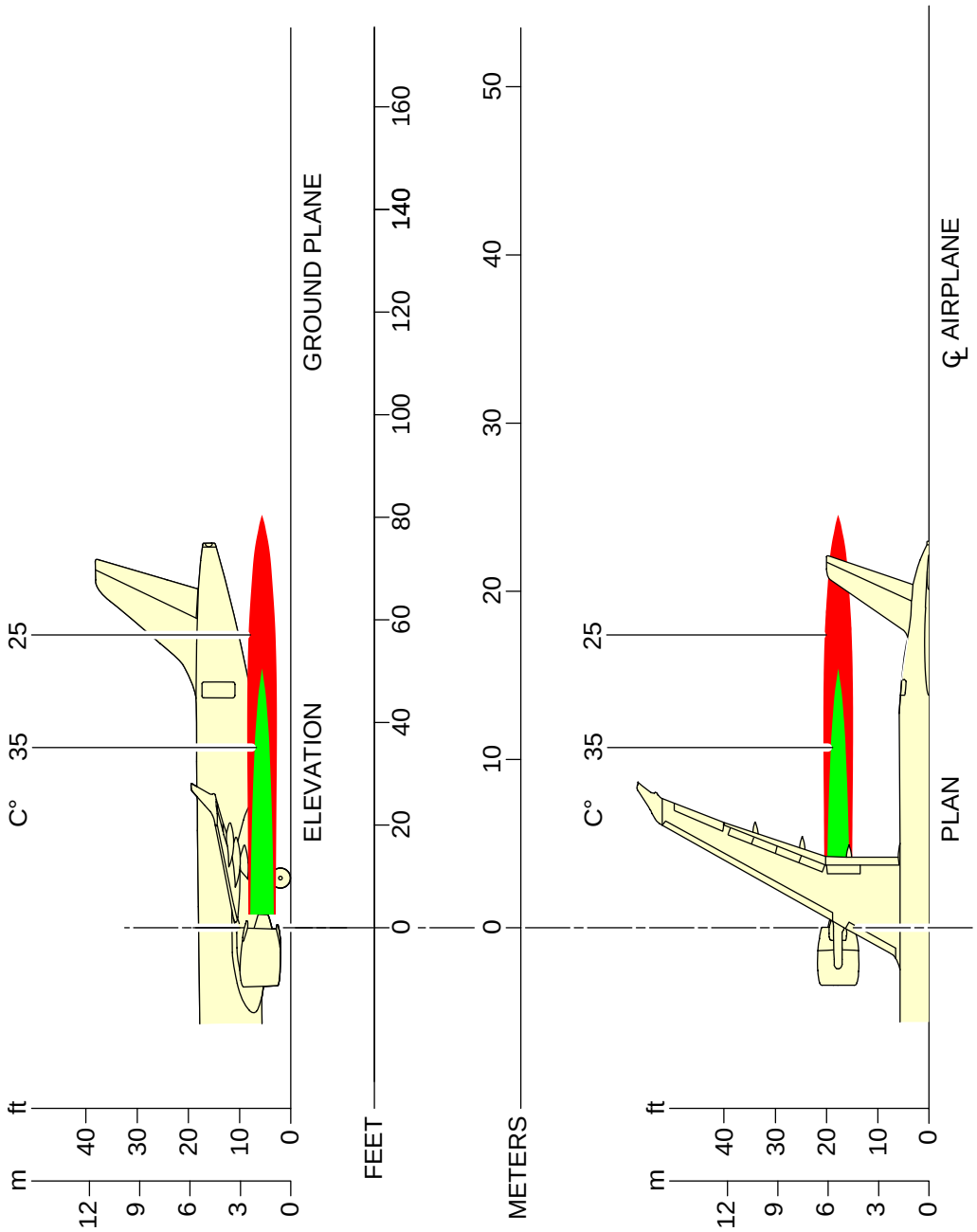

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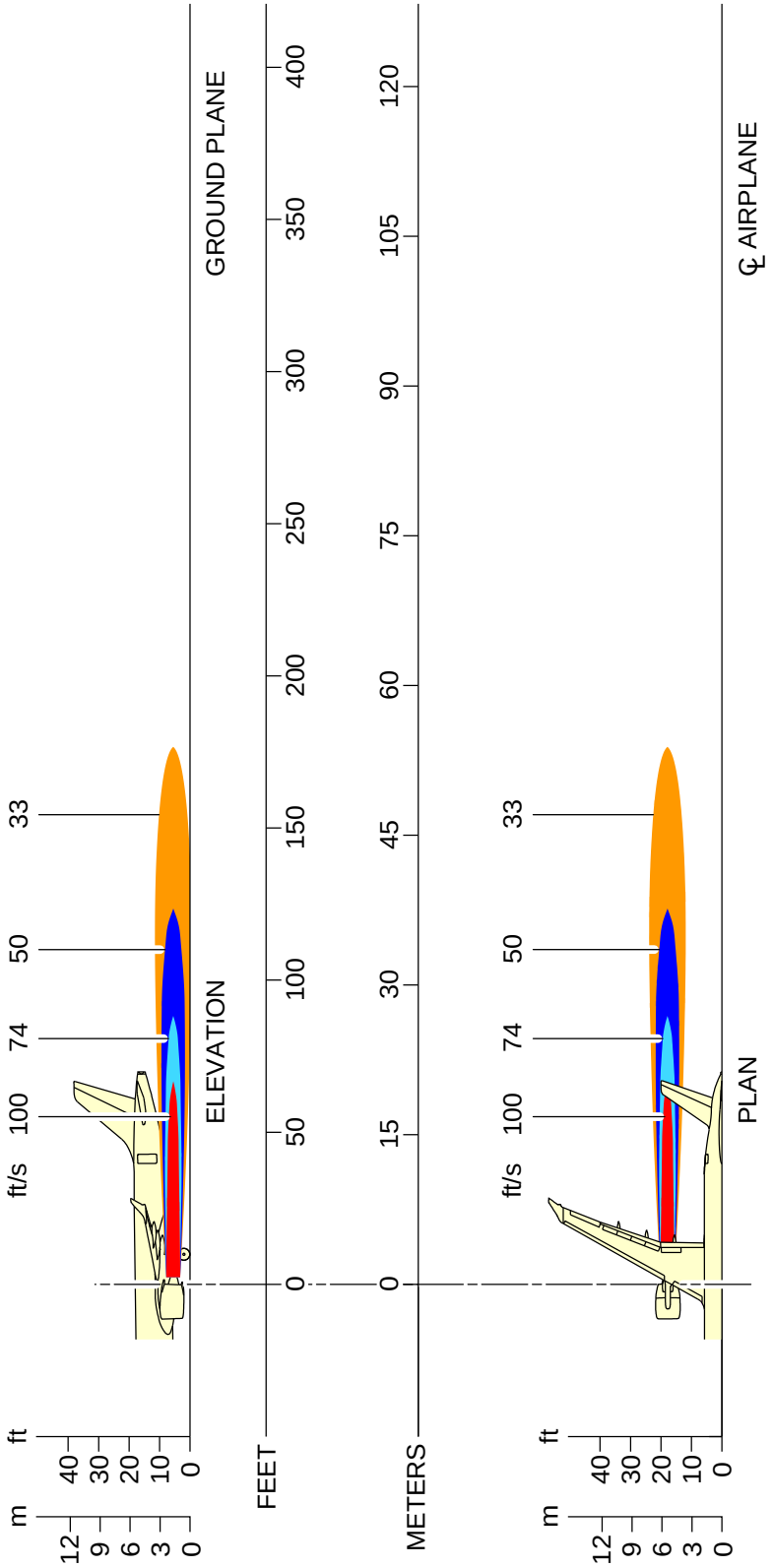
Figure 2 Exhaust plume temperature profile / A220-300 Break-away thrust 3300 lbf



ICN-BD500-A-J000000-A-3AB48-27919-A-001-01

Figure 3 Exhaust plume velocity profile / Ground idle

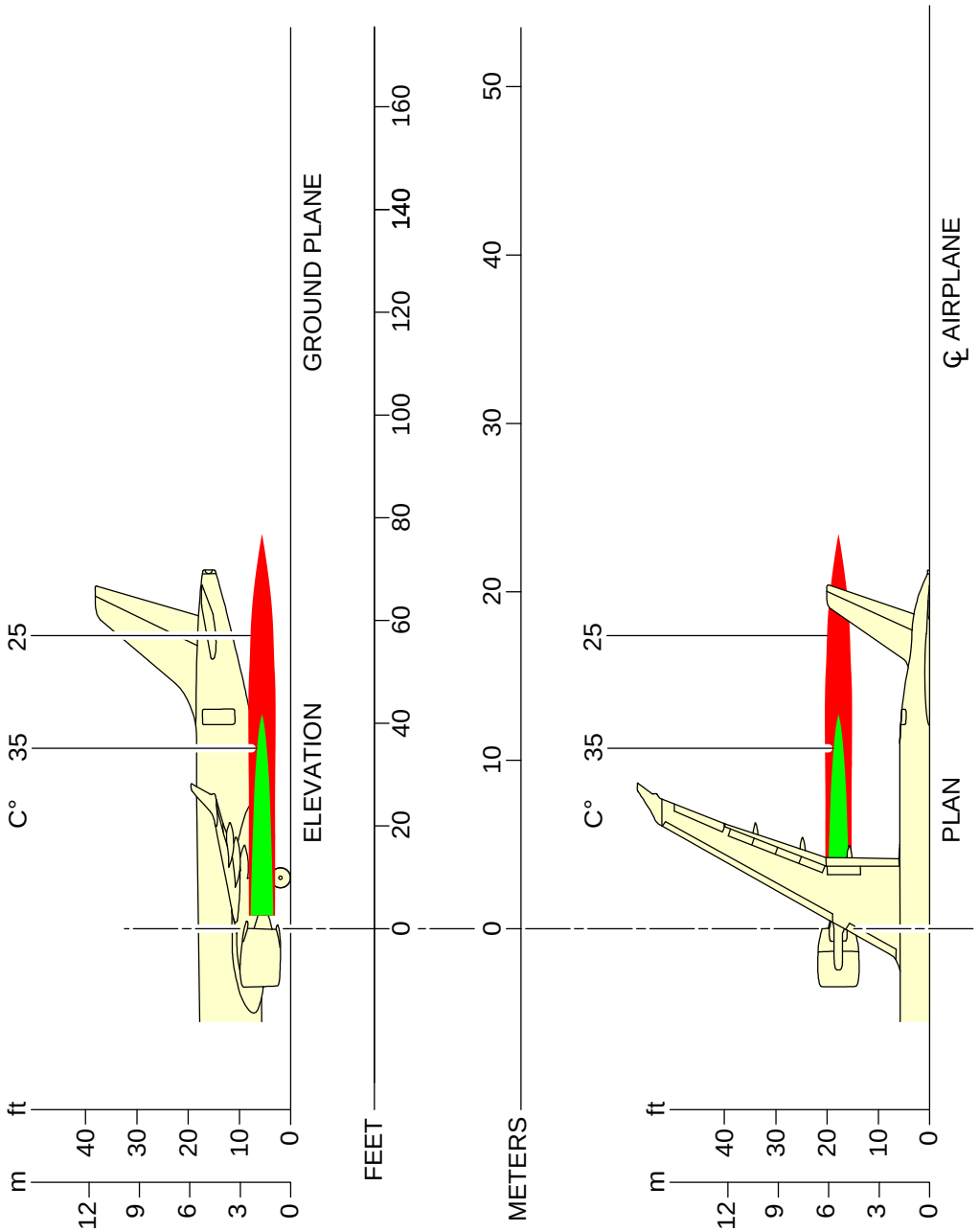


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Figure 4 Exhaust plume temperature profile / Ground idle

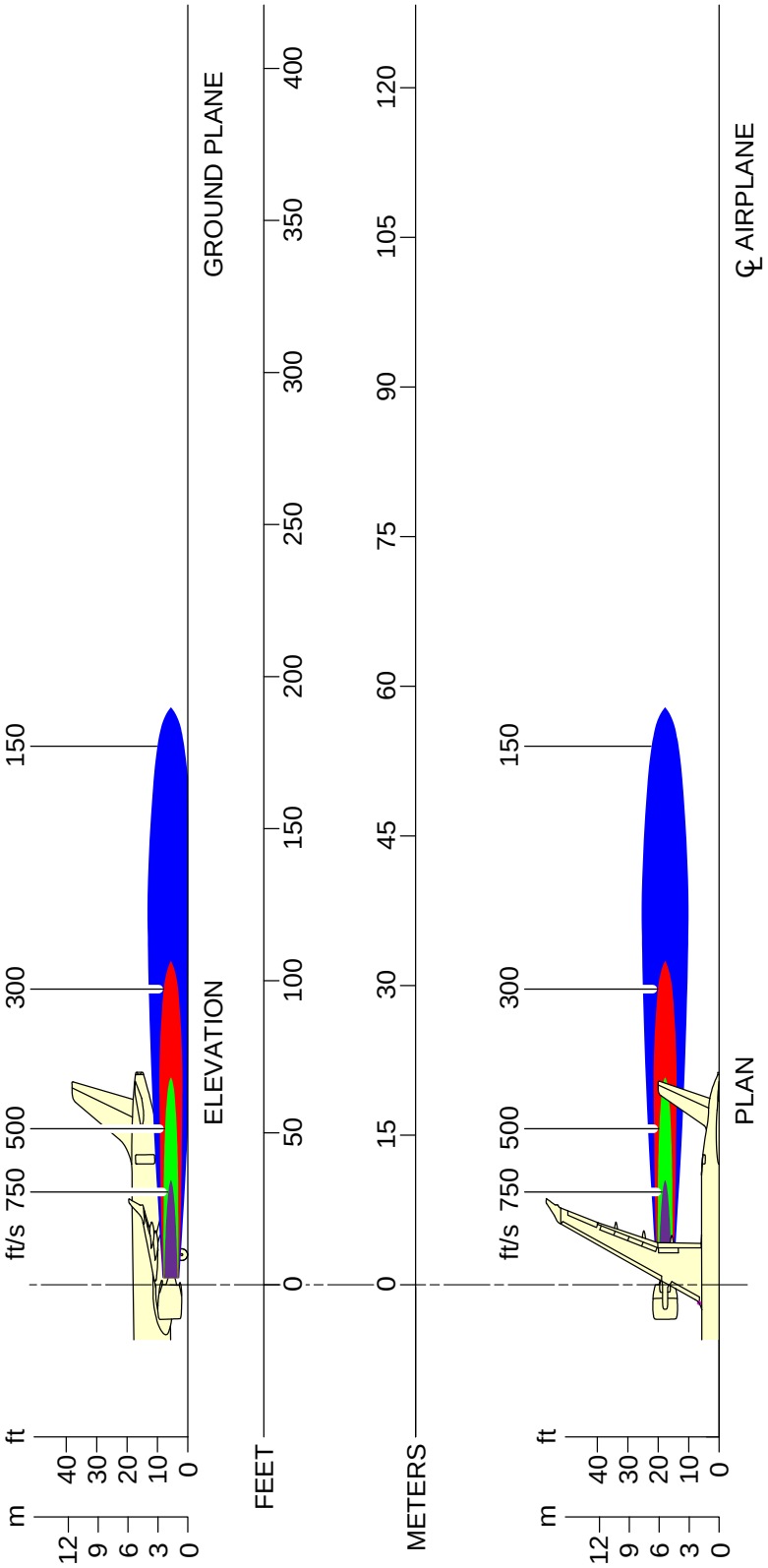

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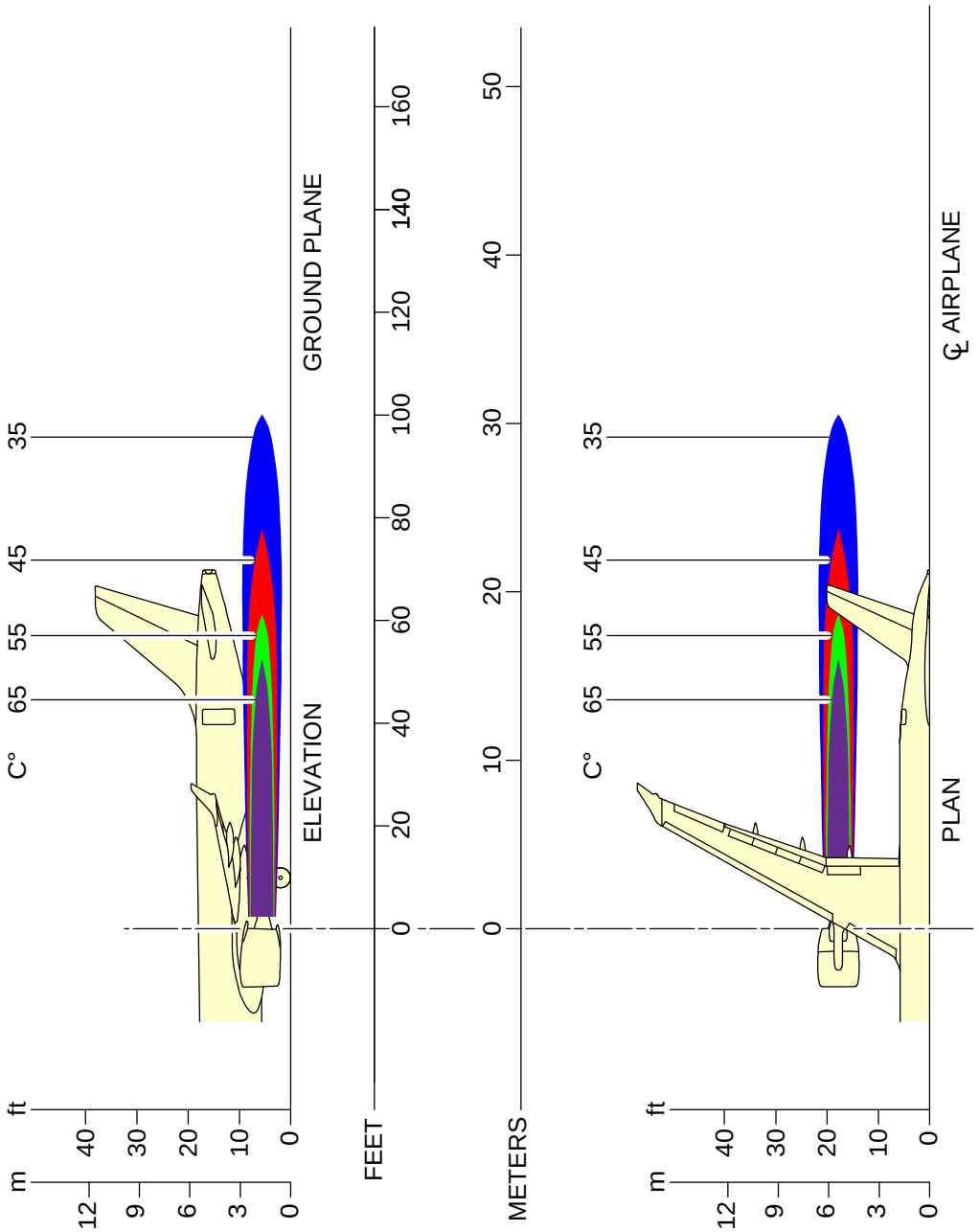
Figure 5 Exhaust plume velocity profile / Maximum take-off at sea level static



ICN-BD500-A-J000000-A-3AB48-27922-A-001-01

Figure 6 Exhaust plume temperature profile / Maximum take-off at sea level static

4 Auxiliary Power Unit (APU)

This section contains information about the danger areas of the APU when operated on the ground. Refer to Fig. 7 and Fig. 8 for danger areas and the exhaust plume temperature of the APU.

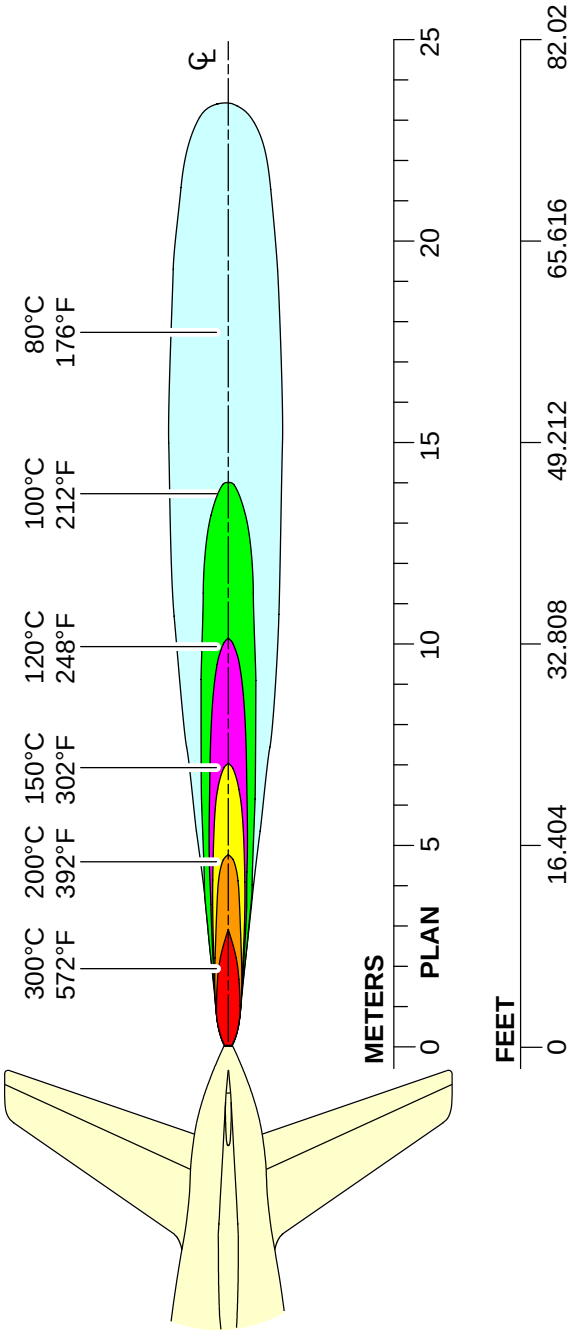


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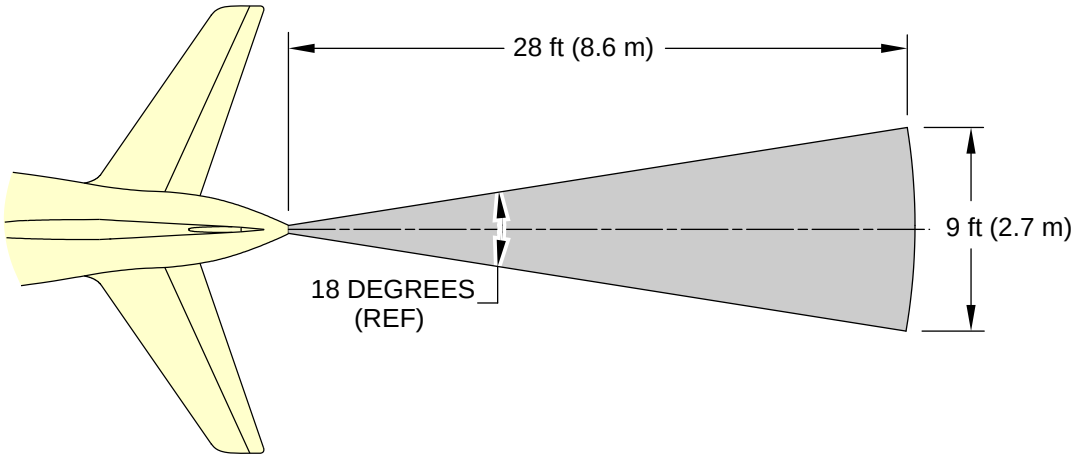
Figure 7 APU exhaust plume temperature



ICN-BD500-A-J000000-A-3AB48-47401-A-001-01

Figure 8 APU danger areas

5 Engine noise levels

The community noise levels must agree with FAR 36 Stage 3, ICAO Annex 16, Chapter 4, Chapter 516.

Refer to Table 2 for the demonstrated Effective Perceived Noise levels (EPNdB), limits, and the relative difference (margin of compliance) for the engines.

Table 2 Engine noise levels

Engine <option code>	Weights		Measure-ment Points			Margins (EPNdB)	Margin Require-ment (EPNdB)
	MTOW <option code>	MLW <option code>	Description	Noise Limit (EPNdB)	Measured Level (EPNdB)		
PW1524G <72210003>	149,000 lb (67,585 kg) <13000170>	129,500 lb (58,740 kg) <1300270>	Approach	99.9	91.9	8.0	0
			Lateral	96.0	87.9	8.1	0
			Flyover	90.4	79.0	11.4	0
			Sum of smallest two individual margins:			16.1	2
			Sum of all individual margins:			27.5	10

Pavement data - Technical data

Applicability: 55001-59999

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References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

1 Introduction

This section contains data related to the pavement design specifications, including aircraft footprints, pavement loading during standard operations, and aircraft/pavement rating systems. Also given are the flotation classification for different weights, fixed tire pressure, and aft Center of Gravity (CG), with the Aircraft Classification Number (ACN) methods.

This section is divided into the subsections that follow:

- ACN
- Landing gear footprint
- Maximum pavement load
- Landing gear loading on pavement

Note

Runway strength data shown in this publication is derived from available information and is a realistic estimate of capability at an average level of activity. It is not intended as a maximum allowable weight or as an operating limitation. Many airport pavements are capable of supporting limited operations with gross weights in excess of published figures. Permissible operating weight, insofar as runway strengths are concerned, are a matter of agreement between the owner and user.

For more information about the Pavement Classification Number (PCN), please contact the concerned airport authority.

Note

- If the aircraft take-off weight is less than or equal to 67 585 kg (149 000 lb), the aircraft is classified as code 3C as perInternational Civil Aviation Organization (ICAO) Aerodrome Reference Code

- If the aircraft take-off weight is more than 67 585 kg (149 000 lb), the aircraft is classified as code 4C as per ICAO Aerodrome Reference Code.

1.1 Aircraft Classification Number (ACN) / Pavement Classification Number (PCN) Introduction

1.1.1 Aircraft Classification Number (ACN)

The ACN value is a number, which expresses the relative structural effect of an aircraft on different pavement types for specified standard subgrade strengths in terms of a standard single wheel load.

An aircraft will have eight (8) ACN numbers for any given aircraft weight and tire pressure: four (4) for flexible pavement and four (4) for rigid pavement.

1.1.2 Pavement Classification Number (PCN)

The PCN value is a number, which expresses the relative load carrying capacity of a pavement in terms of a standard single wheel load.

An airport determined and published PCN can be compared with an aircraft's ACN. An aircraft that has an ACN equal to or less than the PCN of a given pavement can operated without restriction on the pavement. (Ref. ICAO State Letter AN411.1.17–8019. Ref. US FAA Advisory Circular 150153355 15/06/83).

For example, if the published airport PCN is 52/R/B/Y/T, it means that the aircraft ACN must be less than 52 for rigid pavement type, with medium subgrade strenght, and the tire pressure of the aircraft must be less than 145 psi (1.0 MPa). The PCN also shows that the value was arrived at through a technical review.

Table 2 Airport method to show Pavement Classification Number (PCN)

Pavement type	Subgrade category	Tire pressure category psi (MPa)	Evaluation
R = Rigid F = Flexible	A = High B = Medium C = Low D = Ultra Low	W = No limit X = To 254 (1.75) Y = To 181 (1.25) Z = To 73 (0.5)	T = Technical U = Using aircraft

Table 3 Subgrade strength categories

Subgrade Categories	Flexible pavement		Rigid pavement	
	Characterization	CBR range	Characterization	k-Value Range
A	CBR 15	Above 13	k = 150MN/m3 (550 pci)	Above 120MN/m3 (442pci)
B	CBR 10	From 8 to 13	k = 80MN/m3 (300 pci)	From 60 to 120 MN/m3 (221 to 442pci)
C	CBR 6	From 4 to 8	k = 80MN/m3 (300 pci)	From 25 to 60 MN/m3 (92 to 221pci)
D	CBR 3	Below 4	k=20MN/m3 (75pci)	Below 25 MN/m3 (92pci)

1.1.3 Load Classification Number (LCN)

The Load Classification Number (LCN) is a method of flotation analysis by the ICAO.

An aircraft will have two (2) LCN numbers for any given aircraft weight and tire pressure: one (1) for rigid pavement usually concrete and second (2) for flexible pavement usually layered asphalt.

2 Aircraft Classification Number (ACN) results for most aft C.G. position

Refer to Table 4 for tabular format and Fig. 1 for graphical format for the ACN results for rigid pavement and Table 5 for tabular format and Fig. 2 for graphical format for the ACN results for flexible pavement.

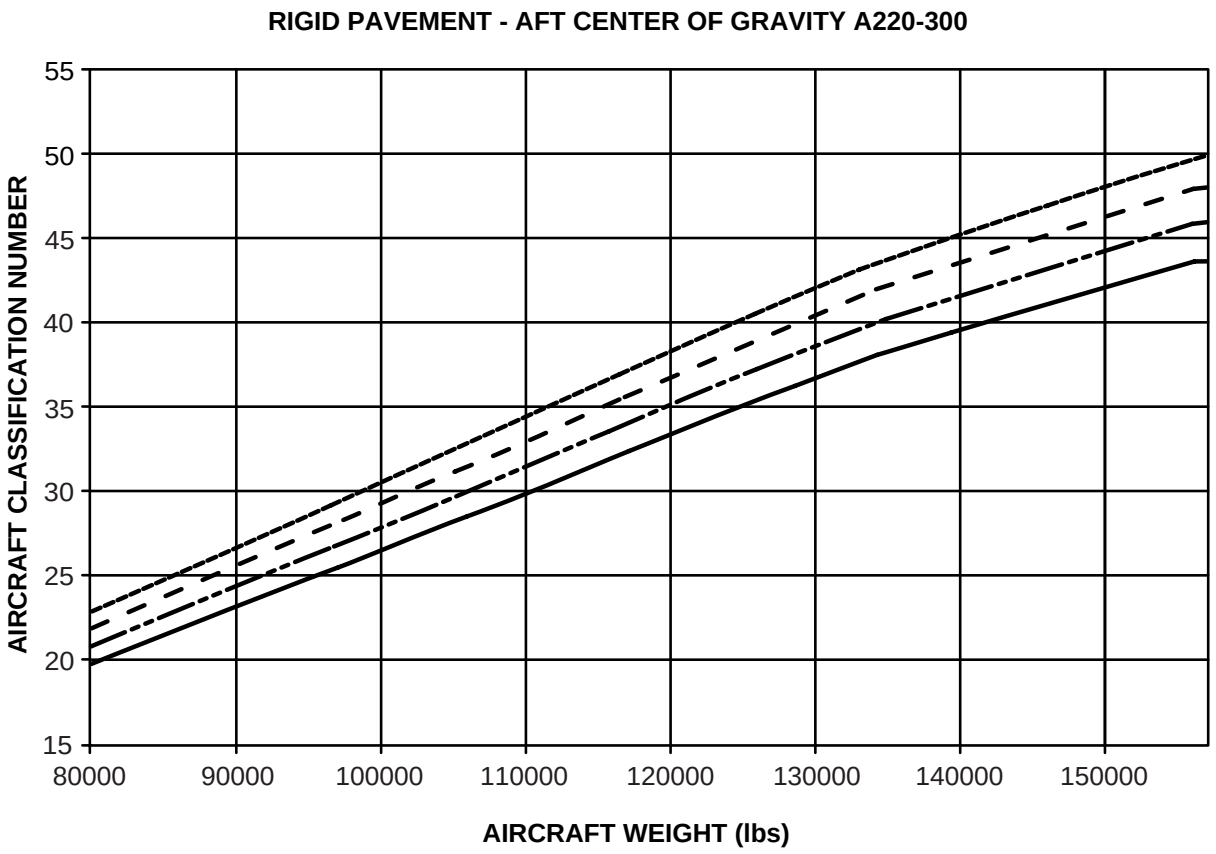
Table 4 Aircraft Classification Number (ACN) RESULTS FOR MOST AFT C.G. RIGID PAVEMENT

A/C Gross Weight (lb)	A/C Gross weight (Kg)	MLG Load (lb)	MLG Load (Kg)	ACN High Strength K=150 MN/m3	ACN Medium Strength K=80 MN/m3	ACN Medium Strength K=40 MN/m3	ACN Ultra-Low Strength K=20 MN/m3
157000	71213	146872	66619	44	46	48	50
156300	70896	146853	66611	44	46	48	50
156000	70760	146640	66514	44	46	48	50
155000	70306	145929	66192	43	46	48	49
154000	69853	145219	65870	43	45	47	49
153000	69399	144509	65548	43	45	47	49
152000	68945	143798	65225	43	45	47	49
151000	68492	143088	64903	42	45	47	48
150000	68038	142378	64581	42	44	46	48
149000	67585	141667	64259	42	44	46	48
148000	67131	140957	63936	42	44	46	48
147000	66678	140247	63614	41	44	46	47
146000	66224	139537	63292	41	43	45	47
145000	65770	138826	62970	41	43	45	47
144000	65317	138116	62648	41	43	45	46
143000	64863	137406	62326	40	42	44	46
142000	64410	136695	62003	40	42	44	46

A/C Gross Weight (lb)	A/C Gross weight (Kg)	MLG Load (lb)	MLG Load (Kg)	ACN High Strength K=150 MN/ m3	ACN Medium Strength K=80 MN/ m3	ACN Medium Strength K=40 MN/ m3	ACN Ultra-Low Strength K=20 MN/ m3
141000	63956	135985	61681	40	42	44	46
140000	63502	135275	61359	40	42	44	45
139000	63049	134564	61037	39	41	43	45
138000	62595	133854	60715	39	41	43	45
137000	62142	133144	60393	39	41	43	44
136000	61688	132434	60071	39	41	43	44
135000	61234	131723	59748	38	40	42	44
134500	61008	131368	59587	38	40	42	44
134000	60781	130898	59374	38	40	42	44
133000	60327	129958	58947	38	40	42	43
132000	59874	129017	58521	37	39	41	43
131000	59420	128077	58094	37	39	41	43
130000	58966	127137	57668	37	39	41	42
129000	58513	126197	57241	37	38	40	42
128000	58059	125256	56815	36	38	40	42
127000	57606	124202	56337	36	38	40	41
126000	57152	123147	55858	36	37	39	41
125000	56699	122092	55379	35	37	39	40
124000	56245	121037	54901	35	37	38	40
123000	55791	119983	54423	34	36	38	40
122000	55338	118928	53944	34	36	38	39
121000	54884	117873	53466	34	36	37	39
120000	54431	116819	52988	33	35	37	38
119000	53977	115764	52509	33	35	37	38
118000	53523	114709	52031	33	34	36	38
117000	53070	113655	51552	32	34	36	37

A/C Gross Weight (lb)	A/C Gross weight (Kg)	MLG Load (lb)	MLG Load (Kg)	ACN High Strength K=150 MN/ m3	ACN Medium Strength K=80 MN/ m3	ACN Medium Strength K=40 MN/ m3	ACN Ultra-Low Strength K=20 MN/ m3
116000	52616	112600	51074	32	34	35	37
115000	52163	111545	50595	32	33	35	36
114000	51709	110490	50117	31	33	35	36
113000	51255	109436	49639	31	33	34	36
112000	50802	108381	49160	31	32	34	35
111000	50348	107326	48682	30	32	34	35
110000	49895	106272	48204	30	32	33	35
109000	49441	105217	47725	30	31	33	34
108000	48987	104162	47247	29	31	32	34
107000	48534	103107	46768	29	31	32	33
106000	48080	102053	46290	29	30	32	33
105000	47627	100998	45811	28	30	31	33
104000	47173	99943	45333	28	29	31	32
103000	46719	98889	44855	28	29	31	32
102000	46266	97834	44376	27	29	30	31
101000	45812	96779	43898	27	28	30	31
100000	45359	95725	43420	27	28	29	31
99000	44905	94670	42941	26	28	29	30
98000	44452	93615	42463	26	27	29	30
97000	43998	92560	41984	26	27	28	29
96000	43544	91506	41506	25	27	28	29
95000	43091	90451	41027	25	26	28	29
94000	42637	89396	40549	25	26	27	28
93000	42184	88342	40071	24	25	27	28
92000	41730	87287	39592	24	25	26	28
91000	41276	86232	39114	24	25	26	27

A/C Gross Weight (lb)	A/C Gross weight (Kg)	MLG Load (lb)	MLG Load (Kg)	ACN High Strength K=150 MN/ m3	ACN Medium Strength K=80 MN/ m3	ACN Medium Strength K=40 MN/ m3	ACN Ultra-Low Strength K=20 MN/ m3
90000	40823	85177	38635	23	24	26	27
89000	40369	84123	38157	23	24	25	26
88000	39916	83068	37678	23	24	25	26
87000	39462	82013	37200	22	23	25	26
86000	39008	80959	36722	22	23	24	25
85000	38555	79904	36243	22	23	24	25
84000	38101	78849	35765	21	22	23	24
83000	37648	77795	35287	21	22	23	24
82000	37194	76740	34808	20	22	23	24
81000	36740	75685	34330	20	21	22	23
80000	36287	74630	33851	20	21	22	23



LEGEND

- Ultra low strength k=20 mn/m³.
- Low strength k=40 mn/m³.
- Medium strength k=80 mn/m³.
- High strength k=150 mn/m³.

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Figure 1 ACN results - Rigid pavement

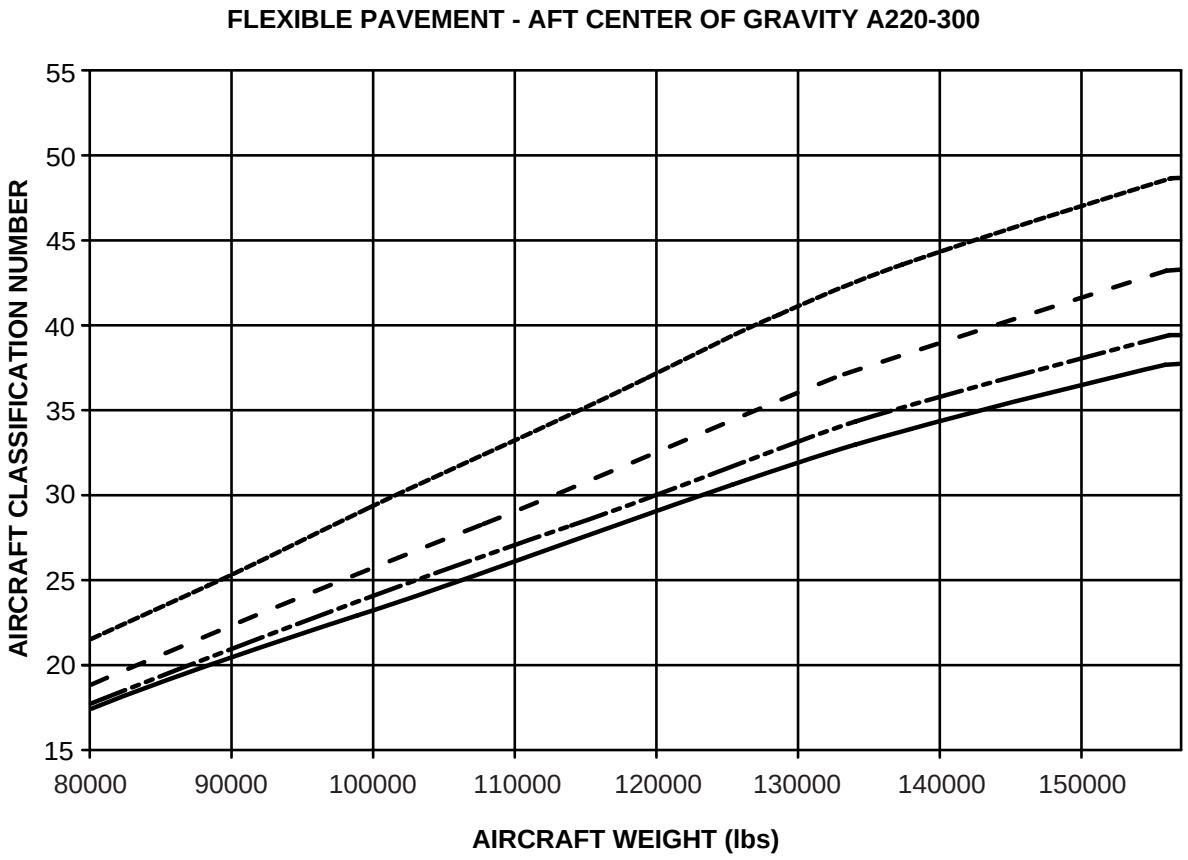
Table 5 Aircraft Classification Number (ACN) RESULTS FOR MOST AFT C.G. FLEXIBLE PAVEMENT

A/C Gross Weight (lb)	A/C Gross Weight (kg)	MLG Load (lb)	MLG Load (kg)	ACN High Strength CBR=15	ACN Medium Strength CBR=10	ACN Low Strength CBR=6	ACN Ultra-Low Strength CBR=3
157000	71213	146872	66619	38	40	43	49
156300	70896	146853	66611	38	40	43	49
156000	70760	146640	66514	38	39	43	49
155000	70306	145929	66192	38	39	43	48
154000	69853	145219	65870	37	39	43	48
153000	69399	144509	65548	37	39	42	48
152000	68945	143798	65225	37	39	42	48
151000	68492	143088	64903	37	38	42	47
150000	68038	142378	64581	36	38	42	47
149000	67585	141667	64259	36	38	41	47
148000	67131	140957	63936	36	38	41	46
147000	66678	140247	63614	36	37	41	46
146000	66224	139537	63292	36	37	41	46
145000	65770	138826	62970	35	37	40	46
144000	65317	138116	62648	35	37	40	45
143000	64863	137406	62326	35	37	40	45
142000	64410	136695	62003	35	36	40	45
141000	63956	135985	61681	35	36	39	45
140000	63502	135275	61359	34	36	39	44
139000	63049	134564	61037	34	36	39	44
138000	62595	133854	60715	34	35	39	44
137000	62142	133144	60393	34	35	38	44
136000	61688	132434	60071	34	35	38	43
135000	61234	131723	59748	33	35	38	43
134500	61008	131368	59587	33	35	38	43
134000	60781	130898	59374	33	34	37	43

A/C Gross Weight (lb)	A/C Gross Weight (kg)	MLG Load (lb)	MLG Load (kg)	ACN High Strength CBR=15	ACN Medium Strength CBR=10	ACN Low Strength CBR=6	ACN Ultra-Low Strength CBR=3
133000	60327	129958	58947	33	34	37	42
132000	59874	129017	58521	33	34	37	42
131000	59420	128077	58094	32	34	36	42
130000	58966	127137	57668	32	33	36	41
129000	58513	126197	57241	32	33	36	41
128000	58059	125256	56815	31	33	35	41
127000	57606	124202	56337	31	32	35	40
126000	57152	123147	55858	31	32	35	40
125000	56699	122092	55379	31	32	34	39
124000	56245	121037	54901	30	31	34	39
123000	55791	119983	54423	30	31	34	39
122000	55338	118928	53944	30	31	33	38
121000	54884	117873	53466	29	31	33	38
120000	54431	116819	52988	29	30	33	37
119000	53977	115764	52509	29	30	32	37
118000	53523	114709	52031	29	30	32	37
117000	53070	113655	51552	28	29	32	36
116000	52616	112600	51074	28	29	31	36
115000	52163	111545	50595	28	29	31	35
114000	51709	110490	50117	27	28	31	35
113000	51255	109436	49639	27	28	30	35
112000	50802	108381	49160	27	28	30	34
111000	50348	107326	48682	26	27	30	34
110000	49895	106272	48204	26	27	29	33
109000	49441	105217	47725	26	27	29	33
108000	48987	104162	47247	26	26	29	33

A/C Gross Weight (lb)	A/C Gross Weight (kg)	MLG Load (lb)	MLG Load (kg)	ACN High Strength CBR=15	ACN Medium Strength CBR=10	ACN Low Strength CBR=6	ACN Ultra-Low Strength CBR=3
107000	48534	103107	46768	25	26	28	32
106000	48080	102053	46290	25	26	28	32
105000	47627	100998	45811	25	26	27	31
104000	47173	99943	45333	24	25	27	31
103000	46719	98889	44855	24	25	27	31
102000	46266	97834	44376	24	25	26	30
101000	45812	96779	43898	24	24	26	30
100000	45359	95725	43420	23	24	26	29
99000	44905	94670	42941	23	24	25	29
98000	44452	93615	42463	23	23	25	29
97000	43998	92560	41984	22	23	25	28
96000	43544	91506	41506	22	23	24	28
95000	43091	90451	41027	22	22	24	27
94000	42637	89396	40549	22	22	24	27
93000	42184	88342	40071	21	22	23	27
92000	41730	87287	39592	21	22	23	26
91000	41276	86232	39114	21	21	23	26
90000	40823	85177	38635	20	21	22	25
89000	40369	84123	38157	20	21	22	25
88000	39916	83068	37678	20	20	22	25
87000	39462	82013	37200	20	20	21	24
86000	39008	80959	36722	19	20	21	24
85000	38555	79904	36243	19	19	21	23
84000	38101	78849	35765	19	19	20	23
83000	37648	77795	35287	18	19	20	23
82000	37194	76740	34808	18	18	20	22

A/C Gross Weight (lb)	A/C Gross Weight (kg)	MLG Load (lb)	MLG Load (kg)	ACN High Strength CBR=15	ACN Medium Strength CBR=10	ACN Low Strength CBR=6	ACN Ultra-Low Strength CBR=3
81000	36740	75685	34330	18	18	19	22
80000	36287	74630	33851	18	18	19	22



LEGEND

- Ultra low strength california bearing ratio=3.
- Low strength california bearing ratio=6.
- Medium strength california bearing ratio=10.
- High strength california bearing ratio=15.

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Figure 2 ACN results - Flexible pavement

3 Aircraft Classification Number (ACN) results for most forward C.G. positions

Refer to Table 6 for tabular format and Fig. 3 for graphical format for the ACN results for rigid pavement and Table 7 for tabular format and Fig. 4 for graphical format for the ACN results for flexible pavement.

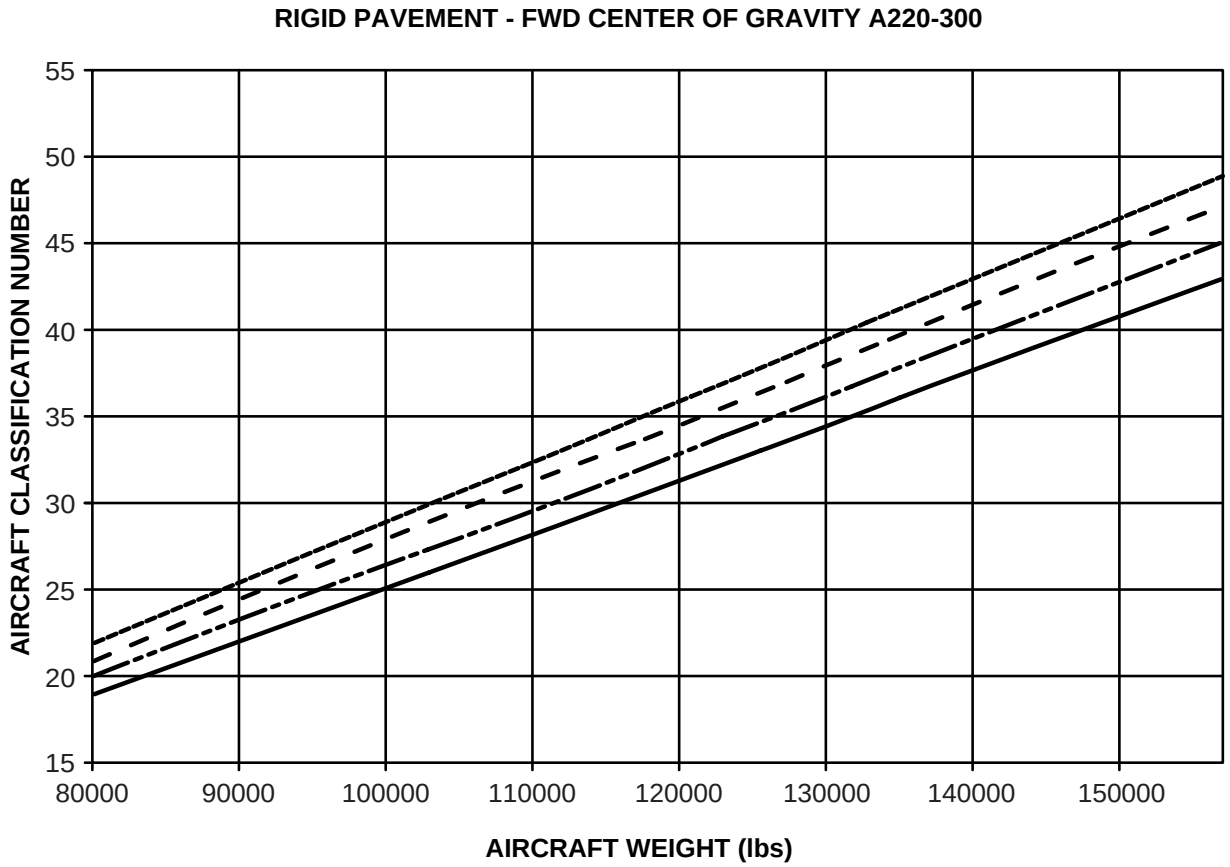
Table 6 Aircraft Classification Number (ACN) RESULTS FOR MOST FWD C.G. RIGID PAVEMENT

A/C Gross Weight (lb)	A/C Gross Weight (Kg)	MLG Load (lb)	MLG Load (kg)	ACN High Strength K=150 MN/m3	ACN Medium Strength K=80 MN/m3	ACN Low Strength K=40 MN/m3	ACN Ultra-Low Strength K=20 MN/m3
157000	71213	144570	65575	43	45	47	49
156300	70896	143858	65252	43	45	47	49
156000	70760	143589	65130	43	45	47	48
155000	70306	142695	64725	42	44	46	48
154000	69853	141801	64319	42	44	46	48
153000	69399	140907	63914	42	44	46	47
152000	68945	140013	63508	41	43	45	47
151000	68492	139119	63103	41	43	45	47
150000	68038	138225	62697	41	43	45	46
149000	67585	137331	62292	40	42	44	46
148000	67131	136437	61886	40	42	44	46
147000	66678	135543	61481	40	42	44	45
146000	66224	134649	61075	39	41	43	45
145000	65770	133755	60670	39	41	43	45
144000	65317	132860	60264	39	41	43	44
143000	64863	131966	59858	39	41	42	44
142000	64410	131072	59453	38	40	42	44
141000	63956	130178	59047	38	40	42	43
140000	63502	129284	58642	38	40	41	43
139000	63049	128390	58236	37	39	41	43
138000	62595	127496	57831	37	39	41	42

A/C Gross Weight (lb)	A/C Gross Weight (Kg)	MLG Load (lb)	MLG Load (kg)	ACN High Strength K=150 MN/m3	ACN Medium Strength K=80 MN/m3	ACN Low Strength K=40 MN/m3	ACN Ultra-Low Strength K=20 MN/m3
137000	62142	126602	57425	37	39	40	42
136000	61688	125708	57020	36	38	40	42
135000	61234	124814	56614	36	38	40	41
134500	61008	124367	56411	36	38	40	41
134000	60781	123535	56034	36	37	39	41
133000	60327	122624	55621	35	37	39	40
132000	59874	121713	55208	35	37	39	40
131000	59420	120801	54794	35	36	38	40
130000	58966	119890	54381	34	36	38	39
129000	58513	118979	53967	34	36	38	39
128000	58059	118067	53554	34	36	37	39
127000	57606	117099	53115	33	35	37	38
126000	57152	116130	52675	33	35	37	38
125000	56699	115162	52236	33	35	36	38
124000	56245	114193	51797	33	34	36	37
123000	55791	113225	51357	32	34	36	37
122000	55338	112256	50918	32	34	35	37
121000	54884	111287	50478	32	33	35	36
120000	54431	110319	50039	31	33	35	36
119000	53977	109350	49600	31	33	34	36
118000	53523	108382	49161	31	32	34	35
117000	53070	107413	48721	30	32	34	35
116000	52616	106445	48282	30	32	33	35
115000	52163	105476	47843	30	31	33	34
114000	51709	104507	47403	29	31	33	34
113000	51255	103539	46964	29	31	32	33

A/C Gross Weight (lb)	A/C Gross Weight (Kg)	MLG Load (lb)	MLG Load (kg)	ACN High Strength K=150 MN/ m3	ACN Medium Strength K=80 MN/ m3	ACN Low Strength K=40 MN/ m3	ACN Ultra-Low Strength K=20 MN/ m3
112000	50802	102570	46524	29	30	32	33
111000	50348	101602	46085	29	30	31	33
110000	49895	100633	45646	28	30	31	32
109000	49441	99664	45206	28	29	31	32
108000	48987	98696	44767	28	29	30	32
107000	48534	97727	44328	27	29	30	31
106000	48080	96759	43889	27	28	30	31
105000	47627	95790	43449	27	28	29	31
104000	47173	94822	43010	26	28	29	30
103000	46719	93853	42570	26	27	29	30
102000	46266	92884	42131	26	27	28	30
101000	45812	91916	41692	25	27	28	29
100000	45359	90947	41252	25	26	28	29
99000	44905	89979	40813	25	26	27	29
98000	44452	89010	40374	24	26	27	28
97000	43998	88042	39935	24	25	27	28
96000	43544	87073	39495	24	25	26	28
95000	43091	86104	39056	24	25	26	27
94000	42637	85136	38617	23	24	26	27
93000	42184	84167	38177	23	24	25	26
92000	41730	83199	37738	23	24	25	26
91000	41276	82230	37298	22	23	25	26
90000	40823	81261	36859	22	23	24	25
89000	40369	80293	36420	22	23	24	25
88000	39916	79324	35980	21	23	24	25
87000	39462	78356	35541	21	22	23	24

A/C Gross Weight (lb)	A/C Gross Weight (Kg)	MLG Load (lb)	MLG Load (kg)	ACN High Strength K=150 MN/m3	ACN Medium Strength K=80 MN/m3	ACN Low Strength K=40 MN/m3	ACN Ultra-Low Strength K=20 MN/m3
86000	39008	77387	35102	21	22	23	24
85000	38555	76419	34663	20	22	23	24
84000	38101	75450	34223	20	21	22	23
83000	37648	74481	33783	20	21	22	23
82000	37194	73513	33344	20	21	22	23
81000	36740	72544	32905	19	20	21	22
80000	36287	71576	32466	19	20	21	22



LEGEND

- Ultra low strength k=20 mn/m³.
- Low strength k=40 mn/m³.
- Medium strength k=80 mn/m³.
- High strength k=150 mn/m³.

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Figure 3 ACN results - Rigid pavement

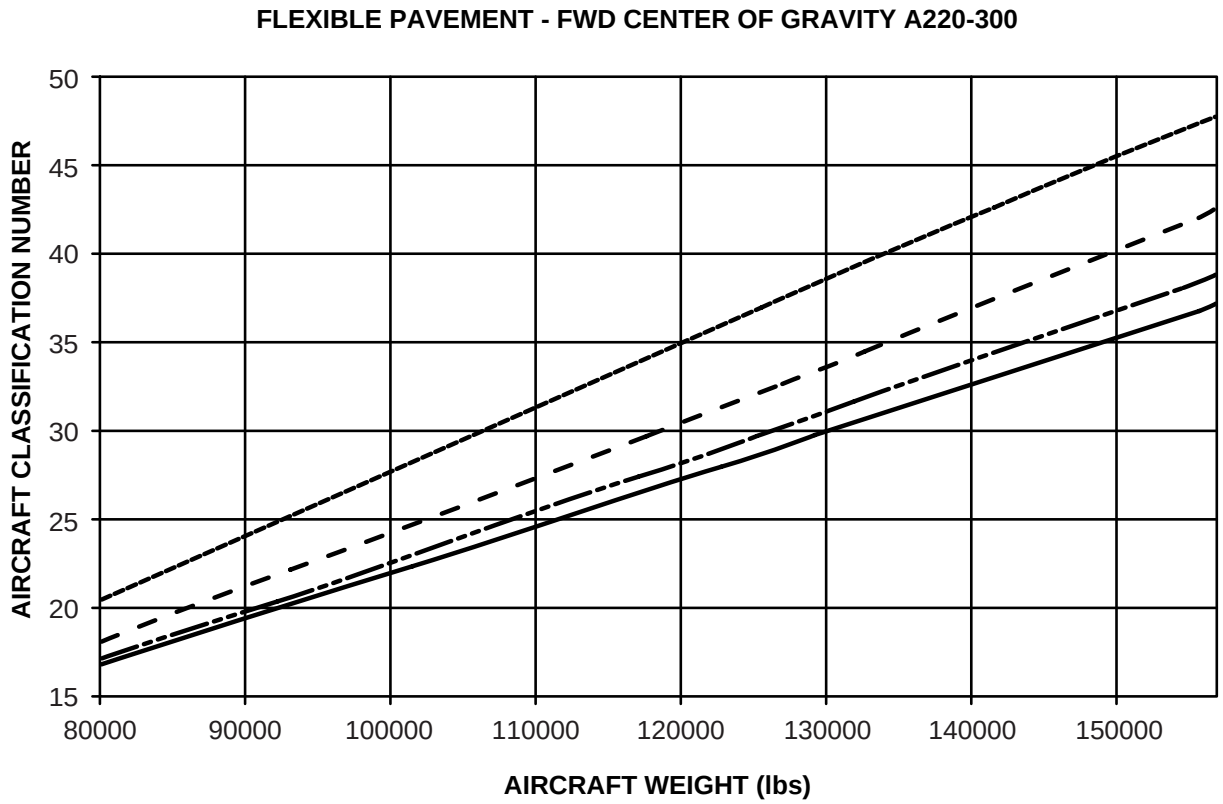
Table 7 Aircraft Classification Number (ACN) RESULTS FOR MOST FWD C.G. FLEXIBLE PAVEMENT

A/C Gross Weight (lb)	A/C Gross Weight (Kg)	MLG Load (lb)	MLG Load (kg)	ACN High Strength CBR=15	ACN Medium Strength CBR=10	ACN Low Strength CBR=6	ACN Ultra-Low Strength CBR=3
157000	71213	144570	65575	37	39	43	48
156300	70896	143858	65252	37	39	42	48
156000	70760	143589	65130	37	38	42	47
155000	70306	142695	64725	37	38	42	47
154000	69853	141801	64319	36	38	41	47
153000	69399	140907	63914	36	38	41	46
152000	68945	140013	63508	36	37	41	46
151000	68492	139119	63103	36	37	40	46
150000	68038	138225	62697	35	37	40	45
149000	67585	137331	62292	35	36	40	45
148000	67131	136437	61886	35	36	39	45
147000	66678	135543	61481	34	36	39	44
146000	66224	134649	61075	34	36	39	44
145000	65770	133755	60670	34	35	39	44
144000	65317	132860	60264	34	35	38	43
143000	64863	131966	59858	33	35	38	43
142000	64410	131072	59453	33	34	38	43
141000	63956	130178	59047	33	34	37	42
140000	63502	129284	58642	33	34	37	42
139000	63049	128390	58236	32	34	37	42
138000	62595	127496	57831	32	33	36	41
137000	62142	126602	57425	32	33	36	41
136000	61688	125708	57020	32	33	36	41
135000	61234	124814	56614	31	33	35	40
134500	61008	124367	56411	31	32	35	40
134000	60781	123535	56034	31	32	35	40

A/C Gross Weight (lb)	A/C Gross Weight (Kg)	MLG Load (lb)	MLG Load (kg)	ACN High Strength CBR=15	ACN Medium Strength CBR=10	ACN Low Strength CBR=6	ACN Ultra-Low Strength CBR=3
133000	60327	122624	55621	31	32	35	40
132000	59874	121713	55208	30	32	34	39
131000	59420	120801	54794	30	31	34	39
130000	58966	119890	54381	30	31	34	38
129000	58513	118979	53967	30	31	33	38
128000	58059	118067	53554	29	31	33	38
127000	57606	117099	53115	29	30	33	37
126000	57152	116130	52675	29	30	32	37
125000	56699	115162	52236	29	30	32	37
124000	56245	114193	51797	28	29	32	36
123000	55791	113225	51357	28	29	31	36
122000	55338	112256	50918	28	29	31	36
121000	54884	111287	50478	28	29	31	35
120000	54431	110319	50039	27	28	30	35
119000	53977	109350	49600	27	28	30	35
118000	53523	108382	49161	27	28	30	34
117000	53070	107413	48721	26	27	29	34
116000	52616	106445	48282	26	27	29	33
115000	52163	105476	47843	26	27	29	33
114000	51709	104507	47403	26	27	29	33
113000	51255	103539	46964	25	26	28	32
112000	50802	102570	46524	25	26	28	32
111000	50348	101602	46085	25	26	28	32
110000	49895	100633	45646	25	25	27	31
109000	49441	99664	45206	24	25	27	31
108000	48987	98696	44767	24	25	27	31

A/C Gross Weight (lb)	A/C Gross Weight (Kg)	MLG Load (lb)	MLG Load (kg)	ACN High Strength CBR=15	ACN Medium Strength CBR=10	ACN Low Strength CBR=6	ACN Ultra-Low Strength CBR=3
107000	48534	97727	44328	24	25	26	30
106000	48080	96759	43889	24	24	26	30
105000	47627	95790	43449	23	24	26	29
104000	47173	94822	43010	23	24	25	29
103000	46719	93853	42570	23	23	25	29
102000	46266	92884	42131	23	23	25	28
101000	45812	91916	41692	22	23	25	28
100000	45359	90947	41252	22	23	24	28
99000	44905	89979	40813	22	22	24	27
98000	44452	89010	40374	21	22	24	27
97000	43998	88042	39935	21	22	23	27
96000	43544	87073	39495	21	21	23	26
95000	43091	86104	39056	21	21	23	26
94000	42637	85136	38617	20	21	22	25
93000	42184	84167	38177	20	21	22	25
92000	41730	83199	37738	20	20	22	25
91000	41276	82230	37298	20	20	21	24
90000	40823	81261	36859	19	20	21	24
89000	40369	80293	36420	19	19	21	24
88000	39916	79324	35980	19	19	20	23
87000	39462	78356	35541	19	19	20	23
86000	39008	77387	35102	18	19	20	23
85000	38555	76419	34663	18	18	20	22
84000	38101	75450	34223	18	18	19	22
83000	37648	74481	33783	17	18	19	21
82000	37194	73513	33344	17	17	19	21

A/C Gross Weight (lb)	A/C Gross Weight (Kg)	MLG Load (lb)	MLG Load (kg)	ACN High Strength CBR=15	ACN Medium Strength CBR=10	ACN Low Strength CBR=6	ACN Ultra-Low Strength CBR=3
81000	36740	72544	32905	17	17	18	21
80000	36287	71576	32466	17	17	18	20



LEGEND

- Ultra low strength california bearing ratio=3.
- Low strength california bearing ratio=6.
- Medium strength california bearing ratio=10.
- High strength california bearing ratio=15.

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Figure 4 ACN results - Flexible pavement

4 Load Classification Number (LCN) results for most aft C.G. positions

Refer to Table 8 for tabular format and Fig. 5 for graphical format for the LCN results for rigid pavement and Table 9 for tabular format and Fig. 6 for graphical format for the LCN results for flexible pavement.

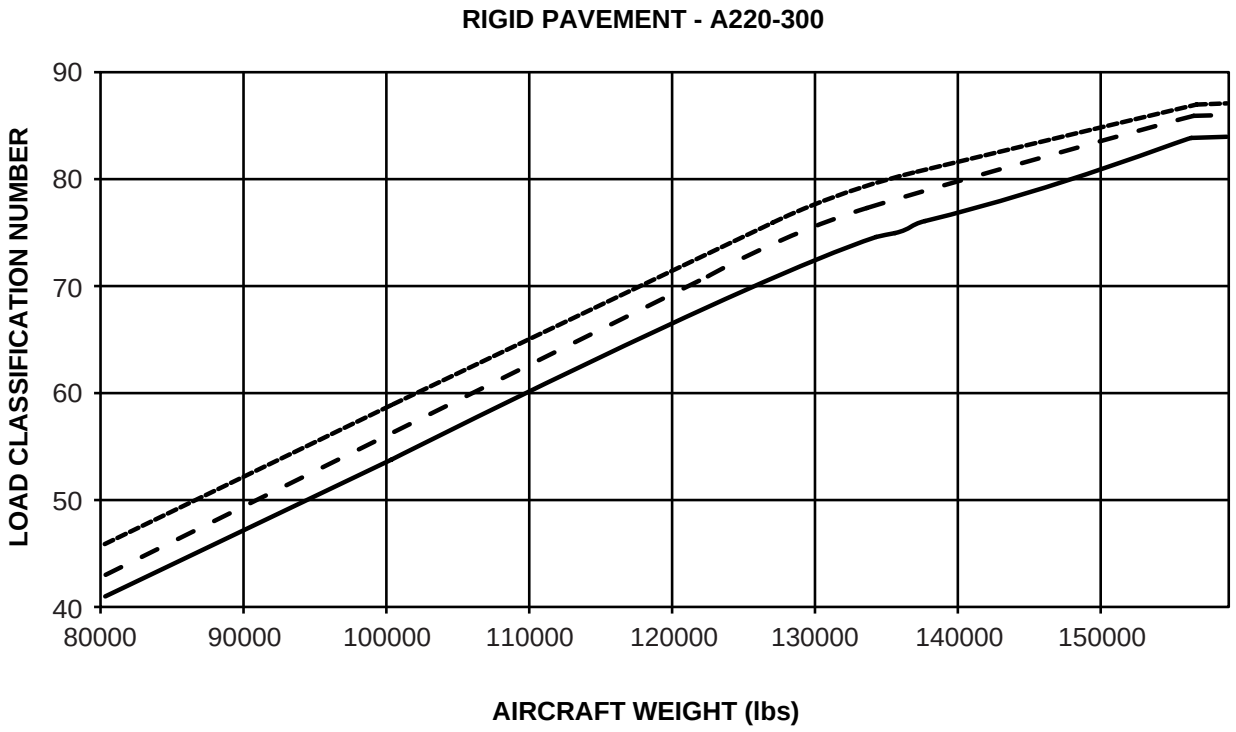
Table 8 Load Classification Number (LCN) RESULTS FOR MOST AFT C.G. RIGID PAVEMENT

Aircraft weight (Lbs)	Aircraft Weight (Kg)	Tire Pressure (psi)	L = 30 inches		L = 40 inches		L = 50 inches	
			ESWL	LCN	ESWL	LCN	ESWL	LCN
80000	36287	223	23768	41	24877	43	26095	46
81000	36740	223	24131	42	25265	44	26490	47
82000	37194	223	24494	42	25652	44	26885	47
83000	37648	223	24857	43	26040	45	27280	48
84000	38101	223	25221	44	26428	46	27675	49
85000	38555	223	25584	44	26816	46	28070	49
86000	39008	223	25947	45	27204	47	28465	50
87000	39462	223	26310	46	27591	48	28860	51
88000	39916	223	26673	46	27979	48	29255	51
89000	40369	223	27037	47	28367	49	29650	52
90000	40823	223	27400	47	28755	50	30045	52
91000	41276	223	27763	48	29143	50	30440	53
92000	41730	223	28126	49	29531	51	30835	54
93000	42184	223	28490	49	29918	52	31230	54
94000	42637	223	28853	50	30306	52	31625	55
95000	43091	223	29216	51	30694	53	32020	56
96000	43544	223	29579	51	31082	54	32415	56
97000	43998	223	29943	52	31470	54	32810	57
98000	44452	223	30306	53	31857	55	33205	58
99000	44905	223	30669	53	32245	56	33600	58
100000	45359	223	31032	54	32633	56	33995	59
101000	45812	223	31395	55	33021	57	34390	60

Aircraft weight (Lbs)	Aircraft Weight (Kg)	Tire Pressure (psi)	L = 30 inches		L = 40 inches		L = 50 inches	
			ESWL	LCN	ESWL	LCN	ESWL	LCN
102000	46266	223	31759	55	33409	58	34785	60
103000	46719	223	32122	56	33796	58	35180	61
104000	47173	223	32485	57	34184	59	35575	62
105000	47627	223	32848	57	34572	60	35970	62
106000	48080	223	33212	58	34960	60	36365	63
107000	48534	223	33575	58	35348	61	36760	63
108000	48987	223	33938	59	35736	62	37156	64
109000	49441	223	34301	60	36123	62	37551	65
110000	49895	223	34665	60	36511	63	37946	65
111000	50348	223	35028	61	36899	64	38341	66
112000	50802	223	35391	62	37287	64	38736	67
113000	51255	223	35754	62	37675	65	39131	67
114000	51709	223	36117	63	38062	66	39526	68
115000	52163	223	36481	64	38450	66	39921	69
116000	52616	223	36844	64	38838	67	40316	69
117000	53070	223	37207	65	39226	68	40711	70
118000	53523	223	37570	66	39614	68	41106	71
119000	53977	223	37934	66	40001	69	41501	71
120000	54431	223	38297	67	40389	70	41896	72
121000	54884	223	38660	67	40777	70	42291	72
122000	55338	223	39023	68	41165	71	42686	73
123000	55791	223	39387	69	41553	72	43081	74
124000	56245	223	39750	69	41941	72	43476	74
125000	56699	223	40113	70	42328	73	43871	75
126000	57152	223	40476	71	42716	74	44266	76
127000	57606	223	40840	71	43104	74	44661	76
128000	58059	223	41203	72	43492	75	45056	77

Aircraft weight (Lbs)	Aircraft Weight (Kg)	Tire Pressure (psi)	L = 30 inches		L = 40 inches		L = 50 inches	
			ESWL	LCN	ESWL	LCN	ESWL	LCN
129000	58513	223	41601	72	43818	75	45447	77
130000	58966	223	41999	73	44145	76	45838	78
131000	59420	223	42397	73	44471	76	46229	78
132000	59874	223	42795	74	44798	77	46620	79
133000	60327	223	43192	74	45124	77	47011	79
134000	60781	223	43590	75	45451	78	47402	80
134500	61008	223	43789	75	45614	78	47597	80
136000	61688	223	44167	76	46033	79	48010	80
137000	62142	223	44419	76	46313	79	48285	81
138000	62595	223	44671	76	46592	79	48560	81
139000	63049	223	44923	77	46872	80	48835	81
140000	63502	223	45174	77	47152	80	49111	82
141000	63956	223	45426	78	47431	80	49386	82
142000	64410	223	45678	78	47711	81	49661	82
143000	64863	223	45930	79	47990	81	49936	83
144000	65317	223	46182	79	48270	81	50211	83
145000	65770	223	46434	79	48549	82	50486	83
146000	66224	223	46686	80	48829	82	50762	84
147000	66678	223	46937	80	49109	83	51037	84
148000	67131	223	47189	81	49388	83	51312	84
149000	67585	223	47441	81	49668	83	51587	85
150000	68038	223	47693	81	49947	84	51862	85
151000	68492	223	47945	82	50227	84	52137	85
152000	68945	223	48197	82	50507	84	52413	86
153000	69399	223	48448	83	50786	85	52688	86
154000	69853	223	48700	83	51066	85	52963	86
155000	70306	223	48952	83	51345	86	53238	87

Aircraft weight (Lbs)	Aircraft Weight (Kg)	Tire Pressure (psi)	L = 30 inches		L = 40 inches		L = 50 inches	
			ESWL	LCN	ESWL	LCN	ESWL	LCN
156000	70760	223	49204	84	51625	86	53513	87
156300	70896	223	49279	84	51709	86	53596	87
157000	71213	223	49286	84	51715	86	53603	87



LEGEND

- Radius of relative stiffness L=50.00 in. (1270.00 mm).
- Radius of relative stiffness L=40.00 in. (1016.00 mm).
- Radius of relative stiffness L=30.00 in. (762.00 mm).

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Figure 5 LCN results - Rigid pavement

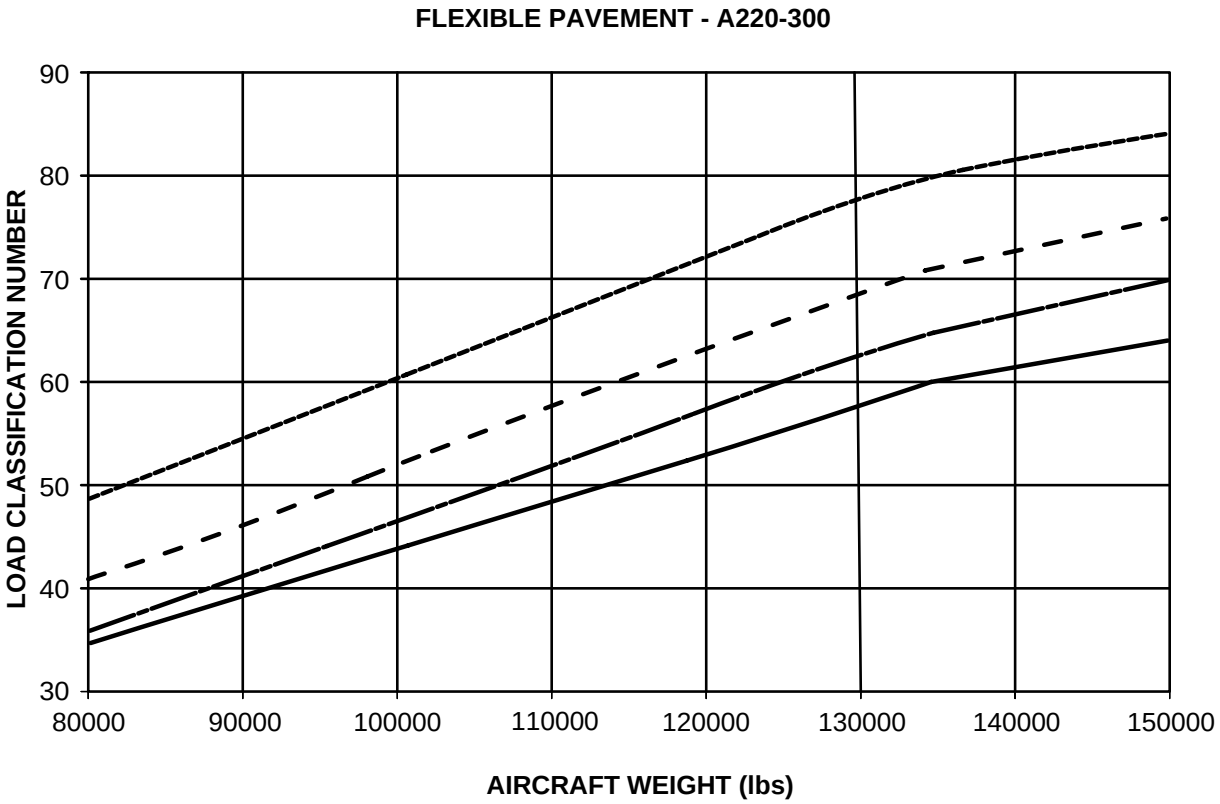
Table 9 Load Classification Number (LCN) RESULTS FOR MOST AFT C.G. FLEXIBLE PAVEMENT

Aircraft Weight (lbs)	Aircraft Weight (Kg)	Tire Pressure (psi)	Pavement Thickness 10 inches		Pavement Thickness 15 inches		Pavement Thickness 20 inches		Pavement Thickness 30 inches	
			ESWL	LCN	ESWL	LCN	ESWL	LCN	ESWL	LCN
80000	36287	223	18658	35	19711	36	22206	41	26268	49
81000	36740	223	18921	35	20015	37	22543	42	26658	50
82000	37194	223	19185	36	20320	37	22881	42	27048	50
83000	37648	223	19449	36	20624	38	23218	43	27438	51
84000	38101	223	19712	37	20929	38	23556	43	27828	51
85000	38555	223	19976	37	21234	39	23894	44	28219	52
86000	39008	223	20240	38	21538	39	24231	44	28609	53
87000	39462	223	20503	38	21843	40	24569	45	28999	53
88000	39916	223	20767	39	22147	40	24906	46	29389	54
89000	40369	223	21031	39	22452	41	25244	46	29779	54
90000	40823	223	21294	40	22757	41	25582	47	30169	55
91000	41276	223	21558	40	23061	42	25919	47	30560	55
92000	41730	223	21822	41	23366	43	26257	48	30950	56
93000	42184	223	22085	41	23670	43	26595	48	31340	57
94000	42637	223	22349	41	23975	44	26932	49	31730	57
95000	43091	223	22613	42	24280	44	27270	49	32120	58
96000	43544	223	22876	42	24584	45	27607	50	32510	58
97000	43998	223	23140	43	24889	45	27945	51	32901	59
98000	44452	223	23404	43	25193	46	28283	51	33291	60
99000	44905	223	23667	44	25498	46	28620	52	33681	60
100000	45359	223	23931	44	25803	47	28958	52	34071	61
101000	45812	223	24195	45	26107	47	29295	53	34461	61
102000	46266	223	24458	45	26412	48	29633	53	34851	62
103000	46719	223	24722	46	26717	48	29971	54	35242	62
104000	47173	223	24986	46	27021	49	30308	55	35632	63

Aircraft Weight (lbs)	Aircraft Weight (Kg)	Tire Pressure (psi)	Pavement Thickness 10 inches		Pavement Thickness 15 inches		Pavement Thickness 20 inches		Pavement Thickness 30 inches	
			ESWL	LCN	ESWL	LCN	ESWL	LCN	ESWL	LCN
105000	47627	223	25250	46	27326	50	30646	55	36022	64
106000	48080	223	25513	47	27630	50	30983	56	36412	64
107000	48534	223	25777	47	27935	51	31321	56	36802	65
108000	48987	223	26041	48	28240	51	31659	57	37192	65
109000	49441	223	26304	48	28544	52	31996	57	37582	66
110000	49895	223	26568	49	28849	52	32334	58	37973	67
111000	50348	223	26832	49	29153	53	32671	58	38363	67
112000	50802	223	27095	50	29458	53	33009	59	38753	68
113000	51255	223	27359	50	29763	54	33347	60	39143	68
114000	51709	223	27623	51	30067	54	33684	60	39533	69
115000	52163	223	27886	51	30372	55	34022	61	39923	69
116000	52616	223	28150	52	30676	56	34359	61	40314	70
117000	53070	223	28414	52	30981	56	34697	62	40704	71
118000	53523	223	28677	52	31286	57	35035	62	41094	71
119000	53977	223	28941	53	31590	57	35372	63	41484	72
120000	54431	223	29205	53	31895	58	35710	64	41874	72
121000	54884	223	29468	54	32199	58	36047	64	42264	73
122000	55338	223	29732	54	32504	59	36385	65	42655	74
123000	55791	223	29996	55	32809	59	36723	65	43045	74
124000	56245	223	30259	55	33113	60	37060	66	43435	75
125000	56699	223	30523	56	33418	60	37398	66	43825	75
126000	57152	223	30787	56	33722	61	37735	67	44215	76
127000	57606	223	31050	57	34027	61	38073	67	44605	76
128000	58059	223	31314	57	34332	62	38411	68	44996	77
129000	58513	223	31549	57	34611	62	38719	68	45349	77
130000	58966	223	31784	58	34890	63	39027	69	45702	78

Aircraft Weight (lbs)	Aircraft Weight (Kg)	Tire Pressure (psi)	Pavement Thickness 10 inches		Pavement Thickness 15 inches		Pavement Thickness 20 inches		Pavement Thickness 30 inches	
			ESWL	LCN	ESWL	LCN	ESWL	LCN	ESWL	LCN
131000	59420	223	32019	58	35170	63	39335	69	46056	78
132000	59874	223	32254	59	35449	64	39643	70	46409	79
133000	60327	223	32489	59	35728	64	39950	70	46762	79
134000	60781	223	32724	60	36007	65	40258	71	47115	80
134500	61008	223	32842	60	36147	65	40412	71	47292	80
135000	61234	223	32931	60	36254	65	40530	71	47426	80
136000	61688	223	33108	60	36467	65	40764	71	47695	80
137000	62142	223	33286	61	36680	66	40999	72	47963	81
138000	62595	223	33464	61	36893	66	41233	72	48231	81
139000	63049	223	33641	61	37106	66	41468	72	48500	81
140000	63502	223	33819	62	37319	67	41702	73	48768	82
141000	63956	223	33996	62	37532	67	41937	73	49036	82
142000	64410	223	34174	62	37745	67	42171	73	49305	82
143000	64863	223	34351	62	37958	68	42406	74	49573	82
144000	65317	223	34529	63	38171	68	42640	74	49841	83
145000	65770	223	34707	63	38384	68	42874	74	50110	83
146000	66224	223	34884	63	38597	69	43109	75	50378	83
147000	66678	223	35062	63	38810	69	43343	75	50646	83
148000	67131	223	35239	64	39023	69	43578	75	50915	84
149000	67585	223	35417	64	39236	70	43812	76	51183	84
150000	68038	223	35594	64	39449	70	44047	76	51451	84
151000	68492	223	35772	65	39662	70	44281	76	51720	85
152000	68945	223	35950	65	39875	71	44516	77	51988	85
153000	69399	223	36127	65	40088	71	44750	77	52256	85
154000	69853	223	36305	65	40301	71	44985	77	52525	85
155000	70306	223	36482	66	40514	72	45219	78	52793	86

Aircraft Weight (lbs)	Aircraft Weight (Kg)	Tire Pressure (psi)	Pavement Thickness 10 inches		Pavement Thickness 15 inches		Pavement Thickness 20 inches		Pavement Thickness 30 inches	
			ESWL	LCN	ESWL	LCN	ESWL	LCN	ESWL	LCN
156000	70760	223	36660	66	40727	72	45454	78	53061	86
156100	70805	223	36678	66	40749	72	45477	78	53088	86
156200	70851	223	36695	66	40770	72	45501	78	53115	86
156300	70896	223	36713	66	40791	72	45524	78	53142	86
157000	71213	223	36718	66	40797	72	45530	78	53149	86



LEGEND

- Radius of relative stiffness L=30.00 in. (762.00 mm).
- Radius of relative stiffness L=20.00 in. (508.00 mm).
- Radius of relative stiffness L=15.00 in. (381.00 mm).
- Radius of relative stiffness L=10.00 in. (254.00 mm).

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Figure 6 LCN results - Flexible pavement

5 Required Pavement Thickness

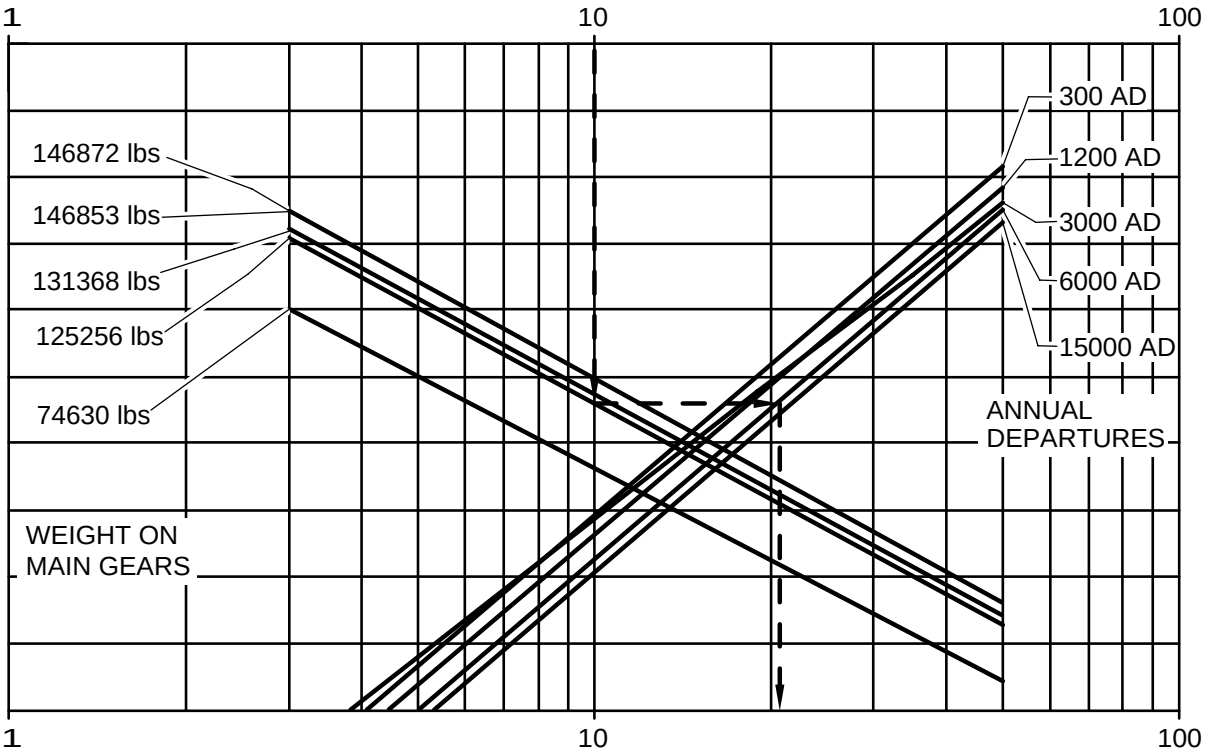
An essential parameter to calculate the PCN is the required pavement thickness.Fig. 7 and Fig. 8. provide a graphical way to determine the required rigid or flexible pavement thickness based on the pavement strength, aircraft load applied to the pavement, and the annual departure rate. Normally, each airport calculates the PCN based on the different aircraft types which operate to and from that airport considering the number of annual departure for each aircraft type. Using the graphs in this section, one can conclude on the impact of annual departure on required pavement thickness. This material gives the user another mean to evaluate the considered airport for operating the A220 more realistically based on more realistic number of annual departure.

Note

Number of annual departure starts from 300 (close to 1 flight per day). In fact, this gives the reader a better idea about required pavement thickness on those small airports that might not have a very high usage rate.

A220-300, AFT CENTER OF GRAVITY, REQUIRED FLEXIBLE PAVEMENT THICKNESS

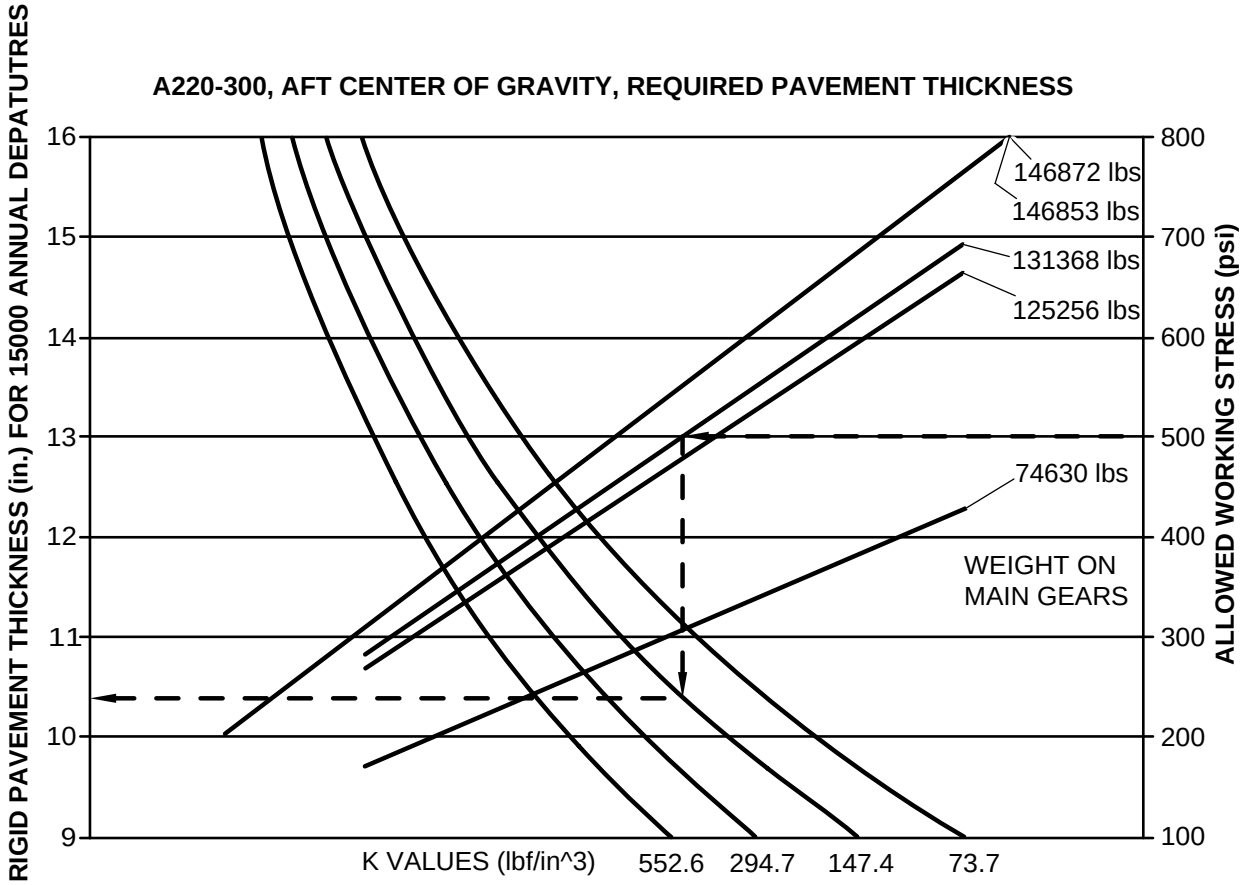
SUBGRADE STRENGTH - CALIFORNIA BEARING RATIO



FLEXIBLE PAVEMENT THICKNESS (in.)

ICN-BD500-A-J000000-C-3AB48-57661-A-003-01

Figure 7 Flexible pavement required thickness



ICN-BD500-A-J000000-C-3AB48-57662-A-003-01

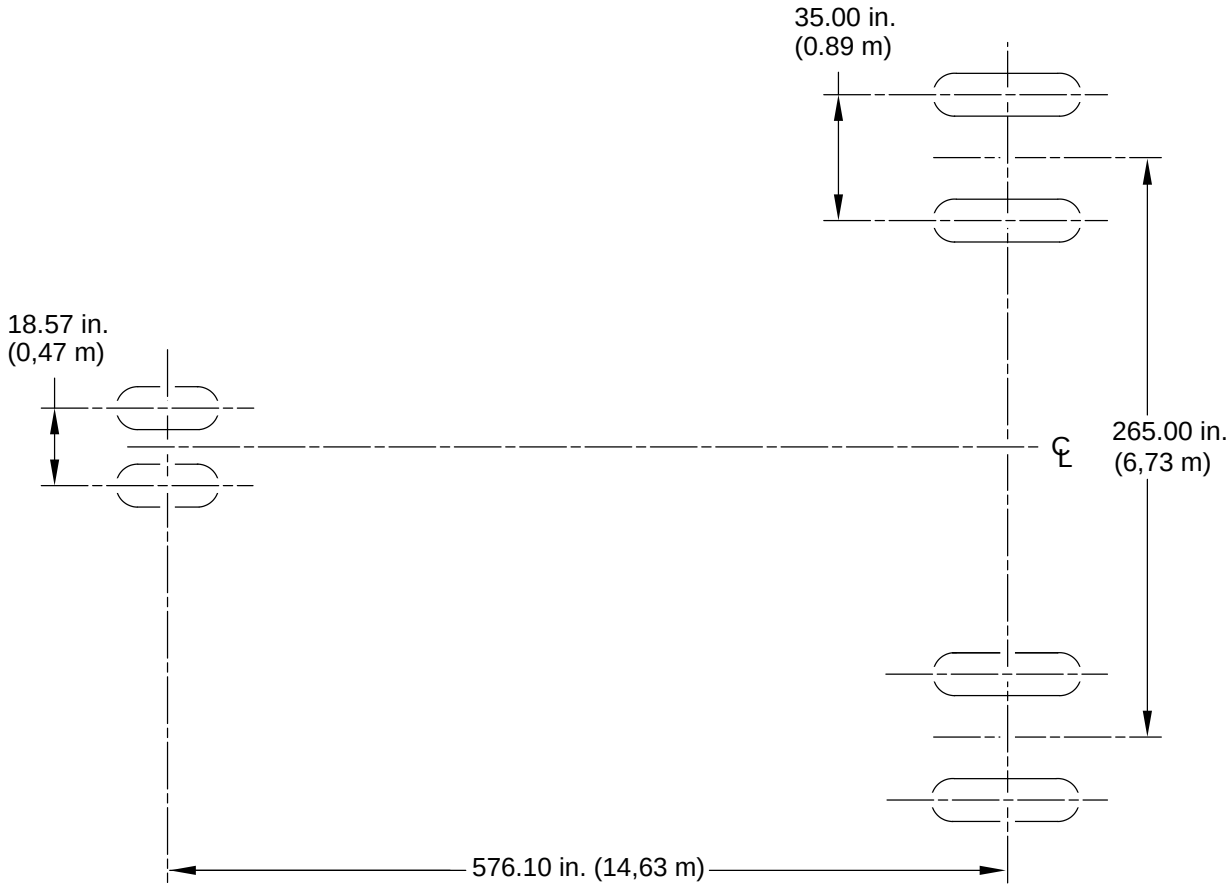
Figure 8 Rigid pavement required thickness

6 Landing gear footprint

Refer to Fig. 9 for the landing gear footprint.

Table 10 Landing gear footprint

code	A-B-C-D-E-F-G-H-I-J-K-L-M-N-O-P
Percentage of weight on main gear group	Refer to section 4
Nose gear tire size	27 x 8.5 R12 16 PR
Nose gear tire pressure	146 PSIG (10 Bar)
Main gear tire size	H42 x15.0 R21 26 PR
Main gear tire pressure	213 PSIG (14.7 Bar)



NOTE

Not to scale.

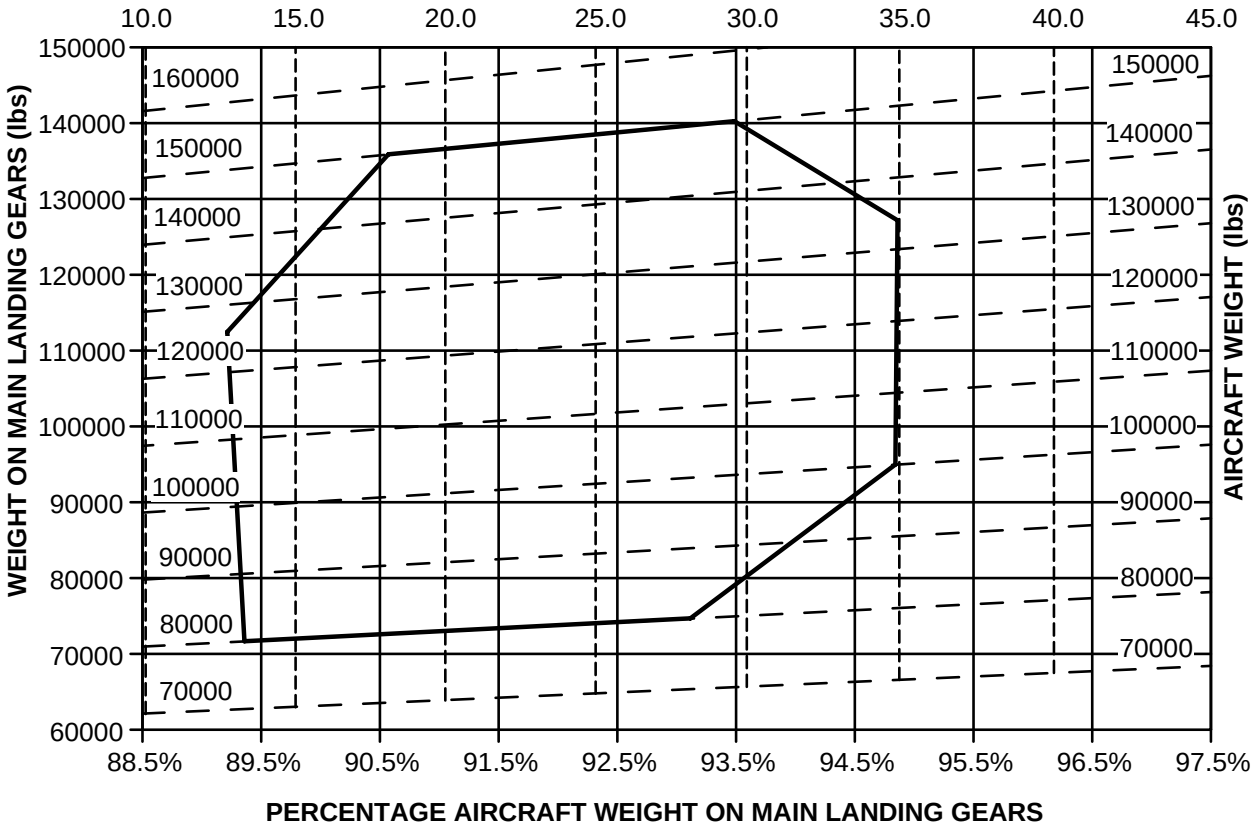
ICN-BD500-A-J000000-A-3AB48-21629-A-001-01

Figure 9 Landing gear footprint

7 Maximum pavement loads

The maximum pavement load is given at aircraft CG,weight on Main Landing Gear (MLG) and aircraft weight.

Refer to Fig. 10 for graphical format.



LEGEND

- Aircraft center of gravity.
- Aircraft weight.
- A220-300 ground center of gravity envelope.

ICN-BD500-A-J000000-C-3AB48-58657-A-001-01

Figure 10 Maximum pavement load

A220

Derivative aircraft - Technical data

Applicability: 55001-59999

Table of contents

List of tables

References

Table 1 References

Data Module/Technical Publication	Title
None	

Description

This section will be updated if new derivatives of the BD-500-1A11 (A220-300) model are manufactured.

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A220

Scaled drawings - Technical data

Applicability: 55001-59999

Table of contents

List of tables

List of figures

References

Table 1 References

Data Module/Technical Publication	Title
None	

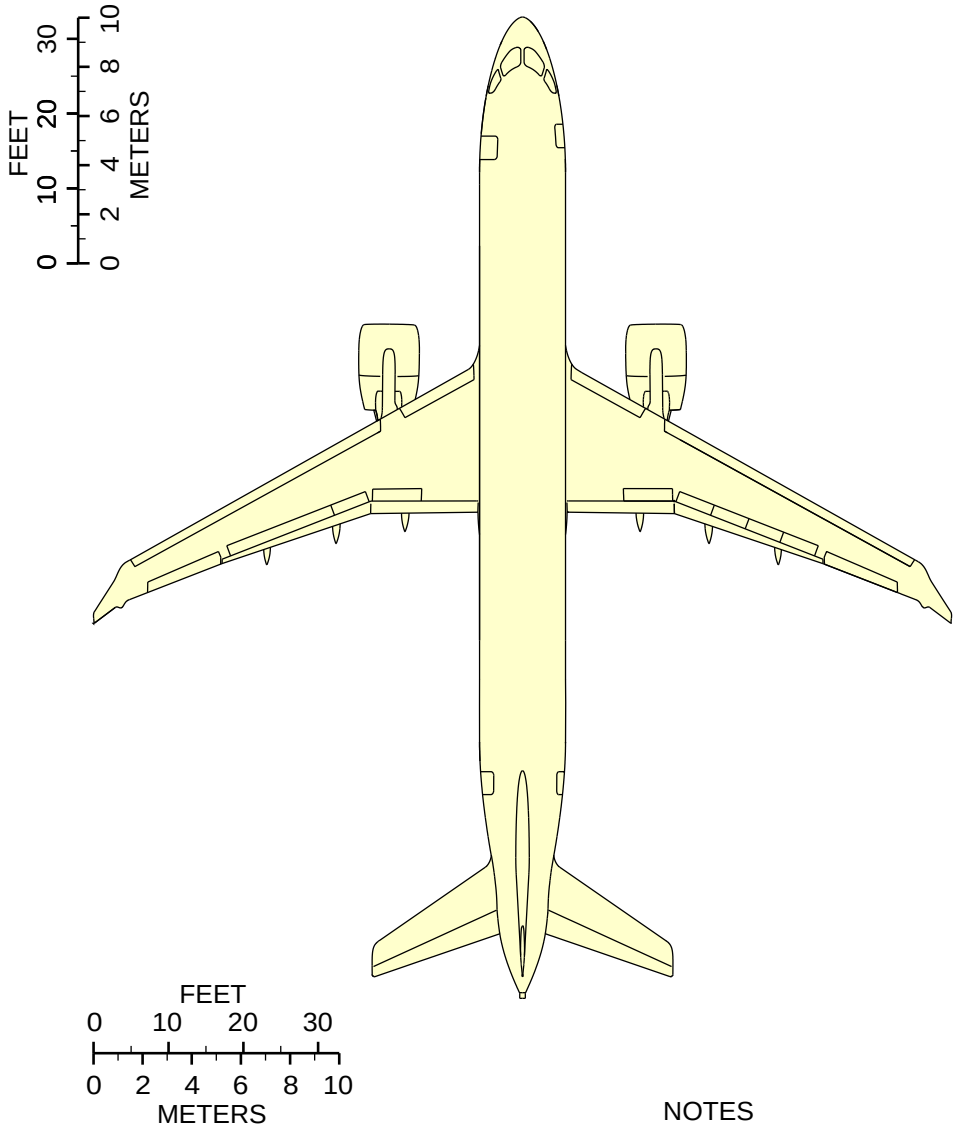
Description

1 Introduction

This data module contains the scaled drawings for the Airbus BD500–1A11 (A220-300).

It can be used to plan and to verify runway, ramp, and maintenance facility layouts.

Refer to Fig. 1 for the scaled drawing.



NOTES

1. Scale: 1 in. = 25 ft (1 cm = 3 m)
2. When printing this illustration, make sure to adjust for proper scaling.

ICN-BD500-A-J000000-A-3AB48-23263-A-001-01

Figure 1 Scaled drawing