A318

AIRPLANE CHARACTERISTICS

AC

AIRBUS S.A.S.
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FRANCE

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HIGHLIGHTS

Revision No. 7 - Sep 01/10

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SCOPE

1-1-0 Purpose

**ON A/C A318-100

Purpose

1. General
   The A318 AIRPLANE CHARACTERISTICS (AC) manual is issued for the A318 basic versions to provide the necessary data needed by airport operators and airlines for the planning of airport facilities.

   This document conforms to NAS 3601.

   CORRESPONDENCE
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1-2-0 Introduction

**ON A/C A318-100

Introduction

1. General

This manual comprises 9 chapters with a List of Effective Pages (LEP) and a Table Of Content (TOC) at the beginning of the manual.

Chapter 1: SCOPE

Chapter 2: AIRPLANE DESCRIPTION

This chapter contains general dimensional and other basic aircraft data.

It covers:
- aircraft dimensions and ground clearances,
- passenger and cargo compartment arrangement.

Chapter 3: AIRPLANE PERFORMANCE

This chapter indicates the aircraft performance.

It covers:
- payload range,
- takeoff and landing runway requirements,
- landing approach speed.

Chapter 4: GROUND MANEUVERING

This chapter provides the aircraft turning capability and maneuvering characteristics on the ground.

It includes:
- turning radii and visibility from the cockpit,
- runway and taxiway turn path.

Chapter 5: TERMINAL SERVICING

This chapter provides information for the arrangement of ground handling and servicing equipments.

It covers:
- location and connections of ground servicing equipments,

- engine starting pneumatic and preconditioned airflow requirements.

Chapter 6: OPERATING CONDITIONS

This chapter contains data and safety/environmental precautions related to engine and APU operation on the ground.

It covers:
- contour size and shape of the jet engine exhaust velocities and temperature,
- noise data.

Chapter 7: PAVEMENT DATA

This chapter contains the pavement data helpful for airport planning.

It gives:
- landing gear foot print and static load,
- charts for flexible pavements with Load Classification Number (LCN),
- charts for rigid pavements with LCN,
- Aircraft Classification Number (ACN), Pavement Classification Number (PCN), reporting system for flexible and rigid pavements.

Chapter 8: DERIVATIVE AIRPLANES

This chapter gives relevant data of possible new version with the associated size change.

Chapter 9: SCALED DRAWING

This chapter contains different A318 scaled drawings.

AIRPLANE DESCRIPTION

2-1-0 General Airplane Characteristics

****ON A/C A318-100**

General Airplane Characteristics

1. General Airplane Characteristics
   The weight terms used throughout this manual are given below together with their respective definitions.

   Maximum Taxi Weight (MTW):
   Maximum weight for ground maneuver as limited by aircraft strength and airworthiness requirements. (It includes weight of run-up and taxi fuel). It is also called Maximum Ramp Weight (MRW).

   Maximum Landing Weight (MLW):
   Maximum weight for landing as limited by aircraft strength and airworthiness requirements.

   Maximum Takeoff Weight (MTOW):
   Maximum weight for takeoff as limited by aircraft strength and airworthiness requirements. (This is the maximum weight at start of the takeoff run).

   Maximum Zero Fuel Weight (MZFW):
   Maximum operational weight of the aircraft without usable fuel.

   Operational Empty Weight (OEW):
   Weight of structure, powerplant, furnishings, systems, and other items of equipment that are an integral part of a particular aircraft configuration plus the operator's items. The operator's items are the flight and cabin crew and their baggage, unusable fuel, engine oil, emergency equipment, toilet chemical and fluids, galley structure, catering equipment, passenger seats and life vests, documents, etc.

   Maximum Payload:
   Maximum Zero Fuel Weight (MZFW) minus Operational Empty Weight (OEW).

   Maximum Seating Capacity:
   Maximum number of passengers specifically certified or anticipated for certification.

   Maximum Cargo Volume:
   Maximum usable volume available for cargo.

   Usable Fuel:
   Fuel available for aircraft propulsion.

2-1-1 General Airplane Characteristics Data

**ON A/C A318-100

General Airplane Characteristics Data

1. The following table provides characteristics of A318-100 Models, these data are specific to each Weight Variant:

Aircraft Characteristics						
		WV000	WV001	WV002	WV003	WV004
Maximum Ramp Weight (MRW) Maximum Taxi Weight (MTW)	Kilograms	59 400	61 900	63 400	64 900	66 400
	Pounds	130 955	136 466	139 773	143 080	146 387
Maximum Takeoff Weight (MTOW)	Kilograms	59 000	61 500	63 000	64 500	66 000
	Pounds	130 073	135 584	138 891	142 198	145 505
Maximum Landing Weight (MLW)	Kilograms	56 000	56 000	57 500	57 500	57 500
	Pounds	123 459	123 459	126 766	126 766	126 766
Maximum Zero Fuel Weight (MZFW)	Kilograms	53 000	53 000	54 500	54 500	54 500
	Pounds	116 845	116 845	120 152	120 152	120 152
Estimated Operational Empty Weight (OEW)	CFM Engines	38 818 kg (85 579 lb)				
	PW Engines	38 661 kg (85 233 lb)				
Estimated Maximum Payload CFM 56	Kilograms	14 182		15 682		
	Pounds	31 266		34 573		
Estimated Maximum Payload PW 6000	Kilograms	14 339		15 839		
	Pounds	31 612		34 919		

Aircraft Characteristics					
		WV005	WV006	WV007	WV008
Maximum Ramp Weight (MRW) Maximum Taxi Weight (MTW)	Kilograms	68 400	56 400	61 400	64 400
	Pounds	150 796	124 341	135 364	141 978
Maximum Takeoff Weight (MTOW)	Kilograms	68 000	56 000	61 000	64 000
	Pounds	149 914	123 459	134 482	141 096
Maximum Landing Weight (MLW)	Kilograms	57 500	56 000	56 000	56 000
	Pounds	126 766	123 459	123 459	123 459
Maximum Zero Fuel Weight (MZFW)	Kilograms	54 500	53 000	53 000	53 000
	Pounds	120 152	116 845	116 845	116 845
Estimated Operational Empty Weight (OEW)	CFM Engines	38 818 kg (85 579 lb)			
	PW Engines	38 661 kg (85 233 lb)			

Aircraft Characteristics					
		WV005	WV006	WV007	WV008
Estimated Maximum Payload CFM 56	Kilograms	15 682	14 182		
	Pounds	34 573	31 266		
Estimated Maximum Payload PW 6000	Kilograms	15 839	14 339		
	Pounds	34 919	31 612		

2. The following table provides characteristics of A318 Models, these data are common to each Weight Variant:

Aircraft Characteristics		
Standard Seating Capacity	Single-class	132
Usable Fuel Capacity	Liters	23 859
	US gallons	6 303
	Kilograms (density = 0.785 kg/l)	18 729
	Pounds	41 290
Pressurized Fuselage Volume (A/C non equipped)	Cubic meters	257
	Cubic feet	9 076
Passenger Compartment Volume	Cubic meters	107
	Cubic feet	3 779
Cockpit Volume	Cubic meters	9
	Cubic feet	318
Usable Volume, FWD CC	Cubic meters	6.72
	Cubic feet	237.3
Usable Volume, AFT CC	Cubic meters	8.87
	Cubic feet	313.3
Usable Volume, Bulk CC	Cubic meters	5.71
	Cubic feet	201.6
Water Volume, FWD CC	Cubic meters	8.34
	Cubic feet	294.5
Water Volume, AFT CC	Cubic meters	10.38
	Cubic feet	366.6
Water Volume, Bulk CC	Cubic meters	5.97
	Cubic feet	210.8

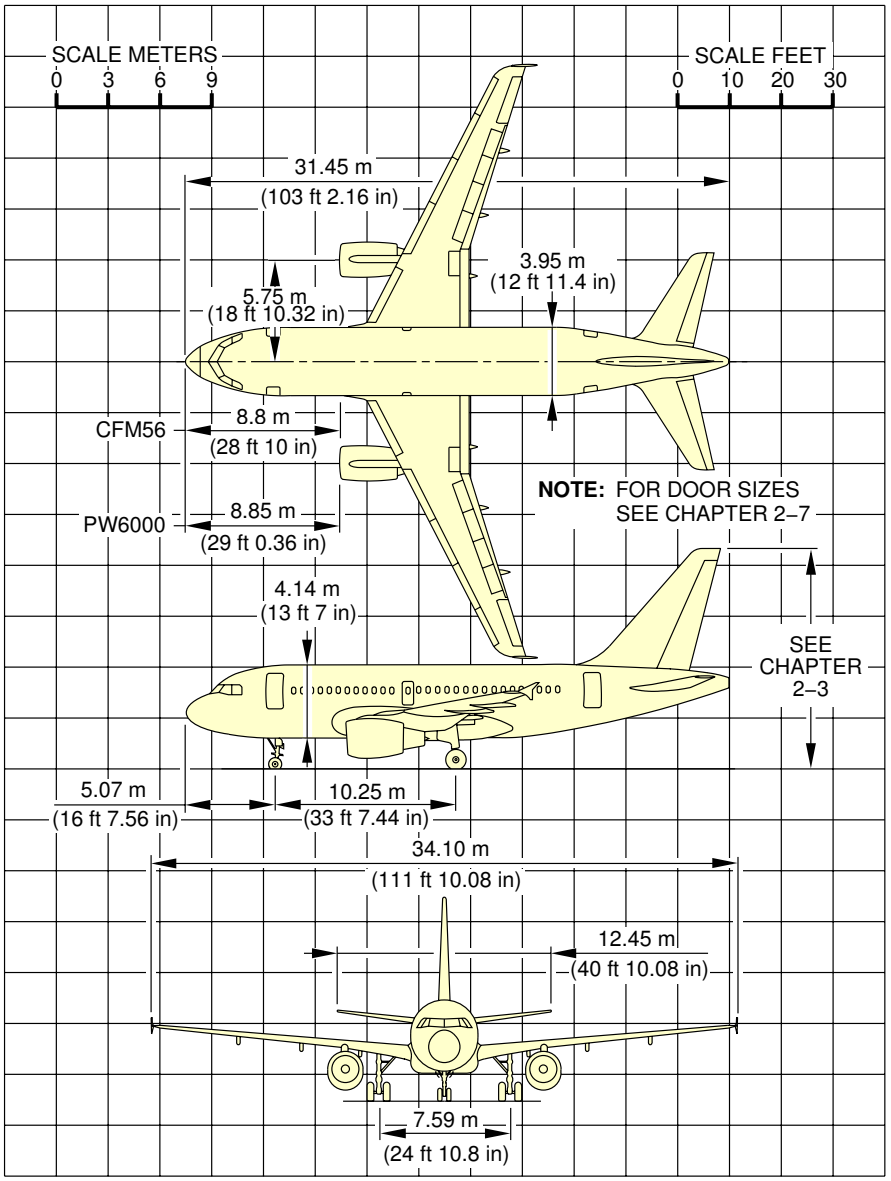
2-2-0 General Airplane Dimensions

**ON A/C A318-100

General Airplane Dimensions

1. This section provides General Airplane Dimensions.

**ON A/C A318-100



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General Airplane Dimensions
FIGURE 1

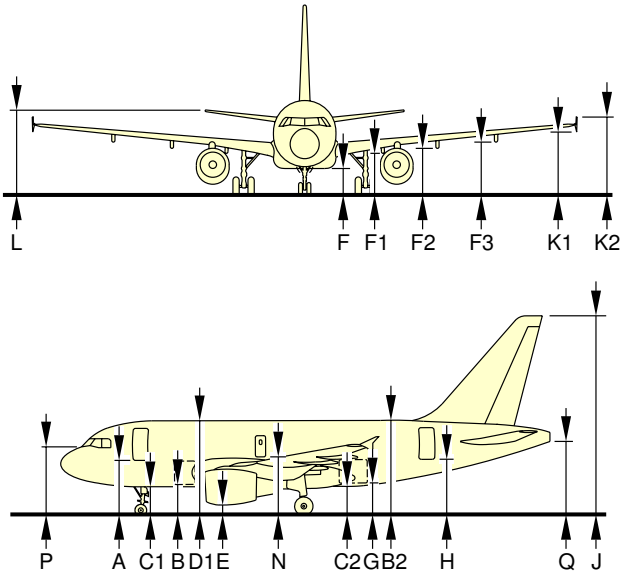
2-3-0 Ground Clearances

**ON A/C A318-100

Ground Clearances

1. This section gives the height of various points of the aircraft, above the ground, for different aircraft configurations.
   Dimensions in the tables are approximate and will vary with tire type and weight and balance conditions.
   The dimensions are given for:
   - The basic aircraft OWE with a mid CG,
   - the MRW for the lightest weight variant with a FWD CG and a AFT CG,
   - the MRW for the heaviest weight variant with a FWD CG and a AFT CG,
   - aircraft on jacks, FDL at 4.6m (15.09ft).

**ON A/C A318-100



NOTE: POINTS A, B, G, H & N ARE MID DOOR AT FLOOR LEVEL.

	OWE 38 818 kg		MRW (WV0) 59 400 kg				MRW (WV11) 64 400 kg				AC JACKED FDL = 4.60 m	
	CG 25%		FWD CG 15%		AFT CG 33.9%		FWD CG 15.8%		AFT CG 32%			
	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
A	3.45	11.32	3.37	11.06	3.44	11.29	3.37	11.06	3.42	11.22	4.13	13.55
B	2.08	6.82	2.01	6.59	2.05	6.73	2.00	6.56	2.03	6.66	2.71	8.89
C1	1.79	5.87	1.71	5.61	1.76	5.77	1.71	5.61	1.74	5.71	2.43	7.97
C2	1.93	6.33	1.89	6.20	1.85	6.07	1.87	6.14	1.84	6.04	2.43	7.97
D1	5.93	19.46	5.86	19.23	5.91	19.39	5.86	19.23	5.89	19.32	6.58	21.59
D2	6.08	19.95	6.04	19.82	6.00	19.68	6.02	19.75	5.99	19.65	6.58	21.59
E (CFM)	0.66	2.17	0.60	1.97	0.61	2.00	0.59	1.94	0.60	1.97	1.24	4.07
E (PW)	0.78	2.56	0.72	2.36	0.73	2.40	0.71	2.33	0.72	2.36	1.36	4.46
F	1.74	5.71	1.69	5.54	1.67	5.48	1.67	5.48	1.65	5.41	2.26	7.41
F1	2.73	8.96	2.68	8.79	2.66	8.73	2.67	8.76	2.65	8.69	3.25	10.66
F2	3.17	10.40	3.12	10.24	3.09	10.14	3.11	10.20	3.08	10.10	3.68	12.07
F3	3.51	11.52	3.47	11.38	3.43	11.25	3.45	11.32	3.42	11.22	4.01	13.16
G	2.20	7.22	2.16	7.09	2.13	6.99	2.14	7.02	2.11	6.92	2.71	8.89
H	3.72	12.20	3.70	12.14	3.61	11.84	3.67	12.04	3.60	11.81	4.13	13.55
J	12.89	42.29	12.88	42.26	12.74	41.80	12.85	42.16	12.74	41.80	13.20	43.31
K1	3.92	12.86	3.88	12.73	3.83	12.57	3.86	12.66	3.82	12.53	4.38	14.37
K2	4.89	16.04	4.86	15.94	4.80	15.75	4.83	15.85	4.79	15.72	5.35	17.55
L	5.62	18.44	5.60	18.37	5.47	17.95	5.57	18.27	5.46	17.91	5.93	19.46
N	3.97	13.02	3.91	12.83	3.92	12.86	3.90	12.80	3.90	12.80	4.54	14.89
P	4.22	13.85	4.14	13.58	4.23	13.88	4.13	13.55	4.21	13.81	4.96	16.27
Q	4.91	16.11	4.91	16.11	4.76	15.62	4.87	15.98	4.75	15.58	5.20	17.06

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Ground Clearances
FIGURE 1

2-4-0 Interior Arrangements

**ON A/C A318-100

Interior Arrangements

1. This section gives the standard interior arrangements configuration.

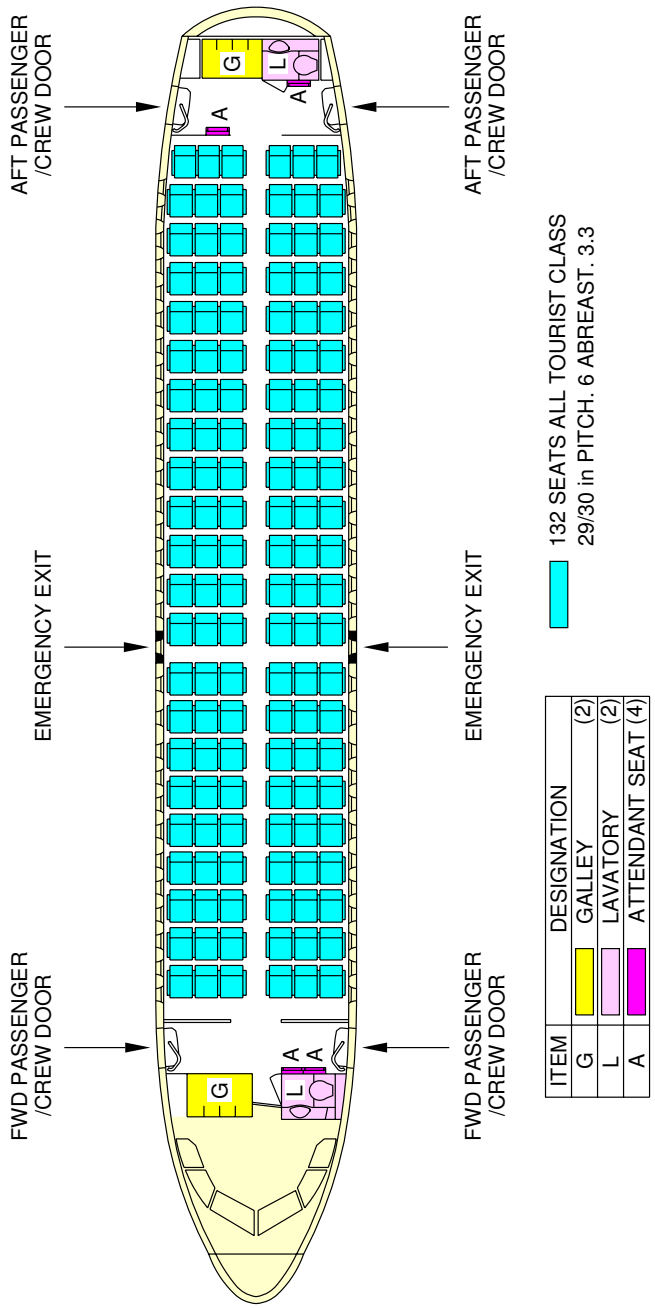
2-4-1 Passenger Compartment Layout

**ON A/C A318-100

Typical Configuration

1. This section gives the typical interior configuration.

**ON A/C A318-100



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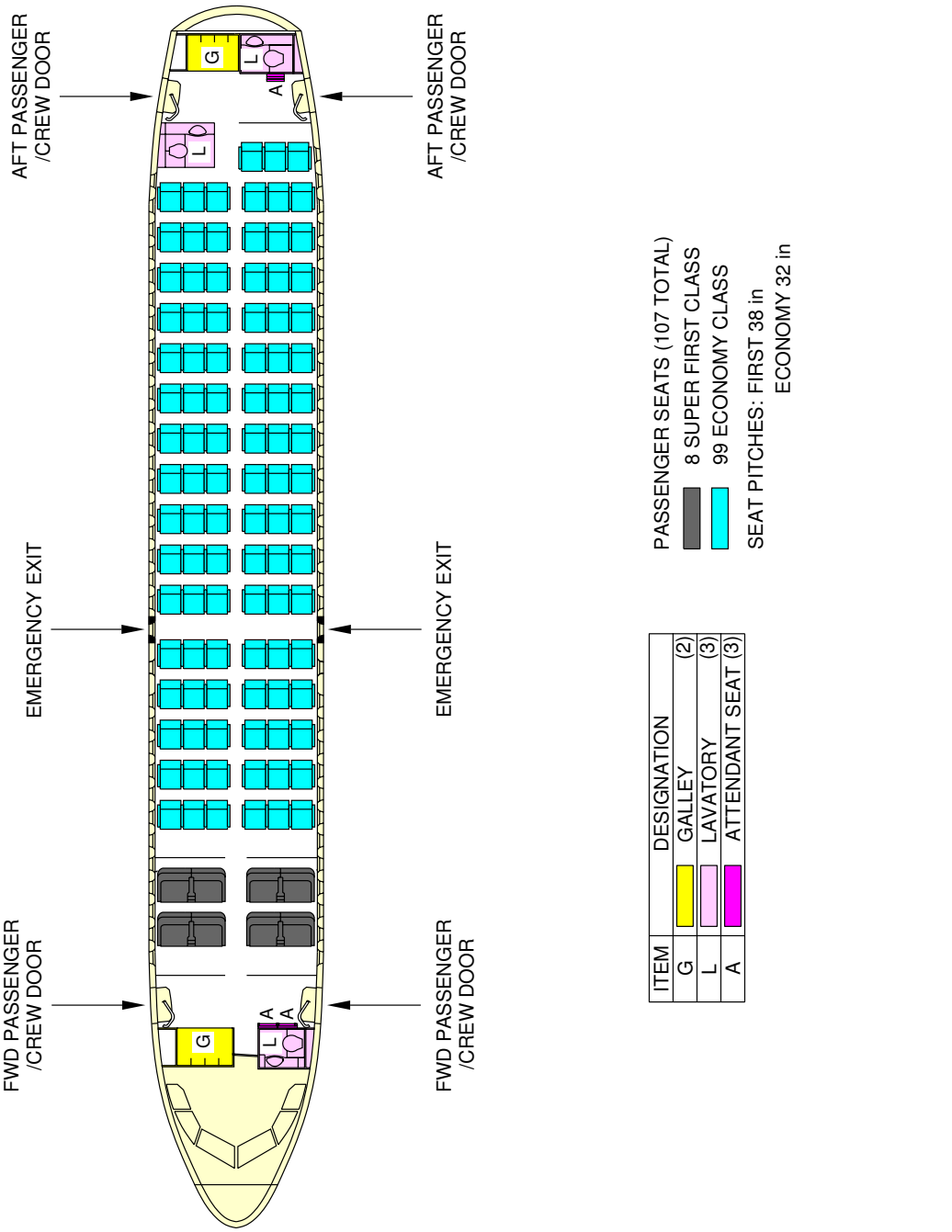
Typical Configuration
Typical Configuration Single-Class, High Density
FIGURE 1

**ON A/C A318-100



Typical Configuration
Typical Configuration Two-Class
FIGURE 2

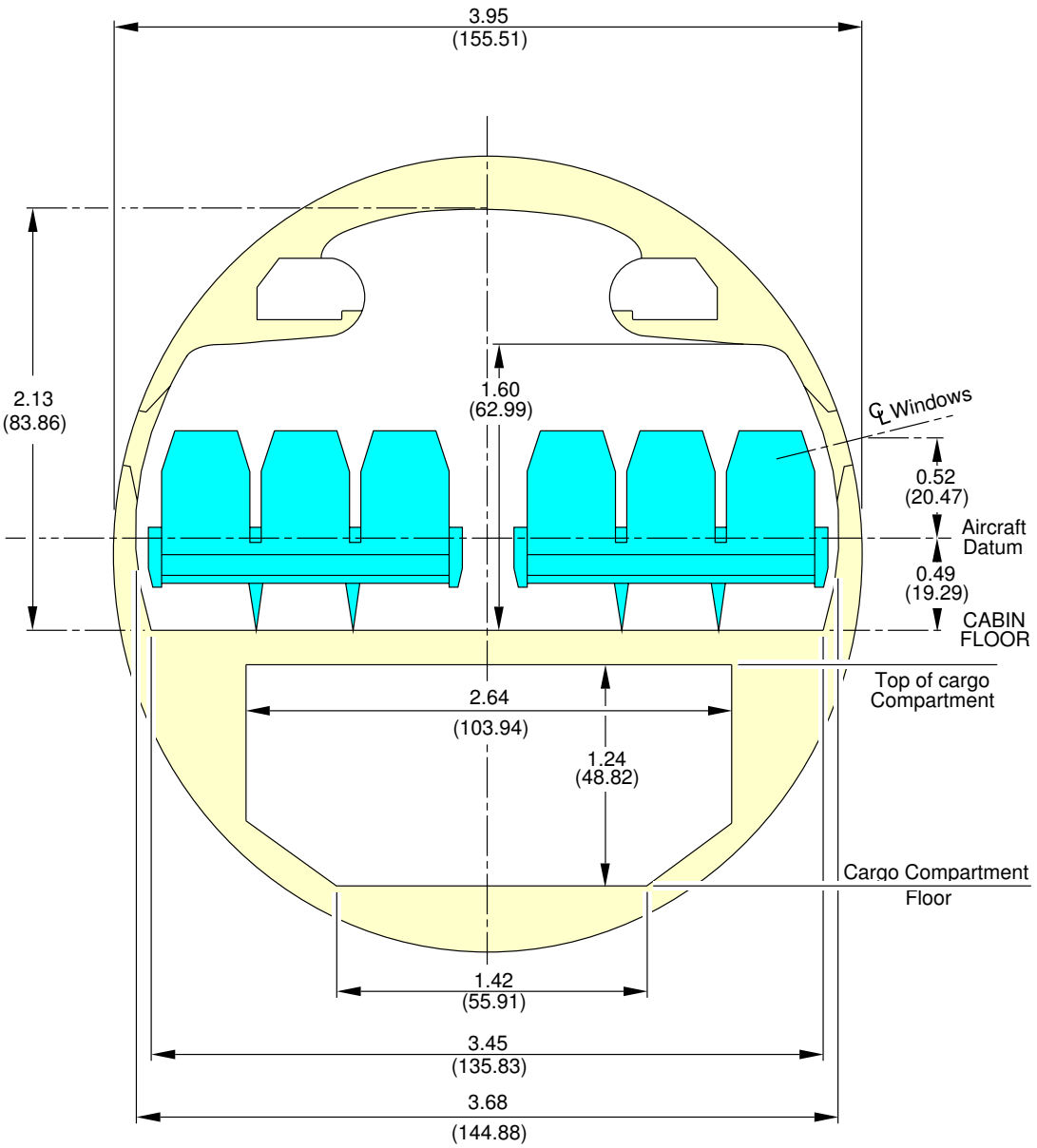
2-5-0 Passenger Compartment Cross Section

**ON A/C A318-100

Passenger Compartment Cross-section

1. This section gives the typical passenger compartment cross-section configuration.

**ON A/C A318-100



NOTE: DIMENSIONS m (in)

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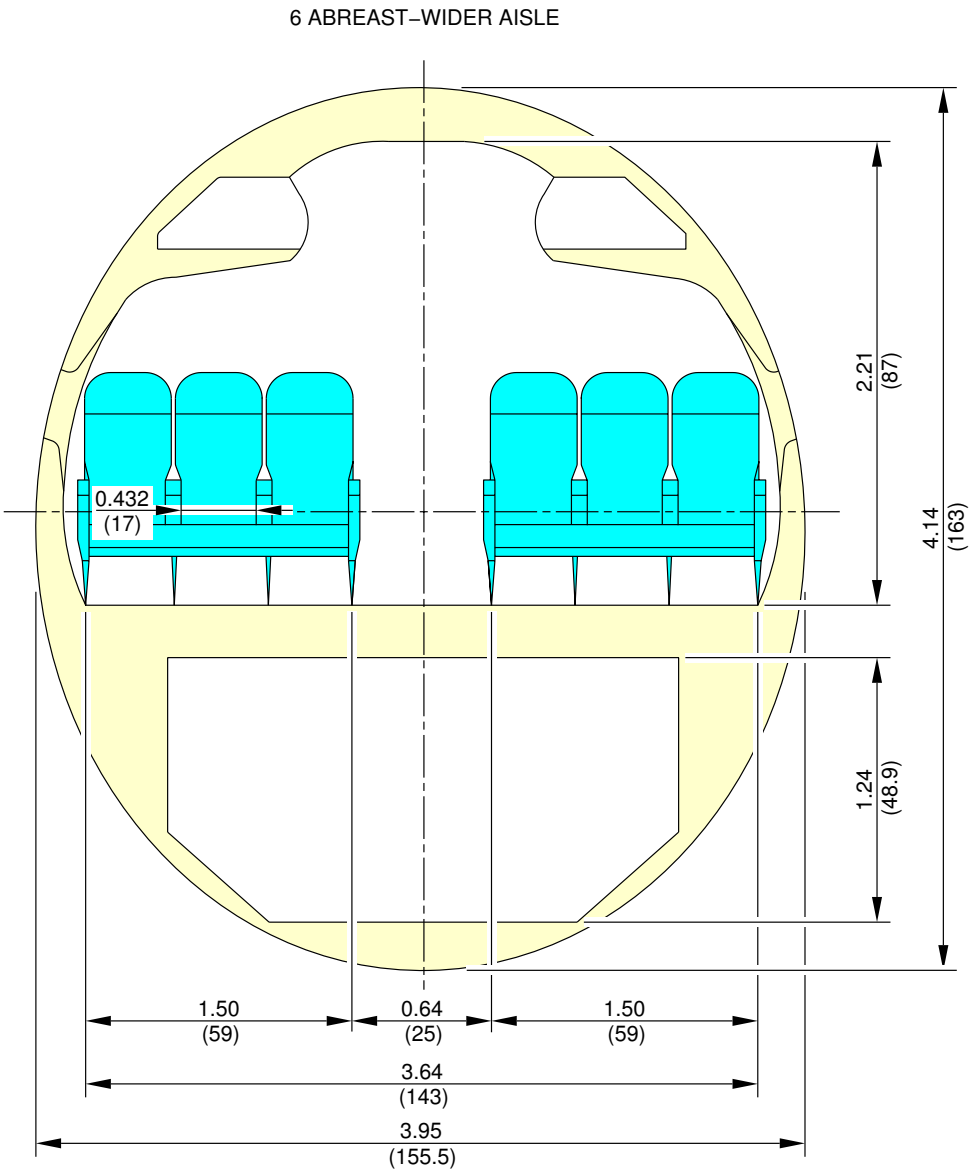
Passenger Compartment Cross-section
FIGURE 1

**ON A/C A318-100



NOTE: DIMENSIONS m (in)

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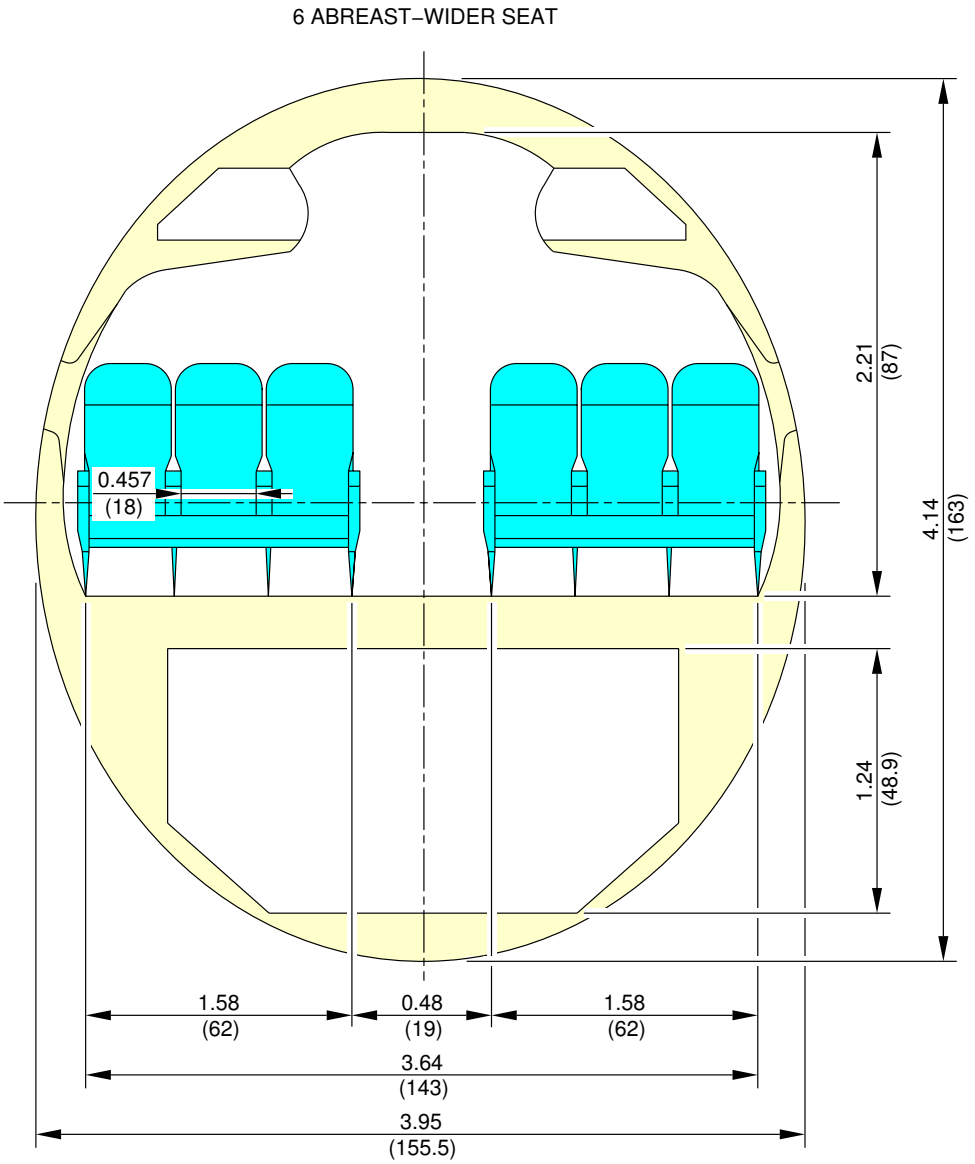
Passenger Compartment Cross-section
Economy Class, 6 Abreast - Wider Aisle (Sheet 1 of 2)
FIGURE 2

**ON A/C A318-100



NOTE: DIMENSIONS m (in)

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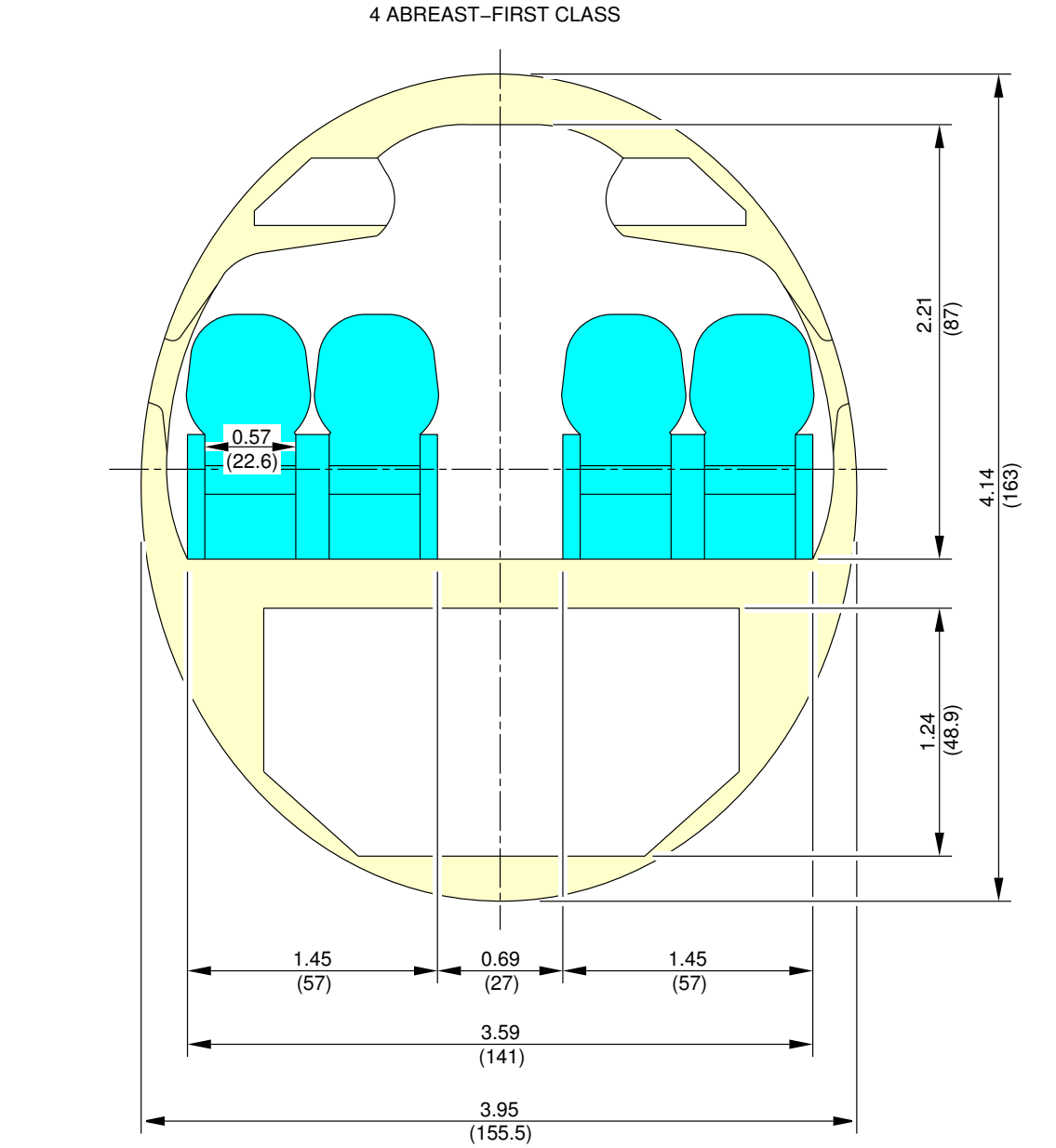
Passenger Compartment Cross-section
Economy Class, 6 Abreast - Wider Seat (Sheet 2 of 2)
FIGURE 3

**ON A/C A318-100



NOTE: DIMENSIONS m (in)

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Passenger Compartment Cross-section
Passenger Compartment Cross-section, First-class
FIGURE 4

2-6-0 Cargo Compartments

**ON A/C A318-100

Cargo Compartments

1. This section gives the cargo compartments location and dimensions.

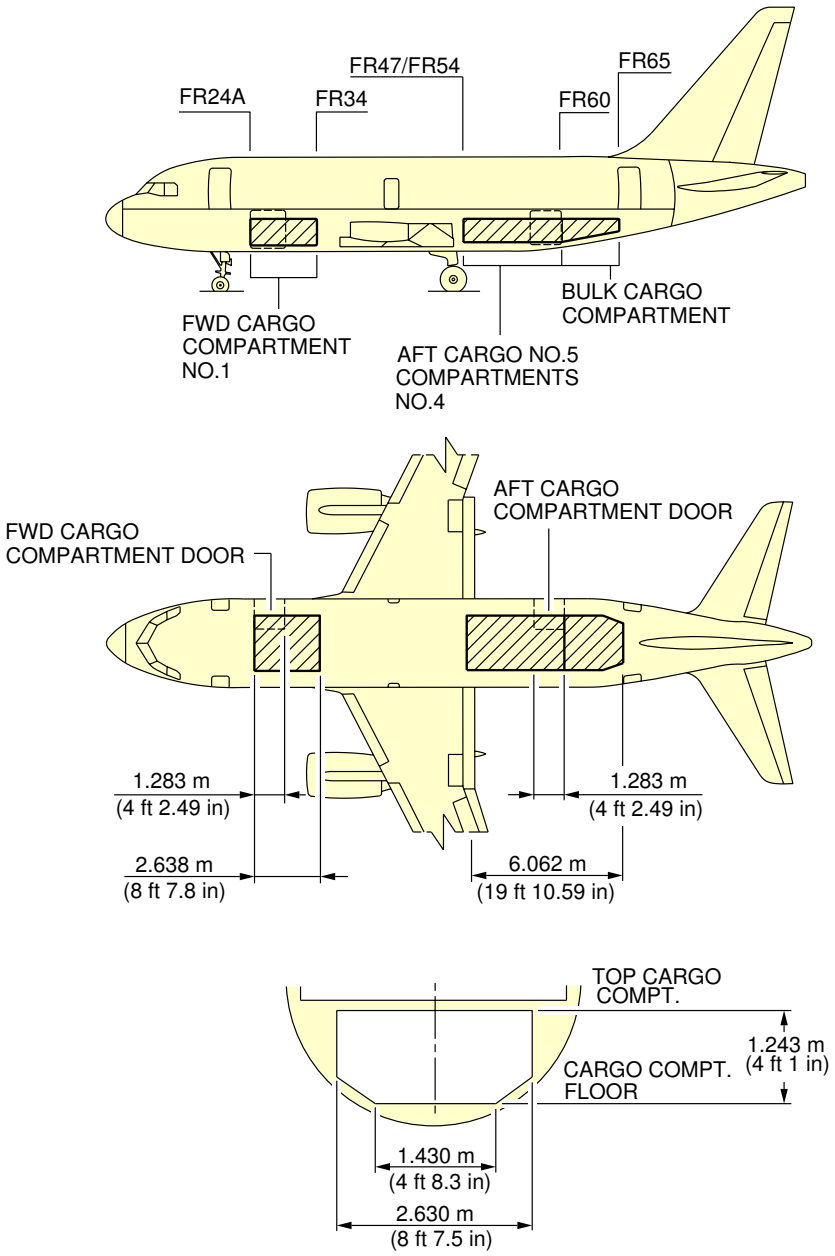
2-6-1 Lower Deck Cargo Compartments

**ON A/C A318-100

Lower Deck Cargo Compartments

1. This section gives the lower deck cargo compartments.

**ON A/C A318-100



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Lower Deck Cargo Compartments
Lower Deck Cargo Compartments Dimensions
FIGURE 1

2-7-0 Door Clearances

**ON A/C A318-100

Doors Clearances

1. This section gives doors clearances.

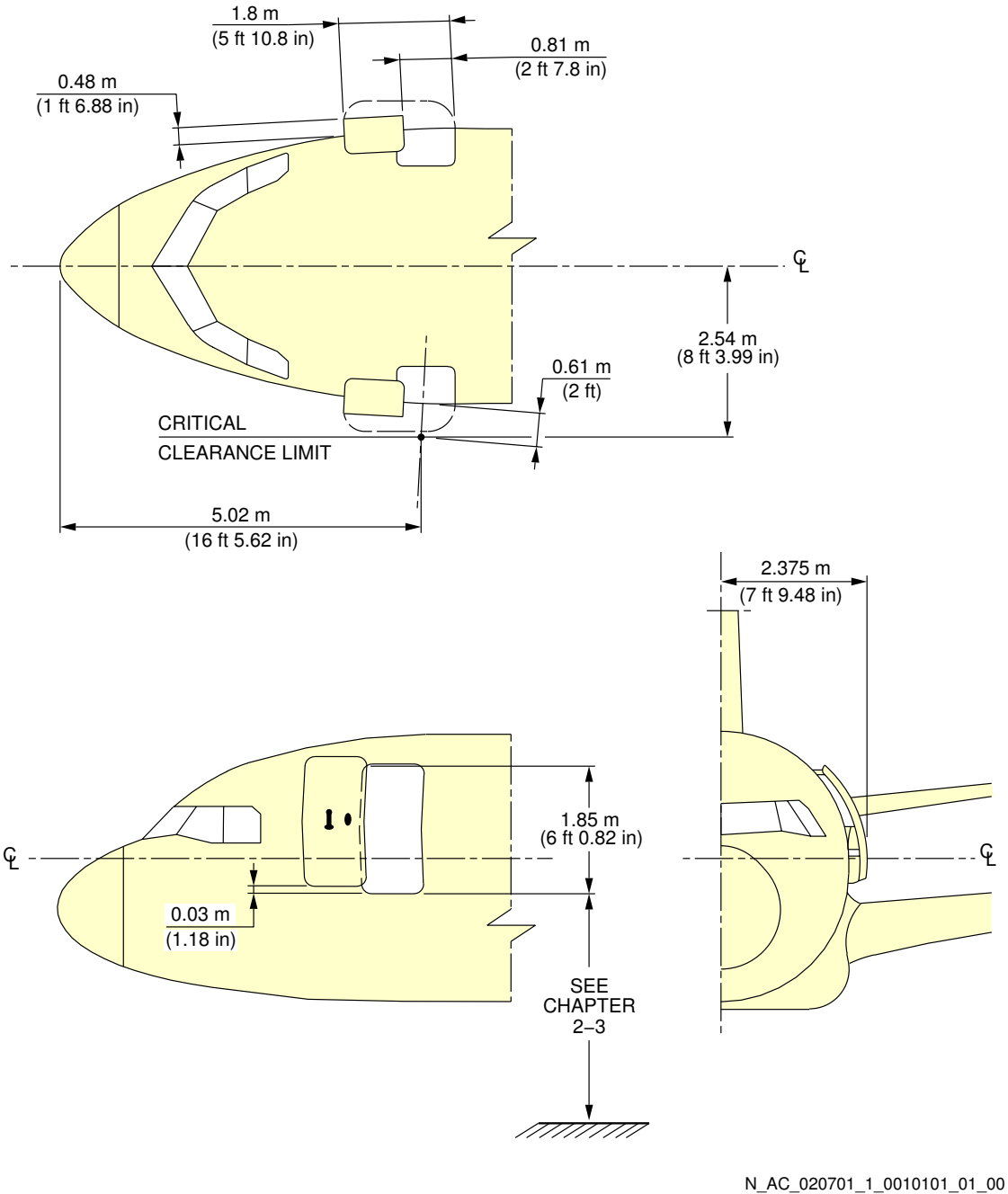
2-7-1 Forward Passenger / Crew Doors

**ON A/C A318-100

Forward Passenger / Crew Doors

1. This section gives forward passenger / crew doors clearances.

**ON A/C A318-100



Doors Clearances
Forward Passenger / Crew Doors
FIGURE 1

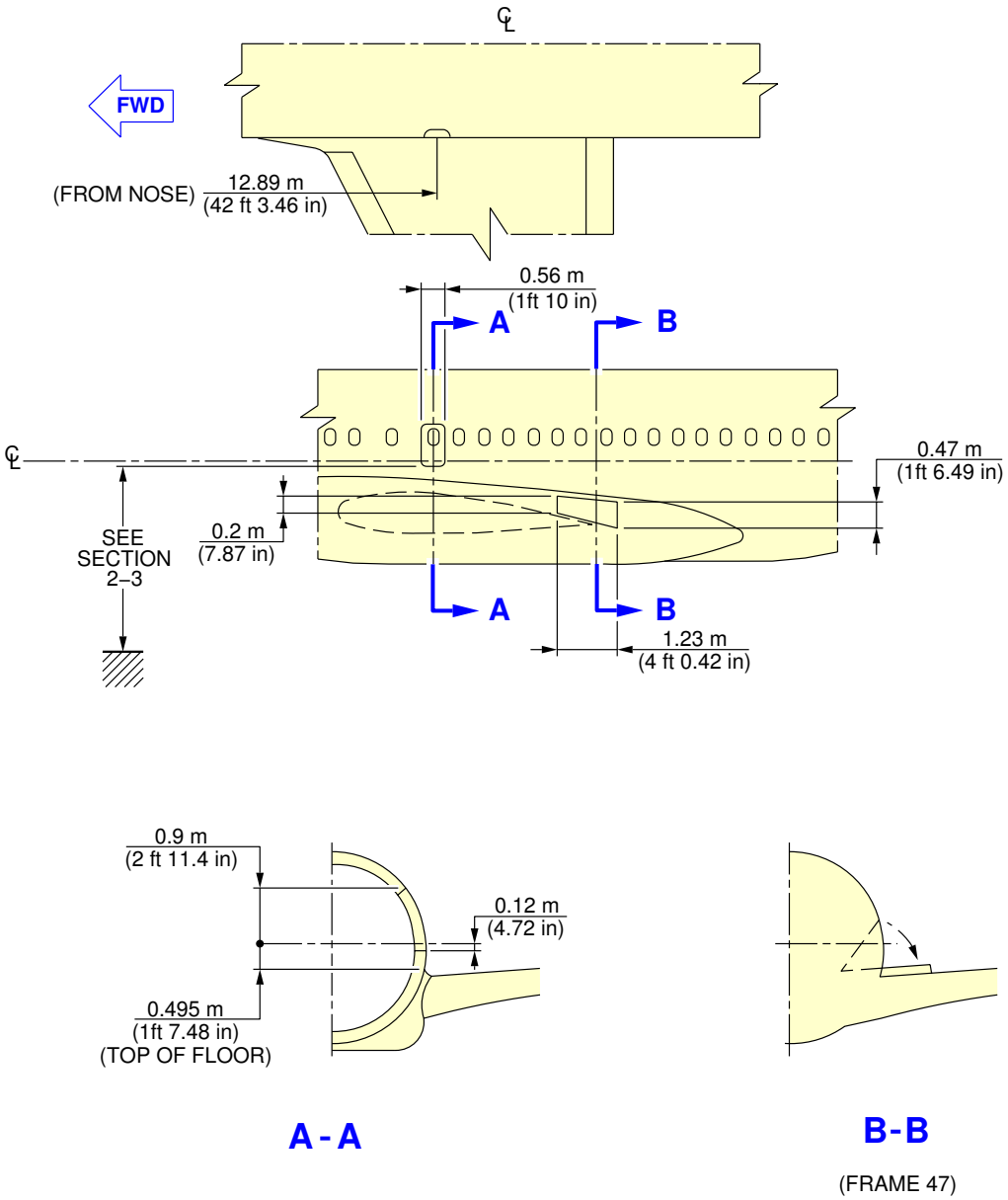
2-7-2 Emergency Exits

**ON A/C A318-100

Emergency Exits

1. This section gives emergency exits doors clearances.

**ON A/C A318-100



NOTE: ESCAPE SLIDE COMPARTMENT DOOR OPENS ON WING UPPER SURFACE.

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Doors Clearances
Emergency Exits
FIGURE 1

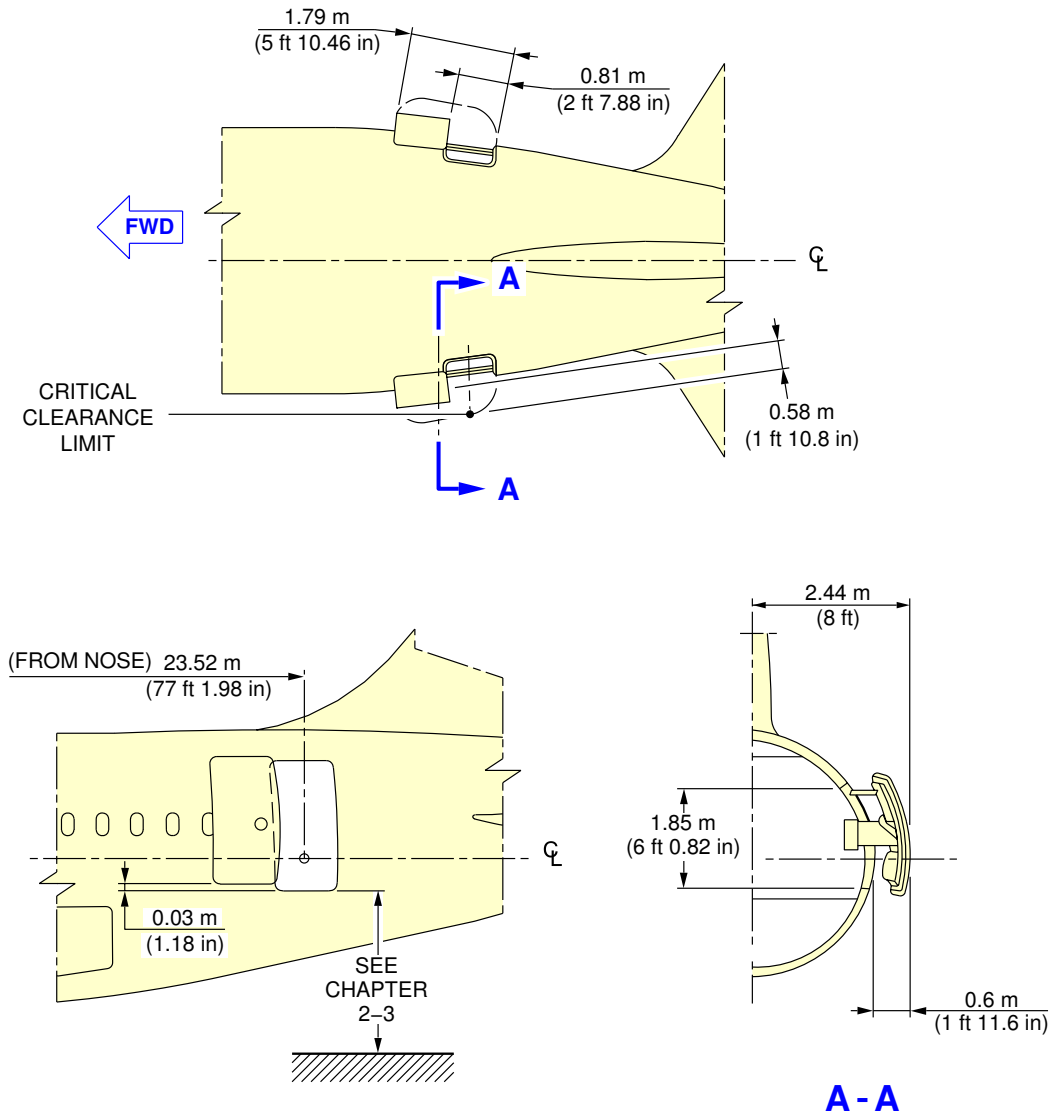
2-7-3 Aft Passenger / Crew Doors

**ON A/C A318-100

Aft Passenger / Crew Doors

1. This section gives Aft passenger / crew doors clearances.

**ON A/C A318-100



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Doors Clearances
Aft Passenger / Crew Doors
FIGURE 1

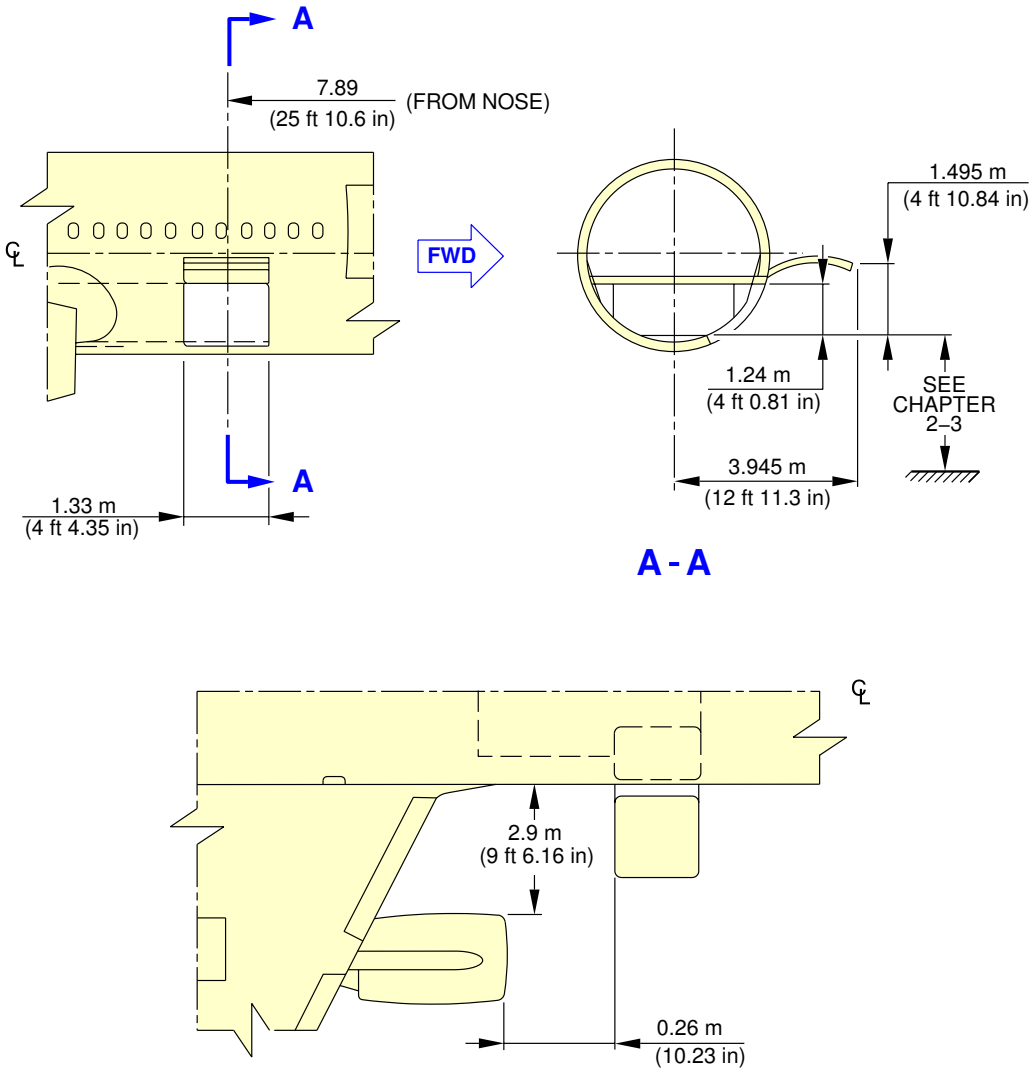
2-7-4 Forward Cargo Compartment Doors

**ON A/C A318-100

Forward Cargo Compartment Door

1. This section gives forward cargo compartment door clearances.

**ON A/C A318-100



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Doors Clearances
Forward Cargo Compartment Door
FIGURE 1

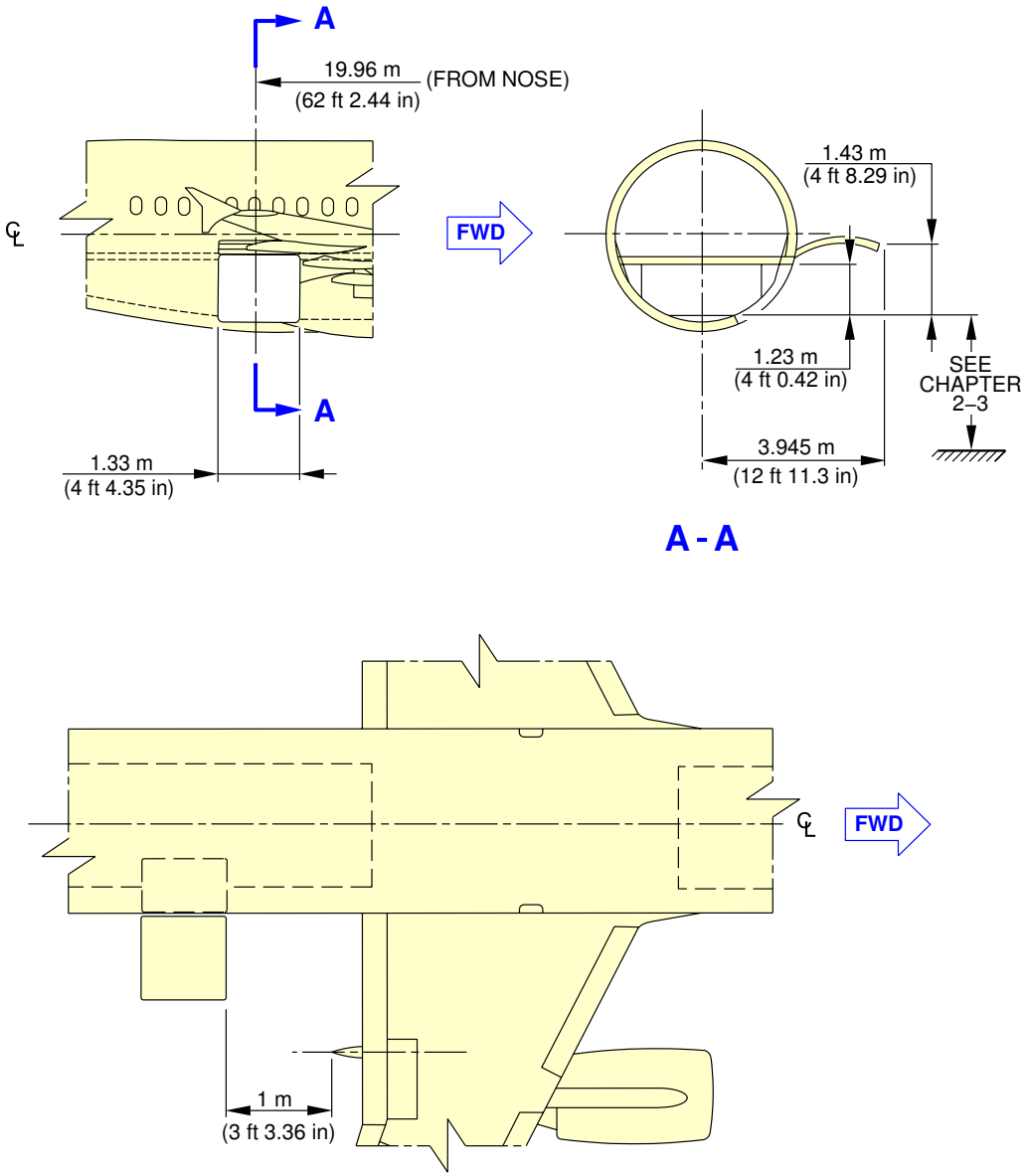
2-7-5 Aft Cargo Compartment Doors

**ON A/C A318-100

Aft Cargo Compartment Door

1. This section gives Aft cargo compartment door clearances.

**ON A/C A318-100



N_AC_020705_1_0010101_01_01

Doors Clearances
Aft Cargo Compartment Door
FIGURE 1

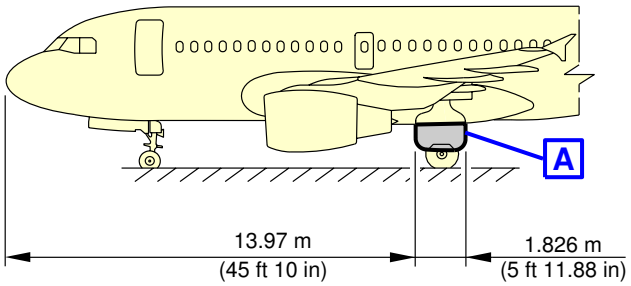
2-7-7 Main Landing Gear Doors

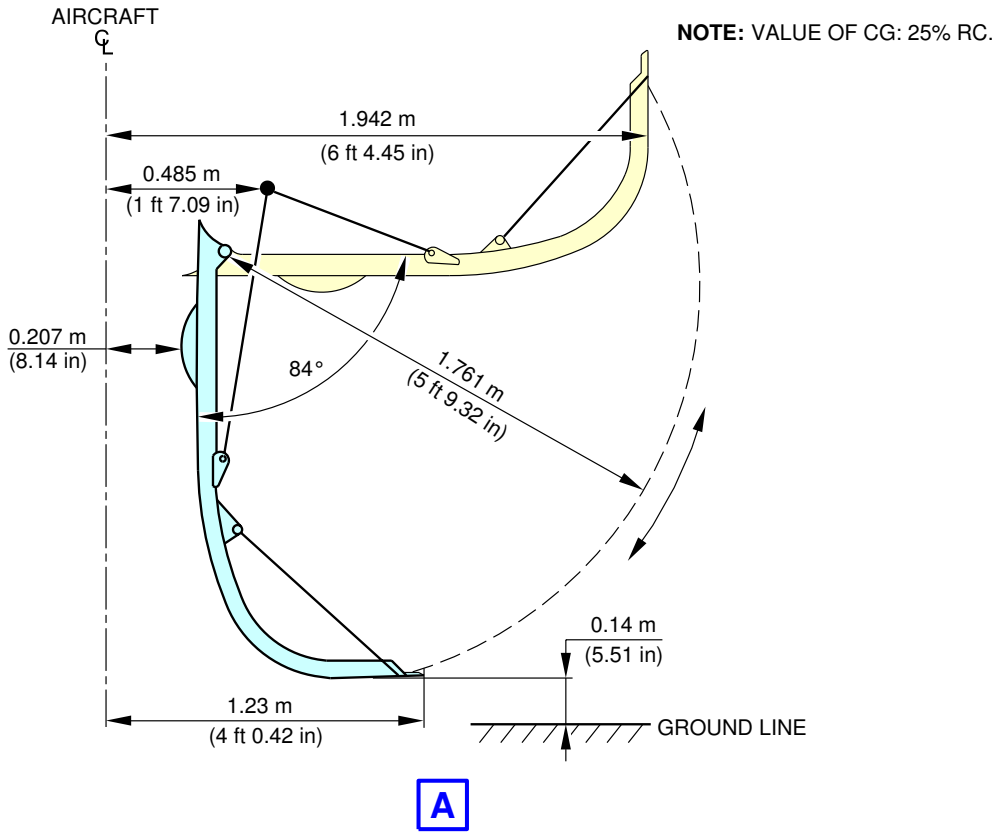
**ON A/C A318-100

Main Landing Gear Doors

1. This section gives the main landing gear doors clearances.

**ON A/C A318-100





N_AC_020707_1_0010101_01_02

Doors Clearances
Main Landing Gear Doors
FIGURE 1

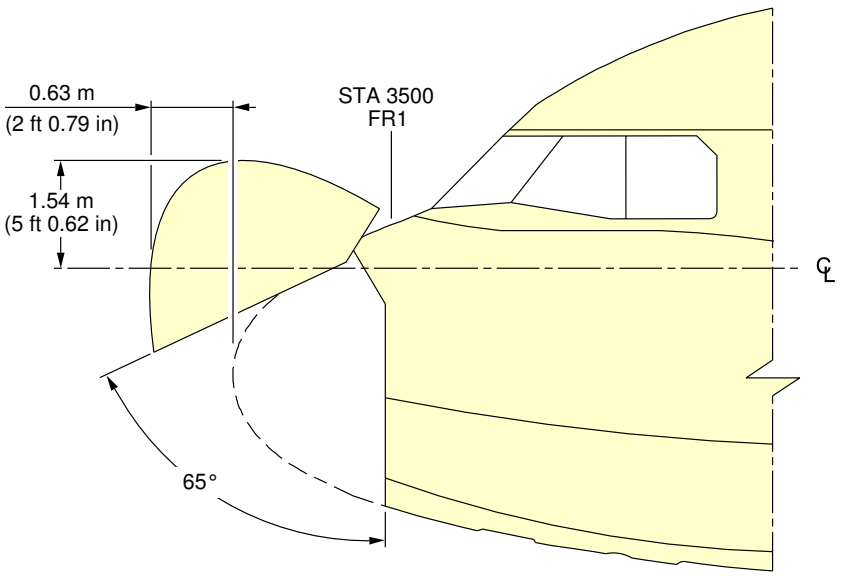
2-7-8 Radome

**ON A/C A318-100

Radome

1. This section gives the radome clearances.

**ON A/C A318-100



N_AC_020708_1_0010101_01_00

Doors Clearances
Radome
FIGURE 1

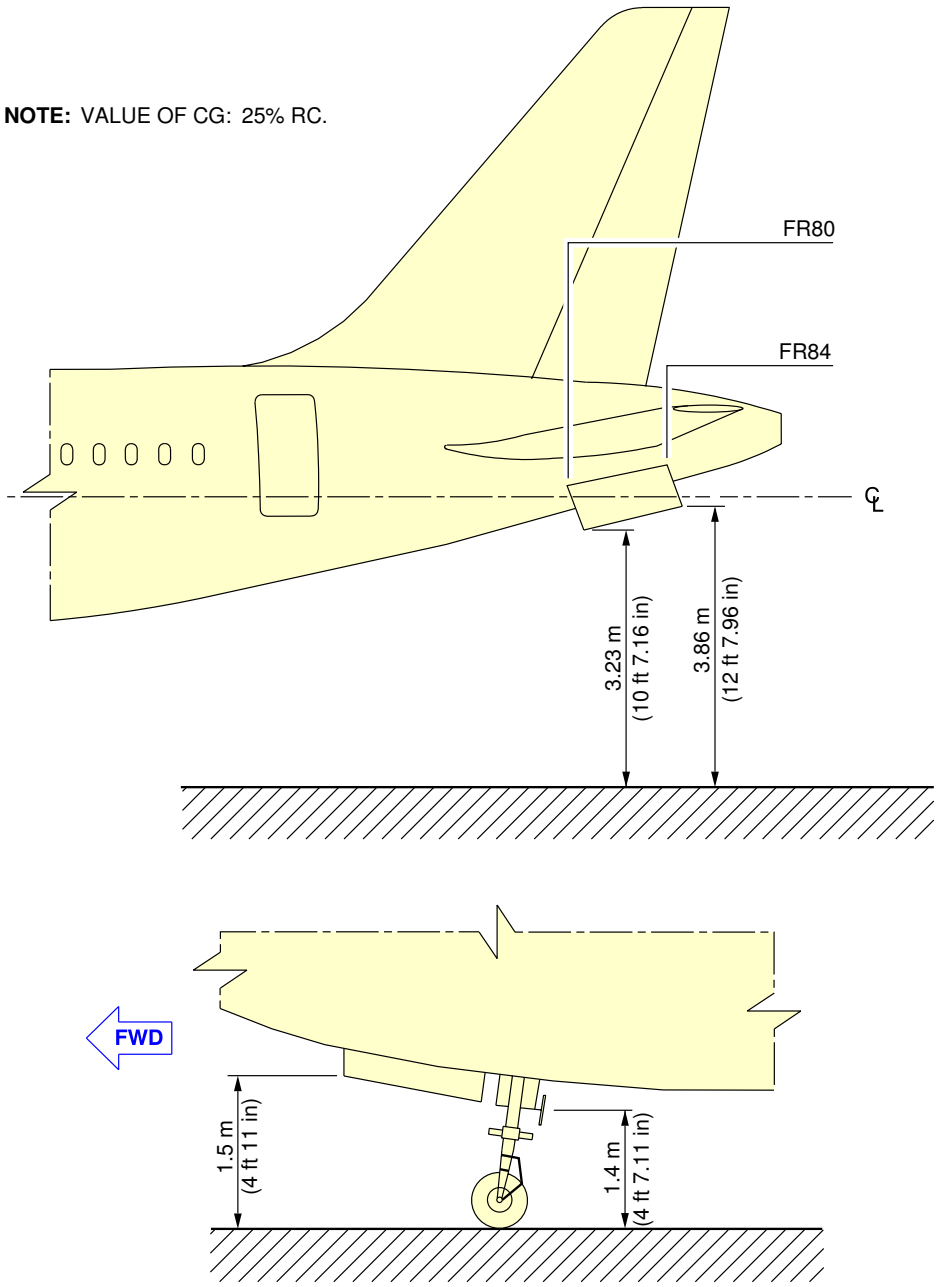
2-7-9 APU and Nose Landing Gear Doors

**ON A/C A318-100

APU and Nose Landing Gear Doors

1. This section gives APU and Nose Landing Gear doors clearances.

**ON A/C A318-100



N_AC_020709_1_0010101_01_00

Doors Clearances
APU and Nose Landing Gear Doors
FIGURE 1

AIRPLANE PERFORMANCE

3-1-0 General Information

**ON A/C A318-100

General Information

1. This section gives standard day temperatures.

   Section 3-2 indicates payload range information at specific altitudes recommended for long range cruise with a given fuel reserve condition.

   Section 3-3 represents FAR take-off runway length requirements at ISA and ISA +15˚C (+59˚F) for CFM56 and PW 6000 series engine conditions for FAA certification.

   Section 3-4 represents FAR landing runway length requirements for FAA certification.

   Section 3-5 indicates final approach speeds.

   Standard day temperatures for the altitudes shown are tabulated below:

Standard day temperatures for the altitude			
Altitude		Standard Day Temperature	
FEET	METERS	˚F	˚C
0	0	59.0	15.0
2000	610	51.9	11.1
4000	1219	44.7	7.1
6000	1829	37.6	3.1
8000	2438	30.5	-0.8

3-2-0 Payload / Range

**ON A/C A318-100

Payload / Range

1. Payload / Range

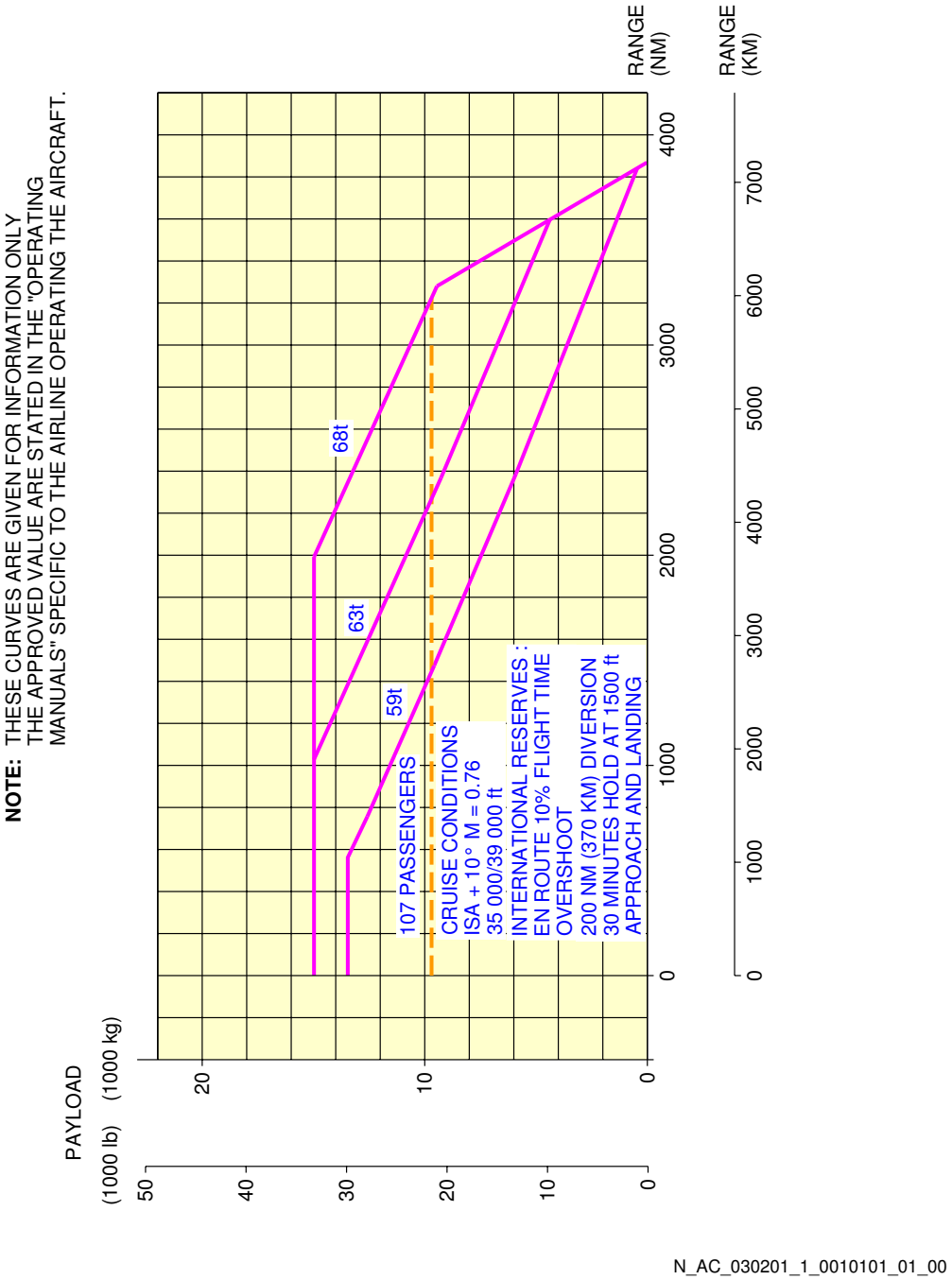
3-2-1 ISA Conditions

**ON A/C A318-100

ISA Conditions

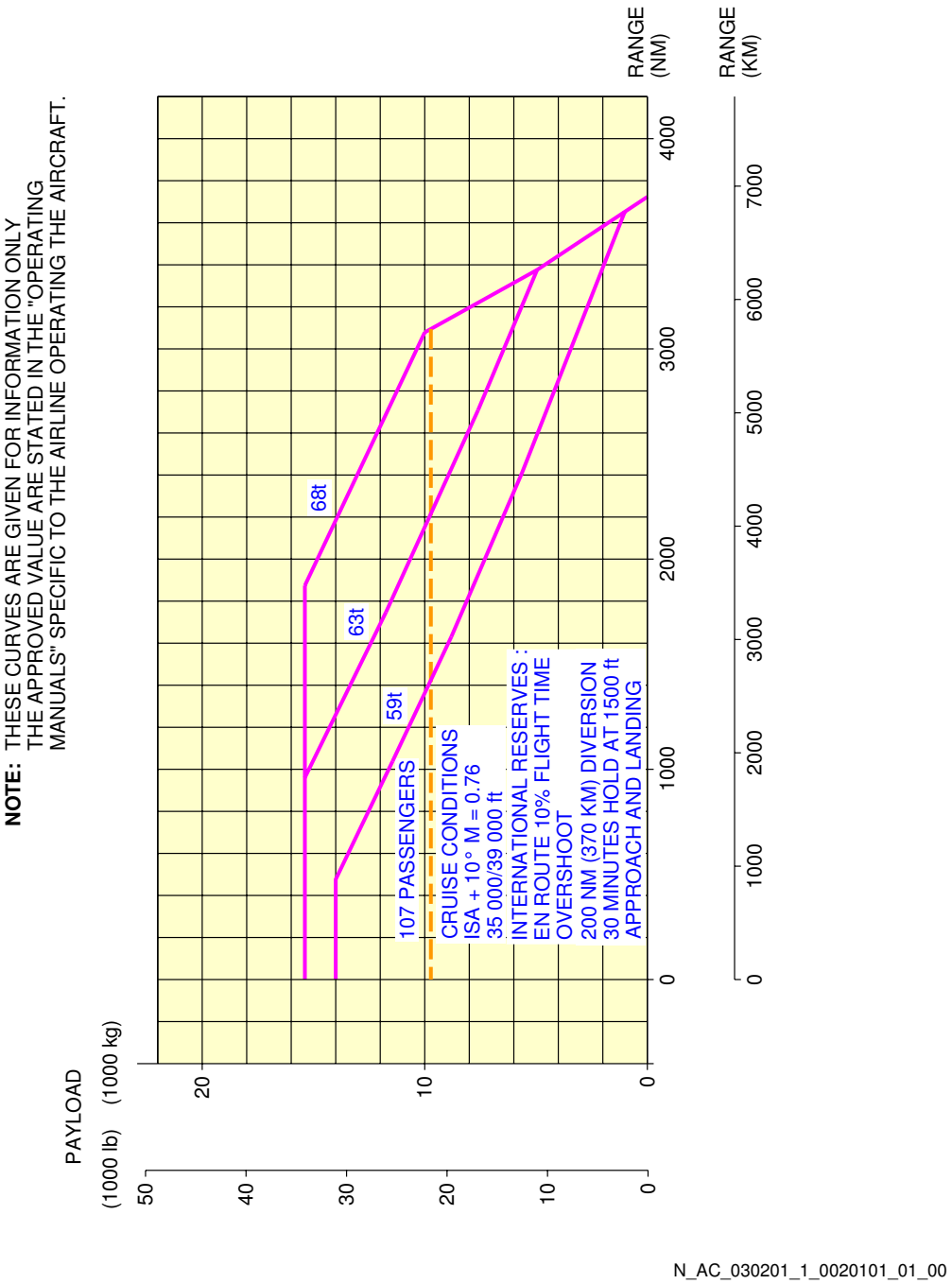
1. This section gives the payload / range at ISA conditions.

**ON A/C A318-100



Payload / Range
CFM56 series engine
FIGURE 1

**ON A/C A318-100



Payload / Range
PW 6000 series engine
FIGURE 2

3-3-0 FAR / JAR Takeoff Weight Limitation

****ON A/C A318-100**

FAR / JAR Take-off Weight Limitation

1. FAR / JAR Take-off Weight Limitation

3-3-1 ISA Conditions

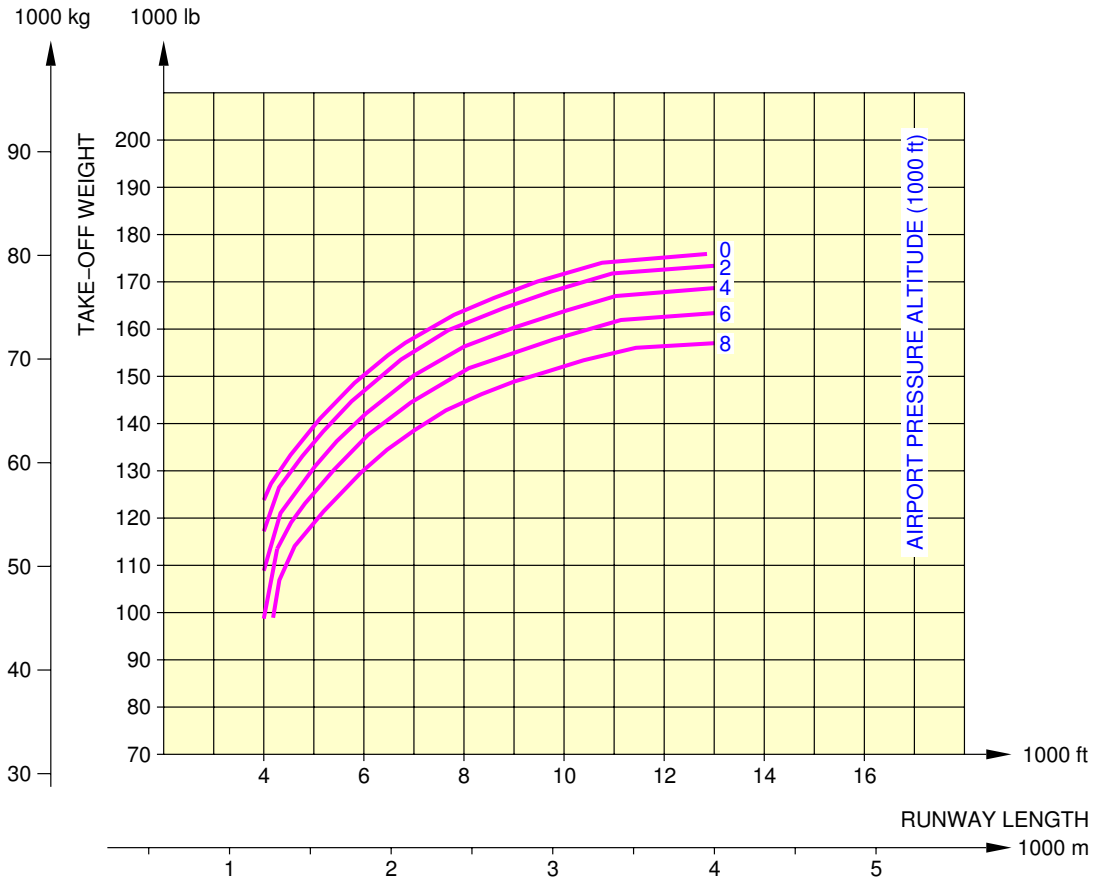
**ON A/C A318-100

ISA Conditions

1. This section gives the take-off weight limitation at ISA conditions.

**ON A/C A318-100

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING
MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



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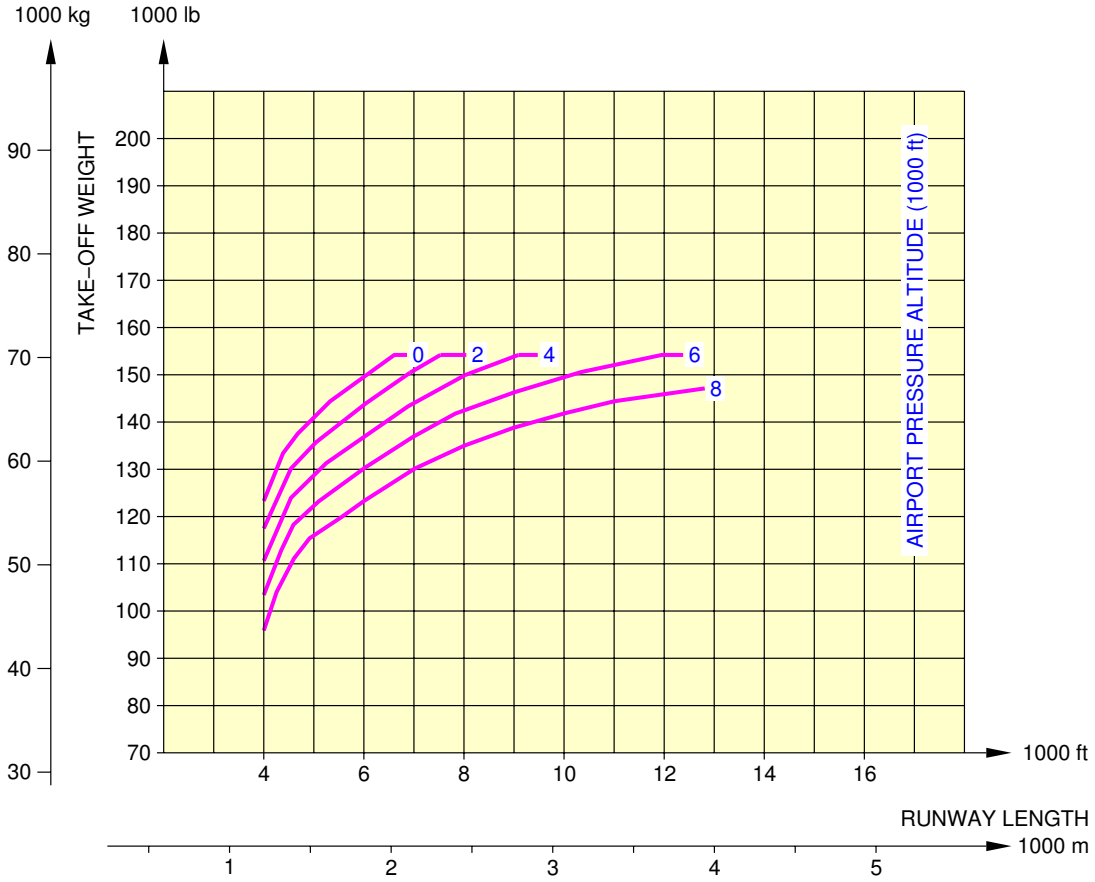
FAR / JAR Take-off Weight Limitation
ISA Conditions – CFM56 series engine
FIGURE 1

**ON A/C A318-100

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING
MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



N_AC_030301_1_0020101_01_00

FAR / JAR Take-off Weight Limitation
ISA Conditions – PW 6000 series engine
FIGURE 2

3-3-2 ISA +15°C (+59°F) Conditions

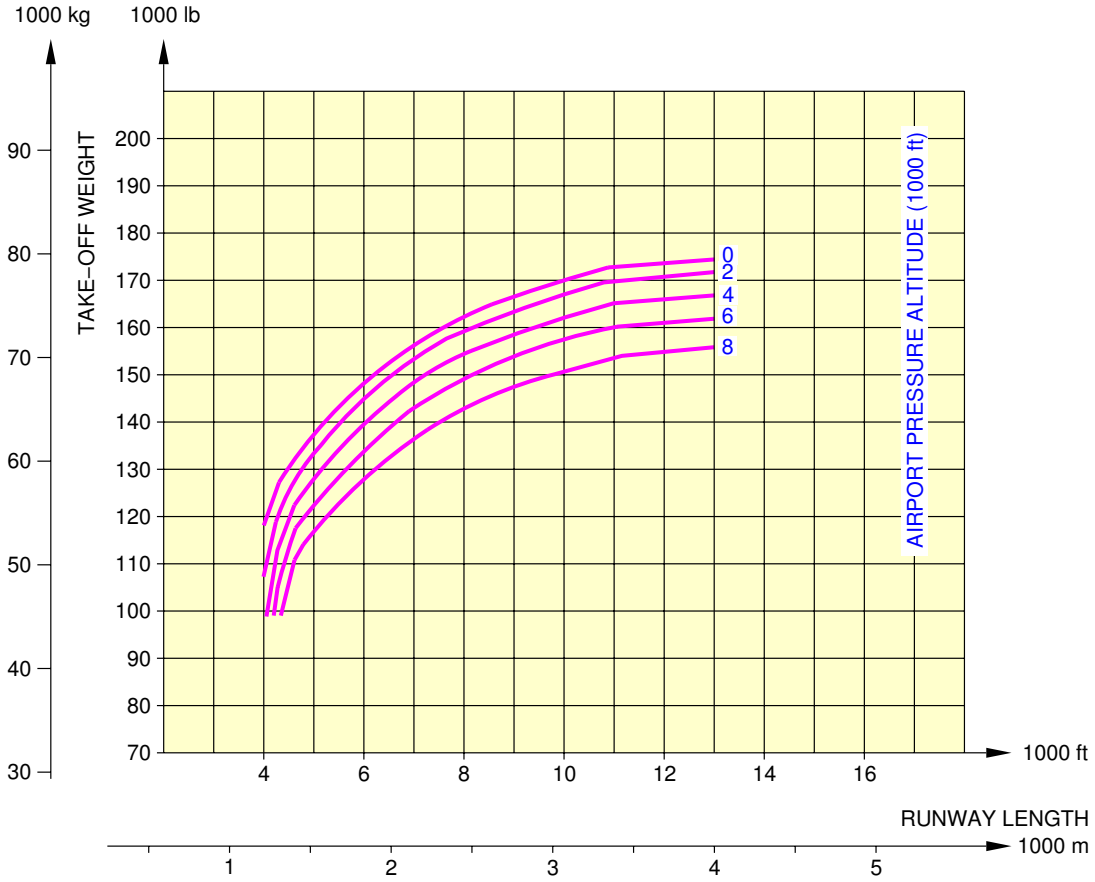
**ON A/C A318-100

ISA +15°C (+59°F) Conditions

1. This section gives the take-off weight limitation at ISA +15°C (+59°F) conditions.

**ON A/C A318-100

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING
MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.

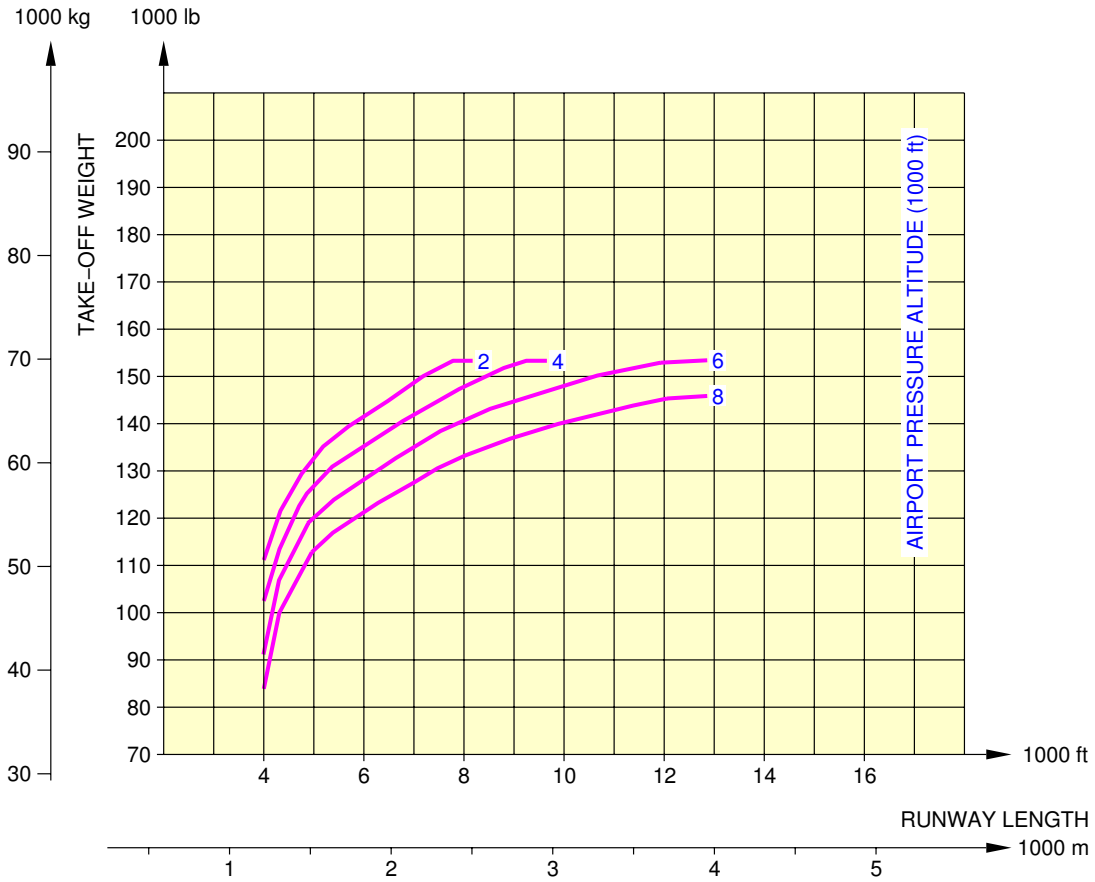


N_AC_030302_1_0010101_01_00

FAR / JAR Take-off Weight Limitation
ISA +15˚C (+59˚F) Conditions – CFM56 series engine
FIGURE 1

**ON A/C A318-100

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING
MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



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FAR / JAR Take-off Weight Limitation
ISA +15˚C (+59˚F) Conditions – PW 6000 series engine
FIGURE 2

3-4-0 FAR / JAR Landing Field Length

**ON A/C A318-100

FAR / JAR Landing Field Length

1. FAR / JAR Landing Field Length

3-4-1 ISA Conditions

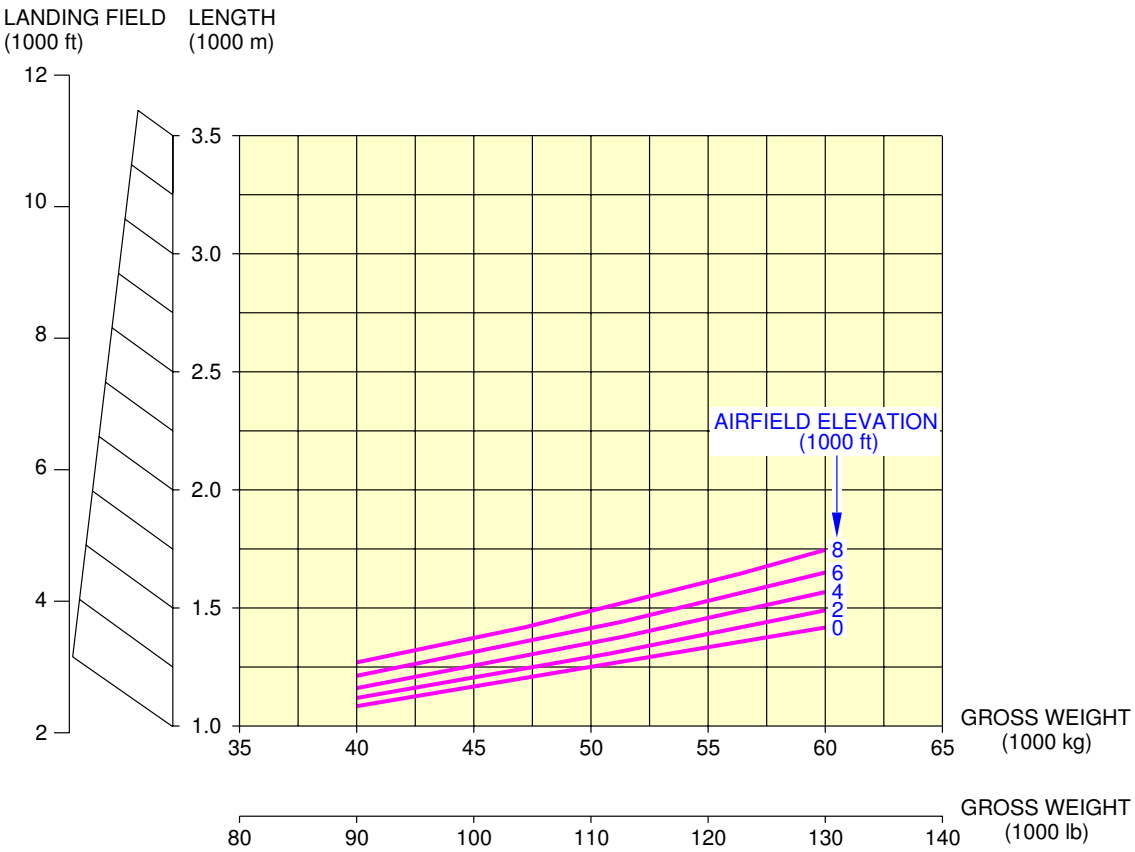
**ON A/C A318-100

ISA Conditions

1. This section gives the landing field length.

**ON A/C A318-100

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



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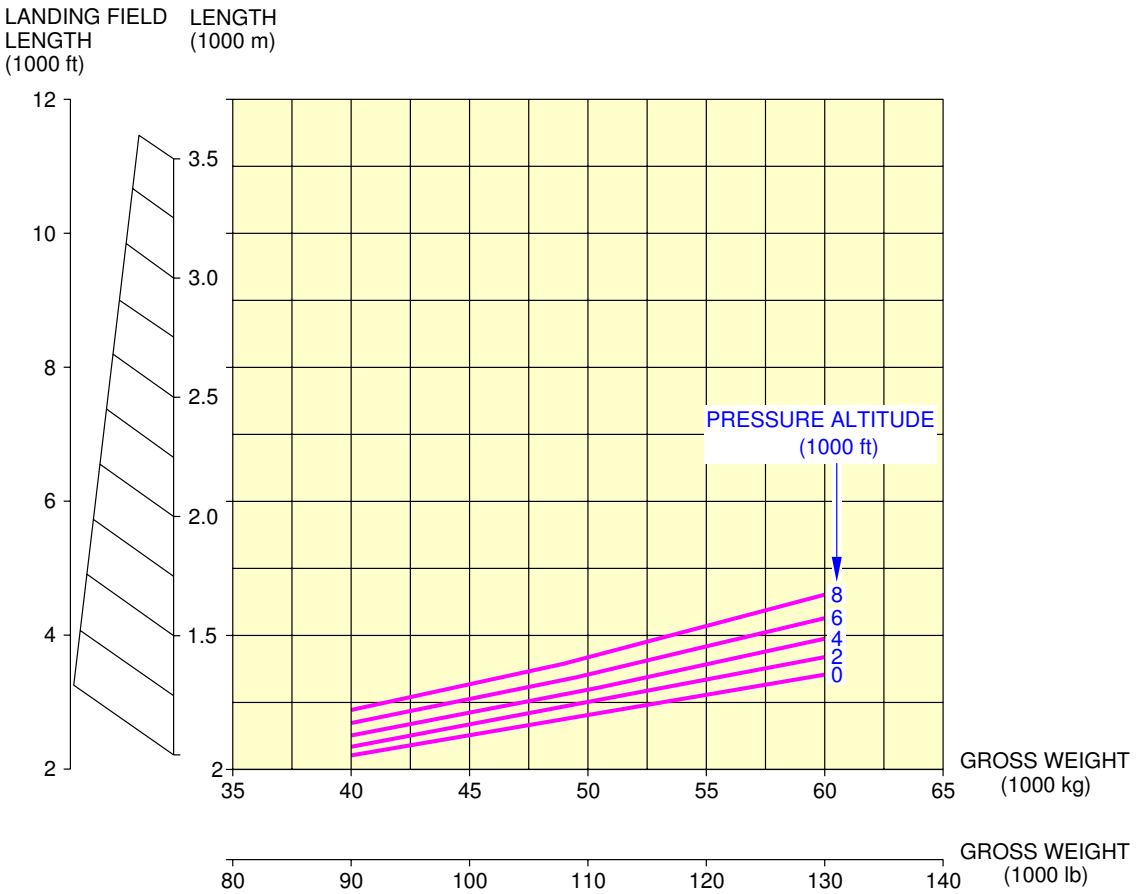
FAR / JAR Landing Field Length
CFM56-5B series engine
FIGURE 1

**ON A/C A318-100

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



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FAR / JAR Landing Field Length
PW 6000 series engine
FIGURE 2

3-5-0 Final Approach Speed

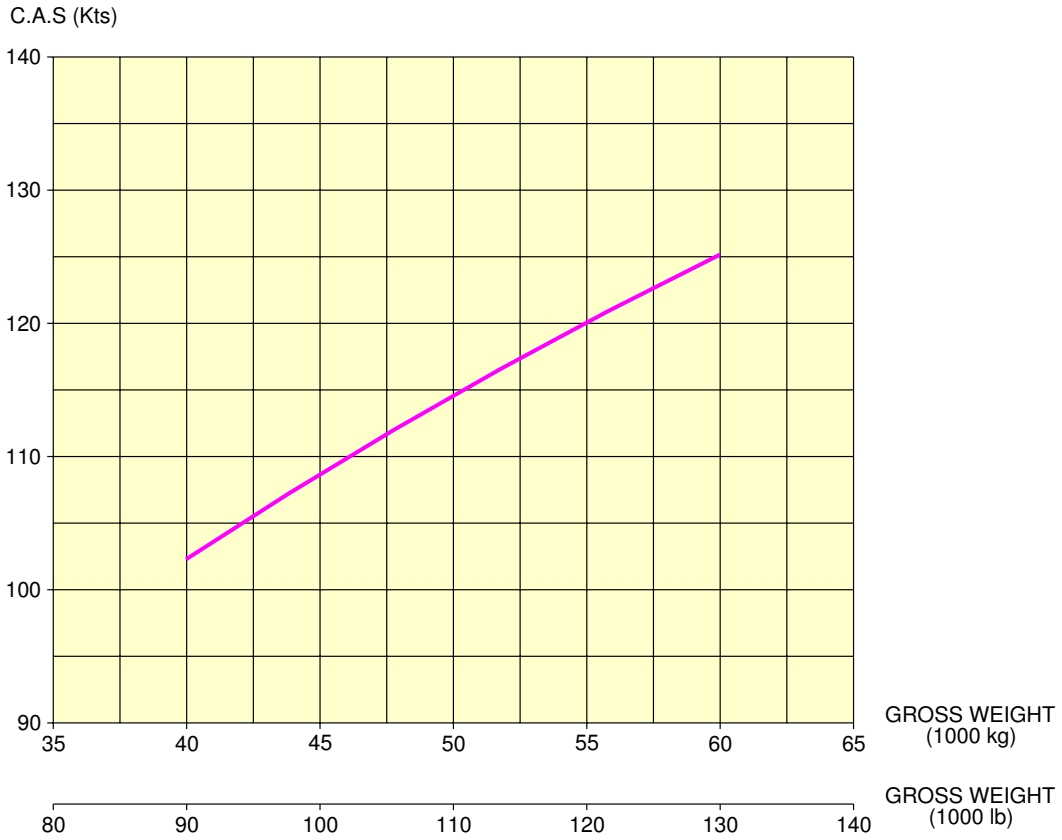
**ON A/C A318-100

Final Approach Speed

1. This section gives the final approach speed.

**ON A/C A318-100

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



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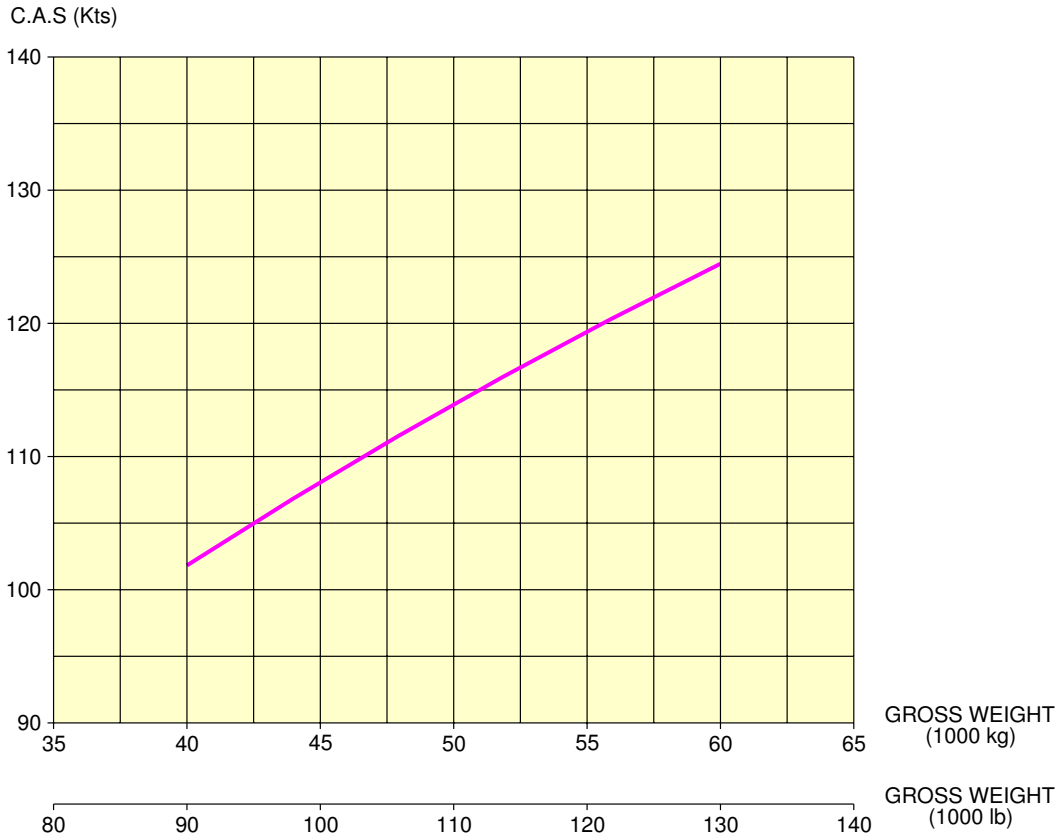
Final Approach Speed
CFM56-5B8 and CFM56-5B9 series engine
FIGURE 1

**ON A/C A318-100

NOTE: THESE CURVES ARE GIVEN FOR INFORMATION ONLY
THE APPROVED VALUES ARE STATED IN THE "OPERATING MANUALS" SPECIFIC TO THE AIRLINE OPERATING THE AIRCRAFT.



N_AC_030500_1_0020101_01_00

Final Approach Speed
PW 6000 series engine
FIGURE 2

GROUND MANEUVERING

4-1-0 General Information

**ON A/C A318-100

General Information

1. This section provides airplane turning capability and maneuvering characteristics.

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

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

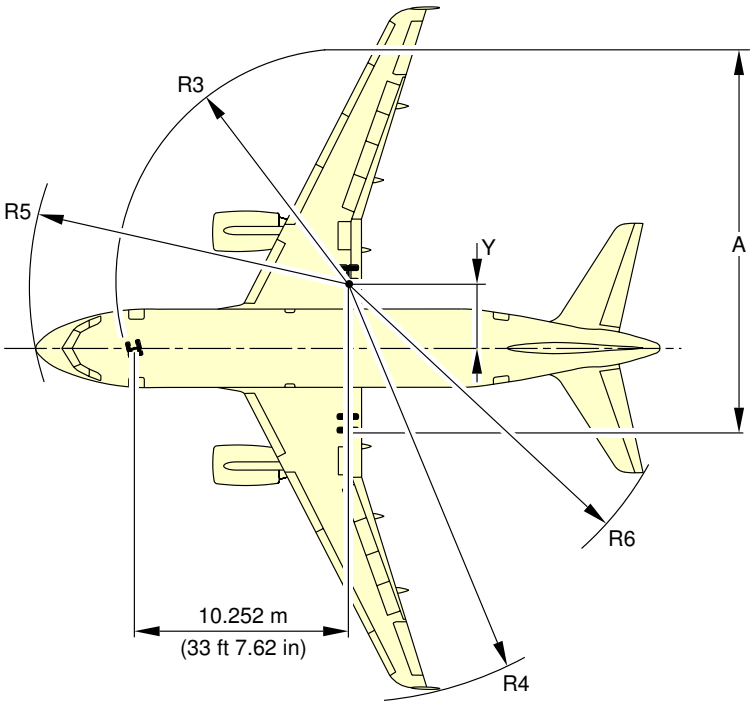
4-2-0 Turning Radii

**ON A/C A318-100

Turning Radii

1. This section gives the turning radii.

**ON A/C A318-100



NOTE: FOR STEERING DIMENSION TABLE SEE SHEET 2.

TURN TYPE
SYMMETRIC THRUST NO BRAKING

N_AC_040200_1_0010101_01_01

Turning Radii, no Slip Angle
FIGURE 1

****ON A/C A318-100**

MAXIMUM RAMP WEIGHT		Y		R3		R4		R5		R6		A	
STEERING ANGLE WT.27.85%	EFFECTIVE STEERING ANGLE WITH SLIP ON NLG TIRES	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft
75.00°	73.20°	3.10	10.10	11.10	36.30	20.60	67.60	15.60	51.30	17.90	58.80	18.70	61.20
70.00°	69.00°	3.90	12.90	11.30	37.20	21.40	70.30	15.80	51.90	18.40	60.30	19.80	64.90
65.00°	64.50°	4.90	16.00	11.70	38.40	22.30	73.30	16.10	52.80	18.90	62.10	21.10	69.20
60.00°	59.60°	6.00	19.70	12.20	40.20	23.40	76.90	16.50	54.00	19.60	64.30	22.80	74.60
55.00°	54.70°	7.30	23.80	12.90	42.40	24.70	81.00	17.00	55.60	20.40	66.90	24.70	81.00
50.00°	49.80°	8.70	28.50	13.80	45.30	26.10	85.50	17.60	57.80	21.40	70.10	27.00	88.50
45.00°	44.80°	10.30	33.90	14.90	48.90	27.70	90.90	18.50	60.60	22.50	74.00	29.70	97.60
40.00°	39.80°	12.30	40.30	16.40	53.70	29.60	97.20	19.60	64.50	24.00	78.80	33.20	108.80
35.00°	34.90°	14.70	48.30	18.30	60.00	32.00	105.10	21.20	69.70	25.90	85.10	37.50	123.10
30.00°	29.90°	17.80	58.50	20.90	68.70	35.10	115.20	23.50	77.20	28.50	93.60	43.30	142.00
25.00°	24.90°	22.10	72.40	24.70	81.10	39.30	129.00	26.90	88.20	32.20	105.60	51.30	168.30
20.00°	19.90°	28.30	92.80	30.40	99.90	45.50	149.20	32.20	105.50	37.70	123.80	63.20	207.40
15.00°	14.95°	38.40	126.00	40.10	131.60	55.60	182.30	41.30	135.70	47.20	154.80	83.00	272.40
10.00°	9.96°	58.40	191.40	59.60	195.60	75.50	247.60	60.30	197.90	66.40	217.70	122.50	401.80

N_AC_040200_1_0020101_01_00

Turning Radii, no Slip Angle
FIGURE 2

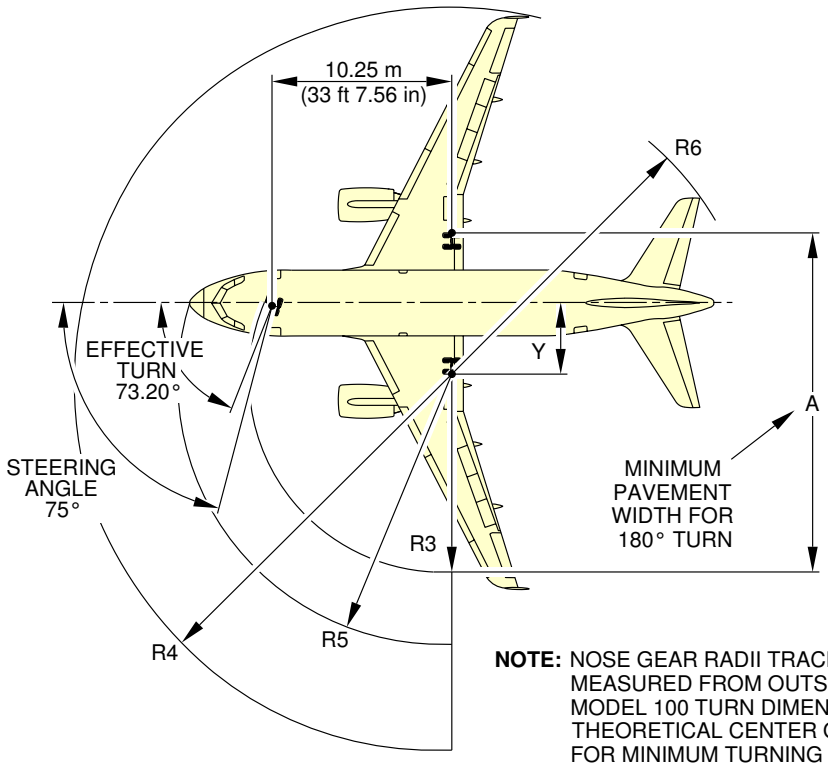
4-3-0 Minimum Turning Radii

**ON A/C A318-100

Minimum Turning Radii

1. This section gives the minimum turning radii.

**ON A/C A318-100



NOTE: NOSE GEAR RADII TRACK R3,
MEASURED FROM OUTSIDE FACE OF TIRE.
MODEL 100 TURN DIMENSION SHOWN.
THEORETICAL CENTER OF TURN
FOR MINIMUM TURNING RADIUS.
SLOW CONTINUOUS TURNING.
APPROXIMATELY IDLE THRUST
ON BOTH ENGINES.
NO DIFFERENTIAL BRAKING.
DRY SURFACE.

EFFECTIVE TURN ANGLE		Y	A	R3	R4	R5	R6
73.20° EFF.	m	3.10	18.70	11.10	20.60	15.60	17.90
75° STEERED	(ft)	(10.10)	(61.20)	(36.30)	(67.60)	(51.30)	(58.80)

N_AC_040300_1_0010101_01_01

Minimum Turning Radii
FIGURE 1

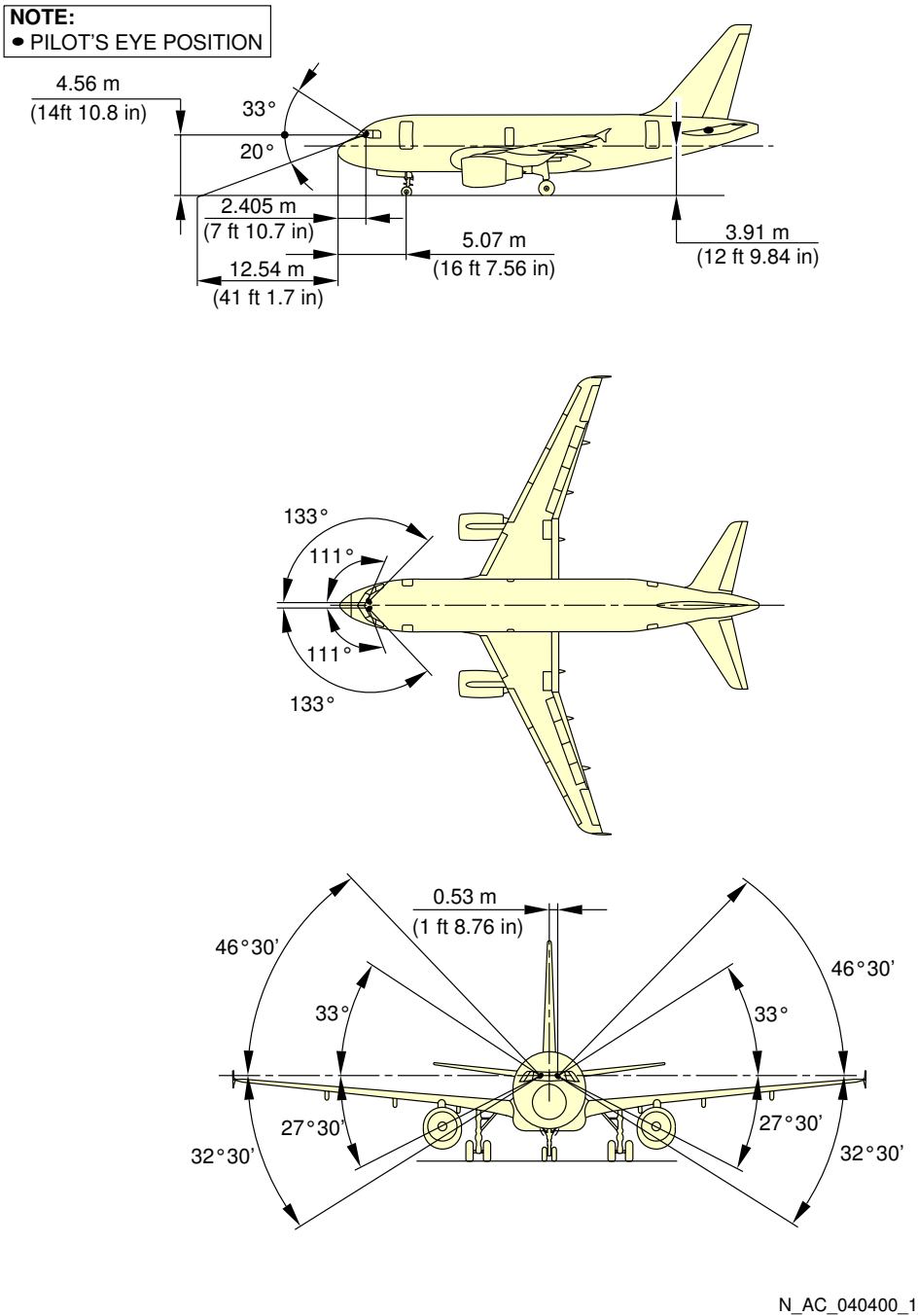
4-4-0 Visibility from Cockpit in Static Position

**ON A/C A318-100

Visibility from Cockpit in Static Position

1. This section gives the visibility from cockpit in static position.

**ON A/C A318-100



Visibility from Cockpit in Static Position
FIGURE 1

4-5-0 Runway and Taxiway Turn Paths

**ON A/C A318-100

Runway and Taxiway Turn Paths

1. Runway and Taxiway Turn Paths.

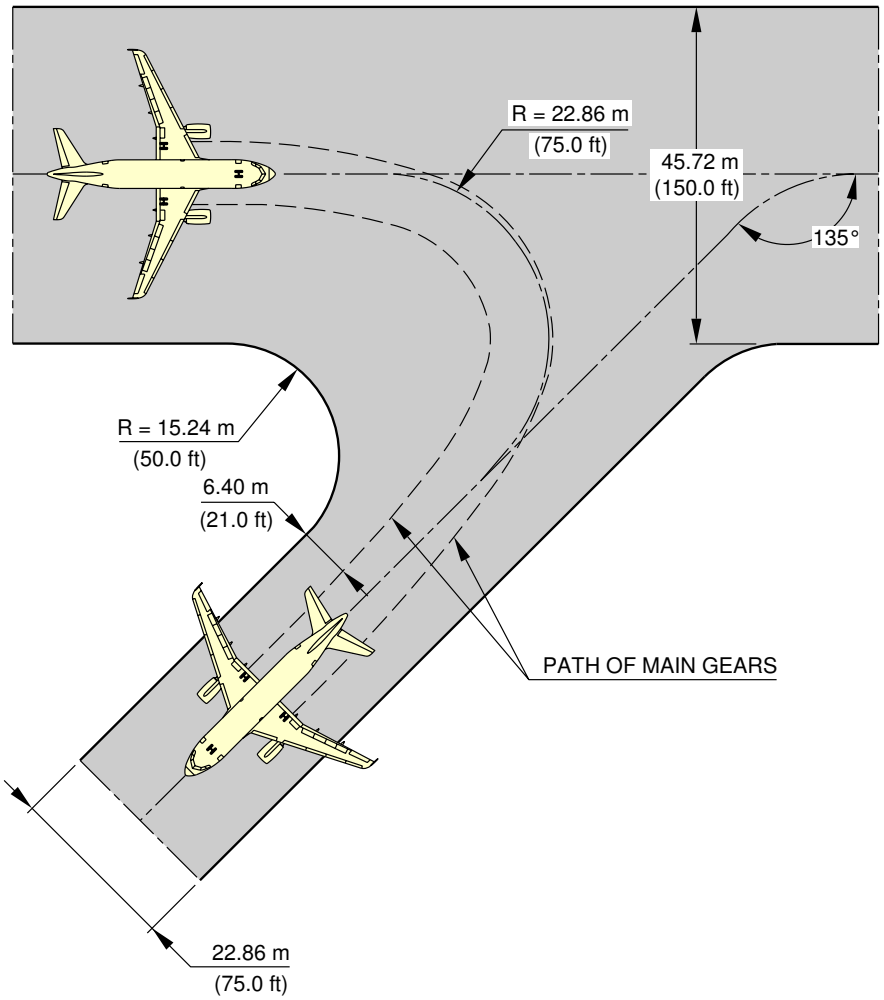
4-5-1 135° Turn - Runway to Taxiway

**ON A/C A318-100

135° Turn - Runway to Taxiway

1. This section gives the 135° turn - runway to taxiway.

**ON A/C A318-100



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135° Turn - Runway to Taxiway
Cockpit Tracks Centerline
FIGURE 1

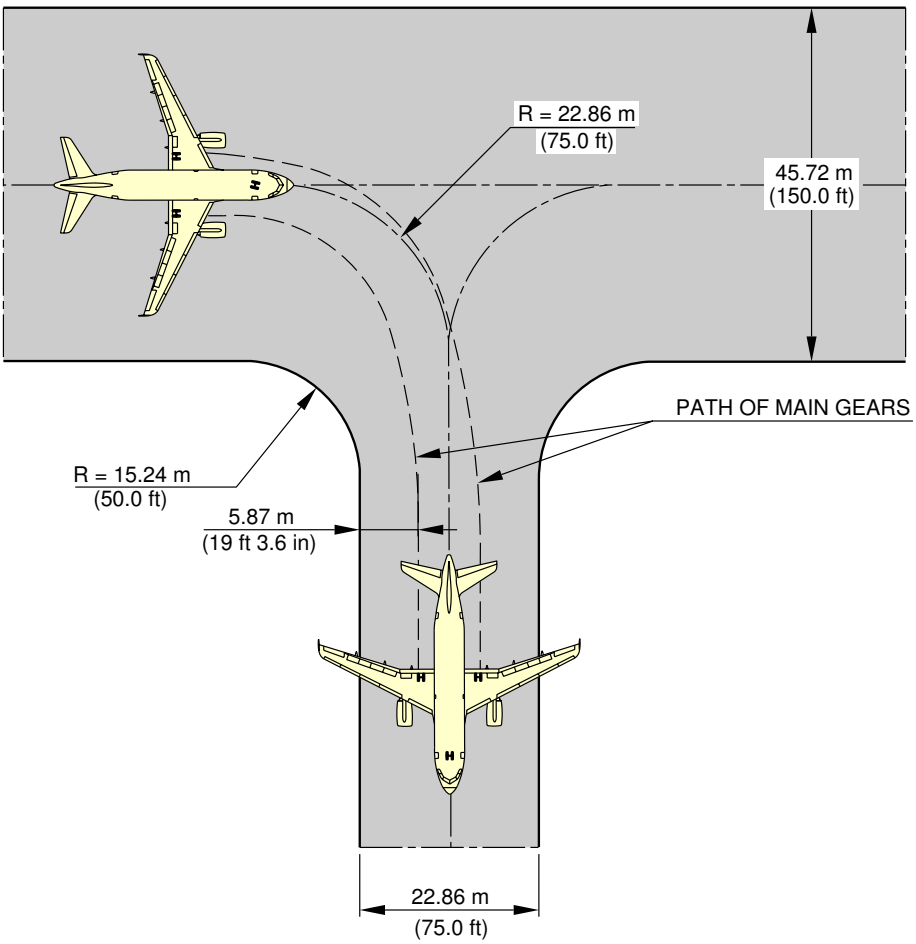
4-5-2 90° Turn - Runway to Taxiway

**ON A/C A318-100

90° Turn - Runway to Taxiway

1. This section gives the 90° turn - runway to taxiway.

**ON A/C A318-100



N_AC_040502_1_0010101_01_01

90° Turn - Runway to Taxiway
Cockpit Tracks Centerline
FIGURE 1

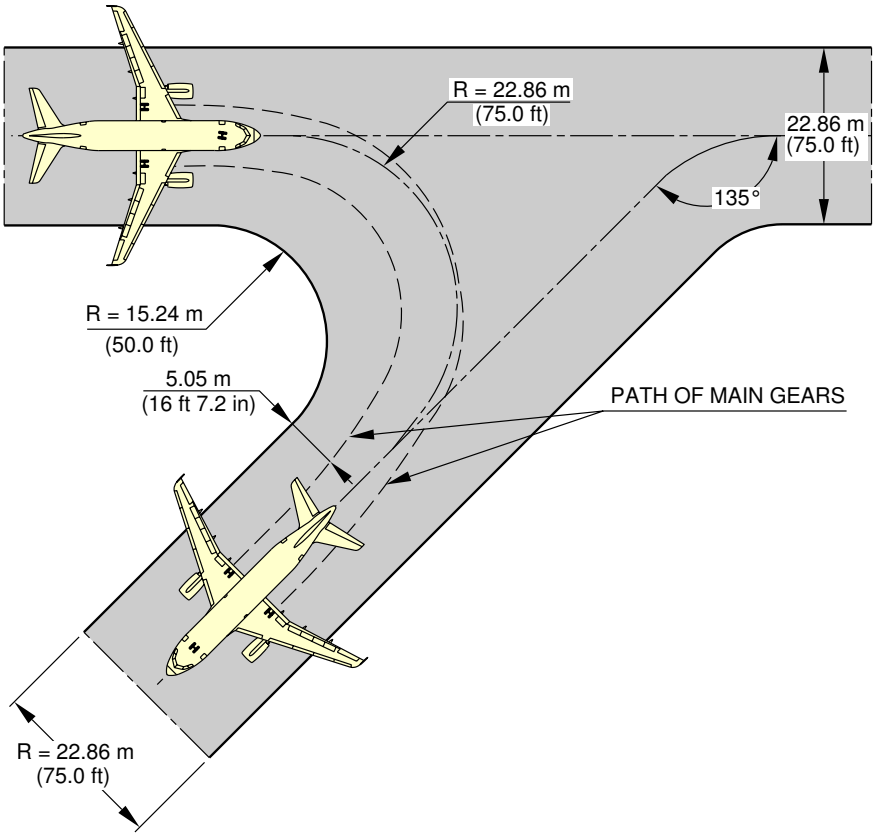
4-5-4 135° Turn - Taxiway to Taxiway

**ON A/C A318-100

135° Turn - Taxiway to Taxiway

1. This section gives the 135° turn - taxiway to taxiway.

**ON A/C A318-100



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135° Turn - Taxiway to Taxiway
35° NLG Steering Angle Centerline Radius – Edge of Runway Method
FIGURE 1

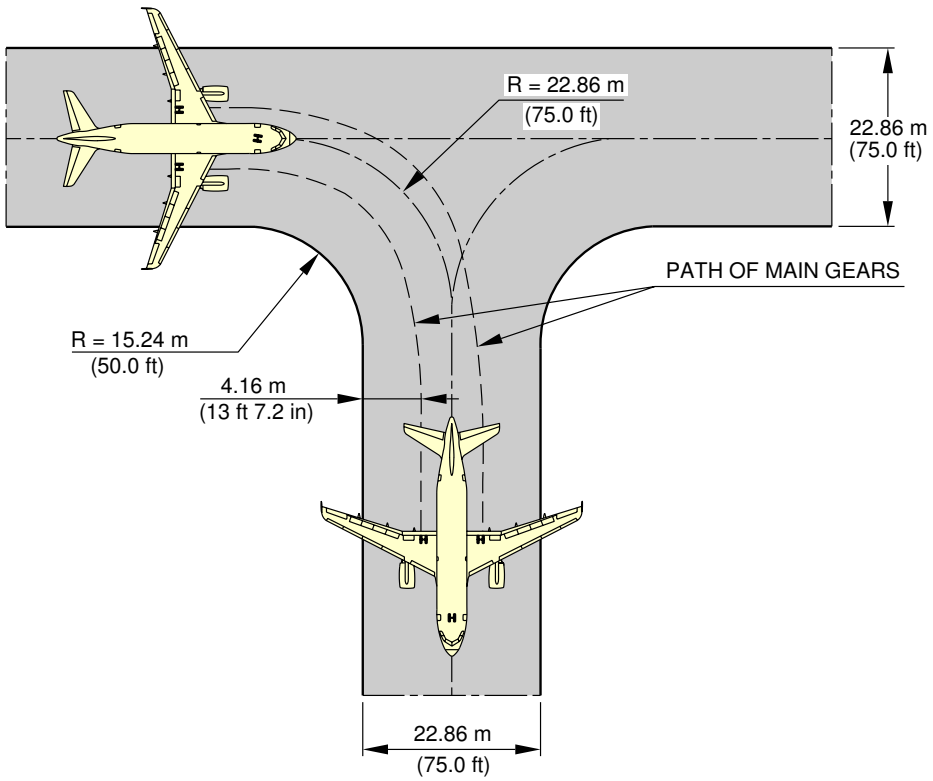
4-5-5 90° Turn - Taxiway to Taxiway

**ON A/C A318-100

90° Turn - Taxiway to Taxiway

1. This section gives the 90° turn - taxiway to taxiway.

**ON A/C A318-100



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90° Turn - Taxiway to Taxiway
FIGURE 1

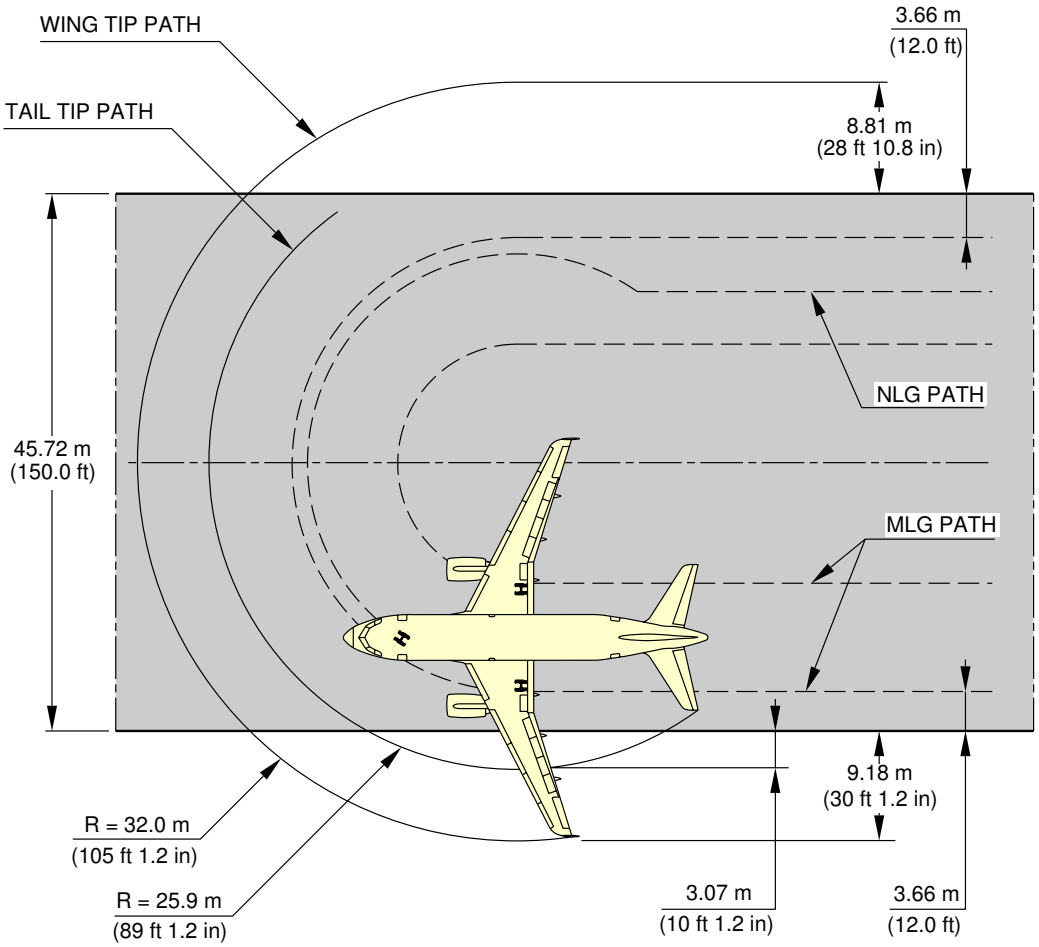
4-5-6 180° Turn on a Wide Runway

**ON A/C A318-100

180° Turn on a Wide Runway

1. This section gives the 180° turn on a wide runway.

**ON A/C A318-100



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180° Turn on a 150 ft Wide Runway
FIGURE 1

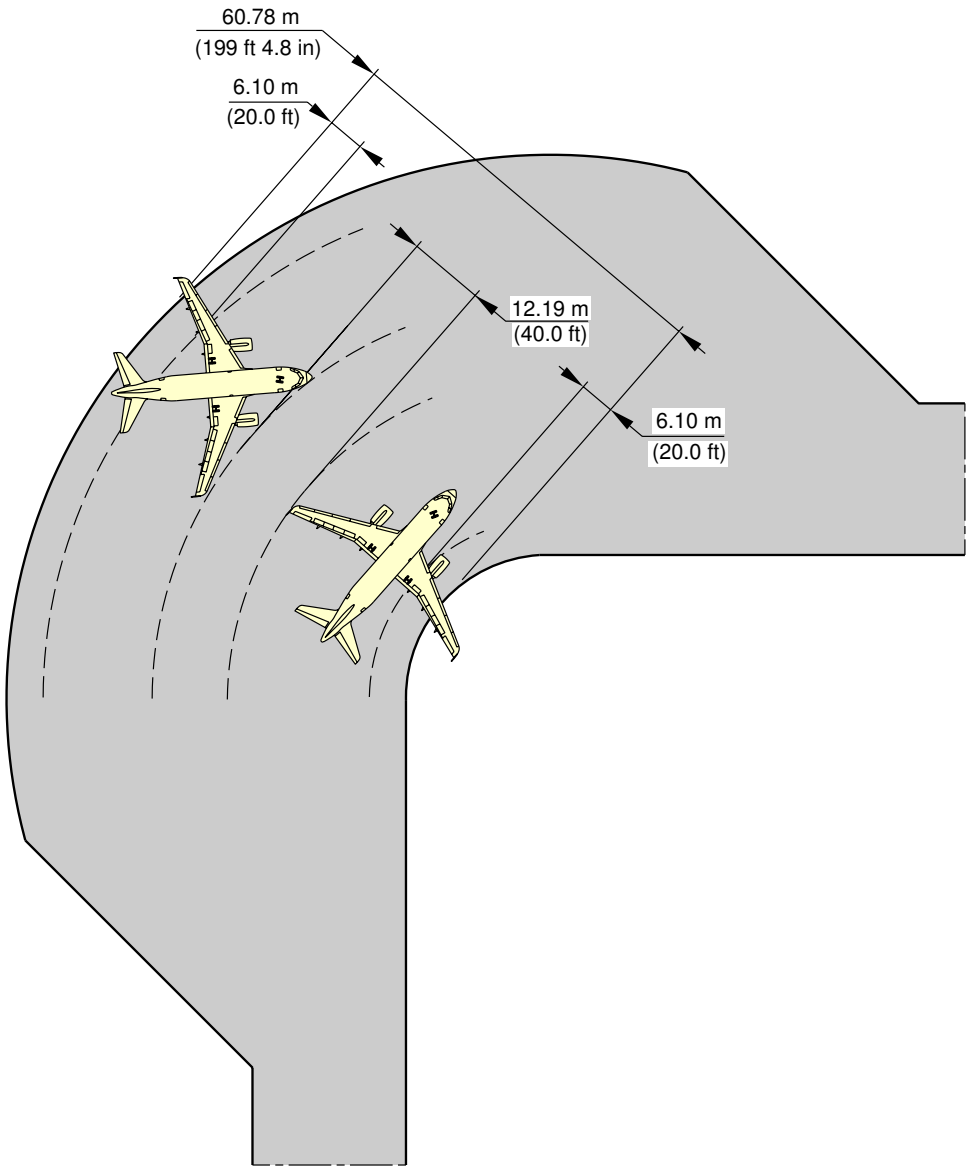
4-6-0 Runway Holding Bay (Apron)

**ON A/C A318-100

Runway Holding Bay (Apron)

1. This section gives the runway holding bay (Apron).

**ON A/C A318-100



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Runway Holding Bay (Apron)
FIGURE 1

4-7-0 Airplane Parking

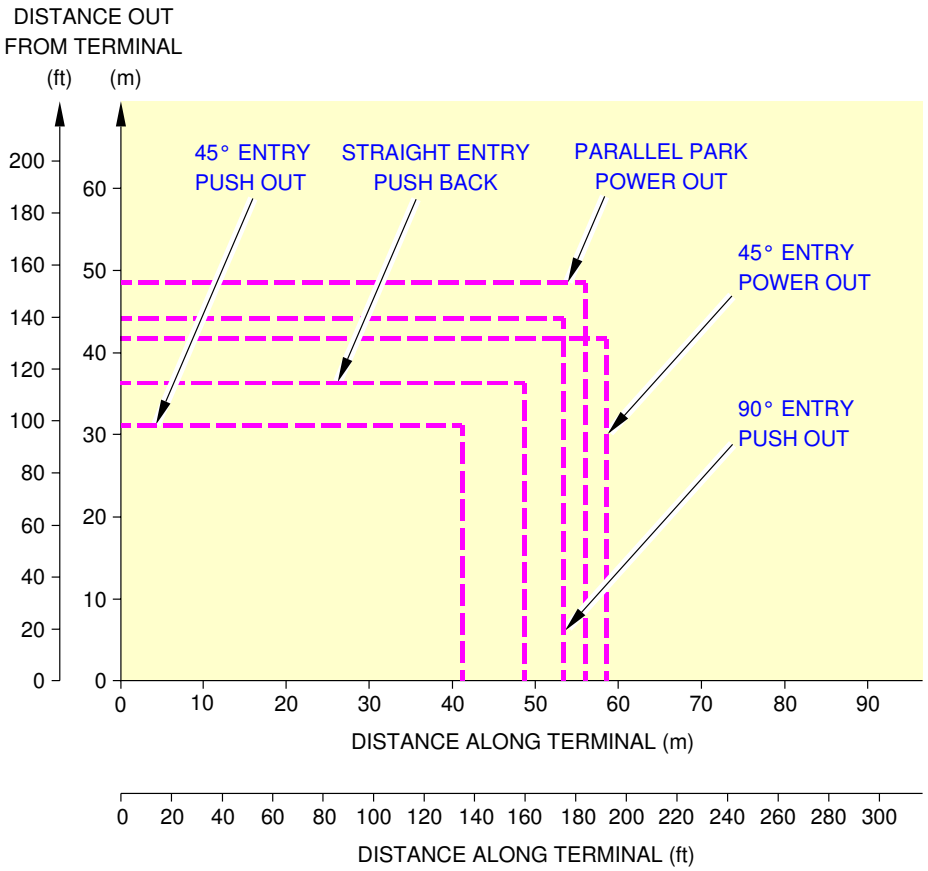
**ON A/C A318-100

Airplane Parking

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

   The rectangle includes allowance for swinging the airplane on arrival and departure.
   - Steering Geometry
   - Minimum Parking Space Requirements

**ON A/C A318-100

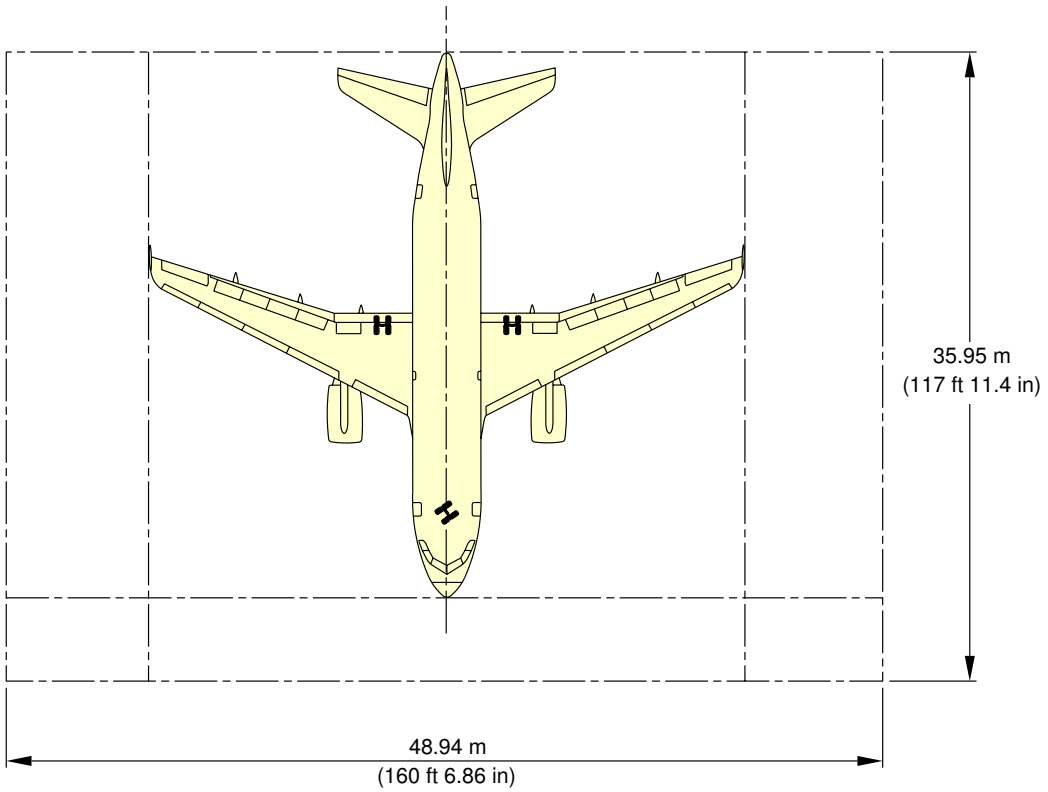


NOTE: ± 75° NOSE WHEEL STEERING (POWER OUT).
± 95° NOSE WHEEL STEERING (PUSH BACK, PUSH OUT).
3.05 m (10 ft) TRAVEL WITH NOSE WHEEL STRAIGHT AHEAD BEFORE AND AFTER PARKED POSITION.
4.5 m (15 ft) BUILDING CLEARANCE FOR NOSE–IN PARKING.
7.5 m (25 ft) BUILDING CLEARANCE FOR OTHER PARKING POSITIONS.
7.5 m (25 ft) AIRPLANE TO AIRPLANE CLEARANCE DURING PARKING MANOEUVRES.
LIAISE WITH USER AIRLINE FOR SPECIFIC PLANNED OPERATION PROCEDURE.

N_AC_040700_1_0010101_01_00

Airplane Parking
Minimum Parking Space Requirements
FIGURE 1

**ON A/C A318-100



STRAIGHT ENTRY–PUSH BACK

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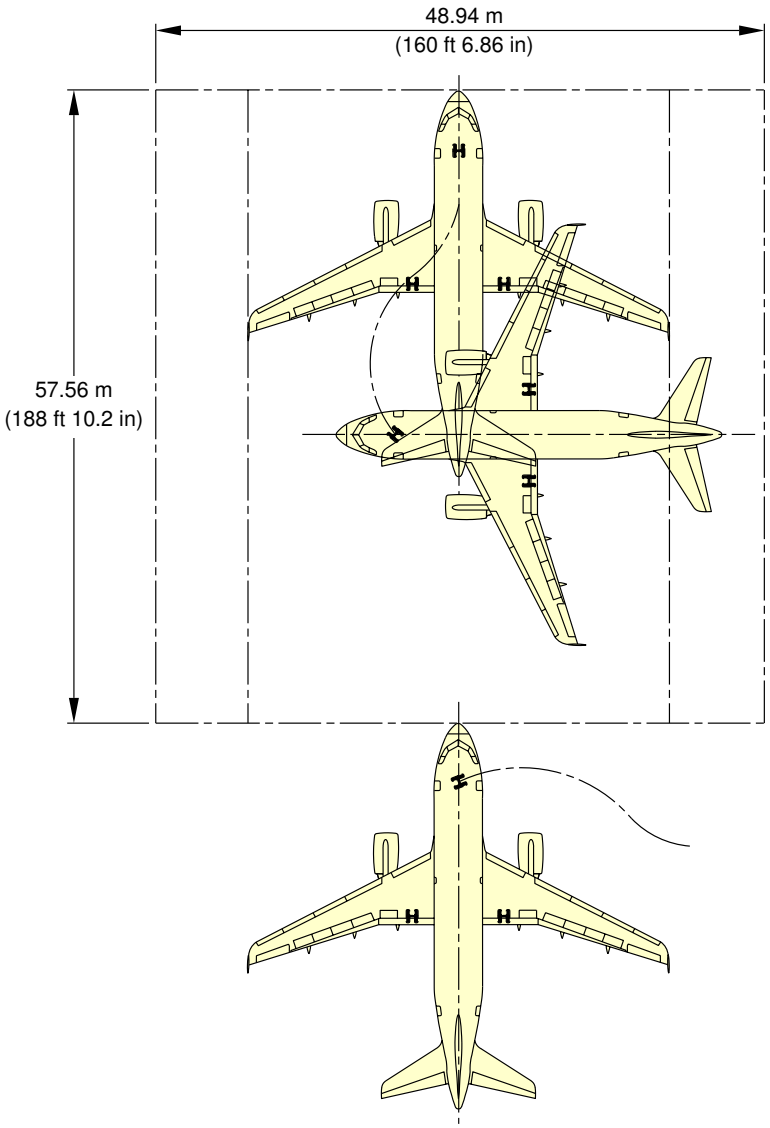
Airplane Parking
Steering Geometry
FIGURE 2

**ON A/C A318-100



PARALLEL IN–POWER OUT

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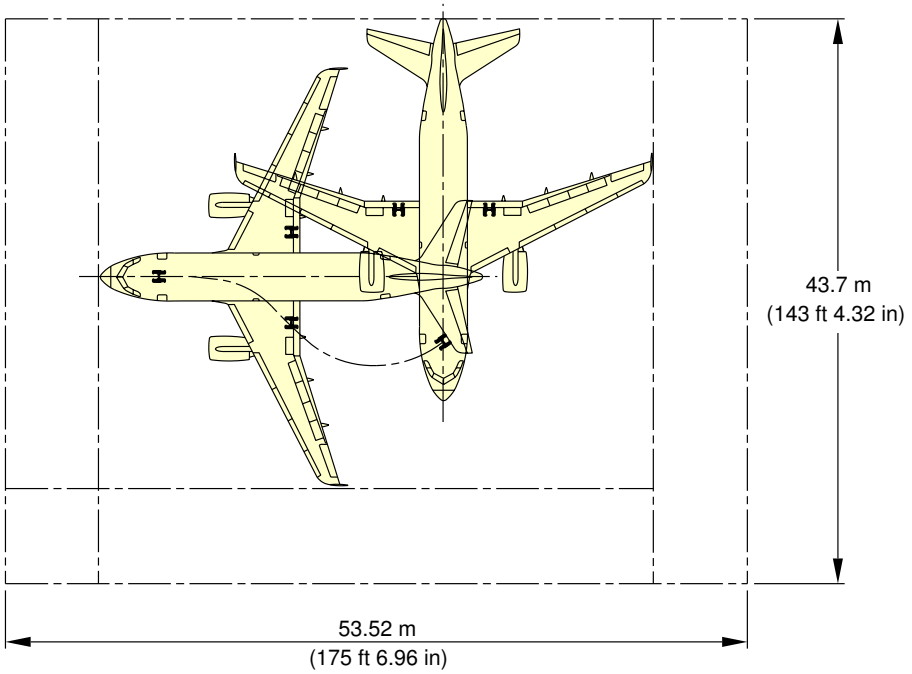
Airplane Parking
Steering Geometry
FIGURE 3

**ON A/C A318-100



90° ENTRY–PUSH OUT

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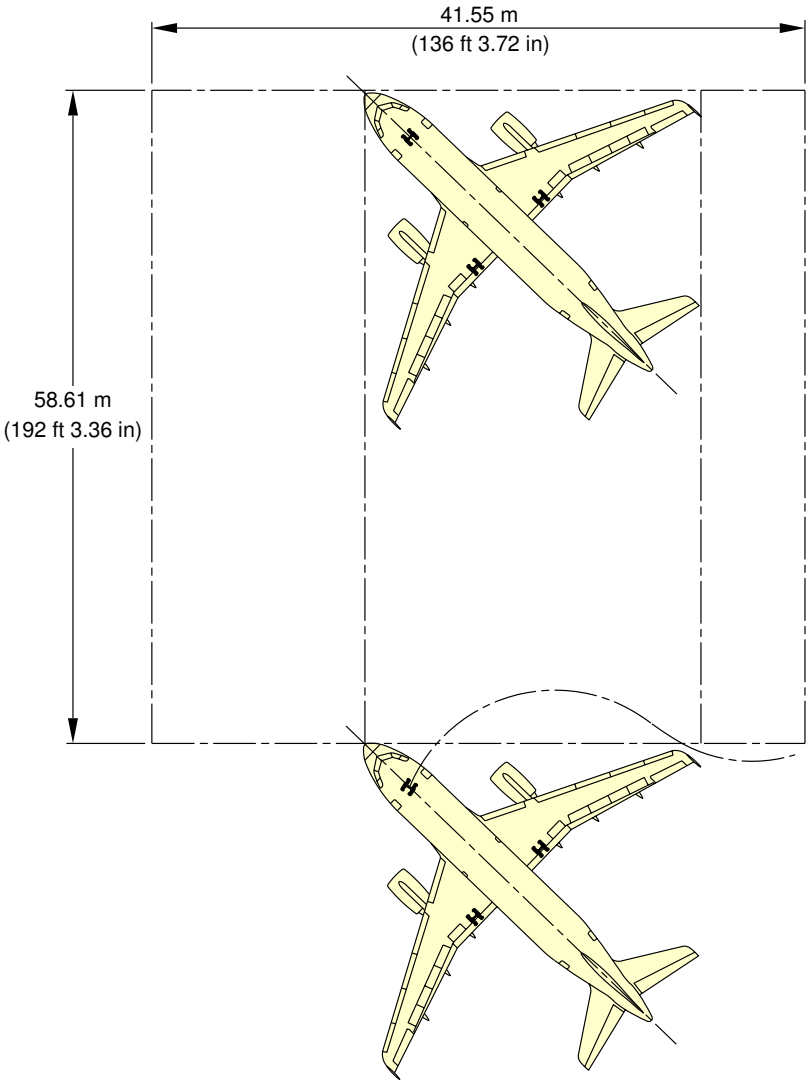
Airplane Parking
Steering Geometry
FIGURE 4

**ON A/C A318-100



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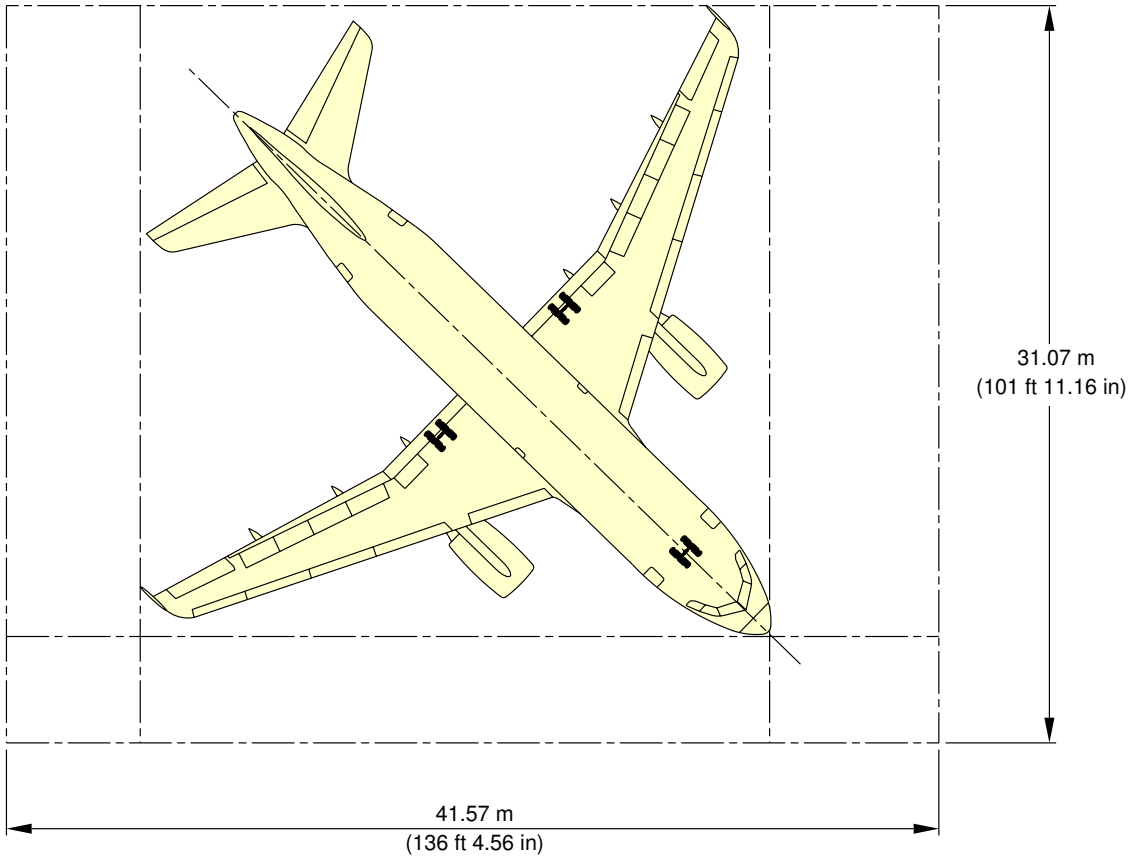
Airplane Parking
Steering Geometry
FIGURE 5

**ON A/C A318-100



45° ENTRY–PUSH OUT

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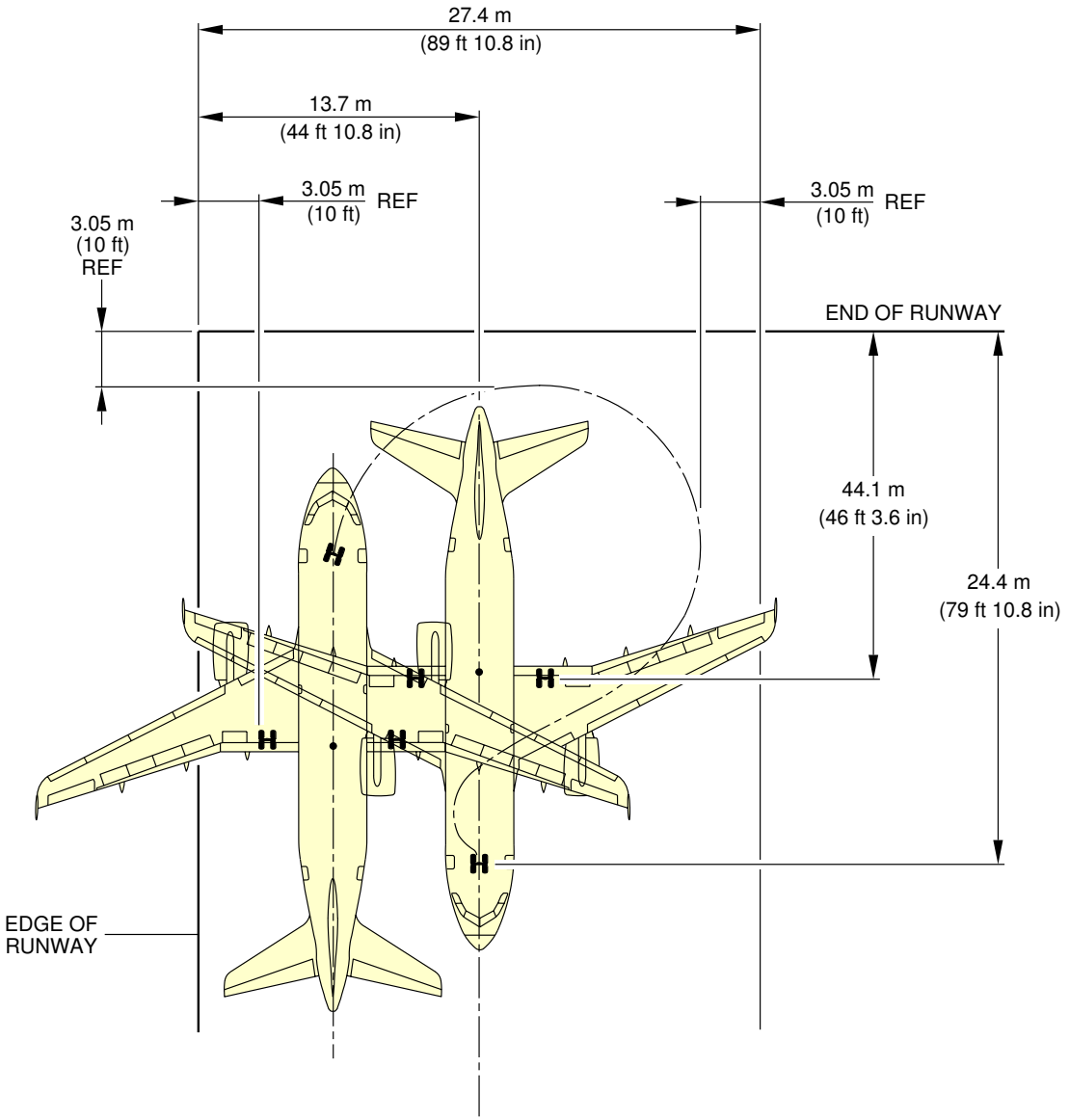
Airplane Parking
Steering Geometry
FIGURE 6

**ON A/C A318-100



NOTE: 73.2° EFFECTIVE STEERING ANGLE.

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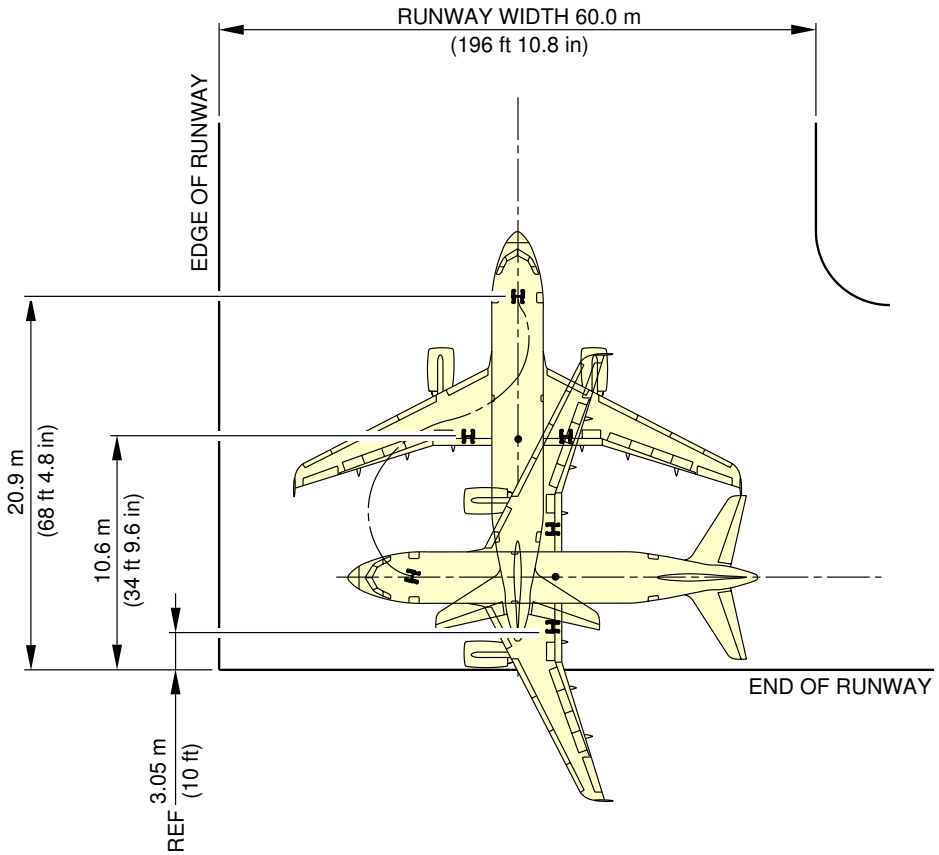
Airplane Parking
Steering Geometry
FIGURE 7

**ON A/C A318-100



NOTE: 73.2° EFFECTIVE STEERING ANGLE.

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Airplane Parking
Steering Geometry
FIGURE 8

TERMINAL SERVICING

5-0-0 TERMINAL SERVICING

**ON A/C A318-100

Terminal Servicing

1. General

This chapter provides typical ramp layouts, corresponding minimum turnaround time estimations, locations of ground service points and service requirements.

The information given in this chapter reflects ideal conditions. Actual ramp layouts and service requirements may vary according to local regulations, airline procedures and the airplane condition.

- Section 5.1 shows typical ramp layouts for passenger aircraft at the gate or on an open apron.
- Section 5.2 shows the minimum turnaround schedules for full servicing arrangements.
- Section 5.3 shows the minimum turnaround schedule for reduced servicing arrangements.
- Section 5.4 gives the locations of ground service connections, the standard of connections used and typical capacities and requirements.
- Section 5.5 provides the engine starting pneumatic requirements for different engine types and different ambient temperatures.
- Section 5.6 provides the air conditioning requirements for heating and cooling (pull-down and pull-up) using ground conditioned air for different ambient temperatures.
- Section 5.7 provides the air conditioning requirements for heating and cooling to maintain a constant cabin air temperature using low pressure conditioned air.
- Section 5.8 shows the ground towing requirements taking into account different ground surface and aircraft conditions.

5-1-0 Airplane Servicing Arrangements

**ON A/C A318-100

Airplane Servicing Arrangements

1. General
   This chapter provides typical ramp layouts, showing the various GSE items in position during typical turnaround scenarios for the passenger aircraft.

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

   The associated turnaround chart for full servicing is given in section 5.2.
   The associated turnaround chart for minimum servicing arrangement is given in section 5.3.

5-1-1 Symbols Used on Servicing Diagrams

**ON A/C A318-100

Symbols Used on Servicing Diagrams

1. This table gives the symbols used on servicing diagrams.

Ground Support Equipment	
AC	AIR CONDITIONING UNIT
AS	AIR STARTING UNIT
BULK	BULK TRAIN
CAT	CATERING TRUCK
CB	CONVEYOR BELT
CLEAN	CLEANING TRUCK
FUEL	FUEL HYDRANT DISPENSER or TANKER
GPU	GROUND POWER UNIT
LD CL	LOWER DECK CARGO LOADER
LV	LAVATORY VEHICLE
PBB	PASSENGER BOARDING BRIDGE
PS	PASSENGER STAIRS
TOW	TOW TRACTOR
ULD	ULD TRAIN
WV	POTABLE WATER VEHICLE

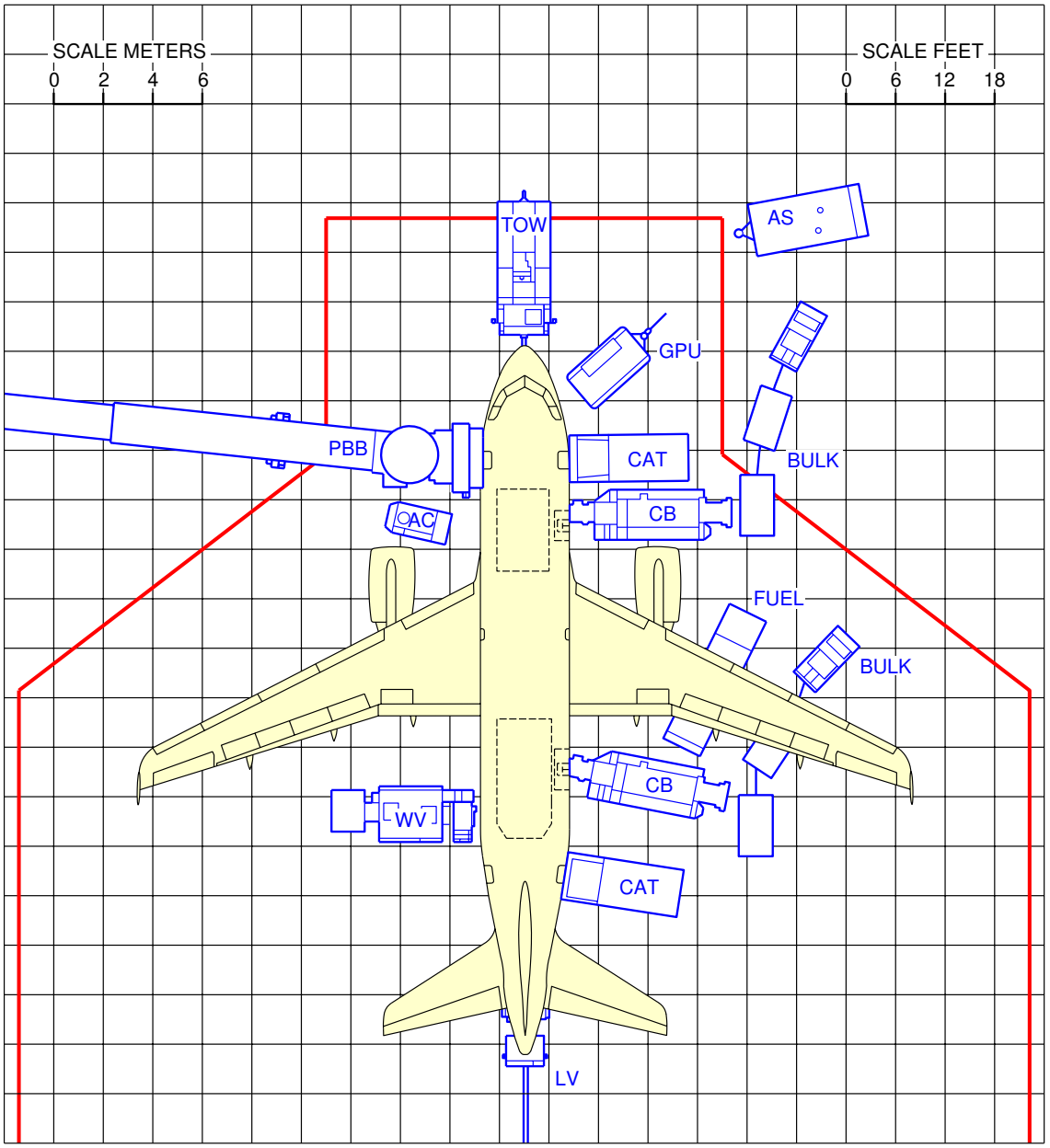
5-1-2 Typical Ramp Layout - Aircraft at the Gate

**ON A/C A318-100

Aircraft at the Gate

1. This section gives the typical servicing arrangement for pax version (Passenger Bridge).

**ON A/C A318-100



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Aircraft at the Gate
FIGURE 1

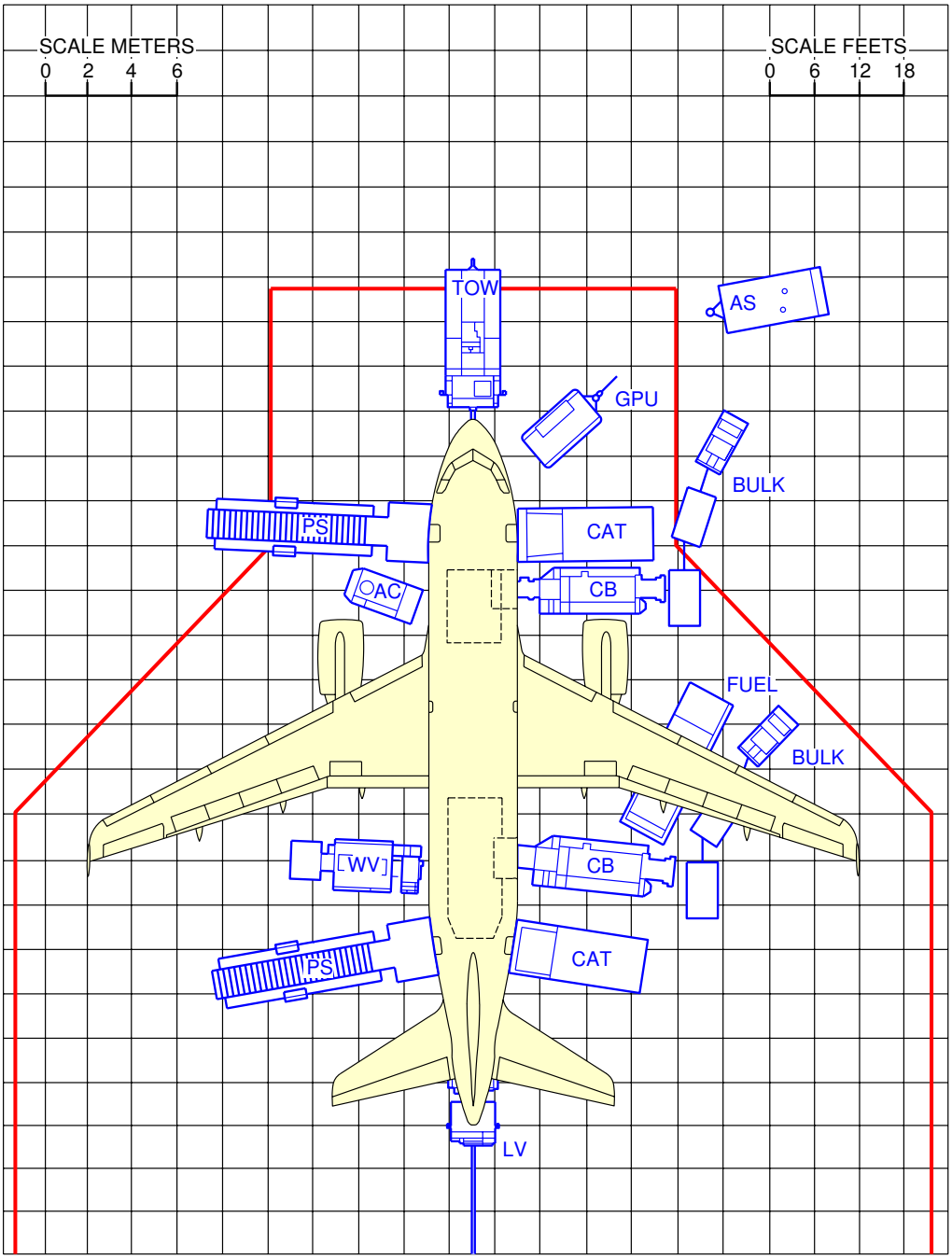
5-1-3 Typical Ramp Layout - Aircraft at an Open Apron

**ON A/C A318-100

Loading (Passenger Bridge)

1. This section give the typical servicing arrangement for pax version (Passenger Bridge)

**ON A/C A318-100



Airplane Servicing Arrangements
Loading (Passenger Bridge)
FIGURE 1

5-2-0 Terminal Operations - Full Servicing Turnaround

**ON A/C A318-100

Terminal Operations - Full Servicing Turnaround

1. This section provides a chart showing typical activities for full servicing turnaround.

   These data are provided to show the general scope and type of activities involved in ramp operations during the turnaround of an aircraft.

   Varying airline practices and operating circumstances may result in different sequences and different time intervals to do the activities shown.

5-2-1 Full Servicing Turnaround Charts

**ON A/C A318-100

Full Servicing Turnaround Charts

1. Assumptions for 38 minutes turnaround chart - Full Servicing.

   Please note this turnaround time is an assumption regarding a given example.

   A. Passenger handling: 107 pax / 1 bridge

      (1) Deboarding
      - 1L:107
      - 2L:0
      - Deboarding rate: 22 pax / min per door.
      - No PRM

      (2) Boarding
      - 1L:107
      - 2L:0
      - Boarding rate: 18 pax / min per door.
      - No PRM

   B. Catering: R1 - R 2 /sequential
      - Galley M1: 4 FSTE
      - Galley M2: 4 FSTE

   C. Cleaning: Time available

   D. Security/Safety checks: Yes (3 min each)
      - Cabin crew change: Yes (3min)

   E. Cargo
      - 10 kg / pax
      - 2 Belt loaders
      - 1 operator / BL
      - No sliding carpet
      - FWD compartment bulk: 650 kg
      - AFT compartment bulk: 650 kg

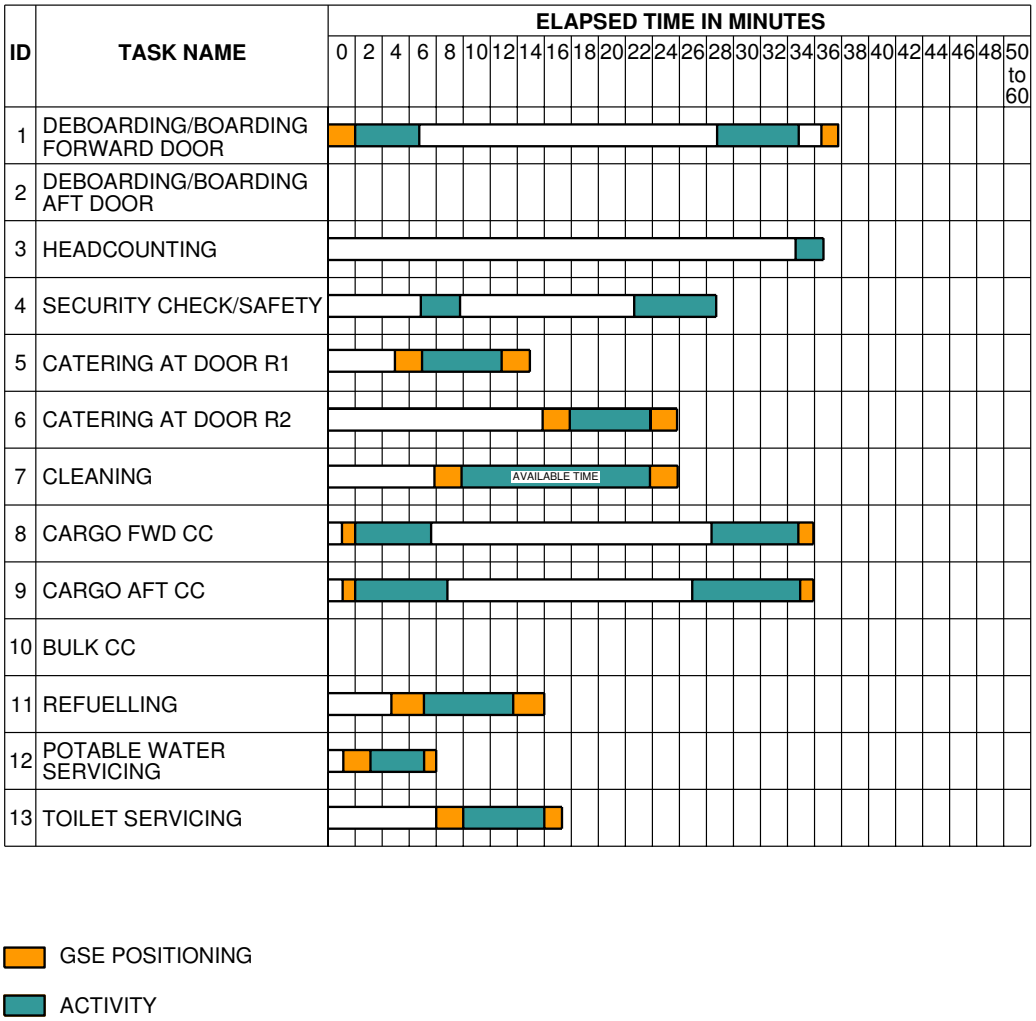
   F. Refuel: 5.2 tons, 6624 (l), 2 hoses (1 side)

   G. Water servicing: 100%:
      - 50 l / min.

   H. Toilet servicing: 100%

**ON A/C A318-100

TRT: 38 min



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Turnaround Stations
Full Servicing (38 Min.)
FIGURE 1

5-3-0 Terminal Operation - Minimum Servicing Turnaround

**ON A/C A318-100

Terminal Operation

1. This section provides a chart showing typical activities for minimum servicing turnaround.

   These data are provided to show the general scope and type of activities involved in ramp operations during the turnaround of an aircraft.

   Varying airline practices and operating circumstances may result in different sequences and different time intervals to do the activities shown.

5-3-1 Minimum Servicing Turnaround Chart

**ON A/C A318-100

Minimum Servicing Turnaround Chart

1. Assumptions for 19 minutes turnaround chart - Minimum Servicing.

   Please note this turnaround time is an assumption regarding a given example.

   A. Passenger handling: 132 pax / 2 stairways

      (1) Deboarding
      - 1L:66
      - 2L:66
      - Deboarding rate: 20 pax / min per door.
      - No PRM

      (2) Boarding
      - 1L:66
      - 2L:66
      - Boarding rate: 15 pax / min per door.
      - No PRM

   B. Catering: No
      - Galley M1:
      - Galley M2:

   C. Cleaning: No

   D. Security/Safety checks: Yes (3 min each)
      - Cabin crew change: No

   E. Cargo
      - 10 kg / pax
      - No bulk CC door
      - 2 Belt loaders
      - 1 operator / BL
      - No sliding carpet
      - FWD compartment bulk: 650 kg
      - AFT compartment bulk: 650 kg

   F. Refuel: 5.2 tons, 6624 (l), 2 hoses (1 side)

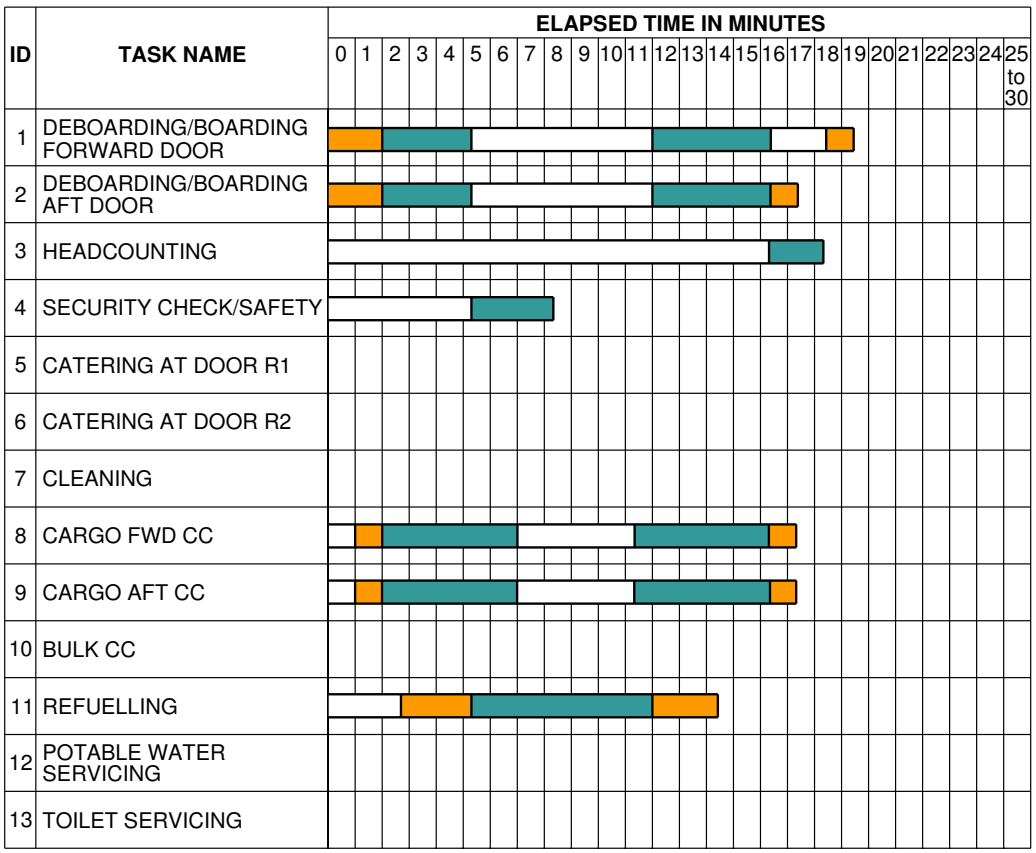
   G. Water servicing: 0%:

   H. Toilet servicing: 0%

**ON A/C A318-100

TRT: 19 min

ID	TASK NAME	ELAPSED TIME IN MINUTES
1	DEBOARDING/BOARDING FORWARD DOOR	
2	DEBOARDING/BOARDING AFT DOOR	
3	HEADCOUNTING	
4	SECURITY CHECK/SAFETY	
5	CATERING AT DOOR R1	
6	CATERING AT DOOR R2	
7	CLEANING	
8	CARGO FWD CC	
9	CARGO AFT CC	
10	BULK CC	
11	REFUELLING	
12	POTABLE WATER SERVICING	
13	TOILET SERVICING	



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Turnaround Stations
Minimum Servicing (19 Min.)
FIGURE 1

5-4-0 Ground Service Connections

**ON A/C A318-100

Ground Service Connections

1. Ground Service Connections.

5-4-1 Ground Service Connections Layout

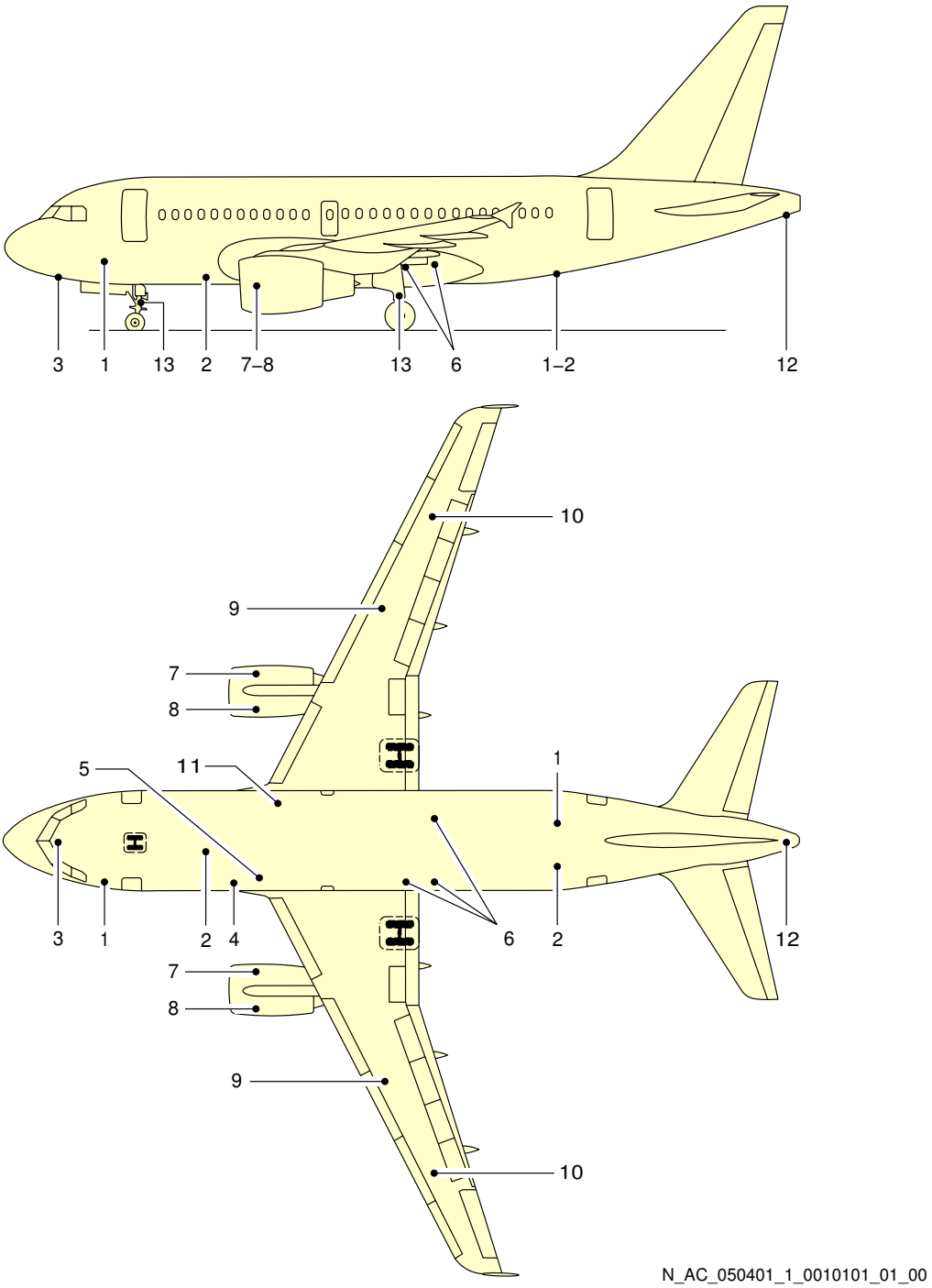
**ON A/C A318-100

Ground Service Connections Layout

1. This section gives the ground service connections layout.

Ground Service Connections Layout	
1	– TOILET SERVICING
2	– WATER FILLING AND DRAINAGE
3	– GROUND ELECTRICAL POWER PANEL
4	– GROUND SERVICE CONDITIONED AIR CONNECTOR
5	– GROUND HP AIR CONDITIONING AND AIR START CONNECTOR
6	– HYDRAULIC CONNECTORS (GROUND SERVICE PANELS)
7	– IDG OIL FILLING CONNECTOR
8	– ENGINE OIL FILLING CONNECTOR
9	– REFUEL/DEFUEL CONNECTOR
10	– GRAVITY FILLING PANELS
11	– REFUEL/DEFUEL PANEL
12	– APU OIL FILLING CONNECTOR
13	– AIRCRAFT GROUNDING

**ON A/C A318-100



Ground Service Connections
Ground Service Connections Layout
FIGURE 1

5-4-2 Grounding Points

**ON A/C A318-100

Grounding Points

1. Grounding Points.

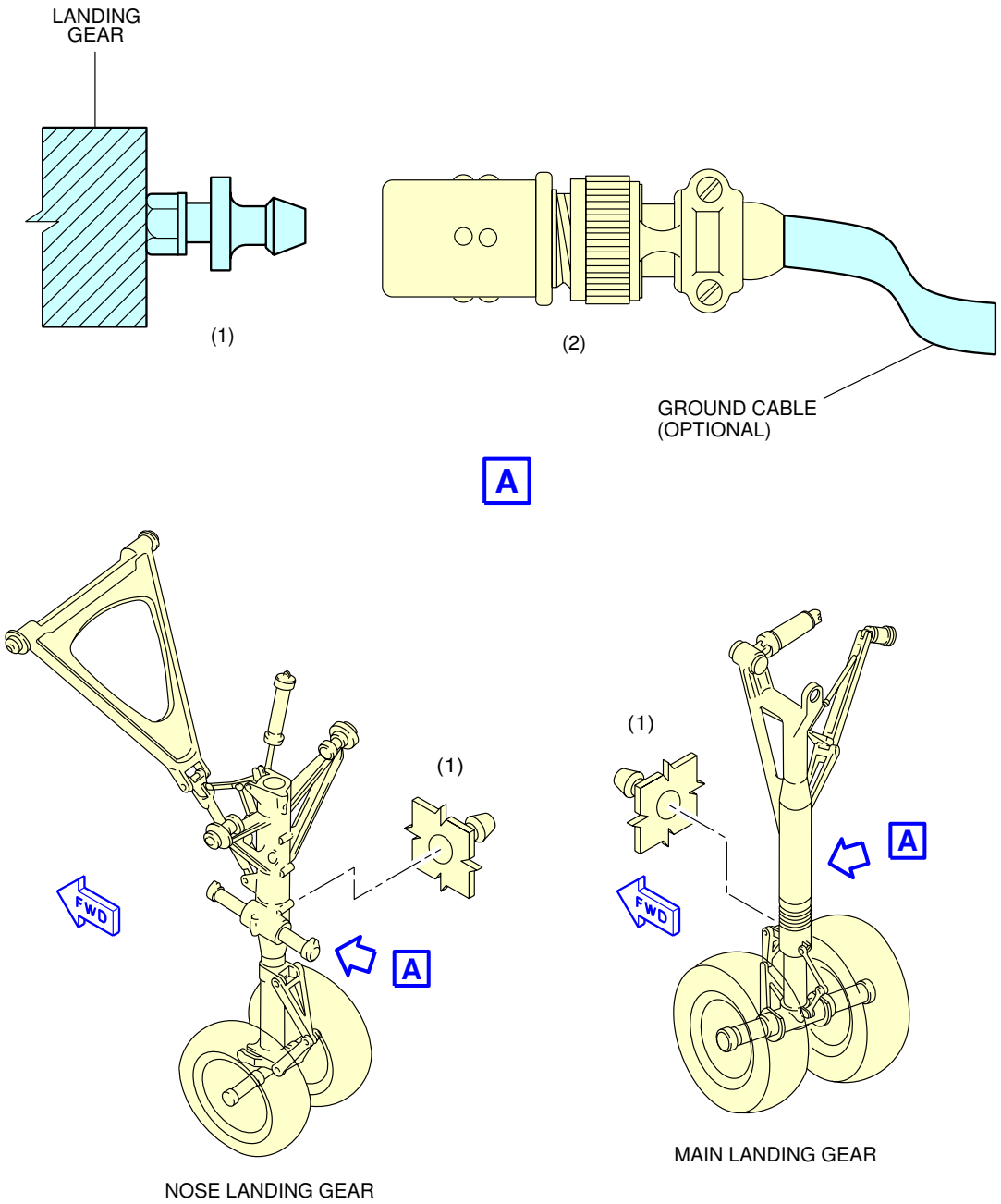
	DISTANCE: Meters (ft)			
	AFT OF NOSE	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM GROUND
		R SIDE	L SIDE	
On Nose Landing Gear leg:	5.07 m (16.63 ft)	on centerline		0.94 m (3.08 ft)
On left Main Landing Gear leg:	15.32 m (50.26 ft)		3.79 m (12.43 ft)	1.07 m (3.51 ft)
On right Main Landing Gear leg:	15.32 m (50.26 ft)	3.79 m (12.43 ft)		1.07 m (3.51 ft)

A. The grounding stud on each landing gear leg is designed for use with a clip-on connector (such as Appleton TGR).

B. The grounding studs are used to connect the aircraft to an approved ground connection on the ramp or in the hangar for:
   - refuel/defuel operations,
   - maintenance operations,
   - bad weather conditions.

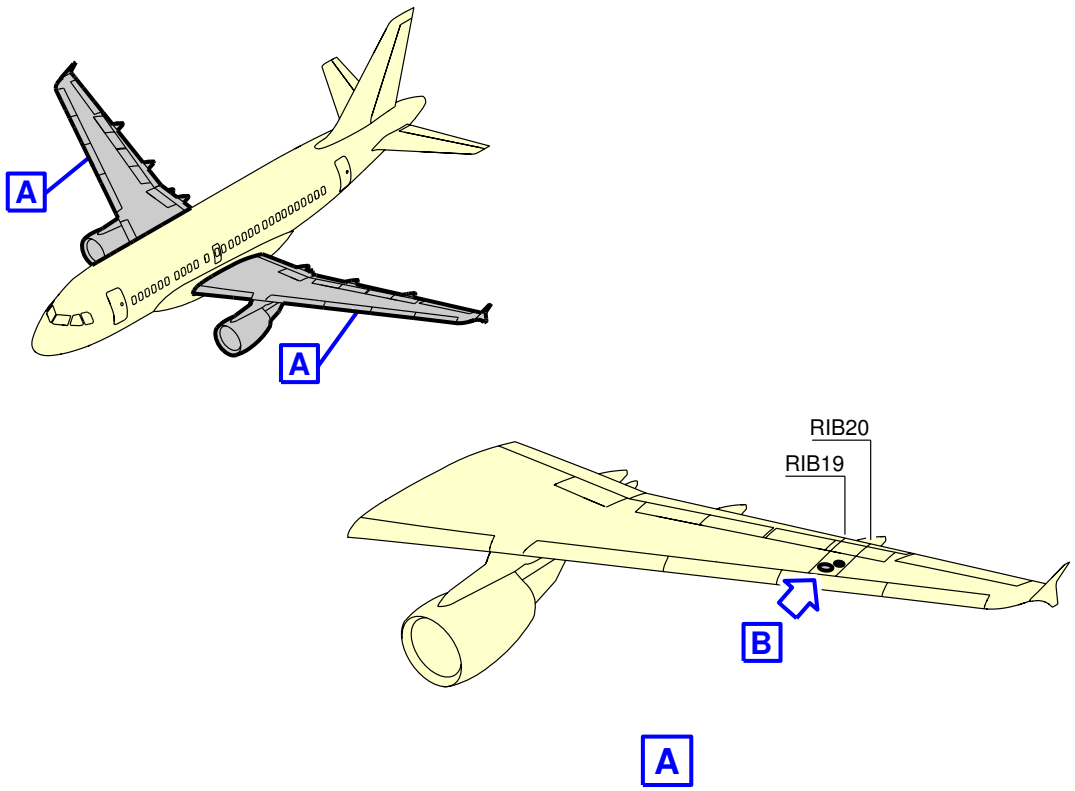
NOTE : In all other conditions, the electrostatic discharge through the tyre is sufficient.

**ON A/C A318-100



Ground Service Connections
Grounding Points
FIGURE 1

**ON A/C A318-100



Ground Service Connections
Grounding Points
FIGURE 2

5-4-3 Hydraulic System

**ON A/C A318-100

Hydraulic System

1. Access.

ACCESS	AFT OF NOSE m (ft)	FROM AIRPLANE CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		RH SIDE m (ft)	LH SIDE m (ft)	
Green System: Access door 197CB	16.43 (53.9)	1.27 (4.17)		1.76 (5.77)
Yellow System: Access door 198CB	16.43 (53.9)		1.27 (4.17)	1.76 (5.77)
Blue System: Access door 197EB	16.96 (55.64)	1.27 (4.17)		1.76 (5.77)

NOTE : Distances are approximate.

2. Reservoir Pressurization.
On the air pressurization manifold:

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		RH SIDE m (ft)	LH SIDE m (ft)	
Access door 195AB	13.2 (43.31)		0.25 (0.82)	1.74 (5.71)

NOTE : Distances are approximate.
- One 1/4 in. AEROQUIP AE 96994E self-sealing connection common to the 3 reservoirs.

3. Accumulator Charging.
Four (MS28889-1) connections (one for each accumulator) for:

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		RH SIDE m (ft)	LH SIDE m (ft)	
Yellow System accumulator: Access door 196BB	13.8 (45.28)	0.25 (0.82)		1.99 (6.53)
Green System accumulator: Left MLG door	14.3 (46.92)		0.25 (0.82)	3.2 (10.5)
Blue System accumulator: Access door 195BB	15.8 (51.84)		0.25 (0.82)	1.99 (6.53)
Yellow System braking accumulator: Access door 196BB	13.8 (45.28)	0.76 (2.49)		1.74 (5.71)

NOTE : Distances are approximate.

4. Reservoir Filling.
On the Green system ground service panel:

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		RH SIDE m (ft)	LH SIDE m (ft)	
Access door 197CB	16.43 (53.9)	1.27 (4.17)		1.76 (5.77)

NOTE : Distances are approximate.
One 1/4 in. AEROQUIP AE96993E self-sealing connection for pressurized supply.
One handpump filling connection for unpressurized (suction) supply.

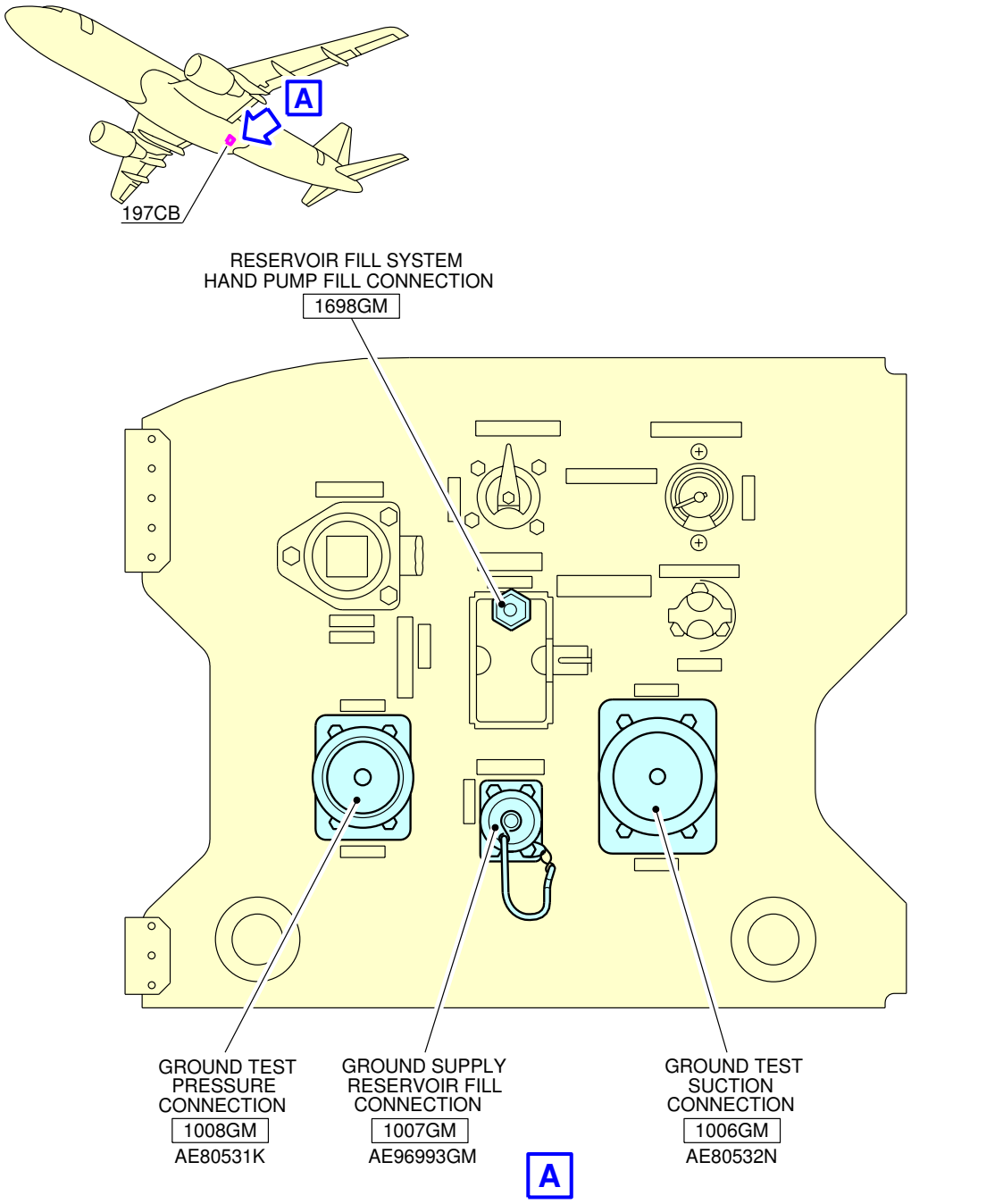
5. Reservoir Drain.
On 3/8 in. self-sealing connection on reservoir for:

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		RH SIDE m (ft)	LH SIDE m (ft)	
Yellow System: Access door 196 BB - 198 CB	13.8 (45.27)	1.43 (4.69)		1.9 (6.23)
Green System: Left MLG door	14.3 (46.92)		1.27 (4.17)	2.61 (8.56)
Blue System: Access door 197 EB	16.96 (55.64)	1.27 (4.17)		1.76 (5.77)

NOTE : Distances are approximate.

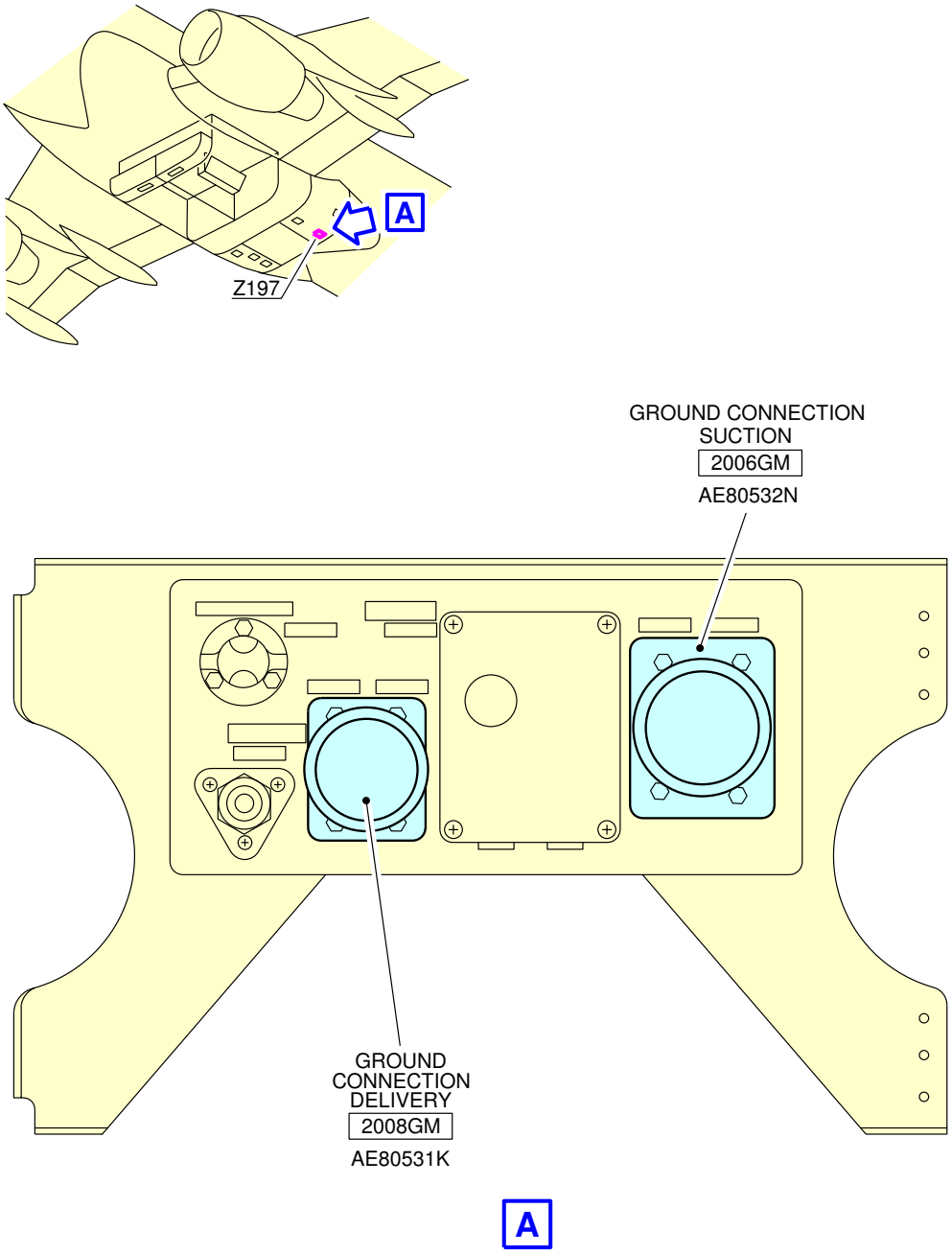
6. Ground Test.
On each ground service panel:
- One self-sealing connector AE80532N (suction).
- One self-sealing connector AE80531K (delivery).

**ON A/C A318-100



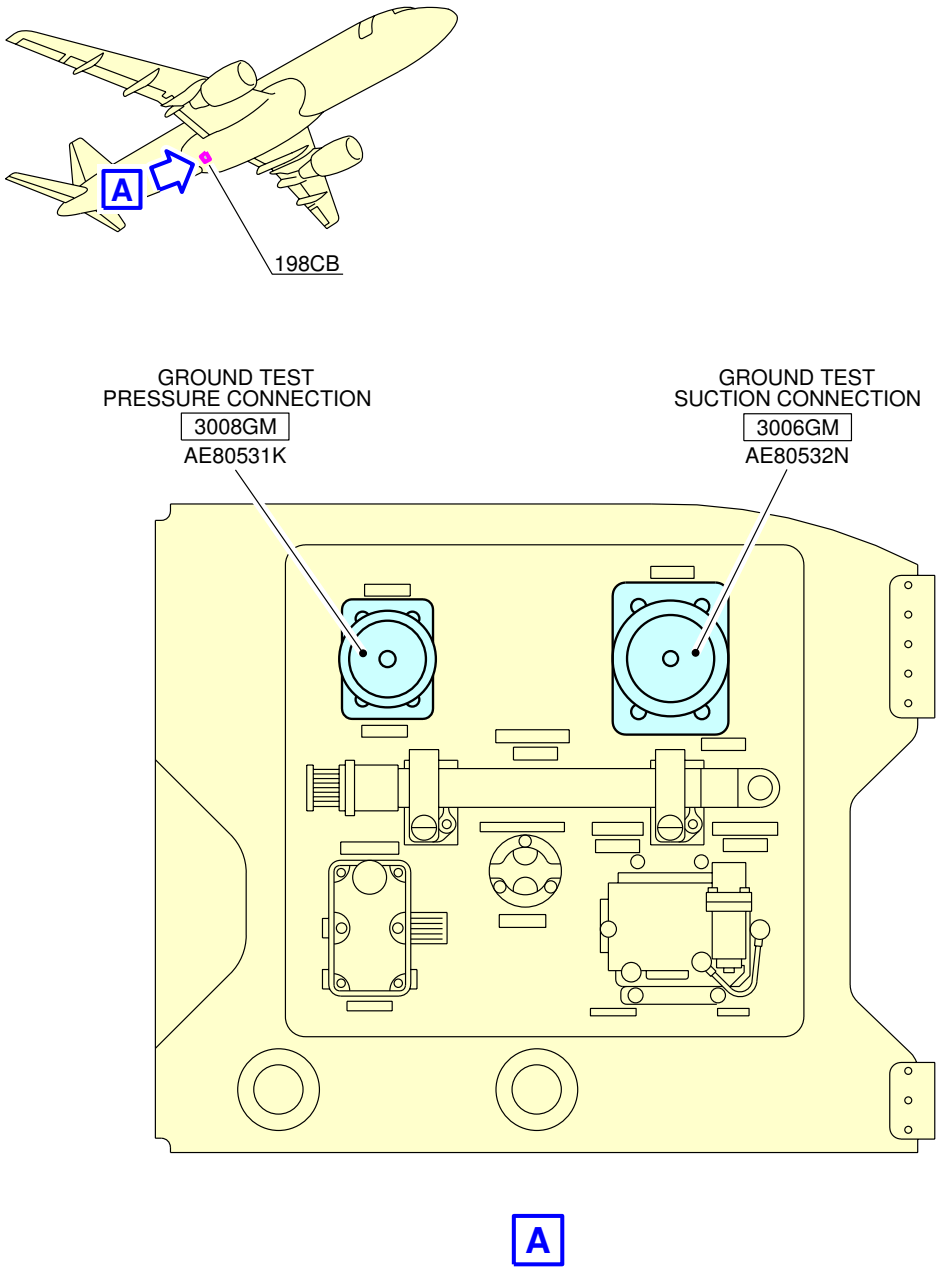
Hydraulic System
Green System Ground Service Panel
FIGURE 1

**ON A/C A318-100



Hydraulic System
Blue System Ground Service Panel
FIGURE 2

**ON A/C A318-100



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Hydraulic System
Yellow System Ground Service Panel
FIGURE 3

5-4-4 Electrical System

**ON A/C A318-100

Electrical System

1. Electrical System.
This chapter gives data related to the location of the ground service connections.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		RH SIDE m (ft)	LH SIDE m (ft)	
A/C External Power: Access door 121AL	2.55 (8.37)	on centerline		2 (6.56)

NOTE : Distances are approximate.

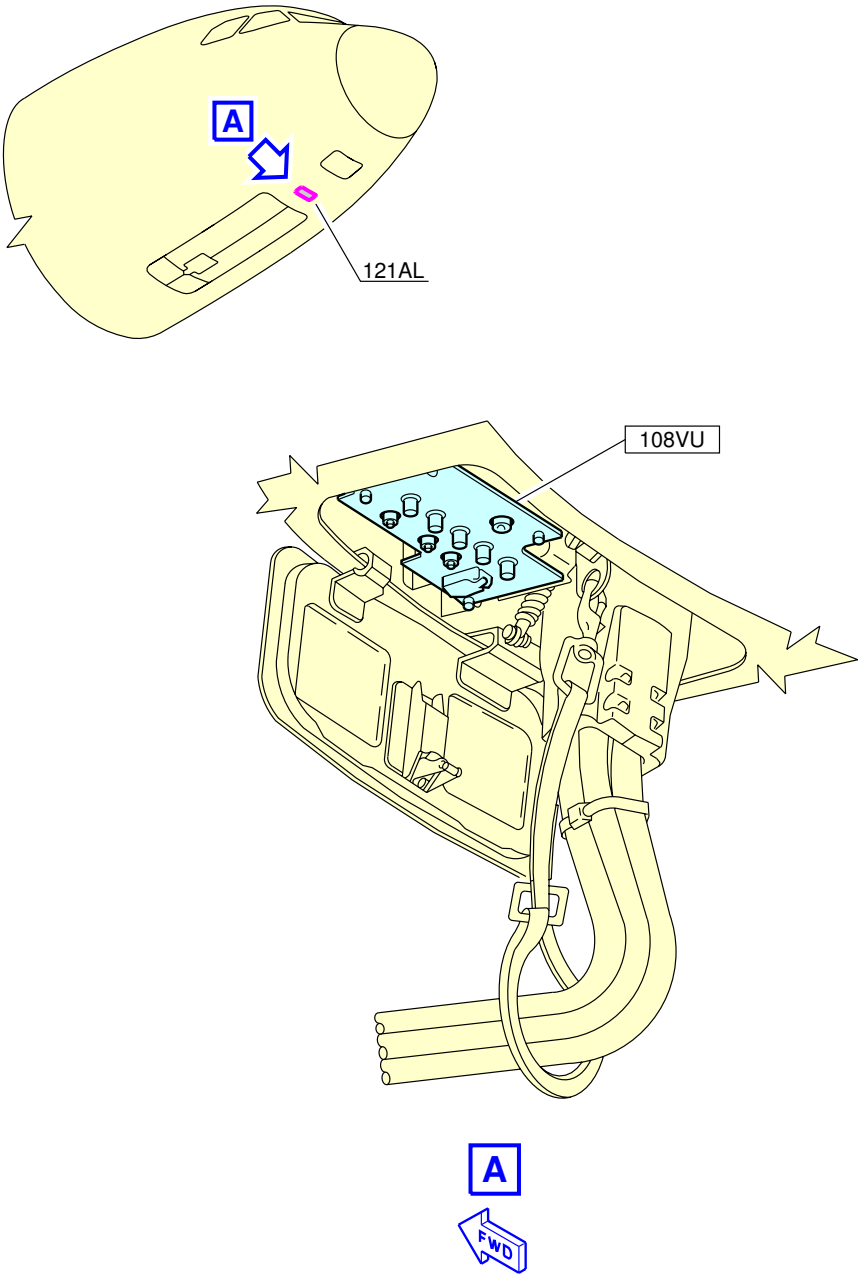
2. Technical Specifications
This chapter gives data related to the location of the ground service connections.

A. External Power Receptacle:
- One MS90362-3 receptacle - 90 KVA.

B. Power Supply:
- Three-phase, 400 Hz, 115/200V

C. Electrical connectors for servicing
- AC outlets: Hubbel 5258
- DC outlets: Hubbel 7472
- Vacuum cleaner outlets: Hubbel 5258

**ON A/C A318-100



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Ground Service Connections
External Power Receptacles
FIGURE 1

5-4-5 Oxygen System

**ON A/C A318-100

Oxygen System

1. Replenishment of high pressure oxygen source.
   A. For the A318 aircraft (basic version), the oxygen source is replenished by replacing the oxygen cylinder installed in the avionics compartment.

5-4-6 Fuel System

**ON A/C A318-100

Fuel System

1. Refuel/Defuel Couplings.
This chapter gives data related to the location of the ground service connections.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		RH SIDE m (ft)	LH SIDE m (ft)	
Refuel/Defuel Integrated Panel: Access door 192MB	14 (45.93)		1.8 (5.91)	1.8 (5.91)
Refuel/defuel coupling, Left Access Door 522HB (Optional)	14.8 (48.56)	10 (32.81)		3.5 (11.48)
Refuel/defuel coupling, Right Access Door 622HB	14.8 (48.56)		10 (32.81)	3.5 (11.48)
Gravity Refuel Coupling	16.7 (54.79)	12.4 (40.68)	12.4 (40.68)	3.7 (12.14)

NOTE : Distances are approximate.

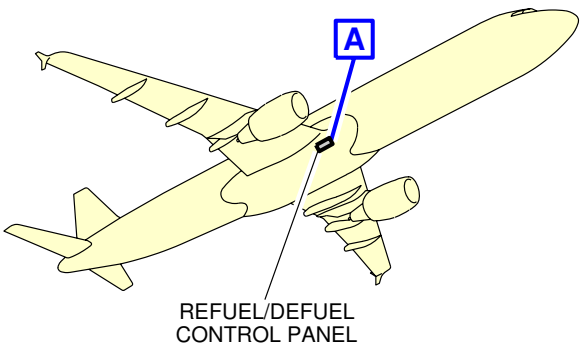
2. Technical Specifications
This chapter gives data related to the specifications of the ground service connections.

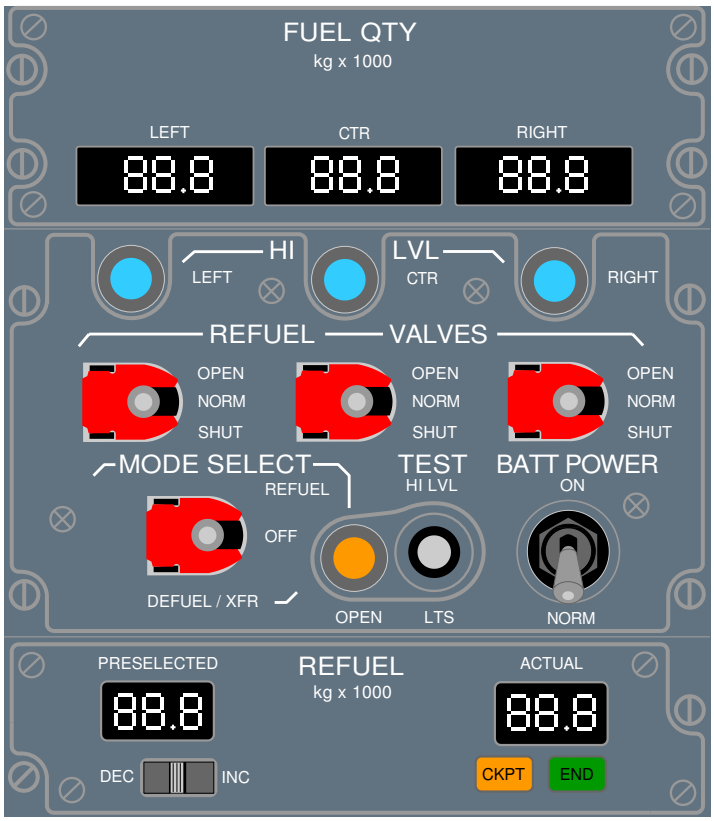
A. Refuel/defuel couplings:
- Right wing: one standard ISO R45, 2.5in.
- Left wing: one optional standard ISO R45, 2.5 in.

B. Refuel pressure:
- Maximum pressure: 3.45 bar (50 psi)

C. Refuel Flow:
- 1400 l/minute (369.84 US gal/minute)

**ON A/C A318-100





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NOTE: STANDARD CONFIGURATION OF REFUEL/DEFUEL PANEL.

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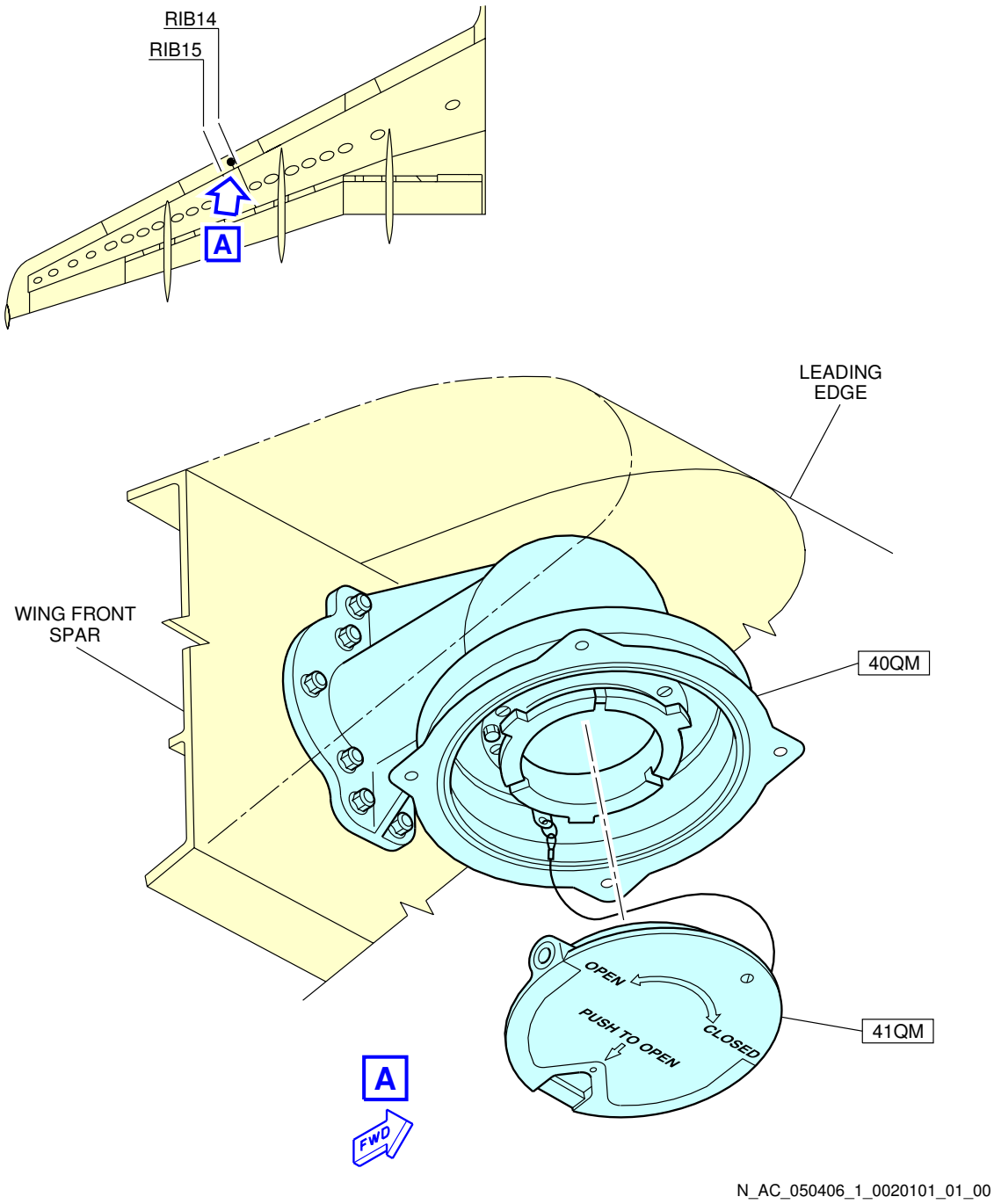
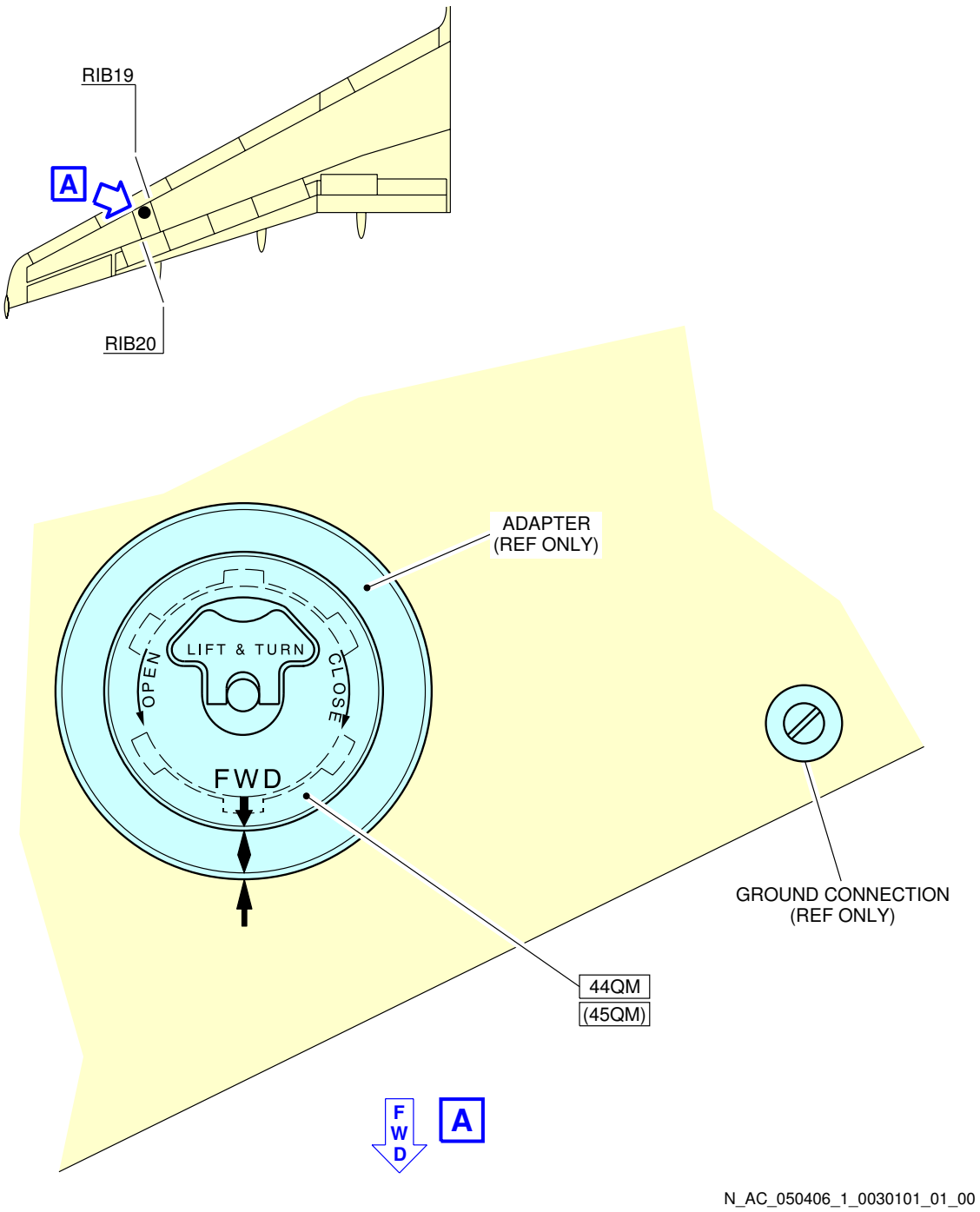
Ground Service Connections
Refuel/Defuel Panel
FIGURE 1

**ON A/C A318-100



Ground Service Connections
Refuel/Defuel Couplings
FIGURE 2

**ON A/C A318-100



Ground Service Connections
Gravity Refuel Couplings
FIGURE 3

5-4-7 Pneumatic System

**ON A/C A318-100

Pneumatic System

1. High Pressure Air Connectors.
This chapter gives data related to the location of the ground service connections.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		RH SIDE m (ft)	LH SIDE m (ft)	
HP Connector Access door 191DB	10.43 (34.22)		0.84 (2.76)	1.76 (5.77)

NOTE : Distances are approximate.

A. Connector:
- One standard MS33740, 3 in.

2. Low Pressure Air Connectors.
This chapter gives data related to the location of the ground service connections.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		RH SIDE m (ft)	LH SIDE m (ft)	
LP Connector Access door 191CB	9.9 (32.48)		1.11 (3.64)	1.73 (5.68)

NOTE : Distances are approximate

A. Connector:
- One standard SAE AS4262 type B, 8 in.

5-4-8 Potable Water System

**ON A/C A318-100

Potable Water System

1. Potable Water Ground Service Panel.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		RH SIDE m (ft)	LH SIDE m (ft)	
Potable Water Ground Service Panel: Access door 171AL:	25.2 (82.67)		0.3 (0.98)	2.6 (8.53)

NOTE : Distances are approximate

2. Potable Water Ground Drain Panel.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		RH SIDE m (ft)	LH SIDE m (ft)	
Potable Water Ground Service Panel: Access door 133AL:	11.4 (37.4)		0.15 (0.49)	1.75 (5.74)

NOTE : Distances are approximate

3. Technical Specifications

   A. Connectors:

      (1) On the potable ground service panel (Access Door 171AL)
      - Fill/Drain Nipple 3/4 in (ISO 17775).
      - One ground pressurization connector.

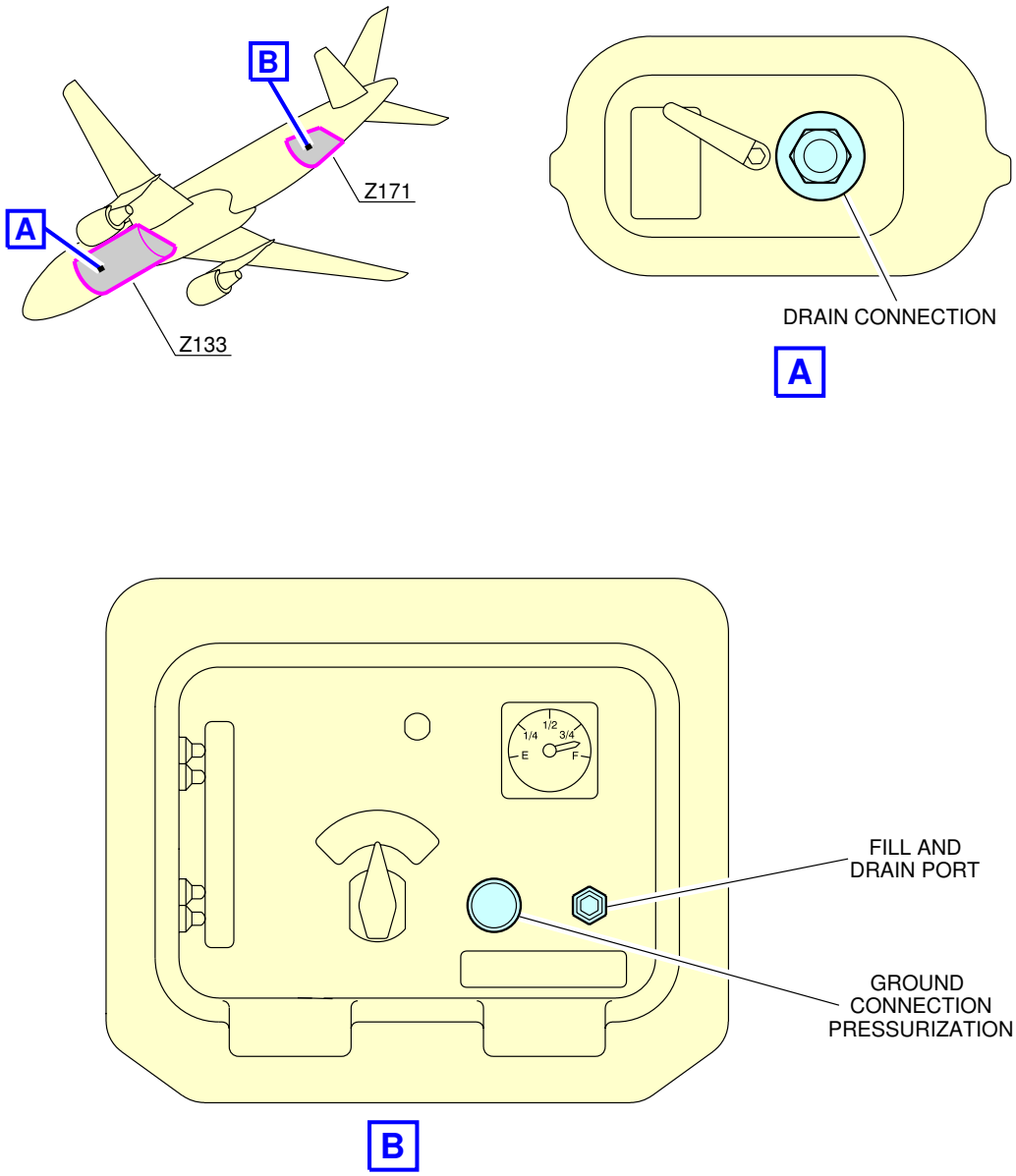
      (2) On drain panel (Access Door 133AL)
      - Drain Nipple 3/4 in (ISO 17775)

   B. Usable capacity:
      - Standard configuration - one tank:200 l (52.83 US gal)

C. Filling pressure:
   - 3.45 bar (50 psi).

D. Typical flow rate:
   - 50 l/min (13.21 US gal/min).

**ON A/C A318-100



Ground Service Connections
Potable Water Ground Service Panel
FIGURE 1

5-4-9 Oil System

**ON A/C A318-100

Oil System

1. Engine Oil Replenishment for CFM56 Series Engine (See FIGURE 5-4-9-991-001-A):
One gravity filling cap and one pressure filling connection per engine.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		ENGINE 1 (LH) m (ft)	ENGINE 2 (RH) m (ft)	
Engine Oil Gravity Filling Cap: Access door: 437BL (LH), 447BL (RH)	12.3 (40.35)	6.63 (21.75)	4.82 (15.81)	1.46 (4.79)
Engine Oil Pressure Filling Port:	12.2 (40.03)	6.49 (21.29)	4.74 (15.55)	1.42 (4.66)

NOTE : Distances are approximate

A. Tank capacity:
- Full level: 19.6 l (5.18 US gal)
- Usable: 9.46 l (2.50 US gal)

B. Maximum delivery pressure required: 25 psi (1.72 bar)
Maximum delivery flow required: 180 l/h (47.55 US gal/h)

2. IDG Oil Replenishment for CFM56 Series Engine (See FIGURE 5-4-9-991-002-A):
One pressure filling connection per engine.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		ENGINE 1 (LH) m (ft)	ENGINE 2 (RH) m (ft)	
IDG Oil Pressure Filling Connection: Access door: 438DR (LH), 448DR (RH)	11.4 (37.4)	6.9 (22.64)	5.52 (18.11)	0.68 (2.23)

NOTE : Distances are approximate

A. IDG oil tank capacity: 5 l (1.32 US gal)

B. Maximum servicing pressure: 5 to 40 psi (0.34 to 2.76 bar) at the IDG inlet.

3. Starter Oil Replenishment for CFM56 Series Engine (See FIGURE 5-4-9-991-003-A):
One gravity filling cap per engine.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		ENGINE 1 (LH) m (ft)	ENGINE 2 (RH) m (ft)	
Starter Oil Filling Connection:	10.4 (34.12)	5.3 (17.39)	6.2 (20.34)	0.76 (2.49)

NOTE : Distances are approximate

A. Tank capacity: 0.8 l (0.206 US gal)

4. Engine Oil Replenishment for PW 6000 Series Engine (See FIGURE 5-4-9-991-004-A):
One gravity filling cap per engine.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		ENGINE 1 (LH) m (ft)	ENGINE 2 (RH) m (ft)	
Engine Oil Gravity Filling Cap: Access door: 438BR (LH), 448BR (RH)	10.16 (33.33)	4.8 (15.75)	6.63 (21.75)	1.8 (5.9)

NOTE : Distances are approximate

A. Tank capacity:
- Full level: 18.36 l (4.85 US gal)
- Usable: 23.50 l (6.21 US gal)
- Engine oil tank capacity: 18.36 l (4.85 US gal)

1. IDG Oil Replenishment for PW 6000 Series Engine:
One pressure filling connection per engine.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		ENGINE 1 (LH) m (ft)	ENGINE 2 (RH) m (ft)	
IDG Oil Pressure Filling Connection: Access door 438DR (LH), 448DR (RH)	10 (32.81)	5.33 (17.49)	6.17 (20.24)	1.02 (3.35)

NOTE : Distances are approximate

A. Tank capacity: 6.28 l (1.66 US gal)

B. Maximum servicing pressure: 35 psi (2.41 bar)

5. Starter Oil Replenishment for PW 6000 Series Engine (See FIGURE 5-4-9-991-006-A):
One gravity filling cap per engine.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		ENGINE 1 (LH) m (ft)	ENGINE 2 (RH) m (ft)	
Starter Oil Filling Connection:	10.16 (33.33)	5.84 (19.16)	5.59 (18.34)	1.02 (3.35)

NOTE : Distances are approximate

A. Tank capacity: 0.35 l (0.09 US gal)

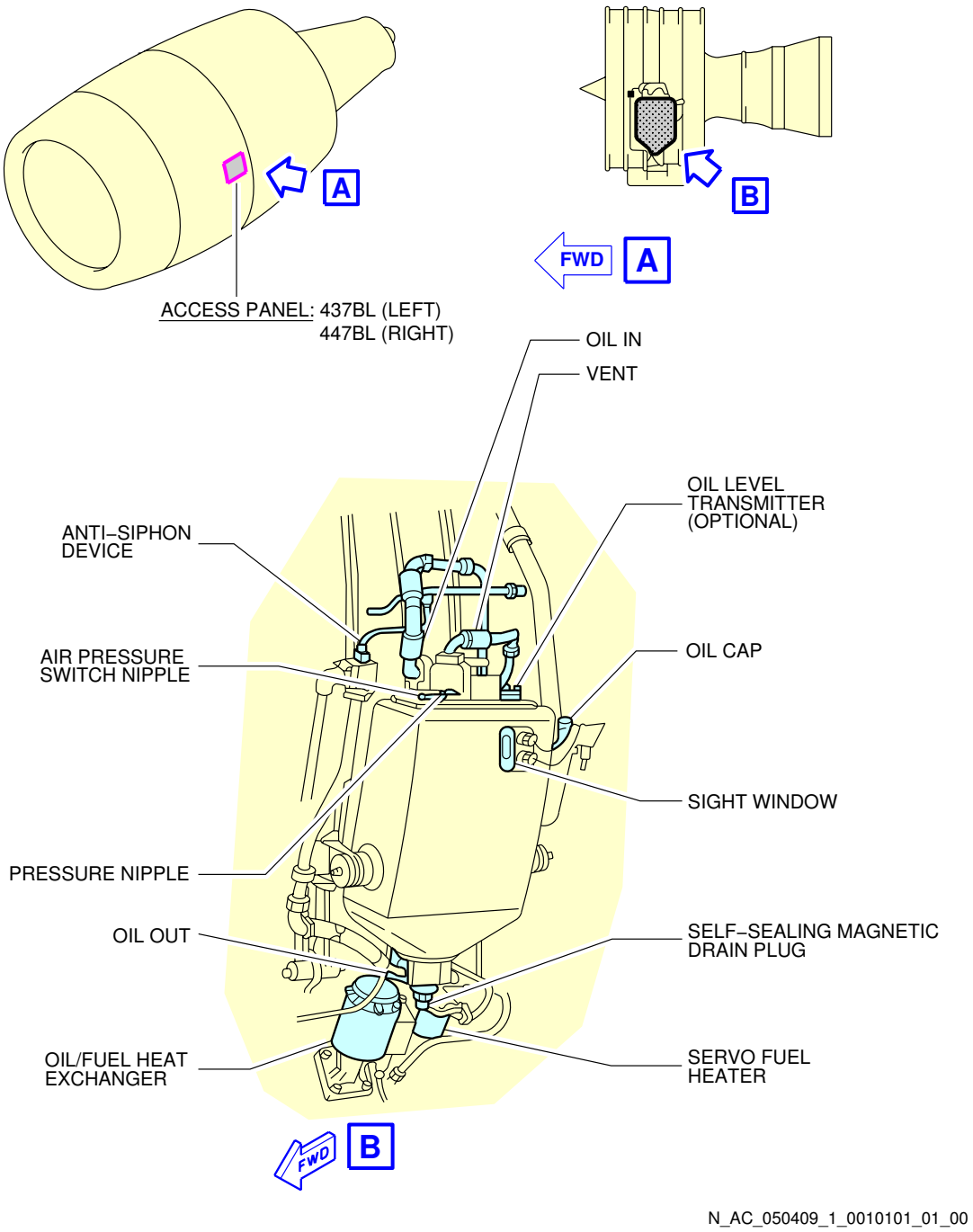
6. APU Oil System (See FIGURE 5-4-9-991-007-A):
APU oil gravity filling cap.

	AFT OF NOSE m (ft)	FROM AIRPLANE CENTERLINE (LEFT HAND) m (ft)	MEAN HEIGHT FROM GROUND m (ft)
GTCP 36-300	29.37 (96.36)	0.3 (0.98)	4.83 (15.85)
APS 3200	29.37 (96.36)	0.3 (0.98)	4.78 (15.68)
131-9	29.27 (96.03)	0.35 (1.15)	4.32 (14.17)

NOTE : Distances are approximate

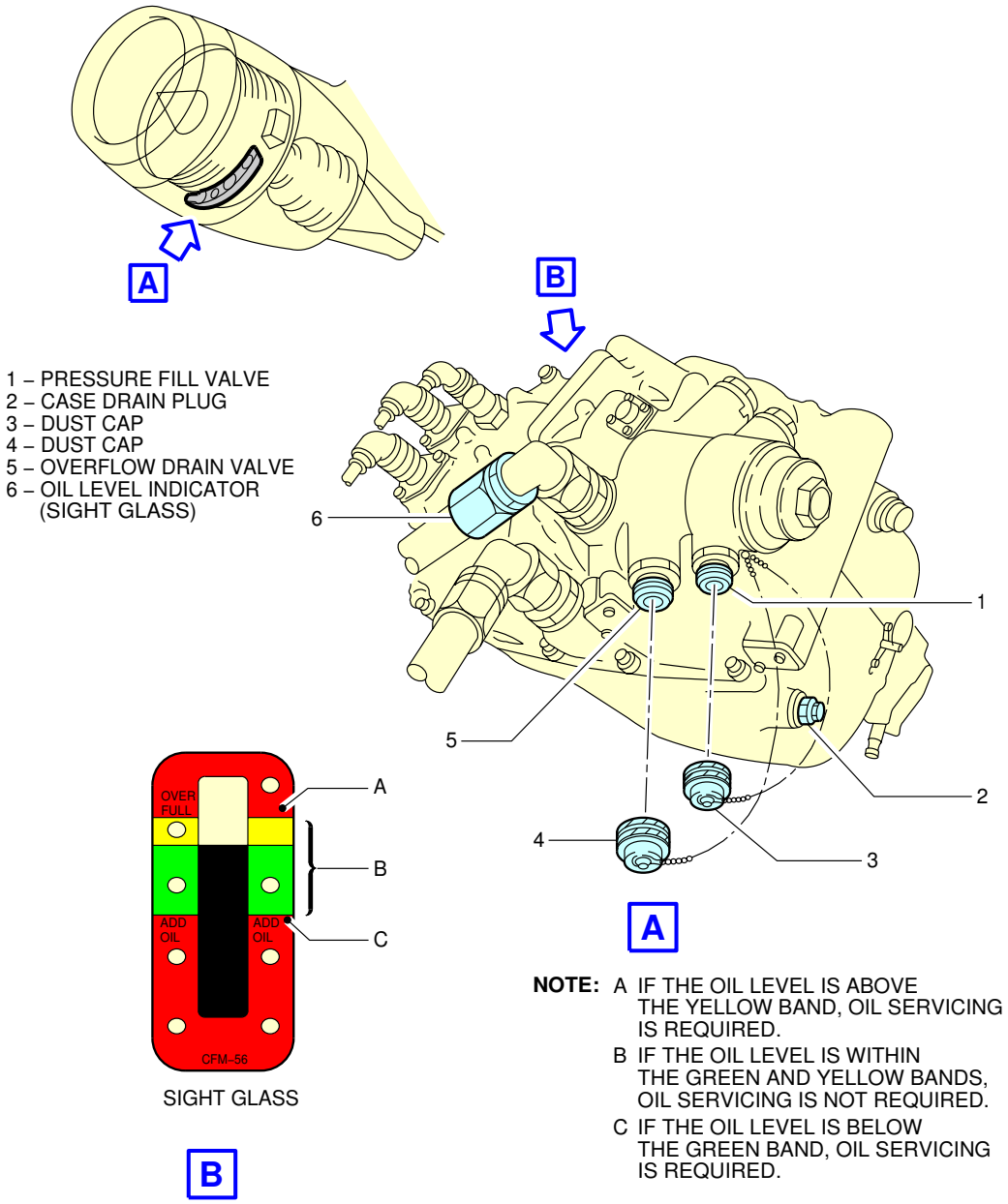
A. Tank capacity (usable):
- APU type GTCP 36-300: 6.20 l (1.64 US gal)
- APU type APS 3200: 5.40 l (1.43 US gal)
- APU type 131-9: 6.25 l (1.65 US gal)

**ON A/C A318-100



Ground Service Connections
Engine Oil Tank – CFM56 Series Engine
FIGURE 1

**ON A/C A318-100



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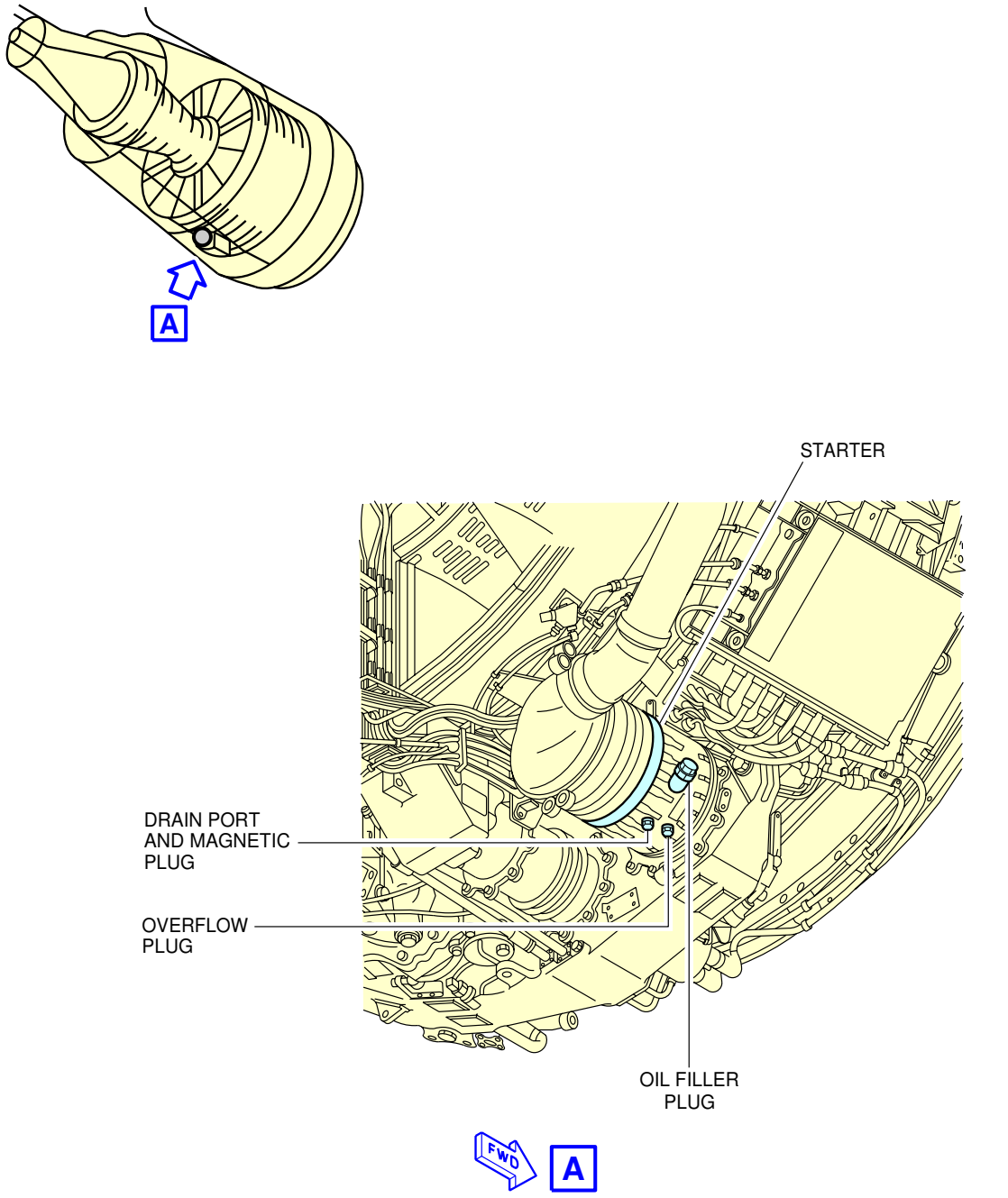
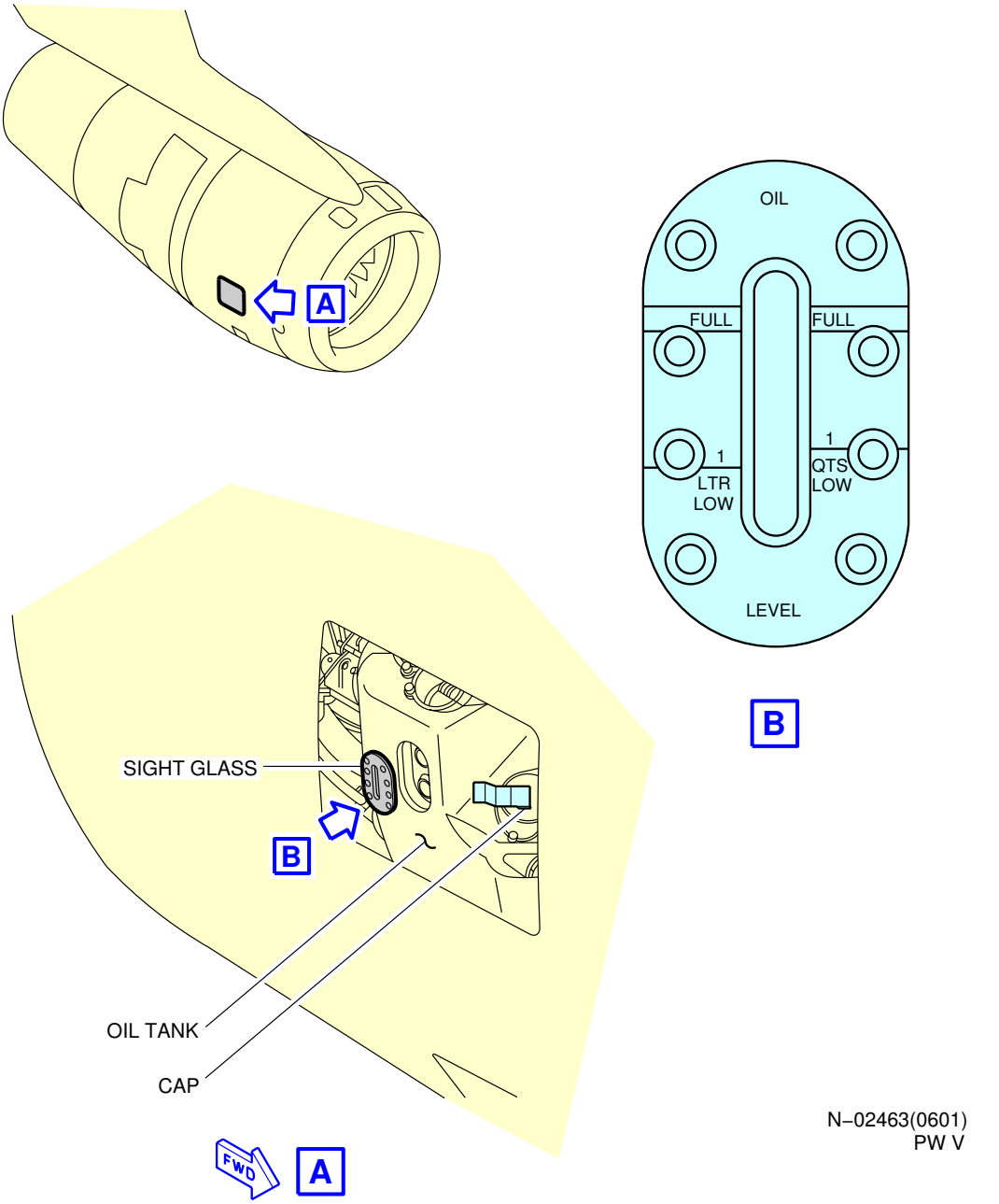
Ground Service Connections
IDG Oil Tank – CFM56 Series Engine
FIGURE 2

**ON A/C A318-100



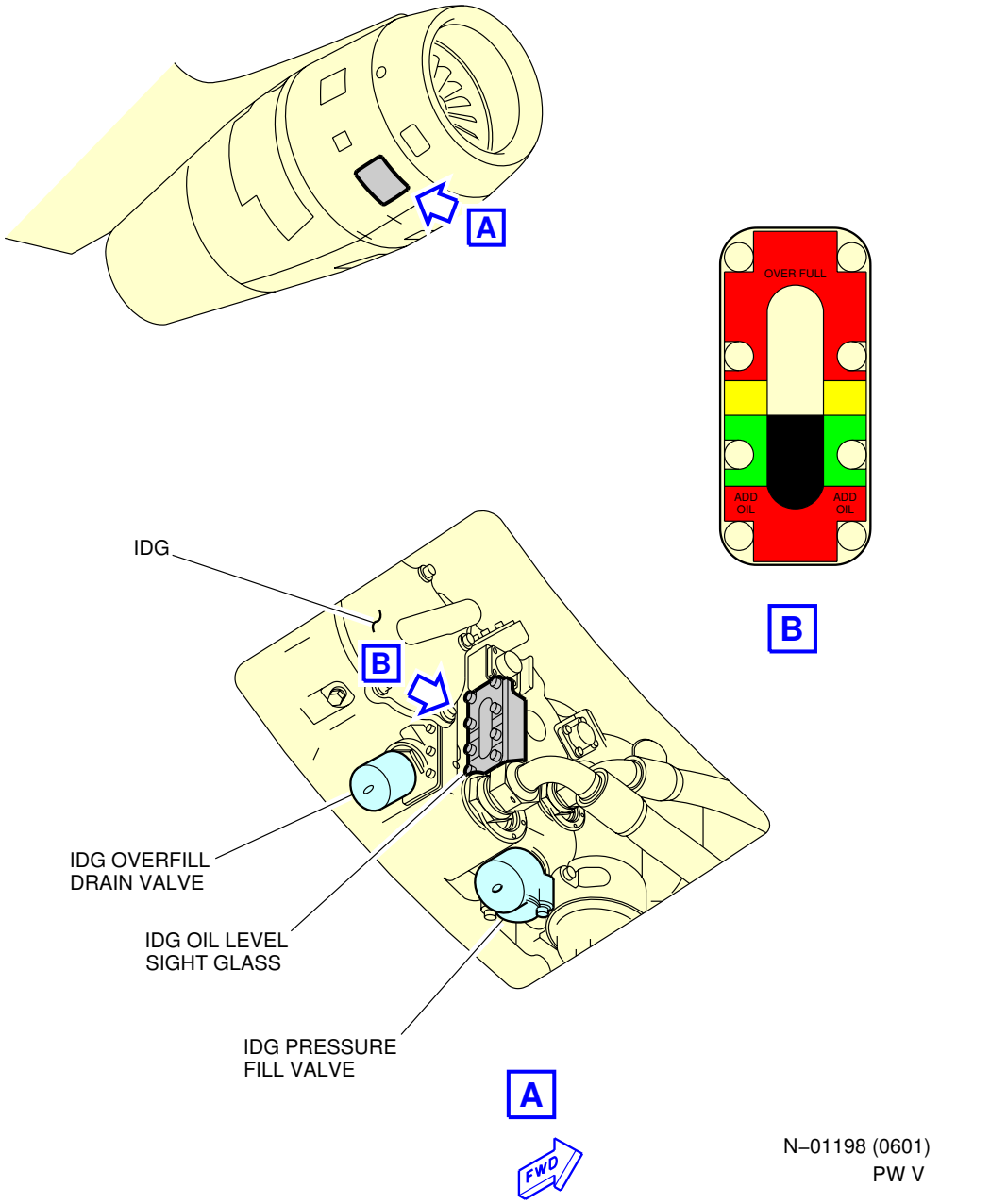
Ground Service Connections
Starter Oil Tank – CFM56 Series Engine
FIGURE 3

**ON A/C A318-100



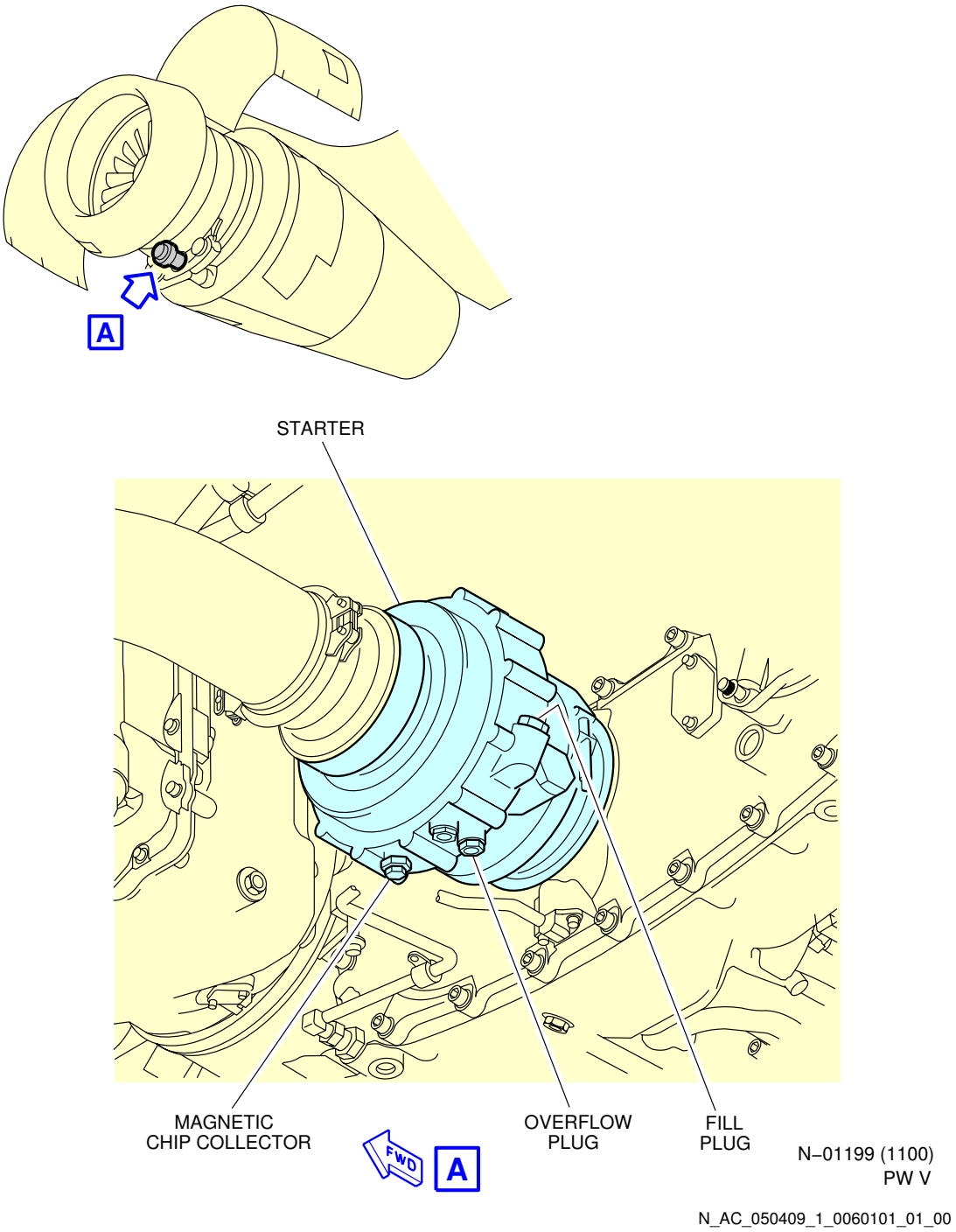
Ground Service Connections
Engine Oil Tank – PW 6000 Series Engine
FIGURE 4

**ON A/C A318-100



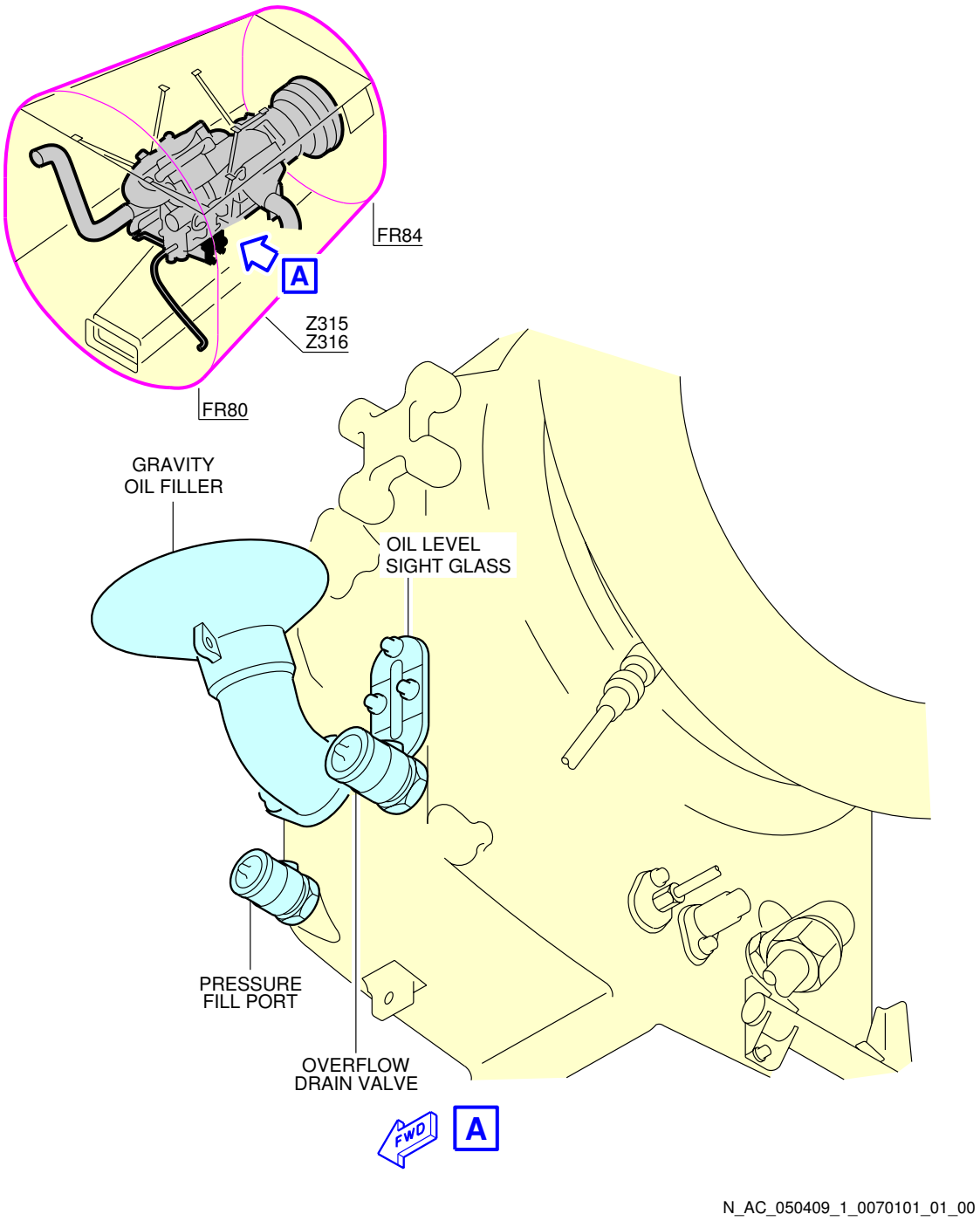
Ground Service Connections
IDG Oil Tank – PW 6000 Series Engine
FIGURE 5

**ON A/C A318-100



Ground Service Connections
Starter Oil Tank – PW 6000 Series Engine
FIGURE 6

**ON A/C A318-100



Ground Service Connections
APU Oil Tank
FIGURE 7

5-4-10 Vacuum Toilet System

**ON A/C A318-100

Vacuum Toilet System

1. Vacuum Toilet System.

ACCESS	AFT OF NOSE m (ft)	POSITION FROM AIRCRAFT CENTERLINE		MEAN HEIGHT FROM GROUND m (ft)
		R SIDE m (ft)	L SIDE m (ft)	
Waste Water Ground Service Panel: Access door 172AR	25.2 (82.67)	0.8 (2.62)		2.8 (9.18)

NOTE : Distances are approximate

2. Technical Specifications

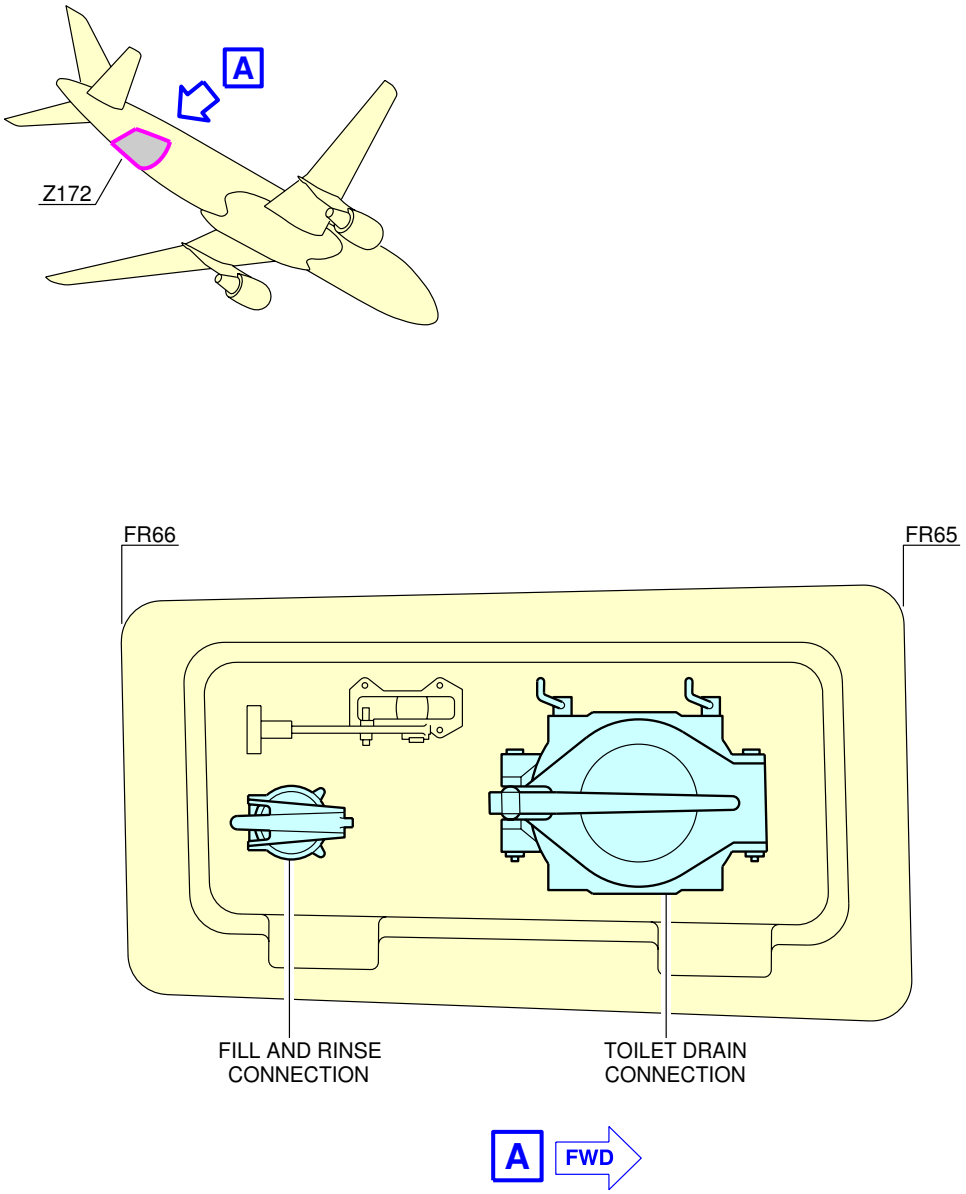
   A. Connectors:
      - Draining: 4 in (ISO 17775).
      - Flushing and filling: 1 in (ISO 17775).

   B. Usable waste tank capacity:
      - Standard configuration - on tank: 177 l (30.91 US gal).

   C. Waste tank - Rinsing:
      - Operating pressure: 3.45 bar (50 psi).

   D. Waste tank - Precharge:
      - 10 l (2.64 US gal).

**ON A/C A318-100



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Ground Service Connections
Waste Water Ground Service Panel
FIGURE 1

5-5-0 Engine Starting Pneumatic Requirements

**ON A/C A318-100

Engine Starting Pneumatic Requirements

1. Engine Starting Pneumatic Requirements.

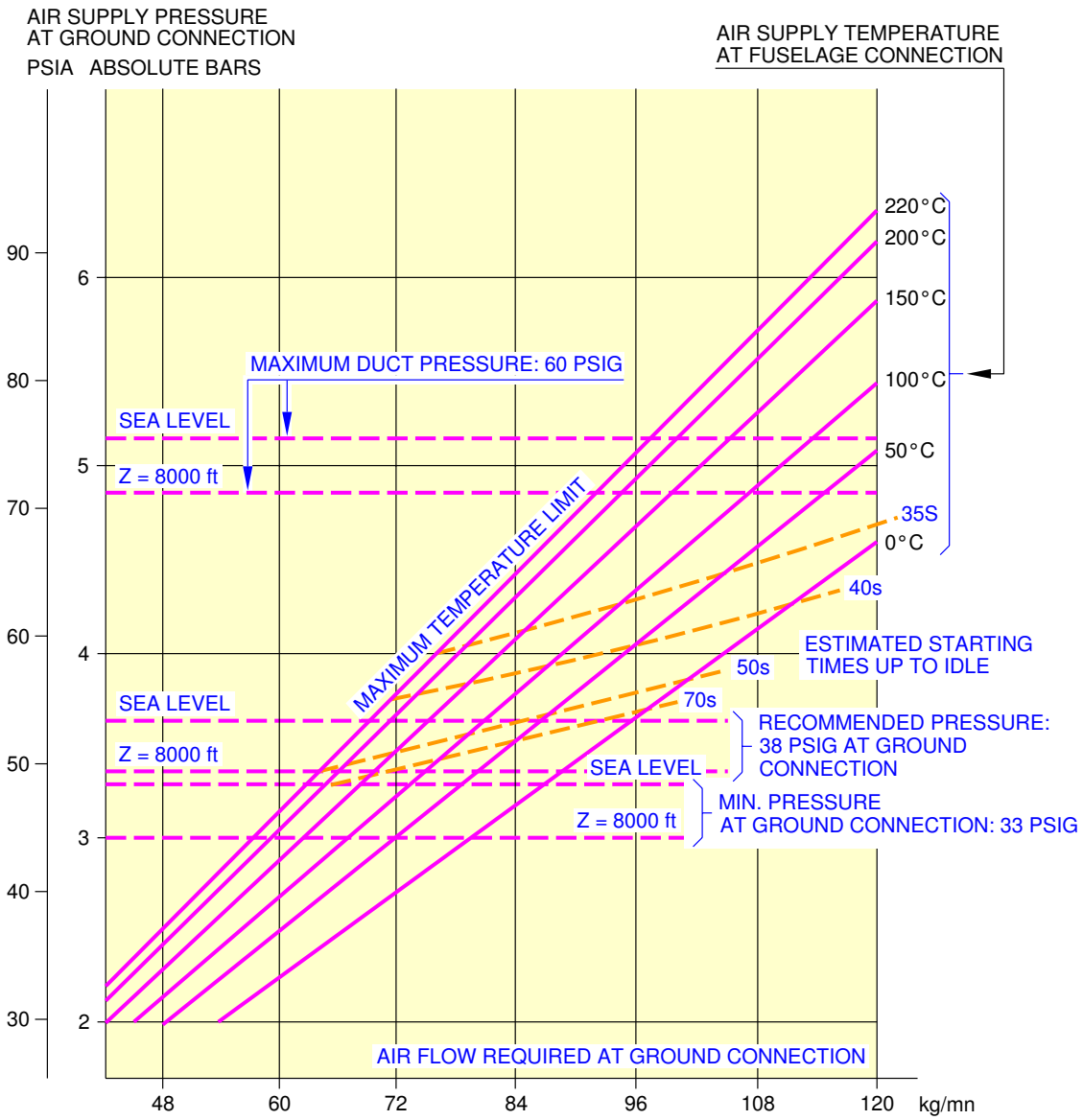
5-5-1 Low Temperatures

**ON A/C A318-100

Low Temperature -40˚C (-40˚F)

1. This section provides the engine starting pneumatic requirements for a temperature of -40˚C (-40˚F).

**ON A/C A318-100



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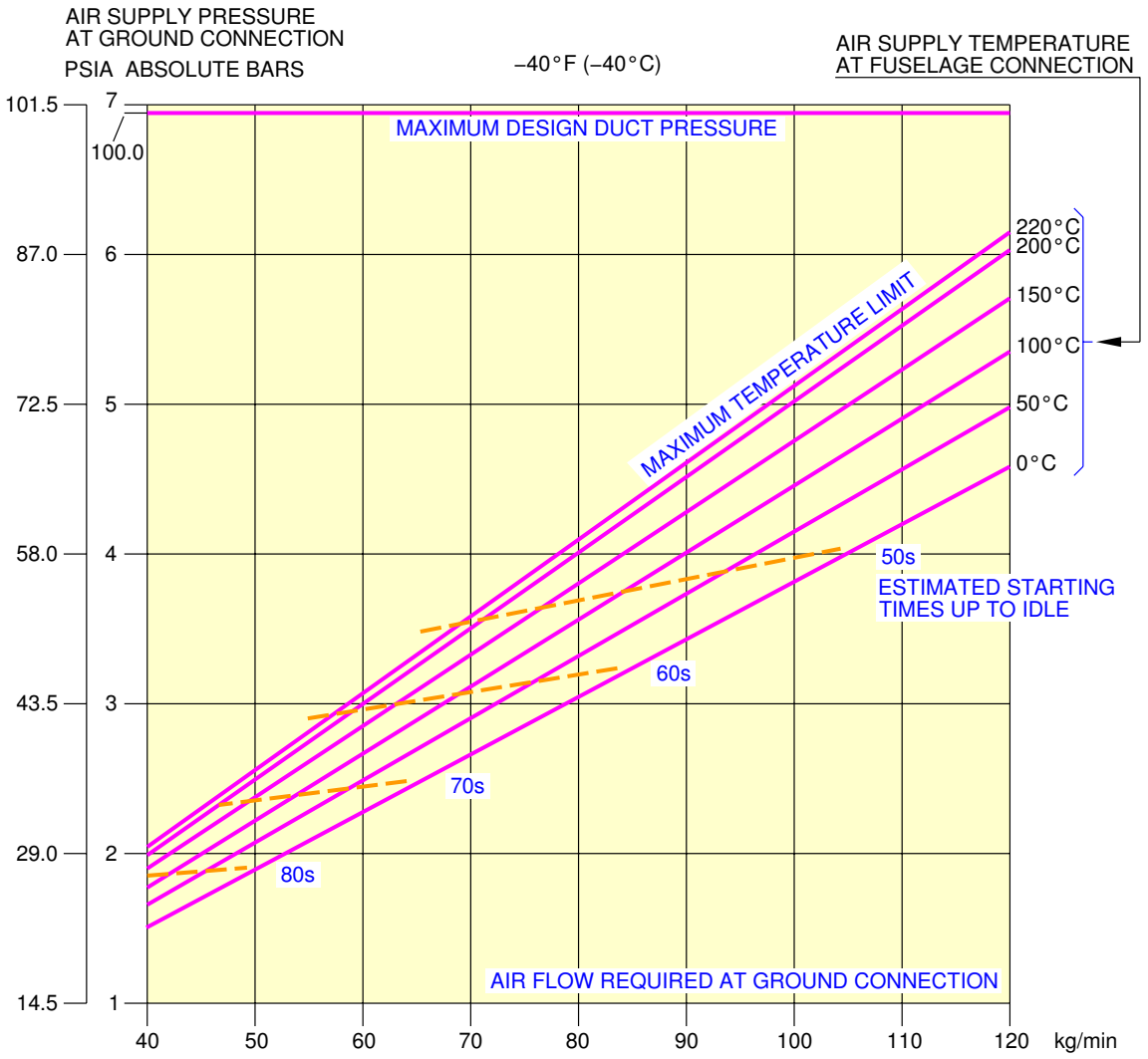
Engine Starting Pneumatic Requirements
Temperature -40 ° C (-40 ° F) – CFM56 series engine
FIGURE 1

**ON A/C A318-100



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Engine Starting Pneumatic Requirements
Temperature -40 ° C (-40 ° F) – PW 6000 series engine
FIGURE 2

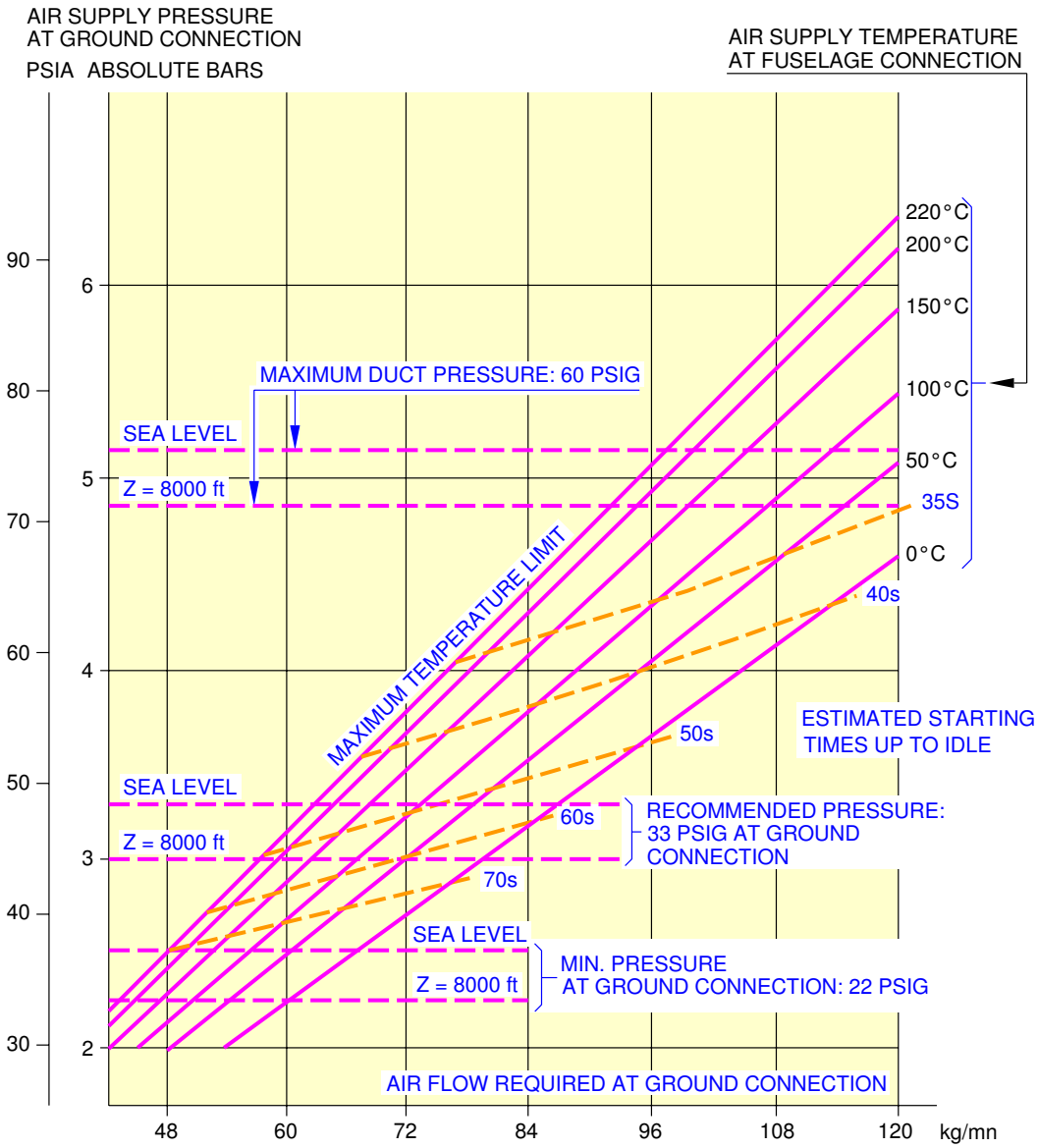
5-5-2 Ambient Temperatures

**ON A/C A318-100

Ambient Temperature +15˚C (+59˚F)

1. This section provides the engine starting pneumatic requirements for a temperature of +15˚C (+59˚F).

**ON A/C A318-100



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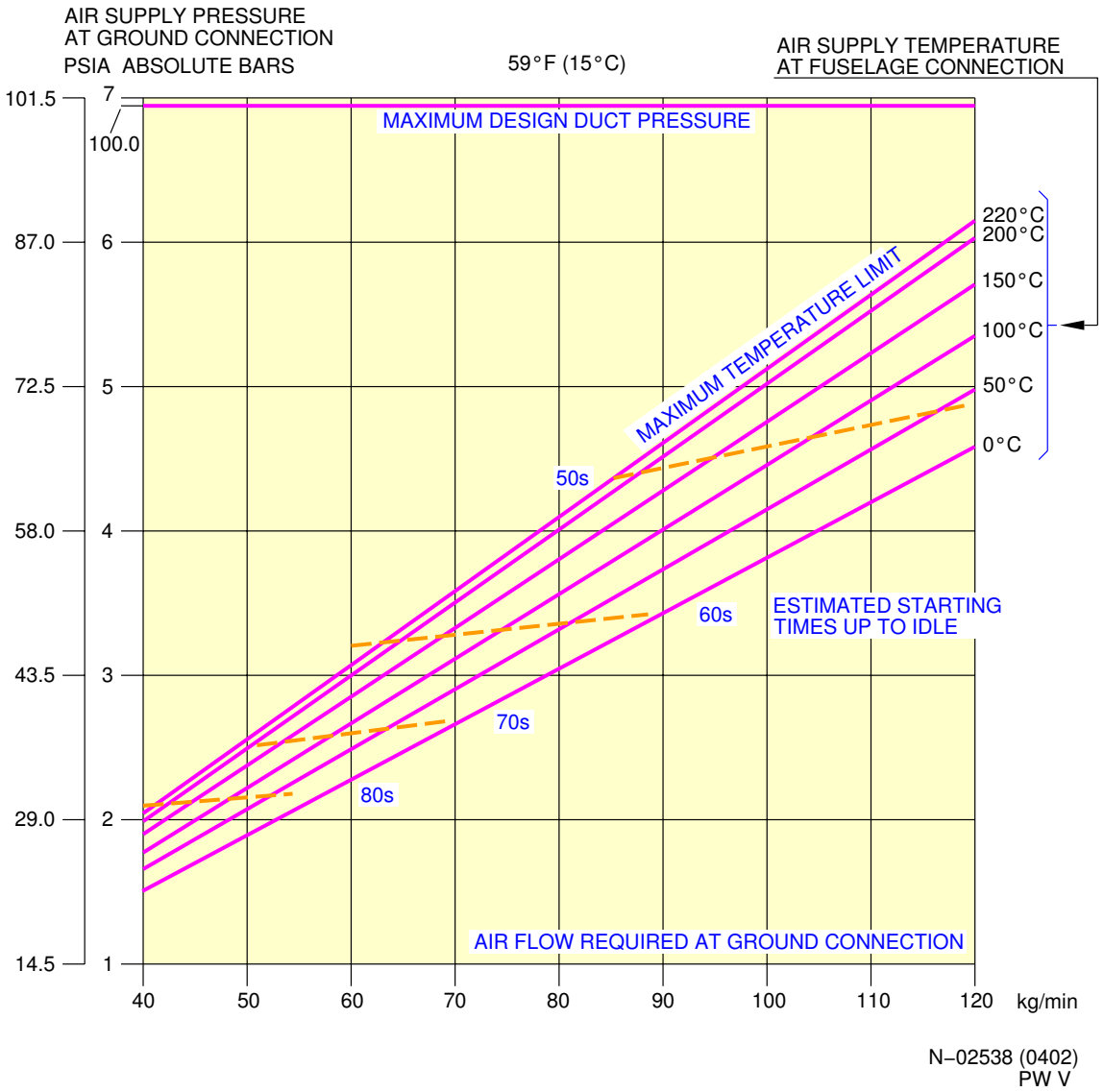
Engine Starting Pneumatic Requirements
Temperature +15˚C (+59˚F) – CFM56 series engine
FIGURE 1

**ON A/C A318-100



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Engine Starting Pneumatic Requirements
Temperature +15 ° C (+59 ° F) – PW 6000 series engine
FIGURE 2

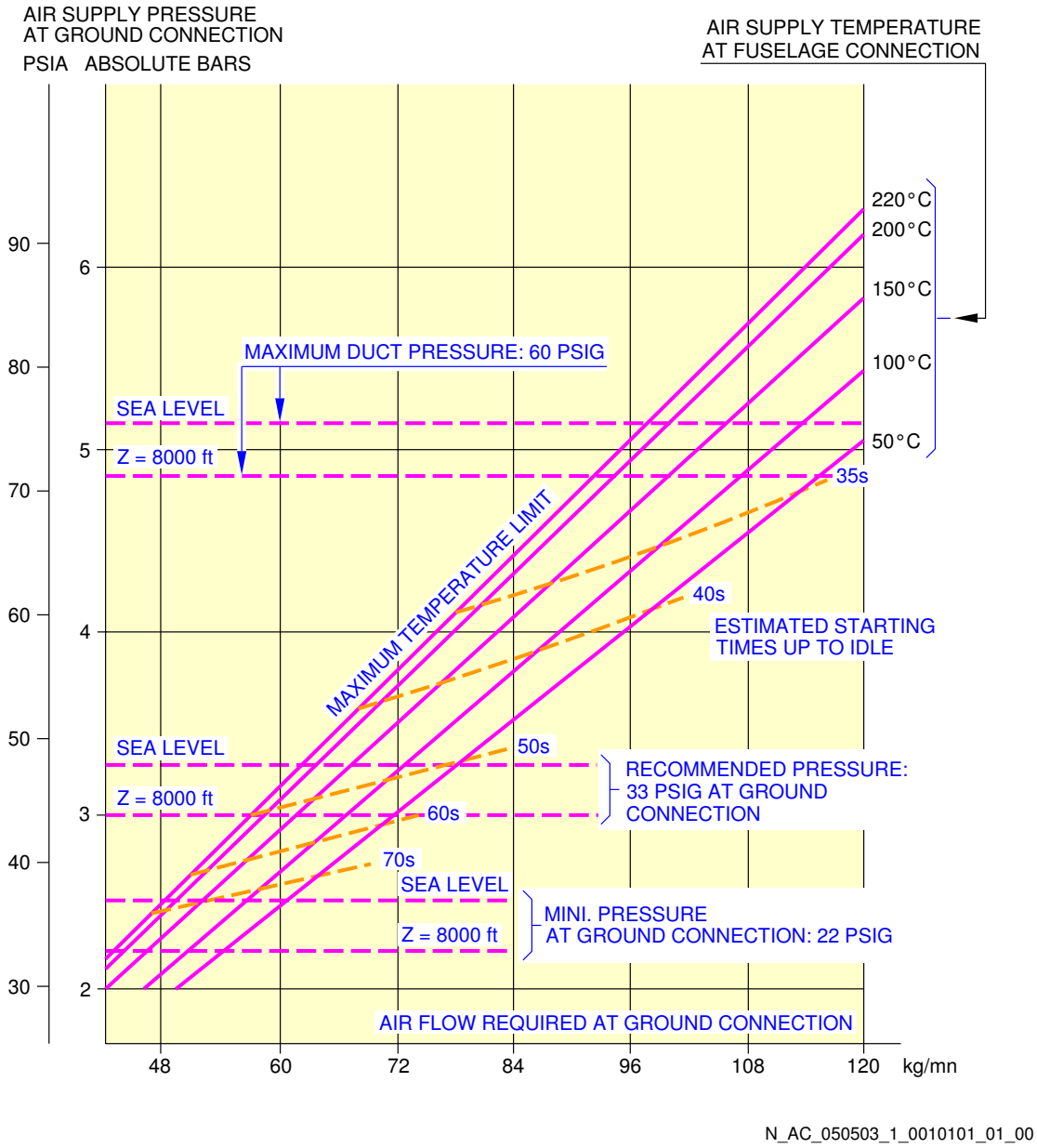
5-5-3 High Temperatures

**ON A/C A318-100

High Temperature +38°C (+100°F) and +50°C (+122°F)

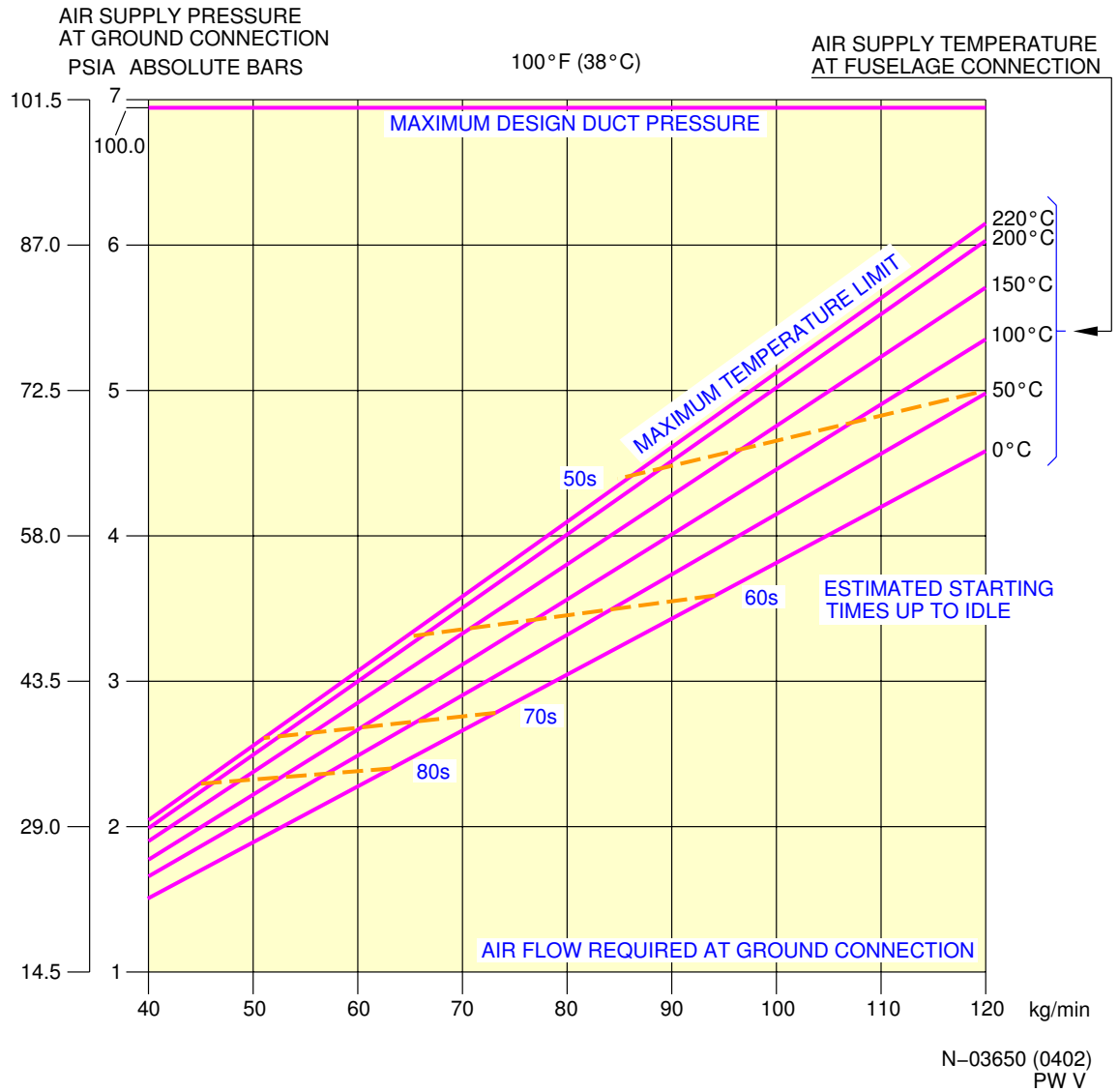
1. This section provides the engine starting pneumatic requirements for a temperature upper:
   - +38°C (+100°F) – PW 6000
   - +50°C (+122°F) – CFM56

**ON A/C A318-100



Engine Starting Pneumatic Requirements
Temperature +50 ° C (+122 ° F) – CFM56 series engine
FIGURE 1

**ON A/C A318-100



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Engine Starting Pneumatic Requirements
Temperature +38 ˚C (+100 ˚F) – PW 6000 series engine
FIGURE 2

5-6-0 Ground Pneumatic Power Requirements

**ON A/C A318-100

Ground Pneumatic Power Requirements

1. Ground Pneumatic Power Requirements.

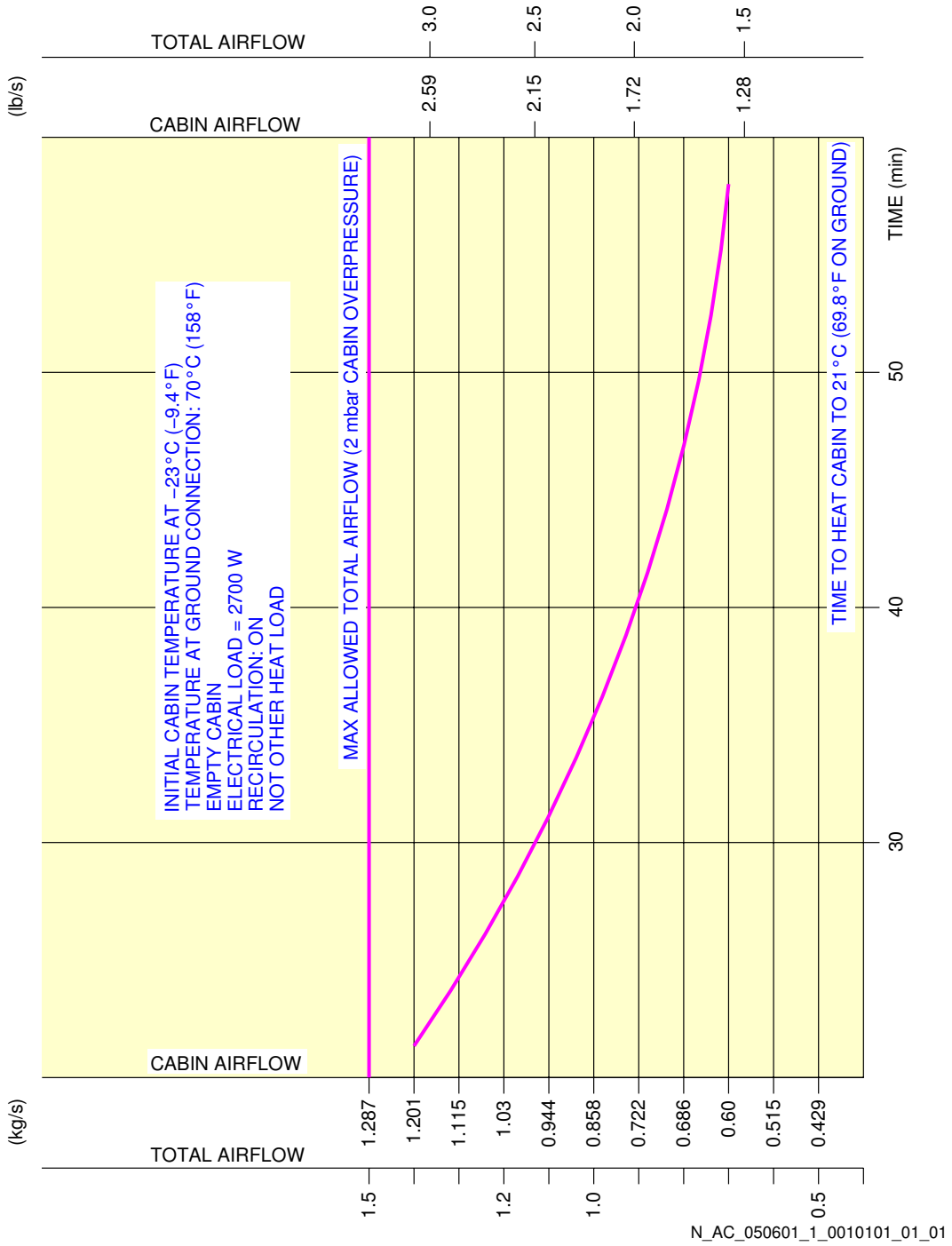
5-6-1 Heating

**ON A/C A318-100

Heating

1. This section provides the ground pneumatic power requirements heating.

**ON A/C A318-100



Ground Pneumatic Power Requirements
Heating
FIGURE 1

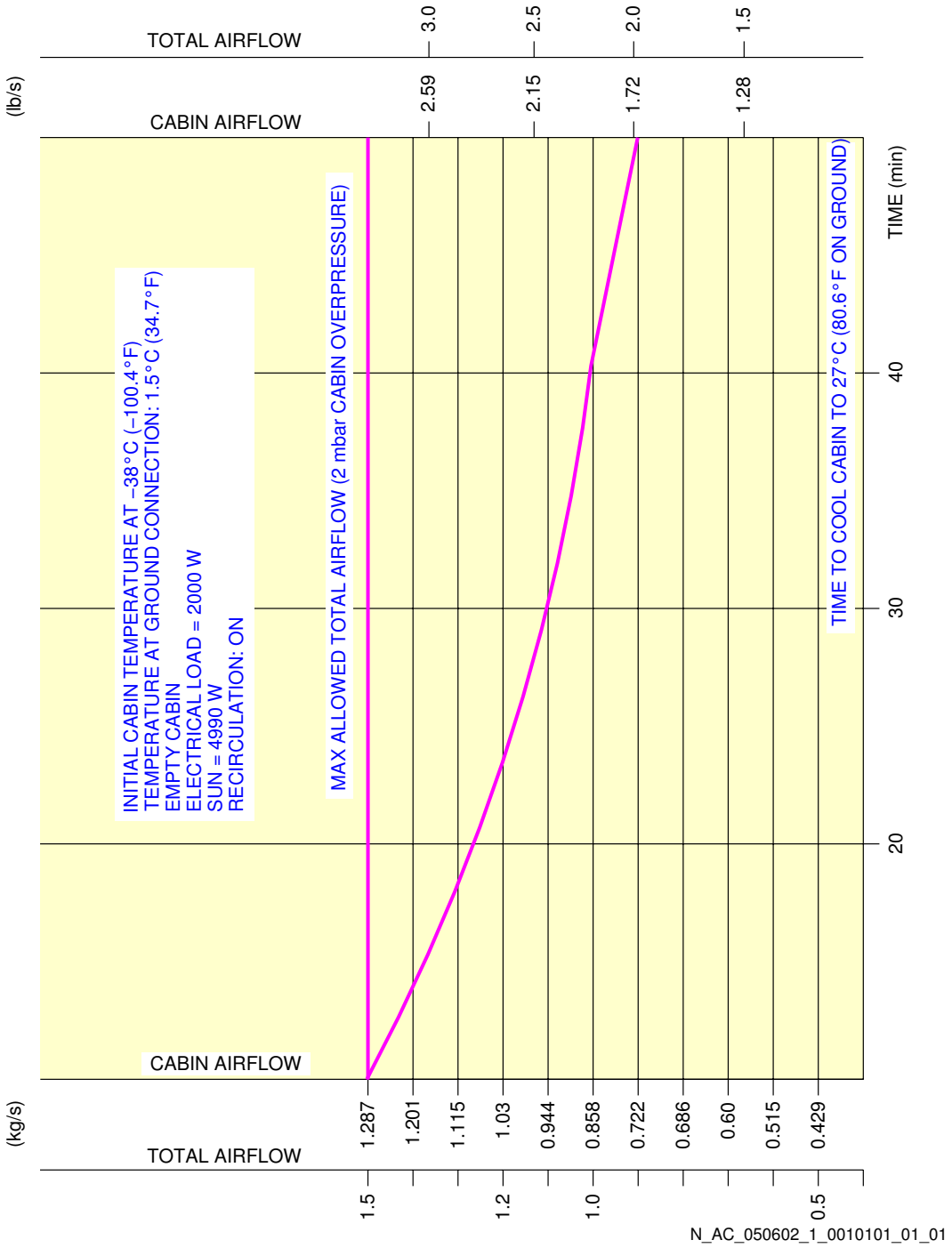
5-6-2 Cooling

**ON A/C A318-100

Cooling

1. This section provides the ground pneumatic power requirements cooling.

**ON A/C A318-100



Ground Pneumatic Power Requirements
Cooling
FIGURE 1

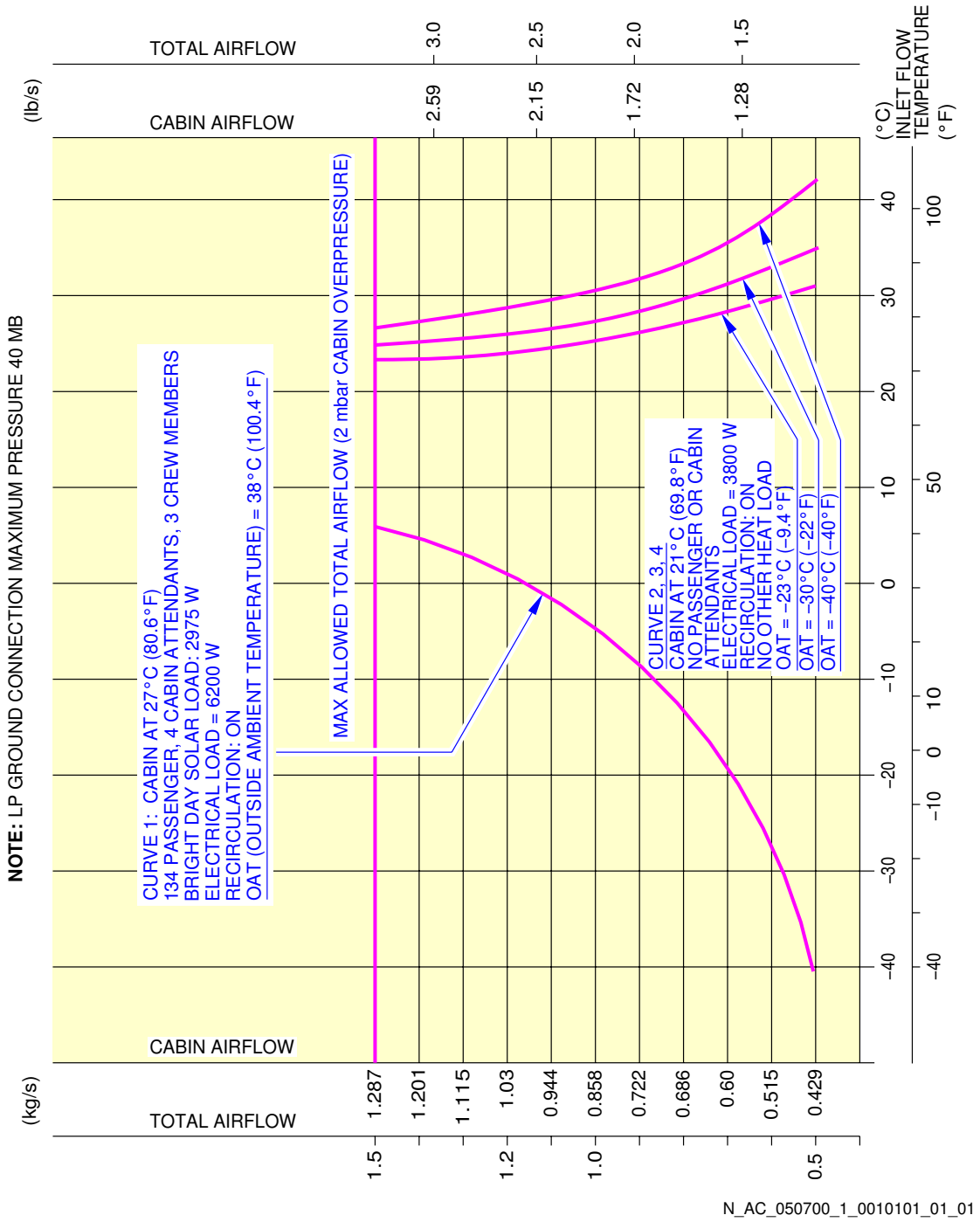
5-7-0 Preconditioned Airflow Requirements

**ON A/C A318-100

Preconditioned Airflow Requirements

1. This section gives the preconditioned airflow requirements for cabin air conditioning.

**ON A/C A318-100



Preconditioned Airflow Requirements
FIGURE 1

5-8-0 Ground Towing Requirements

**ON A/C A318-100

Ground Towing Requirements

1. General

This section provides information on aircraft towing.
This aircraft is designed with means for conventional or towbarless towing.
Information/procedures can be found for both in chapter 9 of the Aircraft Maintenance Manual.
Status on towbarless towing equipment qualification can be found in SIL 09-002.
It is possible to tow or push the aircraft, at maximum ramp weight with engines at zero or up to idle thrust, using a tow bar attached to the nose gear leg (refer to AMM chap 9 for conditions and limitations).
One tow bar fitting is installed at the front of the leg.
The main landing gears have attachment points for towing or debogging (for details, refer to chapter 07 of the Aircraft Recovery Manual).

A. The first part of this section shows the chart to determine the draw bar pull and tow tractor mass requirements as function of the following physical characteristics:
- Aircraft weight
- Number of engines at idle
- Slope.

The chart is based on the engine type with the highest idle thrust level.

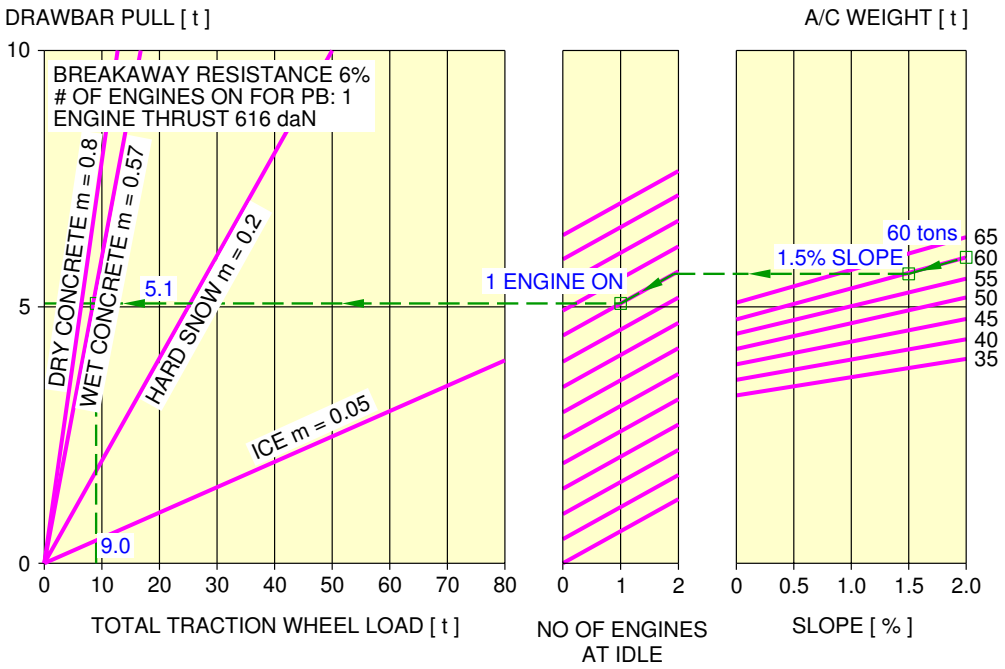
B. The second part of this section supplies guidelines for the tow bar.
The aircraft tow bar shall respect the following norms:
- SAE AS 1614, "Main Line Aircraft Tow Bar Attach Fitting Interface"
- SAE ARP1915 Revision C, "Aircraft Tow Bar"
- ISO 8267-1, "Aircraft - Tow bar attachment fitting - Interface requirements - Part 1: Main line aircraft"
- ISO 9667, "Aircraft ground support equipment - Tow bars"
- IATA Airport Handling Manual AHM 958, "Functional Specification for an Aircraft Tow bar".

A conventional type tow bar 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 9425 daN (21188 lbf)
- A torsion pin calibrated at 826 m.daN (7311 lbf.in).

The towing head is designed according to SAE/AS 1614 (issue C) cat. I.

NOTE : Information on aircraft towing procedures and corresponding aircraft limitations are given in chapter 9 on the Aircraft Maintenance Manual.

**ON A/C A318-100



EXAMPLE HOW TO DETERMINE THE MASS REQUIREMENT TO TOW A A318 AT 60 t, AT 1.5% SLOPE, 1 ENGINE AT IDLE AND FOR WET TARMAC CONDITIONS:

- ON THE RIGHT HAND SIDE OF THE GRAPH, CHOOSE THE RELEVANT AIRCRAFT WEIGHT (60 t)
- FROM THIS POINT DRAW A PARALLEL LINE TO THE REQUIRED SLOPE PERCENTAGE (1.5%)
- FROM THE POINT OBTAINED DRAW A STRAIGHT HORIZONTAL LINE UNTIL NO OF ENGINES AT IDLE = 2
- FROM THIS POINT DRAW A PARALLEL LINE TO THE REQUESTED NUMBER OF ENGINES (1)
- FROM THIS POINT DRAW A STRAIGHT HORIZONTAL LINE TO THE DRAWBAR PULL AXIS
- THE Y–COORDINATE OBTAINED IS THE NECESSARY DRAWBAR PULL FOR THE TRACTOR (5.1 t)
- SEARCH THE INTERSECTION WITH THE "WET CONCRETE" LINE. THE OBTAINED X–COORDINATE IS THE RECOMMENDED MINIMUM TRACTOR WEIGHT (9 t)

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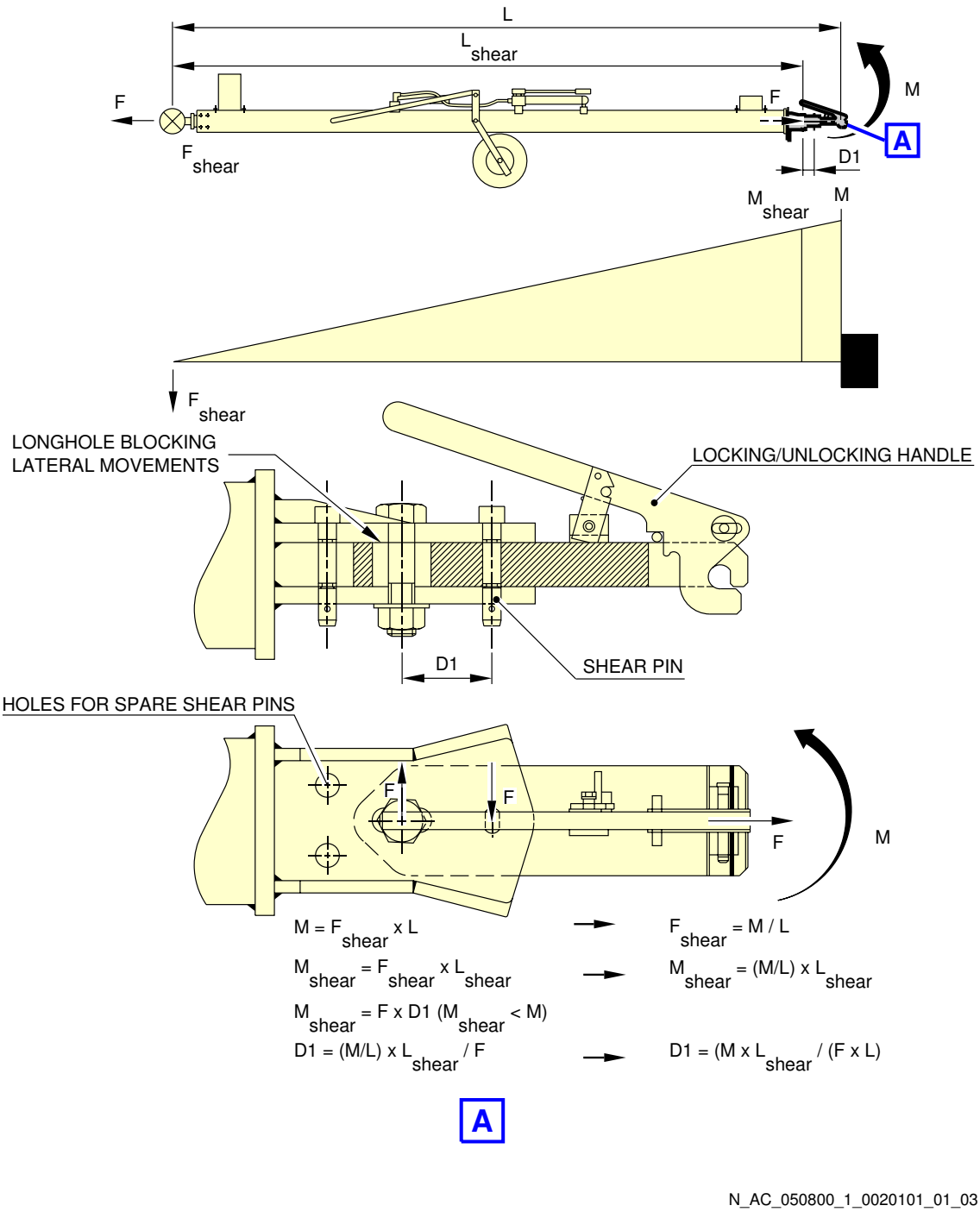
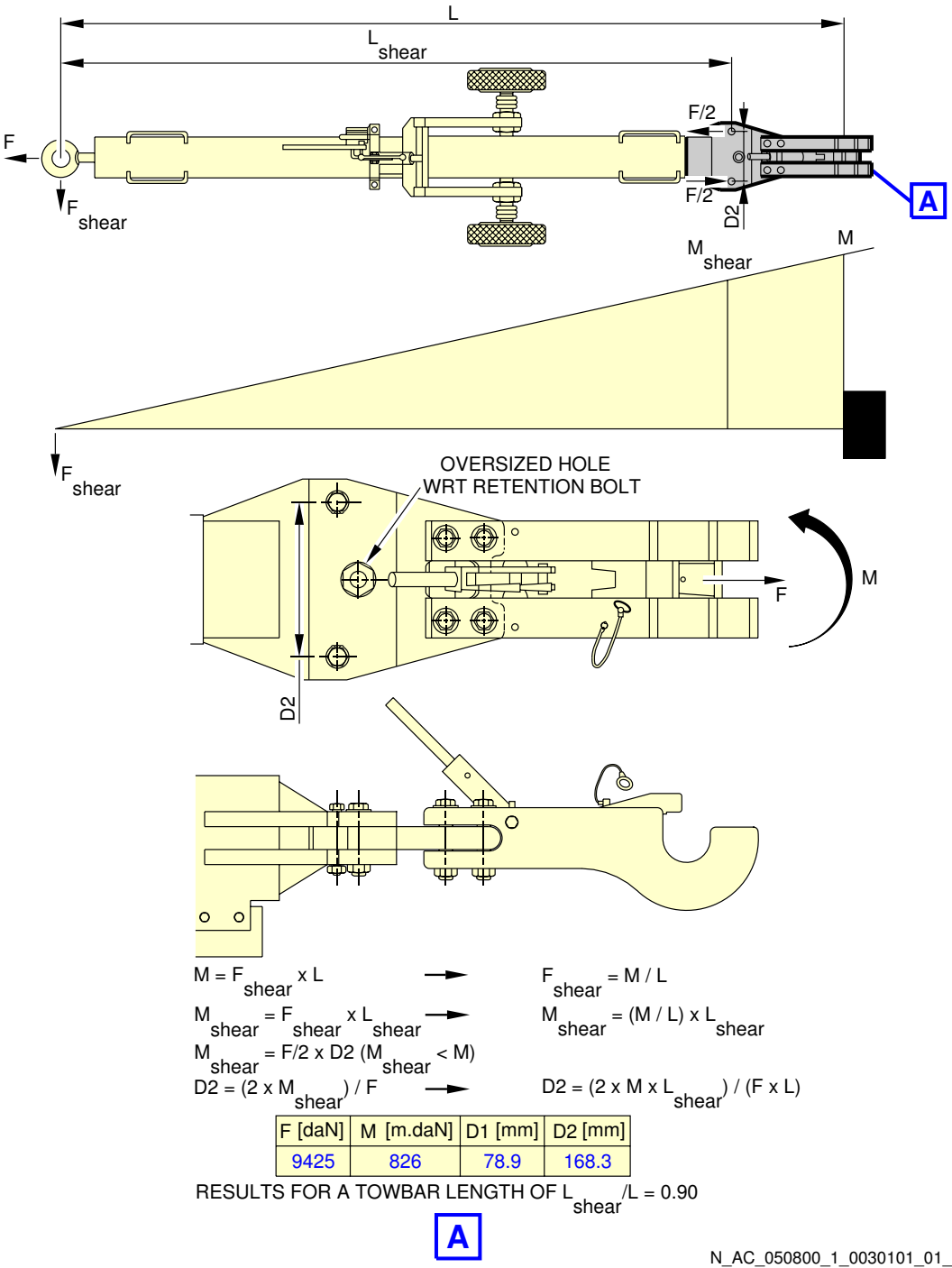
Ground Towing Requirements
FIGURE 1

**ON A/C A318-100



Ground Towing Requirements
Typical Tow Bar Configuration 1
FIGURE 2

**ON A/C A318-100



F [daN]	M [m.daN]	D1 [mm]	D2 [mm]
9425	826	78.9	168.3

Ground Towing Requirements
Typical Tow Bar Configuration 2
FIGURE 3

OPERATING CONDITIONS

6-1-0 Engine Exhaust Velocities and Temperatures

**ON A/C A318-100

Engine Exhaust Velocities and Temperatures

1. General
   This section shows the estimated engine exhaust efflux velocities and temperatures contours for Ground Idle, Breakaway, Maximum Takeoff conditions.

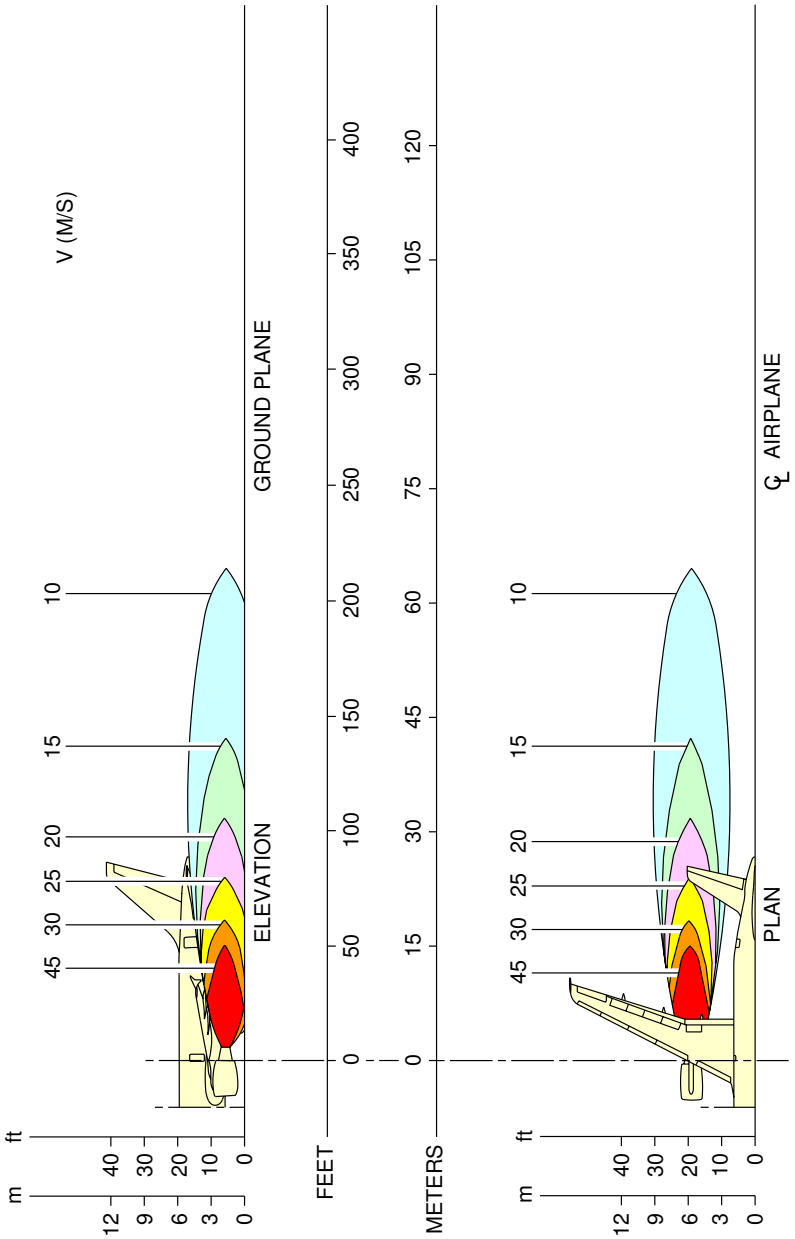
6-1-1 Engine Exhaust Velocities Contours - Ground Idle Power

**ON A/C A318-100

Engine Exhaust Velocities Contours - Ground Idle Power

1. This section gives engine exhaust velocities contours at ground idle power.

**ON A/C A318-100



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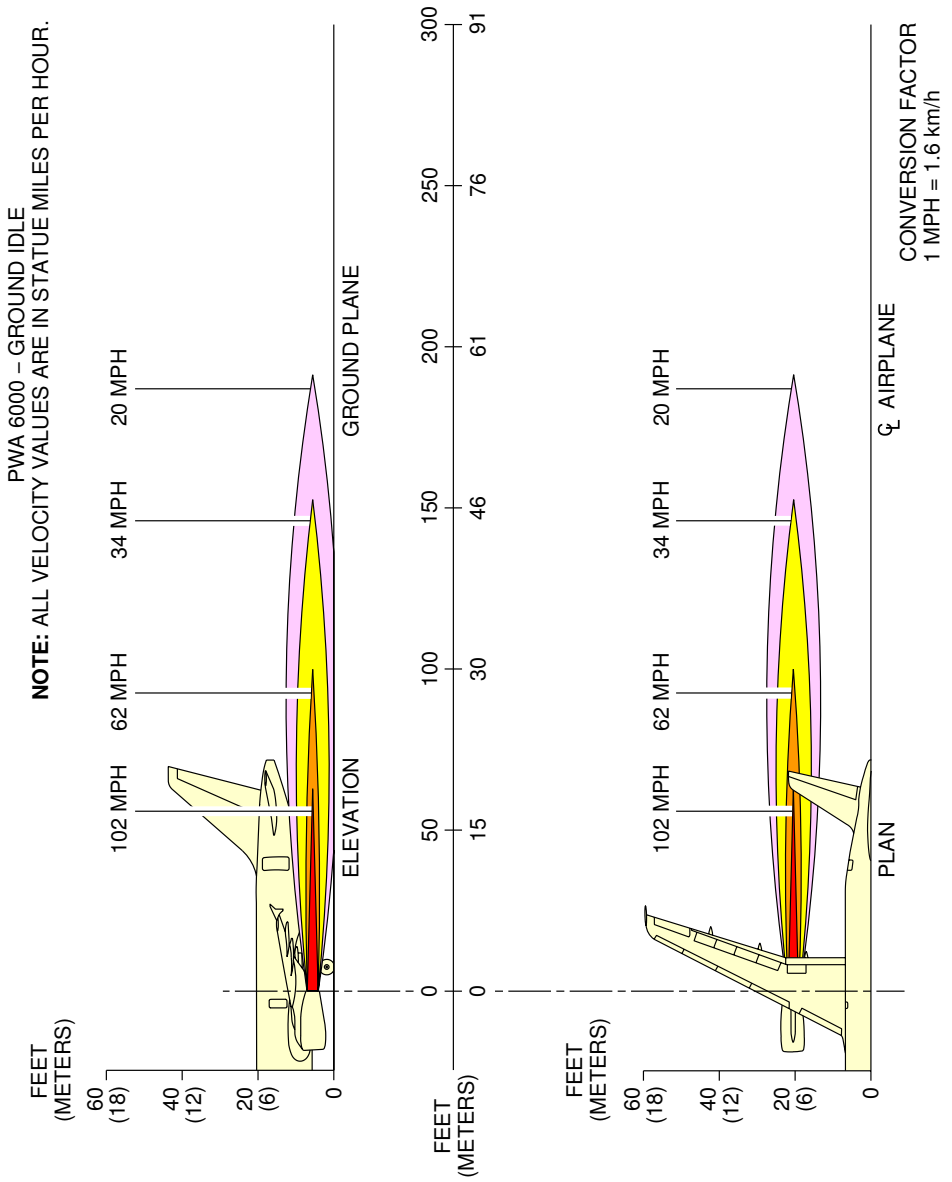
Engine Exhaust Velocities
Ground Idle Power – CFM56 series engine
FIGURE 1

**ON A/C A318-100



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Engine Exhaust Velocities
Ground Idle Power – PW 6000 series engine
FIGURE 2

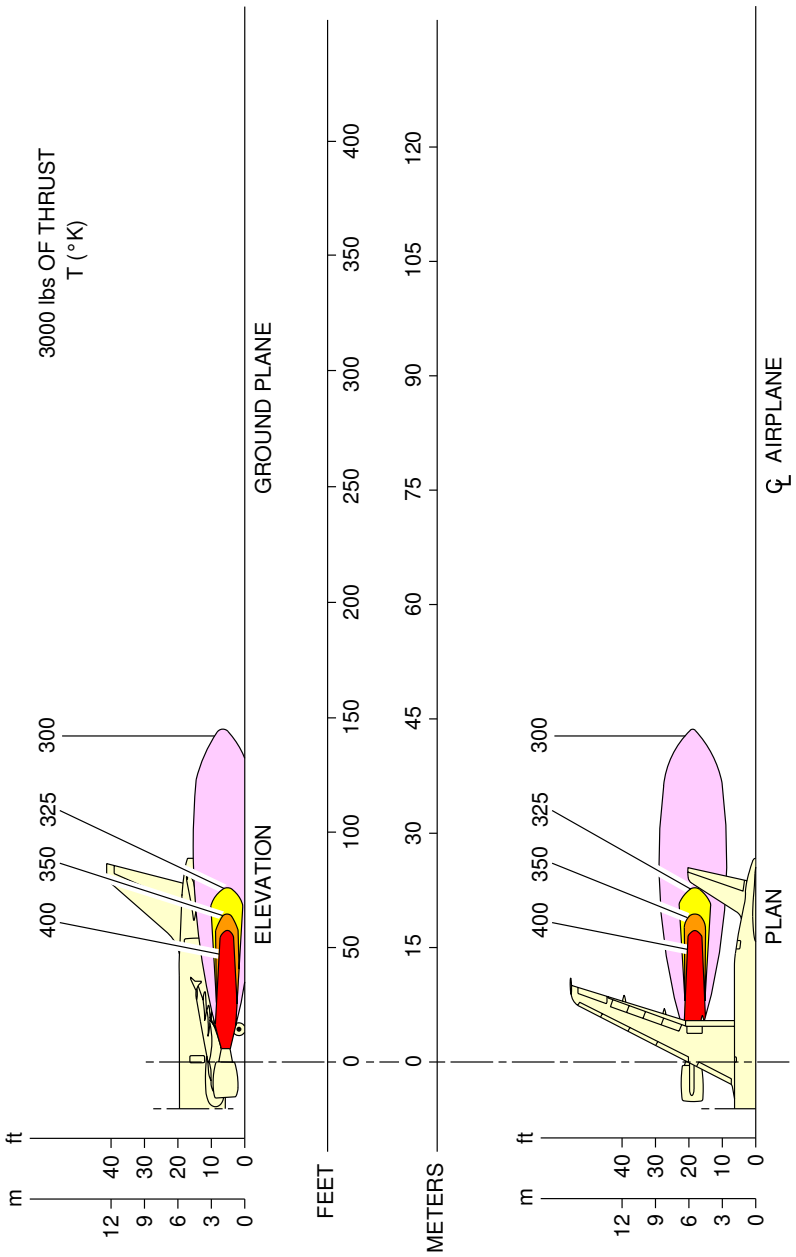
6-1-2 Engine Exhaust Temperatures Contours - Ground Idle Power

**ON A/C A318-100

Engine Exhaust Temperatures Contours - Ground Idle Power

1. This section gives engine exhaust temperatures contours at ground idle power.

**ON A/C A318-100



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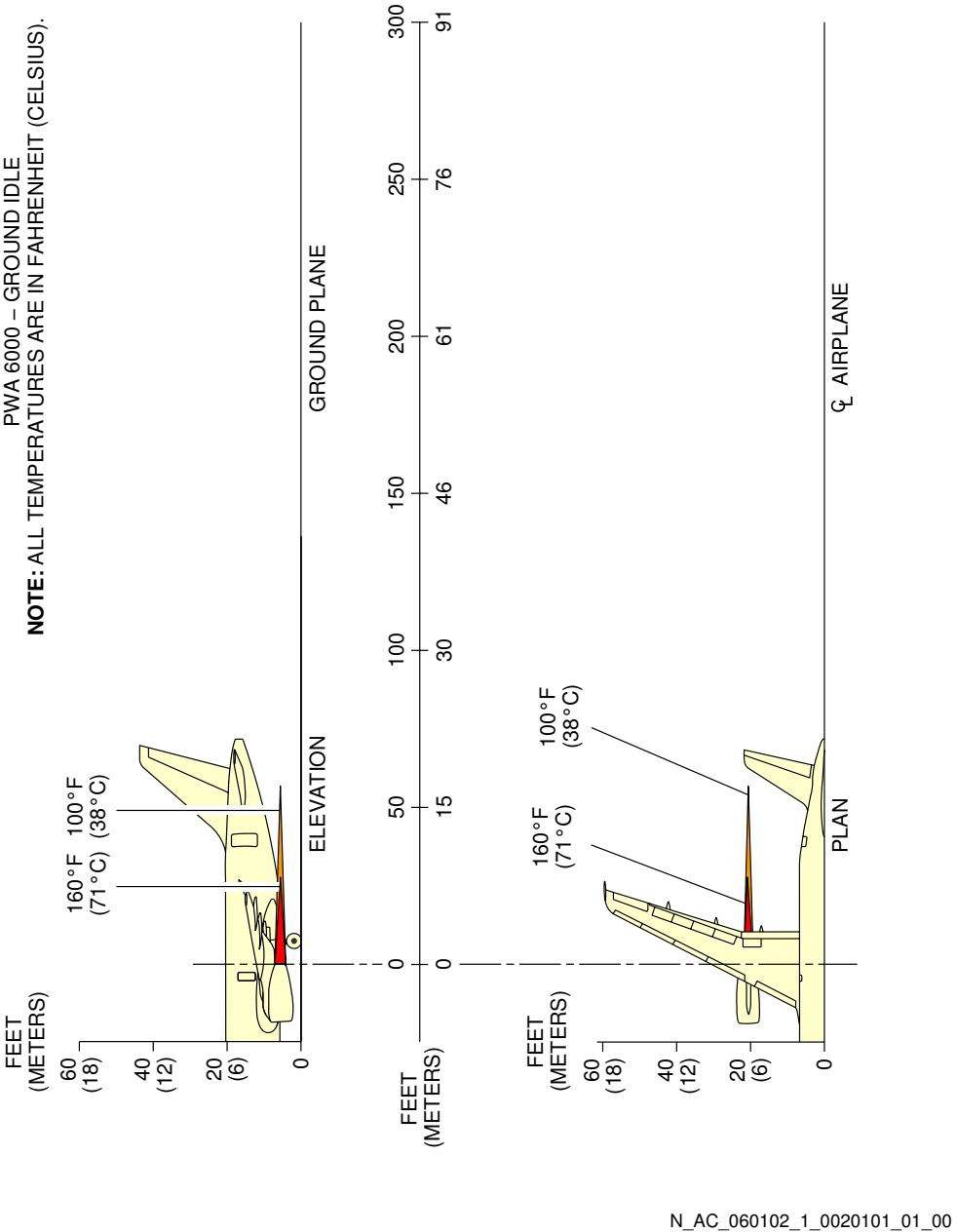
Engine Exhaust Temperatures
Ground Idle Power – CFM56 series engine
FIGURE 1

**ON A/C A318-100



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Engine Exhaust Temperatures
Ground Idle Power – PW 6000 series engine
FIGURE 2

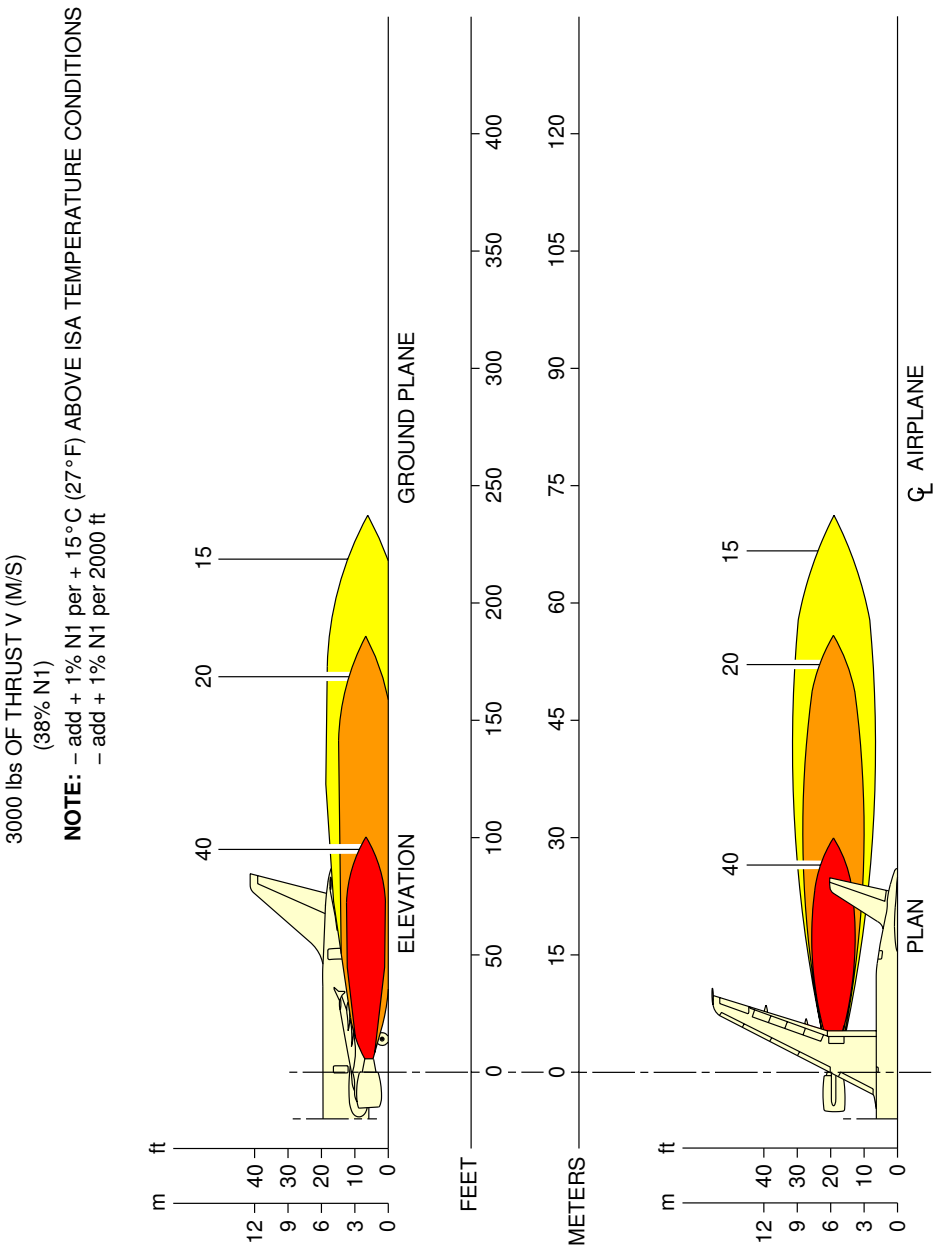
6-1-3 Engine Exhaust Velocities Contours - Breakaway Power

**ON A/C A318-100

Engine Exhaust Velocities Contours - Breakaway Power

1. This section gives engine exhaust velocities contours at breakaway power.

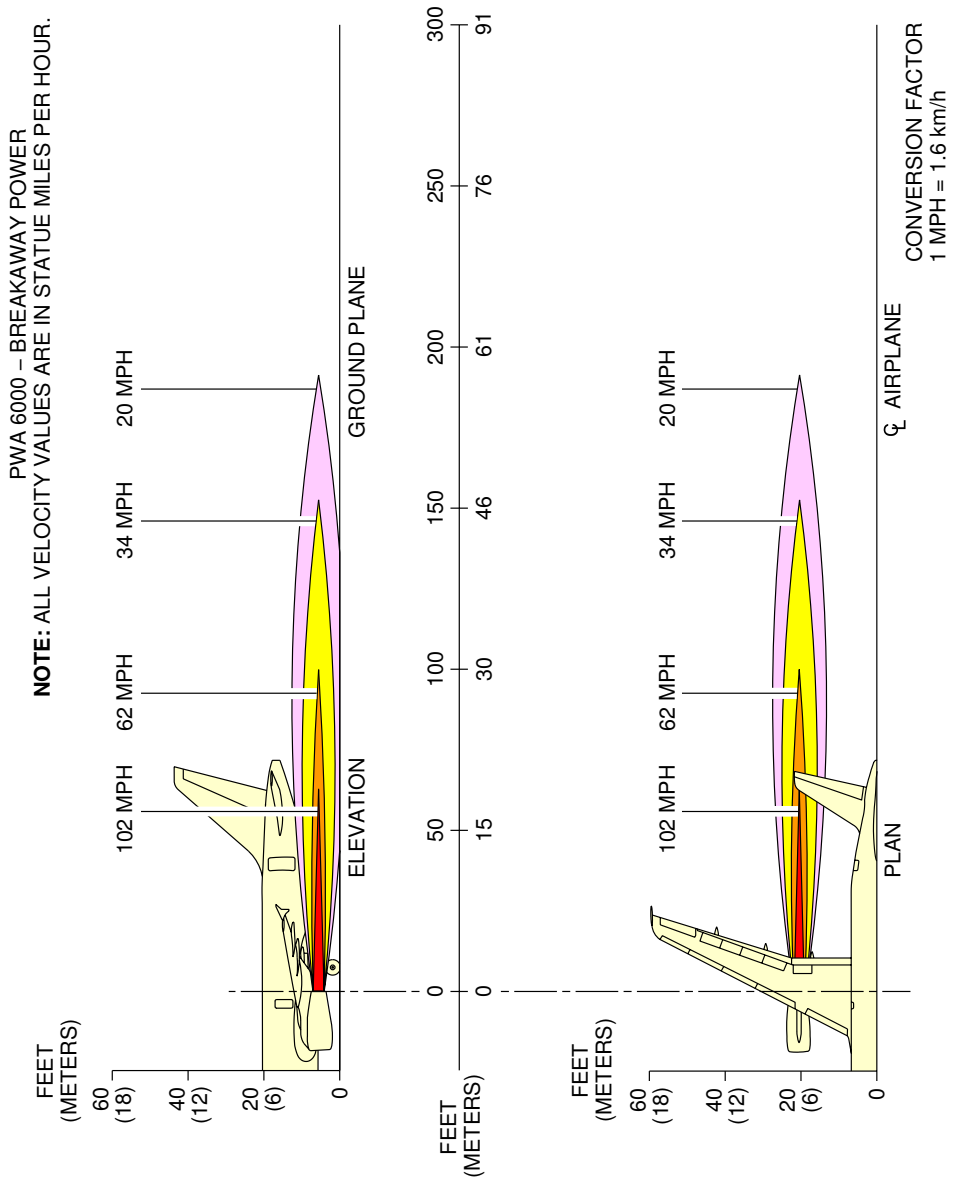
**ON A/C A318-100



N_AC_060103_1_0010101_01_00

Engine Exhaust Velocities
Breakaway Power – CFM56 series engine
FIGURE 1

**ON A/C A318-100



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Engine Exhaust Velocities
Breakaway Power – PW 6000 series engine
FIGURE 2

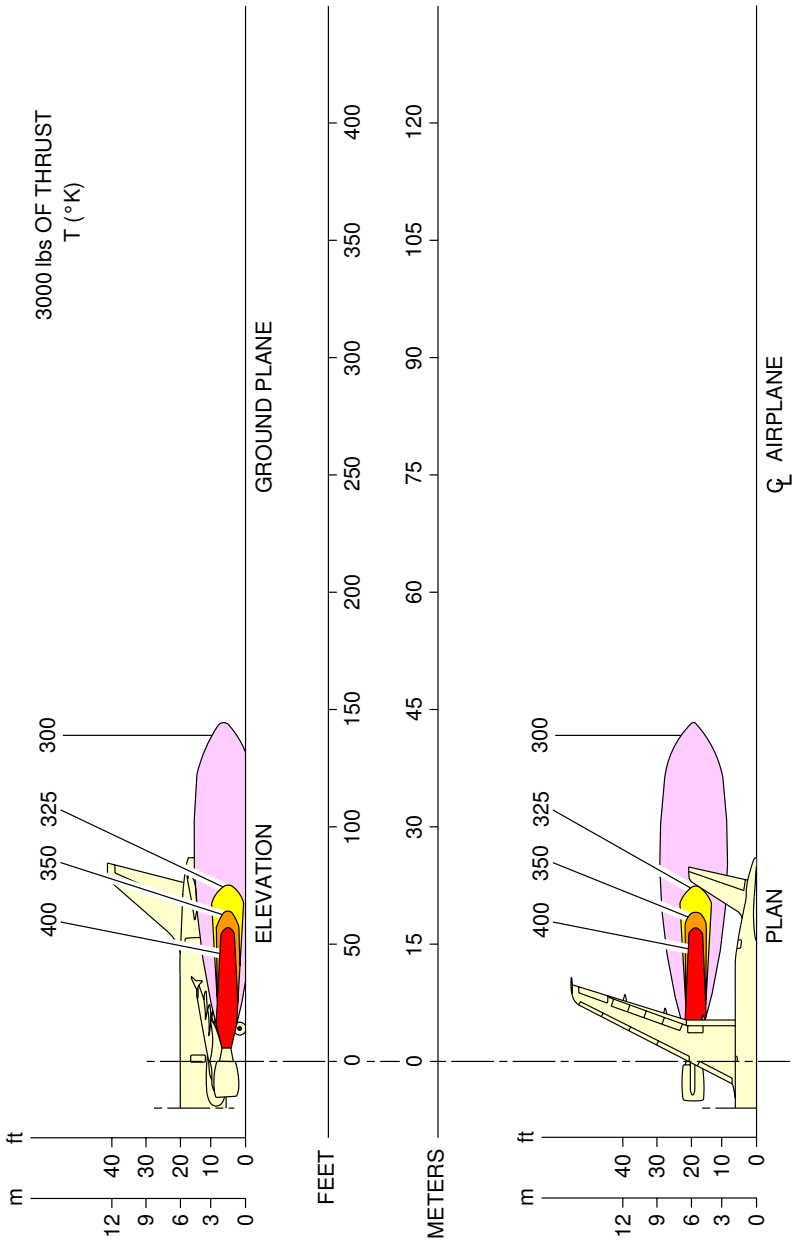
6-1-4 Engine Exhaust Temperatures Contours - Breakaway Power

**ON A/C A318-100

Engine Exhaust Temperatures Contours - Breakaway Power

1. This section gives engine exhaust temperatures contours at breakaway power.

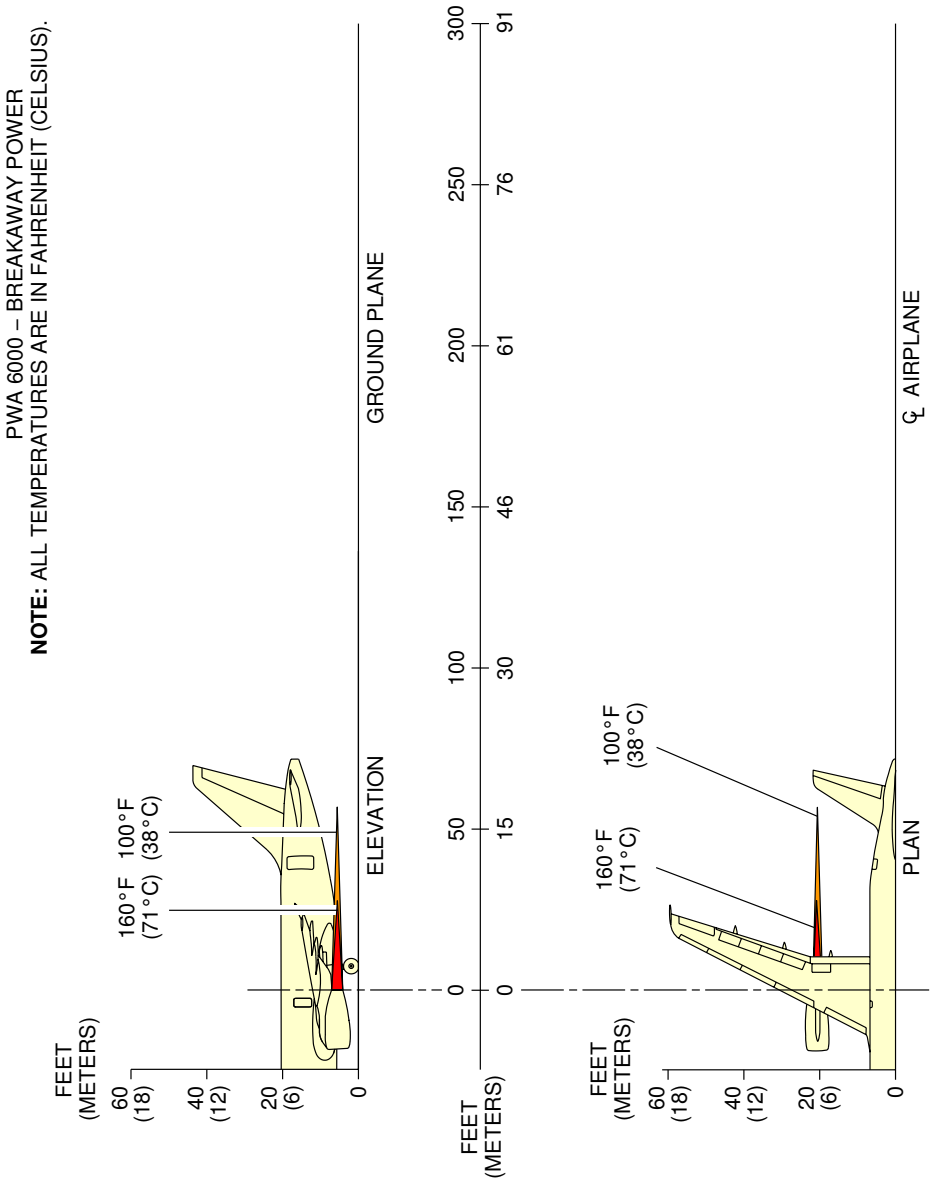
**ON A/C A318-100



N_AC_060104_1_0010101_01_00

Engine Exhaust Temperatures
Breakaway Power – CFM56 series engine
FIGURE 1

**ON A/C A318-100



N_AC_060104_1_0020101_01_00

Engine Exhaust Temperatures
Breakaway Power – PW 6000 series engine
FIGURE 2

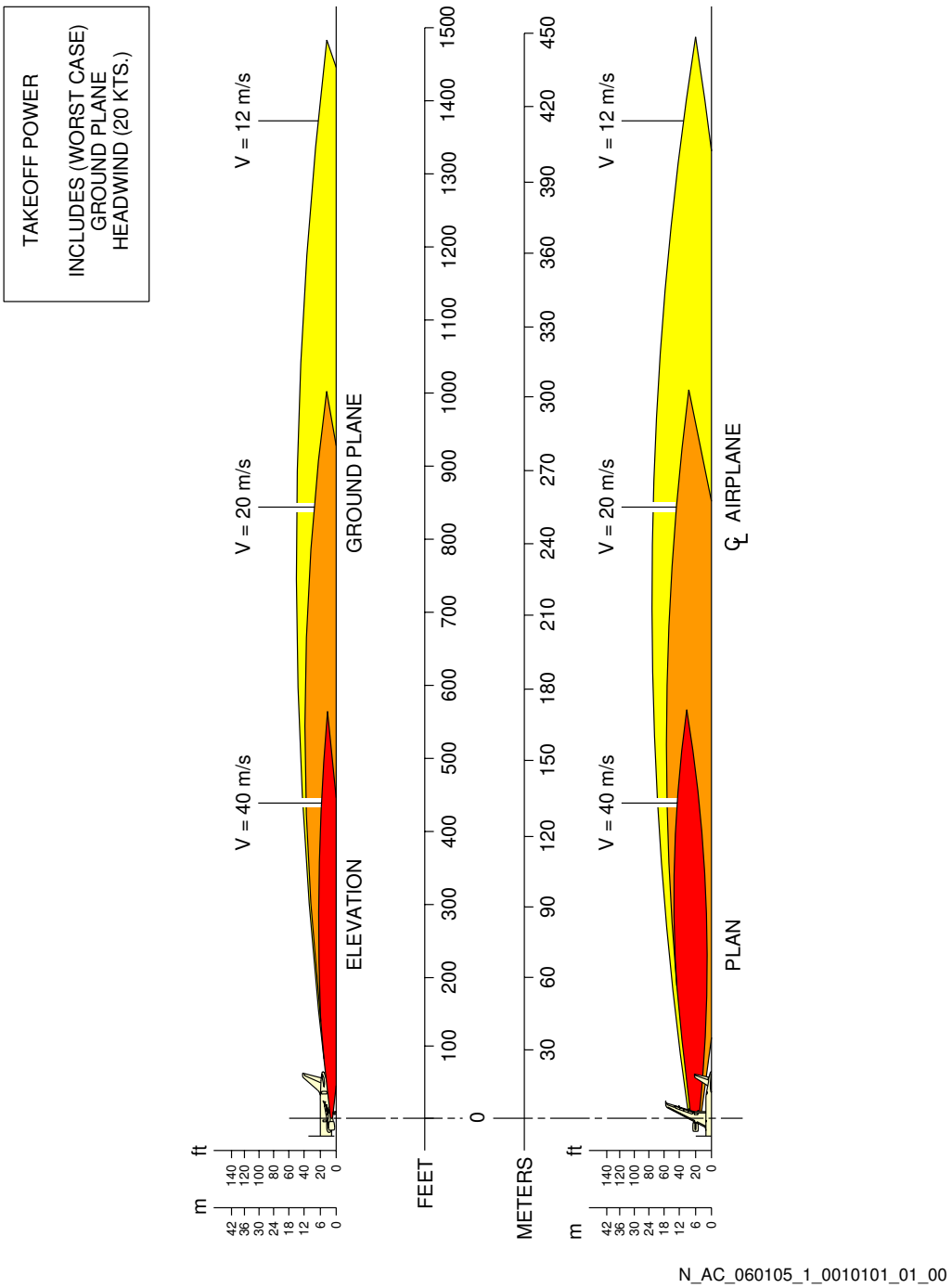
6-1-5 Engine Exhaust Velocities Contours - Takeoff Power

**ON A/C A318-100

Engine Exhaust Velocities Contours - Takeoff Power

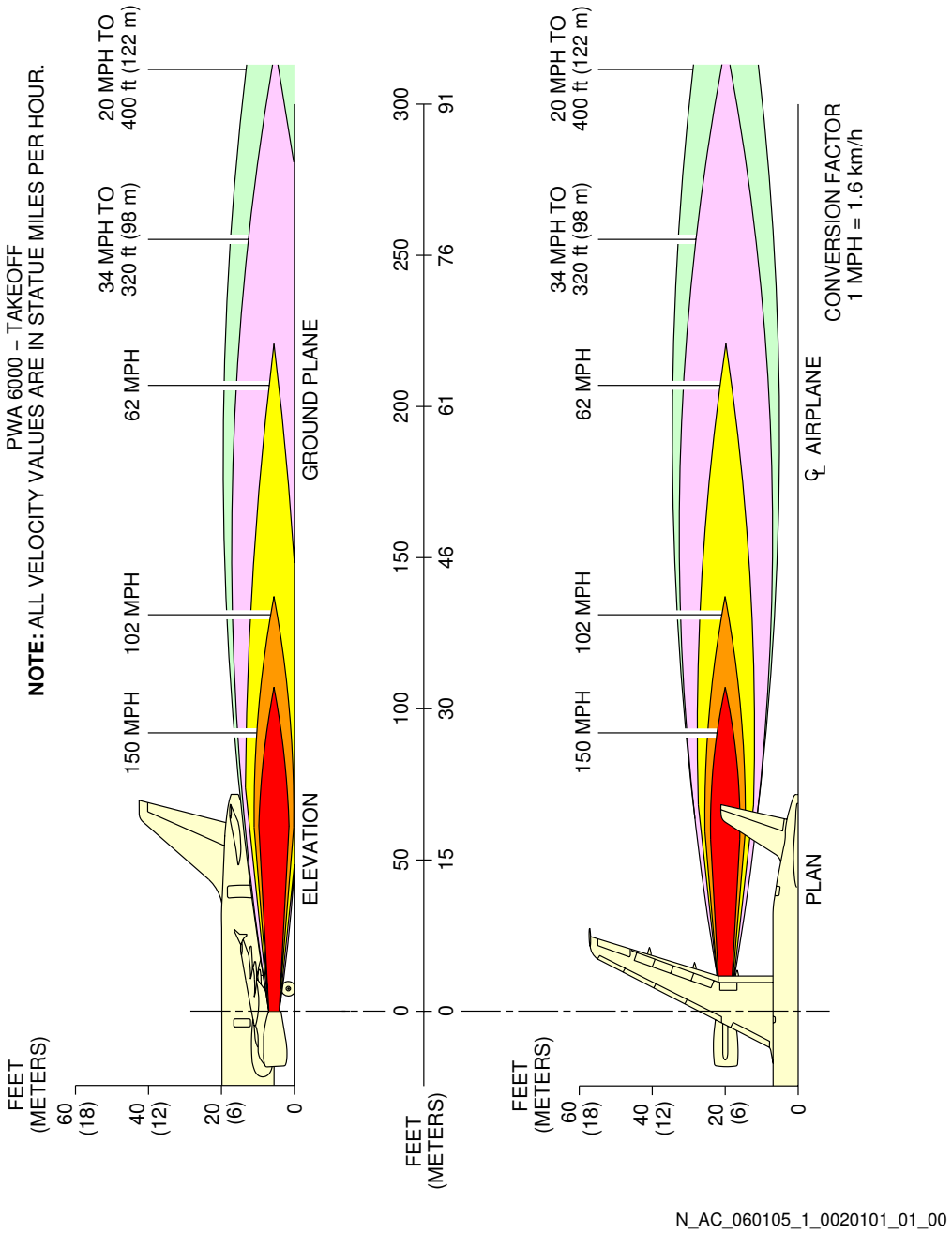
1. This section gives engine exhaust velocities contours at takeoff power.

**ON A/C A318-100



Engine Exhaust Velocities
Takeoff Power – CFM56 series engine
FIGURE 1

**ON A/C A318-100



Engine Exhaust Velocities
Takeoff Power – PW 6000 series engine
FIGURE 2

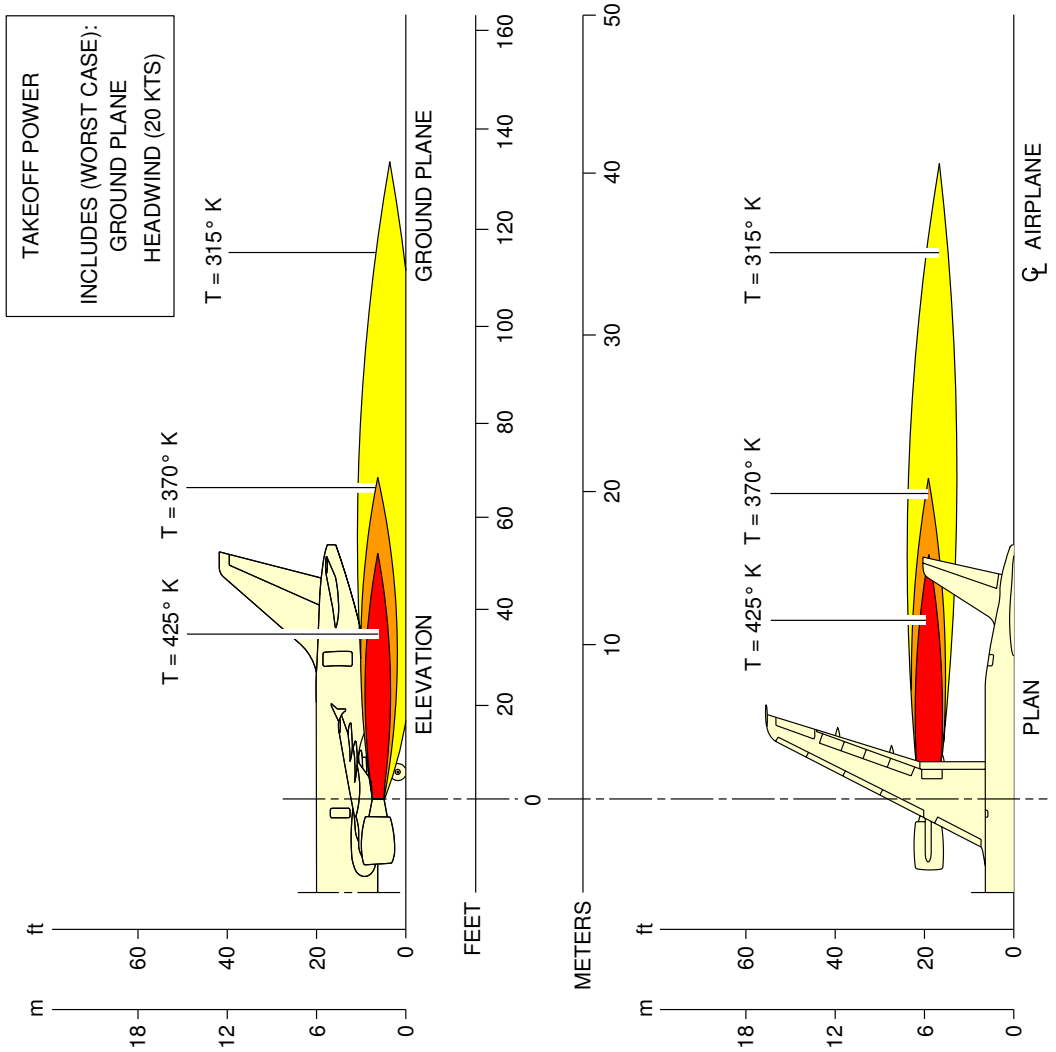
6-1-6 Engine Exhaust Temperatures Contours - Takeoff Power

**ON A/C A318-100

Engine Exhaust Temperatures Contours - Takeoff Power

1. This section gives engine exhaust temperatures contours at takeoff power.

**ON A/C A318-100



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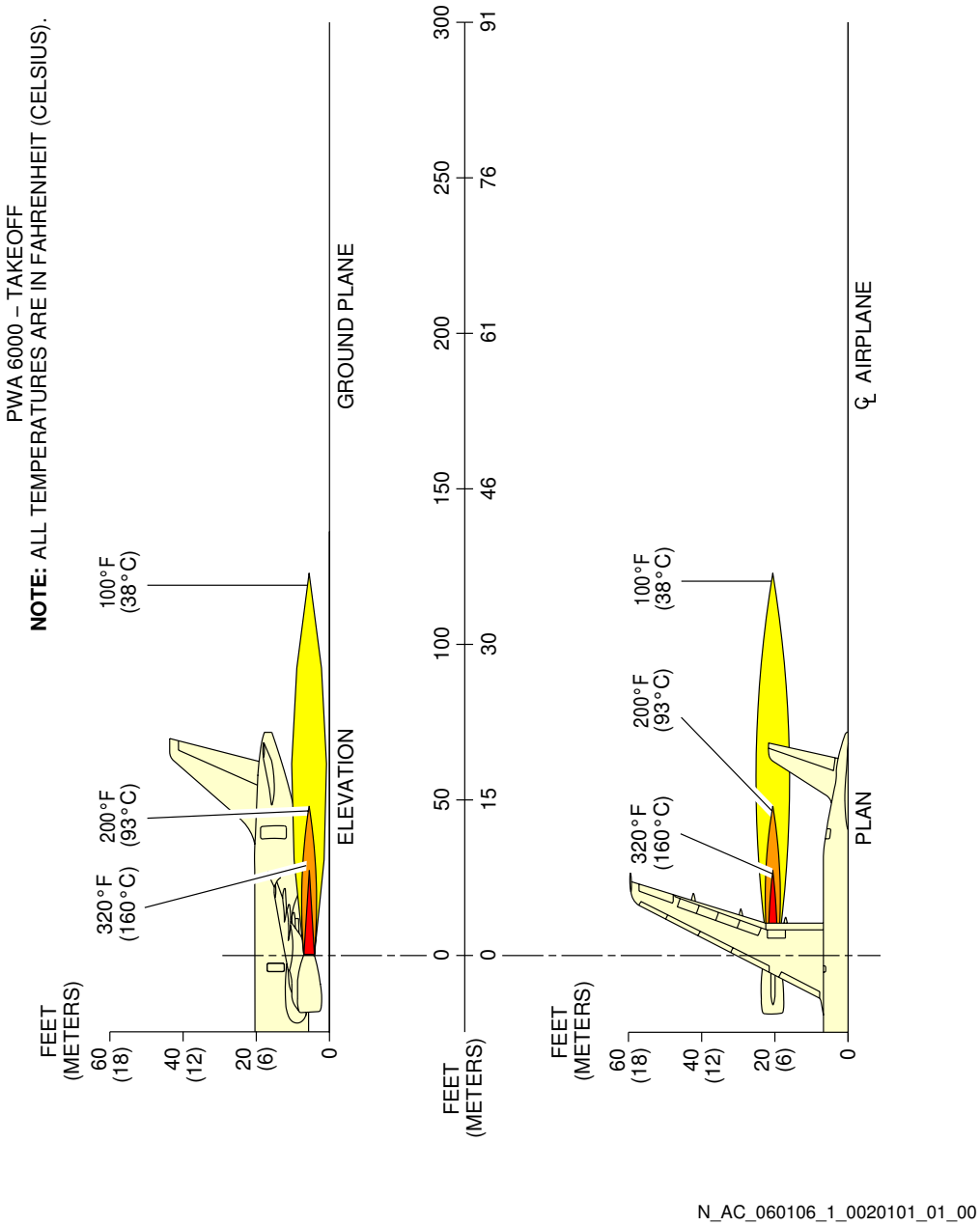
Engine Exhaust Temperatures
Takeoff Power – CFM56 series engine
FIGURE 1

**ON A/C A318-100



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Engine Exhaust Temperatures
Takeoff Power – PW 6000 series engine
FIGURE 2

6-2-0 Airport and Community Noise

**ON A/C A318-100

Airport and Community Noise

1. Airport and Community Noise Data

   This section gives data concerning engine maintenance run-up noise to permit evaluation of possible attenuation requirements.

6-2-1 Noise Data

**ON A/C A318-100

Noise Data

1. Noise Data for CFM56-5A series engine
   A. Description of test conditions:

      The arc of circle (radius = 60 m (196.85 ft)), with microphones 1.2 m (3.94 ft) high, is centered on the position of the noise reference point.
      A.P.U.: off; E.C.S.: Packs off.

   B. Engine parameters: 2 engines running

   C. Meteorological data:

      The meteorological parameters measured 1.6 m (5.25 ft) from the ground on the day of test were as follows:
      - Temperature: 3 °C (37 °F)
      - Relative humidity: 66%
      - Atmospheric pressure: 1016 hPa
      - Wind speed: Negligible
      - No rain

2. Noise Data for CFM56-5B series engine
   A. Description of test conditions:

      The arc of circle (radius = 60 m (196.85 ft)), with microphones 1.2 m (3.94 ft) high, is centered on the position of the noise reference point.
      A.P.U.: off; E.C.S.: Packs off.

   B. Engine parameters: 2 engines running

   C. Meteorological data:

      The meteorological parameters measured 1.6 m (5.25 ft) from the ground on the day of test were as follows:
      - Temperature: 22 °C (72 °F)
      - Relative humidity: 42%
      - Atmospheric pressure: 1003 hPa
      - Wind speed: Negligible
      - No rain

3. Noise Data for PW 6000 series engine
   A. Description of test conditions:

The arc of circle (radius = 60 m (196.85 ft)), with microphones 1.2 m (3.94 ft) high, is centered on the position of the noise reference point.
A.P.U.: off; E.C.S.: Packs off.

B. Engine parameters: 2 engines running

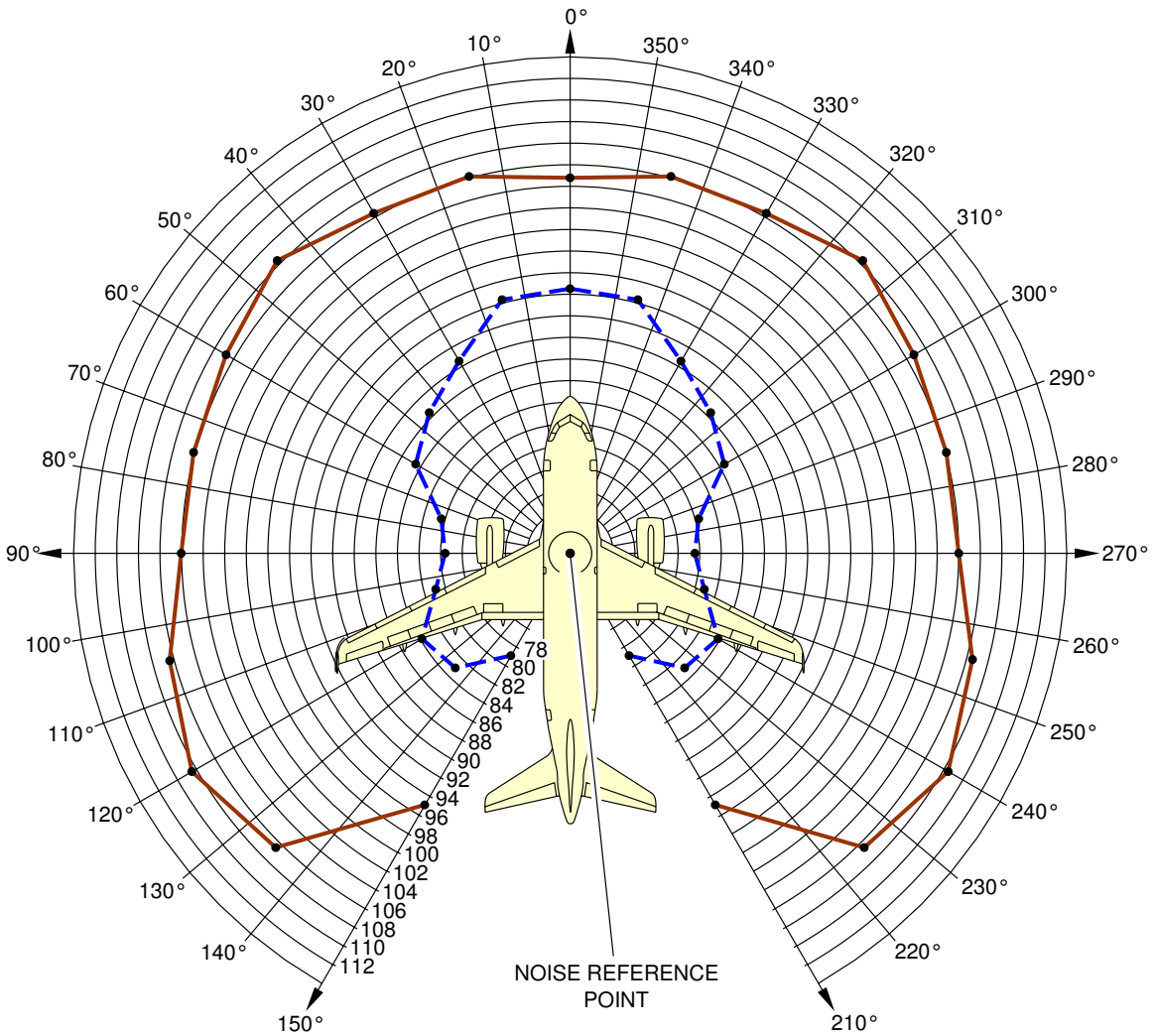
C. Meteorological data:

The meteorological parameters measured 1.6 m (5.25 ft) from the ground on the day of test were as follows:

- Temperature: 28 °C (82 °F)
- Relative humidity: 47%
- Atmospheric pressure: 1004 hPa
- Wind speed: Negligible
- No rain

**ON A/C A318-100

	GROUND IDLE	MAX THRUST POSSIBLE ON BRAKES
N1	20.8%	90%
CURVE	- - - -	———



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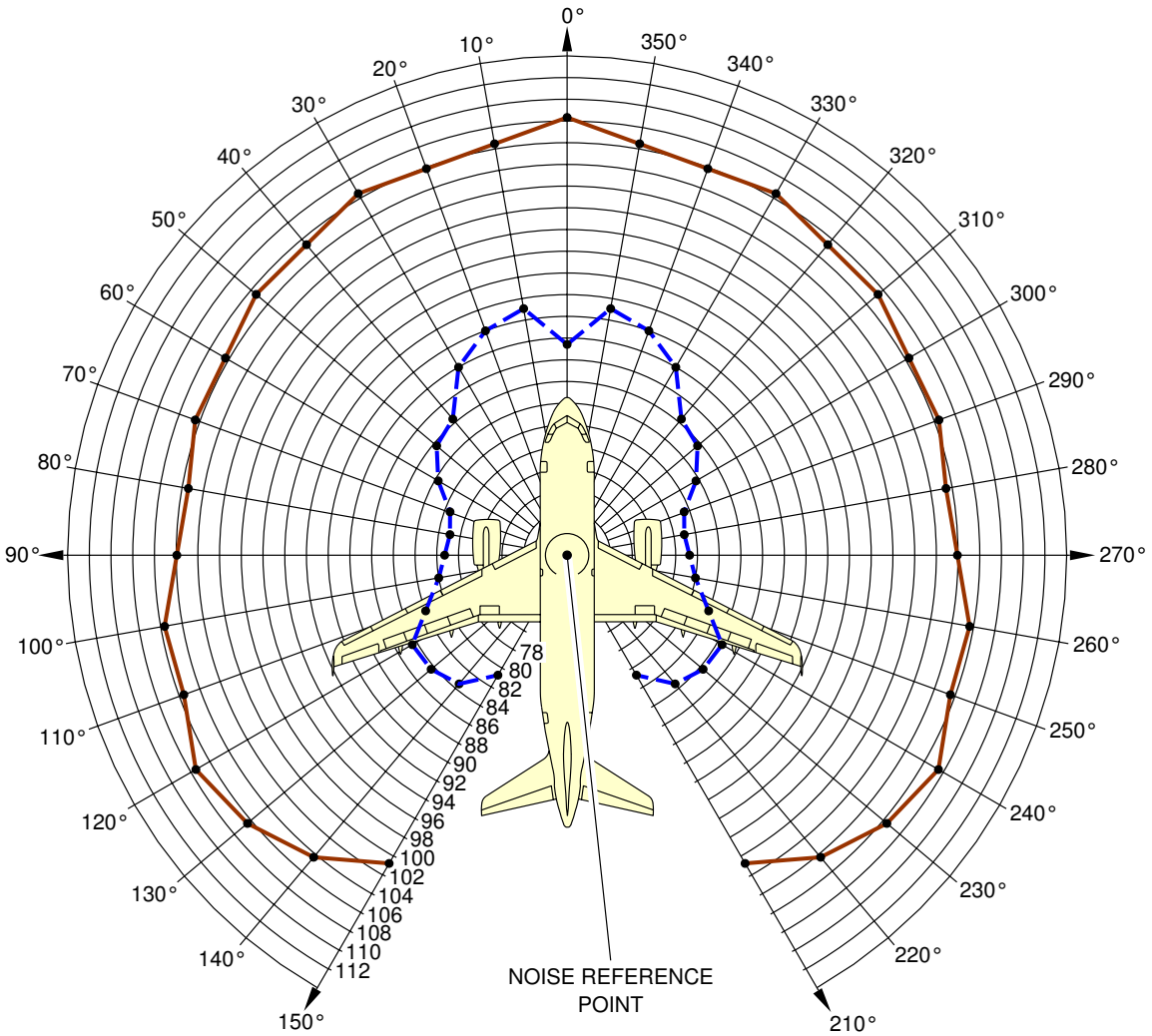
Airport and Community Noise
CFM56-5A series engine
FIGURE 1

**ON A/C A318-100

	GROUND IDLE	MAX THRUST POSSIBLE ON BRAKES
N1	18.9%	87%
CURVE	- - - -	———



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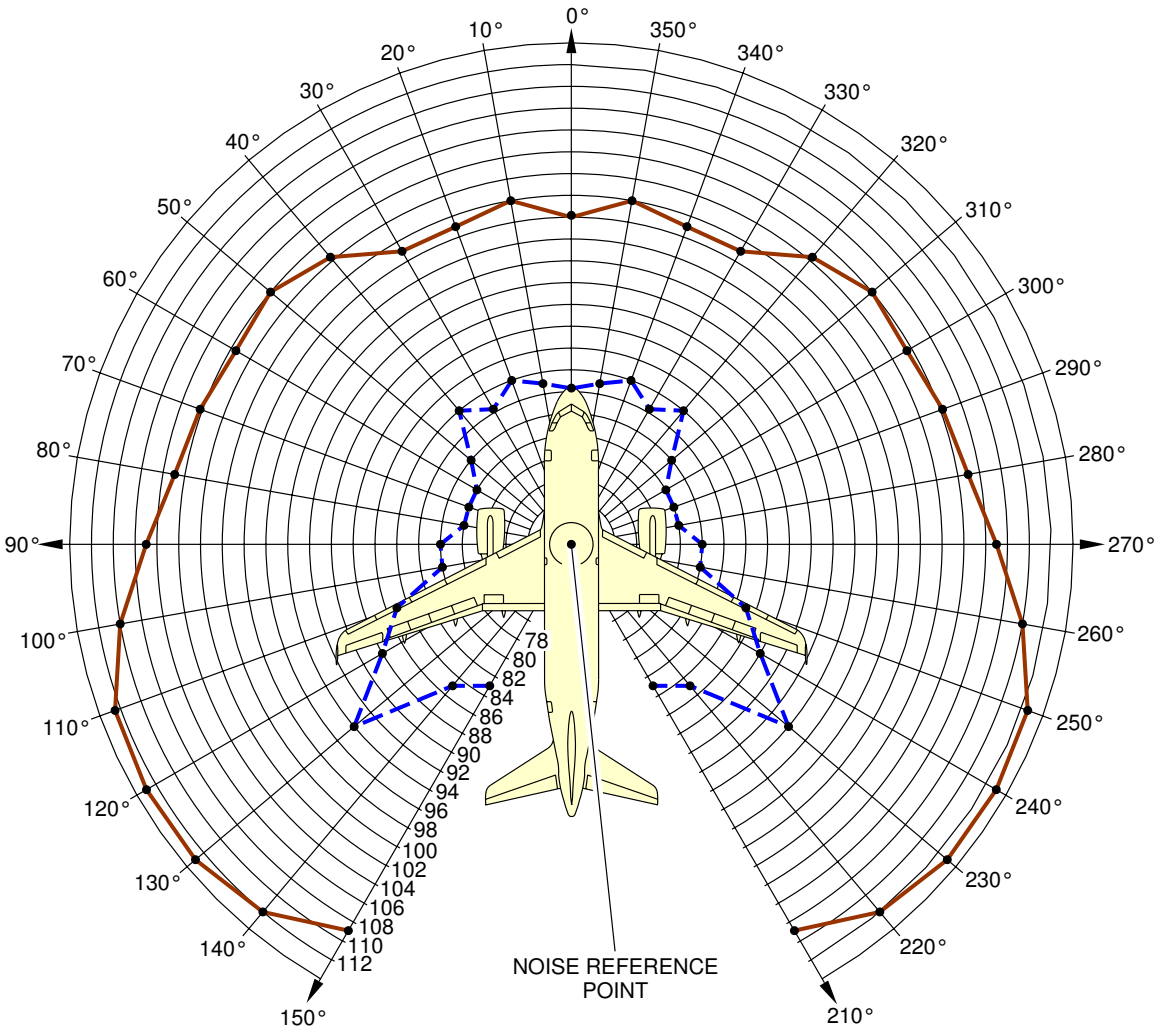
Airport and Community Noise
CFM56-5B series engine
FIGURE 2

**ON A/C A318-100

	GROUND IDLE	MAX THRUST POSSIBLE ON BRAKES
N1	23.4%	92.7%
CURVE	- - -	———



Airport and Community Noise
PW 6000 series engine
FIGURE 3

6-3-0 Danger Areas of Engines

**ON A/C A318-100

Danger Areas of Engines

1. Danger Areas of the Engines.

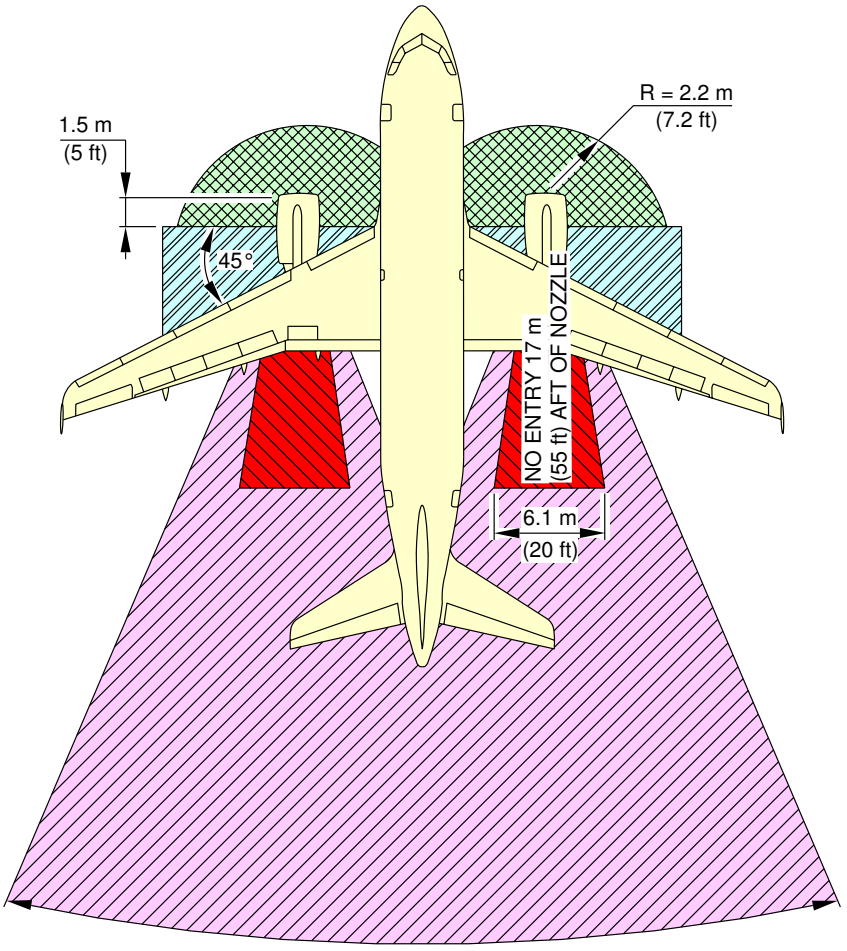
6-3-1 Ground Idle Power

**ON A/C A318-100

Ground Idle Power

1. This section gives danger areas of the engines at ground idle power conditions.

**ON A/C A318-100



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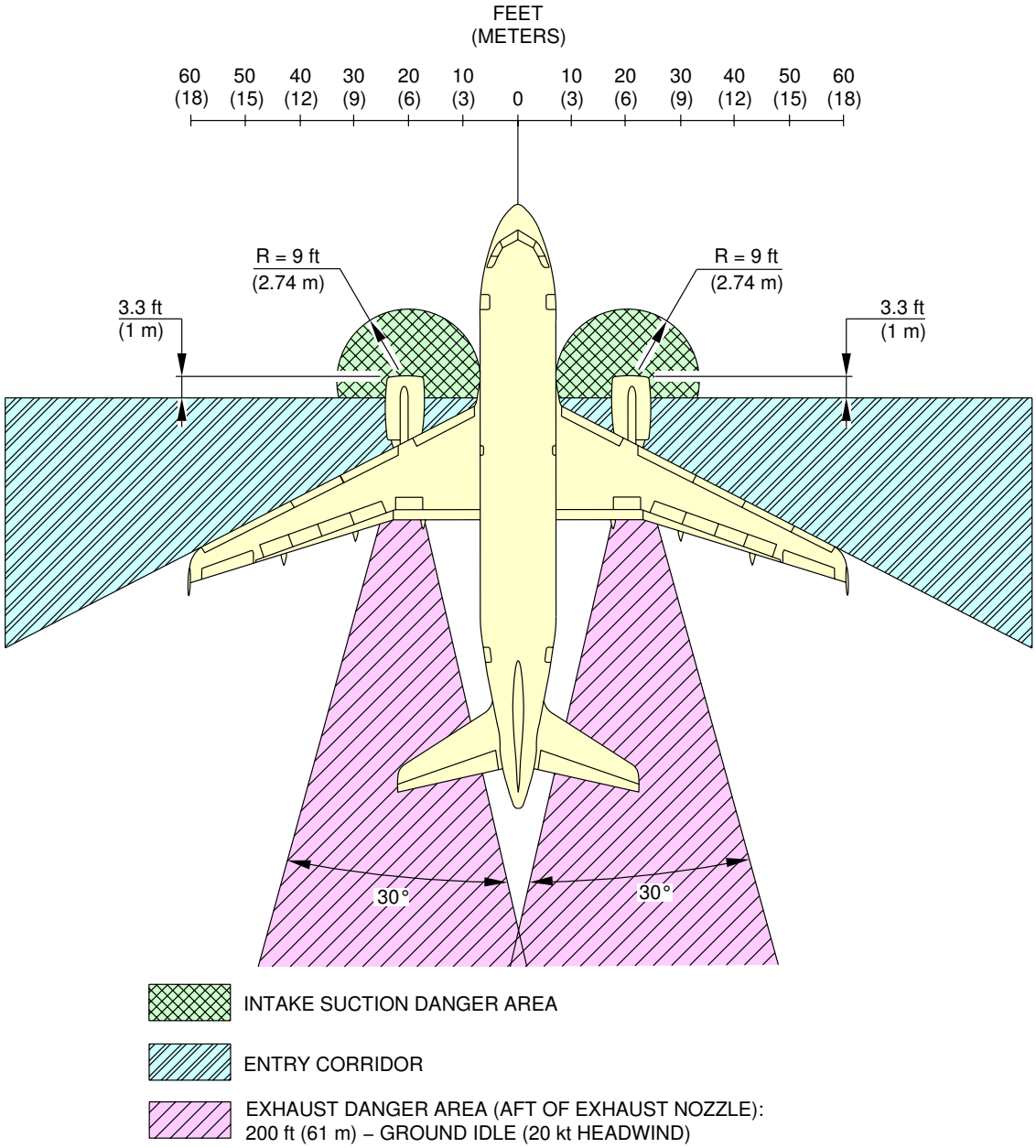
Danger Areas of Engines
CFM56 series engine
FIGURE 1

**ON A/C A318-100



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Danger Areas of Engines
PW 6000 series engine
FIGURE 2

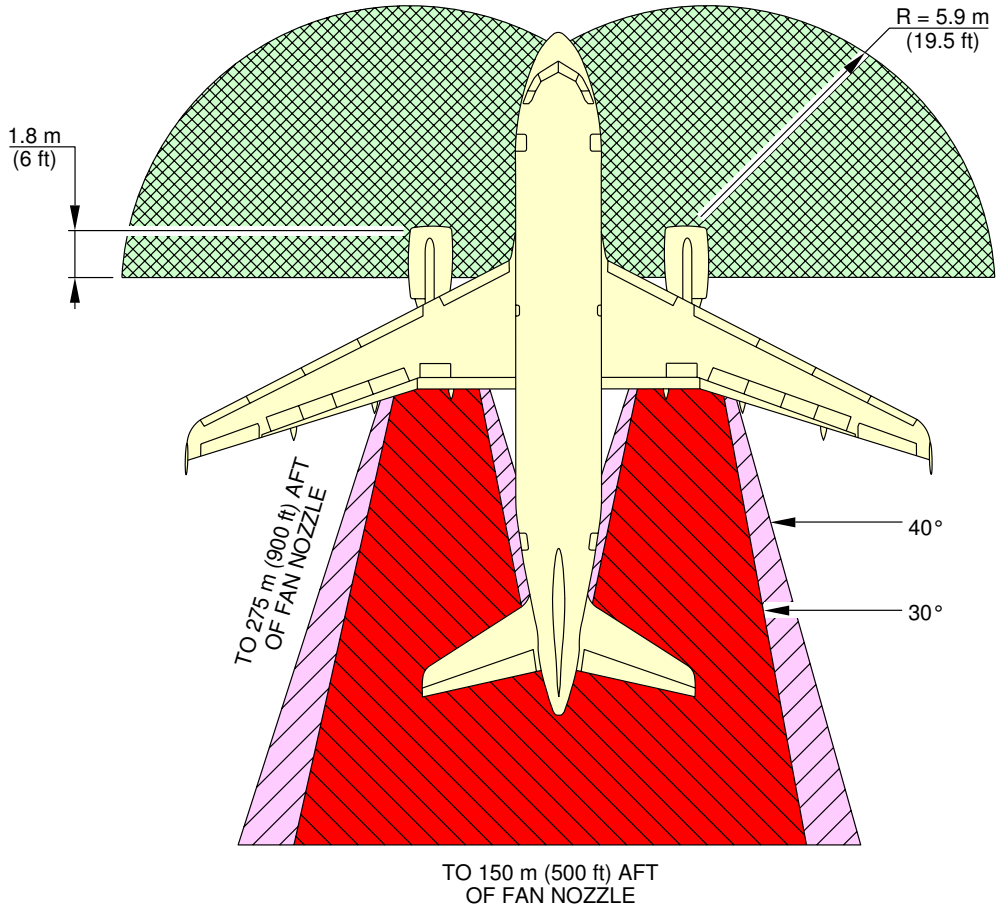
6-3-2 Takeoff Power

**ON A/C A318-100

Takeoff Power

1. This section gives danger areas of the engines at max takeoff conditions.

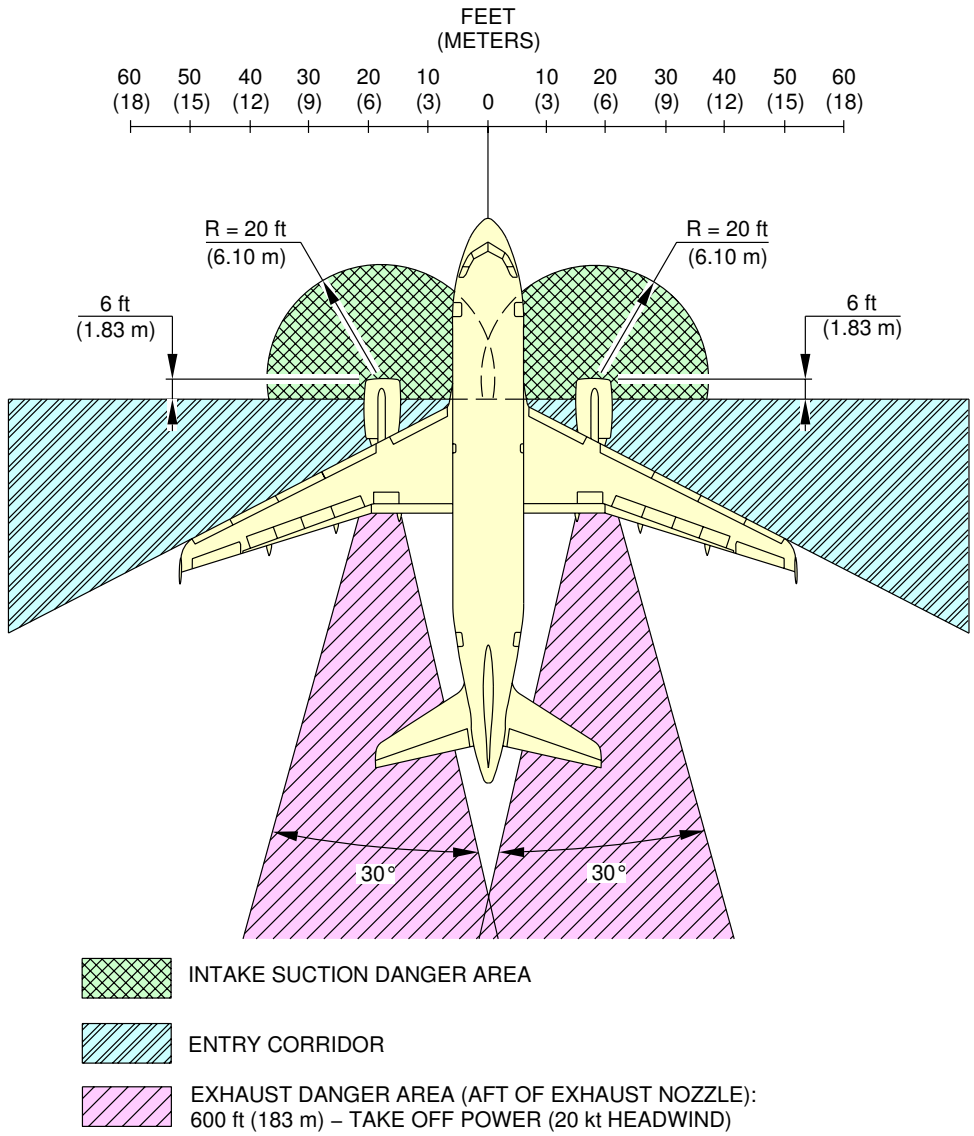
**ON A/C A318-100



N_AC_060302_1_0010101_01_01

Danger Areas of Engines
CFM56 series engine
FIGURE 1

**ON A/C A318-100



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Danger Areas of Engines
PW 6000 series engine
FIGURE 2

6-4-0 APU Exhaust Velocities and Temperatures

**ON A/C A318-100

APU Exhaust Velocities and Temperatures

1. APU Exhaust Velocities and Temperatures.

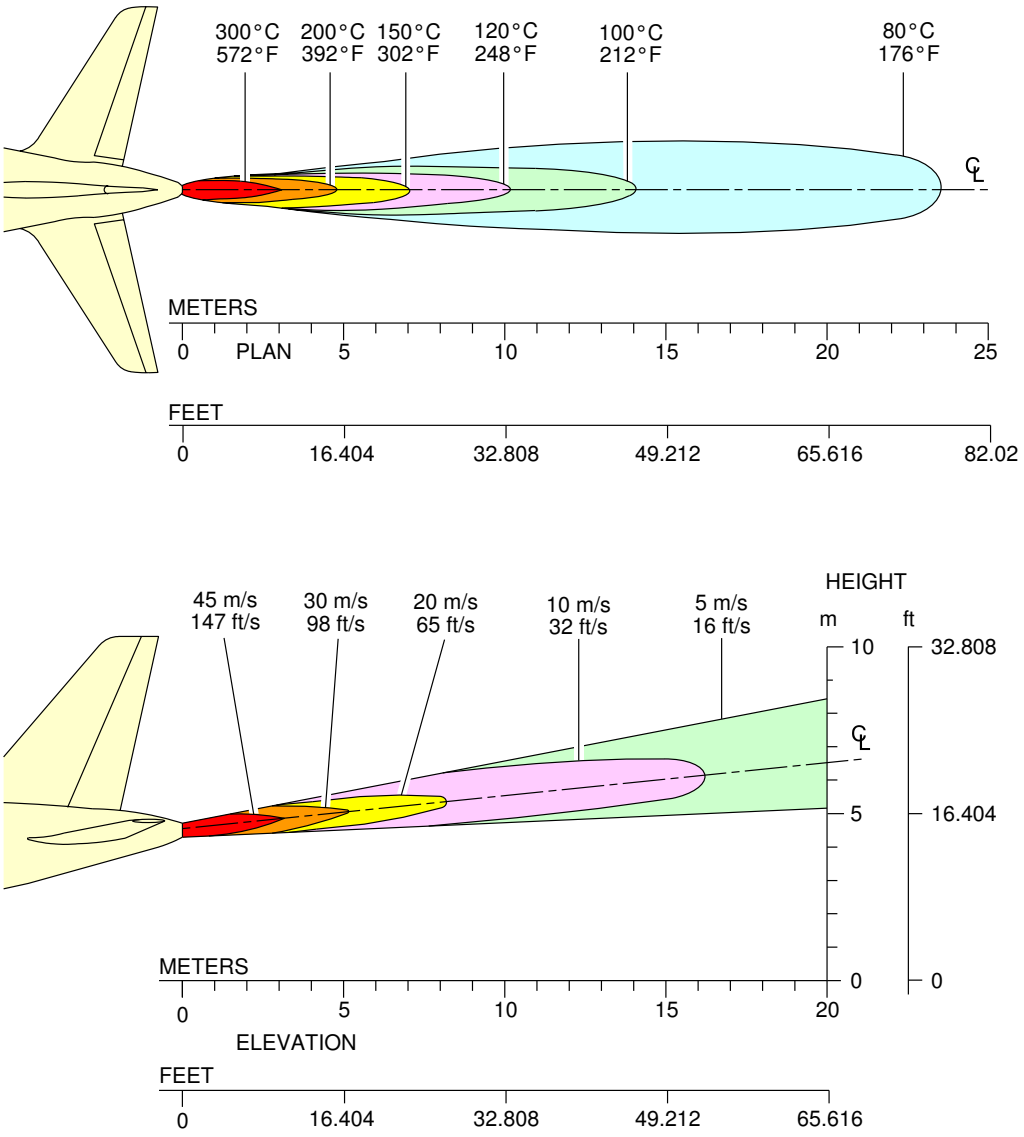
6-4-1 APU

**ON A/C A318-100

APU - APIC & GARRETT

1. This section gives APU exhaust velocities and temperatures.

**ON A/C A318-100



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Exhaust Velocities and Temperatures
APU – APIC & GARRETT
FIGURE 1

PAVEMENT DATA

7-1-0 General Information

**ON A/C A318-100

General Information

1. General Information

The brief description of the pavement charts that follow will help in their use for airport planning.

Each airplane configuration is depicted with a minimum range of five loads imposed on the main landing gear to aid in interpolation between the discrete values shown.

All curves for any single chart represent data at a constant specified tire pressure, with the airplane loaded to the maximum ramp weight and the CG at its maximum permissible aft position.

Pavement requirements for commercial airplanes are derived from the static analysis of loads imposed on the main landing gear struts.

Section 7-2, page 1 to 3, presents basic data on the landing gear footprint configuration, maximum ramp weights and tire sizes and pressures.

Section 7-3, page 1 to 3, shows maximum vertical and horizontal pavement loads for certain critical conditions at the tire-ground interfaces.

The charts, section 7-4-1 page 1 to 3, are provided in order to determine these loads throughout the stability limits of the airplane at rest on the pavement.

These main landing gear loads are used as the point of entry to the pavement design charts which follow, interpolating load values where necessary.

All Load Classification Number (LCN) curves shown in Section 7-6 and Section 7-8 have been developed from a computer program based on data provided in International Civil Aviation Organisation (ICAO) document 7920-AN/865/2, Aerodrome Manual, Part 2, "Aerodrome Physical Characteristics", Second Edition, 1965.

On the same flexible pavement chart, section 7-6-1 page 1 to 2, showing LCN versus equivalent single wheel load, there are load plots showing equivalent single wheel load versus pavement thickness.

Similarly on the same rigid pavement chart, section 7-8-2 page 1 to 2, showing LCN versus equivalent single wheel load, there are load plots showing equivalent single wheel load versus radius of relative stiffness.

Section 7-9 provides ACN data prepared according to the ACN/PCN system as referenced in ICAO Annex 14, "Aerodromes", Volume 1 Third Edition July 1999, incorporating Amendments 1 to 3.

The ACN/PCN system provides a standardized international airplane/pavement rating system replacing the various S, T, TT, LCN, AUW, ISWL, etc., rating systems used throughout the world. ACN is the Aircraft Classification Number and PCN is the corresponding Pavement Classification Number.
An aircraft having an ACN equal to or less than the PCN can operate without restriction on the pavement.
Numerically the ACN is two times the derived single wheel load (expressed in thousands of kilograms) where the derived single wheel load is defined as the load on a single tire inflated to 1.25 Mpa (181 psi) that would have the same pavement requirements as the aircraft. Computationally, the ACN/PCN system uses PCA program PDILB for rigid pavement and S-77-1 for flexible pavements to calculate ACN values.
The method of pavement evaluation is left up to the airport with the results of their evaluation presented as follows:

PCN			
PAVEMENT TYPE	SUBGRADE CATEGORY	TIRE PRESSURE CATEGORY	EVALUATION METHOD
R – Rigid	A – High	W – No Limit	T – Technical
F – Flexible	B – Medium	X – To 1.5 Mpa (217 psi)	U – Using Aircraft
	C – Low	Y – To 1.0 Mpa (145 psi)	
	D – Ultra Low	Z – To 0.5 Mpa (73 psi)	

Section 7-9-1 Page 1 to 6 shows the aircraft ACN values for flexible pavements.

The four subgrade categories are:
- A. High Strength CBR 15
- B. Medium Strength CBR 10
- C. Low Strength CBR 6
- D. Ultra Low Strength CBR 3

Section 7-9-2 Page 1 to 6 shows the aircraft ACN for rigid pavements.

The four subgrade categories are:
- A. High Strength Subgrade k = 150 MN/m^3 (550 pci)
- B. Medium Strength Subgrade k = 80 MN/m^3 (300 pci)
- C. Low Strength Subgrade k = 40 MN/m^3 (150 pci)

- D. Ultra Low Strength Subgrade k = 20 MN/m³ (75 pci)

A. Flexible Pavement

The flexible pavement design curves in Section 7-5-1 page 1 to 2, are based on procedures set forth in Instruction Report N° S-77-1, "Procedures for Development of CBR Design Curves", dated June 1977. The report was prepared by the U.S Army Corps Engineers Waterways Experiment Station, Soils and Pavement Laboratory, Vicksburg, Mississippi.
The line showing 10000 coverages is used to calculate Aircraft Classification Number (ACN).

The following procedure is used to develop flexible pavement design curves such as that shown in Section 7-5-1 page 1 to 2.

- Having established the scale for pavement thickness at the bottom and the scale for CBR at the top, an arbitrary line is drawn representing 10000 coverages.
- Incremental values of the weight on the main landing gear are then plotted.
- Annual departure lines are then drawn based on the load lines of the weight on the main landing gear that is shown on the graphs.

B. Rigid pavement

The rigid pavement design curves in Section 7-7 have been prepared with the use of the Westergaard Equation in general accordance with the procedures outlined in the Portland Cement Association publications, "Design of Concrete Airport Pavement", 1973 and "Computer Program for Airport Pavement Design", (Program PDILB), 1967 both by Robert G. Packard.

The following procedure is used to develop rigid pavement design curves shown in Section 7-7 page 2 and 3.

- Having established the scale for pavement thickness to the left and the scale for allowable working stress to the right, an arbitrary load line is drawn representing the main landing gear maximum weight to be shown.
- All values of the subgrade modulus (k values) are then plotted
- Additional load lines for the incremental values of weight on the main landing gear are drawn on the basis of the curve for k = 300 already shown on the graphs.

7-2-0 Landing Gear Footprint

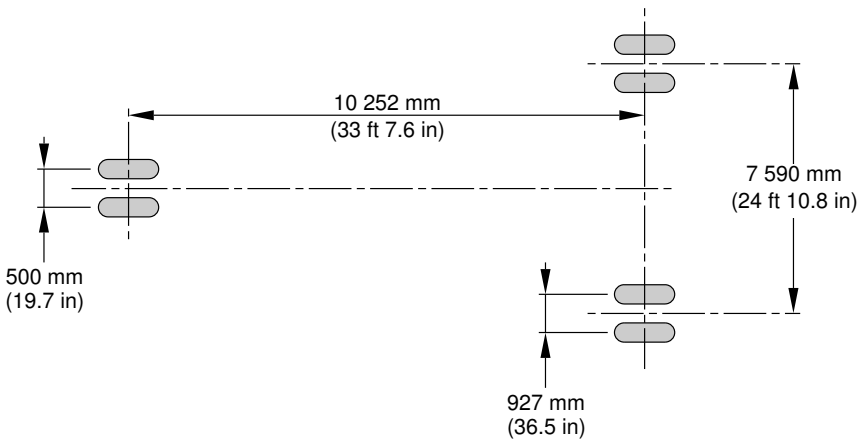
**ON A/C A318-100

Landing Gear Footprint

1. This section gives Landing Gear Footprint.

**ON A/C A318-100

MAXIMUM RAMP WEIGHT	56 400 kg (124 350 lb)
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SHEET 7–4–1 PAGE 2
NOSE GEAR TIRE SIZE	30 x 8.8 R15 (30 x 8.8 – 15)
NOSE GEAR TIRE PRESSURE	12.3 bar (178 psi)
MAIN GEAR TIRE SIZE	46 x 17 R20 (46 x 16 – 20)
MAIN GEAR TIRE PRESSURE	10.2 bar (148 psi)



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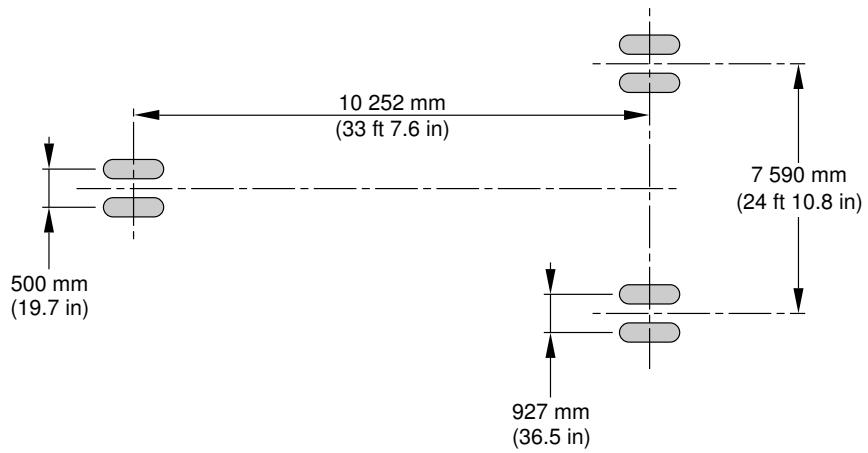
Landing Gear Footprint
MTOW 56 T
FIGURE 1

**ON A/C A318-100

MAXIMUM RAMP WEIGHT	59 400 kg (130 950 lb)	61 900 kg (136 475 lb)	61 400 kg (135 375 lb)	63 400 kg (139 775 lb)
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SHEET 7–4–1 PAGE 1		SEE SHEET 7–4–1 PAGE 2	SEE SHEET 7–4–1 PAGE 3
NOSE GEAR TIRE SIZE	30 x 8.8 R15 (30 x 8.8 – 15)			
NOSE GEAR TIRE PRESSURE	12.8 bar (186 psi)			
MAIN GEAR TIRE SIZE	46 x 17 R20 (46 x 16 – 20)			
MAIN GEAR TIRE PRESSURE	11.4 bar (165 psi)			



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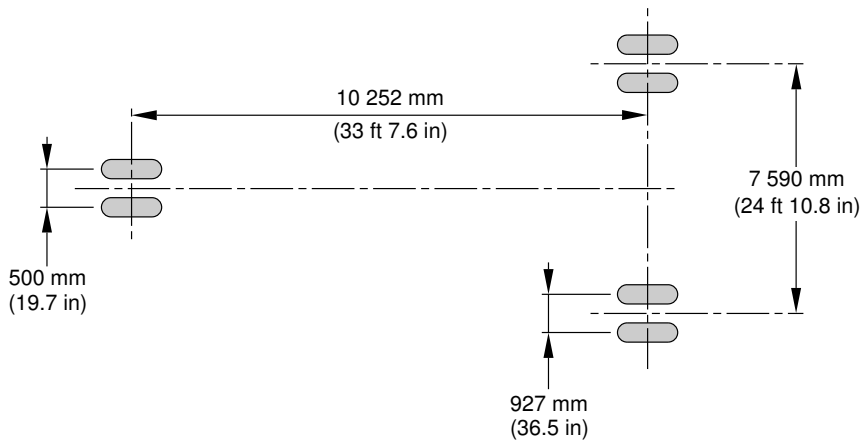
Landing Gear Footprint
MTOW 59 T/61.5 T/61 T/63 T
FIGURE 2

**ON A/C A318-100

MAXIMUM RAMP WEIGHT	64 400 kg (141 975 lb)	64 900 kg (143 075 lb)	66 400 kg (146 375 lb)	68 400 kg (150 800 lb)
PERCENTAGE OF WEIGHT ON MAIN GEAR GROUP	SEE SHEET 7–4–1 PAGE 2	SEE SHEET 7–4–1 PAGE 3		
NOSE GEAR TIRE SIZE	30 x 8.8 R15 (30 x 8.8 – 15)			
NOSE GEAR TIRE PRESSURE	13.5 bar (196 psi)			
MAIN GEAR TIRE SIZE	46 x 17 R20 (46 x 16 – 20)			
MAIN GEAR TIRE PRESSURE	12.4 bar (180 psi)			



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Landing Gear Footprint
MTOW 64 T/64.5 T/66 T/68T
FIGURE 3

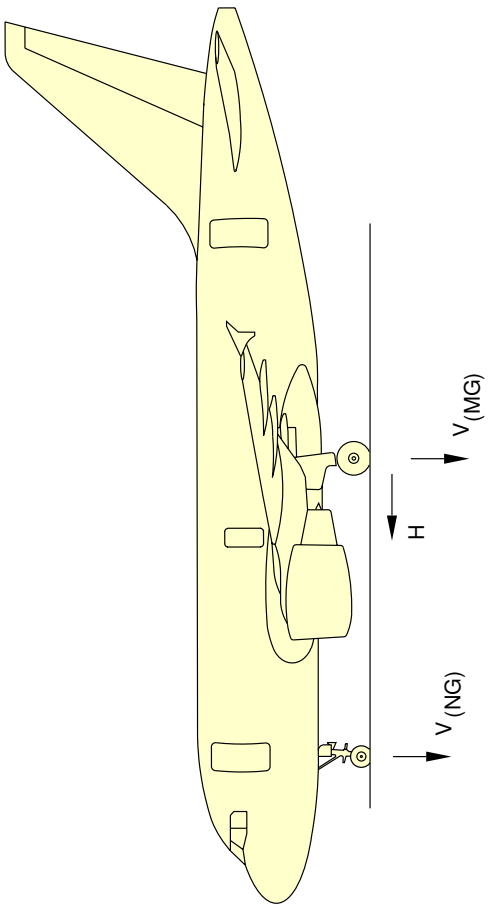
7-3-0 Maximum Pavement Loads

**ON A/C A318-100

Maximum Pavement Loads

1. This section gives Maximum Pavement Loads.

**ON A/C A318-100



1	2		3		4		5		6			
			VNG				VMG (PER STRUT)		H (PER STRUT)			
MODEL –100	MAXIMUM RAMP WEIGHT		STATIC LOAD AT MOST FWD CG (1)		STATIC BRAKING @ 10 ft/s² DECELERATION		STATIC LOAD AT MAX AFT CG (2)		STEADY BRAKING @ 10 ft/s² DECELERATION		AT INSTANTANEOUS BRAKING COEFFICIENT = 0.8	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
WV002	139 775	63 400	25 475	11 560	39 475	17 900	62 175	28 200	22 725	9 850	49 725	22 560
WV001	136 475	61 900	24 900	11 290	38 550	17 490	60 900	27 620	21 200	9 620	48 700	22 100
WV000	130 950	59 400	23 900	10 840	35 050	16 810	58 750	26 649	20 350	9 230	44 000	21 320

V (NG) MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CG
V (MG) MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT CG
H MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

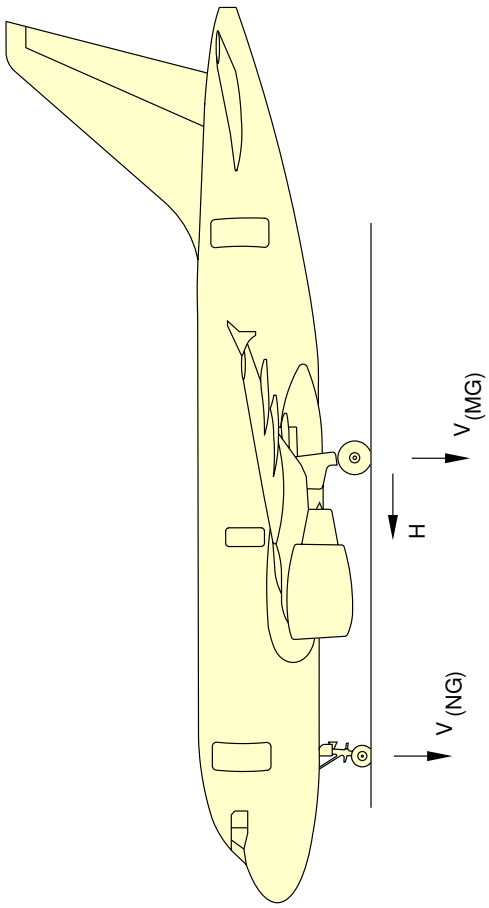
(1) FWD CG = 15% MAC.
(2) AFT CG = 33.93% MAC (WV000), = 32.7% MAC (WV001), = 32% MAC (WV002)

NOTE: ALL LOADS CALCULATED USING AIRPLANE MAXIMUM RAMP WEIGHT

N_AC_070300_1_0010101_01_00

Maximum Pavement Loads
MTOW 63 T/61.5 T/59 T
FIGURE 1

**ON A/C A318-100



1	2		3		4		5		6			
			VNG				VMG (PER STRUT)		H (PER STRUT)			
MODEL –100	MAXIMUM RAMP WEIGHT		STATIC LOAD AT MOST FWD CG (1)		STATIC BRAKING @ 10 ft/s^2 DECELERATION		STATIC LOAD AT MAX AFT CG (2)		STEADY BRAKING @ 10 ft/s^2 DECELERATION		AT INSTANTANEOUS BRAKING COEFFICIENT = 0.8	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
WV005	150 800	68 400	25 100	11 380	40 100	18 190	67 075	30 430	23 425	10 630	53 675	24 340
WV004	146 375	66 400	25 520	11 450	39 850	18 080	65 125	29 540	22 750	10 320	52 100	23 630
WV003	143 075	64 900	25 375	11 510	39 650	17 990	63 650	28 870	22 225	10 090	50 925	23 090

V (NG) MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CG
V (MG) MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT CG
H MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

(1) FWD CG = 16.17% MAC (WV003), = 17.29% MAC (WV004), = 18.7% MAC (WV005)
(2) AFT CG = 32% MAC.

NOTE: ALL LOADS CALCULATED USING AIRPLANE MAXIMUM RAMP WEIGHT

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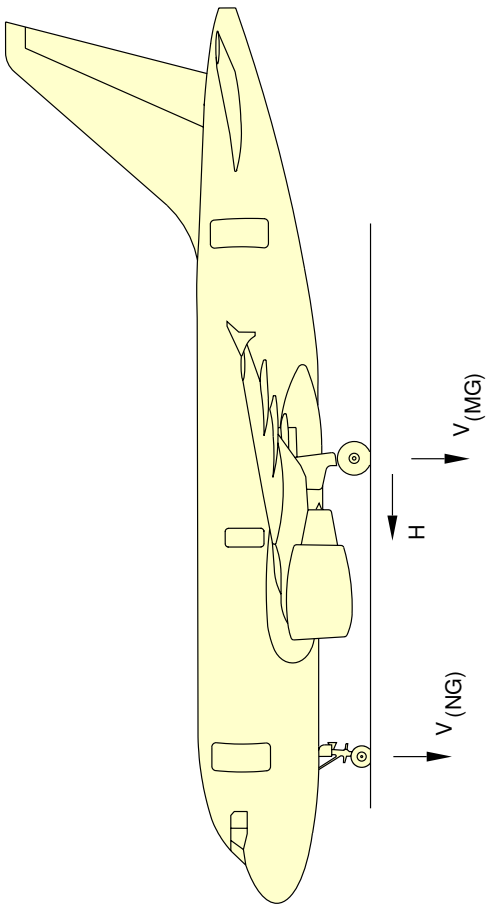
Maximum Pavement Loads
MTOW 68 T/66 T/64.5 T
FIGURE 2

**ON A/C A318-100



1	2		3		4		5		6			
			VNG				VMG (PER STRUT)		H (PER STRUT)			
MODEL –100	MAXIMUM RAMP WEIGHT		STATIC LOAD AT MOST FWD CG (1)		STATIC BRAKING @ 10 ft/s² DECELERATION		STATIC LOAD AT MAX AFT CG (2)		STEADY BRAKING @ 10 ft/s² DECELERATION		AT INSTANTANEOUS BRAKING COEFFICIENT = 0.8	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
WV008	141 975	64 400	25 400	11 520	39 575	17 960	63 150	28 640	22 075	10 010	50 525	22 920
WV007	135 375	61 400	24 700	11 200	38 250	17 350	60 450	27 430	21 025	9 540	48 375	21 940
WV006	124 350	56 400	23 250	10 550	35 775	16 230	56 050	25 430	19 325	8 760	44 850	20 340

V (NG) MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CG
V (MG) MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT CG
H MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

(1) FWD CG = 14% MAC (WV006), = 15% MAC (WV007), = 15.79% MAC (WV008)
(2) AFT CG = 35% MAC (WV006), = 32.93% MAC (WV007), = 32% MAC (WV008)

NOTE: ALL LOADS CALCULATED USING AIRPLANE MAXIMUM RAMP WEIGHT

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Maximum Pavement Loads
MTOW 64 T/61 T/56 T
FIGURE 3

7-4-0 Landing Gear Loading on Pavement

**ON A/C A318-100

Landing Gear Loading on Pavement

1. General

In the example shown in Section 7-4-1 Page 1, the Gross Aircraft Weight is 54 tonnes (119050 lb) and the percentage of weight on the Main Landing Gear is 89.3 %.

For these conditions the total weight on the Main Landing Gear is 48240 kg (106351 lb).

In the example shown in Section 7-4-1 Pages 2 to 3, the Gross Aircraft Weight is 54 tonnes (119050 lb) and the percentage of weight on the Main Landing Gear is 89 %.

For these conditions the total weight on the Main Landing Gear is 48030 kg (105888 lb).

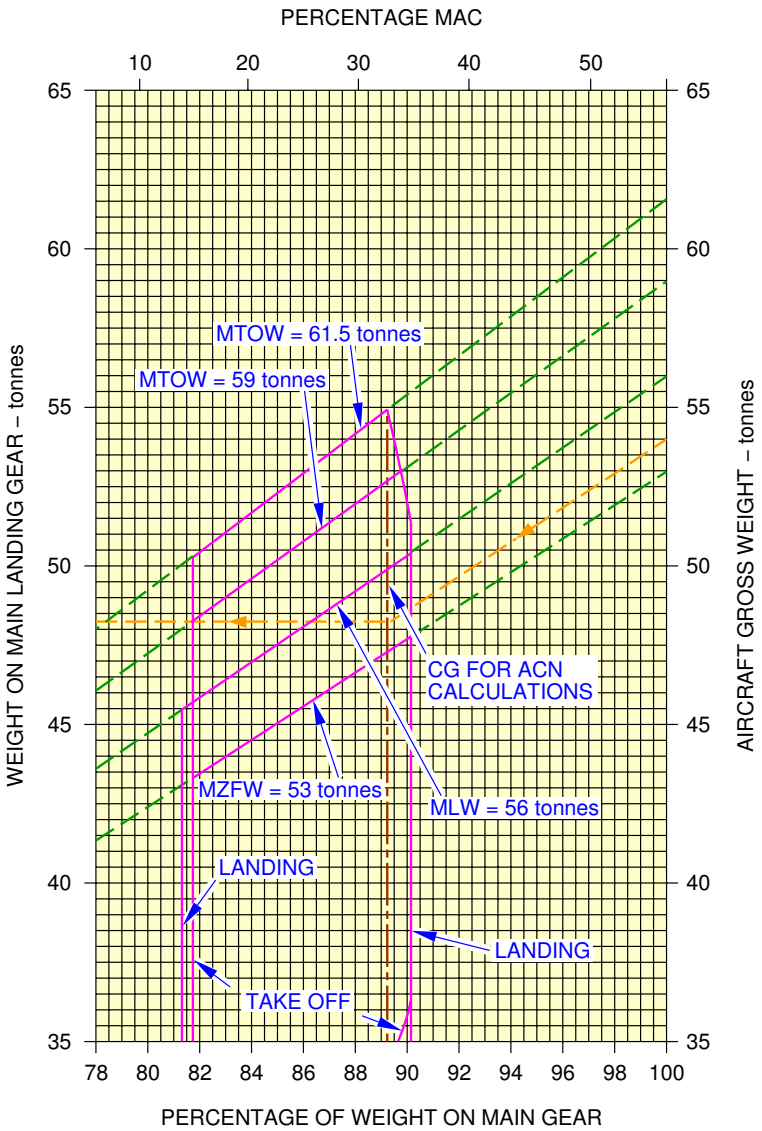
7-4-1 Landing Gear Loading on Pavement

**ON A/C A318-100

Landing Gear Loading on Pavement

1. This section gives Landing Gear Loading on Pavement.

**ON A/C A318-100



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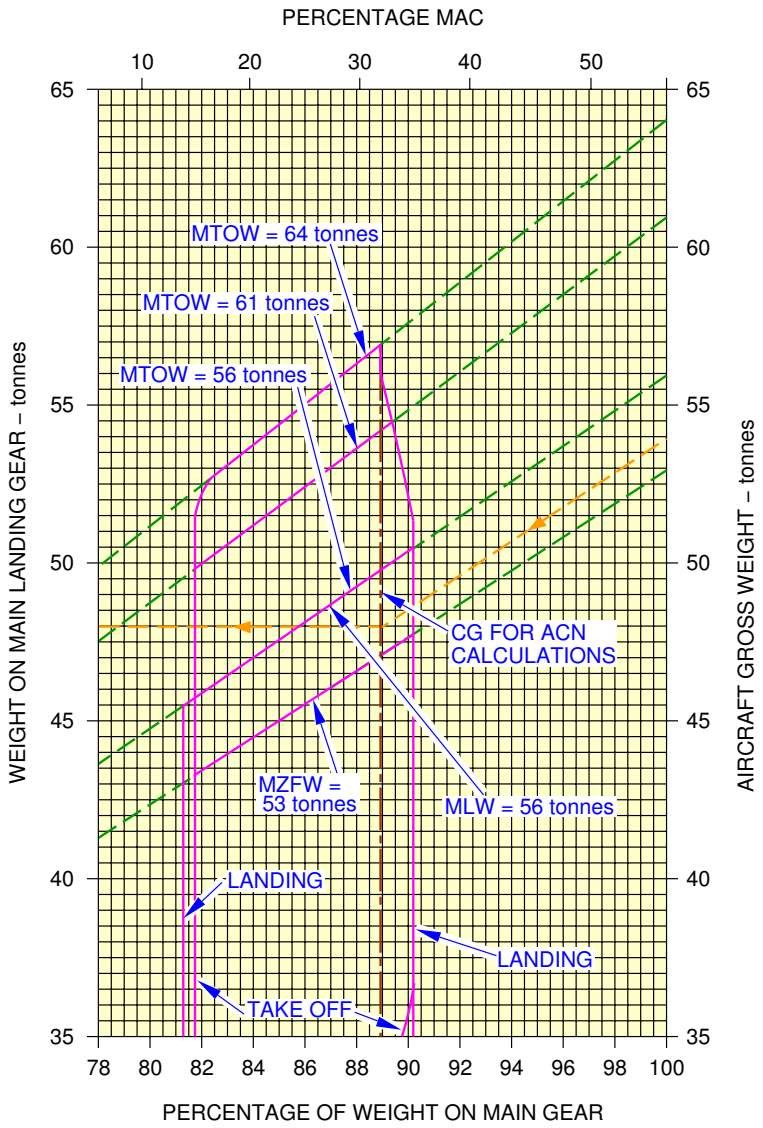
Landing Gear Loading on Pavement
MTOW 59 T/61.5 T
FIGURE 1

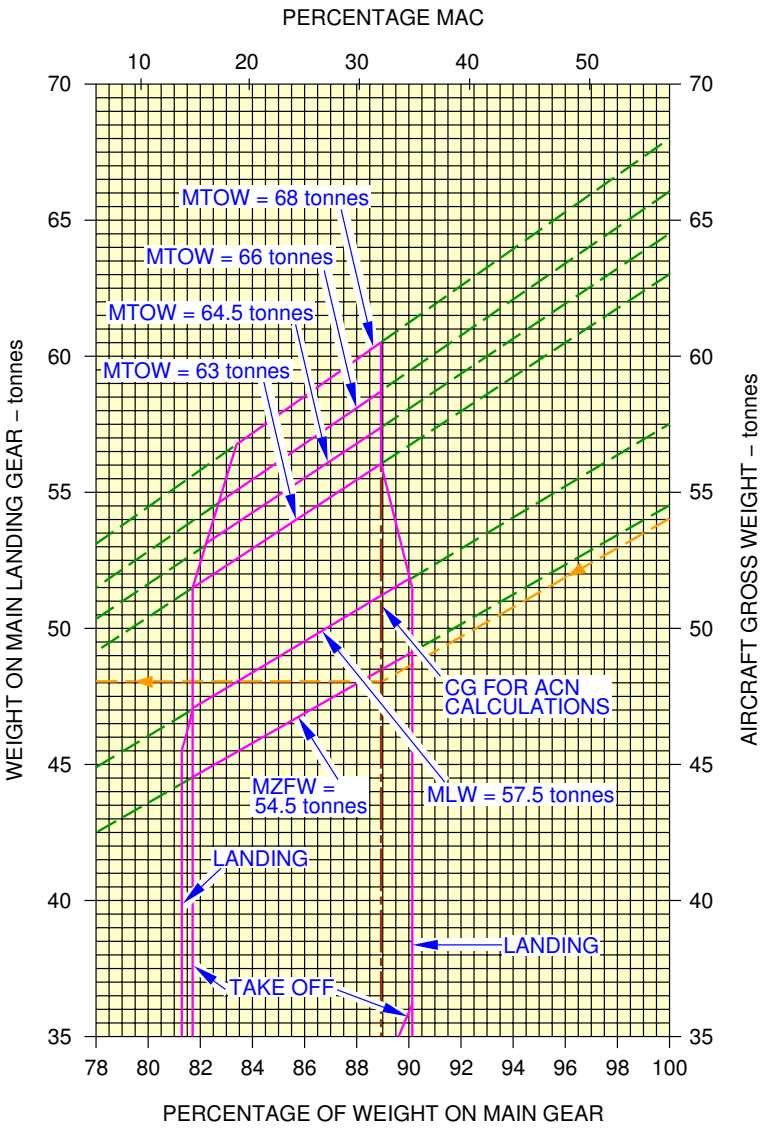
**ON A/C A318-100



N_AC_070401_1_0020101_01_01

Landing Gear Loading on Pavement
MTOW 56 T/61 T/ 64 T
FIGURE 2

**ON A/C A318-100



N_AC_070401_1_0030101_01_01

Landing Gear Loading on Pavement
MTOW 63 T/64.5 T/66 T/68 T
FIGURE 3

7-5-0 Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method

**ON A/C A318-100

Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method

1. General

To find a Flexible Pavement Thickness, the Subgrade Strength (CBR), the Annual Departure Level and the weight on one Main Landing Gear must be known.

In the example shown in Section 7-5-1 page 1 for:
- a CBR value of 10
- an Annual Departure Level of 25000
- the Load on one MLG of 20000 kg (44092 lb).

For these conditions the Flexible Pavement Thickness is 40.9 cm (16.1 in).

In the examples shown in Section 7-5-1 pages 2 to 5 for:
- a CBR value of 10
- an Annual Departure Level of 25000
- the Load on one MLG of 20000 kg (44092 lb).

For these conditions the Flexible Pavement Thickness is 41.2 cm (16.2 in).

In the example shown in Section 7-5-1 page 6 for:
- a CBR value of 10
- an Annual Departure Level of 25000
- the Load on one MLG of 20000 kg (44092 lb).

For these conditions the Flexible Pavement Thickness is 41.5 cm (16.3 in).

The line showing 10000 Coverages is used to calculate the Aircraft Classification Number (ACN).

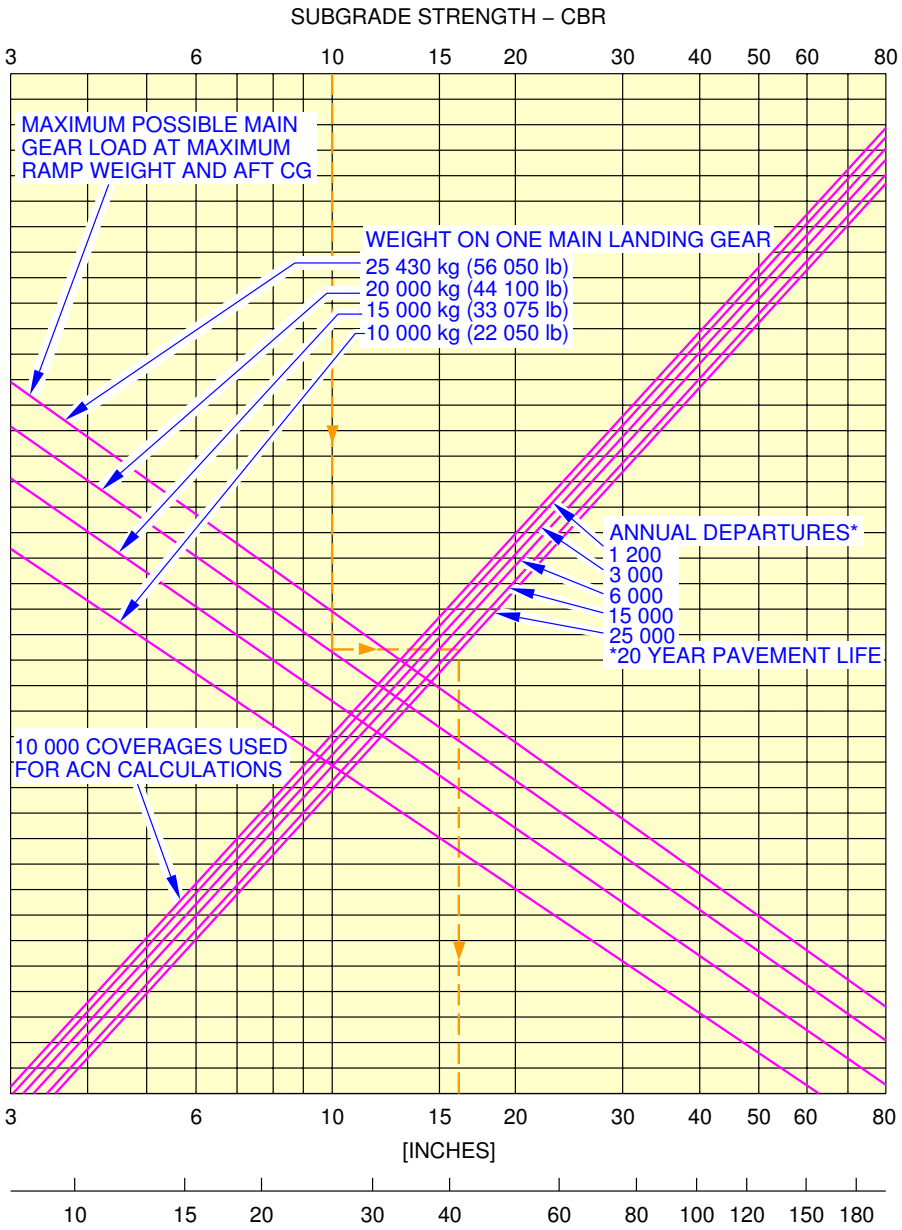
7-5-1 Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method

**ON A/C A318-100

Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method

1. This section gives Flexible Pavement Requirements.

**ON A/C A318-100



FLEXIBLE PAVEMENT THICKNESS

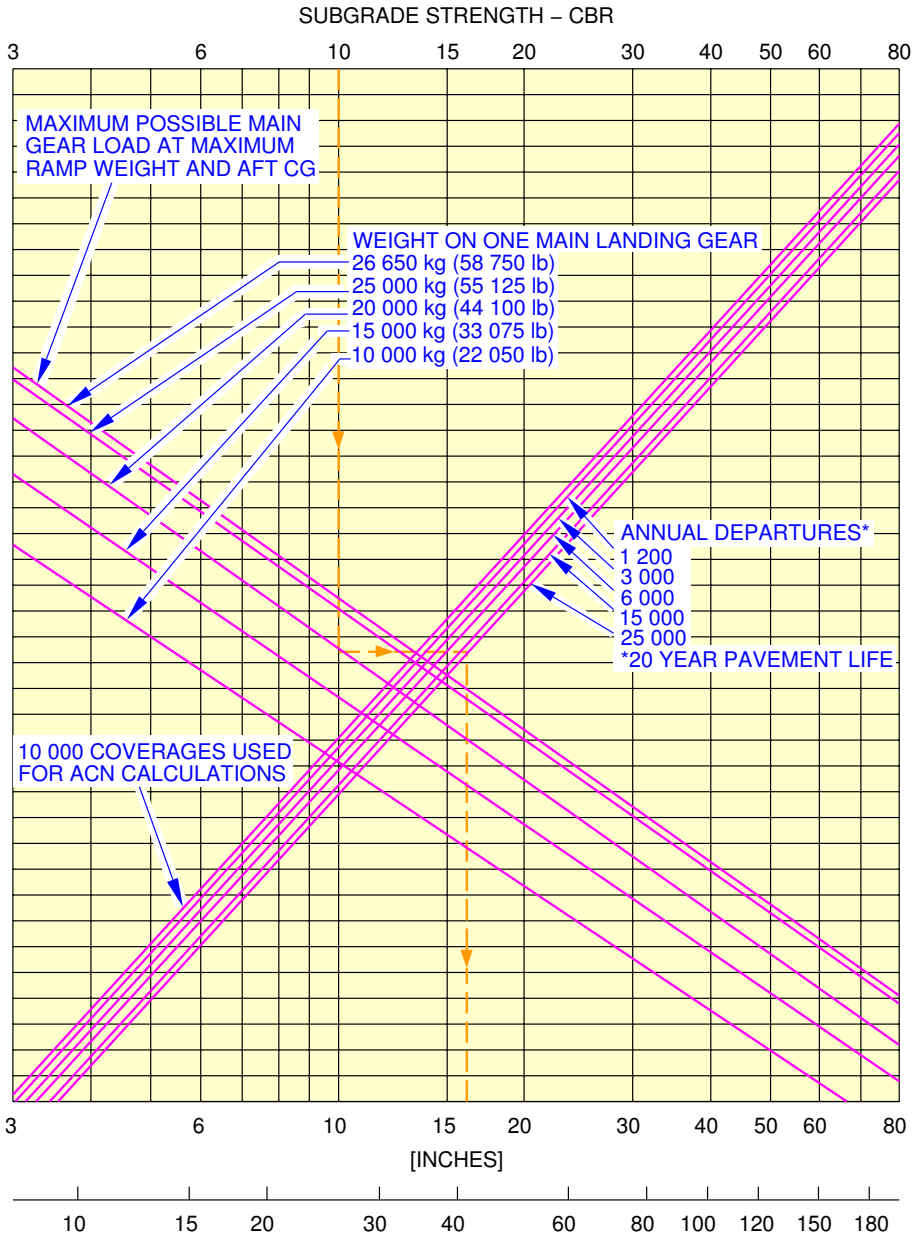
46 x 17 R20 TIRES

TIRE PRESSURE CONSTANT AT 10.2 bar (148 psi)

N_AC_070501_1_0010101_01_01

Flexible Pavement Requirements
MTOW 56 T
FIGURE 1

**ON A/C A318-100



FLEXIBLE PAVEMENT THICKNESS

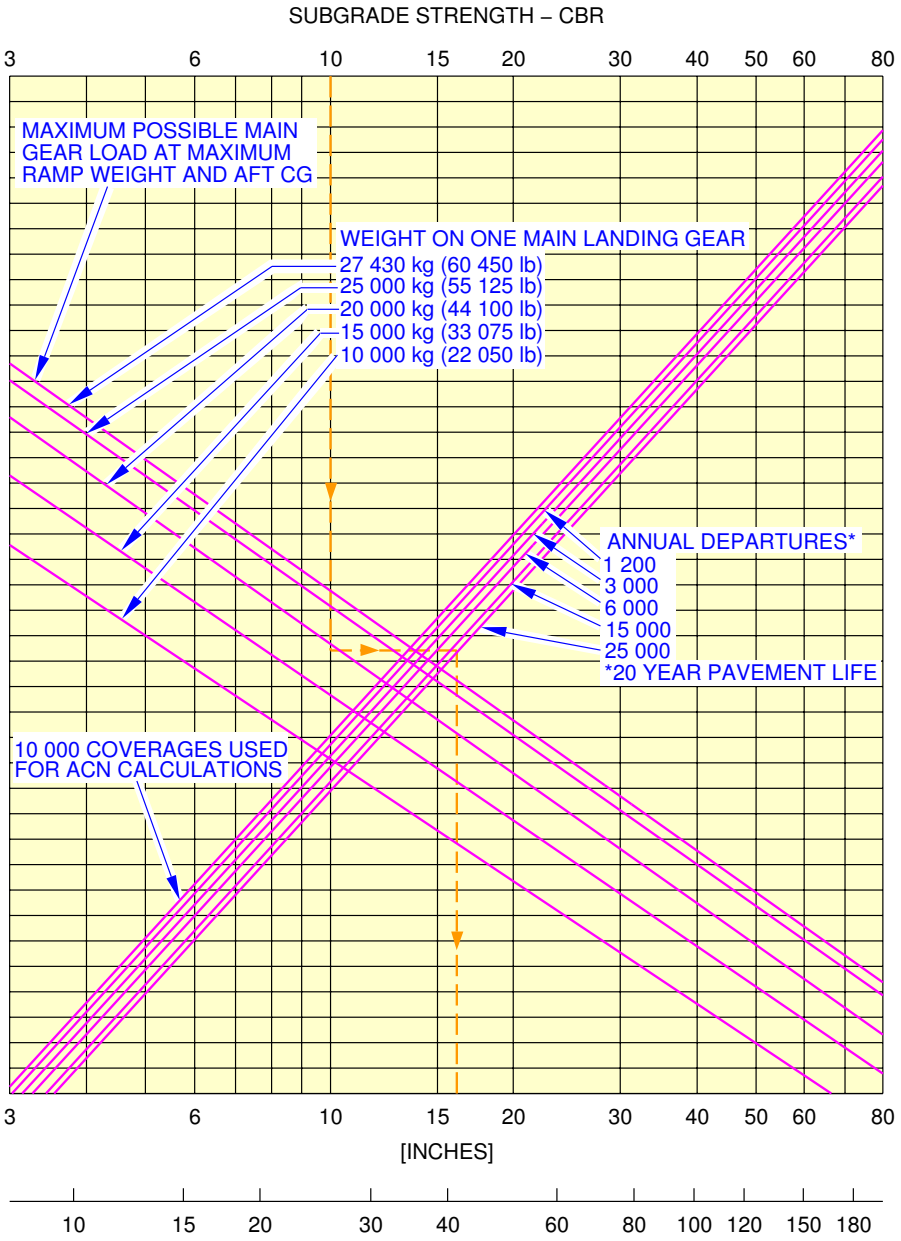
46 x 17 R20 TIRES

TIRE PRESSURE CONSTANT AT 11.4 bar (165 psi)

N_AC_070501_1_0020101_01_01

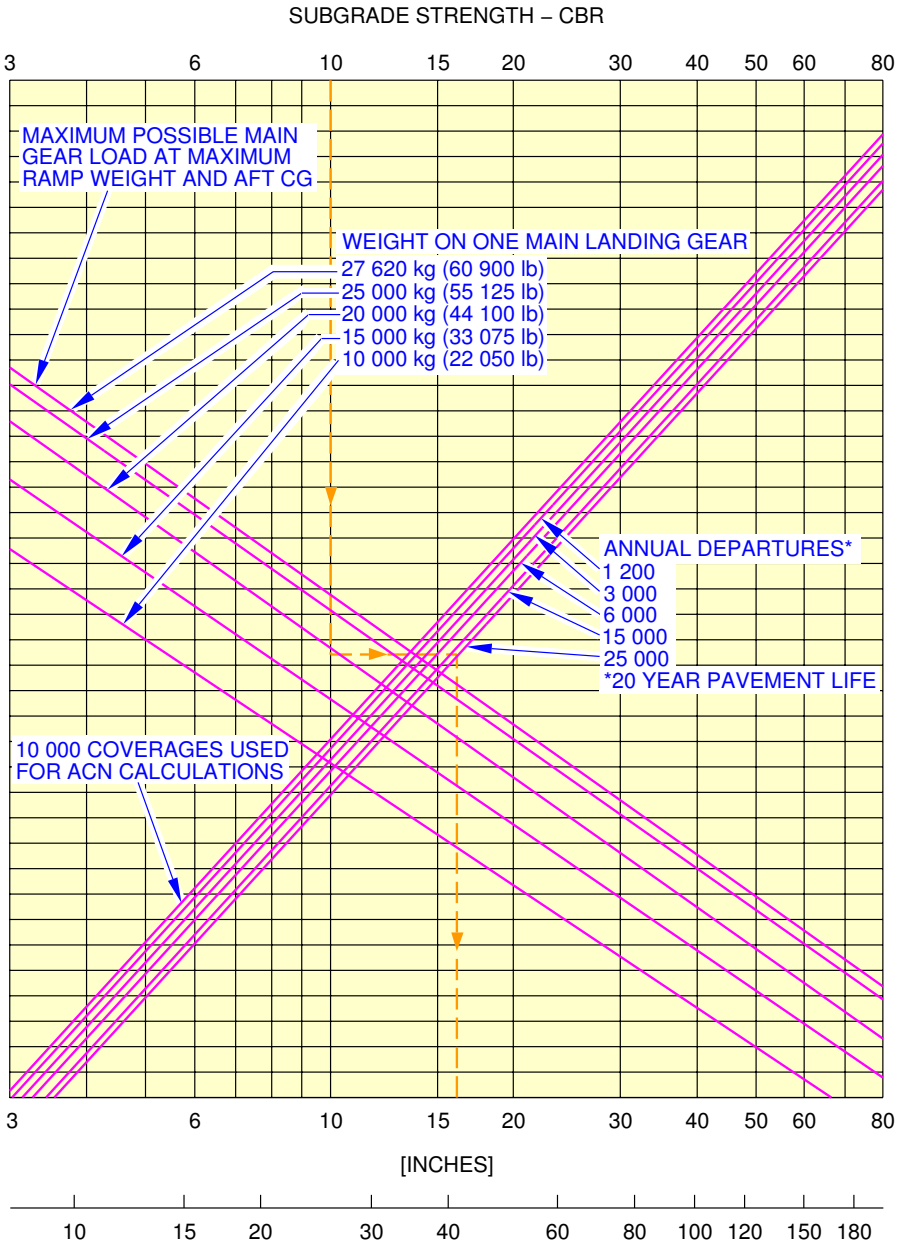
Flexible Pavement Requirements
MTOW 59 T
FIGURE 2

**ON A/C A318-100



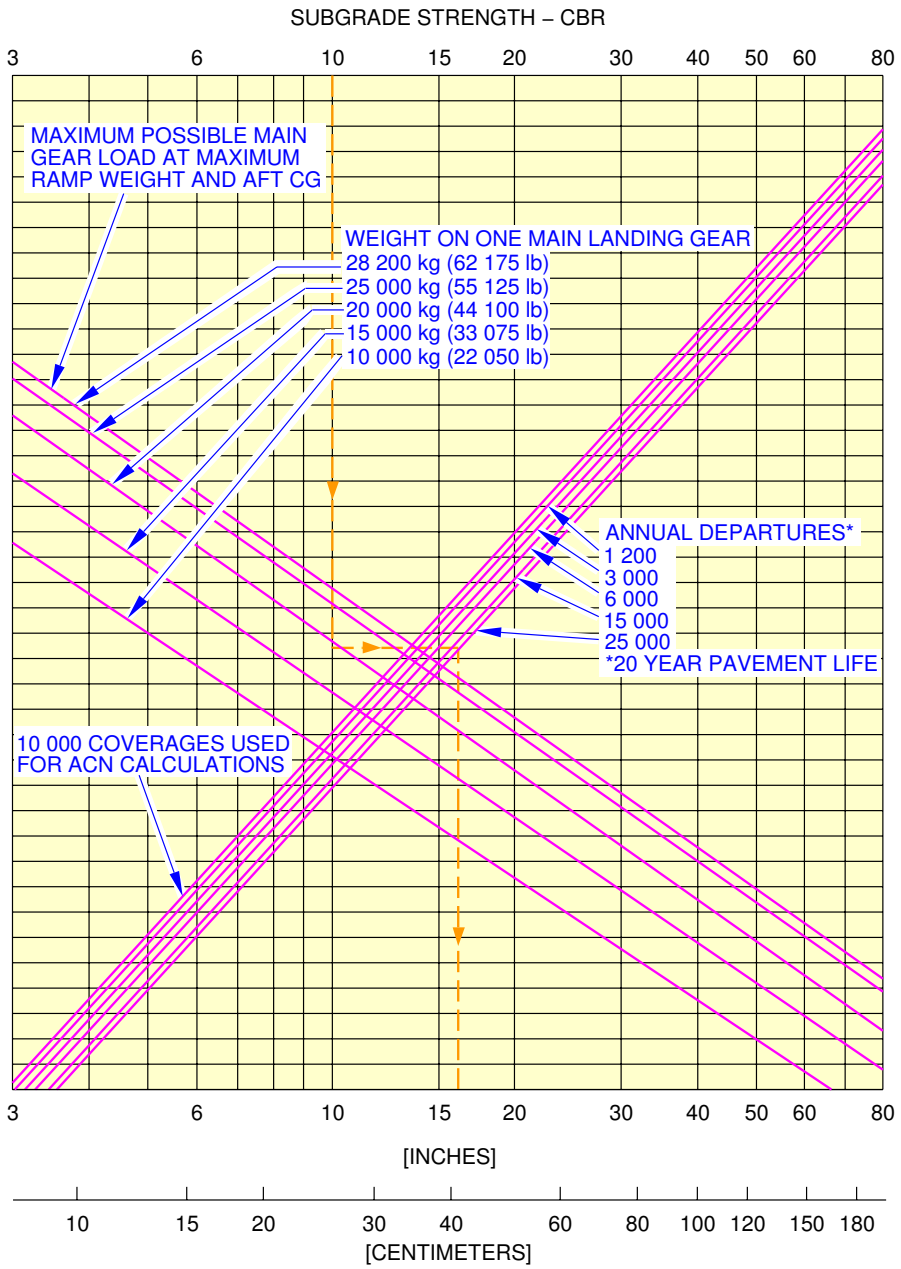
Flexible Pavement Requirements
MTOW 61 T
FIGURE 3

**ON A/C A318-100



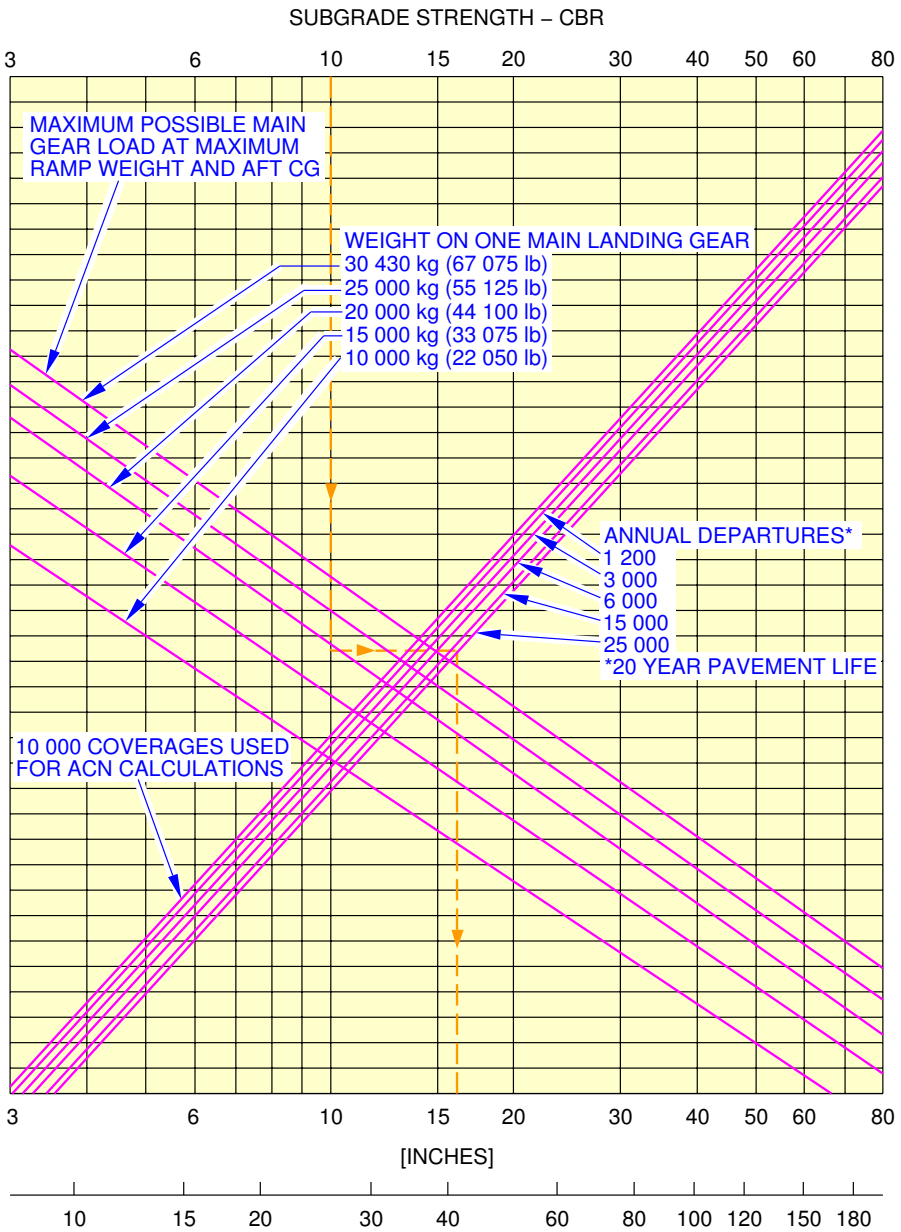
Flexible Pavement Requirements
MTOW 61.5 T
FIGURE 4

**ON A/C A318-100



Flexible Pavement Requirements
MTOW 63 T
FIGURE 5

**ON A/C A318-100



Flexible Pavement Requirements
MTOW 68 T
FIGURE 6

7-6-0 Flexible Pavement Requirements - LCN Conversion

**ON A/C A318-100

Flexible Pavement Requirements - LCN Conversion

1. General

To find the airplane weight that a Flexible Pavement can support, the LCN of the pavement and the thickness (h) must be known.

In the example shown in Section 7-6-1 Page 1.
The thickness (h) is shown at 20 inches with an LCN of 49.
For these conditions the weight on one Main Landing Gear is 25430 kg (56064 lb).

In the examples shown in Section 7-6-1 Pages 2 to 5.
The thickness (h) is shown at 20 inches with an LCN of 51. For these conditions the weight on one Main Landing Gear is 25000 kg (55116 lb).

In the example shown in Section 7-6-1 Page 6.
The thickness (h) is shown at 20 inches with an LCN of 54.
For these conditions the weight on one Main Landing Gear is 25000 kg (55116 lb).

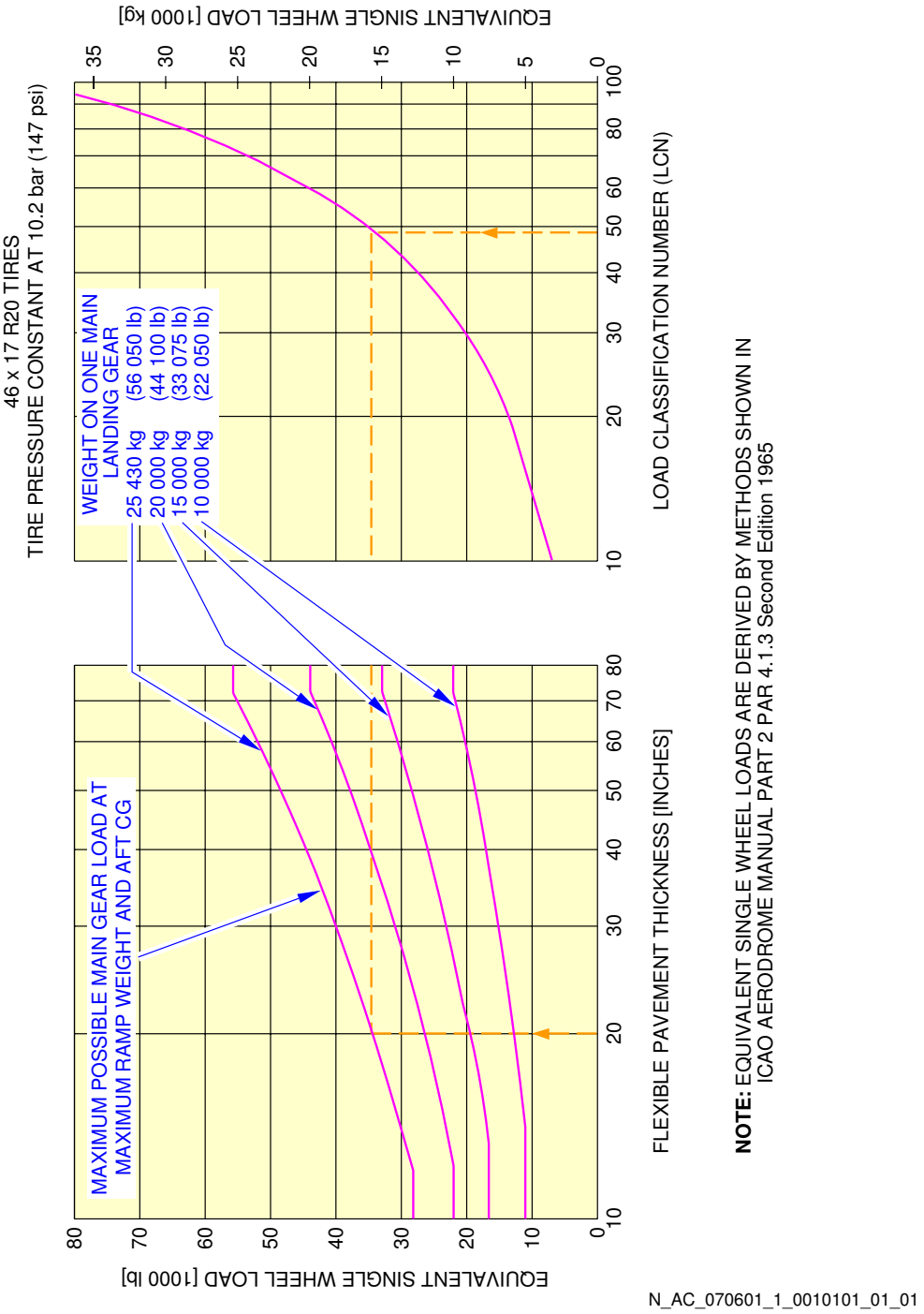
7-6-1 Flexible Pavement Requirements - LCN Conversion

**ON A/C A318-100

Flexible Pavement Requirements - LCN Conversion

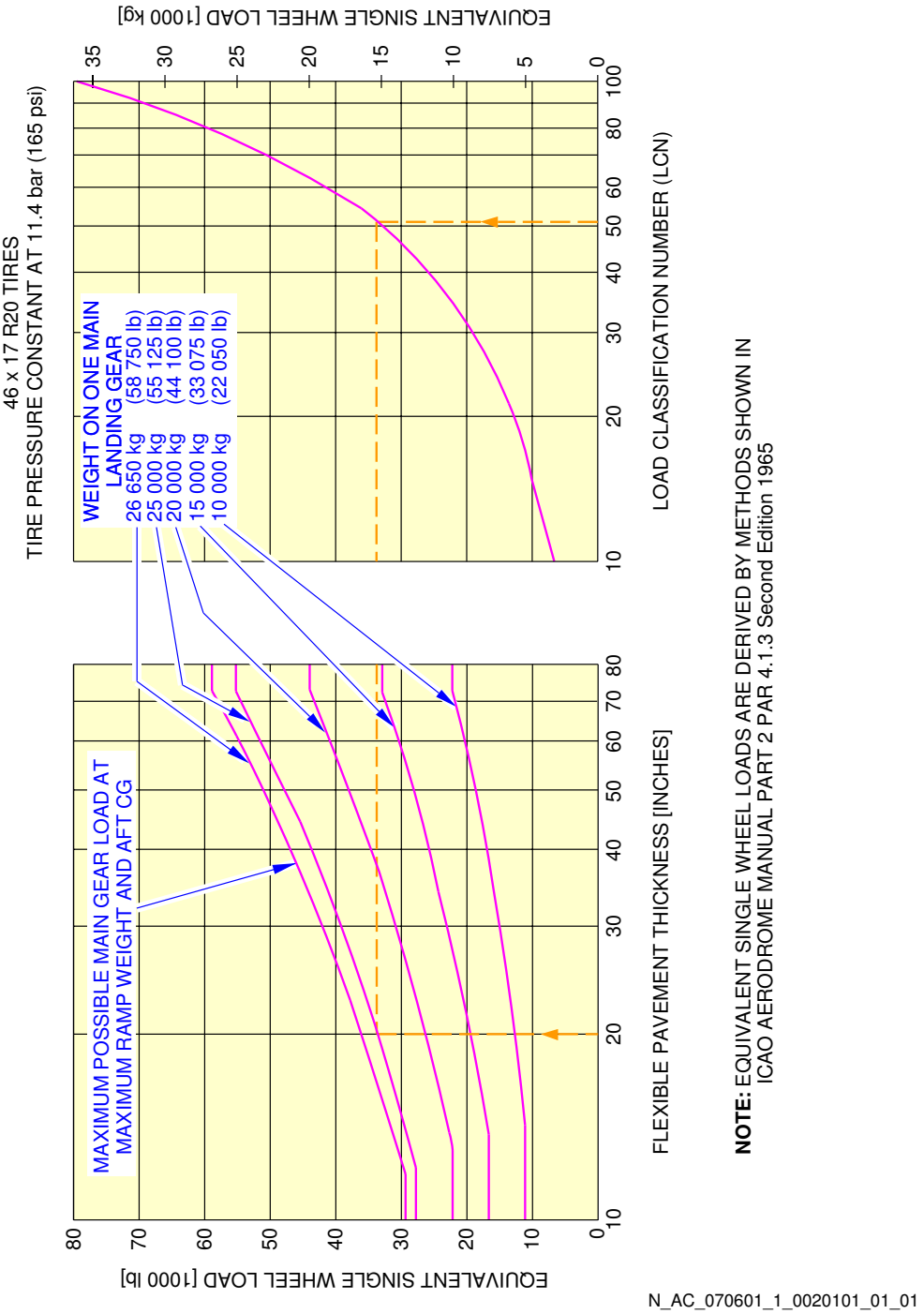
1. This section gives Flexible Pavement Requirements - LCN Conversion.

**ON A/C A318-100



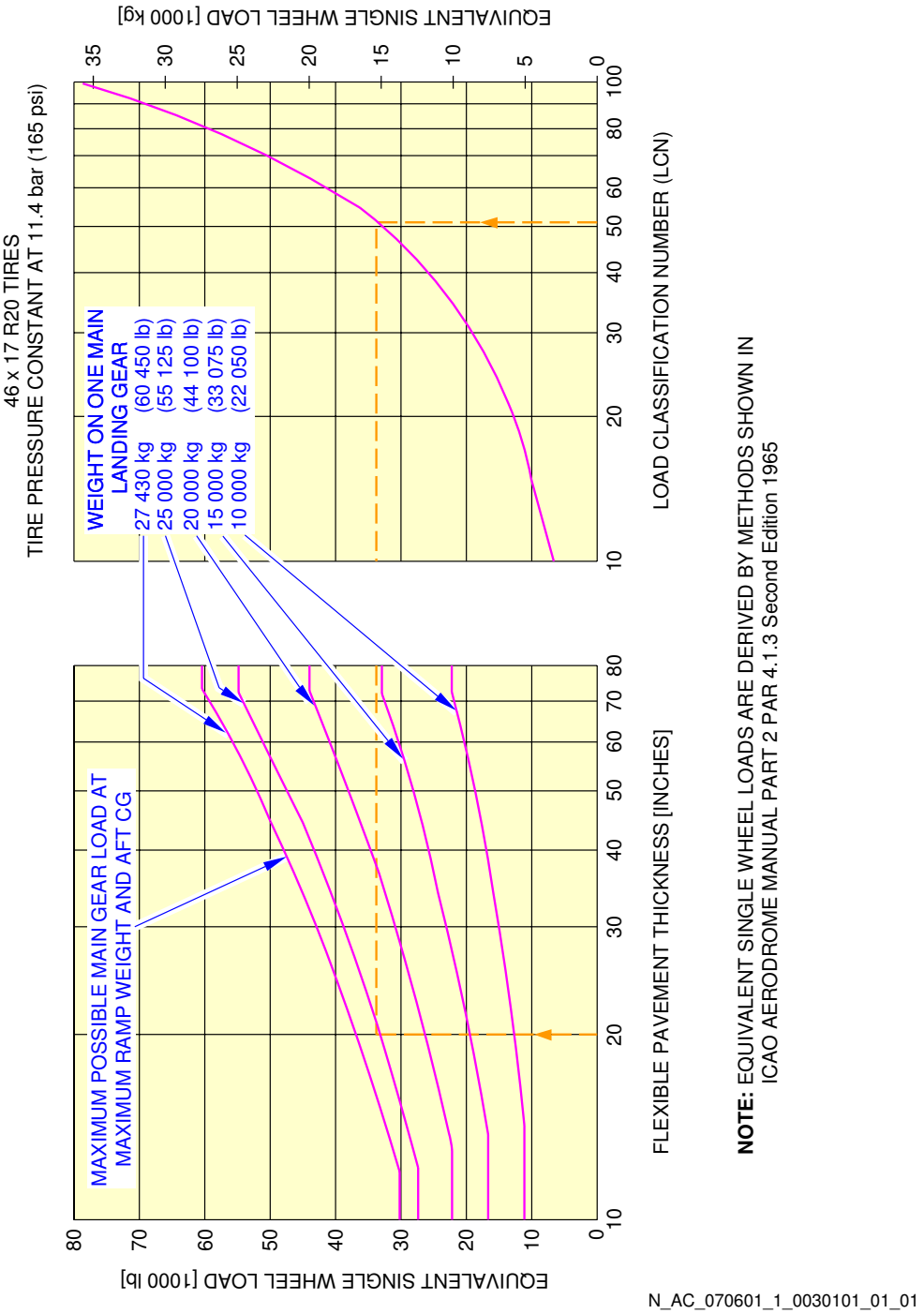
Flexible Pavement Requirements - LCN Conversion
MTOW 56 T
FIGURE 1

**ON A/C A318-100



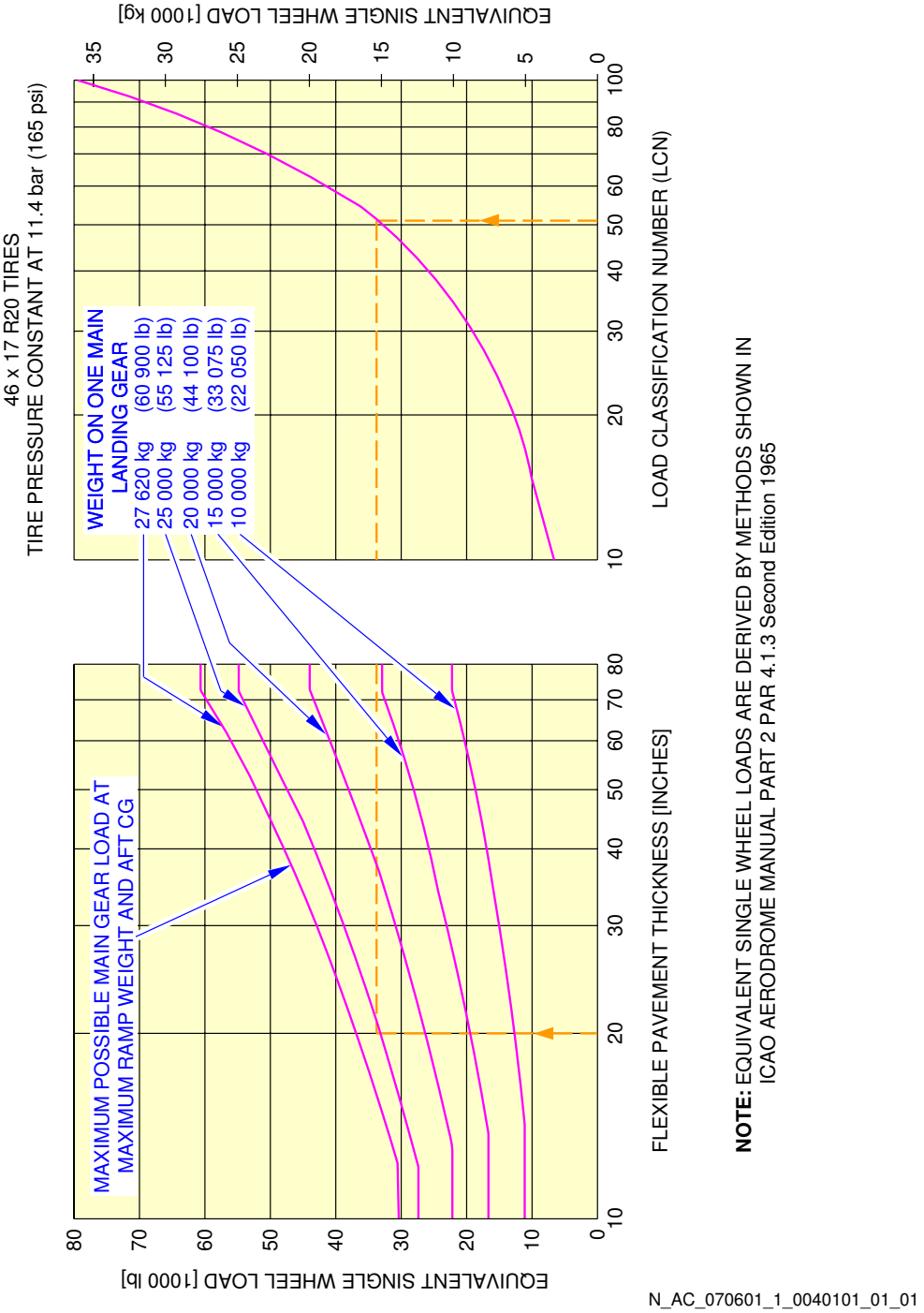
Flexible Pavement Requirements - LCN Conversion
MTOW 59 T
FIGURE 2

**ON A/C A318-100



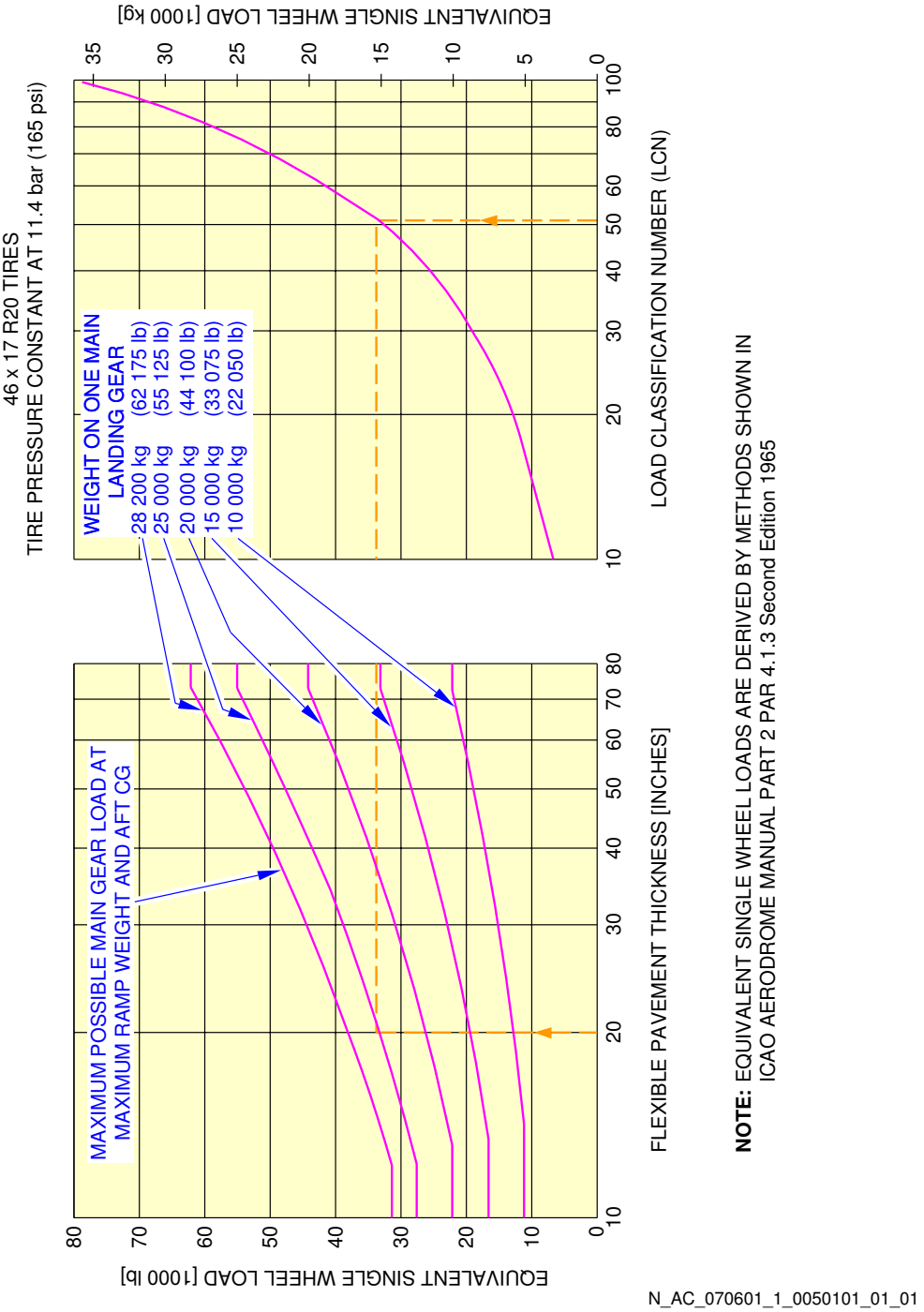
Flexible Pavement Requirements - LCN Conversion
MTOW 61 T
FIGURE 3

**ON A/C A318-100



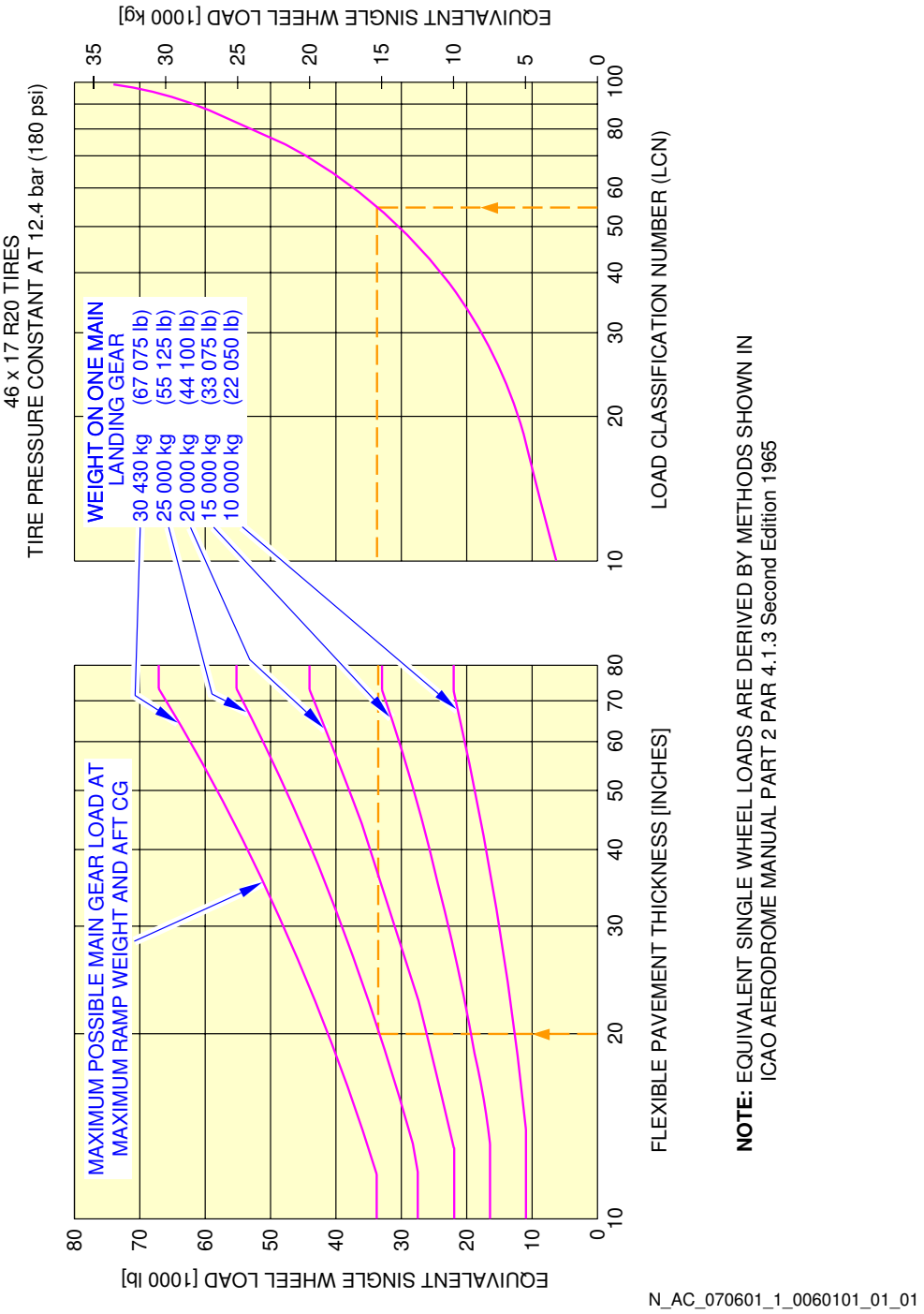
Flexible Pavement Requirements - LCN Conversion
MTOW 61.5 T
FIGURE 4

**ON A/C A318-100



Flexible Pavement Requirements - LCN Conversion
MTOW 63 T
FIGURE 5

**ON A/C A318-100



Flexible Pavement Requirements - LCN Conversion
MTOW 68 T
FIGURE 6

7-7-0 Rigid Pavement Requirements - Portland Cement Association Design Method

**ON A/C A318-100

Rigid Pavement Requirements - Portland Cement Association Design Method

1. General

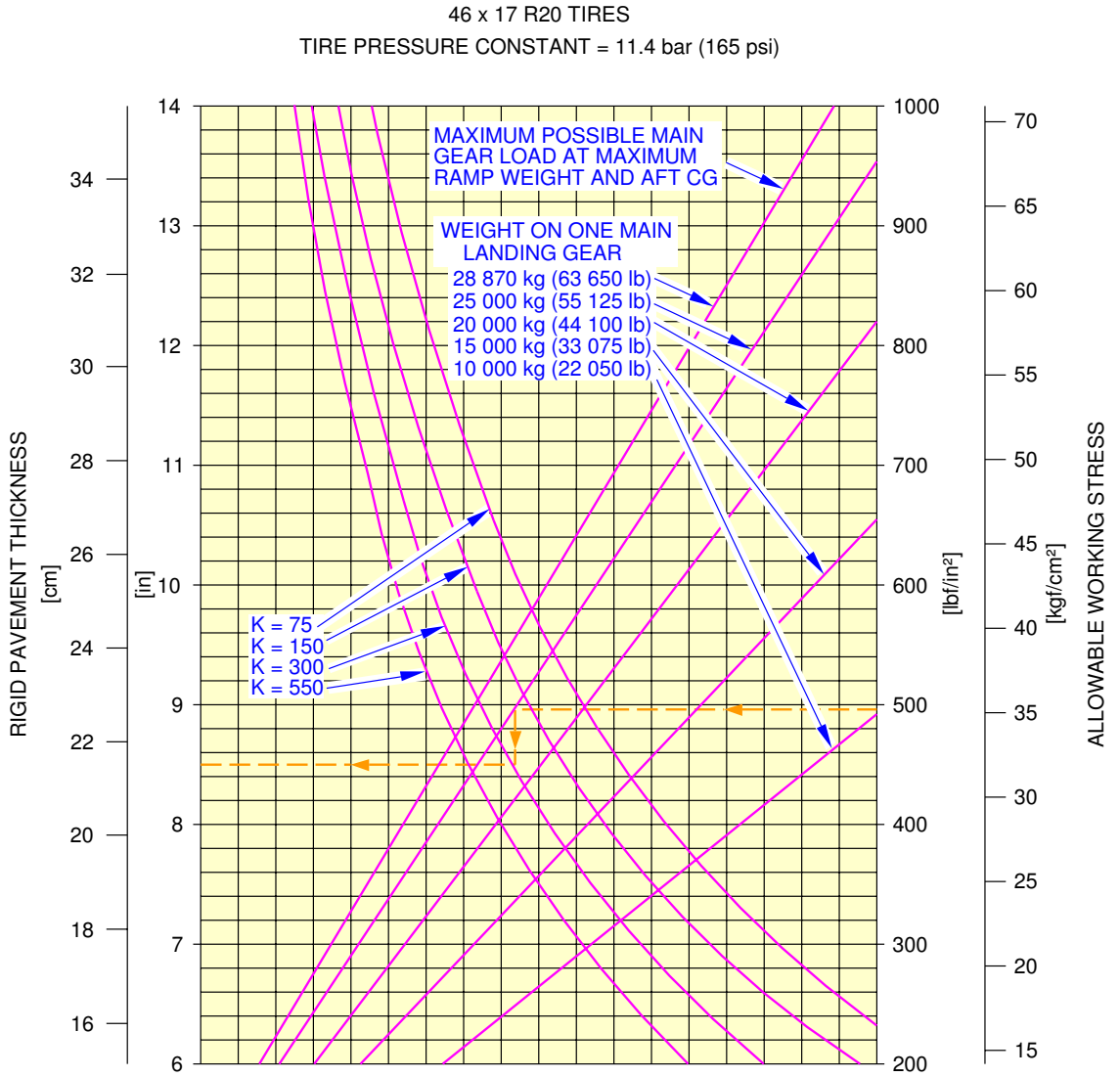
To determine a Rigid Pavement Thickness, the Subgrade Modulus (k), the allowable working stress and the weight on one Main Landing Gear must be known.

In the example shown in Section 7-7-1 page 1 for a k value of 80 MN/m^3 (300 lbf/in^3):
- an allowable working stress of 31.4 kgf/cm^2 (447 lbf/in^2)
- the load on one Main Landing Gear of 20000 kg (44092 lb).
- required rigid pavement thickness is 20.3 cm (8 in).

In the examples shown in Section 7-7-1 pages 2 to 5 for a k value of 80 MN/m^3 (300 lbf/in^3):
- an allowable working stress of 32.3 kgf/cm^2 (460 lbf/in^2)
- the load on one Main Landing Gear of 20000 kg (44092 lb).
- required rigid pavement thickness is 20.3 cm (8 in).

In the example shown in Section 7-7-1 page 6 for a k value of 80 MN/m^3 (300 lbf/in^3):
- an allowable working stress of 32.6 kgf/cm^2 (463 lbf/in^2)
- the load on one Main Landing Gear of 20000 kg (44092 lb).
- required rigid pavement thickness is 20.3 cm (8 in).

**ON A/C A318-100



NOTE:
THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR K ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR K = 300 BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF K.

REFERENCE:
"DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN – PROGRAM PDILB" PORTLAND CEMENT ASSOCIATION.

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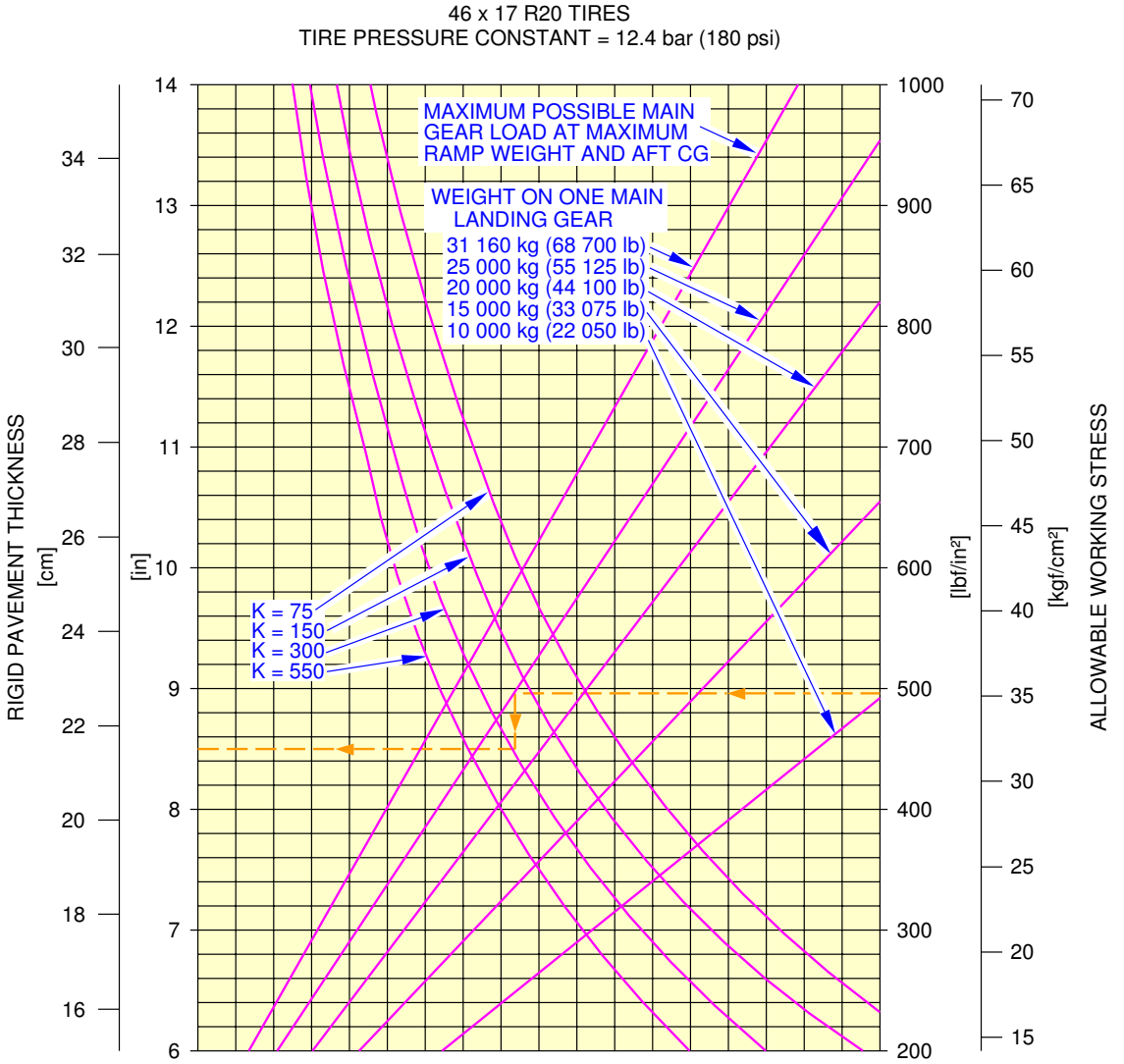
Rigid Pavement Requirements (PCA)
MTOW 63 T
FIGURE 1

**ON A/C A318-100



Rigid Pavement Requirements (PCA)
MTOW 68 T
FIGURE 2

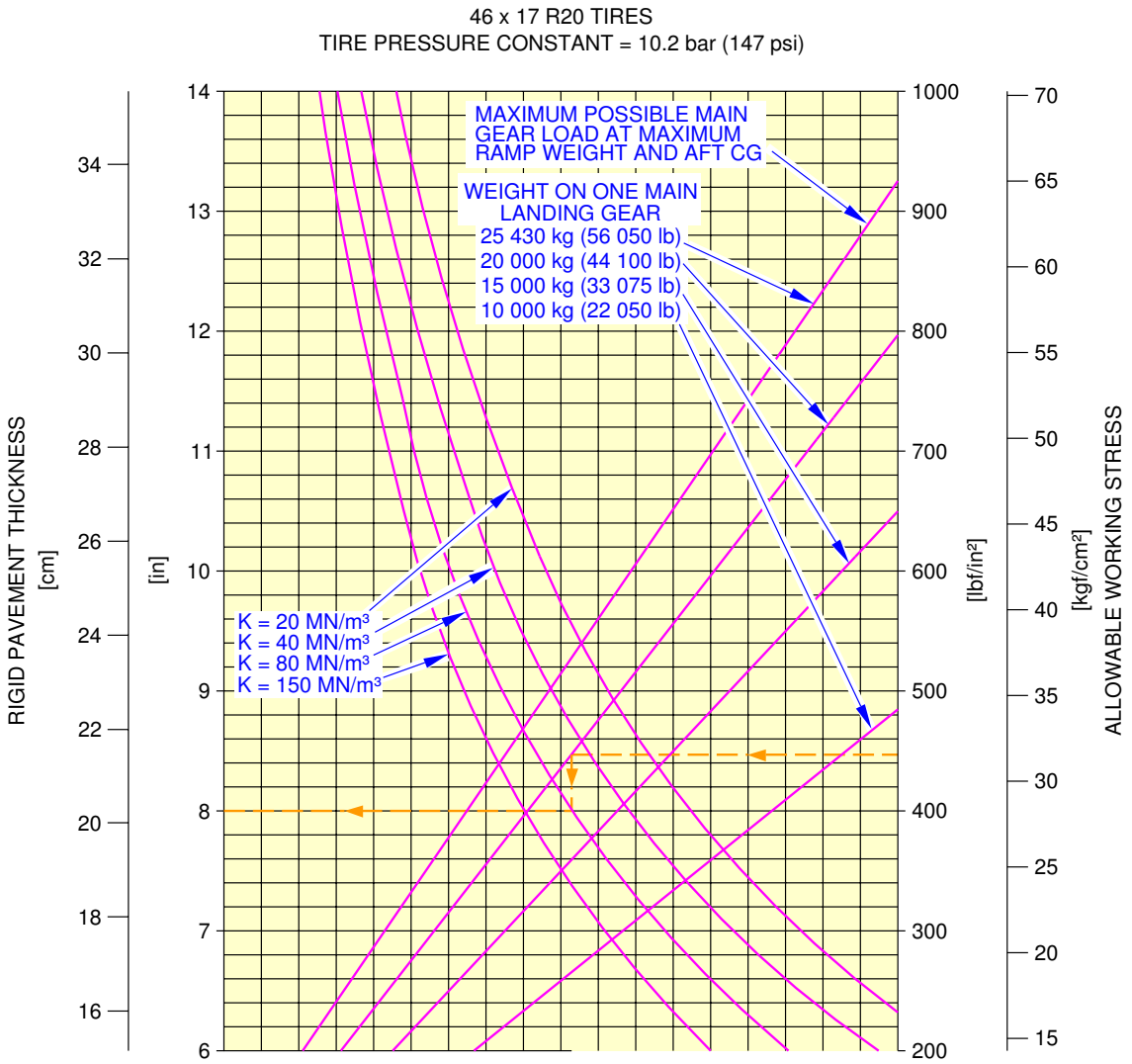
7-7-1 Rigid Pavement Requirements - Portland Cement Association Design Method

**ON A/C A318-100

Rigid Pavement Requirements - Portland Cement Association Design Method

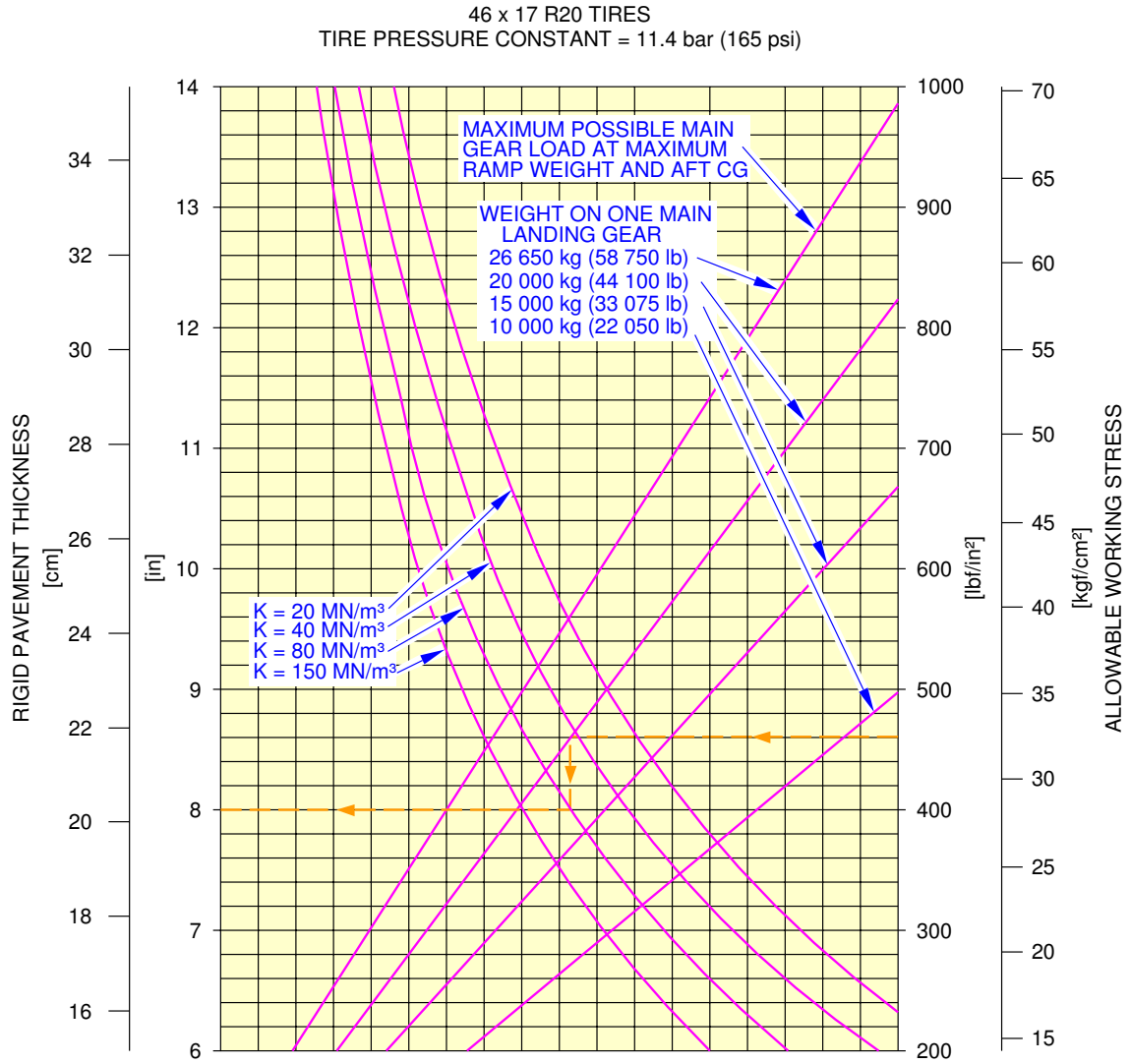
1. This section gives Rigid Pavement Requirements.

**ON A/C A318-100



Rigid Pavement Requirements (PCA)
MTOW 56 T
FIGURE 1

**ON A/C A318-100



NOTE:
THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR K ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR K = 80 MN/m³ BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF K

REFERENCE:
"DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN – PROGRAM PDILB" PORTLAND CEMENT ASSOCIATION.

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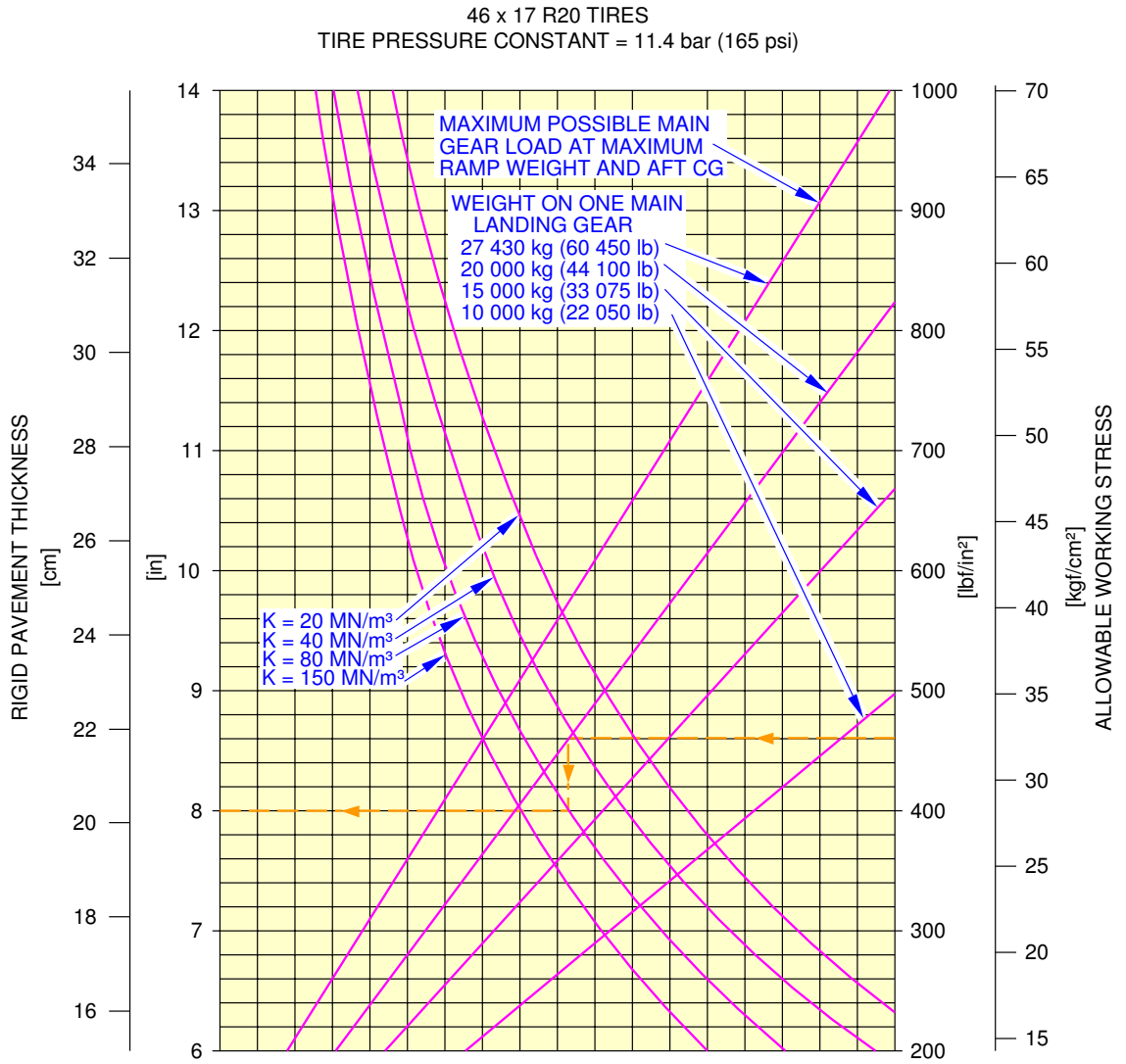
Rigid Pavement Requirements (PCA)
MTOW 59 T
FIGURE 2

**ON A/C A318-100



NOTE:
THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR K ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR K = 80 MN/m³ BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF K

REFERENCE:
"DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN – PROGRAM PDILB" PORTLAND CEMENT ASSOCIATION.

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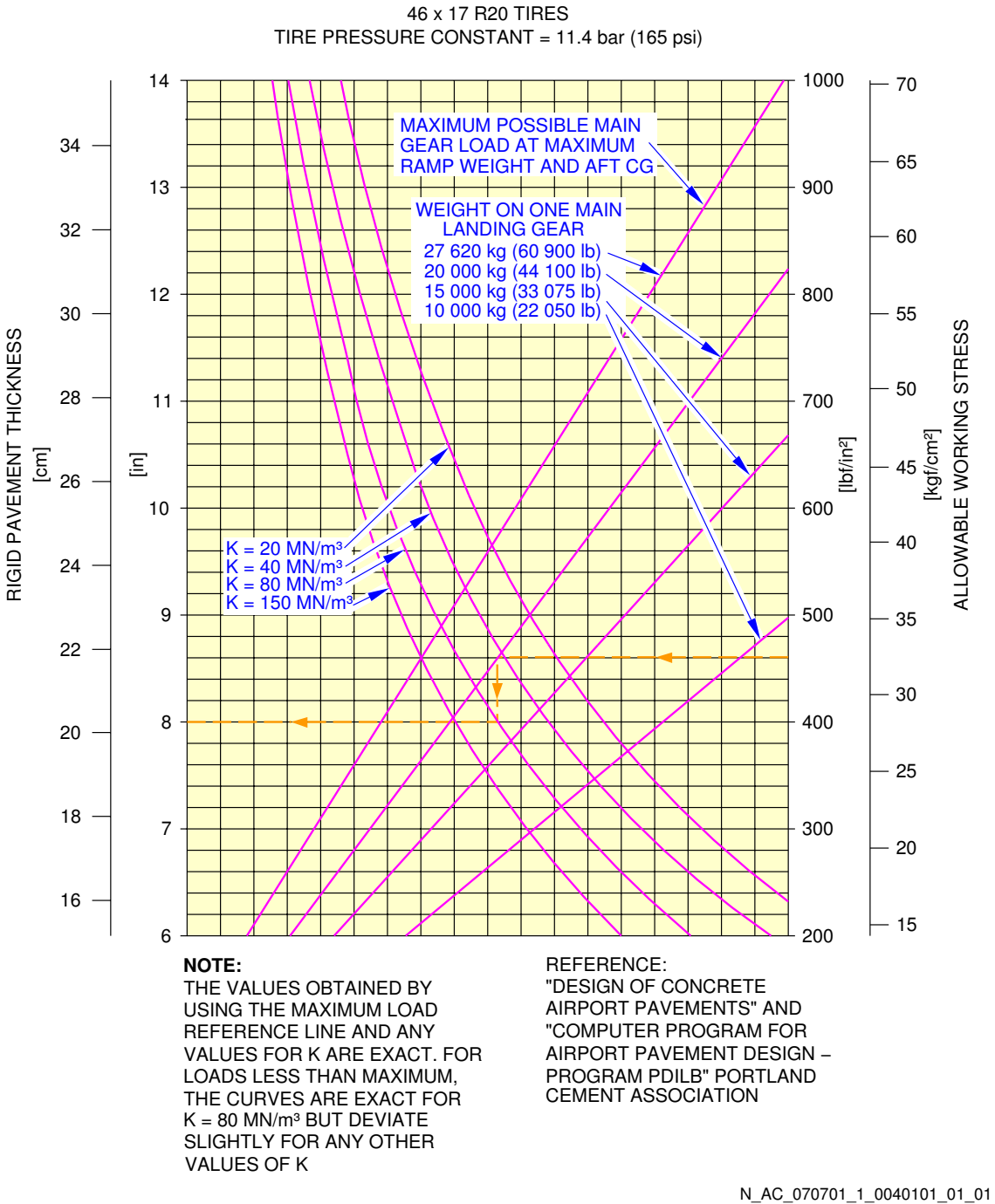
Rigid Pavement Requirements (PCA)
MTOW 61 T
FIGURE 3

**ON A/C A318-100



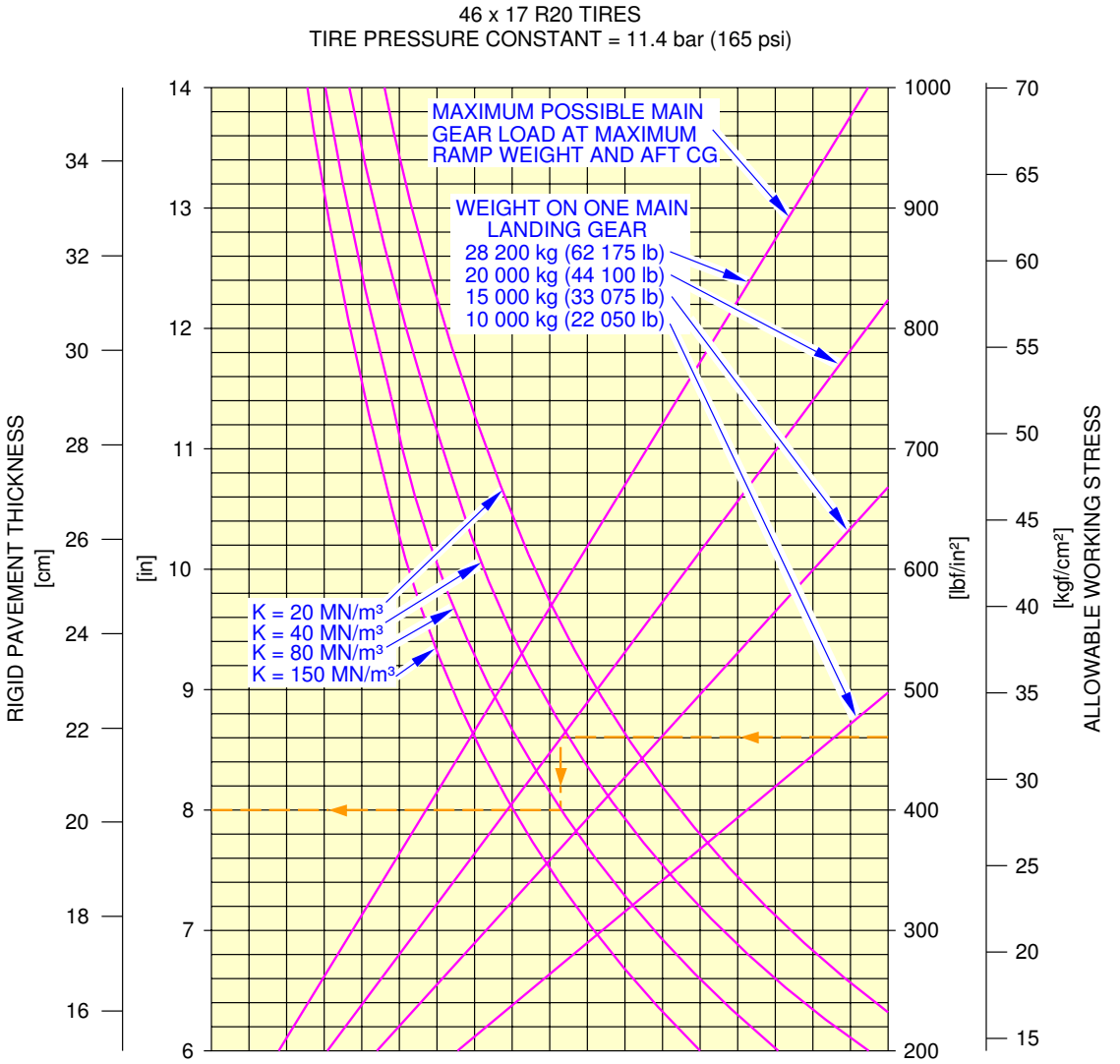
NOTE:
THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR K ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR K = 80 MN/m³ BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF K

REFERENCE:
"DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN – PROGRAM PDILB" PORTLAND CEMENT ASSOCIATION

N_AC_070701_1_0040101_01_01

Rigid Pavement Requirements (PCA)
MTOW 61.5 T
FIGURE 4

**ON A/C A318-100



NOTE:
THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR K ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR K = 80 MN/m³ BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF K

REFERENCE:
"DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN – PROGRAM PDILB" PORTLAND CEMENT ASSOCIATION

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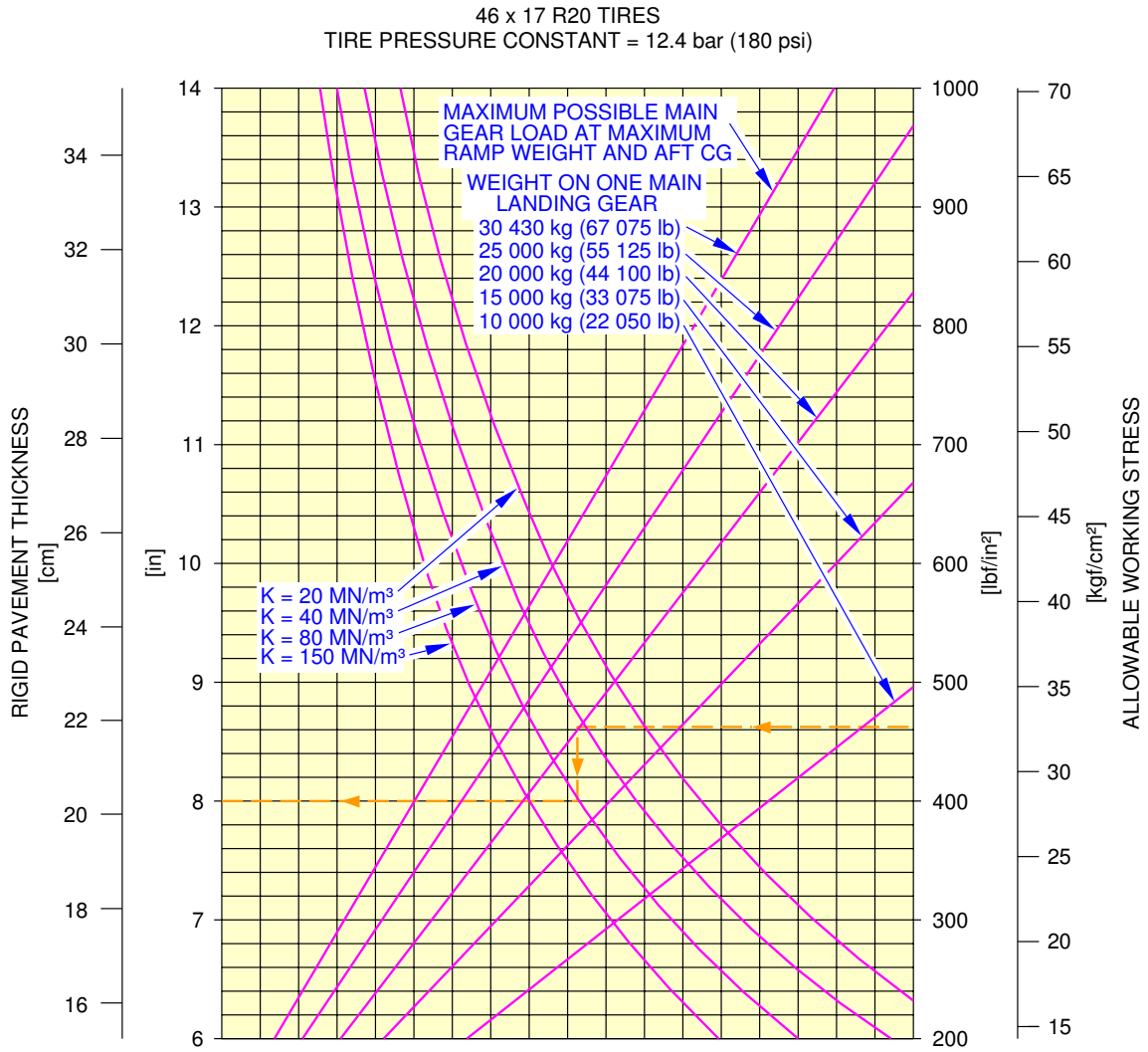
Rigid Pavement Requirements (PCA)
MTOW 63 T
FIGURE 5

**ON A/C A318-100



NOTE:
THE VALUES OBTAINED BY USING THE MAXIMUM LOAD REFERENCE LINE AND ANY VALUES FOR K ARE EXACT. FOR LOADS LESS THAN MAXIMUM, THE CURVES ARE EXACT FOR K = 80 MN/m³ BUT DEVIATE SLIGHTLY FOR ANY OTHER VALUES OF K

REFERENCE:
"DESIGN OF CONCRETE AIRPORT PAVEMENTS" AND "COMPUTER PROGRAM FOR AIRPORT PAVEMENT DESIGN – PROGRAM PDILB" PORTLAND CEMENT ASSOCIATION

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Rigid Pavement Requirements (PCA)
MTOW 68 T
FIGURE 6

7-8-0 Rigid Pavement Requirements - LCN Conversion

**ON A/C A318-100

Rigid Pavement Requirements - LCN Conversion

1. General

To find the airplane weight that a Rigid Pavement can support, both the LCN of the pavement and the Radius of Relative Stiffness (L) must be known.

In the example shown in Section 7-8-1 Page 1
The Radius of Relative Stiffness is shown at 30 inches with an LCN of 52.
For these conditions the weight on one Main Landing Gear is 25430 kg (56064 lb).

In the examples shown in Section 7-8-2 Pages 2 to 5
The Radius of Relative Stiffness is shown at 30 inches with an LCN of 55.
For these conditions the weight on one Main Landing Gear is 25000 kg (55116 lb).

In the example shown in Section 7-8-2 Page 6
The Radius of Relative Stiffness is shown at 30 inches with an LCN of 57.
For these conditions the weight on one Main Landing Gear is 25000 kg (55116 lb).

7-8-1 Radius of Relative Stiffness

**ON A/C A318-100

Radius of Relative Stiffness

1. This section gives Radius of Relative Stiffness.

**ON A/C A318-100

RADIUS OF RELATIVE STIFFNESS (L)
VALUES IN INCHES

$$L = \sqrt[4]{\frac{Ed^3}{12\,(1-\mu^2)\,k}} = 24.1652\,\sqrt[4]{\frac{d^3}{k}}$$

WHERE E = Young's Modulus = 4×10^6 psi
k = Subgrade Modulus, lb/in^3
d = Rigid Pavement Thickness, inches
μ = Poisson's Ratio = 0.15

d	K=75	K=100	K=150	K=200	K=250	K=300	K=350	K=400	K=550
6.0	31.48	29.30	26.47	24.63	23.30	22.26	21.42	20.72	19.13
6.5	33.43	31.11	28.11	26.16	24.74	23.64	22.74	22.00	20.31
7.0	35.34	32.89	29.72	27.65	26.15	24.99	24.04	23.25	21.47
7.5	37.22	34.63	31.29	29.12	27.54	26.32	25.32	24.49	22.61
8.0	39.06	36.35	32.85	30.57	28.91	27.62	26.58	25.70	23.74
8.5	40.88	38.04	34.37	31.99	30.25	28.91	27.81	26.90	24.84
9.0	42.67	39.71	35.88	33.39	31.58	30.17	29.03	28.08	25.93
9.5	44.43	41.35	37.36	34.77	32.89	31.42	30.23	29.24	27.00
10.0	46.18	42.97	38.83	36.14	34.17	32.65	31.42	30.39	28.06
10.5	47.90	44.57	40.28	37.48	35.45	33.87	32.59	31.52	29.11
11.0	49.60	46.16	41.71	38.81	36.71	35.07	33.75	32.64	30.14
11.5	51.28	47.72	43.12	40.13	37.95	36.26	34.89	33.74	31.16
12.0	52.94	49.27	44.52	41.43	39.18	37.44	36.02	34.84	32.17
12.5	54.59	50.80	45.90	42.72	40.40	38.60	37.14	35.92	33.17
13.0	56.22	52.32	47.27	43.99	41.61	39.75	38.25	36.99	34.16
13.5	57.83	53.82	48.63	45.26	42.80	40.89	39.35	38.06	35.14
14.0	59.43	55.31	49.98	46.51	43.98	42.02	40.44	39.11	36.12
14.5	61.02	56.78	51.31	47.75	45.16	43.15	41.51	40.15	37.08
15.0	69.59	58.25	52.63	48.98	46.32	44.26	42.58	41.19	38.03
15.5	64.15	59.70	53.94	50.20	47.47	45.36	43.64	42.21	38.98
16.0	65.69	61.13	55.24	51.41	48.62	46.45	44.70	43.23	39.92
16.5	67.23	62.56	56.53	52.61	49.75	47.54	45.74	44.24	40.85
17.0	68.75	63.98	57.81	53.80	50.88	48.61	46.77	45.24	41.78
17.5	70.26	65.38	59.08	54.98	52.00	49.68	47.80	46.23	42.70
18.0	71.76	66.78	60.34	56.15	53.11	50.74	48.82	47.22	43.61
19.0	74.73	69.54	62.84	58.48	55.31	52.84	50.84	49.17	45.41
20.0	77.66	72.27	65.30	60.77	57.47	54.91	52.84	51.10	47.19
21.0	80.55	74.96	67.74	63.04	59.62	56.96	54.81	53.01	48.95
22.0	83.41	77.63	70.14	65.28	61.73	58.98	56.75	54.89	50.69
23.0	86.24	80.26	72.52	67.49	63.83	60.98	58.68	56.75	52.41
24.0	89.04	82.86	74.87	69.68	65.90	62.96	60.58	58.59	54.11
25.0	91.81	85.44	77.20	71.84	67.95	64.92	62.46	60.41	55.79

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Radius of Relative Stiffness
(Reference: Portland Cement Association)
FIGURE 1

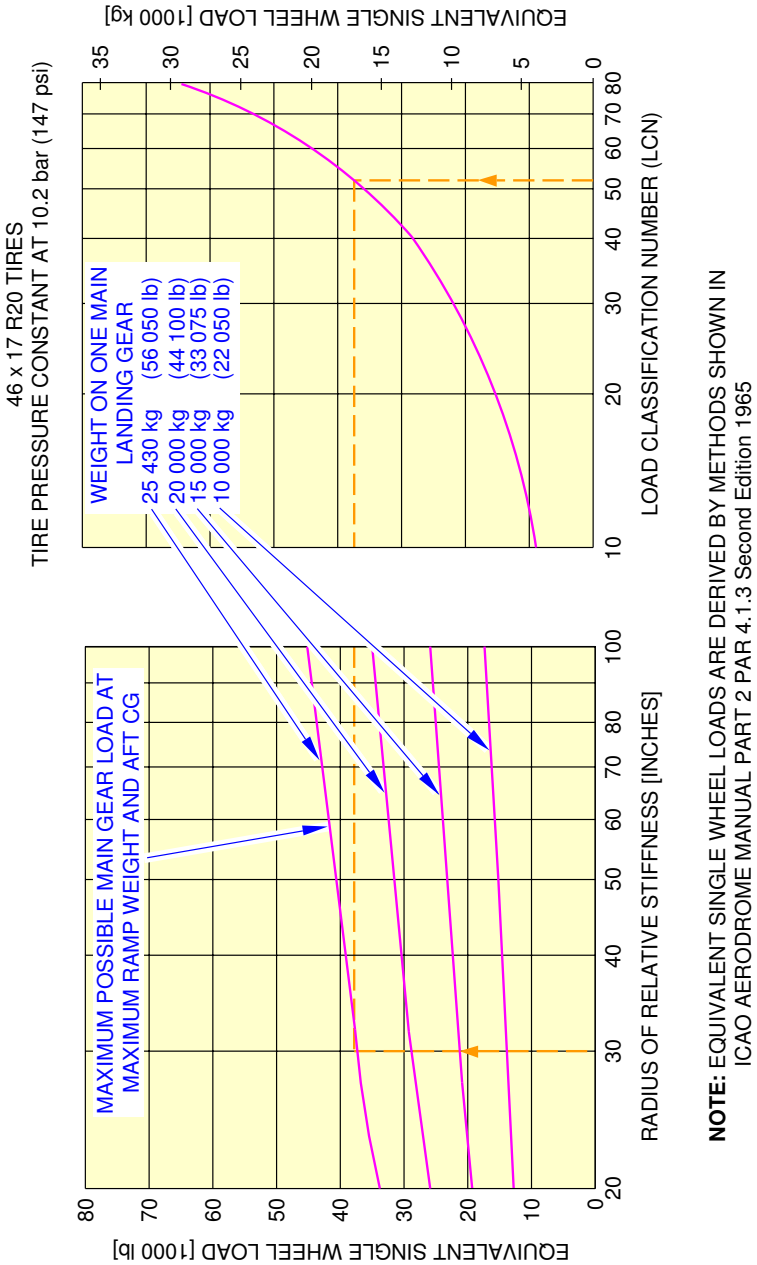
7-8-2 Rigid Pavement Requirements - LCN Conversion

**ON A/C A318-100

Rigid Pavement Requirements - LCN Conversion

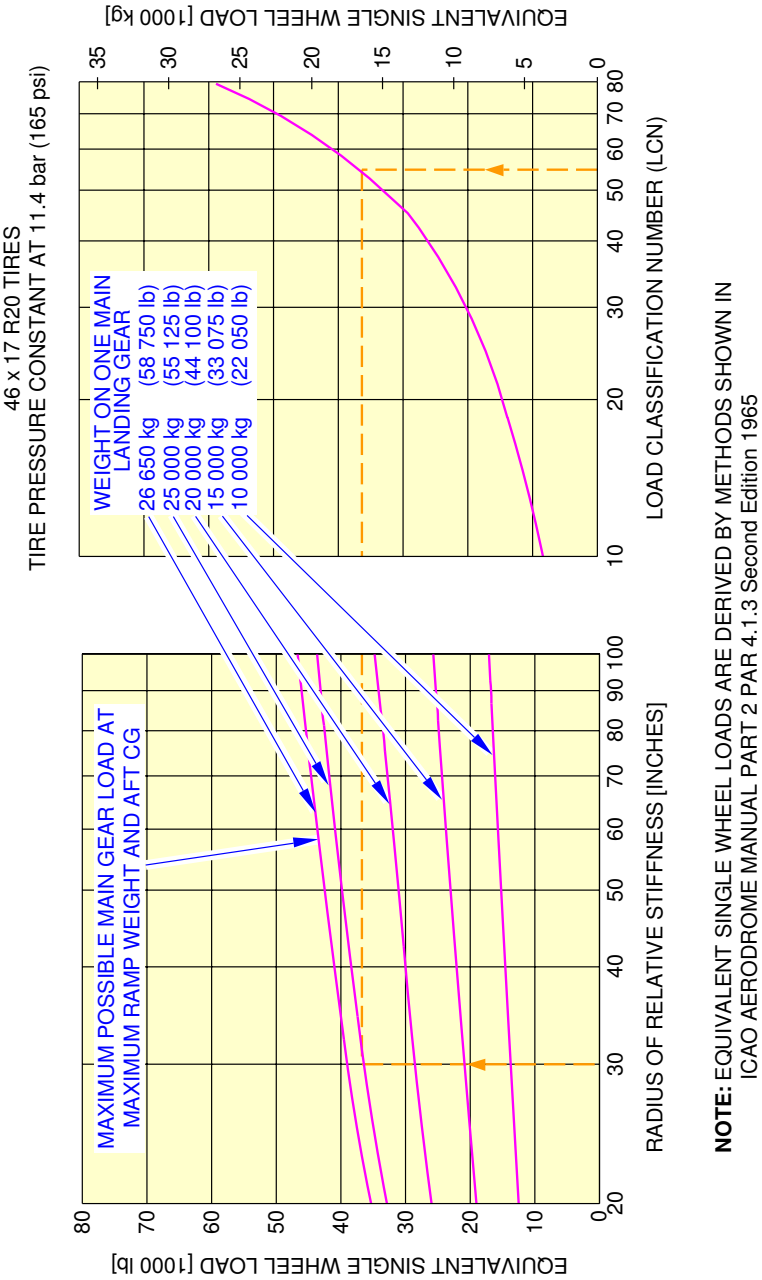
1. This section gives Rigid Pavement Requirements - LCN Conversion.

**ON A/C A318-100



Rigid Pavement Requirements - LCN Conversion
MTOW 56 T
FIGURE 1

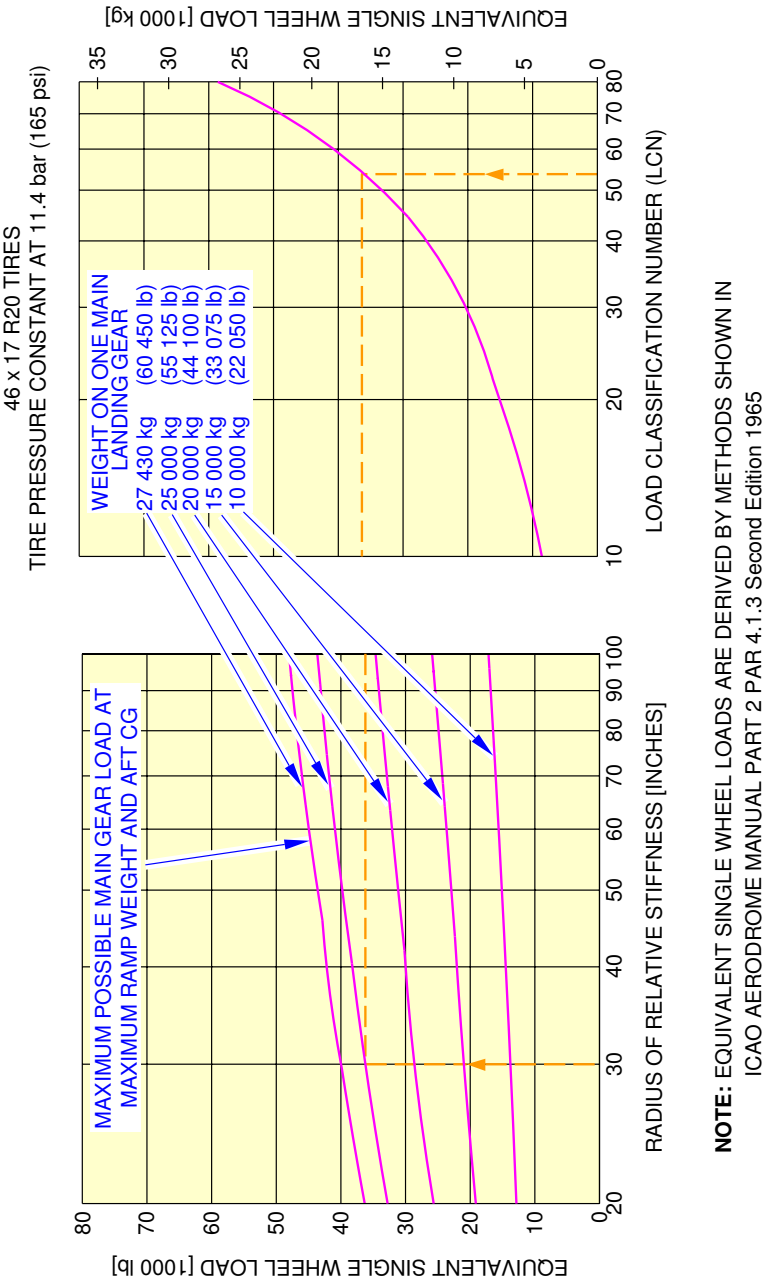
**ON A/C A318-100



N_AC_070802_1_0020101_01_01

Rigid Pavement Requirements - LCN Conversion
MTOW 59 T
FIGURE 2

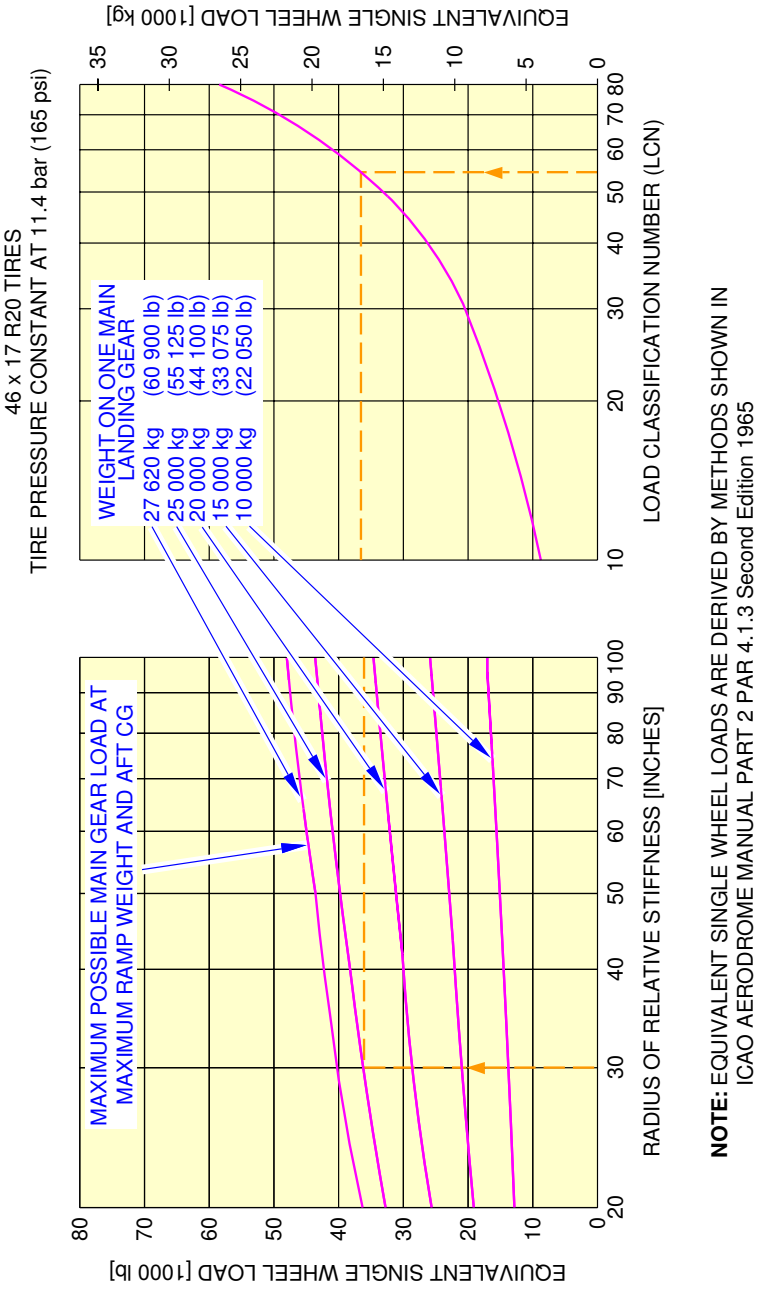
**ON A/C A318-100



N_AC_070802_1_0030101_01_01

Rigid Pavement Requirements - LCN Conversion
MTOW 61 T
FIGURE 3

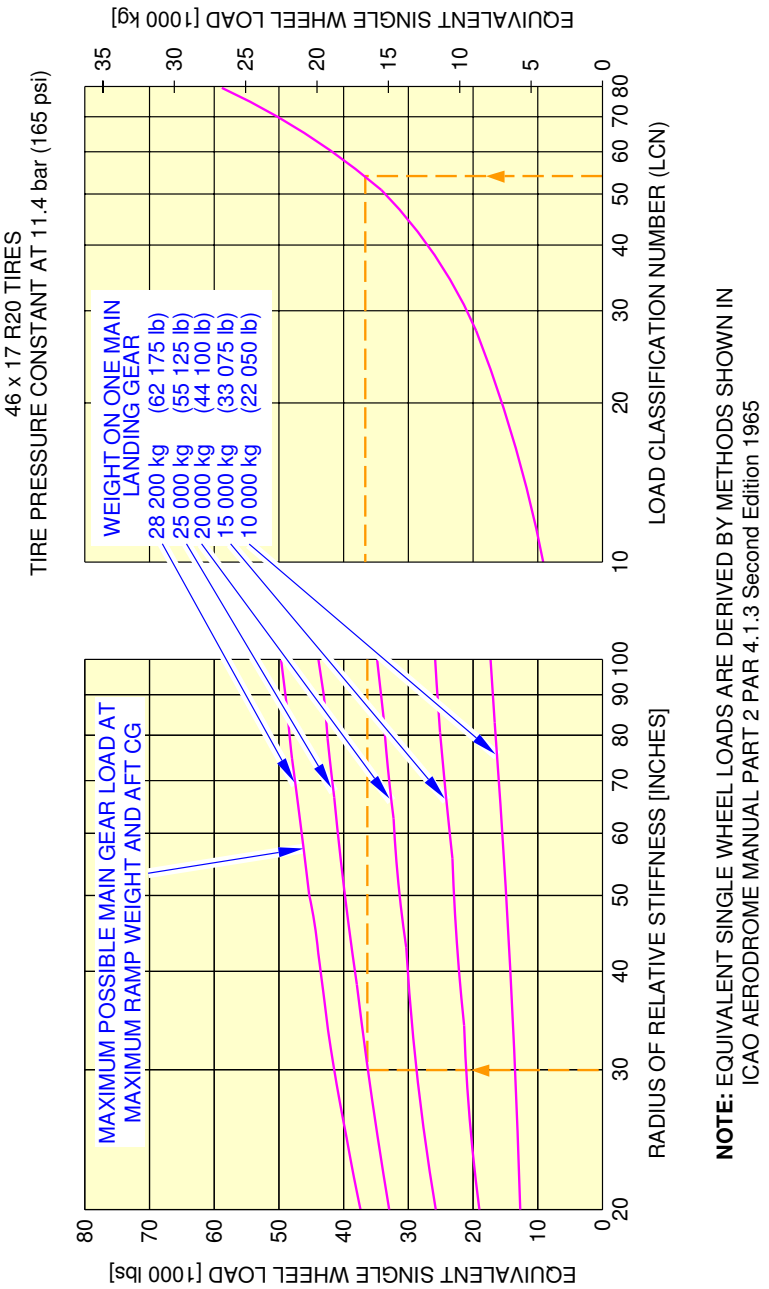
**ON A/C A318-100



N_AC_070802_1_0040101_01_01

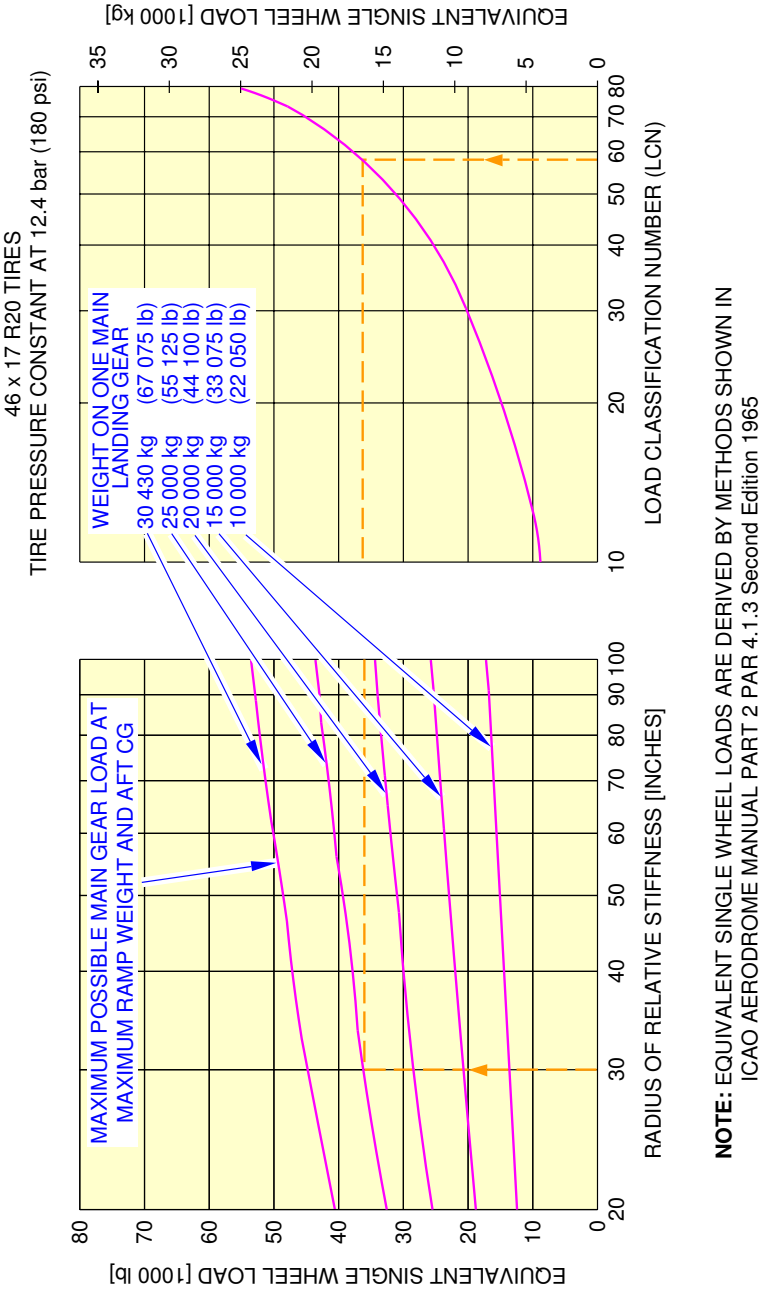
Rigid Pavement Requirements - LCN Conversion
MTOW 61.5 T
FIGURE 4

**ON A/C A318-100



Rigid Pavement Requirements - LCN Conversion
MTOW 63 T
FIGURE 5

**ON A/C A318-100



Rigid Pavement Requirements - LCN Conversion
MTOW 68 T
FIGURE 6

7-8-3 Radius of Relative Stiffness (Other values of E and L)

**ON A/C A318-100

Radius of Relative Stiffness (Other values of "E" and "L")

1. General

The chart of section 7-8-1 presents "L" values based on Young's Modulus (E) of 4 000 000 psi and Poisson's Ratio (μ) of 0.15.

For convenience in finding "L" values based on other values of "E" and "μ", the curves of section 7-8-4 are included.

For example, to find an "L" value based on an "E" of 3 000 000 psi, the "E" factor of 0.931 is multiplied by the "L" value found in table of section 7-8-1.

The effect of variations of "μ" on the "L" value is treated in a similar manner.

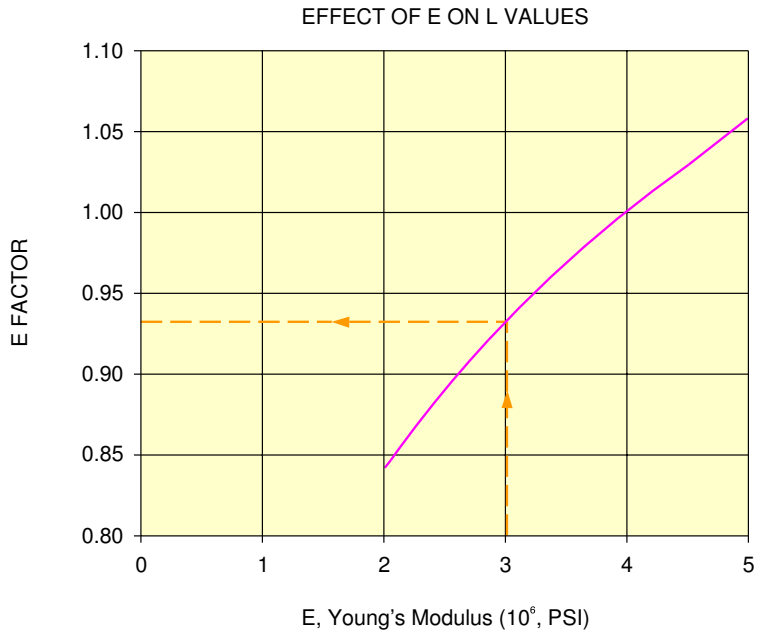
7-8-4 Radius of Relative Stiffness

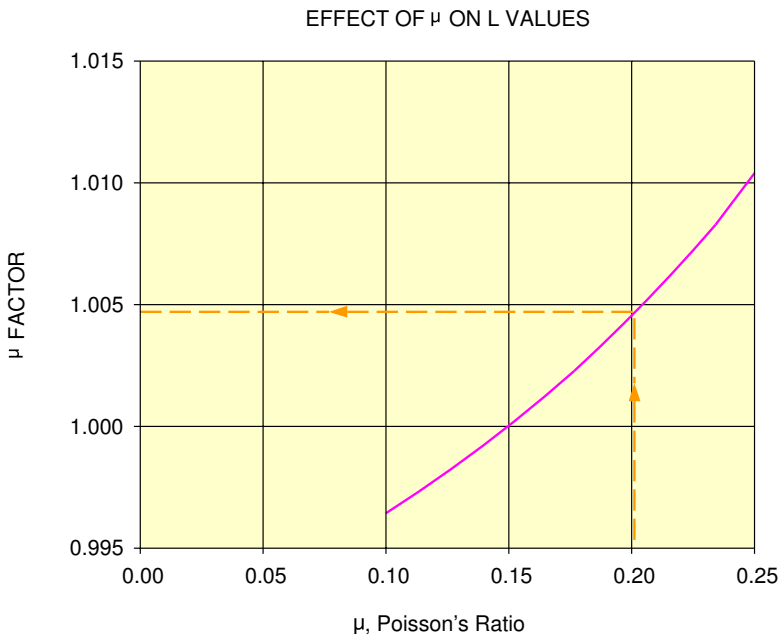
**ON A/C A318-100

Radius of Relative Stiffness

1. This section gives Radius of Relative Stiffness.

**ON A/C A318-100





NOTE: BOTH CURVES ON THIS PAGE ARE USED TO ADJUST THE L VALUES OF TABLE 7.8.1

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Radius of Relative Stiffness
(Other Values of "E" and "L")
FIGURE 1

7-9-0 ACN/PCN Reporting System

**ON A/C A318-100

ACN/PCN Reporting System

1. General

To determine the ACN of an aircraft on flexible or rigid pavement, both the aircraft gross weight and the subgrade strength must be known.

In the example shown in Section 7-9-1 Page 1 and 2, for an Aircraft Gross Weight of 50 tonnes (110231 lb) and medium subgrade strength (code B), the ACN for the flexible pavement is 23.

In the example shown in Section 7-9-1 Page 3 and 4, for an Aircraft Gross Weight of 55 tonnes (121254 lb) and medium subgrade strength (code B), the ACN for the flexible pavement is 26.

In the example shown in Section 7-9-1 Page 5 and 6, for an Aircraft Gross Weight of 60 tonnes (132277 lb) and medium subgrade strength (code B), the ACN for the flexible pavement is 29.

In the example shown in Section 7-9-2 Page 1, for an Aircraft Gross Weight of 50 tonnes (110231 lb) and medium subgrade strength (code B), the ACN for the rigid pavement is 25.5.

In the example shown in Section 7-9-2 Page 2, for an Aircraft Gross Weight of 50 tonnes (110231 lb) and medium subgrade strength (code B), the ACN for the rigid pavement is 26.

In the example shown in Section 7-9-2 Page 3 and 4, for an Aircraft Gross Weight of 55 tonnes (121254 lb) and medium subgrade strength (code B), the ACN for the rigid pavement is 29.

In the example shown in Section 7-9-2 Page 5, for an Aircraft Gross Weight of 60 tonnes (132277 lb) and medium subgrade strength (code B), the ACN for the rigid pavement is 32.

In the example shown in Section 7-9-2 Page 6, for an Aircraft Gross Weight of 60 tonnes (132277 lb) and medium subgrade strength (code B), the ACN for the rigid pavement is 33.

NOTE : An aircraft with an ACN equal to or less than the reported PCN can operate on that pavement, subject to any limitation on the tire pressure.
(Ref.: ICAO Aerodrome Design Manual Part 3 Chapter 1 Second Edition 1983).

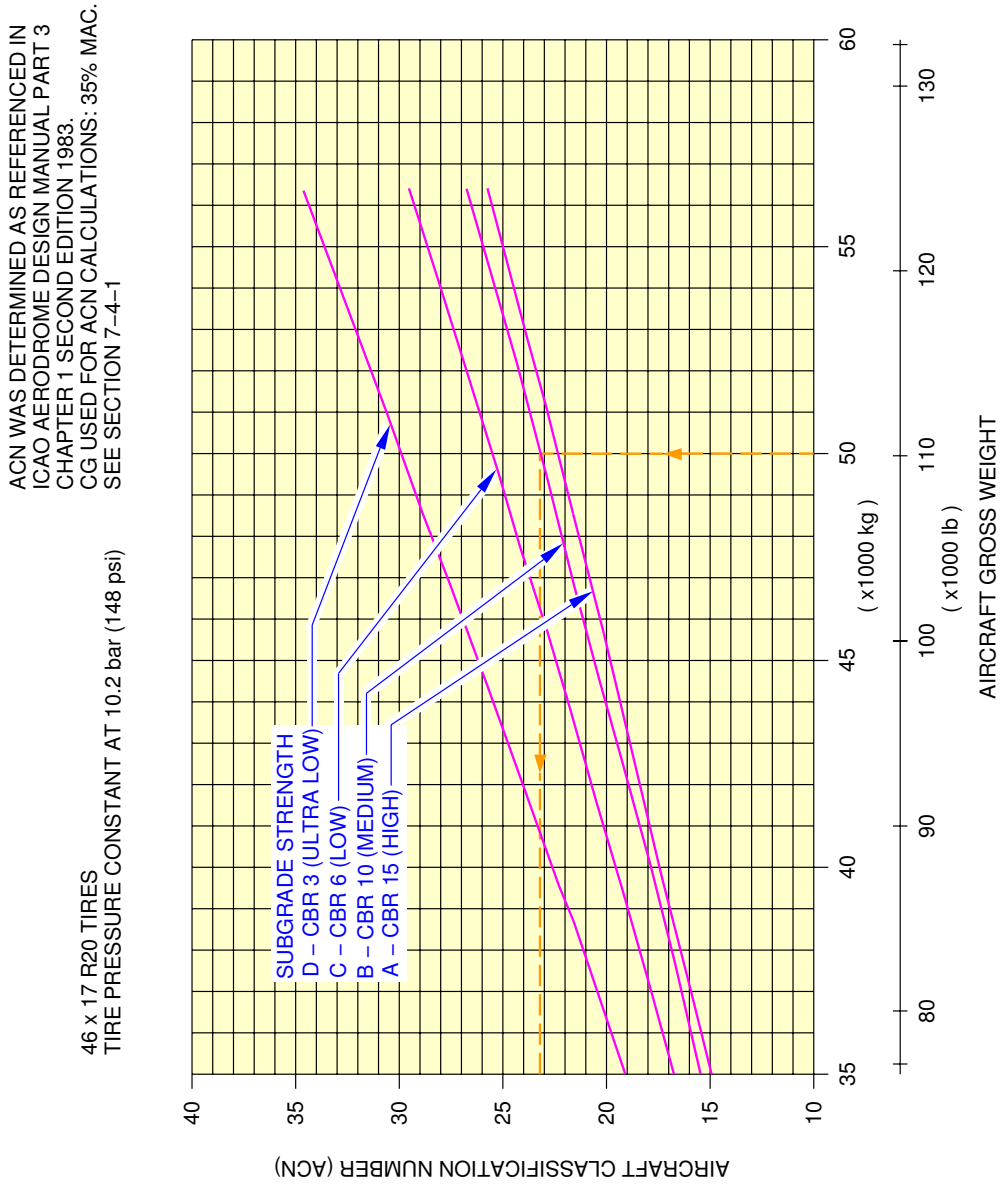
7-9-1 Aircraft Classification Number - Flexible Pavement

**ON A/C A318-100

Aircraft Classification Number - Flexible Pavement

1. This section gives the Aircraft Classification Number - Flexible Pavement.

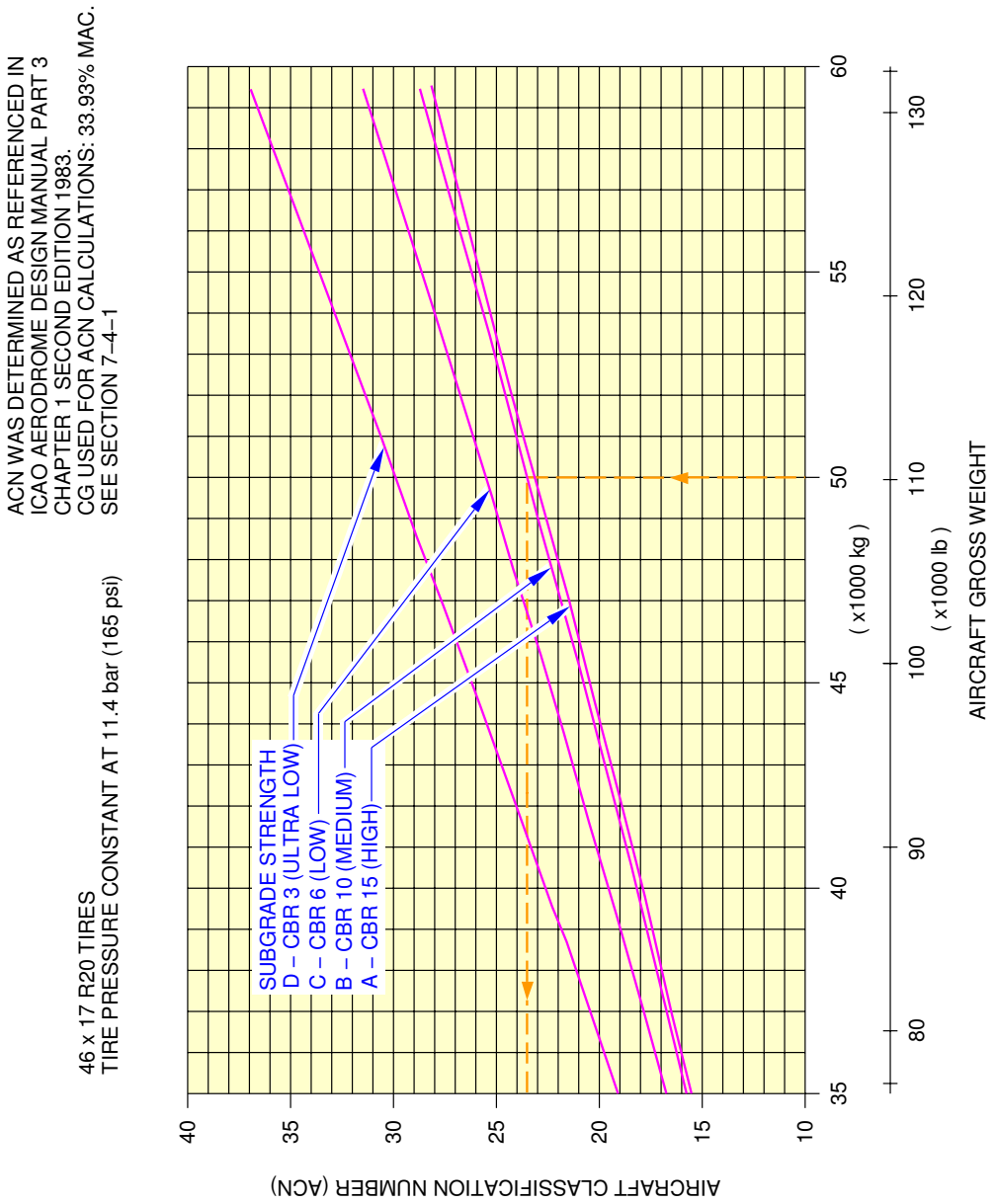
**ON A/C A318-100



N_AC_070901_1_0010101_01_01

Aircraft Classification Number – Flexible Pavement
MTOW 56T
FIGURE 1

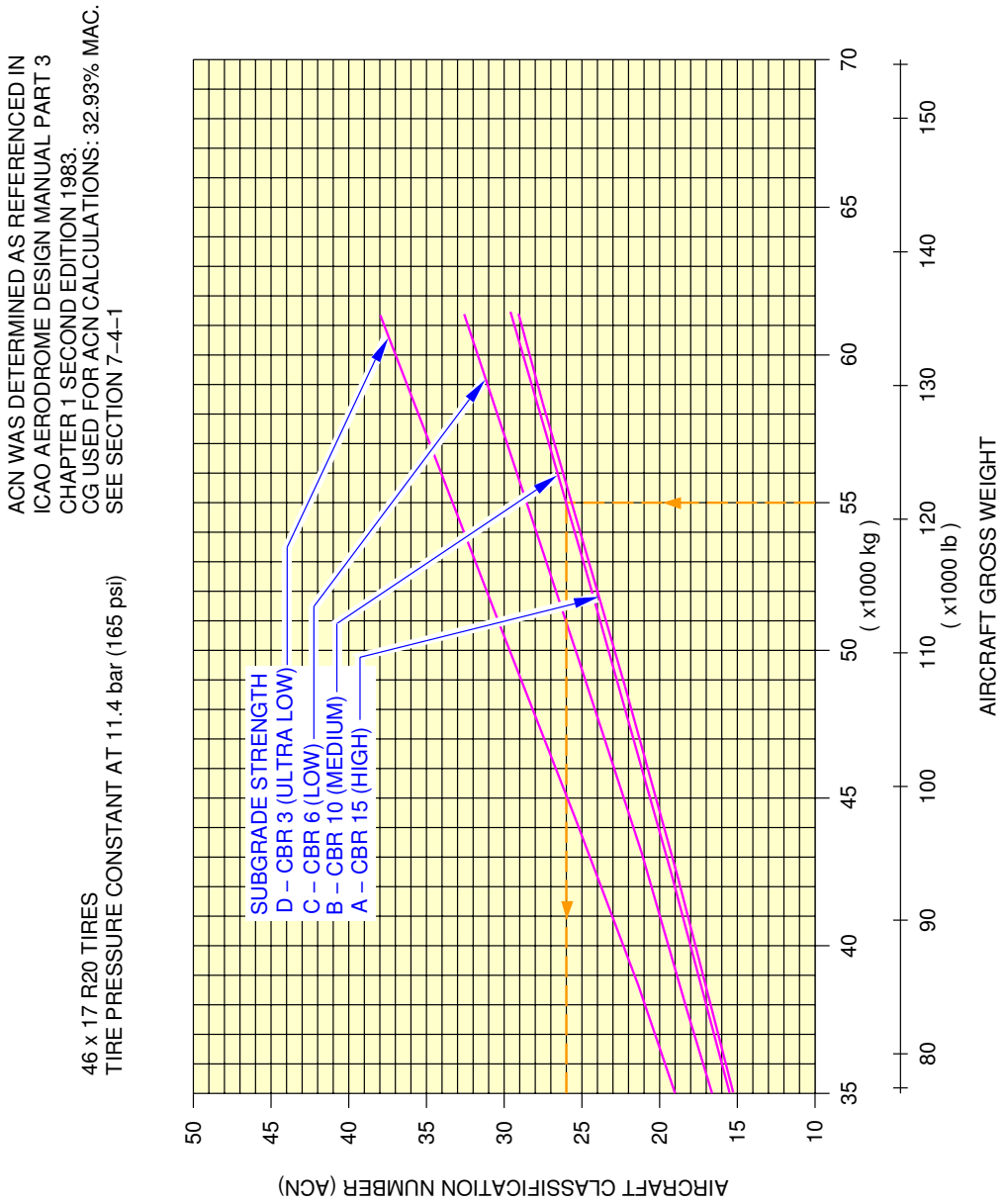
**ON A/C A318-100



N_AC_070901_1_0020101_01_01

Aircraft Classification Number – Flexible Pavement
MTOW 59 T
FIGURE 2

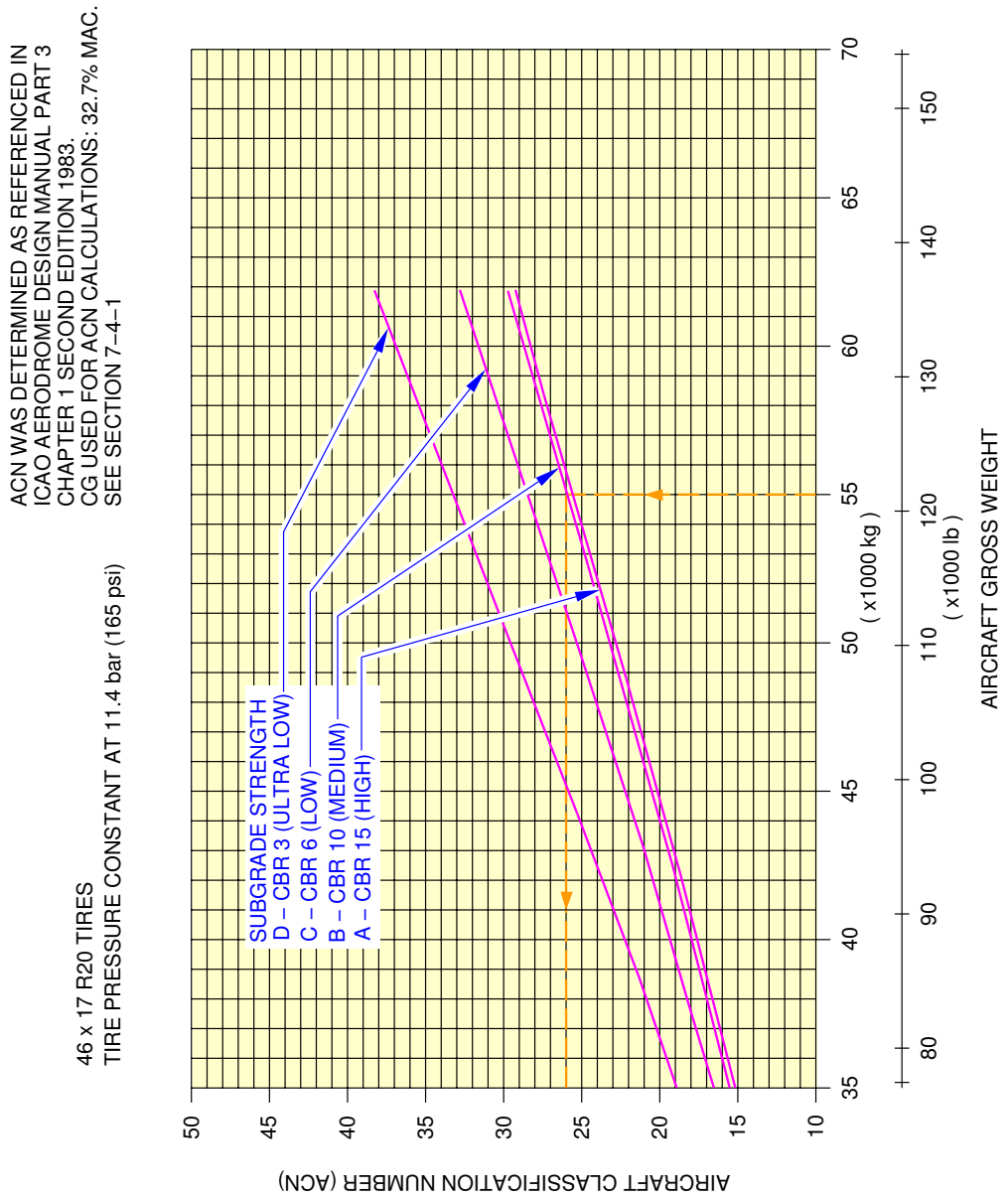
**ON A/C A318-100



N_AC_070901_1_0030101_01_01

Aircraft Classification Number – Flexible Pavement
MTOW 61 T
FIGURE 3

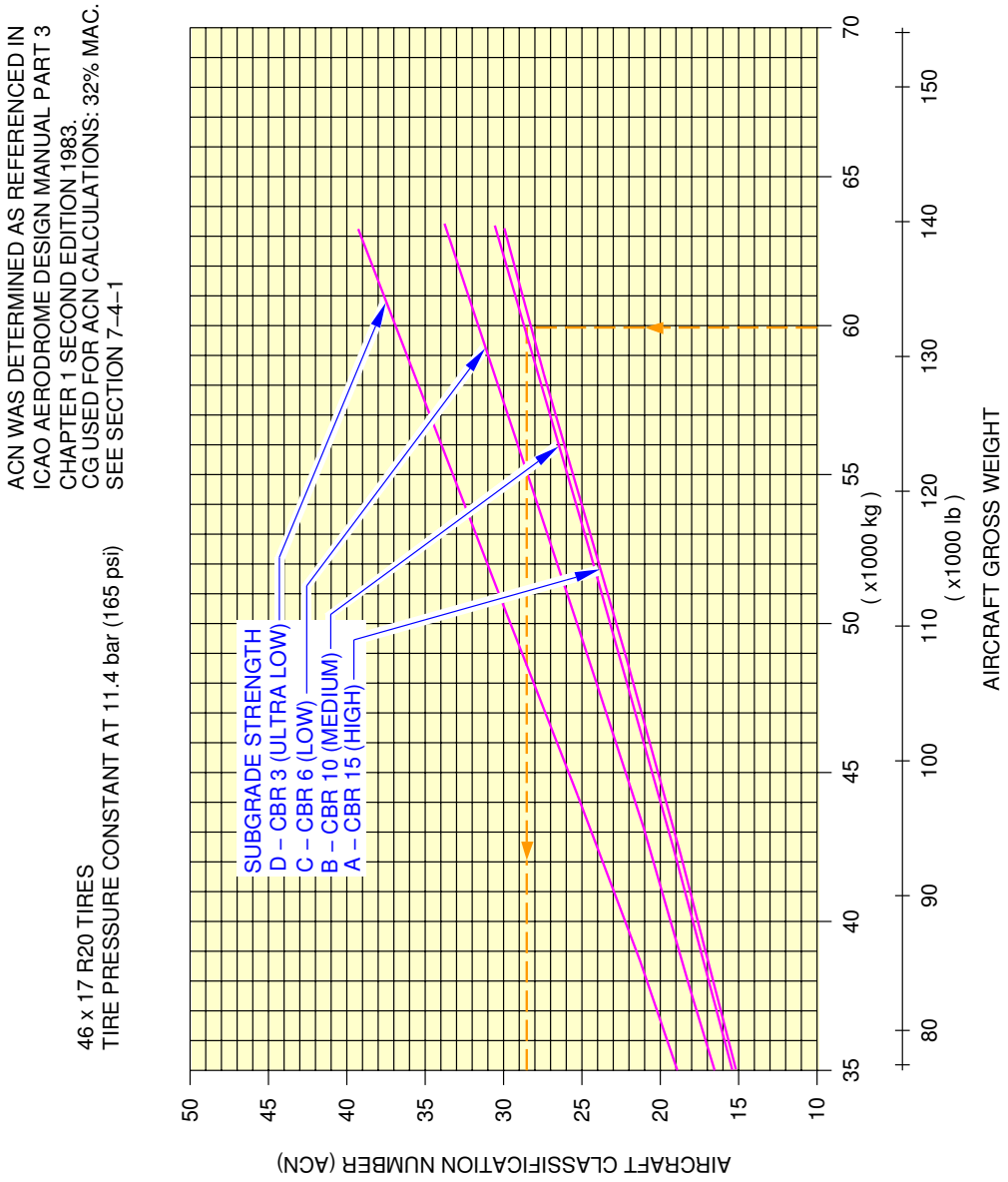
**ON A/C A318-100



N_AC_070901_1_0040101_01_01

Aircraft Classification Number – Flexible Pavement
MTOW 61.5 T
FIGURE 4

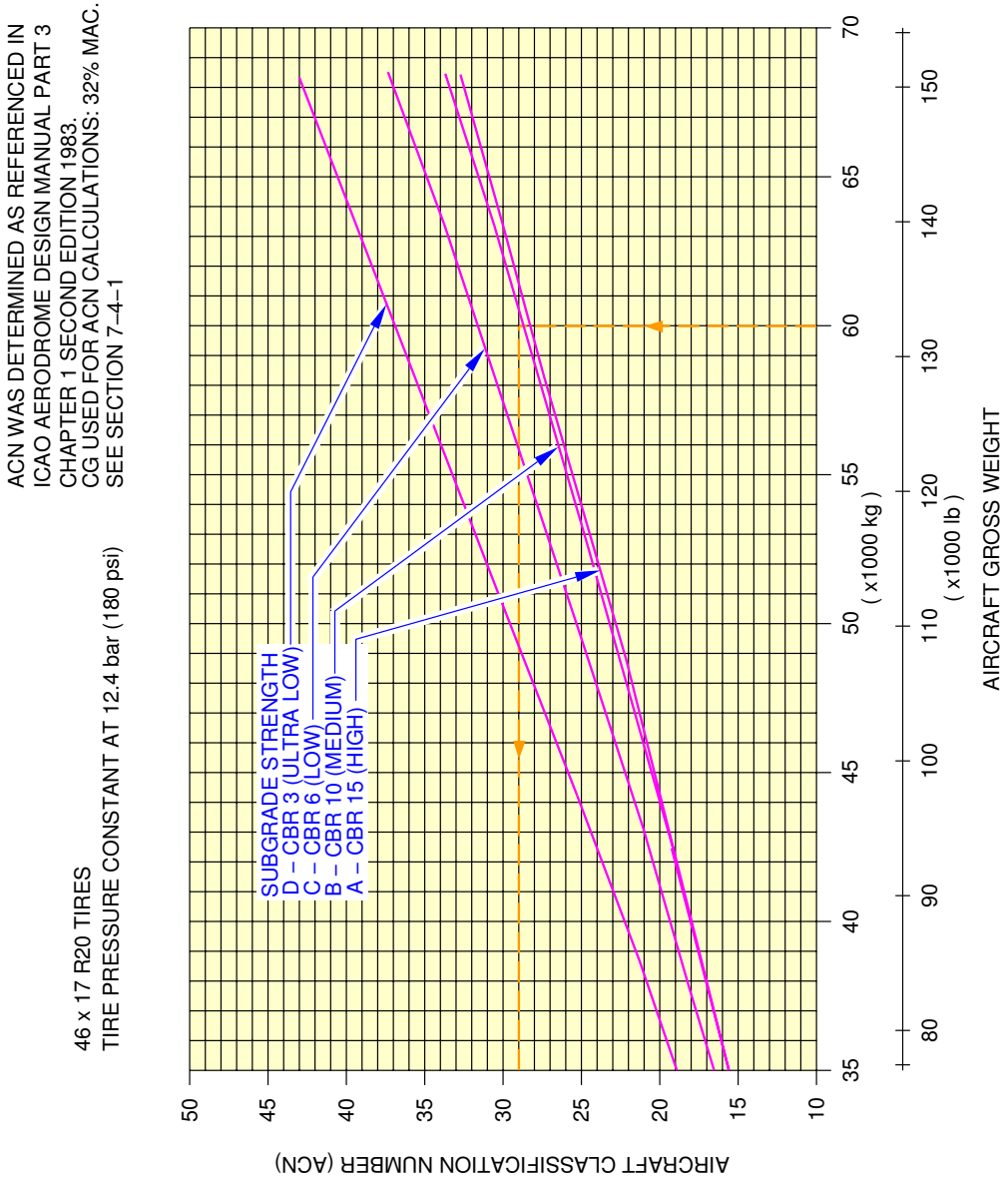
**ON A/C A318-100



N_AC_070901_1_0050101_01_01

Aircraft Classification Number – Flexible Pavement
MTOW 63 T
FIGURE 5

**ON A/C A318-100



N_AC_070901_1_0060101_01_01

Aircraft Classification Number – Flexible Pavement
MTOW 68 T
FIGURE 6

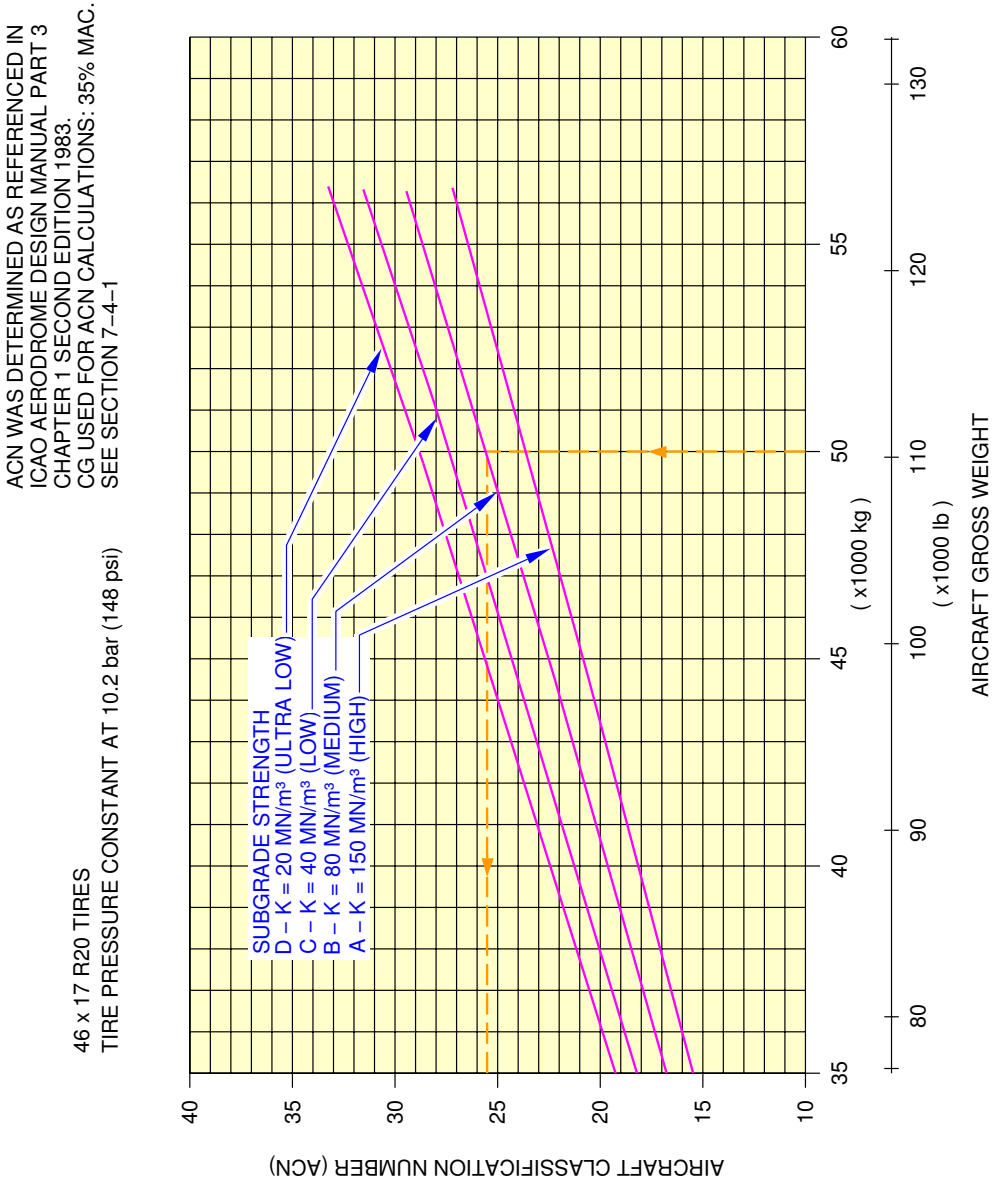
7-9-2 Aircraft Classification Number - Rigid Pavement

**ON A/C A318-100

Aircraft Classification Number - Rigid Pavement

1. This section gives the Aircraft Classification Number - Rigid Pavement.

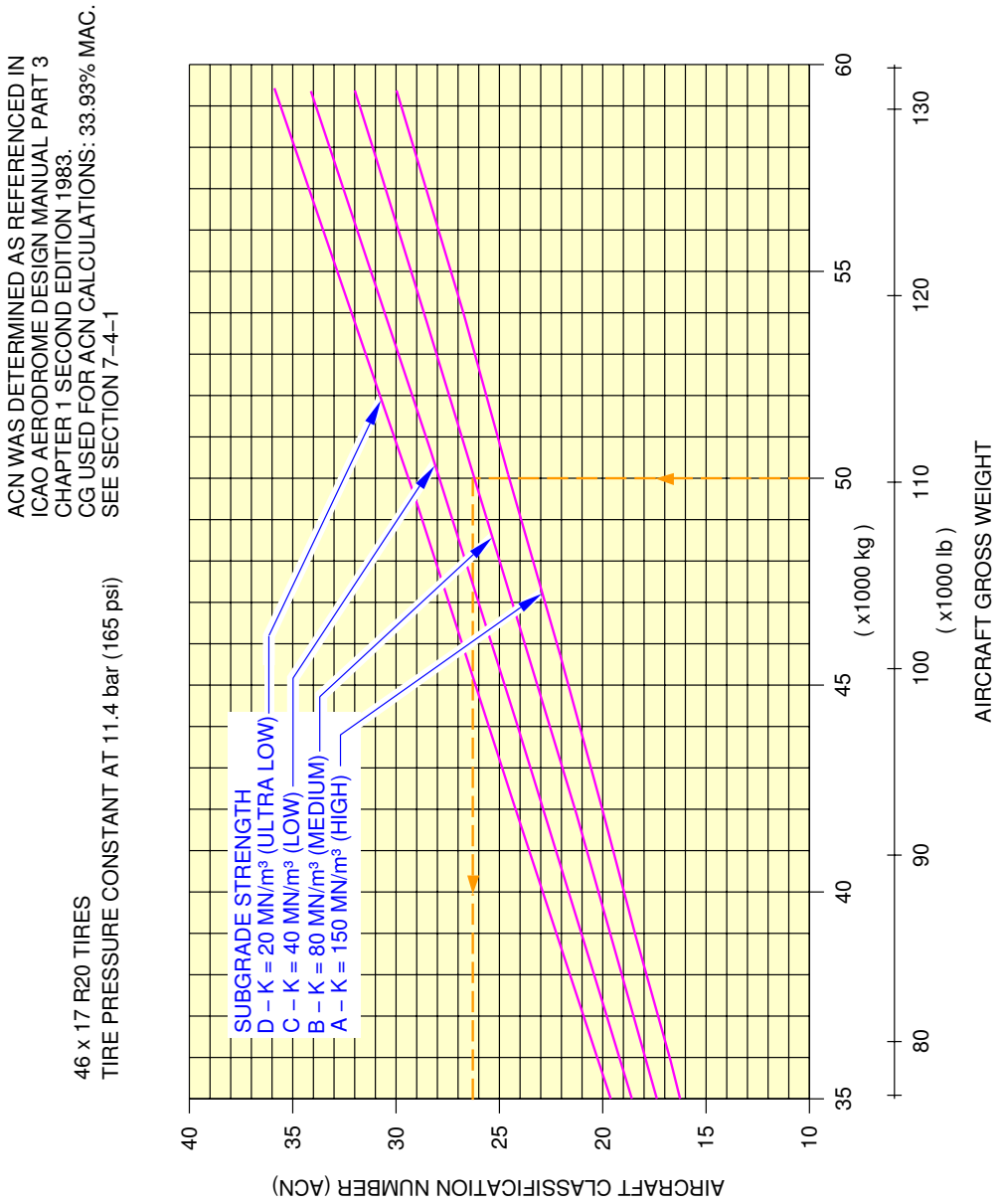
**ON A/C A318-100



N_AC_070902_1_0010101_01_01

Aircraft Classification Number – Rigid Pavement
MTOW 56 T
FIGURE 1

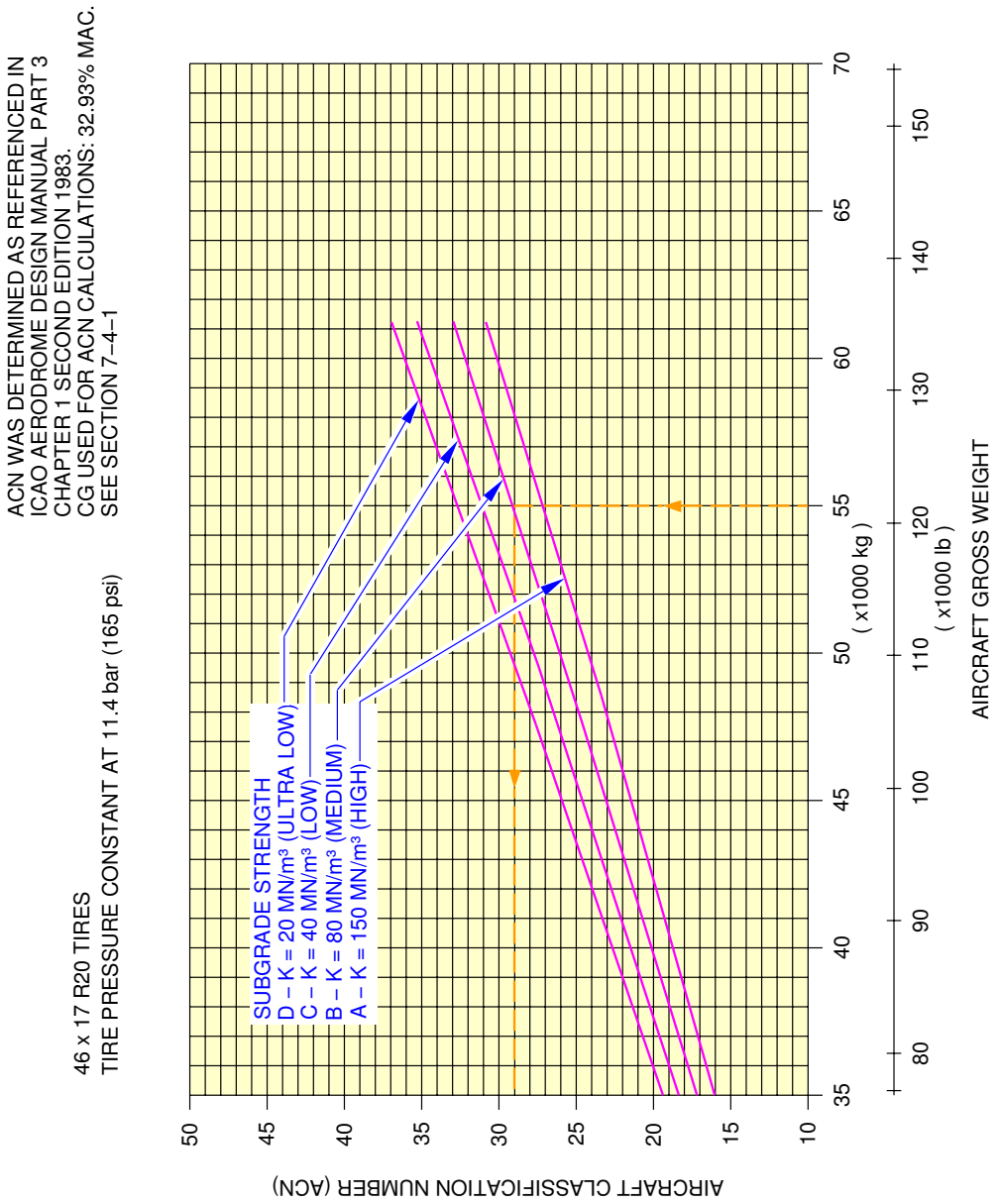
**ON A/C A318-100



N_AC_070902_1_0020101_01_01

Aircraft Classification Number – Rigid Pavement
MTOW 59 T
FIGURE 2

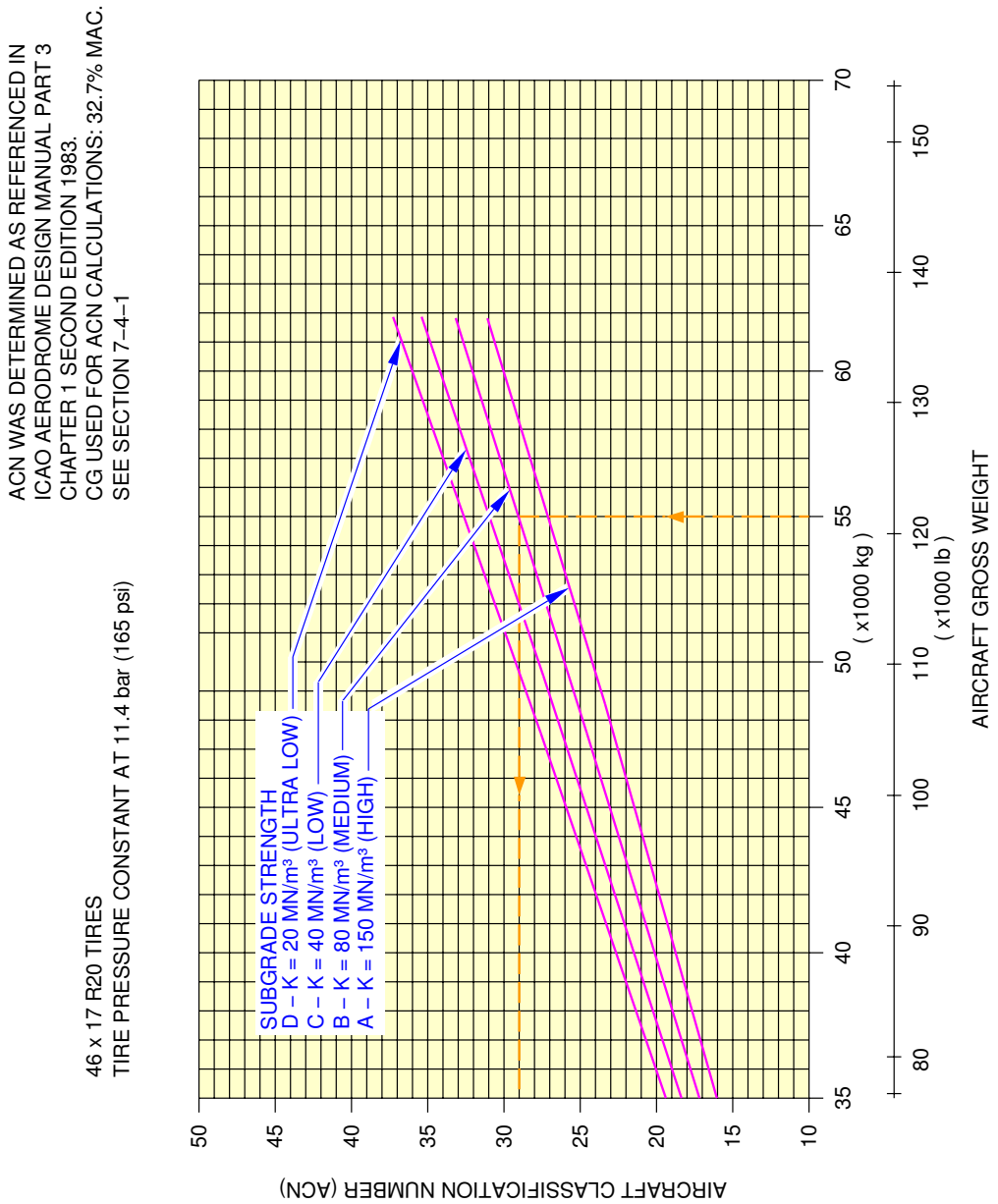
**ON A/C A318-100



N_AC_070902_1_0030101_01_01

Aircraft Classification Number – Rigid Pavement
MTOW 61 T
FIGURE 3

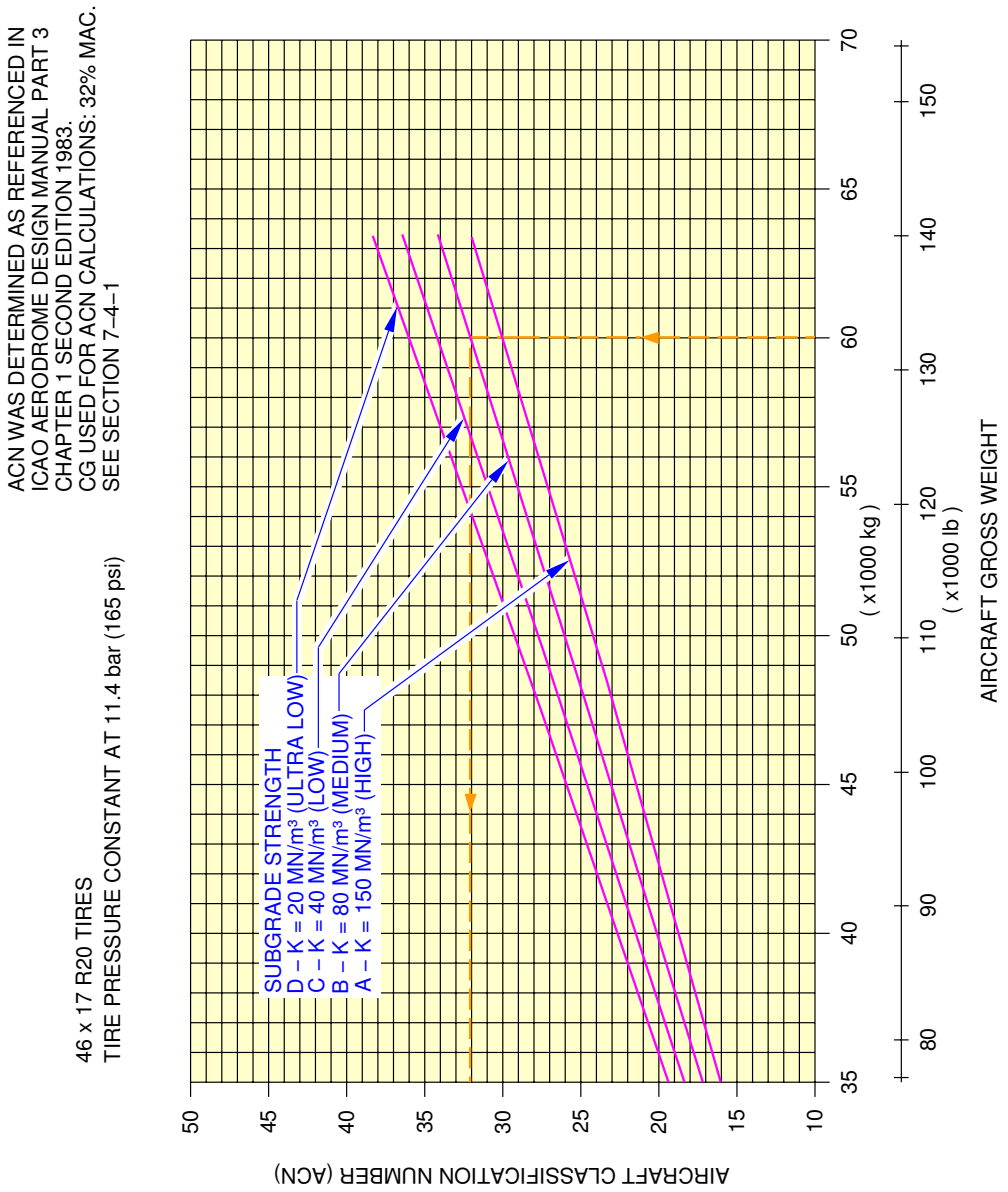
**ON A/C A318-100



N_AC_070902_1_0040101_01_01

Aircraft Classification Number – Rigid Pavement
MTOW 61.5 T
FIGURE 4

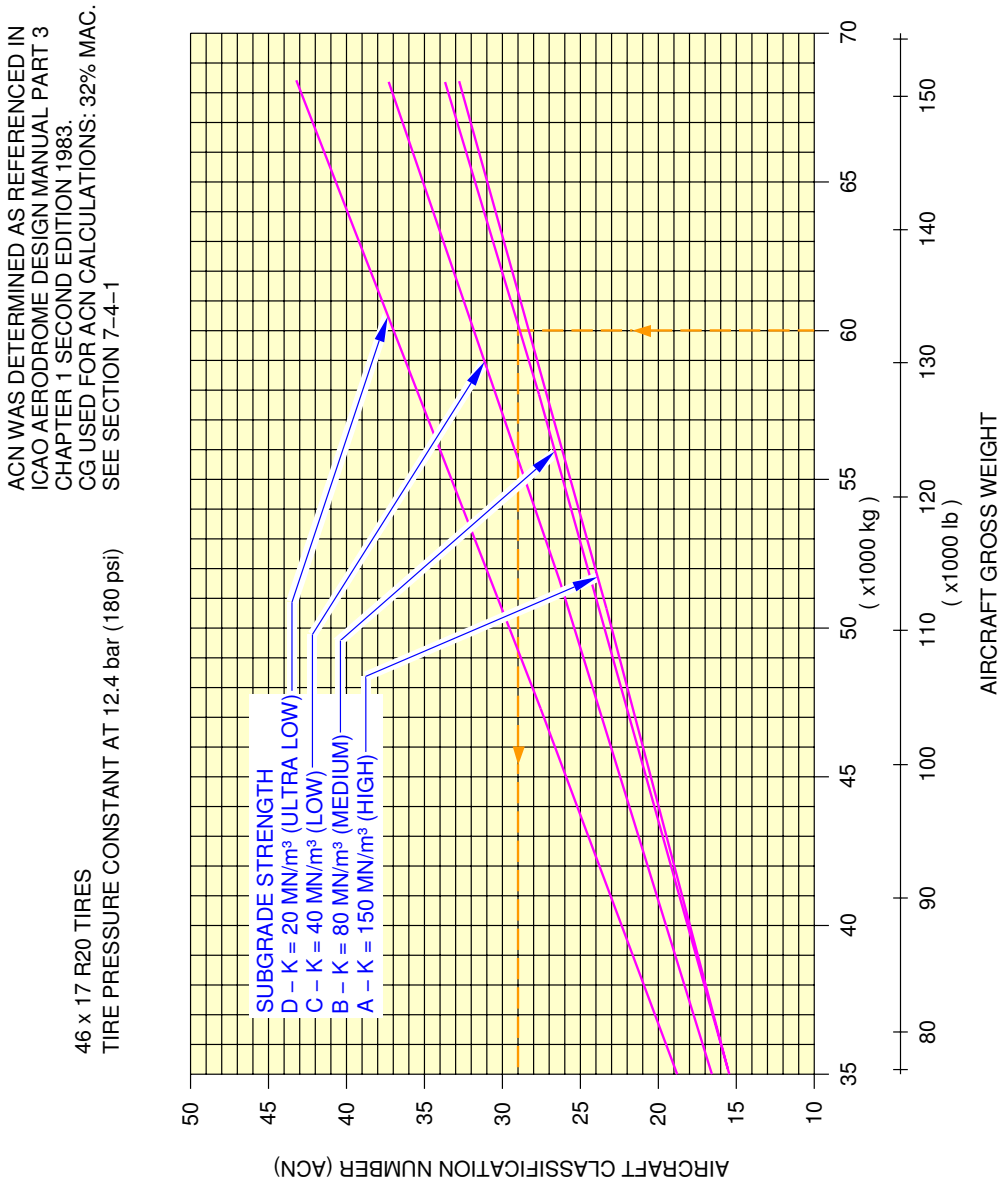
**ON A/C A318-100



N_AC_070902_1_0050101_01_01

Aircraft Classification Number – Rigid Pavement
MTOW 63 T
FIGURE 5

**ON A/C A318-100



N_AC_070902_1_0060101_01_01

Aircraft Classification Number – Rigid Pavement
MTOW 68 T
FIGURE 6

DERIVATIVE AIRPLANES

8-1-0 Possible Future Derivative Airplane

****ON A/C A318-100**

Possible Future Derivative Airplane

1. General

   Derivative versions of the A318 are planned. All product line airplanes are studied for possible size changes that might be required for fulfilling future airline needs. History has proved that derivative airplanes of a given model can encompass both increases and decreases in linear dimensions and weight.

SCALED DRAWINGS

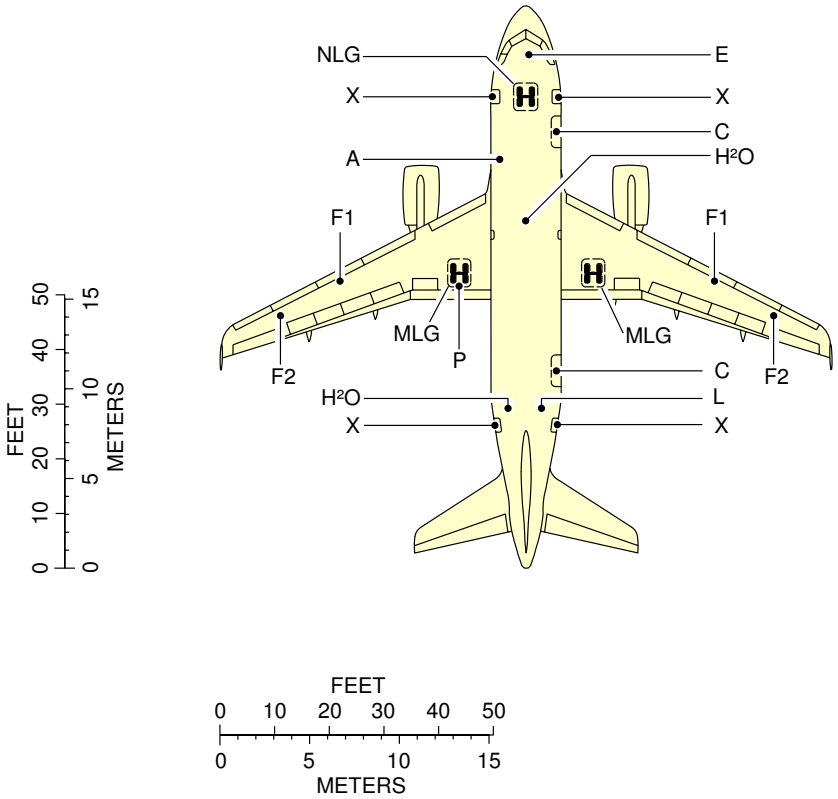
9-1-0 Scaled Drawings

**ON A/C A318-100

Scaled Drawings.

1. This section gives a scaled drawings of the aircraft.

**ON A/C A318-100



LEGEND:

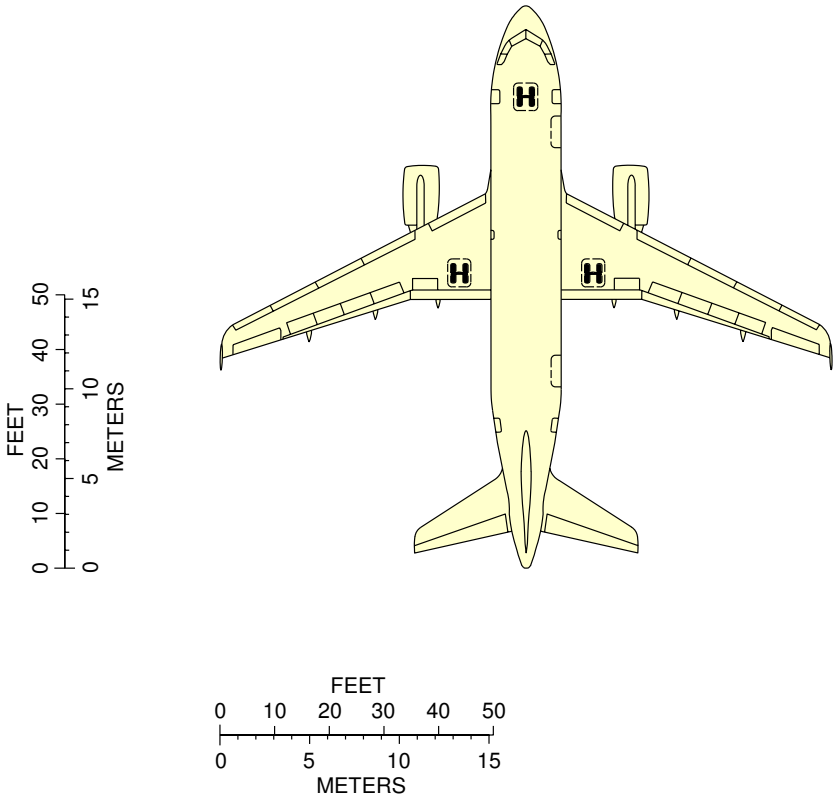
A	AIR CONDITIONING		
C	CARGO COMPT DOOR	L	LAVATORY
E	ELECTRICAL	MLG	MAIN LANDING GEAR
F1	FUEL (COUPLING)	NLG	NOSE LANDING GEAR
F2	FUEL (GRAVITY)	P	PNEUMATIC
H²O	POTABLE WATER	X	PASSENGER/CREW DOOR

NOTE: WHEN PRINTING, MAKE SURE TO ADJUST FOR PROPER SCALING.

N_AC_090100_1_0010101_01_03

Scaled Drawing
FIGURE 1

**ON A/C A318-100



NOTE: WHEN PRINTING, MAKE SURE TO ADJUST FOR PROPER SCALING.

N_AC_090100_1_0020101_01_03

Scaled Drawing
FIGURE 2