Q300 DASH 8

The Quiet One

AIRPORT PLANNING MANUAL

PSM 1-83-13

BOMBARDIER INC.
Bombardier Aerospace Regional Aircraft
Customer Support
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Issue 2: 27 July, 2001

Technical Publications Manual Change Request

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The following Temporary Revisions are effective in your Manual as of Jan 27, 2005

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SECTION 1

PREFACE

PREFACE

1.0 SCOPE

A. This document provides airport planning data for the Bombardier Q300 Model 311 (Detail Spec. DS8−300). Specific data should be coordinated with the appropriate airlines prior to facility design.

B. The performance data contained in Section 3 (Aircraft Performance) are for reference only. Refer to the applicable Airplane Flight Manual (AFM) for the Q300 (Model 311) for specific performance information.

1.1 INTRODUCTION

A. The content of this document conforms to NAS 3601 Revision 6 (15 July, 1994). NAS 3601 is the result of agreements between representatives from the following organizations:

- Aerospace Industries Association
- Airport Operators Council International
- Air Transport Association of America
- International Air Transport Association

B. This manual provides Q300 (Model 311) airplane data for airport planners and operators, airlines, architectural and engineering consultant organizations, and other interested industry agencies. Aircraft modifications and available options may alter model characteristics; therefore, the data contained in this manual represents the typical Q300 (Model 311) aircraft.

C. For additional information contact:

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Ontario, Canada, M3K 1Y5

1.2 A BRIEF DESCRIPTION OF THE Q300 (MODEL 311) AIRCRAFT

The Q300 is a commercial transport airplane, pressurized and designed to accommodate 50 to 56 passengers in wide body comfort and to set new standards in fuel efficiency, speed and comfort. The aircraft is powered by two Pratt and Whitney PW123 (or PW123B or PW123E) turboprop engines. Large diameter, slow turning Hamilton Standard 14SF propellers provide high thrust efficiency and low noise levels. The Q300 offers excellent short take–off and landing performance and outstanding capabilities under "hot and high" conditions.

The Q300 is capable of economic operations over a broad range of applications. These include scheduled airline operations, resource and regional development work, corporate and military transport roles, and for missionized applications such as coastal surveillance.

The aircraft is capable of operation in ambient temperatures between −54°C (−65°F) and 48.9°C (120°F), unless otherwise specified. Transfer from one climate to another is accomplished without penalties or extensive modification or adjustments.

Significant features of interest to the airport planner include the following:

- Engines are located high and on the wing.
- The horizontal stabilizer is mounted on top of the fin, which places it higher than conventional locations.
- The aircraft has a self–contained airstair entry door at the forward end of the cabin.
- Servicing connections are provided for single station pressure refueling or overwing gravity refueling.
- All servicing of the Q300 is accomplished with standard ground equipment.
- High engine exhaust outlets that generate modest pressure and temperature profiles are another feature of the Q300.

1.3 GUIDE TO QSERIES / MODEL DESIGNATIONS

TYPE APPROVAL MODEL NO.	PWC ENGINE	MTOP	MTOW (lb)	Active Noise and Vibration Suppression (ANVS)	REMARKS
301	PW123	2380 SHP	41,100	Standard	–Pre–1990 Interior
311 311 311	PW123 PW123 PW123	2380 SHP 2380 SHP 2380 SHP	41,100 41,880 43,000	Standard	–C & D Interior –Main Landing Gear leg 8" further aft than Model 301
314 314 314	PW123B PW123B PW 123B	2500 SHP 2500 SHP 2500 SHP	41,100 41,880 43,000	Standard	–C & D Interior –Increased mechanical power –Improved takeoff performance in "low & cold" conditions
315 315 315	PW123E PW123E PW123E	2380 SHP 2380 SHP 2380 SHP	41,100 41,880 43,000	Standard	–C & D Interior –Increased thermodynamic power –Improved airfield performance in "hot & high" conditions

SECTION 2

AIRCRAFT DESCRIPTION

ILLUSTRATIONS

SECTION 2

AIRCRAFT DESCRIPTION

2.0 INTRODUCTION

General characteristics of the Bombardier Q300 (Model 311).

The basic Q300 (Model 311) aircraft has a maximum design take–off weight of 41,100 pounds (18,643 kg). For the higher gross weight available refer to the Change Requests (CR) on Figure 2–1. Other weight parameters such as ramp weight, landing weight and zero fuel weight are set accordingly.

Definitions refer to Figure 2–1 and are used throughout this document:

MAXIMUM DESIGN TAXI WEIGHT (MTW): Maximum weight for ground maneuvers as limited by aircraft strength and airworthiness requirements. (It includes weight of taxi and run–up fuel).

MAXIMUM DESIGN LANDING WEIGHT (MLW): Maximum weight for landing as limited by aircraft strength and airworthiness requirements.

MAXIMUM DESIGN TAKE–OFF WEIGHT (MTOW): Maximum weight for take–off as limited by aircraft strength and airworthiness requirements. (This is the maximum weight at start of the take–off run).

OPERATING WEIGHT EMPTY (OWE): Weight of structure, power plant, furnishings, systems, unusable fuel and other items of equipment that are considered an integral part of a particular airplane configuration. Also included are certain standard items, personnel, equipment and supplies necessary for full operations, excluding usable fuel and payload.

MAXIMUM DESIGN ZERO FUEL WEIGHT (MZFW): Maximum weight allowed before usable fuel and other specified usable agents must be loaded in defined sections of the aircraft, as limited by strength and airworthiness requirements.

MAXIMUM PAYLOAD: Maximum design zero fuel weight minus operational weight empty.

MAXIMUM SEATING CAPACITY: The maximum number of passengers specifically certified or anticipated for certification.

MAXIMUM CARGO VOLUME: The maximum space available for cargo.

USABLE FUEL: Fuel available for aircraft propulsion and optional A.P.U.

DESCRIPTION	BASIC	CR803SO00001	CR803SO00002
MAXIMUM DESIGN TAXI WEIGHT	18,730 kg (41,300 lb)	19,090 kg (42,080 lb)	19,600 kg (43,200 lb)
MAXIMUM DESIGN LANDING WEIGHT	18,140 kg (40,000 lb)	18,600 kg (41,000 lb)	19,050 kg (42,000 lb)
MAXIMUM DESIGN TAKE–OFF WEIGHT	18,640 kg (41,100 lb)	19,000 kg (41,880 lb)	19,500 kg (43,000 lb)
OPERATING WEIGHT EMPTY (STANDARD A/C)	11,630 kg (26,042 lb)	11,630 kg (26,065 lb)	11,630 kg (26,065 lb)
MAXIMUM DESIGN ZERO FUEL WEIGHT	16,870 kg (37,200 lb)	17,460 kg (38,500 lb)	17,920 kg (39,500 lb)
MAXIMUM PAYLOAD (STANDARD A/C)	5,250 kg (11,158 lb)	5,840 kg (12,435 lb)	6,290 kg (13,435 lb)

TANK CAPACITY – USABLE FUEL				
STANDARD TANKS	US GALS	LBS	LITRES	KG
LEFT	417.5	2839	1580.5	1287
RIGHT	417.5	2839	1580.5	1287
TOTAL	835.0	5678	3161.0	2574

Figure 2–1 General Airplane Characteristics

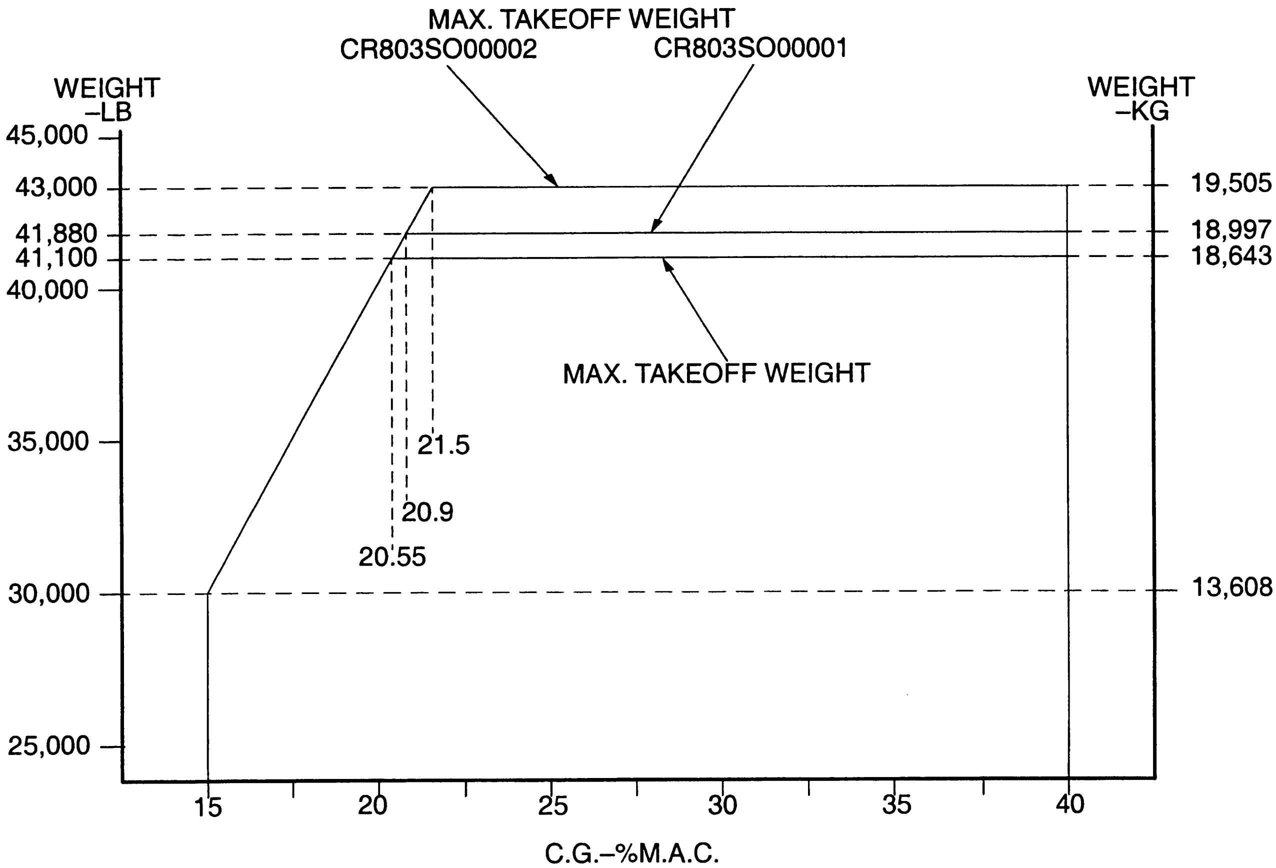


Figure 2-2 CG Limits

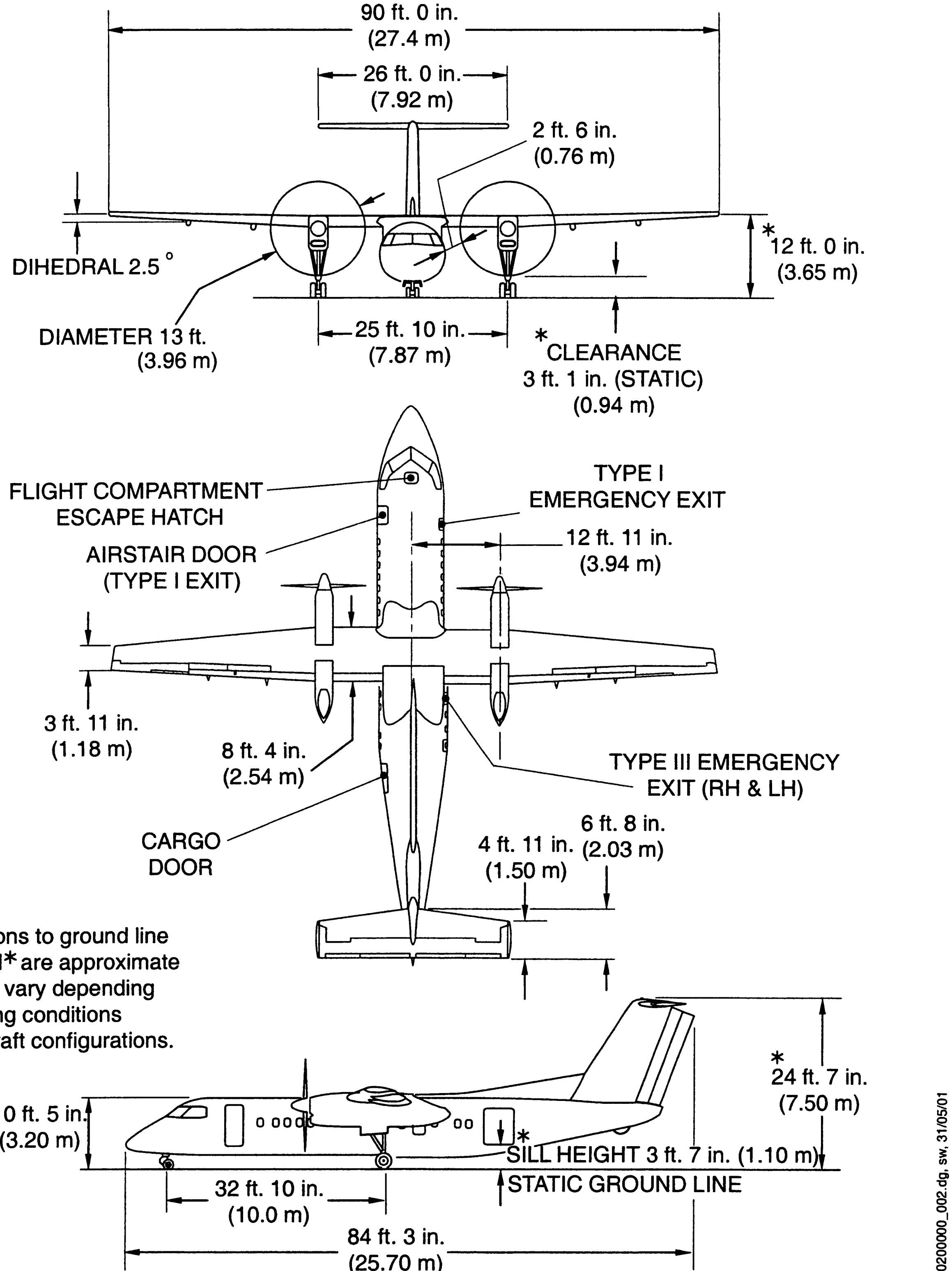
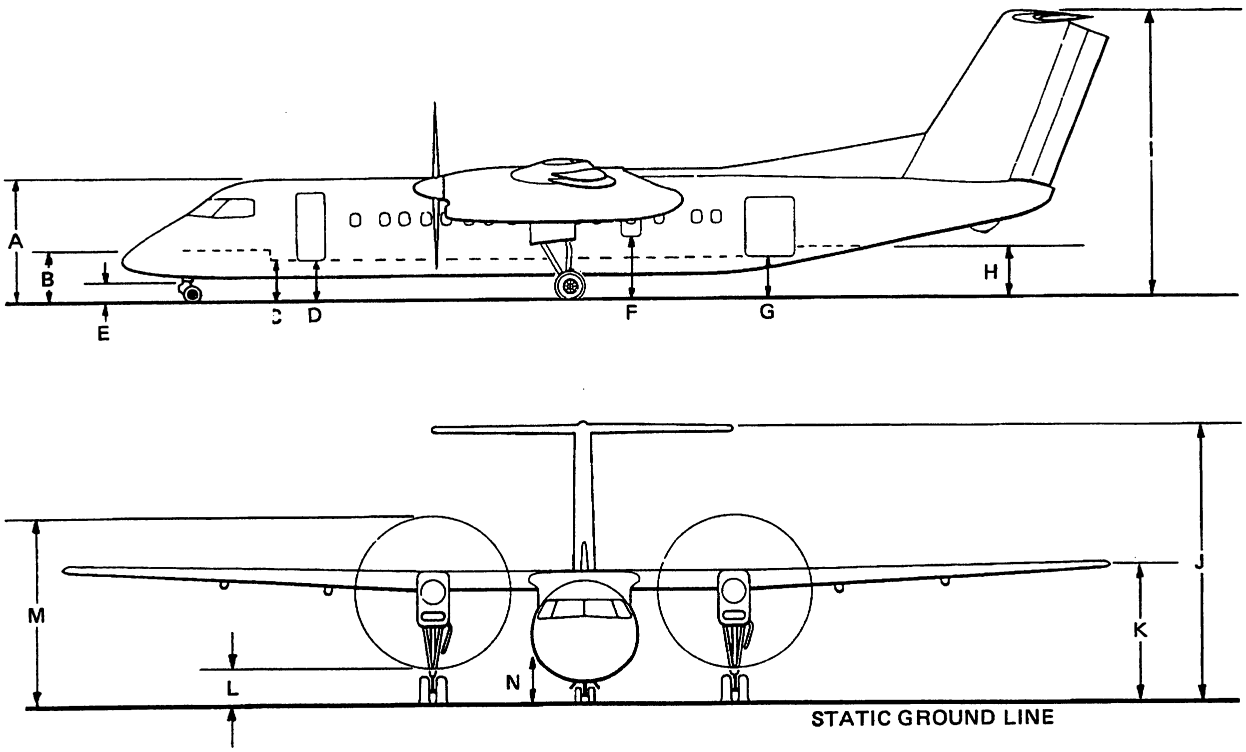


Figure 2–3 General Airplane Dimensions



		MAXIMUM		MINIMUM	
		WEIGHT: 24,500 LB. C.G.: X391.2" WT. ON NLG: 2300 LB (1043 kg)		WEIGHT: 41,300 LB. C.G.; X412.6" WT. ON NLG: 1700 LB (771 kg)	
ITEM	HEIGHT	FEET	METERS	FEET	METERS
A	TOP OF FUSELAGE	10.82	3.30	10.40	3.17
B	FLIGHT DECK	4.96	1.51	5.00	1.52
C	CABIN FLOOR	4.01	1.22	3.46	1.05
D	AIRSTAIR DOOR TYPE I EXIT SILL	3.85	1.17	3.82	1.16
E	FUSELAGE GROUND CLEARANCE	2.41	0.73	2.04	0.62
F	TYPE III EXIT SILL	5.66	1.72	5.28	1.61
G	BAGGAGE DOOR SILL	3.93	1.20	3.39	1.03
H	BAGGAGE STEP	4.98	1.52	4.37	1.33
I	VERTICAL STABILIZER	25.08	7.64	24.29	7.40
J	HORIZONTAL STABILIZER	24.27	7.40	23.49	7.16
K	WING TIP	12.05	3.67	11.77	3.59
L	PROP GROUND CLEARANCE	3.47	1.06	3.32	1.01
M	PROP HEIGHT CLEARANCE	16.47	5.02	16.31	4.97
N	SERVICE DOOR SILL	4.01	1.22	3.53	1.07

NOTES: 1. Dimensions quoted are for standard tires. Nose wheel tires are 22 x 6.50–10, inflated to 60 psi (414 kPa). Main wheel tires are 31.0 x 9.75–14, inflated to 97 psi (669 kPa).

Figure 2–4 Ground Clearance

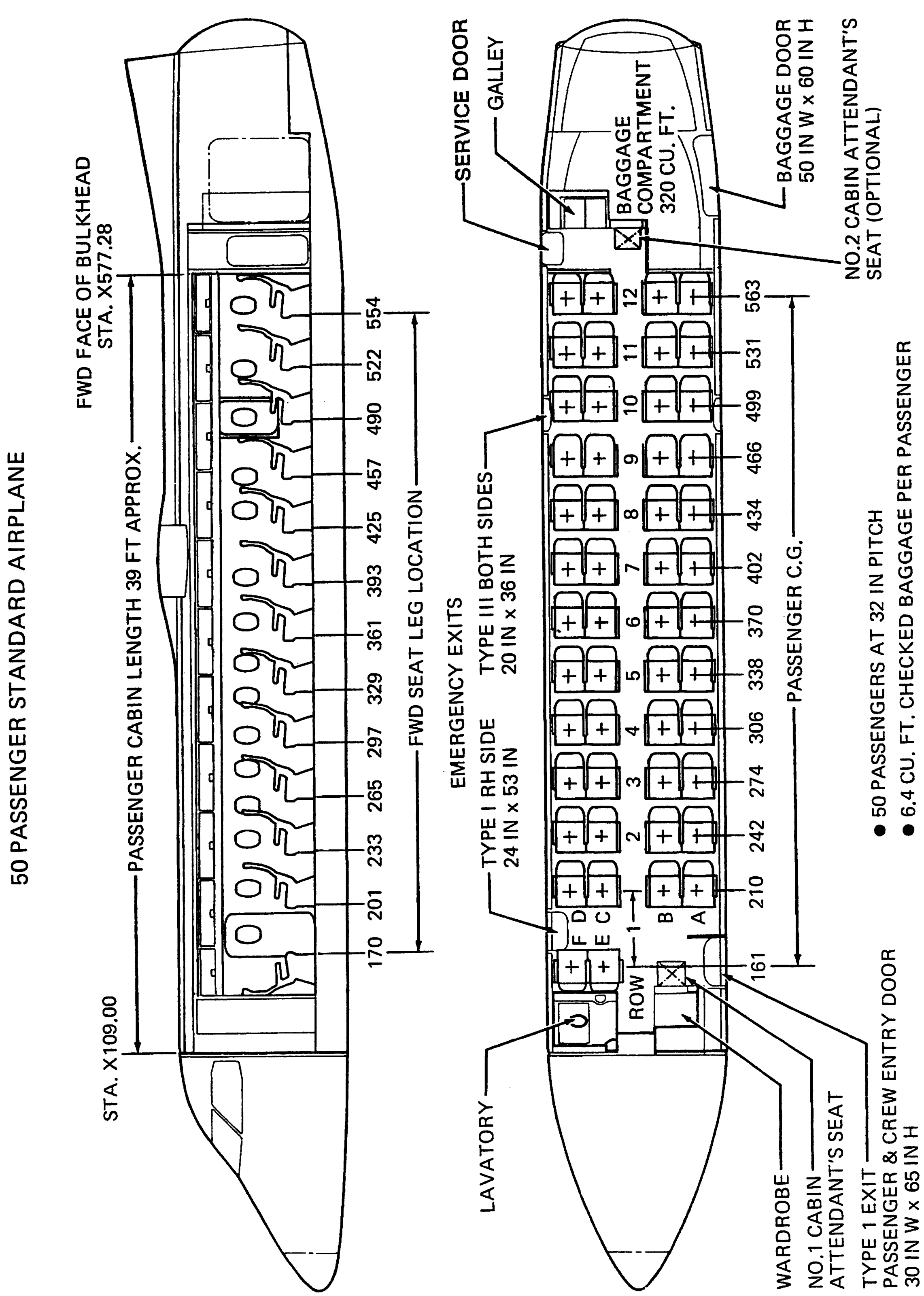


Figure 2–5 Interior Arrangement – 50 Passengers (Sheet 1 of 4)

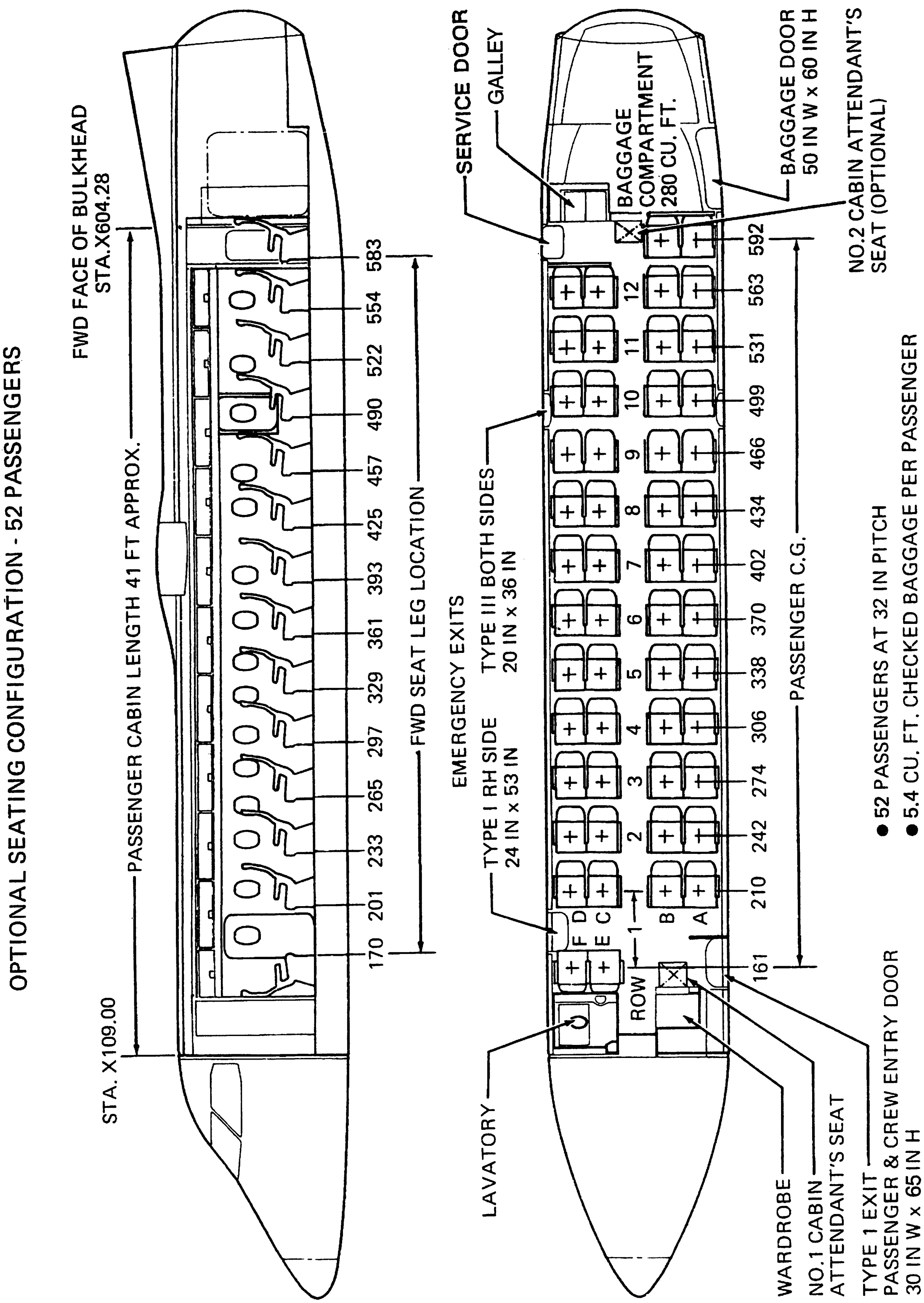


Figure 2–5 Interior Arrangement – 52 Passengers (Sheet 2 of 4)

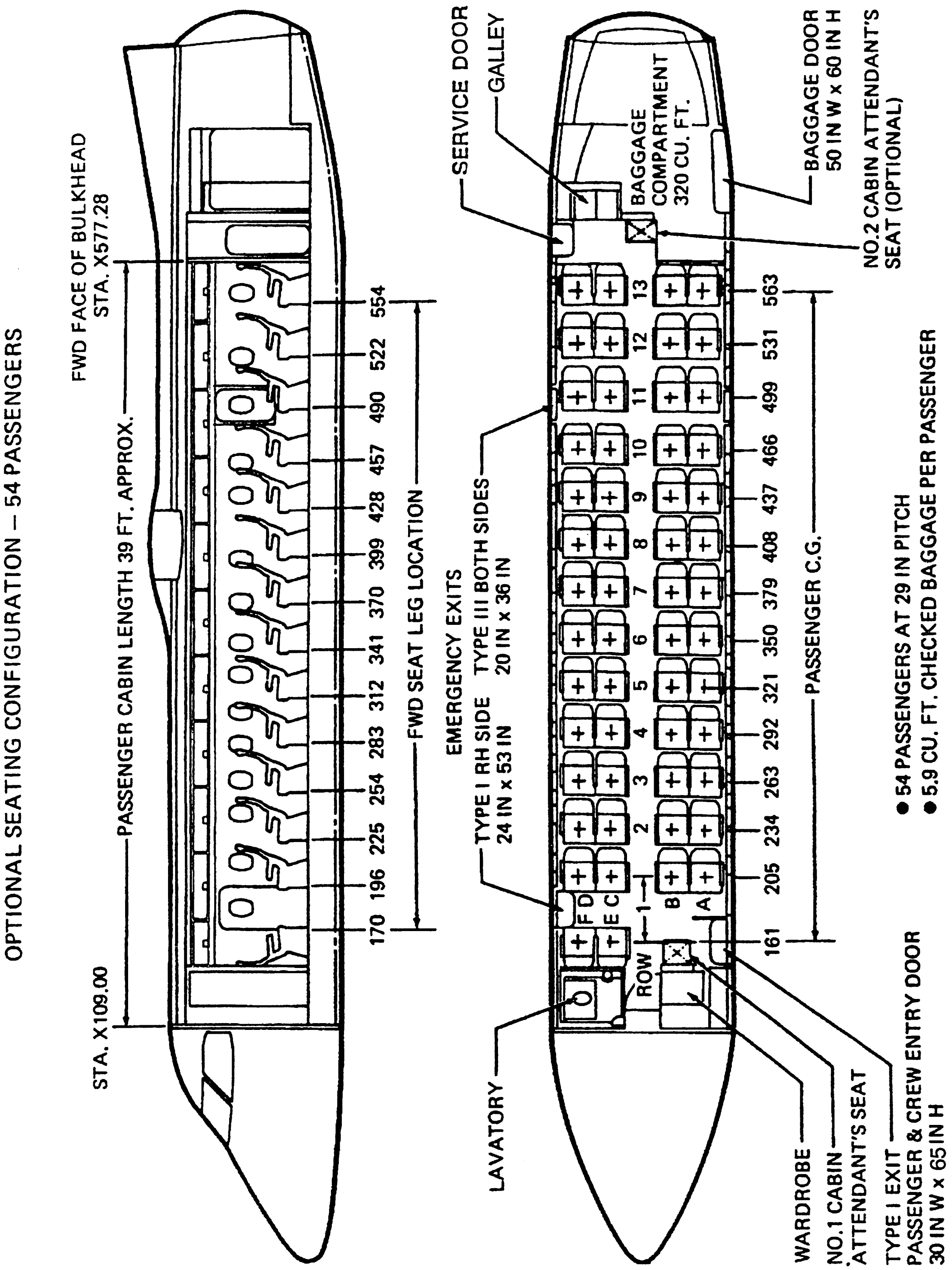


Figure 2–5 Interior Arrangement – 54 Passengers
(Sheet 3 of 4)

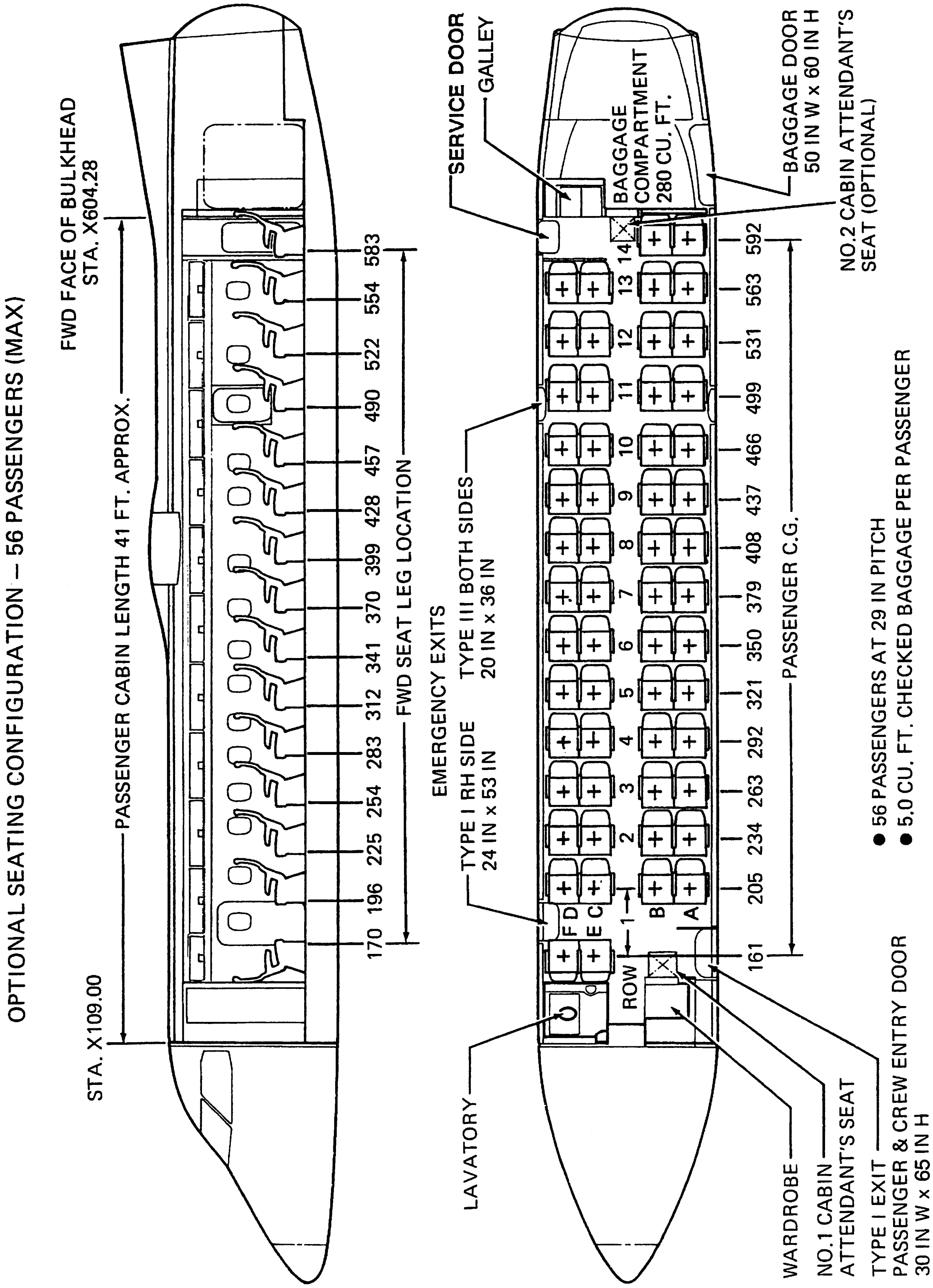


Figure 2–5 Interior Arrangement – 56 Passengers
(Sheet 4 of 4)

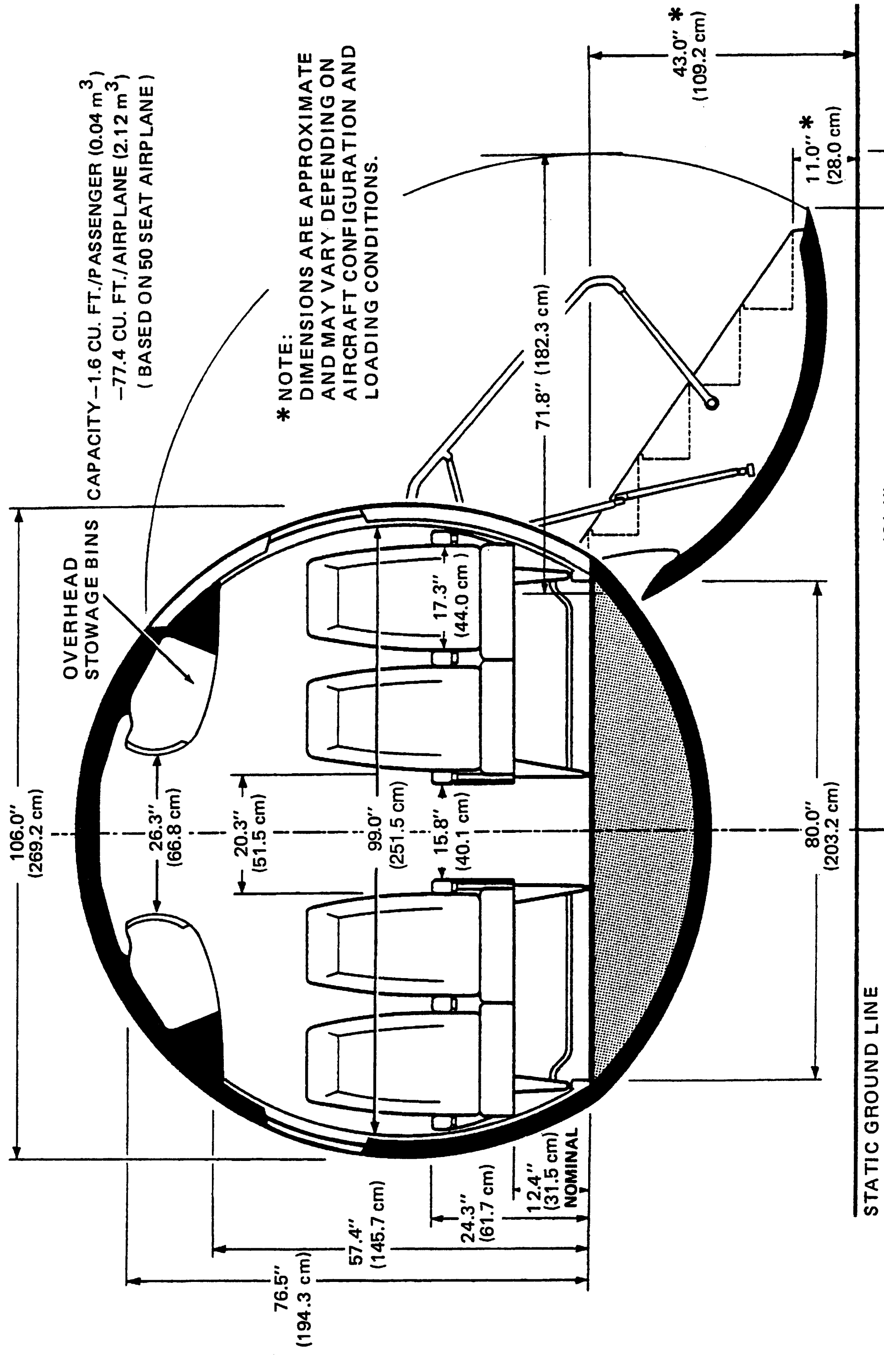


Figure 2–6 Cabin Cross–Section

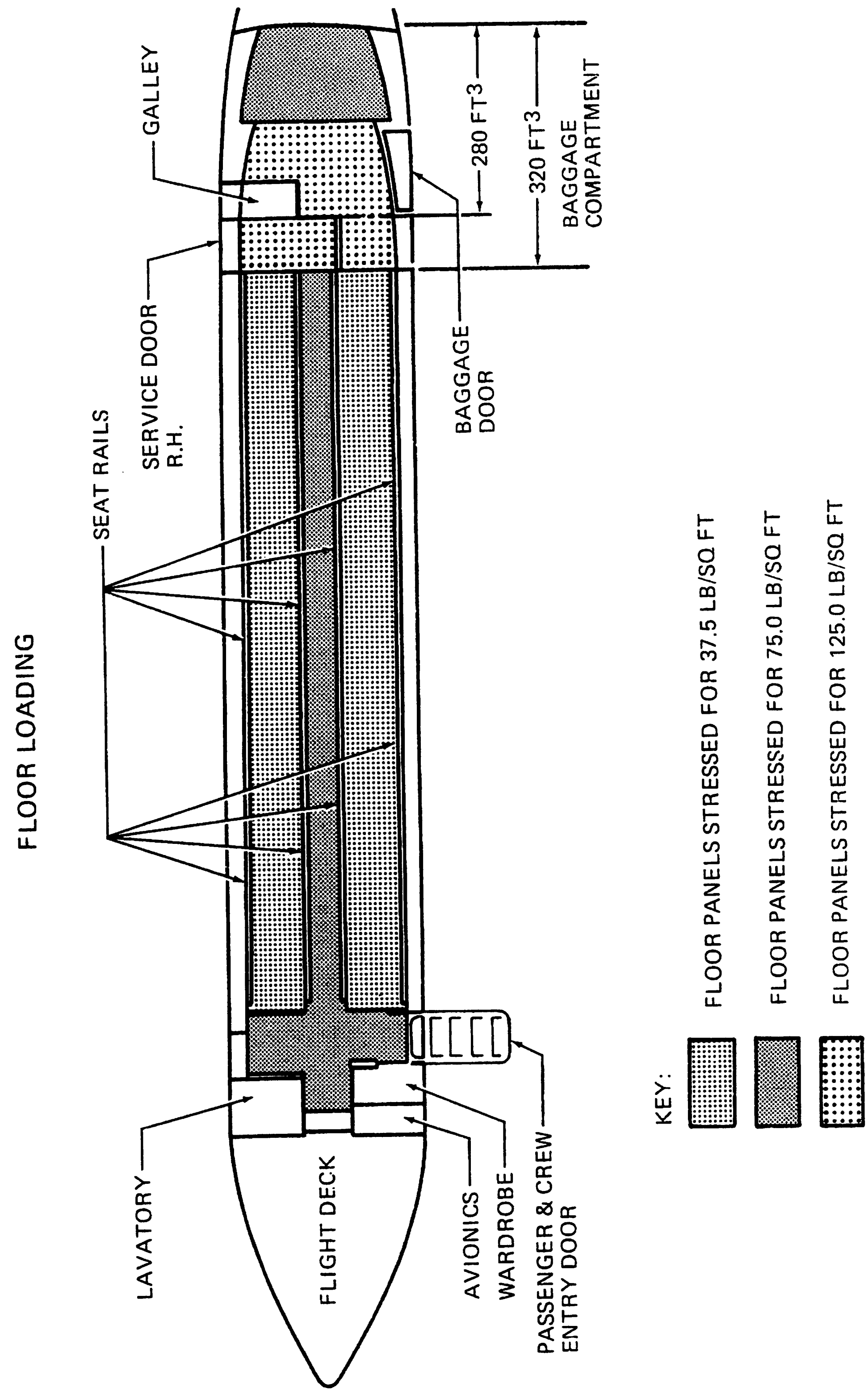


Figure 2–7 Floor Loading Diagram

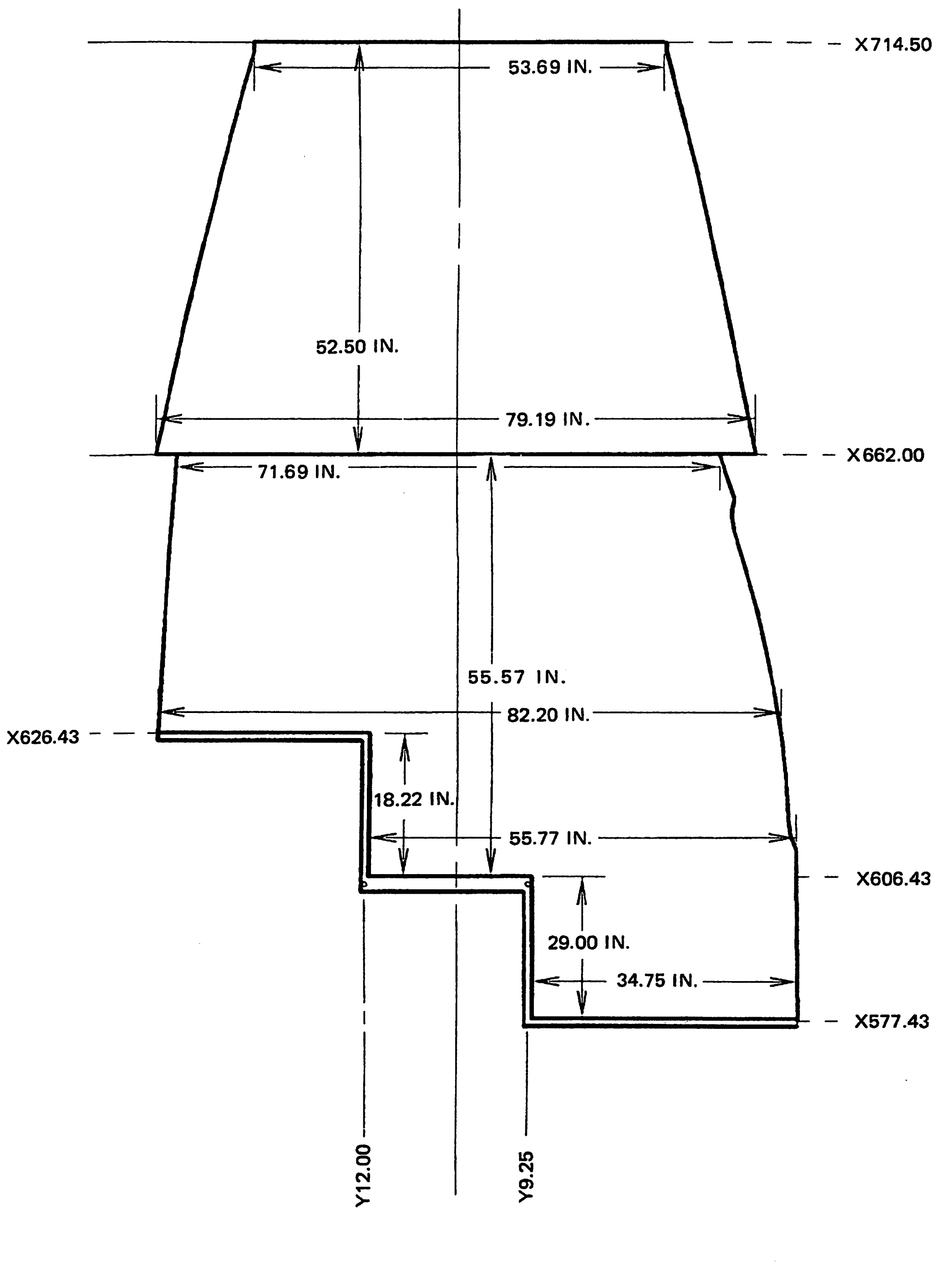


Figure 2–8 Baggage Compartment Dimensions

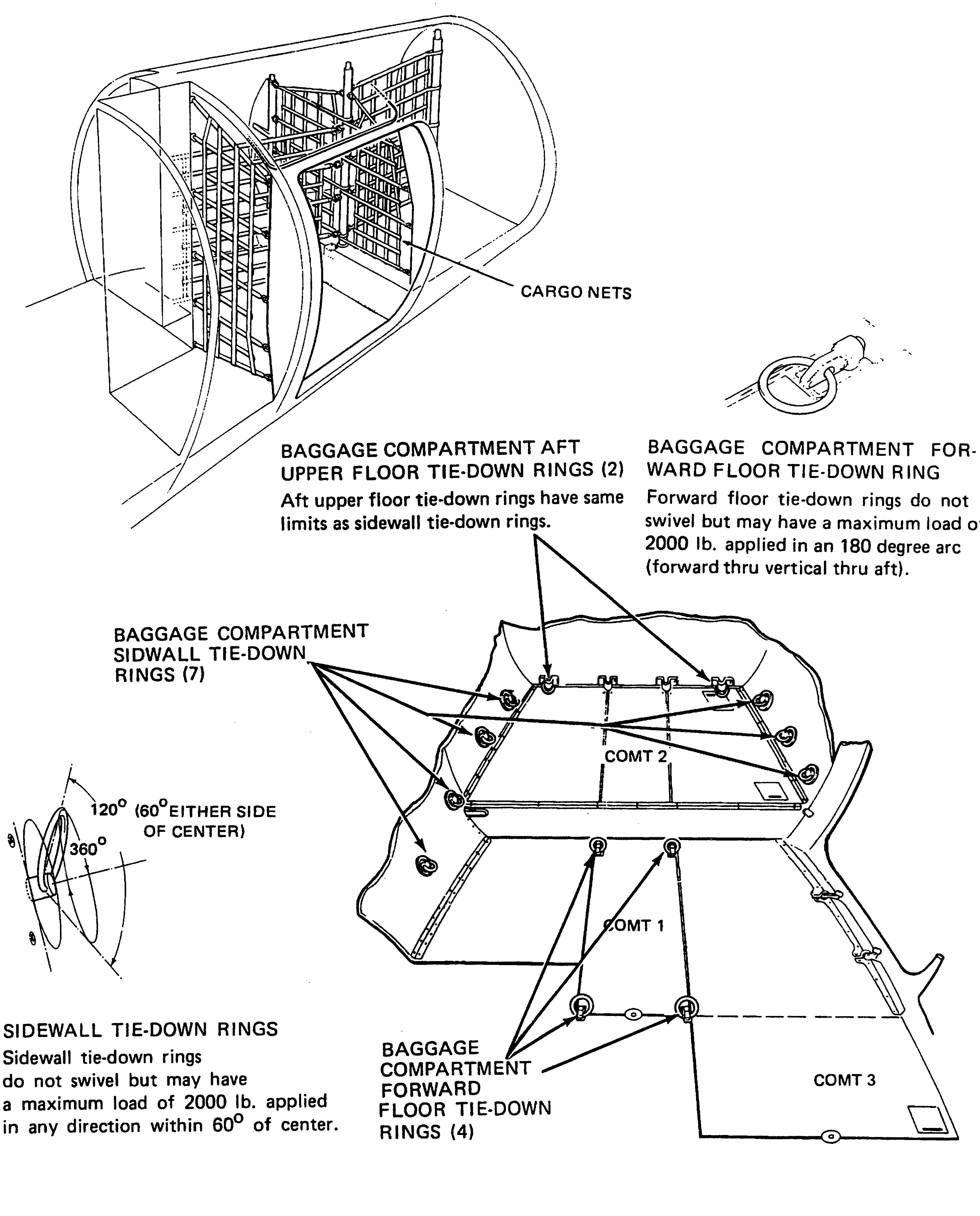


Figure 2–9 Baggage Compartment Nets and Tiedowns

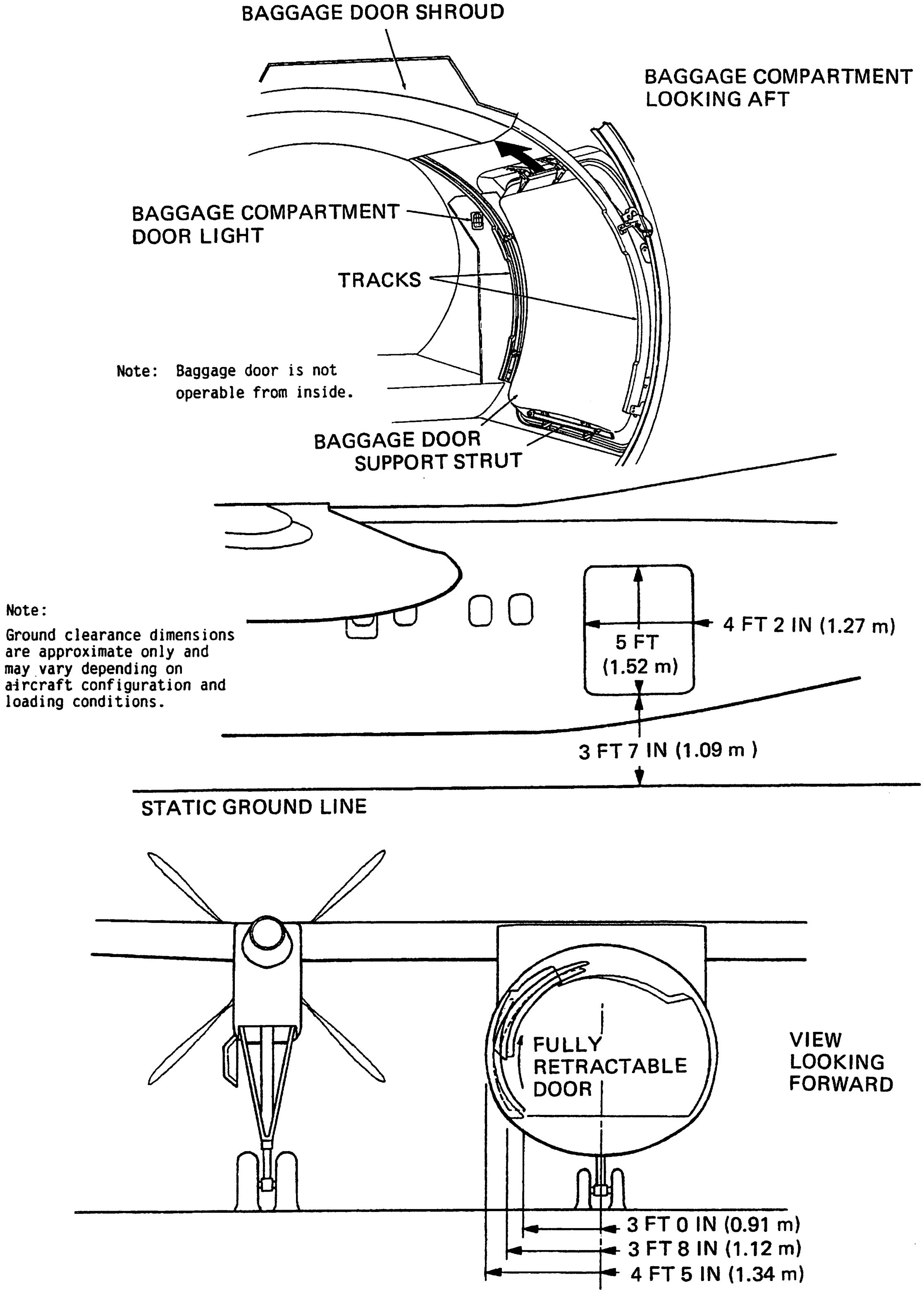
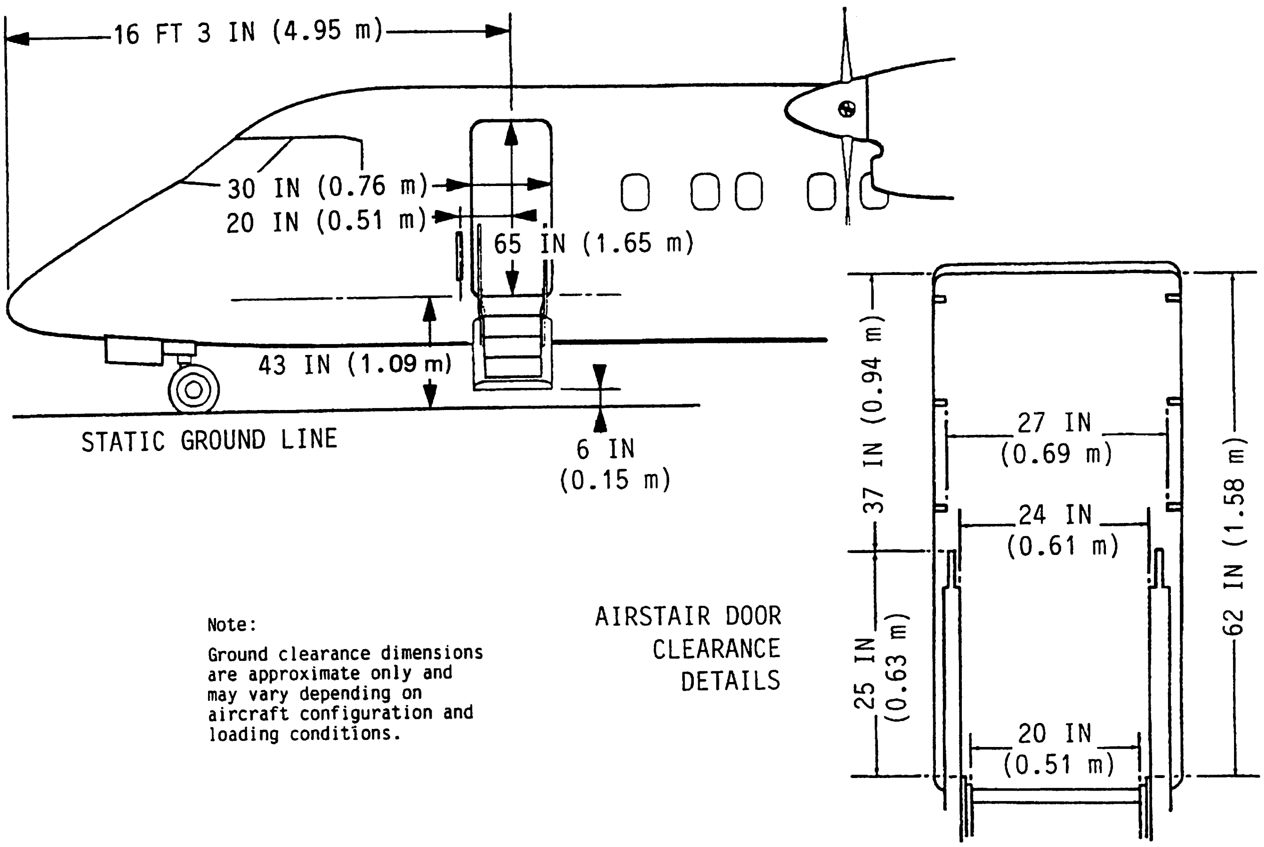


Figure 2–10 Airstair Door Clearance



Note:
Ground clearance dimensions are approximate only and may vary depending on aircraft configuration and loading conditions.

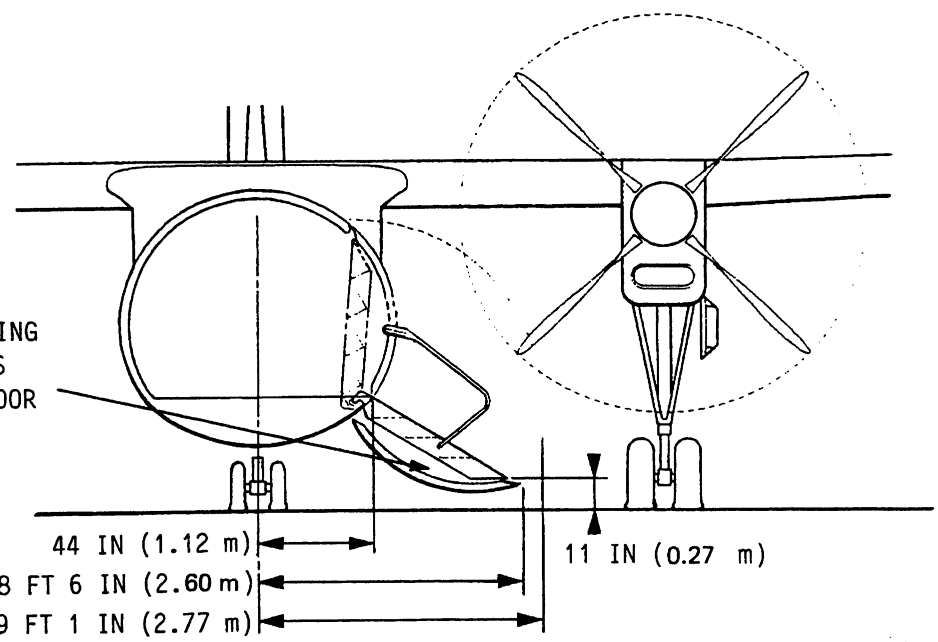


Figure 2–11 Baggage Compartment Door Clearance

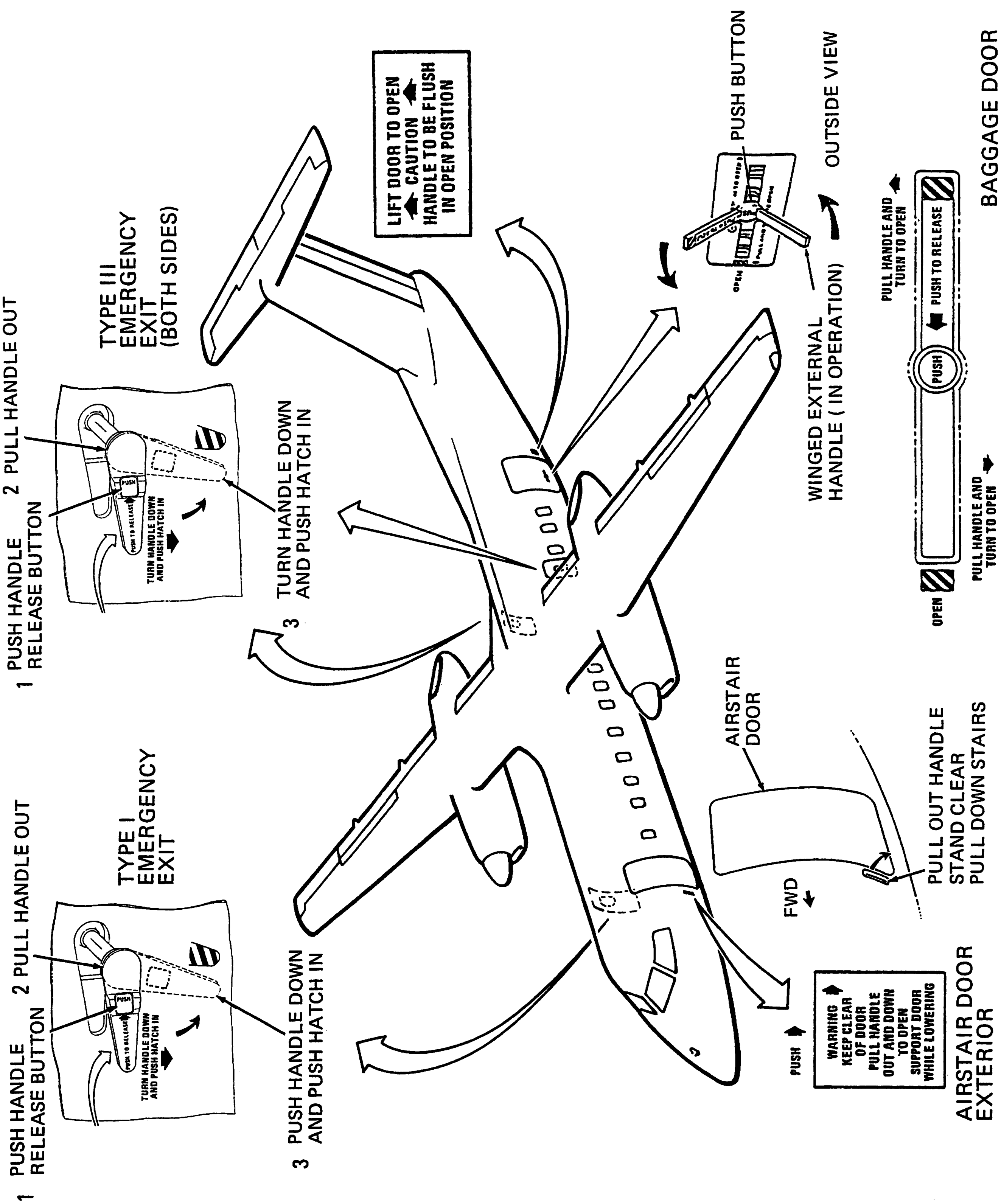


Figure 2–12 Exterior Handles

SECTION 3

AIRCRAFT PERFORMANCE

ILLUSTRATIONS

SECTION 3

AIRCRAFT PERFORMANCE

ILLUSTRATIONS CONT'D.

SECTION 3

AIRCRAFT PERFORMANCE

3.0 INTRODUCTION

This section contains the performance data of the Q300 (Model 311) aircraft with CR803SOO0002 incorporated, as required for operations and Airport Planning purposes.

CR803CH00064 provides hot and high takeoff and approach WAT limit improvements by incorporating a 5 degree approach flap setting with a commensurate 10 degree landing flap setting via a Flight Manual Supplement. Figures 3–4, 3–5, 3–12 and 3–15 show the improved performances associated with this option.

3.1 DEFINITIONS

The following definitions are used in this Section:

Maximum Structural Weights

The maximum structural take–off and landing weights are as follows:

Maximum Take–off Weight:	19,500 kg (43,000 lb)
Maximum Landing Weight:	19,050 kg (42,000 lb)

WAT Limits

The maximum permissible take–off weight (figures 3–2 through 3–7) and landing weight (figures 3–12 through 3–14) are based on the limiting one engine inoperative climb requirements of FAR 25.

Take–Off Field Length

The take–off field length shown in figures 3–8 through 3–11 is the longest of:

(i) Accelerate stop distance.
(ii) Take–off distance to 35 ft. with one engine inoperative at V_1.
(iii) 1.15 x all engine operating take–off distance to 35 ft.

Landing Field Length

The landing field lengths derived from figures 3–15 through 3–18 are based on an approach speed of 1.3 V_S and a screen height of 50 ft. The landing field length factors, which are those required by FAR 121 are:

a) Destination Airport
Landing Field Length = Actual Landing Distance X $\frac{1}{0.6}$

b) Alternate Airport
Landing Field Length = Actual Landing Distance X $\frac{1}{0.7}$

Retardation Devices

The following retardation devices are used:

a) Accelerate Stop – (i) Main wheel anti–skid brakes
(ii) Both propellers in discing

b) Landing – (i) Main wheel anti–skid brakes
(ii) Both propellers in discing

3.2 USE OF CHARTS (Illustrative Examples)

The use of the charts is illustrated by “examples”, which are depicted as arrowed broken lines.

Example 1

Given:	Outside Air Temperature	=	10°C
	Airfield Altitude	=	8,000 ft

Find: Maximum Permissible Take–Off Weight Take–Off Flap 15°.

From Figure 3–7:

The maximum permissible take–off weight is 16,200 kg. (35,715 lb).

Example 2

Given:	Outside Air Temperature	=	10°C
	Airfield Altitude	=	8,000 ft
	Weight	=	16,000 kg (35,270 lb)

Find: The Take–Off Field Length Flap 15°.

From Figure 3–11:

The take–off field length is 1250 m (4100 ft).

Example 3

Given:	Outside Air Temperature	=	16°C
	Airfield Altitude	=	8000 ft.

Find: The Maximum Permissible Landing Weight with Landing Flap 15°.

From Figure 3–13:

The maximum permissible landing weight is 16,900 kg (37,260 lb).

Example 4

Given:	Airfield Altitude	=	6,000 ft.
	Aircraft Weight	=	16,300 Kg (35,935 lb.)

Find: Landing Field Length Flap 35°.

From Figure 3–17:

The unfactored landing distance is 630 m (2067 ft).

From Figure 3–18:

The landing field length at the destination airport is 1050 m (3445 ft).
The landing field length at the alternate airport is 900 m (2950 ft).

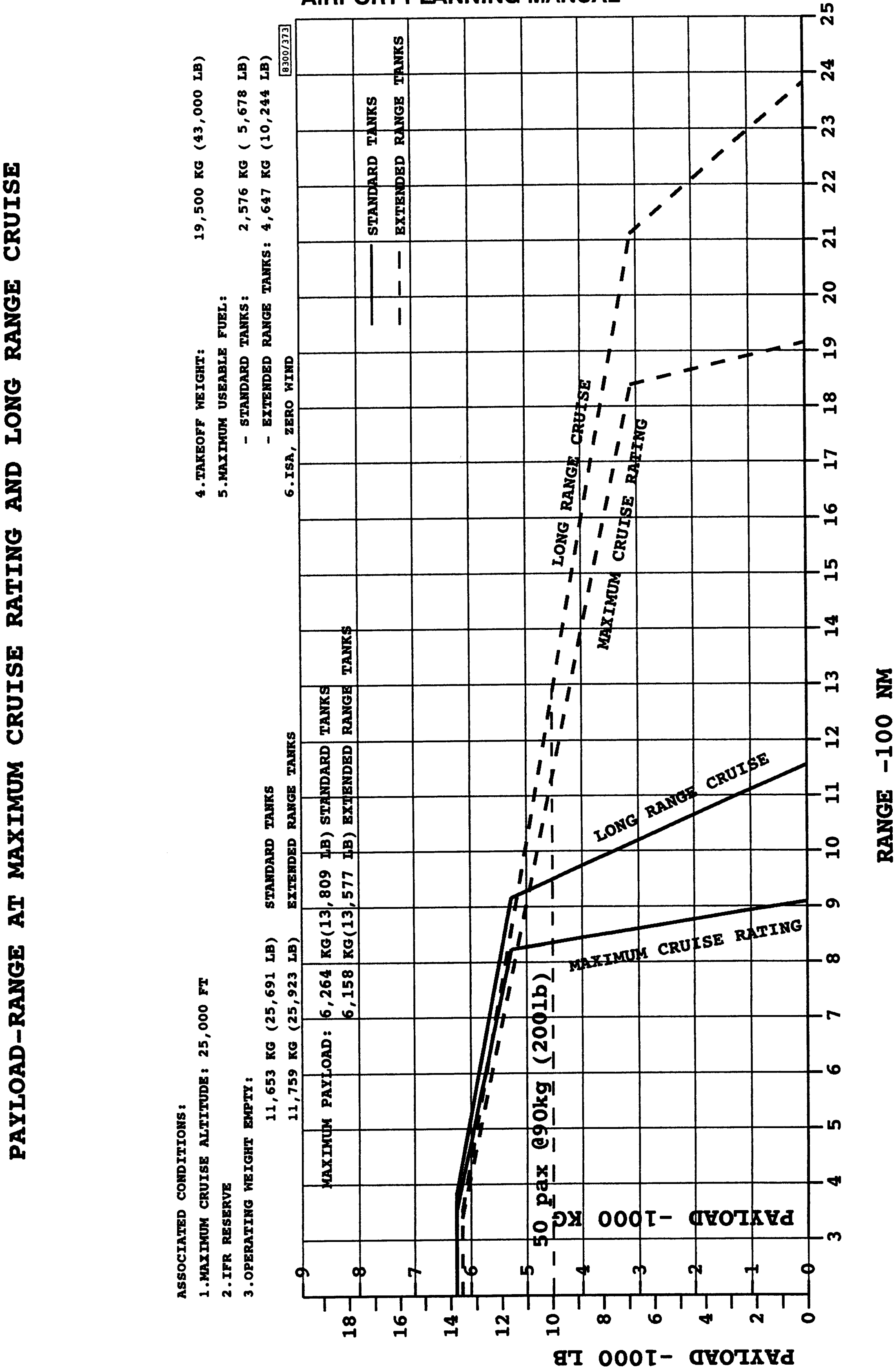


Figure 3−1 Payload Range at Maximum Cruise Rating and Long Range Cruise

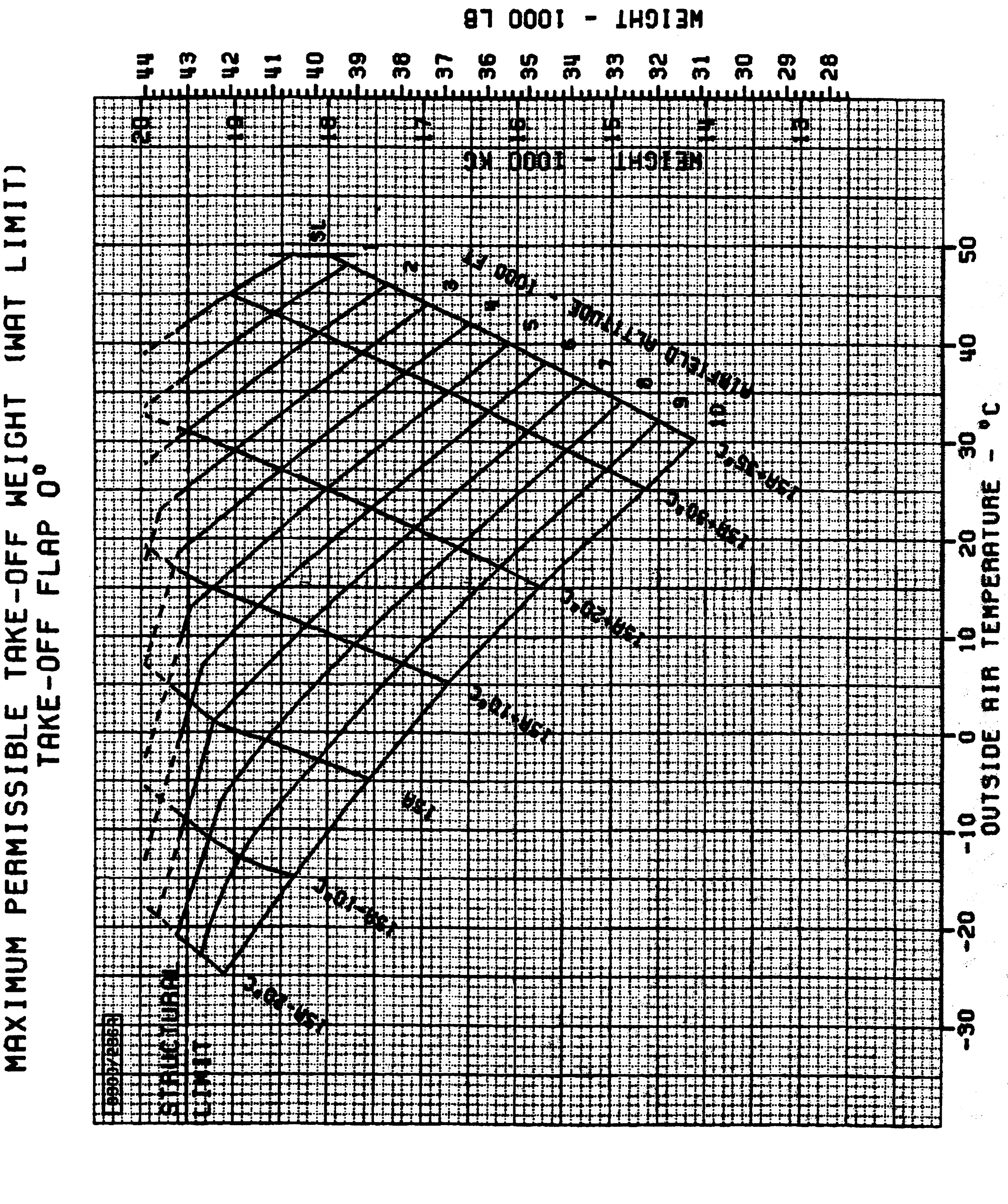


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Figure 3−2 Maximum Permissible Take−Off Weight Flap 0°

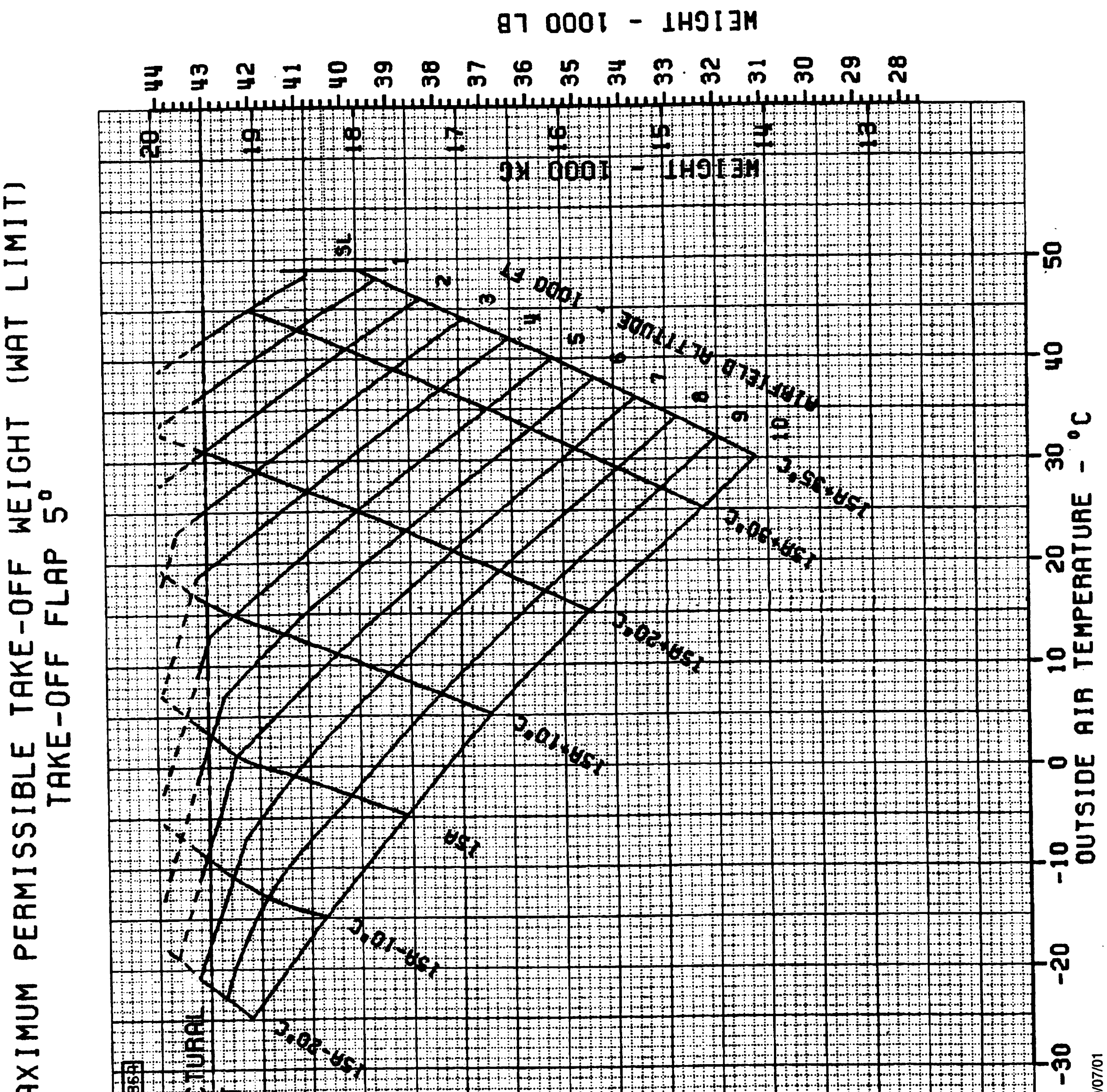

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Figure 3–3 Maximum Permissible Take–Off Weight Flap 5°

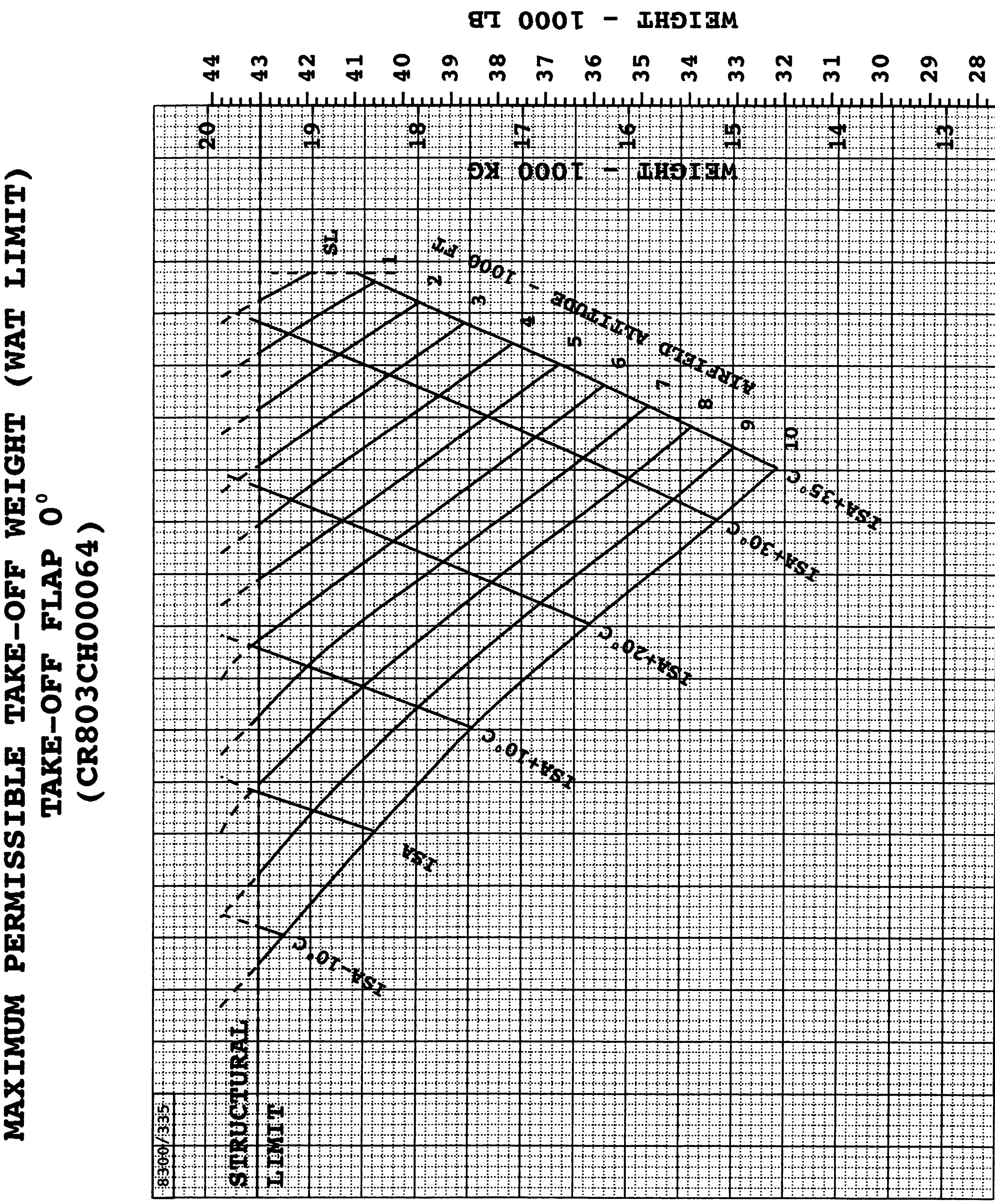

Figure 3–4 Maximum Permissible Take–Off Weight – Flap 0° (CR803CH00064)

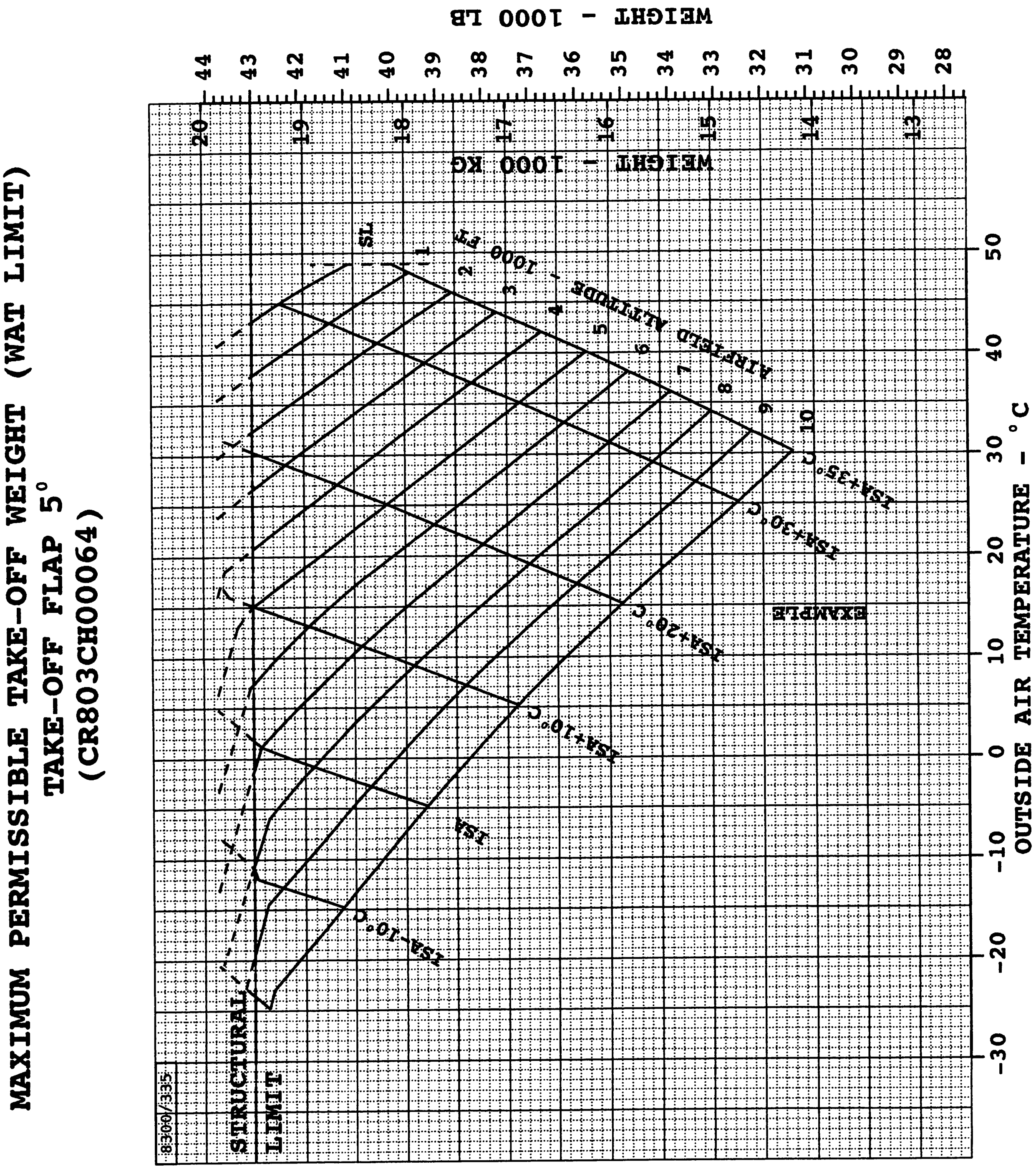

Figure 3–5 Maximum Permissible Take–Off Weight – Flap 5° (CR803CH00064)

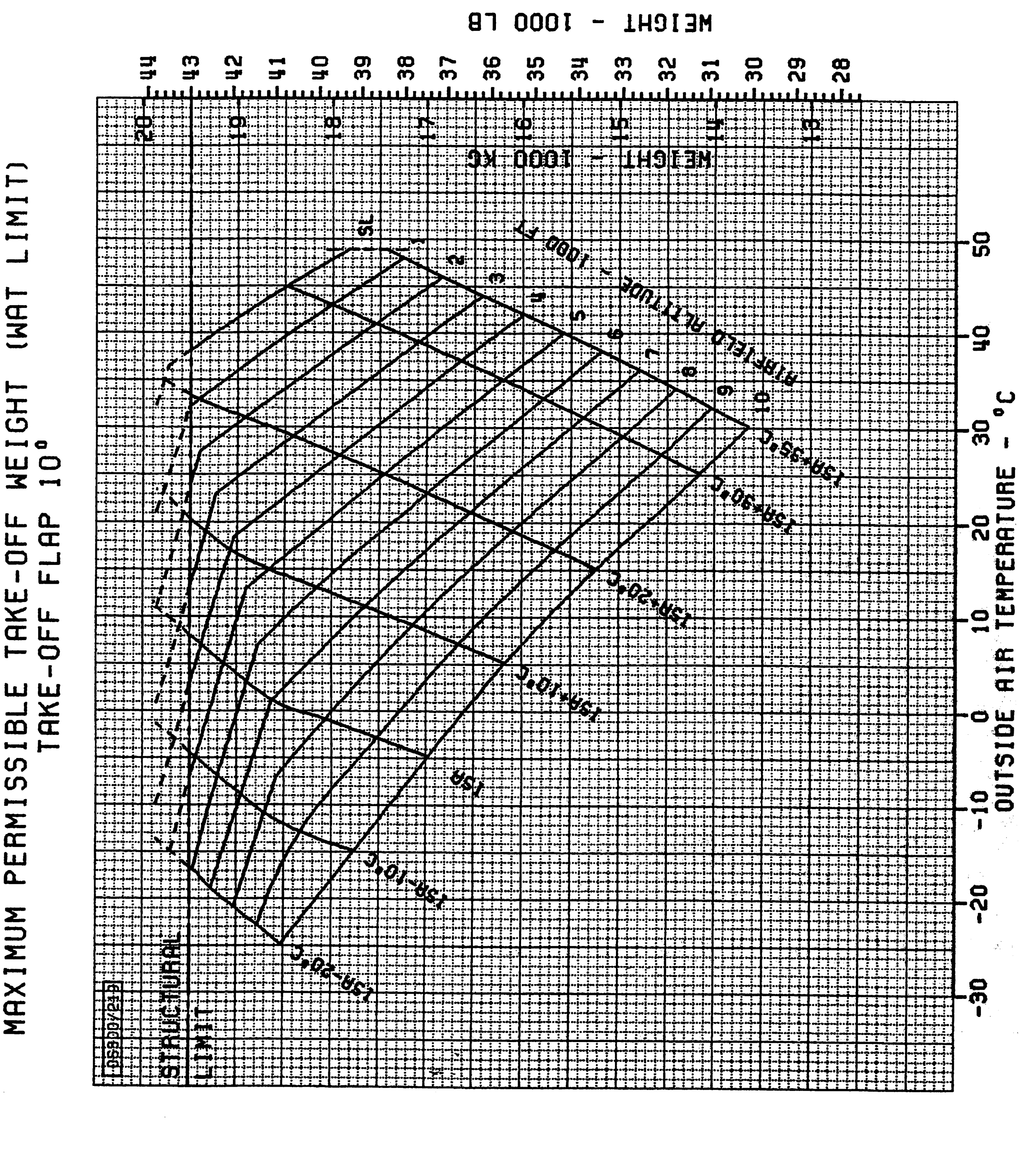

Figure 3–6 Maximum Permissible Take–Off Weight – Flap 10°

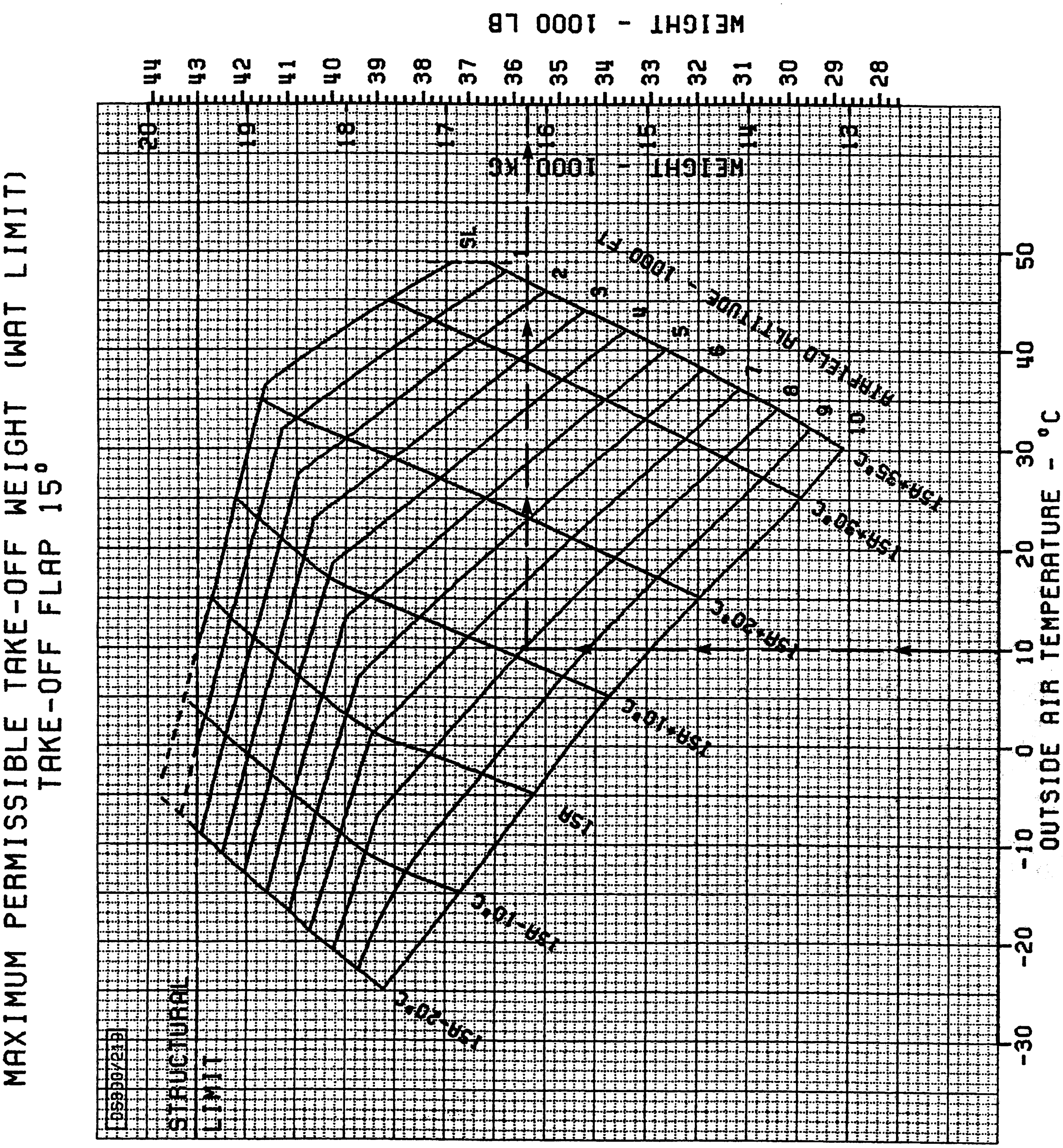

Figure 3–7 Maximum Permissible Take–Off Weight – Flap 15°

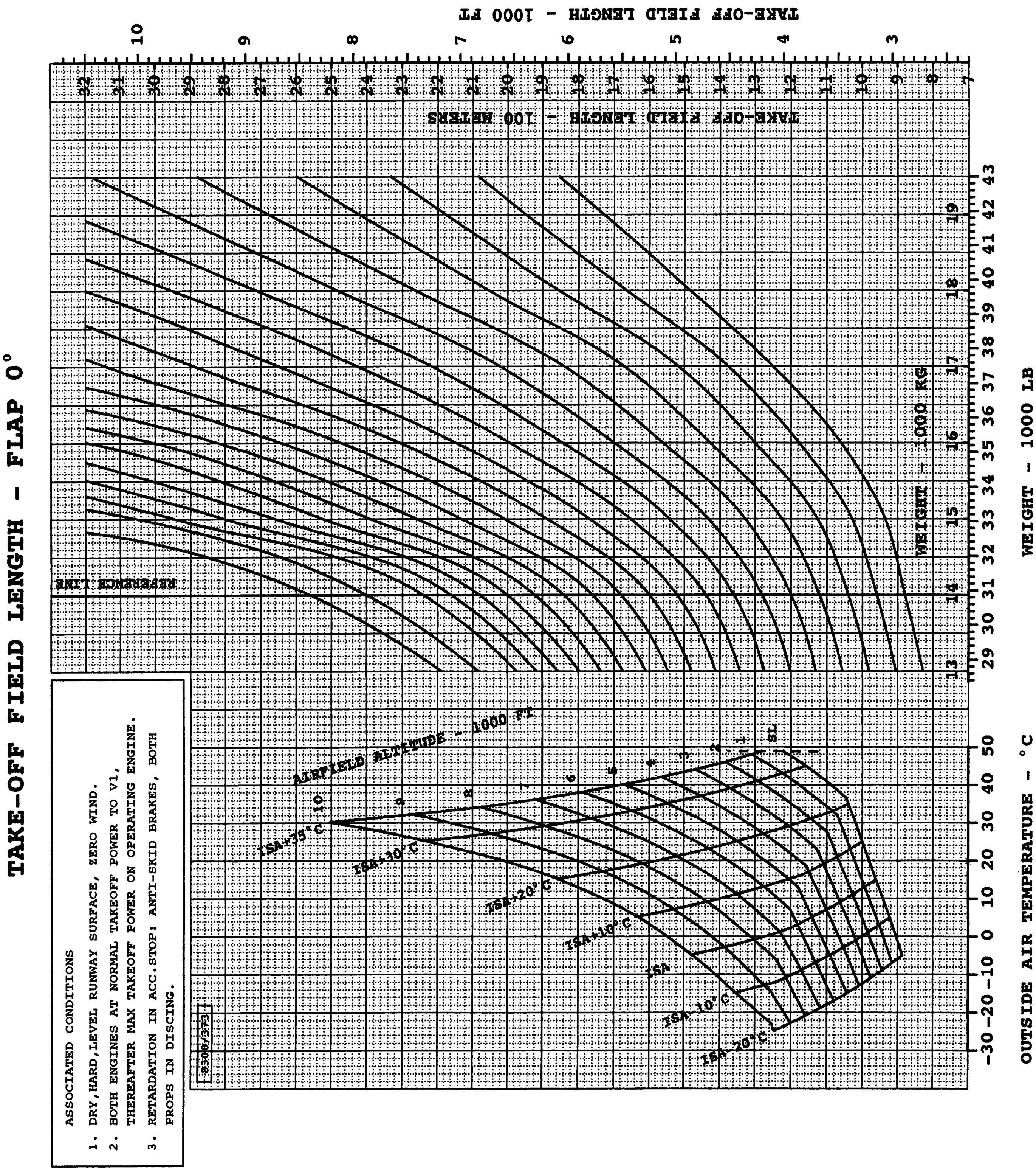

Figure 3–8 Take–Off Field Length – Flap 0°

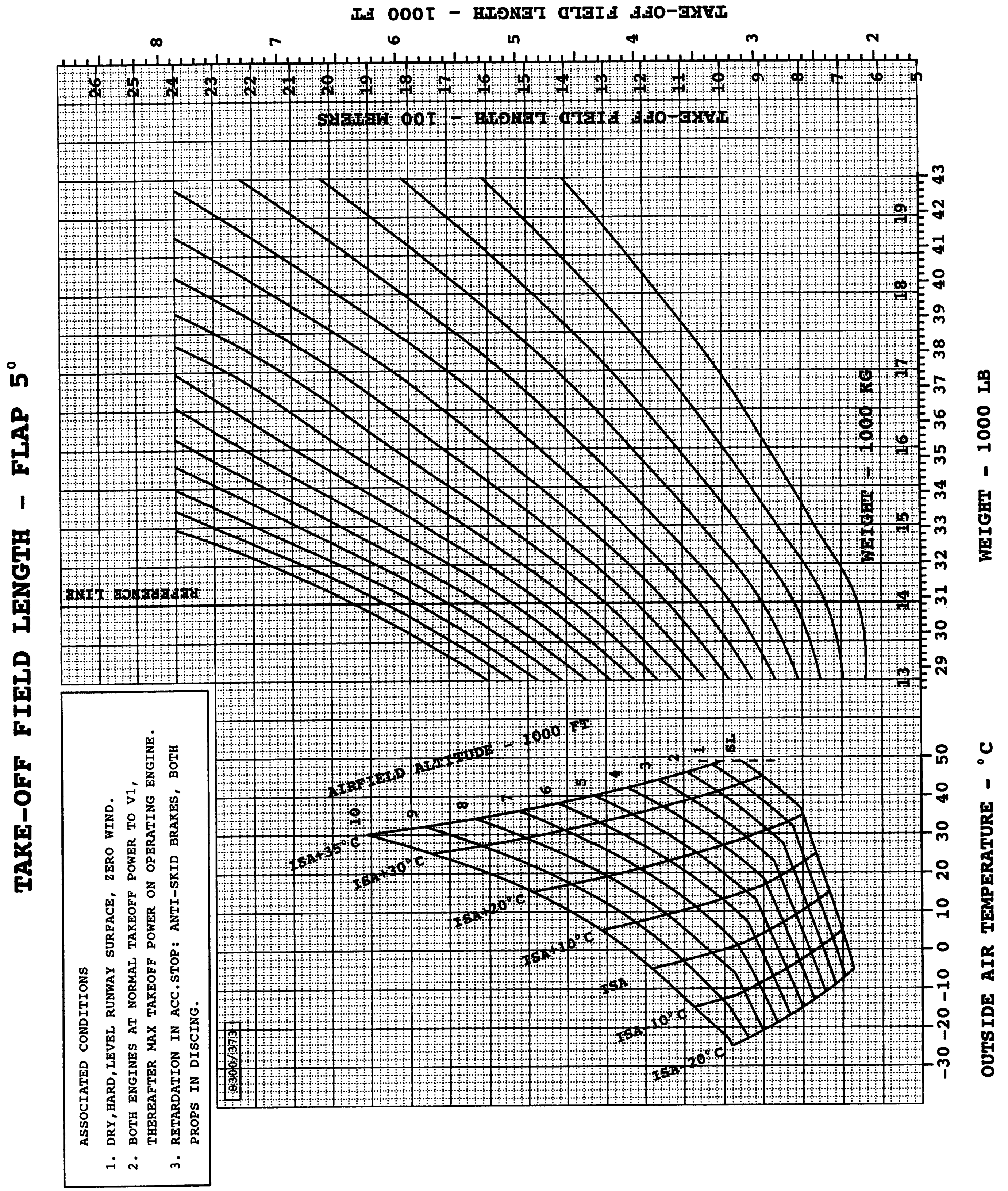

Figure 3–9 Take–Off Field Length – Flap 5 °

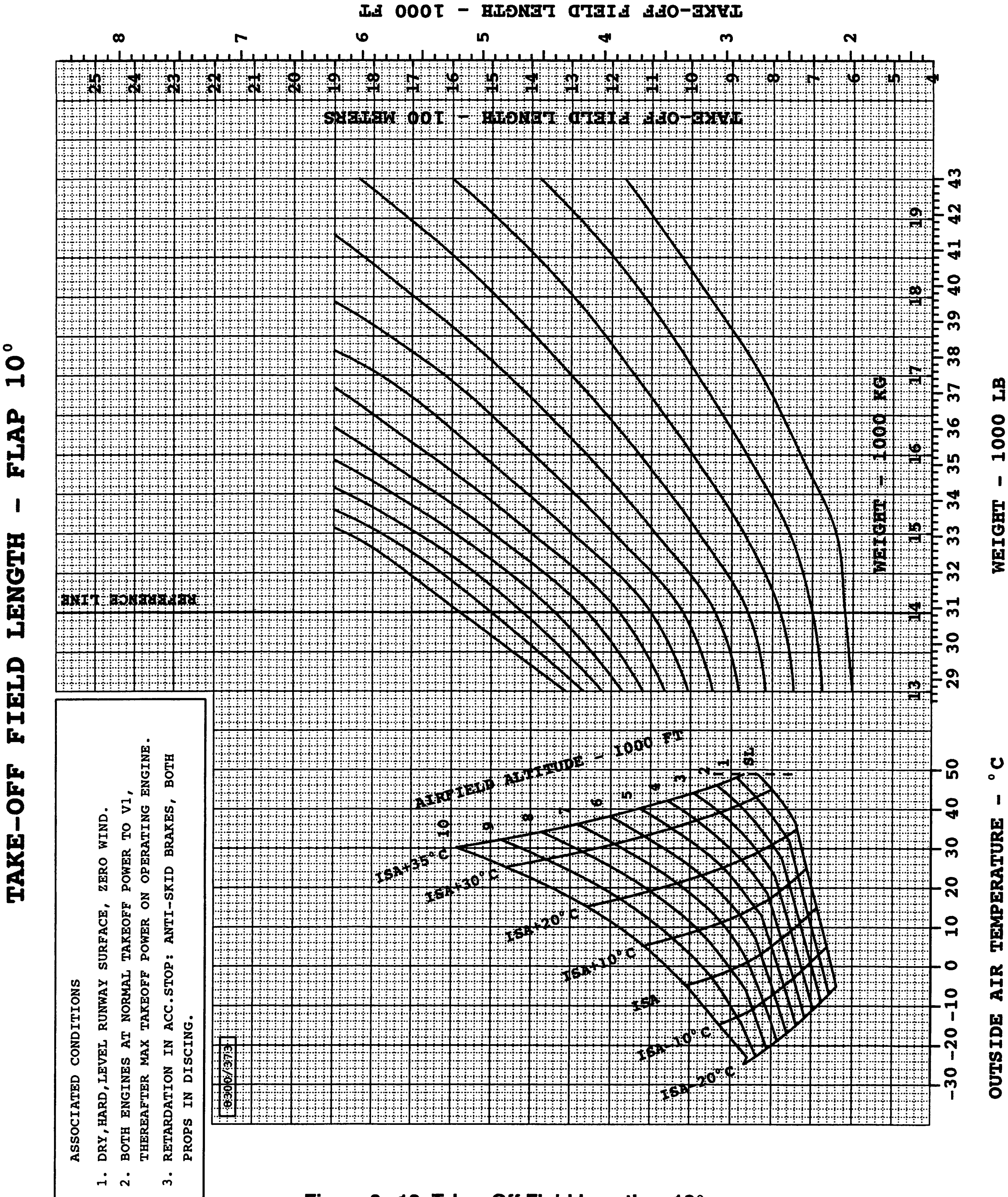

Figure 3–10 Take–Off Field Length – 10°

TAKE-OFF FIELD LENGTH - FLAP 15°

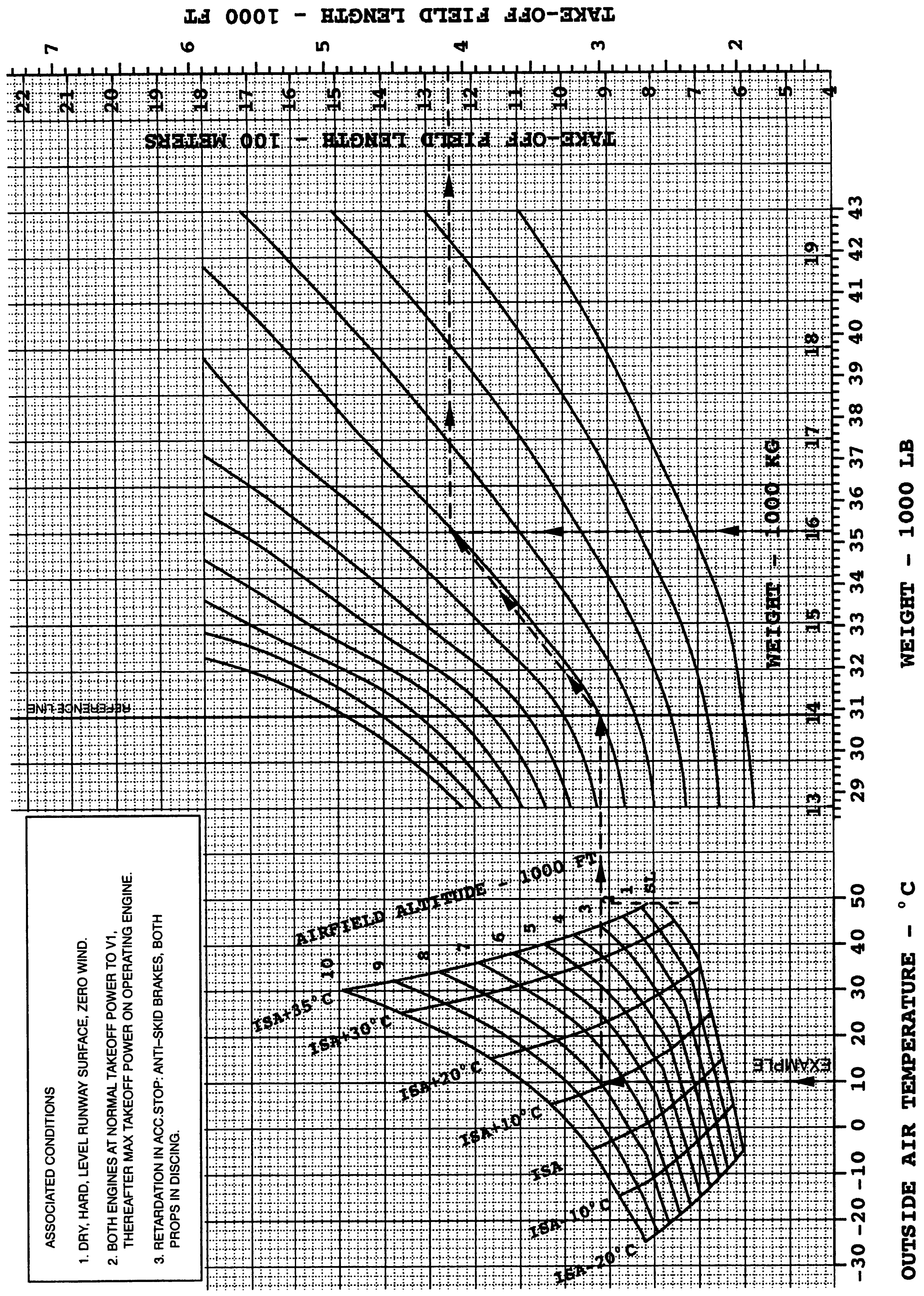

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Figure 3-11 Take-Off Field Length - Flap 15°

MAXIMUM PERMISSIBLE LANDING WEIGHT (WAT LIMIT)
LANDING FLAP 10°, APPROACH FLAP 5°
(CR803CH00064)

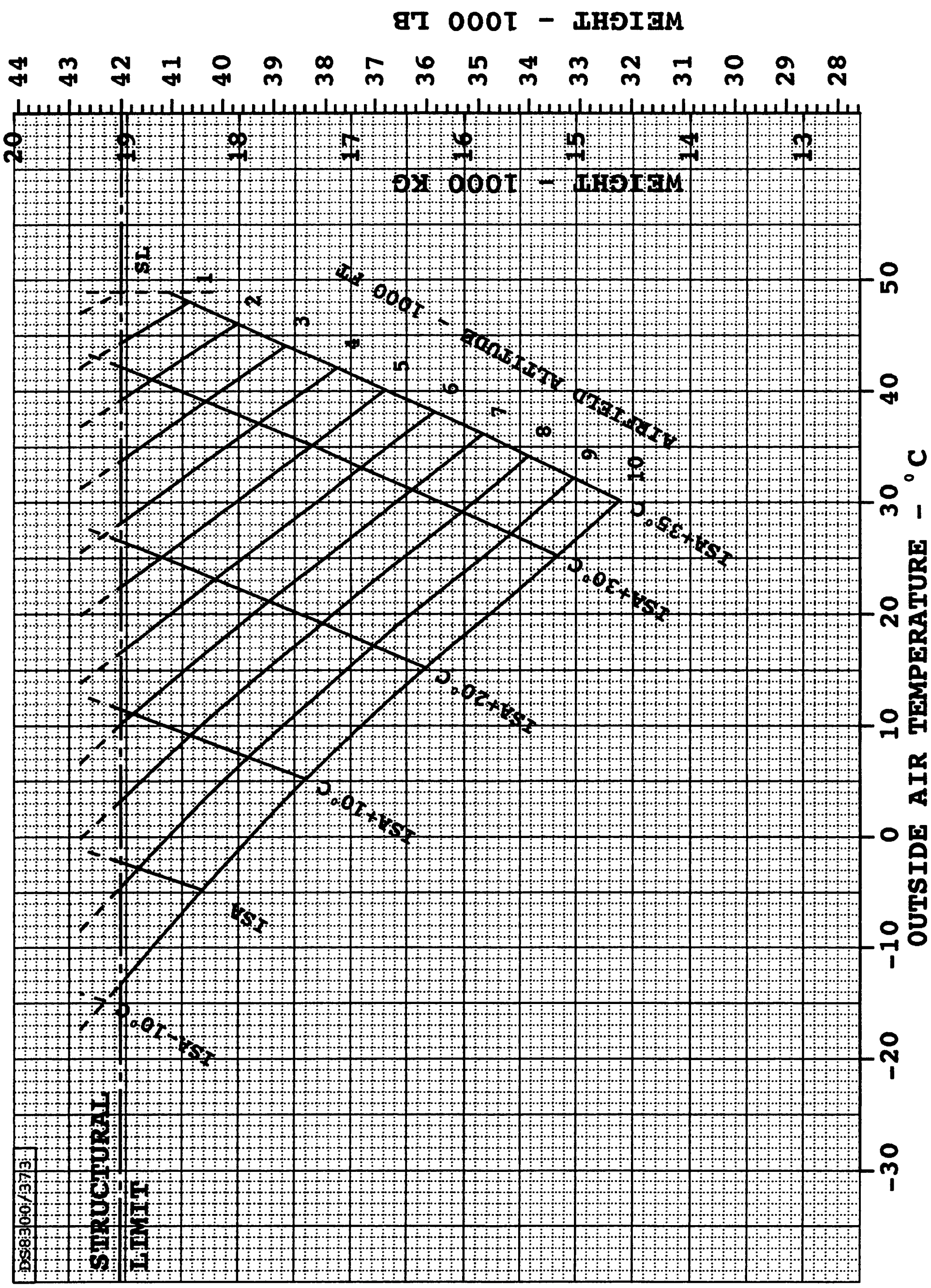


Figure 3–12 Maximum Permissible Landing Weight – Landing Flap 10° (CR803CH00064)

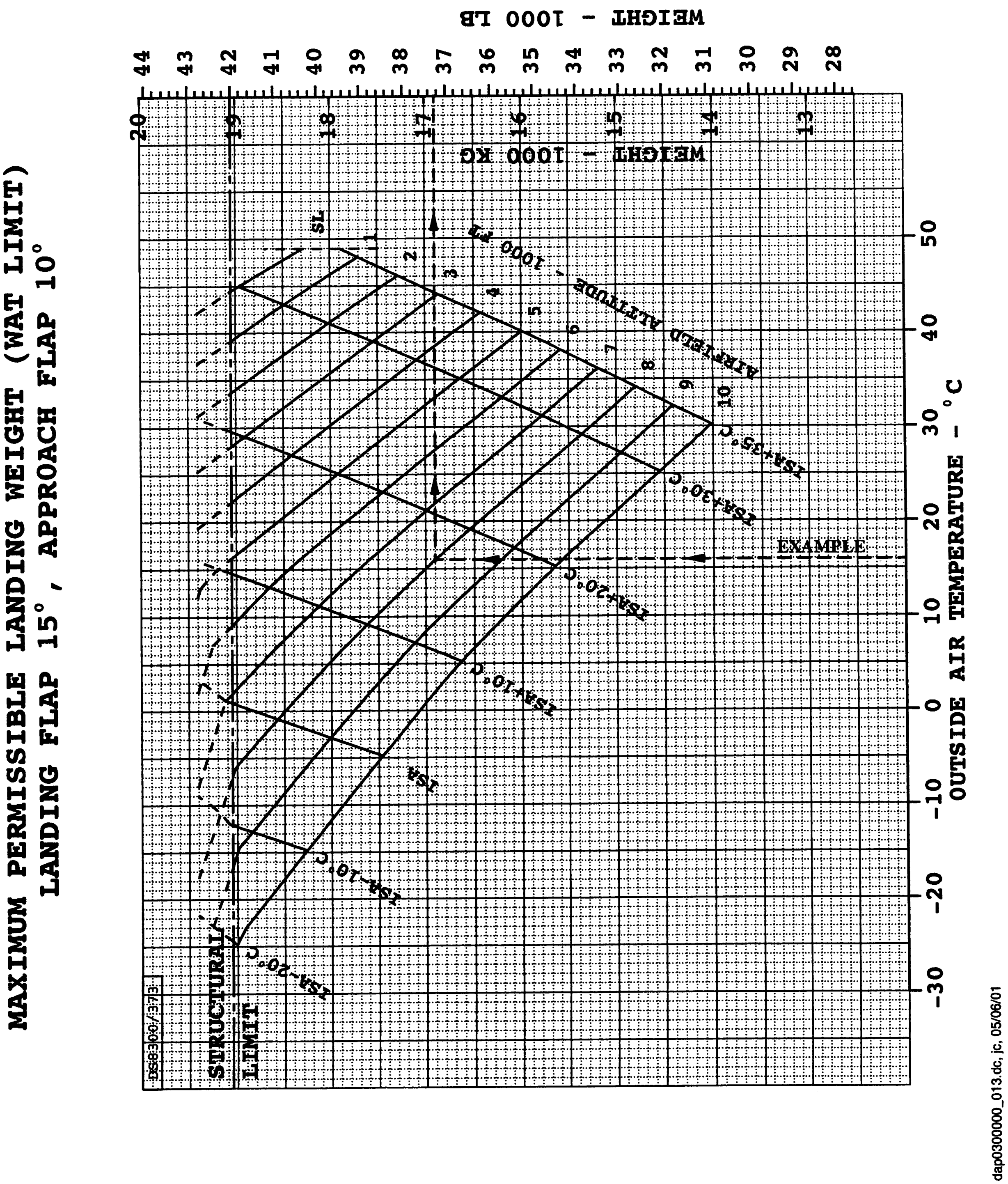


Figure 3-13 Maximum Permissible Landing Weight – Landing Flap 15°

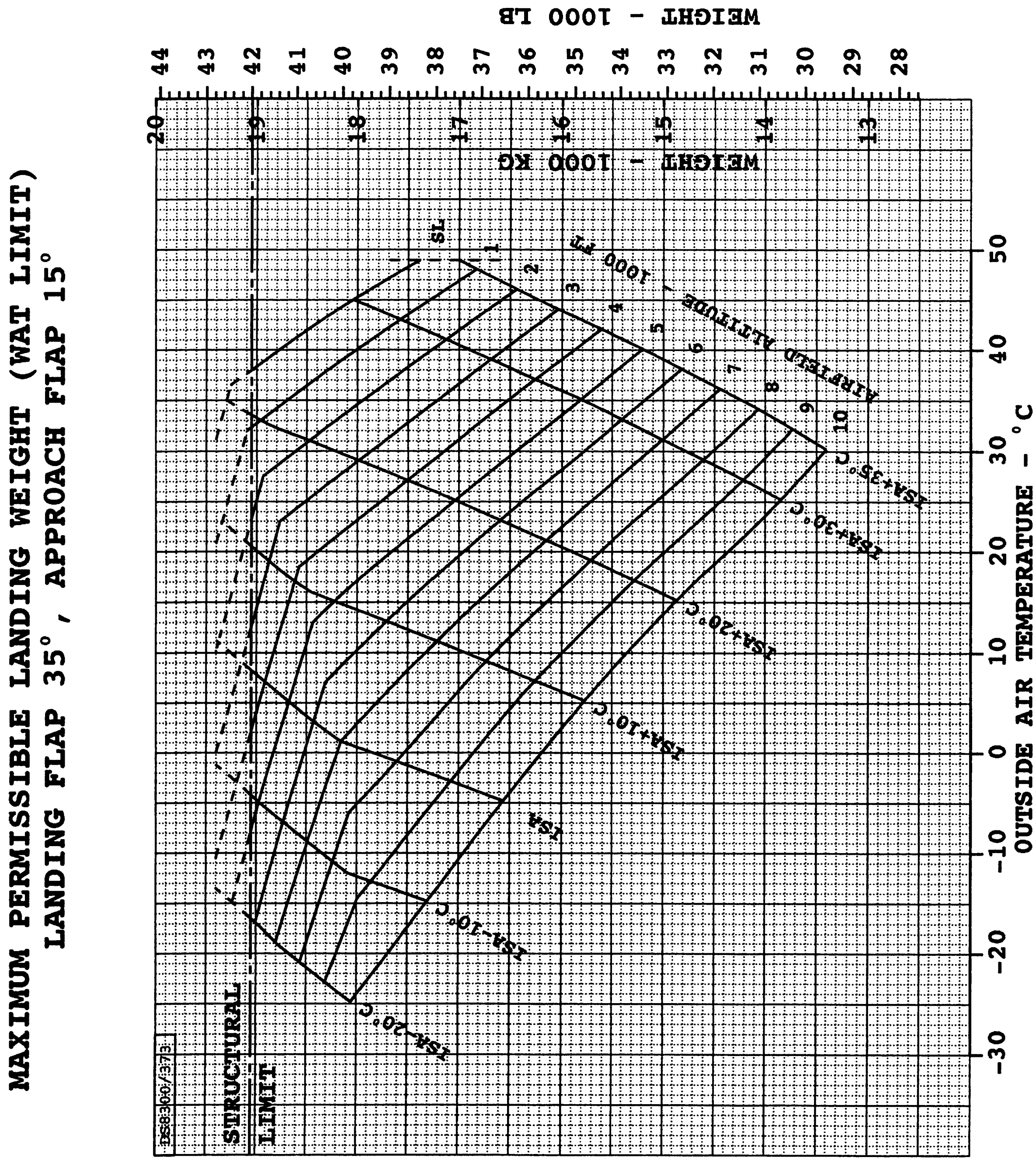


Figure 3–14 Maximum Permissible Landing Weight – Landing Flap 35°

UNFACTORED LANDING DISTANCE
FLAP 10°
(CR803CH00064)

8300/373

ASSOCIATED CONDITIONS

1. DRY,HARD,LEVEL RUNWAY SURFACE,ZERO WIND
2. RETARDATION IN GROUND ROLL: MAXIMUM MAIN WHEEL ANTI-SKID BRAKING, PROPELLERS AT DISC.

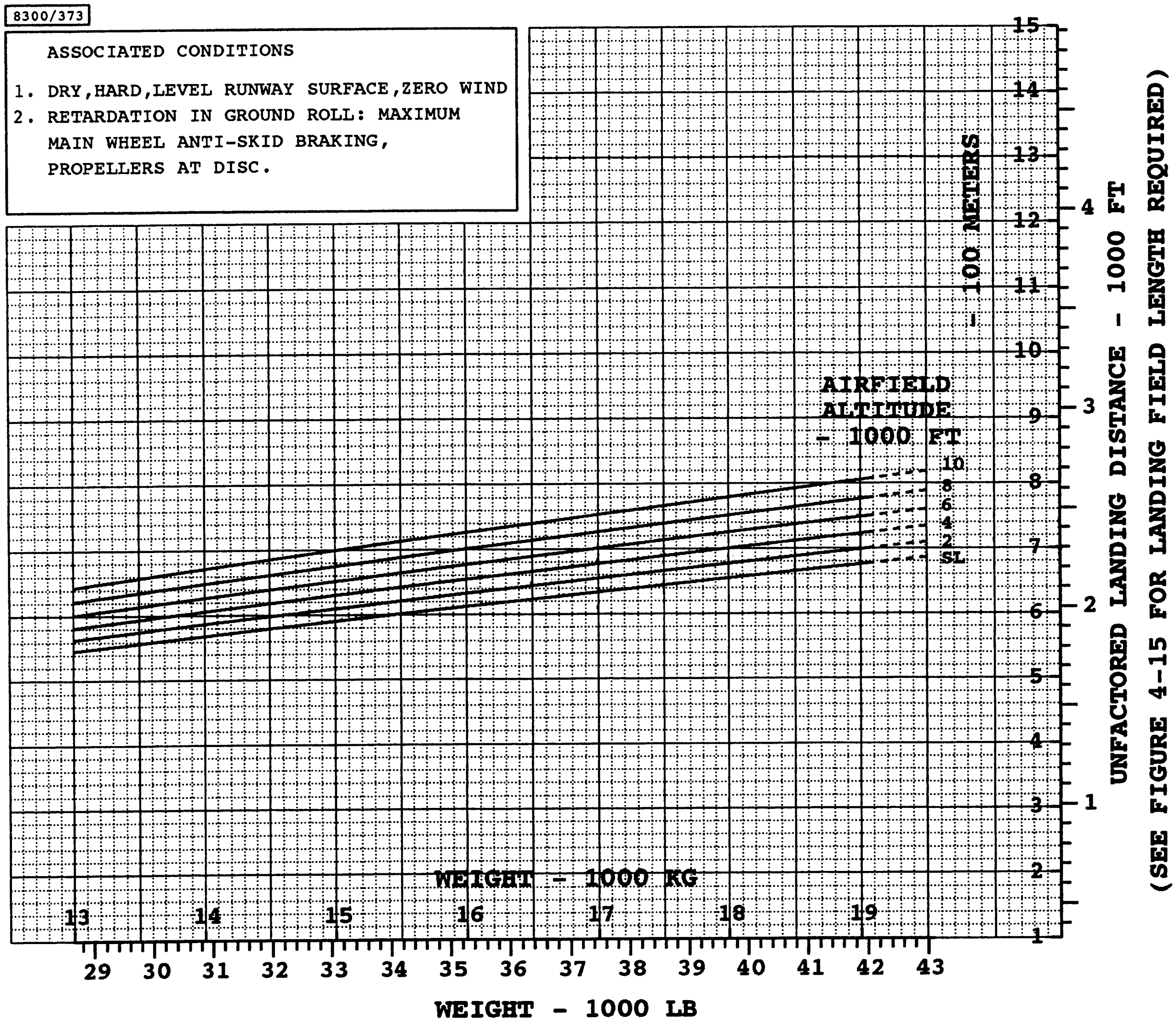


Figure 3−15 Unfactored Landing Distance Flap 10° (CR803CH00064)

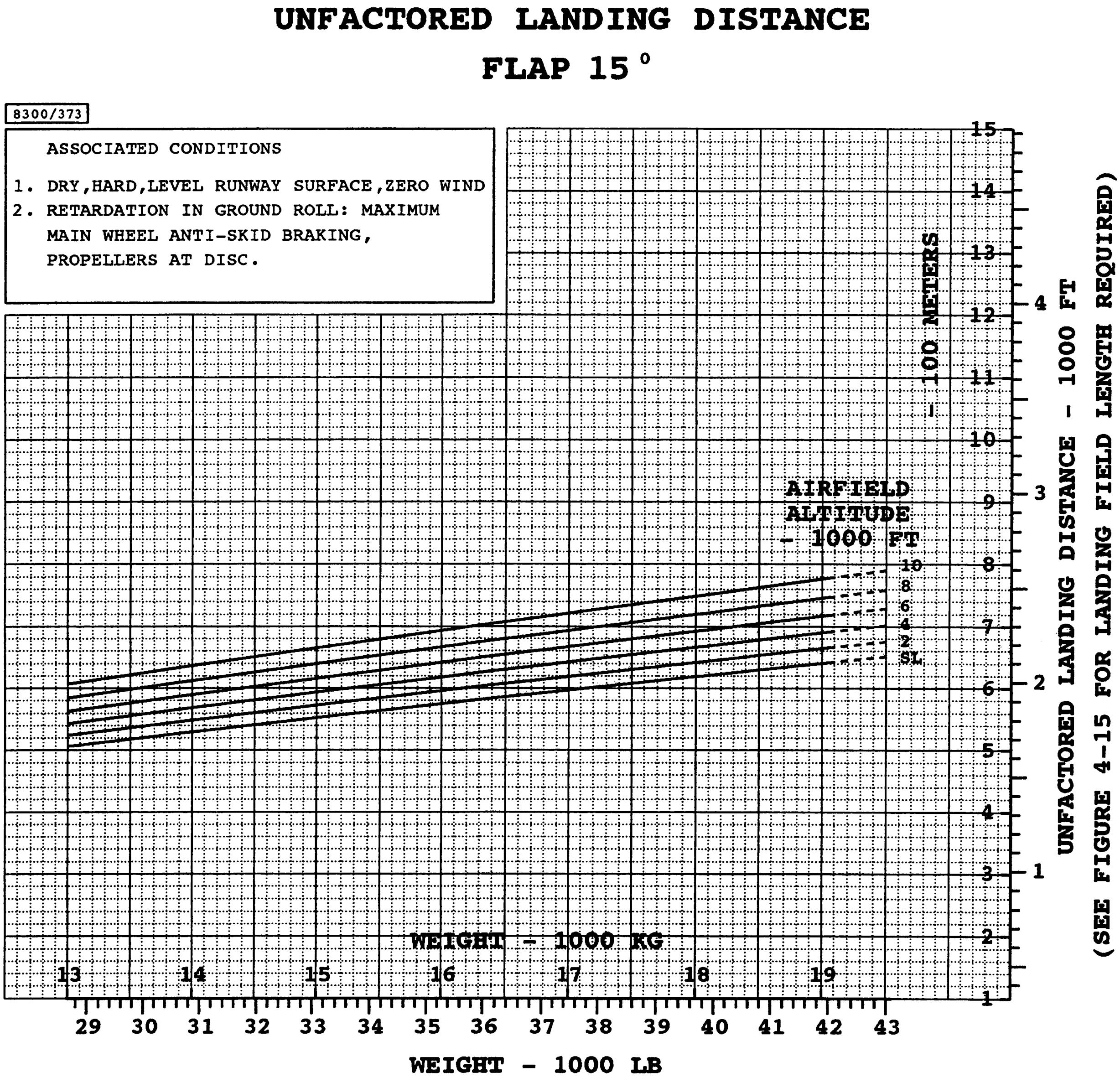


Figure 3–16 Unfactored Landing Distance Flap 15°

UNFACTORED LANDING DISTANCE
FLAP 35°

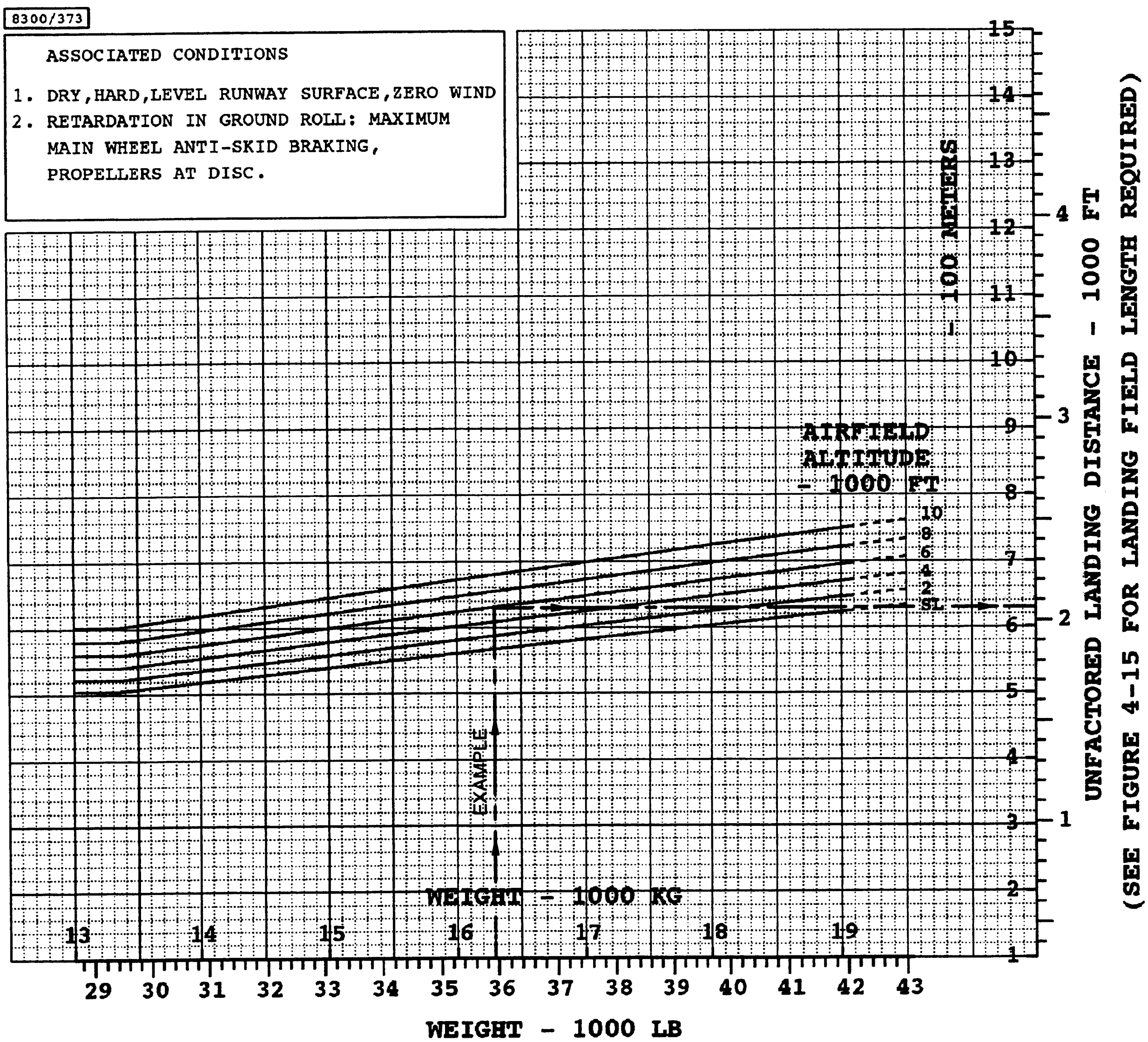


Figure 3–17 Unfactored Landing Distance Flap 35°

LANDING FIELD LENGTH REQUIRED DESTINATION AND ALTERNATE AIRFIELDS

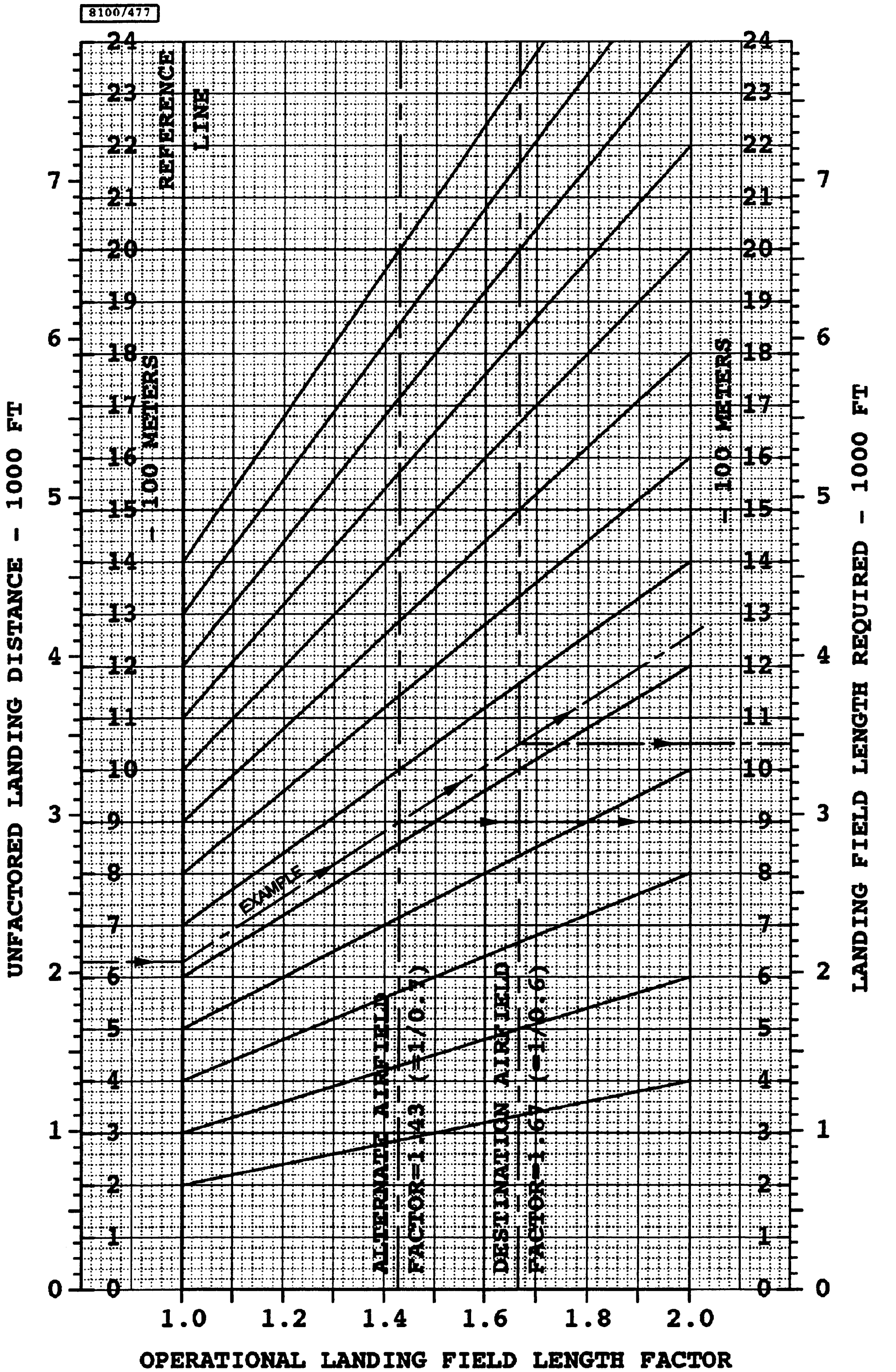


Figure 3–18 Landing Field Length Required – Destination and Alternate

SECTION 4

GROUND MANEUVERING

ILLUSTRATIONS

SECTION 4

GROUND MANEUVERING

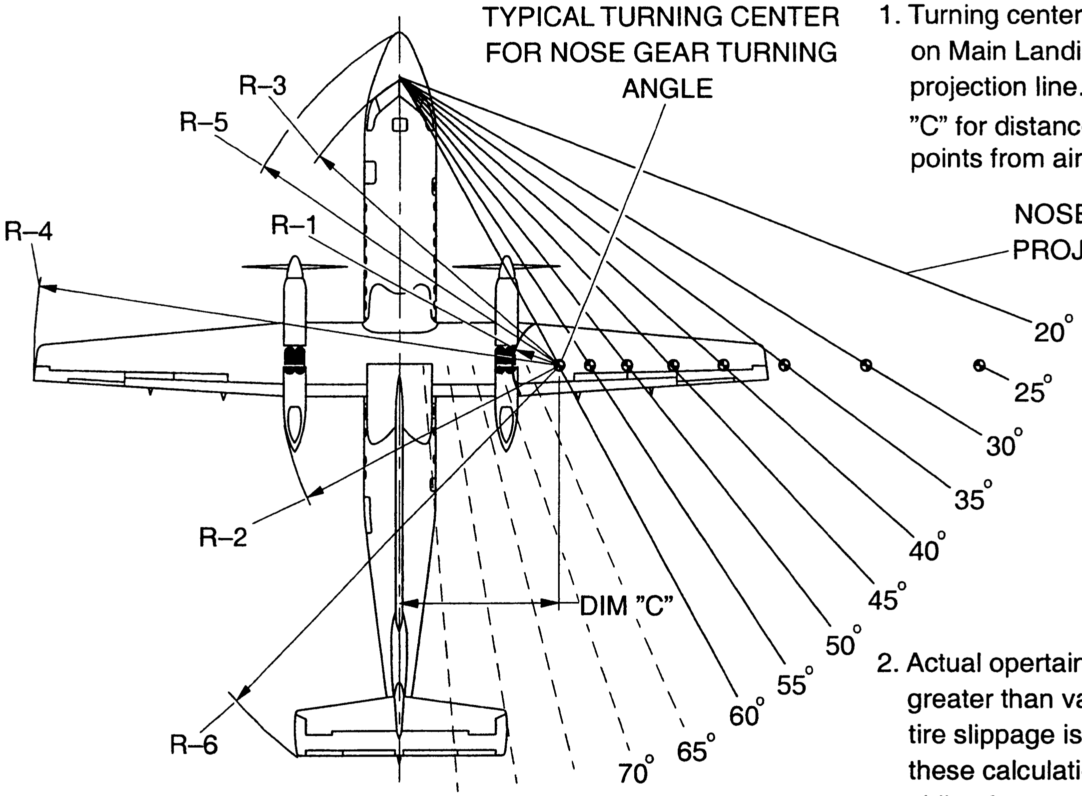
4.0 INTRODUCTION

This section provides data on the following items:

- –Aircraft turning capabilities (refer to Figure 4–1 and 4–2)
- –Visibility from cockpit (refer to Figure 4–3 and 4–4)
- –Maneuvering characteristics (refer to Figure 4–5, 4–6, 4–7, and 4–8)
- –Parking and Mooring data (refer to Figure 4–9)

For ease of presentation, this data has been determined from the theoretical limits imposed by the geometry of the aircraft, and where noted, provides normal allowance for tire slippage. As such, it reflects the turning capability of the aircraft in favorable operating circumstances without the use of reverse thrust or differential braking. This data should only be used as a guideline for the method of determination of such parameters and for the maneuvering characteristics of the Q300 aircraft.

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 and techniques may be necessary to satisfy physical constraints within the maneuvering area, such as: adverse grades, limited area or high risk of jet engine exhaust or propeller slipstream damage. For these reasons, ground maneuvering requirements should be coordinated with the aircraft operator prior to layout planning.

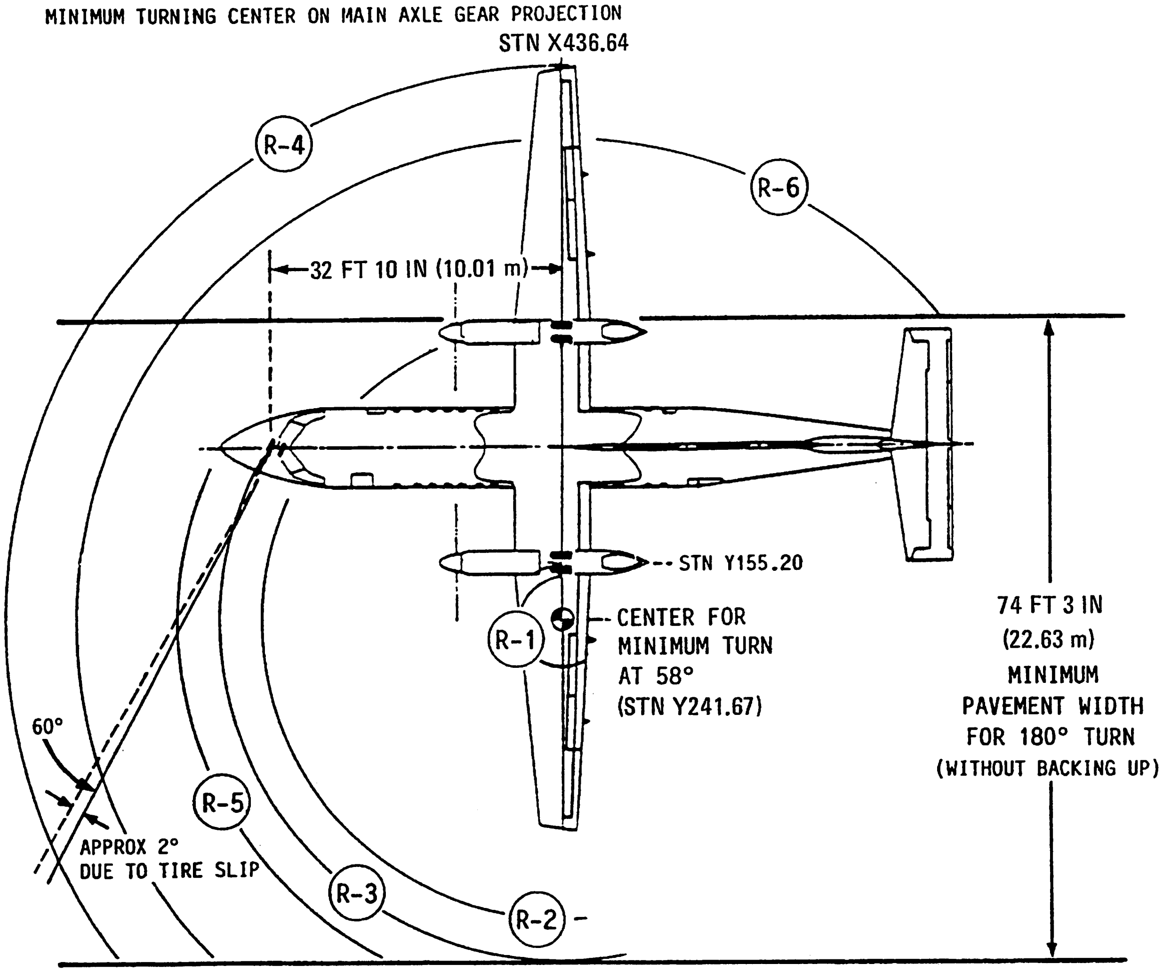


NOTES

1. Turning center points located on Main Landing Gear axle projection line. See dimension "C" for distance of individual points from aircraft centerline.
2. Actual opertaing data will be greater than values shown since tire slippage is not considered in these calculations. Consult airline for operating procedures.

	STEERING ANGLE–DEG	R–1 INNER GEAR IN / FT	R–1 M	R–2 OUTER GEAR IN / FT	R–2 M	R–3 NOSE GEAR IN / FT	R–3 M	R–4 WING TIP IN / FT	R–4 M	R–5 NOSE IN / FT	R–5 M	R–6 TAIL IN / FT	R–6 M	DIMENSION "C" IN / FT	DIMENSION "C" M
STEERING	5	361.45	110.17	389.60	118.75	4535.20 / 377.93	115.19	5043.93 / 420.33	128.11	4571.30 / 380.90	116.10	4689.39 / 390.78	119.11	375.52	114.46
	10	2066.47 / 172.20	52.49	2402.21 / 200.35	61.07	2282.28 / 190.19	57.97	2772.98 / 231.10	70.43	2312.31 / 192.69	58.73	2445.91 / 203.83	62.13	2235.34 / 186.28	56.78
	15	1301.49 / 108.46	33.06	1639.23 / 136.03	41.64	1535.46 / 127.96	39.00	2009.80 / 167.49	51.05	1560.90 / 130.08	39.65	1706.40 / 142.20	43.34	1470.40 / 122.50	37.35
	20	912.91 / 76.08	23.19	1250.65 / 104.22	31.77	1165.26 / 97.11	29.60	1621.25 / 135.10	41.18	1188.18 / 99.02	30.18	1342.01 / 111.80	34.09	1081.78 / 90.15	27.48
	25	674.79 / 56.23	17.14	1012.53 / 84.38	25.72	945.79 / 78.82	24.02	1383.13 / 115.26	35.13	969.64 / 80.80	24.63	1126.76 / 93.90	28.62	843.66 / 70.30	21.43
	30	511.77 / 42.65	13.00	849.51 / 70.79	21.58	801.80 / 66.82	20.37	1220.13 / 101.68	30.99	829.00 / 69.08	21.06	985.50 / 82.12	25.03	680.64 / 56.72	17.29
	35	391.55 / 32.63	9.95	729.29 / 60.77	18.52	701.04 / 58.42	17.81	1099.91 / 91.66	27.94	731.92 / 60.99	18.59	886.11 / 73.84	22.51	560.42 / 46.70	14.23
	40	297.93 / 24.83	7.57	635.67 / 52.97	16.15	627.44 / 52.29	15.94	1006.29 / 83.86	25.56	662.18 / 55.18	16.82	812.63 / 67.72	20.64	466.80 / 38.90	11.86
	45	221.94 / 18.50	5.64	559.68 / 46.64	14.22	572.11 / 47.68	14.53	930.31 / 77.53	23.63	610.32 / 50.86	15.50	756.26 / 63.02	19.21	390.81 / 32.57	9.93
	50	158.01 / 13.17	4.01	495.75 / 41.31	12.59	528.83 / 44.07	13.43	866.39 / 72.20	22.01	570.80 / 47.57	14.50	711.67 / 59.31	18.08	326.88 / 27.24	8.30
	55	120.83 / 10.07	3.07	440.57 / 36.71	11.19	496.73 / 41.39	12.62	811.21 / 67.60	20.60	540.74 / 45.06	13.73	675.68 / 56.31	17.16	271.70 / 22.64	6.90
	60	53.87 / 4.49	1.37	391.61 / 32.63	9.95	471.14 / 39.26	11.97	762.26 / 63.52	19.36	517.60 / 43.13	13.15	646.03 / 53.84	16.41	222.74 / 18.56	5.66
TOWING	65	9.58 / 0.798	0.243	347.32 / 28.94	8.82	451.41 / 38.20	11.64	717.97 / 59.83	18.24	499.97 / 41.66	12.70	621.31 / 51.78	15.78	178.45 / 14.87	4.53
	70			306.43 / 25.54	7.78	436.49 / 36.37	11.09	677.09 / 56.42	17.20	486.68 / 40.56	12.36	600.49 / 50.04	15.25	137.56 / 11.46	3.49
	75			268.01 / 22.33	6.81	425.66 / 35.47	10.81	638.67 / 53.22	16.22	477.28 / 39.77	12.12	582.86 / 48.57	14.80	99.13 / 8.26	2.52
	80			231.27 / 19.27	5.87	418.46 / 34.87	10.63	601.94 / 50.16	15.29	470.98 / 39.25	11.96	567.93 / 47.33	14.43	62.40 / 5.20	1.58
	85			195.59 / 16.30	4.97	414.52 / 34.54	10.53	566.27 / 47.19	14.38	467.48 / 38.96	11.87	555.37 / 46.28	14.11	26.72 / 2.23	0.679
	90			160.38 / 13.37	4.07	412.95 / 34.41	10.49	531.07 / 44.26	13.49	466.69 / 38.89	11.85	544.99 / 45.42	13.82	8.487 / 0.71	0.216

Figure 4–1 Turning Radii, No Slip Angle



ITEM	RADIUS
R-1 INNER GEAR	6 FT 1 IN (1.85 m)
R-2 OUTER GEAR	34 FT 3 IN (10.43 m)
R-3 NOSE GEAR	40 FT 1 IN (12.21 m)
R-4 WING TIP	65 FT 1 IN (19.84 m)
R-5 NOSE	43 FT 10 IN (13.36 m)
R-6 ELEVATOR TIP	54 FT 9 IN (16.69 m)

NOTES:
1. DIMENSIONS QUOTED ARE GIVEN FOR DRY, HARD, LEVEL SURFACE AT RECOMMENDED TIRE PRESSURES: 97 psi (669 kPa) FOR 31 x 9.75-14 STANDARD MAIN WHEEL TIRES, AND 60 psi (414 kPa) FOR 22 x 6.50-10 STANDARD NOSE WHEEL TIRES.
2. NOSE WHEEL STEERING LIMIT IS APPROXIMATELY 60° LEFT AND RIGHT.
3. SLIP ANGLE OF 2° IS APPROXIMATE ONLY AND MAY VARY DEPENDING ON AIRCRAFT CONFIGURATION, LOADING, AND TIRE WEAR.
4. DIMENSIONS GIVEN FOR MANEUVERING CLEARANCE AND TURNING RADII ARE MINIMUM RECOMMENDED LIMITS.

Figure 4–2 Turning Radius at Minimum Power

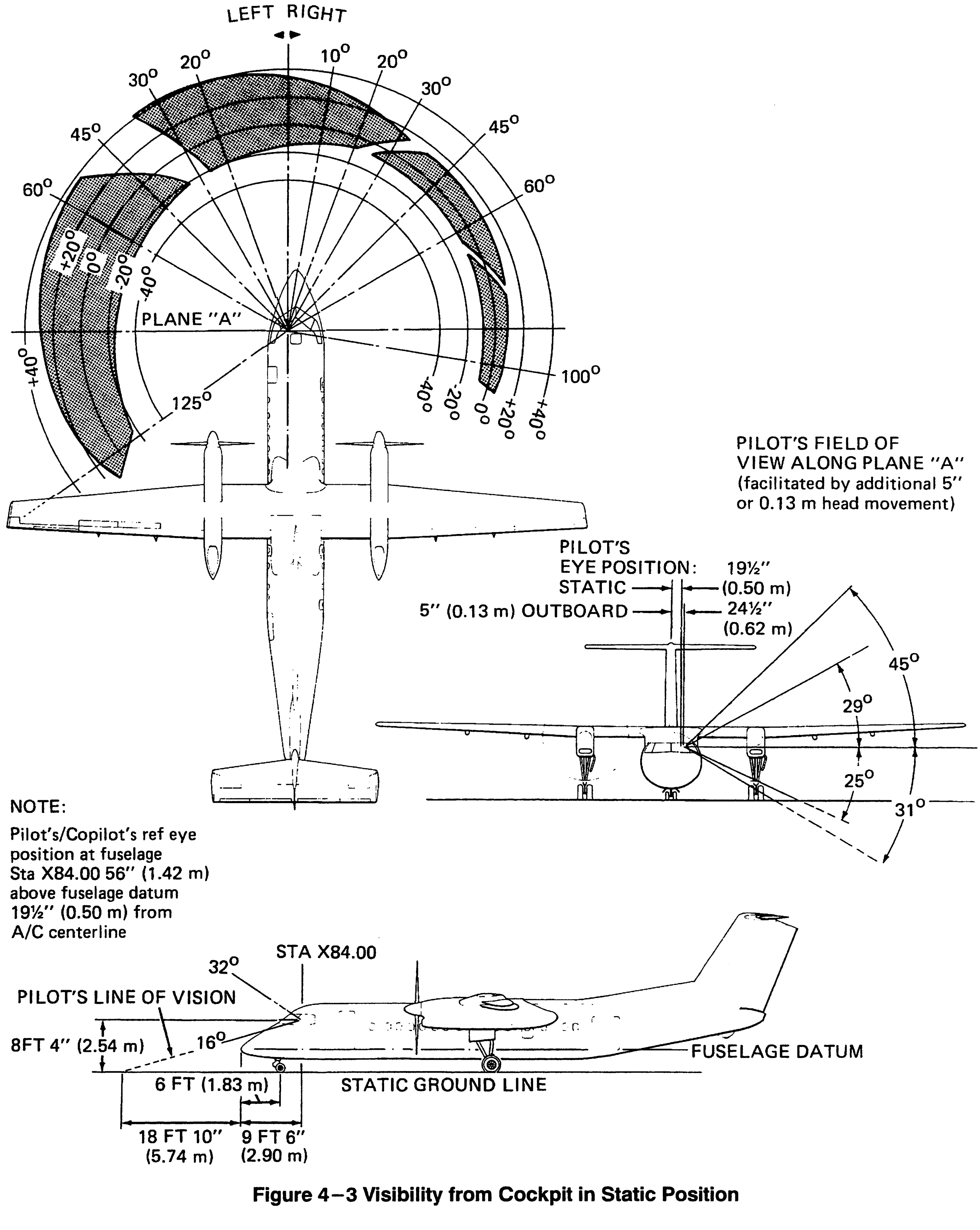


Figure 4–3 Visibility from Cockpit in Static Position

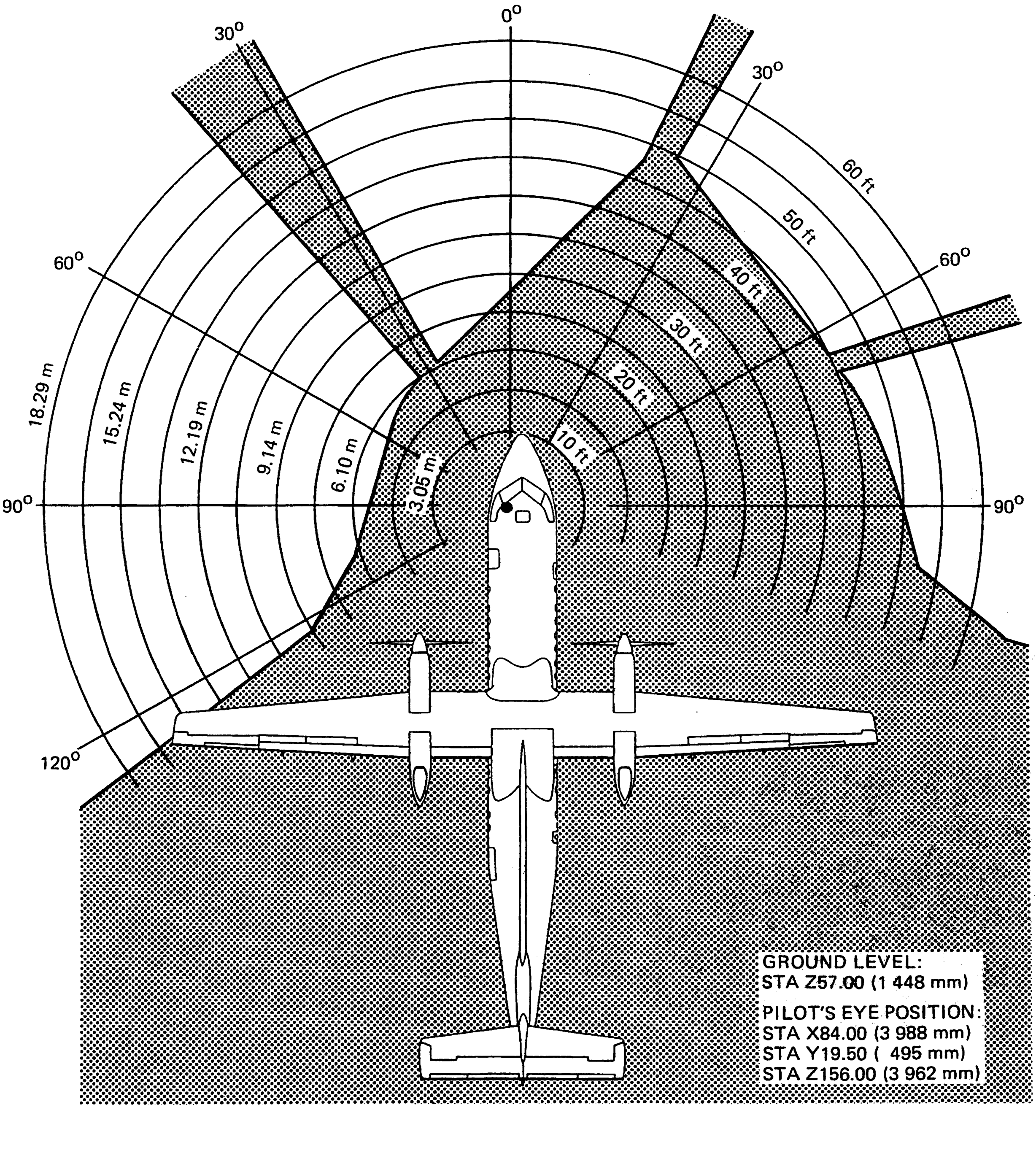


Figure 4–4 Ground Line Visibility from Cockpit, Static Position

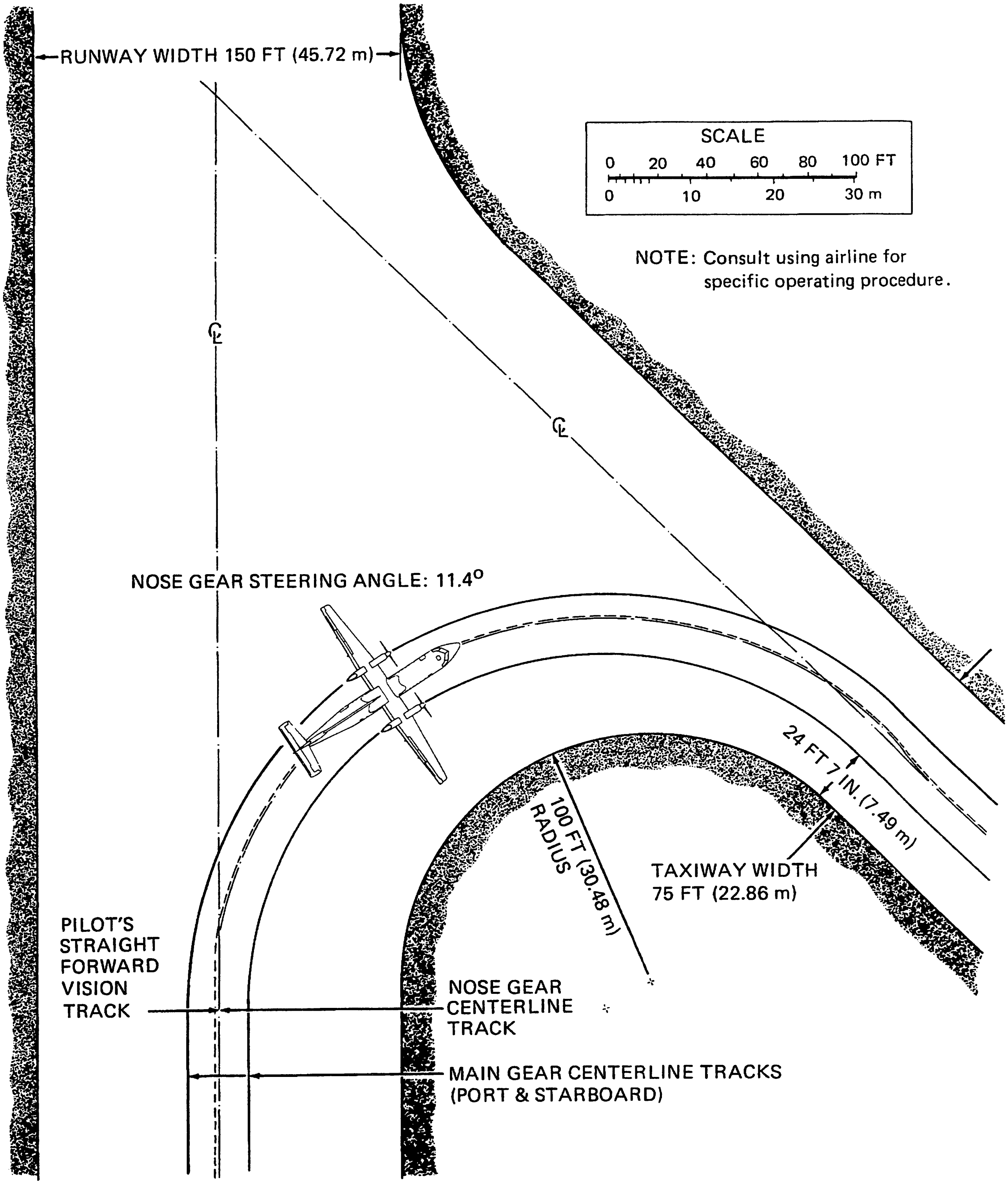


Figure 4–5 Greater Than 90° Turn – Runway to Taxiway with Nose Gear and Cockpit Tracks

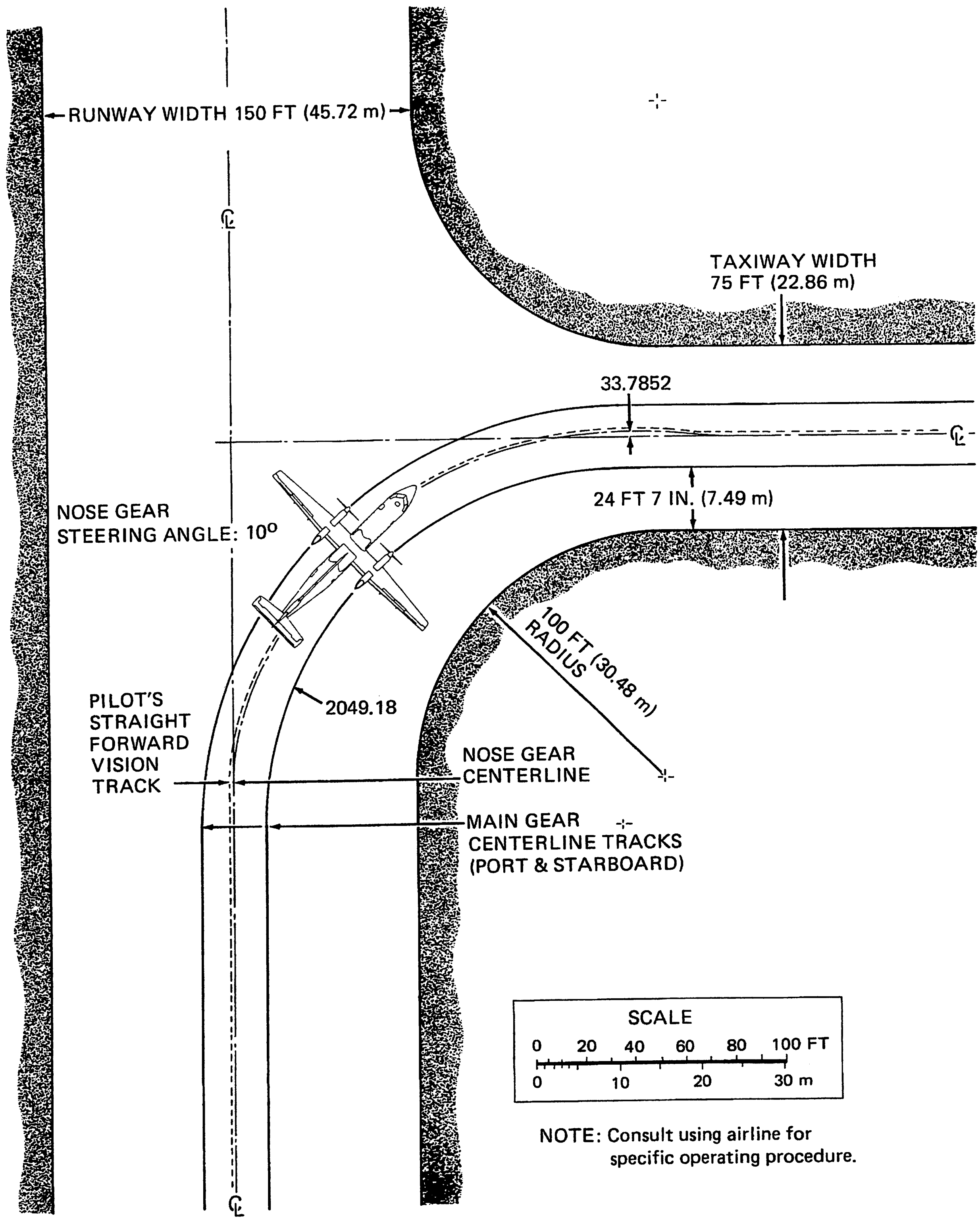


Figure 4–6 90° Turn–Runway to Taxiway with Nose Gear and Cockpit Tracks

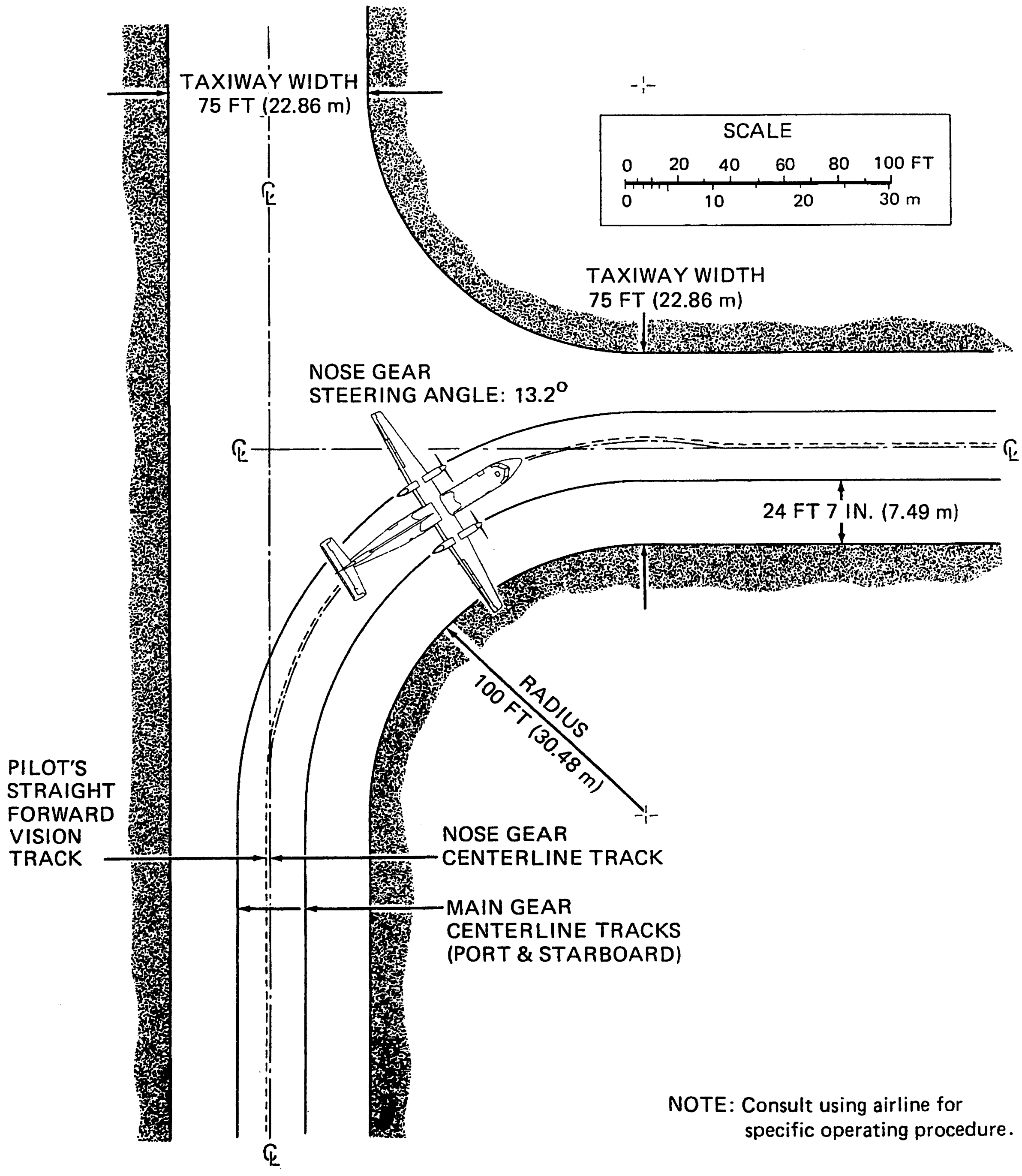


Figure 4–7 90° Turn–Taxiway to Taxiway with Nose Gear and Cockpit Tracks

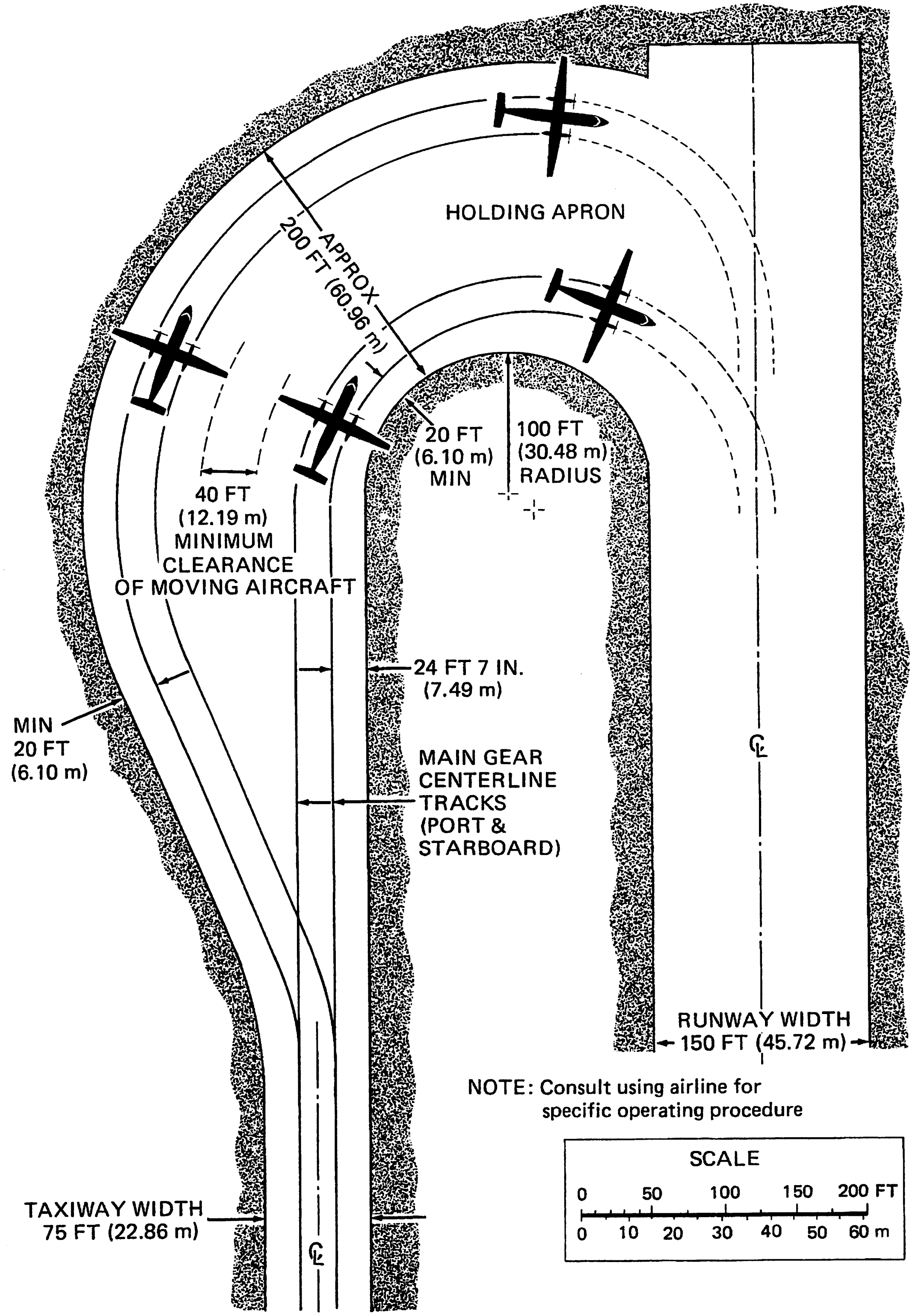
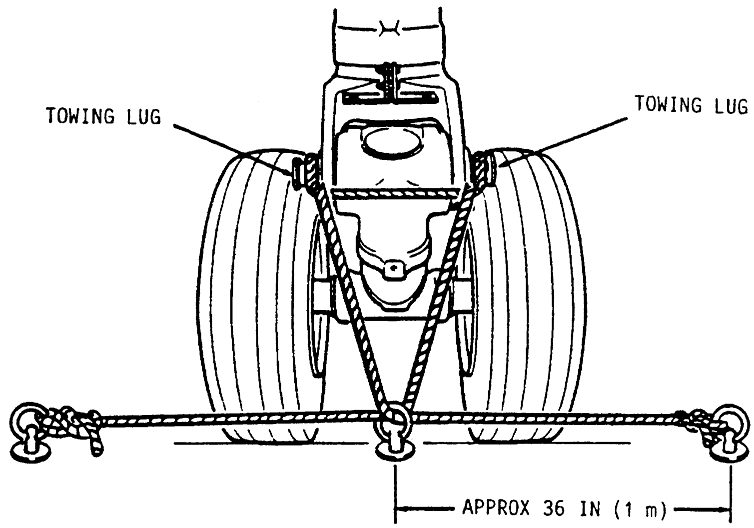


Figure 4−8 Runway Holding Bay (Apron)

PARKING & MOORING PROCEDURE

1. Park airplane heading into wind with flaps up and nose wheel centered.
2. Engage parking brake, check brake accumulator gauge and pump up as required (2500 psi minimum).
3. Engage gust lock.
4. Engage nose gear ground lock.
5. Install main gear ground lock pins (see illustration).
6. Install protective covers.
7. Install propeller restraints.
8. Close all doors and windows.
9. Statically ground airplane on undercarriage drag strut crossbeam (both sides).
10. Chock nose and main wheels.
11. Moor airplane (see illustrations).



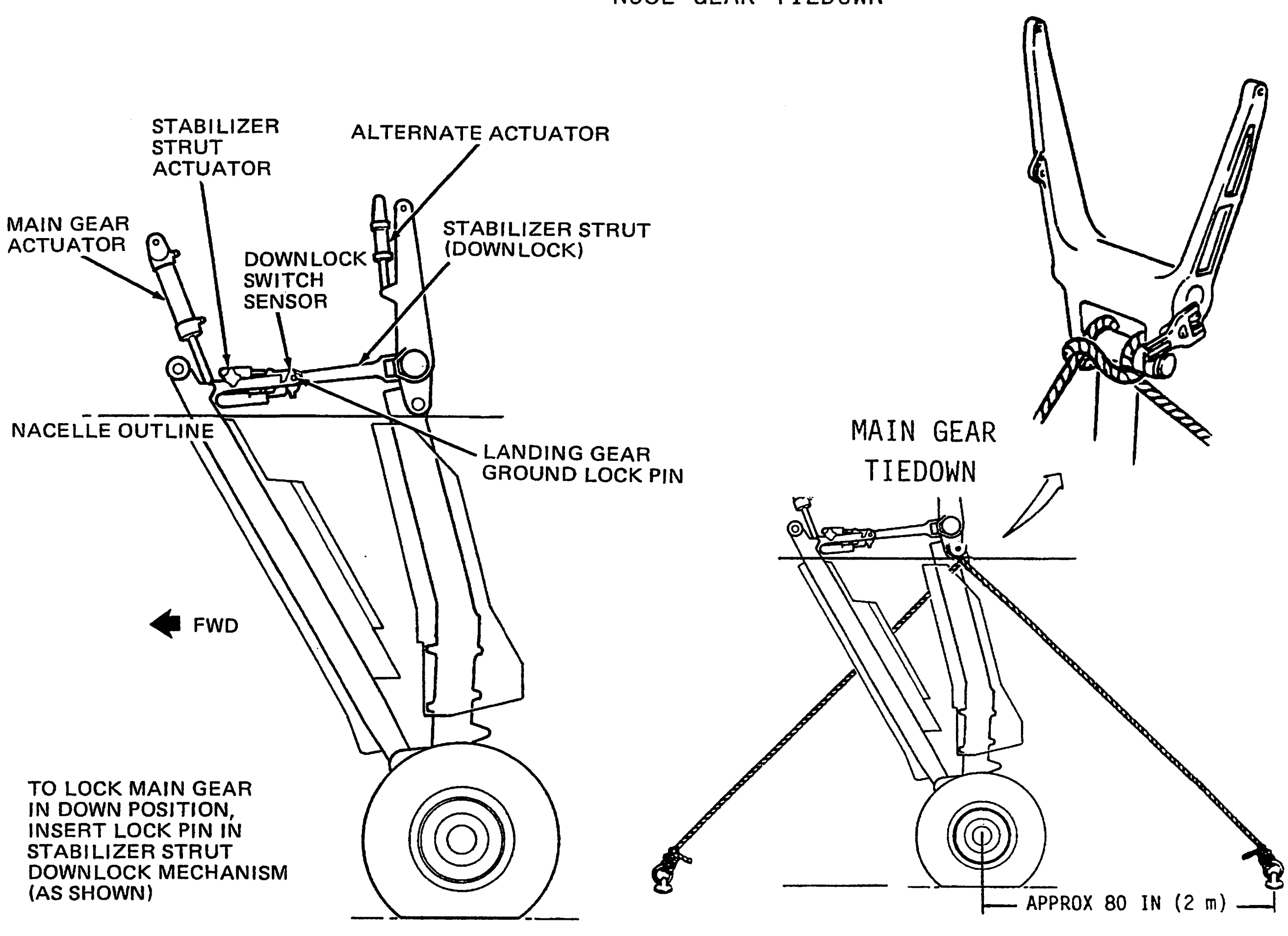
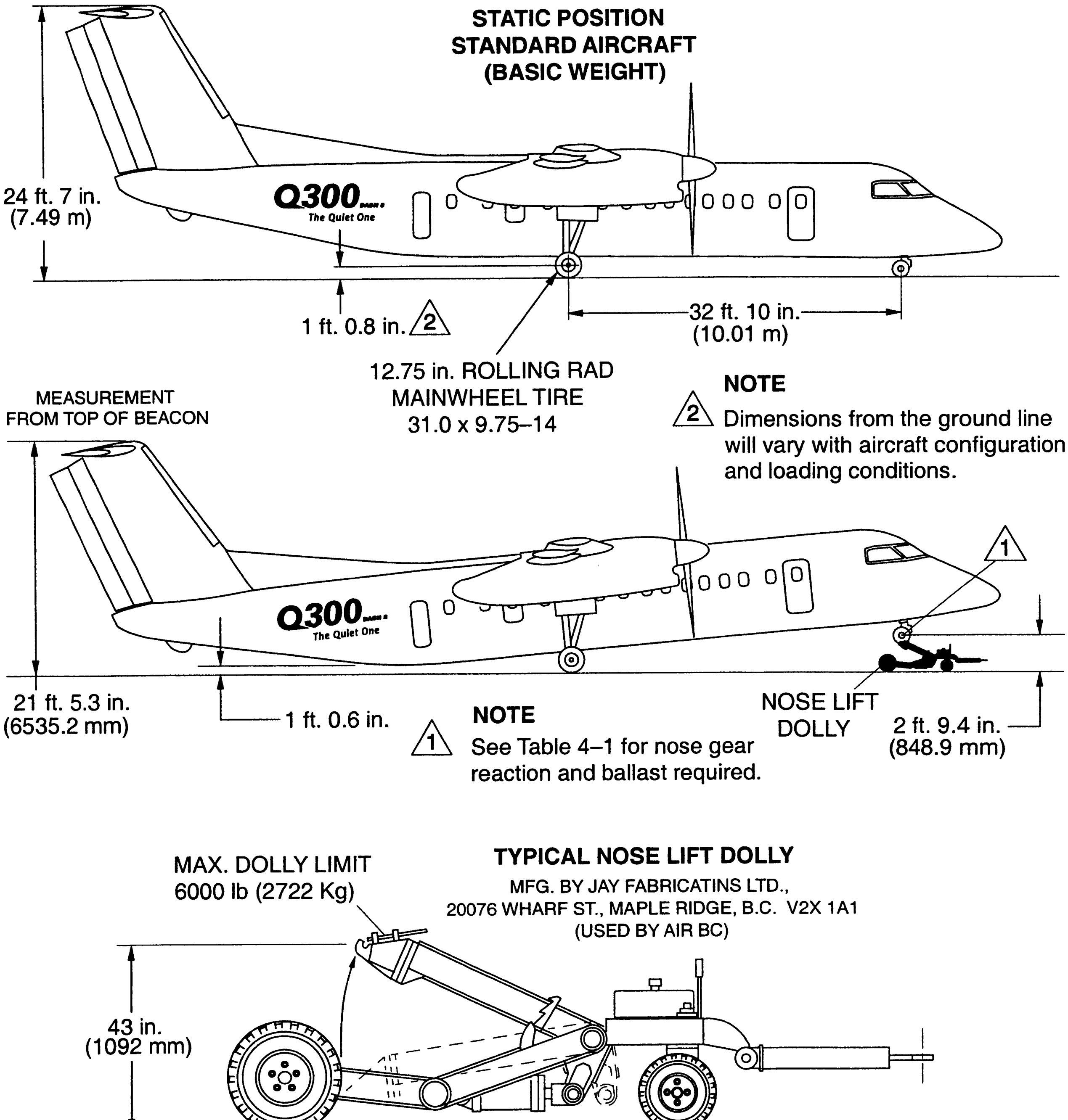


Figure 4–9 Parking and Mooring



ASSOCIATED CONDITIONS:

1. Limit use in lift mode for hangar storage only.
2. Aircraft at basic weight with one brake operator.
3. Maximum tilt angle to be avoided if aircraft has appreciable fuel load.
4. Nose landing gear and main landing gear locked and MLG Pins installed.
5. Hard level surface.
6. Use of ramps over steps (i.e. hangar door tracks).
7. Zero to 5 mph wind velocity.
8. Limit turns to +10° to –10°.
9. Maximum tractor speed 5 mph (8 kmh).
10. Nose wheel steering switch "off".
11. Check aircraft brake system.
12. During towing use brakes only in emergency.

Figure 4–10 Nose Lift Dolly (For Hangar Storage Only)

Q300 With APU

	MZF (311)	MZF (311*)	OWE + Stand. Fuel	OWE + Extend. Fuel
Aircraft Weight (lb)	37,200	39,500	31,847	36,289
Aircraft Centre of Gravity (in)	412.600	412.600	402.436	402.841
NLG Jacking Station (in)	29.553	29.553	29.553	29.553
NLG Reaction at Jacking Height of 20”, NLG Reaction at Jacking Height of 40”, NLG Reaction at Jacking Height of 60”	1,843 1,313 692	1,959 1,402 745	2,342 1,840 1,256	2,625 2,040 1,363
Towing Load (coef=0.2)	7,440	7,900	6,369	7,258
Ballast Required at NLG for Jacking Height of 20”	NIL	NIL	NIL	NIL
Ballast Required at NLG for Jacking Height of 40”	891	890	311	390
Ballast Required at NLG for Jacking Height of 60”	1,512	1,547	895	1,067

Q300 Without APU

	MZF (311)	MZF (311*)	OWE + Stand. Fuel	OWE + Extend. Fuel
Aircraft Weight (lb)	37,200	39,500	31,392	35,834
Aircraft Centre of Gravity (in)	412.600	412.600	398.782	399.645
NLG Jacking Station (in)	29.553	29.553	29.553	29.553
NLG Reaction at Jacking Height of 20”, NLG Reaction at Jacking Height of 40”, NLG Reaction at Jacking Height of 60”	1,843 1,314 692	1,961 1,406 753	2,590 2,093 1,515	2,872 2,293 1,622
Towing Load (coef=0.2)	7,440	7,900	6,278	7,167
Ballast Required at NLG for Jacking Height of 20”	NIL	NIL	NIL	NIL
Ballast Required at NLG for Jacking Height of 40”	888	875	40	119
Ballast Required at NLG for Jacking Height of 60”	1,510	1,528	618	790

NLG= Nose Landing Gear
MZF= Maximum Design Zero Fuel Weight
*= With CR803SO0002 incorporated
OWE= Operating Weight Empty

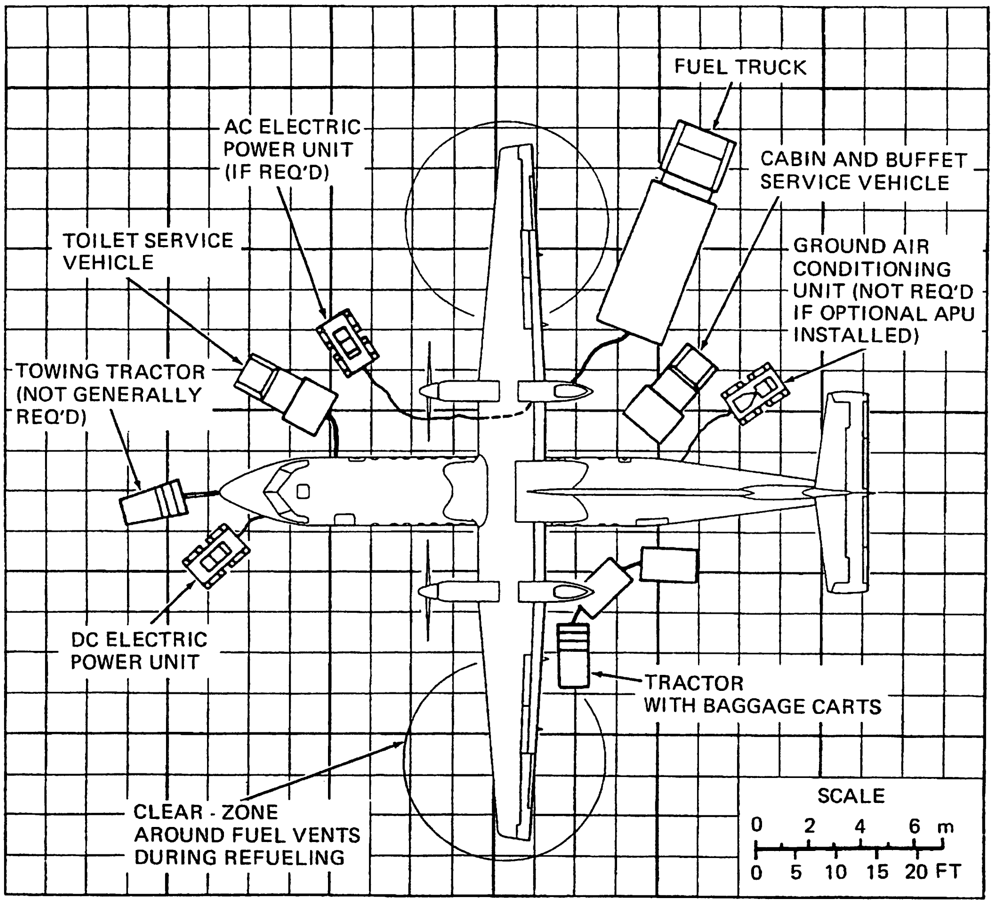
TABLE 4–1 NOSE LIFTING ASSOCIATED DATA

SECTION 5

TERMINAL SERVICING

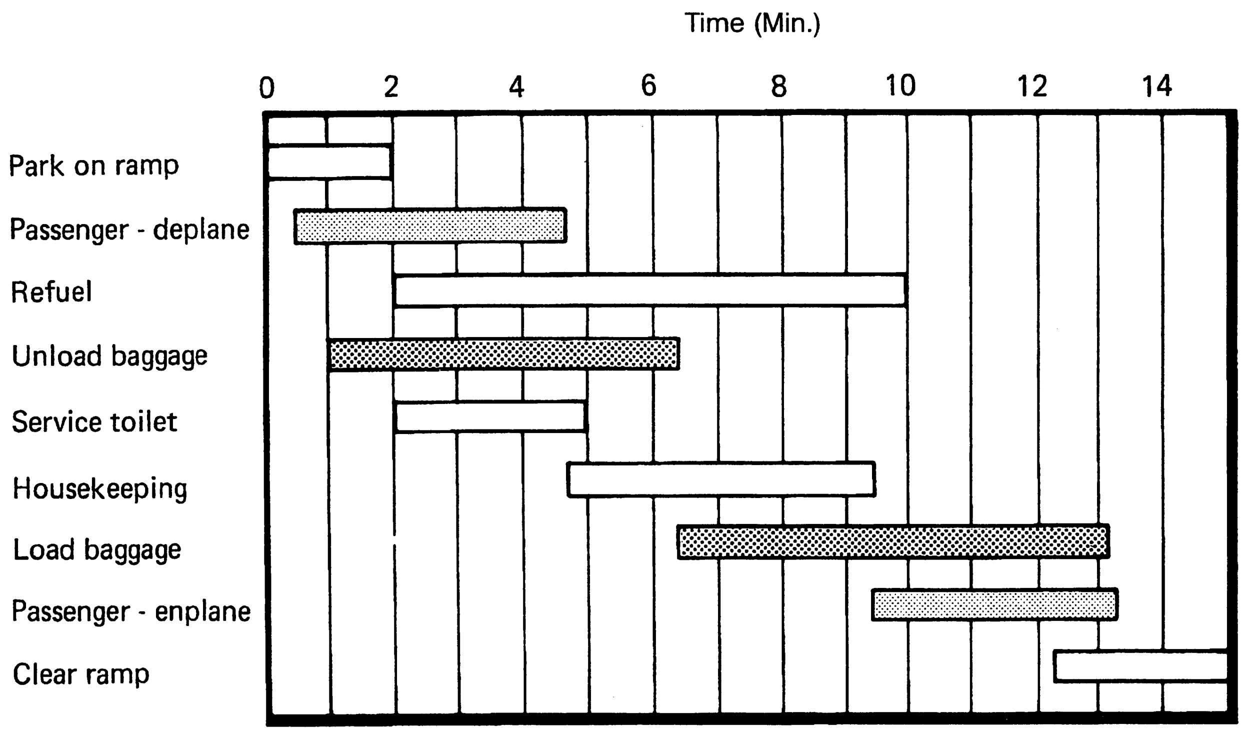
ILLUSTRATIONS

SECTION 5
TERMINAL SERVICING



SYSTEM	ADAPTER
PRESSURE REFUELLING	MS 24484−2
DC ELECTRICAL POWER	MS 3506−1 (AIRCRAFT CONNECTOR); MS 25488 (MATING GROUND CONNECTOR)
AC ELECTRICAL POWER	CANNON CE9310−10 (AIRCRAFT CONNECTOR) CE9183 (MATING GROUND CONNECTOR)
GROUND AIR CONDITIONING	MS 33562 8" (20.3 cm); RECEPTACLE (OPTIONAL INSTALLATION)
TOILET SERVICING	MS2651−133 ROYLYN 'Y' DRAIN COUPLING PLUS STANDARD 1" (2.5 cm) FILLPORT
GROUND CREW INTERPHONE	300 OHM IMPEDENCE THROAT MICROPHONE WITH SWITCH − AIRCRAFT CONNECTOR 72340012−001 (SWITCHCRAFT C−55B); MATING GROUND CONNECTOR PF051B (NATO 4−WAY JACK PLUG)

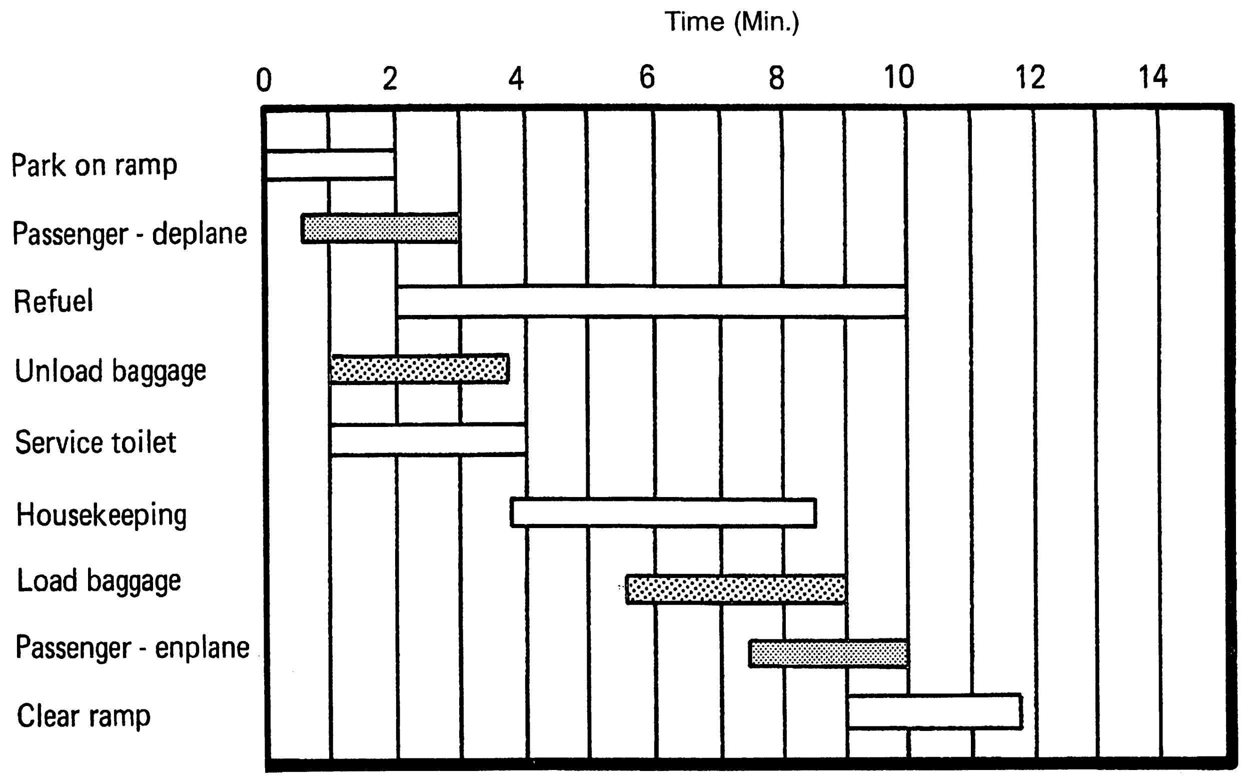
Figure 5−1 Airplane Servicing Arrangement
(TYPICAL − NO APU)



DEFINITION

Park on ramp	Aircraft stop, propellers stop turning, insert chocks, connect ground, connect external power and cooling equipment or start APU.
Passengers - deplane	Open airstair door. Passengers retrieve contents from overhead bins and deplane.
Refuel	Add 511 U.S. gallons for 5 X 100 nm stages.
Unload baggage	Remove approximately 2 pieces per passenger.
Service toilet	Use standard external servicing equipment.
Housekeeping	Tidy cabin after passenger deplane.
Load baggage	Load and stack 2 pieces per passenger.
Passengers - enplane	Passenger stow contents in overhead bins and be seated. Airstair door closed..
Clear ramp	Disconnect ground, external power and cooling equipment. Start engines and remove chocks.

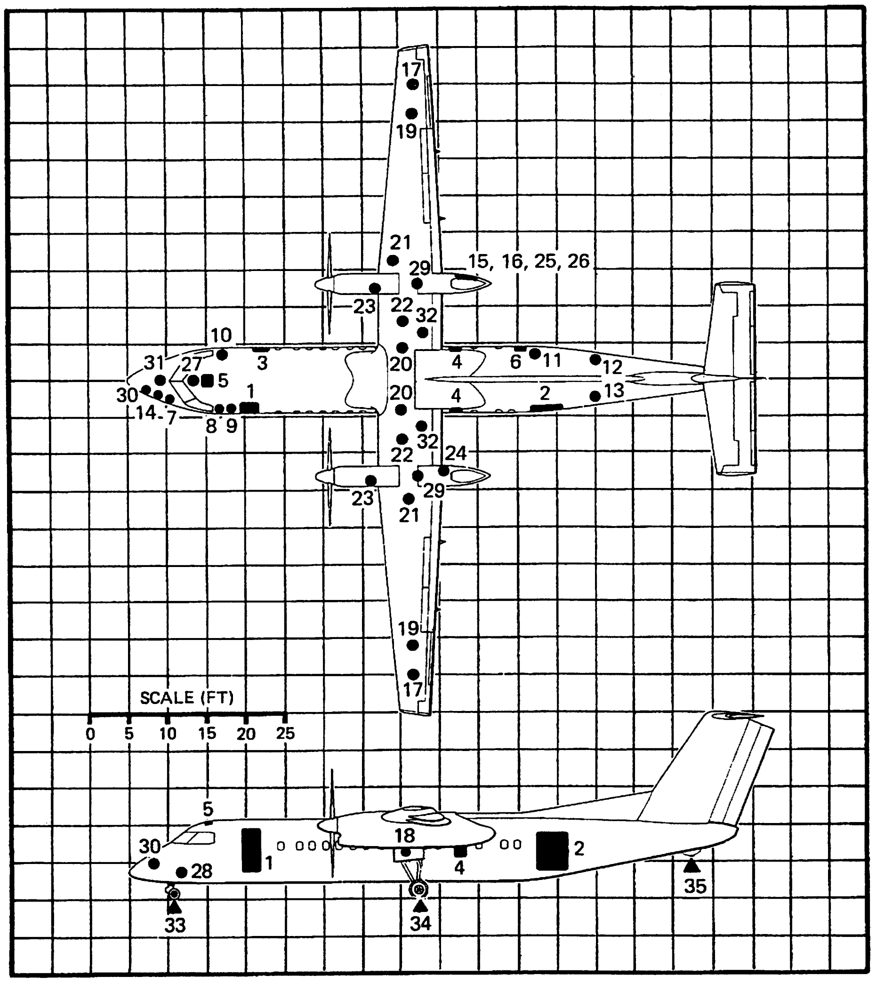
Figure 5–2 Terminal Operations, Turnaround Station (100% Passenger Exchange)



DEFINITION

Park on ramp	Aircraft stop, propellers stop turning, insert chocks, connect ground, connect external power and cooling equipment or start APU.
Passengers - deplane	Open airstair door. Passengers retrieve contents from overhead bins and deplane.
Refuel	Add 511 U.S. gallons for 5 X 100 nm stages.
Unload baggage	Remove approximately 2 pieces per passenger.
Service toilet	Use standard external servicing equipment.
Housekeeping	Tidy cabin after passenger deplane.
Load baggage	Load and stack 2 pieces per passenger.
Passengers - enplane	Passenger stow contents in overhead bins and be seated. Airstair door closed..
Clear ramp	Disconnect ground, external power and cooling equipment. Start engines and remove chocks.

Figure 5–3 Terminal Operations, Enroute Station (50% Passenger Exchange)



1. Airstair Door
2. Cargo Door
3. Type I Emergency Exit
4. Type III Emergency Exit
5. Flight Compartment Emergency Exit
6. Service Door
7. Interphone Connector (fore)
8. Avionics Bay
9. Wardrobe
10. Lavatory
11. Galley
12. APU (optional)
13. Air Conditioning Ground Connection (optional) - on the RH side if no APU
14. Electrical DC Power Receptacle
15. Electrical AC Power Receptacle
16. Pressure Refuelling Panel & Grounding Point
17. Grounding Point (overwing)
18. Grounding Point (on u/c drag strut crossbeam - both sides)
19. Gravity Fuel Filler (overwing)
20. Auxiliary Tank Gravity Fuel Filler (optional)
21. Magnastick (fuel contents - underwing)
22. Auxiliary Tank Magnastick (optional)
23. Engine Oil Filler Panel
24. No. 1 Hydraulic System
25. No. 2 Hydraulic System
26. Brake Accumulator & Hydraulic Handpump
27. Emergency Landing Gear Hydraulic Reservoir & Handpump
28. Nose Gear Shock Strut Air Charging Point
29. Main Gear Shock Strut Air Charging Points (under nacelle)
30. Nose Jacking Point
31. Crew Oxygen Supply
32. Wing Jacking Point
33. Nose Gear Jacking Point
34. Main Gear Jacking Points
35. Tail Bumper

Figure 5–4 Ground Service Connections

SYSTEM	DISTANCE AFT OF NOSE		DISTANCE FROM AIRPLANE CENTER-LINE				HEIGHT FROM GROUND*	
			LEFT SIDE		RIGHT SIDE			
	FT	m	FT	m	FT	m	FT	m
HYDRAULIC SYSTEM								
No. 1 SYSTEM – 2.68 U.S. QUARTS (2.5 L) CAPACITY RESERVOIR	40'2"	12.25	12'1"	3.68	–	–	6'11"	2.11
No. 2 SYSTEM – 5.19 U.S. QUARTS (4.9 L) CAPACITY RESERVOIR	40'2"	12.25	–	–	13'9"	4.19	6'11"	2.11
ALTERNATIVE EXTENSION SYSTEM RESERVOIR (IN NOSE EQUIPMENT COMPARTMENT)	5'4"	1.63	–	–	1'10"	0.56	3'11"	1.19
MAIN GEAR SHOCK STRUT VALVES	38'5"	11.70	12'11"	3.94	12'11"	3.94	4'1"	1.25
NOSE GEAR SHOCK STRUT VALVE	5'7"	1.70	0	0	0	0	2'4"	0.71
PARKING BRAKE ACCUMULATOR	40'6"	12.34	–	–	13'11"	4.24	6'11"	2.11
ELECTRICAL SYSTEM								
28v DC EXTERNAL CONNECTION (450 AMP CONTINUOUS, 2000 AMP PEAK)	5'3"	1.60	2'8"	0.81	–	–	4'0"	1.22
115/200v AC EXTERNAL CONNECTION (3–PHASE 400 Hz FREQ., AMP 20 kvA MIN)	39'5"	12.01	–	–	11'8"	3.56	7'3"	2.21
OXYGEN SYSTEM								
CREW OXYGEN SUPPLY IN NOSE COMPARTMENT – 39.4 CU FT (1100 L) CAPACITY	4'3"	1.30	–	–	1'8"	0.51	4'0"	1.22
PORTABLE CYLINDER IN–FLIGHT COMPARTMENT – 11.3 CU FT (320 L) CAPACITY	11'4"	3.45	–	–	1'11"	0.58	5'0"	1.52
3 PORTABLE PASSENGER OXYGEN CYLINDERS – 4.25 CU FT (120 L) EACH	50'2"	15.29	–	–	2'1"	0.63	9'2"	2.79

***Dimensions are approximate and vary depending on airplane configuration and loading conditions.**

Figure 5–5 Ground Service Connection Data (Sheet 1 of 3)

SYSTEM	DISTANCE AFT OF NOSE		DISTANCE FROM AIRPLANE CENTER-LINE				HEIGHT FROM GROUND*	
			LEFT SIDE		RIGHT SIDE			
	FT	m	FT	m	FT	m	FT	m
FUEL SYSTEM								
1 STANDARD TANK PER WING – 423 U.S. GAL. (1601 L) EACH, TOTALLING 846 U.S. GAL. (3202 L)								
1 AUX. LONG RANGE TANK PER WING (OPTIONAL) –354 U.S. GAL. (1341 L) EACH, INCREASING TOTAL CAPACITY TO 1554 U.S. GAL. (5884 L)								
REFUELING AT MAX PRESSURE OF 50 PSI (345 kPa) AT RATE OF 75 U.S. GAL./MIN. (284L/MIN.)								
STANDARD CONNECTIONS								
1 REFUEL/DEFUEL ADAPTER	45'6"	13.86	–	–	12'11"	3.94	7'1"	2.16
2 OVERWING GRAVITY FILLERS	36'11"	11.25	31'5"	9.58	31'5"	9.58	11'10"	3.61
FUEL VENTS	37'0"	11.27	33'4"	10.16	33'4"	10.16	10'6"	3.20
AUXILIARY TANK CONNECTIONS (OPTIONAL)								
2 OVERWING FILLERS	36'4"	11.07	7'2"	2.18	7'2"	2.18	11'4"	3.45
PNEUMATIC SYSTEM								
NOSE LANDING GEAR – UPPER SHOCK STRUT VALVE (NITROGEN) – 290 psi (2000 kPa)	5'7"	1.70	0	0	0	0	2'4"	0.71
MAIN LANDING GEAR – UPPER SHOCK STRUT VALVES (NITROGEN) – 332 psi (2289 kPa)	38'5"	11.70	12'11"	3.94	12'11"	3.94	4'1"	1.25

***Dimensions are approximate and vary depending on airplane configuration and loading conditions.**

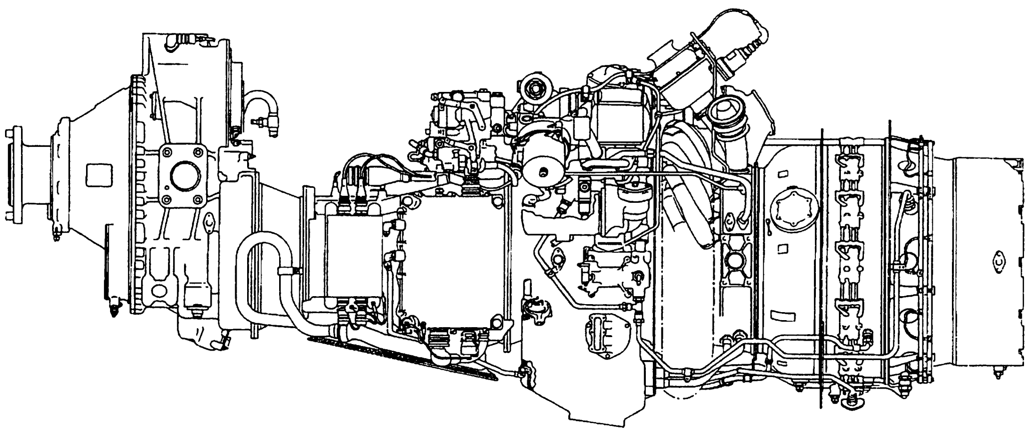
Figure 5–5 Ground Service Connection Data (Sheet 2 of 3)

SYSTEM	DISTANCE AFT OF NOSE		DISTANCE FROM AIRPLANE CENTER-LINE				HEIGHT FROM GROUND*	
			LEFT SIDE		RIGHT SIDE			
	FT	m	FT	m	FT	m	FT	m
PARKING BRAKE ACCUMULATOR – CHARGED WITH 900–1000 psi (6205–6895 kPa) NITROGEN	40'6"	12.34	–	–	13'11"	4.24	6'11"	2.11
<u>AIR CONDITIONING GROUND CONNECTION (OPTIONAL)</u> 8" (20.3 cm) RECEPTACLE (ON L.H. SIDE IF OPTIONAL APU INSTALLED)	65'4"	19.91	2'10"	0.86	–	–	7'2"	2.18
<u>WATER WASH</u> INSTALLATION IN LAVATORY – 5.8 U.S. GAL. (22 L) CAPACITY	14'3"	4.34	–	–	2'5"	0.74	8'0"	2.44
<u>TOILET</u> 3.5 U.S. GAL. (13 L) CAPACITY FLUSH SOLUTION RESERVOIR WITH DRAIN	13'9"	4.19	–	–	2'9"	0.84	3'3"	0.99
<u>OIL</u> 6 U.S. GAL. (23 L) PER ENGINE – ACCESS TO FILLER THROUGH DOOR ON L.H. SIDE OF EACH NACELLE	30'10"	9.42	14'3"	4.34	11'8"	3.56	8'11"	2.72
<u>WINDSHIELD WASHER SYSTEM (OPTIONAL)</u> 2 U.S. GAL. (7.6 L) RESERVOIR THROUGH THE RIGHT UPPER NOSE COMPARTMENT ACCESS DOOR	4'1"	1.25	–	–	1'3"	0.38	5'7"	1.70

***Dimensions are approximate and vary depending on airplane configuration and loading conditions.**

Figure 5–5 Ground Service Connection Data (Sheet 3 of 3)

PW123 ENGINE



NOMINAL VOLTAGE	STARTING CURRENT	DURATION
28	1100 – 1300 AMPS	2 – 3 SECONDS
28	500 – 700 AMPS	5 SECONDS
28	300 AMPS	60 SECONDS

The 28 volt DC electrical system which supplies the external DC starting power is connected to the aircraft by means of a DC external power receptacle – (type MS 3506-1) located on the left side of the aircraft nose section approximately 52 inches (1.32 m) above the static ground line.

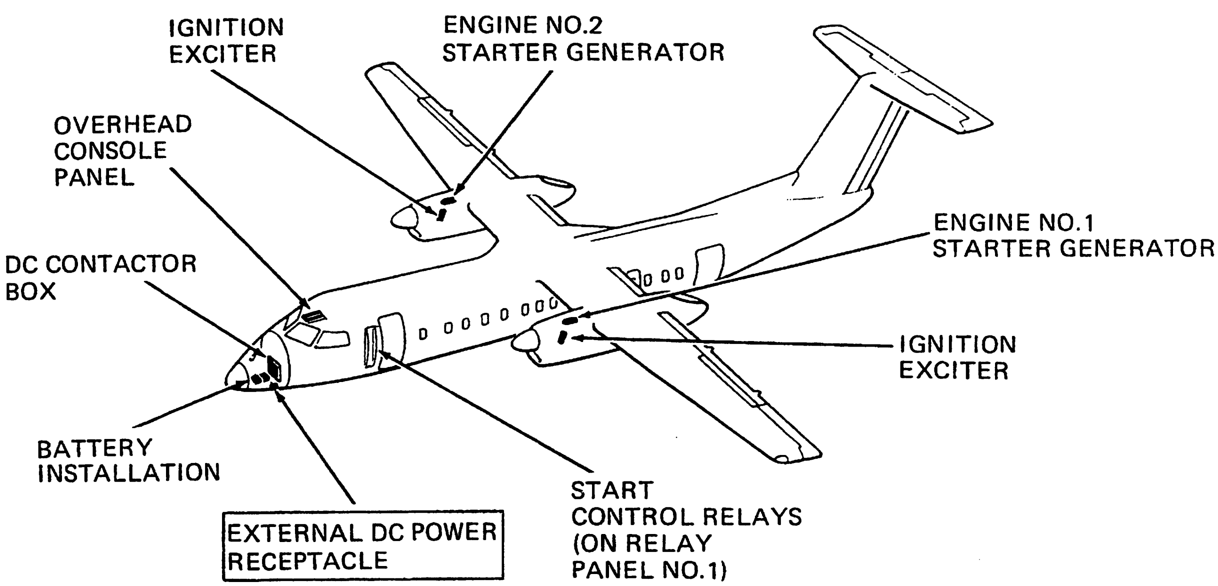
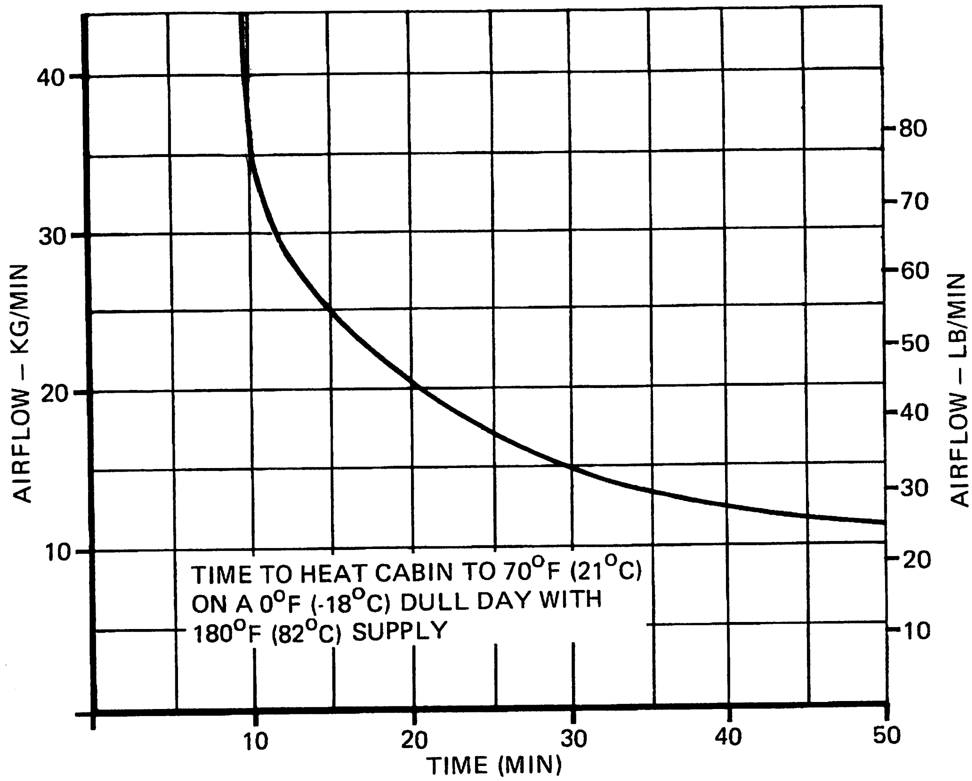


Figure 5–6 Engine Starting Electrical Requirements



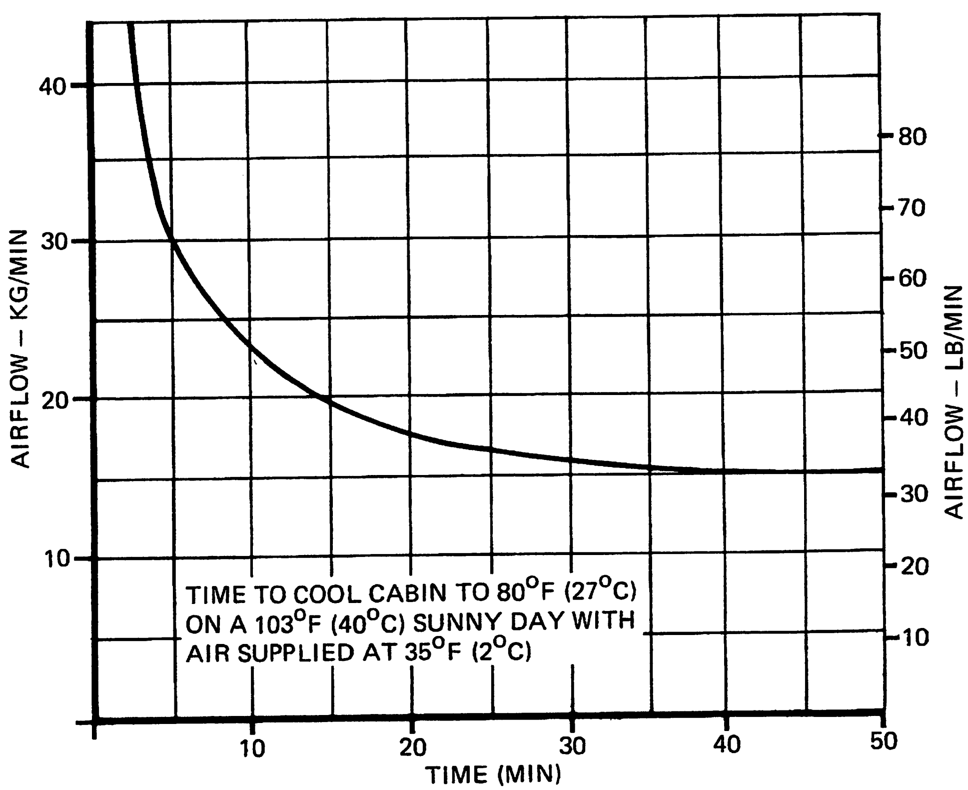


Figure 5–7 Ground Pneumatic Power Requirements – Heating and Cooling

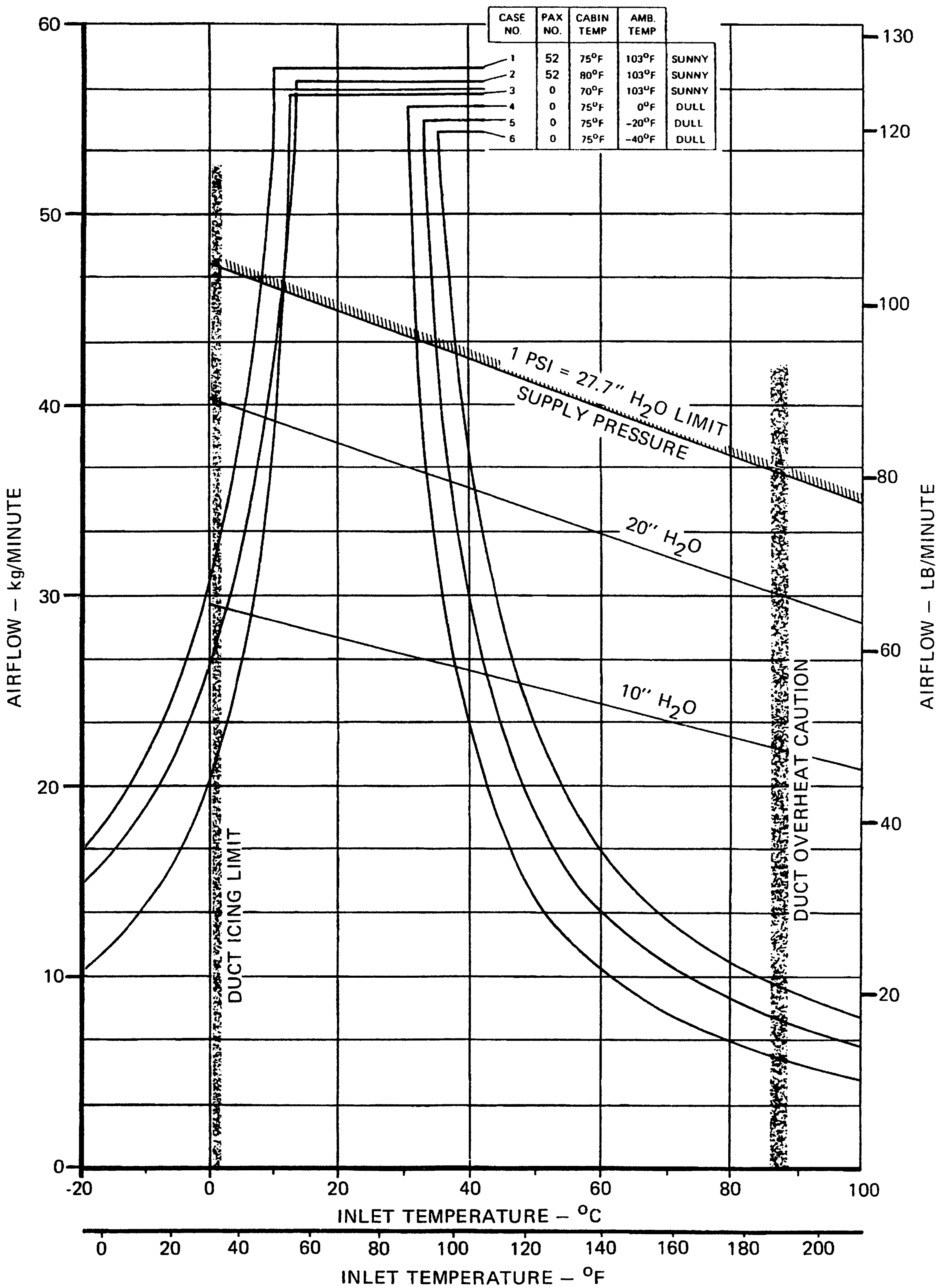
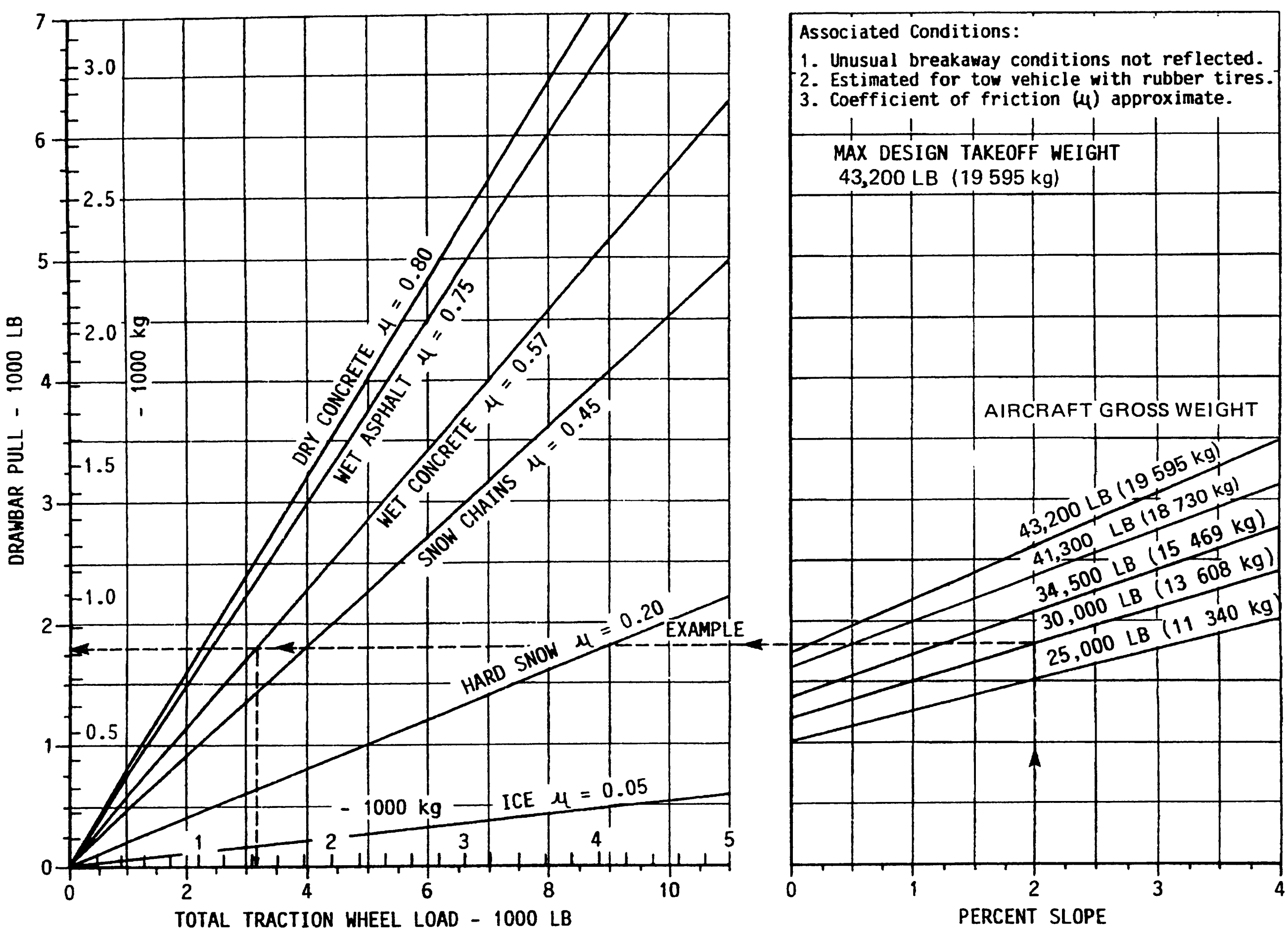


Figure 5–8 Ground Air Conditioning Requirements – Preconditioned Airplane

Drawbar pull and total traction wheel load may be determined for straight-line tow by considering aircraft weight, pavement slope, and coefficient of friction.



Example:

At an aircraft gross weight of 30,000 lb (13,608 kg), an uphill slope of 2% and with a wet concrete surface, the corresponding drawbar pull or push required is 1800 lb (817 kg) and the total traction wheel load is 3200 lb (1452 kg).

Figure 5–9 Ground Towing Requirements

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SECTION 6

OPERATING CONDITIONS AND NOISE DATA

ILLUSTRATIONS

SECTION 6

OPERATING CONDITIONS AND NOISE DATA

6.0 INTRODUCTION

Aircraft operating conditions and noise are important to airport and community planners. Although an airport is a major element in a community transportation system and is vital to its growth, it must also be accountable to the best interests of the neighborhood in which it is located. This can only be accomplished with proper planning. Because aircraft noise extends beyond the boundaries of the airport, it is vital to consider the impact on surrounding communities.

The Q300 aircraft is designed with advanced quiet turboprop technology. Its noise impact is minimal compared to most aircraft, larger and smaller, currently being operated in a typical airport.

To help the airport planner estimate the impact of the Q300 on airport operations, the following material is provided:

1. Data on the Exhaust Temperature Contours at Idle Power, Taxi Power and Take–Off Power settings are shown in Figure 6–1, Figure 6–2, and Figure 6–3.

2. Data on the Prop/Engine Slipstream Velocity Contours at Idle Power, Taxi Power and Take–Off Power setting are shown in Figure 6–4, Figure 6–5, and Figure 6–6.

3. Data on the Take–Off and Landing Noise Footprint (A–Level Contours) is shown in Figure 6–7 and 6–8.

4. The Q300 (Model 311 basic aricraft) complies with the Stage 3 noise–level limits under the trade–off clause specified in FAR 36, Section C36.5b and also under AWM 516 and JAR 36 standards. A summary of the certified noise levels, measured and corrected to these standards, is shown in the following table:

	FAR 36 Limit Stage 3 (EPNdB)	Q300 Noise Level (EPNdB)
Take–off (Flap 5°)	89	79.5
Sideline (Flap 5°)	94	87.0
Approach (Flap 35°)	98	93.3

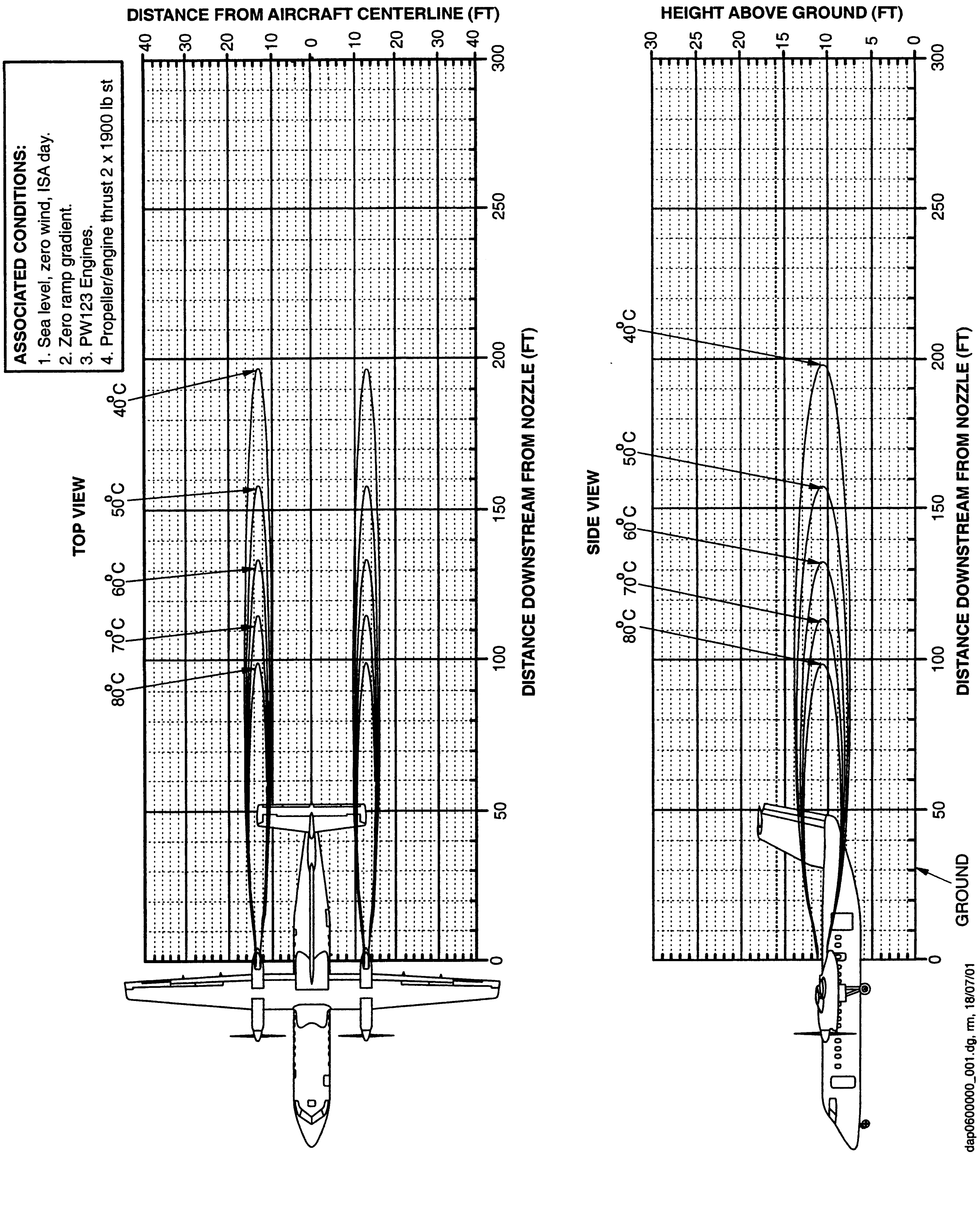

Figure 6-1 Engine Exhaust Temperature Contours at Ground Idle

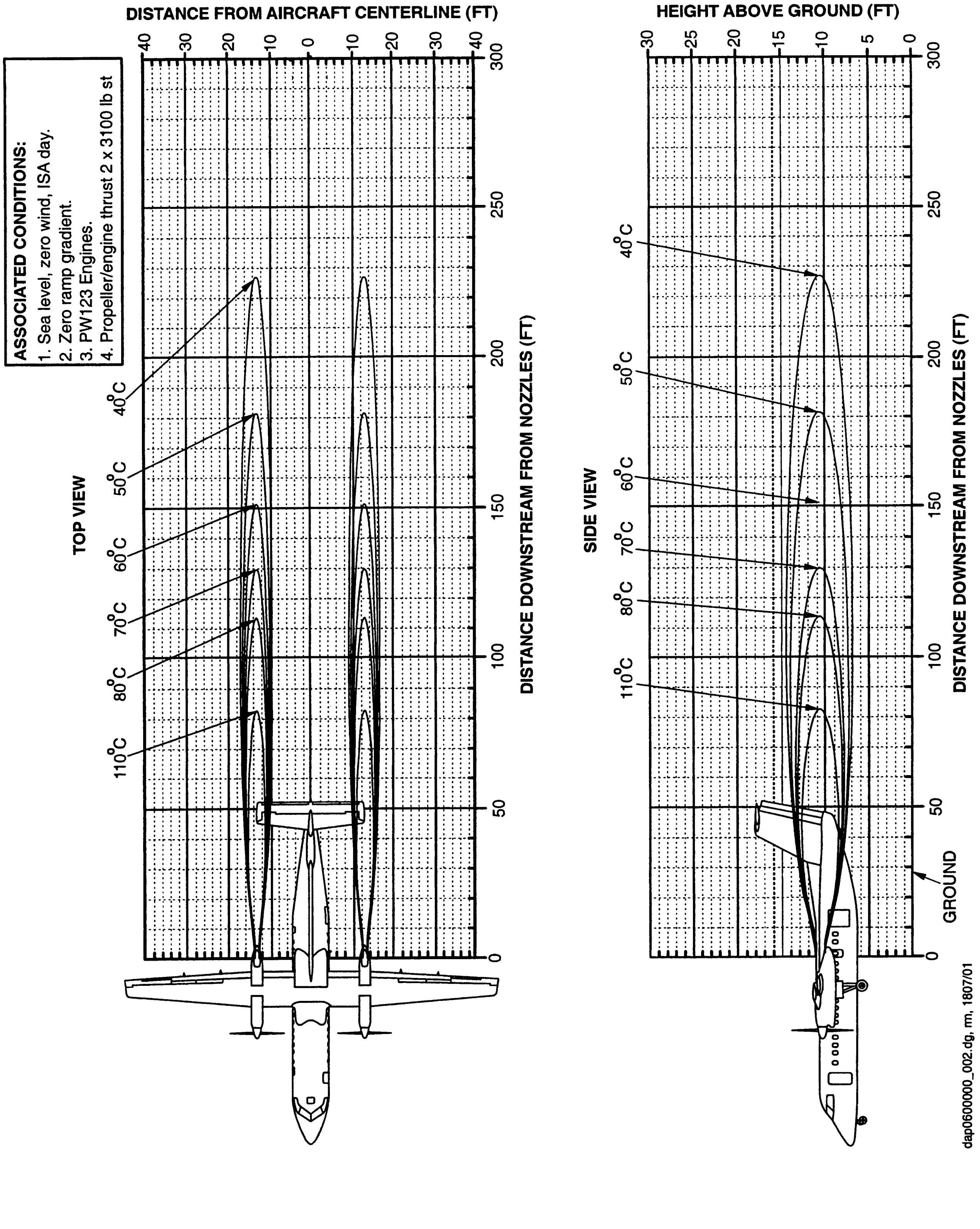

Figure 6–2 Engine Exhaust Temperature Contours at Taxi Power

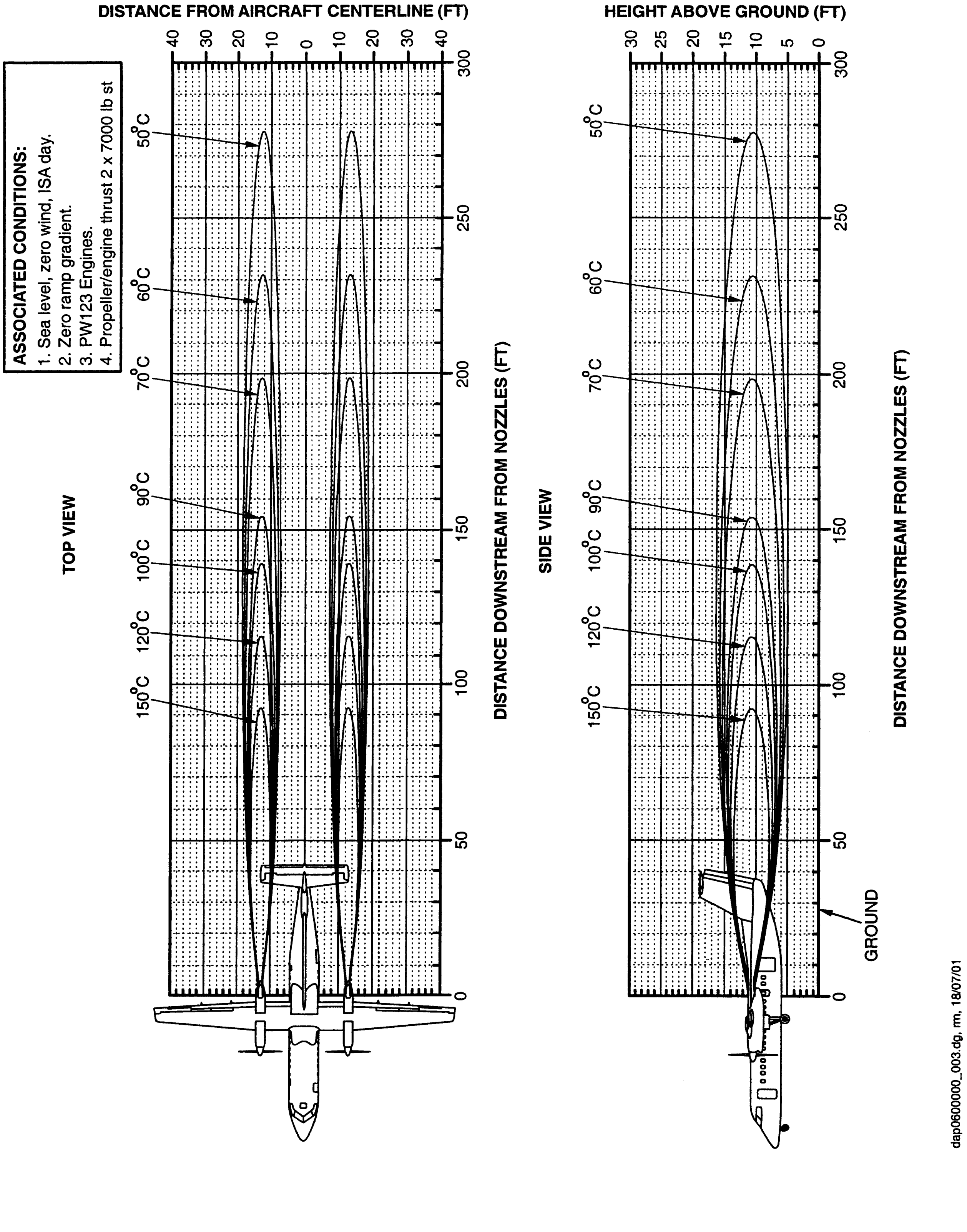

Figure 6–3 Engine Exhaust Temperature Contours at Take–Off Power

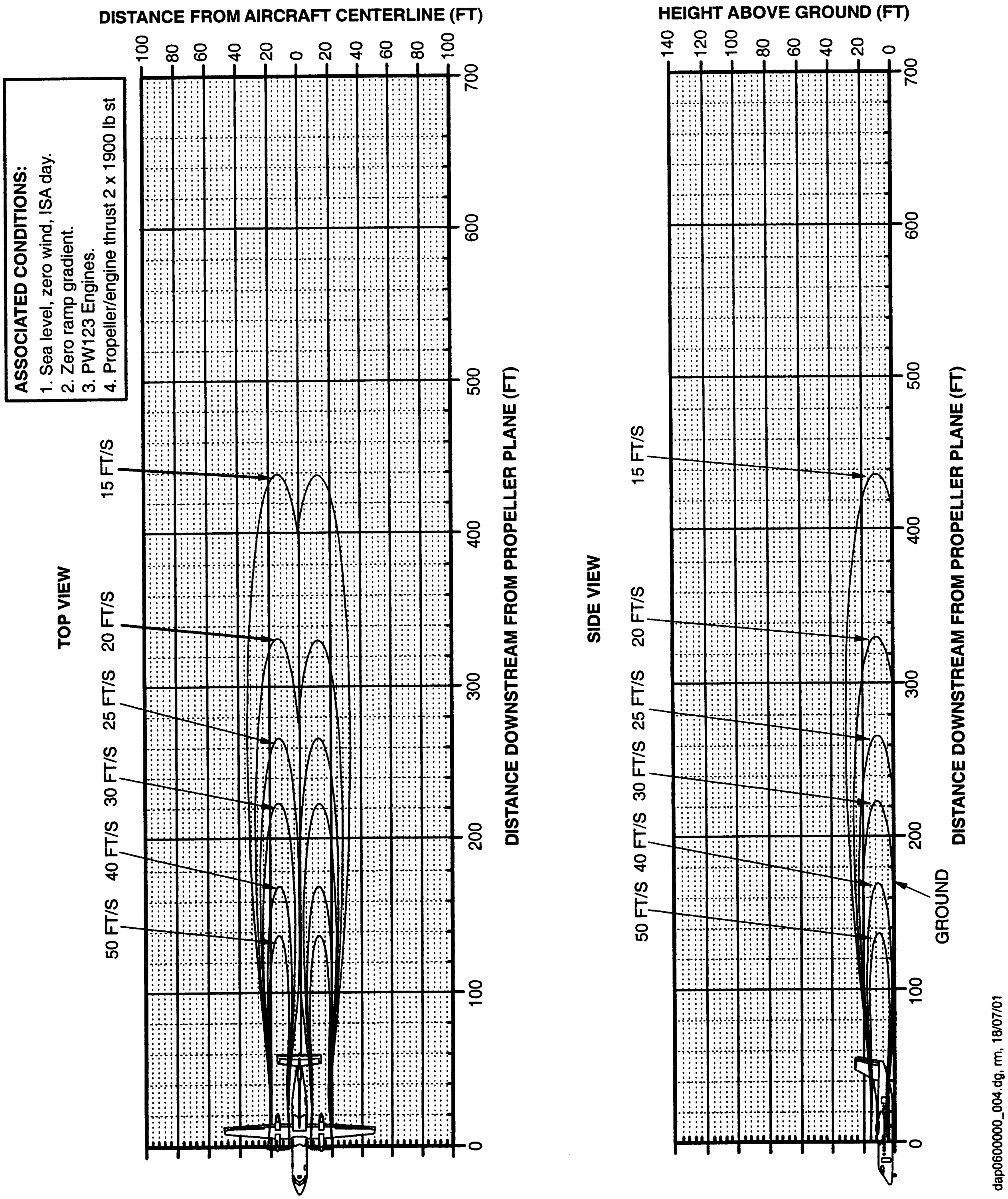

Figure 6–4 Idle Power Prop/Engine Slipstream Velocity Contours

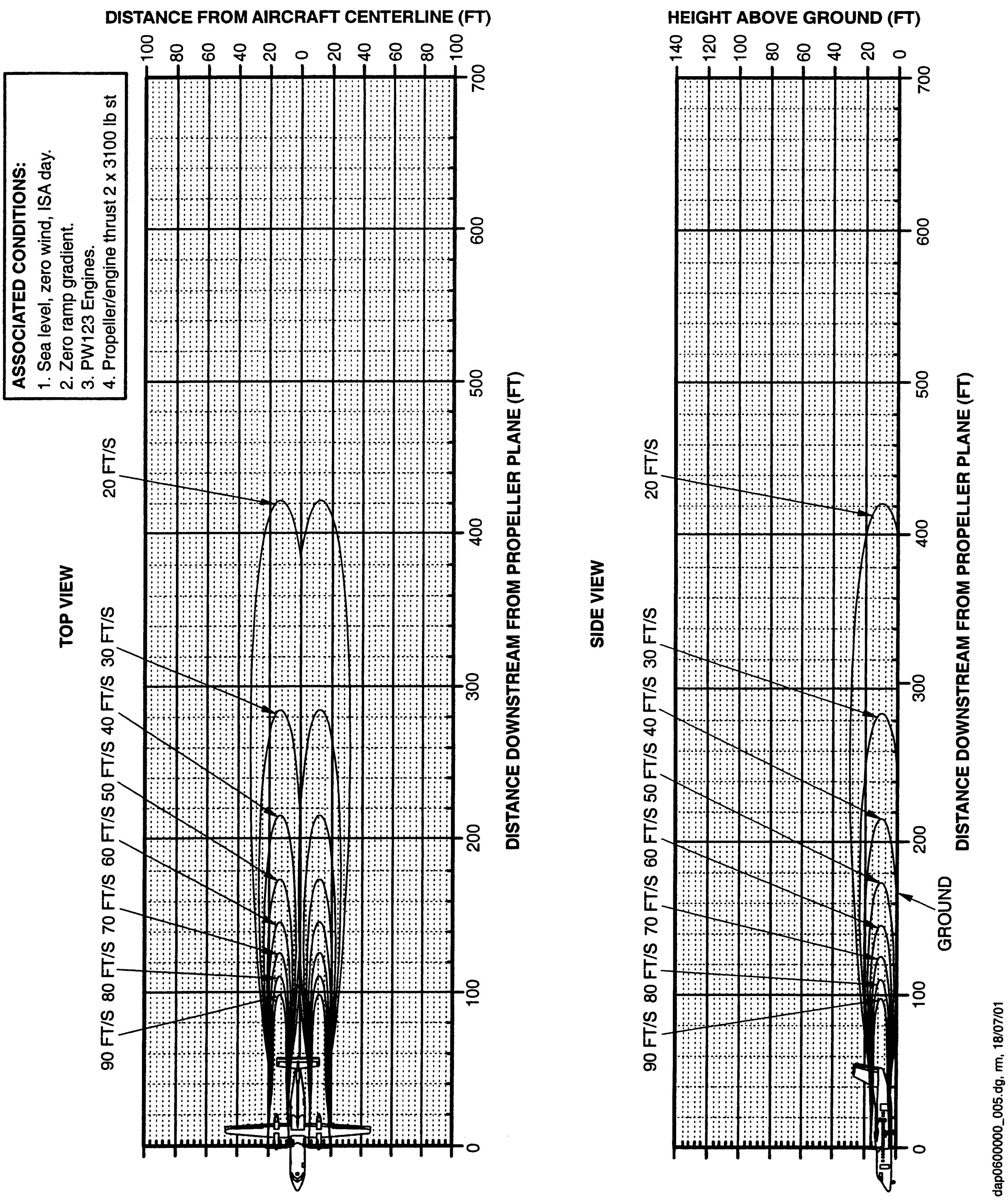

Figure 6–5 Taxi Power Prop/Engine Slipstream Velocity Contours

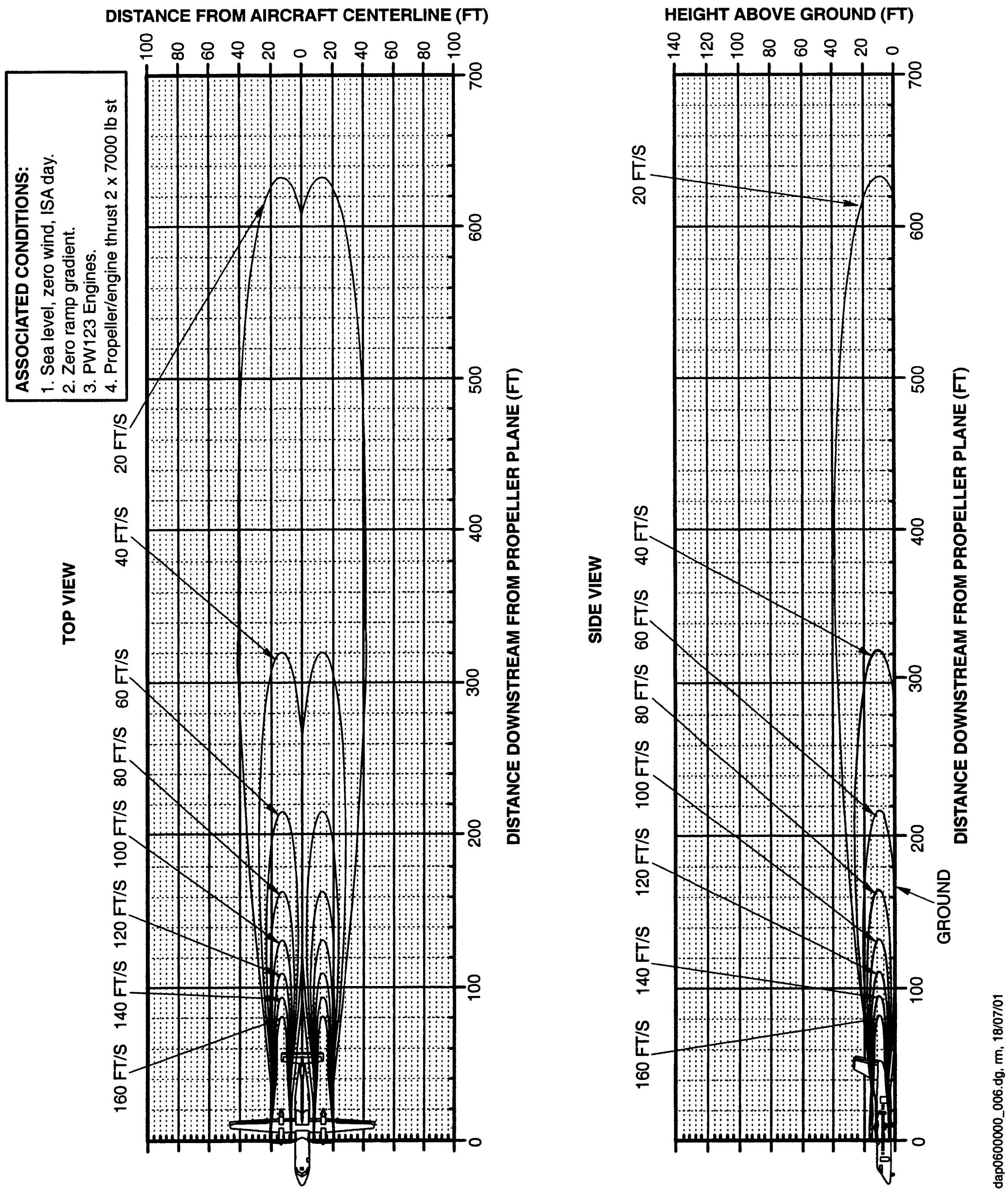

Figure 6–6 Take–Off Power Prop/Engine Slipstream Velocity Contours

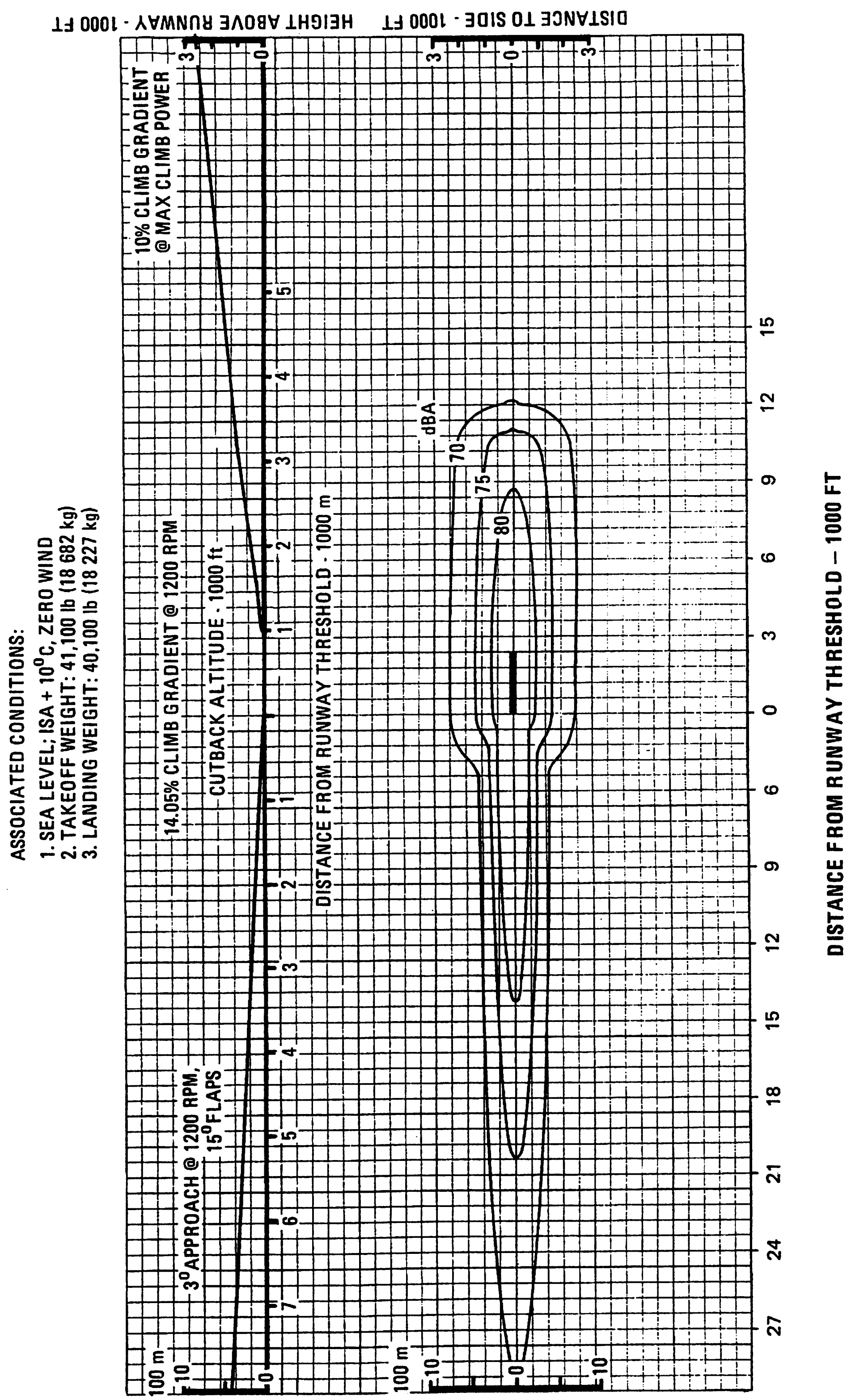

Figure 6–7 Take–Off and Landing Noise Footprint Maximum Power (A–Level Contours)

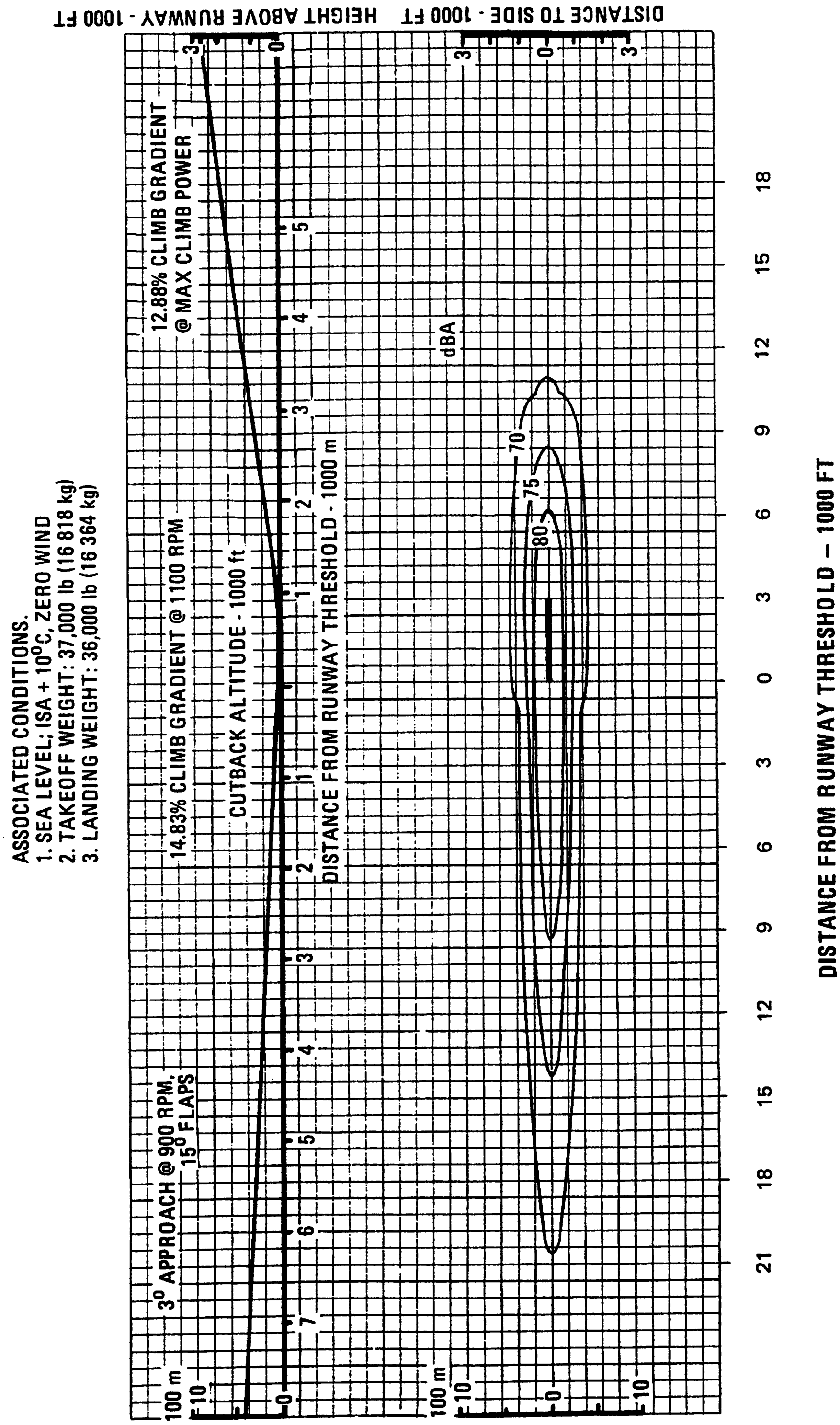

Figure 6–8 Take–Off and Landing Noise Footprint Noise Abatement (A–Level Contours)

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SECTION 7

PAVEMENT DATA

ILLUSTRATIONS

SECTION 7

PAVEMENT DATA

7.0 INTRODUCTION

The pavement requirements for commercial airplanes are customarily derived from the static analysis loads imposed on the main landing gear wheels and tires via the shock struts.

1. Basic data on the landing–gear footprint configuration, maximum–design taxi loads, and tire sizes and pressures are shown in Figure 7–1.
2. Maximum pavement loads for certain critical conditions at the tire–ground interfaces are shown in Figure 7–2.
3. Landing gear loading on pavement for aircraft weights and position of Percent MAC (Mean Aerodynamic Chord) are shown in Figure 7–3.
4. The California Bearing Ratio (CBR) for unlimited commercial use at all aircraft weights is shown in Figure 7–4.
5. The minimum Load Classification Number (LCN) or Aircraft Classification Number (ACN) for flexible and rigid pavement are shown in Figure 7–5 through Figure 7–8.

The illustrations presented in this section are for the Q300 (Model 311) aircraft with CR803SO0002 (Maximum Design Take–off Weight 43,000 lb) incorporated and fitted with standard tires as shown.

LANDING GEAR FOOTPRINT DATA

MAXIMUM DESIGN TAXI WEIGHT	43,200 LB (19,595 KG)
PERCENTAGE OF WEIGHT ON MAIN GEAR	(SEE FIGURE 7-3)
NOSE GEAR TIRE SIZE	22.0 X 6.5 - 10
NOSE GEAR TIRE PRESSURE	60 PSI (414 kPa) COLD UNLOADED 62 PSI (427 kPa) AT RATED DEFLECTION
MAIN GEAR TIRE SIZE	31.0 X 9.75 - 14
MAIN GEAR TIRE PRESSURE	97 PSI (669 kPa) COLD UNLOADED 101 PSI (696 kPa) AT RATED DEFLECTION

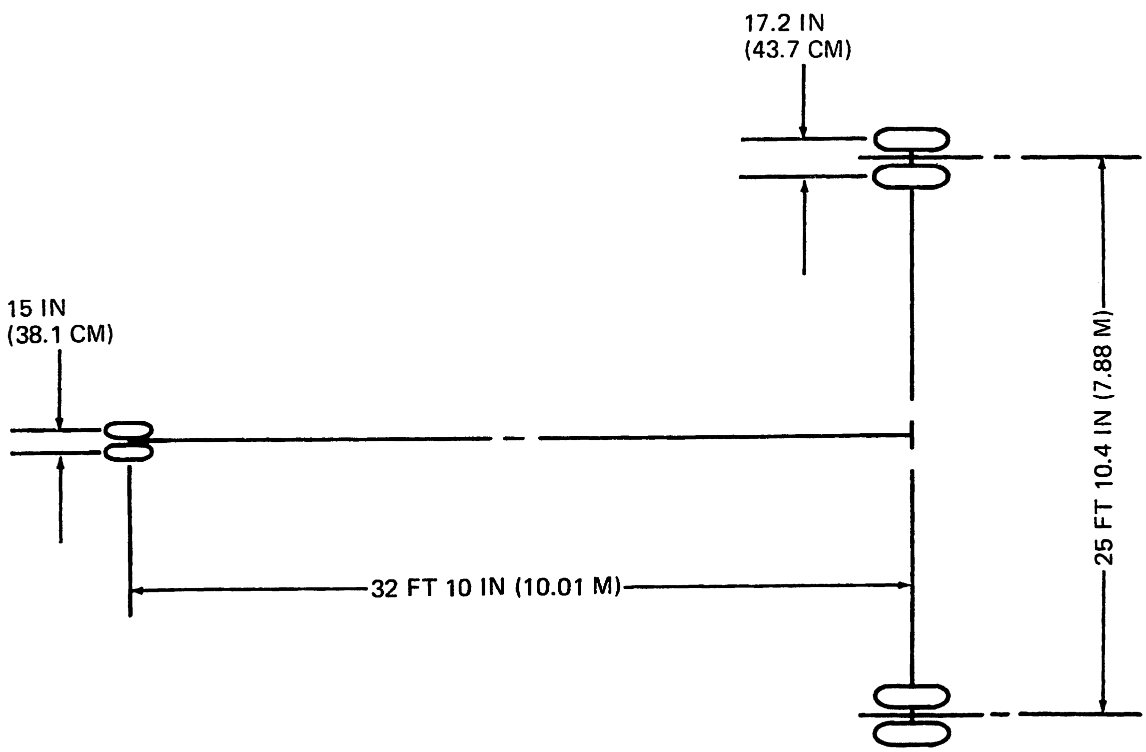
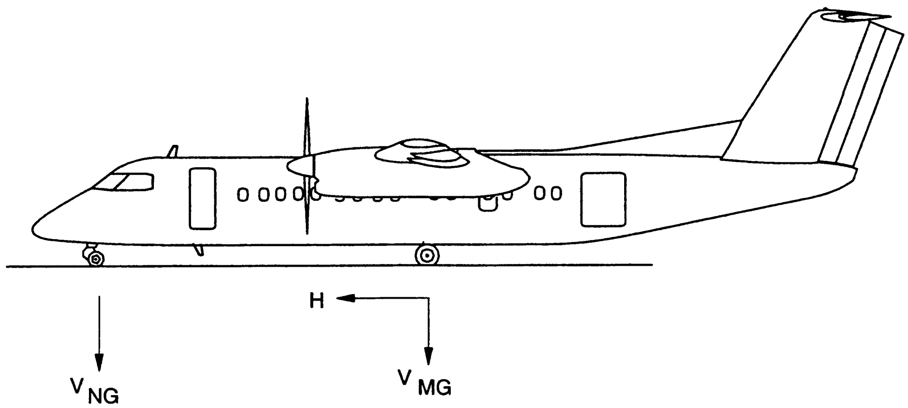


Figure 7–1 Landing Gear Footprint



V_{NG} = MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD C.G.
V_{MG} = MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT C.G.
H = MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING

NOTE : ALL LOADS CALCULATED USING AIRPLANE MAXIMUM DESIGN TAXI WEIGHT

		V_{NG} AT FORWARD C.G.		V_{MG} (PER STRUT)	H (PER STUT)	
MODEL	MAXIMUM DESIGN TAXI WEIGHT	STATIC	STATIC PLUS BRAKING AT 10 FT/SEC ^{2} (3.05 M/SEC ^{2}) DECEL. (1)	MAXIMUM LOAD OCCURING AT STATIC AFT C.G.	AT STEADY BRAKING OF 10 FT/SEC ^{2} (3.05 M/SEC ^{2}) DECEL. (2)	AT INSTANTANEOUS BRAKING (COEFF. OF FRICTION 0.8) (3)
CR 803SO000002	43,200 LB (19,595 KG)	4,351 LB (1,974 KG)	8,028 LB (3,641 KG)	20,287 LB (9,202 KG)	6,708 LB (3,043 KG)	16,230 LB (7,362 KG)
CR 803SO000001	42,080 LB (19,087 KG)	4,238 LB (1,923 KG)	7,820 LB (3,547 KG)	19,761 LB (8,963 KG)	6,534 LB (2,964 KG)	15,809 LB (7,171 KG)
311	41,300 LB (18,734 KG)	4,160 LB (1,887 KG)	7,675 LB (3,481 KG)	19,395 LB (8,797 KG)	6,413 LB (2,909 KG)	15,516 LB (7,038 KG)

NOTE : 1. UPPER C.G. LIMIT APPORXIMATELY 9 FT. (2.74 M) ABOVE GROUND LINE
2. MAXIMUM MAIN GEAR HORIZONTAL FORCE EXCLUDES ALLEVIATING EFFECT OF NOSE GEAR ROLLING FRICTION
3. INSTANTANEOUS BRAKING APPLIED DURING A STEADY BRAKING RUN

Figure 7–2 Maximum Pavement Loads

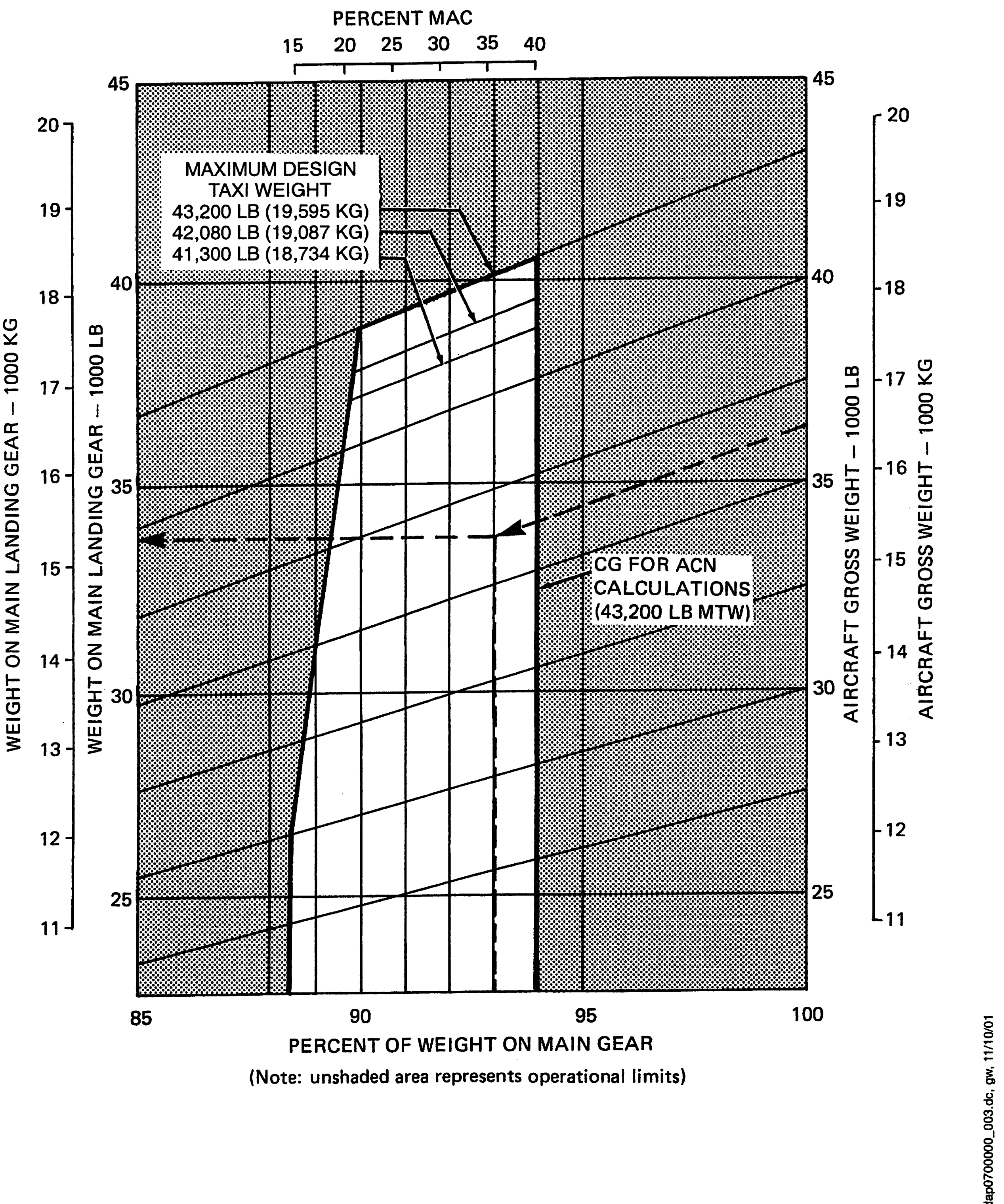


Figure 7–3 Landing Gear Loading on Pavement

NOTES:
TIRES 31.0 X 9.75 - 14
PRESSURE CONSTANT AT 101 PSI (696 kPa)

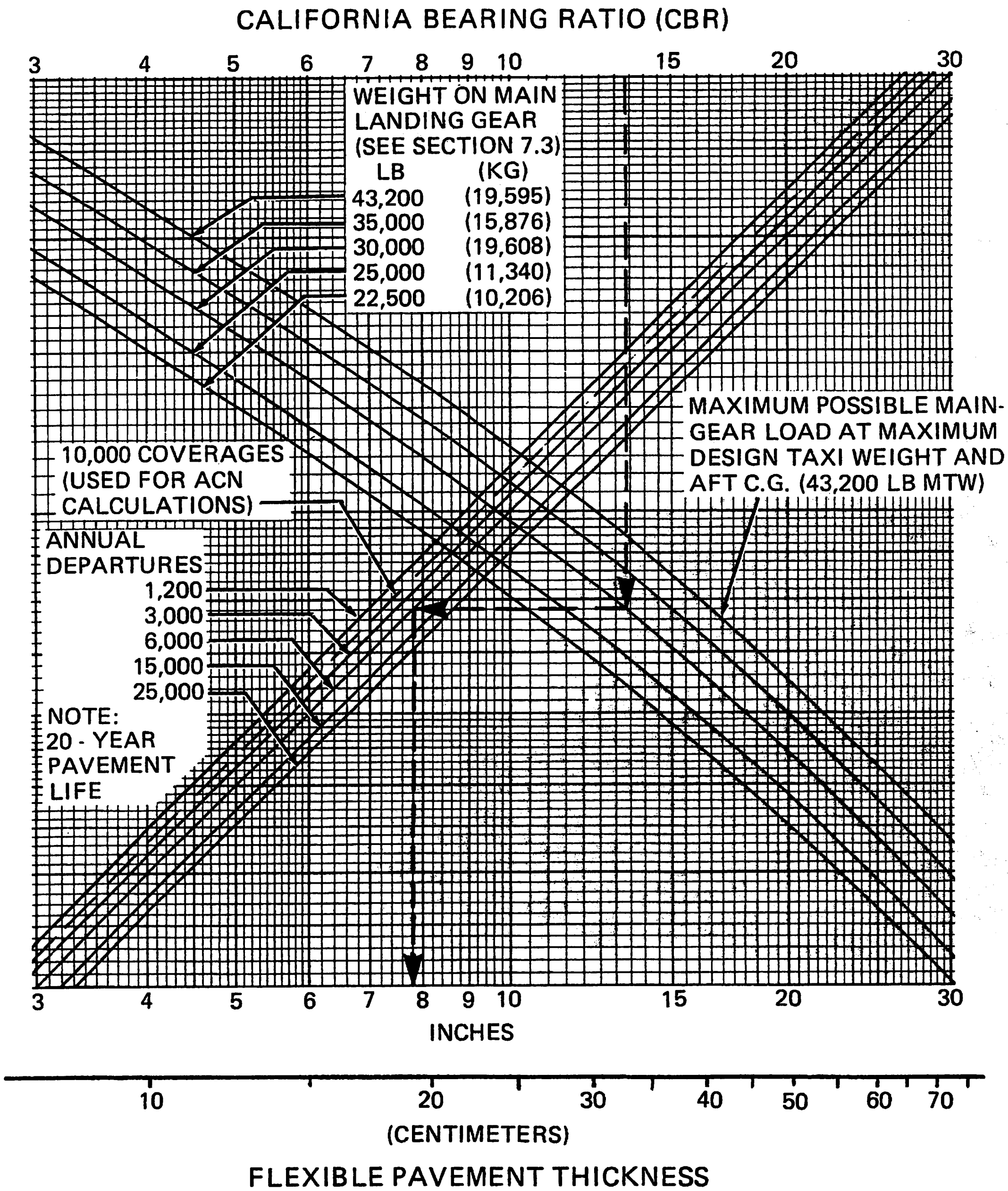


Figure 7–4 Flexible Pavement Requirements – U.S. Army Corps of Engineers Design Method (S–77–1) and FAA Design Method

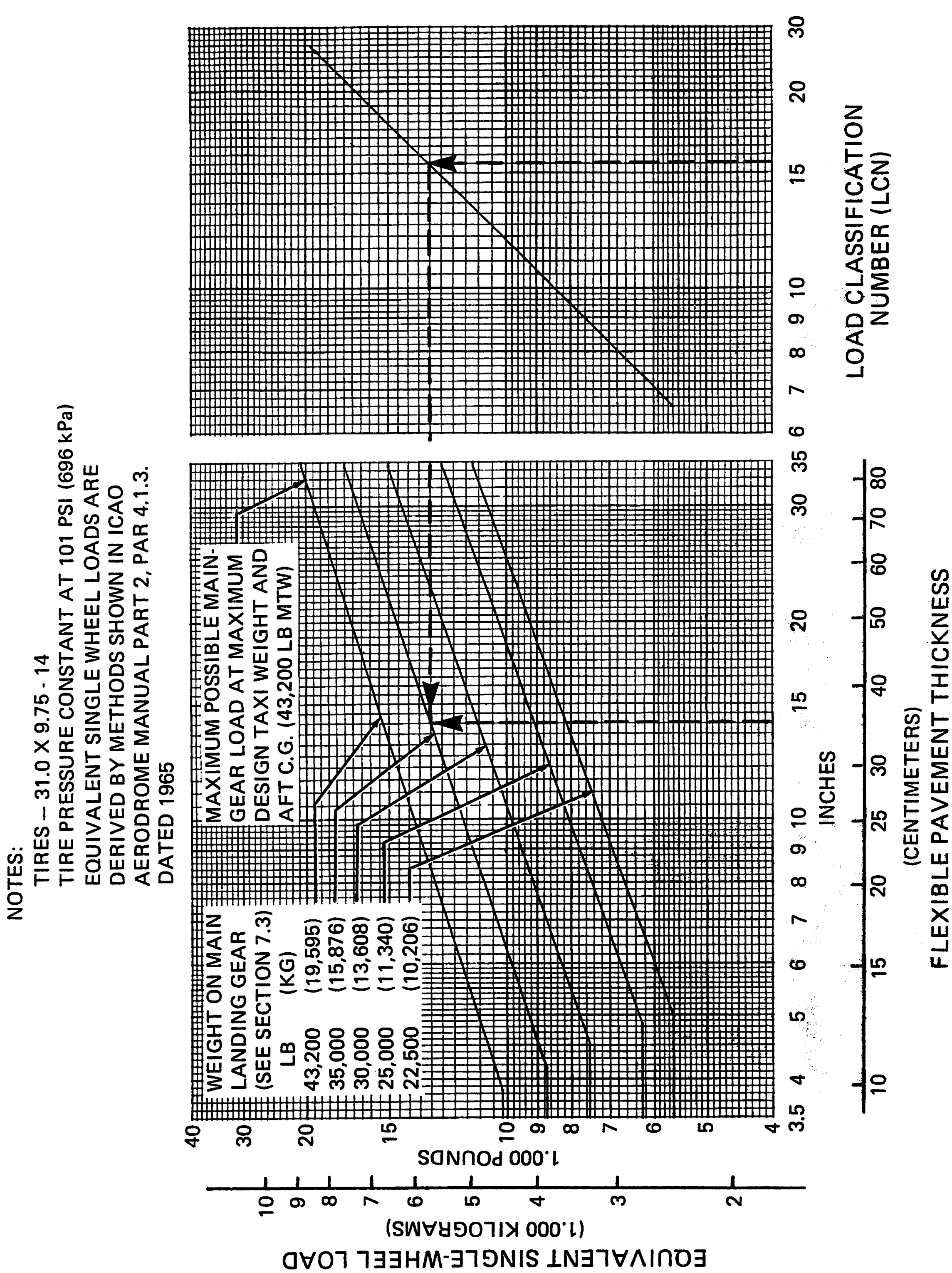


Figure 7–5 Flexible Pavement Requirements – LCN Conversion

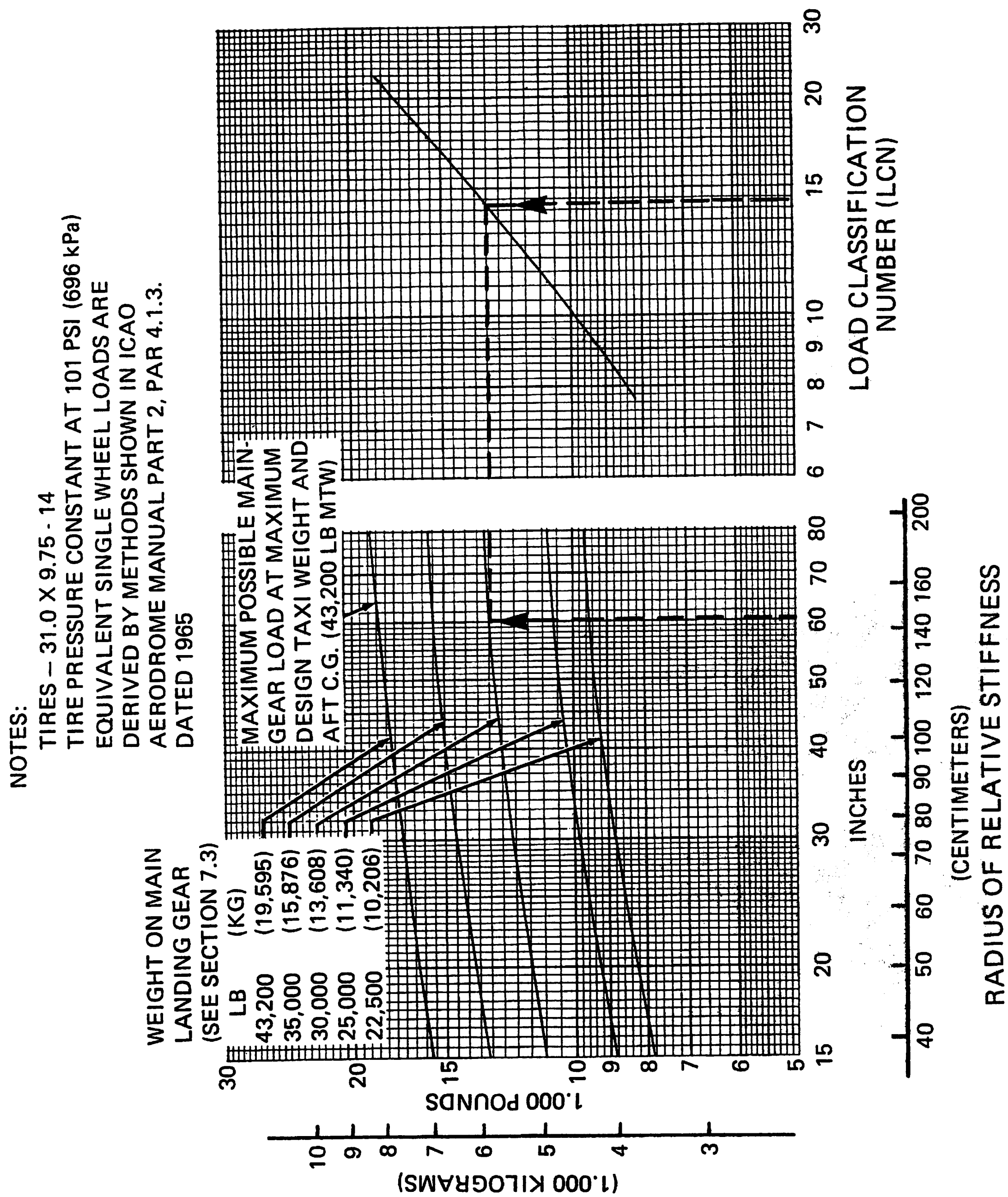


Figure 7–6 Rigid Pavement Requirements – LCN Conversion

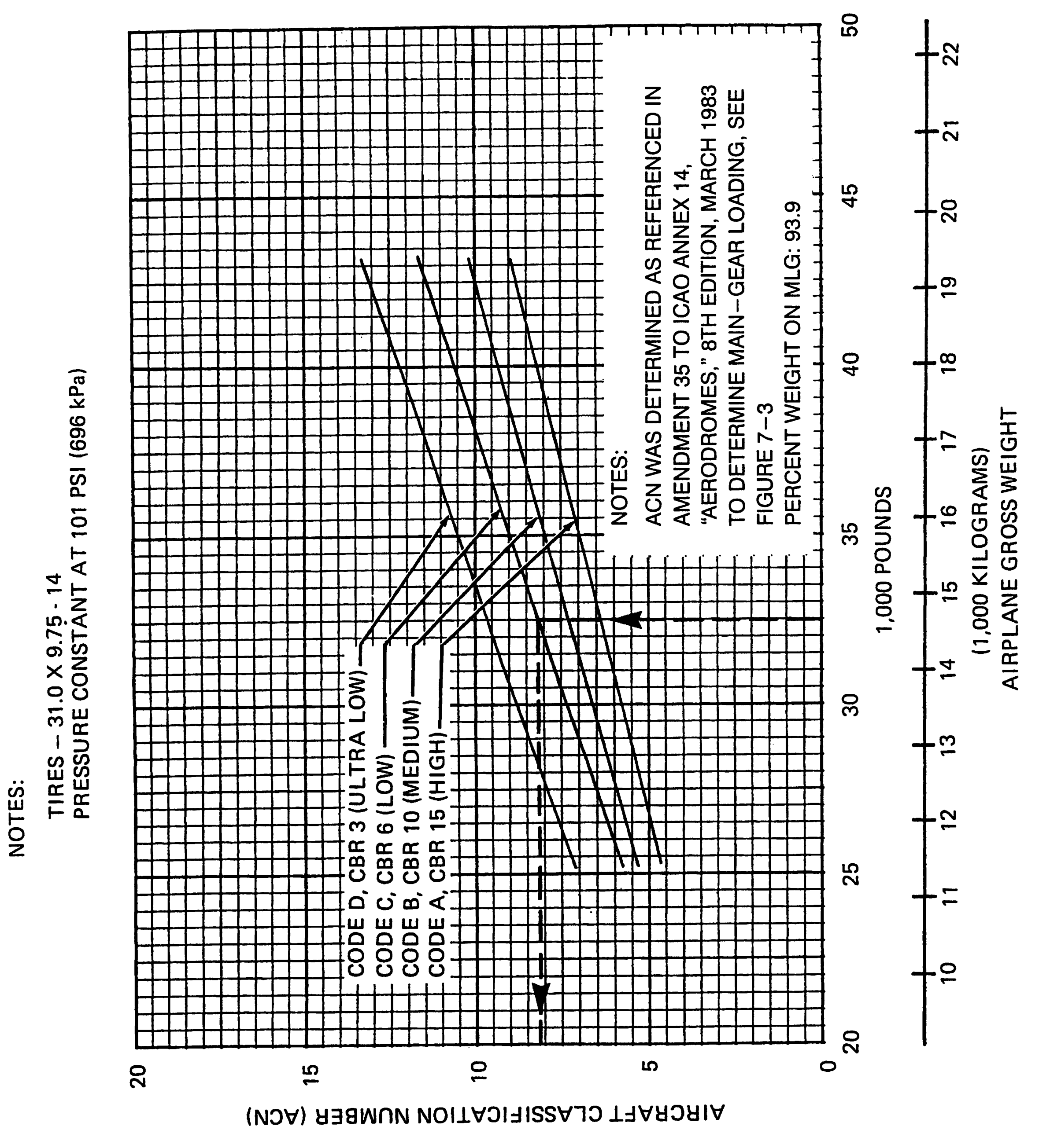


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Figure 7–7 Aircraft Classification Number – Flexible Pavement

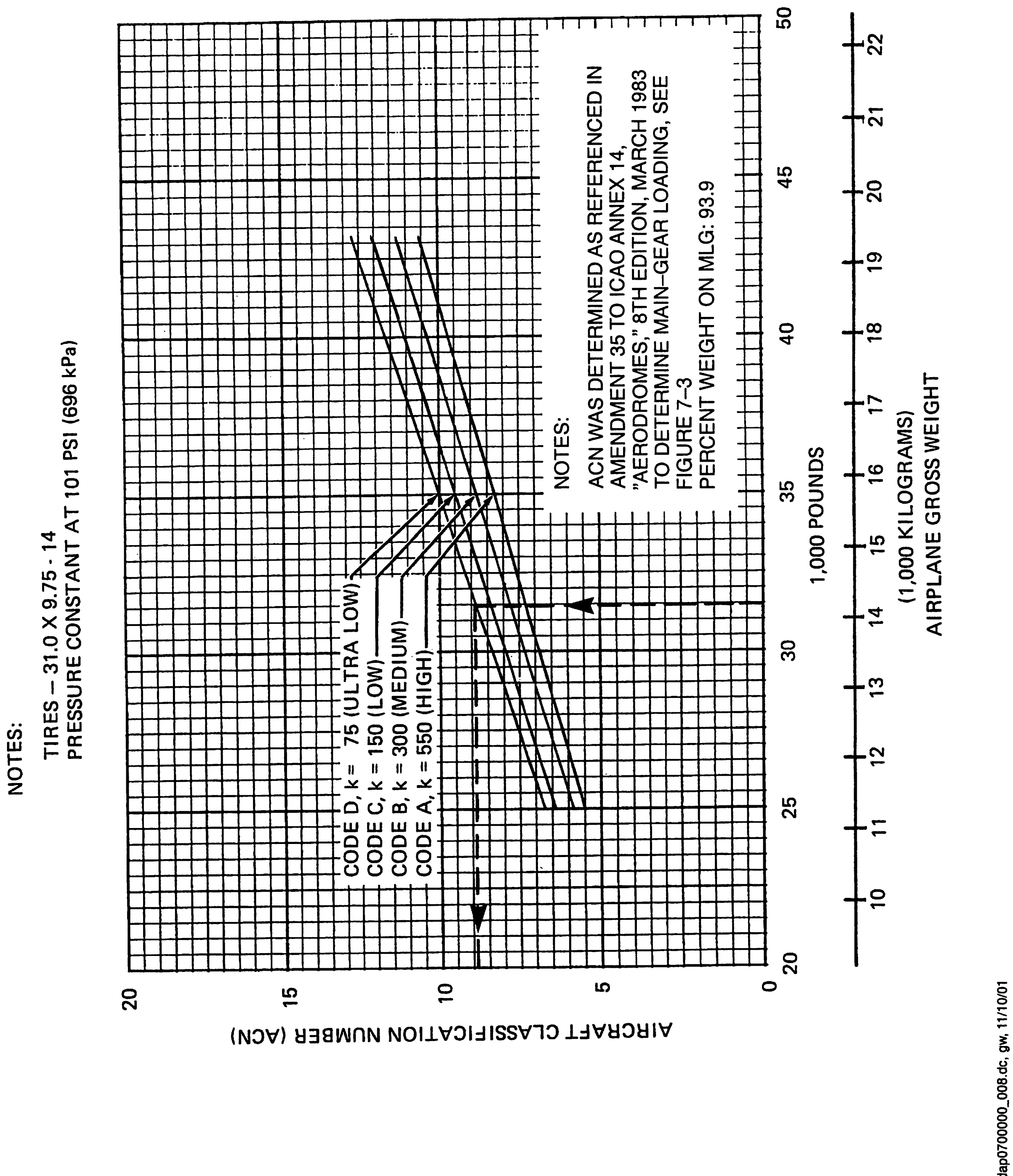

Figure 7–8 Aircraft Classification Number – Rigid Pavement

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SECTION 8

DERIVATIVE AIRCRAFT

SECTION 8

DERIVATIVE AIRCRAFT

8.0 INTRODUCTION

All Bombardier Aerospace products are continually evaluated for possible modifications with the potential of leading to new derivative models tailored to meet specific new airline requirements.

8.1 Q300 (MODEL 314)

This aircraft is similar to the Q300 (Model 311) with the exception of a 5% increase in Maximum Torque. This is accomplished with the installation of two PW123B engines rated at 2500 SHP.

8.2 Q300 (MODEL 315)

This aircraft is similar to the Q300 (Model 311), but has the optional PW 123E engines installed which have a 5% increase in thermal limit over PW 123 (Model 311) engines. MTOW and MZFW are the same as Model 311.

8.3 AIRCRAFT WEIGHTS

Each model can be tailored to suit an operators operating environment by incorporating optional intermediate or high gross weight versions.

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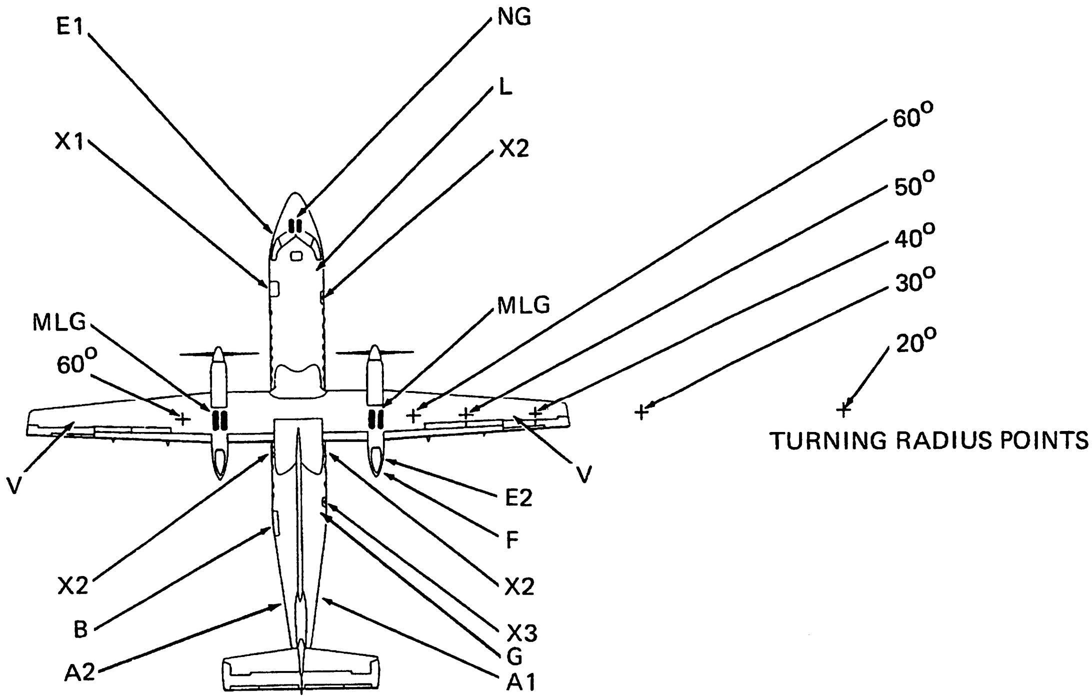
SECTION 9

SCALED Q300 DRAWINGS

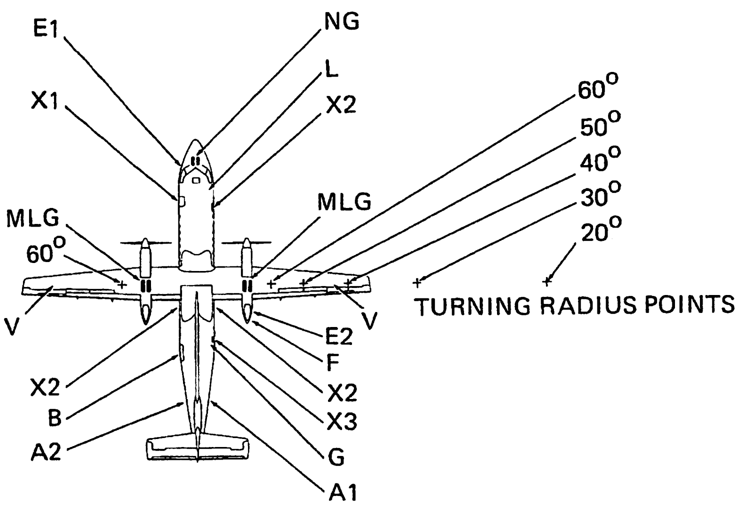
ILLUSTRATIONS



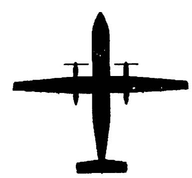
1 IN = 32 FT (1:384)

LEGEND	
A1	AIR CONDITIONING
A2	GROUND AIR CONDITIONING CONNECTION – ON R/H SIDE IF NO APU
B	BAGGAGE DOOR
E1	ELECTRICAL CONNECTION (DC)
E2	ELECTRICAL CONNECTION (AC)
F	PRESSURE REFUELING POINT
G	GALLEY
L	LAVATORY
MLG	MAIN LANDING GEAR
NG	NOSE LANDING GEAR
V	FUEL VENT (STD & LONG RANGE TANKS)
X1	AIRSTAIR DOOR
X2	EMERGENCY EXITS
X3	GALLEY SERVICE DOOR
+	TURNING RADIUS POINTS: 60°; 50°; 40°; 30°; 20°.

Figure 9–1 Scaled Q300 Model 311 Drawing 1" = 32' (1:384)



1 IN = 50 FT (1:600)

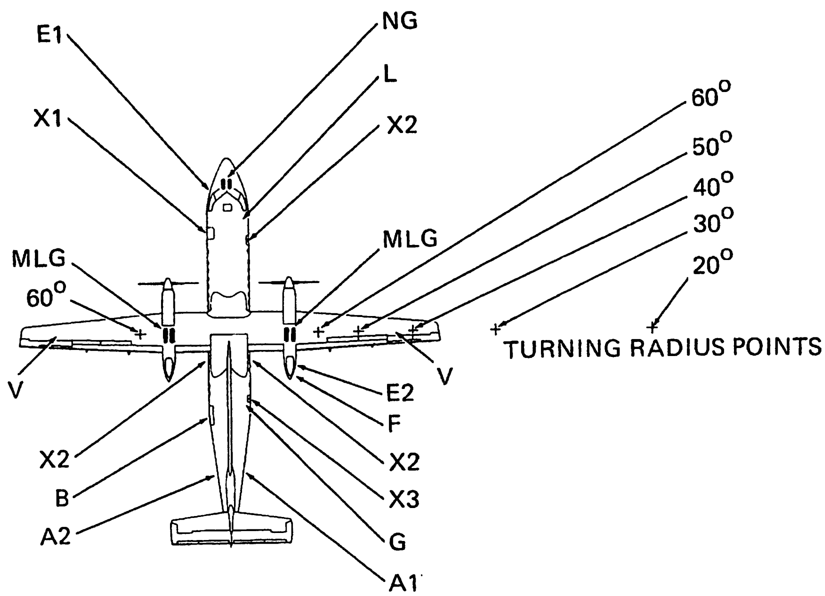


1 IN = 100 FT (1:1200)

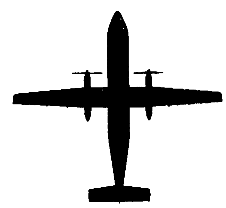
LEGEND

A1	AIR CONDITIONING
A2	GROUND AIR CONDITIONING CONNECTION – ON R/H SIDE IF NO APU
B	BAGGAGE DOOR
E1	ELECTRICAL CONNECTION (DC)
E2	ELECTRICAL CONNECTION (AC)
F	PRESSURE REFUELING POINT
G	GALLEY
L	LAVATORY
MLG	MAIN LANDING GEAR
NG	NOSE LANDING GEAR
V	FUEL VENT (STD & LONG RANGE TANKS)
X1	AIRSTAIR DOOR
X2	EMERGENCY EXITS
X3	GALLEY SERVICE DOOR
+	TURNING RADIUS POINTS: 60°; 50°; 40°; 30°; 20°.

Figure 9–2 Scaled Q300 Model 311 Drawing 1" = 50' (1:600) and 1" = 100' (1:1200)



SCALE 1:500



SCALE 1:1000

LEGEND	
A1	AIR CONDITIONING
A2	GROUND AIR CONDITIONING CONNECTION – ON R/H SIDE IF NO APU
B	BAGGAGE DOOR
E1	ELECTRICAL CONNECTION (DC)
E2	ELECTRICAL CONNECTION (AC)
F	PRESSURE REFUELING POINT
G	GALLEY
L	LAVATORY
MLG	MAIN LANDING GEAR
NG	NOSE LANDING GEAR
V	FUEL VENT (STD & LONG RANGE TANKS)
X1	AIRSTAIR DOOR
X2	EMERGENCY EXITS
X3	GALLEY SERVICE DOOR
+	TURNING RADIUS POINTS: 60°; 50°; 40°; 30°; 20°.

Figure 9–3 Scaled Q300 Model 311 Drawing 1:500 and 1:1000

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