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Table of Contents

1.0	SC	COPE A	AND INTRODUCTION	1-1
	1.1	SCO	РЕ	1-1
	1.2	INTR	RODUCTION	1-2
	1.3	A BR	RIEF DESCRIPTION OF THE 737 FAMILY OF AIRPLANES	1-3
2.0	A	IRPLA	NE DESCRIPTION	2-1
	2.1	GEN	ERAL CHARACTERISTICS	2-1
		2.1.1	General Characteristics: Model 737-600	
		2.1.2	General Characteristics: Model 737-700, -700W, -700C	
		2.1.3	General Characteristics: Model 737-800, -800W, -800BCF	
		2.1.4	General Characteristics: Model 737-900, -900W	
		2.1.5	General Characteristics: Model 737-900ER, -900ERW	
		2.1.6	General Characteristics: Model 737 BBJ	
		2.1.7	General Characteristics: Model 737 BBJ2	
	2.2	GEN	ERAL DIMENSIONS	
		2.2.1	General Dimensions: Model 737-600	
		2.2.2	General Dimensions: Model 737-600W	2-10
		2.2.3	General Dimensions: Model 737-700, -700C	2-11
		2.2.4	General Dimensions: Model 737-700W, BBJ1	2-12
		2.2.5	General Dimensions: Model 737-800	2-13
		2.2.6	General Dimensions: Model 737-800W, BBJ2, -800BCF	2-14
		2.2.7	General Dimensions: Model 737-900, -900ER	2-15
		2.2.8	General Dimensions: Model 737-900W, -900ERW	2-16
	2.3	GRO	UND CLEARANCES	2-17
		2.3.1	Ground Clearances: Model 737-600, -700, -700C	2-17
		2.3.2	Ground Clearances: Model 737-800, -900, -900ER	2-18
		2.3.3	Ground Clearances: Model 737-700W, -800W, -900W, - 900ERW, BBJ, BBJ2	2-19
		2.3.4	Ground Clearances: Model 737-800BCF	2-20
	2.4	INTE	RIOR ARRANGEMENTS	2-21
		2.4.1	Interior Arrangements: Model 737-600	2-21
		2.4.2	Interior Arrangements: Model 737-700, -700W	2-22
		2.4.3	Interior Arrangements: Model 737-700C	2-23
		2.4.4	Interior Arrangements: Model 737-800, -800W	2-24
		2.4.5	Interior Arrangements: Model 737 BBJ1, 737 BBJ2	2-25
		2.4.6	Interior Arrangements: Model 737-800BCF	2-26
		2.4.7	Interior Arrangements: Model 737-900, -900W	2-27
		2.4.8	Interior Arrangements: Model 737-900ER, -900ERW	2-28
	2.5	CAB	IN CROSS SECTIONS	2-29

2.5.1	Cabin Cross-Sections: Model 737-600, -700, -800, -900, BBJ1, BBJ2, Four-Abreast Seating	2-29
2.5.2	Cabin Cross-Sections: Model 737-600, -700, -800, -900, Six- Abreast Seating	2-30
2.6 LOW	ER CARGO COMPARTMENTS	2-31
2.6.1	Lower Cargo Compartments: Model 737-600, -700, -700C, -800, -800BCF, -900, -900ER With and Without Winglets, Capacities	2-31
2.6.2	Lower Cargo Compartments: Model 737BBJ1, 737 BBJ2, Capacities	2-32
2.7 DOO	R CLEARANCES	2-33
2.7.1	Door Clearances: Model 737, All Models, Forward Main Entry Door No. 1	2-33
2.7.2	Door Clearances: Model 737, All Models, Optional Forward Airstairs, Main Entry Door No 1	2-34
2.7.3	Door Clearances: Model 737-600, -700, -700C, -800, -800BCF, - 900, -900ER, BBJ1, BBJ2, With and Without Winglets, Locations of Sensors and Probas – Ferward of Main Entry Door No. 1	2 25
274	Door Clearances: Model 737 All Models Forward Service Door	2-35
2.7.5	Door Clearances: Model 737, All Models, Aft Entry Door and Aft Service Door	2 30
2.7.6	Door Clearances: Model 737-700C, Main Deck Cargo Door	2-38
2.7.7	Door Clearances: Model 737-800BCF, Main Deck Cargo Door	2-39
3.0 AIRPLA	NE PERFORMANCE	3-1
3.1 GEN	ERAL INFORMATION	3-1
3.2 PAY	LOAD/RANGE FOR LONG RANGE CRUISE	3-2
3.2.1	Payload/Range for Long Range Cruise: Model 737-600	3-2
3.2.2	Payload/Range for Long Range Cruise: Model 737-700, -700W	3-3
3.2.3	Payload/Range for Long Range Cruise: Model 737-700ER, - 700ERW, -700C, -700CW, BBJ1	3-4
3.2.4	Payload/Range for Long Range Cruise: Model 737-800, -800W, - 800BCF, BBJ2	3-5
3.2.5	Payload/Range for Long Range Cruise: Model 737-900, -900W	3-6
3.2.6	Payload/Range for Long Range Cruise: Model 737-900ER, - 900ERW, BBJ3	3-7
3.3 FAA/	EASA TAKEOFF RUNWAY LENGTH REQUIREMENTS	3-8
3.3.1	FAA/EASA Takeoff Runway Length Requirements - Standard	
	Day, Dry Runway: Model 737-600 (CFM56-7B18/-7B20 Engines at 20,000 LB SLST)	3-8
3.3.2	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-600	
	(CFM56-7B18/-7B20 Engines at 20,000 LB SLST)	3-9

3.3.3	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 40°F (STD + 22.2°C), Dry Runway: Model 737-600
	(CFM56-7B18/-7B20 Engines at 20,000 LB SLST)
3.3.4	FAA/EASA Takeoff Runway Length Requirements - Standard
	Day + 63° F (SID + 35° C), Dry Runway: Model /3/-600 (CEM56 7P18/7P20 Engines at 20,000 LP SLST) 2,11
225	(Criviso-7B10/-7B20 Engines at 20,000 EB SEST)
5.5.5	Day, Dry Runway: Model 737-600 (CEM56-7B22 Engines at
	22.000 LB SLST)
3.3.6	FAA/EASA Takeoff Runway Length Requirements - Standard
	Day + 27°F (STD + 15°C), Dry Runway: Model 737-600
	(CFM56-7B22 Engines at 22,000 LB SLST)
3.3.7	FAA/EASA Takeoff Runway Length Requirements - Standard
	Day + 45°F (STD + 25°C), Dry Runway: Model 737-600
	(CFM56-7B22 Engines at 22,000 LB SLST)
3.3.8	FAA/EASA Takeoff Runway Length Requirements - Standard
	Day + 63° F (STD + 35° C), Dry Runway: Model 737-600
220	(CFM56-/B22 Engines at 22,000 LB SLS1)
3.3.9	FAA/EASA Takeoff Runway Length Requirements - Standard
	7B24 Engines at 20 000 LB SLST) 3-16
3 3 10	FAA/EASA Takeoff Runway Length Requirements - Standard
5.5.10	$Day + 27^{\circ}F$ (STD + 15°C). Dry Runway: Model 737-700, 700W
	(CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)
3.3.11	FAA/EASA Takeoff Runway Length Requirements - Standard
	Day + 40°F (STD + 22.2°C), Dry Runway: Model 737-700, -
	700W (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST) 3-18
3.3.12	FAA/EASA Takeoff Runway Length Requirements - Standard
	Day $+ 63^{\circ}$ F (STD $+ 35^{\circ}$ C), Dry Runway: Model 737-700, -700W
2 2 1 2	(CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)
3.3.13	FAA/EASA Takeoff Runway Length Requirements - Standard
	Engines at 26 000 LB SI ST 3-20
331/	Engines at 20,000 LD SEST
5.5.14	Day, +27°F (STD + 15°C). Dry Runway: Model 737-700, -700W
	(CFM56-7B26 Engines at 26,000 LB SLST
3.3.15	FAA/EASA Takeoff Runway Length Requirements - Standard
	Day + 45°F (STD + 25°C), Dry Runway: Model 737-700, -700W
	(CFM56-7B26 Engines at 26,000 LB SLST) 3-22
3.3.16	FAA/EASA Takeoff Runway Length Requirements - Standard
	Day + 63°F (STD + 35 °C), Dry Runway: Model 737-700, -700W
	(CFM56-7B26 Engines at 26,000 LB SLST)
3.3.17	FAA/EASA Takeoff Runway Length Requirements - Standard
	Day, Dry Runway: Model 737-700ER, -700ERW, -700C, -

	700CW (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)
3.3.18	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-700ER, - 700ERW, -700C, -700CW (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)
3.3.19	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 40°F (STD + 22.2°C), Dry Runway: Model 737-700ER, - 700ERW, -700C, -700CW (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)
3.3.20	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-700ER, - 700ERW, -700C, -700CW (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)
3.3.21	FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-700ER, -700ERW, -700C, - 700CW, BBJ1 (CFM56-7B26/-7B27 Engines at 26,000 LB SLST)
3.3.22	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-700ER, - 700ERW, -700C, -700CW, BBJ1 (CFM56-7B26/-7B27 Engines at 26,000 LB SLST)
3.3.23	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 45°F (STD + 25°C), Dry Runway: Model 737-700ER, - 700ERW, -700C, -700CW, BBJ1 (CFM56-7B26/-7B27 Engines at 26,000 LB SLST)
3.3.24	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-700ER, - 700ERW, -700C, -700CW, BBJ1 (CFM56-7B26/-7B27 Engines at 26,000 LB SLST)
3.3.25	FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B27-B1 Engine at 26,000 LB SLST)
3.3.26	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B27-B1 Engine at 26,000 LB SLST) 3-33
3.3.27	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 45°F (STD + 25°C), Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B27-B1 Engine at 26,000 LB SLST) 3-34
3.3.28	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35°C), Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B27-B1 Engine at 26,000 LB SLST) 3-35
3.3.29	FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B24/-7B26/-7B27 Engines at 26,000 LB SLST)

3.3.30	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B24/-7B26/-7B27 Engines at 26,000 LB SLST)	3-37
3.3.31	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 45°F (STD + 25°C), Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B24/-7B26/-7B27 Engines at 26,000 LB SLST)	3-38
3.3.32	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-800, - 800W, BBJ2, -800BCF (CFM56-7B24/-7B26/-7B27 Engines at 26,000 LB SLST)	3-39
3.3.33	FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-900, -900W (CFM56-7B24/-7B26 Engines at 24,000 LB SLST)	3-40
3.3.34	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-900, -900W (CFM56-7B24/-7B26 Engines at 24,000 LB SLST)	3-41
3.3.35	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 45°F (STD + 25°C), Dry Runway: Model 737-900, -900W (CFM56-7B24/-7B26 Engines at 24,000 LB SLST)	3-42
3.3.36	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-900, -900W (CFM56-7B24/-7B26 Engines at 24,000 LB SLST)	3-43
3.3.37	FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-900ER, -900ERW, BBJ3 (CFM56- 7B26/-7B27 Engines at 26 000 LB SLST)	3-44
3.3.38	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-900ER, - 900ERW, BBJ3 (CFM56-7B26/-7B27 Engines at 26,000 LB SLST)	3-45
3.3.39	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 45°F (STD + 25°C), Dry Runway: Model 737-900ER, - 900ERW, BBJ3 (CFM56-7B26/-7B27 Engines at 26,000 LB SLST).	3-46
3.3.40	FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-900ER, - 900ERW, BBJ3 (CFM56-7B26/-7B27 Engines at 6,000 LB SLST)	3-47
3.3.41	ICAO Aerodrome Reference Code – All Models	3-48
3.4 FAA/	EASA LANDING RUNWAY LENGTH REQUIREMENTS	3-49
3.4.1	FAA/EASA Landing Runway Length Requirements - Flaps 30: Model 737, 600	3 10
	1110001 / J / -000	5-49

3	3.4.2	FAA/EASA Landing Runway Length Requirements - Flaps 30: Model 737-700, -700W, 700ER, -700ERW, 700C, -700CW, BB11	3-50
2	3.4.3	FAA/EASA Landing Runway Length Requirements - Flaps 30: Model 737-800, -800W, -800BCF, BBJ2	3-51
3	3.4.4	FAA/EASA Landing Runway Length Requirements - Flaps 30: Model 737-900, -900W	3-52
3	3.4.5	FAA/EASA Landing Runway Length Requirements - Flaps 30: Model 737-900ER, -900ERW, BBJ3	3-53
4.0 AI	RPLAN	NE PERFORMANCE	4-1
4.1	GENE	ERAL INFORMATION	4-1
4.2	TURN	JING RADII	4-2
2	4.2.1	Turning Radii – No Slip Angle: Model 737-600	4-2
2	4.2.2	Turning Radii – No Slip Angle: Model 737-600W	4-3
2	4.2.3	Turning Radii – No Slip Angle: Model 737-700	4-4
2	4.2.4	Turning Radii – No Slip Angle: Model 737-700W, BBJ1	4-5
2	4.2.5	Turning Radii – No Slip Angle: Model 737-800	4-6
2	4.2.6	Turning Radii – No Slip Angle: Model 737-800W, -800BCF, BBJ2	4-7
2	4.2.7	Turning Radii – No Slin Angle: Model 737-900, -900ER	4-8
2	4.2.8	Turning Radii – No Slip Angle: Model 737-900W, -900ERW	4-9
4.3	CLEA	RANCE RADII	4-10
2	4.3.1	Minimum Turning Radii – 3" Slip Angle: Model 737-600, -700, - 800, -900, -900ER	4-10
2	4.3.2	Minimum Turning Radii – 3" Slip Angle: Model 737-600W, - 700W, -800W, -800BCF, -900W, -900ERW, BBJ1, BBJ2	4-11
4.4	VISIE ALL I	BILITY FROM COCKPIT IN STATIC POSITION: MODEL 737, MODELS	4-12
4.5	RUN	WAY AND TAXIWAY TURN PATHS	4-13
2	4.5.1	Runway and Taxiway Turn Paths - Runway-to-Taxiway, More Than 90 Degrees, Nose Gear Tracks Centerline: Model 737, All	4 1 2
2	4.5.2	Runway and Taxiway Turn Paths - Runway-to-Taxiway, 90 Degrees, Nose Gear Tracks Centerline: Model 737, All Models	4-13
2	4.5.3	Runway and Taxiway Turn Paths - Taxiway-to-Taxiway, 90 Degrees, Nose Gear Tracks Centerline: Model 737, All Models	4-15
2	4.5.4	Runway and Taxiway Turn Paths - Taxiway-to-Taxiway, 90 Degrees, Cockpit Tracks Centerline: Model 737, All Models	4-16
4.6	RUN	WAY HOLDING BAY: MODEL 737, ALL MODELS	4-17
5.0 TE	ERMIN	AL SERVICING	5-1
5.1	AIRP	LANE SERVICING ARRANGEMENT - TYPICAL	5 0
	IUKP		J-Z

5.1.1	Airplane Servicing Arrangement - Typical Turnaround: Model 737-600	5-2
5.1.2	Airplane Servicing Arrangement - Typical Turnaround: Model 737-700, -700W	5-3
5.1.3	Airplane Servicing Arrangement - Typical Turnaround: Model 737-700C, -700QC, -800BCF	5-4
5.1.4	Airplane Servicing Arrangement - Typical Turnaround: Model 737-800, -800W	5-5
5.1.5	Airplane Servicing Arrangement - Typical Turnaround: Model 737-900, -900ER, With and Without Winglets	5-6
5.1.6	Airplane Servicing Arrangement - Typical Turnaround: Model 737 BBJ1, BBJ2	5-7
5.2 TER	MINAL OPERATIONS - TURNAROUND STATION	5-8
5.2.1	Terminal Operations – Turnaround Station: Model 737-600	5-8
5.2.2	Terminal Operations – Turnaround Station: Model 737-700, - 700W	5-9
5.2.3	Terminal Operations – Turnaround Station: Model 737-700C, - 700QC	. 5-10
5.2.4	Terminal Operations – Turnaround Station: Model 737-800, - 800W	. 5-11
5.2.5	Terminal Operations – Turnaround Station: Model 737-900, - 900ER, With and Without Winglets	. 5-12
5.2.6	Terminal Operations – Turnaround Station: Model 737 BBJ1, BBJ2	. 5-13
5.3 TER	MINAL OPERATIONS - EN ROUTE STATION	. 5-14
5.3.1	Terminal Operations - En Route Station: Model 737-600	. 5-14
5.3.2	Terminal Operations - En Route Station: Model 737-700, -700W	. 5-15
5.3.3	Terminal Operations - En Route Station: Model 737-800, -800W	. 5-16
5.3.4	Terminal Operations - En Route Station: Model 737-900, -900ER, With and Without Winglets	. 5-17
5.3.5	Terminal Operations - En Route Station: Model 737 BBJ1, BBJ2	. 5-18
5.4 GRO	OUND SERVICING CONNECTIONS	. 5-19
5.4.1	Ground Service Connections: Model 737-600	. 5-19
5.4.2	Ground Service Connections: Model 737-700	. 5-20
5.4.3	Ground Service Connections: Model 737-700W, BBJ 1	. 5-21
5.4.4	Ground Service Connections: Model 737-800	. 5-22
5.4.5	Ground Service Connections: Model 737-800W, -800BCF, BBJ2	. 5-23
5.4.6	Ground Service Connections: Model 737-900, -900ER	. 5-24
5.4.7	Ground Service Connections: Model 737-900W, -900ERW	. 5-25
5.4.8	Ground Servicing Connections and Capacities: Model 737, All Models	5-26
5.5 ENG	INE STARTING PNEUMATIC REOUIREMENTS	. 5-27
	`	

5.5.1	Engine Start Pneumatic Requirements - Sea Level: Model 737-600, -700, -800, -800BCF, -900, -900ER, With and Without	5.07
5.6 CRO	Winglets, BBJ1, BBJ2	5-27
5.6 GRU	UND PNEUMATIC POWER REQUIREMENTS	5-28
5.6.1	Model 737-600, -700, With and Without Winglets	5-28
5.6.2	Ground Pneumatic Power Requirements - Heating/Cooling: Model 737-800, -800BCF, -900, -900ER, With and Without	5 20
57 CON		5-29
5.7 CON	Conditioned Air Flow Provincements Model 727 (00, 700 With	3-30
5.7.1	and Without Winglets	5-30
572	Conditioned Air Flow Requirements: Model 737-800 -800BCF -	5-50
5.7.2	900, -900ER. With and Without Winglets	5-31
5.8 GRO	UND TOWING REQUIREMENTS	5-32
5.8.1	Ground Towing Requirements - English Units: Model 737,	
	All Models	5-32
5.8.2	Ground Towing Requirements - Metric Units: Model 737, All	
	Models	5-33
6.0 JET ENG	INE WAKE AND NOISE DATA	6-1
6.1 JET E	ENGINE EXHAUST VELOCITIES AND TEMPERATURES	6-1
6.1.1	Jet Engine Exhaust Velocity Contours – Idle Thrust: Model 737- 600	6-2
6.1.2	Jet Engine Exhaust Velocity Contours – Idle Thrust: Model 737-700, -700W	6-3
6.1.3	Jet Engine Exhaust Velocity Contours – Idle Thrust: Model 737- 800, -800W, -800BCF	6-4
6.1.4	Jet Engine Exhaust Velocity Contours – Idle Thrust: Model 737-	
-	900, -900ER, With and Without Winglets	6-5
6.1.5	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MLW: Model 737-600	6-6
6.1.6	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MTW: Model 737-600	6-7
6.1.7	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / Both Engines / MTW: Model 737-600	6-8
6.1.8	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 1% Slope / Both Engines / MTW: Model 737-600	6-9
6.1.9	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MLW: Model 737-700, -700W	6-10
6.1.10	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MTW: Model 737-700 -700W	
6.1.11	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / Both Engines / MTW: Model 737-700, -700W	6-12

6.1.12	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 1%	
	Slope / Both Engines / MTW: Model 737-700, -700W	6-13
6.1.13	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MLW: Model 737-800, -800W, -800BCF	6-14
6.1.14	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MTW: Model 737-800, -800W, -800BCF	6-15
6.1.15	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / Both Engines / MTW: Model 737-800, -800W, -800BCF	6-16
6.1.16	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 1% Slope / Both Engines / MTW: Model 737-800, -800W, -800BCF	6-17
6.1.17	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MLW: Model 737-900, -900ER, With and Without Winglets	6-18
6.1.18	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MTW: Model 737-900, -900ER, With and Without Winglets	6-19
6.1.19	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / Both Engines / MTW: Model 737-900, -900ER, With and Without Winglets	6-20
6.1.20	Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 1% Slope / Both Engines / MTW: Model 737-900, -900ER, With and Without Winglets	6-21
6.1.21	Jet Engine Exhaust Velocity Contours - Takeoff Thrust: Model 737-600	6-22
6.1.22	Jet Engine Exhaust Velocity Contours - Takeoff Thrust: Model 737-700, -700W	6-23
6.1.23	Jet Engine Exhaust Velocity Contours - Takeoff Thrust: Model 737-800, -800W, -800BCF	6-24
6.1.24	Jet Engine Exhaust Velocity Contours - Takeoff Thrust: Model 737-900 -900ER With and Without Winglets	6-25
6.1.25	Jet Engine Exhaust Temperature Contours - Idle Thrust: Model 737-600, -700, -800, -800BCF, -900, -900ER, With and Without Winglets	6 76
6.1.26	Jet Engine Exhaust Temperature Contours – Breakaway Thrust: Model 737-600, -700, -800, -800BCF, -900, -900ER, With and Without Winglets	6-27
6.1.27	Jet Engine Exhaust Temperature Contours – Takeoff Thrust: Model 737-600, -700, -800, -800BCF, -900, -900ER, With and Without Winglets	6-28
6.1.28	Inlet Hazard Areas: Models 737-600, -700, -800, -800BCF, -900, -900FR With and Without Winglets	6-29
6.2 AIRP	PORT AND COMMUNITY NOISE	6-30
PAVEMI	ENT DATA	7-1

7.0

xi

7.1	GEN	ERAL INFORMATION	7-1
7.2	LAN	DING GEAR FOOTPRINT	7-1
,	7.2.1	Landing Gear Footprint: Model Advanced 737-600, -700, -800, - 800BCF, -900, -900ER, With and Without Winglets	7-5
,	7.2.2	Landing Gear Footprint: Model 737 BBJ1, BBJ2	7-6
7.3	МАХ	XIMUM PAVEMENT LOADS	7-7
,	7.3.1	Maximum Pavement Loads: Model 737-600, -700, -800, -	
		800BCF, -900, -900ER With and Without Winglets	7-7
,	7.3.2	Maximum Pavement Loads: Model 737 BBJ1, BBJ2	7-9
7.4	LAN	DING GEAR LOADING ON PAVEMENT	. 7-10
,	7.4.1	Landing Gear Loading on Pavement: 737-600	. 7-10
,	7.4.2	Landing Gear Loading on Pavement: Model 737-700, -700W	. 7-11
,	7.4.3	Landing Gear Loading on Pavement: Model 737 BBJ1	. 7-12
,	7.4.4	Landing Gear Loading on Pavement: Model 737-800, -800W, -	
		800BCF	. 7-13
,	7.4.5	Landing Gear Loading on Pavement: Model 737 BBJ2	. 7-14
,	7.4.6	Landing Gear Loading on Pavement: Model 737-900, -900W	. 7-15
,	7.4.7	Landing Gear Loading on Pavement: Model 737-900ER, -	
		900ERW	. 7-16
7.5	FLEZ	XIBLE PAVEMENT REQUIREMENTS - U.S. ARMY CORPS OF	- 1-
,	ENG	INEERS METHOD S-77-1 AND FAA DESIGN METHOD	. /-1/
	/.3.1	Flexible Pavement Requirements - U.S. Army Corps of Engineers	
		600 -700 -800 -800BCF -900 -900ER With and Without	
		Winglets, BBJ1, BBJ2	. 7-18
7.6	FLEZ	XIBLE PAVEMENT REQUIREMENTS - LCN CONVERSION	. 7-19
,	7.6.1	Flexible Pavement Requirements - LCN Method: Model 737-600,	
		-700, -800, -800BCF, -900, -900ER, With and Without Winglets,	
		BBJ1, BBJ2	. 7-20
7.7	RIGI	D PAVEMENT REQUIREMENTS - PORTLAND CEMENT	
	ASS	OCIATION DESIGN METHOD	. 7-21
,	7.7.1	Rigid Pavement Requirements - Portland Cement Association	
		Design Method: Model 737-600, -700, -800, -800BCF, -900, -	7 22
,	770	900EK, with and without winglets, BBJ1, BBJ2	. /-22
	1.1.2	Design Method: Model 737-600 -700 (Optional Tires)	7_23
78	RIGI	D PAVEMENT REQUIREMENTS - I CN CONVERSION	7-24
7.0	7 8 1	Radius of Relative Stiffness (Reference: Portland	. / 2-1
	/.0.1	Cement Association)	. 7-25
,	7.8.2	Rigid Pavement Requirements - LCN Conversion: Model 737-	-
		600, -700, -800, -800BCF, -900, -900ER With and Without	
		Winglets, BBJ1, BBJ2	. 7-26
7.9	RIGI	D PAVEMENT REQUIREMENTS - FAA DESIGN METHOD	. 7-27

7.9.1	Rigid Pavement Requirements – FAA Design Method: Model 737-600, -700, -800, -800BCF, -900, -900ER With and Without Winglets, BBJ1, BBJ2	7-28
7.9.2	Rigid Pavement Requirements – FAA Design Method: Model 737-600, -700 (Optional Tires)	. 7-29
7.10 ACN/ PAVE	PCN REPORTING SYSTEM - FLEXIBLE AND RIGID EMENTS	. 7-30
7.10.1	Aircraft Classification Number - Flexible Pavement: Model 737- 600	. 7-32
7.10.2	Aircraft Classification Number - Flexible Pavement: Model 737- 600 (Optional Tires)	. 7-33
7.10.3	Aircraft Classification Number - Flexible Pavement: Model 737-700, -700W	. 7-35
7.10.4	Aircraft Classification Number - Flexible Pavement: Model 737- 700, -700W (Optional Tires)	. 7-37
7.10.5	Aircraft Classification Number - Flexible Pavement: Model 737 BBJ1	. 7-39
7.10.6	Aircraft Classification Number - Flexible Pavement: Model 737- 800, -800W, -800BCF	. 7-41
7.10.7	Aircraft Classification Number - Flexible Pavement: Model 737 BBI2	7-43
7.10.8	Aircraft Classification Number - Flexible Pavement: Model 737- 900, -900W	. 7-44
7.10.9	Aircraft Classification Number - Flexible Pavement: Model 737-900ER, -900ERW	. 7-45
7.10.10	Aircraft Classification Number - Rigid Pavement: Model 737-600	. 7-33
7.10.11	Aircraft Classification Number - Rigid Pavement: Model 737-600 (Optional Tires)	. 7-35
7.10.12	Aircraft Classification Number - Rigid Pavement: Model 737- 700, -700W	. 7-37
7.10.13	Aircraft Classification Number - Rigid Pavement: Model 737- 700, -700W (Optional Tires)	. 7-39
7.10.14	Aircraft Classification Number - Rigid Pavement: Model 737 BBJ1	7-41
7.10.15	Aircraft Classification Number - Rigid Pavement: Model 737- 800, -800W, -800BCF	. 7-43
7.10.16	Aircraft Classification Number - Rigid Pavement: Model 737 BBI2 Error' Bookmark not det	fined
7.10.17	Aircraft Classification Number - Rigid Pavement: Model 737- 900 -900W	7_45
7.10.18	Aircraft Classification Number - Rigid Pavement: Model 737- 900ER, -900ERW	. 7-47

7.11 A P	CR/PCR REPORTING SYSTEM – FLEXIBLE AND RIGID	7-48
7.11	1 Aircraft Classification Rating - Flexible Pavement: Model 737- 600	7-50
7.11	 Aircraft Classification Rating - Flexible Pavement: Model 737- 700 -700W 	7-51
7.11	 Aircraft Classification Rating - Flexible Pavement: Model 737 BBJ1 	. 7-57
7.11	.4 Aircraft Classification Rating - Flexible Pavement: Model 737- 800, -800W, -800BCF	. 7-59
7.11	5 Aircraft Classification Rating - Flexible Pavement: Model 737 BBJ2	. 7-61
7.11	.6 Aircraft Classification Rating - Flexible Pavement: Model 737- 900, -900W	. 7-62
7.11	7 Aircraft Classification Rating - Flexible Pavement: Model 737- 900ER, -900ERW	. 7-63
7.11 7.11	 Aircraft Classification Rating - Rigid Pavement: Model 737-600 Aircraft Classification Rating - Rigid Pavement: Model 737-700. 	. 7-51
7 11	-700W	. 7-55
7.11	11 Aircraft Classification Rating - Rigid Pavement: Model 737-800, -800W -800BCF	7-61
7.11	12 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E	rror! Bookmark not
7.11 7.11	 12 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E 13 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W	rror! Bookmark not
7.11 7.11 7.11	 12 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E 13 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W 14 Aircraft Classification Rating - Rigid Pavement: Model 737- 900ER, -900ERW 	. 7-63 . 7-63 . 7-65
7.11 7.11 7.11 8.0 FUTU	 12 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E 13 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W 14 Aircraft Classification Rating - Rigid Pavement: Model 737- 900ER, -900ERW RE 737 DERIVATIVE AIRPLANES 	. 7-63 . 7-63 . 7-65 8-1
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI	 12 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E 13 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W 14 Aircraft Classification Rating - Rigid Pavement: Model 737- 900ER, -900ERW RE 737 DERIVATIVE AIRPLANES ED 737 DRAWINGS 	rror! Bookmark not . 7-63 . 7-65 8-1 9-1
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI 9.1 M	 12 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E1 13 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W 14 Aircraft Classification Rating - Rigid Pavement: Model 737- 900ER, -900ERW RE 737 DERIVATIVE AIRPLANES ED 737 DRAWINGS DDEL 737-600 	rror! Bookmark not . 7-63 . 7-65 8-1 9-1 9-2
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI 9.1 M 9.1.	 12 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E1 13 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W 14 Aircraft Classification Rating - Rigid Pavement: Model 737- 900ER, -900ERW RE 737 DERIVATIVE AIRPLANES ED 737 DRAWINGS DDEL 737-600 Scaled Drawings - 1 IN. = 32 FT: Model 737-600 	rror! Bookmark not . 7-63 . 7-65 8-1 9-1 9-2 9-2
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI 9.1 M 9.1. 9.1.	 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E1 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W Aircraft Classification Rating - Rigid Pavement: Model 737-900ER, -900ERW RE 737 DERIVATIVE AIRPLANES ED 737 DRAWINGS DDEL 737-600 Scaled Drawings - 1 IN. = 32 FT: Model 737-600 Scaled Drawings - 1 IN. = 32 FT: Model 737-600 	rror! Bookmark not . 7-63 . 7-65 8-1 9-1 9-2 9-2 9-3
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI 9.1 M 9.1. 9.1. 9.1.	 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E1 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W Aircraft Classification Rating - Rigid Pavement: Model 737-900ER, -900ERW RE 737 DERIVATIVE AIRPLANES ED 737 DRAWINGS DDEL 737-600 Scaled Drawings - 1 IN. = 32 FT: Model 737-600 Scaled Drawings - 1 IN. = 50 FT: Model 737-600 	rror! Bookmark not . 7-63 . 7-65 8-1 9-1 9-2 9-2 9-3 9-4
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI 9.1 M 9.1. 9.1. 9.1. 9.1.	 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E1 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W Aircraft Classification Rating - Rigid Pavement: Model 737-900ER, -900ERW RE 737 DERIVATIVE AIRPLANES ED 737 DRAWINGS DDEL 737-600 Scaled Drawings - 1 IN. = 32 FT: Model 737-600 Scaled Drawings - 1 IN. = 50 FT: Model 737-600 Scaled Drawings - 1 IN. = 50 FT: Model 737-600 	rror! Bookmark not . 7-63 . 7-65 8-1 9-1 9-2 9-2 9-3 9-4 9-5
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI 9.1 M 9.1. 9.1. 9.1. 9.1. 9.1.	 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E1 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W Aircraft Classification Rating - Rigid Pavement: Model 737-900ER, -900ERW RE 737 DERIVATIVE AIRPLANES ED 737 DRAWINGS DDEL 737-600 Scaled Drawings - 1 IN. = 32 FT: Model 737-600 Scaled Drawings - 1 IN. = 50 FT: Model 737-600 Scaled Drawings - 1 IN. = 50 FT: Model 737-600 Scaled Drawings - 1 IN. = 100 FT: Model 737-600 	rror! Bookmark not . 7-63 . 7-65 8-1 9-1 9-2 9-2 9-3 9-4 9-5 9-6
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI 9.1 M 9.1. 9.1. 9.1. 9.1. 9.1. 9.1. 9.1.	 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E1 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W Aircraft Classification Rating - Rigid Pavement: Model 737-900ER, -900ERW RE 737 DERIVATIVE AIRPLANES ED 737 DRAWINGS DDEL 737-600 Scaled Drawings - 1 IN. = 32 FT: Model 737-600 Scaled Drawings - 1 IN. = 50 FT: Model 737-600 Scaled Drawings - 1 IN. = 50 FT: Model 737-600 Scaled Drawings - 1 IN. = 100 FT: Model 737-600 Scaled Drawings - 1 IN. = 100 FT: Model 737-600 	rror! Bookmark not . 7-63 . 7-65 8-1 9-1 9-2 9-2 9-3 9-4 9-5 9-6 9-7
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI 9.1 M 9.1. 9.1. 9.1. 9.1. 9.1. 9.1. 9.1. 9.1	 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W	rror! Bookmark not . 7-63 . 7-65 8-1 9-1 9-2 9-2 9-3 9-4 9-5 9-6 9-8
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI 9.1 M 9.1. 9.1. 9.1. 9.1. 9.1. 9.1. 9.1. 9.1	 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W Aircraft Classification Rating - Rigid Pavement: Model 737- 900ER, -900ERW RE 737 DERIVATIVE AIRPLANES RE 737 DRAWINGS DDEL 737-600 Scaled Drawings - 1 IN. = 32 FT: Model 737-600 Scaled Drawings - 1 IN. = 50 FT: Model 737-600 Scaled Drawings - 1 IN. = 50 FT: Model 737-600 Scaled Drawings - 1 IN. = 100 FT: Model 737-600 Scaled Drawings - 1 IN. = 100 FT: Model 737-600 Scaled Drawings - 1 IN. = 100 FT: Model 737-600 Scaled Drawings - 1 IN. = 100 FT: Model 737-600 Scaled Drawings - 1 IN. = 100 FT: Model 737-600 Scaled Drawings - 1 IN. = 100 FT: Model 737-600 	rror! Bookmark not . 7-63 . 7-65 8-1 9-1 9-2 9-2 9-3 9-4 9-5 9-6 9-7 9-8 9-9
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI 9.1 M 9.1. 9.1. 9.1. 9.1. 9.1. 9.1. 9.1. 9.1	 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W	rror! Bookmark not . 7-63 . 7-65 8-1 9-1 9-2 9-2 9-3 9-4 9-5 9-6 9-7 9-8 9-9 . 9-10
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI 9.1 M 9.1. 9.1. 9.1. 9.1. 9.1. 9.1. 9.1. 9.1	 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W	rror! Bookmark not . 7-63 . 7-65 8-1 9-1 9-2 9-2 9-2 9-3 9-4 9-5 9-6 9-7 9-8 9-9 . 9-10 . 9-11
7.11 7.11 7.11 8.0 FUTU 9.0 SCAI 9.1 M 9.1. 9.1. 9.1. 9.1. 9.1. 9.1. 9.1. 9.1	 12 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ2E 13 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W	rror! Bookmark not . 7-63 . 7-65 8-1 9-1 9-2 9-2 9-2 9-3 9-4 9-5 9-6 9-7 9-8 9-9 . 9-10 . 9-12

de

	9.2.2	Scaled Drawings – 1 IN. = 32 FT: Model 737-600W	9-13
	9.2.3	Scaled Drawings – 1 IN. = 50 FT: Model 737-600W	9-14
	9.2.4	Scaled Drawings – 1 IN. = 50 FT: Model 737-600W	9-15
	9.2.5	Scaled Drawings – 1 IN. = 100 FT: Model 737-600W	9-16
	9.2.6	Scaled Drawings – 1 IN. = 100 FT: Model 737-600W	9-17
	9.2.7	Scaled Drawings – 1:500: Model 737-600W	9-18
	9.2.8	Scaled Drawings – 1:500: Model 737-600W	9-19
	9.2.9	Scaled Drawings – 1:1000: Model 737-600W	9-20
	9.2.10	Scaled Drawings – 1:1000: Model 737-600W	9-21
9.3	MOD	EL 737-700	9-22
	9.3.1	Scaled Drawings – 1 IN. = 32 FT: Model 737-700	9-22
	9.3.2	Scaled Drawings – 1 IN. = 32 FT: Model 737-700	9-23
	9.3.3	Scaled Drawings – 1 IN. = 50 FT: Model 737-700	9-24
	9.3.4	Scaled Drawings – 1 IN. = 50 FT: Model 737-700	9-25
	9.3.5	Scaled Drawings – 1 IN. = 100 FT: Model 737-700	9-26
	9.3.6	Scaled Drawings – 1 IN. = 100 FT: Model 737-700	9-27
	9.3.7	Scaled Drawings – 1:500: Model 737-700	9-28
	9.3.8	Scaled Drawings – 1:500: Model 737-700	9-29
	9.3.9	Scaled Drawings – 1:1000: Model 737-700	9-30
	9.3.10	Scaled Drawings – 1:1000: Model 737-700	9-31
9.4	MOD	EL 737-700W, BBJ1	9-32
	9.4.1	Scaled Drawings – 1 IN. = 32 FT: Model 737-700W	9-32
	9.4.2	Scaled Drawings – 1 IN. = 32 FT: Model 737 BBJ1	9-33
	9.4.3	Scaled Drawings – 1 IN. = 50 FT: Model 737-700W, BBJ1	9-34
	9.4.4	Scaled Drawings – 1 IN. = 50 FT: Model 737-700W, BBJ1	9-35
	9.4.5	Scaled Drawings – 1 IN. = 100 FT: Model 737-700W, BBJ1	9-36
	9.4.6	Scaled Drawings – 1 IN. = 100 FT: Model 737-700W, BBJ1	9-37
	9.4.7	Scaled Drawings – 1:500: Model 737-700W, BBJ1	9-38
	9.4.8	Scaled Drawings – 1:500: Model 737-700W, BBJ1	9-39
	9.4.9	Scaled Drawings – 1:1000: Model 737-700W, BBJ1	9-40
	9.4.10	Scaled Drawings – 1:1000: Model 737-700W, BBJ1	9-41
9.5	MOD	EL 737-800	9-42
	9.5.1	Scaled Drawings – 1 IN. = 32 FT: Model 737-800	9-42
	9.5.2	Scaled Drawings – 1 IN. = 32 FT: Model 737-800	9-43
	9.5.3	Scaled Drawings – 1 IN. = 50 FT: Model 737-800	9-44
	9.5.4	Scaled Drawings – 1 IN. = 50 FT: Model 737-800	9-45
	9.5.5	Scaled Drawings – 1 IN. = 100 FT: Model 737-800	9-46
	9.5.6	Scaled Drawings – 1 IN. = 100 FT: Model 737-800	9-47
	9.5.7	Scaled Drawings – 1:500: Model 737-800	9-48
	9.5.8	Scaled Drawings – 1:500: Model 737-800	9-49
	9.5.9	Scaled Drawings – 1:1000: Model 737-800	9-50

D6-58325-7

	9.5.10	Scaled Drawings – 1:1000: Model 737-800	9-51
9.6	MOD	EL 737-800W, BBJ2	9-52
	9.6.1	Scaled Drawings – 1 IN. = 32 FT: Model 737-800W, BBJ2	9-52
	9.6.2	Scaled Drawings – 1 IN. = 32 FT: Model 737-800W, BBJ2	9-53
	9.6.3	Scaled Drawings – 1 IN. = 50 FT: Model 737-800W, BBJ2	9-54
	9.6.4	Scaled Drawings – 1 IN. = 50 FT: Model 737-800W, BBJ2	9-55
	9.6.5	Scaled Drawings – 1 IN. = 100 FT: Model 737-800W, BBJ2	9-56
	9.6.6	Scaled Drawings – 1 IN. = 100 FT: Model 737-800W, BBJ2	9-57
	9.6.7	Scaled Drawings – 1:500: Model 737-800W, BBJ2	9-58
	9.6.8	Scaled Drawings – 1:500: Model 737-800W, BBJ2	9-59
	9.6.9	Scaled Drawings - 1:1000: Model 737-800W, BBJ2	9-60
	9.6.10	Scaled Drawings - 1:1000: Model 737-800W, BBJ2	9-61
9.7	MOD	EL 737-900, -900ER	9-62
	9.7.1	Scaled Drawings – 1 IN. = 32 FT: Model 737-900, -900ER	9-62
	9.7.2	Scaled Drawings – 1 IN. = 32 FT: Model 737-900, -900ER	9-63
	9.7.3	Scaled Drawings – 1 IN. = 50 FT: Model 737-900, -900ER	9-64
	9.7.4	Scaled Drawings – 1 IN. = 50 FT: Model 737-900, -900ER	9-65
	9.7.5	Scaled Drawings – 1 IN. = 100 FT: Model 737-900, -900ER	9-66
	9.7.6	Scaled Drawings – 1 IN. = 100 FT: Model 737-900, -900ER	9-67
	9.7.7	Scaled Drawings – 1:500: Model 737-900, -900ER	9-68
	9.7.8	Scaled Drawings – 1:500: Model 737-900, -900ER	9-69
	9.7.9	Scaled Drawings - 1:1000: Model 737-900, -900ER	9-70
	9.7.10	Scaled Drawings - 1:1000: Model 737-900, -900ER	9-71
9.8	MOD	EL 737-900W, -900ERW	9-72
	9.8.1	Scaled Drawings – 1 IN. = 32 FT: Model 737-900W, -900ERW	9-72
	9.8.2	Scaled Drawings – 1 IN. = 32 FT: Model 737-900W, -900ERW	9-73
	9.8.3	Scaled Drawings – 1 IN. = 50 FT: Model 737-900W, -900ERW	9-74
	9.8.4	Scaled Drawings – 1 IN. = 50 FT: Model 737-900W, -900ERW	9-75
	9.8.5	Scaled Drawings – 1 IN. = 100 FT: Model 737-900W, -900ERW	9-76
	9.8.6	Scaled Drawings – 1 IN. = 100 FT: Model 737-900W, -900ERW	9-77
	9.8.7	Scaled Drawings – 1:500: Model 737-900W, -900ERW	9-78
	9.8.8	Scaled Drawings – 1:500: Model 737-900W, -900ERW	9-79
	9.8.9	Scaled Drawings - 1:1000: Model 737-900W, -900ERW	9-80
	9.8.10	Scaled Drawings - 1:1000: Model 737-900W, -900ERW	9-81

D6-58325-7

1.0 SCOPE AND INTRODUCTION

1.1 SCOPE

This document provides, in a standardized format, airplane characteristics data for general airport planning. Since operational practices vary among airlines, specific data should be coordinated with the using airlines prior to facility design. Boeing Commercial Airplanes should be contacted for any additional information required.

Content of the document reflects the results of a coordinated effort by representatives from the following organizations:

- Aerospace Industries Association
- Airports Council International North America
- Air Transport Association of America
- International Air Transport Association

The airport planner may also want to consider the information presented in the "Commercial Aircraft Design Characteristics - Trends and Growth Projections," for long range planning needs and can be accessed via the following website:

http://www.boeing.com/airports

The document is updated periodically and represents the coordinated efforts of the following organizations regarding future aircraft growth trends.

- International Coordinating Council of Aerospace Industries Associations
- Airports Council International North America
- Air Transport Association of America
- International Air Transport Association

1.2 INTRODUCTION

This document conforms to NAS 3601. It provides characteristics of the Boeing Model 737 Next Generation airplane for airport planners and operators, airlines, architectural and engineering consultant organizations, and other interested industry agencies. Airplane changes and available options may alter model characteristics. Data contained herein is generic in scope and not customer-specific.

For additional information contact:

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Attention: Manager, Airport Operations Engineering

Email: <u>AirportCompatibility@boeing.com</u>

1.3 A BRIEF DESCRIPTION OF THE 737 FAMILY OF AIRPLANES

The 737 is a twin-engine airplane designed to operate over short to medium ranges from sea level runways of less than 6,000 ft (1,830 m) in length.

Significant features of interest to airport planners are described below:

- Underwing-mounted engines provide eye-level assessability. Nearly all system maintenance may be performed at eye level.
- Optional airstairs allow operation at airports where no passengers loading bridges or stairs are available.
- Auxiliary power unit can supply energy for engine starting, air conditioning, and electrical power while the airplane is on the ground or in flight.
- Servicing connections allow single-station pressure fueling and overwing gravity fueling.
- All servicing of the 737 is accomplished with standard ground equipment.

737-600

The 737-600, along with the 737-700, -800, and -900 is the latest derivative in the 737 family of airplanes. This airplane has the same fuselage as the 737-500 and fitted with new wing, stabilizer, and tail sections. This enables the airplane to fly over longer distances. The 737-600 is 102 ft 6 in long and can carry up to 130 passengers in an all-economy configuration.

737-700

The 737-700 has the same fuselage as the 737-300 and is fitted with the new wing, stabilizer, and tail sections. The 737-700 is 110 ft 4 in long and can carry up to 148 passengers in an all-economy configuration.

737-800

The 737-800 has a slightly longer fuselage than the 737-400 and is fitted with the new wing, stabilizer, and tail sections. The 737-800 is 129 ft 6 in long and can carry up to 184 passengers in an all-economy configuration.

737-900

The 737-900 is a derivative of the -800 and is 96 inches longer that the -800. Two sections were added to the -800 fuselage; a 54-in section forward of the wing and a 42-in section aft of the wing. The -900 can seat as many as 189 passengers in all-economy configuration.

737 BBJ1

The Boeing Business Jet One is a 737-700 airplane that is delivered without any interior furnishings. The customer installs specific interior configurations. This 737-700 model airplane is equipped with a 737-800 landing gear configuration and has the same weight and performance capabilities as the -800. One unique feature of the 737 BBJ1 is the addition of winglets to provide improved cruise performance capabilities.

737 BBJ2

The Boeing Business Jet Two is a 737-800 airplane that is delivered without any interior furnishings. The customer installs specific interior configurations. Like the 737 BBJ, the BBJ2 is equipped with winglets to provide improved cruise performance capabilities.

737-600, -700, -800, -900 with Winglets

The 737-700, -800, and -900 airplanes are also delivered with winglets. Interior configurations are similar to the base airplane models. Like the BBJ airplanes, the winglets provide improved cruise performance capabilities. Winglets are installed on some 737-600 airplanes as an after-market airline option. Data for this airplane is included for dimensional information only.

737-900ER, -900ER with Winglets

The 737-900ER airplanes are long-range derivatives of the 737-900 and -900 with winglets and designed for higher capacity seating. Additional exit doors are installed aft of the wing to provide exit capability for the additional passenger capacity. The 737-900ER and -900ER with winglets are capable of carrying up to 215 passengers with the additional exit doors.

Engines

The 737-600, -700, -800, and -900 airplanes are equipped with advanced derivatives of the 737-300, -400, and -500 engines. These engines (CFM56-7) generate more thrust and exhibit noise characteristics that are below the current noise standards.

Passenger Cabin Interiors

Early 737s were equipped with hat-rack-type overhead stowage. Later models were equipped with a "wide-body look" interior that incorporates stowage bins in the sidewall and ceiling panels to simulate a superjet interior. More recent configurations include carryall compartments and the advanced technology interior. These interiors provide more stowage above the passenger seats.

Auxiliary Fuel Tanks

Optional auxiliary fuel tanks installed in the lower cargo compartments, provide extra range capability. Although this option increases range, it decreases payload.

December 2024

Document Page Applicability

Several configurations have been developed for the 737 family of airplanes to meet varied airline requirements. Configurations shown in this document are typical and individual airlines may have different combinations of options. The airlines should be consulted for specific airplane configuration.

Document Applicability

This document contains information on all 737 Next Generation models.

Information on the 737-600, -700, -800, and -900 model airplanes formerly contained in Document D6-58325-3, 737-600/700/800/900 Airplane Characteristics for Airport Planning is now included in this document. Document D6-58325-3 is superseded and should be discarded.

Information on the 737-600, -700, -800, and -900 model airplanes with winglets formerly contained in Document D6-58325-5, 737-700/800/900 (With Winglets) Airplane Characteristics for Airport Planning is now included in this document. Document D6-58325-5 is superseded and should be discarded.

Information on the Boeing Business Jet airplanes formerly contained in Document D6-58325-4, 737-BBJ Airplane Characteristics for Airport Planning is now included in this document. Document D6-58325-4 is superseded and should be discarded.

Information on the 737-600, -700, -800, and -900 model airplanes (with and without winglets) and information on the Boeing Business Jet airplanes formerly contained in Document D6-58325-6, 737 Airplane Characteristics for Airport Planning is now included in this document. Document 58325-6 is superseded for these models but should still be used for information on all 737-100, -200, -300, -400, and -500 model airplanes.

2.0 AIRPLANE DESCRIPTION

2.1 GENERAL CHARACTERISTICS

<u>Maximum Design Taxi Weight (MTW)</u>. Maximum weight for ground maneuver as limited by aircraft strength and airworthiness requirements. (It includes weight of taxi and run-up fuel.)

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

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

<u>Maximum Design Zero Fuel Weight (MZFW)</u>. 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.

<u>Operating Empty Weight (OEW)</u>. Weight of structure, powerplant, furnishing systems, unusable fuel and other unusable propulsion agents, 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 Payload. Maximum design zero fuel weight minus operational empty weight.

<u>Maximum Seating Capacity</u>. The maximum number of passengers specifically certificated or anticipated for certification.

Maximum Cargo Volume. The maximum space available for cargo.

<u>Usable Fuel</u>. Fuel available for aircraft propulsion.

CHARACTERISTICS	UNITS	Ν	10DEL 737-60	0
MAX DESIGN	POUNDS	124,500	144,000	145,000
- TAXI WEIGHT	KILOGRAMS	56,472	65,317	65,770
MAX DESIGN	POUNDS	124,000	143,500	144,500
- TAKEOFF WEIGHT	KILOGRAMS	56,245	65,090	65,544
MAX DESIGN	POUNDS	120,500	120,500	121,500
- LANDING WEIGHT	KILOGRAMS	54,657	54,657	55,111
MAX DESIGN	POUNDS	113,500	113,500	114,500
- ZERO FUEL WEIGHT	KILOGRAMS	51,482	51,482	51,936
OPERATING	POUNDS	80,200	80,200	80,200
- EMPTY WEIGHT (1)	KILOGRAMS	36,378	36,378	36,378
MAX STRUCTURAL	POUNDS	33,300	33,300	34,300
- PAYLOAD	KILOGRAMS	15,104	15,104	15,558
SEATING CAPACITY (1)	TWO-CLASS	108	108	108
	ALL-ECONOMY	130	130	130
MAX CARGO VOLUME	CUBIC FEET	756	756	756
- LOWER DECK	CUBIC METERS	21.4	21.4	21.4
USABLE FUEL	US GALLONS	6875	6875	6875
	LITERS	26,024	26,024	26,024
	POUNDS	46,062	46,062	46,062
	KILOGRAMS	20,897	20,897	20,897

2.1.1 General Characteristics: Model 737-600

NOTE:

1. OPERATING EMPTY WEIGHT FOR BASELINE MIXED CLASS CONFIGURATION. CONSULT WITH AIRLINE FOR SPECIFIC WEIGHTS AND CONFIGURATIONS.

CHARACTERISTICS	UNITS	MODEL	737-700, -700	N, -700C
MAX DESIGN	POUNDS	133,500	153,500	155,000
- TAXI WEIGHT	KILOGRAMS	60,554	69,626	70,306
MAX DESIGN	POUNDS	133,000	153,000	154,500
- TAKEOFF WEIGHT	KILOGRAMS	60,327	69,399	70,080
MAX DESIGN	POUNDS	128,000	128,000	129,200
- LANDING WEIGHT	KILOGRAMS	58,059	58,059	58,604
MAX DESIGN	POUNDS	120,500	120,500	121,700
- ZERO FUEL WEIGHT	KILOGRAMS	54,657	54,657	55,202
OPERATING	POUNDS	83,000	83,000	83,000
- EMPTY WEIGHT (1)	KILOGRAMS	37,648	37,648	37,648
MAX STRUCTURAL	POUNDS	37,500	37,500	38,700
- PAYLOAD	KILOGRAMS	17,009	17,009	17,554
SEATING CAPACITY (1)	TWO-CLASS	128	128	128
	ALL-ECONOMY	148	148	148
MAX CARGO VOLUME	CUBIC FEET	1,002	1,002	1,002
- LOWER DECK	CUBIC METERS	28.4	28.4	28.4
USABLE FUEL	US GALLONS	6875	6875	6875
	LITERS	26,024	26,024	26,024
	POUNDS	46,062	46,062	46,062
	KILOGRAMS	20,897	20,897	20,897

2.1.2 General Characteristics: Model 737-700, -700W, -700C

NOTE:

1. OPERATING EMPTY WEIGHT FOR BASELINE MIXED CLASS CONFIGURATION. CONSULT WITH AIRLINE FOR SPECIFIC WEIGHTS AND CONFIGURATIONS.

CHARACTERISTICS	UNITS	7	37-800, -800	W	737-800BCF
MAX DESIGN	POUNDS	156,000	173,000	174,700	174,700
- TAXI WEIGHT	KILOGRAMS	70,760	78,471	79,242	79,242
MAX DESIGN	POUNDS	155,500	172,500	174,200	174,200
- TAKEOFF WEIGHT	KILOGRAMS	70,533	78,244	79,015	79,015
MAX DESIGN	POUNDS	144,000	144,000	146,300	146,300
- LANDING WEIGHT	KILOGRAMS	65,317	65,317	66,360	66,360
MAX DESIGN	POUNDS	136,000	136,000	138,300	138,300
- ZERO FUEL WEIGHT	KILOGRAMS	61,688	61,688	62,731	62,731
OPERATING	POUNDS	91,300	91,300	91,300	80,800
- EMPTY WEIGHT (1)	KILOGRAMS	41,412	41,412	41,412	36,650
MAX STRUCTURAL	POUNDS	44,700	44,700	47,000	47,000
- PAYLOAD	KILOGRAMS	20,275	20,275	21,318	21,318
SEATING CAPACITY (1)	TWO-CLASS	160	160	160	N/A
	ALL-ECONOMY	184	184	184	N/A
MAX CARGO VOLUME	CUBIC FEET	1,591	1,591	1,591	6,581
- LOWER DECK (2)	CUBIC METERS	45.1	45.1	45.1	186.4
USABLE FUEL	US GALLONS	6875	6875	6875	6875
	LITERS	26,024	26,024	26,024	26,024
	POUNDS	46,062	46,062	46,062	46,062
	KILOGRAMS	20,897	20,897	20,897	20,897

2.1.3 General Characteristics: Model 737-800, -800W, -800BCF

NOTE:

1. OPERATING EMPTY WEIGHT FOR BASELINE MIXED CLASS CONFIGURATION. CONSULT WITH AIRLINE FOR SPECIFIC WEIGHTS AND CONFIGURATIONS.

2. MAX CARGO VOLUME FOR 737-800BCF INCLUDES UPPER DECK AND LOWER DECK CAPACITIES

CHARACTERISTICS	UNITS	MODEL 737	′-900, -900W
MAX DESIGN	POUNDS	164,500	174,700
- TAXI WEIGHT	KILOGRAMS	74,615	79,242
MAX DESIGN	POUNDS	164,000	174,200
- TAKEOFF WEIGHT	KILOGRAMS	74,389	79,015
MAX DESIGN	POUNDS	146,300	147,300
- LANDING WEIGHT	KILOGRAMS	66,360	66,814
MAX DESIGN	POUNDS	138,300	140,300
- ZERO FUEL WEIGHT	KILOGRAMS	62,731	63,639
OPERATING	POUNDS	94,580	94,580
- EMPTY WEIGHT (1)	KILOGRAMS	42,900	42,900
MAX STRUCTURAL	POUNDS	43,720	45,720
- PAYLOAD	KILOGRAMS	19,831	20,738
SEATING CAPACITY (1)	TWO-CLASS	177	177
	ALL-ECONOMY	189	189
MAX CARGO VOLUME	CUBIC FEET	1,852	1,852
- LOWER DECK	CUBIC METERS	52.5	52.5
USABLE FUEL	US GALLONS	6875	6875
	LITERS	26,024	26,024
	POUNDS	46,062	46,062
	KILOGRAMS	20,897	20,897

2.1.4 General Characteristics: Model 737-900, -900W

NOTE:

1. OPERATING EMPTY WEIGHT FOR BASELINE MIXED CLASS CONFIGURATION. CONSULT WITH AIRLINE FOR SPECIFIC WEIGHTS AND CONFIGURATIONS.

CHARACTERISTICS	UNITS	MODEL 737-900E WING		ER, -90 LETS	0ER WITH
MAX DESIGN	POUNDS	164,500)	188,200	
- TAXI WEIGHT	KILOGRAMS	74,615			85,366
MAX DESIGN	POUNDS	164,000)		187,700
- TAKEOFF WEIGHT	KILOGRAMS	74,389			85,139
MAX DESIGN	POUNDS	146,300)		157,300
- LANDING WEIGHT	KILOGRAMS	66,360			71,350
MAX DESIGN	POUNDS	138,300)		149,300
- ZERO FUEL WEIGHT	KILOGRAMS	62,731		67,721	
OPERATING	POUNDS	98,495		98,495	
- EMPTY WEIGHT (1)	KILOGRAMS	44,676		44,676	
MAX STRUCTURAL	POUNDS	39,308		50,805	
- PAYLOAD	KILOGRAMS	17,829		23,044	
SEATING CAPACITY (1)	TWO-CLASS	177		177	
	ALL-ECONOMY	186 WITH MID EXIT DOOR, 215: FAA EXIT LIMIT)OR, 215: T
AUXILIARY FUEL OPTIONS	SEE NOTES	(2)	(3	3)	(4)
MAX CARGO	CUBIC FEET	1,826	1,6	673	1,585
- LOWER DECK	CUBIC METERS	51.7	47	' .7	44.9
USABLE FUEL	US GALLONS	6,875	7,390		7,837
	LITERS	26,024	27,	974	29,666
	POUNDS	46,062	49,	513	52,507
	KILOGRAMS	20,897	22,	463	23,822

2.1.5 General Characteristics: Model 737-900ER, -900ERW

NOTES:

- 1. OPERATING EMPTY WEIGHT FOR BASELINE MIXED CLASS CONFIGURATION. CONSULT WITH AIRLINE FOR SPECIFIC WEIGHTS AND CONFIGURATIONS.
- 2. WITH NO AUXILIARY FUEL TANK
- 3. WITH ONE AUXILIARY FUEL TANK
- 4. WITH TWO AUXILIARY FUEL TANKS

2.1.6 General Characteristics: Model 737 BBJ

CHARACTERISTICS	UNITS	MODEL 737 BBJ
MAX DESIGN - TAXI WEIGHT	POUNDS	171,500
	KILOGRAMS	77,791
MAX DESIGN - TAKEOFF WEIGHT	POUNDS	171,000
	KILOGRAMS	77,564
MAX DESIGN	POUNDS	134,000
- LANDING WEIGHT	KILOGRAMS	60,781
MAX DESIGN - ZERO FUEL WEIGHT	POUNDS	126,000
	KILOGRAMS	57,152

NUMBER OF AUXILIARY FUEL TANKS		3	4	5	6	7	8	9
SPEC OPERATING	POUNDS	92,345	92,722	93,393	93,785	94,056	94,352	94,570
- EMPTY WEIGHT (1)	KILOGRAMS	41,886	42,057	42,362	43,540	42,663	42,797	42,896
MAX STRUCTURAL	POUNDS	33,655	33,278	32,607	32,215	31,944	31,648	31,430
- PAYLOAD	KILOGRAMS	15,265	15,094	14,788	14,612	14,489	14,355	14,256
MAX CARGO	CUBIC FEET	611	515	415	319	268	214	160
- LOWER DECK	CUBIC METERS	17.3	14.6	11.7	9.0	7.6	6.1	4.6
USEABLE FUEL	US GALLONS	8,360	8,897	9,399	9,917	10,213	10,457	10,697
	LITERS	31,646	33,678	35,579	37,539	38,660	39,584	40,482
	POUNDS	56,012	59,609	62,973	66,443	68,427	70,061	71,669
	KILOGRAMS	25,411	27,044	28,570	30,144	31,044	31,785	32,515

NOTE: 1.

SPEC WEIGHT FOR NUMBER OF AUXILIARY FUEL TANKS SHOWN. CONSULT WITH AIRCRAFT OPERATOR FOR SPECIFIC WEIGHTS AND CONFIGURATIONS.

2.1.7 General Characteristics: Model 737 BBJ2

CHARACTERISTICS	UNITS	MODEL 737 BBJ2
MAX DESIGN - TAXI WEIGHT	POUNDS	174,700
	KILOGRAMS	79,242
MAX DESIGN	POUNDS	174,200
- TAKEOFF WEIGHT	KILOGRAMS	79,015
MAX DESIGN	POUNDS	146,300
- LANDING WEIGHT	KILOGRAMS	66,360
MAX DESIGN	POUNDS	138,300
- ZERO FUEL WEIGHT	KILOGRAMS	62,731

NUMBER OF AUXILIARY FUEL TANKS		0	1	2	3	4	5	6	7
SPEC OPERATING	POUNDS	96,727	97,372	97,821	98,344	98,722	99,393	99,785	100,312
- EMPTY WEIGHT (1)	KILOGRAMS	43,874	44,167	44,370	44,608	44,779	45,083	45,261	45,500
MAX STRUCTURAL	POUNDS	41,573	40,928	40,479	39,956	39,578	38,907	38,515	37,988
- PAYLOAD	KILOGRAMS	18,857	18,564	18,360	18,123	17,952	17,647	17,470	17,231
MAX CARGO	CUBIC FEET	1,546	1,423	1,331	1,224	1,116	1,029	922	814
- LOWER DECK	CUBIC METERS	43.8	40.3	37.7	34.7	31.6	29.2	26.1	23.1
USEABLE FUEL	US GALLONS	6,875	7,395	7,837	8,360	8,879	9,399	9,917	10,443
	LITERS	26,024	27,993	29,666	31,646	33,610	35,579	37,539	39,531
	POUNDS	46,062	49,546	52,507	56,012	59,489	62,973	66,443	69,968
	KILOGRAMS	20,897	22,478	23,822	25,411	26,989	28,570	30,144	31,743

NOTE:

1. SPEC WEIGHT FOR NUMBER OF AUXILIARY FUEL TANKS SHOWN. CONSULT WITH AIRCRAFT OPERATOR FOR SPECIFIC WEIGHTS AND CONFIGURATIONS.

2.2 GENERAL DIMENSIONS

2.2.1 General Dimensions: Model 737-600





2.2.2 General Dimensions: Model 737-600W



2.2.3 General Dimensions: Model 737-700, -700C



2.2.4 General Dimensions: Model 737-700W, BBJ1



2.2.5 General Dimensions: Model 737-800



2.2.6 General Dimensions: Model 737-800W, BBJ2, -800BCF

2.2.7 General Dimensions: Model 737-900, -900ER




2.2.8 General Dimensions: Model 737-900W, -900ERW

2.3 GROUND CLEARANCES

2.3.1 Ground Clearances: Model 737-600, -700, -700C



			737	-600		737-700, -700C				
	DESCRIPTION	MAX (AT OEW)		MIN (AT MTW)		MAX (AT OEW)		MIN (AT MTW)		
		FT - IN	М	FT - IN	М	FT - IN	М	FT - IN	м	
А	TOP OF FUSELAGE	18 - 2	5.54	17 - 8	5.38	18 - 3	5.56	17 - 9	5.41	
В	ENTRY DOOR NO 1	9 - 0	2.74	8 - 6	2.59	9 - 0	2.74	8 - 6	2.59	
С	FWD CARGO DOOR	4 - 9	1.45	4 - 3	1.30	4 - 9	1.45	4 - 3	1.30	
D	ENGINE	2 - 0	0.61	1 - 6	0.46	2 - 0	0.61	1 - 6	0.46	
Е	WINGTIP	12 - 9	3.89	11 - 11	3.63	12 - 9	3.89	11 - 11	3.63	
F	AFT CARGO DOOR	5 - 10	1.78	5 - 4	1.63	5 - 10	1.78	5 - 4	1.63	
G	ENTRY DOOR NO 2	10 - 2	3.10	9 - 8	2.95	10 - 2	3.10	9 - 8	2.95	
Н	STABILIZER	18 - 5	5.61	17 - 11	5.46	18 - 5	5.61	17 - 11	5.46	
J	VERTICAL TAIL	41 - 8	12.70	40 - 10	12.45	41 - 7	12.67	40 - 10	12.45	

NOTES: CLEARANCES SHOWN ARE NOMINAL. ADD PLUS OR MINUS 3 INCHES TO ACCOUNT FOR VARIATIONS IN LOADING, OLEO AND TIRE PRESSURES, CENTER OF GRAVITY, ETC.

DURING ROUTINE SERVICING, THE AIRPLANE REMAINS RELATIVELY STABLE, PITCH AND ELEVATION CHANGES OCCURRING SLOWLY.

2.3.2 Ground Clearances: Model 737-800, -900, -900ER



			737-	-800		737-900				
	DESCRIPTION	MAX (AT OEW)		MIN (AT MTW)		MAX (AT OEW)		MIN (AT MTW)		
		FT - IN	м							
А	TOP OF FUSELAGE	18 - 3	5.56	17 - 9	5.41	18 - 4	5.59	17 - 10	5.44	
В	ENTRY DOOR NO 1	9 - 0	2.74	8 - 6	2.59	9 - 0	2.74	8 - 6	2.59	
С	FWD CARGO DOOR	4 - 9	1.45	4 - 3	1.30	4 - 9	1.45	4 - 3	1.30	
D	ENGINE	2 - 1	0.64	1 - 7	0.48	2 - 1	0.64	1 - 7	0.48	
Е	WINGTIP	12 - 10	3.91	12 - 0	3.66	12 - 10	3.91	12 - 0	3.66	
F	AFT CARGO DOOR	5 - 11	1.80	5 - 5	1.65	5 - 11	1.80	5 - 5	1.65	
G	ENTRY DOOR NO 2	10 - 3	3.12	9 - 9	2.97	10 - 3	3.12	9 - 9	2.97	
Н	STABILIZER	18 - 6	5.64	18- 0	5.49	18 - 7	5.66	18 - 1	5.51	
J	VERTICAL TAIL	41 - 5	12.62	40 - 7	12.37	41 - 5	12.62	40 - 7	12.37	

NOTES: CLEARANCES SHOWN ARE NOMINAL. ADD PLUS OR MINUS 3 INCHES TO ACCOUNT FOR VARIATIONS IN LOADING, OLEO AND TIRE PRESSURES, CENTER OF GRAVITY, ETC.

DURING ROUTINE SERVICING, THE AIRPLANE REMAINS RELATIVELY STABLE, PITCH AND ELEVATION CHANGES OCCURRING SLOWLY.

2.3.3 Ground Clearances: Model 737-700W, -800W, -900W, -900ERW, BBJ, BBJ2



		737-700 WITH WINGLETS, BBJ			737-800 WITH WINGLETS, BBJ2				737-900 WITH WINGLETS				
	DESCRIPTION	MAX (MAX (OEW)		MTW)	MAX	MAX (OEW)		MIN (MTW)		OEW)	MIN (MTW)	
		FT - IN	М	FT - IN	М	FT - IN	М	FT - IN	М	FT - IN	М	FT - IN	М
A	TOP OF FUSELAGE	18 - 3	5.56	17 - 9	5.41	18 - 3	5.56	17 - 9	5.41	18 - 4	5.59	17 - 10	5.41
В	ENTRY DOOR NO 1	9 - 0	2.74	8 - 6	2.59	9 - 0	2.74	8 - 6	2.59	9 - 0	2.74	8 - 6	2.59
С	FWD CARGO DOOR	4 - 9	1.45	4 - 3	1.30	4 - 9	1.45	4 - 3	1.30	4 - 9	1.45	4 - 3	1.30
D	ENGINE	2 - 0	0.61	1 - 6	0.46	2 - 1	0.64	1 - 7	0.48	2 - 1	0.64	1 - 7	0.48
Е	WINGTIP	21 - 9	6.63	21 - 3	6.48	22 - 2	6.76	21 - 4	6.50	22 - 2	6.76	21 - 4	6.50
F	AFT CARGO DOOR	5 - 10	1.78	5 - 4	1.63	5 - 11	1.80	5 - 5	1.65	5 - 11	1.80	5 - 5	1.65
G	ENTRY DOOR NO 2	10 - 2	3.10	9 - 8	2.95	10 - 3	3.12	9 - 9	2.97	10 - 3	3.12	9 - 9	2.97
Н	STABILIZER	18 - 5	5.61	17 - 11	5.46	18 - 6	5.64	18 - 0	5.49	18 - 7	5.66	18 - 1	5.51
J	VERTICAL TAIL	41 - 7	12.67	40 - 10	12.45	41 - 5	12.62	40 - 7	12.37	41 - 5	12.62	40 - 7	12.37
К	BOTTOM OF WINGLET (APPROX)	13 - 9	4.19	13 - 3	4.04	14 - 2	4.32	13 - 4	4.06	14 - 2	4.32	13 - 4	4.06

NOTES: CLEARANCES SHOWN ARE NOMINAL. ADD PLUS OR MINUS 3 INCHES TO ACCOUNT FOR VARIATIONS IN LOADING, OLEO AND TIRE PRESSURES, CENTER OF GRAVITY, ETC.

DURING ROUTINE SERVICING, THE AIRPLANE REMAINS RELATIVELY STABLE, PITCH AND ELEVATION CHANGES OCCURRING SLOWLY.

D6-58325-7

2.3.4 Ground Clearances: Model 737-800BCF



			737-80	00BCF		
	DESCRIPTION	MAX	(OEW)	MIN (MTW)		
		FT - IN	м	FT - IN	м	
А	TOP OF FUSELAGE	18 - 3	5.56	17 - 9	5.41	
В	ENTRY DOOR NO 1	9 - 0	2.74	8 - 6	2.59	
С	FWD CARGO DOOR	4 - 9	1.45	4 - 3	1.30	
D	ENGINE	2 - 1	0.64	1 - 7	0.48	
Е	WINGTIP	22 - 2	6.76	21 - 4	6.50	
F	AFT CARGO DOOR	5 - 11	1.80	5 - 5	1.65	
G	ENTRY DOOR NO 2	10 - 3	3.12	9 - 9	2.97	
Н	STABILIZER	18 - 6	5.64	18 - 0	5.49	
J	VERTICAL TAIL	41 - 5	12.62	40 - 7	12.37	
к	BOTTOM OF WINGLET (APPROX)	14 - 2	4.32	13 - 4	4.06	
L	MAIN DECK CARGO DOOR	9 - 2	2.79	8 - 8	2.64	

NOTES: CLEARANCES SHOWN ARE NOMINAL. ADD PLUS OR MINUS 3 INCHES TO ACCOUNT FOR VARIATIONS IN LOADING, OLEO AND TIRE PRESSURES, CENTER OF GRAVITY, ETC.

DURING ROUTINE SERVICING, THE AIRPLANE REMAINS RELATIVELY STABLE, PITCH AND ELEVATION CHANGES OCCURRING SLOWLY.

2.4 INTERIOR ARRANGEMENTS

2.4.1 Interior Arrangements: Model 737-600



2.4.2 Interior Arrangements: Model 737-700, -700W



2.4.3 Interior Arrangements: Model 737-700C



PASSENGER CONFIGURATION - MIXED CLASS 8 FIRST CLASS SEATS AT 36-IN PITCH 118 ECONOMY CLASS SEATS AT 32-IN PITCH



2.4.4 Interior Arrangements: Model 737-800, -800W







2.4.5 Interior Arrangements: Model 737 BBJ1, 737 BBJ2

2.4.6 Interior Arrangements: Model 737-800BCF

P1
P2
P3
P4
P5
P6
P7
P8
P9
P10
P11
P12

Cargo Door
<

Baseline 11 ULD (88"x 125") plus 1 ULD (60.4" x 61.5")

Alternate 11 ULD (88"x 108") plus 1 ULD (60.4" x 61.5")

70												- E
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12

Alternate 10 ULD (96"x 125") plus 1 ULD (60.4" x 61.5")

											1 ET
L	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11
											B

2.4.7 Interior Arrangements: Model 737-900, -900W



MIXED CLASS 12 FIRST CLASS SEATS AT 36-IN PITCH 165 ECONOMY CLASS SEATS AT 32-IN PITCH



SINGLE CLASS 177 ECONOMY CLASS SEATS AT 32-IN PITCH (SHOWN) OR 189 ECONOMY CLASS SEATS AT 31-IN PITCH



C CLOSET

G GALLEY

L LAVATORY

2.4.8 Interior Arrangements: Model 737-900ER, -900ERW



MIXED CLASS 12 FIRST CLASS SEATS AT 36-IN PITCH 162 ECONOMY CLASS SEATS AT 32-IN PITCH



SINGLE CLASS 204 ECONOMY CLASS SEATS AT 30-IN PITCH



SINGLE CLASS (HIGH-DENSITY SEATING) 215 ECONOMY CLASS SEATS AT 28-IN PITCH

G GALLEY

A ATTENDANT

L LAVATORY

C CLOSET

D6-58325-7 December 2024

2.5 CABIN CROSS SECTIONS

2.5.1 Cabin Cross-Sections: Model 737-600, -700, -800, -900, BBJ1, BBJ2, Four-Abreast Seating



NOTE: CABIN INTERIOR FOR BBJ1 AND BBJ2 AIRPLANES ARE DEPENDENT ON CUSTOMER OPTION.

2.5.2 Cabin Cross-Sections: Model 737-600, -700, -800, -900, Six-Abreast Seating



2.6 LOWER CARGO COMPARTMENTS

2.6.1 Lower Cargo Compartments: Model 737-600, -700, -700C, -800, -800BCF, -900, -900ER With and Without Winglets, Capacities



	AFT C	CARGO COMPAR	TMENT			
AIRPLANE MODEL	BULK CARGO	AUXILIARY FUEL TANK CAPACITY	AUXILIARY FUEL TANK COMPARTMENT CAPACITY	FORWARD COMPARTMENT BULK CARGO	TOTAL BULK CARGO	NOTES
737-600	488 CU FT (13.8 CU M)	0	0	268 CU FT (7.6 CU M)	756 CU FT (21.4 CU M)	(1)
737-700, -700C	596 CU FT (16.9 CU M)	0	0	406 CU FT (11.5 CU M)	1,002 CU FT (28.4 CU M)	(1)
737-800, -800BCF	899 CU FT (25.5 CU M)	0	0	692 CU FT (19.6 CU M)	1,591 CU FT (45.1 CU M)	(1)
737-900	1,012 CU FT (28.7 CU M)	0	0	840 CU FT (23.8 CU M)	1,852 CU FT (52.5 CU M)	(1)
737-900ER	996 CU FT (28.2 CU M)	0	0	830 CU FT (23.5 CU M)	1,826 CU FT (51.7 CU M)	(2)
737-900ER	843 CU FT (23.9 CU M)	520 GAL (1,968 L)	153 CU FT (4.3 CU M)	830 CU FT (23.5 CU M)	1,673 CU FT (47.7 CU M)	(3)
737-900ER	755 CU FT (21.4 CU M)	962 GAL (3,641 L)	241 CU FT (6.8 CU M)	830 CU FT (23.5 CU M)	1,585 CU FT (44.9 CU M)	(4)

NOTES:

1. NO AUXILIARY FUEL TANK

2. USEABLE CAPACITY, NO AUXILIARY FUEL TANK – PRELIMINARY ESTIMATES

3. USEABLE CAPACITY, WITH ONE AUXILIARY FUEL TANK – PRELIMINARY ESTIMATES

4. USEABLE CAPACITY, WITH TWO AUXILIARY FUEL TANKS – PRELIMINARY ESTIMATES

2.6.2 Lower Cargo Compartments: Model 737BBJ1, 737 BBJ2, Capacities



	FWD C	ARGO COMP	ARTMENT	AFT CA	ARGO COMP	PARTMENT	TOTAL CARGO		
	NO OF	CAPACITY AVAILABLE		NO OF	CAPACITY	' AVAILABLE	CAPACITY AVAILABLE		
MODEL	FUEL TANKS	CU FT	CU M	FUEL TANKS	CU FT	CU M	CU FT	СИМ	
737 BBJ1	0	377	10.7	3	234	6.6	611	17.3	
	0	377	10.7	4	138	3.9	515	14.6	
	2	181	5.1	3	234	6.6	415	11.7	
	2	181	5.1	4	138	3.9	319	9.0	
	2	181	5.1	5	87	2.5	268	7.6	
	3	127	3.6	5	87	2.5	214	6.1	
	4	73	2.1	5	87	2.5	160	4.6	
737 BBJ2	0	985	27.9	3	561	15.9	1,546	43.8	
	0	985	27.9	3	454	12.8	1,423	40.3	
	0	985	27.9	5	346	9.8	1,331	37.7	
	1	662	18.8	3	561	15.9	1,224	34.7	
	1	662	18.8	4	454	12.8	1,116	31.6	
	2	468	13.3	3	561	15.9	1,029	29.2	
	2	468	13.3	4	454	12.8	922	26.1	
	2	468	13.3	5	346	9.8	814	23.1	

2.7 DOOR CLEARANCES

2.7.1 Door Clearances: Model 737, All Models, Forward Main Entry Door No. 1



NOTES: 737-800BCF does not have Optional Forward Airstairs.

D6-58325-7

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2.7.2 Door Clearances: Model 737, All Models, Optional Forward Airstairs, Main Entry Door No 1



NOTES: 737-800BCF does not have Optional Forward Airstairs.

2.7.3 Door Clearances: Model 737-600, -700, -700C, -800, -800BCF, -900, -900ER, BBJ1, BBJ2, With and Without Winglets, Locations of Sensors and Probes – Forward of Main Entry Door No 1



NAME OF SENSOR	DISTANCE AFT OF NOSE	DISTANCE ABOVE (+) OR BELOW (-) DOOR SILL REFERENCE LINE	PROTRUSION FROM AIRPLANE SKIN
PRIMARY PITOT-STATIC (L/R)	5 FT 2 IN (1.57 M)	+1 FT 3 IN (0.38 M)	6 IN (0.15 M)
ALTERNATE PITOT-STATIC (R)	5 FT 2 IN (1.57 M)	+ 3 IN (0.08 M)	6 IN (0.15 M)
ANGLE OF ATTACK (L/R)	5 FT 2 IN (1.57 M)	-6 IN (-0.15 M)	4 IN (0.10 M)
TOTAL AIR TEMPERATURE (L)	11 FT 6 IN (3.50 M)	+ 1 FT 6 IN (0.46 M)	4 IN (0.10 M)



2.7.4 Door Clearances: Model 737, All Models, Forward Service Door



2.7.5 Door Clearances: Model 737, All Models, Aft Entry Door and Aft Service Door

NOTES: 737-800BCF deactivates all Overwing and Aft Entry and Service Doors.









3.0 AIRPLANE PERFORMANCE

3.1 GENERAL INFORMATION

The graphs in Section 3.2 provide information on payload-range capability of the 737 NG airplane. To use these graphs, if the trip range and zero fuel weight (OEW + payload) are known, the approximate takeoff weight can be found, limited by maximum zero fuel weight, maximum design takeoff weight, or fuel capacity.

The graphs in Section 3.3 provide information on FAA/EASA takeoff runway length requirements with typical engines at different pressure altitudes. Maximum takeoff weights shown on the graphs are the heaviest for the particular airplane models with the corresponding engines. Standard day temperatures for pressure altitudes shown on the FAA/EASA takeoff graphs are given below:

PRESSURE ALTITUDE	E	STANDARD DAY TEMP				
FEET	METERS	°F	°C			
0	0	59.0	15.0			
2,000	610	51.9	11.0			
4,000	1,219	44.7	7.1			
6,000	1,829	37.6	3.1			
8,000	2,438	30.5	-0.8			
10,000	3,048	23.3	-4.8			
12,000	3,658	16.2	-8.8			
14,000	4,267	9.1	-12.7			
15,500	4,724	3.7	-15.7			

The graphs in Section 3.4 provide information on landing runway length requirements for different airplane weights and airport altitudes. The maximum landing weights shown are the heaviest for the particular airplane model.

3.2 PAYLOAD/RANGE FOR LONG RANGE CRUISE

3.2.1 Payload/Range for Long Range Cruise: Model 737-600

DO NOT USE FOR DISPATCH

Payload/Range

737-600 (CFM56-7B Series)

- STANDARD DAY, ZERO WIND

- CRUISE MACH = LRC

- NORMAL POWER EXTRACTION AND AIR CONDITIONING BLEED

- TYPICAL MISSION RULES

- CONSULT USING AIRLINE FOR SPECIFIC OPERATING PROCEDURE AND OEW PRIOR TO FACILITY DESIGN.



3.2.2 Payload/Range for Long Range Cruise: Model 737-700, -700W

DO NOT USE FOR DISPATCH

Payload/Range

737-700/-700W (CFM56-7B Series)

- STANDARD DAY, ZERO WIND

- CRUISE MACH = LRC

- NORMAL POWER EXTRACTION AND AIR CONDITIONING BLEEDS

- TYPICAL MISSION RULES

- NON-WINGLET PERFORMANCE SHOWN. WINGLET AIRCRAFT WILL HAVE SLIGHTLY GREATER RANGE.

- CONSULT USING AIRLINE FOR SPECIFIC OPERATING PROCEDURE AND OEW PRIOR TO FACILITY DESIGN.



3.2.3 Payload/Range for Long Range Cruise: Model 737-700ER, -700ERW, -700C, -700CW, BBJ1





3.2.4 Payload/Range for Long Range Cruise: Model 737-800, -800W, -800BCF, BBJ2

DO NOT USE FOR DISPATCH

Payload/Range

737-800/800W/BBJ2 (CFM56-7B Series)

- STANDARD DAY, ZERO WIND

- CRUISE MACH = LRC

- NORMAL POWER EXTRACTION AND AIR CONDITIONING BLEEDS

- TYPICAL MISSION RULES

- NON-WINGLET PERFORMANCE SHOWN. WINGLET AIRCRAFT WILL HAVE SLIGHTLY GREATER RANGE.

- CONSULT USING AIRLINE FOR SPECIFIC OPERATING PROCEDURE AND OEW PRIOR TO FACILITY DESIGN.



3.2.5 Payload/Range for Long Range Cruise: Model 737-900, -900W

DO NOT USE FOR DISPATCH

Payload/Range

737-900/-900W (CFM56-7B Series)

- STANDARD DAY, ZERO WIND

- CRUISE MACH = LRC

- NORMAL POWER EXTRACTION AND AIR CONDITIONING BLEEDS

- TYPICAL MISSION RULES

- NON-WINGLET PERFORMANCE SHOWN. WINGLET AIRCRAFT WILL HAVE SLIGHTLY GREATER RANGE.

- CONSULT USING AIRLINE FOR SPECIFIC OPERATING PROCEDURE AND OEW PRIOR TO FACILITY DESIGN.



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3.2.6 Payload/Range for Long Range Cruise: Model 737-900ER, -900ERW, BBJ3

DO NOT USE FOR DISPATCH

Payload/Range

737-900ER/900ERW/BBJ3 (CFM56-7B Series)

- STANDARD DAY, ZERO WIND

- CRUISE MACH = LRC

- NORMAL POWER EXTRACTION AND AIR CONDITIONING BLEEDS

- TYPICAL MISSION RULES

- NON-WINGLET PERFORMANCE SHOWN. WINGLET AIRCRAFT WILL HAVE SLIGHTLY GREATER RANGE.

- CONSULT USING AIRLINE FOR SPECIFIC OPERATING PROCEDURE AND OEW PRIOR TO FACILITY DESIGN.



3.3 FAA/EASA TAKEOFF RUNWAY LENGTH REQUIREMENTS

3.3.1 FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-600 (CFM56-7B18/-7B20 Engines at 20,000 LB SLST)





3.3.2 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-600 (CFM56-7B18/-7B20 Engines at 20,000 LB SLST)



3.3.3 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 40°F (STD + 22.2°C), Dry Runway: Model 737-600 (CFM56-7B18/-7B20 Engines at 20,000 LB SLST)



3.3.4 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-600 (CFM56-7B18/-7B20 Engines at 20,000 LB SLST)



3.3.5 FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-600 (CFM56-7B22 Engines at 22,000 LB SLST)


3.3.6 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-600 (CFM56-7B22 Engines at 22,000 LB SLST)

D6-58325-7



3.3.7 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 45°F (STD + 25°C), Dry Runway: Model 737-600 (CFM56-7B22 Engines at 22,000 LB SLST)



3.3.8 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-600 (CFM56-7B22 Engines at 22,000 LB SLST)



3.3.9 FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-700, 700W (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)



3.3.10 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-700, 700W (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)



3.3.11 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 40°F (STD + 22.2°C), Dry Runway: Model 737-700, -700W (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)



3.3.12 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-700, -700W (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)



3.3.13 FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-700, -700W (CFM56-7B26 Engines at 26,000 LB SLST



3.3.14 FAA/EASA Takeoff Runway Length Requirements - Standard Day, +27°F (STD + 15°C), Dry Runway: Model 737-700, -700W (CFM56-7B26 Engines at 26,000 LB SLST



3.3.15 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 45°F (STD + 25°C), Dry Runway: Model 737-700, -700W (CFM56-7B26 Engines at 26,000 LB SLST)



3.3.16 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-700, -700W (CFM56-7B26 Engines at 26,000 LB SLST)



3.3.17 FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-700ER, -700ERW, -700C, -700CW (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)



3.3.18 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-700ER, -700ERW, -700C, -700CW (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)



3.3.19 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 40°F (STD + 22.2°C), Dry Runway: Model 737-700ER, -700ERW, -700C, -700CW (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)

3-26

3.3.20 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-700ER, -700ERW, -700C, -700CW (CFM56-7B20/-7B22/-7B24 Engines at 20,000 LB SLST)





3.3.21 FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-700ER, -700ERW, -700C, -700CW, BBJ1 (CFM56-7B26/-7B27 Engines at 26,000 LB SLST)



3.3.22 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-700ER, -700ERW, -700C, -700CW, BBJ1 (CFM56-7B26/-7B27 Engines at 26,000 LB SLST)





180 80 NON-WINGLET PERFORMANCE SHOWN. WINGLET AIRCRAFT WILL HAVE SLIGHTLY IMPROVED PERFORMANCE.
CONSULT USING AIRLINE FOR SPECIFIC OPERATING PROCEDURE PRIOR TO FACILITY DESIGN. 170 75 160 737-700ER/-700ERW/-700C/-700CW/BBJ1 (CFM56-7B26/-7B27) 70 50 50.0 Takeoff Runway Length Requirements 0:01 DO NOT USE FOR DISPATCH 225 MPH (362 KMPH) TIRE SPEED LIMIT 65 22 **OPERATIONAL TAKEOFF WEIGHT** 140 .s₅ ∕` 1,000 KILOGRAMS ,000 POUNDS 2.05 60 130 205 SNISTED TEMPERATURE 2000 (610) 2.000 (610) 1612,11000,4 55 120 16781)0009 185471 000 8 PRESSURE ALTITUDE 110 50 LEET WITTERS) 10,000 3,0461 STANDARD DAY + 63.0 ° F (STD + 35.0 ° C) 100 45 6 13 15 1 6 ŝ m ZERO RUNWAY GRADIENT OPTIMUM FLAP SETTING 1,000 FEET AIR CONDITIONING OFF DRY RUNWAY ZERO WIND 1.0 4.5 4.0 3.5 1.5 3.0 2.5 5.0 1,000 METERS TAKEOFF FIELD LENGTH





3.3.25 FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B27-B1 Engine at 26,000 LB SLST)



3.3.26 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B27-B1 Engine at 26,000 LB SLST)



3.3.27 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 45°F (STD + 25°C), Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B27-B1 Engine at 26,000 LB SLST)



3.3.28 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35°C), Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B27-B1 Engine at 26,000 LB SLST)



3.3.29 FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B24/-7B26/-7B27 Engines at 26,000 LB SLST)

D6-58325-7

TAKEOFF FIELD LENGTH



3.3.30 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-800, -800W, BBJ2, -



3.3.31 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 45°F (STD + 25°C), Dry Runway: Model 737-800, -800W, BBJ2, -800BCF (CFM56-7B24/-7B26/-7B27 Engines at 26,000 LB SLST)

D6-58325-7



3.3.32 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-800, -800W, BBJ2, -



FAA/EASA Takeoff Runway Length Requirements - Standard Day, 3.3.33 Dry Runway: Model 737-900, -900W (CFM56-7B24/-7B26 Engines at 24,000 LB SLST)

D6-58325-7



3.3.34 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-900, -900W (CFM56-7B24/-7B26 Engines at 24,000 LB SLST)

D6-58325-7



FAA/EASA Takeoff Runway Length Requirements - Standard Day + 3.3.35 45°F (STD + 25°C), Dry Runway: Model 737-900, -900W (CFM56-7B24/-7B26 Engines at 24,000 LB SLST)



3.3.36 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-900, -900W (CFM56-7B24/-7B26 Engines at 24,000 LB SLST)



3.3.37 FAA/EASA Takeoff Runway Length Requirements - Standard Day, Dry Runway: Model 737-900ER, -900ERW, BBJ3 (CFM56-7B26/-7B27 Engines at 26,000 LB SLST)



3.3.38 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 27°F (STD + 15°C), Dry Runway: Model 737-900ER, -900ERW, BBJ3 (CFM56-7B26/-7B27 Engines at 26,000 LB SLST)

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3.3.39 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 45°F (STD + 25°C), Dry Runway: Model 737-900ER, -900ERW, BBJ3 (CFM56-7B26/-7B27 Engines at 26,000 LB SLST)



3.3.40 FAA/EASA Takeoff Runway Length Requirements - Standard Day + 63°F (STD + 35 °C), Dry Runway: Model 737-900ER, -900ERW, BBJ3 (CFM56-7B26/-7B27 Engines at 6,000 LB SLST)

3.3.41 ICAO Aerodrome Reference Code – All Models

The airplane is certified to operate up to its maximum takeoff weight (MTOW). The airplane flight manual provides field length requirements up to MTOW. The airplane reference code can vary for some models based on the airplane takeoff weight up to MTOW.

The following table shows the ICAO Aerodrome Reference Code classification for all models.

AIRPLANE MODEL	TAKEOFF WEIGHT LB (KG)	AERODROME REFERENCE CODE
737-600	145,500 (65,997)	3C
737-700	154,500 (70,080)	3C
737-800	165,788 (75,200)	3C
737-800	174,200 (79,016)	4C
737-900	143,400 (65,000)	3C
737-900	174,200 (79,016)	4C

The reference takeoff weights are given for information only and not intended for dispatch purposes. Consult airline for specific operating procedures prior to facility design.
3.4 FAA/EASA LANDING RUNWAY LENGTH REQUIREMENTS

3.4.1 FAA/EASA Landing Runway Length Requirements - Flaps 30: Model 737-600

DO NOT USE FOR DISPATCH

Landing Field Length

737-600 (CFM56-7B Series)

- STANDARD DAY, ZERO WIND

- AUTO SPOILERS OPERATIVE

- ANTI-SKID OPERATIVE

- ZERO RUNWAY GRADIENT

- CONSULT USING AIRLINE FOR SPECIFIC OPERATING PROCEDURE PRIOR TO FACILITY DESIGN



D6-58325-7

December 2024

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3.4.2 FAA/EASA Landing Runway Length Requirements - Flaps 30: Model 737-700, -700W, 700ER, -700ERW, 700C, -700CW, BBJ1

DO NOT USE FOR DISPATCH

Landing Field Length

737-700/-700W/-700ER/-700ERW/-700C/-700CW/BBJ1 (CFM56-7B Series)

- STANDARD DAY, ZERO WIND

- AUTO SPOILERS OPERATIVE

- ANTI-SKID OPERATIVE

- ZERO RUNWAY GRADIENT

- CONSULT USING AIRLINE FOR SPECIFIC OPERATING PROCEDURE PRIOR TO FACILITY DESIGN



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3.4.3 FAA/EASA Landing Runway Length Requirements - Flaps 30: Model 737-800, -800W, -800BCF, BBJ2



3.4.4 FAA/EASA Landing Runway Length Requirements - Flaps 30: Model 737-900, -900W



OPERATIONAL LANDING WEIGHT

3.4.5 FAA/EASA Landing Runway Length Requirements - Flaps 30: Model 737-900ER, -900ERW, BBJ3



4.0 AIRPLANE PERFORMANCE

4.1 GENERAL INFORMATION

This section provides airplane turning capability and maneuvering characteristics.

For ease of presentation, these data have been determined from the theoretical limits imposed by the geometry of the aircraft, and where noted, provide for a normal allowance for tire slippage. As such, they reflect the turning capability of the aircraft in favorable operating circumstances. These data should be used only as guidelines for the method of determination of such parameters and for the maneuvering characteristics of this 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 procedures 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.

Section 4.2 presents turning radii for various nose gear steering angles. Radii for the main and nose gears are measured from the turn center to the outside of the tire.

Section 4.3 shows data on minimum width of pavement required for 180° turn.

Section 4.4 provides pilot visibility data from the cockpit and the limits of ambinocular vision through the windows. Ambinocular vision is defined as the total field of vision seen simultaneously by both eyes.

Section 4.5 shows approximate wheel paths for various runway and taxiway turn scenarios on a 100 ft (30 m) runway and 50 ft (15 m) taxiway system. Boeing 737 Series aircraft are capable of operating on 100 ft wide runways. However, for design purposes, the FAA and ICAO recommend that the minimum runway width for the 737 Series aircraft is 150 ft (45 m).

The pavement fillet geometries are based on the FAA's Advisory Circular (AC) 150/5300-13 (thru change 16). They represent typical fillet geometries built at many airports worldwide. ICAO and other civil aviation authorities publish many different fillet design methods. Prior to determining the size of fillets, airports are advised to check with the airlines regarding the operating procedures and aircraft types they expect to use at the airport. Further, given the cost of modifying fillets and the operational impact to ground movement and air traffic during construction, airports may want to design critical fillets for larger aircraft types to minimize future operational impacts.

Section 4.6 illustrates a typical runway holding bay configuration.

December 2024

4.2 TURNING RADII



4.2.1 Turning Radii – No Slip Angle: Model 737-600

STEERING ANGLE	R1 IN GE	INER AR	R2 O GE	UTER AR	R3 N GE	IOSE AR	R WING	4 G TIP	R NO	5 SE	R TA	6 AIL
(DEG)	FT	М	FT	М	FT M		FT	М	FT	М	FT	М
30	52.1	15.9	75.2	22.9	74.0	22.6	121.2	36.9	81.0	24.7	101.7	31.0
35	40.9	12.5	64.0	19.5	64.6	19.7	110.2	33.6	72.6	22.1	92.3	28.1
40	32.2	9.8	55.3	16.9	57.8	17.6	101.6	31.0	66.6	20.3	85.3	26.0
45	25.2	7.7	48.3	14.7	52.7	16.1	94.7	28.9	62.2	19.0	79.9	24.3
50	26.2	5.9	42.4	12.9	48.7	14.9	88.8	27.1	58.9	17.9	75.5	23.0
55	14.2	4.3	37.3	11.4	45.7	13.9	83.8	25.6	56.4	17.2	71.9	21.9
60	9.7	2.9	32.8	10.0	43.3	13.2	79.4	24.2	54.5	16.6	68.9	21.0
65	5.6	1.7	28.7	8.7	41.4	12.6	75.5	23.0	53.0	16.2	66.3	20.2
70	1.8	0.6	24.9	7.6	40.0	12.2	71.8	21.9	51.9	15.8	64.1	19.5
78 (MAX)	-3.7	-1.1	19.4	5.9	38.5	11.7	66.4	20.2	50.8	15.5	61.0	18.6



4.2.2 Turning Radii – No Slip Angle: Model 737-600W

NOTES: * ACTUAL OPERATING TURNING RADII MAY BE GREATER THAN SHOWN * CONSULT WITH AIRLINE FOR SPECIFIC OPERATING PROCEDURE

STEERING ANGLE	R1 IN GE	INER AR	R2 O GE	UTER AR	R3 N GE	IOSE AR	R WINC	4 G TIP	R NO	5 SE	R TA	6 AIL
(DEG)	FT	М	FT	М	FT	М	FT	М	FT	М	FT	М
30	52.7	16.1	75.8	23.1	75.1	22.9	124.7	38.0	81.7	24.9	75.8	23.1
35	41.4	12.6	64.5	19.7	65.6	20.0	113.5	34.6	73.2	22.3	64.5	19.7
40	32.7	10.0	55.8	17.0	58.7	17.9	104.9	32.0	67.1	20.5	55.8	17.0
45	25.5	7.8	48.6	14.8	53.4	16.3	98.0	29.9	62.7	19.1	48.6	14.8
50	19.6	6.0	42.7	13.0	49.4	15.1	92.1	28.1	59.3	18.1	42.7	13.0
55	14.4	4.4	37.5	11.4	46.2	14.1	87.1	26.6	56.8	17.3	37.5	11.4
60	9.9	3.0	33.0	10.0	43.8	13.3	82.7	25.2	54.9	16.7	33.0	10.0
65	5.7	1.8	28.8	8.8	41.9	12.8	78.7	24.0	53.4	16.3	28.8	8.8
70	2.0	.6	25.1	7.6	40.4	12.3	75.1	22.9	52.3	15.9	25.1	7.6
78 (MAX)	3.7	1.1	19.4	5.9	38.9	11.9	69.7	21.2	51.1	15.6	19.4	5.9





NOTES: * ACTUAL OPERATING TURNING RADII MAY BE GREATER THAN SHOWN * CONSULT WITH AIRLINE FOR SPECIFIC OPERATING PROCEDURE

STEERING ANGLE	R1 IN GE	INER AR	R2 O GE	UTER AR	R3 N GE	IOSE AR	R WINC	4 G TIP	R NO	5 SE	R TA	6 AIL
(DEG)	FT	М	FT	М	FT M		FT	М	FT	М	FT	М
30	59.9	18.3	83.0	25.3	83.0	25.3	128.9	39.3	90.0	27.4	110.1	33.6
35	47.4	14.4	70.5	21.5	72.5	22.1	116.5	35.5	80.4	24.5	99.5	30.3
40	37.6	11.5	60.7	18.5	64.8	19.8	106.9	32.6	73.5	22.4	91.6	27.9
45	29.7	9.1	52.8	16.1	59.0	18.0	99.1	30.2	68.5	20.9	85.5	26.0
50	23.0	7.0	46.2	14.1	54.6	16.7	92.6	28.2	64.7	19.7	80.5	24.5
55	17.3	5.3	40.4	12.3	51.2	15.6	86.9	26.5	61.8	18.8	76.5	23.3
60	12.3	3.7	35.4	10.8	48.5	14.8	82.0	25.0	59.6	18.2	73.1	22.3
65	7.7	2.3	30.8	9.4	46.4	14.2	77.5	23.6	58.0	17.7	70.2	21.4
70	3.5	1.1	26.6	8.2	44.8	13.7	73.4	22.4	56.7	17.3	67.7	20.6
78 (MAX)	-2.8	-0.8	20.3	6.2	43.1	13.1	67.3	20.5	55.4	16.9	64.4	19.6



4.2.4 Turning Radii – No Slip Angle: Model 737-700W, BBJ1

STEERING ANGLE	R1 IN GE	INER AR	R2 O GE	UTER AR	R3 N GE	IOSE AR	R WINC	4 G TIP	R NC	SE	R TA	6 \ L
(DEG)	FT	М	FT	М	FT	М	FT	М	FT	Μ	FT	М
30	59.9	18.3	83.0	25.3	83.5	25.5	131.8	40.2	90.0	27.4	110.1	33.6
35	47.4	14.4	70.5	21.5	72.5	22.1	119.4	36.4	80.4	24.5	99.5	30.3
40	37.6	11.5	60.7	18.5	64.8	19.8	109.8	33.5	73.5	22.4	91.6	27.9
45	29.7	9.1	52.8	16.1	59.0	18.0	102.0	31.1	68.5	20.9	85.5	26.0
50	23.0	7.0	46.2	14.1	54.6	16.7	95.5	29.1	64.7	19.7	80.5	24.5
55	17.3	5.3	40.4	12.3	51.2	15.6	89.9	27.4	61.8	18.8	76.5	23.3
60	12.3	3.7	35.4	10.8	48.5	14.8	85.0	25.9	59.6	18.2	73.1	22.3
65	7.7	2.3	30.8	9.4	46.4	14.2	80.5	24.5	58.0	17.7	70.2	21.4
70	3.5	1.1	26.6	8.1	44.8	13.7	76.4	23.3	56.7	17.3	67.7	20.6
78 (MAX)	-2.8	-0.8	20.3	6.2	43.1	13.1	70.4	21.5	55.4	16.9	64.4	19.6



4.2.5 Turning Radii – No Slip Angle: Model 737-800

NOTES: * ACTUAL OPERATING TURNING RADII MAY BE GREATER THAN SHOWN * CONSULT WITH AIRLINE FOR SPECIFIC OPERATING PROCEDURE

STEERING ANGLE	R1 IN GE	INER AR	R2 O GE	UTER AR	R3 N GE	IOSE AR	R WINC	4 G TIP	R NO	5 SE	R TA	6 \ L
(DEG)	FT	М	FT	М	FT	М	FT	М	FT	М	FT	М
30	76.9	23.4	100.0	30.5	102.7	31.3	145.8	44.4	109.5	33.4	129.5	39.5
35	61.4	18.7	84.5	25.8	89.6	27.3	130.4	39.7	97.4	29.7	116.4	35.5
40	49.3	15.0	72.4	22.1	80.1	24.4	118.5	36.1	88.7	27.0	106.6	32.5
45	39.5	12.0	62.6	19.1	72.9	22.2	108.8	33.2	82.3	25.1	99.0	30.2
50	18.2	9.5	54.4	16.6	67.4	20.6	100.7	30.7	77.4	23.6	93.0	28.3
55	24.2	7.4	47.3	14.4	63.2	19.3	93.7	28.6	73.8	22.5	88.0	26.8
60	17.9	5.5	41.0	12.5	59.8	18.3	87.5	26.7	70.9	21.6	83.9	25.6
65	12.3	3.7	35.4	10.8	57.3	17.5	82.0	25.0	68.8	21.0	80.4	24.5
70	7.0	2.1	30.1	9.2	55.3	16.9	76.9	23.4	67.1	20.5	77.5	23.6
78 (MAX)	-0.7	-0.2	22.4	6.8	53.2	16.2	69.4	21.1	65.4	19.9	73.6	22.4



4.2.6 Turning Radii – No Slip Angle: Model 737-800W, -800BCF, BBJ2

	R	1	R	2	R	3	R	4	R	5	R	6
STEERING ANGLE	INN GE	IER AR	OU ⁻ GE	TER AR	NO GE	SE AR	WI TI	NG IP	NO	SE	TA	۱L
(DEGREES)	FT	М	FT	М	FT	М	FT	М	FT	М	FT	М
30	77.5	23.6	100.6	30.7	103.7	31.6	149.1	45.4	110.1	33.6	129.8	39.6
35	61.9	18.9	85.0 25.9		90.6	27.6	133.6	4.07	97.9	29.8	116.6	35.5
40	49.7	15.2	72.8 22.2		80.9	24.7	121.6	37.1	89.2	27.2	106.7	32.5
45	39.8	12.1	62.9	62.9 19.2		22.4	111.9	34.1	82.7	25.2	99.0	30.2
50	31.6	9.6	54.7	16.7	68.0	20.7	103.8	31.6	77.8	23.7	92.9	28.3
55	24.4	7.4	47.5	14.5	63.7	19.43	96.8	29.5	74.1	22.6	87.9	26.8
60	18.1	5.5	41.2	12.6	60.3	18.4	90.6	27.6	71.3	21.7	83.8	25.5
65	12.4	3.8	35.8	10.8	57.7	17.6	85.1	25.9	69.1	21.1	80.3	24.5
70	7.2	2.2	30.3	9.2	55.6	17.0	80.0	24.4	67.4	20.6	77.3	23.6
78 (MAX)	-0.6	-0.2	22.5 6.9 5		53.5	16.3	72.5	22.1	65.7	20.0	73.3	22.3



4.2.7 Turning Radii – No Slip Angle: Model 737-900, -900ER

NOTES:	* ACTUAL OPERATING TURNING RADII MAY BE GREATER THAN SHOWN
	* CONSULT WITH AIRLINE FOR SPECIFIC OPERATING PROCEDURE

	R	1	R	2	R	3	R	4	R	5	R	6
STEERING ANGLE	INN GE	IER AR	OU ⁻ GE	TER AR	NO GE	SE AR	WI T	NG IP	NO	SE	TA	AIL.
(DEGREES)	FT	М	FT	М	FT	М	FT	М	FT	М	FT	М
30	86.0	26.2	109.1	33.2	113.5	34.6	154.8	47.2	119.9	36.5	138.8	42.3
35	68.9	21.0	92.0 28.0		99.1	30.2	137.8	42.0	106.4	32.4	124.1	37.8
40	55.5	16.9	78.6 24.0		88.5	27.0	124.6	38.0	96.7	29.5	113.2	34.5
45	44.7	13.6	67.8	67.8 20.7		24.6	113.9	34.7	89.6	27.3	104.8	31.9
50	35.7	10.9	58.8	17.9	74.4	22.7	105.0	32.0	84.2	25.7	98.0	29.9
55	27.9	8.9	51.0	15.5	69.7	21.2	97.3	29.7	80.1	24.4	92.5	28.2
60	21.0	6.4	44.1	13.4	66.0	20.1	90.5	27.6	76.9	23.4	88.0	26.9
65	14.7	4.5	37.8	37.8 11.5		19.2	84.4	25.7	74.5	22.7	84.1	25.6
70	8.9	2.7	32.0	9.8	60.9	18.6	78.7	24.0	72.6	22.1	80.8	24.6
78 (MAX)	0.4	0.1	23.5 7.2 5		58.5	17.8	70.4	21.5	70.7	21.5	76.5	23.4



4.2.8 Turning Radii – No Slip Angle: Model 737-900W, -900ERW

	R	1	R	2	R	3	R	4	R	5	R	6
STEERING ANGLE	INN GE	IER AR	OU ⁻ GE	TER AR	NO GE	SE AR	WI T	NG IP	NO	SE	TA	۱L
(DEGREES)	FT	М	FT	М	FT	М	FT	М	FT	М	FT	М
30	86.0	26.2	109.1	33.2	113.5	34.6	157.6	48.0	119.9	36.5	138.8	42.3
35	68.9	21.0	92.0 28.0		99.1	30.2	140.6	42.9	106.4	32.4	124.1	37.8
40	55.5	16.9	78.6 24.0		88.5	27.0	127.5	38.8	96.7	29.5	113.2	34.5
45	44.7	13.6	67.8	20.7	80.6	24.6	118.8	35.6	89.6	27.3	104.8	31.9
50	35.7	10.9	58.8	17.9	74.4	22.7	107.9	32.9	84.2	25.7	98.0	29.9
55	27.9	8.9	51.0	15.5	69.7	21.2	100.2	30.6	80.1	24.4	92.5	28.2
60	21.0	6.4	44.1	13.4	66.0	20.1	93.5	28.5	76.9	23.4	88.0	26.9
65	14.7	4.5	37.8	11.5	63.1	19.2	87.4	26.6	74.5	22.7	84.1	25.6
70	8.9	2.7	32.0	9.8	60.9	18.6	81.8	24.9	72.6	22.1	80.8	24.6
78 (MAX)	0.4	0.1	23.5 7.2 5		58.5	17.8	73.6	22.4	70.7	21.5	76.5	23.4

4.3 CLEARANCE RADII

4.3.1 Minimum Turning Radii – 3" Slip Angle: Model 737-600, -700, -800, -900, -900ER



SLOW CONTINUOUS TURNING AT MINIMUM THRUST ON ALL ENGINES. NO DIFFERENTIAL BRAKING.

AIRPLANE	EFFECTIVE	X		Y		Α		R3		R4		R5		R6	
MODEL	TURNING ANGLE (DEG)	FT	м	FT	м	FT	м	FT	м	FT	М	FT	м	FT	м
737-600	75	36.8	11.2	9.9	3.0	60.8	18.5	39.6	12.1	68.4	20.9	51.2	15.6	62.0	18.9
737-700	75	41.3	12.6	11.1	3.4	66.9	20.4	44.3	13.5	69.6	21.2	55.9	17.0	65.5	20.0
737-800	75	51.2	15.6	13.7	4.2	79.7	24.3	54.5	16.6	72.1	22.0	66.0	20.1	74.8	22.8
737-900, -900ER	75	56.3	17.2	15.1	4.6	86.4	26.3	59.8	18.2	73.5	22.4	71.4	21.8	78.6	23.9

4.3.2 Minimum Turning Radii – 3" Slip Angle: Model 737-600W, -700W, -800W, -800BCF, -900W, -900ERW, BBJ1, BBJ2



NO DIFFERENTIAL BRAKING.

AIRPLANE	EFFECTIVE	EFFECTIVE X		Y		-	Α		R3		4	R5		R6	
MODEL	TURNING ANGLE (DEG)	FT	м	FT	М	FT	м	FT	М	FT	М	FT	М	FT	М
737-600	75	36.8	11.2	9.9	3.0	60.8	18.5	39.6	12.1	71.7	21.8	51.2	15.6	62.0	18.9
737-700 737BBJ	75	41.3	12.6	11.1	3.4	66.9	20.4	44.3	13.5	72.8	22.2	55.9	17.0	65.5	20.0
737-800 737 BBJ2	75	51.2	15.6	13.7	4.2	79.7	24.3	54.5	16.6	75.3	23.0	66.0	20.1	74.8	22.8
737-900, -900ER	75	56.3	17.2	15.1	4.6	86.4	26.3	59.8	18.2	76.7	23.4	71.4	21.8	78.6	23.9

4.4 VISIBILITY FROM COCKPIT IN STATIC POSITION: MODEL 737, ALL MODELS



4.5 RUNWAY AND TAXIWAY TURN PATHS

4.5.1 Runway and Taxiway Turn Paths - Runway-to-Taxiway, More Than 90 Degrees, Nose Gear Tracks Centerline: Model 737, All Models



CENTERLINE OF TURNS

4.5.2 Runway and Taxiway Turn Paths - Runway-to-Taxiway, 90 Degrees, Nose Gear Tracks Centerline: Model 737, All Models



December 2024

4.5.3 Runway and Taxiway Turn Paths - Taxiway-to-Taxiway, 90 Degrees, Nose Gear Tracks Centerline: Model 737, All Models



4.5.4 Runway and Taxiway Turn Paths - Taxiway-to-Taxiway, 90 Degrees, Cockpit Tracks Centerline: Model 737, All Models



4.6 RUNWAY HOLDING BAY: MODEL 737, ALL MODELS

NOTE: BEFORE DETERMINING THE SIZE OF THE PAVEMENT AND SHOULDER, CHECK WITH THE AIRLINES REGARDING THE OPERATING PROCEDURES THAT THEY USE AND THE AIRCRAFT TYPES THAT ARE EXPECTED TO SERVE THE AIRPORT.



5.0 TERMINAL SERVICING

During turnaround at the terminal, certain services must be performed on the aircraft, usually within a given time, to meet flight schedules. This section shows service vehicle arrangements, schedules, locations of service points, and typical service requirements. The data presented in this section reflect ideal conditions for a single airplane. Service requirements may vary according to airplane condition and airline procedure.

Section 5.1 shows typical arrangements of ground support equipment during turnaround. As noted, if the auxiliary power unit (APU) is used, the electrical, air start, and air-conditioning service vehicles would not be required. Passenger loading bridges or portable passenger stairs could be used to load or unload passengers.

Sections 5.2 and 5.3 show typical service times at the terminal. These charts give typical schedules for performing service on the airplane within a given time. Service times could be rearranged to suit availability of personnel, airplane configuration, and degree of service required.

Section 5.4 shows the locations of ground service connections in graphic and in tabular forms. Typical capacities and service requirements are shown in the tables. Services with requirements that vary with conditions are described in subsequent sections.

Section 5.5 shows typical sea level air pressure and flow requirements for starting different engines. The curves are based on an engine start time of 90 seconds.

Section 5.6 shows pneumatic requirements for heating and cooling (air conditioning) using high pressure air to run the air cycle machine. The curves show airflow requirements to heat or cool the airplane within a given time and ambient conditions. Maximum allowable pressure and temperature for air cycle machine operation are 60 psia and 450°F, respectively.

Section 5.7 shows pneumatic requirements for heating and cooling the airplane, using low pressure conditioned air. This conditioned air is supplied through an 8-in ground air connection (GAC) directly to the passenger cabin, bypassing the air cycle machines.

Section 5.8 shows ground towing requirements for various ground surface conditions.



5.1.1 Airplane Servicing Arrangement - Typical Turnaround: Model 737-600













5.1.4 Airplane Servicing Arrangement - Typical Turnaround: Model 737-800, -800W



5.1.5 Airplane Servicing Arrangement - Typical Turnaround: Model 737-900, -900ER, With and Without Winglets

5.1.6 Airplane Servicing Arrangement - Typical Turnaround: Model 737 BBJ1, BBJ2

NOTE

AIRPLANE SERVICING ARRANGEMENT CHARTS ARE NOT INCLUDED IN THIS DOCUMENT BECAUSE THE DIFFERENT CONFIGURATIONS OF BOEING BUSINESS JET AIRPLANES HAVE INDIVIDUAL REQUIREMENTS. CONSULT AIRCRAFT USER/OPERATOR FOR CURRENT REQUIREMENTS



5.2.1 Terminal Operations – Turnaround Station: Model 737-600

TERMINAL OPERATIONS - TURNAROUND STATION

5.2



5.2.2 Terminal Operations – Turnaround Station: Model 737-700, -700W



5.2.3 Terminal Operations – Turnaround Station: Model 737-700C, -700QC

737-700 TURNTIME ANALYSIS 8 PALLETS 38 MINUTES



5.2.4 Terminal Operations – Turnaround Station: Model 737-800, -800W



5.2.5 Terminal Operations – Turnaround Station: Model 737-900, -900ER, With and Without Winglets

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5.2.6 Terminal Operations – Turnaround Station: Model 737 BBJ1, BBJ2

NOTE

TURNAROUND STATION TIME CHARTS ARE NOT INCLUDED IN THIS DOCUMENT BECAUSE THE DIFFERENT CONFIGURATIONS OF BOEING BUSINESS JET AIRPLANES HAVE INDIVIDUAL REQUIREMENTS. CONSULT AIRCRAFT USER/OPERATOR FOR CURRENT REQUIREMENTS



5.3.1 **Terminal Operations - En Route Station: Model 737-600**

TERMINAL OPERATIONS - EN ROUTE STATION

5.3


5.3.2 Terminal Operations - En Route Station: Model 737-700, -700W



5.3.3 Terminal Operations - En Route Station: Model 737-800, -800W



5.3.4 Terminal Operations - En Route Station: Model 737-900, -900ER, With and Without Winglets

5.3.5 Terminal Operations - En Route Station: Model 737 BBJ1, BBJ2

NOTE

ENROUTE TERMINAL OPERATIONS TIME CHARTS ARE NOT INCLUDED IN THIS DOCUMENT BECAUSE THE DIFFERENT CONFIGURATIONS OF BOEING BUSINESS JET AIRPLANES HAVE INDIVIDUAL REQUIREMENTS. CONSULT AIRCRAFT USER/OPERATOR FOR CURRENT REQUIREMENTS

5.4 GROUND SERVICING CONNECTIONS



5.4.1 Ground Service Connections: Model 737-600



5.4.2 Ground Service Connections: Model 737-700



5.4.3 Ground Service Connections: Model 737-700W, BBJ 1



5.4.4 Ground Service Connections: Model 737-800



5.4.5 Ground Service Connections: Model 737-800W, -800BCF, BBJ2



5.4.6 Ground Service Connections: Model 737-900, -900ER



5.4.7 Ground Service Connections: Model 737-900W, -900ERW

5.4.8 Ground Servicing Connections and Capacities: Model 737, All Models

SYSTEM	MODEL	DISTANCE AFT OF NOSE		DISTANCE FROM AIRPLANE CENTERLINE				MAX HEIGHT ABOVE	
				LH SIDE		RH SIDE		GROUND	
		FT – IN	М	FT – IN	М	FT – IN	М	FT – IN	м
CONDITIONED AIR ONE 8-IN (20.3 CM) PORT	737-600	35 – 3	10.7	0	0	0	0	4 – 4	1.3
	737-700	39 – 9	12.1	0	0	0	0	4 – 3	1.3
	737-800	49 – 7	15.1	0	0	0	0	4 – 3	1.3
	737-900	54 – 9	16.7	0	0	0	0	4 – 3	1.3
ELECTRICAL ONE CONNECTION - 60 KVA, 200/115 V AC 400 HZ, 3-PHASE EACH	737-600	8 – 6	2.6	-	-	3 – 1	0.9	7 – 5	2.3
	737-700	8 – 6	2.6	-	-	3 – 1	0.9	7 – 4	2.2
	737-800	8 – 6	2.6	-	-	3 – 1	0.9	7 – 5	2.3
	737-900	8 – 6	2.6	-	-	3 – 1	0.9	7 – 4	2.2
FUEL ONE UNDERWING- PRESSURE CONNECTOR ON RIGHT WING (SEE SEC 2.1 FOR CAPACITY)	737-600	48 – 8	14.8	-	-	25 - 3	7.7	9 – 9	3.0
	737-700	53 – 2	16.2	-	-	25 - 3	7.7	9 – 9	3.0
	737-800	63 – 0	19.2	-	-	25 - 3	7.7	9 - 8	2.9
	737-900	68 – 2	20.8	-	-	25 - 3	7.7	9-8	2.9
FUEL FUEL VENT ON UNDERSIDE OF BOTH WINGTIPS	737-600	61 – 0	18.6	48 – 3	14.7	48 – 3	14.7	UNDERSIDE OF WING	
	737-700	65 – 6	20.0	48 – 3	14.7	48 – 3	14.7		
	737-800	75 – 4	22.0	48 – 3	14.7	48 – 3	14.7		
	737-900	80 – 6	24.5	48 – 3	14.7	48 – 3	14.7		
LAVATORY ONE CONNECTION FOR VACUUM LAVATORY	737-600	67 – 9	20.7	2 – 7	0.8	-	-	6 – 3	1.9
	737-700	75 – 7	23.0	2 – 7	0.8	-	-	6 – 4	1.9
	737-800	94 – 9	28.9	2 – 7	0.8	-	-	6 – 3	1.9
	737-900	103 – 5	31.5	2 – 7	0.8	-	-	6 – 3	1.9
OXYGEN INDIVIDUAL CANISTERS IN EACH PASSENGER SERVICE UNIT	737-600	18 – 11	5.8	-	-	0 - 10	0.3	6 – 5	2.0
	737-700	18 – 11	5.8	-	-	0 - 10	0.3	6-4	1.9
	737-800	18 – 11	5.8	-	-	0 – 10	0.3	6 – 5	2.0
	737-900	18 – 11	5.8	-	-	0 – 10	0.3	6-4	1.9
PNEUMATIC ONE 3-IN (7.6-CM) PORT FOR ENGINE START AND AIRCONDITIONING PACKS	737-600	37 – 1	11.3	-	-	3 – 0	0.9	4 – 8	1.4
	737-700	41 – 7	12.7	-	-	3 – 0	0.9	4 – 8	1.4
	737-800	51 – 5	15.7	-	-	3 – 0	0.9	4 – 8	1.4
	737-900	56 – 7	17.3	-	-	3 – 0	0.9	4 – 7	1.4
POTABLE WATER	737-600	73 – 1	22.3	-	-	1 – 0	0.3	6 – 10	2.1
ONE SERVICE CONNECTION 0.75-IN (1.9 CM)	737-700	80 – 11	24.7	-	-	1 – 0	0.3	6 – 10	2.1
	737-800	100 – 1	30.5	-	-	1 – 0	0.3	6 – 9	2.1
	737-900	108 – 9	33.2	-	-	1 – 0	0.3	6 – 9	2.1

NOTES:

- DISTANCES ROUNDED TO THE NEAREST INCH AND 0.1 METER.
- AIRPLANE MODEL DESIGNATIONS ALSO INCLUDE ALL DERIVATIVES.

5.5 ENGINE STARTING PNEUMATIC REQUIREMENTS

5.5.1 Engine Start Pneumatic Requirements - Sea Level: Model 737-600, -700, -800, -800BCF, -900, -900ER, With and Without Winglets, BBJ1, BBJ2



D6-58325-7

5.6 GROUND PNEUMATIC POWER REQUIREMENTS

5.6.1 Ground Pneumatic Power Requirements - Heating/Cooling: Model 737-600, -700, With and Without Winglets



D6-58325-7

December 2024

5.6.2 Ground Pneumatic Power Requirements - Heating/Cooling: Model 737-800, -800BCF, -900, -900ER, With and Without Winglets



5.7 CONDITIONED AIR REQUIREMENTS

5.7.1 Conditioned Air Flow Requirements: Model 737-600, -700, With and Without Winglets



D6-58325-7

5.7.2 Conditioned Air Flow Requirements: Model 737-800, -800BCF, -900, -900ER, With and Without Winglets



5.8 GROUND TOWING REQUIREMENTS

5.8.1 Ground Towing Requirements - English Units: Model 737, All Models







6.0 JET ENGINE WAKE AND NOISE DATA

6.1 JET ENGINE EXHAUST VELOCITIES AND TEMPERATURES

This section shows jet engine exhaust velocity and temperature contours aft of the 737 Series of airplanes. The contours were calculated from a standard computer analysis using three-dimensional viscous flow equations with mixing of primary, fan, and freestream flow. The presence of the ground plane is included in the calculations as well as engine tilt and toe-in. Mixing of flows from the engines is also calculated. The analysis does not include thermal buoyancy effects which tend to elevate the jet wake above the ground plane. The buoyancy effects are considered to be small relative to the exhaust velocity and therefore are not included.

The graphs show jet wake velocity and temperature contours for representative engines. The results are valid for sea level, static, standard day conditions. The effect of wind on jet wakes is not included. There is evidence to show that a downwind or an upwind component does not simply add or subtract from the jet wake velocity, but rather carries the whole envelope in the direction of the wind. Crosswinds may carry the jet wake contour far to the side at large distances behind the airplane.

It should be understood, these exhaust velocity contours reflect steady-state, at maximum taxi weight, and not transient-state exhaust velocities. A steady-state is achieved with the aircraft in a fixed location, engine running at a given thrust level and measured when the contours stop expanding and stabilize in size, which could take several seconds. The steady-state condition, therefore, is conservative. Contours shown also do not account for performance variables such as ambient temperature or field elevation. For the terminal area environment, the transient-state is a more accurate representation of the actual exhaust contours when the aircraft is in motion and encountering static air with forward or turning movement, but it is very difficult to model on a consistent basis due to aircraft weight, weather conditions, the high degree of variability in terminal and apron configurations, and intensive numerical calculations. If the contours presented here are overly restrictive for terminal operations, The Boeing Company recommends conducting an analysis of the actual exhaust contours experienced by the using aircraft at the airport.



6.1.1 Jet Engine Exhaust Velocity Contours – Idle Thrust: Model 737-600



6.1.2 Jet Engine Exhaust Velocity Contours – Idle Thrust: Model 737-700, -700W



6.1.3 Jet Engine Exhaust Velocity Contours – Idle Thrust: Model 737-800, -800W, -800BCF



6.1.4 Jet Engine Exhaust Velocity Contours - Idle Thrust: Model 737-900, -900ER, With and Without Winglets



6.1.5 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MLW: Model 737-600



6.1.6 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MTW: Model 737-600



6.1.7 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / Both Engines / MTW: Model 737-600



6.1.8 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 1% Slope / Both Engines / MTW: Model 737-600



6.1.9 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MLW: Model 737-700, -700W



6.1.10 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MTW: Model 737-700, -700W



6.1.11 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / Both Engines / MTW: Model 737-700, -700W



6.1.12 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 1% Slope / Both Engines / MTW: Model 737-700, -700W



6.1.13 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MLW: Model 737-800, -800W, -800BCF



6.1.14 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MTW: Model 737-800, -800W, -800BCF



6.1.15 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / Both Engines / MTW: Model 737-800, -800W, -800BCF



6.1.16 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 1% Slope / Both Engines / MTW: Model 737-800, -800W, -800BCF

D6-58325-7


6.1.17 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MLW: Model 737-900, -900ER, With and Without Winglets



6.1.18 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / One Engine / MTW: Model 737-900, -900ER, With and Without Winglets



6.1.19 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 0% Slope / Both Engines / MTW: Model 737-900, -900ER, With and



6.1.20 Jet Engine Exhaust Velocity Contours - Breakaway Thrust / 1% Slope / Both Engines / MTW: Model 737-900, -900ER, With and Without Winglets



6.1.21 Jet Engine Exhaust Velocity Contours - Takeoff Thrust: Model 737-600



6.1.22 Jet Engine Exhaust Velocity Contours - Takeoff Thrust: Model 737-700, -700W



6.1.23 Jet Engine Exhaust Velocity Contours - Takeoff Thrust: Model 737-800, -800W, -800BCF



6.1.24 Jet Engine Exhaust Velocity Contours - Takeoff Thrust: Model 737-900, -900ER, With and Without Winglets

D6-58325-7

6.1.25 Jet Engine Exhaust Temperature Contours - Idle Thrust: Model 737-600, -700, -800, -800BCF, -900, -900ER, With and Without Winglets

Temperature contours for idle power conditions are not shown as the maximum temperature aft of the 737-600, -700, -800, -900, -900ER is predicated to be less than 100° F (38° C) for standard day conditions of 59° F (15° C).

D6-58325-7

6.1.26 Jet Engine Exhaust Temperature Contours – Breakaway Thrust: Model 737-600, -700, -800, -800BCF, -900, -900ER, With and Without Winglets

Temperature contours for breakaway power conditions are not shown as the maximum temperature aft of the 737-600, -700, -800, -900, -900ER is predicated to be less than 100° F (38° C) for standard day conditions of 59° F (15° C).

6.1.27 Jet Engine Exhaust Temperature Contours – Takeoff Thrust: Model 737-600, -700, -800, -800BCF, -900, -900ER, With and Without Winglets



6.1.28 Inlet Hazard Areas: Models 737-600, -700, -800, -800BCF, -900, -900ER, With and Without Winglets



INLET HAZARD AREA

	RAI	DIUS	AFT DISTANCE		
IDLE THRUST	10 FT	3.1 M	4 FT	1.2 M	
BREAKAWAY THRUST	14 FT	4.2 M	5 FT	1.5 M	
TAKEOFF THRUST	14 FT	4.2 M	5 FT	1.5 M	

6.2 AIRPORT AND COMMUNITY NOISE

Airport noise is of major concern to the airport and community planner. The airport is a major element in the community's transportation system and, as such, is vital to its growth. However, the airport must also be a good neighbor, and this can be accomplished only with proper planning. Since aircraft noise extends beyond the boundaries of the airport, it is vital to consider the impact on surrounding communities. Many means have been devised to provide the planner with a tool to estimate the impact of airport operations. Too often they oversimplify noise to the point where the results become erroneous. Noise is not a simple subject; therefore, there are no simple answers.

The cumulative noise contour is an effective tool. However, care must be exercised to ensure that the contours, used correctly, estimate the noise resulting from aircraft operations conducted at an airport.

The size and shape of the single-event contours, which are inputs into the cumulative noise contours, are dependent upon numerous factors. They include the following:

- 1. Operational Factors
 - a. <u>Aircraft Weight</u>-Aircraft weight is dependent on distance to be traveled, enroute winds, payload, and anticipated aircraft delay upon reaching the destination.
 - b. <u>Engine Power Settings</u>-The rates of ascent and descent and the noise levels emitted at the source are influenced by the power setting used.
 - c. <u>Airport Altitude</u>-Higher airport altitude will affect engine performance and thus can influence noise.
- 2. Atmospheric Conditions-Sound Propagation
 - a. <u>Wind</u>-With stronger headwinds, the aircraft can take off and climb more rapidly relative to the ground. Also, winds can influence the distribution of noise in surrounding communities.
 - b. <u>Temperature and Relative Humidity</u>-The absorption of noise in the atmosphere along the transmission path between the aircraft and the ground observer varies with both temperature and relative humidity.
- 3. Surface Condition-Shielding, Extra Ground Attenuation (EGA)
 - a. <u>Terrain</u>-If the ground slopes down after takeoff or before landing, noise will be reduced since the aircraft will be at a higher altitude above ground. Additionally, hills, shrubs, trees, and large buildings can act as sound buffers.

All these factors can alter the shape and size of the contours appreciably. To demonstrate the effect of some of these factors, estimated noise level contours for two different operating conditions are shown below. These contours reflect a given noise level upon a ground level plane at runway elevation.

Condition 1

Landing	Takeoff
Maximum Structural Landing Weight	Maximum Gross Takeoff Weight
10-knot Headwind	Zero Wind
3° Approach	84 °F
84 °F	Humidity 15%
Humidity 15%	



Condition 2

Landing	Takeoff
85% of Maximum Structural Landing Weight	80% of Maximum Gross Takeoff Weight
10-knot Headwind	10-knot Headwind
3° Approach	59 °F (15 °C)
59 °F (15 °C)	Humidity 70%
Humidity 70%	

As indicated from the data, the contour size varies substantially with operating and atmospheric conditions. Most aircraft operations are, of course, conducted at less than maximum gross weights because average flight distances are much shorter than maximum aircraft range capability and average load factors are less than 100%. Therefore, in developing cumulative contours for planning purposes, it is recommended that the airlines serving a particular city be contacted to provide operational information.

In addition, there are no universally accepted methods for developing aircraft noise contours or for relating the acceptability of specific zones to specific land uses. It is therefore expected that noise contour data for particular aircraft and the impact assessment methodology will be changing. To ensure that the best currently available information of this type is used in any planning study, it is recommended that it be obtained directly from the Office of Environmental Quality in the Federal Aviation Administration in Washington, D.C.

It should be noted that the contours shown herein are only for illustrating the impact of operating and atmospheric conditions and do not represent the single-event contour of the family of aircraft described in this document. It is expected that the cumulative contours will be developed as required by planners using the data and methodology applicable to their specific study.

7.0 PAVEMENT DATA

7.1 GENERAL INFORMATION

A brief description of the pavement charts that follow will help in their use for airport planning. A 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 based on rated loads and tire pressures considered normal and acceptable by current aircraft tire manufacturer's standards. Tire pressures, where specifically designated on tables and charts, are at values obtained under loaded conditions as certificated for commercial use.

Section 7.2 presents basic data on the landing gear footprint configuration, maximum design taxi loads, and tire sizes and pressures.

Maximum pavement loads for certain critical conditions at the tire-to-ground interface are shown in Section 7.3, with the tires having equal loads on the struts.

Pavement requirements for commercial airplanes are customarily derived from the static analysis of loads imposed on the main landing gear struts. The charts in Section 7.4 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, interpolating load values where necessary.

The flexible pavement design curves (Section 7.5) are based on procedures set forth in Instruction Report No. S-77-1, <u>Procedures for Development of CBR Design Curves</u>, June 1977, and as modified according to the methods described in FAA Advisory Circular 150/5320-6D, <u>Airport Pavement Design and Evaluation</u>, July 1995. Instruction Report No. S-77-1 was prepared by the U.S. Army Corps of Engineers Waterways Experiment Station, Soils and Pavements Laboratory, Vicksburg, Mississippi. The line showing 10,000 coverages is used to calculate Aircraft Classification Number (ACN).

The following procedure is used to develop the curves, such as shown in Section 7.5:

- 1. Having established the scale for pavement depth at the bottom and the scale for CBR at the top, an arbitrary line is drawn representing 5,000 annual departures.
- 2. Values of the aircraft gross weight are then plotted.
- 3. Additional annual departure lines are drawn based on the load lines of the aircraft gross weights already established.
- 4. An additional line representing 10,000 coverages (used to calculate the flexible pavement Aircraft Classification Number) is also placed.

All Load Classification Number (LCN) curves (Sections 7.6 and 7.8) have been developed from a computer program based on data provided in International Civil

Aviation Organization (ICAO) Document 9157-AN/901, <u>Aerodrome Design Manual</u>, Part 3, "Pavements", Second Edition, 1983. LCN values are shown directly for parameters of weight on main landing gear, tire pressure, and radius of relative stiffness (*i*) for rigid pavement or pavement thickness or depth factor (h) for flexible pavement.

Rigid pavement design curves (Section 7.7) have been prepared with the Westergaard equation in general accordance with the procedures outlined in the <u>Design of Concrete Airport Pavement</u>, 1955 edition, by Robert G. Packard, published by the Portland Cement Association, 5420 Old Orchard Road, Skokie, Illinois 60077-1083. These curves are modified to the format described in the Portland Cement Association publication XP6705-2, <u>Computer Program for Airport Pavement Design (Program PDILB)</u>, 1968, by Robert G. Packard.

The following procedure is used to develop the rigid pavement design curves shown in Section 7.7:

- 5. 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.
- 6. Values of the subgrade modulus (k) are then plotted.
- 7. 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 established.

The rigid pavement design curves (Section 7.9) have been developed based on methods used in the FAA Advisory Circular AC 150/5320-6D, July 1995. The following procedure is used to develop the curves, such as shown in Section 7.9:

- 8. Having established the scale for pavement flexure strength on the left and temporary scale for pavement thickness on the right, an arbitrary load line is drawn representing the main landing gear maximum weight to be shown at 5,000 coverages.
- 9. Values of the subgrade modulus (k) are then plotted.
- 10. Additional load lines for the incremental values of weight are then drawn on the basis of the subgrade modulus curves already established.
- 11. The permanent scale for the rigid-pavement thickness is then placed. Lines for other than 5,000 coverages are established based on the aircraft pass-to-coverage ratio.

The ACN/PCN system (Section 7.10) as referenced in ICAO Annex 14, <u>Aerodromes</u>, Volume I, "Aerodrome Design and Operations," Ninth Edition, July 2022, 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 Pavement Classification Number. An aircraft having an ACN equal to or less than the PCN can operate on the pavement subject to any limitation on the tire pressure. 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 181 psi (1.25 MPa) that would have the same pavement requirements as the aircraft. Computationally, the ACN/PCN system uses the PCA program PDILB for rigid pavements and S-77-1 for flexible pavements to calculate ACN values.

The ACR-PCR system (Section 7.11) follows ICAO Annex 14, <u>Aerodromes</u>, Volume I, "Aerodrome Design and Operations," Ninth Edition, July 2022, and guidance from ICAO Doc 9157-AN/901, <u>Aerodrome Design Manual</u>, Part 3, "Pavements," Third Edition, 2022, replacing the ACN/PCN system used throughout the world. ACR is the Aircraft Classification Rating and PCR is the Pavement Classification Rating. The ACR-PCR system allows an aircraft having an ACR equal to or less than the PCR to operate on the pavement subject to any limitation on the tire pressure. Numerically, the ACR is two times the derived single-wheel load expressed in hundreds of kilograms, where the derived single wheel load is defined as the load on a single tire inflated to 218 psi (1.5 MPa) that would have the same pavement requirements as the aircraft.

PCN/ PCR	PAVEMENT TYPE	SUBGRADE CATEGORY	TIRE PRESSURE CATEGORY	EVALUATION METHOD
	R = Rigid	A = High	W = No Limit	T = Technical
	F = Flexible	B = Medium	X = To 254 psi (1.75 MPa)	U = Using Aircraft
		C = Low	Y = To 181 psi (1.25 MPa)	
		D = Ultra Low	Z = To 73 psi (0.5 MPa)	

The method of pavement evaluation is left up to the airport with the results of their evaluation presented as follows:

ACN values for flexible pavements are calculated for the following four subgrade categories:

Code A - High strength; characterized by CBR 15 and representing all CBR values above 13.

Code B - Medium strength; characterized by CBR 10 and representing a range in CBR of 8 to 13.

Code C - Low strength; characterized by CBR 6 and representing a range in CBR of 4 to 8.

Code D - Ultra-low strength; characterized by CBR 3 and representing all CBR values below 4.

ACN values for rigid pavements are calculated for the following four subgrade categories:

Code A - High strength; characterized by $k = 150 \text{ MN/m}^3$ (552.6 pci) and representing all k values above 120 MN/m³.

Code B - Medium strength; characterized by $k = 80 \text{ MN/m}^3$ (294.7 pci) and representing a range in k values of 60 to 120 MN/m³.

Code C - Low strength; characterized by $k = 40 \text{ MN/m}^3$ (147.4 pci) and representing a range in k values of 25 to 60 MN/m³.

Code D - characterized by k = 20 MN/m³ (73.7 pci) and representing all k values below 25 MN/m³.

ACR values at any mass on rigid and flexible pavements are calculated for the following four subgrade categories:

Code A - High strength; characterized by E = 200 MPa (29,008 psi) and representing all E values equal to or above 150 MPa, for rigid and flexible pavements.

Code B - Medium strength; characterized by E = 120 MPa (17,405 psi) and representing a range in E equal to or above 100 MPa and strictly less than 150 MPa, for rigid and flexible pavements.

Code C - Low strength; characterized by E = 80 MPa (11,603 psi) and representing a range in E equal to or above 60 MPa and strictly less than 100 MPa, for rigid and flexible pavements.

Code D - Ultra-low strength; characterized by E = 50 MPa (7,252 psi) and representing all E values strictly less than 60 MPa, for rigid and flexible pavements.

7.2 LANDING GEAR FOOTPRINT

7.2.1 Landing Gear Footprint: Model Advanced 737-600, -700, -800, -800BCF, -900, -900ER, With and Without Winglets



-900ER: 22 FT 11.5 IN (7.00 M)

	UNITS	737-600	737-700	737-800	737-900	737-900ER
MAXIMUM	LB	145,000	155,000	174,700	174,700	188,200
DESIGN TAXI WEIGHT	KG	65,770	70,306	79,242	79,242	85,366
NOSE GEAR	INI					
TIRE SIZE	IIN			2/X/./5-15, 12PR		
NOSE GEAR	PSI	206	205	185	163	164
TIRE PRESSURE	MPa	1.42	1.41	1.28	1.12	1.13
MAIN GEAR	INI		0.21.2600			H44.5x16.5-21
TIRE SIZE	IIN	H43.3X 10.0	U-21, 20FR	H44.5X10.3	30PR	
MAIN GEAR	PSI	182 197		204		220
TIRE PRESSURE	MPa	1.25	1.36	1.4	41	1.52
OPTIONAL TIRES						

MAN GEAR TIRE SIZE	IN	H44.5x16.5-21 28PR *[1]	H44.5x16.5-21 28PR	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
MAIN GEAR	PSI	168	179	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE
TIRE PRESSURE	MPa	1.16	1.23	NOT AVAILABLE	NOT AVAILABLE	NOT AVAILABLE

NOTE: 1. H44.5x16.5-21, 28PR TIRE CERTIFICATED ON 737-600 UP TO 144,000 LB (65,317 KG)

7.2.2 Landing Gear Footprint: Model 737 BBJ1, BBJ2



	UNITS	737-BBJ	737-BBJ2	
MAXIMUM DESIGN TAXI	LB	171,500	174,700	
WEIGHT	KG	77,790	79,250	
PERCENT OF WEIGHT SEE SECTION 7.4				
NOSE GEAR TIRE SIZE	IN	27x7.7-15, 12 PR		
NOSE GEAR TIRE	PSI	185		
PRESSURE	MPa	1.28		
MAIN GEAR TIRE SIZE	IN	H44.5x16.5-21, 28 PR	H44.5x16.5–21, 28 PR	
MAIN GEAR TIRE	PSI	196	204	
PRESSURE	KG/CM ²	1.35	1.41	

D6-58325-7

7.3 MAXIMUM PAVEMENT LOADS

7.3.1 Maximum Pavement Loads: Model 737-600, -700, -800, -800BCF, -900, -900ER With and Without Winglets

- V_{NG} = MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CENTER OF GRAVITY
- V_{MG} = MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT CENTER OF GRAVITY
- H = MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING
- NOTE: ALL LOADS CALCULATED USING AIRPLANE MAXIMUM DESIGN TAXI WEIGHT



			V _{NG}			H PER STRUT	
AIRPLANE MODEL	UNITS	MAX DESIGN TAXI WEIGHT	STATIC AT MOST FWD C.G.	STATIC + BRAKING 10 FT/SEC ² DECEL	STRUT AT MAX LOAD AT STATIC AFT C.G.	STEADY BRAKING 10 FT/SEC ² DECEL	AT INSTANTANEOU S BRAKING (μ = 0.8)
737-600	LB	124,500	16,839	26,489	58,333	19,298	46,666
	KG	56,472	7,638	12,015	26,459	8,708	21,167
737-600	LB	144,000	19,020	30,180	66,708	22,320	53,366
	KG	65,317	8,627	13,689	30,258	10,124	24,206
737-600	LB	145,000	19,000	30,236	66,454	22,475	53,163
	KG	65,771	8,618	13,715	30,143	10,194	24,114
737-700	LB	133,500	17,558	26,711	63,000	20,692	50,400
	KG	60,554	7,963	12,116	28,576	9,386	22,861
737-700	LB	153,500	18,740	29,265	71,482	23,792	57,185
	KG	69,626	8,500	13,274	32,424	10,792	25,939
737-700	LB	155,000	16,925	27,552	71,060	24,025	56,847
	KG	70,307	7,677	12,497	32,232	10,898	25,785
737-800	LB	156,000	16,770	25,510	75,062	24,180	60,050
	KG	70,750	7,607	11,571	34,047	10,968	27,442
737-800	LB	173,000	17,059	26,752	82,143	26,815	65,715
	KG	78,471	7,738	12,134	37,259	12,163	29,808
737-800, -	LB	174,700	15,100	24,886	81,730	27,078	65,384
800BCF	KG	79,242	6,849	11,279	37,060	12,282	29,658
737-900	LB	164,500	14,998	23,369	78,962	25,498	63,169
	KG	74,616	6,803	10,600	35,817	11,566	28,653
737-900	LB	174,700	14,155	23,045	81,743	27,078	65,394
	KG	79,242	6,421	10,453	37,078	12,282	29,662

			V _{NG}			H PER STRUT	
AIRPLANE MODEL	UNITS	MAX DESIGN TAXI WEIGHT	STATIC AT MOST FWD C.G.	STATIC + BRAKING 10 FT/SEC ² DECEL	STRUT AT MAX LOAD AT STATIC AFT C.G.	STEADY BRAKING 10 FT/SEC ² DECEL	AT INSTANTANEOU S BRAKING (μ = 0.8)
737-900ER	LB	188,200	15,206	24,810	88,993	29,227	71,194
	KG	85,366	6,897	11,254	40,367	13,257	32,293

D6-58325-7

7.3.2 Maximum Pavement Loads: Model 737 BBJ1, BBJ2

- V_{NG} = MAXIMUM VERTICAL NOSE GEAR GROUND LOAD AT MOST FORWARD CENTER OF GRAVITY
- V_{MG} = MAXIMUM VERTICAL MAIN GEAR GROUND LOAD AT MOST AFT CENTER OF GRAVITY
- H = MAXIMUM HORIZONTAL GROUND LOAD FROM BRAKING
- NOTE: ALL LOADS CALCULATED USING AIRPLANE MAXIMUM DESIGN TAXI WEIGHT



			V _{NG}		V _{MG} PER	H PER STRUT	
AIRPLANE MODEL	UNITS	MAX DESIGN TAXI WEIGHT	STATIC AT MOST FWD C.G.	STATIC + BRAKING 10 FT/SEC ² DECEL		STEADY BRAKING 10 FT/SEC ² DECEL	AT INSTANTANEOU S BRAKING (μ = 0.8)
737 BBJ	LB	171,500	17,400	29,400	78,700	26,600	62,900
	KG	77,800	7,900	13,340	35,700	12,100	28,550
737 BBJ2	LB	174,700	15,100	24,900	81,700	27,100	65,400
	KG	79,250	6,850	11,300	37,050	12,300	29,650

7.4 LANDING GEAR LOADING ON PAVEMENT



7.4.1 Landing Gear Loading on Pavement: Model 737-600

D6-58325-7

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7.4.2 Landing Gear Loading on Pavement: Model 737-700, -700W



7.4.3 Landing Gear Loading on Pavement: Model 737 BBJ1



7.4.4 Landing Gear Loading on Pavement: Model 737-800, -800W, -800BCF

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7.4.5 Landing Gear Loading on Pavement: Model 737 BBJ2



7.4.6 Landing Gear Loading on Pavement: Model 737-900, -900W



7.4.7 Landing Gear Loading on Pavement: Model 737-900ER, -900ERW

7.5 FLEXIBLE PAVEMENT REQUIREMENTS - U.S. ARMY CORPS OF ENGINEERS METHOD S-77-1 AND FAA DESIGN METHOD

The following flexible-pavement design chart presents the data of five incremental maingear loads at the minimum tire pressure required at the maximum design taxi weight.

In the example shown in the next page, for a CBR of 25 and an annual departure level of 10,000, the required flexible pavement thickness for an airplane with a main gear loading of 85,000 pounds is 8.2 inches. Similar examples are shown in succeeding charts.

The line showing 10,000 coverages is used for ACN calculations (see Section 7.10).

The FAA design method uses a similar procedure using total airplane weight instead of weight on the main landing gears. The equivalent main gear loads for a given airplane weight could be calculated from Section 7.4. For the flexible pavement design refer to the FAA AC 150/5320-6 "Airport Pavement Design and Evaluation" and pavement design program FAARFIELD. Both are available on the FAA website:

FAA AC 150/5320-6F: https://www.faa.gov/airports/resources/advisory_circulars/ FAARFIELD: https://www.faa.gov/airports/engineering/design_software/

7.5.1 Flexible Pavement Requirements - U.S. Army Corps of Engineers Design Method (S-77-1) and FAA Design Method: Model 737-600, -700, -800, -800BCF, -900, -900ER, With and Without Winglets, BBJ1, BBJ2



FLEXIBLE PAVEMENT THICKNESS, h

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7.6 FLEXIBLE PAVEMENT REQUIREMENTS - LCN CONVERSION

To determine the airplane weight that can be accommodated on a particular flexible pavement, both the Load Classification Number (LCN) of the pavement and the thickness must be known.

In the example shown on the next page, flexible pavement thickness is shown at 23.75 in. with an LCN of 42. For these conditions, the apparent maximum allowable weight permissible on the main landing gear is 85,000 lb for an airplane with 138 to 146-psi main gear tires. Similar examples are shown in succeeding charts.

Note: If the resultant aircraft LCN is not more that 10% above the published pavement LCN, the bearing strength of the pavement can be considered sufficient for unlimited use by the airplane. The figure 10% has been chosen as representing the lowest degree of variation in LCN that is significant (reference: <u>ICAO</u> <u>Aerodrome Manual</u>, Part 2, "Aerodrome Physical Characteristics," Chapter 4, Paragraph 4.1.5.7v, 2nd Edition dated 1965).

7.6.1 Flexible Pavement Requirements - LCN Method: Model 737-600, -700, -800, -800BCF, -900, -900ER, With and Without Winglets, BBJ1, BBJ2



D6-58325-7

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7.7 RIGID PAVEMENT REQUIREMENTS - PORTLAND CEMENT ASSOCIATION DESIGN METHOD

The Portland Cement Association method of calculating rigid pavement requirements is based on the computerized version of "Design of Concrete Airport Pavement" (Portland Cement Association, 1965) as described in XP6705-2, "Computer Program for Airport Pavement Design" by Robert G. Packard, Portland Cement Association, 1968.

The following rigid pavement design chart presents the data for five incremental main gear loads at the minimum tire pressure required at the maximum design taxi weight.

In the example shown on the next page, for an allowable working stress of 400 psi, a main gear load of 70,000 lb, and a subgrade strength (k) of 300, the required rigid pavement thickness is 7.7 in. Similar examples are shown in succeeding charts.
7.7.1 Rigid Pavement Requirements - Portland Cement Association Design Method: Model 737-600, -700, -800, -800BCF, -900, -900ER, With and Without Winglets, BBJ1, BBJ2



D6-58325-7



7.7.2 Rigid Pavement Requirements - Portland Cement Association Design Method: Model 737-600, -700 (Optional Tires)

NOTE: TIRES - H44.5 x 16.5 - 21 28PR

7.8 RIGID PAVEMENT REQUIREMENTS - LCN CONVERSION

To determine the airplane weight that can be accommodated on a particular rigid pavement, both the LCN of the pavement and the radius of relative stiffness (i) of the pavement must be known.

In the examples shown in Section 7.8.2 for a rigid pavement with a radius of relative stiffness of 47 with an LCN of 91, and 7.8.3 for a rigid pavement with a radius of relative stiffness of 47 with an LCN of 87, the apparent maximum allowable weight permissible on the main landing gear is 600,000 lb (272,155 kg) for an airplane with 221-psi (15.54 kg/cm²) main tires.

Note: If the resultant aircraft LCN is not more that 10% above the published pavement LCN, the bearing strength of the pavement can be considered sufficient for unlimited use by the airplane. The figure 10% has been chosen as representing the lowest degree of variation in LCN that is significant (reference: <u>ICAO</u> <u>Aerodrome Design Manual</u>, Part 2, "Aerodrome Physical Characteristics," Chapter 4, Paragraph 4.1.5.7v, 2nd Edition dated 1965).

7.8.1 Radius of Relative Stiffness (Reference: Portland Cement Association)

RADIUS OF RELATIVE STIFFNESS (*i*) VALUES IN INCHES

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

WHERE: E = YOUNG'S MODULUS OF ELASTICITY = 4 x 10⁶ psi k = SUBGRADE MODULUS, LB PER CU IN d = RIGID PAVEMENT THICKNESS, IN μ = POISSON'S RATIO = 0.15

d	k = 75	k = 100	k = 150	k = 200	k = 250	k = 300	k = 350	k = 400	k = 500	k = 550
6.0	31.48	29.29	26.47	24.63	23.30	22.26	21.42	20.71	19.59	19.13
6.5	33.42	31.10	28.11	26.16	24.74	23.63	22.74	21.99	20.80	20.31
7.0	35.33	32.88	29.71	27.65	26.15	24.99	24.04	23.25	21.99	21.47
7.5	37.21	34.63	31.29	29.12	27.54	26.31	25.32	24.49	23.16	22.61
8.0	39.06	36.35	32.84	30.56	28.91	27.62	26.57	25.70	24.31	23.73
8.5	40.87	38.04	34.37	31.99	30.25	28.90	27.81	26.90	25.44	24.84
9.0	42.66	39.70	35.88	33.39	31.57	30.17	29.03	28.07	26.55	25.93
9.5	44.43	41.35	37.36	34.77	32.88	31.42	30.23	29.24	27.65	27.00
10.0	46.17	42.97	38.83	36.13	34.17	32.65	31.41	30.38	28.73	28.06
10.5	47.89	44.57	40.27	37.48	35.44	33.87	32.58	31.52	29.81	29.10
11.0	49.59	46.15	41.70	38.81	36.70	35.07	33.74	32.63	30.86	30.14
11.5	51.27	47.72	43.12	40.12	37.95	36.26	34.89	33.74	31.91	31.16
12.0	52.94	49.26	44.51	41.43	39.18	37.43	36.02	34.83	32.94	32.17
12.5	54.58	50.80	45.90	42.71	40.40	38.60	37.14	35.92	33.97	33.17
13.0	56.21	52.31	47.27	43.99	41.60	39.75	38.25	36.99	34.98	34.16
13.5	57.83	53.81	48.63	45.25	42.80	40.89	39.34	38.05	35.99	35.14
14.0	59.43	55.30	49.97	46.50	43.98	42.02	40.43	39.10	36.98	36.11
14.5	61.01	56.78	51.30	47.74	45.15	43.14	41.51	40.15	37.97	37.07
15.0	62.58	58.24	52.62	48.97	46.32	44.25	42.58	41.18	38.95	38.03
15.5	64.14	59.69	53.93	50.19	47.47	45.35	43.64	42.21	39.92	38.98
16.0	65.69	61.13	55.23	51.40	48.61	46.45	44.69	43.22	40.88	39.92
16.5	67.22	62.55	56.52	52.60	49.75	47.53	45.73	44.23	41.83	40.85
17.0	68.74	63.97	57.80	53.79	50.87	48.61	46.77	45.23	42.78	41.77
17.5	70.25	65.38	59.07	54.97	51.99	49.68	47.80	46.23	43.72	42.69
18.0	71.75	66.77	60.34	56.15	53.10	50.74	48.82	47.22	44.65	43.60
19.0	74.72	69.54	62.83	58.47	55.30	52.84	50.84	49.17	46.50	45.41
20.0	77.65	72.26	65.30	60.77	57.47	54.91	52.83	51.10	48.33	47.19
21.0	80.55	74.96	67.73	63.03	59.61	56.95	54.80	53.00	50.13	48.95
22.0	83.41	77.62	70.14	65.27	61.73	58.98	56.75	54.88	51.91	50.68
23.0	86.23	80.25	72.51	67.48	63.82	60.98	58.67	56.74	53.67	52.40
24.0	89.03	82.85	74.86	69.67	65.89	62.95	60.57	58.58	55.41	54.10
25.0	91.80	85.43	77.19	71.84	67.94	64.91	62.46	60.41	57.13	55.78

7.8.2 Rigid Pavement Requirements - LCN Conversion: Model 737-600, -700, -800, -800BCF, -900, -900ER With and Without Winglets, BBJ1, BBJ2



7.9 Rigid Pavement Requirements - FAA Design Method

The following rigid pavement design charts present data on five incremental main gear loads at the minimum tire pressure required at the maximum design taxi weight.

In the example shown in the next page, the pavement flexural stress is shown at 700 psi, the subgrade strength is shown at k = 550, and the annual departure level is 6,000. For these conditions, the required rigid pavement thickness for an airplane with main gear load of 100,000 pounds is 10.4 inches. Similar examples are shown in succeeding charts.

For the rigid pavement design refer to the FAA AC 150/5320-6F "Airport Pavement Design and Evaluation" and pavement design program FAARFIELD. Both are available on the FAA website:

FAA AC 150/5320-6F: https://www.faa.gov/airports/resources/advisory_circulars/ FAARFIELD: https://www.faa.gov/airports/engineering/design_software/

> D6-58325-7 December 2024

7.9.1 **Rigid Pavement Requirements – FAA Design Method: Model** 737-600, -700, -800, -800BCF, -900, -900ER With and Without Winglets, BBJ1, BBJ2



D6-58325-7

7.9.2 Rigid Pavement Requirements – FAA Design Method: Model 737-600, -700 (Optional Tires)



7.10 ACN/PCN REPORTING SYSTEM - FLEXIBLE AND RIGID PAVEMENTS

To determine the ACN of an aircraft on flexible or rigid pavement, both the aircraft gross weight and the subgrade strength category must be known. The chart in Section 7.10.1 shows that for a 737-600 aircraft with gross weight of 110,000 lb on a medium strength subgrade (Code B), the flexible pavement ACN is 25. In Section 7.10.2, for the same aircraft weight and medium subgrade strength (Code B), the rigid pavement ACN is 28.7, which rounded to the nearest whole number is reported as 29.

The following table provides ACN data in tabular format similar to the one used by ICAO in Doc 9157-AN/901, <u>Aerodrome Design Manual</u>, Part 3, "Pavements," Second Edition, 1983. If the ACN for an intermediate weight between maximum taxi weight and the minimum weight specified in the table is required, Sections 7.10.1 through 7.10.16 should be consulted.

The ACN curve graphs were developed based on standard recommended practices from ICAO Annex 14, <u>Aerodromes</u>, Volume I, "Aerodrome Design and Operations," Ninth Edition, July 2022, and guidance material from ICAO Doc 9157-AN/901, <u>Aerodrome Design Manual</u>, Part 3, "Pavements," Second Edition, 1983. The Federal Aviation Administration has developed the "ICAO-ACN 1.0" program to calculate the ACN values for aircraft on flexible and rigid airport pavements, and it is available for download at:

https://www.airporttech.tc.faa.gov/Products/Airport-Safety-Papers-Publications/Airport-Safety-Detail/icao-acn-10.

				ACN FOR FLEXIBLE PAVEMENT SUBGRADES CBR				ACN FOR RIGID PAVEMENT SUBGRADES k, pci (MN/m³)			
AIRCRAFT TYPE	MAXIMUM TAXI WEIGHT MINIMUM WEIGHT *[1] Ib (kg)	LOAD ON ONE MAIN GEAR LEG	TIRE PRESSURE psi (MPa)	HIGH (A) 15	MEDIUM (B) 10	6 6	ULTRA LOW (D) 3	HIGH (A) 550 (150)	MEDIUM (B) 300 (80)	LOW (C) 150 (40)	ULTRA LOW (D) 75 (20)
	145 000 (65 770)	(70)		34	35	39	44	37	40	42	44
737-600	80 200 (36 378)	46.25	182 (1.25)	17	17	19	22	19	20	21	22
737-600 (OPTIONAL TIRE)	144.000 (65.317)	46.25	168 (1.16)	33	34	38	44	36	39	41	43
	80,200 (36,378)			17	17	19	22	18	19	21	22
737-700	155,000 (70,306)	45.78	197 (1.36)	36	38	42	47	41	43	46	47
	83,000 (37,648)			18	18	19	22	20	21	22	23
737-700 (OPTIONAL TIRE)	155,000 (70,306)	45.78	179 (1.23)	36	37	42	47	40	42	45	47
	83,000 (37,648)			18	18	19	22	19	20	22	23
737 BBJ1	171,500 (77,791)	45.00	196 (1.35)	41	43	48	53	46	49	51	53
	92,345 (41,886)	45.80		20	20	22	26	22	24	25	26
737-800, -800BCF, BBJ2	174,700 (79,242)	40.70	204 (1.41)	43	45	50	55	49	52	54	56
	80,800 (36,650)	40.73		18	18	19	22	20	21	22	23
737-900	174,700 (79,242)	46.74	204 (1.41)	43	45	50	55	49	52	54	56
	94,580 (42,900)	40.74		21	22	23	27	24	25	27	28
737-900ER	188,200 (85,366)	17.24	220 (1.52)	48	51	56	61	56	58	61	63
	98,495 (44,676)	47.24		23	23	25	29	26	27	29	30

*[1] Minimum weight used solely as a baseline for ACN curve generation.

NOTE: VALUES FOR 737-700, -800, -900, -900ER ARE VALID FOR MODELS WITH AND WITHOUT WINGLETS.



7.10.1 Aircraft Classification Number - Flexible Pavement: Model 737-600



7.10.2 Aircraft Classification Number - Rigid Pavement: Model 737-600

D6-58325-7



7.10.3 Aircraft Classification Number - Flexible Pavement: Model 737-600 (Optional Tires)

D6-58325-7



7.10.4 Aircraft Classification Number - Rigid Pavement: Model 737-600 (Optional Tires)

D6-58325-7



7.10.5 Aircraft Classification Number - Flexible Pavement: Model 737-700, -700W



7.10.6 Aircraft Classification Number - Rigid Pavement: Model 737-700, -700W

D6-58325-7



7.10.7 Aircraft Classification Number - Flexible Pavement: Model 737-700, -700W (Optional Tires)

D6-58325-7



7.10.8 Aircraft Classification Number - Rigid Pavement: Model 737-700, -700W (Optional Tires)

December 2024



7.10.9 Aircraft Classification Number - Flexible Pavement: Model 737 BBJ1

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7.10.10 Aircraft Classification Number - Rigid Pavement: Model 737 BBJ1



7.10.11 Aircraft Classification Number - Flexible Pavement: Model 737-800, -800W, -800BCF, BBJ2

D6-58325-7



7.10.12 Aircraft Classification Number - Rigid Pavement: Model 737-800, -800W, -800BCF, BBJ2



7.10.13 Aircraft Classification Number - Flexible Pavement: Model 737-900, -900W



7.10.14 Aircraft Classification Number - Rigid Pavement: Model 737-900, -900W



7.10.15 Aircraft Classification Number - Flexible Pavement: Model 737-900ER, -900ERW

D6-58325-7



7.10.16 Aircraft Classification Number - Rigid Pavement: Model 737-900ER, -900ERW

7.11 ACR/PCR REPORTING SYSTEM – FLEXIBLE AND RIGID PAVEMENTS

To determine the ACR of an aircraft on flexible or rigid pavement, both the aircraft gross weight and the subgrade strength category must be known. The chart in Section 7.11.1 shows that for a 737-600 aircraft with gross weight of 110,000 lb on a medium strength subgrade (Code B), the flexible pavement ACR is 234, which rounded to the nearest multiple of ten is reported as 230. In Section 7.11.2, for the same aircraft weight and medium subgrade strength (Code B), the rigid pavement ACR is 291, which rounded to the nearest multiple of ten is reported as 290.

The following table provides ACR data in tabular format. If the ACR for an intermediate weight between maximum taxi weight and the minimum weight specified in the table is required, Sections 7.11.1 through 7.11.16 can be consulted.

The ACR curve graphs were developed based on standard recommended practices from ICAO Annex 14, <u>Aerodromes</u>, Volume I, "Aerodrome Design and Operations," Ninth Edition, July 2022, and guidance material from ICAO Doc 9157-AN/901, <u>Aerodrome Design Manual</u>, Part 3, "Pavements," Third Edition, 2022. The Federal Aviation Administration has developed the "ICAO-ACR 1.4" program to calculate the ACR values for aircraft on flexible and rigid airport pavements", and it is available for download at:

https://www.airporttech.tc.faa.gov/Products/Airport-Safety-Papers-Publications/Airport-Safety-Detail/ICAO-ACR-14.

				ACR FOR FLEXIBLE PAVEMENT SUBGRADES				ACR FOR RIGID PAVEMENT SUBGRADES			
AIRCRAFT TYPE	MAXIMUM TAXI WEIGHT MINIMUM WEIGHT *[1] Ib (kg)	LOAD ON ONE MAIN GEAR LEG (%)	TIRE PRESSURE psi (MPa)	НІ G Н (A) E = 200 МРа	MEDIUM (B) E = 120 MPa	LOW (C) E = 80 MPa	ULTRA LOW (D) E = 50 MPa	НІ G Н (A) E = 200 МРа	MEDIUM (B) E = 120 MPa	LOW (C) E = 80 MPa	ULTRA LOW (D) E = 50 MPa
737-600	145,000 (65,770)	46.25	182 (1.25)	290	320	350	390	380	400	420	430
	80,200 (36,378)			160	170	170	190	190	200	210	220
737-600 (OPTIONAL TIRE)	144,000 (65,317)	46.25	168 (1.16)	280	310	340	380	370	390	410	430
	80,200 (36,378)			160	160	170	190	180	200	210	220
737-700	155,000 (70,306)	45.78	197 (1.36)	320	340	380	420	420	440	450	470
	83,000 (37,648)			170	170	180	190	200	210	220	230
737-700 (OPTIONAL TIRE)	155,000 (70,306)	45.78	179 (1.23)	310	340	370	420	410	430	450	460
	83,000 (37,648)			160	170	180	190	190	210	210	220
737 BBJ1	171,500 (77,791)	45.90	196 (1.35)	360	390	420	480	470	500	510	530
	92,345 (41,886)	45.60		190	190	200	220	230	240	250	260
737-800, -800BCF, BBJ2	174,700 (79,242)	46.73	204 (1.41)	380	410	450	510	500	520	540	560
	80,800 (36,650)			170	170	180	190	200	210	220	230
737-900	174,700 (79,242)	40.74	204 (1.41)	380	410	450	510	500	520	540	560
	94,580 (42,900)	40.74		200	200	210	230	240	250	260	270
737-900ER	188,200 (85,366)	47.24	220 (1.52)	420	460	500	570	560	590	600	620
	98,495 (44,676)	47.24		210	220	230	250	260	270	280	290

*[1] Minimum weight used solely as a baseline for ACR curve generation.

NOTE: VALUES FOR 737-700, -800, -900, -900ER ARE VALID FOR MODELS WITH AND WITHOUT WINGLETS.



7.11.1 Aircraft Classification Rating - Flexible Pavement: Model 737-600



7.11.2 Aircraft Classification Rating - Rigid Pavement: Model 737-600



7.11.3 Aircraft Classification Rating - Flexible Pavement: Model 737-600 (Optional Tires)

D6-58325-7



7.11.4 Aircraft Classification Rating - Rigid Pavement: Model 737-600 (Optional Tires)

D6-58325-7

75 165 NOTES:
1. TO DETERMINE MAIN LANDING GEAR LOADING SEE SECTION 7.4
2. PERCENT WEIGHT ON MAIN LANDING GEAR FROM AFTMOST CG LIMIT: 91.56 NOTES: • TIRES – H43.5x16.0-21, 26PR • PRESSURE – 197 PSI (1.36 MPa) 155 70 145 65 135 60 Aircraft Gross Weight 125 (1,000 KG) (1,000 LB) 55 115 50 105 Code D – E = 50 MPa (Ultra Low) Code B - E = 120 MPa (Medium) Code A – E = 200 MPa (High) Code C – E = 80 MPa (Low) I 45 95 ł I I 40 t ÷ 85 ł I I I 35 75 500 400 450 350 300 250 200 150 Aircraft Classification Rating (ACR)

7.11.5 Aircraft Classification Rating - Flexible Pavement: Model 737-700, - 700W

D6-58325-7



7.11.6 Aircraft Classification Rating - Rigid Pavement: Model 737-700, -700W



7.11.7 Aircraft Classification Rating - Flexible Pavement: Model 737-700 (Optional Tires)



7.11.8 Aircraft Classification Rating - Rigid Pavement: Model 737-700 (Optional Tires)


7.11.9 Aircraft Classification Rating - Flexible Pavement: Model 737 BBJ1



7.11.10 Aircraft Classification Rating - Rigid Pavement: Model 737 BBJ1



7.11.11 Aircraft Classification Rating - Flexible Pavement: Model 737-800, - 800W, -800BCF



7.11.12 Aircraft Classification Rating - Rigid Pavement: Model 737-800, -800W, -800BCF

D6-58325-7

180NOTES: 1. TO DETERMINE MAIN LANDING GEAR LOADING SEE SECTION 7.4 2. PERCENT WEIGHT ON MAIN LANDING GEAR FROM AFTMOST CG LIMIT: 93.48 NOTES: • TIRES – H44.5x16.5-21, 28PR • PRESSURE – 204 PSI (1.41 MPa) 80 170 75 16070 150 65 Aircraft Gross Weight 140-(1,000 KG) (1,000 LB) 60 130 55 120 Code D – E = 50 MPa (Ultra Low) Code B - E = 120 MPa (Medium) Code A – E = 200 MPa (High) Code C – E = 80 MPa (Low) 11050 100 45 I I t t 90 40 575 525 375 225 175 475 425 325 275 Aircraft Classification Rating (ACR)

7.11.13 Aircraft Classification Rating - Flexible Pavement: Model 737-900, -900W



7.11.14 Aircraft Classification Rating - Rigid Pavement: Model 737-900, -900W

D6-58325-7



7.11.15 Aircraft Classification Rating - Flexible Pavement: Model 737-900ER, -900ERW

D6-58325-7

7-64



7.11.16 Aircraft Classification Rating - Rigid Pavement: Model 737-900ER, -900ERW

D6-58325-7

8.0 FUTURE 737 DERIVATIVE AIRPLANES

Development of these derivatives will depend on airline requirements. The impact of airline requirements on airport facilities will be a consideration in the configuration and design of these derivatives.

D6-58325-7

9.0 SCALED 737 DRAWINGS

The drawings in the following pages show airplane plan view drawings, drawn to approximate scale as noted. The drawings may not come out to exact scale when printed or copied from this document. Printing scale should be adjusted when attempting to reproduce these drawings. Three-view drawing files of the 737 airplane models, along with other Boeing airplane models, can be downloaded from the following website:

http://www.boeing.com/airports

D6-58325-7

9.1 MODEL 737-600

Scaled Drawings – 1 IN. = 32 FT: Model 737-600 9.1.1



LEGEND

- AIR CONDITIONING
- CARGO DOOR
- ELECTRICAL
- A C E F G H₂O FUEL
- SERVICE DOOR POTABLE WATER
- мĹG
- MAIN LANDING GEAR NOSE LANDING GEAR NG
- Ρ
- PNEUMATIC (AIR START) VACUUM LAVATORY SERVICE L
- ٧ FUEL VENT
- χ PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

D6-58325-7

9.1.2 Scaled Drawings – 1 IN. = 32 FT: Model 737-600



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

D6-58325-7

December 2024

9.1.3 Scaled Drawings – 1 IN. = 50 FT: Model 737-600



LEGEND

- AIR CONDITIONING CARGO DOOR
- ELECTRICAL
- A C E F G FUEL
- SERVICE DOOR
- H20 POTABLE WATER
- MAIN LANDING GEAR MLG
- NG NOSE LANDING GEAR Ρ
- PNEUMATIC (AIR START) VACUUM LAVATORY SERVICE
- L
- ۷ FUEL VENT
- PASSENGER DOOR χ
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

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9.1.4 Scaled Drawings – 1 IN. = 50 FT: Model 737-600





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

D6-58325-7

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9.1.5 Scaled Drawings – 1 IN. = 100 FT: Model 737-600





SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEIGEENEEND

A	AIR CONDITIONING
С	CARGO DOOR
E	ELECTRICAL
F	FUEL
G	SERVICE DOOR
H20	POTABLE WATER
MLG	MAIN LANDING GEAR
NG	NOSE LANDING GEAR
Р	PNEUMATIC (AIR START)
L	VACUUM LAVATORY SERVICE
٧	FUEL VENT
Х	PASSENGER DOOR
NOTE:	FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.1.6 Scaled Drawings – 1 IN. = 100 FT: Model 737-600



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

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9.1.7 Scaled Drawings - 1:500: Model 737-600



LEGEND

- AIR CONDITIONING А
- CARGO DOOR
- C E F ELECTRICAL
- FUEL
- SERVICE DOOR G
- POTABLE WATER H20
- MLG MAIN LANDING GEAR
- NOSE LANDING GEAR PNEUMATIC (AIR START) NG
- Ρ
- VACUUM LAVATORY SERVICE L
- ۷ FUEL VENT
- Х PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.1.8 Scaled Drawings – 1:500: Model 737-600





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

D6-58325-7

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9.1.9 Scaled Drawings - 1:1000: Model 737-600



NOTE:

SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

- AIR CONDITIONING А
- CARGO DOOR
- C E F G ELECTRICAL
- FUEL
- SERVICE DOOR
- H20 POTABLE WATER
- МĹG MAIN LANDING GEAR
- NG NOSE LANDING GEAR Ρ PNEUMATIC (AIR START)
- VACUUM LAVATORY SERVICE L
- ٧ FUEL VENT PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

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9.1.10 Scaled Drawings - 1:1000: Model 737-600



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

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December 2024

9.2 MODEL 737-600W

9.2.1 Scaled Drawings – 1 IN. = 32 FT: Model 737-600W



LEGEND

- AIR CONDITIONING А
- С CARGO DOOR
- ELECTRICAL
- E F FUEL
- G SERVICE DOOR H₂O POTABLE WATER
- MLG MAIN LANDING GEAR
- NOSE LANDING GEAR NG
- Ρ PNEUMATIC (AIR START)
- L VACUUM LAVATORY SERVICE
- ٧ FUEL VENT
- PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.2.2 Scaled Drawings – 1 IN. = 32 FT: Model 737-600W



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

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9.2.3 Scaled Drawings – 1 IN. = 50 FT: Model 737-600W

LEGEND

- А AIR CONDITIONING
- С CARGO DOOR
- ELECTRICAL
- E F FUEL
- G
- SERVICE DOOR POTABLE WATER $H_{2}O$
- MLG MAIN LANDING GEAR
- NOSE LANDING GEAR NG
- PNEUMATIC (AIR START) Ρ
- VACUUM LAVATORY SERVICE L
- ۷
- FUEL VENT PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.2.4 Scaled Drawings – 1 IN. = 50 FT: Model 737-600W



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

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9.2.5 Scaled Drawings – 1 IN. = 100 FT: Model 737-600W



SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEIGEONEIND

- AIR CONDITIONING A C
- CARGO DOOR
- Ē F ELECTRICAL
- FUEL
- G SERVICE DOOR
- H20 POTABLE WATER
- MAIN LANDING GEAR NOSE LANDING GEAR MLG
- NG Ρ
- PNEUMATIC (AIR START)
- L VACUUM LAVATORY SERVICE
- ٧ FUEL VENT Х
- PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.2.6 Scaled Drawings – 1 IN. = 100 FT: Model 737-600W



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

D6-58325-7

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9.2.7 Scaled Drawings - 1:500: Model 737-600W



LEGEND

- AIR CONDITIONING A
- С CARGO DOOR
- ELECTRICAL
- Ē F FUEL
- G
- SERVICE DOOR POTABLE WATER H20
- MLG MAIN LANDING GEAR
- NOSE LANDING GEAR NG
- Ρ PNEUMATIC (AIR START)
- VACUUM LAVATORY SERVICE L
- ۷ FUEL VENT
- PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.2.8 Scaled Drawings – 1:500: Model 737-600W



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

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9.2.9 Scaled Drawings – 1:1000: Model 737-600W



SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

- A AIR CONDITIONING
- C CARGO DOOR
- E ELECTRICAL
- F FUEL
- G SERVICE DOOR
- H₂O POTABLE WATER
- MLG MAIN LANDING GEAR
- NG NOSE LANDING GEAR
- P PNEUMATIC (AIR START)
- L VACUUM LAVATORY SERVICE
- V FUEL VENT
- X PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.2.10 Scaled Drawings – 1:1000: Model 737-600W



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

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9.3 MODEL 737-700

9.3.1 Scaled Drawings – 1 IN. = 32 FT: Model 737-700



LEGEND

- A C AIR CONDITIONING
- CARGO DOOR ELECTRICAL
- E F FUEL
- G
- SERVICE DOOR POTABLE WATER H20
- MLG MAIN LANDING GEAR
- NG
- NOSE LANDING GEAR PNEUMATIC (AIR START) P
- VACUUM LAVATORY SERVICE L
- ٧
- FUEL VENT PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.3.2 Scaled Drawings – 1 IN. = 32 FT: Model 737-700



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

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LEGEND

AIR	CONDITIONING
-----	--------------

- CARGO DOOR
- ELECTRICAL
- A C E F G FUEL
- SERVICE DOOR
- H₂O MLG POTABLE WATER
- MAIN LANDING GEAR NG
- NOSE LANDING GEAR Ρ
- PNEUMATIC (AIR START) VACUUM LAVATORY SERVICE
- L V FUEL VENT
- Х PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

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9.3.4 Scaled Drawings – 1 IN. = 50 FT: Model 737-700



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

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9.3.5 Scaled Drawings - 1 IN. = 100 FT: Model 737-700





SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

- А AIR CONDITIONING
- CARGO DOOR ELECTRICAL
- C E F G FUEL
- SERVICE DOOR POTABLE WATER H20
- MĹG MAIN LANDING GEAR
- NG NOSE LANDING GEAR
- Ρ
- PNEUMATIC (AIR START) VACUUM LAVATORY SERVICE L V
- FUEL VENT
- X PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

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9.3.6 Scaled Drawings – 1 IN. = 100 FT: Model 737-700



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

D6-58325-7

REV B

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9.3.7 Scaled Drawings - 1:500: Model 737-700



LEGEND

- AIR CONDITIONING А
- C E CARGO DOOR
- ELECTRICAL
- F FUEL G
- SERVICE DOOR
- H20 POTABLE WATER
- MLG MAIN LANDING GEAR NG
- NOSE LANDING GEAR Ρ
- PNEUMATIC (AIR START) VACUUM LAVATORY SERVICE L
- ٧ FUEL VENT
- PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.3.8 Scaled Drawings - 1:500: Model 737-700



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

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9.3.9 Scaled Drawings – 1:1000: Model 737-700



NOTE:

SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

- AIR CONDITIONING
- CARGO DOOR
- ELECTRICAL
- A C E F G FUEL
- SERVICE DOOR
- H₂O POTABLE WATER
- MLG NG
- Ρ
- MAIN LANDING GEAR NOSE LANDING GEAR PNEUMATIC (AIR START) VACUUM LAVATORY SERVICE L V
 - FUEL VENT
- Х PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

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9.3.10 Scaled Drawings – 1:1000: Model 737-700



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

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9.4 MODEL 737-700W, BBJ1

Scaled Drawings – 1 IN. = 32 FT: Model 737-700W 9.4.1



LEGEND

- AIR CONDITIONING
- CARGO DOOR
- A C E F ELECTRICAL
- FUEL
- G
- SERVICE DOOR POTABLE WATER H20
- MLG
- MAIN LANDING GEAR NOSE LANDING GEAR PNEUMATIC (AIR START) NG P
 - VACUUM LAVATORY SERVICE
- L FUEL VENT PASSENGER DOOR ٧
- X
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.4.2 Scaled Drawings – 1 IN. = 32 FT: Model 737 BBJ1



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

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9.4.3 Scaled Drawings - 1 IN. = 50 FT: Model 737-700W, BBJ1



LEGEND

- AIR CONDITIONING
- CARGO DOOR ELECTRICAL
- A C E F G
- FUEL
- SERVICE DOOR POTABLE WATER
- H20
- MAIN LANDING GEAR NOSE LANDING GEAR MLG NG
- Ρ
- PNEUMATIC (AIR START) VACUUM LAVATORY SERVICE
- L V FUEL VENT
- PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

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9.4.4 Scaled Drawings – 1 IN. = 50 FT: Model 737-700W, BBJ1



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

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9.4.5 Scaled Drawings - 1 IN. = 100 FT: Model 737-700W, BBJ1



NOTE:

SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

А	AIR CONDITIONING
С	CARGO DOOR
E	ELECTRICAL
F	FUEL
G	SERVICE DOOR
H20	POTABLE WATER
MLG	MAIN LANDING GEAR
NG	NOSE LANDING GEAR
Р	PNEUMATIC (AIR START)
L	VACUUM LAVATORY SERVICE
V	FUEL VENT
Х	PASSENGER DOOR
NOTE:	FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

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9.4.6 Scaled Drawings – 1 IN. = 100 FT: Model 737-700W, BBJ1



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

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9.4.7 Scaled Drawings - 1:500: Model 737-700W, BBJ1



LEGEND

- AIR CONDITIONING А
- C E CARGO DOOR
 - ELECTRICAL
- F FUEL G
- SERVICE DOOR POTABLE WATER
- H20
- MAIN LANDING GEAR NOSE LANDING GEAR MLG
- NG Ρ
- PNEUMATIC (AIR START) VACUUM LAVATORY SERVICE L
- ۷
- FUEL VENT PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.4.8 Scaled Drawings – 1:500: Model 737-700W, BBJ1



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

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Scaled Drawings – 1:1000: Model 737-700W, BBJ1 9.4.9





SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

- AIR CONDITIONING
- A C E F CARGO DOOR
- ELECTRICAL
- FUEL
- G SERVICE DOOR H₂O POTABLE WATER
- MAIN LANDING GEAR NOSE LANDING GEAR MLG
- NG Ρ
- PNEUMATIC (AIR START) L
- VACUUM LAVATORY SERVICE FUEL VENT PASSENGER DOOR
- v Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

December 2024

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9.4.10 Scaled Drawings - 1:1000: Model 737-700W, BBJ1



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

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9.5 MODEL 737-800

Scaled Drawings - 1 IN. = 32 FT: Model 737-800 9.5.1



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

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9.5.2 Scaled Drawings – 1 IN. = 32 FT: Model 737-800



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

D6-58325-7

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9.5.3 Scaled Drawings - 1 IN. = 50 FT: Model 737-800

LEGEND

- AIR CONDITIONING A
- CARGO DOOR
- C E F ELECTRICAL
- FUEL
- G SERVICE DOOR
- H20 POTABLE WATER
- MLG MAIN LANDING GEAR
- NOSE LANDING GEAR NG
- Ρ PNEUMATIC (AIR START)
- VACUUM LAVATORY SERVICE L
- ۷ FUEL VENT χ
- PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

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9.5.4 Scaled Drawings – 1 IN. = 50 FT: Model 737-800



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

D6-58325-7

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9.5.5 Scaled Drawings – 1 IN. = 100 FT: Model 737-800



NOTE:

SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

- AIR CONDITIONING А
- С CARGO DOOR ELECTRICAL
- Ε F FUEL
- G
- SERVICE DOOR POTABLE WATER
- H20
- MLG MAIN LANDING GEAR
- NG NOSE LANDING GEAR
- PNEUMATIC (AIR START) VACUUM LAVATORY SERVICE Ρ
- L
- ۷ FUEL VENT
- Х PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

D6-58325-7

9.5.6 Scaled Drawings – 1 IN. = 100 FT: Model 737-800



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

D6-58325-7

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9.5.7 Scaled Drawings - 1:500: Model 737-800



LEGEND

- AIR CONDITIONING А
 - CARGO DOOR
- C E ELECTRICAL
- F G FUEL
- SERVICE DOOR POTABLE WATER
- H20
- MLG MAIN LANDING GEAR NG
- NOSE LANDING GEAR Ρ PNEUMATIC (AIR START)
- VACUUM LAVATORY SERVICE L
- V FUEL VENT
- PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

D6-58325-7

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9.5.8 Scaled Drawings – 1:500: Model 737-800



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

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9.5.9 Scaled Drawings – 1:1000: Model 737-800



NOTE:

SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

- AIR CONDITIONING CARGO DOOR
- A C
- E F ELECTRICAL
- FUEL G
- SERVICE DOOR POTABLE WATER H20
- MLG MAIN LANDING GEAR NOSE LANDING GEAR NG
- P PNEUMATIC (AIR START)
- VACUUM LAVATORY SERVICE L
- ٧ FUEL VENT
- PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.5.10 Scaled Drawings - 1:1000: Model 737-800



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

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9.6 MODEL 737-800W, BBJ2

9.6.1 Scaled Drawings – 1 IN. = 32 FT: Model 737-800W, BBJ2



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

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

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9.6.3 Scaled Drawings – 1 IN. = 50 FT: Model 737-800W, BBJ2

LEGEND

4	AIR	CONDITIONING

- CARGO DOOR
- ELECTRICAL
- A C E F FUEL
- G SERVICE DOOR H₂O POTABLE WATER
- МĹG MAIN LANDING GEAR
- NG
- NOSE LANDING GEAR PNEUMATIC (AIR START) Ρ
- L V VACUUM LAVATORY SERVICE
- FUEL VENT
- χ PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

D6-58325-7

9.6.4 Scaled Drawings – 1 IN. = 50 FT: Model 737-800W, BBJ2



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

D6-58325-7

REV B

December 2024

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Scaled Drawings – 1 IN. = 100 FT: Model 737-800W, BBJ2 9.6.5





SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

- AIR CONDITIONING А
- С CARGO DOOR
- Е ELECTRICAL
- FG FUEL
- G SERVICE DOOR H₂O POTABLE WATER
- MLG
- MAIN LANDING GEAR NOSE LANDING GEAR NG
- Ρ PNEUMATIC (AIR START)
- L VACUUM LAVATORY SERVICE
- ٧
- FUEL VENT PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.6.6 Scaled Drawings – 1 IN. = 100 FT: Model 737-800W, BBJ2



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

D6-58325-7

REV B

December 2024





LEGEND

4	AIR	CONDITIONING
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- CARGO DOOR
- C E F ELECTRICAL
- FUEL
- G SERVICE DOOR
- H20 POTABLE WATER
- MLG
- NG
- MAIN LANDING GEAR NOSE LANDING GEAR PNEUMATIC (AIR START) VACUUM LAVATORY SERVICE Ρ
- L ۷
- FUEL VENT χ
- PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

D6-58325-7

9.6.8 Scaled Drawings – 1:500: Model 737-800W, BBJ2



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

D6-58325-7

December 2024

9.6.9 Scaled Drawings - 1:1000: Model 737-800W, BBJ2



SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

- А AIR CONDITIONING
- С CARGO DOOR ELECTRICAL
- Е F
- FUEL
- G SERVICE DOOR H₂O POTABLE WATER
- MLG MAIN LANDING GEAR
- NG
- NOSE LANDING GEAR PNEUMATIC (AIR START) Ρ
- L VACUUM LAVATORY SERVICE
- ٧ FUEL VENT
- Х PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.6.10 Scaled Drawings - 1:1000: Model 737-800W, BBJ2



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

D6-58325-7

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9.7 MODEL 737-900, -900ER

9.7.1 Scaled Drawings – 1 IN. = 32 FT: Model 737-900, -900ER



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

D6-58325-7

9.7.2 Scaled Drawings – 1 IN. = 32 FT: Model 737-900, -900ER



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

December 2024


9.7.3 Scaled Drawings – 1 IN. = 50 FT: Model 737-900, -900ER

LEGEND

- AIR CONDITIONING А
- CARGO DOOR C E F
- ELECTRICAL
- FUEL G
- SERVICE DOOR H20 POTABLE WATER
- MLG
- MAIN LANDING GEAR NG NOSE LANDING GEAR
- Ρ
- PNEUMATIC (AIR START) VACUUM LAVATORY SERVICE
- L V FUEL VENT
- PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.7.4 Scaled Drawings – 1 IN. = 50 FT: Model 737-900, -900ER



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

D6-58325-7

REV B

December 2024

9.7.5 Scaled Drawings – 1 IN. = 100 FT: Model 737-900, -900ER



NOTE:

SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

- AIR CONDITIONING А
- С CARGO DOOR
- Е ELECTRICAL
- F FUEL
- SERVICE DOOR POTABLE WATER G
- H20
- MLG MAIN LANDING GEAR
- NOSE LANDING GEAR NG PNEUMATIC (AIR START) Ρ
- VACUUM LAVATORY SERVICE L
- V FUEL VENT
- Х PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

D6-58325-7

9.7.6 Scaled Drawings – 1 IN. = 100 FT: Model 737-900, -900ER



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

D6-58325-7

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December 2024





LEGEND

- AIR CONDITIONING
- A C CARGO DOOR
- Ē F ELECTRICAL
- FUEL
- G SERVICE DOOR
- POTABLE WATER H20
- MLG
- MAIN LANDING GEAR NOSE LANDING GEAR NG
- Ρ PNEUMATIC (AIR START)
- VACUUM LAVATORY SERVICE L
- ۷ FUEL VENT
- PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.7.8 Scaled Drawings – 1:500: Model 737-900, -900ER



D6-58325-7

December 2024

9.7.9 Scaled Drawings - 1:1000: Model 737-900, -900ER



SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

- AIR CONDITIONING
- А CARGO DOOR С
- ELECTRICAL
- E F FUEL
- G SERVICE DOOR
- H₂O POTABLE WATER
- MLG MAIN LANDING GEAR
- NG
- NOSE LANDING GEAR PNEUMATIC (AIR START) VACUUM LAVATORY SERVICE Ρ
- L
- FUEL VENT ٧ Х
- PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.7.10 Scaled Drawings - 1:1000: Model 737-900, -900ER



9.8 MODEL 737-900W, -900ERW

9.8.1 Scaled Drawings – 1 IN. = 32 FT: Model 737-900W, -900ERW



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





D6-58325-7

December 2024



9.8.3 Scaled Drawings - 1 IN. = 50 FT: Model 737-900W, -900ERW

LEGEND

- AIR CONDITIONING А
- C E CARGO DOOR
- ELECTRICAL
- F FUEL
- G SERVICE DOOR
- POTABLE WATER H20
- MLG MAIN LANDING GEAR
- NOSE LANDING GEAR NG
- Ρ PNEUMATIC (AIR START) L
- VACUUM LAVATORY SERVICE
- ۷ FUEL VENT
- PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

D6-58325-7

9.8.4 Scaled Drawings – 1 IN. = 50 FT: Model 737-900W, -900ERW



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

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9.8.5 Scaled Drawings – 1 IN. = 100 FT: Model 737-900W, -900ERW





LEGEND

- AIR CONDITIONING А
- С CARGO DOOR
- Ε ELECTRICAL
- F FUEL
- G
- SERVICE DOOR POTABLE WATER H20
- MLG
- MAIN LANDING GEAR NOSE LANDING GEAR NG Ρ
- PNEUMATIC (AIR START)
- VACUUM LAVATORY SERVICE L
- ۷
- FUEL VENT PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

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9.8.6 Scaled Drawings – 1 IN. = 100 FT: Model 737-900W, -900ERW



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

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December 2024





LEGEND

- AIR CONDITIONING
- CARGO DOOR
- A C E F ELECTRICAL
- FUEL
- G SERVICE DOOR
- POTABLE WATER H20
- MLG MAIN LANDING GEAR
- NOSE LANDING GEAR NG PNEUMATIC (AIR START) Ρ
- L VACUUM LAVATORY SERVICE
- ٧ FUEL VENT
- Х PASSENGER DOOR
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

9.8.8 Scaled Drawings – 1:500: Model 737-900W, -900ERW



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

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December 2024

9.8.9 Scaled Drawings – 1:1000: Model 737-900W, -900ERW



SEE CORRESPONDING PAGE FOR 1 IN = 32 FT FOR IDENTIFICATIONS OF SERVICE POINTS

LEGEND

- AIR CONDITIONING А
- С CARGO DOOR
- E F ELECTRICAL
- FUEL
- G
- SERVICE DOOR POTABLE WATER H20
- MLG MAIN LANDING GEAR
- NG NOSE LANDING GEAR
- PNEUMATIC (AIR START) Ρ
- VACUUM LAVATORY SERVICE L
- ٧ FUEL VENT
 - PASSENGER DOOR Х
- NOTE: FOR TURNING RADIUS DATA SEE SECTIONS 4.2 AND 4.3

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

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9.8.10 Scaled Drawings - 1:1000: Model 737-900W, -900ERW



D6-58325-7

December 2024