DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

A6WE
Revision 24
McDonnell Douglas
DC-9-11, DC-9-12, DC-9-13,
DC-9-14, DC-9-15, DC-9-15F,
DC-9-21, DC-9-31, DC-9-32,
DC-9-32 (VC-9C), DC-9-32F,
DC-9-32F (C-9A, C-9B)
DC-9-33F, DC-9-34, DC-9-34F
DC-9-41, DC-9-51, DC-9-81,
DC-9-82, DC-9-83, DC-9-87
MD-88, MD-90-30
NOVEMBER 4, 1994

TYPE CERTIFICATE DATA SHEET NO. A6WE

This data sheet, which is a part of Type Certificate No. A6WE, prescribes conditions and limitations under which the product for which the Type Certificate was issued meets the airworthiness requirements of the Civil Air Regulations and Federal Aviation Regulations.

Type Certificate Holder: McDonnell Douglas Corporation
Long Beach, California

I - Models DC-9-11, -12, -13, -14 (Transport Aircraft) approved November 23, 1965; Model DC-9-15 (Transport Aircraft) approved January 21, 1966; (See NOTE 9 for conversions, Models DC-9-11, -12, -13 and -14).

Engines

2 Pratt and Whitney Turbojet JT8D-1, JT8D-1A, JT8D-1B, JT8D-5, JT8D-7, JT8D-7A, JT8D-7B, JT8D-9, JT8D-9A, JT8D-11, JT8D-15 or JT8D-17 (See NOTE 5 regarding intermixing of engines).

Fuel

Commercial Aircraft Turbine Fuel conforming to P&W Specification 522 as revised. (See NOTE 7).

Engine Limits

See Section II, Model DC-9-31 for JT8D-9, 9A or -15 engines.
See Section VIII, Model DC-9-21, for JT8D-11 engines.
See Section IX, Model DC-9-51, for JT8D-17 engines.

P&W JT8D-1, JT8D-1A, JT8D-1B, JT8D-7, JT8D-7A and JT8D-7B

Static Thrust, S.L.

Take-off (5 min.)(JT-8D-1 Std. Day)(JT8-D-7 Flat Rated to 84°F)	14,000 lbs.
Maximum Continuous	12,600 lbs.

Maximum permissible engine rotor operating speeds:

N_1 (Low Compressor)	8,600 rpm (100.1%)
N_2 (High Compressor)	12,250 rpm (100%)

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I - Models DC-9-11, -12, -13, -14 (cont'd)

P&W JT8D-1, JT8D-1A, JT8D-1B, JT8D-7, JT8D-7A and JT8D-7B (cont'd)

Maximum permissible temperatures:

Turbine exhaust gas	JT8D-1, -7	JT8D-1A, -7A	JT8D-1B, -7B
Take-off (5 min.)	570°C 1,058°F	580°C 1,076°F	590°C 1,094°F
Maximum Continuous	535°C 995°F	540°C 1,004°F	545°C 1,013°F
Maximum Acceleration	570°C 1,058°F	580°C 1,076°F	590°C 1,094°F

Starting - At ambient temperatures of:		
15°C and above	420°C	788°F
below 15°C	350°C	662°F
Oil Inlet (continuous operation)	120°C	248°F
Oil Inlet (15 min. max.)	157°C	315°F

P&W JT8D-5

Static Thrust, S.L.	
Take-off (5 min.)(Flat Rated to 90°F)	12,250 lbs.
Maximum Continuous(Std. Day)	12,250 lbs.

Maximum permissible engine rotor operating speeds:	
N_1 (Low Compressor)	8,500 rpm (98.9%)
N_2 (High Compressor)	12,100 rpm (98.8%)

Maximum permissible temperatures:		
Turbine exhaust gas		
Take-off (5 min.)	555°C	1031°F
Maximum Continuous	535°C	995°F
Maximum Acceleration	555°C	1031°F
Starting - At ambient temperatures of:		
15°C and above	420°C	788°F
below 15°C	350°C	662°F
Oil Inlet (continuous operation)	120°C	248°F
Oil Inlet (15 min. max.)	157°C	315°F

APU Limits (if installed)

AiResearch	GTCP85-98D or -98W		GTCP85-98DC[A], 98DC[B], or 98DC[C]	
Maximum permissible EGT temperatures:				
Starting (30 seconds)	760°C	1398°F	760°C	1398°F
Idle (no load)(continuous)	---	----	---	----
Maximum load (continuous)	710°C	1270°F	677°C	1251°F
Transient overload	732°C	1350°F	710°C	1270°F
Maximum rotor speed - all conditions		110%		110%

See Section IX, Model DC-9-51 for GTCP85-98DCK.
See Section XII, Model DC-9-81 for GTCP85-98DHF.

Airspeed Limits (CAS)

V_{MO} (Normal Operating - 25,850' to 35,000')		M=0.84
V_A (Maneuvering - S.L.)	220K	
V_A (Maneuvering - 35,000') (See AFM for variation in V_A speed vs. alt.)	249K	
V_{FE} (Flaps down 0° to 10°)	280K	M=0.57
(Flaps down 10° to 20°)	240K	M=0.57
(Flaps down 20° to 30°)	210K	M=0.57
(Flaps down 30° to 50°)	180K	M=0.57
V_{LO} (Landing gear operation)	215K	M=0.51
V_{LE} (Landing gear extended)	215K	M=0.51

I - Models DC-9-11, -12, -13, -14 (cont'd)

Airspeed Limits (CAS) (cont'd)

V_{LO} (Landing gear operation)		
(Gear retraction)	250K (1)	M=0.70
(Gear extension)	300K (1)	M=0.70
V_{LE} (Landing gear extended)	300K (1)	M=0.70
V (Landing light extension)	V_{MO}/M_{MO}	

(1) Airspeed limits after DC-9 Service Bulletin No. 32-50, or production equivalent, has been accomplished.

C.G. Range

	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
Gross Weight Pounds	Forward	Aft	Forward	Aft
44,000	569.4	604.6	566.3	604.6
77,000	--	604.6	--	--
78,000	569.4	--	567.7	--
79,000	--	601.7	--	604.6
81,000	--	598.9	--	601.7
81,700	570.4	--	--	--
87,000	571.3	--	569.8	--
90,700		585.2	569.8	588.0
91,500	571.3	584.1		

(1) Straight line variation between weights shown. Landing gear retraction moment is -38,813 in.-lb. Moves C.G. Fwd. When the aircraft is loaded within the above limits and the effect of landing gear retraction and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within approved C.G. limits. (See NOTE 1(b) and (e)).

Maximum Weights

Taxi and Ramp	91,500 lbs. (1)(2)
Start of Take-off	90,700 lbs. (1)(2)(4)
Zero Fuel	74,000 lbs. (3)
Landing	81,700 lbs.

(1) 20 ply rating main gear tires required for weights 85,700 lbs and above.
(2) Brake Assembly P/N 9560743 must be installed for weights above 86,300 lbs.
(3) All weight above this value must be fuel in main tanks.
(4) Dump system not required (See exemption under Certification Basis).

Minimum Crew

For all flights: Pilot and Copilot.

Maximum Passengers

See NOTES 6 and 8.

Maximum Baggage

Compartment	Fuselage Station	Capacity (lbs)	Max. Loading lb/ft^2	Max. Loading lb.in.	H-Arm Sta.
Fwd. Belly	218-482.5	5595	150	34.0	352.1
Aft Belly	[646-715	----	---	34.0	-----
	715-817]	3405	150	27.0	724.9
With 1780 Gal. Fuselage Tank (DC-9-15)					
Fwd. Belly	218-373	3900(1)	150	34.0	286.8
Aft Belly	646-817	(no cargo)	---	---	---

Above values satisfactory for a maximum of 5 abreast seating and a minimum seat spacing of 29 inches.

(1) With fuselage tank empty or fueled.

I - Models DC-9-11, -12, -13, -14 (cont'd)

Fuel Capacity	Total	Usable	H-Arm Sta.
#1 and #2 Main Tank	9947 lbs. ea.	9892 lbs. ea.	585.7
Center Wing Tank	6518 lbs.	6442 lbs.	535.8
Fwd. Fuselage Tank (780 gal.) (1)	5543 lbs.	5538 lbs.	421.0
Aft Fuselage Tank (1000 gal.) (1)	7109 lbs.	7100 lbs.	706.5

(1) Eligible for installation in Model DC-9-15 airplane (S/N 47151) only.

Fuel weights based upon fuel density of 7.1 lbs./gal. (See NOTE 1(c) for system fuel; NOTE 1(d) for unusable fuel; NOTE 1(e) for fuel loading and usage procedures).

Oil Capacity		H-Arm Sta.
Engine Oil	31.0 lbs. ea.	771.0
CSD	9.4 lbs. ea.	811.0
APU (if installed)	7.75 lbs. ea.	856.5

Oil weight based upon 7.74 lbs./gal. (See NOTE 1(c) for system oil).

Serial Nos. Eligible

DC-9-11: None
DC-9-12: None
DC-9-13: None
DC-9-14: 45695-45709, 45711-45716, 45725-45730, 45735-45737, 45742-45749, 45770, 45771, 45795, 45796, 45825, 45829-45832, 45842-45844, 47043, 47049, 47056, 47060, 47081, 47309.
DC-9-15: 45717-45724, 45731, 45732, 45738-45741, 45772, 45773, 45775, 45776, 45778-45787, 45797-45799, 45841, 47000-47002, 47033-47035, 47048, 47059, 47063, 47064, 47078, 47085, 47100, 47122-47127, 47151, 47204-47206.
DC-9-11: S/Ns 45728-45730 modified to DC-9-14 (See NOTE 11).
DC-9-12: S/N 47056 modified to DC-9-14 (See NOTE 11).

II - Model DC-9-31 (Transport Aircraft) approved December 19, 1966.

Engines

2 Pratt and Whitney Turbojet JT8D-1, JT8D-1A, JT8D-1B, JT8D-5, JT8D-7, JT8D-7A, JT8D-7B, JT8D-9, JT8D-9A, JT8D-11, JT8D-15, JT8D-15A, JT8D-17, or JT8D-17A (See NOTE 5 regarding intermixing of engines).

Fuel Commercial Aircraft Turbine Fuel conforming to PWA Specification 522 as revised. (See NOTE 7).

Engine Limits

See Section I, Models DC-9-11, -12, -13, -14, -15, for JT8D-1, -1A, -1B, -5, -7, -7A or -7B engines.
See Section VIII, Model DC-9-21, for JT8D-11 engines.
See Section IX, Model DC-9-51 for JT8D-17, or JT8D-17A engines.

P&W JT8D-9 and JT8D-9A

Static Thrust, S.L.

Take-off (5 min.)(Flat Rated to 84°F)	14,500 lbs.			
Maximum continuous(Std. Day)	12,600 lbs.			
Maximum permissible engine rotor operating speeds:				
N_1 (Low compressor)	8,600 rpm (100.1%)			
N_2 (High Compressor)	12,250 rpm (100%)			
Maximum permissible temperatures:				
Turbine exhaust gas	JT8D-9		JT8D-9A	
Take-off (5 min.)	580°C	1076°F	590°C	1094°F
Maximum Continuous	540°C	1004°F	545°C	1013°F
Maximum Acceleration	580°C	1076°F	590°C	1094°F
Starting - At ambient temperatures of:				
15° and above	420°C	788°F		
above 15°C	350°C	662°F		
Oil Inlet (continuous operation)	120°C	248°F		
Oil Inlet (15 min. max.)	157°C	315°F		

II - Model DC-9-31 (cont'd)

P&W JT8D-15 and JT8D-15A

Static Thrust, S.L.	
Take-off (5 min.)(Flat Rated to 84°F)	15,500 lbs.
Maximum continuous(Std. Day)	13,750 lbs.
Maximum permissible engine rotor operating speeds:	
N_1 (Low compressor)	8,800 rpm (102.4%)
N_2 (High Compressor)	12,250 rpm (100%)

Maximum permissible temperatures:

Turbine exhaust gas		
Take-off (5 min.)	620°C	1148°F
Maximum Continuous	580°C	1076°F
Maximum Acceleration (2 min.)	630°C	1166°F
Starting -		
Ground	550°C	1022°F
Inflight	620°C	1148°F
Oil Inlet (continuous operation)	130°C	266°F
Oil Inlet (15 min. max.)	165°C	329°F

APU Limits (If installed)

See Section I,	Models DC-9-11, -12, -13, -14, -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], -98DC[B] and -98DC[C].
See Section IX,	Model DC-9-51 for GTCP85-98DCK.
See Section XII,	Model DC-9-81 for GTCP85-98DHF.

Airspeed Limits (CAS)

V_{MO}	(Normal Operating - S.L.)	350K	
V_{MO}	(Normal Operating - 23,500')	367K	M=0.84
V_{MO}	(Normal Operating - 23,500 to 35,000')		M=0.84
V_A	(Maneuvering - S.L.) (below 100,000 lbs.)	235K	244K (1)
V_A	(Maneuvering - 35,000') (below 100,000 lbs.)	258K	260K (1)
V_A	(Maneuvering - S.L.) (100,000 lbs. and up)	241K	
V_A	(Maneuvering - 35,000') (100,000 lbs. and up)	256K	
	(See AFM for variation in V_A speed vs. alt)		
V_{FE}	(Flaps down 0° to 10°)	280K	M=0.57
	(Flaps down 10° to 20°)	240K	M=0.57
	(Flaps down 20° to 25°)	210K	M=0.57
	(Flaps down 25° to 50°)	180K	M=0.57
V_{LO}	(Landing Gear operation)		
	(Gear retraction)	250K	M=0.70
	(Gear extension)	300K	M=0.70
V_{LE}	(Landing gear extended)	300K	M=0.70
V	(Landing light extension)	V_{MO}/M_{MO}	
V	(Slat operation or extended)		
	(S.L. to 15,540')	280K	M=0.57
	(Above 15,540')		M=0.57

(1) For airplanes with maximum takeoff gross weight 108,000 lbs.

II - Model DC-9-31 (cont'd)

C.G. Range

For Maximum Ramp Weight of 106,000 lbs. (2) (3)

Gross Weight Pounds	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
	Forward	Aft	Forward	Aft
52,000	667.2	709.7	662.8	709.7
89,000	667.2	--	664.6	--
94,000	--	709.7	--	709.7
103,400	670.8	--	--	--
105,000	672.0 (4)	693.5	669.0	693.5
106,000	672.7 (4)	692.0	--	--

For Maximum Ramp Weight of 109,000 lbs. (2) (3)

Gross Weight Pounds	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
	Forward	Aft	Forward	Aft
52,000	667.2	709.7	662.0	709.7
89,000	667.2	709.7	664.6	709.7
94,000	--	709.7	--	709.7
99,000	669.6	702.3	667.3	702.3
108,000	671.8	689.1 (5)	669.7	689.1 (5)
109,000	672.1	687.6 (5)	--	--

(1) Straight line variation between weights shown. Landing gear retraction moment is -48,900 in.-lb. Moves C.G. fwd. When the aircraft is loaded within the above limits and the effect of landing gear retraction, and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within the approved C.G. limits. (See NOTE 1(b) and (e)).

(2) Airplanes with ramp weight greater than 104,000 lbs. not approved for operations with low pressure tires.

(3) Airplanes with ramp weight greater than 104,000 lbs. must use 10 ply nose tires and 24 ply main tires.

(4) Forward C.G. limits may be extended to 671.1 @ 105,000 lbs. and 671.4 @ 106,000 lbs. when tires are installed in accordance with (3) above.

(5) Aft C.G. limits may be extended to 698.8 @ 108,000 lbs. and 697.6 @ 109,000 lbs. when tires are installed in accordance with (3) above.

Maximum Weights

Taxi and Ramp	106,000 lbs. (2)(3)	109,000 lbs.(3)
Start of Takeoff	105,000 lbs. (2)(3)	108,000 lbs.(3)
Zero Fuel	87,000 lbs. (1)	
Landing	99,000 lbs.	

(1) All weight above this value must be fuel in main tanks. Additional fuel may be added to the center wing tank when the main tanks are full to attain max. ramp weights.

(2) Maximum for Airplane Serial Numbers 45733, 45734, 45833, 45834, 47003, 47004, 47007.

(3) Seven (7) rotor disk brakes required for weights over 103,000 pounds.

Minimum Crew

For all flights: Pilot and Copilot.

Maximum Passengers

See NOTES 6 and 8.

II - Model DC-9-31 (cont'd)

Maximum Baggage

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading lb/ft^2	Max. Loading lb.in	H-Arm Sta.
Fwd. Belly	[218-370 370-596]	8430	150	26 34	408.9
Aft Belly	[760-897 897-996]	4995	150	34 18	868.4

Above values satisfactory for a maximum of 5 abreast seating and a minimum seat spacing of 29 inches.

Fuel Capacity

	Total	Usable	H-Arm Sta.
#1 and #2 Main Tank	9893 lbs. ea.	9838 lbs. ea.	699.6
Center Wing Tank	6518 lbs.	6442 lbs.	649.8

Fuel weights based upon fuel density of 7.1 lbs/gal. (See NOTE 1(c) for system fuel; NOTE 1(d) for usable fuel; NOTE 1(e) for fuel loading and usage procedures).

Oil capacity		H-Arm Sta.
Engine Oil	31.0 lbs. ea.	950.0
CSD	9.4 lbs. ea.	990.0
APU (if installed)	7.75 lbs. ea.	1035.5

Oil weight based upon 7.74 lbs./gal. (See NOTE 1(c) for system oil).

Serial Nos. Eligible

45733, 45734, 45833-45840, 45846, 45863-45876, 47003-47009, 47020, 47023, 47026, 47036, 47042, 47050-47054, 47057, 47058, 47065-47068, 47072-47075, 47082, 47083, 47095-47099, 47119-47121, 47130, 47134-47146, 47149, 47150, 47157-47167, 47171, 47181-47189, 47202, 47203, 47207-47212, 47214-47217, 47244-47256, 47263, 47264, 47267-47272, 47280, 47310, 47315, 47316, 47325-47338, 47343-47347, 47351, 47352, 47362, 47369-47375, 47382, 47389-47391, 47393, 47399-47406, 47411, 47412, 47415-47421, 47429, 47439-47441, 47487, 47490, 47491, 47501, 47505-47508, 47517, 47526-47528, 47547-47552, 47564, 47574, 47576, 47583, 47588-47590, 47593, 48114-48120, 48131, 48138-48147, 48154-48159.

DC-9-31, S/N 47442, 47450, 47566, 47572, 47573, 47638, 47647, 47649, 47664, 47720, 47721, and 47727 modified to DC-9-32 (See NOTE 11).

S/N 45846, 47020, 47023, 47026, 47068, 47351 and 47352 were DC-9-32 modified to DC-9-31 (See NOTE 11).

The following serial numbered airplanes demonstrated compliance at time of delivery with FAR 36 dated December 1, 1969 and Amendments 36-1 and 36-2: 47589, 48114-48120, 48131, 48138-48147, 48154-48159.

III - Model DC-9-15F (Transport Aircraft) Approved March 1, 1967.

Engines

2 Pratt and Whitney Turbojet JT8D-1, JT8D-1A, JT8D-1B, JT8D-5, JT8D-7, JT8D-7A, T8D-7B, JT8D-9, JT8D-9A, JT8D-11, JT8D-15 or JT8D-17 (See NOTE 5 regarding intermixing of engines).

Fuel

Commercial Aircraft Turbine Fuel conforming to P&W Specification 522 as revised. (See NOTE 7).

Engine Limits

See Section I, Models DC-9-11, -12, -13, -14, and -15 for JT8D-1, -1A, -1B, -5, -7, -7A, or -7B engines.
See Section II, Model DC-9-31 for JT8D-9, -9A or -15 engines.
See Section VIII, Model DC-9-21 for JT8D-11 engines.
See Section IX, Model DC-9-51 for JT8D-17 engines.

III - Model DC-9-15F (cont'd)

APU Limits (if installed)

See Section I, Models DC-9-11, -12, -13, -14, and -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B] and GTCP85-98DC[C].
See Section IX, Model DC-9-51 for GTCP85-98DCK.
See Section XII, Model DC-9-81 for GTCP85-98DHF.

Airspeed Limits

See Section I, Model DC-9-11, -12, -13, -14, and -15.

C.G Range

Gross Weight Pounds	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
	Forward	Aft	Forward	Aft
44,000	569.4	604.6	566.3	604.6
77,000	--	604.6	--	--
79,000	--	601.7	--	604.6
81,000	569.4	598.9	567.7	601.7
90,700	571.3	585.2	569.7	588.0
91,500	571.5	584.1		

(1) Straight line variation between weights shown. Landing gear retraction moment is -38,813 in.-lb. Moves C.G. fwd. When the aircraft is loaded within the above limits and the effect of landing gear retraction and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within approved C.G. limits. (See NOTE 1(b) and (e)).

Maximum Weights

Taxi and Ramp 91,500 lbs. (1)
Start of Takeoff 90,700 lbs. (1) (3)
Zero Fuel 74,000 lbs. (2)
Landing 81,700 lbs.

(1) With 20 ply rating main gear tires.
(2) All weight above this value must be fuel in main tanks.
(3) Dump system not required (See exemption under Certification Basis).

Minimum Crew For all flights: Pilot and Copilot.

Maximum Passengers See NOTES 6 and 8.

Maximum Baggage

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading lb/ft^2	Max. Loading lb/in	H-Arm Sta.
Fwd. Belly	218-482.5	5595	150	34.0	352.1
Aft Belly	[646-718	----	---	34.0	-----
	718-817]	3405	150	27.0	724.9

Above values satisfactory for a maximum of 5 abreast seating and a minimum seat spacing of 29 inches when operating as a passenger airplane.

For additional information concerning loading limitations when operating as a passenger airplane as well as when operating as a cargo or combination passenger/cargo airplane, see NOTE 1(a).

Fuel Capacity: See Section I, Models DC-9-11, -12, -13, -14, and -15.

Oil Capacity: See Section I, Models DC-9-11, -12, -13, -14, and -15.

Serial Nos. Eligible: 45826, 45828, 47010-47018, 47044, 47045, 47055, 47061, 47062, 47086, 47087, 47152-47156, 47240.

IV - Model DC-9-32 (Transport Aircraft) Approved March 1, 1967.

Engines

2 Pratt and Whitney Turbojet JT8D-1, JT8D-1A, JT8D-1B, JT8D-5, JT8D-7, JT8D-7A, JT8D-7B, JT8D-9, JT8D-9A, JT8D-11, JT8D-15, JT8D-15A, JT8D-17, or JT8D-17A (See NOTE 5 regarding intermixing of engines).

Fuel

Commercial Aircraft Turbine Fuel conforming to P&W Specification 522 as revised. (See NOTE 7)

Engine Limits

See Section I,	Models DC-9-11, -12, -13, -14, -15 for JT8D-1, -1A, -1B, -5, -7, -7A, or -7B engines.
See Section II,	Model DC-9-31 for JT8D-9, -9A, -15, or -15A engines.
See Section VIII,	Model DC-9-21 for JT8D-11 engines.
See Section IX,	Model DC-9-51 for JT8D-17, or -17A engines.

APU Limits (if installed)

See Section I,	Models DC-9-11, -12, -13, -14, -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B] and GTCP85-98DC[C].
See Section IX,	Model DC-9-51 for GTCP85-98DCK.
See Section XII,	Model DC-9-81 for GTCP85-98DHF.

Airspeed Limits (CAS)

V_{MO}	(Normal Operating - S.L.)	350K	
V_{MO}	(Normal Operating - 25,850')	350K	M=0.84
V_{MO}	(Normal Operating - 25,850 to 35,000')		M=0.84
V_A	(Maneuvering - S.L.) (below 100,000 lbs.)	235K	
V_A	(Maneuvering - 35,000') (below 100,000 lbs.)	257K	
V_A	(Maneuvering - S.L.) (100,000 to 108,000 lbs.)	245K	
V_A	(Maneuvering - S.L.) (above 108,000 lbs.)	250.4K	
V_A	(Maneuvering - 35,000') (above 108,000 lbs.)	262.5K	
	(See AFM for variation in V_A speed vs. alt)		
V_{FE}	(Flaps down 0° to 10°)	280K	M=0.57
	(Flaps down 10° to 20°)	240K	M=0.57
	(Flaps down 20° to 25°)	210K	M=0.57
	(Flaps down 25° to 50°)	180K	M=0.57
V_{LO}	(Landing Gear operation)		
	(Gear retraction)	250K	M=0.70
	(Gear extension)	300K	M=0.70
V_{LE}	(Landing gear extended)	300K	M=0.70
V	(Landing light extension)	V_{MO}/M_{MO}	
V	(Slat operation or extended)		
	(S.L. to 15,540')	280K	M=0.57
	(Above 15,540')		M=0.57

C.G. Range

For maximum ramp weight of 109,000 lbs.

Gross Weight	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
Pounds	Forward	Aft	Forward	Aft
58,000	667.2	709.7	663.3	709.7
89,000	667.2	--	664.6	--
94,000	--	709.7	--	709.7
108,000	668.9	689.1	666.7	689.1
109,000	668.9	687.6		

IV - Model DC-9-32 cont'd)

C.G. Range (continued)

For maximum ramp weight of 111,000 lbs.

Gross Weight Pounds	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
	Forward	Aft	Forward	Aft
58,000	667.2	709.7	663.3	709.7
89,000	--	--	664.6	--
94,000	--	709.7	--	709.7
96,000	667.2	--	--	
100,200	--	708.2	--	708.2
109,000	--	697.6	--	697.6
110,000	672.5	694.8	670.3	694.8
111,000	672.8	691.9		

(1) Straight line variation between weights shown. Landing gear retraction moment is -48,900 in.-lb. Moves C.G. fwd. When the aircraft is loaded within the above limits and the effect of landing gear retraction, and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within approved C.G. limits. (See NOTE 1(b) and (e)).

Maximum Weights

		ALTERNATE CONFIGURATION (3)	VC-9C (4)
Taxi and Ramp	109,000 lbs.	111,000 lbs.	111,000 lbs,
Start of Takeoff	108,000 lbs. (2)	110,000 lbs, (2)	110,000 lbs. (2)
Zero Fuel	89,000 lbs. (1)	92,000 lbs. (1)	92,000 lbs. (1)
Landing	99,000 lbs.	102,000 lbs. (5)	99,000 lbs.

(1) All weight above this value must be fuel in main tanks. Additional fuel may then be added to the center wing and/or forward fuselage tank (if installed) when the main tanks are full to attain max. ramp weight.
(2) Dump system not required (See exemption under Certification Basis).
(3) Passenger seating limited to 5 abreast between stations 222 and 935 with a minimum spacing of 31 inches.
(4) Passenger seating limited to 5 abreast between stations 213 and 857 with minimum seat spacing of 36 inches (for VC-9C).
(5) See NOTE 3 for nose landing gear component safe life limits.

Minimum Crew For all flights: Pilot and copilot.

Maximum Passengers See NOTES 6 and 8.

Maximum Baggage

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading lb/ft^2	Max. Loading lb/in	H-Arm Sta.
Fwd. Belly	[218-370 370-596]	8430	150	26 34	408.9
Fwd. Belly	[218-370 370-511]	(1)	150	24.2 34	361.5
Aft Belly	[760-897 897-996]	4995	150	34 18	868.4
With 1780 Gal. Fuselage Tank (108,000 lbs. maximum ramp weight only)					
Fwd. Belly	[218-370 370-487]	(2)	150	26 34	347.3
Aft Belly	[881-897 897-996]	(3)	150	24 18	946.8
With 2250 Gal. Fuselage Tank (VC-9C Only)					
Fwd. Belly	[218-432]	(4)	150	27.85	314.6
Aft Belly	[882-996]	(5)	150	23.70	938.2

IV - Model DC-9-32 cont'd)

Maximum Baggage (cont'd)

Above values satisfactory for a maximum of 5 abreast seating and a minimum seat spacing of 29 inches (alternate configuration of 111,000 lbs. maximum ramp weight has a minimum seat spacing of 31 inches). Alternate configuration of 111,000 lbs. maximum ramp weight with 2250 gallon fuselage tank installation has a minimum seat spacing of 36 inches.

(1) With 580 gal. fwd. fuselage tank, 7215 lbs. with fuselage tank empty and 6330 lbs. with fuselage tank fueled (up to full).
(2) With 780 gal. fwd. fuselage tank, 6655 lbs. with fuselage tank empty and 5760 lbs. with fuselage tank fueled.
(3) With 1000 gal. aft fuselage tank, 2106 lbs. with fuselage tank empty and 2025 lbs. with fuselage tank fueled.
(4) With 1250 gal. fwd. fuselage tank (and 1000 gal. aft fuselage tank), 5960 lbs. with fwd. fuselage tank empty or fueled.
(5) With 1000 gal. aft fuselage tank (and 1250 gal. fwd. fuselage tank), 2700 lbs. with aft fuselage tank empty or fueled.

Fuel Capacity

	Total	Usable	H-Arm Sta
#1 and #2 Main Tank	9893 lbs. ea.	9838 lbs. ea	699.6
Center Wing Tank	6518 lbs.	6442 lbs.	649.8
Fwd. Fuselage Tank (580 gal) or	4122 lbs.	4118 lbs.	547.0
Fwd. Fuselage Tank (780 gal) *	5543 lbs.	5538 lbs.	535.0
Aft Fuselage Tank (1000 gal) *	7109 lbs.	7100 lbs.	820.5
Fwd. Fuselage Tank (1250 gal)*	8903 lbs.	8875 lbs.	507.7

* (if installed)

Fuel weights based upon fuel density of 7.1 lbs./gal. (See NOTE 1(c) for system fuel; NOTE 1(d) for unusable fuel; NOTE 1(e) for fuel loading and usage procedures).

Oil Capacity

See Section II, Model DC-9-31

Serial Nos. Eligible

45710, 45774, 45788-45793, 45827, 45845, 45847, 47019, 47021, 47022, 47024, 47025, 47027-47032, 47037-47039, 47046, 47047, 47069-47071, 47076, 47077, 47079, 47080, 47084, 47088-47094, 47101-47113, 47118, 47128, 47129, 47131-47133, 47168-47170, 47172-47177, 47190, 47195-47201, 47213, 47218, 47219, 47222-47239, 47243, 47257-47262, 47265, 47266, 47273-47278, 47281-47285, 47289, 47290, 47292-47294, 47311-47314, 47317-47324, 47339-47342, 47348-47350, 47353, 47354, 47356-47359, 47364, 47365, 47368, 47376-47381, 47383, 47385, 47386, 47392, 47394, 47397, 47422-47427, 47430-47438, 47442-47447, 47450-47461, 47463, 47466, 47468-47470, 47472-47474, 47477-47482, 47484-47486, 47488, 47489, 47500, 47502-47504, 47514, 47516, 47518-47525, 47529, 47531-47535, 47539, 47542-47544, 47546, 47553-47557, 47559-47563, 47566-47573, 47575, 47579, 47582, 47591, 47592, 47594, 47595, 47598, 47600-47602, 47607, 47609, 47611, 47621, 47622, 47635-47645, 47647-47650, 47653, 47664, 47666, 47667, 47669, 47672-47675, 47678, 47680, 47701, 47720-47723, 47727, 47730, 47734, 47740.

47741, 47744, 47765, 47788-47795, 47797-47799, 48111-48113, 48125-48130, 48132, 48133, 48150, 48151.

S/N 47442, 47450, 47566, 47572, 47573, 47638, 47647, 47649, 47664, 47720, 47721, and 47727 were DC-9-31 modified to DC-9-32 (See NOTE 11).

DC-9-32, S/N 45846, 47020, 47023, 47026, 47068, 47351 and 47352 modified to DC-9-31 (See NOTE 11).

DC-9-32 (VC-9C)

47668, 47670, 47671.

The following serial numbered airplanes demonstrated compliance at time of delivery with FAR 36 dated December 1, 1969 and Amendments 36-1 and 36-2.

47592, 47594, 47598, 47601, 47602, 47607, 47609, 47611, 47621, 47622, 47635-47645, 47647-47650, 47653, 47664, 47666-47675, 47678, 47680, 47701, 47720-47723, 47727, 47730, 47734, 47740, 47741, 47744, 47765, 47788-47795, 47797-47799, 48111-48113, 48125-48130, 48132-48133, 48150, 48151.

V - Model DC-9-32F (Transport Aircraft) Approved October 4, 1967.

(C-9A, C-9B, See NOTE 10 Regarding Certification).

Engines

2 Pratt and Whitney Turbojet JT8D-1, JT8D-1A, JT8D-1B, JT8D-5, JT8D-7, JT8D-7A, JT8D-7B, JT8D-9, JT8D-9A, JT8D-11, JT8D-15, JT8D-15A, JT8D-17 or JT8D-17A. (See NOTE 5 regarding intermixing of engines).

Fuel

Commercial Aircraft Turbine Fuel conforming to P&W Specification 522 as revised. (See NOTE 7).

Engine Limits

See Section I,	Models DC-9-11, -12, -13, -14, -15 for JT8D-1, -1A, -1B, -5, -7, -7A or -7B engines.
See Section II,	Model DC-9-31 for JT8D-9, -9A, -15, or -15A engines.
See Section VIII,	Model DC-9-21 for JT8D-11 engines.
See Section IX,	Model DC-9-51 for JT8D-17, or -17A engines.

APU Limits (if installed)

See Section I,	Models DC-9-11, -12, -13, -14, -15 for GTCP85-98D, GTCP85-98W, GTCP85- 98DC[A], GTCP85-98DC[B] and GTCP85-98DC[C].
See Section IX,	Model DC-9-51 for GTCP85-98DCK.
See Section XII,	Model DC-9-81 for GTCP85-98DHF.

Airspeed Limits

(1) For Model DC-9-32F (All-passenger and All-cargo configurations, and DC-9-32F (C-9B)), see Airspeed Limits as specified for Model DC-9-32.

(2) For Model DC-9-32F (C-9A Aeromed), See Airspeed Limits as specified for Model DC-9-31.

C.G. Range

For Model DC-9-32F All passenger configuration, all-cargo configuration, Passenger/Cargo passenger/cargo configuration and C-9B configuration.

Gross Weight	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
Pounds	Forward	Aft	Forward	Aft
58,000	667.2	709.7	663.3	709.7
89,000	--	--	664.6	--
94,000	--	709.7	--	709.7
96,000	667.2	--	--	--
100,200	--	708.2	--	708.2
109,000	--	697.6	--	697.6
110,000	672.5	694.8	670.3	694.8
111,000	672.8	691.9	--	--

For Model DC-9-32F, (C-9A Aeromed configuration)

Gross Weight	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
Pounds	Forward	Aft	Forward	Aft
58,000	667.2	709.7	663.3	709.7
89,000	--	--	664.6	--
94,000	--	709.7	--	709.7
96,000	667.2	--	--	--
100,200	--	708.2	--	708.2
108,000	671.8	698.8	669.7	698.8
109,000	672.1	697.6		

(1) Straight line variation between weights shown. Landing gear retraction moment is -48,900 in.-lb. Moves C.G. fwd. When the aircraft is loaded within the above limits and the effect of landing gear retraction and crew and passenger movement from their assigned position is accounted for; and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within approved C.G. limits. (SEE NOTE 1(b) and (e)).

V - Model DC-9-32F (cont'd)

Maximum Weights

	DC-9-32F	C-9B	C-9A
	All Passenger, All Cargo		
Taxi and Ramp	111,000 lbs.	111,000 lbs.	109,000 lbs.
Start of Takeoff	110,000 lbs. (2)	110,000 lbs. (2)	108,000 lbs. (2)
Zero Fuel	96,000 lbs. (1)	92,000 lbs. (1)	90,000 lbs. (1)
Landing	102,000 lbs. (3)	99,000 lbs. (3)	99,000 lbs.

(1) All weight above this value must be fuel in main tanks. Additional fuel may then be added to the center wing and/or fuselage tank (if installed) when the main tanks are full to attain max. ramp weight.
(2) Dump system not required (see exemption under Certification Basis).
(3) See NOTE 3 for nose landing gear component safe-life limits.

Minimum Crew For all flights. Pilot and Copilot.

Maximum Passengers SEE NOTES 6 and 8.

Maximum Baggage

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading lb/ft^2	Max. Loading lb/in	H-Arm Sta.
Fwd. Belly	[218-370			26	
	370-596]	8430	150	34	408.9
Fwd. Belly	[218-370			26	
	370-596]	8430	150	34	408.9
Fwd. Belly	[218-370			24.2	
	370-511]	(1)	150	34	361.5
Aft Belly	[760-897			34	
	897-996]	4995	150	18	868.4
With 1780 Gal. Fuselage Tank (C-9A only)					
Fwd. Belly	[218-370			26	
	370-487]	(2)	150	34	347.3
Aft Belly	[897-996]	(3)	150	18	946.8
With 2250 Gal. Fuselage Tank (C-9B only)					
Fwd. Belly	[218-432]	(4)	150	27.85	314.6
Aft Belly	[882-996]	(5)	150	23.70	938.2

Above values satisfactory for a maximum of 5 abreast seating and a minimum seat spacing of 29 inches (36 inches minimum seat spacing for C-9B).

(1) With 580 gal. fwd. fuselage tank, 7215 lbs. with fuselage tank empty and 6330 lbs. with fuselage tank fueled (up to full).
(2) With 780 gal. fwd. fuselage tank 7680 lbs. with fuselage tank empty and 5760 lbs. with fuselage tank fueled.
(3) With 1000 gal. aft fuselage tank, 2700 lbs. with fuselage tank empty and 2025 lbs. with fuselage tank fueled.
(4) With 1250 gal. fwd. fuselage tank (and 1000 gal.aft fuselage tank), 5960 lbs. with fwd. fuselage tank empty or fueled.
(5) With 1000 gal. aft fuselage tank (and 1250 gal. fwd. fuselage tank), 2700 lbs. with fwd. fuselage tank empty or fueled.

For additional information concerning loading limitations when operation as passenger airplane as well as where operating as a cargo or combination passenger/cargo airplanes, see NOTE 1 (a).

V - Model DC-9-32F (cont'd)

Fuel Capacity

	Total	Usable	H-Arm Sta
#1 and #2 Main Tank	9893 lbs. ea.	9838 lbs. ea.	699.6
Center Wing Tank	6518 lbs.	9442 lbs.	649.8
Fwd. Fuselage Tank (580 gal.) or	4122 lbs.	4118 lbs.	547.0
Fwd. Fuselage Tank (780 gal.)*	5543 lbs.	5533 lbs.	535.0
Aft Fuselage Tank (1000 gal.)*	7109 lbs.	7100 lbs.	820.5
Fwd. Fuselage Tank (1250 gal.)*	8903 lbs.	8875 lbs.	507.7

* (if installed)

Fuel weights based upon fuel density of 7.1 lbs/gal. (See NOTE 1(c) for system fuel; NOTE 1(d) for unusable fuel; NOTE 1(e) for fuel loading and usage procedures).

Oil Capacity See Section II, Model DC-9-31.

Serial Nos. Eligible

DC-9-32F

47040, 47041, 47147, 47148, 47220, 47221, 47355.

DC-9-32F (C-9A)

47241, 47242, 47295, 47297-47300, 47366, 47367, 47448, 47449, 47467, 47471, 47475, 47495, 47536-47538, 47540, 47541.

DC-9-32F (C-9B)

47577, 47578, 47580, 47581, 47584-47587, 47681, 47684, 47687, 47690, 47691, 47698-47700, 48137, 48165, 48166.

The following serial numbered airplanes demonstrated compliance at time of delivery with FAR 36 dated December 1, 1969 and Amendments 36-1 and 36-2:

47681, 47684, 47687, 47690, 47691, 47698-47700, 48137, 48165, 48166.

VI - Model DC-9-41 (Transport Aircraft) Approved February 21, 1968.

Engines

2 Pratt and Whitney Turbojet JT8D-9, JT8D-9A, JT8D-11, JT8D-15, JT8D-15A, JT8D-17, or JT8D-17A (See NOTE 5 regarding intermixing of engines).

Fuel

Commercial Aircraft Turbine Fuel conforming to P&W specification 522 as revised (See NOTE 7).

Engine Limits

See Section II,	Model DC-9-31 for JT8D-9, -9A, -15, or 15A engines.
See Section VIII,	Model DC-9-21, for JT8D-11 engines.
See Section IX,	Model DC-9-51 for JT8D-17 or -17A engines.

APU Limits (If installed)

See Section I,	Models DC-9-11, -12, -13, -14, and -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B] and GTCP85-98DC[C].
See Section IX,	Model DC-9-51 for GTCP85-98DCK.
See Section XII,	Model DC-9-81 for GTCP85-98DHF.

Airspeed Limits

See Section VII, Model DC-9-33F.

VI - Model DC-9-41 (cont'd)

C.G. Range

Gross Weight Pounds	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
	Forward	Aft	Forward	Aft
50,000	703.8	749.6	699.2	749.6
97,000	703.8	--	701.4	--
105,000	--	749.6	--	749.6
107,000 (2)	--	749.6 (2)	--	749.6 (2)
114,000	705.4	731.0	703.3	731.0
		739.2 (2)		739.2
115,000	705.4	729.0		
		737.8 (2)		

(1) Straight line variation between weights shown. Landing Gear Retraction Moment is -53,882 in.-lb. Moves C.G. forward. When the aircraft is loaded within the above limits and the effect of landing gear retraction and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within approved C.G. limits. (See NOTES 1(b) and (e)).

(2) For airplanes with 1360 gal. fuselage tanks.

Maximum Weights

Taxi and Ramp	115,000 lbs.
Start of Take-off	114,000 lbs. (2)
Zero Fuel	96,000 lbs. (1)
Landing	102,000 lbs.

(1) All weight above this value must be fuel in main tanks. Additional fuel may then be added to the center wing and/or forward fuselage tank (if installed) when the main tanks are full to attain max. ramp weight.

(2) Dump system not required (See exemption under Certification Basis).

Minimum Crew

For all flights: Pilot and Copilot.

Maximum Passengers

See NOTES 6 and 8.

Maximum Baggage

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading		H-Arm Sta.
			lb/ft^2	lb/in	
Fwd. Belly	[218-370 370-634]	370-350	150	26 34	429.2
Fwd. Belly	[218-370 370-549]	(1)	150	24 34	382.2
Aft Belly	[798-973 973-1072]	5925	150	34 18	924.4

Above values satisfactory for a maximum of 5 abreast seating and a minimum seat spacing of 29 inches.

With 1360 Gal. Fuselage Tanks

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading		H-Arm Sta.
			lb/ft^2	lb/in	
Fwd. Belly	[218-370 370-549]	(1)	150	24.18 26.7	382.2
Aft Belly	[894-973 973-1072]	(2)	150	30.89 17.58	976.0

Above values satisfactory for a maximum of 5 abreast seating and a minimum seat spacing of 32 inches between stations 222-414 and 31 inches between stations 414-1039.

VI - Model DC-9-41 (cont'd)

Maximum baggage (cont'd)

(1) With 580 gal. fwd. fuselage tank.
8450 lbs. with fuselage tank empty.
7620 lbs. with fuselage tank fueled (up to full).

(2) With 780 gal. aft fuselage tank
5925 lbs. with fuselage tank empty
3570 lbs. with fuselage tank fueled (up to full).

Fuel Capacity

	Total	Usable	H-Arm Sta.
#1 and #2 Main Tank	9893 lbs. ea.	9838 lbs. ea.	737.6
Center Wing Tank	6518 lbs.	6442 lbs.	687.8
Fwd. Fuselage Tank (580 gal.)*	4122 lbs.	4118 lbs.	585.0
Aft Fuselage Tank (780 gal.)*	5543 lbs.	5538 lbs.	845.9

*(If installed)

Fuel weights based upon fuel density of 7.1 lbs./gal. (See NOTE 1(c) for system fuel; NOTE 1(d) for unusable fuel; NOTE 1(e) for fuel loading and usage procedures).

Oil Capacity

		H-Arm Sta.
Engine Oil	31.0 lbs. ea.	1026.0
CSD	9.4 lbs. ea.	1066.0
APU (if installed)	7.75 lbs. ea.	1111.5

Oil weight based on 7.74 lbs./gal (See NOTE 1(c) for system oil).

Serial Nos. Eligible

47114-47117, 47178-47180, 47286-47288, 47395, 47396, 47464, 47492-47494, 47497-47499, 47509-47513, 47596, 47597, 47599, 47603-47606, 47608, 47610, 47612-47620, 47623-47634, 47646, 47725, 47747, 47748, 47750, 47759-47762, 47766-47768, 47777-47781.

The following serial numbered airplanes demonstrated compliance at time of delivery with FAR 36 dated December 1, 1969, and Amendments 36-1 and 36-2.
47596, 47597, 47599, 47603-47606, 47608, 47610, 47612-47620, 47623-47634, 47646, 47725, 47747, 47748, 47750, 47759-47762, 47766-47768, 47777-47781.

VII - Model DC-9-33F (Transport Aircraft) approved April 5, 1968.

Engines

2 Pratt and Whitney Turbojet JT8D-7, JT8D-7A, JT8D-7B, JT8D-9, JT8D-9A, JT8D-11, JT8D-15, JT8D-15A, JT8D-17, or JT8D-17A (See NOTE 5 regarding intermixing of engines).

Fuel

Commercial Aircraft Turbine Fuel Conforming to P&W Specification 522 as revised. (See NOTE 7)

Engine Limits

See Section I,	Models DC-9-11, -12, -13, -14, -15 for JT8D-7, -7A, or -7B engines.
See Section II,	Model DC-9-31 for JT8D-9, -9A, -15, or -15A engines.
See Section VIII,	Model DC-9-21 for JT8D-11 engines.
See Section IX,	Model DC-9-51 for JT8D-17 or 17A engines.

APU Limits (If installed)

See Section I,	Models DC-9-11, -12, -13, -14, and -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B], and GTCP85-98DC[C].
See Section IX,	Model DC-9-51 for GTCP85-98DCK.
See Section XII,	Model DC-9-81 for GTCP85-98DHF.

VII - Model DC-9-33F (cont'd)

Airspeed Limits (CAS)

V_{MO}	(Normal Operating - S.L.)	34OK	
V_{MO}	(Normal Operating - 27,260')	34OK	M=0.84
V_{MO}	(Normal Operating - 27,260 to 35,000')		M=0.84
V_A	(Maneuvering - S.L.) (below 100,000 lbs.)	235K	
V_A	(Maneuvering - 35,000') (below 100,000 lbs.)	258K	
V_A	(Maneuvering - S.L.) (114,000 lbs.)	250K	
V_A	(Maneuvering - 35,000') (114,000 lbs.)	267K	
	(See AFM for variation in V_A speed vs. alt)		
	(V_A speeds Linear between 100,000 lbs. & 114,000 lbs.)		
V_{FE}	(Flaps down 0° to 10°)	280K	M=0.57
	(Flaps down 10° to 20°)	240K	M=0.57
	(Flaps down 20° to 25°)	220K	M=0.57
	(Flaps down 25° to 50°)	190K	M=0.57
V_{LO}	(Landing Gear operation)		
	(Gear retraction)	250K	M=0.70
	(Gear extension)	300K	M=0.70
V_{LE}	(Landing gear extended)	300K	M=0.70
V	(Landing light extension)	V_{MO}/M_{MO}	
V	(Slat operation or extended)		
	(S.L. to 15,500')	280K	M=0.57
	(Above 15,540')		M=0.57

C.G. Range

Gross Weight Pounds	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
	Forward	Aft	Forward	Aft
52,000	667.2	709.7	662.8	709.7
89,000	667.2	--	664.6	--
94,000	--	709.7	--	709.7
111,700	--	705.7	--	705.7
114,000	668.9	693.3	666.8	693.3
115,000	668.9	688.0		

(1) Straight line variation between weights shown. Landing gear retraction moment is -53,882 in.-lb. Moves C.G. forward. When the aircraft is loaded within the above limits and the effect of landing gear retraction and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within approved C.G. limits. (See NOTE 1(b) and (e)).

Maximum Weights

Taxi and Ramp	115,000 lbs.
Start of Take-off	114,000 lbs. (2)
Zero Fuel	96,000 lbs. (1)
Landing	102,000 lbs.

(1) All weight above this value must be fuel in main tanks. Additional fuel may then be added to the center wing and/or forward fuselage tank (if installed) when the main tanks are full to attain max. ramp weight, not to exceed their individual capacities.

(2) Dump system not required. (See exemption under Certification Basis)

Minimum Crew

For all flights: Pilot and Copilot.

Maximum Passengers

See NOTES 6 and 8.

VII - Model DC-9-33F (cont'd)

Maximum Baggage

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading lb/ft^2	Max. Loading lb/in	H-Arm Sta.
Fwd. Belly	[218-370 370-596]	8430	150	26 34	408.9
Fwd. Belly	[218-370 370-511]	(1)	150	24.2 34	361.5
Aft Belly	[760-897 897-996]	4995	150	34 18	868.4

Above values satisfactory for a maximum of 5 abreast seating and a minimum seat spacing of 29 inches between stations 238-628 and 30 inches between stations 628-1005.

(1) With 580 gal. fwd. fuselage tank, 7215 lbs. with fuselage tank empty and 6330 lbs. with fuselage tank full.

For additional information concerning loading limitations when operating as passenger airplane as well as when operating as a cargo or combination passenger/cargo airplane, see NOTE 1(a).

Fuel Capacity — See Section IV, Model DC-9-32.

Oil Capacity — See Section II, Model DC-9-31.

Serial Nos. Eligible — 47191-47194, 47279, 47291, 47363, 47384, 47407-47410, 47413, 47414, 47428, 47462, 47465, 47476, 47496, 47530, 47545, 47565.

VIII - Model DC-9-21 (Transport Aircraft) Approved November 25, 1968.

Engines — 2 Pratt and Whitney Turbojet JT8D-9, JT8D-9A or JT8D-11 (See NOTE 5 regarding intermixing of engines).

Fuel — Commercial Aircraft Turbine Fuel conforming to P&W Specification 522 as revised. (See NOTE 7).

Engine Limits — See Section II, Model DC-9-31 for JT8D-9 or -9A engines.

P&W JT8D-11

Static Thrust, S.L.		
Take-off (5 min.)(Flat Rated to 84°F)	15,000 lbs.	
Maximum continuous (Std. Day)	12,600 lbs.	
Maximum permissible engine rotor operation speeds:		
N_1 (Low Compressor)	8,600 rpm (100.1%)	
N_2 (High Compressor)	12,250 rpm (100%)	
Maximum permissible temperatures:		
Turbine exhaust gas		
Take-off (5 min.)	595°C	1103°F
Maximum Continuous	550°C	1022°F
Maximum Acceleration (2 min.)	595°C	1103°F
Starting -		
Ground	510°C	950°F
Inflight	550°C	1022°F
Oil Inlet (continuous operation)	130°C	266°F
Oil Inlet Transient (15 min. max.)	165°C	329°F

VIII - Model DC-9-21 (cont'd)

APU Limits (if installed)

See Section I, Models DC-9-11, -12, -13, -14, -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B] and GTCP85-98DC[C].

See Section IX, Model DC-9-51 for GTCP85-98DCK.

See Section XII, Model DC-9-81 for GTCP85-98DHF.

Airspeed Limits (CAS)

V_{MO}	(Normal Operating - S.L.)	350K	
V_{MO}	(Normal Operating - 23,500')	367K	M=0.84
M_{MO}	(Normal Operating - 23,500 to 35,000')		M=0.84
V_A	(Maneuvering - S.L.)	226K	
V_A	(Maneuvering - 35,000')	263K	
	(See AFM for variation in V_A speed vs. alt)		
V_{FE}	(Flaps down 0° to 10°)	280K	M=0.57
	(Flaps down 10° to 20°)	240K	M=0.57
	(Flaps down 20° to 25°)	210K	M=0.57
	(Flaps down 25° to 50°)	180K	M=0.57
V_{LO}	(Landing Gear operation)		
	(Gear retraction)	250K	M=0.70
	(Gear extension)	300K	M=0.70
V_{LE}	(Landing gear extended)	300K	M=0.70
V	(Landing light extension)	V_{MO}/M_{MO}	
V	(Slat operation or extended)		
	(S.L. to 15,540')	280K	M=0.57
	(Above 15,540')		M=0.57

C.G. Range

Gross Weight Pounds	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
	Forward	Aft	Forward	Aft
50,000	562.2	596.1	559.0	596.1
86,000	562.2	--	560.3	--
95,300	564.1	--	562.5	--
100,000	563.1	--	561.5	--
101,000	563.0	596.1		

(1) Straight line variation between weights shown. Landing gear retraction moment is -48,900 in.-lb. Moves C.G. fwd. When the aircraft is loaded within the above limits and the effect of landing gear retraction and crew and passenger movement from their assigned position is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within approved C.G. limits. (See NOTE 1(b) and (e)).

Maximum Weights

Taxi and Ramp	101,000 lbs.
Start of Take-off	100,000 lbs.
Zero Fuel	84,000 lbs. (1)
Landing	95,300 lbs.

(1) All weight above this value must be fuel in main tanks.

Minimum Crew

For all flights: Pilot and Copilot.

Maximum Passengers

See NOTES 6 and 8.

VIII - Model DC-9-21 (cont'd)

Maximum Baggage

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading lb/ft^2	Max. Loading lb/in	H-Arm Sta.
Fwd. Belly	218-482.5	7460	150	34	352.1
Aft Belly	646-817	4540	150	27	724.9

Above values satisfactory for a maximum of 5 abreast seating and a minimum seat spacing of 29 inches.

Fuel Capacity

	Total	Usable	H-Arm Sta.
#1 and #2 Main Tank	9893 lbs. ea	9838 lbs. ea.	585.6
Center Wing Tank	6518 lbs.	6442 lbs.	535.8

Fuel Weights based upon fuel density of 7.1 lb/gal. (See NOTE 1(c) for system fuel; NOTE 1(d) for unusable fuel; NOTE 1(e) for fuel loading and usage procedures).

Oil Capacity See Section I, Models DC-9-11, -12, -13, -14, -15.

Serial Nos. Eligible 47301-47308, 47360, 47361.

IX - Model DC-9-51 (Transport Aircraft) Approved August 11, 1975.

Engines

2 Pratt and Whitney Turbojet JT8D-15, JT8D-15A, JT8D-17, JT8D-17A.

Fuel

Commercial Aircraft Turbine Fuel Conforming to P&W Specification 522 as revised. (See NOTE 7).

Engine Limits

See Section II, Model DC-9-31 for JT8D-15 or JT8D-15A engines.

P&W JT8D-17 and JT8D-17A

Static Thrust, S.L.		
Take-off (5 min.)(Flat Rated to 84°F)	16,000 lb.	
Maximum Continuous (Std. Day)	15,200 lb.	
Maximum permissible engine rotor operation speeds:		
N_1 (Low Compressor)	8,800 rpm (102.4%)	
N_2 (High Compressor)	12,250 rpm (100%)	
Maximum permissible temperatures:		
Turbine outlet gas		
Take-off (5 min.)	650°C	1202°F
Maximum Continuous	610°C	1130°F
Maximum Acceleration (2 min.)	660°C	1220°F
Starting -		
Ground	550°C	1022°F
Inflight	650°C	1202°F
Oil Inlet (continuous operation)	130°C	266°F
Oil Inlet Transient (15 min. max.)	165°C	329°F

IX - Model DC-9-51 (cont'd)

APU Limits (if installed)

See Section I, Models DC-9-11, -12, -13, -14 and -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B] and GTCP85-98DC[C].

See Section XII, Model DC-9-82 for GTCP85-98DHF.

AiResearch GTCP85-98DCK

Maximum Permissible EGT temperatures

Starting (30 seconds)	760°C
Idle (no load) (continuous)	
Maximum allowable (continuous)	663°C
Maximum Rated	621°C
Maximum rotor speed - all conditions	110%

Airspeed Limits (CAS)

V_{MO}	(Normal Operating - S.L.)	340K	
V_{MO}	(Normal Operating - 27,260')	321K	M=0.84
V_{MO}	(Normal Operating - 27,260 to 35,000')		M=0.84
V_A	(Maneuvering - S.L.)	242K	
V_A	(Maneuvering - 35,000')	254K	
	(See AFM for variation in V_A speed vs. alt)		
V_{FE}	(Flaps down 0° to 10°)	280K	
	(Flaps down 10° to 20°)	240K	
	(Flaps down 20° to 25°)	222K	
	(Flaps down 25° to 40°)	195K	
	(Flaps down 40° to 50°)	190K	
V_{LO}	(Landing Gear operation)		
	(Gear retraction)	250K	M=0.7
	(Gear extension)	300K	M=0.7
V_{LE}	(Landing gear extended)	300K	M=0.7
V	(Landing light extension)	350K	M=0.84
V	(Slat operation or extended)		
	(S.L. to 15,540')	280K	M=0.57
	(Above 15,540')		M=0.57

C.G. Range

Gross Weight Pounds	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
	Forward	Aft	Forward	Aft
58,000	752.7	806.5	749.0	806.5
90,000	752.7	806.5	749.0	806.5
102,500	752.7	806.5	752.7	806.5
110,000	754.9	806.5	754.9	806.5
116,000	756.7	806.5	756.7	806.5
122,200	758.6	782.6	758.6	782.6
123,200	758.9	778.2		

At intermediate weights, C.G. limits vary linearly.

(1) Straight line variation between weights shown. Landing gear retraction moment is -53,882 in.-lb. Moves C.G. Forward. When the aircraft is loaded within the above limits and the effect of landing gear retraction and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within approved C.G. limits. (See NOTES 1(b) and (e)).

IX - Model DC-9-51 (cont'd)

Maximum Weights

Taxi and Ramp	123,200 lbs.
Start of Take-off	122,200 lbs. (2)
Zero Fuel	100,500 lbs. (1)
Landing	110,000 lbs.

(1) All weight above this value must be fuel in main tanks. Additional fuel may then be added to the center wing and/or fuselage tank (if installed) when the main tanks are full to attain max. ramp weight not to exceed their individual capacities.

(2) Dump system not required (See exemption under Certification Basis).

Minimum Crew For all flights: Pilot and Copilot.

Maximum Passengers See NOTES 6 and 8.

Maximum Baggage

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading lb/ft^2	Max. Loading lb/in	H-Arm Sta.
Fwd. Belly	[218-370 370-693]	-- 10,755	150 150	24.18 29.23	-- 459.5
Aft Belly	[855-1068 1068-1167	-- 6,855	150 150	32.02 17.58	-- 1001.2
	With 580 gal. Fuselage Tank (1)				
Fwd. Belly	[218-370 370-554]	-- 8,655	150 150	24.18 24.14	-- 413.9
Aft Belly	[851-1068 1068-1167]	-- 6,855	150 150	32.02 17.58	-- 1001.2
	With 1360 gal. Fuselage Tank (1)				
Fwd. Belly	[218-370] 370-606]	-- 8,655	150 150	24.18 28.14	-- 413.9
Aft Belly	[951-1068 1068-1167]	-- 4,500	150 150	31.45 17.58	-- 1051.4

With 780 gal. Fuselage Tank (1)

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading lb/ft^2	Max. Loading lb/in	H-Arm Sta.
Fwd. Belly	[218-370 370-582]	-- 8,085	150 150	24.18 27.74	-- 400.9
Aft Belly	[855-1068 1068-1167]	-- 6,855	150 150	32.02 17.58	-- 1001.2
	With 1000 gal. Fuselage Tank (1)				
Fwd. Belly	[218-370 370-554]	 7,395	150 150	24.18 26.96	 385.2
Aft Belly	[835-1068 1068-1167]	-- 6,855	150 150	32.02 17.58	-- 1001.2

Above values satisfactory for a maximum of 5 abreast seating and a minimum seat spacing of 31 inches. Three seats in the first row of the passenger cabin may be spaced 30 inches from the second row instead of 31 inches.

(1) With Fuselage Tank(s) empty or fueled.

IX - Model DC-9-51 (cont'd)

Fuel Capacity	Total	Usable	H-Arm Sta.
#1 and #2 Main Tank	9893 lbs. ea.	9838 lbs. ea.	794.6
Center Wing Tank	6518 lbs.	6442 lbs.	744.8
Fus. Tank (580 gal.)*	4122 lbs.	4118 lbs.	642.0
Fus. Tank (780 gal.)*	5543 lbs.	5538 lbs.	630.0
Fus. Tank (1000 gal.)*	7109 lbs.	7100 lbs.	622.0
Aft Fus. Tank (780 gal.)*	5543 lbs.	5538 lbs.	909.0

*(if installed)

Fuel weights based upon fuel density of 7.1 lbs./gal. (See NOTE 1(c) for system fuel; NOTE 1(d) for unusable fuel; NOTE 1(e) for fuel loading and usage procedure).

Oil Capacity		H-Arm Sta.
Engine Oil	31.0 lbs. ea.	1121
CSD	9.4 lbs. ea.	1161
APU (if installed)	7.75 lbs. ea.	1206.5

Oil Weight based upon 7.74 lbs./gal. (See NOTE 1(c) for system oil).

Serial Nos. Eligible

47651, 47652, 47654-47663, 47665, 47676, 47677, 47679, 47682, 47683, 47685, 47686, 47688, 47689, 47692-47697, 47703, 47705, 47708-47710, 47712-47719, 47724, 47726, 47728, 47729, 47731-47733, 47735-47739, 47742, 47743, 47745, 47746, 47749, 47751, 47753-47758, 47763, 47764, 47769-47776, 47782-47787, 47796, 48100-48102, 48107-48110, 48121, 48122, 48134-48136, 48148, 48149.

Noise Standards

Airplanes of the Model DC-9-51 issued an original U.S. Standard Airworthiness Certificate comply with FAR 36 dated December 1, 1969, and Amendment 36-1 and 36-2.

Airplane operation in excess of 121,000 pounds has not been evaluated for compliance with FAR Part 36 dated December 1, 1969, and amendments 36-1 and 36-2.

X - Model DC-9-34F (Transport Aircraft) Approved April 20, 1976.

Engines

2 Pratt and Whitney Turbojet JT8D-9, JT8D-9A, JT8D-11, JT8D-15, JT8D-15A, JT8D-17, or JT8D-17A (See NOTE 5 regarding intermixing of engines).

Fuel

Commercial Aircraft Turbine Fuel Conforming to P&W Specification No. 522 as revised. (See NOTE 7).

Engine Limits

See Section II,	Model DC-9-31 for JT8D-9, -9A, -15, or -15A engines.
See Section VIII,	Model DC-9-21 for JT8D-11 engines.
See Section IX,	Model DC-9-51 for JT8D-17, or 17A engines.

APU Limits (if installed)

See Section I,	Models DC-9-11, -12, -13, -14 and -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B], and GTCP85-98DC[C]
See Section IX,	Model DC-9-51 for GTCP85-98DCK.
See Section XII,	Model DC-9-81 for GTCP85-98DHF.

X - Model DC-9-34F (cont'd)

Airspeed Limits (CAS)

V_{MO}	(Normal Operating - S.L.)	40K	
V_{MO}	(Normal Operating - 27,260')	321K	M=0.84
V_{MO}	(Normal Operating - 27,260 to 35,000')		M=0.84
V_A	(Maneuvering - S.L.)	248.7K	
V_V	(Maneuvering - 35,000')	254K	
	(See AFM for variation in V_A speed vs. alt)		
V_{FE}	(Flaps down 0° to 10°)	280K	
	(Flaps down 10° to 20°)	240K	
	(Flaps down 20° to 25°)	220K	
	(Flaps down 25° to 40°)	195K	
	(Flaps down 40° to 50°)	190K	
V_{LO}	(Landing Gear operation)		
	(Gear retraction)	250K	M=0.7
	(Gear extension)	300K	M=0.7
V_{LE}	(Landing gear extended)	300K	M=0.7
V	(Landing light extension)	350K	M=0.84
V	(Slat operation or extended)		
	(S.L. to 15,540')	280K	M=0.57
	(Above 15,540')		M=0.57

C.G. Range

	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
Gross Weight	Forward	Aft	Forward	Aft
Up to 52,000	667.1	709.6	662.7	709.6
Up to 89,000	667.1	709.6	--	709.6
At 89,000	667.1	709.6	664.5	709.6
94,000	--	709.6	--	709.6
111,700	--	705.6	--	705.6
121,000	669.0	689.7	667.3	689.7
122,000	669.2	687.9		

(1) Straight line variation between weights shown. Landing gear retraction moment is -53,903 in.lbs. Moves C.G. Forward. When the aircraft is loaded within the above limits and the effect of landing gear retraction and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within approved C.G. limits. (See NOTE 1(b) and (e)).

Maximum Weights

Taxi and Ramp	122,000 lbs.
Start of Take-off	121,000 lbs. (2)
Zero Fuel	98,500 lbs. (1)
Landing	110,000 lbs.

(1) All weight above this value must be fuel in main tanks. Additional fuel may then be added to the center wing and/or fuselage tank (if installed) when the main tanks are full to attain max. ramp weight not to exceed their individual capacities.

(2) Dump system not required (See exemption under Certification Basis).

Minimum Crew

For all flights: Pilot and Copilot.

Maximum Passengers

See NOTES 6 and 8.

X - Model DC-9-34F (cont'd)

Maximum Baggage

With 780 gal. fuselage tank (1)

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading lb/ft^2	Max. Loading lb/in	H-Arm Sta.
Fwd. Belly	[218-370		150	24	
	370-465		150	23	
	465-597]	8430	150	32	408.7

Maximum Baggage

With 780 gal. fuselage tank (1)

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading lb/ft^2	Max. Loading lb/in	H-Arm Sta.
Aft Belly	[856-897		150	29.48	
	897-996]	2640	150	17.58	922
With 1360 gal. fuselage tank (1)					
Fwd. Belly	[218-370		150	24.18	
	370-511]	6330	150	25.11	361.5
Aft Belly	[856-897		150	29.48	
	897-996]	2640	150	17.58	922.2

Above values satisfactory for a maximum for 5 abreast seating and a minimum seat spacing of 30 inches.

(1) With fuselage tank(s) empty or fueled.

For additional information concerning loading limitations when operating as a passenger airplane as well as when operating as a cargo airplane, see NOTE 1(a).

Fuel Capacity

	Total	Usable	H-Arm Sta.
#1 and #2 Main Tank	9893 lbs. ea.	9838 lbs. ea.	699.6
Center Wing Tank	6518 lbs.	6442 lbs.	649.8
Fwd. Tank (580 gal.)	4122 lbs.	4118 lbs.	547.0
Aft Fus. Tank (780 gal.)	5543 lbs.	5538 lbs.	807.9

Fuel weights based upon fuel density of 7.1 lb/gal. (See NOTE 1(c) for system fuel; NOTE 1(d) for unusable fuel; NOTE 1(e) for fuel loading and usage procedure).

Oil Capacity

		H-Arm Sta.
Engine Oil	31.0 lbs. ea.	950
CSD	9.4 lbs. ea.	990
APU (if installed)	7.75 lbs. ea.	1035.5

Oil Weight based upon 7.74 lbs/gal. (See NOTE 1(c) for system oil)

Serial Nos. Eligible

47702, 47704, 47706, 47707, 47752.

Noise Standards

Airplanes of the Model DC-9-34F issued an original U.S. Standard Airworthiness Certificate comply with FAR part 36 dated December 1, 1969, and Amendments 36-1 and 36-2.

XI - Model DC-9-34 (Transport Aircraft) Approved November 3, 1976.

Engines

2 Pratt and Whitney Turbojet JT8D-9, JT8D-9A, JT8D-11, JT8D-15, JT8D-15A, JT8D-17, or JT8D-17A (See NOTE 5 regarding intermixing of engines).

Fuel

Commercial Aircraft Turbine Fuel Conforming to P&W Specification No. 522 as revised. (See NOTE 7).

Engine Limits

See Section II, Model DC-9-31 for JT8D-9, JT8D-9A, -15, or 15A engines.
See Section VIII, Model DC-9-21 for JT8D-11 engines.
See Section IX, Model DC-9-51 for JT8D-17, or 17A engines.

APU Limits (if installed)

See Section I, Models DC-9-11, -12, -13, -14 and -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B] and GTCP85-98DC[C].
See Section IX, Model DC-9-51 for GTCP85-98DCK.
See Section XII, Model DC-9-81 for GTCP85-98DHF.

Airspeed Limits (CAS)

V_{MO}	(Normal Operating - S.L.)	340K	
V_{MO}	(Normal Operating - 27.260')	321K	M=0.84
V_{MO}	(Normal Operating - 27,260' to 35,000')		M=0.84
V_A	(Maneuvering - S.L.)	248.7K	
V_A	(Maneuvering - 35,000')	254K	
	(See AFM for variation in V_A speed vs. alt)		
V_{FE}	(Flaps down 0° to 10°)	280K	
	(Flaps down 10° to 20°)	240K	
	(Flaps down 20° to 25°)	220K	
	(Flaps down 25° to 40°)	195K	
	(Flaps down 40° to 50°)	190K	
V_{LO}	(Landing Gear operation)		
	(Gear retraction)	250K	M=0.7
	(Gear extension)	300K	M=0.7
V_{LE}	(Landing gear extended)	300K	M=0.7
V	(Landing light extension)	350K	M=0.84
V	(Slat operation or extended)		
	(S.L. to 15, 540')	280K	M=0.57
	(Above 15,540')		M=0.57

C.G. Range

Gross Weight Pounds	LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
	Forward	Aft	Forward	Aft
Up to 52,000	667.1	709.6	662.7	709.6
Up to 89,000	667.1	709.6	--	709.6
At 89,000	667.1	709.6	664.5	709.6
94,000	--	709.6	--	709.6
111,700	--	705.6	--	705.6
121,000	669.0	689.7	667.3	689.7
122,000	669.2	687.9		

(1) Straight line variation between weights shown. Landing gear retraction moment is -53,903 in.-lb. Moves C.G. Forward. When the aircraft is loaded within the above limits and the effect of landing gear retraction and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within approved C.G. limits. (See NOTE 1(b) and (e)).

XI - Model DC-9-34 (cont'd)

Maximum Weights

Taxi and Ramp	122,000 lbs.
Start of Take-off	121,000 lbs. (2)
Zero Fuel	98,500 lbs. (1)
Landing	110,000 lbs.

(1) All weight above this value must be fuel in main tanks. Additional fuel may then be added to the center wing and/or fuselage tank (if installed) when the main tanks are full to attain max. ramp weight not to exceed their individual capacities.

(2) Dump system not required (See exemption under Certification Basis).

Minimum Crew

For all flights: Pilot and Copilot.

Maximum Passengers

See NOTES 6 and 8.

Maximum Baggage

With 1360 gal. fuselage Tank (1)

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading lb/ft^2	Max. Loading lb/in	H-Arm Sta.
Fwd. Belly	[218-370		150	24.18	
	370-511]	6330	150	25.11	361

With 1360 gal. fuselage Tank (1)

Compartment	Fuselage Station	Capacity (lbs.)	Max. Loading lb/ft^2	Max. Loading lb/in	H-Arm Sta.
Aft Belly	[856-897		150	29.48	
	897-996]	2640	150	17.58	922.2
With 1780 gal. fuselage tank (1)					
Fwd. Belly	[218-370		150	23.88	
	370-489]	5760	150	23.87	347.3
Aft Belly	[882-897		150	25.33	
	897-996]	2025	150	17.58	938.2
With 2250 gal. fuselage tank (1)					
Fwd. Belly	[218-370		150	23.88	
	370-432]	4470	150	18.06	314.6
Aft Belly	[882-897		150	25.33	
	897-996]	2025	150	17.58	938.2

Above values satisfactory for a maximum of 5 abreast seating and a minimum spacing of 30 inches.

(1) With fuselage tanks empty or fueled.

Fuel Capacity

	Total	Usable	H-Arm Sta.
#1 and #2 Main Tank	9893 lbs. ea.	9838 lbs. ea.	699.6
Center Wing Tank	6518 lbs.	6442 lbs.	649.8
Fwd. Fus. Tank (580) *	4122 lbs.	4118 lbs.	547.0
Aft Fus. Tank (780) *	5543 lbs.	5538 lbs.	807.9
Fwd. Fus. Tank (780) *	5543 lbs.	5538 lbs.	535.0
Fwd. Fus. Tank (1250) *	8903 lbs.	8875 lbs.	507.7
Aft Fus. Tank (1000) *	7109 lbs.	7100 lbs.	820.5

* (if installed)

Fuel weights based upon fuel density of 7.1 lb/gal. (See NOTE 1(c) for system fuel; NOTE 1(d) for unusable fuel; NOTE 1(e) for fuel loading and usage procedure).

XI - Model DC-9-34 (cont'd_

Oil Capacity		H-Arm Sta.
Engine	31.0 lbs. ea.	950
CSD	9.4 lbs. ea.	990
APU (if installed)	7.75 lbs. ea.	1035.5

Oil Weight based upon 7.74 lbs/gal. (See NOTE 1(c) system oil)

Serial Nos. Eligible: 47711, 48103-48106, 48123, 48124.

Noise Standards

Airplanes of the Model DC-9-34 issued an original U.S. Standard Airworthiness Certificate comply with FAR part 36 dated December 1, 1969, and Amendments 36-1 and 36-2.

XII - Model DC-9-81 (Transport Aircraft) Approved August 25, 1980.

(MD-81, See NOTE 14, regarding certification)

Engines — 2 Pratt and Whitney Turbofan JT8D-209, -217, -217A, -217C, or -219. (See NOTE 5 regarding intermixing of engines).

Oil — P&W Turbojet Engine Service Bulletin No. 238 lists approved brand oils. Synthetic type oil conforming to P&W Specification 521 as revised.

Fuel — Commercial aircraft turbine fuel conforming to P&W Specification 522 as revised. (see NOTE 7).

Engine Limits — See Section XIII, Model DC-9-82 for JT8D-217, -217A and -217C engines.

Power Rating		JT8D-209	JT8D-219
Maximum Static Thrust at sea level			
Maximum Takeoff (5 min. flat-rated to 84°F)*		19,250 lbs.	21,700 lbs.
Normal Takeoff (5 min. flat-rated to 77°F)*		18,500 lbs.	21,000 lbs.

Maximum Takeoff Rating is the maximum thrust certified for takeoff operation. The Maximum takeoff Rating is available through actuation of the fuel control Automatic Reserve Thrust System (ARTS) when the engine is operating at the Normal Takeoff Rating, or manually by throttle movement.

Normal Takeoff Rating is the maximum thrust to be set for takeoff operation with the aircraft Automatic Reserve Thrust System (ARTS) operative. When set, this rating ensures that the Takeoff Rating will be achieved upon actuation of ARTS.

Maximum Continuous		16,000 lbs.	18,500 lbs.
Rotor Speed, Maximum			
N_1 (Low Compressor)	Takeoff	8,150 rpm (99.2%)	8,350 rpm (101.6%)
	Normal Takeoff	7,850 rpm (95.5%)	8,120 rpm (98.8%)
N_2 (High Compressor)	Takeoff	12,370 rpm (101.0%)	12,550 rpm (102.5%)
	Normal Takeoff	12,150 rpm (99.2%)	12,350 rpm (100.9%)
Exhaust Gas Temperature, Maximum			
Maximum Takeoff (2 min.)		630°C (1166°F)	
Maximum Takeoff (5 min.)*		570°C (1058°F)	625°C (1157°F)
Normal Takeoff (2 min.)*		595°C (1103°F)	
Normal Takeoff (5 min.)*		550°C (1022°F)	590°C (1094°F)
Continuous		530°C (986°F)	580°C (1076°F)
Starting - Ground		475°C (887°F)	475°C (887°F)
- In-Flight		570°C (1058°F)	625°C (1157°F)

*The total time at both Take-off Thrust Levels must not exceed 5 minutes.

XII - Model DC-9-81 (cont'd)

Oil-Inlet Temperature-Maximum

Continuous operation	135°C (275°F)
Transient operation	165°C (329°F)

Transient operation above 135°F (275°C) is limited to 15 minutes.

Oil Pressure Limits 40 to 55 psi

Fuel Pressure Limits

Normal	at engine pump inlet -15 psi
Minimum	at engine pump inlet -not less than 5 psi above true fuel vapor pressure
Maximum	at engine pump inlet -no greater than 50 psi with a vapor liquid ratio of zero

Air Bleed Extraction

	% High Compressor Bleed 13th Stage	
	Normal	Maximum
At 90% and below Max. Cont. Thrust	8.0	8.0
Above 90% Max. Cont. Thrust	3.5	5.5

	% Low Compressor Bleed 8th Stage	
	Normal	Maximum
At and below Max. Cont. Thrust	4.0	4.0
Above Max. Cont. Thrust	2.75	3.25

APU Limits

See Section I, Models DC-9-11, -12, -13, -14, -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B] and GTCP85-98DC[C].

See Section IX, Model DC-9-51, for GTCP85-98DCK.

AiResearch GTCP85-98DHF

Rotor Speeds, Maximum Allowable	46,000 (110%)
Maximum rated RPM (all conditions)	42,000
100% RPM	42,000
Exhaust Gas Temperatures	
Maximum allowable (continuous)	663°C
Maximum rated	621°C
Maximum starting (30 seconds)	760°C

Fuel Pressure Limits, Minimum of 5 psi above true vapor pressure up to 40 psi.

Oil Capacity, 5 qts. total, 4 qts. usable.

Oil Pressure, Normal and Idle operation	95 + 5 psi
Low Oil pressure (Master Caution)	45 psi

Oil Temperature, Maximum 255°F.

APU Envelope, Start	--	up to 30,000 feet
Operate	--	up to 35,000 feet

APU Electrical Load must not exceed 57% of rated load above 25,000 ft.

XII - Model DC-9-81 (cont'd)

Airspeed Limits (CAS)

V_{MO}	(Maximum Operating - S.L.)	340K	
V_{MO}	(Maximum Operating - 27,240')	340K	(M=0.84)
V_{MO}	(Maximum Operating - 27,300 to 37,000')		(M=0.84)
V_A	(Maneuvering - S.L.)	263K	
V_A	(Maneuvering - 30,000')	297K	
V_A	(Maneuvering - 37,000')	262K	
	(See AFM for variation in V_A speeds vs. altitude.)		
V_{FE}	(Flaps down 0.1° - 13°)	280K	(M=0.57)
	(Flaps down 13.1° - 20°)	240K	(M=0.57)
	(Flaps down 20.1° - 25°)	220K	(M=0.57)
	(Flaps down 25.1° - 30°)	200K	(M=0.57)
	(Flaps down 31° - 40°)	195K	(M=0.57)
V	(Slat Extended Takeoff, 17.8°)	280K	(M=0.51)
V	(Slat Extended Landing, 21°)	240K	(M=0.51)
V	(Autoslat Extension)	280K	(M=0.51)
V_{LO}	(Landing Gear operation)		
	(Gear retraction)	250K	(M=0.70)
	(Gear extension)	300K	(M=0.70)
V_{LE}	(Landing gear extended)	300K	(M=0.70)
V	(Landing light extension)	350K	(M=0.84)

C.G. Range:

GROSS WEIGHT		LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
POUNDS	KILOGRAMS	Forward	Aft	Forward	Aft
70,000	31,751	884.3	938.5	881.1	938.5
118,000	53,524	--	938.5	--	938.5
124,000	56,245	884.3	936.0	881.1	936.0
130,000	58,967	886.0	933.6	883.3	933.6
140,000	63,503	--	929.5	887.8	929.5
141,000	63,957	890.5	929.1		

GROSS WEIGHT		LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
POUNDS	KILOGRAMS	Forward	Aft	Forward	Aft
70,000	31,751	884.3	938.5	881.1	938.5
118,000	53,524	--	938.5	--	938.5
124,000	56,245	884.3	936.0	881.1	936.0
130,000	58,967	886.0	933.6	883.3	933.6
142,000	64,410	--	928.8	888.7	928.8
143,000	64,864	891.4	928.5		

NOTE: Inflight weight limited to 79,000 pounds (35,834 kg) minimum.

(1) Straight line variation between weights shown. Gear retraction moment is -10,154 in.-lbs. which moves C.G. Forward. When the aircraft is loaded within the above limits and the effect of landing gear retraction and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within approved C.G. limits.

(2) Main landing gear has "zero" retraction moment.

Maximum Weights

Taxi and Ramp	143,000 lbs. (3)
Start of Takeoff	142,000 lbs. (2)
Zero Fuel	120,000 lbs. (1)
Landing	130,000 lbs.

(1) All weight in excess of 120,000 lbs. must be in usable fuel. After filling the main wing tanks, additional fuel may then be added to the center wing tank to attain the maximum design taxi weight.

(2) Fuel jettisoning system not installed. (See exemption under Certification Basis).

(3) 26 Ply rating MLG tires required for all ramp weights over 141,000 lbs.

XII - Model DC-9-81 (cont'd)

Minimum Crew

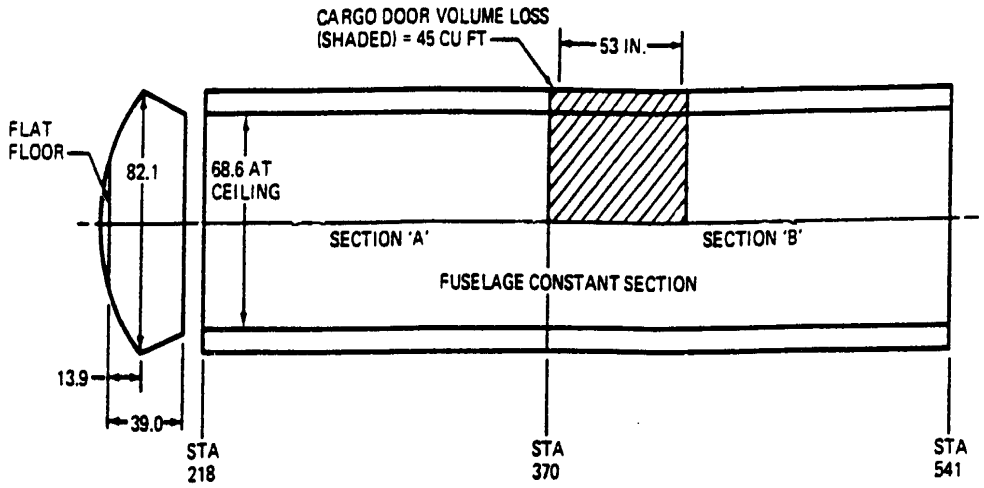
For all flights: Pilot and Copilot.

Maximum Passengers

See NOTES 6 and 8.

Maximum Baggage

FORWARD CARGO COMPARTMENT



Area Designation	A	B	A + B
Location (Sta. to Sta.)	218 to 370	370 to 541	218 to 541
H-Arm (Fus. Sta.)	294.9	467.5	378.6
Usable Volume (Cu/Ft)	239	225	464
Maximum Running Load (lb/in. of Fuselage Length)	24.0	24.0	24.0
Placard Capacity (lbs.)	3585	3375	6960
Combined Capacity (lbs.) Sta. 218 to 541	--	--	6960

Maximum floor loading not to exceed 150 lbs./ft^2.

Each of the above limitations is independent of the others. Do not exceed any limitation.

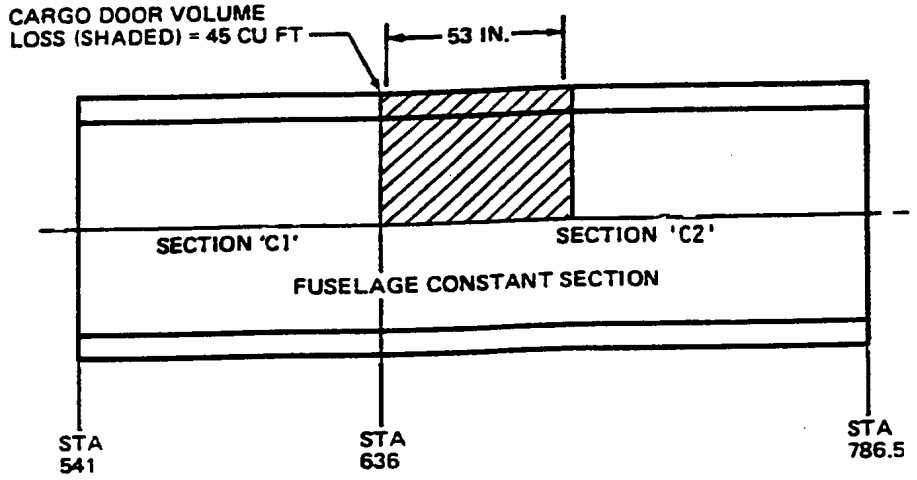
NOTE: The combined capacity of Fus. Sta. 218 to 786.5 is not to exceed 12,150 pounds.

NOTE: The above section and compartment limitations are applicable only to the following Factory Serial Numbers - 48002-48022, 48024-48059, 48062, 48063, 48066-48074, 48079, 48080, 48083, 48086-48099, 49100-49104, 49110-49127, 49138-49145, 49149-49190, 49192-49222, 49229, 49230, 49237, 49245, 49246, 49249-49251, 49253-49265, 49269-49273, 49277, 49278, 49286-49289, 49430-49435, 49531, 49549-49552, 49669, 49740, 49794-49796, 49969-49975, 53053-53062, 53176-53181, 53203-53206, 53216-53228.

See Section XIV for limitations applicable to other DC-9-81 and -82 airplanes.

XII - Model DC-9-81 (cont'd)

MIDDLE CARGO COMPARTMENT



Area Designation	C1	C2	C1 + C2 = C
Location (Sta. to Sta.)	541 to 636	636 to 786.5	541 to 786.5
H-Arm (Fus. Sta.)	588.5	721.9	663.7
Usable Volume (Cu/Ft)	151	195	346
Maximum Running Load (lb/in. of Fuselage Length)	32	32	32
Placard Capacity (lbs.)	3020	3900	6920
Combined Capacity (lbs.) Sta. 541 to 786.5	-	-	6920

Maximum floor loading must not exceed 150 lbs./ft^2.

Each of the above limitations is independent of the other. Do not exceed any limitation.

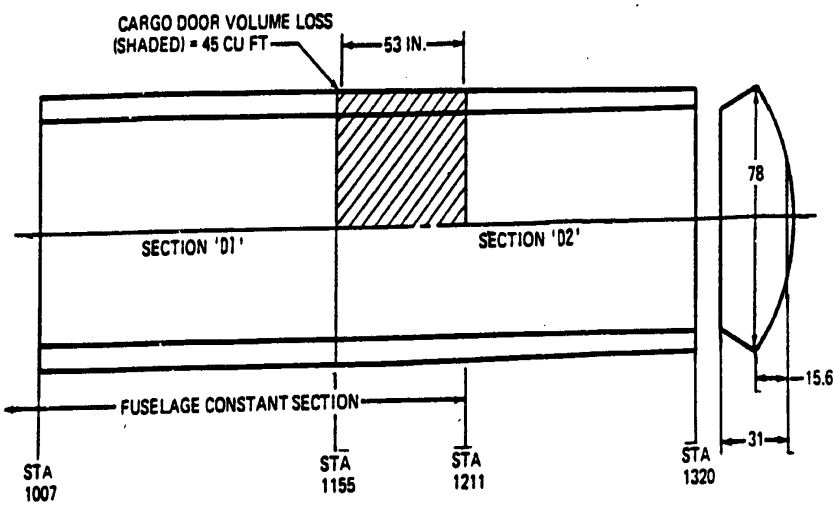
NOTE: Combined capacity of Fus. Sta. 218 to 786.5 is not to exceed 12,150 pounds.

NOTE: The above section and compartment limitations are applicable only to the following Factory Serial Numbers - 48002-48022, 48024-48059, 48062, 48063, 48066-48074, 48079, 48080, 48083, 48086-48099, 49100-49104, 49110-49127, 49138-49145, 49149-49190, 49192-49222, 49229, 49230, 49237, 49245, 49246, 49249-49251, 49253-49265, 49269-49273, 49277, 49278, 49286-49289, 49430-49435, 49531, 49549-49552, 49669, 49740, 49794, 49796, 49969-49975, 53053-53062, 53176-53181, 53203-53206, 53216-53228.

See Section XIV for limitations applicable to other DC-9-81 and -82 airplanes.

XII - Model DC-9-81 (cont'd)

AFT CARGO COMPARTMENT
(WITHOUT AUXILIARY FUEL SYSTEM)



Area Designation	D1	D2	D1 + D2 = D
Location (Sta. to Sta.)	1007 to 1155	1155 to 1320	1007 to 1320
H-Arm (Fus. Sta.)	1081	1245.4	1157.8
Usable Volume (Cu/Ft)	236	207	443
Maximum Running Load (lb/in. of Fuselage Length)	32	22.5	--
Placard Capacity (lbs.)	4720	3105	6645
Combined Capacity (lbs.)	-	-	6645

Maximum compartment floor loading must not exceed 150 lbs./ft^2.

Each of the above section and compartment limitations is independent of the other. Do not exceed any limitation.

NOTE: The above section and compartment limitations are applicable to all DC-9-81, -82, -83 Factory Serial Numbers, except as specified in certain other cargo compartment limitation sections.

XII - Model DC-9-81 (cont'd)

Fuel Capacity

THREE TANK SYSTEM	TOTAL CAPACITY	TOTAL USABLE	H-ARM STA.
MAIN WING TANKS (2)	19,752 lbs	19,638 lbs	951.0
CENTER WING TANK	21,867 lbs	21,825 lbs	884.8
LINES	120 lbs	36 lbs	1006.0
ENGINE	26 lbs	7 lbs	1322.0
TOTAL	41,765 lbs	41,506 lbs	916.3

NOTE: H-ARM applies to usable fuel.

Fuel Weights based upon fuel density of 7.1 lbs./gal. (See NOTE 1(c) for system fuel; NOTE 1(d) for unusable fuel; NOTE 1(e) for fuel loading and usage procedures).

Oil Capacity

	TOTAL CAPACITY	TOTAL VOLUME USABLE	PER ENGINE USABLE WEIGHT	H-ARM STA.
ENGINE OIL	6.92 gal.	4 gal.	31.0 lbs.	1300.0
CSD	1.25 gal.	1.23 gal.	9.4 lbs.	1319.0
APU	1.1 gal.	1.1 gal.	7.75 lbs.	1377.5

Oil Weight based upon 7.74 lbs.gal. (See NOTE 1(c) for system oil)

Serial Nos. Eligible

48002-48021, 48024-48046, 48049-48053, 48058, 48059, 48070-48074, 48092-48094, 48099, 49100, 49115, 49164, 49278-49283, 49356-49359, 49380-49382, 49420, 49422, 49436, 49438, 49461-49463, 49554, 49570-49572, 49603, 49613, 49820, 49821, 49844, 49907-49914, 49998, 49999, 53000-53008, 53043, 53149, 53150, 53275, 53297-53302, 53314, 53315, 53347, 53365, 53366, 53368.

See NOTE 11 for model conversion.

XIII - Model DC-9-82 (Transport Aircraft) Approved July 29, 1981

(MD-82, See NOTE 14, regarding certification)

Engines — 2 Pratt and Whitney Turbofan JT8D-209, -217, -217A, -217C, or -219. (See NOTE 5 regarding intermixing of engines).

Fuel — Commercial aircraft turbine fuel conforming to P&W Specification 522 as revised (see NOTE 7).

Oil — P&W Turbojet Engine Service Bulletin Number 238 lists approved brand oils. Synthetic type oil conforming to P&W Specifications 521 as revised.

Engine Limits — See Section XII, Model DC-9-81 for JT8D-209 and JT8D-219 engines.

P&W JT8D-217, -217A and -217C

Power Rating

Maximum Static Thrust at sea level

Maximum Takeoff (5 min. flat-rated to 84°F)*	20,850 lbs.
Normal Takeoff (5 min. flat-rated to 77°F)*	20,000 lbs.

NOTE: Maximum Takeoff Rating is the maximum thrust certified for takeoff operation. The Maximum Takeoff Rating is available through actuation of the fuel control Automatic Reserve Thrust System (ARTS) when the engine is operating at the Normal Takeoff Rating, or manually by throttle movement.

XIII - Model DC-9-82 (cont'd)

Normal Takeoff Rating is the maximum thrust to be set for takeoff operation with the aircraft Automatic Reserve Thrust System (ARTS) operative. When set, this rating ensures that the Takeoff Rating will be achieved upon actuation of ARTS.

Maximum Continuous 18,000 lbs.

		-217	-217A/-217C
Rotor Speed, Maximum			
N_1 (Low Compressor)	Takeoff	8,150 rpm (99.2%)	8,350 rpm (101.6%)
	Normal Takeoff	7,770 rpm (94.5%)	8,080 rpm (98.3%)
N_2 (High Compressor)	Takeoff	12,550 rpm (102.5%)	12,550 rpm (102.5%)
	Normal Takeoff	12,285 rpm (100.3%)	12,350 rpm (100.9%)

Exhaust Gas Temperature, Maximum

Maximum Takeoff (2 min.)*	630°C (1166°F)
Maximum Takeoff (5 min.)*	625°C (1157°F)
Normal Takeoff (2 min.)*	595°C (1103°F)
Normal Takeoff (5 min.)*	590°C (1094°F)
Maximum Continuous	580°C (1076°F)
Starting - Ground	475°C (887°F)
- In-Flight	625°C (1157°F)

*The total time at both Take-off Thrust Levels must not exceed 5 minutes.

Oil-Inlet Temperature-Maximum

Continuous operation	135°C (275°F)
Transient operation	165°C (329°F)

Transient operation above 135° C (275°C) is limited to 15 minutes.

Oil Pressure Limits 40 to 55 psi

Fuel Pressure Limits

Normal	at engine pump inlet -15 psi
Minimum	at engine pump inlet -not less than 5 psi above true fuel vapor pressure
Maximum	at engine pump inlet -no greater than 50 psi with a vapor liquid ratio of zero

Air Bleed Extraction

	% High Compressor Bleed 13th Stage	
	Normal	Maximum
At 90% and below Max. Cont. Thrust	8.0	8.0
Above 90% Max. Cont. Thrust	3.5	5.5

	% Low Compressor Bleed 8th Stage	
	Normal	Maximum
At and below Max. Cont. Thrust	4.0	4.0
Above Max. Cont. Thrust	2.75	3.25

APU Limits

See Section I,	Models DC-9-11, -12, -13, -14 and -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B] and GTCP85-98DC[C].
See Section IX,	Model DC-9-51, for GTCP85-98DCK.
See Section XIII,	Model DC-9-81, for GTCP85-98DHF.

XIII - Model DC-9-82 (cont'd)

Airspeed Limits (CAS)		147,000 lbs.			149,500 lbs.
V_{MO}	(Maximum Operating - S.L.)	340K			
V_{MO}	(Maximum Operating - 27,240')	340K	(M=0.84)		
V_{MO}	(Maximum Operating - 27,240 to 37,000')		(M=0.84)		270.8K 304.0K
V_A	(Maneuvering - S.L.)	268.5K			270.0K
V_A	(Maneuvering - 29,000)	303.OK			304.1K
V_A	(Maneuvering - 30,000')	298.4K			299.0K
V_A	(Maneuvering - 37,000')	263.8K			262.1K
	(See AFM for variation in V_A speeds vs. altitude)				
V_{FE}	(Flaps down 0.1° - 13°)		280K	(M=0.57)	
	(Flaps down 13.1° 20°)		240K	(M=0.57)	
	(Flaps down 20.1° - 25°)		220K	(M=0.57)	
	(Flaps down 25.1° - 30°)		200K	(M=0.57)	
	(Flaps down 31° - 40°)		195K	(M=0.57)	
V	(Slat Extended Takeoff, 17.8°)		280K	(M=0.57)	
V	(Slat Extended Landing, 21°)		240K	(M=0.57)	
V	(Autoslat Extension)		280K	(M=0.57)	
V_{LO}	(Landing Gear operation)				
	(Gear retraction)		250K	(M=0.70)	
	(Gear extension)		300K	(M=0.70)	
V_{LE}	(Landing gear extended)		300K	(M=0.70)	
V	(Landing light extension)		350K	(M=0.84)	

C.G. Range

GROSS WEIGHT		LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
POUNDS	KILOGRAMS	Forward	Aft	Forward	Aft
70,000	31,751	884.3	938.5	881.1	938.5
118,000	53,524	--	938.5	--	938.5
126,000	57,153	884.3	935.3	881.1	935.3
130,000	58,967	--	933.6	--	933.6
140,000	63,503	890.1	929.5	--	929.5
141,000	63,967	--	--	888.4	--
147,000	66,678	--	--	888.4	927.6
148,000	67,132	890.6	927.1		

GROSS WEIGHT		LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
POUNDS	KILOGRAMS	Forward	Aft	Forward	Aft
70,000	31,751	884.3	938.5	881.1	938.5
118,000	53,524	--	938.5	--	938.5
126,000	57,153	884.3	935.3	881.1	935.3
130,000	58,967	--	933.6	--	933.6
140,000	63,503	890.1	929.5	887.8	929.5
141,000	63,957	--	--	888.4	--
148,000	67,132	890.6	--	--	--
149,500	67,812	891.3	926.6	888.4	926.6
150,500	68,266	891.9	926.3		

NOTE: Inflight weight limited to 79,000 pounds (35,834 kg.) minimum.

(1) Straight line variation between weights shown. Gear retraction moment is -10,154 in. lbs. which moves C.G. forward. When the aircraft is loaded within the above limits and the effects of landing gear retraction fuel loading and crew and passenger movement from their assigned positions is accounted for and then the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequence, the aircraft will remain within approved C.G. limits.

XIII - Model DC-9-82 (cont'd)

Maximum Weights:

Taxi and Ramp	150,500 lbs. (3)
Start of Takeoff	149,500 lbs. (2)
Zero Fuel	122,000 lbs. (1)
Landing	130,000 lbs.

(1) All weight in excess of 122,000 lbs. must be in usable fuel. After filling the main wing tanks, additional fuel may then be added to the center wing tank to attain the maximum design taxi weight.
(2) Fuel jettisoning system not installed. (See exemption under Certification Basis).
(3) 26 ply rating MLG tires required for all ramp weights over 141,000 lbs.

Minimum Crew: For all flights: Pilot and Copilot.

Maximum Passengers: See NOTES 6 and 8.

Maximum Baggage: See Section XII, Model DC-9-81.

Fuel Capacity: See Section XII, Model DC-9-81.

Oil Capacity: See Section XII, Model DC-9-81.

Serial Nos. Eligible

48022, 48047, 48048, 48054-48057, 48062, 48063, 48066-48069, 48079, 48080, 48083, 48086-48091, 48095-48098, 49101-49104, 49110-49114, 49116-49127, 49138-49145, 49149-49163, 49165-49190, 49192-49222, 49229-49237, 49245-49251, 49253-49267, 49269-49273, 49277, 49286-49329, 49331-49343, 49350, 49355, 49363-49374, 49379, 49383-49387, 49391-49394, 49415-49419, 49421, 49423-49435, 49437, 49439-49441, 49443, 49444, 49450-49457, 49459, 49460, 49468-49494, 49501-49524, 49531, 49549-49553, 49555, 49558-49566, 49569, 49580-49582, 49592-49601, 49604, 49615, 49634, 49635, 49647-49656, 49660, 49661, 49667, 49669, 49675-49684, 49701-49704, 49728, 49730-49740, 49794-49806, 49849-49853, 49877, 49889-49903, 49905, 49906, 49915-49925, 49931, 49932, 49969-49975, 49987-49996, 53017, 53025-53034, 53053-53062, 53064-53066, 53083-53092, 53117-53121, 53147, 53148, 53151-53160, 53162-53171, 53173-53181, 53203-53206, 53216-53228, 53244-53250, and 53294-53296.

XIV - Model DC-9-83 (Transport Aircraft) Approved: October 17, 1985

(MD-83, See NOTE 14, regarding certification)

Engines	2 Pratt and Whitney Turbofan JT8D-209, -217, -217A, -217C, or -219 engines. (See NOTE 5 regarding intermixing of engines).
Fuel	Commercial aircraft turbine fuel conforming to P&W Specification 522 as revised (see NOTE 7).
Oil	P&W Turbojet Engine Service Bulletin Number 238 lists approved brand oils. Synthetic type oil conforming to P&W Specification 521 as revised.
Engine Limits	See Section XII, Model DC-9-81 for JT8D-209 and JT8D-219 engines. See Section XIII, Model DC-9-82 for JT8D-217, -217A and -217C engines.

APU Limits

See Section I,	Models DC-9-11, -12, -13, -14 and -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B] and GTCP85-98DC[C].
See Section IX,	Model DC-9-51 for GTCP85-98DCK
See Section XII,	Model DC-9-81, for GTCP85-98DHF.

XIV - Model DC-9-83 (cont'd)

Airspeed Limits (CAS)

V_{MO}	(Maximum Operating - S.L.)	340K	
V_{MO}	(Maximum Operating - 27,240')	340K	(M=0.84)
V_{MO}	(Maximum Operating 27,300 to 37,000')		(M=0.84)
V_A	(Maneuvering - S.L.)	280.6K	
V_A	(Maneuvering - 29,000')	306.2K	
V_A	(Maneuvering - 30,000')	301.1K	
V_A	(Maneuvering - 37,000')	263.5K	
	(See AFM for variation in V_A speeds vs. altitude)		
V_{FE}	(Flaps down 0.1° - 13°)	280K	(M=0.57)
	(Flaps down 13.1° - 20°)	240K	(M=0.57)
	(Flaps down 20.1° - 25°)	220K	(M=0.57)
	(Flaps down 25.1° - 30°)	205K	(M=0.57)
	(Flaps down 31° - 40°)	200K	(M=0.57)
V	(Slat Extended Takeoff, 17.8°)	280K	(M=0.57)
V	(Slat Extended Landing, 21°)	240K	(M=0.57)
V	(Autoslat Extension)	280K	(M=0.57)
V_{LO}	(Landing Gear operation)		
	(Gear retraction)	250K	(M=0.70)
	(Gear extension)	300K	(M=0.70)
V_{LE}	(Landing gear extended)	300K	(M=0.70)
V	(Landing light extension)	350K	(M=0.84)

K = KCAS

C.G. Range

GROSS WEIGHT		LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
POUNDS	KILOGRAMS	Forward	Aft	Forward	Aft
80,000*	36,287	884.3	938.5	881.1	938.5
118,000	53,524	--	938.5	--	938.5
126,000	57,153	884.3	935.3	881.1	935.3
130,000	58,967	--	933.6	--	933.6
139,500	63,276	887.8	--	884.4	--
140,000	63,503	--	929.5	--	929.5
149,500	67,812	--	926.4	884.3	926.6
150,500	68,266	--	926.3	--	926.3
156,000	70,760	887.4	--	884.1	--
156,000	70,760	887.9	--	884.8	--
160,000	72,575	--	923.9	884.6	923.9
161,000	73,028	887.8	923.6		

* Inflight weight limited to 80,000 pounds (36,287 kg.) minimum.

(1) Straight line variation between weights shown. Gear retraction moment is -10,154 in.-lbs. which moves C.G. forward. When the aircraft is loaded within the above limits and the effect of landing gear retraction and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used the approved sequence, the aircraft will remain within approved C.G. limits.

Maximum Weights

Taxi and Ramp	150,500 lbs. (5)	161,000 lbs. (3)(4)
Start of Takeoff	149,500 lbs. (5)	160,000 lbs. (2)(3)(4)
Zero Fuel		122,000 lbs. (1)
Landing	130,000 lbs. (5)	150,000 lbs. (3)

(1) All weight in excess of 122,000 lbs. must be in usable fuel. After filling the main wing tanks, additional fuel may then be added to the center wing tank to attain the maximum design taxi weight.

(2) Fuel jettisoning system not installed. (See exemption under Certification Basis).

(3) 26 ply rating MLG tires required for all ramp weights over 141,000 lbs.

(4) 28 ply rating MLG tires required for all ramp weights over 150,500 lbs.

(5) Maximum weights with Sperry 4034241-906 Digital Flight Guidance Computer (DFGC) installed.

XIV - Model DC-9-83 (cont'd)

Minimum Crew

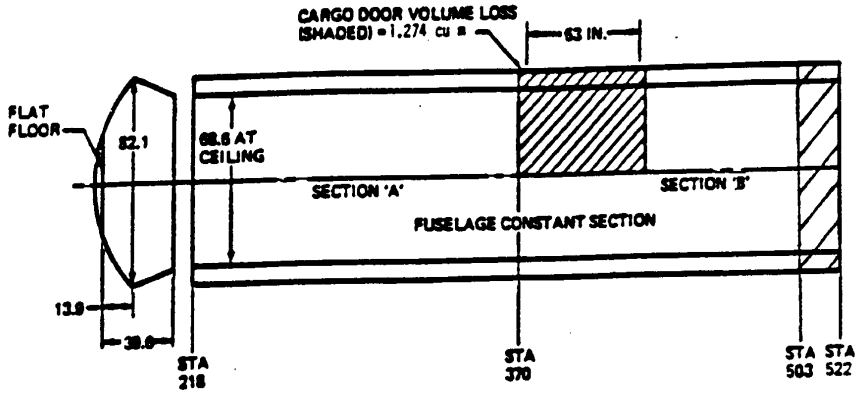
For all flights: Pilot and Copilot.

Maximum Passengers

See NOTES 6 and 8.

MAXIMUM BAGGAGE

FORWARD CARGO COMPARTMENT



Area Designation	A	B	A + B
Location (Sta. to Sta.)	218 to 370	370 to 522	218 to 522
H-Arm (Fus. Sta.)	294.9	459.0	368.7
Usable Volume (Cu/Ft)	239	195	434
Maximum Running Load (lb/in. of Fuselage Length)	24.0	24.0	24.0
Placard Capacity (lbs.)	3585	2925	6510
Combined Capacity (lbs.) Sta. 218 to 522	-	-	6510

Maximum floor loading not to exceed 150 lbs./ft^2.

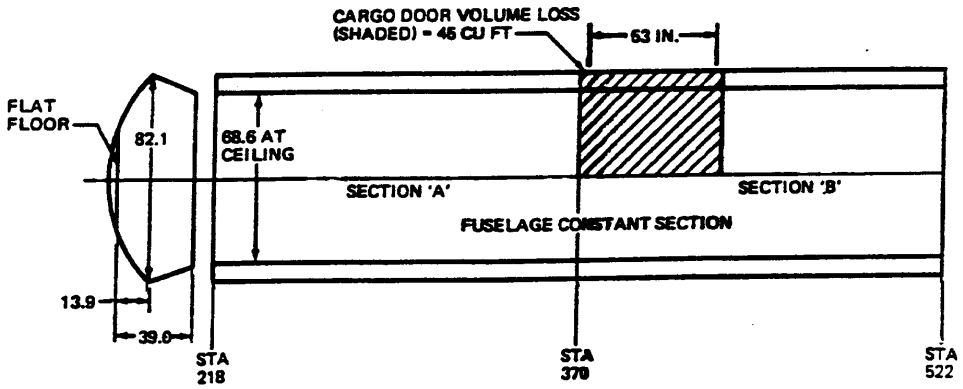
Each of the above limitations is independent of the others. Do not exceed any limitation.

NOTE: The combined capacity of Fus. Sta. 218 to 786.5 is not to exceed 10,305 pounds.

NOTE: The above section and compartment limitations are applicable to all DC-9-81, -82, -83 and MD-88 Factory Serial Numbers except as specified in certain other cargo compartment limitation sections.

XIV - Model DC-9-83 (cont'd)

FORWARD CARGO COMPARTMENT
(WITH 1960 GALLON AUXILIARY FUEL SYSTEM)



Area Designation Location (Sta. to Sta.)	A 218 to 370	B 370 TO 503	A + B 218 TO 503
H-Arm (Fus. Sta.)	294.9	449.1	357.8
Usable Volume (Cu/Ft)	239	165	404
Maximum Running Load (lb/in. of Fuselage Length)	24.0	24.0	24.0
Placard Capacity (lbs.)	3585	2460	6045
Combined Capacity (lbs.) Sta. 218 to 503	-	-	6045

Maximum floor loading not to exceed 150 lbs./ft^2.

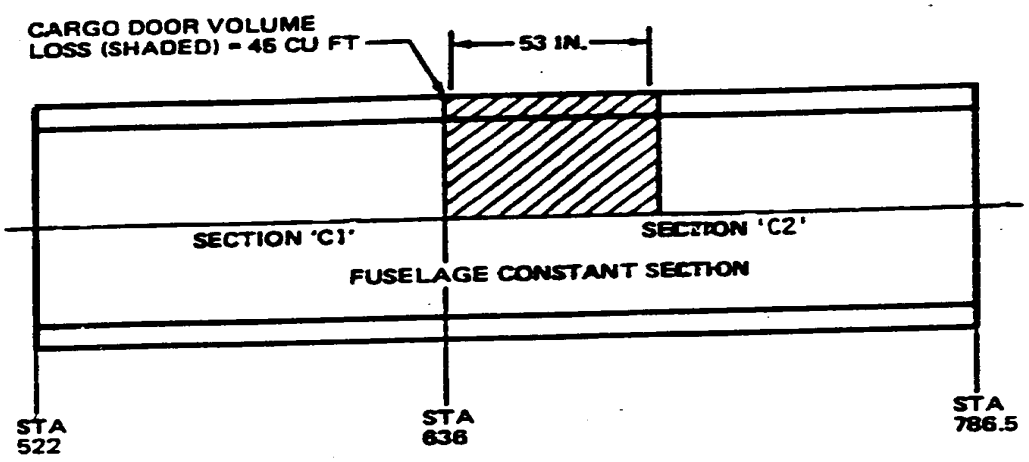
Each of the above limitations is independent of the others. Do not exceed any limitation.

NOTE: The combined capacity of Fus. Sta. 218 to 786.5 is not to exceed 9839 pounds.

NOTE: The above section and compartment limitations are applicable to all DC-9-81, -82, -83 Factory Serial Numbers except as specified in certain other cargo compartment limitation sections.

XIV - Model DC-9-83 (cont'd)

MIDDLE CARGO COMPARTMENT
(WITHOUT AUXILIARY FUEL SYSTEM)



Area Designation Location (Sta. to Sta.)	C1 522 to 636	C2 636 to 786.5	C1 + C2 = C 522 to 786.5
H-Arm (Fus. Sta.)	579.1	721.9	653.2
Usable Volume (Cu/Ft)	181	195	376
Maximum Running Load (lb/in. of Fuselage Length)	32	32	32
Placard Capacity (lbs.)	3620	3900	7520
Combined Capacity (lbs.) 522 to 786.5	-	-	7520

Maximum floor loading must not exceed 150 lbs./ft^2

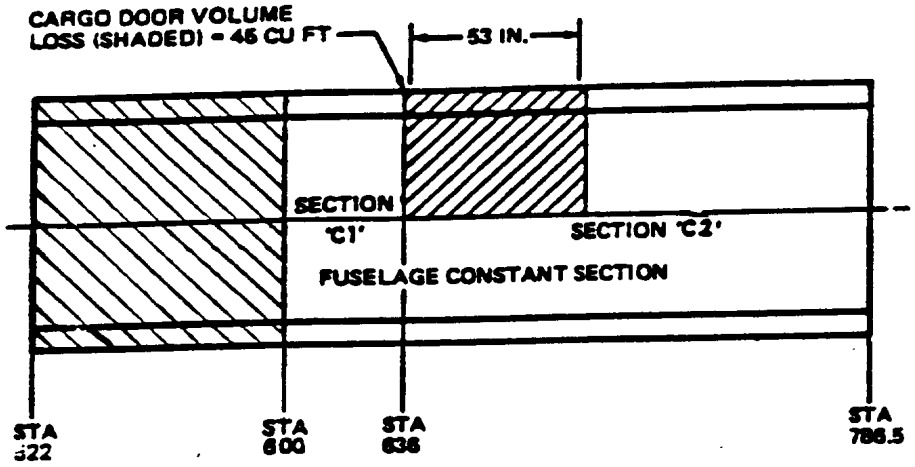
Each of the above limitations is independent of the other. Do not exceed any limitation.

NOTE: Combined capacity of Fus. Sta. 218 to 786.5 is not to exceed 12,150 pounds.

NOTE: The above section and compartment limitations are applicable to all DC-9-81, -82, -83 and MD-88 Factory Serial Numbers except as specified in certain other cargo compartment limitation sections.

XIV - Model DC-9-83 (cont'd)

MIDDLE CARGO COMPARTMENT
(WITH 1130 GALLON AUXILIARY FUEL SYSTEM)



Area Designation	C1	C2	C1 + C2 = C
Location (Sta. to Sta.)	600 to 636	636 to 786.5	600 to 786.5
H-Arm (Fus. Sta.)	618	721.9	698.1
Usable Volume (Cu/Ft)	58	195	253
Maximum Running Load (lb/in. of Fuselage Length)	32	32	32
Placard Capacity (lbs.)	1160	3900	5060
Combined Capacity (lbs.) 600 to 786.5			

Maximum compartment floor loading must not exceed 150 lbs./ft^2.

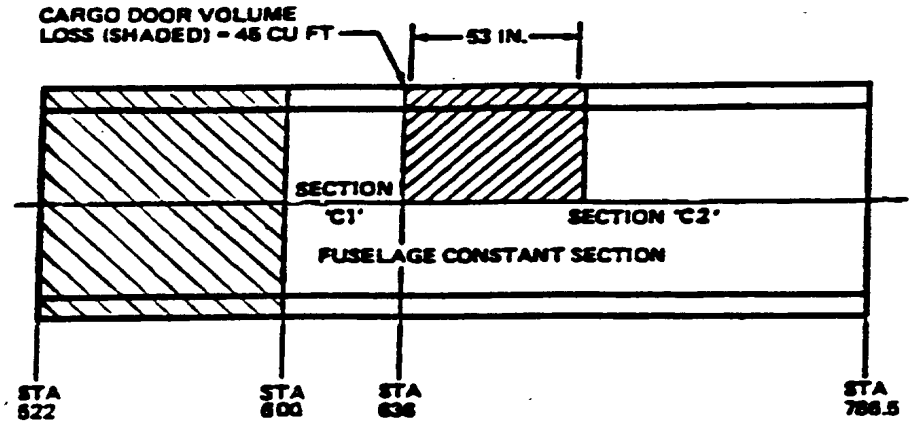
Each of the above section and compartment limitations is independent of the other. Do not exceed any limitation.

NOTE: Combined capacity of Fus. Sta. 218 to 786.5 is not to exceed 10,305 pounds.

NOTE: The above section and compartment limitations are applicable to all DC-9-81, -82, and -83 Factory Serial Numbers except as specified in certain other cargo compartment limitation sections.

XIV - Model DC-9-83 (cont'd)

MIDDLE CARGO COMPARTMENT
(WITH 1960 GALLON AUXILIARY FUEL SYSTEM)



Area Designation Location (Sta. to Sta.)	C1 600 to 636	C2 636 to 786.5	C1 + C2 = C 600 to 786.5
H-Arm (Fus. Sta.)	618	721.9	698.1
Usable Volume (Cu/Ft)	58	195	253
Maximum Running Load (lb/in. of Fuselage Length)	32	32	32
Placard Capacity (lbs.)	1160	3900	5060
Combined Capacity (lbs.) 600 to 786.5			5060

Maximum compartment floor loading must not exceed 150 lbs./ft^2.

Each of the above section and compartment limitations is independent of the other. Do not exceed any limitation.

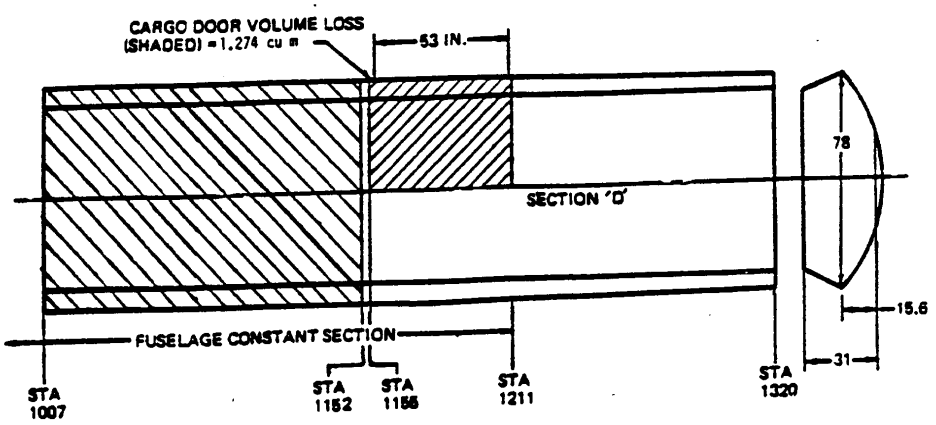
NOTE: Combined capacity of Fus. Sta. 218 to 786.5 is not to exceed 9,841 pounds.

NOTE: The above section and compartment limitations are applicable to all DC-9-81, -82, or -83 Factory Serial Numbers except as specified in certain other cargo compartment limitation sections.

XIV - Model DC-9-83 (cont'd)

AFT CARGO COMPARTMENT

(WITH 1130 GALLON AUXILIARY FUEL SYSTEM)



Area Designation	D1	D2	D1 + D2 = D
Location (Sta. to Sta.)	1081 to 1155	1155 to 1320	1081 to 1320
H-Arm (Fus. Sta.)	1118.0	1245.4	1198.6
Usable Volume (Cu/Ft)	119	207	326
Maximum Running Load (lb./in. of Fuselage Length)	32	22.5	--
Placard Capacity (lbs.)	2380	3105	5485
Combined capacity (lbs.)	--	--	4890

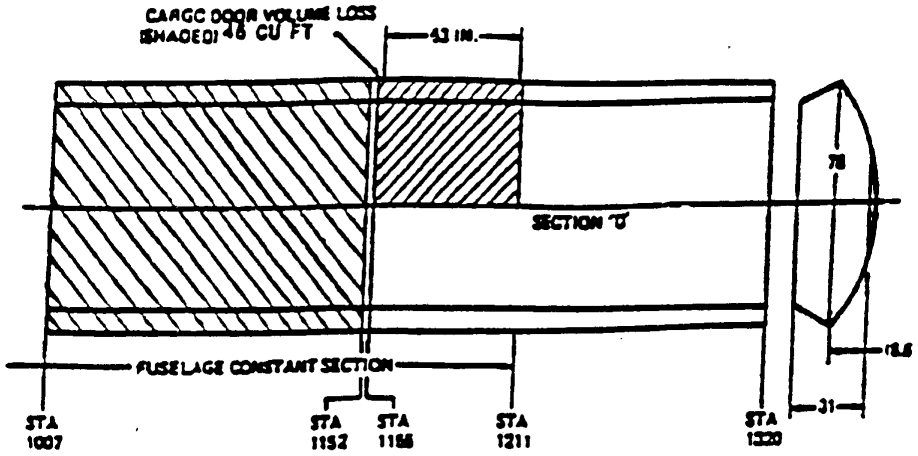
Maximum compartment floor loading must not exceed 150 lbs./ft^2.

Each of the above section and compartment limitations is independent of the other. Do not exceed any limitation.

NOTE: The above section and compartment limitations are applicable to all DC-9-81, -82, or -83 Factory Serial Numbers except as specified in certain other cargo compartment limitation sections.

XIV - Model DC-9-83 (cont'd)

AFT CARGO COMPARTMENT
(WITH 1960 GALLON AUXILIARY FUEL SYSTEM)



Area Designation	D
Location (Sta. to Sta.)	1152 to 1320
H-Arm (Fus. Sta.)	1242.3
Usable Volume (Cu/Ft)	213
Maximum Running Load (lb/in. of Fuselage Length)	22.5
Placard Capacity (lbs.)	3194
Combined Capacity (lbs.)	-

Maximum compartment floor loading must not exceed 150 lbs./ft^2.

Each of the above section and compartment limitations is independent of the other. Do not exceed any limitation.

NOTE: The above section and compartment limitations are applicable to all DC-9-81, -82, or -83 Factory Serial Numbers except as specified in certain other cargo compartment limitation sections.

XIV - Model DC-9-83 (cont'd)

Fuel Capacity

See Section XII, Fuel Capacity-Three Tank System.

Five Tank System:

FIVE TANK SYSTEM (1130 GALLONS)	TOTAL CAPACITY	TOTAL USABLE	H-ARM STA
MAIN WING TANKS (2)	19,752 lbs	19,638 lbs	951.0
CENTER WING TANK	21,867 lbs	21,825 lbs	884.8
FWD FUS AUX TANK	4,056 lbs	4,019 lbs	564.0
AFT FUS AUX TANK	4,056 lbs	4,019 lbs	1042.8
LINES	147 lbs	56 lbs	935.5
ENGINE	26 lbs	7 lbs	1322.0
TOTAL	49,904 lbs	49,564 lbs	897.9

Five Tank System:

FIVE TANK SYSTEM (1960 GALLONS)	TOTAL CAPACITY	TOTAL USABLE	H-ARM STA
MAIN WING TANKS (2)	19,752 lbs	19,638 lbs	951.0
CENTER WING TANK	21,843 lbs	21,801 lbs	884.8
FWD FUS AUX TANK	5,566 lbs	5,500 lbs	551.3
AFT FUS AUX TANK	8,487 lbs	8,399 lbs	1080.0
LINES	175 lbs	41 lbs	1005.8
ENGINE	26 lbs	7 lbs	1322.0
TOTAL	55,849 lbs	55,386 lbs	904.9

NOTE: H-ARM applies to usable fuel.

Fuel weights based upon fuel density of 7.1 lbs./gal. (See NOTE 1(c) for system fuel; NOTE 1(d) for unusable fuel; NOTE 1(e) for fuel loading and usage procedure).

Oil Capacity: See Section XII, Oil Capacity

Serial Nos. Eligible:

49252, 49284, 49344-49349, 49351-49353, 49390, 49395-49402, 49442, 49448, 49449, 49458, 49525-49530, 49556, 49557, 49567, 49568, 49574-49579, 49602, 49617-49632, 49642, 49643, 49657-49659, 49662, 49663, 49668, 49672, 49707-49710, 49741, 49769, 49784-49793, 49807-49809, 49822-49826, 49845-49848, 49854-49857, 49904, 49930, 49933-49952, 49965, 49966, 49968, 49985, 49986, 53012-53016, 53018-53024, 53044-53046, 53050-53052, 53063, 53074-53079, 53093, 53122-53126, 53137-53141, 53182-53186, 53198, 53199, 53251-53256, 53284-53293, 53377, 53435, 53436, 53448-53451, and 53463-53467.

See NOTE 11 for model conversion.

XV - Model DC-9-87 (Transport Aircraft) Approved: October 21, 1987

(MD-87, See NOTE 14, regarding certification)

Engines

2 Pratt and Whitney Turbofan JT8D-217A, -217C, and -219 engines.
(See NOTE 5 regarding intermixing of engines).

Engine Limits

See Section XII, Model DC-9-81 for JT8D-219 engines.
See Section XIII, Model DC-9-82 for JT8D-217A and -217C engines.

XV - Model DC-9-87 (cont'd)

APU Limits

See Section 1, Models DC-9-11, -12, -13, -14, and -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B] and GTCP85-98DC[C].

See Section IX, Model DC-9-51 for GTCP85-98DCK.

See Section XII, Model DC-9-81, for GTCP85-98DHF.

Fuel

Commercial aircraft turbine fuel conforming to P&W Specification 522 as revised. (See NOTE 7).

Oil

P&W Turbojet Engine Service Bulletin Number 238 lists approved brand oils. Synthetic type oil conforming to P&W Specification 521 as revised.

Airspeed Limits (CAS)

V_{MO}	(Maximum operating - S.L.)	340K	
V_{MO}	(Maximum Operating - 25,970')	340K	(M=0.82)
V_{MO}	(Maximum Operating - 25,970 to 37,000')		(M=0.82)
V_A	(Maneuvering - S.L.)	272.1K	
V_A	(Maneuvering - 29,000')	303.3K	
V_A	(Maneuvering - 30,000')	298.0K	
V_A	(Maneuvering - 37,000')	262.9K	
	(See AFM for variation in V_A speeds vs. altitude)		
V_{FE}	(Flaps down 0.1° - 13°)	280K	(M=0.57)
	(Flaps down 13.1° - 20°)	240K	(M=0.57)
	(Flaps down 20.1° - 25°)	220K	(M=0.57)
	(Flaps down 25.1° - 30°)	200K	(M=0.57)
	(Flaps down 31° - 40°)	195K	(M=0.57)
V	(Slat Extended Takeoff, 17.8°)	280K	(M=0.57)
V	(Slat Extended Landing, 21°)	240K	(M=0.57)
V	(Autoslat Extension)	280K	(M=0.57)
V_{LO}	(Landing Gear operation)		
	(Gear retraction)	250K	(M=0.70)
	(Gear extension)	300K	(M=0.70)
		K = CAS	

Airspeed Limits (CAS) (Continued)

V_{LE}	(Landing gear extended)	300K	(M=0.70)
V	(Landing light extension)	350K	(M=0.84)

C.G. Range

GROSS WEIGHT		FUSELAGE STATIONS LANDING GEAR RETRACTED	
POUNDS	KILOGRAMS	FORWARD	AFT
*70,500	31,752	774.56	823.22
130,000	58,967	774.56	----
140,000	63,503	----	----
141,000	63,957	775.19	823.22
149,500	67,812	----	815.77
150,500	68,266	775.67	815.14

* Inflight weight limited to 71,600 pounds (32,477 kg.) minimum.

NOTE: Straight line variation between weights shown. Gear retraction moment is -10,154 in.-lbs. which moves C.G. forward. When the aircraft is loaded within the above limits and the effect of landing gear retraction and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approved sequency, the aircraft will remain within approved C.G. limits.

XV - Model DC-9-87 (cont'd)

Maximum Weights

Taxi and Ramp	126,000 lbs. (4)	150,500 lbs. (3)
Start of Takeoff	125,000 lbs. (2)(4)	149,500 lbs. (2)(3)
Zero Fuel	112,000 lbs. (1)(4)	112,000 lbs. (1)
Landing	120,000 lbs. (4)	130,000 lbs. (3)

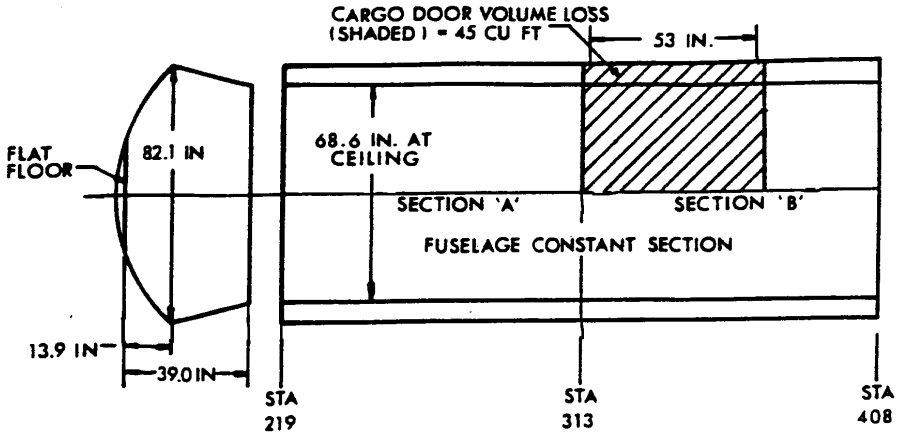
(1) All weight in excess of 112,000 lbs. must be in usable fuel. After filling the main wing tanks, additional fuel may then be added to the center wing tank to attain the maximum design taxi weight.
(2) Fuel jettisoning system not installed. (See exception under Certification Basis).
(3) 26 ply rating MLG tires required for all ramp weights over 141,000 lbs.
(4) Maximum for airplane serial numbers 49464 and 49465.

Minimum Crew For all flights: Pilot and Copilot.

Maximum Passengers See NOTES 6 and 8.

MAXIMUM BAGGAGE

FWD CARGO COMPARTMENT

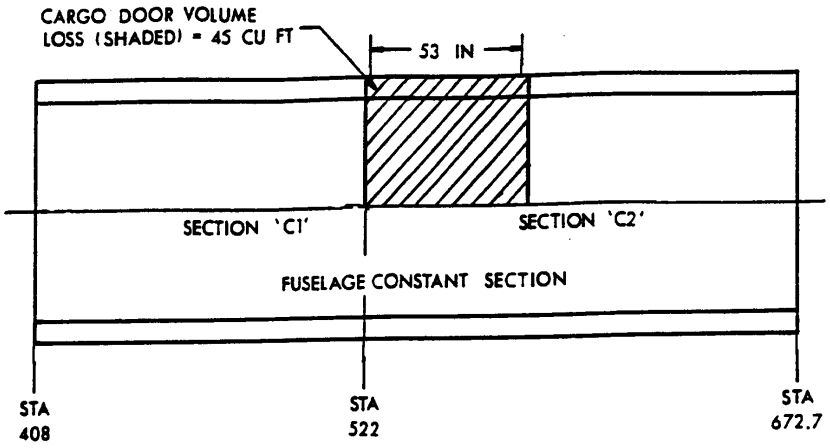


Area	A	B	A + B
Location (Sta. to Sta.)	219 to 313	313 to 408	219 to 408
H-Arm (Fus. Sta.)	266.8	368.6	309.5
Usable Volume (Cu/Ft)	146	106	252
Maximum Running Load (lb/in. of Fuselage Length)	24.0	24.0	24.0
Placard Capacity (lbs.)	2190	1590	3780
Combined Capacity (lbs.) Sta. 219 to 408	-	-	3780

Maximum floor loading not to exceed 150 lbs./ft^2.
Each of the above limitations is independent of the other. Do not exceed any limitation.
NOTE: The combined capacity of Fus. Sta. 219 to 672.7 is not to exceed 9,420 pounds.

XV - Model DC-9-87 (cont'd)

MIDDLE CARGO COMPARTMENT
(WITHOUT AUXILIARY FUEL TANK)



Area Designation Location (Sta. to Sta.)	C1 408 to 522	C2 522 to 672.7	C1 + C2 = C 408 to 672.7
H-Arm (Fus. Sta.)	465.0	608.2	539.2
Usable Volume (Cu/Ft)	181	195	376
Maximum Running Load (lb/in. of Fuselage Length)	32	32	32
Placard Capacity (lbs.)	3620	3900	7520
Combined Capacity (lbs.) Sta. 408 to 672.7	-	-	7520

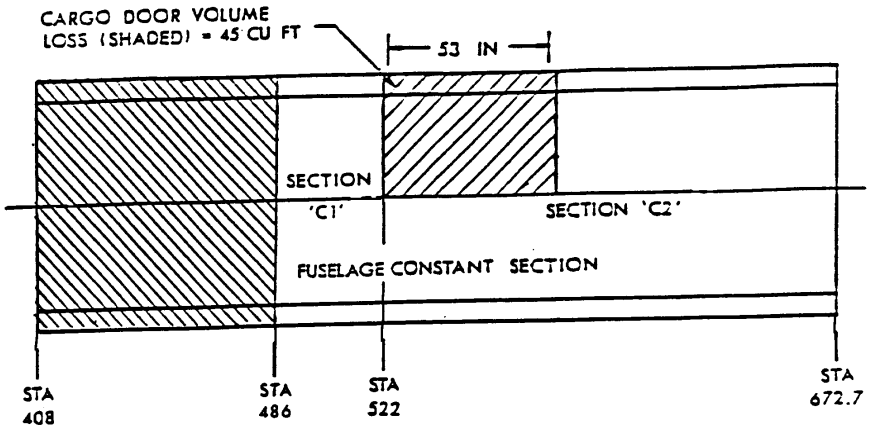
Maximum floor loading must not exceed 150 lbs./ft^2.

Each of the above limitations is independent of the other. Do not exceed any limitation.

NOTE: Combined capacity of Fus. Sta. 219 to 672.7 is not to exceed 9,420 pounds.

XV - Model DC-9-87 (cont'd)

MIDDLE CARGO COMPARTMENT
(WITH 1130 AUXILIARY FUEL SYSTEM)

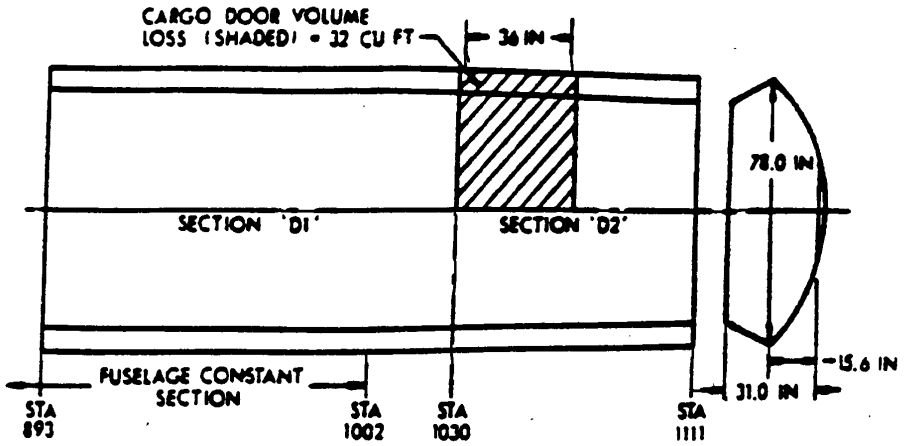


Area Designation	C1	C2	C1 + C2 = C
Location (Sta. to Sta.)	486 to 522	522 to 672.7	408 to 672.7
H-Arm (Fus. Sta.)	504.0	608.2	584.3
Usable Volume (Cu/Ft)	58	195	253
Maximum Running Load (lb/in. of Fuselage Length)	32	32	32
Placard Capacity (lbs.)	1160	3900	5060
Combined Capacity (.bs.) Sta. 486 to 672.7	---	---	5060

Maximum compartment floor loading must not exceed 150 lbs./ft^2.
Each of the above section and compartment limitations is independent of the other.
Do not exceed any limitation.
NOTE: Combined capacity of Fus Sta 219 to 672.7 is not to exceed 9,420 pounds.

XV - Model DC-9-87 (cont'd)

AFT CARGO COMPARTMENT
(WITHOUT AUXILIARY FUEL SYSTEM)



Area Designation Location (Sta. to Sta.)	D1 893 to 1030	D2 1030 to 1111	D1 + D2 = D 893 to 1111
H-Arm (Fus. Sta.)	960.4	1068.8	992.2
Usable Volume (Cu/Ft)	219	91	310
Maximum Running Load (lb/in. of Fuselage Length)	*	22.5	---
Placard Capacity (lbs.)	4111	1380	4650
Combined Capacity (.bs.) Sta. 893 to 1111	---	---	4650

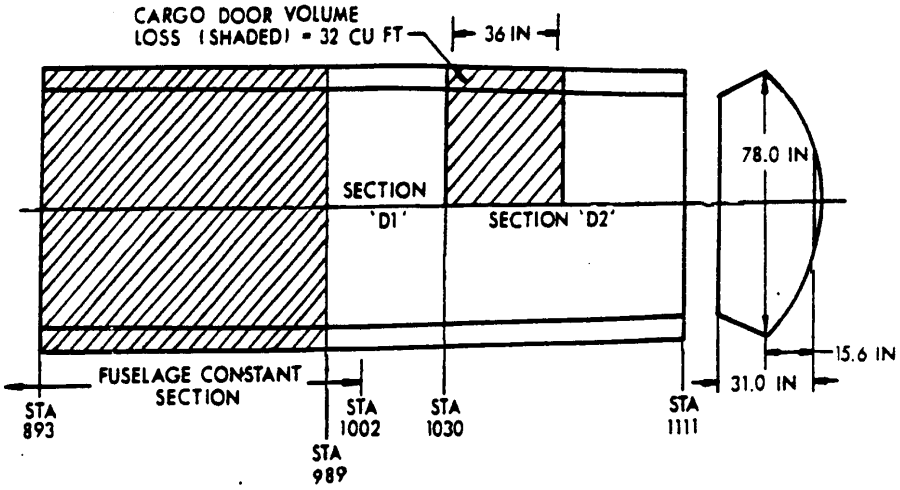
Maximum compartment floor loading must not exceed 150 lbs./ft^2.

Each of the above section and compartment limitations is independent of the other.
Do not exceed any limitation.

*Sta. 893 to Sta. 1002: 32 lbs./in.
*Sta. 1002 to Sta. 1030: 22.5 lbs./in.

XV - Model DC-9-87 (cont'd)

AFT CARGO COMPARTMENT
(WITH 780 GALLON AUXILIARY FUEL TANK)



Area Designation Location (Sta. to Sta.)	D1 989 to 1030	D2 1030 to 1111	D1 + D2 = D 989 to 1111
H-Arm (Fus. Sta.)	1008.9	1068.8	1044.3
Usable Volume (Cu/Ft)	63	91	154
Maximum Running Load (lb/in. of Fuselage Length)	*	22.5	---
Placard Capacity (lbs.)	1029	1380	2310
Combined Capacity (.bs.) Sta. 893 to 1111	---	---	2310

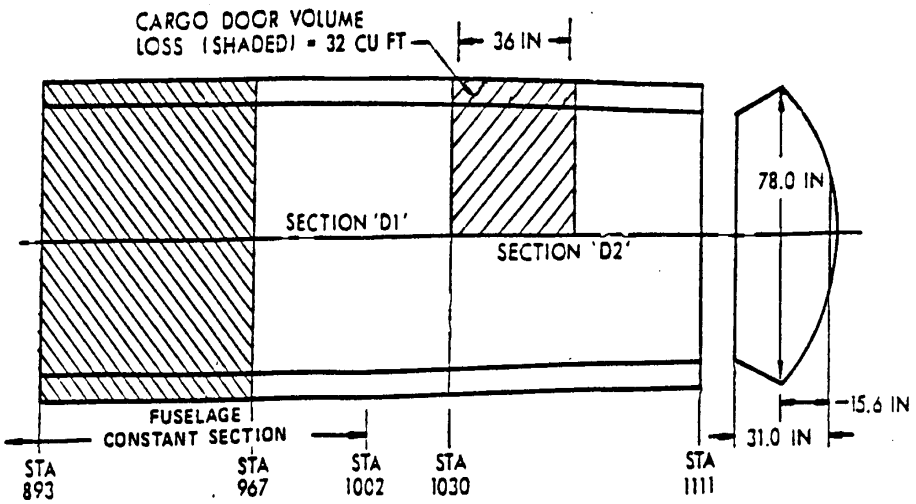
Maximum compartment floor loading must not exceed 150 lbs./ft^2.

Each of the above limitations is independent of the other. Do not exceed any limitation.

*Sta. 989 - Sta. 1002: 32 lbs./in.
*Sta. 1002 - Sta. 1030: 22.5 lbs./in.

XV - Model DC-9-87 (cont'd)

AFT CARGO COMPARTMENT
(WITH 1130 GALLON AUXILIARY FUEL SYSTEM)



Area Designation Location (Sta. to Sta.)	D1 967 to 1030	D2 1030 to 1111	D1 + D2 = D 967 to 1111
H-Arm (Fus. Sta.)	997.6	1068.8	1031.7
Usable Volume (Cu/Ft)	99	91	190
Maximum Running Load (lb/in. of Fuselage Length)	*	22.5	---
Placard Capacity (lbs.)	1760	1380	2850
Combined Capacity (.bs.)	---	---	2850

Maximum compartment floor loading must not exceed 150 lbs./ft^2.

Each of the above section and compartment limitations is independent of the other.
Do not exceed any limitation.

*Sta. 967 to Sta. 1002: 32 lbs./in.
*Sta. 1002 to Sta. 1030: 22.5 lbs./in.

XV - Model DC-9-87 (cont'd)

Fuel Capacity

Three Tank System:

THREE TANK SYSTEM	TOTAL CAPACITY	TOTAL USABLE	H-ARM FUSELAGE STA
MAIN WING TANKS (2)	19,752 lbs	19,638 lbs	837.0
CENTER WING TANK	21,867 lbs	21,825 lbs	770.8
LINES	111 lbs	28 lbs	943.9
ENGINE	26 lbs	7 lbs	1113.0
TOTAL	41,756 lbs	41,498 lbs	802.3

Four Tank System:

FOUR TANK SYSTEM	TOTAL CAPACITY	TOTAL USABLE	H-ARM FUSELAGE STA
MAIN WING TANKS (2)	19,752 lbs	19,638 lbs	837.0
CENTER WING TANK	21,867 lbs	21,825 lbs	770.8
AFT FUS AUX TANK	5,581 lbs	5,512 lbs	940.9
LINES	125 lbs	34 lbs	927.0
ENGINE	26 lbs	7 lbs	1113.0
TOTAL	47,351 lbs	47,016 lbs	818.6

Five Tank System:

FIVE TANK SYSTEM	TOTAL CAPACITY	TOTAL USABLE	H-ARM FUSELAGE STA
MAIN WING TANKS (2)	19,752 lbs	19,638 lbs	837.0
CENTER WING TANK	21,867 lbs	21,825 lbs	770.8
FWD FUS AUX TANK	4,056 lbs	4,019 lbs	449.0
AFT FUS AUX TANK	4,056 lbs	4,019 lbs	930.3
LINES	138 lbs	47 lbs	704.0
ENGINE	26 lbs	7 lbs	1113.0
TOTAL	49,895 lbs	49,555 lbs	783.9

NOTE: H-ARM applies to usable fuel.

Fuel weights based upon fuel density of 7.1 lb./gal. (See NOTE 1(c) for system Fuel; NOTE 1(d) for unusable fuel; NOTE 1(e) for fuel loading and usage procedure).

Oil Capacity

	TOTAL CAPACITY	TOTAL VOLUME USABLE	PER ENGINE USABLE WEIGHT	H-ARM STA.
ENGINE OIL	6.92 gal.	4.2 gal.	31.0 lbs.	1091.0
CSD	1.25 gal.	1.23 gal.	9.4 lbs.	1110.0
APU	1.1 gal.	1.1 gal.	7.75 lbs.	1168.5

Oil weight based upon 7.74 lbs./gal. (See NOTE 1(c) for system oil)

Serial Nos. Eligible:

49388, 49389, 49403-49405, 49411-49414, 49464-49467, 49585-49587, 49605-49612, 49614, 49641, 49670, 49671, 49673, 49706, 49724-49727, 49767, 49768, 49777-49780, 49827-49843, 49888, 49997, 53009-53011, 53039-53042, 53039, 53207-53213, 53336, 53337, 53340, 53348, 53351, 53416-53423, 53446, and 53447.

XVI - Model MD-88 (Transport Aircraft) Approved December 8, 1987

Engines

2 Pratt and Whitney Turbofan JT8D-217A, -217C and -219 engines.
(See NOTE 5 regarding intermixing of engines).

Engine Limits

See Section XII, Model DC-9-81 for JT8D-219 engines.
See Section XIII, Model DC-9-82 for JT8D-217A and -217C engines.

APU Limits

See Section I, Models DC-9-11, -12, -13, -14 and -15 for GTCP85-98D, GTCP85-98W, GTCP85-98DC[A], GTCP85-98DC[B] and GTCP85-98DC[C].
See Section IX, Model DC-9-51 for GTCP85-98DCK.
See Section XII, Model DC-9-81 (MD-81) for GTCP85-98DHF.

Fuel

Commercial aircraft turbine fuel conforming to P&W Specification 522 as revised (See NOTE 7).

Oil

P&W Turbojet Engine Service Bulletin 238 lists approved brand oils.
Synthetic type oil conforming to P&WA Specifications 521, as revised.

Airspeed Limits (CAS)

		149,500 lbs.		160,000 lbs.	
V_{MO}	(Maximum Operating - S.L.)	340K		340K	
V_{MO}	(Maximum Operating - 27,240 ')	340K	(M=0.84)	340K	(M=0.84)
V_{MO}	(Maximum Operating - 27,240 to 37,000 ')		(M=0.84)		(M=0.84)
V_A	(Maneuvering - S.L.)	270.0K		280.6K	
V_A	(Maneuvering - 29,000 ')	340.1K		306.2K	
V_A	(Maneuvering - 30,000 ')	299.0K		301.1K	
V_A	(Maneuvering - 37,000 ')	262.1K		263.5K	
	(See AFM for variation in V_A speeds versus altitude)				
V_{FE}	(Flaps down 0.1° - 13°)	280K	(M=0.57)	280K	(M=0.57)
	(Flaps down 13.1° - 20°)	240K	(M=0.57)	240K	(M=0.57)
	(Flaps down 20.1° - 25°)	220K	(M=0.57)	220K	(M=0.57)
	(Flaps down 25.1° - 30°)	200K	(M=0.57)	205K	(M=0.57)
	(Flaps down 31° - 40°)	195K	(M=0.57)	200K	(M=0.57)
		K=KCAS			
		149,500 Lbs.		160,000 Lbs.	
V	(Slat Extended Takeoff, 17.8°)	280K	(M=0.57)	280K	(M=0.57)
V	(Slat Extended Landing, 21°)	240K	(M=0.57)	240K	(M=0.57)
V	(Autoslat Extension)	280K	(M=0.57)	280K	(M=0.57)
V_{LO}	(Landing Gear operation)				
	(Gear retraction)	250K	(M=0.70)	250K	(M=0.70)
	(Gear extension)	300K	(M=0.70)	300K	(M=0.70)
V_{LE}	(Landing gear extended	300K	(M=0.70)	300K	(M=0.70)
V	(Landing light extension)	350K	(M=0.84)	350K	(M=0.84)

XVI - Model MD-88 (cont'd)

C.G. Range

GROSS WEIGHT		LANDING GEAR EXTENDED (1)		LANDING GEAR RETRACTED (1)	
POUNDS	KILOGRAMS	FORWARD	AFT	FORWARD	AFT
70,000	31,751	884.3	938.5	881.1	938.5
80,000*	36,287	884.3	938.5	881.1	938.5
117,000	53,524	--	938.5	--	938.5
126,000	57,153	884.3	935.3	881.1	935.3
130,000	58,967	--	933.6	--	933.6
139,500	63,276	887.8	--	884.4	--
140,000	63,503	--	929.5	--	929.5
141,000	63,957	--	929.5	--	929.5
148,000	67,132	890.6	--	--	--
149,500	67,812	--	926.4	884.3	926.6
150,500	68,266	--	926.3	--	926.3
156,000	70,760	887.4	--	884.1	--
156,000	70,760	887.9	--	884.8	--
160,000	72,575	--	923.9	884.6	923.9
161,000	73,028	887.8	923.6	--	--

* Inflight weight limited to 80,000 pounds (36,287 kg.) minimum

(1) Straight line variation between weights shown. Gear retraction moment is -10,154 in.-lbs. which moves C.G. forward. When the aircraft is loaded within the above limits and the effects of landing gear retraction, fuel loading and crew and passenger movement from their assigned positions is accounted for and the fuel is loaded (up to the maximum takeoff weight) and used in the approve sequence, the aircraft will remain within approved C.G. limits.

Maximum Weights

Taxi and Ramp	161,000 lbs. (3)(4)
Start of Takeoff	160,000 lbs. (2)(3)(4)
Zero Fuel	122,000 lbs. (1)
Landing	150,000 lbs. (3)

Maximum Weights

(1) All weight in excess of 122,000 lbs. must be in usable fuel. After filling the main wing tanks, additional fuel may then be added to the center wing tank to attain the maximum design taxi weight.

(2) Fuel jettisoning system not installed. (See exemption under Certification Basis).

(3) 26 ply rating MLG tires required for all ramp weights over 141,000 lbs.

(4) 28 ply rating MLG tires required for all ramp weights over 150,000 lbs.

Minimum Crew:

For all flights: Pilot and copilot.

Maximum Passengers:

See NOTES 6 and 8.

Maximum Baggage:

See Section XIV, Model DC-9-83.

Fuel Capacity:

See Section XIV, Model DC-9-83.

Oil Capacity:

See Section XII, Model DC-9-81.

XVI - Model MD-88 (cont'd)

Serial Numbers Eligible:

49532-49546, 49573, 49583, 49584, 49591, 49644-49646, 49705, 49711-49723, 49759-49766, 49810-49819, 49878-49887, 49926-49929, 49956-49959, 49967, 49976-49984, 49997, 53047-53049, 53115, 53116, 53161, 53172-53175, 53193-53197, 53214, 53215, 53241-53243, 53257-53259, 53266-53268, 53273, 53274, 53303-53310, 53311-53313, 53338, 53339, 53341-53346, 53351, 53362-53364, 53370-53372, 53378-53380, 53409, 53410, 53415-53423, 53446, 53447.

XVII - Model MD-90-30 (Transport Aircraft) Approved November 4, 1994

Engines

2 International Aero Engines (IAE) V2525-D5 or V2528-D5 engines.
(Intermixing of engines not permitted. See NOTE 5).

Engine Limits

Thrust Ratings	V2525-D5	V2528-D5
Takeoff (5 min.) (static thrust at sea level, flat-rated to 86°F)	25,000 lb	28,000 lb
Takeoff, Engine Inoperative (10 min.) (static thrust at sea level, flat-rated to 86°F) (Takeoff Rating is the maximum thrust certified for takeoff operation.)	25,000 lb	28,000 lb
Maximum Continuous (static thrust at sea level)	23,900 lb	25,660 lb

Maximum Permissible Engine Operating Speeds (All Models)

N_1 (Low Pressure Rotor) Takeoff	5,650 rpm (100%)	5,650 rpm (100%)
N_2 (High Pressure Rotor) Takeoff	14,950 rpm (100%)	14,950 rpm (100%)

Maximum Permissible Indicated Engine Exhaust Gas Temperatures *

	V2525-D5	V2528-D5
Takeoff (5 min.)	620°C	635°C
Maximum Continuous	610°C	610°C
Starting on Ground	635°C	635°C
in Flight	635°C	635°C

* See NOTE 19 of Engine TCDS E40NE.

Oil Outlet Temperature (All Models)

Continuous Operation	155°C/311°F
Transient Operation (15 min.)	165°C/329°F Maximum
Oil Pressure Limits	60 psig Minimum
Fuel Pressure	At the inlet to the engine system pump, not less than 5 psig above the true vapor pressure of the fuel and not greater than 70 psig with a vapor/liquid ratio of zero.

XVII - Model MD-90-30 (cont'd)

Maximum permissible air bleed extraction is as follows: (All Models)

	Max Bleed Limit ** % of Inlet Core Flow (WA26)
7th Stage Bleed At or below 90% Corrected high rotor speed	8.2%
From 90% to 97% Corrected high rotor speed	Linear variation from 8.2% to 6.0%
At or above 97% Corrected high rotor speed	6.0%
10th Stage Bleed * At or below 61% Corrected high rotor speed	13.7%
From 61% to 78% Corrected high rotor speed	Linear variation from 13.7% to 12%
From 78% to 97% Corrected high rotor speed	Linear variation from 12.0% to 6.0%
At or above 97% Corrected high rotor speed	6.0%

* Below 24,000 ft:

- at ambient temperatures above 40°F, no 10th stage bleed is allowed at max. continuous rating and above.
- at 40°F ambient temperatures and below, a maximum of 2% 10th stage bleed is allowed at takeoff rating and 4% 10th stage bleed at max. continuous rating.

** Simultaneous use of 7th and 10th stage bleed due to a malfunction is allowed only until the next landing.

Airspeed Limits (KCAS)

V_{MO}	(Maximum Operating - S.L.)	340K	
V_{MO}	(Maximum Operating - 27,240')	340K	(M=0.84)
V_{MO}	(Maximum Operating - 27,240 to 37,000')		(M=0.84)
V_A	(Maneuvering - S.L.)	273K	
V_A	(Maneuvering - 29,000')	296K	
V_A	(Maneuvering - 30,000')	290K	
V_A	(Maneuvering - 37,000')	256K	
	(See AFM for variation in V_A with altitude)		
V_{FE}	(Flaps down 0.1° - 13°)	280K	(M=0.57)
	(Flaps down 13.1° - 20°)	240K	(M=0.57)
	(Flaps down 20.1° - 25°)	220K	(M=0.57)
	(Flaps down 25.1° - 30°)	205K	(M=0.57)
	(Flaps down 31° - 40°)	200K	(M=0.57)
V	(Slat Extended Takeoff, 17.8°)	280K	(M=0.57)
V	(Slat Extended Landing, 21°)	240K	(M=0.57)
V	(Autoslat Extension)	280K	(M=0.57)
V_{LO}	(Landing Gear operation)		
	(Gear retraction)	250K	(M=0.70)
	(Gear extension)	300K	(M=0.70)
V_{LE}	(Landing gear extended	300K	(M=0.70)
V	(Landing light extension)	350K	(M=0.84)

XVII - Model MD-90-30 (cont'd)

C.G. Range

See FAA Approved Airplane Flight Manual

Maximum Weights

Taxi and Ramp	157,000 lb.
Start of Takeoff	156,000 lb.
Zero Fuel	130,000 lb. (1)
Landing	142,000 lb.

(1) All weight in excess of 130,000 lb. must be in usable fuel. After filling the main wing tanks, additional fuel may then be added to the center wing tank to attain the maximum design taxi weight.

Minimum Crew: For all flights: Pilot and copilot.

Maximum Passengers: See NOTES 6 and 8.

Maximum Baggage: See Weight and Balance Manual Report No. MDC-91K0981.

Fuel Capacity

THREE TANK SYSTEM	TOTAL CAPACITY	TOTAL USABLE	H-ARM STA
MAIN WING TANKS (2)	19,964 lbs	19,837 lbs	1008.8
CENTER WING TANK	21,656 lbs	21,612 lbs	941.9
LINES	124 lbs	36 lbs	1063.0
ENGINE	28 lbs	7 lbs	1398.0
TOTAL	41,772 lbs	41,492 lbs	974.1

NOTE: H-ARM applies to usable fuel.

Fuel weights based upon fuel density of 7.1 lbs/gal (See NOTE 1(c) for system fuel; NOTE 1(d) for unusable fuel; NOTE 1(e) for fuel loading and usage procedures)

Oil Capacity

		TOTAL CAPACITY	TOTAL VOLUME USABLE	PER ENGINE USABLE WEIGHT	H-ARM STA.
ENGINE OIL	(2)	11.5 gal.	6.0 gal.	44.4 lbs.	1365.0
VSCF	(2)	.7 gal.	.5 gal.	3.7 lbs.	1360.3
APU	(1)	1.6 gal.	.85 gal.	6.3 lbs.	1422.5

Oil Weight based upon 7.4 lbs./gal. (See NOTE 1(c) for system oil)

Serial Numbers Eligible: 53352-53355, 53381-53391.

APU Limits

AlliedSignal Engines 131-9 [D]

Rotor Speeds, Maximum Allowable	(108%)	52,704 RPM
Maximum for normal operation	(104%)	50,752 RPM
Minimum for normal operation	(96%)	46,848 RPM

Exhaust Gas Temperatures

Maximum allowable for all operations including starting and transients	106% on EGT gauge
Maximum rated for continuous operation	100% on EGT gauge*

* 1052°F for standard day at sea level

XVII - Model MD-90-30 (cont'd)

Fuel Pressure Limits, Minimum of 4 psig.

Oil Capacity, 6.5 qts. total, 3.4 qts. usable.	
Oil Pressure, Normal and Idle operation	23 psig + 2 psi
Low Oil pressure (Master Caution)	45 psi
Oil Temperature, Maximum 325°F	
APU Envelope, Start -- up to 35,000 feet	
Operate -- up to 35,000 feet	

APU Maximum Continuous Electrical Loads must not exceed:

Ground	1.00 Indicated
Inflight	
at or below 25,000 feet	0.6
above 25,000 feet	0.5

Fuel

Commercial aircraft turbine fuel conforming to specifications listed in NOTE 7.

OIL

Oil to be used in the IAE V2525-D5 and V2528-D5 engines must conform to the following specification: MIL-L-23699. Oil brands qualified for use include: Mobil Jet II and Exxon 2380.

DATA PERTINENT TO ALL MODELS

Maximum Operating Altitude

35,000 ft. (DC-9-11 thru DC-9-51)
37,000 ft. (DC-9-81, -82, -83, -87, MD-88, and MD-90-30)

Operating Limitations

See NOTES 2, 3, and 4.

Other Operating Limitations

See FAA Approved Airplane Flight Manual.

Datum

7 inches forward of nose (Sta. 0).

MAC

141.5 in. (L.E. of MAC at Sta. 549.1). Models DC-9-11, -12, -13, -14, -15, -15F
147.4 in. (L.E. of MAC at Sta. 544.5). Model DC-9-21
147.4 in. (L.E. of MAC at Sta. 658.5). Models DC-9-31, -32, -32F, -33F
147.4 in. (L.E. of MAC at Sta. 696.5). Model DC-9-41
147.4 in. (L.E. of MAC at Sta. 753.4). Model DC-9-51
147.4 in. (L.E. of MAC at Sta. 658.4). Models DC-9-34, -34F
158.5 in. (L.E. of MAC at Sta. 885.5). Models DC-9-81, -82, -83 and MD-88
158.5 in. (L.E. of MAC at Sta. 771.5). Model DC-9-87
158.5 in. (L.E. of MAC at Sta. 942.5). Model MD-90-30

Leveling Means

One of two systems in each airplane:
(a) Spirit levels and leveling pads at Sta. 58.7 or
(b) Plumb bob and grid plate at Sta. 69.5

Control Surface Movements

To insure proper operation of the airplane, the movement of the various control surfaces must be carefully controlled by proper rigging of the Flight Control Systems. The airplane must therefore be rigged in accordance with the following: Model DC-9 Douglas Dwg. 7910641 or Model MD-90 Douglas Dwg. 7940643, "Inspection Procedure - Surface Throws, Flight Control" new or later change.

Service Life Limits
See NOTE 3

Certification Basis
Models DC-9-11, -12, -13, -14, -15, -15F, -21, -31, -32, -32F -33F, -34,-34F, -41, -51

CAR 4b dated December 31, 1953, Amendments 4b-1 thru 4b-16, the Special Conditions contained in Attachment "A" of FAA letter to Douglas dated October 20, 1965, the provisions of SR-422B and the following exemptions:

415D - CAR 4b.437, "Fuel Jettisoning System" (See wts. DC-9-10, -30, -40 and -50 Series Airplanes).

424 - CAR 4b.362, "Emergency Exit/Passenger Ratio" (DC-9-11, -12, -13, -14, -15, and 15F that incorporate one Type I and one Type III exit per side and tail cone exit).

NOTE: CAR 4b with Amendments 4b-1 thru 4b-16 is considered equivalent to FAR Part 25 (New) effective February 1, 1965.

All aircraft not flown before December 1, 1973 must comply with FAR 36 dated December 1, 1969, and Amendments 36-1 and 36-2.

Compliance with the following optional requirements has been established:

Ditching Provision 4b.361, including 4b.362(d) and 4b.742(e) and excluding 4b.645 and 4b.646. When the operating rules require emergency ditching equipment, compliance with 4b.645 and 4b.646 must be demonstrated. In such cases when the manufacturer has complied with part or all of the provisions of 4b.645 and 4b.646, the items of equipment will be called out on the pertinent interior arrangement drawing, entitled "FAA Approval Drawing," or "FAA Interior Schematic."

Ice Protection Provisions 4b.640.

Models DC-9-81 and -82
FAR 25, effective February 1, 1965, as amended by amendments 25-1 through 25-40, effective May 2, 1977, except for the following sections which are limited to showing compliance with the amendments indicated:

Section	Amendment	Section	Amendment	Section	Amendment
25.21	25-7	25.701	*	25.979	*
25.251(a)	25-23	25.721	25-15	25.1001	*
25.251(b)	25-23				
25.251(c)	25-23	25.787	*		
25.251(e)	25-23	25.803(c)	25-46		
25.255	25-42	25.803(e)	25-15		
25.395	*	25.807	25-15	25.1093	25-36
25.571	25-10	25.809	25-15	25.1203	*
25.607	*	25.811	25-15	25.1305	25-11
25.631	(N/A)	25.812	25-28	25.1309	*,**
25.671	*	25.863	*	25.1333*	*
				25.1351(d)**	
25.672	(N/A)	25.933	*	25.1435	*
25.695	*				
25.697	*	25.951	*		
25.699	*	25.955	*		

Models DC-9-83, -87 and MD-88

All provisions, as applicable, including Special Conditions and Exemptions mandated for the DC-9-80 series airplanes are applicable in total for the MD-88 airplane.

FAR 25, effective February 1, 1965, as amended by Amendments 25-1 through 25-40, effective May 2, 1977, except showing compliance with the following sections is limited to the amendments as shown in the following table:

Section	Amendment	Section	Amendment	Section	Amendment
25.21	25-7	25.701	*	25.955	*
25.251(d)	(N/A)	25.721	25-15	25.979	*
25.255	25-42	25.787	*	25.1001	*
25.395	*	25.803(c)(d)	25-46	25.1093	25-36
25.571	25-10	25.803(e)	25-15	25.1203	*
25.607	*	25.807	25-15	25.1305	25-11
25.631	(N/A)	25.809	25-15	25.1309	*,**
25.671	*	25.811	25-15	25.1333	*
25.672	(N/A)	25.812	25-28	25.1351(d)	**
25.695	*	25.863	*	25.1435	*
25.697	*	25.933	*		
25.699	*	25.951	*		

Applies to DC-9-81, -82, -83, -87, MD-88 and MD-90-30

(N/A) indicates sections added to FAR 25 by later amendments for which compliance is not applicable.
* as Adopted at original issuance of FAR 25.
** Thru Amendment 25-41 for operation without normal electrical power, autoland system and post stall recovery (stick pusher) system.
Special Condition, No. 25-88-WE-25, "Automatic Takeoff Thrust Control System (ATTCS)", issued March 9, 1979, for the Model DC-9-80/MD-80 series airplanes.
Special Conditions, No. 25-95-WE-27, "Hydraulic System Failure", "In Flight Thrust Reversal", and "Environmental Flight Testing", issued April 3, 1980, for the Model DC-9-80/MD-80 series airplanes.

Special Condition No. 25-ANM-15, "Lightning Protection for new Electronic Systems," issued October 19, 1987, for the Model DC-9-80/MD-80 series airplanes.

Exemption No. 415D, FAR 25.1001, "Fuel Jettisoning System", issued June 23, 1980, for the Model DC-9-80/MD-80 series airplanes, (See Maximum Weights DC-9-81, -82, -83, -87 and MD-88).

Applicable noise standards per FAR 36, effective December 1, 1969, as amended by Amendments 36-1 through 36-11 for the DC-9-81, and through 36-12 for the -82, -83, -87 and MD-88, and through 36-20 for the MD-90-30. This includes retroactive noise requirements and requirements for an acoustical change in accordance with FAR 36-2 and 36-7 respectively.

Air Pollution requirements of EPA regulations Part 87, as implemented by SFAR 27, at the amendment current on the date of certification.

Compliance with the following optional requirements has been established:

Ditching Provisions 25.801, including 25.807 (d) and excluding 25.1411 and 25.1415. When the operating rules require emergency ditching equipment, compliance with 25.1411 and 25.1415 must be demonstrated. In such cases when the manufacturer has complied with part or all of the provisions of 25.1411 and 25.1415, the items of equipment will be called out on the pertinent interior arrangement drawing, entitled "FAA Interior Schematic."

Ice Protection Provisions 25.1419

Part 25, as amended by Amendment 25-1 thru 25-59 (except Section 25.1333), is applicable for the new equipment identified for the Model MD-88.

Certification Basis

Model MD-90-30

The type certification basis for the MD-90-30 Model airplane is Federal Aviation Regulations Part 25, effective February 1, 1965, as amended by Amendments 25-1 through 25-70 except as indicated below:

SECTION	THRU AMENDMENT 25-XX
25.109(a)	(*)
25.251(d)	22 (**)
25.561(b)(3)(iii)	63
25.562(a), (c)(1), (c)(3), (c)(5), & (c)(6)	63 (**)
25.571(e)(1)	44 (**)
25.607	22
25.631	22 (**)
25.699(a)	22
25.701	22
25.777(c)	45
25.807(c)	31
25.809(b) & (f)(1)(i)	31
25.809(f)(1)(v)	45 (**)
25.979	10
25.1309	22 (***)
25.1401(b) & (f)	40

(*) Compliance with Amendment 25-42 as modified by the proposed requirements developed from results of FAA/JAA harmonization.

(**) Requirements of this section have been added to FAR Part 25 by amendment since the original type certification basis and are not applicable to this type design.

(***) Compliance as defined in McDonnell Douglas Report MDC-K4925 where some equipment installations and equipment comply with §25.1309 as amended by Amendment 25-22 and others comply with §25.1309 as amended through Amendment 25-41.

The Special Conditions applying to the Model MD-90-30 are as follows:

(1) Special Conditions No. 25-95-WE-27
Airframe "Hydraulic System Failure" is applicable.
Powerplant "In-Flight Thrust Reversal" is applicable.
Flight Test "Environmental Flight Testing" is not required since FAR 25.253(a)(2)(iii) Amendment 54 incorporates its intent.

(2) Special Condition, No. 25-88-WE-25, "Automatic Takeoff Thrust Control System" is not required since "Automatic Reserve Thrust Control System (ARTS) is deleted.

(3) Special Condition No. 25-ANM-26 "Windshear" is applicable.

(4) Special Condition No. 25-ANM-15 "Lightning Protection for New Electronic Systems" is applicable.

A Special Condition on High Intensity Radiated Fields (HIRF)
(S.C. No. 25-ANM-60) is required as indicated in Issue Paper G-4, Stage 2.

Type Certificate No. A6WE approved:
November 23, 1965 for Models DC-9-11, -12, -13, and -14
January 21, 1966 for Model DC-9-15
December 19, 1966 for Model DC-9-31
March 1, 1967 for Models DC-9-15F and -32
October 4, 1967 for Model DC-9-32F
February 21, 1968 for Model DC-9-41
April 5, 1968 for Model DC-9-33F
November 25, 1968 for Model DC-9-21
August 11, 1975 for Model DC-9-51
April 20, 1976 for Model DC-9-34F
November 3, 1976 for Model DC-9-34
August 25, 1980 for Model DC-9-81
July 29, 1981 for Model DC-9-82
October 17, 1985 for Model DC-9-83
October 21, 1987 for Model DC-9-87
December 10, 1987 for Model MD-88
November 4, 1994 for Model MD-90-30

Production Basis: Production Certificate Number 27.

Required Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (See Certification Basis) must be installed in the aircraft for certification. All of the required equipment that must be installed as well as optional equipment installations approved by the FAA are contained in Chapter 2 of Master Weight and Balance Manual listed in NOTE 1(a) below.

Service Information

The repairs called out in the Douglas Model DC-9 Structural Repair Manual are FAA approved. All Douglas Service Bulletins and other service information, when FAA approved, will carry a statement to that effect.

NOTE 1.

(a) A current weight and balance report, including a list of equipment included in certificated empty weight, and loading instructions must be in each aircraft at the time of original certification and at all times thereafter except in the case of operators having an approved weight control system. The following Douglas Aircraft Company Reports contain loading information and interior arrangement configuration(s) for each airplane (listed by fuselage number and factory serial number) as delivered. These reports contain, or refer to, information relative to location of all passenger and crew member seats, location and capacity of all cargo and baggage compartments, buffets, storage spaces and coat rooms, location and capacity of lounges and lavatories, and the required placards in the passenger compartment. Refer to appropriate Model DC-9 Report(s) for factor serial number effectivity.

Models DC-9-11, -12, -13, -14, and -15
Report No. LB-32360, Chapter 1, "Master Weight and Balance Manual."
Model DC-9-15F
Report No. DAC-33247, Chapter 1, "Master Weight and Balance Manual."
Model DC-9-21
Report No. DAC-66957, Chapter 1, "Master Weight and Balance Manual."
Models DC-9-31, -32
Report No. DAC-33098, Chapter 1, "Master Weight and Balance Manual."
Report No. MDC-07282, Chapter 1, "Master Weight and Balance Manual."
Model DC-9-32F, Serial Nos. 47040, 47041, 47147 and 47148.
Report No. DAC-33098, Chapter 1 with Section 1-8 "Master Weight and Balance Manual."
Models DC-9-32F, (except as noted above) -33F and -34F
Report No. DAC-33870, Chapter 1, "Master Weight and Balance Manual."
Report No. MDC-J7283, Chapter 1, "Master Weight and Balance Manual."
Model DC-9-32F (C-9A Aeromed), -32 (VC-9C)
Report No. DAC-33756, Chapter 1, "Master Weight and Balance Manual."
Model DC-9-32F (C-9B)
Report AN 01-1B-40, "Weight and Balance Data Handbook."
Report No. MDC-J7283, Chapter 1, "Master Weight and Balance Manual."
Model DC-9-34
Report No. MDC-J7282, Chapter 1, "Master Weight and Balance Manual."
Model DC-9-41
Report No. DAC-33871, Chapter 1, "Master Weight and Balance Manual."
Model DC-9-51
Report No. MDC-J6201, Chapter 1, "Master Weight and Balance Manual."
Models DC-9-81, -82, -83, and MD-88
Report No. MDC-J8358, Chapter 1, "Master Weight and Balance Manual."
Model DC-9-87
Report No. MDC-J3855, Chapter 1, "Master Weight and Balance Manual."
Model MD-90-30
Report No. MDC-91K0981, Chapter 1, "Master Weight and Balance Manual."

(b) The airplane must be loaded so that the C.G. is within specified limits at all times, considering fuel loading and usage, gear retraction, and movement of crew and passengers from their assigned positions.

(c) The weight of system fuel and oil, as defined below, and hydraulic fluid, all of which must be included in the airplane empty weight, is listed in the Master Weight and Balance Manual specified in paragraph (a) above, for each airplane.

System Fuel: The weight of all fuel required to fill all lines and tanks up to the zero fuel point on the fuel gages in the most critical flight attitude. This includes the unusable tank fuel as defined by CAR 4b.416 (DC-9-11 thru -51) or FAR 25.959 (DC-9-81, -82, -83, -87, MD-88 and MD-90-30).

System Oil: The weight of oil remaining in the engine, constant speed drive (VSCF generator for MD-90-30), lines and tanks after subtracting the oil in the tanks which is above the standpipe (zero gage) levels. The engine oil tank capacities shown elsewhere in this data sheet include only the usable oil for which the tanks must be placarded.

(d) The "unusable" fuel is that amount of fuel, including tank trapped fuel, in the tanks which is unavailable to the engines under critical flight conditions as defined in CAR 4b.416 (DC-9-11 thru -51) or FAR 25.959 (DC-9-81, -82, -83, -87, MD-88 and MD-90-30) and may be obtained by taking the differences between the "total" and "usable" tank capacities shown under "fuel capacity." This "unusable" fuel is included in system fuel as indicated in 1(c) above and need not be accounted for separately.

(e) All weight in excess of the maximum certificated zero fuel weight must be fuel in the main tanks, except for Models DC-9-31, -32, -32F, -33F, -34, -34F, -41, -51, -81, -82, -83, -87, MD-88 and MD-90-30, (See Footnote (1) under Maximum Weights). Two fuel pumps must be operating in each main tank unless extra reserve fuel is loaded to compensate for an inoperative pump in accordance with the AFM. The center wing tank will supply fuel to both engines directly. Fuselage tank pumps must be off for all take-offs and landings for those airplanes which have fuselage tanks that supply the engines directly. The maximum unbalance in fuel between the main tanks should not exceed 1,500 lbs. in flight.

NOTE 2. The following placard must be placed on the instrument panel in full view of the pilot: **"Take-off and land unpressurized."**

NOTE 3. Life Limited Parts and Airworthiness Limitations.

DC-9 and MD-80 structural components which are life limited are listed in Report MDC-J0005 and must be replaced as indicated therein. MD-90 structural components which are life limited are listed in Part 1, Safe Life Limits, of Section 1 to the Airworthiness Limitations Instructions (ALI) Document, Report MDC-94K9000, and must be replaced as indicated therein. The MD-90 damage tolerance inspections must be conducted in accordance with Report MDC-94K9000. DC-9, MD-80 and MD-90 non-structural components which are life limited are listed in report MDC-92K9145,
"DC-9, MD-80 and MD-90 Special Compliance Requirements."

Reports MDC-J0005, MDC-94K9000, and MDC-92K9145, and revisions thereto, are hereby incorporated as part of Data Sheet No. A6WE. Copies of these reports may be obtained from the manufacturer:

McDonnell Douglas Corporation
Douglas Aircraft Company
3855 Lakewood Boulevard
Long Beach, California 90846
Attention: Contract Data Management, Mail Code: 35-22

The following applies to the Models DC-9-81, -82, -83, -87, MD-88, and MD-90-30 as applicable:

Equipment Functional Check Intervals as defined in FAA Approved MDC Report MDC-J1271, "DC-9-80 Fixed Maintenance Intervals" for the MD-80 and MDC-93K9014 "MD-90 Certification Maintenance Requirements" for the MD-90, shall not be extended, and any later approved revisions thereto, are hereby incorporated as part of Data Sheet No. A6WE. Such later revisions may be used only if approved by FAA DC-9-80/MD-88/MD-90 certificating region engineering office. Copies may be obtained from the manufacturer at the above address.

Brake Wear Limits

See Report No. MDC-92K9064, "Twinjet Brake Wear Limits."

NOTE 4. For specific dimensional and weight limits, static unbalance, rated pressure, load rating, speed rating, etc., see the following McDonnell Douglas Tire Specification Drawing:

Tire Spec. Dwg.	Tire	Max. Weight	Airplane Series
7924523	26x6.6 (Chine)	40 lbs.	Series 10, Models -31, -32, and -41
7929726	26x6.6	40 lbs.	Series 10, -20, -30, -40, -50, -80, MD-88, and MD-9-30
7911309	40x14	150 lbs.	Series 10, -20, and Models -31, -32, and -32F
7926174	41x15-18	175 lbs.	Series 40, -50 and Models -33F, -34 and -34F
7935357	H44.5x16.5-20	240 lbs.	Series 80 and MD-88
PS5554	H44.5x16.5-21	205 lbs.	MD-90-30

NOTE 5. If engines are intermixed, the maximum thrust must be limited to that associated with the lowest powered engine. Combinations of engines which can be intermixed and their respective limitations are covered in the FAA Approved Airplane Flight Manual.

For DC-9-81, -82, -83, -87 and MD-88: Engine installation "Intermix" configurations may be utilized in accordance with MDC DC-9-80 Maintenance Manual, Chapter 71, Engine Intermix, and the applicable appendices of the FAA Approved Airplane Flight Manual. For DC-9-83: Pratt and Whitney JT8D-219 engines may be intermixed in combination with JT8D-209, -217, -217A and -217C engines on the DC-9-83 airplanes, provided that the intermixed combinations and their respective limitations are covered in the FAA Approved Airplane Flight Manual.

: For DC-9-87 and MD-88: Pratt and Whitney JT8D-219 engines may be intermixed in combination with JT8D-217A and JT8D-217C engines on the DC-9-87 and MD-88 airplanes provided that the intermixed combinations and their respective limitations are covered in the FAA Approved Airplane Flight Manual.
For MD-90-30: Intermix not permitted.

NOTE 6.(a) To assure that required overwing emergency exits will meet the pertinent CAR, or FAR, the passenger seat installation drawing prepared by the manufacturer for each operator and approved by the Aircraft Engineering Division, refers to Drawing No. 7916427 or Report Number K4358 for locating seats. This Drawing defines the minimum dimensions for locating the rear locking pins in relation to the center line of the Type III overwing emergency exits and other limitations relative to type of seats, location of armrest and seat back recline, etc., for each of the approved seat models called out on the drawing.

(b) Maximum Passenger Capacity:

DC-9-11, -12, -13, -14 -15, -15F and -21	EXITS REQUIRED		
PASSENGER CAPACITY (1)	TYPE I / SIDE	TYPE III / SIDE	TAIL EXIT
79	1	1	1 (3)
94	1	1	1 (4)
109	1	2 (2)	1 (3)

DC-9-31, -32, -32F, -33F, -34, and -34F	EXITS REQUIRED		
PASSENGER CAPACITY	TYPE I / SIDE	TYPE III / SIDE	TAIL EXIT
109 (1)	1	2 (2)	1 (3)
127	1	2 (2)	1 (5)
127	1 (9)	2 (2)	1 (10)

DC-9-41	EXITS REQUIRED		
PASSENGER CAPACITY	TYPE I / SIDE	TYPE III / SIDE	TAIL EXIT
128 (6)	1	2 (2)	1 (5)

(b) Maximum Passenger Capacity: (cont'd)

DC-9-51	EXITS REQUIRED		
PASSENGER CAPACITY	TYPE I / SIDE	TYPE III / SIDE	TAIL EXIT
139 (6)	1	2 (2)	1 (5)

DC-9-81, -82, -83, MD-88 and MD-90-30	EXITS REQUIRED			
PASSENGER CAPACITY	TYPE I/SIDE	TYPE III/SIDE	TAIL EXIT	TYPE I LH SIDE AFT
172 (6) (12)	1	2 (7)	1 (8)	1

DC-9-87	EXITS REQUIRED			
PASSENGER CAPACITY	TYPE I/SIDE	TYPE III/SIDE	TAIL EXIT	TYPE I LH SIDE AFT
139 (6)	1	2 (7)	1 (8)	1 (11)

(1) Passenger capacity may be increased by 5 when inflatable slides are installed at Type I exits.
(2) Aft Type III exit per side may be limited to Type IV qualifications.
(3) Required exit consists of tail cone exit with assist rope.
(4) Required exit consists of tail cone exit, slide and assist space per Exemption No. 424.
(5) Tail cone exit must show compliance with FAR 25.807(c)(6)(ii), effective October 24, 1967.
(6) Aircraft must show compliance with FAR 25.2.
(7) Aft overwing exit per side is considered Type III exit by equivalent safety finding per FAA letter to Douglas Aircraft Company, dated August 22, 1980.
(8) Tail cone exit must be in compliance with the FAA requirements contained in FAA letter dated November 16, 1977.
(9) Installation of approved inflatable slide required.
(10) Tail cone exit must show compliance with FAR 25.807(c)(6)(iii) and FAR 25.809(f)(1) effective October 24, 1967.
(11) Optional, not installed on all aircraft and not required for the maximum passenger capacity. If installed, must meet all Type I exit requirements of FAR 25.807 through 25.813 (see certification basis for applicable amendment).
(12) Issue Paper SE-1 allows a maximum of 103 seats to be installed forward of the forward overwing exit on the MD-90-30.

NOTE 7.

(a) For Pratt and Whitney engines, MIL-J-5624E (Grades JP-4 & JP-5), ASTM D1655 (Type JET A, A-1, & JET B) and any other fuels conforming to P&W Specification No. 522 and later revisions, may be used separately or mixed in any proportions without adversely affecting the engine operation or power output. No fuel control adjustment is required when switching fuel types.
(b) Shell anti-static fuel additive ASA-3 may be used if concentration delivered to the engine does not exceed 1 (one) p.p.m.
(c) MALCO 5403 corrosion inhibitor fuel additive may be used if concentration delivered to airplane does not exceed 8 lb/1000bbl (23mg/1) of turbine fuel.
(d) For IAE engines, Kerosene type fuels as defined in ASTM-D-1655 (JET A and A1), as specified in engine Type Certificate Data Sheet E40NE, may be used.

NOTE 8.

All replacement seats (crew, passenger and lounge), although they may comply with TSO-C39, must also be demonstrated to comply with CAR 4b.358(c)(DC-9-11 thru -51) or FAR 25.785(i) (Certification basis for applicable amendment) (DC-9-81, -82, -83, -87, MD-88 and MD-90-30). Other installations, such as berths, buffets, compartments, or items of mass which could create a hazard to the safety of passengers and crew must also be demonstrated to meet the same requirements. MD-90-30 passenger seats must also comply with FAR 25.562(b), (c)(2), (c)(4), (c)(7), (c)(8).

NOTE 9.

Any serial numbers eligible for Model DC-9-11, -12, -13, -14 may be converted to another model (DC-9-11, -12, -13, -14) by adding a new nameplate, obtained from the manufacturer, installed adjacent to the original nameplate. The new nameplate must include the date of conversion and the new model designation. The original nameplate must not be removed. Appropriate FAA Airplane Approved Flight Manual pages must be obtained from the manufacturer for the new model. The model designation for serial numbers noted is as delivered by the manufacturer.

NOTE 10.

C-9A airplanes are the same as the basic Model DC-9-32F except for interior configuration and loading ramp. The limitations applicable to C-9A Aeromed airplanes are based on the fuselage loading distributions associated with this particular interior configuration and are not therefore applicable to other Model DC-9-32F airplanes.

C-9B airplanes are the same as the basic Model DC-9-32F.
VC-9C airplanes are the same as the basic Model DC-9-32 except for interior configuration and installation of 2250 gal. auxiliary fuselage belly tanks. The limitations applicable to the VC-9C airplanes are based on loading distribution associated with this particular configuration and are not therefore applicable to other Model DC-9-32 airplanes.

Prior to operation as a commercial aircraft, the following must be accomplished:

(a) The C-9A Aeromed military litters are not FAA approved and must be removed from the aircraft.
(b) The maintenance, overhaul and modifications records of each aircraft must be reviewed for changes made by the military services that may affect the airworthiness of the aircraft. Modifications, changes of equipment and repairs, which affect the safety or performance of the aircraft, must be approved by the FAA.
(c) All aircraft returned to civil operations must comply with all applicable Airworthiness Directives.
(d) Aircraft will be certificated as a Model DC-9-32 or DC-9-32F as applicable. A modification nameplate shall be installed adjacent to the original nameplate and shall contain the following information:

Modifier's Name _____
Civil Model _____
Date of Modification _____

(e) An FAA Approved Airplane Flight Manual applicable to the Model DC-9-32 or DC-9-32F as modified for the particular operation intended, must be provided for each airplane.

NOTE 11. DC-9-11 aircraft, S/N 45728 was modified to a DC-9-14 per MDC Letter C1-25-6317, dated August 26, 1971; DC-9-11 aircraft, S/N's 45729 and 45730 were modified to DC-9-14, per MDC Letter C1-25-2156, dated March 9, 1970.

DC-9-12 aircraft, S/N 47056 was modified to a DC-9-14 per MDC Letter C1-25-3641, dated May 10, 1967.

DC-9-31 aircraft, S/N's 47442, 47450, 47566, 47572, 47573, 47638, 47647, 47649, 47664, 47720, 47721 and 47727, were modified to Model DC-9-32 in accordance with Report No. MDC-J0846, and a new nameplate was installed adjacent to the original to include this new model designation and date of conversion.

DC-9-32 aircraft, S/N's 45846, 47020, 47023, 47026, 47068, 47351, 47352, were modified to a DC-9-31. A new nameplate was installed adjacent to the original to include this new model designation and date of conversion. Subsequent changes of model designation to S/N's 47026, 47351, 47352, airplanes must be made in accordance with Douglas Report MDC-J0846.

DC-9-81 airplane S/N's 48095-48098 were reassigned to DC-9-82 airplanes prior to manufacture and delivery.

A DC-9-81 airplane may be designated a DC-9-82, a DC-9-82 airplane may be designated a DC-9-83, and a DC-9-82 may be designated a DC-9-81 when modified in accordance with McDonnell Douglas Report MDC-J2725; and, by adding a new nameplate, obtained from the manufacturer, installed adjacent to the original nameplate. The new nameplate must include the date of conversion and the new model designation. The original nameplate must not be removed. Appropriate FAA Airplane Approved Flight Manual pages must be obtained from the manufacturer for the new model.

DC-9-82 airplanes, S/Ns 49532 through 49539, were converted to MD-88s in accordance with McDonnell Douglas Service Bulletins 22-89, 34-183, 34-188, and 53-199 and McDonnell Douglas letter 88FAA-C1-E65-3498, dated June 1, 1988. Appropriate FAA Approved Airplane Flight Manual pages must be obtained from the manufacturer for the new model.

NOTE 12. The use of the suffix - CF instead of -F when referring to the DC-9-15F, DC-9-32F, DC-9-33F or DC-9-34F Model designations does not alter the aircraft. For example, a DC-9-34F airplane and a DC-9-34CF airplane are the same and the Model designations may be referred to interchangeable.

NOTE 13. In the DC-9-81, -82, -83, -87, and MD-88, all interior materials must comply with the fire protection requirements of FAR 25.853, effective May 2, 1977. In the MD-90-30, all interior materials must comply with the fire protection requirements of FAR 25.853, effective September 26, 1988.

NOTE 14. The official designator for the McDonnell Douglas Model DC-9-81, -82, -83, or -87 is the DC-9-81, -82, -83, or -87. The "MD" designator may be used in parentheses, but must be accompanied by the official designator (i.e., DC-9-81 (MD-81)).

NOTE 15. The Model DC-9 Series airplanes have a mandated supplemental Structural Inspection Program (SIP). These programs were prepared in accordance with the provisions of AC 91-56. Evaluation of structural elements, type of damage considered (fatigue, corrosion, service, and production damage) and the inspection and/or modification criteria should, to the extent practicable, be in accordance with the damage tolerance principles (Amendment 25-45) of the current FAR 25.571 standards.

NOTE 16. The location of flight attendant seats demonstrated to comply with the direct view requirements of FAR 25.785(h)(1), for the MD-90-30, are shown on the manufacturers interior arrangement drawing, entitled, "FAA Interior Schematic."

NOTE 17. McDonnell Douglas MD-80 and MD-90 FAA accepted Maintenance Review Board reports contain the initial minimum maintenance/inspection requirements to be used in the development of an approved continuous airworthiness maintenance program for the airframe, engines, systems and components. The tasks and their frequencies given in this report form a part of the instructions for continued airworthiness as required by FAR Part 25, Appendix H.

NOTE 18. For MD-90-30 Model, the APU life limited components are listed in the manufacturer's maintenance manual.

NOTE 19. For MD-90-30 Systems Anomalies, refer to McDonnell Douglas Report No. 94K9143 "Nuisance Discrepancies Report."

.....END.....