

## Boeing 737-200 Performance

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## ABBREVIATED CHARTS

Use the following charts to quickly determine trip fuel and trip time.

### 737-200 Flight Planning, Optimum Altitude

<b>JT8D-9/15</b> ABBREVIATED FLIGHT PLANNING - OPTIMUM ALTITUDE 280/.70 CLIMB .72/310 DESCENT 250 KTS CRUISE BELOW 10,000 FT. 320 KTS CRUISE 10,000 THRU 22,000 FT. .72 MACH CRUISE 23,000 FT AND ABOVE T.O.W. 85,000 LBS PLUS FUEL BURN				
DIST (NM)	ALTITUDE	TAS (KTS)	AIR TIME	FUEL BURN
50	70-90	279	16	1700
60	80-100	279	17	1700
70	100-120	377	19	1900
80	130-150	392	21	2100
90	150-170	406	23	2200
100	170-190	417	24	2400
110	190-210	429	26	2500
120	210-230	441	27	2700
130	230-250	441	29	2800
140	230-250	441	31	2900
150	250-270	437	32	3100
160	270-290	432	33	3300
170	270-290	432	34	3400
180	290-310	428	36	3500
190	310-330	423	37	3600
200	310-330	423	39	3800
210	330-350	419	41	4000
220			42	4100
230			44	4200
240			45	4300
250			47	4400
260			48	4500
270			50	4600
280			51	4700
290			52	4900
300			54	5000
310			55	5100
320			57	5200
330	330-350	419	58	5300

NOTE: For 340 - 1000 NM, use Abbreviated Flight Planning - One-Third Distance at Cruise chart (below).

### TIME AND FUEL CORRECTION FOR WIND

Change in Time = Time x Wind Component/TAS

Change in Fuel = Fuel x Wind Component/TAS

Example:

- Dist + 250 NM
- Still Air Time = 47 Min
- Still Air Fuel = 4400 lbs
- Change in Time =  $47 \times 20/419 = 2.2$  Min
- Change in fuel =  $4400 \times 20/419 = 210$  Lbs

Add change in time and change in fuel for headwind; subtract for tailwind

### **737-200 Flight Planning, One-Third Distance at Cruise**

JT8D-9/15 ABBREVIATED FLIGHT PLANNING - ONE-THIRD DISTANCE AT CRUISE 250/.70 CLIMB .72/310/250 DESCENT 250 KTS CRUISE BELOW 10,000 FT. 320 KTS CRUISE 10,000 THRU 22,000 FT. .72 MACH CRUISE 23,000 FT. AND ABOVE T.O.W. 85,000 LBS PLUS FUEL BURN				
DIST (NM)	ALTITUDE	TAS (KTS)	AIR TIME	FUEL BURN
50	60-70	279	15	1700
60	60-70	279	17	1900
70	100-110	368	18	1900
80	110-110	368	20	2100
90	100-110	368	22	2300
100	100-110	368	23	2500
110	110-120	373	26	2700
120	120-130	379	27	2900
130	140-150	284	28	3000
140	160-170	401	29	3200
150	180-190	413	31	3300
160	200-210	425	32	3500
170	200-210	425	33	3600
180	210-220	432	35	3700
190	220-230	437	36	3800
200	230-240	435	38	4000
210	240-250	433	39	4100
220	250-260	431	41	4200
230	260-270	430	42	4300
240	270-280	428	44	4400
250	280-290	426	45	4600
260	290-300	424	47	4600

270	290-300	424	48	4700
280	300-310	422	50	4900
290	300-310	422	51	5000
300	310-320	421	53	5100
310	320-330	419	54	5100
320	320-330	419	55	5200
330	320-330	419	57	5300
340	330-350	415	58	5500
350	330-350	415	59	5600
400	330-350	415	67	6100
450	330-350	415	74	6800
500			81	7500
550			89	8000
600			96	8600
650			103	9200
700			111	9900
750			118	10400
800			125	11000
850			132	11600
900			139	12300
950			147	13000
1000	330-350	415	154	14000

#### TIME AND FUEL CORRECTION FOR WIND

Change in Time = Time x Wind Component/TAS

Change in Fuel = Fuel x Wind Component/TAS

Example:

- Dist + 250 NM
- Still Air Time = 47 Min
- Still Air Fuel = 4400 lbs
- Change in Time =  $47 \times 20/419 = 2.2$  Min
- Change in fuel =  $4400 \times 20/419 = 210$  Lbs

Add change in time and change in fuel for headwind; subtract for tailwind

## 737-200 In-Flight Diversion Chart

<b>JT8D-9/15</b> <b>280/.70 CLIMB</b> <b>250 KTS CRUISE BELOW 10000 FT.</b> <b>LONG RANGE CRUISE 10000 FT. AND ABOVE</b>				
DIST (NM)	REC. ALT.	TAS KTS	TIME MIN	FUEL LBS
30	5000-6000	270	10	1050
40	5000-6000	270	12	1250
50	6000-7000	274	14	1400
60	6000-7000	274	16	1550
70	10000-11000	335	17	1650
80	10000-11000	335	18	1750
90	10000-11000	335	20	1900
100	10000-11000	335	21	2050
110	11000-12000	337	23	2200
120	12000-13000	340	24	2350
130	13000-14000	343	26	2500
140	14000-15000	347	28	2650
150	15000-16000	350	29	2800
160	16000-17000	355	31	2950
170	16000-17000	355	32	3100
180	17000-18000	360	34	3250
190	18000-19000	364	35	3400
200	19000-20000	368	37	3500
210	20000-21000	372	38	3650
220	21000-22000	376	39	3800
230	21000-22000	376	41	3900
240	22000-23000	380	42	4000
250	23000-24000	384	43	4150
260	24000-25000	388	45	4250
270	25000-26000	392	46	4350
280	26000-27000	396	48	4450
290	26000-27000	396	49	4600
300	27000-28000	399	50	4700
310	28000-29000	401	52	4800
320	28000-29000	401	53	4900
330	28000-29000	401	55	5000
340	28000-29000	401	56	5100
350	28000-29000	401	58	5200
360	28000-29000	401	59	5300
370	28000-29000	401	60	5400
380	28000-29000	401	62	5500
390	28000-29000	401	63	5600
400	28000-29000	401	64	5700

Note: Distance is from point of diversion to alternate.

### TIME AND FUEL CORRECTION FOR WIND

Change in Time = Time x Wind Component/TAS

Change in Fuel = Fuel x Wind Component/TAS

Example:

- Dist + 250 NM

- Still Air Time = 47 Min
- Still Air Fuel = 4400 lbs
- Change in Time =  $47 \times 20/419 = 2.2$  Min
- Change in fuel =  $4400 \times 20/419 = 210$  Lbs

Add change in time and change in fuel for headwind; subtract for tailwind

**Additional allowances that must be included to obtain the total fuel required:**

- APU Operation -
  - Idle or Electrical Load Only: 2.5 lbs/min
  - Bleed & Electrical Load: 4.2 lbs/min
- In-Flight Flaps Down Maneuvering: 100 lbs/min
- 45 Minute Reserve Fuel (250 kts below 10,000 / Long Range Cruise at 10,000 feet and above):

Pressure Altitude (Feet)	Fuel (Pounds)
30,000	3400
25,000	3600
20,000	3800
15,000	4000
10,000	4200
9,000	3800
5,000	3900

- Holding Information:

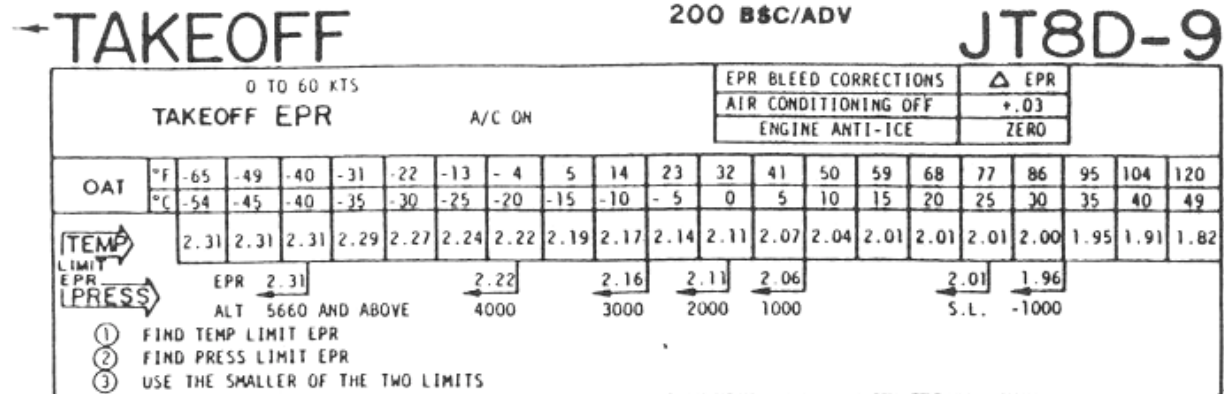
Altitude (Feet)	Fuel Flow - lbs/hr	Fuel Flow - lbs/min
30,000	4300	72
20,000	4400	74
15,000	4550	76
14,000	4600	77
10,000	4750	79

# TAKEOFF CHARTS

## 737-200 Max Takeoff EPR Limit JT9D-9/-15

5. Max Takeoff EPR Limit

737-200



## JT8D-15 200 ADV

MAX TAKEOFF EPR		EPR BLEED CORRECTIONS																	
		ENGINE BLEEDS FOR A/C OFF																	
		ENGINE ANTI-ICE ON																	
		ENGINE ANTI-ICE ON SHADED AREA																	
0 TO 60 KNOTS		ENGINE BLEEDS FOR A/C ON																	
OAT	*F	-65 TO -13	-4	5	14	23	32	41	50	59	68	77	86	95	104	113	122	131	
	*C	-54 TO -25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55	
-1000		2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.04	1.99	1.94	1.90	1.84	
S.L.		2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.09	2.04	1.99	1.94	1.90	1.84	
1000		2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.14	2.13	2.13	2.13	2.09	2.04	1.99	1.94	1.90	1.84	
2000		2.21	2.21	2.21	2.21	2.21	2.20	2.17	2.14	2.14	2.14	2.12	2.09	2.04	1.99	1.94	1.90	1.84	
3000		2.27	2.27	2.27	2.26	2.23	2.21	2.17	2.14	2.14	2.14	2.12	2.09	2.04	1.99	1.94	1.90	1.84	
3856 & ABOVE		2.31	2.30	2.28	2.26	2.23	2.21	2.17	2.14	2.14	2.14	2.12	2.09	2.04	1.99	1.94	1.90	1.84	

## 737-200 Reduced Takeoff EPR BASIC/ADVANCED JT8D-9

DO NOT USE ON PRECIPITATION COVERED RUNWAYS  
ANY FLAP SETTING  
PACKS ON OR OFF

6000 FT. PRESSURE ALTITUDE AND BELOW											
				EPR REDUCTIONS							
SURPLUS WEIGHT LB	O A T	° F	14 TO 22	23 TO 31	32 TO 40	41 TO 49	50 TO 58	59 TO 67	68 TO 76	77 TO 85	86 AND ABV
2000 TO 2999											.01
3000 TO 3999										.01	.02
4000 TO 4999									.02	.03	.03
5000 TO 5999						.01	.01	.02	.03	.04	.04
6000 TO 6999						.01	.03	.04	.05	.05	.05
7000 TO 7999					.02	.03	.04	.05	.06	.06	.06
8000 TO 8999				.02	.03	.05	.06	.07	.07	.07	.07
9000 TO 9999			.02	.03	.05	.06	.08	.08	.08	.08	.08
10000 TO 10999			.04	.05	.07	.08	.09	.09	.09	.09	.09
11000 TO 11999			.05	.07	.08	.10	.10	.10	.10	.10	.10
12000 TO 12999			.08	.08	.10	.11	.11	.11	.11	.11	.11
13000 TO 13999			.09	.10	.12	.12	.12	.12	.12	.12	.12
14000 TO 14999			.10	.12	.13	.13	.13	.13	.13	.13	.13
15000 TO 15999			.12	.14	.14	.14	.14	.14	.14	.14	.14
16000 TO ABOVE			.14	.14	.14	.14	.14	.14	.14	.14	.14

FOR -9 POWERED AIRCRAFT, INCREASE V1 AND VR BY 1 KNOT FOR EACH .10 EPR REDUCTION.

MINIMUM EPR							
PRESSURE ALTITUDE 1000 FEET							
-1	0	1	2	3	4	5	6
1.82	1.82	1.82	1.82	1.83	1.85	1.86	1.88

Increase min. EPR by .03 for bleeds off.



## 737-200 Reduced Takeoff EPR JT8D-15

6000 FT. PRESSURE ALTITUDE AND BELOW												
			EPR REDUCTIONS									
SURPLUS WEIGHT LB	O A T	° F	5 TO 13	14 TO 22	23 TO 31	32 TO 40	41 TO 49	50 TO 58	59 TO 67	68 TO 76	77 TO 85	86 AND ABV
2000 TO	2999											.01
3000 TO	3999										.01	.02
4000 TO	4999									.01	.02	.03
5000 TO	5999								.01	.02	.03	.04
6000 TO	6999							.01	.02	.03	.04	.05
7000 TO	7999						.01	.02	.03	.04	.05	.06
8000 TO	8999					.01	.02	.03	.04	.05	.07	.07
9000 TO	9999				.01	.02	.03	.04	.05	.07	.08	.08
10000 TO	10999			.01	.02	.03	.04	.05	.07	.08	.09	.09
11000 TO	11999		.01	.02	.03	.04	.05	.07	.08	.09	.10	.10
12000 TO	12999		.02	.03	.04	.05	.07	.08	.09	.11	.11	.11
13000 TO	13999		.03	.04	.05	.07	.08	.09	.11	.12	.12	.12
14000 TO	14999		.04	.05	.07	.08	.09	.11	.12	.13	.13	.13
15000 TO	15999		.05	.07	.08	.09	.11	.12	.14	.14	.14	.14
16000 TO	16999		.07	.08	.09	.11	.12	.14	.14	.14	.14	.14
17000 TO	17999		.08	.09	.11	.12	.14	.14	.14	.14	.14	.14
18000 TO	18999		.09	.11	.12	.14	.14	.14	.14	.14	.14	.14
19000 TO	19999		.11	.12	.14	.14	.14	.14	.14	.14	.14	.14
20000 TO	20999		.12	.14	.14	.14	.14	.14	.14	.14	.14	.14
21000 AND ABOVE			.14	.14	.14	.14	.14	.14	.14	.14	.14	.14

FOR -15 POWERED AIRCRAFT, INCREASE V1 AND VR BY 1 KNOT FOR EACH .12 EPR REDUCTION.

MINIMUM EPR							
PRESSURE ALTITUDE 1000 FEET							
-1	0	1	2	3	4	5	6
1.91	1.91	1.91	1.91	1.92	1.94	1.95	1.96

Increase min. EPR by .03 for bleeds off.

## 737-200 Basic JT8D-9 Takeoff Speeds

PRESSURE ALTITUDE 1000 FT	OAT						
	F° C°						
9 to 10	F° C°			-65 to -19 -54 to -28	-18 to 18 -27 to -8	19 to 45 -7 to 7	46 to 86 8 to 30
7 to 9	F° C°		-65 to -21 -54 to -29	-20 to 10 -28 to -23	11 to 39 -22 to 4	40 to 87 5 to 31	88 to 101 32 to 38
5 to 7	F° C°	-65 to -15 -54 to -26	-14 to 15 -27 to -9	16 to 40 -8 to 4	41 to 87 5 to 31	88 to 105 32 to 40	106 to 109 41 to 43
3 to 5	F° C°	-65 to 20 -54 to -8	21 to 42 -7 to 6	43 to 88 7 to 31	89 to 103 32 to 39	104 to 116 40 to 46	
1 to 3	F° C°	-65 to 46 -54 to 8	47 to 89 9 to 32	90 to 104 33 to 40	105 to 120 41 to 49		
-1 to 1	F° C°	-65 to 91 -54 to 33	92 to 105 34 to 40	106 to 120 41 to 49			
FLAPS	GROSS WT - 1000 LB	V1 VR V2	V1 VR V2	V1 VR V2	V1 VR V2	V1 VR V2	V1 VR V2
<b>1</b>	120	159 161 164	160 162 164	152 154 155			
	110	150 152 155	151 153 155	142 144 147			
	100	141 143 147	142 143 147	133 135 138	143 145 147	144 146 147	
	90	131 133 138	132 134 138	123 126 130	133 136 138	134 136 138	135 137 138
	80	122 124 130	122 125 130	114 118 122	124 126 130	125 127 130	125 128 130
	70	112 116 123	113 117 123			115 119 122	116 119 122
<b>5</b>	120	153 155 158	154 156 158				
	110	144 146 150	145 147 150				
	100	135 137 142	136 138 142	137 139 142	138 140 142		
	90	126 128 133	127 129 133	128 130 133	129 131 133	130 132 133	
	80	116 118 125	117 119 125	118 121 125	119 122 125	120 123 125	121 124 125
	70	106 109 118	107 110 118	108 111 117	109 112 117	110 113 117	112 114 117
<b>15</b>	105	135 135 138	136 136 138				
	100	130 130 135	131 131 135	132 132 135			
	90	120 121 128	121 122 128	123 123 128	124 124 128	125 125 128	126 126 128
	80	111 112 119	112 113 119	113 114 119	114 115 119	115 116 119	117 117 119
	70	105 105 112	101 103 112	102 105 112	103 106 112	105 107 112	106 108 112

Red area indicates performance affected by minimum control speed. Minimum field length for lightest weight above red area is required.

For maneuvers immediately after takeoff exceeding 15° bank, maintain at least V2 + 15 at takeoff flaps.

### V1 ADJUSTMENTS (V1 MUST NOT EXCEED VR)

#### WIND:

- ADD 1 KT PER 20 KTS HEADWIND
- SUBTRACT 1 KT PER 5 KTS TAILWIND

#### SLOPE:

- ADD 1 KT PER 1% UP SLOPE
- SUBTRACT 1 KT PER 1% DOWN SLOPE

## 737-200 Advanced JT8D-9 Takeoff Speeds

PRESSURE ALTITUDE 1000 FT	OAT						
	F° C°						
9 to 10	F° C°			-65 to -22 -54 to -30	-21 to 7 -29 to -14	8 to 34 -13 to 1	36 to 88 2 to 30
7 to 9	F° C°		-65 to -25 -54 to -32	-24 to 2 -31 to -17	3 to 31 -18 to -1	32 to 56 0 to 13	57 to 97 14 to 36
5 to 7	F° C°	-65 to -20 -54 to -29	-19 to 11 -28 to -12	12 to 34 -11 to 1	36 to 58 2 to 14	59 to 97 15 to 36	98 to 116 37 to 46
3 to 5	F° C°	-65 to 16 -54 to -9	17 to 40 -8 to 4	41 to 85 5 to 29	86 to 99 30 to 37	100 to 115 38 to 46	
1 to 3	F° C°	-65 to 47 -54 to 8	48 to 88 9 to 31	89 to 101 33 to 38	102 to 115 39 to 46		
-1 to 1	F° C°	-65 to 92 -54 to 33	93 to 103 34 to 39	104 to 115 40 to 46			
FLAPS	GROSS WT - 1000 LB	V1 VR V2	V1 VR V2	V1 VR V2	V1 VR V2	V1 VR V2	V1 VR V2
1	120	151 153 158	152 154 158	153 155 158	153 155 158		
	110	144 146 151	145 147 151	145 147 151	145 147 151		
	100	137 138 144	138 139 144	138 139 144	139 140 144	146 148 151	140 141 144
	90	129 130 136	129 130 136	130 131 136	131 132 136	131 132 136	132 133 136
	80	120 121 128	121 122 128	121 122 128	121 123 128	122 123 128	123 124 128
	70	110 111 120	112 113 120	112 113 120	113 114 120	113 114 120	114 116 120
2	120	146 148 153	147 149 153	148 150 153			
	110	140 141 146	141 142 146	141 142 146	142 143 146		
	100	133 134 139	133 134 139	134 135 139	134 135 139	134 135 139	135 136 139
	90	125 125 132	126 126 132	126 126 132	126 127 132	126 127 132	127 128 132
	80	117 117 124	117 117 124	118 118 124	119 119 124	119 119 124	120 120 124
	70	107 107 116	108 108 116	109 109 116	110 110 116	110 110 116	111 111 116
5	120	144 145 150	145 146 150				
	110	137 138 143	138 139 143	138 139 143	139 140 143		
	100	131 131 136	131 131 136	132 132 136	132 132 136	133 133 136	
	90	123 123 129	123 123 129	123 124 129	124 124 129	125 125 129	125 125 129
	80	115 115 122	115 115 122	116 118 122	116 116 122	117 117 122	117 117 122
	70	105 106 114	105 106 114	106 107 114	107 108 114	107 108 114	108 109 114
15	110	132 133 138	132 133 138	133 134 138			
	100	124 125 131	125 126 131	125 126 131	125 126 131		
	90	117 118 124	117 118 124	118 119 124	118 119 124	118 119 124	119 120 124
	80	109 110 117	109 110 117	110 111 117	110 111 117	111 112 117	111 112 117
	70	105 105 110	105 105 110	105 106 110	105 105 110	105 105 110	105 105 110

Red area indicates performance affected by minimum control speed. Minimum field length for lightest weight above red area is required.

For maneuvers immediately after takeoff exceeding 15° bank, maintain at least V2 + 15 at takeoff flaps.

### V1 ADJUSTMENTS (V1 MUST NOT EXCEED VR)

WIND: Subtract 1 kt per 5 kts tailwind

SLOPE: Subtract 1 kt per 1% down slope

## 732-200 Advanced JT8D-15 Takeoff Speeds

PRESSURE ALTITUDE 1000 FT	OAT						
9 to 10	F° C°				-65 to -2 -54 to -19	-1 to 32 -18 to 0	33 to 85 1 to 29
7 to 9	F° C°			-65 to 5 -54 to -15	6 to 36 -14 to 2	37 to 85 3 to 29	86 to 103 30 to 39
5 to 7	F° C°		-65 to 14 -54 to 10	15 to 42 -9 to 5	43 to 86 6 to 30	87 to 101 31 to 38	102 to 112 39 to 44
3 to 5	F° C°	-65 to 23 -54 to -5	24 to 49 -4 to 9	50 to 92 10 to 32	93 to 105 33 to 40	106 to 120 41 to 48	
1 to 3	F° C°	-65 to 71 -54 to 22	72 to 93 23 to 33	94 to 107 34 to 41	108 to 126 42 to 52		
-1 to 1	F° C°	-65 to 93 -54 to 32	94 to 110 35 to 43	111 to 121 44 to 49	122 to 131 50 to 55		
FLAPS	GROSS WT - 1000 LB	V1 VR V2	V1 VR V2	V1 VR V2	V1 VR V2	V1 VR V2	V1 VR V2
1	130	157 160 165	158 161 165	158 161 165	152 155 158	152 155 158	
	120	150 153 158	150 153 158	151 154 158	152 155 158	152 155 158	
	110	143 145 151	144 146 151	145 147 151	145 147 151	145 147 151	146 148 151
	100	136 137 144	137 138 144	138 139 144	138 139 144	138 140 144	138 140 144
	90	128 129 136	129 130 136	129 130 136	130 131 136	131 132 136	131 132 136
	80	119 120 128	120 121 128	121 122 128	121 122 128	122 123 128	122 123 128
	70	111 111 120	111 111 120	113 113 120	113 113 120	114 114 120	114 114 120
2	130	152 155 160	152 155 160	152 155 160	152 155 160	152 155 160	
	120	145 148 153	145 148 153	146 149 153	147 150 153	147 150 153	
	110	139 141 146	139 141 146	140 142 146	140 142 146	141 143 146	
	100	132 133 139	133 134 139	133 134 139	134 135 139	134 135 139	132 133 139
	90	124 125 132	124 125 132	125 126 132	125 126 132	126 127 132	126 127 132
	80	115 116 124	116 117 124	116 117 124	117 118 124	118 119 124	118 119 124
	70	106 107 116	107 107 116	108 108 116	109 109 116	110 110 116	110 110 116
5	130	149 152 156	149 152 156	149 152 156	149 152 156	149 152 156	
	120	143 145 150	143 145 150	144 146 150	144 146 150	144 146 150	
	110	135 138 143	136 138 143	137 139 143	137 139 143	138 140 143	
	100	129 130 136	130 131 136	130 131 136	131 132 136	131 132 136	132 133 136
	90	121 122 129	122 123 129	122 123 129	123 124 129	123 124 129	124 125 129
	80	113 114 122	114 115 122	114 115 122	115 116 122	115 116 122	116 117 122
	70	105 105 114	105 106 114	106 106 114	107 107 114	108 108 114	108 108 114
10	120	139 140 146	140 141 146	140 141 146	141 142 146	141 142 146	
	110	131 132 138	132 133 138	132 133 138	133 134 138	133 134 138	
	100	123 124 131	124 125 131	125 126 131	125 126 131	125 126 131	125 126 131
	90	116 117 124	117 118 124	117 118 124	118 119 124	118 119 124	118 119 124
	80	107 108 117	109 110 117	109 110 117	110 111 117	110 111 117	111 112 117
	70	105 105 110	105 105 110	105 105 110	105 105 110	105 105 110	105 105 110
	70	105 105 110	105 105 110	105 105 110	105 105 110	105 105 110	105 105 110

Red area indicates performance affected by minimum control speed. Minimum field length for lightest weight above red area is required.

For maneuvers immediately after takeoff exceeding 15° bank, maintain at least V2 + 15 at takeoff flaps.

### V1 ADJUSTMENTS (V1 MUST NOT EXCEED VR)

WIND: Subtract 1 kt per 5 kts tailwind

SLOPE: Subtract 1 kt per 1% down slope

Reduce V1 and Vr by 1 kt and V2 by 2 kts with 15% FWD C.G. limit.

## CLIMB CHARTS

### 737-200 Max Climb and Max Continuous EPR

#### 4. Max Climb and Max Continuous EPR

737-200

JT8D-9BSC/ADV

MAX CLIMB & MAX CONTINUOUS EPR																				A/C AIRBLEED ON
MAX. CLIMB	MAX. CONT.	TAT °C																		
		-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	
S.L. TO 30000	S.L. TO 15000	2.25	2.23	2.21	2.18	2.15	2.12	2.09	2.04	1.99	1.94	1.90	1.86	1.82	1.79	1.76	1.73	1.70	1.67	1.64
	15000 TO 20000	2.30	2.28	2.26	2.24	2.21	2.19	2.16	2.13	2.10	2.07	2.04	2.00	1.95	1.91	1.86	1.81	1.75	1.71	1.66
	20000 TO 30000	2.24	2.22	2.20	2.17	2.14	2.11	2.07	2.02	1.97	1.92									
	30000 & 37000	2.30	2.20	2.14	2.09	2.04	1.98													
		5650 A/D ABOVE	4000	3000	2000	1000	S.L.													

TEMP  
PRESS

- ① FIND TEMP LIMIT EPR
- ② FIND PRESS LIMIT EPR
- ③ USE THE SMALLER OF THE TWO LIMITS

ANTI-ICE BLEED CORRECTIONS	Δ EPR
ENGINE ANTI-ICE	-08
WING ANTI-ICE	2 ENG -04 1 ENG -08

AIR COND-BLEED CORRECTIONS Δ EPR	A/C OFF
S.L. TO 37000	+04

JT8D-15

### MAXIMUM CLIMB EPR

ENGINE BLEEDS FOR A/C ON

FLIGHT LEVEL	TAT °C																			
	-50 TO -40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	
S.L.	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.03	1.98	1.93	1.88	1.84	1.80	1.76	1.72	1.68	1.65	
1000	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.13	2.09	2.03	1.98	1.93	1.88	1.84	1.80	1.76	1.72	1.68	1.65	
1500	2.16	2.16	2.16	2.16	2.16	2.16	2.16	2.14	2.09	2.03	1.98	1.93	1.88	1.84	1.80	1.76	1.72	1.68	1.65	
2000	2.19	2.19	2.19	2.19	2.19	2.19	2.18	2.14	2.09	2.03	1.98	1.93	1.88	1.84	1.80	1.76	1.72	1.68	1.65	
3000	2.25	2.25	2.25	2.25	2.24	2.21	2.18	2.14	2.09	2.03	1.98	1.93	1.88	1.84	1.80	1.76	1.72	1.68	1.65	
1900 TO 10000	2.30	2.29	2.28	2.26	2.24	2.21	2.18	2.14	2.09	2.03	1.98	1.93	1.88	1.84	1.80	1.76	1.72	1.68	1.65	
37000	2.28	2.27	2.25	2.24	2.22	2.19	2.16	2.12	2.07	2.00	1.95	1.91	1.85	1.81	1.77	1.73	1.69	1.65	1.63	

## CRUISE CHARTS

### JT8D-9 Optimum Altitude

FLIGHT LEVEL	CRUISE SCHEDULE	TAT FOR ISA °C	WEIGHT FOR BEST FUEL ECONOMY (Opt. Alt.)
370	LRC	-34	87,500 Lbs
	.72	-34	83,000
350	LRC	-31	96,500
	.72	-31	95,000
330	LRC	-27	106,000
	.72	-27	107,500
310	LRC	-22	115,000
	.72	-23	119,000
290	LRC	-18	-
	.72	-18	-
270	LRC	-15	-
	.72	-14	-
250	LRC	-12	-
	.72	-10	-
230	LRC	-9	-
	.72	-5	-

## JT8D-15 Optimum Altitude

FLIGHT LEVEL	CRUISE SCHEDULE	TAT FOR ISA °C	WEIGHT FOR BEST FUEL ECONOMY (Opt. Alt.)
370	LRC	-34	94,000 Lbs
	.72	-34	88,300
350	LRC	-31	104,000
	.72	-32	98,500
330	LRC	-27	115,000
	.72	-27	111,300
310	LRC	-22	-
	.72	-23	-
290	LRC	-18	-
	.72	-19	-
270	LRC	-15	-
	.72	-14	-
250	LRC	-12	-
	.72	-10	-
230	LRC	-9	-
	.72	-5	-

## 737-200 Mach .72 Cruise, JT8D-9 Basic/Advanced

IND MACH .72 CRUISE  
2 ENGINES 2 AIRBLEEDS

FLIGHT LEVEL IAS (STD TAT)	GROSS WEIGHT 1000 LB									
	115	110	105	100	95	90	85	80	75	70
370 231 kts (-34)			2.15 -20 2715	2.09 -15 2560	2.03	1.98	1.92	1.87	1.82	1.78
350 242 kts (-31)	2.14 -20 2940	2.09 -15 2785	2.04 -10 2645	1.99 -2 2515	1.94	1.89	1.85	1.80	1.77	1.73
330 253 kts (-27)	2.03 -10 2900	1.99 -5 2770	1.94 0 2657	1.90 3 2532	1.86	1.82	1.78	1.75	1.72	1.69
310 264 kts (-23)	1.94 -3 2908	1.90 2 2750	1.86 5 2686	1.83 7 2588	1.80	1.76	1.74	1.71	1.68	1.66
290 276 kts (-18)	1.87 2 2933	1.83 5 2834	1.80 8 2741	1.77 2655	1.75	1.72	1.70	1.67	1.65	1.64
280 282 kts (-16)	1.83 5 2993	1.80 8 2899	1.78 10 2812	1.75 2786	1.73	1.70	1.68	1.66	1.64	1.63
270 288 kts (-14)	1.80 8 3037	1.78 10 2950	1.75 13 2869	1.73 2797	1.71	1.69	1.67	1.65	1.63	1.62
260 295 kts (-12)	1.78 10 3089	1.75 13 2006	1.73 15 2933	1.71 2865	1.69	1.67	1.65	1.64	1.62	1.61
250 310 kts (-10)	1.75 13 3148	1.73 15 3075	1.71 17 3007	1.69 2942	1.67	1.66	1.64	1.63	1.61	1.60
240 307 kts (- 7)	1.73 15 3225	1.71 17 3156	1.69 19 3091	1.68 20 3030	1.66	1.64	1.63	1.62	1.60	1.59
230 313 kts (- 5)	1.71 17 3003	1.70 18 3238	1.68 20 3176	1.66 22 3119	1.65	1.63	1.62	1.61	1.60	1.59
220 320 kts ( -3)	1.70 18 3388	1.68 20 3326	1.66 22 3268	1.65 24 3215	1.64 25 3165	1.62	1.61	1.60	1.59	1.58
210 326 kts ( -1)	1.68 20 3480	1.67 21 3422	1.65 24 3368	1.64 25 3318	1.63 26 3271	1.62	1.60	1.59	1.59	1.58
200 333 kts ( 2)	1.67 21 3584	1.65 24 3530	1.64 25 3478	1.63 26 3430	1.62 27 3388	1.61	1.60	1.59	1.58	1.57



AVERAGE EPR REQUIRED  
MAX TAT AT WHICH EPR CAN BE SET  
ISA FUEL FLOW LB/HR/ENG

MAX TAT NOT SHOWN WHERE EPR CAN BE SET IN IAS + 30°C CONDITIONS  
INCREASE FUEL FLOW 1% PER 5°C ABOVE STD TAT  
DECREASE FUEL FLOW 1% PER 5°C BELOW STD TAT  
FOR ENGINE A/I ON DECREASE MAX TAT BY 10°C  
FOR WING A/I ON DECREASE MAX TAT BY 5°C

## 737-200 Mach .72 Cruise, JT8D-15/ADV

IND MACH .72 CRUISE  
2 ENGINES 2 AIRBLEEDS

FLIGHT LEVEL	IAS STD TAT	GROSS WEIGHT 1000 LB														
		130	125	120	115	110	105	100	95	90	85	80	75	70	65	60
370	231 -34					2.22 -55 2927	2.16 -27 2748	2.10 -14 2587	2.04 -7 2448	1.98 -1 2319	1.93 2210	1.88 2111	1.83 2019	1.79 1936	1.75 1863	1.72 1798
360	237 -34				2.22 -52 3038	2.16 -25 2859	2.10 -14 2698	2.04 -7 2558	1.99 -2 2430	1.94 2322	1.89 2224	1.84 2133	1.80 2048	1.76 1974	1.73 1906	1.70 1847
350	242 -32			2.21 -47 3157	2.15 -24 2978	2.10 -13 2817	2.04 -7 2678	1.99 -2 2550	1.94 2442	1.89 2347	1.85 2257	1.81 2170	1.77 2094	1.74 2025	1.71 1963	1.68 1909
340	248 -29		2.20 -43 3289	2.15 -22 3112	2.09 -13 2952	2.04 -7 2812	1.99 -2 2684	1.95 2 2572	1.90 2474	1.86 2382	1.82 2294	1.78 2215	1.75 2144	1.72 2078	1.69 2022	1.67 1970
330	253 -27	2.19 -37 3420	2.14 -20 3244	2.09 -12 3087	2.04 -7 2946	1.99 -2 2818	1.95 2 2705	1.90 5 2604	1.86 2510	1.83 2420	1.79 2338	1.76 2266	1.73 2198	1.70 2138	1.68 2084	1.65 2037
320	259 -25	2.13 -18 3376	2.08 -11 3222	2.04 -6 3081	1.99 -2 2953	1.95 2 2838	1.91 5 2735	1.87 2 2638	1.83 2548	1.80 2462	1.77 2390	1.74 2320	1.71 2258	1.69 2201	1.66 2153	1.64 2110
310	265 -23	2.07 -10 3356	2.03 -5 3217	1.99 -1 3088	1.95 2 2973	1.91 5 2867	1.87 8 2768	1.83 2 2677	1.80 2589	1.77 2515	1.74 2445	1.72 2380	1.69 2321	1.67 2271	1.65 2228	1.63 2189
300	271 -21	2.02 -5 3352	1.98 -1 3224	1.94 2 3109	1.90 5 3000	1.87 8 2900	1.84 11 2808	1.80 2 2718	1.78 2643	1.75 2572	1.72 2505	1.70 2445	1.68 2390	1.66 2348	1.64 2308	1.62 2272
290	277 -19	1.98 -0 3365	1.94 3 3251	1.90 6 3142	1.87 8 3041	1.84 11 2949	1.81 13 2859	1.78 13 2781	1.75 2710	1.73 2642	1.71 2580	1.68 2523	1.66 2477	1.65 2434	1.63 2396	1.62 2361
280	283 -16	1.93 3 3396	1.90 6 3285	1.87 8 3184	1.84 11 3092	1.81 13 3001	1.78 15 2923	1.76 15 2851	1.73 2782	1.71 2719	1.69 2661	1.67 2610	1.65 2565	1.64 2525	1.62 2488	1.61 2453
270	289 -14	1.89 6 3430	1.86 9 3330	1.84 11 3237	1.81 13 3147	1.78 15 3067	1.76 17 2994	1.74 17 2925	1.71 2861	1.69 2802	1.68 2749	1.66 2701	1.64 2658	1.63 2619	1.61 2582	1.60 2549
260	295 -12	1.86 9 3478	1.83 11 3385	1.81 13 3294	1.78 15 3141	1.76 17 3071	1.74 19 3071	1.72 19 3006	1.70 2947	1.68 2892	1.67 2842	1.66 2795	1.65 2754	1.63 2716	1.62 2680	1.60 2649
250	301 -10	1.83 12 3534	1.80 13 3444	1.78 15 3365	1.76 17 3291	1.74 19 3220	1.72 21 3154	1.70 23 3095	1.68 3039	1.67 2987	1.65 2938	1.64 2894	1.62 2854	1.61 2817	1.60 2783	1.59 2752
240	308 -8	1.80 14 3594	1.78 16 3516	1.76 17 3442	1.74 19 3372	1.72 21 3305	1.70 23 3245	1.69 25 3188	1.67 3125	1.65 3085	1.64 3039	1.63 2998	1.62 2960	1.61 2925	1.60 2893	1.59 2964
230	314 -5	1.78 16 3654	1.76 17 3578	1.74 19 3500	1.72 21 3422	1.70 23 3344	1.69 25 3266	1.67 27 3190	1.66 3153	1.64 3109	1.63 3065	1.62 3021	1.61 2978	1.60 2935	1.59 2892	1.58 2850

		3670	3597	3526	3460	3399	3341	3286	3235	3188	3147	3108	3072	3039	3008	2980
220	320 -3	1.76 17 3754	1.74 19 3685	1.72 21 3618	1.70 23 3556	1.69 25 3497	1.67 26 3442	1.66 28 3390	1.65 30 3341	1.63 32 3299	1.62 34 3260	1.61 36 3223	1.60 38 3189	1.60 40 3158	1.59 42 3128	1.58 44 3102
210	327 -1	1.74 20 3846	1.72 21 3780	1.70 23 3717	1.69 25 3657	1.67 26 3601	1.66 28 3548	1.65 29 3499	1.64 31 3455	1.63 32 3416	1.62 34 3379	1.61 36 3344	1.60 38 3312	1.59 40 3282	1.58 42 3254	1.58 44 3228
200	333 1	1.72 22 3945	1.70 23 3882	1.69 25 3821	1.68 26 3764	1.66 28 3711	1.65 29 3660	1.64 31 3616	1.63 32 3576	1.62 33 3539	1.61 34 3503	1.60 36 3470	1.59 38 3440	1.59 40 3411	1.58 42 3384	1.57 44 3359

AVERAGE EPR REQUIRED  
MAX TAT AT WHICH EPR CAN BE SET  
ISA FUEL FLOW LB/HR/ENG

MAX TAT NOT SHOWN WHERE EPR CAN BE SET IN IAS + 30° C CONDITIONS  
INCREASE FUEL FLOW 1% PER 5° C ABOVE STD TAT  
DECREASE FUEL FLOW 1% PER 5° C BELOW STD TAT  
FOR ENGINE A/I ON DECREASE MAX TAT BY 10° C  
FOR WING A/I ON DECREASE MAX TAT BY 5° C

### 737-200 320 KIAS Cruise, JT8D-9 Basic/Advanced

2 ENGINES 2 AIRBLEEDS

FLIGHT LEVEL MACH NO. (STD TAT)	GROSS WEIGHT 1000 LB									
	115	110	105	100	95	90	85	80	75	70
240 .747 (-11)	1.77 12 3410	1.75 13 3336	1.73 15 3268	1.71 17 3206	1.70 18 3148	1.68 20 3095	1.67 21 3045	1.65 22 3000	1.64 23 2962	1.63 24 2926
230 .733 (-9)	1.73 15 3369	1.71 17 3304	1.69 19 3242	1.68 20 3185	1.66 22 3132	1.65 23 3085	1.64 24 3042	1.63 25 3001	1.62 26 2965	1.61 27 2931
220 .719 (-7)	1.70 18 3357	1.68 20 3296	1.66 22 3239	1.65 24 3186	1.64 25 3135	1.62 26 3091	1.61 27 3049	1.60 28 3015	1.59 29 2974	1.58 30 2941
210 .706 (-6)	1.67 21 3347	1.65 24 3290	1.64 25 3236	1.62 26 3187	1.61 27 3140	1.60 28 3096	1.59 29 3054	1.58 30 3016	1.57 31 2980	1.56 32 2947
200 .693 (-4)	1.64 25 3348	1.62 28 3294	1.61 29 3243	1.60 30 3195	1.59 31 3150	1.58 32 3106	1.57 33 3071	1.56 34 3028	1.55 35 2994	1.54 36 2962
190 .680 (-3)	1.61 30 3347	1.60 31 3295	1.59 32 3246	1.57 33 3198	1.56 34 3154	1.55 35 3113	1.54 36 3073	1.54 37 3036	1.53 38 3002	1.52 39 2971
180 .667 (-2)	1.59 35 3351	1.57 36 3298	1.56 37 3251	1.55 38 3206	1.54 39 3162	1.53 40 3121	1.52 41 3048	1.52 42 3048	1.51 43 3015	1.50 44 2983
170 .655 (0)	1.56 40 3363	1.55 41 3314	1.54 42 3267	1.53 43 3222	1.52 44 3180	1.51 45 3140	1.50 46 3101	1.50 47 3065	1.49 48 3033	1.48 49 3002
160 .643	1.54 45 3375	1.53 46 3326	1.52 47 3279	1.51 48 3234	1.50 49 3192	1.49 50 3152	1.49 51 3112	1.48 52 3072	1.47 53 3032	1.46 54 2992

(2)	3380	3331	3285	3240	3198	3158	3121	3086	3053	3022
150 .631	1.52	1.51	1.50	1.49	1.48	1.48	1.47	1.46	1.45	1.45
(3)	3393	3344	3297	3254	3213	3174	3137	3102	3070	3040
140 .620	1.50	1.49	1.48	1.47	1.47	1.46	1.45	1.44	1.44	1.43
(7)	3423	3376	3331	3288	3246	3208	3171	3137	3105	3074
130 .609	1.48	1.47	1.47	1.46	1.45	1.44	1.43	1.43	1.42	1.41
(9)	3446	3398	3352	3310	3270	3231	3194	3159	3128	3099
120 .598	1.47	1.46	1.45	1.44	1.43	1.43	1.42	1.41	1.41	1.40
(10)	3461	3415	3370	3327	3287	3248	3213	3179	3148	3118
110 .587	1.45	1.44	1.43	1.42	1.42	1.41	1.40	1.40	1.39	1.38
(12)	3484	3437	3392	3351	3312	3274	3238	3204	3172	3143
100 .576	1.43	1.42	1.42	1.41	1.40	1.39	1.39	1.38	1.38	1.37
(13)	3500	3455	3412	3370	3330	3292	3257	3225	3195	3166

AVERAGE EPR REQUIRED  
MAX TAT AT WHICH EPR CAN BE SET  
ISA FUEL FLOW LB/HR/ENG

MAX TAT NOT SHOWN WHERE EPR CAN BE SET IN IAS + 30°C CONDITIONS  
INCREASE FUEL FLOW 1% PER 5°C ABOVE STD TAT  
DECREASE FUEL FLOW 1% PER 5°C BELOW STD TAT  
FOR ENGINE A/I ON DECREASE MAX TAT BY 10°C  
FOR WING A/I ON DECREASE MAX TAT BY 5°C

### 737-200 320 KIAS Cruise, JT8D-15

FLIGHT LEVEL	STD TAT	GROSS WEIGHT 1000 LB												
		120	115	110	105	100	95	90	85	80	75	70	65	60
240	-6	1.79 15 3654	1.77 16 3581	1.75 18 3514	1.74 19 3450	1.72 21 3390	1.70 23 3334	1.69 25 3285	1.68 26 3239	1.66 28 3197	1.65 3159	1.64 3124	1.63 3092	1.62 3065
230	-5	1.75 18 3621	1.73 20 3555	1.72 22 3492	1.70 23 3433	1.69 25 3379	1.67 27 3328	1.66 28 3283	1.65 3240	1.64 3201	1.63 3167	1.62 3135	1.61 3105	1.60 3077
220	-3	1.72 21 3613	1.70 23 3550	1.69 25 3491	1.67 27 3436	1.66 28 3384	1.65 30 3335	1.63 3293	1.62 3254	1.61 3217	1.60 3183	1.59 3152	1.59 3122	1.58 3095
210	-2	1.69 25 3609	1.67 26 3550	1.66 28 3494	1.65 30 3442	1.63 3396	1.62 3352	1.61 3310	1.60 3271	1.59 3235	1.58 3201	1.57 3169	1.57 3141	1.56 3115
200	-1	1.66 28 3612	1.65 30 3556	1.63 31 3506	1.62 3458	1.61 3413	1.60 3370	1.59 3329	1.58 3290	1.57 3255	1.56 3222	1.55 3192	1.55 3163	1.54 3137
190	1	1.64 31 3632	1.62 33 3578	1.61 3527	1.60 3479	1.59 3444	1.58 3390	1.57 3350	1.56 3313	1.55 3277	1.54 3244	1.53 3213	1.53 3185	1.52 3159
180	2	1.61 34 3649	1.60 3595	1.59 3543	1.58 3497	1.57 3453	1.56 3411	1.55 3370	1.54 3332	1.53 3296	1.52 3262	1.51 3231	1.51 3201	1.50 3174
170	3	1.59 3661	1.58 3610	1.57 3562	1.56 3515	1.55 3470	1.54 3427	1.53 3386	1.52 3346	1.51 3309	1.50 3276	1.49 3244	1.49 3214	1.48 3187

160	5	1.57 3678	1.56 3626	1.55 3576	1.54 3528	1.53 3481	1.52 3437	1.51 3396	1.50 3357	1.49 3321	1.48 3287	1.48 3254	1.47 3224	1.46 3197
150	6	1.55 3698	1.54 3635	1.53 3584	1.52 3534	1.51 3490	1.50 3447	1.49 3406	1.48 3367	1.47 3330	1.46 3295	1.46 3262	1.45 3231	1.45 3203
140	7	1.53 3708	1.52 3654	1.51 3605	1.50 3558	1.49 3513	1.48 3470	1.47 3428	1.46 3388	1.45 3350	1.45 3315	1.44 3281	1.43 3250	1.43 3223
130	9	1.51 3731	1.50 3679	1.49 3629	1.48 3581	1.47 3535	1.46 3490	1.45 3448	1.44 3407	1.44 3369	1.43 3334	1.42 3302	1.42 3272	1.41 3244
120	10	1.49 3754	1.48 3702	1.47 3650	1.46 3601	1.45 3554	1.44 3509	1.43 3467	1.43 3428	1.42 3391	1.41 3357	1.41 3324	1.40 3294	1.40 3266
110	12	1.47 3773	1.46 3720	1.45 3668	1.44 3618	1.43 3573	1.42 3530	1.42 3489	1.41 3449	1.40 3412	1.40 3377	1.39 3345	1.39 3315	1.38 3287
100	13	1.45 3791	1.44 3737	1.43 3688	1.42 3640	1.42 3595	1.41 3551	1.40 3509	1.39 3470	1.39 3432	1.38 3397	1.38 3364	1.37 3334	1.37 3306

AVERAGE EPR REQUIRED  
MAX TAT AT WHICH EPR CAN BE SET  
ISA FUEL FLOW LB/HR/ENG

MAX TAT NOT SHOWN WHERE EPR CAN BE SET IN IAS + 30°C CONDITIONS  
INCREASE FUEL FLOW 1% PER 5°C ABOVE STD TAT  
DECREASE FUEL FLOW 1% PER 5°C BELOW STD TAT  
FOR ENGINE A/I ON DECREASE MAX TAT BY 10°C  
FOR WING A/I ON DECREASE MAX TAT BY 5°C

## LANDING CHARTS

### Normal Landing Speeds, 737-200 Basic

GROSS WT - 1000 LB	REFERENCE SPEED AT FLAP POSITION			
	40	30	25	15
110	138	142	153	158
105	134	138	149	154
100	130	135	144	150
95	127	131	140	145
90	123	127	136	141
85	119	124	132	136
80	115	120	127	132
75	113	116	123	127
70	109	112	119	123

## Normal Landing Speeds, 737-200 Advanced

GROSS WT - 1000 LB	REFERENCE SPEED AT FLAP POSITION		
	40	30	15
130	149	154	161
125	146	150	158
120	142	146	154
115	139	142	150
110	135	139	146
105	132	135	142
100	128	131	138
95	124	127	134
90	121	124	131
85	117	120	127
80	113	116	123
75	110	112	119
70	106	109	115