

Boeing 747-200B Performance □ (JT9D-7R4G2)

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747-200B Takeoff Speeds

ALTITUDE 1000 FEET		OAT °F (°C)														
7 to 9					-65 to 64 (-54 to 18)			65 to 80 (19 to 26)			81 to 94 (27 to 34)					
5 to 7					-65 to 64 (-54 to 18)			65 to 80 (19 to 26)			81 to 94 (27 to 34)			95 to 108 (35 to 42)		
3 to 5					-65 to 81 (-54 to 27)			82 to 94 (28 to 34)			95 to 108 (35 to 42)			109 to 120 (43 to 49)		
1 to 3		-65 to 82 (-54 to 28)			83 to 95 (29 to 35)			96 to 108 (36 to 42)			109 to 122 (43 to 50)			123 to 127 (51 to 53)		
-1 to 1		-65 to 99 (-54 to 37)			100 to 109 (38 to 43)			110 to 122 (44 to 50)			123 to 130 (51 to 54)					
FLAPS 10	GROSS WT 1000 LB	V1	VR	V2	V1	VR	V2	V1	VR	V2	V1	VR	V2	V1	VR	V2
	840	168	179	189	169	181	189									
	820	165	176	186	166	178	186	166	179	186						
	800	162	173	183	162	174	183	163	176	183						
	780	158	169	180	159	171	180	159	172	180						
	760	156	166	177	155	167	177	156	169	177	159	171	177			
	740	153	163	174	154	164	174	155	166	174	155	167	174			
	720	149	159	171	151	161	171	151	162	171	152	164	171			
	700	146	156	168	147	157	168	149	159	168	149	160	168			
	680	142	152	166	144	154	166	145	155	166	146	157	166	147	159	166
	660	138	148	163	141	150	163	142	152	163	143	153	163	145	155	163
	640	133	143	160	137	146	160	139	148	160	140	150	160	142	152	160
	620	131	139	157	133	142	157	135	144	157	137	146	151	138	148	157
	600	131	136	155	129	138	153	132	141	153	134	143	153	135	145	153
	580	131	133	153	129	135	151	128	137	150	130	139	150	132	141	150
	560	131	131	151	129	132	149	126	133	148	126	135	148	128	137	148
	540	131	131	150	129	129	147	126	130	146	124	132	145	126	134	144
	520	131	131	150	129	129	146	126	127	144	122	128	143	122	130	141
	500	131	131	150	129	129	146	126	126	142	122	125	141	119	127	139
	480	131	131	150	129	129	146	126	126	141	122	122	138	118	123	137
	460	131	131	150	129	129	146	126	126	141	122	122	137	118	119	135
	440	131	131	150	129	129	146	126	126	141	122	122	137	118	118	133
FLAPS 20	840	161	172	181	161	173	181	162	175	181						
	820	158	169	178	159	170	178	159	171	178						
	800	156	166	175	156	167	175	156	168	175	157	170	175			
	780	152	162	172	152	163	172	153	165	172	153	166	172			
	760	149	159	170	149	160	170	150	162	170	150	163	170			
	740	146	156	167	147	157	167	148	158	167	149	160	167	149	161	167
	720	142	152	164	144	154	164	145	155	164	146	157	164	146	158	164
	700	139	148	161	141	151	161	142	152	161	144	154	161	144	155	161
	680	136	145	158	138	147	158	139	149	158	140	150	158	141	152	158
	660	131	141	155	134	143	155	136	145	155	138	147	155	138	148	155
	640	131	137	153	130	139	153	132	141	153	134	143	153	135	145	153
	620	131	133	150	129	136	150	129	138	150	131	140	150	132	141	150
	600	131	131	148	129	132	147	126	134	147	128	136	147	129	138	147
	580	131	131	147	129	129	145	126	131	144	125	133	144	126	134	144
	560	131	131	147	129	129	143	126	127	142	122	129	141	123	131	141
	540	131	131	147	129	129	143	126	126	140	122	126	138	119	127	138
	520	131	131	147	129	129	143	126	126	138	122	123	136	118	124	135
	500	131	131	147	129	129	143	126	126	138	122	122	134	118	121	133
	480	131	131	147	129	129	143	126	126	138	122	122	134	118	118	131
	460	131	131	147	129	129	143	126	126	138	122	122	134	118	118	129
	440	131	131	147	129	129	143	126	126	138	122	122	134	118	118	129

V1 Adjustments

V1 = Vmcg red lettering. If adjusted V1 is less than Vmcg, use Vmcg as V1.

Wind - Add 1 knot for each 15 knots headwind. Subtract 2 knots for each 5 knots tailwind.

747-200B Takeoff N1%

N1 values are provided for use when an EPR gauge is inoperative.														
PRESS ALT 1000 FEET	AIRPORT TEMPERATURE °F (°C)													
	-20 (-29)	0 (-18)	10 (-12)	20 (-7)	30 (-1)	40 (4)	50 (10)	60 (16)	70 (21)	80 (27)	90 (32)	100 (38)	110 (43)	120 (49)
8	94.4	96.6	97.6	98.7	99.7	100.7	101.6	102.3	101.6	100.3	98.5	97.2	96.3	95.5
6	92.7	94.8	95.9	96.9	97.9	98.9	99.9	100.9	101.2	100.3	98.5	97.2	96.3	95.5
4	91.2	93.3	94.3	95.3	96.3	97.3	98.2	99.2	100.0	99.9	98.5	97.2	96.3	95.5
2	89.7	91.7	92.7	93.7	94.7	95.6	96.6	97.5	98.4	99.1	98.5	97.2	96.3	95.5
SL	88.5	90.5	91.5	92.5	93.4	94.4	95.3	96.3	97.2	98.1	99.1	98.0	96.3	95.5

Values are valid for 3 packs OFF, nacelle anti-ice ON or OFF, and when set while speed is 40 to 80 knots.

747-200B Maximum Takeoff Thrust - EPR, Packs Off

PRESS ALT 1000 FEET	AIRPORT TEMPERATURE °F (°C)													
	Up To 59 (14)	60 (16)	65 (18)	70 (21)	75 (24)	80 (27)	85 (29)	90 (32)	95 (35)	100 (38)	105 (41)	110 (43)	115 (46)	120 (49)
8	1.69	1.67	1.65	1.62	1.59	1.56	1.55	1.52	1.50	1.48	1.46	1.44	1.43	1.41
7	1.67	1.67	1.65	1.62	1.59	1.56	1.55	1.52	1.50	1.48	1.46	1.44	1.43	1.41
6	1.65	1.65	1.65	1.62	1.59	1.56	1.55	1.52	1.50	1.48	1.46	1.44	1.43	1.41
5	1.63	1.63	1.63	1.62	1.59	1.56	1.55	1.52	1.50	1.48	1.46	1.44	1.43	1.41
4	1.61	1.61	1.61	1.61	1.59	1.56	1.55	1.52	1.50	1.48	1.46	1.44	1.43	1.41
3	1.59	1.59	1.59	1.59	1.59	1.56	1.55	1.52	1.50	1.48	1.46	1.44	1.43	1.41
2	1.57	1.57	1.57	1.57	1.57	1.56	1.55	1.52	1.50	1.48	1.46	1.44	1.43	1.41
1	1.55	1.55	1.55	1.55	1.55	1.55	1.55	1.52	1.50	1.48	1.46	1.44	1.43	1.41
SL	1.54	1.54	1.54	1.54	1.54	1.54	1.54	1.52	1.50	1.48	1.46	1.44	1.43	1.41

Enter table with airport pressure altitude and airport temperature to find maximum EPR for takeoff.
 Values valid for 3 packs OFF, nacelle anti-ice on or off and when set while airspeed is 40-80 knots.
 For 3 packs ON, decrease EPR by .02.
 For 1 pack ON, decrease EPR by .01.

747-200B Reduced Takeoff Thrust

Reduced EPR is the minimum thrust required under normal conditions and is recommended as it results in reduced engine wear and fuel consumption. Do not use reduced takeoff thrust for any of the following conditions:

- When ambient temp is below -47°F (-44°C).
- When takeoff runway is other than dry. A grooved runway is considered dry when there is no standing water or other clutter.
- When headwind adjustment has been used to increase allowable takeoff gross weight.
- When taking off with a tailwind.
- When any brake is deactivated.
- When a spare engine is carried.
- When an EPR indicator is inoperative.
- When available runway length is less than 9,000 feet.
- When MEL/CDL weight or performance penalties are applied.

To find assumed temperature - From gross weight page (not shown) for airport to be used, find:

1. Maximum temperature for which actual airplane weight is allowable considering runway limit for runway being used.
2. Maximum temperature for which actual airplane weight is allowable considering performance limit.

The lower of these two temperatures is the assumed temperature.

Enter the table below with maximum EPR and assumed temperature to find reduced takeoff EPR. Reduced EPR cannot be less than maximum climb EPR calculated on field elevation and airport OAT.

From the TAKEOFF SPEEDS table:

1. Determine V1 for the actual OAT, actual gross weight and airport altitude.
2. Determine V1, Vr, and V2 for the assumed temperature, actual gross weight and airport altitude.

Compare the assumed temp V1 and Vr with the actual OAT V1. If actual OAT V1 is greater than the assumed temp V1, use actual OAT V1. If actual V1 is greater than the assumed temperature Vr, use actual OAT V1 for Vr and add the difference to the assumed temperature V2.

	ASSUMED TEMPERATURE ° F													
MAX EPR	Up To 59	60	65	70	75	80	85	90	95	100	105	110	120	130
1.69	1.69	1.67	1.65	1.62	1.59	1.56	1.55	1.52	1.53	1.53	1.53	1.53	1.53	1.53
1.67	1.67	1.67	1.65	1.62	1.59	1.56	1.55	1.52	1.51	1.51	1.51	1.51	1.51	1.51
1.65	1.65	1.65	1.65	1.62	1.59	1.56	1.55	1.52	1.50	1.49	1.49	1.49	1.49	1.49
1.63	1.63	1.63	1.63	1.62	1.59	1.56	1.55	1.52	1.50	1.48	1.47	1.47	1.47	1.47
1.61	1.61		>	1.61	1.59	1.56	1.55	1.52	1.50	1.48	1.46	1.45	1.45	1.45
1.59	1.59			>	1.59	1.56	1.55	1.52	1.50	1.48	1.46	1.44	1.43	1.43
1.57	1.57			>	1.57	1.56	1.55	1.52	1.50	1.48	1.46	1.44	1.41	1.41
1.55	1.55					>	1.55	1.52	1.50	1.48	1.46	1.44	1.41	1.39
1.54	1.54					>	1.54	1.52	1.50	1.48	1.46	1.44	1.41	1.39
1.52	1.52						>	1.52	1.50	1.48	1.46	1.44	1.41	1.39
1.50	1.50							>	1.50	1.48	1.46	1.44	1.41	1.39
1.48	1.48								>	1.48	1.46	1.44	1.41	1.39
1.46	1.46									>	1.46	1.44	1.41	1.39
1.44	1.44										>	1.44	1.41	1.39
1.41	1.41											>	1.41	1.39
1.39	1.39												>	1.39

747-200B Maximum Climb / Maximum Continuous Thrust 250/330/.84 Schedule

PRESSURE ALTITUDE 1000 FEET	SPEED IAS/M	TOTAL AIR TEMPERATURE °C																	
		-30 OR COLDER	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40	45	50	55
45	.84	1.68	1.68	1.68	1.68	1.65	1.61	1.56	1.52	1.48	1.44								
43	.84	1.69	1.69	1.69	1.69	1.66	1.61	1.57	1.53	1.49	1.45								
41	.84	1.70	1.70	1.70	1.70	1.66	1.62	1.58	1.54	1.49	1.46								
39	.84	1.70	1.70	1.70	1.70	1.67	1.63	1.58	1.54	1.50	1.46								
37	.84	1.70	1.70	1.70	1.70	1.67	1.63	1.58	1.54	1.50	1.46								
35	.84	1.69	1.69	1.69	1.69	1.67	1.63	1.59	1.54	1.50	1.46	1.42							
33	.84	1.65	1.65	1.65	1.65	1.65	1.63	1.59	1.55	1.50	1.47	1.42							
31	.84	1.61	1.61	1.61	1.61	1.61	1.61	1.59	1.55	1.50	1.47	1.42	1.38						
29	.84	1.57	1.57	1.57	1.57	1.57	1.57	1.57	1.55	1.51	1.47	1.42	1.38	1.34					
27	330	1.56	1.56	1.56	1.56	1.56	1.56	1.56	1.55	1.51	1.47	1.43	1.39	1.35	1.31				
25	330	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.50	1.46	1.42	1.38	1.34	1.30				
24	330	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.50	1.46	1.42	1.38	1.34	1.30				
20	330	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.45	1.41	1.37	1.33	1.30				
16	330	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.44	1.41	1.38	1.34	1.31	1.28	1.25		
14	330	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.42	1.38	1.35	1.31	1.28	1.26		
12	330	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.41	1.38	1.35	1.32	1.29	1.26	1.24	
10	250	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.48	1.45	1.41	1.38	1.35	1.33	1.30	1.28	1.25
5	250	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.42	1.39	1.36	1.34	1.31	1.29	1.26
0	250	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.38	1.37	1.34	1.32	1.30	1.27

Bleed Corrections:

1. Nacelle A/I ON -.02
2. Wing A/I ON -.03
3. Nacelle and Wing A/I ON -.05

747-200B N1 Equivalents Chart

Enter with required EPR and Mach to determine N1 required to provide same thrust.

EPR	MACH NO.						
	.30	.40	.50	.60	.70	.80	.90
1.15	71.7	75.8	79.5	81.7	83.6	84.8	85.5
1.20	76.4	79.6	82.2	84.3	85.4	86.5	87.1
1.25	80.5	82.7	85.0	86.6	87.6	88.1	88.6
1.30	83.7	85.5	87.2	88.6	89.1	89.8	90.1
1.35	86.3	87.8	89.3	90.4	90.4	91.0	91.4
1.40	88.6	89.6	91.0	92.0	92.5	93.0	93.3
1.45	90.8	91.8	93.0	93.7	94.0	94.4	94.6
1.50	93.0	93.6	94.5	95.0	95.4	95.8	95.9
1.55	94.9	95.4	96.0	96.4	96.8	97.1	97.4
1.60	96.9	97.4	97.7	97.9	98.4	98.6	98.7
1.65	99.0	99.4	99.4	99.7	99.9	100.1	100.3

Above N1 values valid for a TAT of 0°C only. Increase or decrease N1 by 1.5% rpm for each 10°C above or below 0°C TAT respectively.

747-200B Flight Planning Table

CRUISE
747-200B

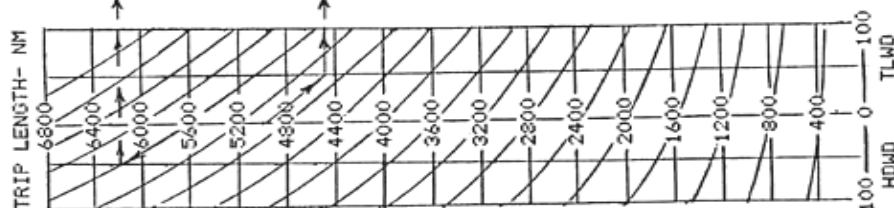
Based on following speed schedule:

CLIMB: 250 IAS to 10,000 ft - 330 IAS to 29,000 ft - Mach 0.84 above 29,000 ft
CRUISE: SL to 10,000 ft - 250 IAS

Fuel 307.3.

When the trip length line (corrected for wind) intersects on a horizontal time-fuel line, interpolate.

Example 5000 NM, 50K Tailwind, Altitude 39000 Time 9:25,
Fuel 209.0.

FLIGHT PLANNING TABLE
(JT9D-7R4G2)

FLIGHT TIME AND FUEL BURNOUT																	
43,000 FT.		41,000 FT.		39,000 FT.		37,000 FT.		35,000 FT.		33,000 FT.		25,000 FT.		20,000 FT.		15,000 FT.	
487 TAS	TIME	487 TAS	TIME	487 TAS	TIME	487 TAS	TIME	489 TAS	TIME	494 TAS	TIME	484 TAS	TIME	450 TAS	TIME	419 TAS	TIME
14-31	357.0	14-31	356.6	14-31	355.7	14-31	356.2	14-28	359.3								
14-6	344.3	14-7	343.6	14-6	343.0	14-6	343.2	14-4	346.6	13-58	352.9						
13-42	331.7	13-42	330.8	13-42	330.4	13-42	330.4	13-40	333.9	13-34	339.9						
13-18	319.5	13-18	318.5	13-18	318.2	13-18	318.1	13-14	321.6	13-9	327.3						
12-54	307.3	12-53	306.2	12-54	306.0	12-53	305.8	12-51	309.4	12-45	315.0	12-59	351.9				
12-29	295.1	12-29	294.4	12-29	293.8	12-29	294.0	12-27	297.2	12-21	302.8	12-34	339.0				
12-5	282.9	12-5	282.6	12-5	281.7	12-4	282.2	12-3	285.0	11-56	291.0	12-9	326.4	13-2	359.6		
11-40	271.0	11-40	271.0	11-40	269.9	11-40	270.6	11-38	273.0	11-32	279.2	11-44	314.0	12-35	345.0		
11-16	259.5	11-16	259.7	11-15	258.4	11-16	259.3	11-13	261.5	11-7	267.8	11-19	301.6	12-9	331.4		
10-51	248.0	10-52	248.4	10-51	246.9	10-51	248.0	10-48	250.0	10-43	256.5	10-55	289.4	11-42	318.2	12-32	352.6
10-26	237.0	10-27	237.2	10-26	235.9	10-27	236.8	10-24	238.9	10-19	245.2	10-30	277.3	11-15	304.9	12-4	337.8
10-2	226.0	10-2	225.9	10-2	225.0	10-2	225.6	9-59	228.0	9-54	234.4	10-5	265.4	10-48	291.8	11-35	323.2
9-37	215.2	9-38	214.9	9-37	214.2	9-38	214.6	9-35	217.0	9-30	223.6	9-40	253.5	10-22	278.8	11-6	308.6
9-13	204.8	9-13	204.2	9-13	203.7	9-13	203.9	9-10	206.6	9-6	212.9	9-15	241.8	9-55	265.9	10-37	294.2
8-48	194.3	8-48	193.5	8-48	193.3	8-48	193.2	8-46	196.2	8-41	202.4	8-50	230.2	9-28	253.1	10-9	280.0
8-23	184.0	8-24	183.1	8-23	183.0	8-23	182.8	8-21	185.8	8-17	192.0	8-26	218.7	9-2	240.4	9-40	265.9
7-59	173.9	7-59	173.0	7-59	172.9	7-59	172.7	7-57	175.9	7-53	181.7	8-1	207.3	8-35	227.8	9-11	251.9
7-34	163.7	7-34	162.9	7-34	162.7	7-34	162.6	7-32	166.0	7-28	171.7	7-36	196.0	8-8	215.2	8-43	238.0
7-10	153.8	7-10	153.2	7-9	152.8	7-9	152.9	7-7	156.1	7-4	161.6	7-11	184.7	7-42	202.9	8-14	224.2
6-45	143.9	6-45	143.6	6-45	143.0	6-45	143.3	6-43	146.6	6-40	151.7	6-46	173.6	7-15	190.6	7-45	210.5
6-20	134.1	6-20	134.0	6-20	133.2	6-20	133.8	6-18	137.0	6-15	141.9	6-21	162.5	6-48	178.4	7-17	197.0
5-56	124.7	5-56	124.7	5-55	123.8	5-55	124.5	5-54	127.6	5-51	132.2	5-57	151.5	6-21	166.3	6-48	183.5
5-31	115.4	5-31	115.5	5-31	114.5	5-31	115.4	5-29	118.4	5-27	122.6	5-32	140.6	5-55	154.2	6-19	170.2
5-6	106.2	5-6	106.3	5-6	105.3	5-6	106.3	5-5	109.1	5-2	113.1	5-7	129.7	5-28	142.3	5-51	156.9
4-42	97.3	4-41	97.2	4-41	96.4	4-41	97.4	4-40	100.0	4-38	103.7	4-42	119.0	5-1	130.4	5-22	143.8
4-17	88.5	4-17	88.2	4-17	87.6	4-17	88.6	4-16	91.1	4-14	94.4	4-17	108.3	4-35	118.7	4-53	130.7
3-52	79.7	3-52	79.3	3-52	78.9	3-52	79.9	3-51	82.2	3-49	85.2	3-53	97.7	4-8	107.0	4-25	117.7
3-27	71.1	3-27	70.5	3-27	70.3	3-27	71.2	3-26	73.3	3-25	76.0	3-28	87.2	3-41	95.3	3-56	104.7
3-3	62.8	3-3	62.2	3-3	62.1	3-3	62.9	3-2	64.6	3-1	66.9	3-3	76.7	3-15	83.7	3-27	91.8
2-38	54.4	2-38	53.8	2-38	53.8	2-38	54.5	2-37	56.0	2-36	58.0	2-38	66.2	2-48	72.0	2-59	79.0
2-13	46.1	2-13	45.4	2-13	45.5	2-13	46.2	2-13	47.4	2-12	49.0	2-13	55.8	2-21	60.5	2-30	66.1
1-49	38.0	1-49	37.5	1-49	37.6	1-49	38.0	1-48	38.9	1-48	40.1	1-48	45.4	1-55	49.1	2-1	53.4
1-24	29.9	1-24	29.6	1-24	29.7	1-24	29.9	1-24	30.5	1-23	31.4	1-24	35.0	1-28	37.6	1-33	40.7
0-59	21.8	0-59	21.7	0-59	21.8	0-59	21.9	0-59	22.2	0-59	22.7	0-59	24.8	1-1	26.3	1-4	28.1

NOTE - TABLE VALID ONLY FOR LANDING WEIGHT OF 470,000 LBS. FOR EACH 10,000 LBS. DEVIATION ABOVE (BELOW) 470,000 LBS., AND (SUBTRACT) FUEL BURNOUT CORRECTION SHOWN ABOVE FOR EACH HOUR OF FLIGHT TIME.

747-200B Mach .82 Cruise

4 ENGINE MACH .82 CRUISE

EPR, fuel flow and NAM/1000 pounds are for Mach. 82. When operating in region left of heavy line, determine and set max cruise EPR if less than listed value.

Fuel flow and true airspeed values are for standard temperature. See Adjustments at bottom of page.

Three air conditioning packs operating.

Refer to next page for gross weights below 620.

FLIGHT LEVEL STD TEMP	IAS TAS	GROSS WEIGHT (1000 LB)											
		840	820	800	780	760	740	720	700	680	660	640	620
390 -56C	254 470											1.68 6340 18.5	1.61 5980 19.7
380 -56C	260 470									1.72 6870 17.1	1.64 6420 18.3	1.58 6080 19.3	1.52 5760 20.4
370 -56C	266 470								1.66 6840 17.2	1.60 6500 18.1	1.54 6180 19.0	1.49 5880 20.0	1.45 5660 20.8
360 -56C	273 470						1.67 7290 16.1	1.61 6920 17.0	1.56 6590 17.9	1.51 6260 18.8	1.47 6030 19.5	1.43 5810 20.2	1.39 5600 21.0
350 -54C	279 472				1.69 7780 15.2	1.62 7360 16.1	1.57 7030 16.8	1.52 6700 17.6	1.48 6430 18.4	1.44 6210 19.0	1.41 5990 19.7	1.38 5790 20.4	1.35 5610 21.0
340 -52C	285 474		1.70 8250 14.4	1.63 7800 15.2	1.58 7460 15.9	1.53 7130 16.7	1.49 6830 17.4	1.45 6610 18.0	1.42 6380 18.6	1.39 6180 19.2	1.36 5990 19.8	1.33 5810 20.4	1.31 5640 21.0
330 -50C	292 476	1.63 8220 14.5	1.58 7880 15.1	1.54 7550 15.8	1.49 7230 16.5	1.46 7000 17.0	1.43 6780 17.6	1.40 6570 18.1	1.37 6370 18.7	1.34 6190 19.2	1.32 6020 19.8	1.29 5850 20.4	1.27 5700 20.9
320 -48C	298 478	1.54 7960 15.0	1.50 7640 15.7	1.46 7400 16.2	1.43 7180 16.7	1.40 6960 17.2	1.37 6750 17.7	1.35 6570 18.2	1.33 6390 18.7	1.30 6220 19.2	1.28 6060 19.8	1.26 5920 20.2	1.24 5780 20.7
310 -46C	305 481	1.46 7800 15.4	1.44 7570 15.9	1.41 7350 16.4	1.38 7140 16.8	1.36 6960 17.3	1.33 6780 17.7	1.31 6600 18.2	1.29 6430 18.7	1.27 6280 19.1	1.25 6140 19.6	1.23 6000 20.1	1.22 5850 20.6
300 -44C	312 483	1.41 7750 15.6	1.38 7530 16.0	1.36 7340 16.4	1.34 7160 16.9	1.31 6980 17.3	1.29 6810 17.7	1.28 6650 18.2	1.26 6510 18.6	1.24 6360 19.0	1.22 6220 19.4	1.21 6090 19.8	1.20 5970 20.2
290 -42C	318 485	1.36 7730 15.7	1.34 7550 16.1	1.32 7370 16.5	1.30 7190 16.9	1.28 7020 17.3	1.26 6880 17.6	1.25 6730 18.0	1.23 6590 18.4	1.21 6440 18.8	1.20 6330 19.2	1.19 6210 19.5	1.18 6100 19.9
280 -40C	325 487	1.32 7750 15.7	1.30 7580 16.1	1.28 7400 16.5	1.27 7260 16.8	1.25 7110 17.1	1.23 6960 17.5	1.22 6820 17.9	1.21 6690 18.2	1.19 6570 18.5	1.18 6460 18.9	1.17 6340 19.2	1.16 6230 19.6
270 -38C	332 489	1.28 7790 15.7	1.27 7640 16.0	1.25 7490 16.3	1.24 7340 16.7	1.22 7200 17.0	1.21 7050 17.3	1.20 6940 17.6	1.19 6820 17.9	1.17 6700 18.2	1.16 6590 18.6	1.15 6490 18.9	1.14 6400 19.1
Temp Adj.		24	24	23	22	21	21	20	20	20	19	18	18

Adjustments: TAS (knots) is for standard temperature. Add/subtract 1 knot for each 1°C above/below standard.

Add/subtract TEMP ADJ pounds per hour to fuel flow for each 1°C above/below standard.

747-200B Mach .82 Cruise (con't)

4 ENGINE MACH .82 CRUISE (Continued)

FLIGHT LEVEL STD TEMP	IAS TAS	GROSS WEIGHT (1000 LB)										
		600	580	560	540	520	500	480	460	440	420	400
450	221							1.70	1.61	1.53	1.47	1.41
-56C	470							4860	4470	4150	3930	3720
								24.2	26.3	28.3	29.9	31.6
440	226						1.68	1.60	1.52	1.46	1.41	1.37
-56C	470						4990	4640	4320	4100	3890	3720
							23.6	25.3	27.2	28.6	30.2	31.6
430	232					1.66	1.58	1.51	1.46	1.41	1.36	1.32
-56C	470					5140	4800	4490	4270	4060	3890	3710
						22.9	24.5	26.2	27.5	28.9	30.2	31.7
420	237				1.63	1.56	1.50	1.45	1.40	1.36	1.32	1.29
-56C	470				5270	4940	4660	4440	4230	4060	3880	3740
					22.3	23.8	25.2	26.5	27.8	29.0	30.3	31.5
410	243		1.68	1.61	1.54	1.48	1.44	1.39	1.35	1.32	1.29	1.26
-56C	470		5750	5410	5080	4820	4610	4400	4230	4050	3910	3770
			20.4	21.7	23.1	24.4	25.5	26.7	27.8	29.0	30.1	31.2
400	248	1.65	1.58	1.51	1.47	1.42	1.38	1.35	1.31	1.28	1.26	1.23
-56C	470	5870	5530	5210	4980	4760	4570	4400	4220	4080	3940	3810
		20.0	21.2	22.6	23.6	24.7	25.7	26.7	27.8	28.8	29.8	30.9
390	254	1.55	1.49	1.45	1.41	1.37	1.34	1.31	1.28	1.25	1.23	1.21
-56C	470	5650	5360	5140	4920	4740	4560	4390	4250	4120	3980	3870
		20.8	21.9	22.9	23.9	24.8	25.8	26.8	27.6	28.6	29.5	30.4
380	260	1.47	1.43	1.39	1.36	1.33	1.30	1.27	1.25	1.22	1.21	1.19
-56C	470	5510	5290	5080	4910	4730	4570	4430	4290	4160	4030	3940
		21.3	22.2	23.1	24.0	24.8	25.7	26.5	27.4	28.3	29.0	29.8
370	266	1.41	1.38	1.35	1.32	1.29	1.27	1.24	1.22	1.20	1.18	1.17
-56C	470	5440	5250	5070	4900	4740	4600	4460	4340	4230	4120	4020
		21.6	22.4	23.2	24.0	24.8	25.5	26.3	27.1	27.8	28.6	29.2
360	273	1.36	1.33	1.31	1.28	1.26	1.24	1.22	1.20	1.18	1.17	1.15
-56C	470	5420	5240	5070	4920	4780	4640	4520	4410	4300	4200	4120
		21.7	22.4	23.2	23.9	24.6	25.3	26.0	26.7	27.4	28.0	28.6
350	279	1.32	1.29	1.27	1.25	1.23	1.21	1.19	1.18	1.16	1.15	1.14
-54C	472	5440	5270	5130	4990	4850	4730	4620	4510	4410	4330	4240
		21.7	22.4	23.0	23.7	24.3	25.0	25.6	26.2	26.8	27.3	27.8
340	285	1.28	1.26	1.24	1.22	1.21	1.19	1.17	1.16	1.15	1.14	1.13
-52C	474	5480	5340	5200	5060	4950	4840	4730	4630	4550	4460	4380
		21.6	22.2	22.8	23.5	24.0	24.5	25.1	25.6	26.1	26.6	27.1
330	292	1.25	1.23	1.22	1.20	1.19	1.17	1.16	1.15	1.14	1.12	1.12
-50C	476	5560	5420	5280	5170	5060	4950	4850	4770	4680	4600	4540
		21.4	22.0	22.6	23.1	23.6	24.1	24.6	25.0	25.5	25.9	26.3
320	298	1.23	1.21	1.20	1.18	1.17	1.16	1.14	1.13	1.12	1.11	1.11
-48C	478	5640	5510	5390	5280	5170	5080	5000	4910	4830	4760	4700
		21.2	21.7	22.2	22.7	23.2	23.6	24.0	24.4	24.8	25.1	25.5
310	305	1.20	1.19	1.18	1.16	1.15	1.14	1.13	1.12	1.11	1.11	1.10
-46C	481	5740	5620	5510	5400	5320	5230	5140	5060	4990	4940	4890
		21.0	21.4	21.8	22.3	22.6	23.0	23.4	23.8	24.1	24.4	24.6
300	312	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10	1.10	1.09
-44C	483	5860	5740	5640	5550	5470	5380	5300	5230	5170	5130	5090
		20.6	21.0	21.4	21.7	22.1	22.4	22.8	23.1	23.3	23.5	23.7
290	318	1.16	1.15	1.14	1.13	1.12	1.12	1.11	1.10	1.10	1.09	1.09
-42C	485	5980	5890	5800	5710	5620	5550	5480	5420	5380	5340	5310
		20.3	20.6	20.9	21.2	21.6	21.9	22.1	22.4	22.6	22.7	22.9
280	325	1.15	1.14	1.13	1.12	1.11	1.11	1.10	1.10	1.09	1.09	1.09
-40C	487	6140	6050	5960	5880	5800	5730	5670	5630	5590	5560	5530
		19.8	20.1	20.4	20.7	21.0	21.3	21.5	21.6	21.8	21.9	22.0
270	332	1.14	1.13	1.12	1.11	1.10	1.10	1.09	1.09	1.09	1.08	1.08
-38C	489	6310	6220	6130	6060	5990	5940	5890	5850	5820	5790	5780
		19.4	19.7	20.0	20.2	20.4	20.6	20.8	20.9	21.0	21.1	21.2
Temp Adj.		18	17	17	16	16	16	15	15	15	15	14

Refer to Adjustments on preceding page

747-200B Mach .85 Cruise

4 ENGINE MACH .85 CRUISE

EPR, fuel flow and NAM/1000 pounds are for Mach .85. When operating in region 1e of heavy line, determine and set max cruise EPR if less than listed value.

Fuel flow and true airspeed values are for standard temperature. See Adjustmen at bottom of page.

Three air conditioning packs operating.

Refer to next page for gross weights below 620.

FLIGHT LEVEL STD TEMP	IAS TAS	GROSS WEIGHT (1000 LB)											
		840	820	800	780	760	740	720	700	680	660	640	620
390 -56C	265 487											1.66 6510 18.7	1.59 6150 19.8
380 -56C	271 487									1.69 6980 17.4	1.61 6570 18.5	1.56 6290 19.4	1.51 6010 20.3
370 -56C	277 487								1.64 7030 17.3	1.58 6700 18.2	1.53 6420 19.0	1.49 6140 19.8	1.45 5900 20.6
360 -56C	284 487						1.65 7480 16.3	1.59 7100 17.2	1.55 6820 17.9	1.50 6540 18.6	1.46 6280 19.4	1.43 6070 20.1	1.39 5860 20.8
350 -54C	290 489				1.66 7950 15.4	1.60 7540 16.2	1.56 7260 16.9	1.51 6980 17.6	1.47 6700 18.3	1.44 6470 18.9	1.41 6260 19.5	1.38 6060 20.2	1.35 5870 20.9
340 -52C	297 492		1.66 8410 14.6	1.61 7990 15.4	1.56 7690 16.0	1.52 7410 16.6	1.48 7130 17.3	1.45 6880 17.9	1.42 6670 18.4	1.39 6460 19.0	1.36 6260 19.6	1.33 6100 20.2	1.31 5950 20.7
330 -50C	304 494	1.61 8430 14.7	1.57 8120 15.2	1.53 7840 15.8	1.49 7550 16.4	1.45 7290 17.0	1.42 7080 17.5	1.40 6870 18.0	1.37 6660 18.5	1.34 6480 19.1	1.32 6330 19.5	1.30 6180 20.0	1.28 6030 20.5
320 -48C	310 496	1.53 8260 15.0	1.49 7970 15.6	1.46 7710 16.1	1.43 7490 16.6	1.40 7270 17.1	1.37 7070 17.6	1.35 6870 18.1	1.33 6710 18.5	1.31 6560 18.9	1.29 6410 19.4	1.27 6270 19.8	1.25 6140 20.2
310 -46C	317 498	1.46 8120 15.3	1.43 7890 15.8	1.40 7680 16.2	1.38 7470 16.7	1.35 7270 17.1	1.33 7100 17.6	1.31 6940 18.0	1.29 6790 18.3	1.28 6650 18.8	1.26 6510 19.1	1.25 6390 19.5	1.23 6260 19.9
300 -44C	324 500	1.41 8090 15.5	1.38 7880 15.9	1.36 7670 16.3	1.33 7490 16.7	1.32 7330 17.1	1.30 7180 17.4	1.28 7040 17.8	1.26 6890 18.2	1.25 6760 18.5	1.24 6640 18.8	1.22 6520 19.2	1.21 6410 19.5
290 -42C	331 502	1.36 8080 15.6	1.34 7880 16.0	1.32 7730 16.3	1.30 7570 16.6	1.29 7430 16.9	1.27 7280 17.3	1.25 7140 17.6	1.24 7020 17.9	1.23 6890 18.3	1.21 6780 18.6	1.20 6670 18.9	1.19 6570 19.1
280 -40C	338 505	1.32 8120 15.5	1.30 7970 15.8	1.29 7820 16.1	1.27 7670 16.5	1.26 7530 16.8	1.24 7410 17.1	1.23 7280 17.3	1.22 7160 17.6	1.21 7040 17.9	1.20 6940 18.2	1.19 6840 18.5	1.18 6740 18.7
270 -38C	345 507	1.29 8220 15.4	1.27 8070 15.7	1.26 7920 16.0	1.25 7800 16.3	1.23 7670 16.5	1.22 7540 16.8	1.21 7430 17.1	1.20 7320 17.3	1.19 7220 17.6	1.18 7120 17.8	1.17 7020 18.1	1.16 6920 18.3
Temp Adj.		25	24	23	23	22	22	21	21	20	20	19	19

Adjustments: TAS (knots) is for standard temperature. Add/subtract 1 knot for each 1°C above/below standard.

Add / subtract TEMP ADJ pounds per hour to fuel flow for each 1°C above/below standard.

747-200B Mach .85 Cruise (con't)

4 ENGINE MACH .85 CRUISE (Continued)

FLIGHT LEVEL STD TEMP	IAS TAS	GROSS WEIGHT (1000 LB)										
		600	580	560	540	520	500	480	460	440	420	400
450	230							1.68	1.59	1.53	1.47	1.41
-56C	487							4990	4620	4350	4100	3900
								24.4	26.4	28.0	29.7	31.2
440	236						1.66	1.58	1.52	1.46	1.41	1.37
-56C	487						5130	4800	4520	4290	4080	3900
							23.7	25.4	26.9	28.4	29.8	31.3
430	241					1.63	1.57	1.51	1.45	1.41	1.36	1.33
-56C	487					5270	4970	4700	4460	4260	4070	3930
						23.1	24.5	26.0	27.3	28.6	29.9	31.0
420	247				1.61	1.55	1.49	1.44	1.40	1.36	1.33	1.30
-56C	487				5420	5140	4860	4640	4440	4250	4110	3960
					22.5	23.7	25.1	26.3	27.5	28.6	29.7	30.8
410	253		1.66	1.59	1.53	1.48	1.43	1.39	1.35	1.32	1.29	1.27
-56C	487		5920	5570	5300	5020	4820	4610	4430	4290	4140	4020
			20.6	21.9	23.0	24.3	25.3	26.4	27.5	28.4	29.4	30.3
400	259	1.62	1.57	1.51	1.46	1.42	1.38	1.35	1.32	1.29	1.27	1.24
-56C	487	6020	5730	5450	5190	4990	4780	4610	4470	4320	4200	4080
		20.3	21.3	22.4	23.5	24.4	25.5	26.4	27.3	28.2	29.0	29.8
390	265	1.54	1.49	1.45	1.41	1.37	1.34	1.31	1.29	1.26	1.24	1.22
-56C	487	5870	5590	5360	5160	4960	4800	4650	4510	4390	4270	4160
		20.8	21.8	22.7	23.6	24.6	25.4	26.2	27.0	27.8	28.6	29.3
380	271	1.47	1.43	1.39	1.36	1.33	1.31	1.28	1.26	1.24	1.22	1.20
-56C	487	5740	5530	5320	5130	4980	4830	4690	4580	4460	4350	4250
		21.2	22.0	22.9	23.8	24.5	25.2	26.0	26.6	27.3	28.0	28.6
370	277	1.41	1.38	1.35	1.32	1.30	1.27	1.25	1.23	1.22	1.20	1.19
-56C	487	5700	5490	5310	5170	5020	4880	4770	4650	4540	4450	4350
		21.4	22.2	22.9	23.6	24.3	25.0	25.6	26.2	26.8	27.4	28.0
360	284	1.36	1.33	1.31	1.29	1.27	1.25	1.23	1.21	1.20	1.19	1.17
-56C	487	5660	5500	5350	5210	5080	4960	4840	4740	4640	4550	4460
		21.5	22.2	22.8	23.4	24.0	24.6	25.2	25.7	26.3	26.8	27.3
350	290	1.32	1.30	1.28	1.26	1.24	1.23	1.21	1.20	1.18	1.17	1.16
-54C	489	5720	5580	5430	5310	5190	5070	4970	4870	4780	4690	4620
		21.4	22.0	22.5	23.1	23.6	24.1	24.7	25.1	25.6	26.1	26.5
340	297	1.29	1.27	1.25	1.24	1.22	1.21	1.19	1.18	1.17	1.16	1.15
-52C	492	5800	5660	5540	5420	5310	5200	5110	5020	4920	4860	4800
		21.2	21.7	22.2	22.7	23.2	23.6	24.1	24.5	25.0	25.3	25.6
330	304	1.26	1.25	1.23	1.22	1.20	1.19	1.18	1.17	1.16	1.15	1.14
-50C	494	5900	5780	5650	5550	5450	5350	5260	5160	5100	5040	4980
		20.9	21.4	21.9	22.3	22.7	23.1	23.5	23.9	24.2	24.5	24.8
320	310	1.24	1.22	1.21	1.20	1.19	1.17	1.16	1.16	1.15	1.14	1.13
-48C	496	6020	5900	5790	5690	5600	5500	5410	5350	5290	5230	5180
		20.6	21.0	21.4	21.8	22.2	22.6	22.9	23.2	23.5	23.7	24.0
310	317	1.22	1.20	1.19	1.18	1.17	1.16	1.15	1.15	1.14	1.13	1.13
-46C	498	6150	6040	5950	5850	5760	5660	5600	5540	5490	5430	5400
		20.3	20.6	21.0	21.3	21.7	22.0	22.2	22.5	22.7	22.9	23.1
300	324	1.20	1.19	1.18	1.17	1.16	1.15	1.14	1.14	1.13	1.13	1.12
-44C	500	6300	6210	6110	6010	5930	5870	5810	5750	5690	5660	5630
		19.9	20.2	20.5	20.8	21.1	21.3	21.6	21.8	22.0	22.1	22.2
290	331	1.18	1.17	1.16	1.15	1.15	1.14	1.14	1.13	1.13	1.12	1.12
-42C	502	6470	6370	6280	6200	6140	6080	6020	5970	5930	5900	5880
		19.4	19.7	20.0	20.3	20.5	20.7	20.9	21.1	21.2	21.3	21.4
280	338	1.17	1.16	1.15	1.15	1.14	1.13	1.13	1.12	1.12	1.12	1.12
-40C	505	6650	6550	6480	6420	6360	6300	6240	6210	6180	6160	6160
		19.0	19.3	19.5	19.7	19.9	20.0	20.2	20.3	20.4	20.5	20.5
270	345	1.15	1.15	1.14	1.14	1.13	1.13	1.12	1.12	1.12	1.12	1.12
-38C	507	6820	6760	6700	6650	6590	6530	6500	6470	6450	6440	6440
		18.6	18.7	18.9	19.1	19.2	19.4	19.5	19.6	19.7	19.7	19.7
Temp Adj.		18	18	18	17	17	17	16	16	16	15	15

747-200B 340 KIAS Cruise

4 ENGINE 340 KIAS CRUISE

EPR, fuel flow and NAM/1000 pounds are for 340 KIAS.

Fuel flow and true airspeed values are for standard temperature. See Adjustments at bottom of page.

Three air conditioning packs operating.

Refer to next page for gross weights below 620.

FLIGHT LEVEL STD TEMP	IAS TAS	GROSS WEIGHT (1000 LB)											
		840	820	800	780	760	740	720	700	680	660	640	620
270	340	1.28	1.27	1.25	1.24	1.23	1.21	1.20	1.19	1.18	1.17	1.16	1.15
-38C	499	7990	7850	7710	7570	7440	7310	7190	7080	6960	6870	6770	6670
		15.6	15.9	16.2	16.5	16.8	17.1	17.4	17.6	17.9	18.2	18.4	18.7
250	339	1.22	1.21	1.20	1.18	1.17	1.16	1.15	1.14	1.13	1.13	1.12	1.11
-34C	484	7820	7670	7520	7390	7280	7160	7040	6930	6820	6730	6640	6550
		15.5	15.8	16.1	16.4	16.6	16.9	17.2	17.5	17.8	18.0	18.2	18.5
230	340	1.17	1.16	1.15	1.14	1.13	1.12	1.12	1.11	1.10	1.09	1.09	1.08
-30C	470	7750	7620	7480	7370	7260	7140	7030	6920	6830	6740	6660	6580
		15.2	15.5	15.7	16.0	16.2	16.5	16.7	17.0	17.2	17.5	17.7	17.9
210	339	1.13	1.12	1.12	1.11	1.10	1.09	1.09	1.08	1.07	1.07	1.06	1.06
-26C	457	7730	7600	7460	7360	7250	7150	7050	6950	6870	6790	6710	6630
		14.3	15.0	15.3	15.5	15.8	16.0	16.2	16.4	16.6	16.8	17.0	17.3
200	339	1.12	1.11	1.10	1.09	1.09	1.08	1.08	1.07	1.06	1.06	1.05	1.05
-24C	450	7720	7590	7470	7370	7270	7170	7070	6970	6890	6810	6730	6660
		14.6	14.8	15.1	15.3	15.5	15.7	15.9	16.1	16.3	16.5	16.7	16.9
190	339	1.11	1.10	1.09	1.08	1.08	1.07	1.07	1.06	1.06	1.05	1.05	1.04
-22C	444	7730	7610	7490	7390	7300	7200	7100	7010	6930	6860	6780	6700
		14.4	14.6	14.8	15.0	15.2	15.4	15.6	15.8	16.0	16.2	16.4	16.6
180	340	1.09	1.09	1.08	1.07	1.07	1.06	1.06	1.05	1.05	1.04	1.04	1.03
-20C	437	7750	7630	7520	7430	7330	7240	7140	7060	6980	6910	6830	6760
		14.1	14.4	14.6	14.7	14.9	15.1	15.3	15.5	15.7	15.8	16.0	16.2
170	340	1.08	1.08	1.07	1.06	1.06	1.05	1.05	1.04	1.04	1.04	1.03	1.03
-18C	431	7780	7650	7550	7450	7360	7270	7170	7100	7020	6950	6870	6800
		13.9	14.1	14.3	14.5	14.7	14.9	15.0	15.2	15.4	15.5	15.7	15.9
160	340	1.07	1.07	1.06	1.06	1.05	1.05	1.04	1.04	1.03	1.03	1.03	1.02
-16C	425	7790	7660	7570	7470	7380	7290	7190	7120	7040	6960	6890	6820
		13.6	13.9	14.1	14.2	14.4	14.6	14.8	14.9	15.1	15.3	15.4	15.6
150	339	1.07	1.06	1.06	1.05	1.05	1.04	1.04	1.03	1.03	1.02	1.02	1.02
-14C	418	7810	7690	7590	7490	7400	7300	7210	7130	7060	6980	6900	6830
		13.4	13.6	13.8	14.0	14.2	14.3	14.5	14.7	14.8	15.0	15.2	15.3
140	339	1.06	1.05	1.05	1.04	1.04	1.03	1.03	1.03	1.02	1.02	1.02	1.01
-12C	413	7830	7720	7620	7520	7430	7330	7240	7160	7080	7000	6930	6850
		13.2	13.4	13.6	13.7	13.9	14.1	14.3	14.4	14.6	14.7	14.9	15.1
130	339	1.05	1.05	1.04	1.04	1.03	1.03	1.03	1.02	1.02	1.02	1.01	1.01
-10C	407	7860	7750	7650	7550	7450	7350	7260	7180	7100	7030	6950	6880
		13.0	13.1	13.3	13.5	13.7	13.9	14.0	14.2	14.3	14.5	14.6	14.8
120	339	1.05	1.04	1.04	1.03	1.03	1.02	1.02	1.02	1.01	1.01	1.01	1.00
-8C	401	7880	7770	7670	7570	7470	7370	7280	7200	7130	7050	6980	6900
		12.7	12.9	13.1	13.3	13.4	13.6	13.8	13.9	14.1	14.2	14.4	14.5
110	339	1.04	1.04	1.03	1.03	1.02	1.02	1.02	1.01	1.01	1.01	1.00	1.00
-6C	395	7910	7800	7690	7590	7490	7390	7300	7230	7150	7070	7000	6930
		12.5	12.7	12.8	13.0	13.2	13.4	13.5	13.7	13.8	14.0	14.1	14.3
Temp Adj.		23	23	23	23	22	22	21	21	21	21	20	20

Adjustments: TAS (knots) is for standard temperature. Add/subtract 1 knot for each 1°C above/below standard.

Add/subtract TEMP ADJ pounds per hour to fuel flow for each 1°C above/below standard.

747-200B 340 KIAS Cruise (con't)

4 ENGINE 340 KIAS CRUISE (Continued)

FLIGHT LEVEL STD TEMP	IAS TAS	GROSS WEIGHT (1000 LB)										
		600	580	560	540	520	500	480	460	440	420	400
270	340	1.14	1.14	1.13	1.12	1.12	1.11	1.11	1.11	1.10	1.10	1.10
-38C	499	6580	6490	6420	6350	6290	6240	6200	6170	6150	6130	6110
		19.0	19.2	19.5	19.7	19.8	20.0	20.1	20.2	20.3	20.4	20.4
250	339	1.10	1.10	1.09	1.08	1.08	1.08	1.07	1.07	1.07	1.07	1.07
-34C	484	6460	6380	6310	6240	6200	6150	6120	6080	6060	6050	6040
		18.7	19.0	19.2	19.4	19.5	19.7	19.8	19.9	20.0	20.0	20.0
230	340	1.07	1.07	1.06	1.06	1.05	1.05	1.05	1.05	1.04	1.04	1.04
-30C	470	6490	6420	6360	6300	6250	6210	6180	6150	6130	6120	6110
		18.1	18.3	18.5	18.7	18.8	19.0	19.1	19.2	19.2	19.2	19.3
210	339	1.05	1.05	1.04	1.04	1.04	1.03	1.03	1.03	1.03	1.03	1.03
-26C	457	6550	6490	6430	6370	6330	6280	6250	6220	6210	6200	6200
		17.5	17.6	17.8	17.9	18.1	18.2	18.3	18.4	18.4	18.4	18.4
200	339	1.04	1.04	1.04	1.03	1.03	1.03	1.03	1.02	1.02	1.02	1.02
-24C	450	6580	6520	6470	6420	6370	6330	6300	6270	6250	6250	6240
		17.1	17.3	17.4	17.5	17.7	17.8	17.9	18.0	18.0	18.0	18.0
190	339	1.04	1.03	1.03	1.03	1.02	1.02	1.02	1.02	1.02	1.02	1.02
-22C	444	6640	6580	6530	6480	6430	6390	6360	6330	6320	6310	6310
		16.7	16.9	17.0	17.1	17.3	17.4	17.5	17.5	17.6	17.6	17.6
180	340	1.03	1.03	1.02	1.02	1.02	1.02	1.02	1.01	1.01	1.01	1.01
-20C	437	6700	6640	6590	6540	6490	6450	6420	6390	6390	6380	6380
		16.3	16.5	16.6	16.7	16.9	17.0	17.0	17.1	17.1	17.2	17.2
170	340	1.03	1.02	1.02	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.01
-18C	431	6740	6690	6640	6590	6540	6500	6470	6440	6440	6430	6430
		16.0	16.1	16.3	16.4	16.5	16.6	16.7	16.8	16.8	16.8	16.8
160	340	1.02	1.02	1.01	1.01	1.01	1.01	1.01	1.01	1.00	1.00	1.00
-16C	425	6760	6710	6650	6600	6560	6520	6490	6470	6460	6450	6450
		15.7	15.9	16.0	16.1	16.2	16.3	16.4	16.4	16.5	16.5	16.5
150	339	1.01	1.01	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00
-14C	418	6770	6720	6670	6620	6570	6540	6510	6490	6480	6480	6480
		15.5	15.6	15.7	15.8	15.9	16.0	16.1	16.1	16.2	16.2	16.2
140	339	1.01	1.01	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
-12C	413	6800	6750	6700	6650	6610	6580	6550	6530	6520	6520	6520
		15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.8	15.8	15.9	15.9
130	339	1.01	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.99
-10C	407	6830	6770	6720	6680	6640	6610	6580	6560	6560	6550	6550
		14.9	15.0	15.1	15.2	15.3	15.4	15.5	15.5	15.5	15.5	15.5
120	339	1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99	0.99
-8C	401	6850	6800	6750	6710	6660	6640	6610	6590	6590	6580	6580
		14.6	14.8	14.9	15.0	15.1	15.1	15.2	15.2	15.2	15.3	15.2
110	339	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
-6C	395	6870	6820	6770	6730	6680	6660	6630	6620	6610	6600	6600
		14.4	14.5	14.6	14.7	14.8	14.8	14.9	14.9	15.0	15.0	15.0
Temp Adj.		20	20	20	20	19	19	19	19	19	19	19

747-200B Recommended Initial Cruise Weight Tables, Mach .85 Cruise Speed, 2000 Foot Step

The following tables provide a weight for a given step climb and wind shear difference at which fuel burn will be optimized. This weight will put the aircraft above the optimum initially. As fuel is consumed, the weight will approach optimum conditions and burn below the optimum weight until the weight reduces to the point for the next step climb. Maximum Cruise Weight should always be checked before climbing to the new altitude.

HEADWIND													
FL CHANGE	WIND STRONGER AT HIGHER ALTITUDE						0	WIND STRONGER AT LOWER ALTITUDE					
	30	25	20	15	10	5		5	10	15	20	25	30
430-450	-	-	-	-	-	-	410	427	443	460	468	477	488
420-440	-	-	-	-	-	408	427	445	461	480	490	501	513
410-430	-	-	-	-	403	431	450	471	488	502	515	533	553
400-420	-	-	-	-	423	449	474	492	510	528	546	568	575
390-410	-	-	-	401	438	473	492	517	537	558	568	578	587
380-400	-	-	-	436	466	501	515	538	561	583	598	619	635
370-390	-	-	408	449	483	521	540	565	589	609	629	642	655
360-380	-	-	415	466	513	549	566	590	617	639	659	671	684
350-370	-	401	446	506	538	573	598	614	648	673	689	702	720
340-360	395	424	480	522	580	603	629	660	681	708	724	738	753
330-350	402	441	493	542	605	638	660	690	718	738	754	770	785
320-340	420	459	520	572	627	658	690	720	747	768	800	810	822
310-330	430	482	540	590	649	695	720	768	790	812	834	-	-
300-320	443	510	555	630	680	740	760	792	823	-	-	-	-
290-310	460	526	580	634	710	760	790	812	-	-	-	-	-

TAILWIND													
FL CHANGE	WIND STRONGER AT LOWER ALTITUDE						0	WIND STRONGER AT HIGHER ALTITUDE					
	30	25	20	15	10	5		5	10	15	20	25	30
430-450	-	-	-	-	-	-	410	425	437	451	463	470	476
420-440	-	-	-	-	-	410	427	442	456	470	483	491	500
410-430	-	-	-	-	413	435	450	464	483	496	507	517	531
400-420	-	-	-	412	431	454	474	489	504	520	533	548	565
390-410	-	-	392	419	459	475	492	513	530	545	562	569	577
380-400	-	390	415	455	472	502	515	533	554	573	588	601	615
370-390	-	398	439	465	492	524	540	561	581	600	620	630	641
360-380	-	404	443	490	532	550	566	581	611	628	646	660	671
350-370	402	447	490	524	558	579	598	615	640	666	681	691	702
340-360	434	480	516	560	591	611	629	660	679	703	720	729	740
330-350	452	492	539	581	622	642	659	690	716	730	746	760	772
320-340	469	508	568	609	642	667	690	719	744	760	785	802	811
310-330	490	550	584	634	673	702	720	767	783	805	820	840	-
300-320	515	557	615	668	720	744	760	791	820	834	-	-	-
290-310	530	610	632	670	739	772	790	812	840	-	-	-	-

747-200B Recommended Initial Cruise Weight Tables, Mach .85 Cruise Speed, 4000 Foot Step

HEADWIND												
FL CHANGE	WIND STRONGER AT HIGHER ALTITUDE						0	WIND STRONGER AT LOWER ALTITUDE				
	60	50	40	30	20	10		10	20	30	40	50
410-450	-	-	-	-	-	407	428	447	463	476	489	505
400-440	-	-	-	-	405	425	446	467	485	498	515	530
390-430	-	-	-	-	420	446	472	491	508	526	546	-
380-420	-	-	-	410	442	470	496	513	532	555	-	-
370-410	-	-	-	427	464	489	520	538	561	575	590	-
360-400	-	-	400	447	483	515	543	564	584	610	-	-
350-390	-	390	428	470	514	539	570	594	615	634	655	-
340-380	-	405	440	500	541	570	599	621	645	668	683	-
330-370	-	428	472	521	560	600	625	655	678	701	720	-
320-360	400	448	494	550	585	626	660	685	712	733	750	-
310-350	423	472	511	579	623	657	700	720	742	770	790	-
300-340	441	488	541	594	653	684	730	751	779	808	823	-
290-330	457	508	567	623	672	721	766	788	811	840	-	-
TAILWIND												
FL CHANGE	WIND STRONGER AT LOWER ALTITUDE						0	WIND STRONGER AT HIGHER ALTITUDE				
	60	50	40	30	20	10		10	20	30	40	50
410-450	-	-	-	-	-	412	428	444	458	469	480	491
400-440	-	-	-	-	412	428	446	464	480	491	503	517
390-430	-	-	-	403	430	451	472	488	502	517	531	-
380-420	-	-	403	427	455	473	496	510	524	541	561	-
370-410	-	-	418	447	474	492	520	535	552	567	579	600
360-400	-	398	436	468	500	518	543	561	578	596	618	-
350-390	389	426	462	498	525	544	570	591	607	623	640	657
340-380	415	441	490	525	555	578	599	620	640	660	672	685
330-370	440	479	519	548	582	608	625	654	671	690	708	724
320-360	460	499	542	572	611	639	660	684	708	726	740	756
310-350	486	517	560	605	640	666	700	719	740	763	779	794
300-340	500	546	588	640	670	694	730	752	775	800	815	828
290-330	520	574	622	650	698	732	766	789	808	828	-	-

747-200B Maximum / Optimum Cruise Weight

MAXIMUM CRUISE WEIGHT				OPTIMUM CRUISE WEIGHT	
Maximum weight at which .85M can be maintained in level flight at max cruise thrust and which will provide at least 300 fpm rate-of-climb at .84M at max climb thrust. This is a performance limit and does not consider fuel efficiency.				Best nautical air miles per 1,000 lbs of fuel.	
FLIGHT LEVEL SAT (Ts) °C	STATIC AIR TEMPERATURE - °C			.85M	LRC
	Ts + 10 and Below	Ts + 15	Ts + 20		
450 -57	454,000	439,000	420,000	383,000	379,000
440 -57	479,000	464,000	444,000	405,000	399,000
430 -57	505,000	488,000	468,000	428,000	419,000
420 -57	532,000	515,000	494,000	451,000	441,000
410 -57	560,000	542,000	522,000	475,000	463,000
400 -57	591,000	571,000	550,000	500,000	486,000
390 -57	622,000	601,000	580,000	526,000	510,000
380 -57	655,000	634,000	612,000	553,000	536,000
370 -57	688,000	667,000	644,000	581,000	562,000
360 -56	719,000	698,000	674,000	609,000	589,000
350 -54	752,000	729,000	705,000	638,000	617,000
340 -52	782,000	758,000	730,000	668,000	645,000
330 -50	813,000	787,000	756,000	699,000	675,000

747-200B Descent Distance

.85/280 KIAS DESCENT SPEED											
FLIGHT LEVEL	GROSS WEIGHT - 1000 LBS										DISTANCE CORRECTION 10 KNOTS WIND
	400	420	440	460	480	500	520	540	560	580	
450	114	116	119	121	123	124	124	125	125	126	3.0
430	108	110	113	115	117	118	118	120	120	121	2.8
410	102	104	107	109	111	112	112	115	115	116	2.7
390	96	98	101	103	105	106	107	108	109	110	2.6
370	91	93	95	97	99	100	101	102	103	104	2.5
350	83	85	87	89	91	92	93	93	94	95	2.3
330	75	77	79	81	82	83	84	85	86	87	2.1
310	67	69	71	72	73	74	75	76	77	78	1.9
290	58	60	61	63	64	65	66	67	67	68	1.7
270	50	51	52	54	55	56	56	57	58	59	1.5
250	41	42	43	45	46	46	47	48	48	49	1.3
200	28	29	30	31	32	32	33	33	34	34	.9
180	23	24	25	25	25	26	26	27	27	28	.7
150	16	16	17	17	17	18	18	18	18	19	.5
.85/340 KIAS DESCENT SPEED											
FLIGHT LEVEL	GROSS WEIGHT - 1000 LBS										DISTANCE CORRECTION 10 KNOTS WIND
	400	420	440	460	480	500	520	540	560	580	
450	89	92	95	98	100	102	103	104	105	106	2.2
430	83	86	88	91	94	96	98	100	101	102	2.1
410	77	80	83	85	88	90	92	94	95	96	1.9
390	71	75	77	80	82	84	86	88	89	90	1.8
370	65	68	70	73	75	78	80	82	83	84	1.7
350	60	63	65	68	70	72	74	76	77	78	1.6
330	55	58	60	63	65	67	69	70	72	73	1.5
310	51	53	55	57	59	61	63	65	66	67	1.4
290	46	48	50	52	54	56	58	60	61	62	1.3
270	42	44	45	47	49	51	53	54	55	55	1.2
250	36	38	39	40	42	43	45	45	46	47	1.0
200	26	27	28	29	30	31	32	33	34	34	.8
180	22	23	24	25	25	26	27	28	29	29	.7
150	16	17	18	18	19	20	20	20	21	21	.5

747-200B Landing Reference Speeds, Flaps 30

GROSS WEIGHT 1000 LBS	400	420	440	460	480	500	520	540	560	580*	600*	620*	640*	660*	680*	700*	720*	740*	760*	780*	800*
REF (KIAS)	118	121	124	127	130	133	135	138	141	144	147	150	153	156	159	162	164	167	170	172	175

* To be used in the event of an overweight landing.

747 SP Maneuver, Approach and Threshold Speeds

FLAP POSTION	MINIMUM MANEUVER	APPROACH & THRESHOLD
0	REF + 80	
1	REF + 60	
5	REF + 40	
10	REF + 20	
20	REF + 10	
25	REF + 5	REF + 5
30		REF

Wind Corrections:

Approach & Threshold Speeds - Add 1/2 the steady headwind component plus the full gust value to the speed for the flap configuration used for landing. The total addition should not exceed 20 knots.

Target Approach Speed - The announced APPROACH SPEED corrected for wind and airplane irregular configuration, if applicable.