

SECTION 2
RAPID FLIGHT PLANNING

Introduction

1. This section of the manual contains data to permit a rapid assessment of the time and fuel needed for a proposed flight. Tables are provided for:

- (a) Sector fuel and time, High Speed cruise at 0.88 M_{IND} at 31,000 feet.
- (b) Sector fuel and time, Intermediate Speed stepped cruise at 0.86 M_{IND} .
- (c) Sector fuel and time, Long Range cruise stepped at 0.84 M_{IND} .
- (d) Reserve fuel.

All of the tables are computed for J.S.A. + 10°C.

Sector Fuel and Time, Tables 1 to 3

2. These tables show the sector fuel and time against stage distance and wind component for the three cruising Mach numbers. They include the fuel and time for take-off and acceleration, climb to cruise altitude, cruise, descent and include a 15 minute circuit allowance and 2,000 lb. start-up and taxi fuel but no contingency fuel. To compute these tables it is assumed that all flights have a constant end-of-descent weight of 220,000 lb: until the range is such that the maximum take-off weight of 323,000 lb. is required. The maximum ranges shown assume that 11,000 lb. of reserve fuel is required. **Note that no diversion fuel is included.**

Table 1 is for High Speed cruise at 0.88 M_{IND} . This is flown at a constant altitude of 31,000 feet to give minimum sector time. The fuel consumption with this cruising technique is high. Table 2 is for Intermediate Speed stepped cruise at 0.86 M_{IND} . For this table it is assumed that the climb is made to an altitude of 1,000 feet below the optimum cruise altitude. A constant altitude cruise is made at this level until the aircraft weight is sufficiently reduced to allow a 4,000 feet climb to the next quadrantal height. An additional 300 lb. of fuel is included for each 4,000 feet step.

Table 3 is for Long Range stepped cruise at 0.84 M_{IND} . The flight technique is similar to that for the 0.86 M_{IND} cruise.

Reserve Fuel, Table 4

3. This table shows the diversion time and total reserve fuel which includes:
- (a) Fuel for diversions up to 500 nautical miles.
 - (b) Fuel for $\frac{1}{2}$ hour holding at 1,000 feet (6,000 lb.).
 - (c) 5,000 lb. of fuel for instrument let-down, approach and landing.
 - (d) 5% of the diversion fuel as a contingency.

The tables assume a diversion from 1,000 feet to 1,000 feet and a constant start-of-climb weight of 220,000 lb. The optimum fuel procedure is used, that is a climb immediately followed by a descent, unless the climb altitude reaches the maximum of 43,000 feet at which altitude a level cruise is commenced. The distances at which 43,000 feet are attained are denoted by the horizontal lines on Table 4.

Anti-Icing Fuel Allowance

4. The use of full anti-icing during normal holding increases the fuel flow by 800 lb./hour or more: see Table 12B.

5. Example

Stage length 3,600 nautical miles.

Mean wind component + 30 Kts.

Long range stepped cruise at M 0.84 indicated.

Diversion 300 nautical miles with wind component - 40 Kts.

Permissible max. take-off weight 323,000 lb.

A.P.S. weight 153,000 lb.

From Table 3A:	flight time is	7 hours 28 minutes.
	fuel burn off is	103,800 lb.
	Contingency 5%	5,200 lb.

From Table 4B: reserve fuel 21,900 lb.

Total fuel required 130,900 lb.

Since the tables include 2,000 lb. start-up and taxi fuel the start-up weight will be 325,000 lb. and the payload (153,000 + 131,000) lb. less than this; namely 41,000 lb.

TABLE 1A

1984

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SECTOR FUEL AND TIME
HIGH SPEED CRUISE AT 0.88 M_{IND}

TABLE 1A

DIST. NAUT. MILES	HEADWIND COMPONENT KNOTS																						DIST. NAUT. MILES	
	-100		-90		-80		-70		-60		-50		-40		-30		-20		-10		0			
	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min		
500	24200	1 : 40	24200	1 : 38	23700	1 : 36	23300	1 : 34	23000	1 : 33	22500	1 : 32	22000	1 : 31	21500	1 : 29	21100	1 : 28	20700	1 : 26	20200	1 : 24	500	
600	29000	1 : 55	28200	1 : 53	27600	1 : 50	27100	1 : 48	26500	1 : 46	26200	1 : 44	25600	1 : 42	24900	1 : 40	24400	1 : 39	23900	1 : 37	23500	1 : 36	600	
700	33300	2 : 09	32300	2 : 07	31600	2 : 05	31000	2 : 02	30400	2 : 00	29900	1 : 58	29200	1 : 56	28400	1 : 54	27900	1 : 51	27400	1 : 49	27000	1 : 47	700	
800	37400	2 : 25	36500	2 : 21	35800	2 : 18	35000	2 : 15	34100	2 : 13	33500	2 : 12	32700	2 : 08	32000	2 : 06	31400	2 : 04	30800	2 : 02	30300	2 : 00	800	
900	41700	2 : 39	40800	2 : 36	39900	2 : 33	39000	2 : 30	38100	2 : 27	37200	2 : 24	36500	2 : 21	35600	2 : 18	34900	2 : 16	34300	2 : 13	33700	2 : 11	900	
1000	46000	2 : 54	45000	2 : 50	44000	2 : 46	43000	2 : 43	42000	2 : 40	41100	2 : 37	40200	2 : 35	39400	2 : 32	38500	2 : 30	37700	2 : 26	37200	2 : 23	1000	
1100	50500	3 : 08	49300	3 : 04	48100	3 : 01	47000	2 : 56	46000	2 : 53	45000	2 : 50	44400	2 : 47	43400	2 : 44	42200	2 : 41	41300	2 : 38	40500	2 : 37	1100	
1200	54700	3 : 22	53500	3 : 18	52200	3 : 14	51000	3 : 10	50000	3 : 07	48800	3 : 04	47800	3 : 00	46800	2 : 56	45800	2 : 53	44900	2 : 50	44000	2 : 47	1200	
1300	59000	3 : 37	57900	3 : 33	56500	3 : 28	55000	3 : 24	53900	3 : 20	52700	3 : 16	51500	3 : 12	50500	3 : 09	49500	3 : 06	48500	3 : 02	47500	2 : 59	1300	
1400	63400	3 : 52	62200	3 : 47	60800	3 : 43	59200	3 : 38	57900	3 : 34	56600	3 : 30	55100	3 : 25	54100	3 : 21	53000	3 : 18	52000	3 : 14	51000	3 : 10	1400	
1500	68000	4 : 07	66500	4 : 02	65000	3 : 56	63400	3 : 52	62000	3 : 47	60600	3 : 43	59200	3 : 39	58000	3 : 34	56800	3 : 31	55600	3 : 25	54500	3 : 22	1500	
1600	72500	4 : 21	71000	4 : 16	69200	4 : 10	67500	4 : 06	66000	4 : 00	64500	3 : 56	63200	3 : 51	61800	3 : 47	60500	3 : 43	59300	3 : 38	58000	3 : 34	1600	
1700	77000	4 : 36	75200	4 : 31	73500	4 : 25	71800	4 : 19	70100	4 : 14	68500	4 : 09	67100	4 : 04	65500	3 : 59	64300	3 : 55	63000	3 : 50	61600	3 : 46	1700	
1800	81600	4 : 51	79700	4 : 45	77800	4 : 39	76000	4 : 33	74100	4 : 27	72500	4 : 22	71000	4 : 16	69500	4 : 13	68000	4 : 07	66600	4 : 03	65200	3 : 58	1800	
1900	86400	5 : 05	84000	5 : 00	82000	4 : 53	80400	4 : 47	78200	4 : 41	76500	4 : 36	75000	4 : 29	73200	4 : 24	71800	4 : 19	70200	4 : 15	68900	4 : 11	1900	
2000	90500	5 : 21	88400	5 : 14	86300	5 : 07	84400	5 : 00	82400	4 : 54	80500	4 : 49	78900	4 : 43	77000	4 : 38	75500	4 : 33	74000	4 : 27	72300	4 : 22	2000	
2100	94800	5 : 37	92600	5 : 27	90600	5 : 20	88600	5 : 13	86400	5 : 08	84400	5 : 01	82500	4 : 55	80800	4 : 50	79300	4 : 45	77500	4 : 39	76000	4 : 35	2100	
2200	99300	5 : 51	97000	5 : 43	94800	5 : 36	92600	5 : 27	90500	5 : 21	88500	5 : 15	86500	5 : 09	84600	5 : 02	83000	4 : 57	81200	4 : 51	79700	4 : 46	2200	
2300	103700	6 : 05	101400	5 : 58	99100	5 : 49	96900	5 : 42	94600	5 : 34	92500	5 : 27	90600	5 : 21	88600	5 : 15	86900	5 : 09	85000	5 : 04	83500	4 : 58	2300	
2400	108100	6 : 22	105600	6 : 10	103200	6 : 03	101100	5 : 55	98900	5 : 48	96600	5 : 42	94600	5 : 34	92500	5 : 27	90700	5 : 21	88800	5 : 15	87100	5 : 10	2400	
2500	112300	6 : 34	109800	6 : 21	107500	6 : 18	105200	6 : 10	103000	6 : 01	100600	5 : 54	98500	5 : 46	96500	5 : 40	94500	5 : 33	92500	5 : 27	90700	5 : 22	2500	
2600	116300	6 : 49	113500	6 : 41	111400	6 : 31	109200	6 : 23	107000	6 : 15	104800	6 : 07	102600	5 : 59	100400	5 : 53	98500	5 : 46	96400	5 : 40	94500	5 : 34	2600	
2700	120200	7 : 02	117300	6 : 55	115000	6 : 46	113000	6 : 36	110700	6 : 28	108500	6 : 21	106500	6 : 14	104200	6 : 07	102000	5 : 58	100100	5 : 51	98100	5 : 46	2700	
2800	124000	7 : 17	121200	7 : 08	118600	7 : 00	116500	6 : 51	114300	6 : 42	112100	6 : 33	110000	6 : 24	108000	6 : 18	106000	6 : 11	103900	6 : 03	101900	5 : 58	2800	
2900	128000	7 : 31	125000	7 : 23	122400	7 : 14	120000	7 : 03	117700	6 : 55	115600	6 : 46	113500	6 : 36	111400	6 : 30	109400	6 : 22	107400	6 : 16	105400	6 : 10	2900	
3000	131700	7 : 48	128800	7 : 38	126000	7 : 28	123600	7 : 18	121300	7 : 08	119000	6 : 58	116900	6 : 51	114700	6 : 43	112700	6 : 34	110700	6 : 27	108700	6 : 21	3000	
3100	135500	8 : 00	132500	7 : 52	129700	7 : 41	127200	7 : 31	124800	7 : 22	122400	7 : 13	120200	7 : 03	118000	6 : 55	116000	6 : 47	114000	6 : 41	112000	6 : 31	3100	
3200	139400	8 : 17	136400	8 : 06	133500	7 : 56	131000	7 : 46	128300	7 : 35	125700	7 : 25	123600	7 : 16	121300	7 : 07	119200	6 : 59	117200	6 : 52	115100	6 : 45	3200	
3300					137300	8 : 10	134500	7 : 59	131900	7 : 49	129200	7 : 39	127000	7 : 29	124900	7 : 20	122400	7 : 12	120300	7 : 03	118300	6 : 56	3300	
3400							138000	8 : 13																3400
3500									139000	8 : 16														3500
3600											139700	8 : 19												3600
3700													137000	8 : 08										3700
3800															134400	7 : 54								3800
3900															137700	8 : 10								3900
4000																	138600	8 : 15						4000
4100																								4100
4200																								4200
4300																								4300
4400																								4400
4500																								4500
4600																								4600
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4800																								4800
4900																								4900
5000																								5000
5100																								5100
5200																								5200
5300																								5300
5400																								5400

NOTE: SECTOR TIME INCLUDES 15 MINUTES CIRCUIT AND TAXI TIME
 SECTOR FUEL INCLUDES 25000 lb. START UP AND TAXI FUEL
 CONTINGENCY FUEL MUST BE ADDED TO THESE FIGURES

RESTRICTED

SECTOR FUEL AND TIME
HIGH SPEED CRUISE AT 0.88 MIND

AP 101. B - 0201 - 16B

TABLE 1B

DIST.	TAILWIND COMPONENT KNOTS																						DIST.	
	0		+10		+20		+30		+40		+50		+60		+70		+80		+90		+100			
	FUEL LBS	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min	FUEL LB	TIME hr:min		
500	20,000	1: 34	19900	1: 22	19700	1: 20	19300	1: 19	19000	1: 18	18800	1: 16	18500	1: 15	18200	1: 14	17800	1: 21	17500	1: 12	17200	1: 11	500	
600	22500	1: 36	22200	1: 34	22000	1: 32	22500	1: 31	22400	1: 30	21700	1: 28	21500	1: 27	21100	1: 25	20700	1: 24	20300	1: 23	20000	1: 21	600	
700	25000	1: 37	24800	1: 45	24600	1: 43	25600	1: 42	25200	1: 41	24800	1: 39	24400	1: 37	24000	1: 36	23600	1: 34	23200	1: 33	22700	1: 32	700	
800	27500	1: 39	27300	1: 58	27200	1: 55	28700	1: 53	28300	1: 52	27800	1: 50	27300	1: 48	26900	1: 46	26400	1: 45	26000	1: 44	25500	1: 42	800	
900	30000	2: 11	30000	2: 09	32300	2: 07	32000	2: 05	31400	2: 04	30900	2: 02	30300	2: 00	29900	1: 57	29400	1: 57	28900	1: 55	28400	1: 52	900	
1000	32500	2: 23	36300	2: 21	35600	2: 15	35000	2: 16	34500	2: 14	33800	2: 12	33300	2: 10	32800	2: 07	32100	2: 06	31700	2: 04	31100	2: 03	1000	
1100	40600	2: 37	39800	2: 34	39000	2: 31	38300	2: 27	37600	2: 27	37000	2: 23	36300	2: 20	35800	2: 18	35000	2: 16	34600	2: 14	34000	2: 12	1100	
1200	47500	2: 47	43100	2: 44	42300	2: 42	41500	2: 39	40800	2: 36	40100	2: 34	39400	2: 31	38700	2: 29	38000	2: 26	37500	2: 24	37000	2: 22	1200	
1300	47500	2: 59	45500	2: 56	45600	2: 52	44800	2: 52	44000	2: 47	43300	2: 44	42500	2: 41	41800	2: 39	41000	2: 37	40500	2: 35	39900	2: 32	1300	
1400	51000	3: 10	50000	3: 08	49300	3: 04	48000	3: 02	47200	2: 57	46400	2: 54	45600	2: 51	44800	2: 49	44000	2: 46	43400	2: 44	42800	2: 41	1400	
1500	54500	3: 22	53300	3: 19	52300	3: 15	51300	3: 12	50500	3: 09	49600	3: 06	48700	3: 03	47900	3: 01	47000	2: 57	46400	2: 55	45700	2: 52	1500	
1600	58000	3: 34	57000	3: 31	56800	3: 26	56000	3: 23	55800	3: 20	52700	3: 17	51900	3: 13	51000	3: 10	50000	3: 07	49300	3: 05	48700	3: 02	1600	
1700	61500	3: 46	60500	3: 47	59300	3: 40	58100	3: 36	57000	3: 33	56000	3: 29	55000	3: 25	54000	3: 22	53100	3: 18	52200	3: 15	51500	3: 12	1700	
1800	65000	3: 58	64000	3: 54	62700	3: 50	61600	3: 46	60500	3: 41	59400	3: 39	58300	3: 36	57300	3: 31	56300	3: 27	55300	3: 24	54300	3: 21	1800	
1900	68500	4: 11	67600	4: 07	66300	4: 02	65000	3: 57	63700	3: 53	62600	3: 50	61500	3: 46	60500	3: 43	59500	3: 39	58500	3: 36	57400	3: 32	1900	
2000	72000	4: 23	71200	4: 17	69700	4: 13	68500	4: 10	67200	4: 05	66000	4: 00	64700	3: 56	63700	3: 52	62500	3: 49	61500	3: 46	60400	3: 42	2000	
2100	75500	4: 35	74800	4: 28	73100	4: 24	72000	4: 20	70500	4: 15	69300	4: 11	68000	4: 07	66900	4: 04	65700	3: 59	64500	3: 56	63300	3: 52	2100	
2200	79000	4: 46	78300	4: 41	76700	4: 37	75400	4: 32	74000	4: 26	72300	4: 22	71300	4: 18	70100	4: 13	68900	4: 10	67700	4: 07	66400	4: 03	2200	
2300	82500	4: 58	82000	4: 53	80200	4: 48	78800	4: 43	77300	4: 38	75600	4: 33	74200	4: 28	73000	4: 24	71800	4: 20	70700	4: 16	69500	4: 12	2300	
2400	86000	5: 10	85500	5: 03	83700	4: 58	82300	4: 53	80500	4: 49	78900	4: 44	77600	4: 39	76300	4: 35	75000	4: 30	73800	4: 26	72500	4: 22	2400	
2500	89500	5: 22	89100	5: 16	87400	5: 11	85700	5: 06	84200	5: 00	82500	4: 55	81000	4: 50	79500	4: 46	78200	4: 41	77000	4: 37	75500	4: 32	2500	
2600	93000	5: 34	92700	5: 27	91000	5: 22	89300	5: 17	87500	5: 11	86000	5: 06	84500	5: 00	82900	4: 55	81400	4: 51	80000	4: 47	78600	4: 43	2600	
2700	96500	5: 46	96400	5: 39	94400	5: 33	92600	5: 28	91000	5: 22	89300	5: 16	87500	5: 12	86000	5: 06	84500	5: 01	83200	4: 57	81700	4: 52	2700	
2800	100000	5: 58	99900	5: 51	97500	5: 45	96000	5: 40	94400	5: 32	92700	5: 27	91000	5: 22	89400	5: 17	87800	5: 12	86300	5: 06	84800	5: 03	2800	
2900	103500	6: 10	103400	6: 01	101300	5: 55	99500	5: 50	97700	5: 43	96000	5: 38	94100	5: 33	92600	5: 26	91000	5: 21	89500	5: 16	87900	5: 12	2900	
3000	107000	6: 21	106800	6: 14	104800	6: 07	103000	6: 01	100900	5: 55	99000	5: 49	97400	5: 44	95800	5: 38	94200	5: 32	92600	5: 26	91000	5: 22	3000	
3100	110500	6: 31	110000	6: 25	108000	6: 18	106100	6: 12	104500	6: 05	102600	6: 00	100700	5: 55	99000	5: 49	97300	5: 43	95700	5: 36	94100	5: 32	3100	
3200	115100	6: 45	113200	6: 37	111200	6: 30	109500	6: 23	107600	6: 17	105600	6: 11	103000	6: 06	102200	5: 59	100500	5: 54	98800	5: 47	97200	5: 43	3200	
3300	119300	6: 56	116300	6: 48	114200	6: 42	112500	6: 34	110700	6: 28	108900	6: 21	107100	6: 16	105500	6: 11	103600	6: 04	102000	5: 58	100200	5: 52	3300	
3400	124500	7: 08	122300	7: 00	117200	6: 54	115500	6: 46	113600	6: 39	111700	6: 32	110000	6: 26	108200	6: 21	106500	6: 14	105000	6: 09	103300	6: 03	3400	
3500	124500	7: 19	122300	7: 12	120200	7: 05	118400	6: 57	116500	6: 50	114600	6: 44	112800	6: 37	111100	6: 31	109500	6: 24	107800	6: 18	106400	6: 13	3500	
3600	127600	7: 31	125400	7: 23	123200	7: 16	121400	7: 08	119500	7: 01	117500	6: 54	115700	6: 48	113900	6: 42	112100	6: 35	110600	6: 28	109000	6: 23	3600	
3700	130700	7: 44	128400	7: 34	126300	7: 26	124300	7: 19	122300	7: 12	120300	7: 04	118400	6: 58	116600	6: 52	114800	6: 45	113200	6: 38	110700	6: 32	3700	
3800	133800	7: 56	131500	7: 46	129300	7: 38	127300	7: 30	125300	7: 23	123200	7: 15	121100	7: 08	119300	7: 03	117500	6: 55	116000	6: 49	114300	6: 43	3800	
3900	137000	8: 07	134500	7: 57	132200	7: 49	130200	7: 40	128200	7: 33	126000	7: 26	124000	7: 19	122000	7: 13	120200	7: 05	118500	6: 58	117000	6: 52	3900	
4000	140000	8: 19	137500	8: 09	135400	8: 01	133200	7: 54	131100	7: 45	129000	7: 36	126800	7: 29	124800	7: 22	123000	7: 15	121300	7: 06	119600	7: 02	4000	
4100					138300	8: 12	136000	8: 04	134000	7: 56	131700	7: 48	129400	7: 39	127600	7: 33	125600	7: 26	123900	7: 19	122100	7: 13	4100	
4200							139000	8: 05	137000	8: 05	134600	7: 58	132400	7: 51	130000	7: 44	128100	7: 35	126500	7: 28	124800	7: 21	4200	
4300									139700	8: 17	137400	8: 09	135300	8: 01	133100	7: 54	131100	7: 46	129300	7: 38	127400	7: 31	4300	
4400												138000	8: 11	136000	8: 04	134000	7: 56	132000	7: 49	130000	7: 41	128000	7: 34	4400
4500														138600	8: 15	136500	8: 06	134700	7: 58	132500	7: 51	130000	7: 44	4500
4600																139300	8: 17	137400	8: 08	135200	8: 01	132800	7: 57	4600
4700																							8: 10	4700
4800																								4800
4900																								4900
5000																								5000
5100																								5100
5200																								5200
5300																								5300
5400																								5400

NOTE: SECTOR TIME INCLUDES 15 MINUTES CIRCUIT AND TAXI TIME
SECTOR FUEL INCLUDES 2,000 lb. START UP AND TAXI FUEL
CONTINGENCY FUEL MUST BE ADDED TO THESE FIGURES

RESTRICTED

SECTOR FUEL AND TIME
INTERMEDIATE SPEED CRUISE AT 0.86 M_{IND}

TABLE 2A

DIST.	HEADWIND COMPONENT KNOTS																						DIST.		
	-100		-90		-80		-70		-60		-50		-40		-30		-20		-10		0				
	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME			
NAUT.	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	NAUT.
MILES	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	MILES
500	21800	1 : 46	21400	1 : 44	20700	1 : 41	20200	1 : 39	19900	1 : 37	19500	1 : 35	19100	1 : 33	18900	1 : 32	18600	1 : 30	18300	1 : 28	18000	1 : 27	500		
600	25600	2 : 01	24700	1 : 59	24100	1 : 56	23600	1 : 54	23100	1 : 52	22700	1 : 49	22200	1 : 47	21800	1 : 45	21400	1 : 43	21100	1 : 41	20700	1 : 39	600		
700	29200	2 : 17	28400	2 : 14	27700	2 : 11	27000	2 : 08	26500	2 : 06	26000	2 : 05	25400	2 : 01	24900	2 : 01	24400	2 : 01	23900	2 : 01	23400	2 : 01	700		
800	32900	2 : 33	32000	2 : 30	31100	2 : 26	30400	2 : 23	29900	2 : 20	29200	2 : 17	28500	2 : 14	28000	2 : 12	27400	2 : 09	26800	2 : 06	26300	2 : 04	800		
900	36600	2 : 49	35500	2 : 45	34500	2 : 40	33500	2 : 37	32700	2 : 34	32000	2 : 31	31400	2 : 28	30900	2 : 25	30400	2 : 22	29900	2 : 19	29300	2 : 16	900		
1000	40300	3 : 03	39000	3 : 00	37900	2 : 55	36900	2 : 52	36000	2 : 48	35100	2 : 44	34400	2 : 41	33900	2 : 38	33200	2 : 34	32500	2 : 31	31900	2 : 28	1000		
1100	44100	3 : 19	42700	3 : 14	41500	3 : 09	40300	3 : 05	39300	3 : 02	38400	2 : 58	37500	2 : 54	37000	2 : 51	36200	2 : 48	35600	2 : 44	34900	2 : 41	1100		
1200	48000	3 : 35	46600	3 : 31	45100	3 : 25	43700	3 : 21	42600	3 : 16	41700	3 : 12	40800	3 : 08	40200	3 : 04	39300	3 : 00	38700	2 : 57	37900	2 : 53	1200		
1300	51800	3 : 50	50200	3 : 45	48700	3 : 39	47300	3 : 35	45000	3 : 30	43800	3 : 25	42900	3 : 21	42300	3 : 17	41400	3 : 13	40800	3 : 09	40700	3 : 05	1300		
1400	55600	4 : 05	54000	4 : 00	52200	3 : 54	50900	3 : 49	49500	3 : 44	48300	3 : 39	47300	3 : 35	46500	3 : 31	45500	3 : 26	44600	3 : 22	43700	3 : 17	1400		
1500	59500	4 : 20	57800	4 : 14	56000	4 : 07	54500	4 : 03	53000	3 : 57	51800	3 : 52	50600	3 : 47	49700	3 : 43	48600	3 : 39	47600	3 : 34	46700	3 : 30	1500		
1600	63400	4 : 37	61600	4 : 31	59800	4 : 24	58200	4 : 18	56600	4 : 12	55300	4 : 06	54100	4 : 01	53000	3 : 56	51900	3 : 52	50800	3 : 47	49900	3 : 42	1600		
1700	67300	4 : 51	65400	4 : 45	63500	4 : 38	61900	4 : 32	60200	4 : 26	58800	4 : 20	57300	4 : 14	56200	4 : 09	55000	4 : 04	53800	3 : 59	52900	3 : 55	1700		
1800	71200	5 : 07	69300	5 : 00	67100	4 : 52	65400	4 : 46	63800	4 : 41	62300	4 : 34	60900	4 : 28	59500	4 : 22	58000	4 : 17	57000	4 : 12	56000	4 : 06	1800		
1900	75100	5 : 23	73100	5 : 15	70900	5 : 07	69200	5 : 01	67400	4 : 54	65900	4 : 47	64400	4 : 42	62900	4 : 35	61300	4 : 30	60000	4 : 24	59000	4 : 19	1900		
2000	79100	5 : 38	77000	5 : 30	75000	5 : 22	73000	5 : 15	71000	5 : 06	69500	5 : 00	67800	4 : 54	66100	4 : 48	64500	4 : 42	63300	4 : 37	62000	4 : 31	2000		
2100	83200	5 : 54	81000	5 : 46	78700	5 : 37	76700	5 : 29	74600	5 : 22	73000	5 : 14	71000	5 : 07	69500	5 : 01	67700	4 : 55	66500	4 : 49	65100	4 : 43	2100		
2200	87300	6 : 10	85200	6 : 01	82900	5 : 52	80600	5 : 45	78500	5 : 37	76500	5 : 29	74500	5 : 22	73000	5 : 15	71000	5 : 08	69800	5 : 02	68200	4 : 56	2200		
2300	91500	6 : 26	89000	6 : 16	86800	6 : 06	84500	5 : 58	82300	5 : 50	80200	5 : 42	78200	5 : 35	76400	5 : 27	74500	5 : 21	72900	5 : 14	71200	5 : 07	2300		
2400	95700	6 : 41	93300	6 : 31	90700	6 : 21	88300	6 : 12	86000	6 : 04	83800	5 : 56	81800	5 : 48	80000	5 : 41	78000	5 : 34	76300	5 : 27	74500	5 : 20	2400		
2500	99900	6 : 57	97400	6 : 47	94900	6 : 36	92100	6 : 27	90000	6 : 18	87700	6 : 09	85400	6 : 02	83400	5 : 54	81400	5 : 47	79600	5 : 40	77600	5 : 32	2500		
2600	104000	7 : 10	101500	7 : 00	99000	6 : 50	96100	6 : 42	93300	6 : 33	91500	6 : 22	89000	6 : 15	87000	6 : 07	84900	6 : 00	83000	5 : 52	81000	5 : 44	2600		
2700	108400	7 : 26	105700	7 : 13	103000	7 : 03	100200	6 : 55	97700	6 : 47	95400	6 : 37	92700	6 : 29	90600	6 : 20	88300	6 : 12	86500	6 : 04	84400	5 : 57	2700		
2800	111500	7 : 42	109000	7 : 29	106600	7 : 18	104200	7 : 08	101800	6 : 59	99300	6 : 50	96700	6 : 42	94300	6 : 33	92000	6 : 25	89900	6 : 17	87700	6 : 09	2800		
2900	114500	7 : 57	112000	7 : 44	109800	7 : 33	107400	7 : 22	105000	7 : 12	103100	7 : 02	100600	6 : 55	98000	6 : 46	95600	6 : 37	93500	6 : 30	91200	6 : 21	2900		
3000	117400	8 : 12	114900	8 : 00	112700	7 : 49	110500	7 : 37	108300	7 : 27	106200	7 : 17	104000	7 : 07	102000	6 : 59	99300	6 : 50	97100	6 : 41	94600	6 : 33	3000		
3100	120400	8 : 29	117900	8 : 16	115600	8 : 04	113400	7 : 53	110300	7 : 42	109200	7 : 32	107300	7 : 21	105400	7 : 12	103000	7 : 03	100500	6 : 54	98100	6 : 46	3100		
3200	123200	8 : 45	120700	8 : 31	118400	8 : 18	116200	8 : 06	114100	7 : 56	112000	7 : 45	110000	7 : 35	108000	7 : 25	105400	7 : 15	104000	7 : 06	101600	6 : 58	3200		
3300	126000	9 : 01	123500	8 : 47	121100	8 : 34	119000	8 : 21	116900	8 : 10	114500	8 : 00	112700	7 : 50	110800	7 : 40	109500	7 : 30	107000	7 : 20	105000	7 : 10	3300		
3400	128600	9 : 15	126100	9 : 01	124000	8 : 49	121500	8 : 36	119500	8 : 25	117200	8 : 13	115300	8 : 02	113400	7 : 53	111500	7 : 42	109200	7 : 32	107500	7 : 22	3400		
3500	131500	9 : 31	128900	9 : 16	126500	9 : 03	124200	8 : 51	122100	8 : 40	119800	8 : 28	117800	8 : 16	116000	8 : 05	114100	7 : 55	112100	7 : 45	110000	7 : 35	3500		
3600	134000	9 : 48	131500	9 : 32	129000	9 : 18	126700	9 : 05	124600	8 : 54	122200	8 : 41	120300	8 : 30	118500	8 : 19	116500	8 : 08	114600	7 : 59	112500	7 : 49	3600		
3700	136800	10 : 03	134100	9 : 48	131700	9 : 33	129300	9 : 20	127100	9 : 07	124700	8 : 55	122700	8 : 44	120800	8 : 33	118900	8 : 21	117000	8 : 11	114900	8 : 01	3700		
3800	139500	10 : 20	136800	10 : 03	134200	9 : 48	132000	9 : 34	129500	9 : 21	127200	9 : 08	125000	8 : 57	123100	8 : 45	121400	8 : 35	119500	8 : 24	117200	8 : 14	3800		
3900			139400	10 : 18	136800	10 : 03	134400	9 : 49	132000	9 : 37	129600	9 : 22	127500	9 : 10	125500	8 : 59	123700	8 : 47	121700	8 : 36	119500	8 : 26	3900		
4000					139400	10 : 17	137000	10 : 03	134500	9 : 50	132000	9 : 36	129800	9 : 24	127800	9 : 11	126000	9 : 00	124000	8 : 50	121800	8 : 40	4000		
4100							139400	10 : 16	137000	10 : 04	134500	9 : 49	132100	9 : 37	130100	9 : 25	128000	9 : 13	126200	9 : 02	124100	8 : 52	4100		
4200									139200	10 : 19	136900	10 : 04	134500	9 : 51	132500	9 : 37	130500	9 : 26	128500	9 : 15	126500	9 : 04	4200		
4300											139100	10 : 18	137000	10 : 04	134700	9 : 50	132700	9 : 39	130600	9 : 27	128500	9 : 16	4300		
4400													137000	10 : 18	134700	10 : 05	135000	9 : 51	132900	9 : 40	130700	9 : 29	4400		
4500														139200	10 : 18	137200	10 : 04	135000	9 : 52	133000	9 : 41	130700	9 : 29	4500	
4600																139400	10 : 18	137200	10 : 05	135200	9 : 54	130700	9 : 29	4600	
4700																		139500	10 : 17	137200	10 : 05	135200	9 : 54	4700	
4800																					139500	10 : 18	135200	9 : 54	4800
4900																								4900	
5000																								5000	
5100																								5100	
5200																								5200	
5300																								5300	
5400																								5400	
5500																								5500	
5600																								5600	

NOTE: SECTOR TIME INCLUDES 15 MINUTES CIRCUIT AND TAXI TIME
 SECTOR FUEL INCLUDES 2,000 LB. START UP AND TAXI FUEL
 CONTINGENCY FUEL MUST BE ADDED TO THESE FIGURES

SECTOR FUEL AND TIME

LONG RANGE STEPPED CRUISE AT 0.84 MIND

TABLE 3A

DIST.	HEADWIND COMPONENT KNOTS																						DIST.
	-100		-90		-80		-70		-60		-50		-40		-30		-20		-10		0		
	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	
NAUT.	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	NAUT.
MILES	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	MILES
500	23000	1: 47	22400	1: 44	22000	1: 42	21700	1: 40	21400	1: 38	21100	1: 36	20800	1: 34	20500	1: 32	20200	1: 31	19900	1: 30	19700	1: 28	500
600	25800	2: 02	25200	2: 00	24800	1: 57	24400	1: 55	24000	1: 52	23500	1: 50	23200	1: 48	22800	1: 46	22400	1: 44	22200	1: 42	21800	1: 40	600
700	29000	2: 19	28400	2: 15	27800	2: 12	27200	2: 10	26700	2: 07	26100	2: 04	25700	2: 01	25200	1: 59	24800	1: 57	24400	1: 55	24000	1: 53	700
800	32300	2: 35	31600	2: 31	30900	2: 28	30200	2: 25	29500	2: 21	28900	2: 18	28400	2: 15	27800	2: 12	27300	2: 10	26900	2: 08	26500	2: 05	800
900	35600	2: 51	34900	2: 47	34000	2: 43	33200	2: 40	32500	2: 36	31800	2: 33	31200	2: 30	30500	2: 27	30000	2: 24	29400	2: 21	28900	2: 18	900
1000	39100	3: 06	38200	3: 02	37200	2: 58	36400	2: 54	35500	2: 50	34700	2: 46	34000	2: 43	33400	2: 40	32600	2: 37	32000	2: 34	31400	2: 31	1000
1100	42600	3: 23	41700	3: 18	40500	3: 13	39600	3: 09	38600	3: 04	37800	3: 00	37000	2: 56	36200	2: 53	35500	2: 50	34700	2: 47	34100	2: 44	1100
1200	46300	3: 39	45200	3: 33	44000	3: 28	43000	3: 23	42000	3: 19	41000	3: 14	40000	3: 10	39100	3: 06	38300	3: 03	37500	3: 00	36800	2: 58	1200
1300	50000	3: 55	48800	3: 49	47400	3: 43	46300	3: 38	45100	3: 33	44100	3: 29	43000	3: 24	42100	3: 20	41200	3: 17	40300	3: 12	39600	3: 09	1300
1400	53700	4: 10	52400	4: 04	51000	3: 58	49200	3: 53	48500	3: 48	47300	3: 43	46200	3: 37	45200	3: 33	44200	3: 30	43200	3: 25	42300	3: 21	1400
1500	57500	4: 26	56000	4: 19	54500	4: 13	53100	4: 07	51800	4: 02	50500	3: 56	49400	3: 51	48200	3: 47	47200	3: 43	46200	3: 38	45300	3: 34	1500
1600	61300	4: 42	59700	4: 35	58000	4: 28	56600	4: 21	55200	4: 16	53900	4: 10	52500	4: 05	51300	4: 00	50200	3: 55	49200	3: 51	48200	3: 46	1600
1700	65100	4: 58	63200	4: 51	61500	4: 43	60000	4: 36	58600	4: 31	57100	4: 24	55800	4: 18	54400	4: 13	53200	4: 08	52100	4: 03	51100	3: 58	1700
1800	68900	5: 13	67000	5: 05	65000	4: 57	63500	4: 50	62000	4: 44	60500	4: 38	59000	4: 31	57500	4: 26	56300	4: 21	55100	4: 15	54000	4: 11	1800
1900	72700	5: 30	70700	5: 21	68500	5: 13	67000	5: 05	65300	4: 59	63800	4: 52	62200	4: 45	60600	4: 40	59400	4: 35	58000	4: 29	57000	4: 24	1900
2000	76600	5: 45	74500	5: 36	72100	5: 28	70500	5: 20	68700	5: 12	67100	5: 05	65500	4: 59	63700	4: 53	62400	4: 47	61100	4: 41	59900	4: 35	2000
2100	80600	6: 00	78200	5: 52	75900	5: 43	74200	5: 35	72300	5: 27	70500	5: 20	68800	5: 12	67000	5: 06	65500	5: 00	64200	4: 54	62800	4: 49	2100
2200	84500	6: 16	82000	6: 07	79600	5: 58	77900	5: 49	75800	5: 42	73900	5: 34	72100	5: 25	70200	5: 19	68700	5: 13	67200	5: 06	65800	5: 01	2200
2300	88500	6: 32	85800	6: 22	83500	6: 13	81500	6: 03	79400	5: 56	77300	5: 48	75500	5: 40	73500	5: 33	71800	5: 27	70400	5: 20	68900	5: 14	2300
2400	92500	6: 49	89700	6: 38	87200	6: 29	85300	6: 19	83000	6: 10	80700	6: 01	78900	5: 53	76700	5: 47	75000	5: 40	73900	5: 32	72000	5: 26	2400
2500	96500	7: 03	93500	6: 54	91000	6: 44	89000	6: 34	86500	6: 25	84100	6: 15	82200	6: 07	80000	6: 00	78300	5: 53	76600	5: 45	75000	5: 39	2500
2600	100500	7: 19	97500	7: 08	94700	6: 58	92700	6: 47	90200	6: 39	87600	6: 30	85700	6: 20	83300	6: 12	81500	6: 05	79800	5: 58	78200	5: 51	2600
2700	105300	7: 34	101300	7: 23	98500	7: 12	96500	7: 02	93800	6: 54	91000	6: 43	89000	6: 34	86600	6: 27	84800	6: 19	83000	6: 10	81400	6: 04	2700
2800	108700	7: 51	106500	7: 39	103500	7: 27	100500	7: 17	97600	7: 07	94500	6: 58	92500	6: 48	90000	6: 40	88100	6: 32	86200	6: 23	84500	6: 16	2800
2900	111300	8: 07	109500	7: 55	107000	7: 43	104500	7: 32	101200	7: 22	98300	7: 12	96000	7: 03	94000	6: 53	91500	6: 45	89400	6: 37	87600	6: 30	2900
3000	114700	8: 23	112400	8: 10	110000	7: 58	107900	7: 47	105700	7: 35	102800	7: 25	100300	7: 15	98000	7: 06	95900	6: 58	93400	6: 50	91000	6: 41	3000
3100	117900	8: 40	115200	8: 26	112800	8: 13	110700	8: 01	108600	7: 50	106500	7: 40	104000	7: 30	101500	7: 20	99200	7: 11	96700	7: 02	94400	6: 54	3100
3200	120200	8: 56	118000	8: 42	115500	8: 30	113500	8: 16	111400	8: 04	109300	7: 53	107200	7: 43	105000	7: 33	102600	7: 24	100100	7: 15	97500	7: 06	3200
3300	123000	9: 12	120700	8: 58	118100	8: 45	116000	8: 32	114000	8: 19	112000	8: 07	109900	7: 57	108000	7: 45	105900	7: 35	103500	7: 28	101000	7: 17	3300
3400	125700	9: 30	123300	9: 13	120800	9: 00	118700	8: 47	116500	8: 33	114500	8: 22	112500	8: 11	110500	8: 00	108500	7: 50	106500	7: 40	104300	7: 30	3400
3500	128400	9: 45	126000	9: 30	123500	9: 15	121300	9: 01	119200	8: 49	117000	8: 36	115000	8: 25	113000	8: 13	111000	8: 03	109000	7: 53	107000	7: 43	3500
3600	131100	10: 01	128600	9: 46	126000	9: 31	123700	9: 16	121700	9: 03	119500	8: 51	117500	8: 39	115500	8: 27	113500	8: 16	111400	8: 06	109500	7: 56	3600
3700	133700	10: 16	131200	10: 01	128600	9: 46	126200	9: 31	124000	9: 18	121800	9: 05	119800	8: 53	117800	8: 41	115900	8: 30	113900	8: 19	112000	8: 09	3700
3800	136400	10: 33	133700	10: 16	131100	10: 01	128600	9: 47	126500	9: 33	124200	9: 19	122100	9: 06	120100	8: 55	118100	8: 43	116100	8: 32	114200	8: 21	3800
3900	139100	10: 50	136400	10: 33	133600	10: 16	131100	10: 01	128900	9: 48	126500	9: 34	124500	9: 21	122400	9: 08	120500	8: 56	118500	8: 45	116500	8: 34	3900
4000			139000	10: 49	136200	10: 32	133600	10: 16	131400	10: 02	128900	9: 48	126800	9: 35	124600	9: 23	122700	9: 10	120600	8: 58	118600	8: 48	4000
4100					138700	10: 47	136200	10: 32	133700	10: 18	131300	10: 03	129100	9: 49	127000	9: 36	124800	9: 23	122800	9: 11	121000	9: 00	4100
4200							138600	10: 47	136100	10: 32	133600	10: 17	131500	10: 03	129200	9: 50	127000	9: 37	125000	9: 24	123000	9: 12	4200
4300									138500	10: 48	136000	10: 32	133800	10: 18	131500	10: 04	129200	9: 50	127100	9: 37	125300	9: 25	4300
4400											138400	10: 46	136000	10: 31	133800	10: 16	131400	10: 03	129300	9: 50	127400	9: 38	4400
4500													138500	10: 45	136000	10: 31	133500	10: 16	131500	10: 03	129500	9: 50	4500
4600															138000	10: 45	136000	10: 30	133600	10: 16	131700	10: 03	4600
4700																	138000	10: 44	135800	10: 30	133800	10: 16	4700
4800																			138000	10: 43	136000	10: 30	4800
4900																					138000	10: 42	4900
5000																							5000
5100																							5100
5200																							5200
5300																							5300
5400																							5400
5500																							5500

NOTE: SECTOR TIME INCLUDES 15 MINUTES CIRCUIT AND TAXI TIME
SECTOR FUEL INCLUDES 2,000 lb. START UP AND TAXI FUEL.
CONTINGENCY FUEL MUST BE ADDED TO THESE FIGURES

SECTION FUEL AND TIME

N.F. 101.B-0201-168

LONG RANGE STEPPED CRUISE AT 0.84 M_{IND}

TABLE 3B

DIST.	TAILWIND COMPONENT KNOTS																						DIST.
	0		+10		+20		+30		+40		+50		+60		+70		+80		+90		+100		
	NAUT.	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	FUEL	TIME	NAUT.	
MILES	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	LB	hr:min	MILES
500	19700	1: 28	19500	1: 27	19300	1: 25	19100	1: 24	18900	1: 22	18800	1: 21	18600	1: 20	18400	1: 19	18300	1: 18	18200	1: 16	18000	1: 15	500
600	21800	1: 40	21400	1: 38	21100	1: 36	20800	1: 34	20600	1: 33	20400	1: 31	20100	1: 30	19900	1: 29	19700	1: 28	19500	1: 26	19300	1: 25	600
700	24000	1: 53	23600	1: 51	23100	1: 48	22700	1: 46	22500	1: 44	22200	1: 43	21900	1: 42	21600	1: 40	21400	1: 38	21200	1: 36	21000	1: 35	700
800	26500	2: 05	25900	2: 03	25400	2: 01	25000	1: 59	24700	1: 57	24300	1: 55	23900	1: 53	23600	1: 51	23300	1: 49	23100	1: 46	22700	1: 45	800
900	28900	2: 18	28400	2: 15	27800	2: 13	27200	2: 10	26900	2: 08	26500	2: 05	26000	2: 04	25600	2: 02	25300	2: 00	24900	1: 56	24600	1: 57	900
1000	31400	2: 31	30900	2: 28	30200	2: 25	29600	2: 22	29300	2: 20	28800	2: 17	28300	2: 15	27700	2: 12	27300	2: 10	27000	2: 06	26600	2: 06	1000
1100	34100	2: 45	33500	2: 40	32700	2: 37	32100	2: 33	31600	2: 31	31000	2: 28	30500	2: 26	30000	2: 23	29600	2: 21	29100	2: 19	28700	2: 17	1100
1200	36800	2: 56	36100	2: 53	35300	2: 49	34600	2: 46	34100	2: 43	33500	2: 40	32800	2: 37	32200	2: 35	31800	2: 32	31400	2: 30	30900	2: 27	1200
1300	39600	3: 09	38800	3: 05	38000	3: 01	37200	2: 58	36500	2: 55	35800	2: 52	35200	2: 50	34500	2: 47	34000	2: 44	33500	2: 42	33000	2: 40	1300
1400	42300	3: 21	41500	3: 18	40600	3: 14	39800	3: 10	39000	3: 06	38300	3: 03	37600	3: 00	36900	2: 57	36200	2: 54	35800	2: 52	35200	2: 49	1400
1500	45300	3: 34	44300	3: 30	43400	3: 26	42500	3: 22	41700	3: 18	40900	3: 14	40000	3: 11	39400	3: 08	38600	3: 05	38100	3: 02	37500	3: 00	1500
1600	48200	3: 46	47100	3: 44	46100	3: 37	45200	3: 33	44400	3: 29	43500	3: 26	42600	3: 22	41800	3: 19	41100	3: 15	40500	3: 12	39800	3: 09	1600
1700	51100	3: 58	50000	3: 53	48900	3: 49	47900	3: 45	47000	3: 40	46000	3: 36	45100	3: 32	44300	3: 29	43500	3: 25	42800	3: 22	42000	3: 19	1700
1800	54000	4: 11	52700	4: 06	51700	4: 01	50600	3: 57	49600	3: 52	48600	3: 48	47700	3: 44	46800	3: 40	46000	3: 36	45200	3: 33	44500	3: 30	1800
1900	57000	4: 24	55700	4: 18	54500	4: 13	53500	4: 08	52200	4: 04	51200	4: 00	50300	3: 55	49300	3: 51	48400	3: 47	47600	3: 44	46900	3: 41	1900
2000	59900	4: 35	58500	4: 30	57300	4: 25	56000	4: 20	55000	4: 15	54000	4: 10	52900	4: 05	51900	4: 01	51000	3: 57	50000	3: 53	49200	3: 50	2000
2100	62800	4: 49	61500	4: 42	60200	4: 37	58800	4: 31	57600	4: 27	56600	4: 21	55500	4: 17	54400	4: 13	53400	4: 08	52400	4: 05	51600	4: 01	2100
2200	65800	5: 01	64400	4: 55	63000	4: 49	61600	4: 43	60500	4: 39	59200	4: 33	58100	4: 29	57000	4: 24	56000	4: 19	54900	4: 15	54000	4: 11	2200
2300	68900	5: 14	67400	5: 07	66000	5: 01	64500	4: 55	63200	4: 50	62000	4: 45	60900	4: 40	59900	4: 35	58800	4: 30	57700	4: 25	56500	4: 21	2300
2400	72000	5: 26	70500	5: 19	69000	5: 12	67500	5: 07	66000	5: 01	64800	4: 55	63500	4: 50	62100	4: 45	61000	4: 40	59900	4: 36	58900	4: 32	2400
2500	75000	5: 39	73400	5: 31	72000	5: 25	70500	5: 18	68800	5: 12	67500	5: 06	66200	5: 01	64700	4: 56	63600	4: 50	62400	4: 46	61300	4: 42	2500
2600	78200	5: 51	76500	5: 43	75000	5: 37	73200	5: 31	71800	5: 25	70400	5: 18	69000	5: 13	67500	5: 07	66300	5: 02	65000	4: 57	63800	4: 53	2600
2700	81400	6: 04	79500	5: 56	78000	5: 50	76500	5: 43	74600	5: 36	73100	5: 30	71600	5: 24	70100	5: 19	68900	5: 13	67600	5: 08	66400	5: 03	2700
2800	84500	6: 16	82800	6: 07	81000	6: 00	79500	5: 53	77600	5: 47	76000	5: 41	74500	5: 35	73000	5: 29	71600	5: 23	70100	5: 18	68900	5: 13	2800
2900	87600	6: 30	85700	6: 20	83800	6: 13	82300	6: 06	80500	5: 59	79000	5: 52	77200	5: 46	75500	5: 40	74400	5: 34	72800	5: 29	71400	5: 24	2900
3000	91000	6: 44	89000	6: 33	87000	6: 26	85000	6: 18	83300	6: 11	81600	6: 04	80000	5: 58	78400	5: 53	77100	5: 47	75600	5: 41	74100	5: 35	3000
3100	94400	6: 58	92100	6: 46	90100	6: 38	88100	6: 31	86500	6: 24	84600	6: 16	83000	6: 10	81200	6: 04	80000	5: 57	78300	5: 51	76700	5: 45	3100
3200	97500	7: 06	95500	6: 58	93500	6: 50	91500	6: 42	89500	6: 35	87600	6: 28	85600	6: 20	84100	6: 14	82700	6: 08	81100	6: 01	79500	5: 56	3200
3300	101000	7: 17	98900	7: 09	96900	7: 01	94900	6: 54	92500	6: 47	90600	6: 40	88900	6: 32	87000	6: 25	85500	6: 19	83900	6: 12	82200	6: 06	3300
3400	104300	7: 30	102100	7: 21	99800	7: 13	97500	7: 05	95500	6: 57	93500	6: 51	91700	6: 43	89900	6: 36	88200	6: 29	86500	6: 22	84900	6: 15	3400
3500	107900	7: 43	105200	7: 34	103000	7: 25	100700	7: 16	98600	7: 08	96900	7: 01	94700	6: 54	92700	6: 47	91000	6: 40	89300	6: 33	87500	6: 26	3500
3600	109500	7: 56	107800	7: 47	106000	7: 37	103800	7: 28	101700	7: 20	99500	7: 12	97600	7: 04	95600	6: 57	93800	6: 50	92000	6: 43	90200	6: 36	3600
3700	112000	8: 09	110100	8: 00	108300	7: 50	106500	7: 41	104800	7: 32	102500	7: 24	100500	7: 16	98500	7: 09	96500	7: 01	94800	6: 54	93000	6: 47	3700
3800	114200	8: 21	112400	8: 10	110700	8: 01	109000	7: 52	107100	7: 43	105000	7: 35	103000	7: 26	101500	7: 19	99500	7: 11	97500	7: 04	95700	6: 57	3800
3900	116500	8: 34	114700	8: 24	113000	8: 14	111200	8: 04	109500	7: 55	107800	7: 47	106100	7: 38	104200	7: 30	102200	7: 22	100300	7: 14	98400	7: 07	3900
4000	118800	8: 48	117000	8: 37	115200	8: 26	113400	8: 16	111700	8: 06	110000	7: 58	108300	7: 50	106700	7: 41	105000	7: 33	103100	7: 25	101000	7: 17	4000
4100	121000	9: 00	119000	8: 50	117400	8: 39	115500	8: 29	113800	8: 19	112000	8: 09	110500	8: 00	108800	7: 51	107100	7: 43	105600	7: 35	103700	7: 27	4100
4200	123000	9: 12	121200	9: 02	119600	8: 51	117600	8: 40	116000	8: 30	114100	8: 21	112500	8: 11	111000	8: 03	109200	7: 54	107700	7: 46	106000	7: 38	4200
4300	125300	9: 25	123200	9: 13	121500	9: 03	119700	8: 53	118000	8: 43	116200	8: 33	114600	8: 23	112900	8: 14	111300	8: 05	109700	7: 57	108100	7: 50	4300
4400	127400	9: 38	125400	9: 26	123500	9: 15	121600	9: 04	120000	8: 53	118200	8: 44	116600	8: 35	114800	8: 25	113200	8: 16	111800	8: 07	110000	7: 59	4400
4500	129500	9: 50	127500	9: 39	125500	9: 27	123700	9: 16	121900	9: 05	120200	8: 55	118500	8: 45	116700	8: 35	115200	8: 26	113700	8: 17	112000	8: 10	4500
4600	131700	10: 03	129500	9: 52	127500	9: 40	125700	9: 29	123800	9: 17	122100	9: 07	120500	8: 57	118700	8: 47	117000	8: 38	115500	8: 29	114000	8: 21	4600
4700	133800	10: 16	131600	10: 04	129500	9: 54	127600	9: 40	125700	9: 29	124000	9: 18	122400	9: 08	120600	8: 58	119000	8: 48	117400	8: 39	115900	8: 31	4700
4800	136000	10: 30	133700	10: 16	131600	10: 04	129600	9: 52	127700	9: 41	126000	9: 30	124300	9: 20	122500	9: 10	120900	9: 00	119400	8: 51	117700	8: 42	4800
4900	138000	10: 42	135700	10: 28	133600	10: 16	131500	10: 05	129600	9: 54	127800	9: 42	126100	9: 32	124500	9: 21	122600	9: 10	121100	9: 01	119500	8: 53	4900
5000			137800	10: 42	135600	10: 29	133500	10: 16	131500	10: 05	129700	9: 53	128000	9: 42	126200	9: 31	124600	9: 21	121200	9: 11	121400	9: 02	5000
5100			140000	10: 53	137700	10: 41	135500	10: 28	133500	10: 16	131600	10: 06	130000	9: 54	128000	9: 43	126200	9: 33	124700	9: 22	123200	9: 13	5100
5200					139700	10: 53	137500	10: 40															

RESERVE FUEL

TABLE 4A

SECT. DIST.	HEADWIND - KNOTS																						SECT. DIST.
	-100		-90		-80		-70		-60		-50		-40		-30		-20		-10		0		
NAUT. MILES	FUEL lb.	TIME mins.	FUEL lb.	TIME mins.	FUEL lb.	TIME mins.	FUEL lb.	TIME mins.	FUEL lb.	TIME mins.	FUEL lb.	TIME mins.	FUEL lb.	TIME mins.	FUEL lb.	TIME mins.	FUEL lb.	TIME mins.	FUEL lb.	TIME mins.	FUEL lb.	TIME mins.	NAUT. MILES
20	12500	6	12500	6	12400	5	12400	5	12300	5	12300	5	12300	5	12200	4	12200	4	12100	4	12100	4	20
40	13600	11	13500	10	13500	10	13400	10	13300	9	13200	9	13200	9	13100	8	13000	8	13000	8	12900	8	40
60	14700	16	14600	15	14500	15	14400	14	14300	14	14200	13	14200	12	14000	12	13900	12	13800	11	13700	11	60
80	15700	20	15600	20	15400	19	15300	18	15200	18	15000	17	14900	16	14800	16	14700	15	14600	15	14500	15	80
100	16600	24	16500	24	16300	23	16100	22	16000	22	15800	21	15700	20	15600	20	15500	19	15300	19	15200	18	100
120	17500	28	17300	27	17100	27	16900	26	16800	25	16600	25	16500	24	16300	23	16200	23	16100	22	15900	21	120
140	18200	32	18000	31	17800	30	17600	29	17500	28	17300	28	17100	27	17000	26	16900	26	16700	25	16600	24	140
160	18900	35	18700	34	18500	33	18300	32	18100	32	18000	31	17800	30	17600	29	17500	29	17300	28	17200	27	160
180	19600	38	19400	37	19200	36	19000	35	18800	35	18600	34	18400	33	18300	32	18100	32	18000	31	17800	30	180
200	20300	42	20100	40	19800	39	19600	38	19400	37	19200	36	19000	36	18900	35	18700	34	18500	34	18400	33	200
220	21000	45	20700	43	20500	42	20300	41	20100	40	19900	39	19600	39	19500	38	19300	37	19100	36	19000	35	220
240	21600	48	21400	47	21100	45	20900	44	20700	43	20500	42	20200	41	20100	40	19900	40	19700	39	19500	38	240
260	22200	51	22000	50	21700	49	21500	47	21300	46	21100	45	20800	44	20600	43	20400	42	20200	41	20000	40	260
280	22800	55	22600	53	22300	52	22000	50	21800	49	21600	48	21400	47	21200	46	21000	45	20800	44	20600	43	280
300	23400	58	23200	56	22900	55	22600	53	22500	52	22200	51	21900	50	21700	49	21500	47	21300	46	21000	45	300
320	24000	61	23700	60	23500	58	23200	57	22900	55	22700	54	22400	53	22200	51	22000	50	21800	49	21600	48	320
340	24600	65	24300	63	24000	61	23700	60	23500	58	23200	57	23000	55	22800	54	22500	53	22300	52	22100	51	340
360	25200	68	24900	66	24600	64	24300	63	24000	61	23800	60	23500	58	23300	57	23000	56	22800	54	22600	53	360
380	25800	71	25500	69	25100	67	24800	66	24500	64	24300	63	24000	61	23800	60	23500	58	23300	57	23000	56	380
400	26400	75	26000	73	25700	71	25400	69	25100	67	24800	66	24500	64	24300	62	24000	61	23800	60	23500	58	400
420	27000	78	26600	76	26200	74	25900	72	25600	70	25300	68	25000	67	24700	65	24500	64	24200	62	24000	61	420
440	27500	81	27200	79	26800	77	26500	75	26100	73	25800	71	25500	70	25300	68	25000	66	24700	65	24500	64	440
460	28100	85	27700	82	27300	80	27000	78	26800	76	26300	74	26000	73	25700	71	25500	69	25200	68	24900	66	460
480	28600	88	28300	85	27900	83	27500	81	27300	79	26900	77	26500	75	26200	73	26000	72	25700	70	25400	69	480
500	29200	91	28800	88	28400	86	28000	84	27800	82	27400	80	27000	78	26700	76	26400	75	26100	73	25800	71	500

NOTE 1 DISTANCES BELOW THE LINE INCLUDE
A CRUISE AT 43,000 FEET

2. FUEL INCLUDES:- a) diversion fuel
b) 6,000 lb. for holding $\frac{1}{2}$ hour at 1,000 ft.
c) 5,000 lb. for let down, approach and land
d) 5% diversion fuel for contingency.

RESERVE FUEL

TABLE 4B

SECT. DIST.	TAILWIND - KNOTS																						SECT. DIST.
	0		+10		+20		+30		+40		+50		+60		+70		+80		+90		+100		
NAUT. MILES	FUEL lb.	TIME mins	FUEL lb.	TIME mins	FUEL lb.	TIME mins	FUEL lb.	TIME mins	FUEL lb.	TIME mins	FUEL lb.	TIME mins	FUEL lb.	TIME mins	FUEL lb.	TIME mins	FUEL lb.	TIME mins	FUEL lb.	TIME mins	FUEL lb.	TIME mins	NAUT. MILES
20	12100	4	12100	4	12100	4	12000	4	12000	3	12000	3	12000	3	12000	3	11900	3	11900	3	11900	3	20
40	12900	8	12900	7	12800	7	12800	7	12700	7	12700	7	12700	6	12600	6	12600	6	12600	6	12500	6	40
60	13700	11	13600	11	13600	10	13500	10	13400	10	13400	9	13300	9	13300	9	13200	9	13200	9	13100	9	60
80	14500	15	14400	14	14300	14	14200	13	14100	13	14000	13	14000	12	13900	12	13800	12	13800	12	13800	11	80
100	15200	18	15100	18	15000	17	14900	17	14800	16	14700	16	14600	15	14500	15	14500	15	14400	14	14300	14	100
120	15900	21	15800	21	15700	20	15600	20	15500	19	15400	19	15300	18	15200	18	15100	17	15000	17	14900	17	120
140	16600	24	16500	24	16300	23	16200	23	16000	22	16000	21	15900	21	15800	20	15700	20	15600	20	15500	19	140
160	17200	27	17000	27	16900	26	16800	25	16800	25	16600	24	16400	24	16300	23	16200	23	16100	22	16000	22	160
180	17800	30	17700	29	17500	29	17400	28	17200	27	17100	27	17000	26	16900	26	16800	25	16700	25	16600	24	180
200	18400	33	18200	32	18100	31	17900	31	17800	30	17700	29	17500	29	17400	28	17300	28	17200	27	17000	27	200
220	19000	35	18800	35	18600	34	18500	33	18300	33	18200	32	18000	31	17900	31	17800	30	17700	30	17600	29	220
240	19500	38	19300	37	19200	36	19000	36	18900	35	18700	34	18600	34	18400	33	18300	32	18200	32	18000	31	240
260	20000	40	19900	40	19700	39	19500	38	19400	38	19200	37	19000	36	18900	35	18800	35	18600	34	18500	33	260
280	20600	43	20400	42	20200	41	20000	40	19900	40	19700	39	19600	38	19400	37	19300	37	19100	36	19000	35	280
300	21100	45	20900	44	20700	44	20600	43	20400	42	20300	41	20000	40	19900	40	19700	39	19600	38	19400	37	300
320	21600	48	21400	47	21200	46	21000	45	20800	44	20700	43	20500	43	20400	42	20200	41	20000	40	19900	40	320
340	22100	51	21900	50	21700	49	21500	48	21300	47	21200	46	21000	45	20800	44	20700	43	20500	42	20300	42	340
360	22600	53	22400	52	22200	51	22000	50	21800	49	21600	48	21400	47	21300	46	21100	45	20900	45	20800	44	360
380	23000	56	22800	55	22600	53	22400	52	22200	51	22000	50	21800	49	21700	48	21500	48	21300	47	21200	46	380
400	23500	58	23300	57	23100	56	22900	55	22600	54	22500	53	22300	52	22100	51	21900	50	21800	49	21600	48	400
420	24000	61	23800	60	23500	58	23300	57	23100	56	22900	55	22700	54	22500	53	22300	52	22200	51	22000	50	420
440	24500	64	24200	62	24000	61	23800	60	23500	59	23300	57	23100	56	22900	55	22700	54	22600	53	22400	52	440
460	24900	66	24700	65	24400	63	24200	62	24000	61	23800	60	23500	59	23300	58	23100	56	23000	55	22800	54	460
480	25400	69	25100	67	24900	66	24600	65	24400	63	24200	62	24000	61	23700	60	23500	59	23400	58	23200	56	480
500	25800	71	25600	70	25300	68	25100	67	24800	66	24600	64	24400	63	24200	62	24000	61	23800	60	23600	59	500

NOTE 1 DISTANCES BELOW THE LINE INCLUDE
A CRUISE AT 43,000 FEET.

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