

STALL SPEEDS

CONDITION:
Power Off

NOTE:
KIAS values are approximate.

MOST REARWARD CENTER OF GRAVITY

WEIGHT LBS	FLAP DEFLECTION	ANGLE OF BANK							
		0°		30°		45°		60°	
		KIAS	KCAS	KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
1600	UP	46	48	49	52	55	57	65	68
	10°	44	45	47	48	52	54	62	64
	40°	42	42	45	45	50	50	59	59

MOST FORWARD CENTER OF GRAVITY

WEIGHT LBS	FLAP DEFLECTION	ANGLE OF BANK							
		0°		30°		45°		60°	
		KIAS	KCAS	KIAS	KCAS	KIAS	KCAS	KIAS	KCAS
1600	UP	47	49	51	53	56	58	66	69
	10°	45	46	48	49	54	55	64	65
	40°	42	42	45	45	50	50	59	59

Figure 5-3. Stall Speeds

TAKEOFF DISTANCE

SHORT FIELD

CONDITIONS:

Flaps Up
Full Throttle Prior to Brake Release
Paved, Level, Dry Runway
Zero Wind

NOTES:

1. Short field technique as specified in Section 4.
2. Prior to takeoff from fields above 5000 feet elevation, the mixture should be leaned to give maximum RPM in a full throttle, static runup.
3. Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
4. Where distance value has been deleted, climb performance after lift-off is less than 150 fpm at takeoff speed.
5. For operation on a dry, grass runway, increase distances by 15% of the "ground roll" figure.

WEIGHT LBS	TAKEOFF SPEED		PRESS ALT FT	0°C			10°C			20°C			30°C			40°C		
	LIFT OFF	AT 50 FT		GRND ROLL	50 FT OBS	TOTAL TO CLEAR	GRND ROLL	50 FT OBS	TOTAL TO CLEAR	GRND ROLL	50 FT OBS	TOTAL TO CLEAR	GRND ROLL	50 FT OBS	TOTAL TO CLEAR	GRND ROLL	50 FT OBS	
1600	53	60	S.L.	655	1245	710	1335	765	1435	820	1540	880	1650	970	1815	1065	2005	
			1000	720	1365	775	1465	835	1575	900	1690	970	1815	1065	2005			
			2000	790	1500	855	1615	920	1735	990	1865	1065	2005	1170	2225			
			3000	870	1650	935	1780	1010	1915	1090	2065	1170	2225	1290	2475			
			4000	955	1820	1030	1965	1115	2125	1200	2290	1290	2475	1430	2770			
			5000	1050	2015	1140	2185	1230	2360	1325	2555	1430	2770	1580	3120			
			6000	1160	2245	1255	2435	1360	2640	1465	2870	1580	3120	---	---			
			7000	1285	2510	1390	2730	1505	2970	1625	3240	---	---	---	---			
			8000	1420	2820	1540	3080	1670	3370	---	---	---	---	---	---			

Figure 5-4. Takeoff Distance

RATE OF CLIMB

MAXIMUM

CONDITIONS:
Flaps Up
Full Throttle

WEIGHT LBS	PRESS ALT FT	CLIMB SPEED KIAS	RATE OF CLIMB - FPM			
			-20°C	0°C	20°C	40°C
1600	S.L.	68	770	710	655	595
	2000	67	675	615	560	500
	4000	65	580	520	465	405
	6000	64	485	430	375	310
	8000	63	390	335	280	215
	10,000	62	295	240	185	
	12,000	61	200	150		

Figure 5-5. Rate of Climb

TIME, FUEL, AND DISTANCE TO CLIMB

MAXIMUM RATE OF CLIMB

CONDITIONS:
Flaps Up
Full Throttle
Standard Temperature

NOTES:

1. Add 0.8 of a gallon of fuel for engine start, taxi and takeoff allowance.
2. Increase time, fuel and distance by 10% for each 8°C above standard temperature.
3. Distances shown are based on zero wind.

WEIGHT LBS	PRESSURE ALTITUDE FT	TEMP °C	CLIMB SPEED KIAS	RATE OF CLIMB FPM	FROM SEA LEVEL		
					TIME MIN	FUEL USED GALLONS	DISTANCE NM
1600	S.L.	15	68	670	0	0	0
	1000	13	68	630	2	0.2	2
	2000	11	67	590	3	0.5	4
	3000	9	66	550	5	0.7	6
	4000	7	65	510	7	1.0	8
	5000	5	65	470	9	1.3	10
	6000	3	64	425	11	1.6	13
	7000	1	64	385	14	1.9	16
	8000	-1	63	345	17	2.3	19
	9000	-3	63	305	20	2.7	23
	10,000	-5	62	265	23	3.2	27
	11,000	-7	62	220	27	3.7	32
	12,000	-9	61	180	33	4.3	38

Figure 5-6. Time, Fuel, and Distance to Climb

CRUISE PERFORMANCE

CONDITIONS:
1600 Pounds
Recommended Lean Mixture

PRESSURE ALTITUDE	RDM FT/M	20°C BELOW STANDARD TEMP			STANDARD TEMPERATURE			20°C ABOVE STANDARD TEMP		
		% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2000	2650	---	---	---	78	103	5.9	72	102	5.4
	2600	80	102	6.0	73	101	5.5	68	100	5.1
	2500	70	97	5.3	65	96	4.9	60	95	4.6
	2400	62	92	4.7	57	91	4.3	53	91	4.1
	2300	54	87	4.1	50	87	3.9	47	86	3.7
	2200	47	83	3.7	44	82	3.5	42	81	3.3
4000	2700	---	---	---	78	105	5.8	72	104	5.4
	2600	75	101	5.6	69	100	5.2	64	99	4.8
	2500	66	96	5.0	61	95	4.6	57	95	4.3
	2400	58	91	4.4	54	91	4.1	50	90	3.9
	2300	51	87	3.9	48	86	3.7	45	85	3.5
	2200	45	82	3.5	42	81	3.3	40	80	3.2
6000	2750	---	---	---	77	107	5.8	71	105	5.3
	2700	79	105	5.9	73	104	5.4	67	103	5.1
	2600	70	100	5.2	64	99	4.8	60	98	4.5
	2500	62	95	4.7	57	95	4.3	53	94	4.1
	2400	54	91	4.2	51	90	3.9	48	89	3.7
	2300	48	86	3.7	45	85	3.5	42	84	3.4
8000	2700	74	104	5.5	68	103	5.1	63	102	4.8
	2600	65	99	4.9	60	99	4.6	57	98	4.3
	2500	58	95	4.4	54	94	4.1	51	93	3.9
	2400	52	90	4.0	48	89	3.7	45	88	3.5
	2300	46	85	3.6	43	84	3.4	40	82	3.2
10000	2700	69	103	5.2	64	102	4.8	59	102	4.5
	2600	61	99	4.6	57	98	4.3	53	97	4.1
	2500	55	94	4.2	51	93	3.9	48	92	3.7
	2400	49	89	3.8	45	88	3.6	43	87	3.4
12000	2650	61	100	4.6	57	99	4.3	53	98	4.1
	2600	58	98	4.4	54	97	4.1	50	96	3.9
	2500	52	93	4.0	48	92	3.7	45	91	3.5
	2400	46	89	3.6	43	87	3.4	41	84	3.3

Figure 5-7. Cruise Performance

RANGE PROFILE
45 MINUTES RESERVE
22.5 GALLONS USABLE FUEL

CONDITIONS:
1600 Pounds
Recommended Lean Mixture for Cruise
Standard Temperature
Zero Wind

- NOTES:
1. This chart allows for the fuel used for engine start, taxi, takeoff and climb, and the distance during climb as shown in figure 5-6.
 2. Reserve fuel is based on 45 minutes at 45% BHP and is 2.6 gallons.

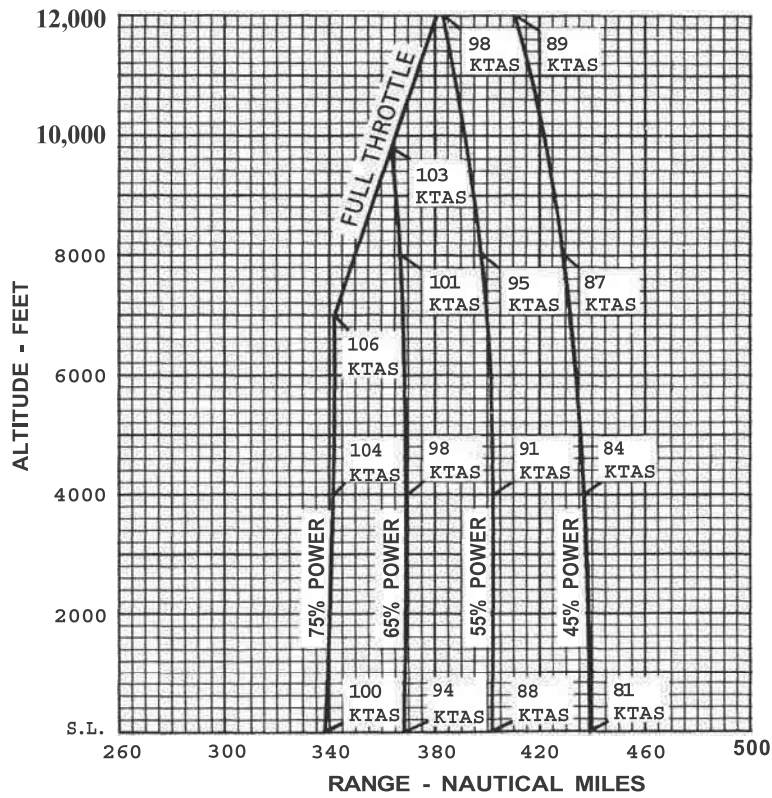


Figure 5-8. Range Profile (Sheet 1 of 2)

RANGE PROFILE
45 MINUTES RESERVE
35.0 GALLONS USABLE FUEL

CONDITIONS:
1600 Pounds
Recommended Lean Mixture for Cruise
Standard Temperature
Zero Wind

- NOTES:
1. This chart allows for the fuel used for engine start, taxi, takeoff and climb, and the distance during climb as shown in figure 5-6.
 2. Reserve fuel is based on 45 minutes at 45% BHP and is 2.6 gallons.

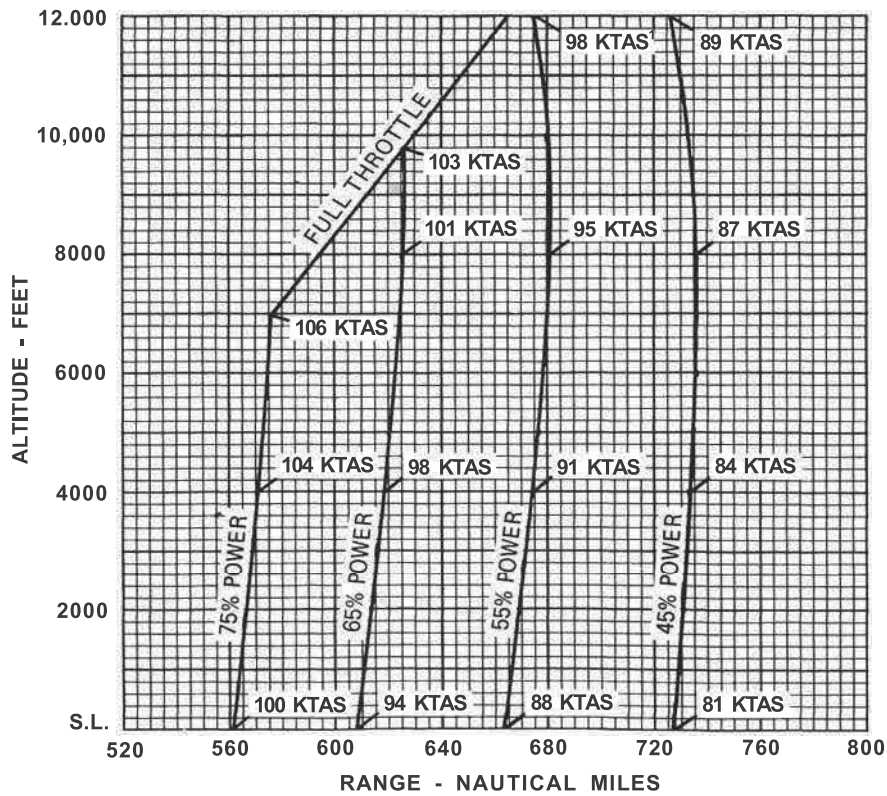


Figure 5-8. Range Profile (Sheet 2 of 2)

ENDURANCE PROFILE
45 MINUTES RESERVE
22.5 GALLONS USABLE FUEL

CONDITIONS:
1600 Pounds
Recommended Lean Mixture for Cruise
Standard Temperature

- NOTES:
1. This chart allows for the fuel used for engine start, taxi, takeoff and climb, and the time during climb as shown in figure 5-6.
 2. Reserve fuel is based on 45 minutes at 45% BHP and is 2.6 gallons.

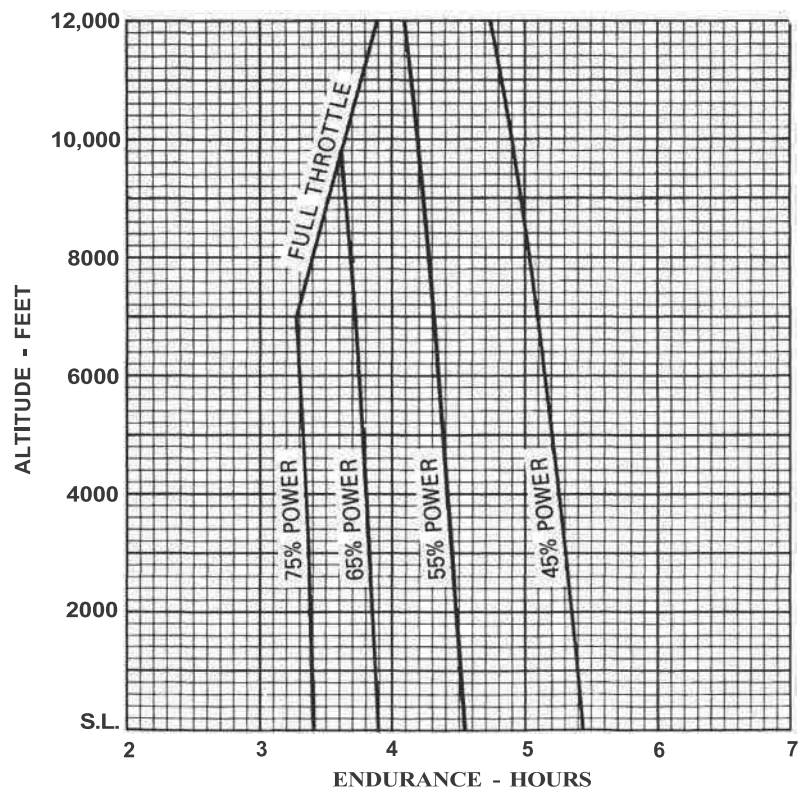


Figure 5-9. Endurance Profile (Sheet 1 of 2)

ENDURANCE PROFILE

45 MINUTES RESERVE
35.0 GALLONS USABLE FUEL

CONDITIONS:
1600 Pounds
Recommended Lean Mixture for Cruise
Standard Temperature

- NOTES:
1. This chart allows for the fuel used for engine start, taxi, takeoff and climb, and the time during climb as shown in figure 5-6.
 2. Reserve fuel is based on 45 minutes at 45% BHP and is 2.6 gallons.

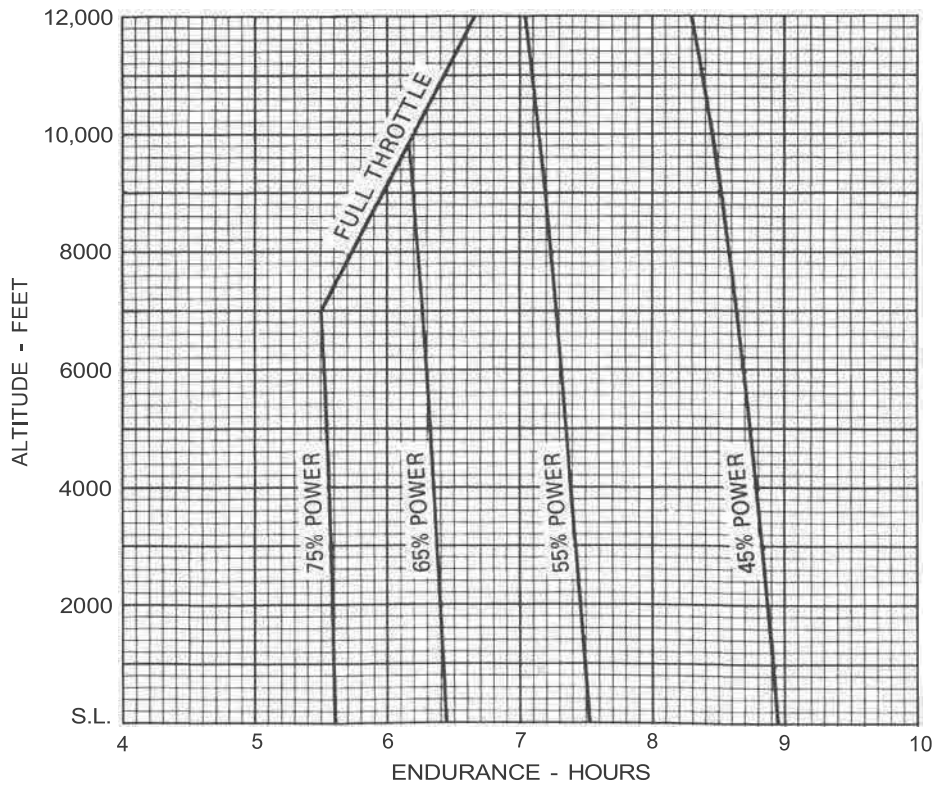


Figure 5-9. Endurance Profile (Sheet 2 of 2)

LANDING DISTANCE

SHORT FIELD

CONDITIONS:

Flaps 40°
Power Off
Maximum Braking
Paved, Level, Dry Runway
Zero Wind

NOTES:

1. Short field technique as specified in Section 4.
2. Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
3. For operation on a dry, grass runway, increase distances by 45% of the "ground roll" figure.

WEIGHT LBS	SPEED AT 50 FT KIAS	PRESS ALT FT	0°C			10°C			20°C			30°C			40°C			
			GRND ROLL	TO CLEAR 50 FT OBS	TOTAL	GRND ROLL	TO CLEAR 50 FT OBS	TOTAL	GRND ROLL	TO CLEAR 50 FT OBS	TOTAL	GRND ROLL	TO CLEAR 50 FT OBS	TOTAL	GRND ROLL	TO CLEAR 50 FT OBS	TOTAL	
1600	52	S.L.	425	1045	440	1065	455	1090	470	1110	485	1135	505	1165	520	1185	540	1215
		1000	440	1065	455	1090	470	1115	490	1140	505	1165	525	1195	540	1215	560	1245
		2000	455	1090	470	1115	490	1140	505	1165	525	1195	545	1225	565	1255	585	1285
		3000	470	1115	490	1140	505	1165	525	1195	545	1225	565	1255	585	1285	605	1315
		4000	490	1140	505	1165	525	1195	545	1225	565	1255	585	1285	610	1320	630	1350
		5000	510	1170	525	1195	545	1225	565	1255	590	1290	610	1320	630	1350	655	1385
		6000	530	1200	545	1225	565	1255	590	1290	610	1320	630	1350	655	1385		
		7000	550	1230	570	1260	590	1290	610	1320	630	1350	655	1385				
8000	570	1260	590	1290	610	1320	630	1350	655	1385								

Figure 5-10. Landing Distance