

PILOT'S OPERATING HANDBOOK

 Cessna® 1977

150 Commuter

CESSNA MODEL 150M



PERFORMANCE - SPECIFICATIONS

SPEED:

Maximum at Sea Level	109 KNOTS
Cruise, 75% Power at 7000 Ft	106 KNOTS

CRUISE: Recommended Lean Mixture with fuel allowance for engine start, taxi, takeoff, climb and 45 minutes reserve at 45% power.

75% Power at 7000 Ft	Range	340 NM
22.5 Gallons Usable Fuel	Time	3.3 HRS
75% Power at 7000 Ft	Range	580 NM
35 Gallons Usable Fuel	Time	5. 5 HRS
Maximum Range at 10,000 Ft	Range	420 NM
22. 5 Gallons Usable Fuel	Time	4.9 HRS
Maximum Range at 10,000 Ft	Range	735 NM
35 Gallons Usable Fuel	Time	8. 5 HRS

RATE OF CLIMB AT SEA LEVEL 670 FPM

SERVICE CEILING 14, 000 FT

TAKEOFF PERFORMANCE:

Ground Roll	735 FT
Total Distance Over 50-Ft Obstacle	1385 FT

LANDING PERFORMANCE:

Ground Roll	445 FT
Total Distance Over 50-Ft Obstacle	107 5 FT

STALL SPEED (CAS):

Flaps Up, Power Off	48 KNOTS
Flaps Down, Power Off	42 KNOTS

MAXIMUM WEIGHT 1600 LBS

STANDARD EMPTY WEIGHT:

Commuter	1111 LBS
Commuter II	1129 LBS

MAXIMUM USEFUL LOAD:

Commuter	489 LBS
Commuter II	471 LBS

BAGGAGE ALLOWANCE 120 LBS

WING LOADING: Pounds/Sq Ft 10.0

POWER LOADING: Pounds/HP. 16.0

FUEL CAPACITY: Total

Standard Tanks	26 GAL.
Long; Range Tanks	38 GAL.

OIL CAPACITY 6 QTS

ENGINE: Teledyne Continental O-200-A

100 BHP at 2750 RPM

PROPELLER: Fixed Pitch, Diameter 69 IN.

SECTION 5

PERFORMANCE

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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 TEMP	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.

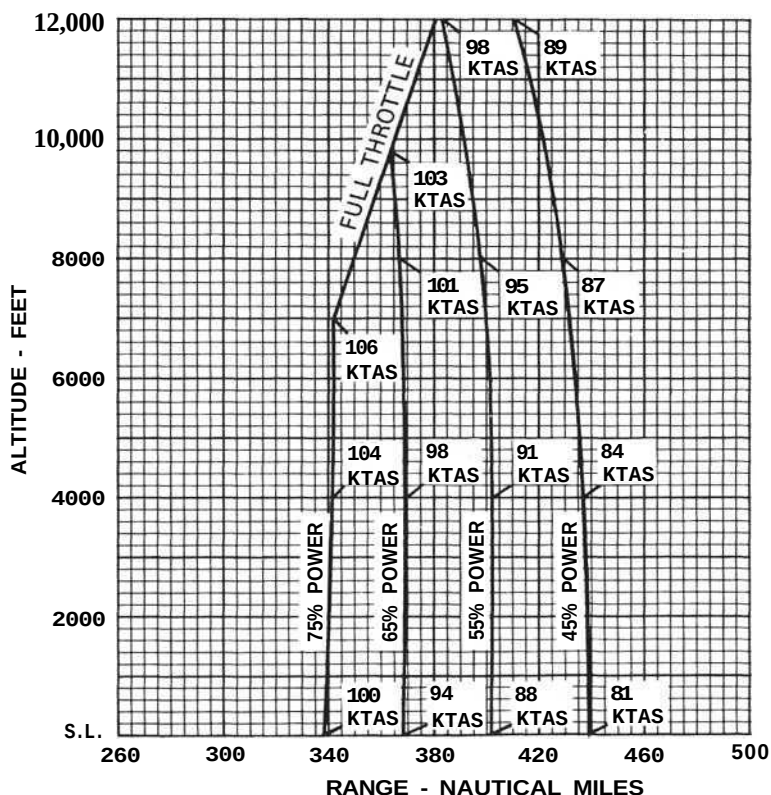


Figure 5-8. Range Profile (Sheet 1 of 2)

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.

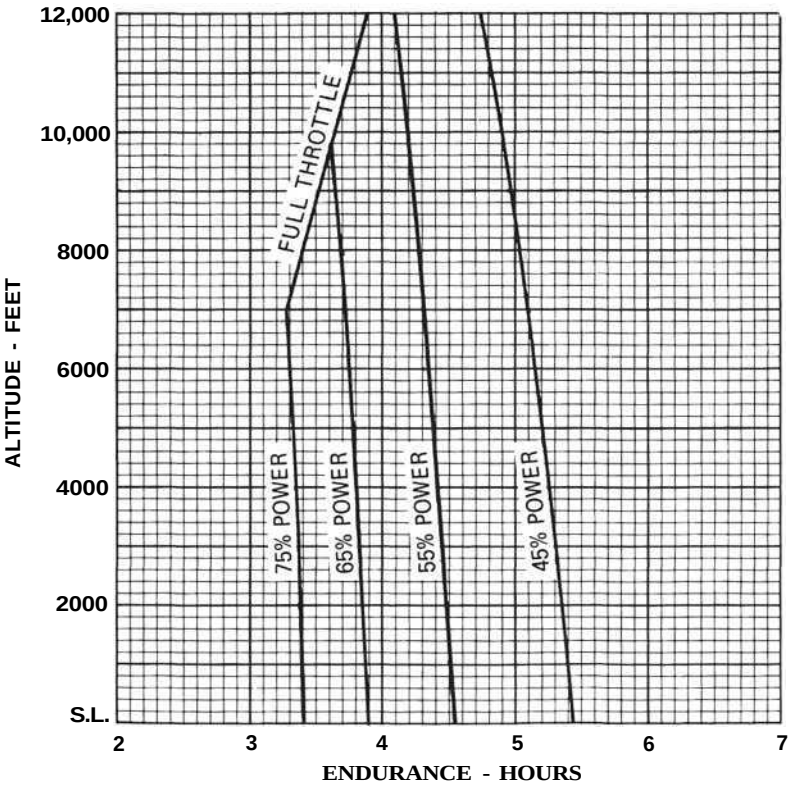


Figure 5-9. Endurance Profile (Sheet 1 of 2)