Section VI

OPERATIONAL DATA

The operational data shown on the following pages are compiled from actual tests with the airplane and engine in good condition, and using average piloting technique and best power mixture. You will find this data a valuable aid when planning your flights.

To realize the maximum usefulness from your Cessna, you should take advantage of its high cruising speeds. However, if range is of primary importance, it may pay you to fly at a low cruising RPM, thereby increasing your range and allowing you to make the trip non-stop with ample fuel reserve. The cruise performance table (figure 6-4) should be used to solve flight planning problems of this nature.

In the table (figure 6-4), range and endurance are given for lean mixture from 2500 feet to 12,500 feet. All figures are based on zero wind, 22.5 and 35.0 gallons of fuel for cruise, McCauley 1A101/HCM6948 propeller, 1600 pounds gross weight, and standard atmospheric conditions. Mixture is leaned to maximum RPM. Allowances for fuel reserve, headwinds, take-offs and climb, and variations in mixture leaning technique should be made as no allowances are shown on the chart. Other indeterminate variables such as carburetor metering characteristics, engine and propeller conditions, externally-mounted optional equipment and turbulence of the atmosphere may account for variations of 10% or more in maximum range.

Remember that the charts contained herein are based on standard day conditions. For more precise power, fuel consumption, and endurance information, consult the Power Computer supplied with your aircraft. With the Power Computer, you can easily take into account temperature variations from standard at any flight altitude.

AIRSPEED CORRECTION TABLE

FLAPS UP										
IAS-MPH	50	60	70	80	90	100	110	120	130	140
CAS-MPH	53	60	69	78	87	97	107	117	128	138
FLAPS DOWN										
IAS-MPH	40	50	60	70	80	90	100			
CAS-MPH	40	50	61	72	83	94	105			

Figure 6-1.

STALL SPEEDS – MPH CAS

Gross Weight 1600 lbs. / CONDITION	ANGLE OF BANK 0°	20°	40°	60°
Flaps UP	55	57	63	78
Flaps 20°	49	51	56	70
Flaps 40°	48	49	54	67

POWER OFF — AFT CG

Figure 6-2.

—TAKE-OFF DISTANCE— FLAPS RETRACTED HARD SURFACE RUNWAY

GROSS WT. LBS.	HEAD WIND KNOTS	AT SEA LEVEL & 59° F. GROUND RUN	AT SEA LEVEL & 59° F. TOTAL TO CLEAR 50 FT. OBS	AT 2500 FT. & 50° F. GROUND RUN	AT 2500 FT. & 50° F. TOTAL TO CLEAR 50 FT. OBS	AT 5000 FT. & 41° F. GROUND RUN	AT 5000 FT. & 41° F. TOTAL TO CLEAR 50 FT. OBS	AT 7500 FT. & 32° F. GROUND RUN	AT 7500 FT. & 32° F. TOTAL TO CLEAR 50 FT. OBS
3500	0	735	1385	910	1660	1115	1985	1380	2440
	10	500	1035	630	1250	780	1510	970	1875
	20	305	730	395	890	505	1090	640	1375

NOTES: 1. Increase the distances 10% for each 35°F. increase in temperature above standard for the particular altitude.
2. For operation on a dry, grass runway, increase distances (both "ground run" and "total to clear 50 ft. obstacle") by 7% of the "total to clear 50 ft. obstacle" figure.

—MAXIMUM RATE-OF-CLIMB DATA—

GROSS WEIGHT LBS.	AT SEA LEVEL & 59° F. IAS, MPH	AT SEA LEVEL & 59° F. RATE OF CLIMB FT./MIN.	AT SEA LEVEL & 59° F. FUEL USED, GAL.	AT 5000 FT. & 41° F. IAS, MPH	AT 5000 FT. & 41° F. RATE OF CLIMB FT./MIN.	AT 5000 FT. & 41° F. FUEL USED FROM S.L., GAL.	AT 10000 FT. & 23° F. IAS, MPH	AT 10000 FT. & 23° F. RATE OF CLIMB FT./MIN.	AT 10000 FT. & 23° F. FUEL USED FROM S.L., GAL.
1600	76	670	0.6	73	440	1.6	70	220	3.0

NOTES: 1. Flaps retracted, full throttle, mixture leaned to smooth operation above 5000 ft.
2. Fuel used includes warm-up and take-off allowances.
3. For hot weather, decrease rate of climb 15 ft./min. for each 10°F above standard day temperature for particular altitude.

—LANDING DISTANCE— FLAPS LOWERED TO 40° - POWER OFF HARD SURFACE RUNWAY - ZERO WIND

GROSS WEIGHT LBS.	APPROACH SPEED, IAS, MPH	AT SEA LEVEL & 59° F. GROUND ROLL	AT SEA LEVEL & 59° F. TOTAL TO CLEAR 50 FT. OBS	AT 2500 FT. & 50° F. GROUND ROLL	AT 2500 FT. & 50° F. TOTAL TO CLEAR 50 FT. OBS	AT 5000 FT. & 41° F. GROUND ROLL	AT 5000 FT. & 41° F. TOTAL TO CLEAR 50 FT. OBS	AT 7500 FT. & 32° F. GROUND ROLL	AT 7500 FT. & 32° F. TOTAL TO CLEAR 50 FT. OBS
1600	60	445	1075	470	1135	495	1195	520	1255

NOTES: 1. Decrease the distances shown by 10% for each 4 knots of headwind.
2. Increase the distance by 10% for each 80°F. temperature increase above standard.
3. For operation on a dry, grass runway, increase distances (both "ground roll" and "total to clear 50 ft. obstacle") by 20% of the "total to clear 50 ft. obstacle" figure.

Figure 6-3.

CRUISE PERFORMANCE — WITH LEAN MIXTURE

ALTITUDE	RPM	%BHP	TAS MPH	GAL/HR.	END. HOURS		RANGE, MILES	
					STANDARD 22.5 GAL.	LONG RANGE 35 GAL.	STANDARD 22.5 GAL.	LONG RANGE 35 GAL.
2500	2750	92	121	7.0	3.2	5.0	390	605
	2700	87	119	6.6	3.4	5.3	410	635
	2600	77	114	5.8	3.9	6.1	445	690
	2500	68	108	5.1	4.4	6.9	475	740
	2400	60	103	4.6	4.9	7.7	505	790
	2300	53	96	4.1	5.5	8.6	535	830
	2200	46	89	3.6	6.2	9.7	550	860
	2100	40	79	3.2	7.0	10.9	555	865
5000	2750	85	121	6.4	3.5	5.5	425	660
	2700	80	118	6.0	3.8	5.8	445	690
	2600	71	113	5.3	4.2	6.6	475	740
	2500	63	107	4.8	4.7	7.4	505	790
	2400	56	101	4.3	5.3	8.2	530	830
	2300	49	93	3.8	5.9	9.2	550	860
	2200	43	84	3.4	6.6	10.3	560	870
	2100	37	71	3.0	7.5	11.7	540	835
7500	2700	74	117	5.5	4.1	6.3	480	745
	2600	66	111	4.9	4.6	7.1	505	790
	2500	58	105	4.4	5.1	7.9	535	830
	2400	52	98	4.0	5.7	8.8	555	860
	2300	45	89	3.6	6.3	9.8	560	875
	2200	40	77	3.2	7.1	11.1	550	850
10,000	2700	68	116	5.1	4.4	6.8	510	790
	2600	61	109	4.6	4.9	7.6	535	830
	2500	54	102	4.1	5.4	8.5	555	865
	2400	48	93	3.7	6.1	9.4	565	880
	2300	42	82	3.3	6.8	10.6	555	860
12,500	2650	60	110	4.5	5.0	7.8	550	855
	2600	56	106	4.3	5.3	8.2	555	865
	2500	50	97	3.9	5.8	9.1	565	880
	2400	44	86	3.5	6.5	10.1	560	870

NOTES: 1. Maximum cruise is normally limited to 75% power.
2. In the above calculations of endurance in hours and range in miles, no allowances were made for take-off or reserve.

Figure 6-4.

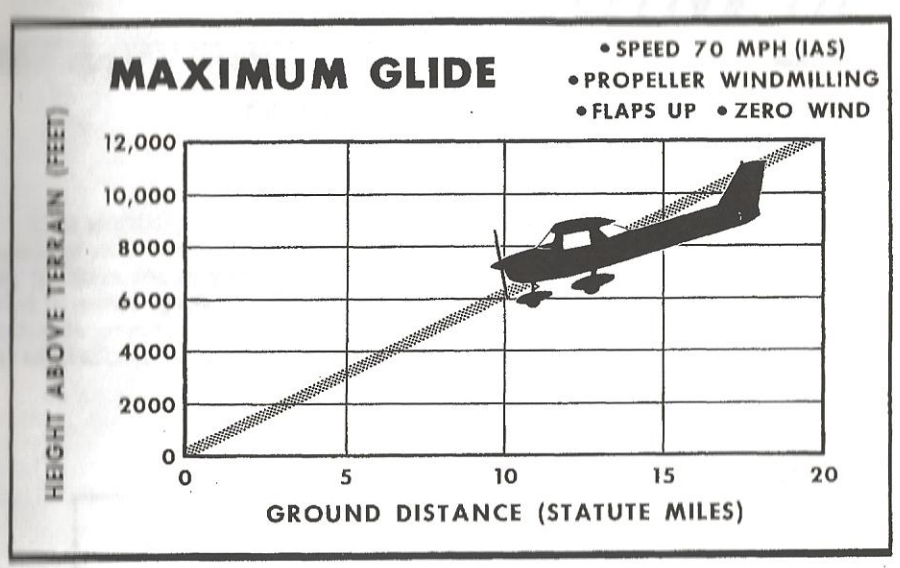

Figure 6-5.