

possible settling back to the runway while drifting. When clear of the ground, make a coordinated turn into the wind to correct for drift.

ENROUTE CLIMB.

CLIMB DATA.

For detailed data, refer to the Maximum Rate-Of-Climb Data chart in Section VI.

CLIMB SPEEDS.

Normal climbs are performed at 80 to 90 MPH with flaps up and full throttle for best engine cooling. The mixture should be full rich below 3000 feet and may be leaned above 3000 feet for smoother engine operation or to obtain maximum RPM for maximum performance climb. The maximum rate-of-climb speeds range from 91 MPH at sea level to 80 MPH at 10,000 feet. If an enroute obstruction dictates the use of a steep climb angle, climb at 75 MPH with flaps retracted.

NOTE

Steep climbs at low speeds should be of short duration to improve engine cooling.

CRUISE.

Normal cruising is done between 65% and 75% power. The power settings required to obtain these powers at various altitudes and outside air temperatures can be determined by using your Cessna Power Computer or the OPERATIONAL DATA, Section VI.

Cruising can be done more efficiently at high altitudes because of lower air density and therefore higher true airspeeds for the same power. This is illustrated in the Maximum Cruise Speed Performance table, which shows performance at 75% power at various altitudes.

To achieve lean mixture fuel consumption figures shown in Section VI, the mixture should be leaned as follows: pull mixture control out until RPM peaks and begins to fall off, then enrichen slightly back to peak RPM.

Carburetor ice, as evidenced by an unexplained drop in RPM, can be removed by application of full carburetor heat. Upon regaining the origi-

MAXIMUM CRUISE SPEED PERFORMANCE

75% POWER

ALTITUDE	RPM	TRUE AIRSPEED
Sea Level	2500	128
4000 Feet	2600	133
8000 Feet	2700	138

nal RPM (with heat off), use the minimum amount of heat (by trial and error) to prevent ice from forming. Since the heated air causes a richer mixture, readjust the mixture setting when carburetor heat is to be used continuously in cruise flight.

The use of full carburetor heat is recommended during flight in heavy rain to avoid the possibility of engine stoppage due to excessive water ingestion or carburetor ice. The mixture setting should be readjusted for smoothest operation.

In extremely heavy rain, the use of partial carburetor heat (control approximately 2/3 out), and part throttle (closed at least one inch), may be necessary to retain adequate power. Power changes should be made cautiously followed by prompt adjustment of the mixture for smoothest operation.

STALLS.

The stall characteristics are conventional and aural warning is provided by a stall warning horn which sounds between 5 and 10 MPH above the stall in all configurations.

Power-off stall speeds at maximum gross weight and aft c.g. position are presented on page 6-2 as calibrated airspeeds since indicated airspeeds are unreliable near the stall.

SPINS.

Intentional spins are approved in this aircraft in the Utility Category only. Although this aircraft is inherently resistant to spins, the follow-

ing techniques may be used to perform intentional spins for training or practice. To obtain a clean entry, decelerate the aircraft at a faster rate than is used for stalls. Then, just as the stall occurs, apply full up elevator, full rudder in the desired spin direction, and momentarily use full engine power. As the aircraft begins to spin, reduce the power to idle and maintain full pro-spin elevator and rudder deflections. The application of ailerons in the direction of the desired spin may also help obtain a clean entry.

During extended spins of two to three turns or more, the spin will tend to change into a spiral, particularly to the right. This will be accompanied by an increase in airspeed and gravity loads on the aircraft. If this occurs, recovery should be accomplished quickly by leveling the wings and recovering from the resulting dive.

To recover from an intentional or inadvertent spin, use the following procedure:

- (1) Retard throttle to idle position.
- (2) Apply full rudder opposite to the direction of rotation.
- (3) After one-fourth turn, move the control wheel forward of neutral in a brisk motion.
- (4) As the rotation stops, neutralize the rudder, and make a smooth recovery from the resulting dive.

Intentional spins with flaps extended are prohibited.

LANDINGS.

Normal landings are made power-off with any flap setting desired. Steep slips should be avoided with flap settings greater than 20° due to a slight tendency for the elevator to oscillate under certain combinations of airspeed, sideslip angle, and center of gravity loadings.

NOTE

Carburetor heat should be applied prior to any significant reduction or closing of the throttle.

NORMAL LANDING.

Landings should be made on the main wheels first to reduce the landing speed and subsequent need for braking in the landing roll. The nose

wheel is lowered to the runway gently after the speed has diminished to avoid unnecessary nose gear loads. This procedure is especially important in rough or soft field landings.

SHORT FIELD LANDING.

For short field landings, make a power-off approach at approximately 70 MPH indicated airspeed with 40° of flaps. Touchdown should be made on the main wheels first. Immediately after touchdown, lower the nose gear to the ground and apply heavy braking as required. For maximum brake effectiveness after all three wheels are on the ground, retract the flaps, hold full nose up elevator and apply maximum possible brake pressure without sliding the tires.

CROSSWIND LANDING.

When landing in a strong crosswind, use the minimum flap setting required for the field length. If flap settings greater than 20° are used in sideslips with full rudder deflection, some elevator oscillation may be felt at normal approach speeds. However, this does not affect control of the aircraft. Although the crab or combination method of drift correction may be used, the wing-low method gives the best control. After touchdown, hold a straight course with the steerable nose wheel and occasional braking if necessary.

The maximum allowable crosswind velocity is dependent upon pilot capability rather than airplane limitations. With average pilot technique, direct crosswinds of 15 knots can be handled with safety.

BALKED LANDING (GO-AROUND).

In a balked landing (go-around) climb, reduce the wing flap setting to 20° immediately after full power is applied. If the flaps were extended to 40°, the reduction to 20° may be approximated by placing the flap switch in the UP position for two seconds and then returning the switch to neutral. If obstacles must be cleared during the go-around climb, leave the wing flaps in the 10° to 20° range until the obstacles are cleared. After clearing any obstacles, the flaps may be retracted as the aircraft accelerates to the normal flaps-up climb speed of 80 to 90 MPH.

AIRSPEED CORRECTION TABLE												
	IAS	40	50	60	70	80	90	100	110	120	130	140
FLAPS UP	CAS	53	58	64	72	79	88	97	107	117	127	137
FLAPS DOWN	CAS	49	55	63	72	81	90	100	•	•	•	•

Figure 6-1.

STALL SPEEDS - MPH CAS						
2300 LBS. GROSS WEIGHT	CONDITION	ANGLE OF BANK				
		0°	20°	40°	60°	
	FLAPS UP	57	59	65	81	
	FLAPS 10°	52	54	59	74	
	FLAPS 40°	49	51	56	69	
POWER OFF — AFT CG						

Figure 6-2.

TAKE-OFF DATA										
TAKE-OFF DISTANCE FROM HARD SURFACE RUNWAY WITH FLAPS UP										
GROSS WEIGHT POUNDS	IAS AT 50' MPH	HEAD WIND KNOTS	AT SEA LEVEL & 59°F		AT 2500 FT. & 50°F		AT 5000 FT. & 41°F		AT 7500 FT. & 32°F	
			GROUND RUN	TOTAL TO CLEAR 50 FT OBS	GROUND RUN	TOTAL TO CLEAR 50 FT OBS	GROUND RUN	TOTAL TO CLEAR 50 FT OBS	GROUND RUN	TOTAL TO CLEAR 50 FT OBS
2300	68	0	865	1525	1040	1910	1255	2480	1565	3855
		10	615	1170	750	1485	920	1955	1160	3110
		20	405	850	505	1100	630	1480	810	2425
2000	63	0	630	1095	755	1325	905	1625	1120	2155
		10	435	820	530	1005	645	1250	810	1685
		20	275	580	340	720	425	910	595	1255
1700	58	0	435	780	520	920	625	1095	765	1370
		10	290	570	355	680	430	820	535	1040
		20	175	385	215	470	270	575	345	745

NOTES:

1.

Increase distance 10% for each 25°F above standard temperature for 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 POUNDS	AT SEA LEVEL & 59°F			AT 5000 FT. & 41°F			AT 10,000 FT. & 23°F			AT 15,000 FT. & 5°F		
	IAS MPH	RATE OF CLIMB FT/MIN	GAL. OF FUEL USED	IAS MPH	RATE OF CLIMB FT/MIN	FROM S.L. FUEL USED	IAS MPH	RATE OF CLIMB FT/MIN	FROM S.L. FUEL USED	IAS MPH	RATE OF CLIMB FT/MIN	FROM S.L. FUEL USED
2300	91	645	1.0	85	435	2.6	80	230	4.8	73	20	11.5
2000	88	840	1.0	81	610	2.2	75	380	3.6	68	155	6.3
1700	83	1085	1.0	77	825	1.9	70	570	2.9	64	315	4.4

NOTES:

1.

Flaps up, full throttle, mixture leaned for smooth operation above 3000 ft.

2.

Fuel used includes warm up and take-off allowance.

3.

For hot weather, decrease rate of climb 20 ft./min. for each 10°F above standard day temperature for particular altitude.

Figure 6-3.