

PERFORMANCE - SPECIFICATIONS

Model 150 *	STANDARD AND TRAINER	COMMUTER
GROSS WEIGHT	1600 lbs	1600 lbs
SPEED:		
Top Speed At Sea Level	122 mph	122 mph
Cruise, 75% Power at 7000 ft	117 mph	117 mph
RANGE:		
Cruise, 75% Power at 7000 ft	475 mi	475 mi
22.5 Gallons, No Reserve	4.1 hrs	4.1 hrs
	117 mph	117 mph
Cruise, 75% Power at 7000 ft	725 mi	725 mi
Long Range Version, 35.0 Gallons	6.2 hrs	6.2 hrs
	117 mph	117 mph
Optimum Range at 10,000 ft	565 mi	565 mi
22.5 Gallons, No Reserve	6.1 hrs	6.1 hrs
	93 mph	93 mph
Optimum Range at 10,000 ft	880 mi	880 mi
Long Range Version, 35.0 Gallons	9.4 hrs	9.4 hrs
	93 mph	93 mph
RATE OF CLIMB AT SEA LEVEL	670 fpm	670 fpm
SERVICE CEILING	12,650 ft	12,650 ft
TAKE-OFF:		
Ground Run	735 ft	735 ft
Total Distance Over 50-ft Obstacle	1385 ft	1385 ft
LANDING:		
Landing Roll	445 ft	445 ft
Total Distance Over 50-ft Obstacle	1075 ft	1075 ft
EMPTY WEIGHT: (Approximate)	Standard	Trainer
With Standard Fuel Tanks	980 lbs	1010 lbs
With Long Range Fuel Tanks	985 lbs	1015 lbs
BAGGAGE	120 lbs	120 lbs
WING LOADING: Pounds/Sq Foot	10.2	10.2
POWER LOADING: Pounds/HP	16.0	16.0
FUEL CAPACITY:		
Total (Standard Tanks)	26 gal.	26 gal.
Total (Long Range Tanks)	38 gal.	38 gal.
OIL CAPACITY:	6 qts	6 qts
(One additional quart is required when optional oil filter is installed)		
PROPELLER: Fixed Pitch (Diameter)	69 inches	69 inches
ENGINE: Continental Engine	O-200-A	O-200-A
100 rated HP at 2750 RPM		

* This manual covers operation of the Model 150 which is certificated as Model 150H under FAA Type Certificate No. 3A19. The manual also covers operation of the Model F150 which is certificated as Model F150H under French Type Certificate No. 38 and FAA Type Certificate No. A13EU. The Model F150, manufactured by Reims Aviation S.A., Reims (Marne), France, is identical to the 150 except that it is powered by an O-200-A engine manufactured under license by Rolls Royce, Crewe, England. All 150 information in this manual pertains to the F150 as well.

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Wichita, Kansas USA

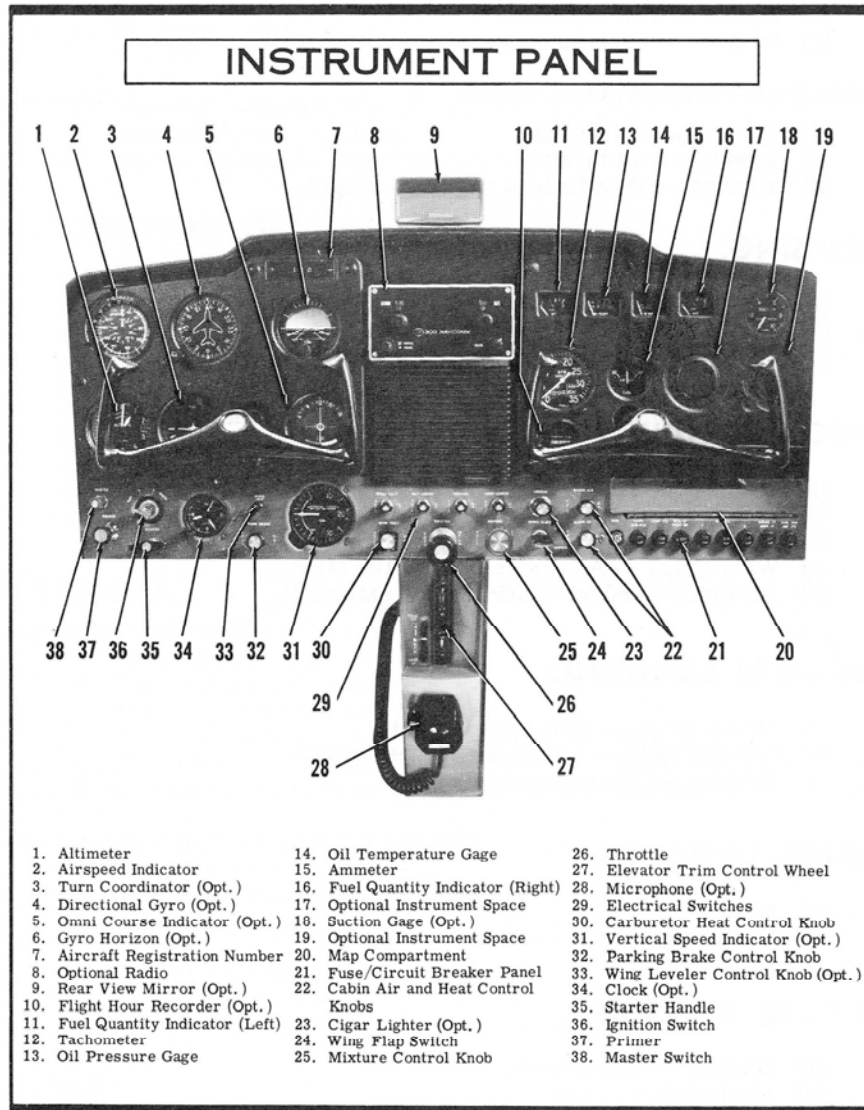


Figure 2-1.

Section II

DESCRIPTION AND OPERATING DETAILS

The following paragraphs describe the systems and equipment whose function and operation is not obvious when sitting in the airplane. This section also covers in somewhat greater detail some of the items listed in Check List form in Section I that require further explanation.

FUEL SYSTEM.

Fuel is supplied to the engine from two tanks, one in each wing. From these tanks, fuel flows by gravity through a fuel shutoff valve and fuel strainer to the carburetor.

Refer to figure 2-2 for fuel quantity data. For fuel system service information, refer to Lubrication and Servicing Procedures in Section IV.

FUEL STRAINER DRAIN KNOB.

Refer to fuel strainer servicing procedure, Section IV.

FUEL QUANTITY DATA (U.S. GALLONS)			
TANKS	USABLE FUEL ALL FLIGHT CONDITIONS	UNUSABLE FUEL	TOTAL FUEL VOLUME
TWO, STANDARD WING (13 GAL. EACH)	22.5	3.5	26.0
TWO, LONG RANGE WING (19 GAL. EACH)	35.0	3.0	38.0

Figure 2-2.

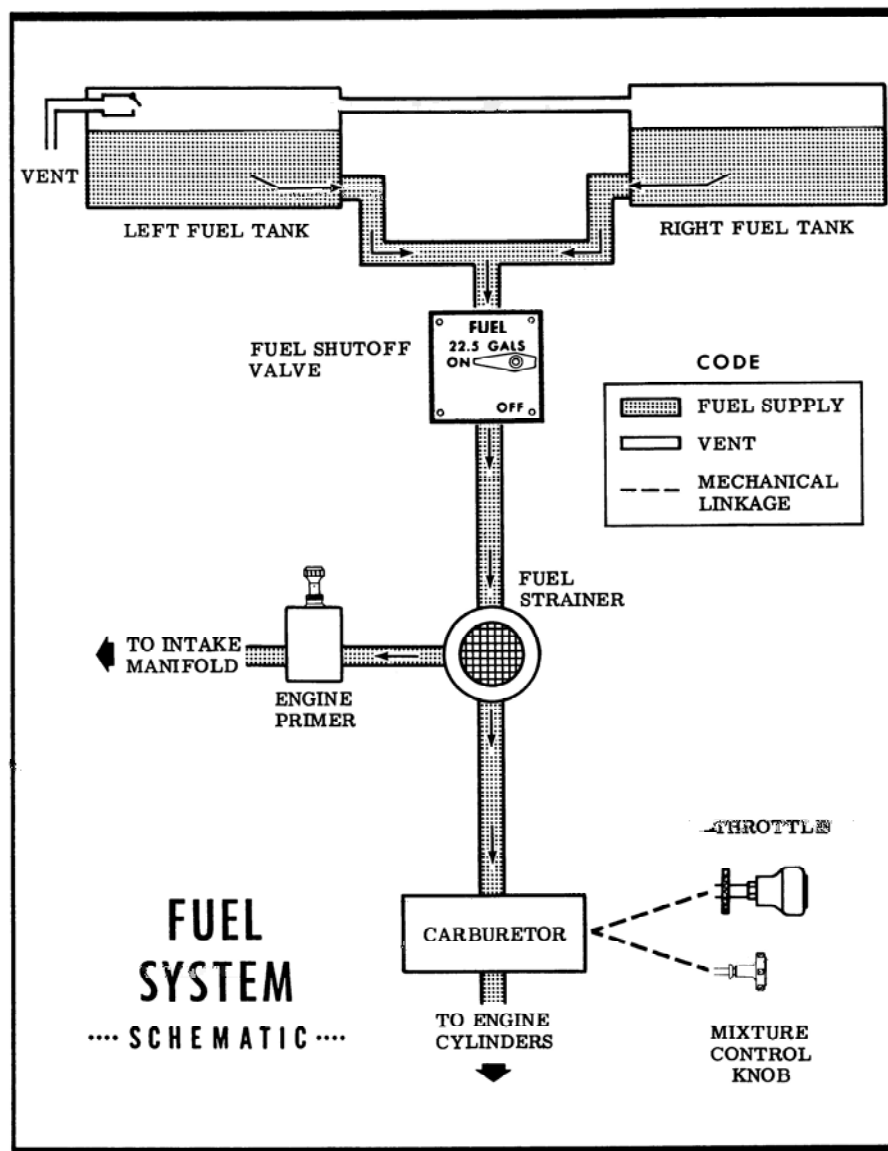


Figure 2-3.

ELECTRICAL SYSTEM.

Electrical energy is supplied by a 14-volt, direct-current system powered by an engine-driven alternator (see figure 2-4). A 12-volt storage battery is located on the right, forward side of the firewall just inside the cowl access door. The master switch controls all electrical circuits except the engine ignition system, optional clock and optional flight hour recorder (operative only when engine is operating).

AMMETER.

The ammeter indicates the flow of current, in amperes, from the alternator to the battery or from the battery to the aircraft electrical system. When the engine is operating and the master switch is "ON," the ammeter indicates the charging rate applied to the battery. In the event the alternator is not functioning or the electrical load exceeds the output of the alternator, the ammeter indicates the discharge rate of the battery.

FUSES AND CIRCUIT BREAKERS.

Fuses on the right side of the instrument panel protect the majority of electrical circuits in the airplane. Labeling above each fuse retainer indicates the circuits protected by the fuses. Fuse capacity is shown on each fuse retainer cap. Fuses are removed by pressing the fuse retainers inward and rotating them counterclockwise until they disengage. The faulty fuse may then be lifted out and replaced. Spare fuses are held in a clip on the inside of the map compartment door.

NOTE

A special "SLO-BLO" fuse protects the wing flaps circuit. If this fuse is replaced, care should be taken to assure that the replacement fuse is of the proper type and capacity. A "SLO-BLO" fuse is identified by an integrally mounted spring encircling the fuse element.

Two additional fuses are provided in the airplane. A fuse located adjacent to the battery protects the optional clock and flight hour recorder circuits. An in-line fuse located in the wire bundle just left of center behind the instrument panel protects the alternator field circuit.

A "push-to-reset" circuit breaker (labeled "GEN") on the instrument panel protects the alternator circuit. The cigar lighter is protected by a

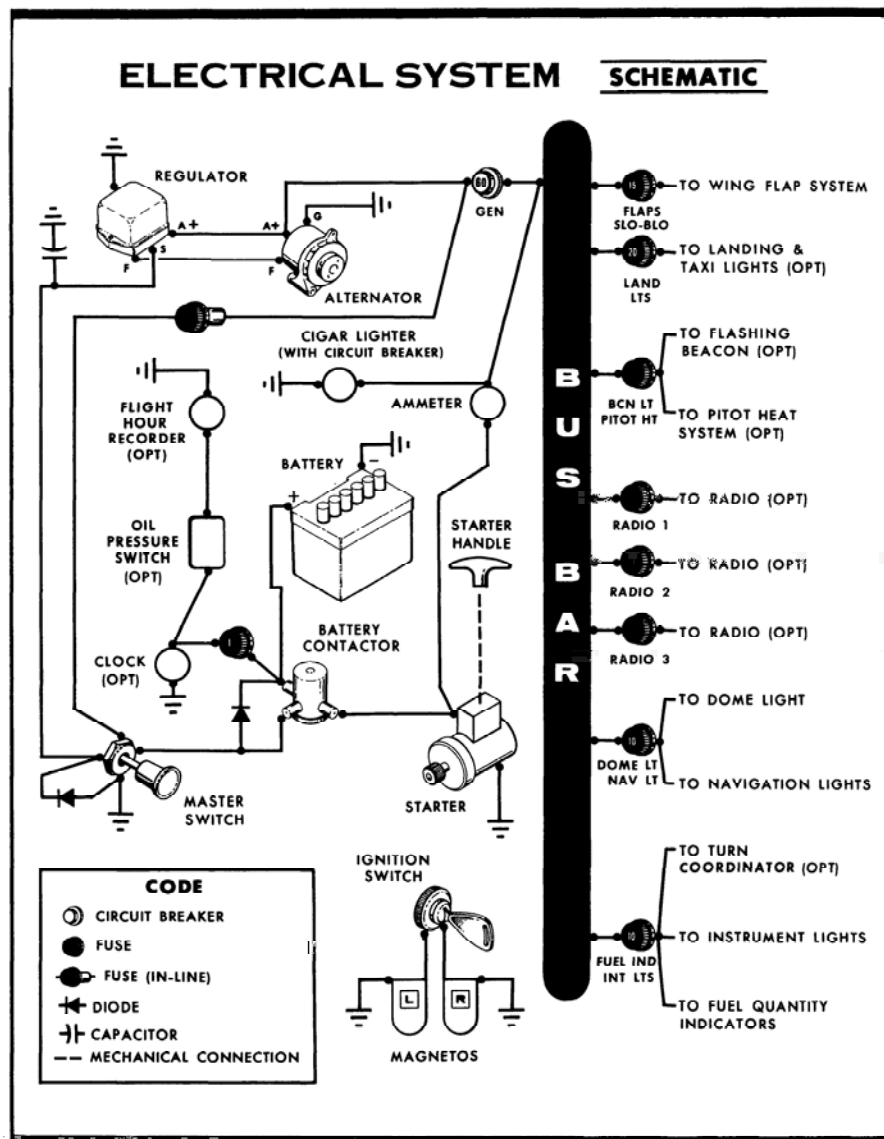


Figure 2-4.

manually reset type circuit breaker mounted directly on the back of the lighter behind the instrument panel.

LANDING LIGHTS (OPT).

A three-position, push-pull type switch controls the optional landing lights mounted in the leading edge of the left wing. To turn one lamp on for taxiing, pull the switch out to the first stop. To turn both lamps on for landing, pull the switch out to the second stop.

FLASHING BEACON (OPT).

The flashing beacon should not be used when flying through clouds or overcast; the flashing light reflected from water droplets or particles in the atmosphere, particularly at night, can produce vertigo and loss of orientation.

CABIN HEATING AND VENTILATING SYSTEM.

The temperature and volume of airflow into the cabin can be regulated to any degree desired by manipulation of the push-pull "CABIN HEAT" and "CABIN AIR" knobs.

Heated fresh air and outside air are blended in a cabin manifold just aft of the firewall by adjustment of the heat and air controls; this air is then vented into the cabin from outlets in the cabin manifold near the pilot's and passenger's feet. Windshield defrost air is also supplied by a duct leading from the manifold.

A separate adjustable ventilator near each upper corner of the windshield supplies additional outside air to the pilot and passenger.

PARKING BRAKE SYSTEM.

To set parking brake, pull out on the parking brake knob, apply and release toe pressure to the pedals, and then release the parking brake knob. To release the parking brake, apply and release toe pressure on the pedals while checking to see that the parking brake knob is full in.

STALLS.

The stall characteristics are conventional for the flaps up and flaps down condition. Slight elevator buffeting may occur just before the stall with flaps down.

The stalling speeds are shown in Section V for aft c.g., full gross weight conditions. They are presented as calibrated airspeeds because indicated airspeeds are unreliable near the stall. Other loadings result in slower stalling speeds. The stall warning horn produces a steady signal 5 to 10 MPH before the actual stall is reached and remains on until the airplane flight attitude is changed.

LANDING.

Normal landings are made power off with any flap setting. Approach glides are normally made at 65 to 75 MPH with flaps up, or 60 to 70 MPH with flaps down, depending upon the turbulence of the air.

SHORT FIELD LANDINGS.

For a short field landing, make a power off approach at 58 MPH with flaps 40° and land on the main wheels first. Immediately after touchdown, lower the nose gear to the ground and apply heavy braking as required. Raising the flaps after landing will provide more efficient braking.

CROSSWIND LANDINGS.

When landing in a strong crosswind, use the minimum flap setting required for the field length. Use a wing low, crab, or a combination method of drift correction and land in a nearly level attitude.

Excessive nose strut inflation can hinder nose wheel alignment with the airplane ground track in a drifting crosswind landing at touchdown and during ground roll. This can be counteracted by firmly lowering the nose wheel to the ground after initial contact. This action partially compresses the nose strut, permitting nose wheel swiveling and positive ground steering.

Section III

OPERATING LIMITATIONS

OPERATIONS AUTHORIZED.

Your Cessna exceeds the requirements for airworthiness as set forth by the United States Government, and is certificated under FAA Type Certificate No. 3A19.

With standard equipment, the airplane is approved for day and night operation under VFR. Additional optional equipment is available to increase its utility and to make it authorized for use under IFR day and night.

Your airplane must be operated in accordance with all FAA-approved markings, placards and check lists in the airplane. If there is any information in this section which contradicts the FAA-approved markings, placards and check lists, it is to be disregarded.

MANEUVERS-UTILITY CATEGORY.

This airplane is not designed for purely aerobatic flight. However, in the acquisition of various certificates such as commercial pilot, instrument pilot and flight instructor, certain maneuvers are required by the FAA. All of these maneuvers are permitted in this airplane when operated in the utility category. In connection with the foregoing, the following gross weight and flight load factors apply, with maximum entry speeds for maneuvers as shown:

Gross Weight	1600 lbs
Flight Maneuvering Load Factor, *Flaps Up . . .	+4.4 -1.76
Flight Maneuvering Load Factor, *Flaps Down . .	+3.5

*The design load factors are 150% of the above, and in all cases, the structure meets or exceeds design loads.

ENGINE INSTRUMENT MARKINGS.

OIL TEMPERATURE GAGE.

Normal Operating Range Green Arc
Maximum Allowable 225° F Red Line

OIL PRESSURE GAGE.

Minimum Idling 10 PSI (red line)
Normal Operating Range 30-60 PSI (green arc)
Maximum 100 PSI (red line)

FUEL QUANTITY INDICATORS.

Empty (1.75 gallons unusable each standard tank) . . E (red line)
11.50 gallons unusable each long range tank)

TACHOMETER.

Normal Operating Range:
At sea level 2000-2550 (inner green arc)
At 5000 feet 2000-2650 (middle green arc)
At 10,000 feet 2000-2750 (outer green arc)
Maximum Allowable 2750 (red line)

WEIGHT AND BALANCE.

The following information will enable you to operate your Cessna within the prescribed weight and center of gravity limitations. To figure the weight and balance for your particular airplane, use the Sample Problem, Loading Graph, and Center of Gravity Moment Envelope as follows:

Take the licensed Empty Weight and Moment/1000 from the Weight and Balance Data sheet, plus any changes noted on forms FAA-337, carried in your airplane, and write them down in the proper columns. Using the Loading Graph, determine the moment/1000 of each item to be carried. Total the weights and moments/1000 and use the Center of Gravity Moment Envelope to determine whether the point falls within the envelope, and if the loading is acceptable.

AIRSPEED CORRECTION TABLE											
(Flaps Up)											
IAS	40	50	60	70	80	90	100	110	120	130	140
CAS	51	57	65	73	82	91	100	109	118	127	136
(Flaps Down)											
IAS	40	50	60	70	80	90	100				
CAS	49	55	63	72	81	89	98				

Figure 5-1.

=Power Off= STALLING SPEEDS MPH = CAS				
Gross Weight 1600 lbs.	ANGLE OF BANK			
	0°	20°	40°	60°
CONDITION				
Flaps UP 	55	57	63	78
Flaps 20° 	49	51	56	70
Flaps 40° 	48	49	54	67

Figure 5-2.

CRUISE PERFORMANCE						WITH LEAN MIXTURE		
ALTITUDE	RPM	%BHP	TAS MPH	GAL./HR.	END. HOURS		RANGE, MILES	
					STANDARD	LONG RANGE	STANDARD	LONG RANGE
					22.5 GAL.	35 GAL.	22.5 GAL.	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 5-4.