



LANCE II

SERVICE MANUAL

PA-32RT-300

PA-32RT-300T

PIPER AIRCRAFT CORPORATION

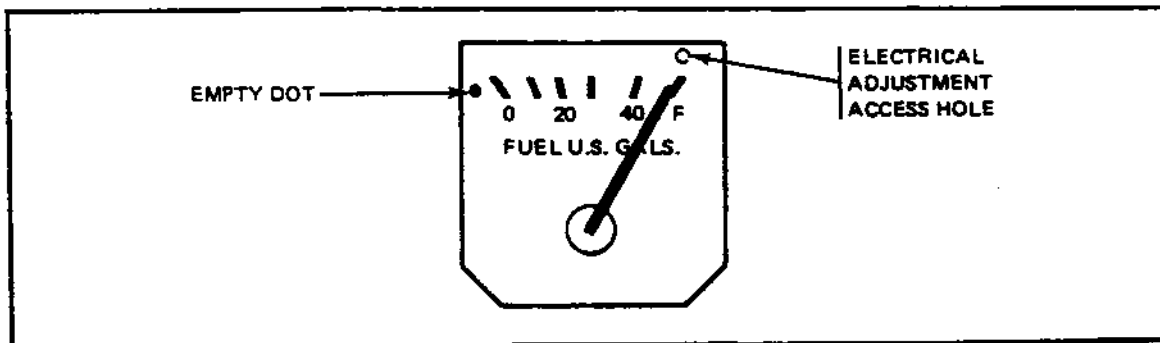


Figure 9-3. Fuel Gauge

TABLE IX-I. SENDER/FUEL QUANTITY GAUGE TOLERANCES

Actual Fuel in Tank (U.S. Gallons)	Gauge Reading (U.S. Gallons)
49 FULL	F
42	40
32	30
22	20 $\pm$ Pointer Width
12	10
2	Not More Than Zero
0 EMPTY	White Dot

9-12. FUEL SELECTOR VALVE AND FILTER.

9-13. FUEL SELECTOR VALVE OPERATION. When the fuel selector handle is not in a positive selector detent position, more than one fuel port will be open at the same time. It should be ascertained that the fuel selector is positioned in a detent, which can be easily felt when moving the handle through its various positions.

9-14. REMOVAL OF FUEL SELECTOR VALVE AND FILTER.

- Drain fuel from tanks. (Refer to Draining Fuel System, Section II.)
- Remove center seats, seat belt attachments and floor panel just aft of the main spar by removing the floor attachment screws. Lift the panel and remove.
- Remove plate from bottom of the fuselage which covers fuel selector.
- Disconnect the fuel lines and selector linkage from valve assembly.
- Remove the four mounting screws which hold the fuel selector in place and remove the selector assembly.

Specifications

	Lance II	Turbo Lance II
ENGINE (6 cylinder)		
Manufacturer	Lycoming	Lycoming
Model	IO-540-K1G5D	TIO-540-S1AD
Rating (HP and RPM)	300 @ 2700	300 @ 2700
Recommended TBO (hrs.)	2000	1800
WEIGHTS		
Gross Weight (lbs./kg)	3600/1633	3600/1633
Standard Empty Weight (lbs./kg)	1968/893	2065/934
(with unusable fuel, full oil and operating fluids)		
Useful Load (Standard Airplane) (lbs./kg)	1632/740	1535/699
WING AREA AND LOADINGS		
Wing Area (ft. ² /m ²)	174.5/53.22	174.5/53.22
Wing Loading (lbs./ft. ²)/(kg/m ²)	20.6/100.59	20.6/100.59
Power Loading (lbs./hp)/(kg/hp)	12.0/5.44	12.0/5.44
BAGGAGE		
Volume (ft. ³ /m ³)		
Forward Compartment	71.20	71.20
Aft Compartment	17.3/4.84	17.3/4.84
Capacity (lbs./kg)		
Forward Compartment	100/45.35	100/45.35
Aft Compartment	100/45.35	100/45.35
DIMENSIONS		
Wing Span (ft./m)	32.8/10	32.8/10
Length (ft./m)	28.3/8.63	29.0/8.84
Height (ft./m)	9.5/2.90	9.5/2.90
Cabin Length (in./cm)	125/317.5	125/317.5
(instrument panel to rear bulkhead)		
Cabin Width (in./cm)	49/124.5	49/124.5
Cabin Height (in./cm)	49/124.5	49/124.5
Cabin Volume (ft. ³ /m ³)	195.3/5.47	195.3/5.47
(including luggage area)		
Headroom (seat to ceiling)		
Front Seats (in./cm)	36/91.4	36/91.4
Middle Seats (in./cm)	36/91.4	36/91.4
Rear Seats (in./cm)	35/88.9	35/88.9
Forward Baggage Door Size (in./cm)	(18/45.7) x (24/60.96)	(18/45.7) x (24/60.96)
Aft Baggage/Utility Door Size (in./cm)	(20/50.8) x (28/71.1)	(20/50.8) x (28/71.1)
Forward Cabin Door Size (in./cm)	(35/88.9) x (36/91.4)	(35/88.9) x (36/91.4)
Aft Cabin Door Size (in./cm)	(33/83.8) x (29/73.7)	(33/83.8) x (29/73.7)
Wheel Base (ft./m)	7.95/2.43	7.95/2.43
Wheel Tread (ft./m)	11.1/3.39	11.1/3.39
FUEL CAPACITY		
Total Capacity (gal./L)	98/371	98/371
Usable Fuel (gal./L)	94/356	94/356
OIL CAPACITY (qts./L)		
	12/11.35	12/11.35

Performance

	Lance II		Turbo Lance II	
MAXIMUM SPEED AT GROSS WEIGHT (kts.)/(km/h)				
Optimum altitude	166/307		189/350	
CRUISING SPEEDS AT GROSS WEIGHT				
Altitude cruise speeds	Best Power	Best Economy	Best Power	Best Economy
(TAS) (optimum altitude)				
81% power (kts./kmh)			183/339	N/A
75% power (kts./kmh)	158/293	156/289	176/326	173/321
65% power (kts./kmh)	149/276	146/271	160/296	158/293
55% power (kts./kmh)	139/258	138/256	142/263	139/257
STALL SPEED	IAS	CAS	IAS	CAS
Flaps Down Full 40° (kts./kmh)	52/96	60/111	52/96	60/111
Flaps Up (kts./kmh)	53/98	64/119	57/106	67/124
CRUISE RANGE				
(Cruising range includes 45 minute fuel reserve at maximum range power plus allowance for fuel used during taxi, take-off, climb at MCP, cruise at optimum altitude and stated mixture plus descent)				
	Best Power	Best Economy	Best Power	Best Economy
81% power (nm/km)			577/1069	N/A
75% power (nm/km)	656/1215	780/1445	597/1106	712/1319
65% power (nm/km)	685/1268	825/1526	609/1128	720/1333
55% power (nm/km)	714/1321	870/1610	623/1154	730/1352
FUEL CONSUMPTION (gph/Lph)	Best Power	Best Economy	Best Power	Best Economy
81% power			24/90.8	N/A
75% power	18/68	16/61	21.9/82.9	17.4/65.9
65% power	16/61	13.8/52	19.8/74.9	15.7/59.4
55% power	14/53	11.9/45	16.8/63.6	13.8/52.2
RATE OF CLIMB (At Sea Level and Gross Wt.)				
Full Throttle (fpm/MPM)	1000/305		1050/320	
SERVICE CEILING (50 fpm) (ft./m)	15,400/4694		*20,000/6096	
ABSOLUTE CEILING (ft./m)	16,200/4938		*20,000/6096	
TAKE-OFF DISTANCE				
(Sea Level, zero wind, standard temperature)				
Ground Run (ft./m)	1450/442		1410/430	
Total over 50 ft. obstacle (ft./m)	2360/719		1875/572	
LANDING DISTANCE				
(Sea Level, zero wind, standard temperature)				
Ground Roll (ft./m)	880/268		1050/320	
Total over 50 ft. obstacle (ft./m)	1710/521		1760/536	

*Max. Approved Altitude

4.27 CRUISING

The cruising speed of the Lance II is determined by many factors, including power setting, altitude, temperature, loading and equipment installed in the airplane.

The normal maximum cruising power is 75% of the rated horsepower of the engine. When selecting cruising RPM below 2300, limiting manifold pressure for continuous operation, as specified by the appropriate "Avco-Lycoming Operator's Manual," should be observed.

To obtain the desired power, set the manifold pressure and RPM according to the power setting table in this manual.

Use of the mixture control in cruising flight reduces fuel consumption significantly, especially at higher altitudes. The mixture should be leaned during cruising operation when 75% power or less is being used. If any doubt exists as to the amount of power being used, the mixture should be in the full "RICH" position for all operations under 5000 feet.

To lean the mixture, disengage the lock and pull the mixture control until the engine becomes rough, indicating that the lean mixture limit has been reached in the leaner cylinder. Then enrich the mixture by pushing the control towards the instrument panel until engine operation becomes smooth. The fuel flow meter will give a close approximation of the fuel being consumed. The low side of the power setting, as shown on the fuel flow meter, indicates best economy for that percent of power while the high side indicates best power.

If the airplane is equipped with the optional exhaust gas temperature (EGT) gauge, a more accurate means of leaning is available to the pilot. For this procedure, refer to the "Avco-Lycoming Operator's Manual."

In order to keep the airplane in best lateral trim during cruise flight, the fuel should be used alternately from each tank at one hour intervals.

Always remember that the electric fuel pump should be turned "ON" before switching tanks, and should be left on for a short period thereafter. To preclude making a hasty selection, and to provide continuity of flow, the selector should be changed to another tank before fuel is exhausted from the tank in use. The electric fuel pump should be normally "OFF" so that any malfunction of the engine driven fuel pump is immediately apparent. If signs of fuel starvation should occur at any time during flight, fuel exhaustion should be suspected, at which time the fuel selector should be immediately positioned to a full tank and the electric fuel pump switched to the "ON" position.