

MODEL 7ECA ——— CRUISE PERFORMANCE ——— ZERO WIND

ALTITUDE FEET	RPM	% BHP	TAS MPH	GPH	ENDURANCE HOURS	RANGE STATUTE MI.
2500	2800	90	122	9.6	3.6	445
	2700	76	117	8.0	4.4	510
	2600	66	113	5.9	5.9	670
	2500	59	108	5.2	6.7	725
	2400	53	104	4.7	7.4	770
	2300	49	100	4.3	8.1	810
	2200	45	96	4.0	8.8	840
	2100	42	92	3.7	9.5	870
	2000	40	88	3.5	10.0	880
5000	2800	83	123	8.9	3.9	480
	2700	72	118	6.3	5.6	655
	2600	63	114	5.6	6.3	710
	2500	56	108	4.9	7.1	770
	2400	51	104	4.5	7.8	805
	2300	47	99	4.1	8.5	845
	2200	43	94	3.8	9.2	865
	2100	40	90	3.6	9.7	875
7500	2800	77	124	8.2	4.3	525
	2700	67	119	5.9	5.9	705
	2600	60	114	5.2	6.7	765
	2500	53	109	4.7	7.4	810
	2400	48	103	4.3	8.1	835
	2300	44	98	3.9	9.0	875
	2200	41	92	3.6	9.7	890
10000	2800	70	124	6.2	5.6	700
	2700	62	119	5.5	6.4	755
	2600	56	114	4.9	7.1	810
	2500	50	107	4.4	8.0	855
	2400	46	101	4.0	8.8	880
	2300	42	93	3.7	9.5	880

- NOTES: 1) Maximum cruise is normally limited to 75% power.
- 2) All fuel consumption estimates are based on the recommended lean mixture when at or below 75% power and full rich above 75% power.
- 3) No fuel allowance is made for takeoff, climb, descent or reserve.
- 4) All performance figures based on maximum gross weight of 1650 lbs.
- 5) Cruise performance using McCauley Propeller 1C90CLM72-46 only.

ALTITUDE FEET	RPM	% BHP	TAS MPH	GPH	ENDURANCE HOURS	RANGE STATUTE MI.
2500	2700	81	130	11.6	3.0	390
	2600	74	126	8.5	4.1	515
	2500	66	121	7.6	4.6	555
	2400	59	116	6.8	5.1	590
	2300	53	111	6.1	5.7	630
	2200	46	104	5.3	6.6	685
	2100	40	98	4.6	7.6	745
	2000	35	90	4.0	8.7	785
5000	2700	76	130	10.8	3.2	415
	2600	69	126	8.7	4.0	500
	2500	62	121	7.1	4.9	590
	2400	55	115	6.4	5.5	630
	2300	49	110	5.7	6.4	700
	2200	43	103	5.0	7.0	720
	2100	38	97	4.4	7.9	765
	2000	33	88	3.8	9.2	810
7500	2700	70	130	8.1	4.3	555
	2600	64	125	7.3	4.8	600
	2500	57	118	6.6	5.3	625
	2400	51	114	5.9	5.9	670
	2300	46	108	5.2	6.7	720
	2200	41	102	4.7	7.4	755
	2100	36	94	4.1	8.5	795
	2000	32	84	3.6	9.7	815
10000	2700	65	128	7.4	4.7	600
	2600	59	124	6.7	5.2	645
	2500	53	118	6.1	5.7	673
	2400	47	112	5.4	6.5	725
	2300	42	105	4.8	7.3	765
	2200	38	98	4.3	8.1	790
	2100	33	89	3.8	9.2	815

- NOTES: 1) Maximum cruise is normally limited to 75% power.
- 2) All fuel consumption estimates are based on the recommended lean mixture when at or below 75% power and full rich above 75% power.
- 3) No fuel allowance is made for take-off, climb, descent or reserve.
- 4) All performance figures based on maximum gross weight of 1650 lbs.
- 5) Cruise performance using Sensenich Propeller 74DM6S8-1-56 only.

All electrical switches and fuses are located on the electrical panel which is installed on the upper left side of the cabin. Additional spare fuses are also provided in the panel and can be used for replacement during flight if necessary.

A red master switch controls all electrical power from the battery and alternator to the distribution bus with the exception of the engine magnetos.

NOTE

Failure to turn the master switch OFF after securing the aircraft will result in a complete discharge of the battery.

The alternator circuit includes an overvoltage relay which automatically removes it from the circuit to prevent damage to the alternator or the radio equipment should an overvoltage condition occur. Cycling the master switch will reset the overvoltage relay should it drop the alternator off the circuit due to an overvoltage condition. This is indicated by a discharge on the ammeter. After resetting, if the overvoltage condition was temporary, the alternator will continue to operate normally.

FUEL SYSTEM

The Citabria fuel system is completely independent from the other aircraft systems and due to its simplicity is virtually trouble free. See Figure 6-5.

Fuel is supplied from two interconnected wing tanks and is gravity fed to the engine carburetor (fuel injector--7KCAB). Fuel quantity is registered by two direct reading float-type gauges, one for each tank. They are located in each wing root area of the cabin.

NOTE

Correct fuel indication is only provided with the aircraft in level flight attitude.

The fuel shut-off valve is located on the lower left side of the cabin forward of the pilot. Two positions are available, ON or OFF. A gascolator is mounted to the firewall with a quick drain feature provided. The quick drain control knob is located through the inspection door on the engine cowl. An additional drain is located under the fuselage aft of the baggage compartment and is easily accessible during the preflight inspection.

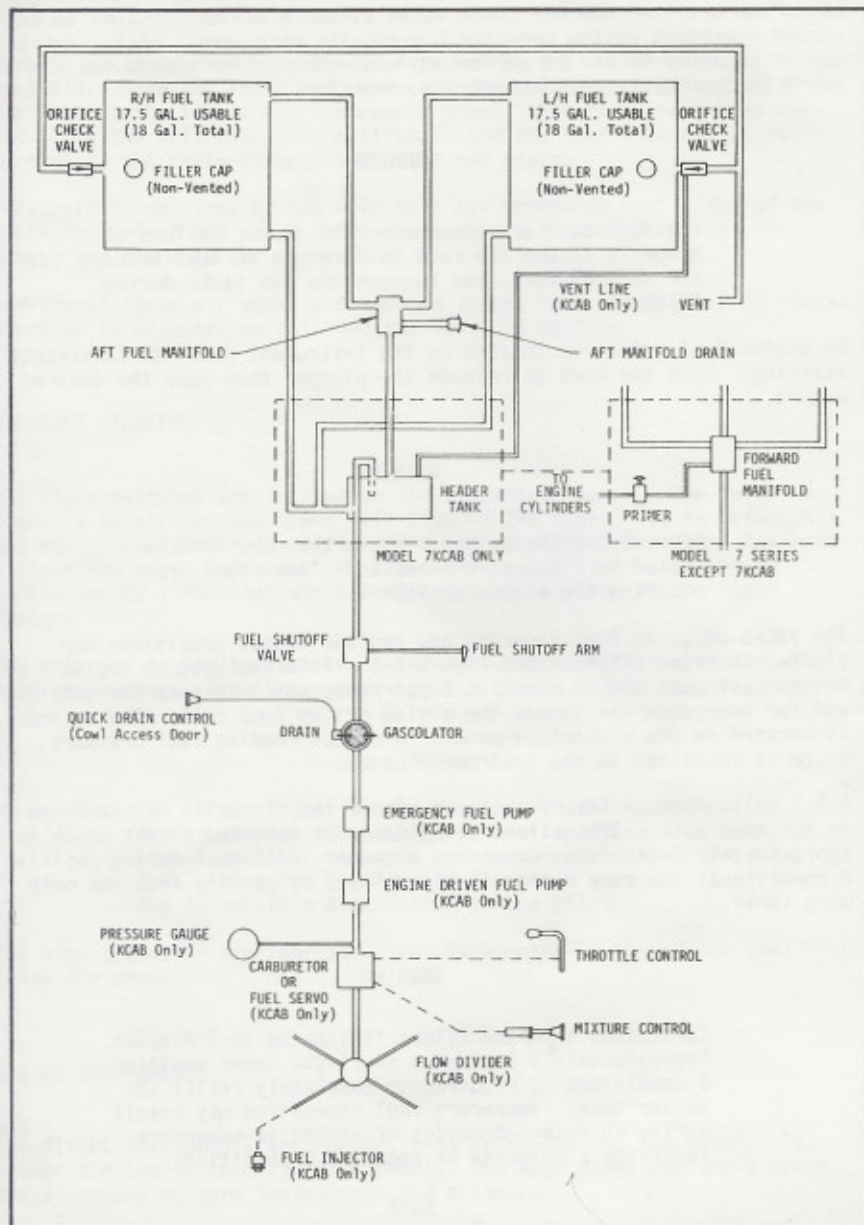


FIGURE 6-5 FUEL SYSTEM SCHEMATIC

The fuel tanks are vented together with the vent located on the left wing. An orificed one-way check valve allows a minimum of fuel to be vented overboard during negative G aerobatic maneuvers. An ice deflector is provided to aid in preventing vent obstruction should the aircraft inadvertently encounter icing conditions.

WARNING

The fuel caps are the non-vented type. Failure to properly secure the caps will result in fuel leakage and unequal fuel feed between the two tanks during flight.

An engine fuel primer is located on the instrument panel to facilitate starting. Turn the knob to release the plunger then pump the desired amount.

WARNING

After using the primer, insure that the knob is locked in place to prevent additional fuel from entering the engine cylinders.

The 7KCAB only, is fuel injected and has additional provisions for limited inverted flight. See Figure 6-5. This includes an engine driven fuel pump and an electric boost pump, which is used for starting and for emergency use should the engine driven pump fail. The switch is located on the electrical panel. A direct reading fuel pressure gauge is installed in the instrument panel.

A 1.5 gallon header tank is mounted aft of the firewall. A standpipe in the tank allows .75 gallons to be used for inverted flight which is approximately 2-3 minutes depending on power settings. During positive G conditions, the tank automatically refills by gravity from the main wing tanks.

WARNING

Continuous inverted flight is limited to 2 minutes. Approximately 3.5 minutes of flight under positive G conditions is required to completely refill the header tank. Temporary fuel starvation may result during an extended series of aerobatic maneuvers involving a majority of negative G conditions.

NOTE

Should fuel starvation result during inverted flight, return to positive G conditions. The engine will restart within 10 seconds.

FUEL

Type - Aviation Grade 80/87 Minimum Octane, or 100/130 Octane
Quantity - 36 Gals. (18 gals, in each tank)
- 35 Gals. Usable (17.5 gals, in each tank)
(100/130 must be low lead for 7ECA)

OIL

Type - Aviation Grade (See engine manufacturer's specifications)
Quantity - 8 Qts. (6 qts. - 7ECA)
- 6 Qts. Aerobatic Minimum

Viscosity

AVERAGE AMBIENT AIR TEMPERATURE	GRADE
Above 60 ⁰ F	SAE 40 or 50
30 ⁰ - 90 ⁰ F	SAE 40
0 - 70 ⁰ F	SAE 30 or 40
Below 10 ⁰ F	SAE 30

BRAKES

Type - Fluid MIL-H-5606 (red)

TIRES

Type - Mains - 6.00 x 6 (4 ply rating)
Tail - 2.80 x 2.50 (4 ply rating)

Pressure - Mains - 24 $\pm$ 4 psi
Tail - 40 $\pm$ 10 psi

LUBRICATION

Type - General Purpose Grease (zerke fittings)
Machine Oil or Engine Oil (pulleys, hinges, etc.)
High Temperature Wheel Bearing Grease (wheel bearings)

FIGURE 7-1 SERVICE SPECIFICATIONS