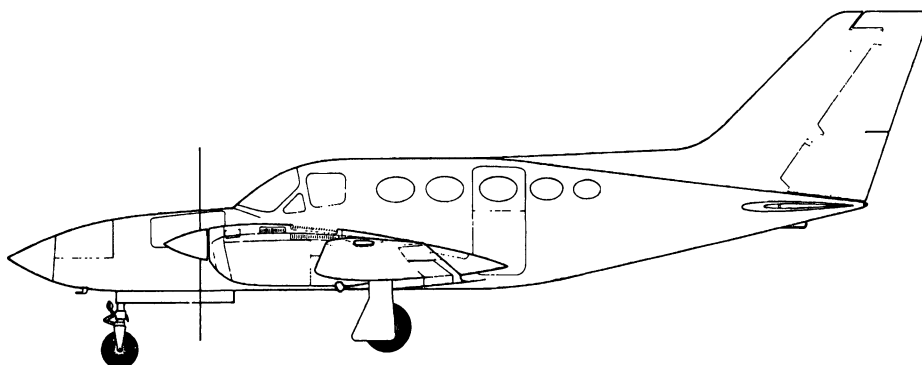


PILOT'S OPERATING HANDBOOK and FAA APPROVED AIRPLANE FLIGHT MANUAL



CESSNA AIRCRAFT COMPANY

1981 MODEL 421C

FAA APPROVED IN NORMAL
CATEGORY BASED ON CAR
PART 3 THIS DOCUMENT MUST
BE CARRIED IN THE AIRPLANE
AT ALL TIMES

Serial Number _____

Registration Number _____

THIS HANDBOOK INCLUDES THE MATERIAL REQUIRED
TO BE FURNISHED TO THE PILOT BY CAR PART 3 AND
CONSTITUTES THE FAA APPROVED AIRPLANE FLIGHT MANUAL.

COPYRIGHT © 1980
THE CESSNA AIRCRAFT COMPANY

CESSNA AIRCRAFT COMPANY

Wallace Division
Wichita, Kansas

 Member of GAMA

3 NOVEMBER 1980

PERFORMANCE AND SPECIFICATIONS

MAXIMUM WEIGHT:	
Ramp	7500 Pounds
Takeoff	7450 Pounds
Landing	7200 Pounds
Zero Fuel	6733 Pounds
*SPEED, BEST POWER MIXTURE:	
Maximum - 20,000 Feet	258 KTAS
Maximum Recommended Cruise	
73.5% Power at 10,000 Feet	208 KTAS
73.5% Power at 25,000 Feet	241 KTAS
*RANGE, RECOMMENDED LEAN MIXTURE:	
Maximum Recommended Cruise	
73.5% Power at 10,000 Feet	790 Nautical Miles,
(1236 Pounds Usable Fuel)	3.91 Hours and 205 KTAS
73.5% Power at 10,000 Feet	925 Nautical Miles,
(1404 Pounds Usable Fuel)	4.56 Hours and 205 KTAS
73.5% Power at 10,000 Feet	1060 Nautical Miles,
(1572 Pounds Usable Fuel)	5.21 Hours and 206 KTAS
73.5% Power at 25,000 Feet	882 Nautical Miles,
(1236 Pounds Usable Fuel)	3.91 Hours and 238 KTAS
73.5% Power at 25,000 Feet	1039 Nautical Miles,
(1404 Pounds Usable Fuel)	4.57 Hours and 239 KTAS
73.5% Power at 25,000 Feet	1197 Nautical Miles,
(1572 Pounds Usable Fuel)	5.22 Hours and 239 KTAS
Maximum Range	
10,000 Feet (1236 Pounds Usable Fuel)	1107 Nautical Miles,
7.19 Hours and 153 KTAS	
10,000 Feet (1404 Pounds Usable Fuel)	1294 Nautical Miles,
8.44 Hours and 153 KTAS	
10,000 Feet (1572 Pounds Usable Fuel)	1485 Nautical Miles,
9.73 Hours and 152 KTAS	
25,000 Feet (1236 Pounds Usable Fuel)	1088 Nautical Miles,
5.74 Hours and 191 KTAS	
25,000 Feet (1404 Pounds Usable Fuel)	1284 Nautical Miles,
6.75 Hours and 192 KTAS	
25,000 Feet (1572 Pounds Usable Fuel)	1483 Nautical Miles,
7.78 Hours and 192 KTAS	
RATE-OF-CLIMB AT SEA LEVEL:	
All Engines	1940 Feet Per Minute
Single-Engine	350 Feet Per Minute
SERVICE CEILING:	
All Engines	30,200 Feet
Single-Engine	14,900 Feet
TAKEOFF PERFORMANCE: (100 KIAS, 0° Wing Flaps And 7450 Pounds Weight)	
Ground Roll	1786 Feet
Total Distance Over 50-Foot Obstacle	2323 Feet
LANDING PERFORMANCE: (100 KIAS, 45° Wing Flaps And 7200 Pounds Weight)	
Ground Roll	720 Feet
Total Distance (Over 50-Foot Obstacle)	2293 Feet
STANDARD EMPTY WEIGHTS: (Approximate)	
Golden Eagle 421C	4640 Pounds
Golden Eagle 421C II	4837 Pounds
Golden Eagle 421C III	5048 Pounds
BAGGAGE ALLOWANCE:	1500 Pounds
WING LOADING:	34.7 Pounds Per Square Foot
POWER LOADING:	9.9 Pounds Per Horsepower
FUEL CAPACITY:	(Total)
Standard (206 Gallons Usable)	213.4 Gallons
With One Wing Locker Tank (234 Gallons Usable)	241.8 Gallons
With Two Wing Locker Tanks (262 Gallons Usable)	270.2 Gallons
OIL CAPACITY: (Total)	28 Quarts
ENGINES:	
Six-Cylinder, Geared, Turbocharged, Fuel-Injected Engines	GTSIO-520-N
375 Rated Horsepower At 2235 Propeller RPM And 39.0 Inches Hg.	
Manifold Pressure To 20,000 Feet	
PROPELLERS:	
Constant Speed, Full Feathering, Three-Bladed 7'6" Diameter	0850334-27

*Range data includes allowances for start, taxi, takeoff, climb, descent and 45-minute reserve at the particular cruise power. Speeds based on Estimated Mid-Cruise Weight.

The above performance figures are based on the indicated weights, standard atmospheric conditions, level hard-surface dry runways and no wind. They are calculated values derived from flight tests conducted by the Cessna Aircraft Company under carefully documented conditions and will vary with individual airplanes and numerous factors affecting flight performance.

ing the shuttle valve to move from the hydraulic to air position. The nitrogen then flows into the uplocks which releases the gear to the free-fall position, and then into the landing gear cylinders, which drives the landing gear into the down and locked position.

NOTE

The landing gear cannot be retracted after emergency gear extension until the system has been ground serviced.

LANDING GEAR SHOCK STRUTS

Shock absorption is provided on each gear by an air-over-oil shock strut. This strut is composed of two basic parts: an upper barrel assembly and an inner tube assembly which fits inside the upper barrel assembly. The inner barrel assembly contains an orifice and tapered metering pin which vary the resistance to shock according to severity transmitted to the upper barrel assembly.

FUEL SYSTEM

The fuel system, see Figure 7-17, consists of two main tanks, two optional wing locker tanks, two fuel selectors, emergency crossfeed shutoff valves and necessary components to complete the system.

MAIN TANKS

The main fuel tanks are an integral portion of the sealed wet wing. These tanks supply their respective engine with fuel for normal operations, including takeoffs and landings. An auxiliary fuel pump, located outside the tank, provides fuel pressure for priming during engine start. In the event of an engine fuel pump failure, the auxiliary fuel pump will supply fuel to the engine if the auxiliary fuel pump switches are on. The main tank is vented to the atmosphere by a combination flush vent and a .50-inch diameter drain located on the lower surface of the wing. The flush mounted vent eliminates the need for heated vents. The fuel tanks are serviced through a flush filler located in the top surface of each wing.

WING LOCKER TANKS

An optional wing locker fuel tank is available for installation in the forward portion of each wing locker baggage area. These tanks are bladder-type cells which supplement the main tank fuel quantity. This fuel cannot be fed directly to the engines; instead it is transferred to the main tanks by wing locker fuel transfer pumps. The transfer pumps are manually controlled and should be energized as soon as adequate volume is available in the main tanks to hold the wing locker fuel, to assure early recognition of possible failure of transfer. After the fuel is transferred, a pressure switch in each transfer line will sense a drop in pressure and illuminate the annunciator light, indicating fuel transfer is complete and the applicable wing locker transfer pump should be turned off. These pumps use fuel for lubrication; therefore, operation after fuel transfer will shorten the pump life. The wing locker fuel tanks are individually vented through the lower surface of each wing. The fuel vent lines are deiced by heaters which are controlled by the stall and vent heat switch. These tanks are serviced through a flush filler located on the top of the engine nacelle.

FUEL SELECTORS

Two fuel selectors, one for each engine, are provided on the floor between the pilot and copilot seats. The selectors allow selection of main fuel, crossfeed and off.

FUEL SYSTEM SCHEMATIC

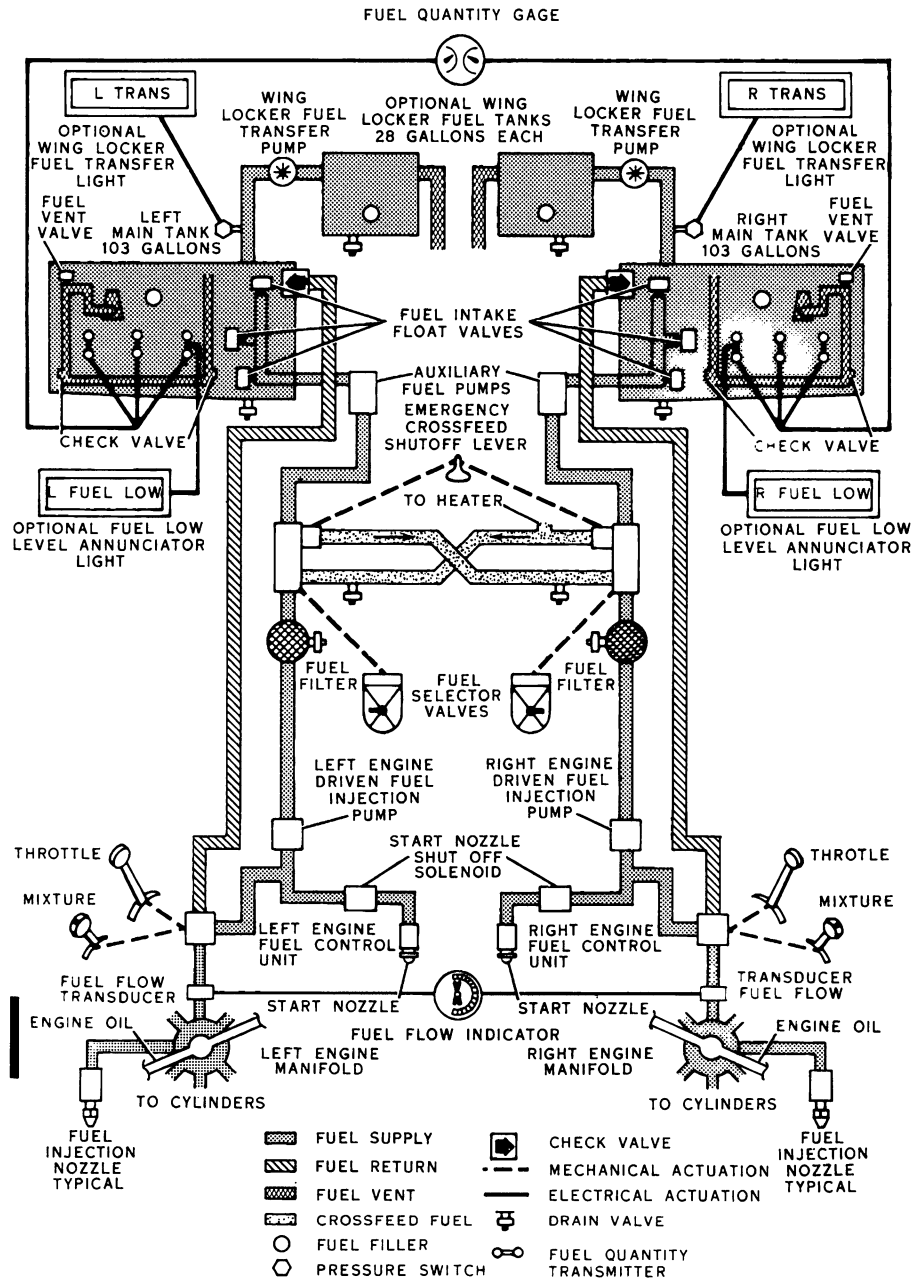


Figure 7-17

During normal flight operations, position the left fuel selector to LEFT MAIN and the right fuel selector to RIGHT MAIN. This allows fuel to flow from each main tank, through the fuel selector, to the respective engine-driven fuel pump. Fuel may be crossfed from the left main tank to the right engine or from the right main tank to the left engine. Both engines will be supplied with fuel from the right main tank when both fuel selectors are positioned to RIGHT MAIN. Conversely, both engines will be supplied with fuel from the left main tank when both fuel selectors are positioned to LEFT MAIN. The crossfeed function is used for balancing asymmetric fuel loads and supplying the engine-driven fuel pump from the opposite main tank. The LEFT ENG OFF position or RIGHT ENG OFF position (the center button must be depressed as the selector valve is rotated to the off position) on the fuel selectors allows no fuel to flow to the engine-driven fuel pump.

The fuel selector handles form the pointers for the selectors. The ends of the handles are arrow-shaped and point to the position on the selector placard which corresponds to the position of the control valves.

EMERGENCY CROSSFEED SHUTOFF LEVER

A two position emergency crossfeed shutoff lever is located between the fuel selector handles. When the shutoff lever is pulled up, crossfeeding of main tank fuel and heater operation is stopped. This lever is for emergency crossfeed control only, since its function is to isolate the fuel crossfeed lines from the fuel tanks in the event of a nacelle, wing or center section fire or a wheels up landing.

AUXILIARY FUEL PUMP SWITCHES

A 3-position auxiliary fuel pump switch, see Figure 7-19, is provided for each main fuel tank pump providing 5.5 PSI pressure for vapor clearing and purging. In the LOW position, the auxiliary fuel pumps operate at low pressure. The ON position runs the auxiliary fuel pumps at low pressure, as long as the engine-driven pumps are functioning. With an engine-driven pump failure and the switch in the ON position, the auxiliary pump on that side will switch to high pressure automatically, providing sufficient fuel for all partial-power engine operations.

FUEL DRAIN VALVES

Fuel quick-drain valves are provided for each fuel tank, fuel filter and crossfeed line. In addition, a quick-drain is provided in each wing locker fuel transfer line. The drains provide a location for removing moisture and sediment from the fuel system. The drains are located on the lower surface of the wing nacelle, and main tanks and are actuated by depressing the lower portion of the valve. A special screwdriver is provided with the airplane which allows a 2-ounce sample to be drained and inspected without fuel spillage.

ELECTRONIC FUEL FLOW INDICATING SYSTEM

The electronic fuel flow indicating system consists of a dual needle indicator and a fuel flow transducer for each engine. The flow transducer generates electrical pulses, which represent a measure of fuel flow rate, and transmits these pulses to the indicator as input frequency. The indicator then converts the frequency signals into an analog output which is displayed by the indicator as fuel flow rate in pounds per hour. These gage markings are predicated on the use of 100 grade aviation fuel. Increase fuel flow 2% above markings when 100LL grade aviation fuel is used.

The indicator has takeoff, climb and cruise markings for various percentages of power. The takeoff range (white arc) presents the desired fuel flow (full rich schedule for proper engine cooling) for full power (2235 RPM and 39.0 inches Hg. manifold pressure) operation under all conditions up to 18,000 feet altitude. The climb range (blue arc) presents the desired fuel flow for maximum power above 18,000 feet, which corresponds to the manifold pressure schedule, with an enriched mixture for higher power settings to allow proper engine cooling during climb conditions. The cruise range presents the desired fuel flow for recommended lean mixture at the specified percent power.

FUEL QUANTITY GAGE

The dual indicating fuel quantity gage, see Figure 7-1, is calibrated in pounds and will accurately indicate the weight of fuel contained in the tanks regardless of whether 100 grade aviation or 100LL grade aviation fuel is used; however, fuel density varies with temperature, therefore, a full tank will weigh more on a cold day than on a warm day. This will be reflected by the weight shown on the gage. A gallons scale is provided in blue on the indicator for convenience in allowing the pilot to determine the approximate volume of fuel on board. The volume markings are predicated on the use of 100 aviation grade fuel. Reduce the indicated gallonage reading by 4% when 100LL grade aviation fuel is being used.

FUEL LOW LEVEL WARNING LIGHTS

The optional fuel low level warning lights, see Figure 7-3, provide a warning when the left and/or right main tanks contain approximately 60 pounds of fuel. The warning is provided by the L FUEL LOW and R FUEL LOW lights located on the annunciator panel. These lights are actuated by a float switch located in each main fuel tank. Each light operates independently from the fuel quantity indicating system.

OIL HEATED FUEL MANIFOLD VALVE

The fuel manifold valves are heated with engine oil to minimize the possibility of engine power loss induced by ice formation in the valve cavity. The manifold valve, located on the top of the engine case aft of the prop gear housing, regulates metered fuel distribution to the injector nozzles.

ENGINE-DRIVEN FUEL PUMPS

Each engine is equipped with a mechanically driven dual stage fuel pump which provides fuel to the metering unit. Should these pumps fail, the main tank auxiliary pumps can provide sufficient fuel flow for all partial-power engine operations. These auxiliary pumps, however, operate at a fixed pressure, consequently the mixture must be leaned when operating at a low power setting to prevent flooding in the engines. Conversely, if an