

OPERATING PROCEDURESPre-Flight

Check Oil (6 Qts. Minimum)
Check Fuel & Secure Filler Caps
Drain Gascolator and 3 Quick Drains
Inspect Airplane for Defects

Starting

Check to Assure Gear is LOCKED
Fasten Seat Belts
Fuel Valve ON (Right or Left Main)
Master Switch ON
Mixture Rich
Auxiliary Fuel Pump ON for Pressure Build Up, Then OFF
Brakes Set
Clear Prop Visually & Verbally
Pump Throttle to Prime
Engage Starter-Return Magneto Switch to Both After Start
Check Oil Pressure After Engine Starts
Open Cowl Flaps

Take-Off

Check Controls for Freedom and Proper Operation
Check Fuel Quantity & Pressure Gauges
Check Instruments
Set Trim to Take-off Position
Check Cowl Flaps
Set Wing Flaps to 15°
Turn ON Auxiliary Fuel Pump
Check Mags at 1500 RPM
Check Carb. Heat-Return to OFF
Check Governor & Prop Operation at 2200 RPM
Governor Control Full Forward
Secure Window & Door
Apply Full Throttle

After Take-Off

Gear UP
Initial Climb-out at 95 MPH (Minimum Speed for Cooling and Speed
for Best R/C at Sea Level with Gear Up and Flaps in Take-off Position)
Turn OFF Auxiliary Fuel Pump
Normal Cruise 2400 RPM and 24" Manifold Pressure
Close Cowl Flaps When Cruise Speed is Attained

Cruise

After Reaching Cruise Altitude Mixture May Be Leaned
Monitor Cylinder Head Temperature

Before Landing

Fuel Selector to Tank with Most Fuel
 Turn ON Auxiliary Fuel Pump
 Mixture Rich
 Carb. Heat ON (When Needed)
 Reduce Speed to 120 MPH
 Gear DOWN and LOCKED
 Governor Control Full Forward
 Apply Flaps at 100 MPH
 Trim As Necessary

After Landing

Open Cowl Flaps
 Retract Flaps After Clearing Runway

Stopping

Reduce RPM to 1000
 Mixture Full Lean (Idle Cut-off)
 Magneto Switches OFF (After Engine Stops)
 Master Switch OFF

Manually Starting the Engine

In the event it becomes necessary to prop start the engine due to low battery, the following procedure is to be followed:

1. As the engine is "propped", hold the magneto switch in the "start" position, but do not push the magneto switch. This operates the starter vibrator and furnishes retarded spark to the engine.
2. When the engine starts, release the switch to the "both" position.

FUEL SYSTEM

Fuel is contained in two integral sealed sections in the front part of each wing root. Each tank will hold 26 gallons of gasoline. These fuel tanks each have a sump drain under the wing from which fuel may be sampled to check for water or sediment contamination. A small plastic cup with an actuator prong is provided to obtain fuel samples. If water is present in the fuel, a distinct line separating the water from the gasoline may be seen through the plastic cup. Water, being heavier, will be on the bottom of the cup, and the light-colored fuel will be on top.

Aluminum fuel lines feed the fuel from the tank to a two-way, positive-setting selector valve on the floor ahead of the pilot's seat. The selector valve feeds fuel from one of the tanks at a time, and also has an "off" position for extended periods of storage or for emergency use. The selector valve also contains a sump drain which is actuated by pulling the ring adjacent to the fuel valve handle. Switch the selector valve handle to the right and left tanks to drain the respective lines. Be sure sump drain returns to normal closed position after releasing the ring. Fuel is fed from the selector valve through the electric boost pump, then to the engine driven pump and into the carburetor. The electric boost pump is turned on for take-off and landing to provide fuel pressure if the engine driven pump malfunctions.

WARNING: Under no circumstances should aviation fuel of a lower grade than 91/98 octane be used. Aviation fuels may distinguished by their color: 80 octane is red, 91 octane is blue, and 100 octane is green. If 91/98 octane is not available, 100/130 octane gasoline may be used.

THE ELECTRICAL SYSTEM

The Mark 21 electrical system is provided with a 50 amp 12 volt generator and a 35 amp-hour battery which is located on the forward left side of the firewall. All electrical systems can

INDICATED AIRSPEED

The superior aerodynamic efficiency of your airplane manifests itself in the normal indicated cruise speeds. Your airspeed indicator is marked with a green arc to 150 mph and a yellow arc starting at 150 mph and ending at 189 mph. When cruising at altitudes below approximately 8,000 feet, it is possible to cruise at indicated airspeeds above 150 mph and in the yellow cautionary arc. The yellow arc indicates speeds at which the pilot must exercise caution when encountering rough air or severe gusts. Rough air is considered to be a condition uncomfortable to pilot and passengers. Therefore, under these conditions, do not operate at airspeeds within the yellow arc.

FUEL MANAGEMENT

The following method is useful for monitoring remaining fuel. After take-off with both tanks full, use one tank only until one hour of fuel is depleted from it. Then switch to the second tank and record the time of switch-over on the elapsed time indicator on the panel clock. Use all the fuel in the second tank. Then, the time of fuel remaining in the first tank is the time it took to deplete the second tank, less one hour. However, this will be correct only if the cruise altitude and power setting remain unchanged. If a tank runs dry and the engine loses power, retard the throttle before restarting. Restarting with advanced throttle may cause engine over-speeding and can lead to mechanical malfunction.

LET-DOWN PROCEDURES

It is recommended that power let-downs be made in order to keep the engine from cooling too rapidly. By reducing the manifold pressure to some figure below cruise setting and then retaining cruise speed, a let-down can be made without excessive cooling of the engine. Do not open the cowl flaps for let-down.