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AVIATION AIRCRAFT
SINCE 1956

SKYWAGON 180



MODEL 180J

OWNER'S MANUAL

- (2) Power -- 23 inches and 2450 RPM.
- (3) Fuel Selector Valve -- "BOTH ON."
- (4) Mixture -- Full rich (unless engine is rough).
- (5) Cowl Flaps -- Open as required.

MAXIMUM PERFORMANCE CLIMB.

- (1) Airspeed -- 95 MPH (sea level) to 87 MPH (10,000 feet).
- (2) Power -- Full throttle and 2600 RPM.
- (3) Fuel Selector Valve -- "BOTH ON."
- (4) Mixture -- Full rich (unless engine is rough).
- (5) Cowl Flaps -- Full "OPEN."

CRUISING.

- (1) Engine Power -- 15 - 23 inches of manifold pressure and 2200-2450 RPM.
- (2) Cowl Flaps -- Adjust to maintain normal cylinder head temperature.
- (3) Stabilizer and Optional Rudder Trim Control Wheels -- Adjust.
- (4) Mixture -- Lean.

LET-DOWN.

- (1) Mixture -- Rich.
- (2) Power -- As desired.
- (3) Carburetor Heat -- Apply (if icing conditions exist).

BEFORE LANDING.

- (1) Mixture -- Rich.
- (2) Fuel Selector Valve -- "BOTH ON."
- (3) Cowl Flaps -- "CLOSED."
- (4) Carburetor Heat -- Apply before closing throttle.
- (5) Propeller -- High RPM.
- (6) Airspeed -- 80 to 90 MPH (flaps retracted).
- (7) Wing Flaps -- 0° to 40° (below 110 MPH).
- (8) Airspeed -- 70 to 80 MPH (flaps extended).
- (9) Stabilizer and Optional Rudder Trim Control Wheels -- Adjust for landing.

For a given throttle setting, select the lowest engine speed in the green arc range that will give smooth engine operation.

Cowl flaps should be adjusted to maintain the cylinder head temperature at approximately two thirds of the normal operating (green arc) range to assure prolonged engine life.

To achieve the range figures shown in Section VI, the mixture should be leaned as follows: pull mixture control out until engine becomes rough; then enrich mixture slightly from this point. Any change in altitude, power, or carburetor heat will require a change in the lean mixture setting.

Application of full carburetor heat may enrichen the mixture to the point of engine roughness. To avoid this, lean the mixture as instructed in the preceding paragraph.

The use of full carburetor heat is recommended during flight in very heavy rain to avoid the possibility of engine stoppage due to excessive water ingestion. The mixture setting should be readjusted for smoothest operation.

STALLS.

The stall characteristics are conventional and aural warning is provided by a stall warning horn which sounds between 5 and 10 MPH above the stall in all configurations.

Power-off stall speeds at maximum gross weight and aft c.g. position are presented in figure 6-2 as calibrated airspeeds, since indicated airspeeds are unreliable near the stall.

SPINS.

Intentional spins are prohibited in this airplane. Should an inadvertent spin occur, the following recovery procedure should be used.

- (1) Retard power to idle position.
- (2) Apply full rudder opposite to the direction of rotation.
- (3) After one-fourth turn, move the control wheel forward of neutral in a brisk motion.
- (4) As rotation stops, neutralize rudder, and make a smooth recovery from the resulting dive.

ELECTRICAL FIRE IN FLIGHT.

The initial indication of an electrical fire is the odor of burning insulation. The immediate response should be to turn off the master switch. Then close off ventilating air as much as practicable to reduce the chances of a sustained fire. If an oxygen system is available in the aircraft and dense smoke makes breathing difficult, occupants should use oxygen masks until the smoke clears.

If electrical power is indispensable for the flight, an attempt may be made to identify and cut off the defective circuit as follows:

- (1) Master Switch -- Off.
- (2) All other switches (except ignition switch) -- Off.
- (3) Check condition of circuit breakers to identify faulty circuit if possible. Leave faulty circuit deactivated.
- (4) Master Switch -- "ON."
- (5) Select switches "ON" successively, permitting a short time delay to elapse after each switch is turned on until the short circuit is localized.
- (6) Make sure fire is completely extinguished before opening vents.

FLIGHT IN ICING CONDITIONS.

Although flying in known icing conditions is prohibited, an unexpected icing encounter should be handled as follows:

- (1) Check pitot heat switch "ON" (if installed).
- (2) Turn back or change altitude to obtain an outside air temperature that is less conducive to icing.
- (3) Pull cabin heat control full out to obtain windshield defroster airflow. Adjust cabin air control to get maximum defroster heat and airflow.
- (4) Increase engine speed to minimize ice build-up on the propeller blades.
- (5) Watch for signs of carburetor air filter ice and apply carburetor heat as required. An unexplained loss in manifold pressure could be caused by carburetor ice or air intake filter ice. Adjust the mixture for smooth operation if continuous operation with carburetor heat "ON" is required.
- (6) Plan a landing at the nearest airport. With an extremely rapid ice build-up, select a suitable "off airport" landing site.

OIL QUICK-DRAIN VALVE

An oil quick-drain valve is optionally offered to replace the drain plug in the oil sump drain port. The valve provides a quicker and cleaner method of draining engine oil. To drain the oil with this valve installed, slip a hose over the end of the valve, route the hose to a suitable container, then push upward on the end of the valve until it snaps into the open position. Spring clips will hold the valve open. After draining, use a screwdriver or suitable tool to snap the valve into the extended (closed) position and remove the drain hose.

CARBURETOR AIR TEMPERATURE GAGE

A carburetor air temperature gage may be installed in the airplane to help detect carburetor icing conditions. The gage is marked with a yellow arc between -15° and $+5^{\circ}\text{C}$. The yellow arc indicates the carburetor temperature range where carburetor icing can occur; a placard on the gage reads "KEEP NEEDLE OUT OF YELLOW ARC DURING POSSIBLE ICING CONDITIONS."

Visible moisture or high humidity can cause carburetor ice formation, especially in idle or low power conditions. Under cruising conditions, the formation of ice is usually slow, providing time to detect the loss of manifold pressure caused by the ice. Carburetor icing during take-off is rare since the full-open throttle condition is less susceptible to ice obstruction.

If the carburetor air temperature gage needle moves into the yellow arc during potential carburetor icing conditions, or there is an unexplained drop in manifold pressure, apply full carburetor heat. Upon regaining the original manifold pressure (with heat off), determine by trial and error the minimum amount of carburetor heat required for ice-free operation.

NOTE

Carburetor heat should not be applied during take-off unless absolutely necessary to obtain smooth engine acceleration (usually in sub-zero temperatures).