PILOT'S OPERATING HANDBOOK

PIPER CHEROKEE CRUISER

FAA APPROVED IN NORMAL AND UTILITY CATEGORIES BASED ON CAR 3 AND FAR PART 21, SUBPART J. THIS HANDBOOK INCLUDES THE MATERIAL REQUIRED TO BE FURNISHED TO THE PILOT BY CAR 3 AND FAR PART 21, SUBPART J AND CONSTITUTES THE APPROVED AIRPLANE FLIGHT MANUAL AND MUST BE CARRIED IN THE AIRPLANE AT ALL TIMES.

AIRPLANE SERIAL NO. _____

AIRPLANE REGISTRATION NO. _____

PA-28-140
REPORT: VB-770

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PIPER

3.3 EMERGENCY PROCEDURES CHECK LIST

ENGINE FIRE DURING START

Starter ..... crank engine
Mixture ..... idle cut-off
Throttle ..... open
Electric fuel pump ..... OFF
Fuel selector ..... OFF
Abandon if fire continues

ENGINE POWER LOSS DURING TAKEOFF

If sufficient runway remains for a normal landing, land straight ahead.

If insufficient runway remains:
Maintain safe airspeed
Make only shallow turn to avoid obstructions
Flaps as situation requires

If sufficient altitude has been gained to attempt a restart:
Maintain safe airspeed
Fuel selector ..... switch to tank containing fuel
Electric fuel pump ..... check ON
Mixture ..... check RICH
Carburetor heat ..... ON
If power is not regained, proceed with power off landing.

ENGINE POWER LOSS IN FLIGHT

Fuel selector ..... switch to tank containing fuel
Electric fuel pump ..... ON
Mixture ..... RICH
Carburetor heat ..... ON
Engine gauges ..... check for indication of cause of power loss
Primer ..... check locked
If no fuel pressure is indicated, check tank selector position to be sure it is on a tank containing fuel.

When power is restored:
Carburetor heat ..... OFF
Electric fuel pump ..... OFF
If power is not restored prepare for power off landing.
Trim for 69 KIAS

POWER OFF LANDING

Trim for best gliding angle - 69 KIAS (Air Cond. OFF).
Locate suitable field.
Establish spiral pattern.
1000 ft. above field at downwind position for normal landing approach.

Touchdowns should normally be made at lowest possible airspeed with full flaps.

When committed to landing:
Ignition ..... OFF
Master switch ..... OFF
Fuel selector ..... OFF
Mixture ..... idle cut-off
Seat belt and harness ..... tight

FIRE IN FLIGHT

Source of fire ..... check

Electrical fire (smoke in cabin):
Master switch ..... OFF
Vents ..... open
Cabin heat ..... OFF
Land as soon as practicable.

Engine fire:
Fuel selector ..... OFF
Throttle ..... CLOSED
Mixture ..... idle cut-off
Electric fuel pump ..... OFF
Heater ..... OFF (in all cases of fire)
Defroster ..... OFF (in all cases of fire)
Proceed with POWER OFF LANDING Procedure.

3.5 AMPLIFIED EMERGENCY PROCEDURES (GENERAL)

The following paragraphs are presented to supply additional information for the purpose of providing the pilot will a more complete understanding of the recommended course of action and probable cause of an emergency situation.

3.7 ENGINE FIRE DURING START

Engine fires during start are usually the result of overpriming. The first attempt to extinguish the fire is to try to start the engine and draw the excess fuel back into the induction system.

If a fire is present before the engine has started, move the mixture control to idle cut-off, open the throttle and crank the engine. This is an attempt to draw the fire back into the engine.

If the engine has started, continue operating to try to pull the fire into the engine.

In either case (above), if fire continues more than a few seconds, the fire should be extinguished by the best available external means.

The fuel selector valves should be "OFF" and the mixture at idle cut-off if an external fire extinguishing method is to be used.

3.9 ENGINE POWER LOSS DURING TAKEOFF

The proper action to be taken if loss of power occurs during takeoff will depend on the circumstances of the particular situation.

If sufficient runway remains to complete a normal landing, land straight ahead.

If insufficient runway remains, maintain a safe airspeed and make only a shallow turn if necessary to avoid obstructions. Use of flaps depends on the circumstances. Normally, flaps should be fully extended for touchdown.

If sufficient altitude has been gained to attempt a restart, maintain a safe airspeed and switch the fuel selector to another tank containing fuel. Check the electric fuel pump to insure that it is "ON" and that the mixture is "RICH." The carburetor heat should be "ON."

If engine failure was caused by fuel exhaustion, power will not be regained after switching fuel tanks until the empty fuel lines are filled. This may require up to ten seconds.

If power is not regained, proceed with the Power Off Landing procedure (refer to the emergency check list and paragraph 3.13).

BEFORE STARTING ENGINE

Parking brake ..... set
Carburetor heat ..... full COLD
Fuel selector ..... desired tank

STARTING ENGINE WHEN COLD

Throttle ..... 1/4" open
Master switch ..... ON
Electric fuel pump ..... ON
Mixture ..... full RICH
Starter ..... engage
Throttle ..... adjust
Oil pressure ..... check

If engine does not start within 10 sec. prime and repeat starting procedure.

STARTING ENGINE WHEN HOT

Throttle ..... 1/2" open
Master switch ..... ON
Electric fuel pump ..... ON
Mixture ..... full RICH
Starter ..... engage
Throttle ..... adjust
Oil pressure ..... check

STARTING ENGINE WHEN FLOODED

Throttle ..... open full
Master switch ..... ON
Electric fuel pump ..... OFF
Mixture ..... idle cut-off
Starter ..... engage
Mixture ..... advance
Throttle ..... retard
Oil pressure ..... check

STARTING WITH EXTERNAL POWER SOURCE

Master switch ..... OFF
All electrical equipment ..... OFF
Terminals ..... connect
External power plug ..... insert in fuselage
Proceed with normal start
Throttle ..... lowest possible RPM
External power plug ..... disconnect from fuselage
Master switch ..... ON - check ammeter
Oil pressure ..... check

WARM-UP

Throttle ..... 800 to 1200 RPM

TAXIING

Chocks ..... removed
Taxi area ..... clear
Parking brake ..... released
Throttle ..... apply slowly
Brakes ..... check
Steering ..... check

GROUND CHECK

Parking brake ..... set
Throttle ..... 2000 RPM
Magnetos ..... max. drop 175 RPM
-max. diff. 50 RPM
Vacuum ..... 5.0" Hg. ± .1
Oil temp ..... check
Oil pressure ..... check
Air conditioner ..... check
Annunciator panel ..... press-to-test
Carburetor heat ..... check
Engine is warm for takeoff when throttle can be opened without engine faltering.
Electric fuel pump ..... OFF
Fuel pressure ..... check
Throttle ..... retard

4.13 STARTING ENGINE

(a) Starting Engine When Cold

Open the throttle lever approximately 1/4 inch. Turn "ON" the master switch and the electric fuel pump.

Move the mixture control to full "RICH" and engage the starter by rotating the magneto switch clockwise and pressing in. When the engine fires, release the magneto switch, and move the throttle to the desired setting.

If the engine does not fire within five to ten seconds, disengage the starter, prime the engine and repeat the starting procedure.

(b) Starting Engine When Hot

Open the throttle approximately 1/2 inch. Turn "ON" the master switch and the electric fuel pump. Move the mixture control lever to full RICH and engage the starter by rotating the magneto switch clockwise and pressing in. When the engine fires, release the magneto switch and move the throttle to the desired setting.

(c) Starting Engine When Flooded

The throttle lever should be full "OPEN." Turn "ON" the master switch and turn "OFF" the electric fuel pump. Move the mixture control lever to idle cut-off and engage the starter by rotating the magneto switch clockwise and pressing in. When the engine fires, release the magneto switch, advance the mixture and retard the throttle.

(d) Starting Engine With External Power Source

An optional feature called the Piper External Power (PEP) allows the operator to use an external battery to crank the engine without having to gain access to the airplane's battery.

Turn the master switch OFF and turn all electrical equipment OFF. Connect the RED lead of the PEP kit jumper cable to the POSITIVE (+) terminal of an external 12-volt battery and the BLACK lead to the NEGATIVE (-) terminal. Insert the plug of the jumper cable into the socket located on the fuselage. Note that when the plug is inserted, the electrical system is ON. Proceed with the normal starting technique.

After the engine has started, reduce power to the lowest possible RPM, to reduce sparking, and disconnect the jumper cable from the aircraft. Turn the master switch ON and check the alternator ammeter for an indication of output. DO NOT ATTEMPT FLIGHT IF THERE IS NO INDICATION OF ALTERNATOR OUTPUT.

NOTE

For all normal operations using the PEP jumper cables, the master switch should be OFF, but it is possible to use the ship's battery in parallel by turning the master switch ON. This will give longer cranking capabilities, but will not increase the amperage.

CAUTION

Care should be exercised because if the ship's battery has been depleted, the external power supply can be reduced to the level of the ship's battery. This can be tested by turning the master switch ON momentarily while the starter is engaged. If cranking speed increases, the ship's battery is at a higher level than the external power supply.

When the engine is firing evenly, advance the throttle to 800 RPM. If oil pressure is not indicated within thirty seconds, stop the engine and determine the trouble. In cold weather it will take a few seconds longer to get an oil pressure indication. If the engine has failed to start, refer to the Lycoming Operating Handbook, Engine Troubles and Their Remedies.

Starter manufacturers recommend that cranking periods be limited to thirty seconds with a two minute rest between cranking periods. Longer cranking periods will shorten the life of the starter.