Emergency Procedures
Piper Cherokee 180

Emergency Procedures

GROUND OPERATIONS
ENGINE FIRE DURING START
Engine fires during Start are usually the result of over priming. The procedures below are designed to draw the excess fuel back into the induction system:

1. STARTER – CONTINUE TO CRANK ENGINE
2. THROTTLE – OPEN
3. MIXTURE – IDLE CUT-OFF
4. ELECTRIC FUEL PUMP – OFF
5. FUEL SELECTOR – OFF (if time allows)
6. ABANDON AIRCRAFT IF FIRE CONTINUES

TAKE OFF
ENGINE POWER LOSS DURING TAKE-OFF
The proper action to be taken if loss of power occurs during take-off will depend on circumstances.

1. If sufficient runway remains for a normal landing, straight ahead.
2. If insufficient runway remains, maintain a same airspeed and make only shallow turn to avoid obstructions. Use of flaps depends on circumstances. Normally, flaps should be fully extend for touchdown.
3. If you have gained sufficient altitude to attempt a restart, proceed as follows: a. MAINTAIN SAFE AIRSPEED
   b. FUEL SELECTOR – SWITCH TO ANOTHER TANK CONTAINING FUEL.
   c. ELECTRIC FUEL PUMP – CHECK ON
   d. MIXTURE – CHECK RICH
   e. CARBURETOR HEAT – ON

NOTE
If engine failure was caused by fuel exhaustion, power will not be regained after tanks are switched until empty fuel line are filled, which may require up to ten seconds.

If power is not regained, proceed with the POWER OFF LANDING procedure.
IN FLIGHT
ENGINE POWER LOSS IN-FLIGHT
Complete engine power loss is usually caused by fuel flow interruption, and power will be restored shortly after fuel flow is restored. If power loss occurs at low altitude the first step is to prepare for an emergency landing. (See POWER OFF LANDING). Maintain airspeed of at least 80 MPH IAS, and if altitude permits, proceed as follows:

1. Fuel selector – switch to another tank containing fuel
2. Electric fuel pump – ON
3. Mixture – Rich
4. Carburetor heat – ON
5. Engine gauges – check for an indication of the cause of power loss
6. Primer – Checked LOCKED
7. If no fuel pressure is indicated, check tank selector position to be sure it is on a tank containing fuel.

When power is restored
8. Carburetor heat – OFF
9. Electric fuel pump – OFF

If the above steps do not restore power, prepare for an emergency landing in time permits:

1. Ignition switch – “L” then “R” then back to “BOTH”
2. Throttle and mixture – Different settings (This may restore power if problem is too rich or too lean a mixture, or partial fuel system restriction)
3. Try another fuel tank – (water in the fuel could take some time to be used up, and allowing the engine to windmill may restore power. If power loss is due to water, fuel pressure indications will be normal).

NOTE
If engine failure was caused by fuel exhaustion, power will not be regained after tanks are switched until empty fuel lines are filled, which may require up to ten seconds. If power is not regained, proceed with the POWER OFF LANDING procedure.

POWER OFF LANDING
If loss of power occurs at altitude, trim the aircraft for best gliding angle (80 MPH IAS) and look for a suitable field. If measures taken to restore power are not effective, and if trim permits, check your charts for airports in the immediate vicinity; it may be possible to land at one if you have sufficient altitude. If possible, notify the FAA by radio of your difficulty and intentions. If another pilot or passenger is aboard let them help.

When you have located a suitable field, establish a spiral pattern around this field. Try to be at 1000 feet above the field at the downwind position, to make a normal approach. Excess altitude may be lost by widening your pattern, using flaps or slipping, or a combination of these. Touchdowns should normally be made at the lowest possible airspeed, with full flaps.

When committed to landing:
1. Ignition – OFF
2. Master switch – OFF
3. Fuel selector – OFF
4. Mixture – Idle cutoff
5. Seat belt (and harness is available) – Tight

FIRE
There is no fire detection system on the aircraft. The presence of fire is noted through smoke, smell, and heat in the cabin. It is essential that the source of the fire be promptly identified through instrument readings, character of the smoke, or other indications, since the action to be taken differs somewhat in each case.

1. Source of fire – CHECK
   Electrical Fire (smoke in cabin) 2. Master switch – OFF
3. Vents – OPEN
4. Cabin heat – OFF
5. Land as soon as practicable
Emergency Procedures

**Engine fire:**
1. Mixture control – Idle cutoff
2. Fuel Selector – Off
3. Electric fuel pump – Check off
4. Master switch – OFF
5. Magneto switch - OFF
6. Throttle – Closed
7. Dive to blow out fire (if altitude permits) Proceed with POWER OFF LANDING procedure

**LOSS OF OIL PRESSURE**
Loss of oil pressure may be either partial or complete. A partial loss of oil pressure usually indicates a malfunction in the oil pressure regulating system, and a landing should be made as soon as possible to investigate the cause, and prevent engine damage.

A complete loss of oil pressure indication may signify oil exhaustion or may be the result of a faulty gauge. In either case, proceed toward the nearest airport, and be prepared for a forced landing. If the problem is not a pressure gauge malfunction, the engine may stop suddenly. Maintain altitude until such time as a dead stick landing can be accomplished. Don’t change power settings unnecessarily, as this may hasten complete power loss.

Depending of the circumstances, it may be advisable to make an off airport landing while power is still available, particulary if other indications of actual oil pressure loss, such as sudden increase in temperatures, or oil smoke, are apparent, and an airport is not close.

If engine stoppage occurs, proceed to POWER OFF LANDING
1. Electric boost pump – ON
2. Fuel selector – CHECK on full tank
   - If problem is not an empty fuel tank, land as soon as practicable, and have engine driven fuel pump checked.

**HIGH OIL TEMPERATURE**
An anormally high oil temperature indication may be caused by a low oil level, an obstruction in the oil cooler, damaged or improper baffle seals, a defective gauge or other causes. Land as soon as practicable at an appropriate airport and have the cause investigated. A steady rapid rise in oil temperature is a sign of trouble. Land at the nearest airport and let a mechanic investigate the problem. Watch the oil pressure gauge for an accompanying loss of pressure.

**ALTERNATOR FAILURE**
Loss of alternator output is detected through a zero reading on the ammeter. Before executing the following procedure, insure that be reading is zero and not merely low by actuating an electrically powered device, such as the landing light. If no increase in the ammeter reading is noted, alternator can be assumed.
1. Reduce electrical load.
2. alternator circuit breakers – Check
3. “Alt” switch – OFF (for 30 seconds), then on.

If the amperimeter continues to indicate no output or alternator will not stay reset, turn off “Alt” switch, maintain minimum electrical load and land as soon as practical. All electrical load is being supplied by the battery.
Piper Cherokee 180

Emergency Procedures

ENGINE ROUGHNESS

Engine roughness is usually due to carburetor icing, and may be accompanied by a slight loss of airspeed or altitude. If too much ice is allowed to accumulate, restoration of full power may not be possible; therefore, prompt action is required.

1. Carburetor heat-ON (see note). RPM will decrease slightly and roughness will increase. Wait for a decrease in engine roughness or an increase in RPM, indicating ice removal. If no change in approximately one minute, return carburetor heat to COLD. If the engine is still rough, try steps below.
2. Mixture – Adjust for maximum smoothness. Engine will run rough if too rich or too lean.
3. Electric fuel pump – ON
4. Fuel selector – change to other tank to see if fuel contaminations is the problem.
5. Engine gauges – Check for a normal readings. If any gauge readings are abnormal proceed accordingly.
6. Magneto switch – “L” then “R”, then back to “BOTH”. If operations is satisfactory or either magneto, proceed on that magneto at reduced power, with mixture full rich, to a landing at the first available airport.

If roughness persists, prepare for a precautionary landing at pilots discretion

NOTE
Partial carburetor heat may be worse than no heat at all, since it may partially melt ice, which will refreeze in the intake system. When using carburetor heat, therefore always, use full heat, and when ice is removed return the control to the full cold position.

SPINS
Internationals spins are prohibited in the normal category airplane. For approved maneuvers as utility category airplane, refer to the flight manual.

1. THROTTLE – IDLE
2. RUDDER – FULL OPPOSITE TO DIRECTION OF ROTATION
3. CONTROL WHEEL – FULL FORWARD
4. RUDDER – NEUTRAL (when rotation stop)
5. CONTROL WHEEL – AS REQUIRED TO SMOOTHLY REGAIN LEVEL FLIGHT ATTITUDE

OPEN DOOR

The cabin on the Cherokee is double latched, so the chances of it springing open in flight at both the top and bottom are remote. However, should you forget the upper latch, or not fully engage the lower latch; the door may spring partially open. This will usually happen at take-off or soon afterward. An open door will not affect normal flight characteristics, and a normal landing can be made with the door open.

If both upper and lower latches open, the door will trail slightly open, and airspeed will be reduced slightly.

To close the door in flight, proceed as follows:
1. Slow aircraft to 100 MPH IAS
2. Cabin Vents – Close
3. Storm window – Open
4. If upper latch is open – Latch. If lower latch is open – open top latch. Push door further open, and then close rapidly. Latch.

A slip in the direction of the open will assist in latching procedure.