

SECTION 3
EMERGENCY PROCEDURES

3.1 GENERAL

The recommended procedures for coping with various types of emergencies and critical situations are provided by this section. All of the required (FAA regulations) emergency procedures and those necessary for operation of the airplane as determined by the operating and design features of the airplane are presented.

Emergency procedures associated with those optional systems and equipment which require handbook supplements are provided in Section 9 (Supplements).

The first portion of this section consists of an abbreviated emergency check list which supplies an action sequence for critical situations with little emphasis on the operation of systems.

The remainder of the section is devoted to amplified emergency procedures containing additional information to provide the pilot with a more complete understanding of the procedures.

These procedures are suggested as a course of action for coping with the particular condition described, but are not a substitute for sound judgment and common sense. Pilots should familiarize themselves with the procedures given in this section and be prepared to take appropriate action should an emergency arise.

Most basic emergency procedures, such as power off landings, are a normal part of pilot training. Although these emergencies are discussed here, this information is not intended to replace such training, but only to provide a source of reference and review, and to provide information on procedures which are not the same for all aircraft. It is suggested that the pilot review standard emergency procedures periodically to remain proficient in them.

3.3 EMERGENCY PROCEDURES CHECK LIST**ENGINE FIRE DURING START**

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

ENGINE POWER LOSS DURING TAKEOFF

If sufficient runway remains for a normal landing, leave gear down and land straight ahead.

If area ahead is rough, or if it is necessary to clear obstructions:

Gear selector switch UP
 Emergency gear lever (aircraft equipped
 with backup gear extender) locked in OVERRIDE
 ENGAGED position

If sufficient altitude has been gained to attempt a restart:

Maintain safe airspeed.

Fuel selector switch to tank
 containing fuel
 Auxiliary fuel pump unlatch, HI
 Mixture check RICH
 Alternate air OPEN
 Emergency gear lever as required
 If power is not regained, proceed with power off landing.

ENGINE POWER LOSS IN FLIGHT

Fuel selector switch to tank
 containing fuel
 Auxiliary fuel pump unlatch, HI
 Mixture RICH
 Alternate air OPEN
 Engine gauges check for indication
 of cause of power loss

If no fuel pressure is indicated, check tank selector position to be sure it is on a tank containing fuel.

When power is restored:

Alternate air CLOSED
Auxiliary fuel pump OFF

If power is not restored prepare for power off landing.

Trim for 97 KIAS.

POWER OFF LANDING

On aircraft equipped with the backup gear extender, lock emergency gear lever in **VERRIDE ENGAGED** position before airspeed drops to 106 KIAS to prevent the landing gear from free falling.

Trim for 97 KIAS.

Locate suitable field.

Establish spiral pattern.

1000 ft. above field at downwind position for normal landing approach.

When field can easily be reached slow to 75 KIAS for shortest landing.

GEAR DOWN EMERGENCY LANDING

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

When committed to landing:

Landing gear selector Down
Throttle close
Mixture idle cut-off
Ignition OFF
Master switch OFF
Fuel selector OFF
Seat belt and harness tight

GEAR UP EMERGENCY LANDING

In the event a gear up landing is required, proceed as follows:

Flaps as desired
Throttle close
Mixture idle cut-off
Ignition switches OFF
Master switch OFF
Fuel selector OFF
Seat belt and harness tight
Contact surface at minimum possible airspeed.

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

Auxiliary fuel pump check OFF

Heater and defroster OFF

Proceed with power off landing procedure.

LOSS OF OIL PRESSURE

Land as soon as possible and investigate cause.

Prepare for power off landing.

LOSS OF FUEL PRESSURE

Auxiliary fuel pump unlatch, HI

Fuel selector check on full tank

ENGINE DRIVEN FUEL PUMP FAILURE

Throttle retard

Auxiliary fuel pump unlatch, HI

Throttle reset (75% power or below)

CAUTION

If normal engine operation and fuel flow is not immediately re-established, the auxiliary fuel pump should be turned off. The lack of a fuel flow indication while in the HI auxiliary fuel pump position could indicate a leak in the fuel system, or fuel exhaustion.

CAUTIONS

DO NOT actuate the auxiliary fuel pump unless vapor suppression is required (LO position) or the engine-driven fuel pump fails (HI position). The auxiliary pump has no standby function. Actuation of the HI switch position when the engine is operating normally may cause engine roughness and/or power loss.

If the auxiliary fuel pump switch or primer switch fails causing the auxiliary fuel pump to be activated in the HI mode while the engine-driven fuel pump is operating normally, engine roughness and/or power loss could occur. Should this condition exist, pull out the fuel pump pull-type circuit breaker, if so equipped, or shut off the master switch.

HIGH OIL TEMPERATURE

Land at nearest airport and investigate the problem.
Prepare for power off landing.

ELECTRICAL FAILURES

ALT annunciator light illuminated

Ammeter check to verify
inop. alt.

If ammeter shows zero

ALT switch OFF

Reduce electrical loads to minimum

ALT circuit breaker check and reset
as required

ALT switch ON

If power not restored

ALT switch OFF

If alternator output cannot be restored, reduce electrical loads and land as soon as practical. The battery is the only remaining source of electrical power.

ELECTRICAL OVERLOAD (alternator over 20 amps above known electrical load)

FOR AIRPLANES WITH INTERLOCKED BAT AND ALT SWITCH OPERATION

Electrical load reduce

If alternator loads are not reduced

ALT switch OFF

Land as soon as practical. The battery is the only remaining source of power. Anticipate complete electrical failure.

FOR AIRPLANES WITH SEPARATE BAT AND ALT SWITCH OPERATION

ALT switch ON

BAT switch OFF

If alternator loads are reduced

Electrical load reduce to minimum

Land as soon as practical.

NOTE

Due to increased system voltage and radio frequency noise, operation with ALT switch ON and BAT switch OFF should be made only when required by an electrical system failure.

If alternator loads are not reduced

ALT switch OFF
BAT switch as required

Land as soon as possible. Anticipate complete electrical failure.

NOTE

If the battery is depleted, the landing gear must be lowered using the emergency extension procedure. The gear position lights will be inoperative.

PROPELLER OVERSPEED

Throttle retard
Oil pressure check
Prop control full DECREASE rpm,
then set if any
control available
Airspeed reduce
Throttle as required to remain
below 2575 rpm

EMERGENCY LANDING GEAR EXTENSION

Prior to emergency extension procedure:

Master switch check ON
Circuit breakers check
Panel lights OFF (in daytime)
Gear indicator bulbs check

If landing gear does not check down and lock:

Airspeed reduce below 88 KIAS
Landing gear selector switch gear DOWN position

If gear has failed to lock down on aircraft equipped with the backup gear extender, raise emergency gear lever to **VERRIDE ENGAGED** position.

If gear has still failed to lock down, move emergency lever to "Emergency Down" position.

If gear has still failed to lock down, yaw the airplane abruptly from side to side with the rudder.

If the nose gear will not lock down using the above procedure, slow the aircraft to the lowest safe speed attainable using the lowest power setting required for safe operation and accomplish the following:

Emergency gear lever (aircraft equipped

with backup gear extender) OVERRIDE ENGAGED

Landing gear selector switch gear DOWN position

If landing gear does not check down, recycle gear through up position, and then select gear DOWN.

SPIN RECOVERY

Rudder full opposite to
direction of rotation

Control wheel full forward while
neutralizing ailerons

Throttle idle

Rudder neutral (when rotation stops)

Control wheel as required to smoothly
regain level flight attitude

OPEN DOOR

If both upper and side latches are open, the door will trail slightly open and airspeeds will be reduced slightly.

To close the door in flight:

Slow airplane to 87 KIAS.

Cabin vents close

Storm window open

If upper latch is open latch

If side latch is open pull on armrest while
moving latch handle to
latched position

If both latches are open latch side latch
then top latch

EMERGENCY DESCENT

A malfunction of the oxygen system requires an immediate descent to an altitude at or below 12,500 feet.

NOTE

Time of useful consciousness at 20,000 ft. is approximately 10 minutes. In the event an emergency descent becomes necessary, **CLOSE** the throttle and move the propeller control full **FORWARD**. Adjust the mixture control as necessary to attain smooth operation. Extend the landing gear and flaps at 103 KIAS and maintain this airspeed.