

ENGINE FAILURE TAKEOFF ROLL

- 1. THROTTLE.....IDLE
- 2. BRAKES.....APPLY
- 3. WING FLAPS.....RETRACT
- 4. MIXTURE.....IDLE/CUTOFF
- 5. IGNITION SWITCH.....OFF
- 5. MASTER.....OFF

ENGINE FAILURE – IMMEDIATE AFTER TAKEOFF

- 1. AIRSPEED..70KIAS (flaps up) 65 KIAS (flaps down)
- 2. MIXTURE.....IDLE CUT OFF
- 3. FUEL SHUTOFF VALVE.....OFF (pull full out)
- 4. IGNITION SWITCH.....OFF
- 5. WING FLAPS.....AS REQUIRED
- 6. MASTER SWITCH.....OFF
- 7. CABIN DOOR.....UNLATCHED
- 8. LAND.....STRAIGHT AHEAD

ENGINE FAILURE DURING FLIGHT

(RESTART PROCEDURES)

- 1. AIRSPEED.....68 KIAS
- 2. FUEL SHUTOFF VALVE.....ON
- 3. FUEL SELECTOR VALVE.....BOTH
- 4. AUX FUEL PUMP SWITCH.....ON
- 5. MIXTURERICH (if restart has not occurred)
- 6. IGNITION SWITCH...BOTH (or START if propeller is stopped)

ENGINE FIRE IN FLIGHT

- 1. MIXTURE.....IDLE CUT OFF
- 2. FUEL SHUTOFF VALVE.....PULL OUT (OFF)
- 3. AUX FUEL PUMP SWITCH.....OFF
- 4. MASTER SWITCH.....OFF
- 5. CABIN HEAT AND AIR.....OFF (except overhead vents)
- 6. AIRSPEED.....100 KIAS
(if fire is not extinguished, increase glide speed to find an airspeed within airspeed limitations – which will provide an incombustible mixture)
- 7. FORCED LANDING – EXECUTE (as described in Emergency Landing Without Engine Power)

ELECTRICAL FIRE IN FLIGHT

- 1. MASTER SWITCH.....OFF
- 2. VENTS, CABIN AIR, HEATCLOSED
- 3. FIRE EXTINGUISHER.....ACTIVATE
- 4. AVIONICS MASTER.....OFF
- 5. ALL OTHER SWITCHES (except ignition switch) OFF

WARNING

AFTER DISCHARGING FIRE EXTINGUISHER AND ASCERTAINING THAT FIRE HAS BEEN EXTINGUISHED VENTILATE THE CABIN

ELECTRICAL FIRE IN FLIGHT

continued

- 6. VENTS/CABIN AIR/HEAT.....OPEN
When it is ascertained that fire is completely extinguished - If fire has been extinguished and electrical power is necessary for continuance of flight to nearest airport or landing area.
- 7. MASTER SWITCH.....ON
- 8. CIRCUIT BREAKERS.....CHECK for faulty circuit (do not reset)
- 9. RADIO SWITCHES.....OFF
- 10. AVIONICS MASTER SWITCH.....ON
- 11. RADIO/ELECTRICAL SWITCHES – ON one at a time, with delay after each until short circuit is localized.

CABIN FIRE

- 1. MASTER SWITCH.....OFF
- 2. VENTS/CABIN AIR/HEAT.....CLOSED
- 3. FIRE EXTINGUISHER.....ACTIVATE
ONCE FIRE IS OUT – VENTILATE CABIN
- 4. VENTS/CABIN AIR/HEAT.....OPEN
- 5. LAND THE AIRPLANE AS SOON AS POSSIBLE

ENGINE FIRE DURING START ON THE GROUND

- 1. IGNITION SWITCH START - CONTINUE CRANKING to get a start which would suck the flames and accumulated fuel into the engine.

If engine starts:

- 2. POWER.....1800 rpm (for a few minutes)
- 3. ENGINE.....SHUTDOWN (and inspect for damage)

If engine fails to start:

- 4. THROTTLE.....FULL OPEN
- 5. MIXTURE.....IDLE CUT OFF
- 6. CRANKING.....CONTINUE
- 7. FUEL SHUTOFF VALVE.....OFF (pull full out)
- 8. AUX FUEL PUMP.....OFF
- 9. FIRE EXTINGUISHER.....ACTIVATE
- 10. ENGINE.....SECURE
 - a. MASTER SWITCH.....OFF
 - b. IGNITION SWITCH.....OFF
- 11. PARKING BRAKE.....RELEASE
- 12. AIRPLANE.....EVACUATE
- 13. FIRE.....EXTINGUISH
- 14. FIRE DAMAGE.....INSPECT

WING FIRE

- 1. LANDING/TAXI LIGHT SWITCHES.....OFF
 - 2. NAVIGATION LIGHT SWITCH.....OFF
 - 3. STROBE LIGHT SWITCH.....OFF
 - 4. PITOT HEAT SWITCH.....OFF
- Perform a sideslip to keep the flames away from the fuel tank and Cabin. Land as soon as possible using flaps only as required for final approach and touchdown

FORCED LANDING EMERGENCY**WITHOUT ENGINE POWER**

1. PASSENGER SEAT BACKS.....MOST UPRIGHT
2. SEAT BELTS/SHOULDER HARNESSSES... SECURE
3. AIRSPEED....70KIAS (flaps up) 65KIAS (flaps down)
4. MIXTURE.....IDLE/CUTOFF
5. FUEL SELECTOR VALVE.....OFF
6. IGNITION SWITCH.....OFF
7. WING FLAPS.....AS REQ.....(30° recommended)
8. MASTER SWITCH.....OFF (landing assured)
9. DOORS.....UNLATCHED (prior to landing)
10. TOUCHDOWN.....SLIGHTLY TAIL LOW
11. BRAKES.....APPLY HEAVILY

LOW OIL PRESSURE

1. IF A TOTAL LOSS OF OIL PRESSURE IS ACCOMPANIED BY A RISE IN OIL TEMPERATURE, THERE IS GOOD REASON TO SUSPECT AN ENGINE FAILURE IS IMMINENT.
2. REDUCE ENGINE POWER IMMEDIATELY AND SELECT A SUITABLE FORCED LANDING FIELD. USE ONLY THE MINIMUM POWER REQUIRED TO REACH THE DESIRED TOUCHDOWN SPOT

ENGINE ROUGHNESS

1. ENGINE INSTRUMENTS.....CHECK
 2. FUEL SELECTOR.....OTHER TANK
 3. MIXTURE.....RE-ADJUST FOR SMOOTH OPERATIONS
 4. MAGNETO/STARTER....SELECT **R** OR **L** OR **BOTH**
IF ROUGHNESS DISAPPEARS ON SINGLE MAGNETO,
MONITOR POWER AND CONTINUE ON SELECTED
MAGNETO
- SEE POH FOR POWER LOSS AND ROUGH ENGINE WARNINGS
5. THROTTLE.....REDUCE
CHECK TO SEE IF A LESSER THROTTLE SETTING CAUSES
ROUGHNESS TO DECREASE
- IF SEVERE ENGINE ROUGHNESS CANNOT BE ELIMINATED
LAND AS SOON AS PRACTICABLE.

ALTERNATOR OVERVOLTAGE**(ammeter shows overcharge)**

1. ALTERNATOR SWITCH.....OFF
2. NON-ESSENTIAL EQUIPMENT.....OFF
3. LAND AS SOON AS PRACTICABLE.

LOW VOLTAGEIllumination of the low voltage (VOLTS) annunciator
In flight

1. AVIONICS MASTER.....OFF
2. ALTERNATOR CIRCUIT BREAKER.. CHECK IN
3. MASTER SWITCH.....(both sides) OFF
4. MASTER SWITCH.....ON
5. LOW VOLTAGE ANNUNCIATOR ...CHECK OFF
6. AVIONICS.MASTER.....ON

IF VOLTS ANNUNCIATOR ILLUMINATES AGAIN
7. ALTERNATOR.....OFF**AIRSPEEDS**

Engine Failure after Takeoff

Wing Flaps up.....70 KIAS
Wing Flaps down.....65 KIAS

Maneuvering Speed:

2550 Lbs.....105 KIAS
2200 Lbs.....98 KIAS
1900 Lbs.....90 KIAS

Max Glide (Vg).....68 KIAS

Precautionary Landing with Engine Power...65 KIAS

Landing Without Engine Power

Wing Flaps Up.....70 KIAS
Win Flaps Down.....65 KIAS**NOTE – INTENTIONAL SPINS PROHIBITED**