

ENGINE FIRE DURING START

- STARTER CRANK ENGINE
- MIXTURE IDLE CUT-OFF
- THROTTLE OPEN
- ELECTRIC FUEL PUMP OFF
- FUEL SELECTOR OFF
- Abandon aircraft if fire continues

ENGINE POWER LOSS DURING TAKEOFF (Not airborne)**▶ if sufficient runway**

- THROTTLE CLOSE immediately
- BRAKES APPLY as required
- AIRCRAFT STOP straight ahead

▶ if insufficient runway

- THROTTLE CLOSE immediately
- BRAKES APPLY as required
- MIXTURE IDLE CUT-OFF
- FUEL SELECTOR OFF
- MASTER SWITCH OFF
- MAGNETOS OFF
- Maintain directional control and manoeuver to avoid obstacles

ENGINE POWER LOSS DURING TAKEOFF (If airborne)**▶ if sufficient runway**

- AIRSPEED MAINTAIN above stall
- DIRECTIONAL CONTROL MAINTAIN
- AIRCRAFT LAND straight ahead

▶ if insufficient runway

- AIRSPEED MAINTAIN above stall
- THROTTLE CLOSE
- MIXTURE IDLE CUT-OFF
- FUEL SELECTOR OFF
- MASTER SWITCH OFF
- MAGNETOS OFF
- FLAPS As situation requires
- DIRECTIONAL CONTROLS MAINTAIN
- Make only shallow turns to avoid obstacles

ENGINE POWER LOSS DURING TAKEOFF (If airborne)**▶ if sufficient altitude to attempt restart**

- SAFE AIRSPEED Maintain
- FUEL SELECTOR SWITCH to other tank containing fuel
- ELECTRIC FUEL PUMP ON
- MIXTURE RICH
- CARBURETOR HEAT ON
- If power is not regained proceed with **POWER OFF LANDING**

ENGINE POWER LOSS IN FLIGHT

- FUEL SELECTOR SWITCH to other tank containing fuel
- ELECTRIC FUEL PUMP ON
- MIXTURE RICH
- CARBURETOR HEAT ON
- ENGINE GAUGES Check for indication of cause
- PRIMER LOCKED
- If no fuel pressure indicated check fuel selector is on a tank containing fuel

▶ if power has not been restored

- IGNITION SWITCH L then R then back to BOTH
- THROTTLE and MIXTURE TRY different settings

▶ when power is restored

- CARBURETOR HEAT OFF
- ELECTRIC FUEL PUMP OFF

▶ if power cannot be restored

- Trim to VBest glide 85 KIAS and prepare for **POWER OFF LANDING**

POWER OFF LANDING

- TRIM to best Glide Angle (85 KIAS)
- LOCATE suitable airfield.
- ESTABLISH spiral pattern.
- 1000ft above airfield at downwind position for normal landing approach.
- When field can easily be reached SLOW to 72 KIAS for shortest landing.
- Touchdown 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 BELTS AND HARNESSSES Tight

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FIRE IN FLIGHT

- SOURCE OF FIRE CHECK

▶ ENGINE FIRE

- FUEL SELECTOR OFF
- THROTTLE CLOSE
- MIXTURE IDLE CUT-OFF
- ELECTRIC FUEL PUMP OFF
- CABIN HEAT OFF
- DEFROSTER OFF
- Prepare for **POWER OFF LANDING**

▶ ELECTRICAL FIRE (smoke in cabin)

- MASTER SWITCH OFF
- CABIN HEAT OFF
- DEFROSTER OFF
- VENTS OPEN to clear cabin
- Land as soon as practicable **(ASAP)**

LOSS OF FUEL PRESSURE

- ELECTRIC FUEL PUMP ON
- FUEL SELECTOR Check on full tank

ELECTRICAL FAILURES

▶ ALT annunciator light illuminated

- AMMETER Check to verify inoperative Alternator

▶ 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 **(ASAP)**.
- The battery is the only remaining source of electrical power

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▶ ELECTRICAL OVERLOAD (Alternator over 20 amps above known electrical load)

- ALT SWITCH ON
- BATT SWITCH OFF

▶ if alternator loads are reduced

- ELECTRICAL LOAD Reduce to minimum

- Land as soon as practical **(ASAP)**

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

▶ if alternator loads are not reduced

- ALT SWITCH OFF
- BATT SWITCH as required

- Land as soon as possible **(ASAP)**

- Anticipate **COMPLETE ELECTRICAL FAILURE**

LOSS OF OIL PRESSURE

- Land as soon as possible **(ASAP)** and investigate cause
- Prepare for **POWER OFF LANDING**

HIGH OIL TEMPERATURE

- Land at nearest airport and investigate the problem
- Prepare for **POWER OFF LANDING**

CARBURETOR ICING

- CARBURETOR HEAT ON
- MIXTURE ADJUST for maximum smoothness

ENGINE ROUGHNESS

- CARBURETOR HEAT ON

▶ if roughness continues after one minute

- CARBURETOR HEAT OFF
- MIXTURE ADJUST for maximum smoothness
- ELECTRIC FUEL PUMP ON
- FUEL SELECTOR SWITCH tanks
- ENGINE GAUGES Check
- MAGNETO SWITCH L then R then BOTH

- If operation is satisfactory on either one, continue on that magneto at reduced power and full RICH mixture to first airport **(ASAP)**

- Prepare for **POWER OFF LANDING**

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SPIN RECOVERY

- **RUDDER** **FULL OPPOSITE to direction of rotation**
- **CONTROL WHEEL** **FULL FORWARD**
while neutralizing ailerons
- **THROTTLE** **CLOSE**
- **RUDDER** **NEUTRAL (when rotation stops)**
- **CONTROL WHEEL** **As required to smoothly regain level flight attitude**

OPEN DOOR

- **If both upper and lower latches are open, the door will trail slightly open and airspeeds will be reduced slightly**
- **To close the door in flight: SLOW AIRPLANE to 83 KIAS**
- **CABIN VENTS** **CLOSE**
- **STORM WINDOW** **OPEN**
▶ if upper latch is open
- **UPPER LATCH** **LATCH**
▶ if side latch is open
PULL ON ARM REST while moving latch handle to latched position
▶ if both latches are open
LATCH side latch then LATCH top latch

PROPELLER OVERSPEED

- **THROTTLE** **RETARD**
- **OIL PRESSURE** **CHECK**
- **PROP CONTROL** **FULL DECREASE RPM**
then SET if any control available
- **AIRSPEED** **REDUCE**
- **THROTTLE** **AS REQUIRED to maintain below 2400RPM**

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AUTOPILOT MALFUNCTION / PITCH TRIM RUNAWAY

If the airplane deviates unexpectedly from the planned flight path:

1. Control Wheel **GRIP FIRMLY**
2. AP DISC / TRIM INT Button **PRESS AND HOLD**

CAUTION

Be prepared for high elevator control forces.

3. Aircraft Attitude **MAINTAIN / REGAIN AIRCRAFT CONTROL**
4. Elevator Trim **RE-TRIM** if necessary using Elevator Trim Control Wheel
5. Autopilot Circuit Breaker **PULL**

NOTE

Do not release the AP DISC / TRIM INT Button until after pulling the autopilot Circuit Breaker.

Pulling the autopilot circuit breaker will render the autopilot, yaw damper (if installed), and ESP inoperative.

6. AP DISC / TRIM INT Button **RELEASE**

WARNING

In flight, do not overpower the autopilot. The trim will operate in the direction opposing the overpower force, which will result in large out-of-trim forces.

Do not attempt to re-engage the autopilot or use manual electric pitch trim until the cause of the malfunction has been corrected.

AUTOPILOT FAILURE / ABNORMAL DISCONNECT

(Red AP in autopilot status box on display, continuous aural disconnect tone.)

1. AP DISC / TRIM INT Button or G5 Knob or G3X Autopilot Status bar **PRESS AND RELEASE**
(to cancel disconnect tone)
2. Aircraft Attitude **MAINTAIN / REGAIN AIRCRAFT CONTROL**

NOTE

The autopilot disconnect may be accompanied by a red AFCS in the autopilot status box, indicating the Automatic Flight Control System has failed. The flight director will not be available, and the autopilot cannot be re-engaged with this annunciation present.

If the disconnect is accompanied by an amber AP with a red X, the autopilot will not be available. However, the flight director will still be functional.

In the event of a GMC failure, pressing the G5 knob or G3X Autopilot Status bar will acknowledge the disconnect tone.

YAW AXIS FAILURE / ABNORMAL YAW DAMPER DISCONNECT

(Red YD in autopilot status box on display)

This procedure applies only if the optional yaw servo is installed:

1. AP DISC / TRIM INT Button, YD Button on GMC or G5 Knob **PRESS AND RELEASE**
(to acknowledge the disconnect)
2. Aircraft Attitude **MAINTAIN / REGAIN AIRCRAFT CONTROL**

NOTE

The yaw damper disconnect may be accompanied by an amber YD with a red X in the autopilot status box. The YD is inoperative and will not be available. The autopilot may be re-engaged and disengaged normally, but the yaw damper will remain inoperative.

PITCH TRIM FAILURE

(Red PTRIM on G5 or G3X display)

This procedure applies only if the optional pitch trim servo is installed:

1. Indicates a failure of the pitch trim servo.
2. Control Wheel GRIP FIRMLY
3. AP DISC / TRIM INT Button..... PRESS and RELEASE
(Be prepared for high elevator control forces)
4. Elevator Trim..... AS REQUIRED USING ELEVATOR TRIM CONTROL WHEEL

NOTE

The autopilot may be re-engaged. Refer to the normal procedures section of this AFMS, MANUAL PITCH TRIM WITH AUTOPILOT ENGAGED.

5. Yaw Damper ENGAGE AS REQUIRED

ESP ACTIVATION

1. Throttle..... AS REQUIRED
2. Aircraft Attitude..... MAINTAIN / REGAIN AIRCRAFT CONTROL

NOTE

If ESP is active for approximately 10 seconds, the autopilot will automatically engage in LVL mode, an aural 'ENGAGING AUTOPILOT' will be played (or a Sonalert tone will sound for installations without a supported audio panel), and the autopilot will roll the wings level and fly at zero vertical speed. Refer to Section 7, System Description for further information.

ESP will be disabled by pressing and holding the AP DISC / TRIM INT button. Releasing the button will allow ESP to function.

OVERSPEED PROTECTION (MAXSPD)

(MAXSPD displayed on G5 or G3X, AIRSPEED – AIRSPEED Aural sounds)

1. Throttle..... REDUCE
2. Aircraft Attitude and Altitude..... MONITOR

After overspeed condition is corrected:

3. Autopilot RESELECT VERTICAL AND LATERAL MODES (if necessary)
4. Throttle ADJUST as necessary

NOTE

Overspeed protection mode provides a pitch up command to decelerate the airplane to or below the maximum autopilot operating speed.

UNDERSPEED PROTECTION (MINSPD)

(MINSPD displayed on G5 or G3X, AIRSPEED – AIRSPEED Aural sounds)

1. Throttle..... INCREASE POWER AS REQUIRED TO CORRECT UNDERSPEED
2. Aircraft Attitude and Altitude..... MONITOR

After underspeed condition is corrected:

3. Autopilot RESELECT VERTICAL AND LATERAL MODES (if necessary)
4. Throttle ADJUST as necessary

NOTE

Autopilot Underspeed Protection Mode provides a pitch down command to maintain 71 KIAS.

AUTOPILOT PRE-FLIGHT TEST FAIL

(Amber AP with a red X in G5 or G3X autopilot status box)

1. Indicates the AFCS system failed the automatic Pre-Flight test.

NOTE

The autopilot, yaw damper (if installed), ESP, and electric elevator trim will be inoperative.

ELEVATOR MISTRIM

(Amber TRIM UP or TRIM DOWN displayed on the G5 or G3X)

This annunciation indicates a mistrim of the elevator while the autopilot is engaged. If an optional pitch trim servo is installed, the autopilot will normally trim the airplane as required. However, during rapid acceleration, deceleration, configuration changes, or near either end of the elevator trim limits, momentary illumination of this message may occur. If the autopilot is disconnected while this message is displayed, high elevator control forces are possible.

If the optional pitch trim servo is NOT installed:

1. Refer to the Normal Procedures section of this AFMS, MANUAL PITCH TRIM WITH AUTOPILOT ENGAGED.

If the optional pitch trim servo is installed:

WARNING

Do not attempt to overpower the autopilot in the event of a pitch mistrim. The autopilot servo will oppose pilot input and will cause pitch trim to run opposite the direction of pilot input. This will lead to a significant out-of-trim condition, resulting in large control wheel force when disengaging the autopilot.

NOTE

Momentary display of the TRIM UP or TRIM DOWN message during configuration changes or large airspeed changes is normal.

1. Control Wheel GRIP FIRMLY

WARNING

Be prepared for significant sustained control forces in the direction of the mistrim annunciation. For example, TRIM DOWN indicates nose down control wheel force will be required upon autopilot disconnect.

2. AP DISC / TRIM INT Button..... PRESS AND RELEASE
3. Manual Elevator Trim RE-TRIM as required

NOTE

Electric pitch trim should be considered inoperative until the cause of the mistrim has been investigated and corrected.