# SECTION 3
# EMERGENCY PROCEDURES

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**AMPLIFIED EMERGENCY PROCEDURES**

## INTRODUCTION

Section 3 provides the operational checklists and amplified procedures to deal with abnormal circumstances and emergencies which may occur on the ground or during flight. Emergencies due to airplane or engine malfunctions are very rare especially if proper preflight inspections, operating procedures, and airplane maintenance and care are adhered to. Other emergencies caused by enroute weather conditions can be avoided by careful planning of the flight, and by using good judgement should unfavourable weather conditions be encountered.

In any event, in order to be prepared for any such emergency, pilots should familiarize themselves with the basic guidelines of this section. Emergency procedures associated with the Emergency Locator Transmitter (ELT) and other optional systems will be found in Section 9.

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## AIRSPEEDS FOR EMERGENCY OPERATION

Engine Failure after Takeoff (Flaps 20°) ..... 70 KIAS

Maneuvering Speed ..... 114 KIAS

Maximum Glide (Flaps 0°)..... 75 KIAS

Precautionary Landing with Engine Power..... 66 KIAS

Landing Without Engine Power:
- Wing Flaps Up ..... 75 KIAS
- Wing Flaps Down..... 68 KIAS

# EMERGENCY PROCEDURES CHECKLISTS

## ENGINE FAILURES

### ENGINE FAILURE DURING TAKEOFF RUN

1. Throttle..... IDLE
2. Brake..... APPLY AS REQUIRED

If time permits:

3. Flaps..... RETRACT
4. Mixture..... IDLE CUT-OFF
5. Ignition Switch..... OFF
6. Master Switch ..... OFF
7. Alternator Switch..... OFF

### ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

1. Land ..... LAND
   Straight ahead turning only to avoid obstacles.
2. Airspeed..... 70 KIAS (Flaps 20°)
   If time permits:
3. Mixture..... IDLE CUT-OFF
4. Fuel Shutoff Valve..... OFF
5. Ignition Switch..... OFF
6. Master Switch ..... OFF
7. Alternator Switch..... OFF
8. Flaps..... AS REQUIRED

### ENGINE FAILURE DURING FLIGHT (Restart Procedures)

1. Airspeed..... 75 KIAS (Flaps 0°)
2. Throttle ..... FULL BACK
3. Fuel Selector Valve ..... TO TANK WITH MOST FUEL
4. Auxiliary Fuel Pump Switch ..... ON
5. Mixture ..... RICH
6. Ignition Switch ..... BOTH (or START if propeller stopped)

**ROUGH RUNNING ENGINE OR PARTIAL LOSS OF POWER**

1. Mixture.....RICH
2. Auxiliary Fuel Pump Switch.....ON
3. Ignition Switch.....BOTH
   Check OAT and look for evidence of possible icing conditions.
   If problem persists after several minutes:
4. Mixture.....Progressively LEAN
   (Do not exceed Max EGT)

If smooth operation is not possible, ensure the mixture is in the RICH setting and proceed to the nearest suitable airport. Monitor engine temperatures and pressures and be prepared for an engine failure or possible need to shut down the engine.

# FORCED LANDINGS

## EMERGENCY LANDING WITHOUT ENGINE POWER

1. Seats ..... SECURE
2. Seat belts..... FASTENED
3. Loose Articles..... SECURE
4. Airspeed..... 75 KIAS (Flaps UP)
   68 KIAS (Flaps 20°)

Before touchdown:

5. Mixture ..... IDLE CUT-OFF
6. Auxiliary Fuel Pump Switch ..... OFF
7. Fuel Shutoff Valve ..... OFF
8. Ignition Switch ..... OFF
9. Master Switch..... OFF
10. Alternator Switch..... OFF
11. Doors ..... UNLATCH PRIOR TO TOUCHDOWN

After touchdown:

12. Brakes..... APPLY AS REQUIRED

## PRECAUTIONARY LANDING WITH ENGINE POWER

1. Seats ..... SECURE
2. Seat Belts..... FASTENED
3. Loose Articles..... SECURE
4. Airspeed..... 73 KIAS Minimum
5. Flaps ..... UP
6. Selected Field ..... FLY OVER

Note terrain and obstructions.

7. Radio and Electrical Switches ..... OFF
8. Flaps ..... $20^{o}$
   (or 30° for steep approach)
9. Airspeed..... 66 KIAS
10. Propeller ..... HIGH RPM
11. Door..... UNLATCH PRIOR TO TOUCHDOWN

After touchdown:

12. Ignition Switch.....OFF
13. Master Switch.....OFF
14. Alternator Switch.....OFF
15. Brakes.....APPLY AS REQUIRED.

**DITCHING**

1. Radio.....TRANSMIT MAYDAY
   (on 121.5 MHz giving LOCATION and INTENTIONS and Squawk 7700)
2. Heavy Objects, Loose Articles.....SECURE
3. Seats.....SECURE
4. Seat Belts.....FASTENED
5. Flaps.....$30^{o}$
6. Doors.....UNLATCH PRIOR TO TOUCHDOWN
7. Power.....as follows
   ESTABLISH 300 FPM DESCENT AT 64 KIAS
8. Approach.....as follows
   High Winds Heavy Seas - INTO WIND
   Light Winds Heavy Swells - PARALLEL TO SWELLS
9. Touchdown.....as follows
   LEVEL ATTITUDE AT ESTABLISHED RATE OF DESCENT
10. Airplane.....EVACUATE through the doors.
11. Life Vests and Raft.....INFLATE when clear of the airplane.

# FIRES

## DURING START ON GROUND

IF ENGINE STARTS

1. Power ..... IDLE
2. Engine ..... SHUTDOWN AND INSPECT

IF ENGINE FAILS TO START

3. Mixture ..... IDLE CUTOFF
4. Throttle ..... BACK
5. Engine ..... SECURE
    a. Master Switch ..... OFF
    b. Alternator Switch ..... OFF
    c. Ignition Switch ..... OFF
    d. Fuel Shut-Off Valve ..... OFF
    e. Auxiliary Fuel Pump Switch ..... OFF
6. Fire Extinguisher ..... OBTAIN
7. Fire ..... EXTINGUISH
8. Fire Damage ..... INSPECT

## ENGINE FIRE IN FLIGHT

1. Mixture ..... IDLE CUTOFF
2. Throttle ..... BACK
3. Fuel Shutoff Valve ..... OFF
4. Auxiliary Fuel Pump Switch ..... OFF
5. Master Switch ..... OFF
6. Alternator Switch ..... OFF
7. Cabin Heat and Air ..... OFF
8. Airspeed ..... 100 KIAS
   If fire not extinguished, increase glide speed to find an incombustible mixture, within airspeed limitations
9. Forced Landing ..... EXECUTE (as described in Emergency Landing Procedures Without Engine Power)

**ELECTRICAL FIRE IN FLIGHT**

1. Master Switch.....OFF
2. Alternator Switch .....OFF
3. Vents, Cabin Air, Heat .....CLOSE
4. Fire Extinguisher.....ACTIVATE
5. Avionics Master Switch .....OFF
6. All Other Switches (except Ignition).....OFF
7. Vents/Cabin Air/Heat.....OPEN, when fire is completely extinguished.

**WARNING**

AFTER DISCHARGING FIRE EXTINGUISHER AND VERIFYING THAT FIRE HAS BEEN EXTINGUISHED, VENTILATE THE CABIN AIR. IF IT CANNOT BE DETERMINED VISUALLY THAT THE FIRE HAS BEEN EXTINGUISHED, LAND IMMEDIATELY.

If fire has been extinguished and electrical power is necessary for continuance of flight to nearest suitable airport or landing area:

8. Master Switch.....ON
9. Alternator Switch .....ON
10. Circuit Breakers .....Check for Faulty Circuit DO NOT RESET
11. Radio Switches.....OFF
12. Avionics Master Switch .....ON
13. Radio/Electrical Switches.....ON one at a time as required, with delay after each until short circuit is localized. If short circuit is localized turn switch off.

**CABIN FIRE**

1. Master Switch ..... OFF
2. Vents, Cabin Air, Heat ..... CLOSE
3. Fire Extinguisher ..... ACTIVATE
4. Vents/Cabin Air/Heat ..... OPEN, when fire is completely extinguished.

**WARNING**

AFTER DISCHARGING FIRE EXTINGUISHER AND VERIFYING THAT FIRE HAS BEEN EXTINGUISHED, VENTILATE THE CABIN AIR. IF IT CANNOT BE DETERMINED VISUALLY THAT THE FIRE HAS BEEN EXTINGUISHED, LAND IMMEDIATELY.

5. Land the airplane as soon as possible to inspect for damage.

**WING FIRE**

1. Landing/Taxi Light Switches ..... OFF
2. Navigation Light Switch..... OFF
3. Strobe Light Switch..... OFF
4. Pitot Heat Switch..... OFF

**NOTE**

Perform a sideslip to keep the flames away from the wing fuel tank and cabin. Land as soon as possible using flaps only as required for final approach and touchdown.

# ICING

## INADVERTENT ICING ENCOUNTER

Flying into known icing conditions is strictly prohibited and extremely dangerous. However an inadvertent encounter with icing conditions may possibly occur. The checklist procedures for this emergency should be adhered to and turning back and/or changing altitude to escape icing conditions is highly advisable.

1. Turn pitot heat switch ON.
2. Turn back or change altitude to obtain an outside air temperature that is less conducive to icing.
3. Pull cabin heat control full out and open defroster outlets to obtain maximum windshield defroster airflow. Adjust cabin air control to get maximum defroster heat and airflow.
4. Watch for signs of engine related icing conditions. An unexplained loss in engine speed could be caused by ice blocking the air intake filter. Change the throttle position to obtain maximum RPM. This may require either advancing or retarding the throttle, dependent on where ice has accumulated in the system. Adjust the mixture as required for maximum RPM.
5. Plan a landing at the nearest airport. With an extremely rapid build-up of ice, select a suitable off-airport site.
6. With ice accumulation of 1/4-inch or more on the wing leading edges, be prepared for a significantly higher stall speed.
7. Leave flaps retracted. With a severe build-up of ice on the horizontal tail, the change in wing wake airflow direction caused by the extension of the flaps could result in loss of elevator effectiveness
8. Perform a landing approach using a forward slip if necessary for improved visibility.
9. Approach at 75 to 80 KIAS depending upon the amount of ice accumulation.
10. Perform a landing in level attitude.

## STATIC SOURCE BLOCKED
**(SUSPECTED ERRONEOUS INSTRUMENT READINGS)**

1. Alternate Static Source Switch (if installed) .. ON
2. Pitot Heat ..... ON
3. Airspeed ..... Consult appropriate calibration table in Section 5.

**NOTE**

In an emergency on airplanes not equipped with an alternate static source, the cabin pressure can be supplied to the static pressure instruments by breaking the glass in the face of the vertical speed indicator. The vertical speed indication will be reversed in this case (i.e. the needle will indicate DOWN for climb and UP for descent).

## LANDING WITH A FLAT MAIN TIRE

1. Approach.....NORMAL
2. Flaps.....30°
3. Touchdown.....GOOD MAIN TIRE FIRST (hold the airplane off flat tire as long as possible using ailerons)
4. Directional Control.....MAINTAIN using brake on good wheel and tail steering as required.

## ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS

### OVER VOLTAGE LIGHT ILLUMINATES DURING FLIGHT (Ammeter Shows Excessive Rate of Charge)

1. Alternator Switch.....OFF
2. Non-essential Electrical Equipment.....OFF
3. Flight.....TERMINATE as soon as practical.

### UNDER VOLTAGE LIGHT ILLUMINATES DURING FLIGHT (Ammeter Indicates Discharge)

**NOTE**

Illumination of the UNDER VOLTAGE LIGHT may occur during low RPM conditions with an electrical load on the system such as during a low RPM taxi. Under these conditions, the light will go out at higher RPM.

1. Avionics Power Switch.....OFF
2. Master Switch.....OFF
3. Alternator Switch.....OFF
4. Alternator Circuit Breaker.....CHECK IN
5. Master Switch.....ON
6. Alternator Switch.....ON

7. Under Voltage Light ..... CHECK OFF
8. Avionics Master Switch ..... ON

If UNDER VOLTAGE LIGHT illuminates again:

9. Alternator Switch..... OFF
10. Non-essential Electrical Equipment ..... OFF
11. Flight ..... TERMINATE as soon as practical.

## VACUUM FAILURE

**(Indicated by Reading Below Green Arc (4.5 to 5.5 psi))**

1. Vacuum Gauge ..... CHECK to ensure vacuum within normal operating limits.

**WARNING**

FAILURE OF THE VACUUM SYSTEM WILL RESULT IN ERRONEOUS AND UNRELIABLE INDICATIONS ON THE ATTITUDE INDICATOR AND THE HEADING INDICATOR. IT WILL BE NECESSARY TO USE THE MAGNETIC COMPASS FOR DIRECTIONAL INFORMATION. READ THIS COMPASS WITH THE AIRCRAFT IN STEADY STRAIGHT FLIGHT AND APPLY THE NECESSARY CORRECTION. THE COMPASS WAS SWUNG WITH THE FOLLOWING TURNED OFF:

1. PITOT HEAT.

THESE ITEMS SHOULD BE TURNED OFF TO GET A VALID HEADING.

# AMPLIFIED EMERGENCY PROCEDURES

The following amplified emergency procedures provide further insight upon the information contained in the emergency procedures checklists of this section. These amplified emergency procedures also include information which cannot be adapted into a checklist format and which is not practical to refer to during a specific emergency. As such, this information should be reviewed in detail before flying the airplane and should also be reviewed on a regular basis to maintain pilot proficiency on the procedures.

## ENGINE FAILURE

If an engine failure occurs during the takeoff roll, the most important thing to do is stop the airplane on the remaining runway, if possible. The additional items shown on the checklist will provide added safety after a failure of this type.

Prompt lowering of the nose in order to maintain safe airspeed and to establish a glide attitude is the first response to an engine failure immediately after takeoff. In most cases, the landing should only be planned straight ahead as there is often not enough altitude and airspeed to attempt safely a 180 degree turn and return to the airfield. Only small changes in direction should be taken to avoid obstructions. The checklist procedures do assume, however, that there is adequate time to secure the fuel and ignition systems of the airplane prior to touchdown.

**The most important course of action following an engine failure in flight is to continue flying the airplane.** The Best-Glide-Speed (75 KIAS) should be established as quickly as possible. Having selected a suitable landing area, the pilot should try to identify the cause of the failure and attempt an engine restart. If time permits, this engine restart should be conducted as shown in the checklist. If the engine cannot be restarted, a forced landing without power will inevitably occur. Follow the procedures for an *Emergency Landing without Engine Power* as shown in the emergency procedures checklists.

## FORCED LANDINGS

The first step to executing a successful forced landing is to select a suitable field as early as possible. After choosing a suitable field, preparations for the landing can begin, as outlined in the emergency procedures checklist for *Emergency Landing without Engine Power*. Ensure that a Mayday message is transmitted on 121.5 MHz giving your location and intentions and that you squawk 7700 on your transponder.

In precautionary landings with engine power, the pilot should first fly over the landing area at a safe but low altitude and inspect the ground features for obstructions and surface conditions. The pilot can then proceed as shown in the *Precautionary Landing with Engine Power Checklist.*

In the event of a ditching attempt over water, the pilot should first secure or jettison heavy objects located in the cargo area of the airplane and collect items such as a folded coat to protect the occupants' face at touchdown. A Mayday transmission on 121.5 MHz giving location and intentions should be effected and the transponder should be set to squawk 7700. A landing flare prior to touchdown should be avoided because of the difficulty in judging height over the water surface. When ditching with no engine power, the airspeeds associated with minimum flap extension allow for a more favourable attitude during a power off ditching.

To prevent disabling the airplane's electrical systems prematurely during a forced landing, the avionics master and master switches should not be turned off until a landing is assured. For more detailed information on the ELT and its operation, refer to Section 9 "Supplements" in this Pilot's Operating Handbook.

## LANDING WITHOUT ELEVATOR CONTROL

Loss of elevator control during flight requires use of the throttle and elevator trim to maintain control. A touchdown with power on will likely be required, especially when at maximum forward C.G. position, and a landing site which provides a longer than normal landing run should be selected if available. With air speed of approximately 75 KIAS and flaps up, adjust the elevator trim and throttle to maintain horizontal flight.

When throttle is reduced for descent on a 3 degree glide slope, elevator trim will be approximately neutral when at maximum forward C.G. position. At C.G. positions further aft, even more nose up elevator trim will be available for the flare. Airspeed and rate of descent can be controlled by small corrections in throttle position and elevator trim.

During a flare out, power reduction will cause a significant nose down pitching moment. Coordination of elevator trim with throttle position reduction is required to perform the flare and to reduce airspeed. If the elevator trim is at full nose up position, a slight increase in engine power will provide a nose up pitch if required.

**WARNING**

AT EXTREME FORWARD CG POSITIONS, INSUFFICIENT NOSE UP ELEVATOR TRIM MAY BE AVAILABLE FOR A LANDING FLARE WITH ELEVATOR TRIM ALONE. A SLIGHT INCREASE IN ENGINE POWER WILL PROVIDE THE REQUIRED NOSE UP PITCHING MOMENT.

## FIRES

If an engine fire occurs during flight, the checklist procedure outlined for *Engine Fire in Flight* should be followed. Having extinguished the fire, execute the *Forced Landings* procedure and do not attempt to restart the engine.

Electrical fires can often be detected from the obvious odour of burning insulation. Immediate action of the checklist procedure for this emergency should result in quick elimination of the fire.

## STATIC SOURCE BLOCKED
**(SUSPECTED ERRONEOUS INSTRUMENT READINGS)**

If erroneous readings of the static source instruments (airspeed, altimeter and vertical speed) are suspected, the alternate static source switch should be turned on. The alternate static source switch opens the static pressure line to the cabin and the cabin static pressure is supplied to the static pressure instruments.

**NOTE**

In an emergency on airplanes not equipped with an alternate static source, the cabin pressure can be supplied to the static pressure instruments by breaking the glass in the face of the vertical speed indicator. The vertical speed indication will be reversed in this case (i.e. the needle will indicate DOWN for climb and UP for descent).

When the alternate static source is on, adjust indicated airspeed during climb or approach according to the Airspeed Calibration (Alternate Static Source) in section 5 as appropriate for the vent/heater configuration.

## SPINS

Although intentional spins are not approved for this aircraft, recovery from an inadvertent spin is performed as follows:

1. Retard the throttle to the IDLE position.
2. Retract flap.
3. Place the ailerons in NEUTRAL position.
4. Apply and HOLD FULL RUDDER OPPOSITE to the direction of rotation.
5. Just after the rudder reaches the stop, move the CONTROL WHEEL BRISKLY FORWARD far enough to break the stall. Full down elevator may be required at aft center of gravity loadings to assure optimum recovery.
6. HOLD these control inputs UNTIL ROTATION STOPS. Premature relaxation of the control inputs may extend the recovery.

7. As rotation stops, NEUTRALIZE RUDDER and make a smooth recovery from the resulting dive.

**NOTE**

If disorientation precludes a visual determination of the direction of rotation, the turn co-ordinator may be referred to for this information.

## ROUGH ENGINE OPERATION OR LOSS OF POWER

### IMPROPER MIXTURE / FUEL STARVATION

Although rough running due to fouled spark plugs is more likely to occur after extensive idling on the ground, a rough running engine during cruising flight may be caused by an improper fuel/air mixture or other problems which can be associated with fuel starvation. Fuel starvation can be attributed to clogged fuel injector nozzles, lack of fuel in the header tanks and main tanks, or low fuel pressure. In such a case, the mixture control should be adjusted to the RICH position and the auxiliary fuel pump switch placed in the ON position. These actions will maximize the amount of fuel into the engine. Verify that the ignition switch is in the BOTH position and also check the fuel quantities in each tank.

If the problem does not clear up within a few minutes, check the OAT temperature gauge and look for evidence of possible icing conditions. A blocked air intake will not cause the engine to stop but may be the cause of a rough running engine as well as a possible indicator of icing conditions.

If icing conditions are present, attempt to get out of them. If the problem persists, follow the procedure for lean burn-off.

**SPARK PLUG FOULING**

Fouling of the spark plugs by carbon or lead deposits may often lead to slight engine roughness during flight. Assuming that the problem is in fact fouling of the spark plugs, adjusting the mixture to the recommended lean setting for cruising flight can help clear the spark plugs. After several minutes, if the problem does not clear up, a richer mixture may produce smoother operation. If this still does not remedy the problem, set the mixture to FULL RICH and land at the nearest airport for repairs using the BOTH position on the ignition switch.

**LOW OIL PRESSURE**

If the oil pressure gauge indicates low pressure but the oil temperature remains normal, it is possible the pressure sending unit or the relief valve is malfunctioning. However, land at the nearest airport to inspect the source of trouble.

If a total loss of oil pressure occurs together with a rise in oil temperature, it is reasonable to suspect an engine failure is imminent. Reduce engine power immediately and select a suitable forced landing field. Use only the minimum power needed to reach the desired touchdown spot.

## ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS

Malfunctions in the electrical system are often difficult to determine. Periodic monitoring of the ammeter and voltmeter and under/over voltage lights can alert you to a problem. Problems with the alternator constitute an electrical emergency and should be dealt with immediately. Typical causes of alternator failure are the drive belt, wiring or control unit. In general, there are two types of alternator emergencies; an alternator producing an excessive rate of charge, and; an alternator producing an insufficient rate of charge.

**EXCESSIVE RATE OF CHARGE**

An excessive rate of charge can be indicated by the voltmeter and/or the OVER VOLTAGE light. After starting the engine and placing heavy electrical loads on the battery at low engine speed (such as extended taxiing), the depleted condition of the battery can accept an above normal charging rate during the initial part of a flight. However, after thirty minutes of cruising flight, the ammeter should be indicating less than two needle widths of charging current. If the charging rate were to remain high for a prolonged period of time, the battery would overheat and the electrolyte would evaporate creating a hazard.

A higher than normal voltage on the electrical system can also damage other sensitive electronic components. The alternator control unit contains an over-voltage sensor which automatically shuts down the alternator if the voltage reaches approximately 31.5 volts. If this safety device fails to operate, the ammeter would show an excessive rate of charge and the alternator switch should then be turned OFF. Since charging of the battery ceases when the alternator is not in operation, all non-essential electrical equipment should also be turned OFF to conserve electrical power. The flight should be terminated as soon as possible.

**INSUFFICIENT RATE OF CHARGE**

**NOTE**

Illumination of the UNDER VOLTAGE light and ammeter discharge indications may occur during low RPM conditions with an electrical load on the system, such as during low RPM taxi. Under these conditions, the light will go out at higher RPM.

Should a higher than normal voltage cause the over-voltage sensor to trip the alternator field circuit breaker (ALT) and shut down the alternator, or if the alternator output is insufficient, the UNDER VOLTAGE light will illuminate and a discharge rate will be shown on the ammeter. Since the over-voltage sensor may occasionally trip the circuit unnecessarily, an attempt should be made to reactivate the alternator system. This is accomplished by first turning the avionics master switch OFF to protect the equipment. Then, the alternator is reconnected by resetting the alternator circuit breaker (ALT). Both the

master switch and the alternator switch should be turned OFF and then ON again to resume normal alternator charging. If the problem no longer exists, the UNDER VOLTAGE light will go out and the avionics power switch may be turned on again.

If the problem persists and the UNDER VOLTAGE light illuminates again, a malfunction is confirmed and the flight should be terminated as soon as possible. All non-essential electrical loads should be removed from the system to conserve battery power. The battery can supply the electrical system for only a limited period of time.

**ALTERNATOR FAILURE**
**(AT NIGHT OR DURING IFR FLIGHT CONDITIONS)**

The under-voltage light will illuminate and the alternator voltage can be checked by depressing the voltage indicator pin on the ammeter. If the ammeter shows 24 volts or less, the alternator has failed.

1. Turn Alternator Switch **OFF**
2. Shut down all unnecessary lights and non-essential equipment as dictated for continued safe flight. Equipment may be activated or de-activated as procedures require.
3. Land the aircraft as soon as practical.

List of equipment and electrical load:

| | **Equipment** | **AMPS** |
|---|---|---|
| 1. | Tachometer | 0.1A |
| 2. | Manifold | 0.1A |
| 3. | Fuel Flow | 0.1A |
| 4. | Turn & Bank | 0.8A |
| 5. | H.S.I. | 2.0A |
| 6. | Audio Panel | 1.1A |
| 7. | Engine Instrument Cluster | 0.2A |
| 8. | Landing Light | 0.6A |
| 9. | Nav Lights | 2.0A |
| 10. | Radio (GNC 430) | 2.0A |

**NOTE**

The above equipment can be used continually for a calculated period of 45 minutes with an 80% charged battery.

**A SHORT ON THE MAIN BUS BAR**
**(AT NIGHT OR DURING IFR FLIGHT CONDITIONS)**

The entire panel and all lights will instantly fail. The Backup Power Switch maybe used to activate the Engine Instrument Cluster and the Interior Light on the roof panel between the pilot and co-pilot seats.

1. Backup Power Switch ..... ON
2. Interior Light Switch ..... ON
3. Interior Light ..... ON
4. Master and Alternator Switches ..... OFF
5. Land aircraft as soon as practical.

**NOTE**

Flap angle cannot be altered under this condition.

## OTHER EMERGENCIES

### WINDSHIELD DAMAGE

In the rare event that a bird strike or other incident should damage the windshield to the point of creating an opening, a significant loss in performance should be expected. A landing should be attempted at the nearest airport. If the airplane performance or other condition prevents safe landing at an airport, an off-airport landing executed in accordance with the *Precautionary Landing with Engine Power* or *Ditching Checklist* should be attempted.

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