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#### **SECTION 3**

#### **EMERGENCY PROCEDURES**

#### 3.1 GENERAL

This section provides the recommended procedures for coping with various emergency or critical situations. All of the emergency procedures required by the FAA are presented, along with those procedures that are necessary for operation of the airplane.

Emergency procedures associated with optional systems and equipment are presented in Section 9, Supplements.

Checklists within this section are divided into two distinct parts.

- Emergency procedures checklists, depicted within boxes, describe immediate action sequences that should be followed during critical situations.
- 2. When applicable, amplified procedures are provided immediately below the relevant emergency procedure, to enhance the pilot's understanding of the procedure.

Pilots must familiarize themselves with the procedures in this section and must be prepared to take the appropriate action should an emergency situation arise. These procedures provide one course of action for coping with the particular situation or condition described. They are not a substitute for sound judgement and common sense.

Most basic emergency procedures are a normal part of pilot training. The information presented in this section is not intended to replace this training. In order to remain proficient, pilots should periodically review standard emergency procedures.

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#### NOTE

A detailed description of the Crew Alerting System and other annunciations and system messages may be found in the latest appropriate revisions and -XX part numbers of Garmin G1000 Cockpit Reference Guide (Garmin P/N 190-02199-00) and the Garmin G1000 Pilot's Guide (Garmin P/N 190-02198-00).

#### **Annunciations and Alerts**

The G1000 System produces a number of annunciations and alerts by various means and methods. Some alerts are provided through visual indications, some are aural messages, and some are a combination of the two. The various methods of producing G1000 annunciations and alerts are described in Section 7 of this handbook.

#### **Crew Alerting System (CAS) Messages**

For quick reference all messages associated with the Crew Alerting System (Warning, Caution and Advisory) are provided in this section. A more detailed description of all CAS, System and Aural alerts is provided in Description and Operation Section 7.9 **GARMIN G1000 AVIONICS SYSTEM.** 

The following tables show the color and significance of the Warning, Caution and Advisory messages which may appear on the Garmin G1000 displays.

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# Crew Alerting System (CAS) Messages (continued)

# Warnings - Red

Event	CAS Message	Checklist Page	Cause*		
	CAS Warnings with Text Messages				
Alternator Failure	L ALTR FAIL B ALTR FAIL	3-28 3-29	Left and/or right alternator is turned ON and has failed as determined by voltage regulator		
High Cylinder Head Temperature	L ENG CHT	3-23	Left and/or right engine CHT exceeds 500 °F		
Low Fuel Quantity	L FUEL QTY	3-24	Left or right fuel quantity is less than 5 gals.		
CO Level High	CO LVL HIGH	3-52	CO level greater than 200 parts per million (PPM).		
Starter Engaged	L START ENGD	3-49	Left or right engine starter is engaged for greater than 30 seconds		
Landing Gear Failure	GEAR SYS	3-27	Landing gear system malfunction while on the ground		
Landing Gear Position Unsafe	CHECK GEAR	3-26	Landing gear selector is not in the down position when aircraft is less than 400 ft AGL with MAP less than 14 in Hg (mutable aural) or flaps greater than first "notch" (non-mutable aural).  Landing gear is selected UP		
			while on the ground.		
High Heater Temperature	HTR OVRHEAT	3-51	Cabin heater has sensed an overheat condition and has shut down the heater		
Underspeed Protection	USP ACTIVE	3-43	The autopilot Underspeed Protection (USP) mode is actively preventing an under speed condition.		

<sup>\*</sup>CAS Messages/Alerts may have small time delays to avoid nuisance alarms.

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# Crew Alerting System (CAS) Messages (continued)

#### Warnings - Red (continued)

	Event	CAE Massage	Checklist	Cause*
	Event	CAS Message CAS Warnings	Page	
	Propeller Overspeed	None	3-50	Propeller speed is greater than 2720 RPM for more than 5 seconds.
	Oil Temperature Exceedance	None	3-23	Oil Temperature greater than 245°F.
	Oil Pressure Exceedance	None	3-22	Oil Pressure less than 25 PSI or greater than 115 PSI.
	Total Fuel Quantity Low	None	3-24	Total fuel quantity less than 10 gals.
	Battery Voltage	None	NA	Primary battery voltage less than:
		:		24 V when RPM less than 1100 or
				25 V when RPM greater than 1100
ĺ				Or
				Primary battery voltage greater than 32 V.
	Alternator Amperage	None	3-28	Left and/or right alternator amperage is greater than 65 AMPS.
	Emergency Battery Voltage	None	3-32	Emergency battery voltage is less than 20 V or greater than 32 V.
	Landing Gear Failure	None	3-27	Malfunction in any of the landing gear as indicated by a red circle on the landing gear display.

\*CAS Messages/Alerts may have small time delays to avoid nuisance alarms.

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# **Crew Alerting System (CAS) Messages (continued)**

#### Cautions - Amber

CAS Event	CAS Message	Checklist Page	Cause*
	CAS Cautions	with <b>Text</b> N	<b>Tessages</b>
CO Level High	CO LVL HIGH	3-52	CO level greater than or equal to 50 but less than 200 parts per million (PPM).
Low Fuel Quantity	L FUEL QTY R FUEL QTY	3-24	Left or right fuel quantity is less than 10 gals.
Landing Gear Failure	GEAR SYS	3-27	Landing gear system malfunction while in flight
Landing Gear Position Unsafe	CHECK GEAR	3-26	Landing gear selector is not in the down position when aircraft is greater than 400 ft AGL with MAP less than 14 in Hg (mutable aural) or flaps greater than first "notch" (non-mutable aural)
Hydraulic Pump	HYDR PUMP ON	3-48	Hydraulic pump has been running for greater than 16 seconds
Pitot Heat Fail	PITOT HEAT FAIL	3-47	Pitot heat is selected ON and is inoperative
Pitot Heat Off	PITOT HEAT OFF	3-47	Pitot heat is selected OFF (double chime is suppressed)

CAS Cautions with EIS Indications			
Oil Pressure Exceedance	None	3-22	Oil pressure between 26 PSI and 55 PSI when propeller speed is greater than 1500 RPM or oil pressure between 96 and 115 PSI.
Total Fuel Quantity Low	None	3-24	Total fuel quantity is less than 20 gals.
Emergency Battery Voltage	None	NA	Emergency battery voltage is less than 23.3 V.

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#### **Crew Alerting System (CAS) Messages (continued)**

#### Advisories - White

CAS Event	CAS Message	Checklist Page	Cause*
	CAS Advisory	with Text I	Vlessage
Emergency Power In Use	EMERG BATT ON	3-31	Emergency battery is in use
Fuel Imbalance	FUEL IMBAL	NA	Left and right fuel quantities differ by greater than 10 gals.
PFD Fan Failure	PFD FAN FAIL	3-47	The PFD cooling fan has failed
MFD Fan Failure	MFD FAN FAIL	3-47	The MFD cooling fan has failed
Avionics Fan Failure	AV FAN FAIL	3-47	The avionics cooling fan has failed

### **Terminology**

Many emergencies require some urgency in landing the aircraft. The degree of urgency varies with the emergency; therefore the terms "land as soon as possible" and "land as soon as practical" are employed. These terms are defined as follows:

Land as soon as possible - A landing should be accomplished at the nearest suitable airfield considering the severity of the emergency, weather conditions, field facilities, and ambient lighting.

Land as soon as practical - Emergency conditions are less urgent, and although the mission is to be terminated, the emergency is such that an immediate landing at the nearest suitable airfield may not be necessary.

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#### 3.3 AIRSPEEDS FOR SAFE OPERATIONS

One engine inoperative air minimum control	56 KIAS
One engine inoperative best rate of climb	88 KIAS
One engine inoperative best angle of climb	82 KIAS
Maneuvering (3800 lb)	@ 2870 LB)
Never exceed	

#### 3.5 EMERGENCY PROCEDURES CHECKLIST

#### 3.5a Engine Inoperative Procedures

An inoperative engine can be identified by various means, including the fact that directional control is maintained by applying rudder pressure toward the operative engine (DEAD FOOT INDICATES DEAD ENGINE). Additionally, engine indications such as EGT and oil pressure may help in identifying an inoperative engine. After identification, verify complete power loss on that engine by retarding its throttle and noting the absence of engine or aircraft response.

# **Engine Securing Procedure (Feathering Procedure)**

THROTTLE	
PROPELLER	FEATHER (950 RPM Min.)
MIXTURE	CUT-OFF
COWL FLAP	CLOSE
MAG LEFT/RIGHT Switches	OFF
FUEL PUMP Switch	OFF
ALTR Switch	OFF
FUEL selector	OFF
Electrical load	REDUCE

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The engine securing procedure should always be accomplished in a sequential order on the inoperative engine. Move the throttle of the inoperative engine towards IDLE. If no changes are noted, the correct identification of the inoperative engine is confirmed. Move the propeller control to FEATHER (fully aft) before the propeller speed drops below 950 RPM, otherwise the propeller will not feather. One engine inoperative performance will decrease significantly if the propeller of the inoperative engine is not feathered.

# Engine Failure During Takeoff (Speed Below 75 KIAS or Gear Down)

THROTTLES	IMMEDIATELY CLOSE
Brakes (or land and brake)	AS REQUIRED
Directional Control	MAINTAIN
If insufficient runway remains for a	complete stop:
Brakes	APPLY MAXIMUM BRAKING
MIXTURES	CUT-OFF
FUEL Selectors	OFF
MAG LEFT/RIGHT Switches	OFF
BATT MASTR Switch	OFF
Directional ControlMAIN	TAIN and AVOID OBSTACLES

If engine failure occurs during the takeoff roll, the takeoff MUST be aborted. If failure occurs after liftoff but before 75 KIAS is achieved or before the landing gear is retracted, the takeoff should also be aborted.

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#### 3.5a Engine Inoperative Procedures (continued)

# **Engine Failure During Takeoff (Speed Above 75 KIAS)**

If sufficient runway remains for a complete stop:

GEAR VERIFY DOWN
Land STRAIGHT AHEAD
Directional Control MAINTAIN
THROTTLES CLOSE
Brakes AS REQUIRED

If GEAR is in transit or UP and the decision is made to continue:

#### WARNING

In many combinations of aircraft weight, configuration, ambient conditions and speed, negative climb performance may result. Refer to Climb Performance chart- One Engine Operating - Gear Up, Figure 5-21.

MIXTURES FULL RICH
PROPELLERS
THROTTLES FULL OPEN
FLAPSFULL UP
GEARVERIFY UP
Inoperative Engine
THROTTLE (Inop. Engine)
PROPELLER (Inop. Engine)FEATHER
MIXTURE (Inop. Engine)
Establish Bank2° to 3° INTO OPERATING ENGINE
Climb Speed
Rudder TrimTOWARD OPERATING ENGINE
TO APPROXIMATELY 1/2 TRAPEZOID
ON THE SLIP INDICATOR
COWL FLAP (Operating Engine)AS REQUIRED
COWL FLAP (Inop. Engine)
MAG LEFT/RIGHT Switches (Inop. Engine)OFF
FUEL PUMP (Inop. Engine)OFF
ALTR Switch (Inop. Éngine)OFF
FUEL Selector (Inop. Engine)
Land as soon as practical.

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THE DICH

If engine failure occurs after liftoff with the gear still down and 75 KIAS has been attained, the best course of action will depend on the runway remaining and aircraft configuration. Also the pilot's decision must be based on a personal judgement, taking into consideration such factors as obstacles, the type of terrain beyond the runway, altitude and temperature, weight and loading, weather, airplane condition, and the pilot's own proficiency and capability.

Attempt to maintain the one engine inoperative best rate of climb speed ( $V_{YSE}$ : 88 KIAS). Do not allow airspeed to decrease below the air minimum control speed ( $V_{MCA}$ : 56 KIAS).

An inoperative engine can be identified by various means, including the fact that directional control is maintained by applying rudder pressure toward the operating engine (DEAD FOOT INDICATES DEAD ENGINE). Additionally, engine indications such as EGT and oil pressure may help in identifying an inoperative engine. After identification, verify complete power loss on that engine by retarding its throttle and noting the absence of engine or aircraft response.

Once the aircraft is trimmed and the inoperative engine is secured, close the cowl flap of the operating engine as much as possible without exceeding engine temperature limits. Land as soon as practical at the nearest suitable airport.

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<b>Engine Failure During Climb</b>	
AirspeedMAINTAIN 88 KIAS	
Directional Control	
MIXTURE	
PROPELLERSFULL INCREASE	
THROTTLES FULL OPEN	
Inoperative Engine	
THROTTLE (Inop. Engine)	
PROPELLER (Inop. Engine) FEATHER	
MIXTURE (Inop. Engine)	
Establish Bank2° to 3° INTO OPERATING ENGINE	
Climb Speed	
Rudder TrimTOWARD OPERATING ENGINE	
TO APPROXIMATELY 1/2	
TRAPEZOID ON THE SLIP INDICATOR	
COWL FLAP (Operating Engine)AS REQUIRED	
COWL FLAP (Inop. Engine)	
MAG LEFT/RIGHT Switches (Inop. Engine)OFF	
FUEL PUMP (Inop. Engine)OFF	
ALTR Switch (Inop. Engine)OFF	
FUEL Selector (Inop. Engine)OFF	
Land as soon as practical.	

An inoperative engine can be identified by various means, including the fact that directional control is maintained by applying rudder pressure toward the operating engine (DEAD FOOT INDICATES DEAD ENGINE). Additionally, engine indications such as EGT and oil pressure may help in identifying an inoperative engine. After identification, verify complete power loss on that engine by retarding its throttle and noting the absence of engine or aircraft response.

After the faulty engine has been identified and power loss has been verified, complete the Engine Securing Procedure. Continue a straight ahead climb until sufficient altitude (minimum of 1000 feet above ground elevation) is reached to execute the normal One Engine Inoperative Landing procedure at the nearest suitable airport.

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Engine Failure During Flight (Speed Below VMCA)	
Rudder APPLY AGAINST YAW	
THROTTLES (Both Engines)RETARD TO ARREST TURN/YAW	
Pitch AttitudeLOWER NOSE TO ACCELERATE	
ABOVE VMCA (56 KIAS)	
Operating EngineINCREASE POWER AS AIRSPEED	
INCREASES ABOVE VMCA (56 KIAS)	
If altitude permits, a restart may be attempted.	
If restart fails or if altitude does not permit restart:	
Inoperative Engine	
PROPELLER (Inop. Engine) FEATHER	
MIXTURE (Inop. Engine)	
Establish Bank2° to 3° INTO OPERATING ENGINE	
Airspeed ATTAIN AND MAINTAIN AT LEAST 88 KIAS	
Rudder TrimTOWARD OPERATING ENGINE	
TO APPROXIMATELY 1/2	
TRAPEZOID ON THE SLIP INDICATOR	
COWL FLAP (Operating Engine)AS REQUIRED	
COWL FLAP (Inop. Engine)	
MAG LEFT/RIGHT Switches (Inop. Engine)OFF	
FUEL PUMP (Inop. Engine)OFF	
ALTR Switch (Inop. Engine)OFF	
FUEL Selector (Inop. Engine)OFF	

In order to maximize control effectiveness during the recovery, bank the airplane up to 5° towards the operating engine.

An inoperative engine can be identified by various means, including the fact that directional control is maintained by applying rudder pressure toward the operating engine (DEAD FOOT INDICATES DEAD ENGINE). Additionally, engine indications such as EGT and oil pressure may help in identifying an inoperative engine. After identification, verify complete power loss on that engine by retarding its throttle and noting the absence of engine or aircraft response.

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Engine Failure During Flight (Speed Above VMCA)
Inoperative Engine
Operating Engine ADJUST POWER AS REQUIRED
AirspeedATTAIN AND MAINTAIN
AT LEAST 88 KIAS
Before securing inoperative engine:
FUEL QTY CHECK (XFEED AS REQUIRED)
FUEL PUMPON
MIXTUREFULL RICH
ALT-AIROPEN
MAG LEFT/RIGHT Switches
OIL °FCHECK
OIL PSI
If engine does not restart, complete Engine Securing Procedure.
Power (Operating Engine)AS REQUIRED
FUEL Selector (Operating Engine)
(XFEED AS REQUIRED
FUEL PUMP (Operating Engine)AS REQUIRED
COWL FLAP (Operating Engine)AS REQUIRED
Establish Bank2° to 3° INTO OPERATING ENGINE
Airspeed ATTAIN AND MAINTAIN AT LEAST 88 KIAS
Rudder TrimTOWARD OPERATING ENGINE
TO APPROXIMATELY 1/2
TRAPEZOID ON THE SLIP INDICATOR
Electrical LoadDECREASE TO MIN. REQUIRED
CAUTION
If engine failure is due to fuel starvation and a fuel

If engine failure is due to fuel starvation and a fuel leak is suspected, carefully monitor remaining fuel quantity if XEEED is used.

# Land as soon as practical.

If oil temperature is high and oil pressure is zero, suspect loss of oil and do not attempt to restart the engine.

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#### 3.5a Engine Inoperative Procedures (continued)

If an engine failure is caused by fuel starvation, both engines may be operated from one fuel tank using XFEED as appropriate. If a fuel leak is suspected, select XFEED OFF and complete the Engine Securing Procedure.

One Freine Increasing I anding

One Engine Inoperative Landing		
Inoperative Engine ENGINE SEC	URING PROCEDURE	
•	COMPLETE	
Seat Belts/Harnesses	SECURE	
FUEL Selector (Operating Engine)	ON	
MIXTURE (Operating Engine)	FULL RICH	
PROPELLER Control (Operating Engine)	FULL INCREASE	
FUEL PUMP (Operating Engine)	ON	
COWL FLAP (Operating Engine)		
Altitude & Airspeed	MAKE NORMAL	
	APPROACH	
When Landing is Assured:		
GEAR	DOWN	
FLAPS	25° (2nd Notch)	

FLAPS......25° (2nd Notch) Final Approach Speed ......90 KIAS Power RETARD SLOWLY AND FLARE AIRPLANE Trim ....... AS POWER IS REDUCED

> (AIRPLANE WILL YAW IN DIRECTION OF OPERATING ENGINE)

# WARNING

Under some conditions of loading density altitude, aircraft single engine climb performance and obstacle clearance may make a one engine inoperative go-around impossible (See Section 5). Sudden application of power during one engine inoperative operation can make control of the airplane more difficult.

# CAUTION

A one engine inoperative go-around should be avoided if at all possible.

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# One Engine Inoperative Go-Around

· ·	
MIXTURE (Operating Engine)	FULL RICH
PROPELLER (Operating Engine)	
THROTTLES SMOOTHLY ADVANCE TO T	AKEOFF POWER
FLAPSRETRACT IN	ICREMENTALLY
GEAR	UP
Establish Bank2° to 3° INTO OPE	RATING ENGINE
Airspeed ATTAIN AND MAINTAIN A	T LEAST 88 KIAS
Rudder TrimTOWARD OPE	RATING ENGINE
TO APPI	ROXIMATELY 1/2
TRAPEZOID ON THE	SLIP INDICATOR
COWL FLAP (Operating Engine)	AS REQUIRED

#### WARNING

Under some conditions of loading and density altitude, aircraft single engine climb performance and obstacle clearance may make a one engine inoperative go-around impossible (See Section 5). Sudden application of power during one engine inoperative operation can make control of the airplane more difficult.

# WARNING

The propeller on the inoperative engine must be feathered, the landing gear retracted, and the wing flaps retracted for continued flight.

# WARNING

Autopilot coupled go-around is not authorized during single engine operations.

# CAUTION

A one engine inoperative go-around should be avoided if at all possible.

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# **Summary of Factors Affecting Single Engine Operations**

Significant climb performance penalties can result from landing gear, flap, or windmilling propeller drag. These penalties are approximated as follows:

Landing gear extended/Flaps Up 250 ft./min.
Flaps extended 25°/Gear Down 490 ft./min.
Flaps extended fully/Gear Down 525 ft./min.
Inoperative engine propeller windmilling
(Gear and Flaps Up) -200 ft./min.

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The following general facts should be used as a guide if an engine failure occurs:

- 1. Discontinuing a takeoff upon engine failure is advisable under most circumstances. Continuing the takeoff, if engine failure occurs prior to reaching obstacle speed and gear retraction, is not advisable.
- 2. A windmilling propeller and extended landing gear cause a severe drag penalty and therefore, climb or continued level flight is improbable, depending on weight, altitude and temperature. Prompt retraction of the landing gear, identification of the inoperative engine, and feathering of the propeller is of utmost importance if the takeoff is to be continued.
- 3. Airspeed should not be allowed to fall below  $V_{\rm XSE}$  (82 KIAS) any lesser speed will result in significantly reduced climb performance.
- Once obstacles and terrain are cleared, accelerate to the singleengine best rate-of-climb airspeed.
- 5. To maximize controllability during recovery following an engine loss near or below  $V_{MC}$ , the airplane should be banked approximately 5° into the operating engine and the rudder used to maintain straight flight. This will result in the trapazoid of the turn and slip indicator being displaced 1/2 to 3/4 towards the operating engine.
- 6. To maximize climb performance after airplane is under control of the pilot and failed engine is secured, maintain a 2° to 3° bank towards the operating engine and trim the rudder as needed for straight flight. This will result in approximately 1/2 trapazoid displacement towards the operating engine. This trapazoid displacement should be maintained during any necessary maneuvering to maintain best possible climb margins.

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#### 3.5b Reserved

#### 3.5c Air Starting Procedure

# Unfeathering Procedure / Unfeathering Accumulator Functioning

#### NOTE

With the propeller unfeathering system installed, the propeller will usually windmill automatically when the propeller control is moved forward.

FUEL Selector (Inoperative Engine)	ON
MAG LEFT/RIGHT Switches (Inoperative Engine)	
FUEL PUMP (Inoperative Engine)	ON
THROTTLE (Inoperative Engine)	OPEN 1/4 inch
PROPELLER (Inoperative Engine)	FULL INCREASE
MIXTURE (Inoperative Engine)	ADVANCE
(after	propeller rotation)
THROTTLEReduce power un	ntil engine is warm
ALTR	ON (after restart)
FUEL PUMPAs Req	uired (after restart)

#### NOTE

Starter assist is required if the propeller is stationary (not rotating) within 5-7 seconds after the propeller control has been moved forward.

When propeller unfeathering occurs, it may be necessary to retard the prop control slightly so as to not overspeed the prop.

#### If restart is not successful:

Proceed to Section 3.5(a) Engine Securing Procedure (Feathering Procedure).

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#### 3.5c Air Starting Procedure (continued)

# **Unfeathering Procedure/ Starter Assisted**

FUEL Selector (Inoperative Engine) ON
MAG LEFT/RIGHT Switches (Inoperative Engine) ON
FUEL PUMP (Inoperative Engine) OPEN 1/4 inch
PROPELLER (Inoperative Engine) INCREASE (to cruise setting)
MIXTURE (Inoperative Engine) FULL RICH
ENG START (Inoperative Engine) ENGAGE UNTIL PROP
WINDMILLS

#### NOTE

The ENG START switch should be engaged as soon as possible after advancing the mixture control to minimize the possibility of flooding the engine.

THROTTLE ......REDUCE POWER until engine is warm ALTR ......ON (after restart) FUEL PUMP ......As Required (after restart)

#### If restart is not successful:

Proceed to Section 3.5(a) Engine Securing Procedure (Feathering Procedure).

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#### 3.5d Engine Roughness

Engine Roughness	
ALT-AIR	OPEN
If roughness continues after one	minute:
ALT-AIR	CLOSE
MIXTURE	Adjust for maximum smoothness
FUEL PUMP	ON
Engine Gauges	CHECK
MAG LEFT/RIGHT Switches	Individually select
	OFF and ON

If operation is satisfactory on either magneto, continue on that magneto at reduced power and full RICH mixture to first airport.

Engine roughness may be caused by blockage in the injector nozzles, induction system icing, ignition problems or too lean or rich mixture.

Adjust the mixture for smoothest operation. Move the alternate air to OPEN and turn on the electric fuel pump. Switch to XFEED on the effected engine to verify that fuel contamination is the problem. Return fuel selector to ON if problem is not corrected.

Upon completion of this checklist, if roughness persists, consider a precautionary landing.

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#### 3.5e Engine Indication System (EIS)

#### Oil Pressure

Indication: Master Warning, Triple Chime, Flashing Red Oil Pressure Indication

Affected Engine......VERIFY

#### Low Oil Pressure:

THROTTLE (Affected Engine)......MINIMUM REQUIRED PROPELLER (Affected Engine).......DECREASE

#### If accompanied by high oil temperature:

#### If accompanied by normal oil temperature:

Land as soon as practical.

#### **High Oil Pressure:**

Land as soon as practical.

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. Oil temperature may be monitored to corroborate low oil pressure readings.

A complete loss of oil pressure may signify oil exhaustion. Continued operation of the engine could result in a serious emergency situation or severe engine damage. Complete the Engine Securing Procedure (para. 3.5a) on the faulty engine. If engine oil is depleted, the engine will seize and if feathering is not initiated above 950 RPM the propeller will not feather.

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#### 3.5e Engine Indication System (EIS) (continued)

# 

High Oil / Cylinder Head Temperature

(If altitude permits)

Abnormally high oil temperature may be caused by low oil level. Monitor oil pressure gage for accompanying loss of pressure.

Excessive cylinder head temperature may parallel excessive oil temperature.

If the problem persists, land as soon as practical and have the cause investigated.

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#### 3.5e Engine Indication System (EIS) (continued)

#### Loss of Fuel Flow

FUEL PUMP (Affected Engine).....ON

#### CAUTION

If normal engine operation is not immediately re-established, the FUEL PUMP should be turned off. The lack of engine response could indicate a leak in the fuel system. If a fuel leak is verified, switch the fuel selector to OFF and proceed with the Engine Securing Procedure.

# **Fuel Quantity**

Indication: Master Warning, Triple Chime, LFUELOTY / RFUELOTY

Master Caution, Double Chime, LFUELOTY / RFUELOTY

If one tank has low fuel quantity:

If both tanks have low fuel quantity:

FUEL Selectors ......ON

Land as soon as possible.

The L FUEL QTY or R FUEL QTY warning CAS messages alert the pilot of low fuel quantity.

A Master Warning will trigger if the fuel quantity in either tank is 5 GAL or less, or if the Total Fuel Quantity is 10 GAL or less.

A Master Caution will trigger if the fuel quantity in either tank is 10 GAL or less, or if the total fuel quantity is 20 GAL or less.

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#### 3.5f Engine Fire

Engine Fire During Start	
If engine has not started:	
MIXTURECUT-OFF	
THROTTLE FULL OPEN	
ENG STARTCONTINUE to CRANK ENGINE	
If engine has already started and is running, continue operating to try pulling the fire into the engine.	
If fire continues:	
FUEL SelectorsOFF	
FUEL PUMPSOFF	
MIXTURESCUT-OFF	
THROTTLES FULL OPEN	
External Fire Extinguisher	
Airplane EVACUATE	
NOTE	
If fire continues, shut down both engines and	
evacuate.	
Engine Fire in Flight	
FUEL Selector (Affected Engine)OFF	
THROTTLE (Affected Engine)	
PROPELLER (Affected Engine)FEATHER	

If fire persists:

Land as soon as possible.

Procedure

#### 3.5g Electrical Fire

Electrical Fire		
EMERG BATT		
BATT MASTRALTR LEFT/RIGHT Switches	OFF OFF	
Vents		
CABIN HEAT	OFF	
If fire persists, locate and, if practical, extinguish with portable fire extinguisher located on the console just aft of the 2 front seats.		
Land as soon as possible.	<b>,</b>	
Prior to landing:		
GEAR Use Manual Ex	tension of Landing Gear procedure	
WARNIN	(G	
The landing gear must be	e lowered using the	

# 3.5h Landing Gear Unsafe

Landing Gear Unsafe	
Indication: Master Warning, Aural Alert,	CHECK GEAR
GEAR	DOWN
Gear Position Indications	
Indication: Master Caution, Aural Alert,	CHECK GEAR
GEAR	DOWN (if desired)
Gear Position Indications	

emergency extension procedure.

The CHECK GEAR aural alert is activated to notify the pilot that the landing gear are not down and locked, when the aircraft is in a landing configuration. The alert is triggered when manifold pressure is less than 14 In. Hg. on either engine, or flaps are extended to the second or third notch.

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#### 3.5h Landing Gear Unsafe (continued)

The CHECK GEAR Caution is triggered when above ~400 feet AGL and the Warning below ~400 feet AGL.

The CHECK GEAR aural that is triggered by low manifold pressure may be muted by pressing the lower right softkey on the PFD. The CHECK GEAR aural that is triggered by flap position, can only be silenced by retracting the flaps or extending the landing gear.

**Landing Gear Malfunction** 

#### 3.5i Landing Gear Malfunctions

# 

Manual Extension of Landing Gear:

BAT'T MASTR Switch ......ON
ALTR LEFT/RIGHT.....CHECK

Leave emergency gear extension knob out.

# WARNING

If the emergency gear extension knob has been pulled out to lower the gear due to a gear system malfunction, leave the control in its extended position until the airplane has been put on jacks to check the proper function of the landing gear hydraulic and electrical systems.

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#### 3.5j Electrical Failures

#### CAUTION

The LEFT ALTR (Row 1, Column 15) and RIGHT ALTR (Row 1, Column 16) circuit breakers should not be opened manually when the alternators are functioning properly.

#### NOTE

Tripped circuit breakers should be reset only if the affected system/component is considered essential for safety of flight. Prior to resetting the circuit breaker, wait at least one minute and verify there is no smoke or "burning smell". If the circuit breaker opens a second time, leave the circuit breaker out. Have a maintenance inspection performed prior to resetting the circuit breaker. Do not reset any nonessential circuit breakers in flight.

Single Alternator Failure  Indication: Master Warning, Triple Chime, LALTREAL or RALTREAL		
Electrical Load	REDUCE less than 65 AMPS	
Section 1997	(60 AMPS if on ground)	
Failed ALTR Switch	OFF	
Failed Alternator Field Circuit Breaker	RESET	
L ALTR FIELD Circ	euit Breaker (Row 2, Col. 15)	
R ALTR FIELD Circ	uit Breaker (Row 2, Col. 16)	
Failed ALTR Switch	ON	
If alternator still failed:		
Failed ALTR Switch	OFF	
ALTR AMPS Indication	MONITOR	
(MAINTAIN less than 65 AMPS)		
	(60 AMPS if on ground)	

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#### **Dual Alternator Failure**

Indication: Master Warning, Triple Chime, LALTR FAIL and RALTR FAIL

### CAUTION

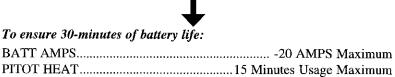
Approximately 30 minutes of electrical power remains after a dual alternator failure. To ensure 30 minutes of battery power, complete the Load Shedding procedure below, within 3 minutes of dual alternator failure.

Verify Failure .......CHECK ALTR AMPS Indication

,		
Attempt to reset alternators:		
Failed ALTR Switches OFF		
Failed Alternators Field Circuit BreakerRESET if tripped		
L ALTR FIELD Circuit Breaker (Row 2, Col. 15)		
R ALTR FIELD Circuit Breaker (Row 2, Col. 16)		
Failed ALTR Switches ON		
If only one alternator resets:		
Operating ALTR Switch ON		
Failed ALTR SwitchOFF		
Electrical Load		
(60 AMPS on ground)		
Ammeter MONITOR		
If neither alternator resets:		
Both Alternator SwitchesOFF		
Electrical Load		
NON ESS BUS Circuit Breaker (Row 1, Col. 1)PULL		
LIGHTING BUS Circuit Breaker (Row 1, Col. 2)PULL		
AVIONICS BUS Circuit Breaker (Row 1, Col. 3)PULL		
AVION MASTER Switch OFF		
EMERG BATTVERIFY ARM		



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If neither alternator resets, the main battery becomes the primary source of electrical power. As battery power is depleted, system voltage may be reduced to a level that is insufficient to support the required electrical load. If this occurs the emergency battery should activate automatically. Activation of the emergency battery may be verified by the CAS Advisory message EMERG BATT ON, and by the VOLT indication changing to E VOLTS on the Engine Indication System. If the emergency battery does not activate automatically (at approximately 20 VOLTS), the BATT MASTR, ALTR 1, and ALTR 2 switches should be turned OFF, thereby forcing the emergency battery to power the Essential Bus.

Refer to Complete Electrical Failure checklist if EMERG BATT ON illuminates.

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# **Complete Electrical Failure**

#### Indication: Single Chime, EMERGBATTON

#### CAUTION

The emergency battery is designed to provide electrical power to all items on the emergency bus for a minimum of 30 minutes.

#### NOTE

The VOLTS indication on the EIS window automatically changes to the emergency bus voltage (E VOLTS) when operating on the emergency battery.

#### NOTE

Cooling air for the PFD is lost when operating on the emergency bus as indicated by the PFD FAN FAIL CAS Advisory message.

EMERG BATT Switch	Verify ARM
Standby Flight Instrument	
Aircraft Control	Use PFD and Standby Instrument
BATT MASTR Switch	OFF
ALTR LEFT/RIGHT Switches	

### **Prior to landing:**

Approximately 30 minutes of electrical power is available.

Land as soon as possible.

The following equipment will operate while on the emergency bus:

- Primary Flight Display (reversionary mode)
- Engine Instruments
- COM1
- NAV1
- Standby Instrument
- · Audio Panel
- Avionics Lighting/Dimming

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# **Emergency Battery Voltage**

Indication: Master Warning, Triple Chime, Flashing Red E VOLTS Indication.

#### WARNING

Complete electrical failure is imminent.

Land as soon as possible.

#### 3.5k Avionics System Failures

#### NOTE

The latest appropriate revision and -XX part number of the Garmin G1000 Cockpit Reference Guide, PN 190-02199-00, and the Garmin G1000 Pilot's Guide, PN 190-02198-00, contain detailed descriptions of the G1000 and GFC 700 autopilot systems.

#### **PFD Failure**

Indication: PFD display goes blank.	
Standby Instrument	Verify OPERATIONAL
Aircraft Control	Use standby instrument
DISPLAY BACKUP (red button on audio	panel)PUSH
	(button extended)
Aircraft Control	MFD and Standby Instrument

Exit and avoid IMC as soon as practical.



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#### NOTE

If the PFD fails, the MFD will remain in normal display mode. Pushing the DISPLAY BACKUP button on the audio panel puts the MFD in reversionary mode, which depicts primary flight instruments, engine and systems information on a single display format. Certain map functions will be lost in reversionary mode.

#### NOTE

\* Multiple pieces of equipment depend on the PFD for proper functionality, including COM1 (121.5 MHz is still available), NAV1, NAV1 DME, GPS1, Traffic, and the GFC 700 autopilot. When the PFD fails, the pilot must manually fly the airplane and use COM2, NAV2, and NAV2 DME when required.

#### NOTE

\* NAV1 DME will continue to function if it was being used prior to the PFD failure. If NAV2 DME is selected, NAV1 DME will no longer function.

وأملا مججودي

Attitude, heading, airspeed and altitude are available on the standby instrument and on the MFD after the DISPLAY BACKUP button is pressed. It is the pilot's responsibility to compare these parameters to verify accuracy.

When the MFD is in reversionary display mode, course deviation indications for GPS and VOR (\* VOR2 only) are available on the HSI and weather products (if installed) are available for display on the inset map.

\* Applicable to SN 4496395, 4496397 thru 4496431, and 4496433 thru 4496446 only.

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#### MFD Failure

Indication: MFD display goes blank.

DISPLAY BACKUP (red button on audio panel).....PUSH

(button extended)

Exit and avoid IMC as soon as practical.

#### NOTE

The PFD will automatically revert to reversionary mode.

#### NOTE

XM will be inoperative. TAS and ADS-B Traffic (if installed) will be inoperative.

#### NOTE

If the GFC700 autopilot was engaged prior to MFD failure, it will remain engaged in its current lateral and vertical modes. The modes cannot be changed and if the autopilot is disengaged, it cannot be re-engaged.

#### NOTE

\* Multiple pieces of equipment depend on the MFD for proper functionality, including COM2 (121.5 MHz is still available), NAV2, DME, GPS2, ADF, and ESP. When the MFD fails, the pilot must use COM1, NAV1, when required.

Attitude, heading, airspeed and altitude indications are available on the standby instrument and on the PFD in reversionary display mode. It is the pilot's responsibility to compare these parameters to verify accuracy.

After an MFD failure, the PFD should automatically revert to reversionary mode. However, pressing the DISPLAY BACKUP button ensures that the PFD reverts. Without automatic or manual reversion of the PFD, engine indications would not be available.

Applicable to SN 4496395, 4496397 thru 4496431, and 4496433 thru 4496446 only.

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### **AHRS Failures**

#### **AHRS Total Failure**

#### On Ground:

Indication: Sky/Ground presentation removed, course pointer straight up, red X's on all attitude and heading indicators.

If AHRS data still invalid:

IFR operations not authorized.

### In Flight:

Indication: Sky/Ground presentation removed, course pointer straight up, red X's on all attitude and heading indicators.

#### NOTE

The course pointer will point upwards at all times, but the CDI can still be used for navigating in GPS/OBS and VOR/LOC modes.

If AHRS data still invalid:

## Exit and avoid flight in IMC

## NOTE

The autopilot (including ESP and USP) and SurfaceWatch (if installed) will be inoperative if AHRS remains inoperative.

#### NOTE

Traffic Advisory System (TAS) and ADS-B Traffic (if installed) symbols will not be displayed on the moving map, however TAS and ADS-B Traffic (if installed) information remain available on the TAS page.

#### NOTE

For partial AHRS failures, a red **X** will appear over the affected indication(s).

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## Air Data Computer (ADC) Failures

#### **ADC Total Failure**

#### On Ground:

Indication: Red or yellow X's on all Air Data indications.

If ADC data still invalid:

IFR operations not authorized.

#### In Flight:

Indication: Red or yellow X's on all Air Data indications.

### NOTE

During failure of ADC, Traffic Advisory System (TAS) and GFC700 autopilot (including ESP and USP) will be inoperative.

If ADC data still invalid:

Exit and avoid flight in IMC.

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## **Erroneous or Loss of Engine and Fuel Displays**

## Indication: Yellow X over affected engine indication or fuel display

#### NOTE

Erroneous information should be suspected when indications do not agree with other system information. Erroneous indications may be identified by comparing a display with other system information.

- 1. Set power based on throttle lever position, engine sound and speed.
- 2. Monitor other indications to determine the health of the engine.
- Use known power settings from POH power setting tables for approximate fuel flow values.
- 4. Use other system information, such as annunciator messages, fuel totalizer quantity and flow, to safely complete the flight.

### If indications for any of the following are invalid:

- All Engine Parameters
- VOLTS
- ALTR AMPS
- BATT AMPS
- · FUEL QTY

GEA circuit breaker (Row 2, Col. 3)......RESET

If all engine parameters are still unavailable, land as soon as practical.

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## **Erroneous or Loss of Warning/Caution CAS Messages**

Indication: Yellow X is shown over the CAS message window or CAS message present when not expected or CAS message not present when expected.

1. If a yellow X is placed over the CAS message window, monitor engine and airframe indications.

#### NOTE

See Section 3.1 of this handbook for a list of CAS Warning, Caution and Advisory messages that may be inoperative.

- If a CAS message appears that is not expected, treat it as if the condition exists.
- 3. If an abnormal condition exists but the CAS system has not been activated, use other available information to confirm the condition exists. If it cannot be determined that the condition does not exist, treat the situation as if the condition does exist and take appropriate action

#### NOTE

CAS messages are inhibited for many parameters on the Engine Indication System (EIS) display of the MFD. The Master Warning and Master Caution indications and associated chimes are still activated whenever any indicated parameter enters the red or yellow bands.

If a yellow X appears over the CAS message window, land has soon as practical.

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## Communications (COM1 and COM2) Failure

Indication: Inability to communicate/receive on COM1 and COM2.

#### NOTE

No matter what the cause, of a Com failure, removing power from the audio panel actuates a fail-safe connection between the pilot's headset/microphone and COM1.

AUDIO MKR circuit breaker (Row 2, Col. 9).....PULL

Exit and avoid IMC as soon as practical.

#### **Dual GPS Failure**

Indication: Amber "DR" annunciation on HSI, Amber "DR" superimposed over airplane symbol on moving map.

## If no alternate navigation sources are available:

Dead Reckoning (DR) Mode - Is active when in Enroute mode (the airplane is greater than 30 NM from the destination airport in flight plan).

## WARNING

In DR mode, the estimated position becomes increasingly unreliable over time and should not be used as a sole means of navigation. In DR mode the CDI is initially displayed in amber, but is removed after 20 minutes.



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### TAWS is Inoperative.

DR mode uses heading, airspeed and last known GPS position to estimate the airplanes current position. All maps with an airplane symbol show a ghosted airplane and a "DR" label.

#### NOTE

Traffic Information System (TIS) and Traffic Advisory System (TAS) are not dependent on GPS information. Therefore, the position of displayed traffic relative to the airplane symbol on the map is still accurate.

Loss of Integrity (LOI) Mode - Is active when GPS integrity is insufficient for the current phase of flight.

Navigation ......Crosscheck / use other navigation sources as required.

### NOTE

All information derived from GPS or DR is removed from the displays.

The airplane symbol is removed from all maps. The map will remain centered at the last known position.

"NO GPS POSITION" is shown in the center of the map.

TAWS and TAS are inoperative.

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## **Autopilot Malfunction**

Indication: An unexpected roll or pitch deviation from the desired flight path, possible flight director command deviations from desired aircraft attitudes and possible autopilot disconnect with red AFCS annunciation, amber or red A/P annunciation on PFD.

### WARNING

Do not press the LVL switch (if installed) if an autopilot or pitch trim malfunction is suspected.

Control Wheel	GRASP FIRMLY
Attitude Indicators	CROSSCHECK
A/P DISC Switch	DEPRESS and HOLD
Pitch Trim	RETRIM as necessary
AUTOPILOT Circuit Breaker (Row 3, Col. 2).	PULL
Autopilot	.DO NOT RE-ENGAGE

## **Automatic Autopilot Disconnect**

Indication: Flashing red and white A/P on PFD and aural disconnect tone

Pitch Trim...... RETRIM as necessary

#### NOTE

The autopilot disconnect may be accompanied by a red boxed PTCH (pitch), ROLL, or PTRM annunciation on the PFD, indicating the axis which has failed. The autopilot cannot be re-engaged with any of these annunciations present.

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### **Electric PitchTrim Failure**

### Indication: Red boxed PTRM on PFD

### NOTE

Loss of the electric pitch trim servo will not cause the autopilot to disconnect. Monitor pitch attitude for unusual behavior. Be alert to possible autopilot out-of-trim conditions (see AUTOPILOT OUT OF TRIM procedure this section) and expect residual control forces upon disconnect. The autopilot will not re-engage after disconnect with failed pitch trim.

Autopilot.......DISCONNECT

## **Electric Pitch Trim Runaway**

Indication: An unexpected pitch deviation from the desired flight path and red PTRM annunciation

### WARNING

Do not press the LVL switch (if installed) if an autopilot or pitch trim malfunction is suspected.

#### NOTE

After the autopilot is disengaged, it can not be re-engaged until the electric pitch trim system regains functionality.

Control Wheel	GRASP FIRMLY
Attitude Indicators	CROSSCHECK
A/P DISC Switch	DEPRESS and HOLD
PITCH TRIM Circuit Breaker (Row 3, Col. 1)	PULL
Pitch Trim.	

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# **Autopilot Overspeed Recovery**

Indication: MAXSPD annunciation at the top of the PFD airspeed tape

This autopilot mode is active whenever the aircraft actual or projected airspeed exceeds  $V_{\rm NE}$ .

### NOTE

Overspeed recovery mode provides a pitch up command (to a maximum level flight altitude) to decelerate the airplane below VNE. The autopilot must be engaged for it to follow the pitch-up commands of the flight director. Overspeed recovery is not active in altitude hold (ALT), glideslope (GS) or glidepath (GP) modes. The speed reference cannot be adjusted while in overspeed recovery mode.

## **Autopilot Underspeed Recovery**

Indication: annunciation at the top of the PFD airspeed tape and USF AGINE annunciation on PFD

This autopilot mode is active whenever the autopilot is engaged and the airspeed has decreased below a minimum threshold.

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## **Autopilot Out-Of-Trim**

Indication: Amber, ← AIL, AIL →, ↑ELE, or ↓ ELE on PFD

#### CAUTION

Do not attempt to overpower the autopilot in the event of a mistrim. The autopilot servos will oppose pilot input and will trim opposite the direction of pilot input (pitch axis only). This could lead to a significant out-of-trim condition. Disconnect the autopilot using the A/P DISC / TRIM INTER switch if manual control is desired.

## CAUTION

Be prepared to apply a sustained control force in the direction of the annunciation arrow. For example, an arrow pointing to the right with AIL annunciation indicates that sustained right wing down control wheel force will be required upon autopilot disconnect.

AP DISC Switch DEPRESS
Affected trim system RETRIM
Autopilot RE-ENGAGE if available

If the mistrim indication re-occurs, disconnect the autopilot for the remainder of the flight or until the offending condition is resolved.

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## **Abnormal Flight Director Mode Transitions**

### Indication: Flashing lateral or vertical mode annunciations on PFD

#### NOTE

Upon loss of a selected mode, the system will revert to the default mode for the affected axis, either ROL or PIT.

#### Loss of selected vertical mode

Autopilot Mode Controls ..... SELECT ANOTHER VERTICAL MODE

If on an instrument approach:

Autopilot.......DISCONNECT (if coupled) and continue manually or execute missed approach

#### Loss of selected lateral mode

Autopilot Mode Controls ...... SELECT ANOTHER LATERAL MODE

If on an instrument approach:

## **Autopilot Preflight Test Failure**

### **Indication: Red Boxed PFT on PFD**

### NOTE

When the AUTOPILOT circuit breaker is pulled, the red PFT annunciation will be removed and the autopilot will be unavailable. One attempt at resetting the circuit breakers is allowed.

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## **Loss Of Navigation Information**

Indication: Amber VOR, VAPP, GPS, BC, LOC or GS flashing on PFD

### NOTE

If a navigation signal is lost while the autopilot is tracking it, the autopilot will roll the aircraft wings level and default to roll mode (ROL).

Autopilot	. SELECT ANOTHER LATERAL MODE
Nav Source	SELECT A VALID NAV SOURCE
Autopilot	SELECT NAV
If on an instrument approach at	the time the navigation signal is lost:
Missed Approach	EXECUTE
(A second approach may be at	tempted using other navaids.)

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## **Cooling Fan Failures**

Indication: CAS Advisory, Single Chime, AV FAN FAIL / PFD FAN FAIL

If failure occurs on ground:

Do not fly until issue is resolved.

If failure occurs in flight:

Fix issue prior to next flight.

When any of these CAS messages illuminate, it is possible to exceed the manufacturer's specified temperature limits for the affected equipment. The avionics fan (AV FAN FAIL advisory CAS message) supplies cooling air to the transponder and GIA. Displays may automatically dim if excessive temperatures are detected.

Pitot Heat
Indication: Master Caution, No Chime, PRIOTHEATOFF
PITOT HEAT SwitchON (If desired)
Indication: Master Caution, Double Chime, PHOTHEATFAIL
PITOT HEAT SwitchOFF
PITOT HEAT Circuit Breaker (Row 2, Col. 2)RESET
PITOT HEAT SwitchON
If Pitot Heat still inoperative:
Exit and Avoid Instrument Meteorological Conditions.

To aviod damage to the Pitot heating units, continuous ground operation should be limited to no longer than 3 minutes. See Section 7 for additional information.

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## 3.51 Hydraulic Pump Failures

Hydraulic Pump Failures
Hydraulic pump will not deactivate: Indication: Master Caution, Double Chime, HYDR PUMP ON
GEAR PUMP Circuit Breaker (Row 2, Col. 12)PULL
Prior to landing:
GEAR PUMP Circuit Breaker (Row 2, Col. 12)RESET
If GEAR PUMP Circuit Breaker Opens:
Complete Manual Extension of Landing Gear checklist
Hydraulic pump will not activate:
Indication: Gear Position Indications remain in current position
GEAR
If landing gear remains up (prior to landing):
Complete Manual Extension of Landing Gear checklist
If landing gear remains down:
Airspeed

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#### 3.5m Starter Engaged

# Starter Engaged Indication: Master Warning, Triple Chime, LSTART ENGD / RSTART ENGD If on the ground: THROTTLE ......REDUCE ENG START Circuit Breaker (Row f, Col. 12)......PULL ENGINE ......SHUTDOWN If in flight: THROTTLE ......REDUCE ENG START Circuit Breaker (Row 1, Col. 12)......PULL Land as soon as possible.

### 3.5n Spin Recovery (Intentional Spins Prohibited)

# **Spin Recovery**

### WARNING

Intentional Spins Prohibited.

### NOTE

Federal Aviation Administration Regulations do not require spin demonstration of multi-engine airplanes; spin tests have not been conducted. The recovery technique presented is based on the best available information.

Throttles		
Rudder		FULL OPPOSITE TO
		DIRECTION OF SPIN
Control wheel		FULL FORWARD
Ailerons	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	NEUTRAL
Rudder	?	NEUTRALIZE when
		rotation stopsSMOOTH BACK PRESSURE
Control wheel		SMOOTH BACK PRESSURE
		to recover from dive

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### 3.50 Open Door

Open Door	
To close the door in flight:	
Airspeed	
Upper latch (if open)	
closing latch If both latches open	

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

### 3.5p Propeller Overspeed

Propeller C	Overspeed
THROTTLE (Affected Engine)	DECREASE (do not feather)

Propeller overspeed is usually caused by a malfunction in the propeller governor which allows the blades to rotate to full low pitch.

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## 3.5q Emergency Descent

Emergency Descent	
THROTTLES	CLOSED
PROPELLERS	FULL INCREASE
MIXTURES	AS REQUIRED
GEAR (Below 140 KIAS)	DOWN
Airspeed	

## 3.5r Emergency Exit

Emergency E	Exit
Thermoplastic Cover	
Emergency Exit Handle	PULL FORWARD
Window	PUSH OUT

### 3.5s Heater Overheat

Heater Overheat
Indication: Master Warning, Triple Chime, HTR OVRHEAT
CABIN HEATOFF

An overheat switch in the heater unit deactivated the heater. See Section 7 for additional information.

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#### 3.5t Carbon Monoxide CAS Indications

## **CO Detector Warning**

Indication: Master Warning, Triple Chime, COLVEHIGH

### If the CO Detector Warning or Caution activates in flight:

Press the CO RST softkey (on the engine page) to reset the CO Detector.

### If the Warning or Caution continues:

Shut off the heater and any other opening to the engine compartment.

Open a fresh air source immediately.

Don't smoke.

### Land as soon as practical.

Be sure the source of the contamination is corrected before further flight.

#### NOTE

The caution CAS message will remain until the CO level drops below 50 parts per million (PPM) by volume of carbon monoxide concentration. Do not recycle the unit through the circuit breaker. A three-minute delay is required for the CO sensor to stabilize after each power-up.

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