READING AERO CLUB
C-172 N2373K
QUICK REFERENCE HANDBOOK

QRH checklists are for informational purposes only and should not be used as a substitute for official documents or the pilot's own judgment and training.

Quick Action Index

For PILOT and passenger awareness:

Terrain CAUTIONS, ALERTS and WARNINGS may be observed with any non-normal approach to an airport runway and/or on an approach and landing at an off-airport location. Commands from the TAWS (terrain alerts and warning system) may be counterintuitive to the necessary pilot actions in an emergency.

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The C172S N2373K has numerous equipment changes that may affect how a pilot might handle an emergency or abnormal situation. This QRH includes considerations from the aircraft POH, the supplemental Sections, the equipment's pilot guides and The FAA Airplane Flying Handbook.

Emergencies and abnormal procedures goals:

1. To help the pilot with recognizing a problem.
2. Time management, the red pages are emergencies that require immediate pilot actions and may have Boldface memory item actions. Red pages also mean that the probability of an immediate forced landing may exist. (Red = "*No"* Time Emergencies)
3. Other checklists will help the pilot to determine whether a precautionary landing is necessary. (Yellow = *"some"* Time for the pilot to take a course of action)
4. To include the "Newer" equipment functions into the Emergency and Abnormal checklists. The safety measures provided by the features of the "Newer" equipment may have made some procedures of the POH obsolete.
5. The QRH also considers the likely operations by the Aero Club's pilots. (Such as the use of ATC for assistance)

How to use the QRH

Airplane systems anomalies found before attempting takeoff should be properly corrected. With few exceptions, the QRH is for use AFTER starting the takeoff roll.

The checklists are designed to be read from top down. The Checklist for a condition is complete when you have reached four ■ ■ ■ ■ . (*Not necessarily at the end of the page)*

Text Boxes are condition variables *"if's"*. The pilot chooses which condition applies and that text box will direct the pilot to further actions.

QRH checklists may not include items that should have been completed under the NORMAL checklists. Example: Seatbelts and shoulder harnesses are assumed ON by the normal Before Takeoff Checklist and are not included in the QRH Engine Failure During Takeoff Roll checklist procedure.

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Airspeeds for Emergency Operation

Engine Failure After Takeoff/Go-Around:

Flaps UP ..... 70 KIAS

Flaps DOWN ..... 65 KIAS

Maneuvering Speed ..... 105 KIAS
Maximum Glide ..... 68 KIAS
Precautionary Landing with Engine Power ..... 65 KIAS
Landing Without Engine Power:
Flaps UP ..... 70 KIAS
Flaps DOWN ..... 65 KIAS

SECTIONS

NOTE: Bold Faced type items are immediate actions which should be committed to memory.

FOR REFERENCE ONLY - NOT APPROVED

1 AUTOPILOT EMERGENCIES and ABNORMAL PROCEDURES

2 COMMUNICATIONS / RADIOS / NAVIGATION

3 ELECTRICAL

4 ENGINE

5 FLIGHT CONTROLS

FOR REFERENCE ONLY - NOT APPROVED

6 FLIGHT INSTRUMENTS & WARNING SYSTEMS (GI 275)

7 FIRE / SMOKE / FUMES

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10 MANEUVERS

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FOR REFERENCE ONLY - NOT APPROVED

1 AUTOPILOT EMERGENCY & ABNORMAL PROCEEDURES

FOR REFERENCE ONLY - NOT APPROVED

Autopilot Malfunction / Pitch Trim Runway

Conditions: Airplane deviates unexpectedly from the planned

WARNING: Do not overpower autopilot. The trim will operate in the direction opposite the overpower force, which will result in large out-of-trim forces.

CAUTION: Be prepared for high elevator control forces.

NOTE: Do not release the AP DISC TRIM INT Button until AFTER pulling the AUTOPILOT Circuit Breaker

1. Control wheel ..... GRIP FIRMLY
2. A/P DISC / TRIM Button ..... PRESS AND HOLD
3. Aircraft Attitude ..... MAINTAIN / REGAIN AIRCRAFT CONTROL
4. Elevator Trim ..... RE-TRIM if necessary, using Elevator Trim Control Wheel
5. AUTOPILOT Circuit Breaker ..... PULL
6. AP DISC / TRIM INT Button ..... RELEASE
7. Elevator Trim ..... USE MANUAL TRIM WHEEL

DO NOT ATTEMPT TO RE- ENGAGE THE AUTOPILOT
OR USE ELECTRIC TRIM.

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AP Autopilot Failure / Abnormal Disconnect

Conditions: Red AP in the Autopilot status box, and continuous aural

NOTE: In the event of GMC failure, pressing the GI 275 knob will acknowledge the disconnect tone.

1. AP DISC/TRIM INT Button or GI 275 knob ..... PRESS AND RELEASE
2. Aircraft control ..... MAINTAIN / REGAIN AIRCRAFT CONTROL

Choose one

AP Abnormal Disconnected Autopilot ... ATTEMPT RE-ENGAGE	AP Autopilot INOP Flight Director AVAILABLE ONLY	AFCS Autopilot & Flight Director INOP

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PTRIM PITCH TRIM FAILURE

Condition: PTRIM autopilot status box. Failure of pitch trim servo.

WARNING: Be prepared for high elevator control forces.

1. Control Wheel …….. GRIP FIRMLY
2. AP DISC / TRIM INT Button ……..……..…….. PRESS and RELEASE
3. Elevator Trim ……..... AS REQUIRED USING TRIM WHEEL

NOTE: Autopilot may be re-engaged, referencing MANUAL PITCH TRIM WITH AUTOPILOT ENGAGED procedures.

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ESP ACTIVATION

1. Throttle ……..…….. AS REQUIRED
2. Aircraft Attitude ……..……. 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. button will allow

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MAXSPD OVERSPEED PROTECTION

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

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

After overspeed is corrected.

3. Autopilot ..... RESELECT VERTICL & LATERAL MODES (if necessary)
4. Throttle ..... ADJUST as necessary

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MINSPD UNDERSPEED PROTECTION

NOTE: Underspeed protection mode provides a pitch down command to maintain 50 KTS.

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

After underspeed is corrected.

3. Autopilot ..... RESELECT VERTICL & LATERAL MODES (if necessary)
4. Throttle ..... ADJUST as necessary

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AP AUTOPILOT PRE-FLIGHT TEST FAIL

NOTE: ESP and electric elevator trim are inoperative.

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

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LOSS OF NAVIGATION INFORMATION

Conditions: Amber GPS, VOR, LOC, or BC flashes for 10 seconds.

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).

1. GMC 507 Mode Panel …… SELECT HDG mode & SET desired heading
2. NAV Source ……..…. SELECT a valid NAV source
3. NAV key ……..... PRESS
   If on an instrument approach at the time the navigation signal is lost.
4. Missed Approach Procedure ……..…….. EXCUTE (as applicable)

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PTRIM

LOSS OF AIRSPEED DATA

NOTE: If airspeed data is lost while the autopilot is tracking airspeed, the flight director will default to pitch mode (PIT).

1. AP DISC / TRIM INT Button …….. PRESS AND RELEASE
2. Aircraft Attitude …… MAINTAIN / REGAIN AIRCRAFT CONTROL
3. Manual Elevator Trim …… TRIM as required

NOTE: The autopilot cannot be re-engaged. The flight director is available however IAS mode cannot be selected. Loss of airspeed will be accompanied by a red PTRIM indication on the GI275.

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LOSS OF ALTITUDE DATA

NOTE: If altitude data is lost while the autopilot is tracking altitude, the autopilot will default to pitch mode (PIT).

1. Autopilot …… SELECT different vertical mode

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LOSS OF GPS INFORMATION

Conditions: GPS position information is lost to the autopilot.

NOTE: If GPS position data is lost while the autopilot is tracking a GPS, VOR, LOC or BC course, the autopilot will default to roll mode (ROL). The autopilot will default to pitch mode (PIT) if GPS information is lost while tracking an ILS. The autopilot uses GPS aiding in VOR, LOC and BC modes.

1. Autopilot …….…. SELECT different lateral & vertical mode (as necessary)

If on an instrument approach:

2. AP DISC / TRIM INT button …… PRESS, Continue approach manually OR
3. Missed Approach Procedure ……..……..…. EXCUTE (as applicable

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HEADING SOURCE FAILURE

NOTE: Track information will be displayed on the G5, or GI 275. Without a heading source to the navigator, GPSS will not be provided to the autopilot for heading legs. Navigator map cannot be oriented heading up.

1. Autopilot …….. SELECT different lateral mode (as necessary)

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TRIM UP
TRIM DOWN

ELEVATOR MIS-TRIM (AUTOTRIM)

Conditions: Indicates a mis-trim of the elevator while the autopilot engaged.

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

NOTE: Momentary display of 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 wheel forces in the directions of the Mis-Trim 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

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

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2 COMMUNICATIONS / RADIOS / NAVIGATION

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INTERMITTENT or SCRATCHY RADIOS

Condition: Radio communication difficulties transmitting and receiving.

NOTE Scratchy radios may be an indication of losing Electrical power. If VOLTS annunciated and/or (-) AMP indication on the ammeter, see LOW VOLTS Alternator Fail checklist SEC 3, pg. 3.

1. GNS 430W COMM FREQ …… CONFIRM (TX & RX)
2. Try …… COMM 2
3. Ask ATC for different Frequency or try 121.5
4. Consider using Transponder IDENT to acknowledge ATC transmissions.
5. Try using Co-Pilot's Headset plugs and yoke MIC switch
6. Try using another headset or speaker on audio panel
7. Try using handheld radio (if available)

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LOST COMMUNICATIONS

Condition: Unable to reach ATC (assigned frequency or on 121.5) or failure of both Radios.

CAUTION: Maintain vigilance for other aircraft and make predictable maneuvers.

NOTE: Stay clear of Class B, C, or D airspace while assessing the situation. Assume ATC tower will use light gun signals.

1. If Transponder powered ………………………..……..….……… SQUAWK 7600
2. Cellphone/ handheld radio (if available) ………………...... CALL ATC TOWER

VFR Flights Landing at Airports with an ATC Tower. >>> Go to Step 3	IFR Flight, Comply with IFR LOST COMM Procedures ■ ■ ■ ■

3. Traffic Pattern and Runway ……………..………………………..…… DETERMINE
   Observe windsock or traffic pattern to find the direction and flow of traffic.
4. Enter and Fly …………………………..…..… STANDARD PATTERN & ALTITUDE
5. Scan the Tower …..…………………….….…. LOOK FOR LIGHT GUN SIGNALS
   Stay in pattern and altitude, follow and comply with ATC light gun signals.
6. WHEN STEADY GREEN Signal …..……………..……… LAND WITH CAUTION
7. After landing ……………….…………………...... CLEAR RUNWAY AND STOP
8. Follow Tower Instructions ………………..... COMPLY TO LIGHT GUN SIGNALS

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AIR TRAFFIC CONTROL: LIGHT GUN SIGNALS FOR PILOTS

Aircraft on the Ground	Signal	Aircraft in Flight
Cleared for takeoff	Steady green	Cleared for landing
Cleared for taxi	Flashing green	Return for landing - to be followed by steady green at the proper time
STOP	Steady red	Give way to other aircraft and continue circling
Taxi clear of the runway in use	Flashing red	Airport unsafe, do NOT land
Return to starting point on airpot	Flashing white	Not applicable
Exercise extreme caution	Alternating green/red	Exercise extreme caution

STUCK MICHROPHONE

Condition: Stuck MIC indicated by continuous (TX) Transmitting in the COMM Frequency window and unable to hear ATC's or other Aircraft's transmissions.

NOTE: COM 2 (GNC 255) If the microphone is keyed for longer than 35 seconds, the GNC 255 will revert to receive mode.

1. MIC switches …………………………………...……………..… CYCLE (to unstick)
2. RADIO 2 (GNC 255) .... TUNE DESIRED FREQ (or 121.5)
3. Intercom Panel ……………………….……….…………….… SELECT COM2 MIC
4. Communications ……………………….……………....………… USE COM 2

If message appears on Com 2 (GNC 255), "COM PUSH-TO-TALK KEY IS STUCK"

5. Com 2 (GNC 255) .... PRESS ENT
6. PULL Headset Jacks …………………………… PLUG INTO CO-PILOT's SIDE
7. For Radio Transmissions …………………..... USE CO-PILOT YOKE MIC KEY

If communication problems persist,
- Headset's Microphone Jacks PULL
- Hand Microphone ……..……… TRY
- Handheld Radio …………..…. TRY

If problems persist, >>> Go To step 8

If normal communications, continue using CO-PILOT's yoke MIC key

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8. Attempt to Advise ATC or
   Observe Control tower ………………………………. USE LIGHT GUN SIGNALS
9. See LOST COMMUNICATION SEC 2, pg. 2 section for additional info.

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3 ELECTRICAL

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AMMETER SHOWS EXCESSIVE RATE OF CHARGE

Condition: Ammeter (Full Scale Deflection)

CAUTION: With the alternator side of the master switch OFF, magnetic (wet compass) deviations as much as 25° may occur.

1. Alternator SW ..... OFF
2. Annunciator panel ..... VOLTS (illuminated)
3. Display Backup Switch ..... ON
4. Flight instruments Use ..... (lower GI 275).STANDBY ADI
5. Nonessential Electric Equipment ..... OFF
6. Seek VFR and land at nearest suitable airport
7. Advise ATC/CTAF ..... DECLARE EMERGENCY

GI 275 STANDBY ADI BATTERY ENDURANCE

<15 minutes 15 - 59 60 minutes

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CIRCUIT BREAKER RESET

NOTE: Wait 2 to 5 minutes before resetting circuit braker

1. Open Circuit Breaker ..... LIMITED TO A SINGLE RESET

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CABIN & ELECTRICAL FIRE / SMOKE / FUMES

Condition: Presence of FIRE, SMOKE, FUMES (electrical smoke - distinct odor of burning insulation, or Faulty circuit)

1. Master Switch ..... OFF
2. Vents, Cabin Air, Heat ..... CLOSED
3. Fire Extinguisher ..... ACTIVATE

At ANY TIME if situation becomes UNMANAGEABLE
(FIRE/SMOKE PERSIST)
IMMEDIATE LAND ASAP/CONSIDER Emergency Descent

WARNING AFTER DISCHARGING FIRE EXTINGUISHER AND ASCERTAINING THAT FIRE HAS BEEN EXTINGUISHED, VENTILATE THE CABIN
>>> Go to Step 4

4. Vents/Cabin Air/Heat ..... OPEN or
..... IF FIRE/SMOKE PERSISTS ..... CLOSED

For Electrical Fire/Smoke/Fumes (Odor of burning insulation) >>> Go To Step 7	If Non Electrical Fire / Smoke / Fumes >>> Go to Step 5

5. Master Switch ..... ON
6. Land At Nearest Suitable Airport (to inspect damage)

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7. Avionics Master Switch ..... OFF
8. All Other Switches (except ignition switch) ..... OFF
9. Master Switch ..... ON
10. Circuit Breakers Tripped ..... DO NOT reset
11. Radio Switches ..... OFF
12 Avionics Master Switch ..... ON
13. Radio/Electrical Switches (one at a time with delay after each) ..... ON
14. Land At Nearest Suitable Airport (to inspect damage).

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VOLTS LOW VOLTS ALTERNATOR FAIL

Condition: Battery low volts , Ammeter indicates discharge (-), alternator output low, ALT FLD circuit breaker tripped or intermittent / scratchy radios

CAUTION: ATC communication, primary flight plan and navigation is lost when Master Switch, Avionic Master – OFF

NOTE: Aircraft's battery may be limited to as little as 15 minutes of use.

NOTE: Volts light may illuminate during low RPM (such as during taxi). Procedure not required if light extinguishes with normal RPM

NOTE: Standby ADI for protection, backup battery operation is inhibited if the battery temperature drops below -20° C or exceeds 80° C.

1. Avionics Master SW ..... OFF
2. ALT CB (ALT FLD) ..... CHECK IN
3. Master SW (both sides) ..... OFF
4. Master SW ..... ON
5. VOLTS Annunciator Light. ..... CHECK OFF
6. Avionic Master SW ..... ON
7. Lower GI275 knob ..... Select HSI

>>If low VOLTS illuminates again:

8. Alternator SW ..... OFF
9. Display Backup Switch ..... ON
10. Flight instruments Use ..... (lower GI275)STANDBY ADI
11. Magnetic (wet) Compass ..... inaccurate (+/-25^)
12. Nonessential Radio & Equip. ..... OFF
13. Seek VFR conditions and Nearest suitable airport ..... LAND
14. Advise ATC/CTAF ..... DECLARE EMERGENCY

STANDBY ADI BATTERY ENDURANCE

<15 minutes 15 - 59 60 minutes

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4 ENGINE

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NOTE: Discontinue RESTART procedure when engine is considered DAMAGED if any of the following:

- Oil or fuel is visibly leaking
- No oil pressure with windmilling propeller
- Max high oil temperature exceeded
- Severe engine vibration
- Engine will not crank
- Selected fuel tank contains fuel and
  Fuel pressure is zero with aux fuel pump on and windmilling propeller
- Engine fire or smoke was observed.

ENGINE FAILURE DURING TAKEOFF ROLL

Engine failed before being airborne

1. **Throttle ..... IDLE**
2. **Brakes ..... APPLY HEAVILY**
3. Wing Flaps ..... RETRACT
4. Mixture ..... IDLE CUT OFF
5. Ignition Switch ..... OFF

If stopping beyond runway surfaces is expected, Transmitted **"MAYDAY, MAYDAY, MAYDAY"**
>>> GO TO STEP 6

If stopping successful on Runway, Advise Traffic"
"ABORTED TAKEOFF ON RUNWAY"
>>> GO TO STEP 6

6. Master Switch ..... OFF

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ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF OR GO AROUND

Condition: Loss of thrust at low altitude after takeoff or during a go around

FLY THE AIRPLANE
LOWER NOSE 70 KTS, W/FLAPS 65 KTS
FUEL PUMP ON, IF POWER RETURNS, LAND ASAP
EMERGENCY LAND, PLAN STRAIGHT AHEAD
'IF TIME", MAYDAY, MAYDAY, MAYDAY

1. Mixture ..... IDLE CUT OFF
2. Fuel Shutoff Valve ..... OFF (PULL)
3. Ignition Switch ..... OFF
4. Flaps ..... AS REQUIRED
5. Master Switch ..... OFF (except at night)
6. Doors ..... UNLATCHED

All Day Landing surfaces other than water, snow, or treetops >>> Go to Step 7

If Landing in water, >>> Go to Step 9.
In Treetops Deep Snow, or at night
>>> Go to Step 10

7. Touch Down ..... SLIGHTLY TAIL LOW
8. Brakes ..... APPLY HEAVILY

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9. Water ..... LAND INTO WIND, OR PARRALLEL TO SWELLS / WAVES
10. Touch down ..... LEVEL ATTITUDE
    ATESTABLISHED RATE OF DESCENT
11. Master Switch ..... OFF
12. EVACUATE ..... through cabin doors
    If necessary, open window and flood cabin

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ENGINE FAILURE DURING FLIGHT

Restart Procedure without engine damage

1. **Airspeed ……..…….…… 68 KIAS**
2. **Fuel Shut Off Valve ……... ON (push full in)**
3. **Fuel Selector Valve……..……BOTH**
4. **Aux. Fuel Pump switch ……..…….. ON**
5. **Mixture ……. RICH (if restart has not occurred)**
6. Ignition Switch ……..…… BOTH (OR START if propeller is stopped)

ENGINES RESTARTS >>> GO TO STEP 7	ENGINE FAIL / DAMAGED, GO TO FORCED LANDING WITHOUT ENGINE POWER

7. Advance throttle slowly from idle and lean mixture as required.
8. Auxiliary Fuel Pump Switch ……..…….. OFF
   If fuel flow indicator immediately drops to zero, engine-driven pump failed
9. Aux. Pump Switch ……..…….. ON
10. Nearest Suitable Airport……..…… LAND

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FORCED LANDING WITHOUT ENGINE POWER

>>> FLY THE AIRPLANE … 68 KIAS while choosing a landing site

1. Announce on ATC (or on 121.5 **……... "MAYDAY, MAYDAY, MAYDAY"**
2. ELT ……..…….. ACTIVATE
3. Passenger Seat Backs …….. MOST UPRIGHT POSITION
4. Seats and Seat Belts ……..…… SECURE
5. Airspeed ……..…….. **70** KIAS (flaps UP), **65** KIAS (flaps DOWN)
6. Mixture ……..…….. IDLE CUT OFF
7. Fuel Shutoff Valve ……..…….. OFF (Pull Full Out)
8. Ignition Switch …….. OFF
9. Wing Flaps ……..……..… AS REQUIRED (30° recommended)
10. Master Switch(when landing is assured) ……..…... OFF (except at night)
11. Doors …….. UNLATCH PRIOR TO TOUCHDOWN

All Day Landing surfaces other than water, snow, or treetops >>> Go to Step 12	If Landing in water, >>>Go to Step 14 In Treetops Deep Snow, or at night >>>Go to Step 15

12. Touchdown ……..…….. SLIGHTLY TAIL LOW
13. Brakes ……..…….. APPLY HEAVILY

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14. Water ……..…….. LAND INTO WIND, OR PARRALLEL TO SWELLS/ WAVES
15. Touch down ……..…….. LEVEL ATTITUDE
    AT ESTABLISHED RATE OF DESCENT
16. Master Switch ……..…….. OFF
17. EVACUATE ……..…….. through cabin doors
    If necessary, open window and flood cabin so doors can be opened

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ROUGH ENGINE OPERATION
PARTIAL LOSS OF POWER

Conditions: Sudden Engine roughness or misfiring, Slight engine roughness, and power surges

NOTE: Climb "IF Possible". More ALTITUDE provides more time and glide distance should sufficient engine power is lost.

NOTE: Excessive fuel vapor is most likely to be generated during ground operations when operating at higher altitudes, in unusually warm temperatures or with more volatile fuel blends. Operation at or near idle RPM (low fuel flow) for extended periods will increase the chances of fuel vapor generation. (See "Leaning For Ground Operations", POH Section 4.)

Engine surges with fuel flow not stable >>>Go to Step 12	Slight engine roughness: Plug fouling/week MAG >>> Go to step 1	Sudden engine roughness or misfire: Magneto malfunction >>> Go to step 7

1. Switch Magneto Switch From BOTH……CHECK L & R
   If power loss is more significant between either (L or R) is evidence of Spark Plug or MAG trouble.
2. Magneto switch……BOTH
3. Mixture Lean …… TO RECOMMENDED SETTINGS

If problem clears up in several minutes, continue ■ ■ ■ ■	If problem does NOT clear up in several minutes >>> Go to step 3

4. Determine if a richer mixture produces smoother operation.
5. Operate on BOTH Magnetos if possible OR switch to use good magneto
6. LAND AT THE NEAREST SUITABLE AIRPORT

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7. Switch Magneto (Switch From BOTH) …… CHECK L & R
   Identify if Magneto L or R is malfunctioning.
8. Switch Magneto …….... BOTH
9. Operate on BOTH MAGs if possible OR switch to use good magneto
10. Power Setting and enrichen Mixture …….. SELECT
    Determine if a different power setting or richer mixture produces smoother operation.
11. LAND AT THE NEAREST SUITABLE AIRPORT

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12. Auxiliary Fuel Pump …… ON
13. Mixture …… LEAN FOR SMOOTH ENGINE OPERATION
14. Fuel …….. SELECT ANOTHER FUEL TANK
15. For COOLING of Engine and Fuel system …… INCREASE AIRSPEED

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FOR REFERENCE ONLY - NOT APPROVED

OIL PRESS OIL PRESSURE LOW, HIGH OIL TEMP.

Conditions: Low oil pressure indication

If oil temperature is HIGH
Suspect Imminent
ENGINE FAILURE

If oil temperature NORMAL
Land at Nearest Suitable
Airport

1. Engine Power ..... REDUCE IMMEDIATELY
2. Suitable Forced Landing Field ..... SELECT
3. LAND ..... ASAP
4. Engine Power ..... USE MINIMUM TO REACH
..DESIRED TOUCHDOWN SPOT
5. Announce on ATC (or on 121.5) ..... **"MAYDAY, MAYDAY, MAYDAY"**
6. ELT ..... ACTIVATE
7. Passenger Seat Backs ..... MOST UPRIGHT POSITION
8. Seats and Seat Belts ..... SECURE

ON FINAL APPROACH

9. Airspeed ..... 70 KIAS (flaps UP), 65 KIAS (flaps DOWN)
10. Mixture ..... IDLE CUT OFF
11. Fuel Shutoff Valve ..... OFF (Pull Full Out)
12. Ignition Switch ..... OFF
13. Wing Flaps ..... AS REQUIRED (30° recommended)
14. Master Switch ..... OFF (when landing is assured) (except at night)
15. Doors ..... UNLATCH PRIOR TO TOUCHDOWN

All Day Landing surfaces
other than water, snow, or
treetops >>> Go to Step 16

If Landing in water,>>>Go to Step 18.
In Treetops Deep Snow, or at night
>>>Go to Step 19

16. Touchdown ..... SLIGHTLY TAIL LOW
17. Brakes ..... APPLY HEAVILY

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18. Water ..... LAND INTO WIND, OR PARRALLEL TO SWELLS / WAVES
19. Touch down ..... LEVEL ATTITUDE
AT ESTABLISHED RATE OF DESCENT
20. Master Switch ..... OFF
21. EVACUATE ..... through cabin doors
If necessary, open window and flood cabin

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REFERENCE ONLY - NOT APPROVED

TACHOMETER FAILURE

Conditions: In flight, Tachometer RPM readings Inconsistent, irregular, or

CAUTION: If the static RPM at FULL Throttle is not between 2300 - 2400 RPM, Takeoff is PROHIBITED.

1. For Cruise and Descents ……..……..…… USE CHART

AVOID FULL THROTTLE settings that exceed engine RPM RED LINE

2. LAND AT THE NEAREST SUITABLE AIRPORT

To Maintaining, Approx. RPM	LVL FLIGHT	DESCENTS
100 KIAS, FLAPS 0	2300 RPM	1700 RPM
90 KIAS, FLAPS 0	2200 RPM	1800 RPM
70 KIAS, FLAPS 10		1700 RPM

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5 FLIGHT CONTROLS

FOR REFERENCE ONLY - NOT APPROVED

FLAPS INOPERATIVE OR STUCK

1. Flap Lever …………………..……………….. RETURN TO LAST POSITION
2. LAND ………………………..………………. at Nearest Suitable Airport
3. Airplane Climb performance may be impacted significantly.

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LANDING WITHOUT ELEVATOR CONTROL

Conditions: Partial or total loss of elevator control, jammed elevator control, Tail damaged by striking the runway or ground surface on Takeoff or Go-Around.

CAUTION: f an elevator becomes jammed, resulting in a total loss of elevator control movement, various combinations of power and flap extension offer a limited amount of pitch control. A successful landing under these conditions, however, can be problematic

NOTE: For horizontal flight use throttle and elevator trim controls.

>>> FLY THE AIRPLANE ………….......... Establish Horizontal Flight by using . Throttle and Elevator Trim Controls

1. Airspeed ……..……….…………………………....…………..... Approx. 65 KTS
2. Flaps ……………………………………………………………………... SET 20°

DO NOT CHANGE THE ELEVATOR TRIM CONTROL SETTING

Control the glide angle by adjusting power exclusively.

3. Transmit to ATC (or 121.5) …………………….. "**MAYDAY, MAYDAY,MAYDAY"**
4. LAND ………………………………… AT THE NEAREST SUITABLE AIRPORT

At the landing flare (round-out), the nose down moment resulting from power reduction is an adverse factor and the airplane may land on the nose wheel. Consequently, at flare, the elevator trim control should be adjusted toward the full nose up position and the power adjusted so that the airplane will rotate to the horizontal attitude for touchdown. Close the throttle at touchdown.

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TAIL STRIKE

1. Maneuver WITH CARE ……………...…… AVOID LARGE CONTROL INPUTS
2. LAND ………………………………… AT THE NEAREST SUITABLE AIRPORT
   If any elevator control problems, ……………….... GO TO LANDING WITHOUT ELEVATOR CONTROL

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6 FLIGHT INSTRUMENTS & WARNING SYSTEMS (GI 275)

FOR REFERENCE ONLY - NOT APPROVED

LOSS OF PRIMARY FLIGHT INFORMATION

If the primary GI 275 ADI fails (loss of some or all primary flight information, display is blank, frozen, or unresponsive).

1. Use standby flight instruments for attitude, airspeed, altitude, and heading reference.
2. If GI 275 reversionary capability is available, the standby GI 275 should automatically change to the ADI page and promptly restore primary flight information. If manual reversion is required, rotate the outer knob left or move the Reversion Backup Switch to the “ON” position.
3. Refer directly to the navigation source for navigation information (such as GPS).
4. Seek VFR conditions or land as soon as practical. If autopilot is engaged:
5. Verify autopilot mode selections and cross check against standby flight and navigation data. Consider disengaging the autopilot.

BLANK SCREEN

If the screen is the primary ADI refer to procedure LOSS of PRIMARY FLIGHT INFORMATION (on this page)

1. Increase display lighting brightness with cockpit dimmer if installed.

AHRS FAILURE

AHRS failure is indicated by the removal of the attitude/heading information and a red X on the GI 275 ADI. Standard rate turn indications will also be removed.

A heading failure may also occur as described in SEC. 6 pg. 6 - HEADING FAILURE

1. Continue flight by reference to the standby ADI
   or
   Manually select “ON” on the GI 275 reversionary backup switch
   or
   Rotate the outer knob to the left to force reversion to ADI Page.
2. Seek VFR conditions or land as soon as practicable if there are no other reliable AHRS sensors capable of providing accurate data.

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ADC FAILURE

ADC failure is indicated by:

- Red X over the airspeed and altitude tapes
- Yellow X over the digital vertical speed value

If valid GPS data is available, the GI 275 will automatically revert to display GPS-calculated altitude relative to mean sea level. GPS altitude is displayed in magenta, in the same location as normal operation.

1. Use standby Airspeed Indicator and Altimeter
2. Seek VFR conditions or land as soon as practical if there are no other reliable ADC sensors capable of providing accurate data.

ATTITUDE, ALT, OR IAS MONITOR CAUTION

If an ATTITUDE, ALT, or IAS monitor CAUTION is displayed in yellow on the attitude display or airspeed/altitude tape:

1. Cross check flight instruments against all available information to determine which indications are correct
2. Seek VFR conditions or land as soon as practical

AIRCRAFT ELECTRICAL SYSTEM FAILURE

In the event of a total loss of aircraft electrical power, the GI 275 will cease to operate, except for displays which are equipped with an internal backup battery. Refer to procedures for failure of affected equipment and operation on backup battery.

R REFERENCE ...OT APPROVED

OPERATION ON BACKUP BATTERY (IF INSTALLED)

Displays equipped with a backup battery will continue to operate after a loss of aircraft electrical power. EIS displays will not be functional. Operation on battery power is indicated by the presence of a battery icon on the affected display. Green battery indication provides at least 60mins, yellow battery indication provides a range between 59mins and 15mins, and red battery indication provides less than 15 minutes of battery operation.

GI 275 STANDBY ADI BATTERY ENDURANCE

<15 minutes 15 - 59 60 minutes

1. Seek VFR conditions and land as soon as practical.

NOTE For protection, backup battery operation is inhibited if the battery temperature drops below -20° C or exceeds 80° C. Battery parameters such as the battery temperature can be viewed in the System Menu.

CAUTION To conserve power and to preserve the display of primary flight data and direct-to navigation capabilities with the optional VGPS receiver, GI 275 backup battery operation internally load-sheds interfaces, which will disable the normal interface with certified navigators or other hazard awareness systems. Depending on how these were installed and configured to the GI 275, some information from these configured systems will not be available when the GI 275 is operating on its backup battery.

If a yellow icon is present during the Before Takeoff ADI system check, verify the battery's remaining capacity is more than 30 mins if the aircraft's service ceiling is below 25,000ft, or more than 60 mins if the aircraft's service ceiling is above 25,000ft.

2. Refer to the battery status and information found in the battery menu (Menu → Systems → Battery).

DISPLAY BACKUP MALFUNCTION

Display backup malfunction is indicated by the unit locking on the ADI page. All other configured pages will not be accessible on the standby ADI or HIS.

A malfunction of the backup battery is indicated by the following indication in the upper left corner of the screen with a system advisory message:

FOR REFERENCE ONLY - NOT APPROVED

BACKUP BATTERY MALFUNCTION

1. Seek VFR conditions or land as soon as practicable.

If this icon is present during the Before Takeoff ADI system check, do not depart into IMC.

FOR REFERENCE ONLY - NOT APPROVED

TERRAIN ALERTS

3.1.11 Terrain Alerts

Aural Alert	Annunciation All Pages	Annunciation Terrain Page	Action
"Terrain, Terrain Pull up, Pull up" -OR- "Obstacle, Obstacle Pull up, Pull up" -OR- "Wire, Wire Pull up, Pull up" -OR- "Warning, Terrain, Terrain" -OR- "Warning, Obstacle, Obstacle" -OR- "Warning, Wire, Wire" -OR- "Pull up"	TER	PULL UP -OR- TERRAIN -OR- OBSTACLE -OR- WIRE	Disconnect autopilot and initiate maximum performance climb (maximum takeoff power and best angle of climb airspeed) NOTE: Only the climb maneuver is recommended, unless operating in VMC or it is determined, based on all available information, that turning in addition climbing is the safest course of action.
"CAUTION, Terrain" -OR- "CAUTION, Obstacle" -OR- "CAUTION, Wire"	TER	TERRAIN -OR- OBSTACLE -OR- WIRE	Take corrective action until the alert ceases. Using all available information to determine the appropriate action, alter the flight path away from the threat by stopping descent, climbing, and/or turning.
"Too low, Terrain"		TERRAIN	Establish climb to the minimum altitude for

2 Re

Aural Alert	Annunciation All Pages	Annunciation Terrain Page	Action
			present position/procedure
"Sink Rate"		TERRAIN	Decrease rate of descent
"Don't sink"		TERRAIN	Establish a positive rate of climb

HEADING FAILURE

If the GI 275 is configured with a VFR GPS or interfaced to a certified GPS source, the HDG indications will be replaced with track (TRK) indications in magenta in the event of a heading failure. The heading bug and course pointer will continue to function normally, using GPS ground track as a reference instead of magnetic heading.

Figure 4- Bottom of the ADI when HDG failed (with GPS)

Figure 5- Top of the HSI when HDG failed (with GPS)

If there is no GPS in the GI 275 system or if the GPS has failed, the heading failure will be indicated by a red “X” in place of the heading readout on the ADI

Figure 6- Bottom of the ADI when HDG failed (no GPS)

or HSIs

Figure 7- Top of the HSI when HDG failed (no GPS)

If GPS track is not available:

1. Use standby compass for heading reference.

NOTE Without magnetic heading or GPS track, the CDI provides no directional information. Only course deviation information is presented, and the orientation of the CDI is based on the selected course, regardless of aircraft heading. Course deviation indications will behave like a traditional CDI. VOR deviations will be relative to the selected course with a TO/FROM indication. Localizer deviations will not be affected by the selected course, and reverse sensing will occur when tracking inbound on a localizer back course.

DISPLAY OVERTEMPERATURE

If the display is in an overheating condition, the system will alert the pilot with a system message. The system message will read “Display Overtemperature.

1. Prepare for loss of the affected display.

GPS DATA FAILURE

GPS data failure may be indicated by any or all of the following:

- Loss of GPS course deviation information on HSI
- Yellow “LOI” text on the ADI
- Yellow “DR” text on the moving map
- Yellow “NO GPS POSITION” text on the moving map
- Loss of waypoint bearing/distance information

1. Select alternate GPS source, if available, by pressing “CDI” button on ADI. If the VFR GPS is configured in the system, while cycling the CDI button the VGPS will become a selectable source. This is limited to Direct-to capability, if configured.
2. If alternate GPS source is not available:

Select alternate navigation source (VOR or LOC, if available) or refer directly to external navigation data.

3. Seek VFR conditions as soon as practical.

NAVIGATION DATA FAILURE (VOR/LOC/GS)

Navigation data failure may be indicated by any or all of the following:

- Loss of course deviation information on ADI
- Loss of glideslope/glidepath information on ADI
- Loss of bearing pointer on HSI

1. Select alternate navigation source or refer directly to external navigation data.

If the synthetic vision depiction is known or suspected to be inaccurate or malfunctioning:

SYNTHETIC VISION MALFUNCTION

1. Turn off synthetic terrain using the Menu → Options → Terrain SVT menu on the ADI

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ELECTRICAL LOAD SHEDDING

The following equipment is considered non-essential. If it becomes necessary to reduce electrical load (for example, during loss of generators or alternators), power to these units may be removed in the order listed.

1. MFD circuit breaker(s) [if installed and not configured as standby

   ADI BREAKER ..... PULL

NOTE Any non-required displays on the co-pilot side may also be powered off.

AHRS ALIGN

If an "AHRS ALIGN / Keep Wings Level" annunciation is displayed on the attitude indicator in flight, limit aircraft operation to:

- ±10o bank
- ±5o pitch
- 200 KTAS or less

CAUTION: Exceeding these values may delay or prevent AHRS alignment.Indicated by individual parameters having a red or yellow X drawn through the gauge and data removed (see EIS failure procedure for loss of entire EIS function).

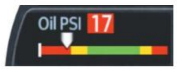
EIS DISPLAY PARAMETER FAILURE

1. Monitor remaining parameters and set engine controls to operate within limitations

FOR REFERENCE ONLY - NOT APPROVED

3.3 WARNINGs, CAUTIONs, and Advisories

The following tables show the color and significance of the warning, caution, and advisory messages which may appear on the GI 275 displays.

3.3.1 WARNING Annunciations – Red		
Annunciation	*Pilot Action*	*Cause*
HDG Fail 	Use Standby Magnetic Compass or GPS track information	Display system is not receiving valid heading input from the ADAHRS or AHRS; accompanied by a red X through the digital heading display.
Red X 	Reference the data source or alternate equipment.	A red X through any display field, indicates that display field is not receiving data or is corrupted.
Red EIS Alert Triangle 	Observe the warning indication on the EIS display and take appropriate action.	One or more engine parameters have exceeded a warning threshold.
Red Engine Parameter 	Take appropriate action to correct condition causing engine parameter exceedance	The engine parameter has exceeded the warning threshold.
Terrain warning 	Take appropriate action to maneuver the aircraft away from the conflicting terrain	Terrain warning due to aircraft proximity to surrounding terrain

WARNING ANNUNCIATIONS - YELLOW

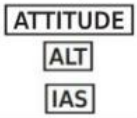
3.3.2 CAUTION Annunciations – Yellow		
Annunciation	*Pilot Action*	*Cause*
AHRS ALIGN – Keep Wings Level 	Limit aircraft attitude to ±10º bank and ±5º pitch as AHRS Aligns - OK to taxi.	Attitude and Heading Reference System is aligning. AHRS may not align with excessive pitch/bank angles.
AHRS NOT READY – Do Not Takeoff 	Remain stationary and allow AHRS to finish initialization and allow navigators to acquire sufficient GPS position.	AHRS sensors are not ready for flight. Additionally, the interfaced navigator does not have sufficient GPS position.
LOI 	Loss of Integrity Monitoring	GPS integrity is insufficient for the current phase of flight.
No GPS Position 	Use alternate information for positional and situational awareness	GPS data is unavailable.
Yellow X 	Reference the data source or alternate equipment.	A yellow X through any display field, indicates that display field is not receiving data or is corrupted.
ATTITUDE 	Fly aircraft manually and crosscheck attitude indication with standby attitude indicator and other sources of attitude information (airspeed, heading, altitude, etc.)	The ADI attitude monitors have detected an AHRS malfunction or an error between AHRS sources (if multiple sources installed). Autopilot may disconnect if AHRS is being used to drive the autopilot. If more than two sensors are installed, only the sensor that miscompares from the others will annunciate. Autopilot may disconnect if AHRS is being used to drive the autopilot.

WARNING ANNUNCIATIONS - YELLOW

ALT and/or IAS (text on ADI) ALT	Cross-check the flagged information against other sources to identify erroneous information.	Differences detected between displayed airspeed and/or altitude (multiple ADC installations only). If more than two sensors are installed, only the sensor that miscompares from the others will annunciate.
AHRS 1/2/3 AHRS 1	Confirm intended AHRS source selection	The ADI is using the cross-side AHRS sensor and AHRS monitor is indicating a miscompare or no-compare (multiple ADI and AHRS installations only).
ADC 1/2/3 ADC 1	Confirm intended ADC source selection	The ADI is using the cross-side ADC sensor and ADC monitor is indicating a miscompare or no-compare (multiple ADI and ADC installations only).
Yellow EIS Alert Triangle 	Observe the caution indication on the EIS display and take appropriate action.	One or more engine parameters have exceeded a caution threshold.
Yellow EIS Parameter 	Take appropriate action to correct condition causing engine parameter exceedance.	The engine parameter has exceeded the caution threshold.
Traffic Caution TFC	Visually acquire the traffic to see and avoid.	The interfaced traffic system has determined that nearby traffic may be a threat to the aircraft.
Terrain Caution TER	Take appropriate action to maneuver the aircraft away from the conflicting terrain	Terrain caution due to aircraft proximity to surrounding terrain
TAWS N/A, TAWS FAIL TER	Use vigilance, terrain depiction and TAWS alerting are no longer provided.	External system that is providing TAWS alerting has failed, or the GI 275 cannot communicate with the system.

ADVISORIES - WHITE

Battery Fault 	Observe the fault condition on the GI 275 by entering the system messages for further details. Seek VFR flight conditions or land as practical.	The Internal battery has detected an issue which may not allow the battery to charge or discharge properly. Such as "Charge Inhibited - unable to charge the battery" or the battery rundown test is out of date.
GPSS Invalid 	Set an active GPS leg to engage GPSS mode or select HDG as the function.	GPSS mode invalid, wings level command sent to autopilot, no active GPS leg, GPS not selected on HSI/ADI 1.
GLIDE 	Smart Glide is active on the GTN.	Reference the GTN Xi AFMS for Smart Glide details and pilot actions.

Annunciation	*Pilot Action*	*Cause*
ATTITUDE, ALT, or IAS (text on ADI) 	View advisory messages to inhibit the annunciation. Be aware that the other (unselected) AHRS/ADC source is not available	Another (unselected) AHRS/ADC source is unavailable.
AHRS 1/2/3/STBY 	Confirm intended AHRS source selection	The ADI is using the cross-side AHRS sensor (multiple ADI and ADC installations only).
ADC 1/2/3/STBY 	Confirm intended ADC source selection	The ADI is using the cross-side ADC sensor (multiple ADI and ADC installations only).
Messages Icon 	View and consider advisory messages. Refer to the GI 275 Pilot Guide for appropriate pilot or service action.	Typically, these indicate system or database status, or data communication issues within the GI 275 System.
Terrain Inhibited 	Use vigilance, traffic system will not provide alerting.	Terrain is inhibited or a terrain test is in progress
External Navigator Message Icon 	View and consider advisory messages on interfaced navigator. Refer to Pilot Guide for the external navigator for appropriate pilot of service action.	Typically, these indicate system or database status.
Electronic Stability Protection Disabled (GFC 500 only) 	Be aware that ESP is disabled on the interfaced GFC 500 autopilot.	The GFC 500 ESP function has been disabled.

UNRELIABLE AIRSPEED / ALTIMETER / VSI

Conditions: Conditions: Blockages in the Pitot Static system,
Both Primary (GI275) and secondary Airspeed indicators affected
- Airspeed - No indications, increases with altitude gained or decreases with altitude loss, remains constant with altitude regardless of actual changes in airspeed. -Altitude, and vertical speed.
- Altimeter & VSI - instruments begin to show lag, all indications remain constant, regardless of actual changes in airspeed, altitude and vertical speed.

1. Stabilize Aircraft ……..…….…….. LEVEL NOSE AND WINGS
2. Maneuver with Caution: Avoid large or excessive control or power inputs
3. Consider Autopilot blue LVL key,
   confirm autopilot status LVL / AP / LVL
4. Set power for 90 KIAS (clean speed) …… approx. 2200RPM
5. Pitot heat if OAT <10C (50F) ……..…….…… ON
6. Alternate Static Source Valve ……..……..…….. PULL

If Airspeed on ADI (Gi275) and analogue airspeed Indicator unreliable:
>>> Go To Step 7

If Altimeter / VSI on ADI (Gi275) and analogue altimeter / VSI indicator unreliable:
>>> Go To SEC 6, pg. 2

7. For Cruise and Descents ……..…… USE CHART

To Maintaining, Approx. RPM	LVL FLIGHT	DESCENTS
100 KIAS, FLAPS 0	2300 RPM	1700 RPM
90 KIAS, FLAPS 0	2200 RPM	1800 RPM
70 KIAS, FLAPS 10		1700 RPM

Vertical speed rate is approximately +/- 100 FPM per +/- 100 RPM change in engine power.

8. Reference GPS Groundspeed (430W) . Compare Against Chart KIAS
   Airspeed = Groundspeed (+) Headwind Factor OR (-) Tailwind factor

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FOR REFERENCE ONLY NOT APPROVED

7 FIRE / SMOKE / FUMES

FOR REFERENCE ONLY - NOT APPROVED

NOTE: FIRE, SMOKE, and/or FUMES events are by nature, one of the most difficult challenges for a pilot.

LAND AS SOON AS POSSIBLE and EVACUATE the airplane WITHOUT DELAY.

The pilot should be familiar with the airplane's emergency descent procedures and should also bear in mind the following:

- The airplane may be severely structurally damaged to the point that the ability to remain under control could be lost at any moment.
- The airplane may still be on fire and susceptible to explosions.
- The airplane is expendable and the only thing that matters is the safety of those on board.

EVACUATION additional considerations:

- Ensure door latches open before touchdown
- Note wind direction and turn aircraft away from wind before coming to a stop to avoid fire entering cockpit & blocking door exits
- Get as far away from airplane as possible
- Call 911

CABIN & ELECTRICAL FIRE/SMOKE/FUMES

Conditions: Presence of FIRE, SMOKE, FUMES (electrical smoke - distinct odor of burning insulation, or Faulty circuit)

1. **Master Switch ..... OFF**
2. **Vents, Cabin Air, Heat ..... CLOSED**
3. **Fire Extinguisher ..... ACTIVATE**

At ANY TIME If the situation becomes UNMANAGEABLE:

(FIRE/SMOKE PERSIST) LAND IMMEDIATELY

(consider emergency descent)

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

4. Vents/Cabin Air/Heat ..... OPEN or
   IF FIRE/SMOKE PERSISTS ..... CLOSED & LAND ASAP

If Electrical Fire/Smoke/Fumes (Odor of burning insulation) >>> Go To Step 7	Non Electrical Fire/Smoke/Fumes >>> Go to Step 5

5. Master Switch ..... ON
6. Land At Nearest Suitable Airport (to inspect damage)

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7. Avionics Master Switch ..... OFF
8. All Other Switches (except ignition switch) ..... OFF
9. Master Switch ..... ON
10. Circuit Breakers Tripped ..... DO NOT reset
11. Radio Switches ..... OFF
12. Avionics Master Switch ..... ON
13. Radio/Electrical Switches one at a time ..... ON
    .....(one at a time with delay after each unit switch)
14. Land At Nearest Suitable Airport (to inspect damage).

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FOR REFERENCE ONLY - NOT APPROVED

ENGINE FIRE DURING START ON GROUND

1. **Ignition Switch ……..…….. START**
   Continue Cranking to get a start, which will suck the flames and accumulated fuel into the engine.

If Engine Starts >>> Go To Step 2	If Engine Fails to Start >>> Go to Step 4

2. Power …….. 1800 RPM for a few minutes
3. Engine …….. SHUTDOWN and inspect for damage

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4. Throttle ……. FULL OPEN
5. Mixture …….... IDLE CUT OFF
6. Cranking……..…….…… CONTINUE
7. Fuel Shutoff Valve ……..…….. OFF (Pull Full Out)
8. Auxiliary Fuel Pump Switch ……..…… OFF
9. Fire Extinguisher ……..…….. ACTIVATE
10. Engine ……..……..…… SECURE
11. Master Switch …….. OFF
12. Ignition Switch ……..…… OFF
13. Parking Brake ……..…… RELEASE
14. Airplane ……..…….. EVACUATE
15. Fire ……..…….. EXTINGUISH
    Use fire extinguisher, wool blanket, or dirt, and call for ARFF
16. Fire Damage inspected and repaired by a qualified mechanic.

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FOR REFERENCE ONLY - NOT APPROVED

ENGINE FIRE IN FLIGHT

Conditions: Fire or Smoke from engine area

1. **Mixture & Throttle ..... IDLE CUT OFF**
2. **Fuel Shutoff Valve ..... PULL OUT (OFF)**
3. **Auxiliary Fuel Pump Switch ..... OFF**
4. Announce on ATC (or 121.5) **"MAYDAY,MAYDAY,MAYDAY"**
5. **Master Switch ..... OFF**
6. Cabin Heat and Air ..... OFF (except overhead vents)
7. Airspeed ..... 100 KTS

If fire is not extinguished, increase glide speed to find an airspeed (within airspeed limitations)-that provides an incombustible mixture. Consider using a forward slip or emergency descent maneuver

8. LAND ..... ASAP
9. ELT ..... ACTIVATE
10. Passenger Seat Backs ..... MOST UPRIGHT POSITION
11. Seats and Seat Belts ..... SECURE
12. Approach Airspeed ..... 70 KTS (flaps UP) 65 KTS (flaps DOWN)
13. Ignition Switch ..... OFF
14. Doors ..... UNLATCH PRIOR TO TOUCHDOWN

All Day Landing surfaces other than water, snow, or treetops
>>> Go to Step 15

If Landing in water, >>>Go to Step 17.
In Treetops Deep Snow, or at night
>>>Go to Step 18

15. Touchdown ..... SLIGHTLY TAIL LOW
16. Brakes ..... .APPLY HEAVILY

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17. Water ..... LAND INTO WIND, OR PARRALLEL TO SWELLS / WAVES
18. Touch down ..... LEVEL ATTITUDE AT ESTABLISHED RATE OF DESCENT
19. Master Switch ..... OFF
20. EVACUATE ..... through cabin doors
    If necessary, open window and flood cabin

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FOR REFERENCE ONLY NOT APPROVED

WING FIRE IN FLIGHT

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

IF fire is Extinguished >>> Go To Step 5	IF fire persists >>> Go To Step 7

5. Land at nearest suitable airport
6. Flaps ..... Only use if required for final approach and touchdown

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7. Perform a sideslip to keep the flames away from the fuel tank and cabin.
8. LAND ..... ASAP
9. Announce on ATC (or on 121.5) ..... "MAYDAY, MAYDAY, MAYDAY"
10. ELT ..... ACTIVATE
11. Passenger Seat Backs ..... MOST UPRIGHT POSITION
12. Seats and Seat Belts ..... SECURE
13. Wing Flaps on Final ..... FLAPS 30°
14. Approach Airspeed ..... 65 KTS
15. Master Switch ..... OFF
16. Doors ..... UNLATCH PRIOR TO TOUCHDOWN

All Day Landing surfaces other than water, snow, or treetops >>> Go to Step 17	If Landing in water, >>>Go to Step 21 In Treetops Deep Snow, or at night >>>Go to Step 22.

17. Touchdown ..... SLIGHTLY TAIL LOW
18. Mixture & Throttle ..... IDLE CUT OFF
19. Ignition Switch ..... OFF
20. Brakes ..... APPLY HEAVILY

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21. Water ..... LAND INTO WIND, OR PARRALLEL TO SWELLS / WAVES
22. Touch down ..... LEVEL ATTITUDE AT ESTABLISHED RATE OF DESCENT
23. Master Switch ..... OFF
24. EVACUATE ..... through cabin doors
    If necessary, open window and flood cabin

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FOR REFERENCE ONLY - NOT APPROVED

8 **FUEL**

FOR REFERENCE ONLY - NOT APPROVED

L LOW FUEL R LOW FUEL / FUEL LEAK / IMBALANCE

Conditions: L / R or Both fuel tanks indicates below 5 gallons.

NOTE: Engine failure may occur if due to low fuel/fuel leak.

NOTE: Low fuel (L or R) light along with associated fuel tank indicates OFF (needle below 0 mark on indicator), the associated transmitter failed or short circuited, fuel indicator inoperative. If normal fuel consumption of the other tank, continue at pilot's discretion.

NOTE: maximum fuel imbalance for autopilot use is 10 Gallons

CAUTION: FIRE risk associated with possible fuel leaks

1. Fuel tank SEL ..... BOTH
2. If any fuel gauge (0-5 GALS) ..... YES
3. Low fuel ..... LAND NEAREST SUITABLE AIRPORT
4. Advise ATC ..... EMERGENCY
5. If large tank imbalance ..... POSSIBLE FUEL LEAK

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FOR REFERENCE ONLY - NOT APPROVED

9 LANDING GEAR

FOR REFERENCE ONLY - NOT APPROVED

BRAKE FAILURE

Conditions During taxi or landing roll, braking action decreases (the brakes become spongy or pedal travel increases)

NOTE: For Minimum stopping distance, Proper braking technique is essential. The brakes are applied firmly until reaching a point just short of a skid.

NOTE: Some of the symptoms of impending brake failure are: gradual decrease in braking action after brake application, noisy or dragging brakes, soft or spongy pedals, and excessive travel and weak braking action. If any of these symptoms appear, the brake system needs immediate attention.

1. Brake pedals ……..…… RELEASE, THEN REAPPLY (HEAVILY)
2. Brake pedals…….…. PUMP, in attempt to build braking pressure

If ONE BRAKE becomes weak or fails,

3. Use the Other Brake …….. SPARINGLY
4. Use opposite rudder ……..…. AS REQUIRED TO OFFSET THE GOOD BRAKE

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HYDROPLANING

Conditions: Ineffective braking due to Hydroplaning with runway contaminants such as Water / Snow / Ice

NOTE: For Minimum stopping distance, Proper braking technique is essential. The brakes are applied firmly until reaching a point just short of a skid.

1. Choose a Grooved Runway ……..…… (if available)
2. Touchdown Speed ……..…… AS SLOW AS SAFELY POSSIBLE
3. Brake pedals . RELEASE,UNTIL WHEEL SPIN UP, THEN REAPPLY
4. Raise the nose and use aerodynamic drag to decelerate to a point where the brakes become effective
5. Directional Control ……..…… USE RUDDER (as required)
6. Brake pedals …….…. RELEASE, UNTIL WHEEL SPIN UP THEN REAPPLY

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FOR TRAINING PURPOSES ONLY. NOT APPROVED

LANDING WITH FLAT TIRE

FLY A NORMAL APPROACH, BUT LINE UP ON SIDE OF RUNWAY OPPOSITE FLAT TIRE

MAIN TIRE	NOSE TIRE
>>> Go to Step 1	>>> Go to Step 5

1. Wing Flaps …… USE 30 DEGREES
2. Touchdown …….. GOOD MAIN TIRE FIRST
   Hold off flat tire as long as possible with aileron control
3. Directional Control .... MAINTAIN use brake on good wheel as required
4. Advise Traffic …… IF UNABLE TO CLEAR RUNWAY

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5. Wing Flaps …… AS REQUIRED
6. Touchdown …….…… ON MAINS
   Hold the nose wheel off the ground as long as possible.
7. When Nose Wheel Touches Down ……..… USE FULL UP ELEVATOR
   Until the airplane slows to a stop.
8. Advise Traffic ……..…….. IF UNABLE TO CLEAR RUNWAY

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TIRE SKIDDING

Conditions: Ineffective braking due to Tire Skidding

NOTE: For Minimum stopping distance, Proper braking technique is essential. The brakes are applied firmly until reaching a point just short of a skid.

1. Brake pedals .. RELEASE, UNTIL WHEEL SPIN UP, THEN REAPPLY
2. Directional Control ……..…… USE RUDDER (as required)

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FOR TRAINING ONLY - NOT APPROVED

10 MANEUVERS

FOR REFERENCE ONLY - NOT APPROVED

EMERGENCY DESCENT

1. Alert other traffic
2. Throttle ..... IDLE
3. Bank angle ..... 30-45 DEGREES
4. Maintain load factor ..... POSITIVE G's
5. Do not exceed ..... Vne (or safe speed if structural damage)

■ ■ ■ ■

DITCHING

1. Radio ..... MAYDAY, MAYDAY, MAYDAY on 121.5, giving location and intentions and SQUAWK 7700
2. Heavy Objects (in baggage area) ..... SECURE OR JETTISON (if possible)
3. Passenger Seat Backs ..... MOST UPRIGHT POSITION
4. Seats and Seat Belts ..... SECURE
5. Wing Flaps ..... 20° to 30°
6. Power ..... ESTABLISH 300 FT/MIN DESCENT AT 55 KTS

NOTE: If no power is available, approach at 70 KTS with flaps up or 65 KTS with 10° flaps.

7. Approach ..... High Winds, Heavy Seas ..... INTO THE WIND
   Light Winds, Heavy Swells ..... PARALLEL TO SWELLS
8. Cabin Doors ..... UNLATCH
9. Touchdown ..... LEVEL ATTITUDE AT ESTABLISHED RATE OF DESCENT
11. Face ..... CUSHION at touchdown with folded coat
12. ELT ..... ACTIVATE
13. Airplane ..... EVACUATE through cabin doors
    If necessary, open window and flood cabin to equalize pressure so doors can be opened.
14. Life Vests and Raft ..... INFLATE WHEN CLEAR OF AIRPLANE

■ ■ ■ ■

SEVERE TURBULENCE

NOTE: Try to maintain steady pitch and wings level attitude, AVOID excessive control forces to maintain Altitude (ride it out)

1. Adjust Throttle ..... MAINTAIN Va SPEED
2. Nose and Wings ..... KEEP A LEVEL ATTITUDE
3. Try engaging Autopilot ..... PRESS BLUE LVL KEY

■ ■ ■ ■

FOR REFERENCE ONLY - NOT APPROVED

SPINS RECOVERY

Conditions: Inadvertent spin occurred

Indications: stall horn, for rotation direction reference turn coordinator

1. **P**ower (throttle) …… IDLE
2. **A**ilerons (control yoke) ……..… NEUTRAL
3. **R**udder (pedal) ……..……,,…..... HOLD FULL OPPOSITE
4. **E**levator (control yoke) …… BRISKLY APPLY FORWARD
   . ENOUGH TO BREAK STALL

As rotation stops, neutralize rudder and make a smooth recovery from the resulting dive.

■ ■ ■ ■ **P.A.R.E**

SPIRAL DIVE RECOVERY

Conditions: A spiral dive, a nose-low upset, is a descending turn during which airspeed and G-load can increase rapidly and often results from a botched

Conditions: Terrain aural and terrain annunciation warnings.

NOTE**:** Pilots typically enter a spiral dive when inadvertently entering IMC.

1. Throttle ……..……..…….. IDLE
2. Apply Some ……..…..... FORWARD ELEVATOR
3. Roll Wings ……..……..…….…… LEVEL
4. Gently Raise the Nose to ……..…... LEVEL FLIGHT
5. Increase Power to ……..…… CLIMB POWER

ALTERNATE RECOVERY METHOD USING THE AUTOPILOT

1. Throttle ……..…….. IDLE
2. Apply Some ……..…. FORWARD ELEVATOR
3. Autopilot ……..…. PRESS blue LVL key
   Once Autopilot establishes Nose and Wings LEVEL
4. Increase power smoothly …… 2000 - 2300 RPM
   Pilot can expect approximately 80-90 KTS in Level Flight

■ ■ ■ ■

FOR REFERENCE ONLY

TERRAIN ESCAPE MANEUVER

NOTE: Escape maneuver is required, unless in DAY VFR with Terrain in sight AND taking corrective actions (i.e.. turning away from terrain).

IMMEDIATELY

1. Autopilot ..... DISCONNECT
2. Pitch up to Vx ..... 62 KTS
3. MAX Power ..... FULL THROTTLE
4. Wings ..... LEVEL
   If VMC, a turn while climbing may also be permitted

TURBULENT AIR APPROACH & LANDING

Conditions: Gusty winds and crosswinds

■ ■ ■ ■

NOTE: Operation in direct crosswind of 15 knots has been demonstrated. Consider max reported gust to determine crosswind factor.

Adjusted approach speed calculation is:
normal approach speed KTS + ½ gust factor KTS.

Gust Factor is difference between Steady State and Gust.
½ Gust KTS – Steady State KTS = Gust Factor (limited to nor more than +10 KTS)
e.g. if wind is 10 KTS gusting to 20 KTS, adjusted flaps up approach speed
= 70 KTS plus (½ of gust factor of 10 knots) = 75 KTS.

CAUTION: If flap settings greater than 20° are used in sideslips with full rudder deflection, some elevator oscillation may be felt at normal approach speeds.

1. Use Minimum flaps ..... REQUIRED FOR FIELD LENGTH
2. Approach Speed ..... INCREASE, BY ADDING (½ of the gust factor)
3. Pitch Attitude at Touchdown ..... APPROXIMATELY LEVEL
   Just enough to land on the main tires first
4. AVOID TENDENCY TO APPLY FORWARD PRESSURE ON YOKE
   This may result in wheelbarrowing and loss of control.
5. Avoid heavy braking until wings are devoid of lift and weight is on wheels.

■ ■ ■ ■

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UPSET RECOVERY

Conditions: Loss of control inflight. Including Stall events, and unusual attitudes that exceed any of 4 parameters

1. Pitch attitude greater than 25°, nose up
2. Pitch attitude greater than 10°, nose down
3. Bank angle greater than 45°
4. Within the above parameters, but flying at airspeeds inappropriate for the conditions

NOTE: Aircraft is aerodynamically UNLOADED when the pilot experiences a "slight light-in-the-seat" feeling. Unloading may require anything from just releasing backpressure to applying heavy forward pressure.

UPRT - UPSET PREVENTION and RECOVERY TRAINING (template)

1. **Autopilot ..... DISCONNECT**
2. **Apply Forward Yoke to Unload Airplane ..... PUSH**
3. **Aggressively Roll the Wings to Nearest Horizon ..... ROLL**
4. **Adjust Power as Necessary by Monitoring Airspeed ..... POWER**
5. **Return to Level Flight ..... STABILIZE**

REPEAT: If STALL or above parameters are exceeded apply UPRT steps in order.

■ ■ ■ ■

FOR REFERENCE ONLY - NOT APPROVED

UNUSUAL ATTITUDE

"FLY THE AIRPLANE"

STABLIZE AIRPLANE:

Autopilot Blue LVL key……..…….…… PRESS

If Autopilot NOT available: SET AT THE SAME TIME

2. Pitch ……..…… 0°
3. Bank ……..…… WINGS LEVEL
4. Throttle ……..…… AS REQUIRED

■ ■ ■ ■

NOTE: When the aircraft enters an unusual pitch attitude, red extreme pitch warning chevrons pointing toward the horizon are displayed on the Attitude Indicator, starting at 40° above and 20° below the horizon line. During extreme pitch attitudes, the display shows either a brown or blue colored bar at the top or bottom of the screen to represent earth or sky. The blue colored bar is also displayed when terrain gradient is great enough to completely fill the display. This is intended to prevent losing sight of the horizon during extreme pitch attitudes. If pitch exceeds +30°/-20° or bank exceeds 65° (45° on sky pointer), some displayed information is removed. The Altimeter and Airspeed, Attitude, and Vertical Speed indicators remain on the display. The following information is removed from the ADI (and corresponding controls are disabled) when the aircraft experiences unusual attitudes: Vertical Deviation Indicator, Heading data, Selected Altitude, GPS navigation status, Standard rate turn indicators, Menus, Altimeter barometric setting

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Unusual attitudes (SVT disabled)

11. MISCELLANEOUS

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DOOR OPEN IN FLIGHT

Conditions: Door will not open beyond a few inches

FLY THE AIRPLANE
DO NOT HURRY - DO NOT PANIC

NOTE: Accidental opening of a cabin door in flight due to improper closing does not constitute a need to land the airplane, however increased noise may make communication difficult.

1. Advise Co-Pilot and PAX …….…….…… LEAVE THE DOOR ALONE
2. DO NOT release Seatbelts or Shoulder Harness
3. DO NOT SLIP airplane in attempts to close the door
4. Climb to ……..…….…… SAFE (pattern) ALTITUDE

To attempt to close the door, >>>Go to Step 5.	If an attempt to close the door is not warranted, >>>Go to Step 7

5. Stabilize Airplane ……..…….…… TRIMMED for approx. 75 KTS
6. Shove the door outward slightly, then forcefully close and lock the door.

■ ■ ■ ■

7. LAND AT NEAREST SUITABLE AIRPORT
8. Advise Traffic or ATC Tower ……..…….RETURING TO AIRPORT
9. "DO NOT HURRY" ……..…….…….... FLY NORMAL TRAFFIC PATTERN
10. Landing Checklist ……..... COMPLETE
11. Make Normal Approach and Landing

■ ■ ■ ■

Go to POH system page 7-18, for more information

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GLIDE DISTANCE CHART

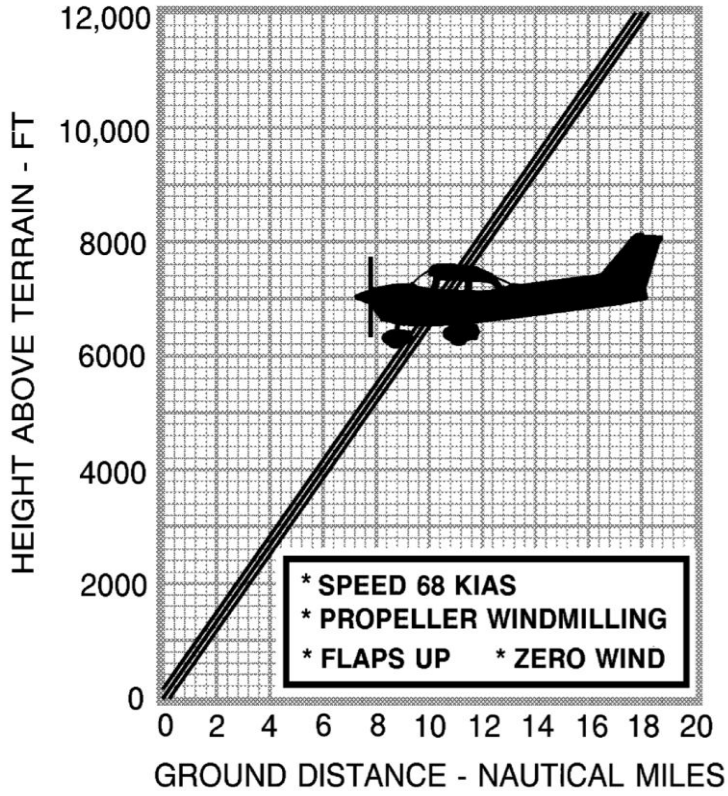

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Figure 3-1. Maximum Glide

INADVERTENT FLIGHT INTO ICING CONDITIONS

1. **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. Unexplained loss in engine speed could be caused by ice blocking the air intake filter, or, in extremely rare instances, ice completely blocking the fuel injection air reference tubes. 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 mixture, as required, for maximum RPM.
5. Plan a landing at the nearest airport. With extremely rapid ice buildup, select a suitable "off airport" landing site.
6. With an ice accumulation of 1/4 inch or more on the wing leading edges, be prepared for significantly higher stall speed and a longer landing roll.
7. Leave wing flaps retracted. With severe ice buildup on the horizontal tail, the change in wing wake airflow direction caused by wing flap extension could result in a loss of elevator effectiveness.
8. Open left window and, if practical, scrape ice from a portion of the windshield for visibility in the landing approach.
9. Perform a landing approach using a forward slip, if necessary, for improved visibility.
10. Approach at 65 to 75 KTS depending upon the amount of ice accumulation.
11. Perform a landing in level attitude.

■ ■ ■ ■

FOR REFERENCE ONLY - NOT APPROVED

INADVERTENT FLIGHT INTO IMC

Conditions: Anytime a VFR pilot is unable to maintain airplane attitude control by reference to the natural horizon

FLY THE AIRPLANE
DO NOT HURRY - DO NOT PANIC

1. Immediate Remedial action ..... MAINTAIN AIRCRAFT CONTROL
2. Compass Heading ..... NOTED
3. Throttle ..... MAINTAIN CURRENT RPM (approx. 2300)

Autopilot Available	Autopilot NOT available
Use to execute 180° turn	Manually execute 180° turn
>>> Go To Step 4	>>> Go To Step 10

4. Autopilot Panel ..... PRESS LVL (blue key)
5. Autopilot Panel HDG/TRK Knob ..... (press) PUSH SYNC knob
6. HSI heading BUG ..... NOTED
7. Autopilot Panel HDG/TRK Knob ..... TURN (L or R 180°)

ON new heading, after a few minutes

If in visual conditions	If still in IMC
■ ■ ■ ■	>>> Go To Step 8

8. Execute Descent ..... Reduce RPM (-500 RPM = -500 FPM VSI
9. Broadcast on ATC Freq. (or 121.5) ....."PAN, PAN,PAN" or "MAYDAY, MAYDAY, MAYDAY"

Ask for Assistance in finding Visual Flight Conditions

■ ■ ■ ■

10. Shallow bank turn (5-10°bank) ..... TURN (L or R 180 degrees)

ON new heading, Fly wings level, after a few minutes

If in visual conditions	If still in IMC
■ ■ ■ ■	>>> Go To Step 11

11. Execute Descent Reduce ..... RPM (-500 RPM = -500 FPM VSI
12. Broadcast on ATC Freq. (or 121.5) ....."PAN, PAN,PAN" or "MAYDAY, MAYDAY, MAYDAY"

Ask for Assistance in finding Visual Flight Conditions

■ ■ ■ ■

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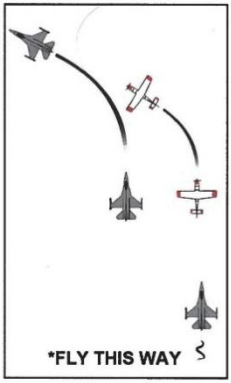
INTERCEPT BY MILITARY AIRCRAFT

#1 REASON GA AIRCRAFT ARE INTERCEPTED:
Entering restricted airspace and not talking to ATC

NORAD / FAA INTERCEPT PROCEDURES

Intercept Procedures

- Typically two fighters approach from the stern -- you may only see one
- Fighter rocks wings to signal intercept
- Fighter responsible for safe separation



Your Actions

- Remain predictable – Altitude, heading, airspeed, don't descend
- Acknowledge fighter with wing rock
- Talk to ATC
- Talk to fighter on 121.5

Post Intercept

- Comply with instructions
- Land where directed

DAY INTERCEPT SIGNALS

Interceptor Signals	Meaning
Fighter slow turn to desired heading	*FLY THIS WAY
Fighter abrupt turn across nose to desired heading and may dispense flares	WARNING: TURN NOW (DIRECTION OF FIGHTER)
Fighter circles airport, lowers landing gear, overflies runway in direction of landing	LAND HERE

NIGHT INTERCEPT SIGNALS

Interceptor Signals	Meaning
Flash navigation lights	You have been intercepted
Turn on landing lights	Land here

Your Signal	Meaning
Flash navigation lights	I will comply
Turn on landing light	I will land
Flash landing light	Airport inadequate
Flash all lights regular	Can not comply
Flash all lights irregular	Distress

For more intercept information, reference the Aeronautical Information Manual 5-6-13 Interception Procedures: http://www.faa.gov/air_traffic/publications/media/aim.pdf

MEDICAL EMERGENCY

1. Advise ATC (or 121.5) ……..... NATURE OF MEDICAL EMERGENCY
2. Request Heading and Descent to Nearest Suitable Airport for type of emergency
3. If necessary, perform ……..……..……..…….... EMERGENCY DESCENT

■ ■ ■ ■

Additional considerations for OFF airport Forced Landing at Night.

NIGHT EMERGENCY

NOTE: The RISK of flight inadvertently into IMC or loss of visual horizon are greatly increased.

1. Turn Towards an Unlighted Area Close to Public Access.
2. Maintain orientation with the wind to avoid a downwind landing.
3. Turn LANDING LIGHT -- ON (except if visibility is better OFF)
4. If NO outside visual references are available,
   MAINTAIN LEVEL ATTITUDE until the ground is contacted.
5. Master Switch OFF and EVACUATE the Airplane

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PRECAUTIONARY LANDING WITH ENGINE POWER

1. Passenger Seat Backs ..... MOST UPRIGHT POSITION
2. Seats and Seat Belts ..... SECURE
3. Airspeed ..... 65 KTS
4. Wing Flaps ..... 20°
5. Selected Field ..... FLY OVER, noting terrain and obstructions, then retract flaps upon reaching a safe altitude and airspeed.
6. Avionics Master Switch and Electrical Switches OFF (except at night)
7. Wing Flaps ..... 30° (on final approach)
8. Approach Airspeed ..... 65 KTS
9. Master Switch ..... OFF(except at night)
10. If at night, Land Lights ..... ON
11. Doors ..... UNLATCH PRIOR TO TOUCHDOWN

All Day Landing surfaces other than water, snow, or treetops >>> Go to Step 12	If Landing in water, >>>Go to Step 16 In Treetops Deep Snow, or at night >>>Go to Step 17.

12. Touchdown ..... SLIGHTLY TAIL LOW
13. Mixture ..... IDLE CUT OFF
14. Ignition Switch ..... OFF
15. Brakes ..... APPLY HEAVILY

■ ■ ■ ■

16. Water ..... LAND INTO WIND, OR PARRALLEL TO SWELLS/ WAVES
17. Touchdown ..... LEVEL ATTITUDE AT ESTABLISHED RATE OF DESCENT
18. Master Switch ..... OFF
19. EVACUATE ..... through cabin doors. If necessary, open window and flood cabin to equalize pressure so doors can be opened

■ ■ ■ ■

FOR REFERENCE ONLY - NOT APPROVED

Tips for Temporary Flight Restrictions (TFR) and Special Use Airspace

3 KEYS TO SUCCESS

- PLAN: Check TFRs at http://TFR.FAA.GOV, call FSS
- TALK: to Air Traffic Control and monitor Guard (VHF 121.5)
- SQUAWK: assigned discrete transponder code

FLIGHT PLANNING

- ☐ Review TFRs: http://tfr.faa.gov (Nat'l Security TFRs on Twitter: @VIP_TFR)
- ☐ Review NOTAMS: https://pilotweb.nas.faa.gov/PilotWeb/

… or get both TFRs and NOTAMs plus route weather and route brief by calling 1-800-WX-BRIEF

- ☐ Review Special Use Airspace along route: http://www.seeandavoid.org
- ☐ File a flight plan—IFR, VFR, DVFR, SVFR
- ☐ Update GPS / iPad / Electronic Apps

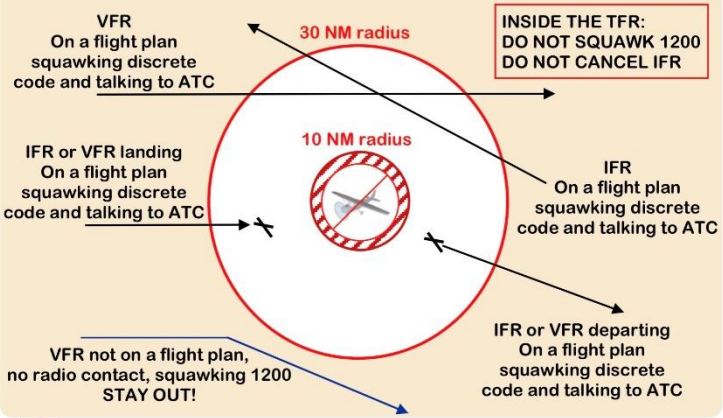
DURING FLIGHT

- ☐ Activate flight plan (prior to entering TFR)
- ☐ IFR or flight following w/discrete squawk
- ☐ Monitor 121.5 on back-up radio (if able)
- ☐ Get TFR updates from FSS

PLANNING REFERENCES

- Review Air Defense Identification Zone (ADIZ) procedures if flying into U.S. from abroad: http://www.faa.gov/air_traffic/publications/us_restrictions/airspace/#adiz
- Review Washington D.C. Special Flight Rules Area (SFRA) procedures if flying within 60 nm of KDCA: (Course ALC-405) https://faasafety.gov

These procedures describe a typical Security TFR. Check published TFR for any unique procedures.



North American Aerospace Defense Command (NORAD)
Get this checklist and more at: www.NORAD.mil/GeneralAviation

WINDSHIELD DAMAGE

Conditions: Bird strike or other incident damaging the windshield in flight to the point of creating an opening.

WARNING: Significant LOSS in performance may be expected. (depending on the amount of damage, altitude, etc.)

1. Side Windows ..... OPEN

Airplane performance and handling normal LAND at the nearest suitable airport ■ ■ ■ ■	If airplane performance or other adverse conditions preclude landing at the Nearest Suitable Airport, prepare for an "OFF AIRPORT" landing with engine power. LAND ASAP >>> Go To Step 3

2. Announce on ATC (or on 121.5) ..... "MAYDAY, MAYDAY, MAYDAY"
3. Passenger Seat Backs ..... MOST UPRIGHT POSITION
4. Seats and Seat Belts ..... SECURE
5. Select ..... LANDING SITE
6. Wing Flaps ..... 30° (on final approach)
7. Approach Airspeed ..... 65 KTS
8. Master Switch ..... OFF (except at night)
9. Doors ..... UNLATCH PRIOR TO TOUCHDOWN

All Day Landing surfaces other than water, snow, or treetops >>> Go to Step 10	If Landing in water, >>>Go to Step 14 In Treetops Deep Snow, or at night >>>Go to Step 15.

10. Touchdown ..... SLIGHTLY TAIL LOW
11. Mixture ..... IDLE CUT OFF
12. Ignition Switch ..... OFF
13. Brakes ..... APPLY HEAVILY

■ ■ ■ ■

14. Water ..... LAND INTO WIND, OR PARRALLEL TO SWELLS/ WAVES
15. Touchdown ..... LEVEL ATTITUDE AT ESTABLISHED RATE OF DESCENT
16. Master Switch ..... OFF
17. EVACUATE ..... through cabin doors.
    If necessary, open window and flood cabin to equalize pressure so doors can be opened

■ ■ ■ ■

FOR REFERENCE ONLY - NOT AN

ENGINE FAILURE DURING FLIGHT

Restart Procedure without engine damage

1. **Airspeed ..... 68 KIAS**
2. **Fuel Shut Off Valve ..... ON (push full in)**
3. **Fuel Selector Valve.....BOTH**
4. **Aux. Fuel Pump switch ..... ON**
5. **Mixture ..... RICH (if restart has not occurred)**
6. Ignition Switch ……..…. BOTH (OR START if propeller is stopped)

ENGINES RESTARTS >>> GO TO STEP 7	ENGINE FAIL / DAMAGED, GO TO FORCED LANDING WITHOUT ENGINE POWER (below)

7. Advance throttle slowly from idle and lean mixture as required.
8. Auxiliary Fuel Pump Switch ……..…….. OFF
   If fuel flow indicator immediately drops to zero, engine-driven pump failed
9. Aux. Pump Switch ……..…….. ON
10. Nearest Suitable Airport…..…….. LAND

■ ■ ■ ■

FORCED LANDING WITHOUT ENGINE POWER

>>> FLY THE AIRPLANE ... 68 KIAS while choosing a landing site

1. Announce on ATC (or on 121.5 **…….. "MAYDAY, MAYDAY, MAYDAY"**
2. ELT …….. ACTIVATE
3. Passenger Seat Backs …….. MOST UPRIGHT POSITION
4. Seats and Seat Belts ……..…. SECURE
5. Airspeed ……..…….. **70** KIAS (flaps UP), **65** KIAS (flaps DOWN)
6. Mixture ……..…….. IDLE CUT OFF
7. Fuel Shutoff Valve ……..…….. OFF (Pull Full Out)
8. Ignition Switch ……..…….. OFF
9. Wing Flaps ……..…….. AS REQUIRED (30° recommended)
10. Master Switch(when landing is assured) ……..…….. OFF (except at night)
11. Doors ……..…….. UNLATCH PRIOR TO TOUCHDOWN

All Day Landing surfaces other than water, snow, or treetops >>> Go to Step 12	If Landing in water, >>>Go to Step 14 In Treetops Deep Snow, or at night >>>Go to Step 15

12. Touchdown ……..…….. SLIGHTLY TAIL LOW
13. Brakes ……..…….. APPLY HEAVILY

■ ■ ■ ■

14. Water ……..…….. LAND INTO WIND, OR PARRALLEL TO SWELLS/ WAVES
15 Touch down …….. LEVEL ATTITUDE AT ESTABLISHED RATE OF DESCENT
16. Master Switch ……..…….. OFF
17. EVACUATE ……..…….. through cabin doors
    If necessary, open window and flood cabin so doors can be opened

■ ■ ■ ■

Back Cover 1

FOR REFERENCE ONLY - NOT APPROVED

ENGINE FAILURE DURING TAKEOFF ROLL

Engine failed before being airborne

1. Throttle ..... IDLE

2. Brakes ..... APPLY HEAVILY

3. Wing Flaps ..... RETRACT
4. Mixture ..... IDLE CUT OFF
5. Ignition Switch ..... OFF

If stopping beyond runway surfaces is expected, Transmitted **"MAYDAY, MAYDAY, MAYDAY"**
>>> GO TO STEP 6

If stopping successful on Runway, Advise Traffic"
"ABORTED TAKEOFF ON RUNWAY"
>>> GO TO STEP 6

6. Master Switch ..... OFF

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF OR GO AROUND

Condition: Loss of thrust at low altitude after takeoff or during a go around

FLY THE AIRPLANE

LOWER NOSE 70 KTS, W/FLAPS 65 KTS
FUEL PUMP ON, IF POWER RETURNS, LAND ASAP
EMERGENCY LAND, PLAN STRAIGHT AHEAD
'IF TIME", MAYDAY, MAYDAY, MAYDAY

1. Mixture ..... IDLE CUT OFF
2. Fuel Shutoff Valve ..... OFF (PULL)
3. Ignition Switch ..... OFF
4. Flaps ..... AS REQUIRED
5. Master Switch ..... OFF (except at night)
6. Doors ..... UNLATCHED

All Day Landing surfaces other than water, snow, or treetops >>> Go to Step 7

If Landing in water, >>> Go to Step 9.
In Treetops Deep Snow, or at night
>>> Go to Step 10

7. Touch Down ..... SLIGHTLY TAIL LOW
8. Brakes ..... APPLY HEAVILY

9. Water ..... LAND INTO WIND, OR PARRALLEL TO SWELLS / WAVES
10. Touch down ..... LEVEL ATTITUDE AT ESTABLISHED RATE OF DESCENT
11. Master Switch ..... OFF
12. EVACUATE ..... through cabin doors
If necessary, open window and flood cabin

Back Cover 2