



NORTH STAR AVIATION MASTER CHECKLIST

G1000 Seminole
PA 44-180 (Fuel Injected)
Revision 12

Introduction

This document has been prepared by North Star Aviation, Inc. and is being furnished to students at the flight school in accordance with 14 CFR Part 141.75(a). This book contains the required normal and emergency procedures for the safe operation of our aircraft as specified in the respective Piper Information Manuals, Lycoming Operators Manual and Service Instructions. In addition to procedures required by Piper, some NSA specific procedures have been added for reference.

Organization

This document has been divided into separate sections that outline the normal procedures and emergency procedures to the PA-44-180.

In each section, procedures surrounded by red dashed boxes are considered "Memory Items". These procedures are required to be memorized and will be evaluated periodically throughout training.

Checklist Completion

Upon Completion of a checklist the pilot flying should state "Checklist Complete". If a checklist is interrupted the checklist should be restarted.

Revision Control

To allow for improvements based on safety, performance, or standardization, this document is being provided in an easily revisable format. It is the student's responsibility to ensure their copy of this document contains the most current revision(s). A record of revisions can be found on the next page that will track individual page numbers affected by each revision. Each individual page will have its revision number printed in the lower left-hand corner.

Disclaimers

This document is provided for training purposes only and is not intended to replace the required Pilot Operations Manual in each aircraft. In actual Emergency Situations, the POH should be consulted if able. No replication of this document is authorized without the express written consent of North Star Aviation, Inc.

Differences between,

LAND AS SOON AS POSSIBLE and LAND AS SOON AS PRACTICAL

In the emergency sections of this checklist, the terms land as soon as possible and land as soon as practical are used. The definitions for each are found below as they pertain to North Star Aviation Operations.

LAND AS SOON AS POSSIBLE means that continued flight is not recommended, and the pilot should land at the nearest airport where a safe landing can be made. Military bases, large airports such as class Bravo and class Charlie, or airports in foreign countries are valid options and must be considered by the pilot. If the pilot determines that they are unable to make it to the nearest airport, the pilot should consider a field, road, or any other surface the pilot determines to be a safe option.

LAND AS SOON AS PRACTICAL means that extended flight is not recommended, and the pilot should land at a nearby airport but has discretion as to which one they choose. Services provided by the airport and the nature of the emergency should be considered by the pilot when determining which airport to land at.

Record of Revisions

<u>Number</u>	<u>Date</u>	<u>Summary of changes</u>	<u>Affected pages</u>
Original	Jul 13, 2011	Original Issuance of Warrior Checklist	ALL
Original	Aug 01, 2011	Original Issuance of Seminole Checklist	ALL
Rev 1	Nov 16, 2011	First Rev. to Warrior Checklist	3,4,9,10,11,36
Rev 1	Feb 22, 2012	First Rev. to Seminole Checklist	ALL
Rev 2	Aug 02, 2012	Second Rev. to Warrior and Seminole Checklist	3, 4, 9, 10, 11, 36 3, 12, 19, 32
Rev 3	Jul 01, 2014	Third Rev. to Warrior Checklist	3, 14-36
Rev 3/4	Jan 01, 2015	Third Rev. to Seminole Checklist Fourth Rev. to Warrior Checklist	ALL ALL
Rev 4	Jan 13, 2015	Fourth Rev. to Seminole Checklist	9, 10, 17
Rev 5	Apr 13, 2015	Fifth Rev. to Warrior Checklist	2, 9, 12, 18, 19
Rev 5	Feb 22, 2016	Addition of G1000 procedures to the Seminole checklist	ALL
Rev 6	Jan 13, 2016	Sixth Rev. to Warrior Checklist	9
Rev 7	Aug 27, 2018	Combination of Warrior, Archer, Seminole and Company Procedures into one Manual	ALL
Rev 8	Jan 8, 2019	Small formatting Changes, Updated Procedures for G1000Nxi and Fuel Injected Engines	ALL
Rev 9	Mar 1, 2021	Removal of Warrior Procedures Addition of notes to Normal Procedures and overhaul of Emergency Procedures. Addition of Quick Reference Checklist.	ALL
Rev 10	July 10, 2023	Changes	ALL
Rev 11	Dec 2, 2024	Unfeathering Accumulator Procedure	32
Rev 12	Dec 9, 2024	Formatting changes, updated table of contents, updated procedures on all pages to align with PA- 44-180 Seminole POH and NSA procedures, list of required pages removed (all are required)	ALL

TABLE OF CONTENTS

<u>Section Title</u>	<u>Page #</u>
Title Page	1
Introduction	2
Record of Revisions	3
Table of Contents	4
Preflight Checklist	5-7
Engine Starting Checklist	7-9
Before taxi-Post flight inspection	9-13
Engine Fire	15
Electrical Fire	15
Emergency Descent	15
Engine Failure	16, 17
Spin Recovery	17
Engine Securing	19
One Engine Inop Landing/Go around	19
Engine Roughness	19
Unfeathering Procedures	20
High/Low Oil Indications	20
Loss of Fuel Flow	21
Landing Gear Indications	21
Hydraulic Pump Indications	21, 22
Single/ Dual Alternator Failure	22
Electrical Failure	23
PFD/MFD Failure	23
AHRS Failure	24
ADC Failure	24
Erroneous/Loss of Engine Systems Display	24
Cooling Fan Failure	25
Communications Failure	25
Pitot Heat Failure	25
Dual GPS Failure	25
Loss of Navigation Info	26
Autopilot Malfunctions	26, 27
Open Door	27
Prop Overspeed	27
Emergency Exit	28
Started Engaged	28
Heater Overheat	28
Carbon Monoxide Indication	28

PREFLIGHT CHECKLIST

KNOWN DISCREPENCIES.....CHECK
RAMP OUT SHEET CHECK TACH TIME
*Note time until next event
FUEL QUANTITY..... CHECK
*Call line service for fuel if need (507)508-0323
OIL.....CHECK 6-8 QUARTS

COCKPIT INSPECTION AIRCRAFT

PARKING BRAKE SET
REQUIRED DOCUMENTS..... VERIFY
*Airworthiness certificate should be visible to all passengers.
HOBBS/TACH TIMEVERIFY
*Must match with the ramp out sheet. If not, call dispatch (507) 508-0706
FLIGHT CONTROLS.....CHECK
*For ease and continuity
PARKING BRAKE SET
*Parking brake is set by pushing on the toe brakes and pulling the parking brake knob out.
PITOT/STATICDRAIN
*Do not cover holes on buttons
CIRCUIT BREAKERSCHECK IN
ALTERNATE STATIC SOURCE CLOSED
MAGNETO SWITCHES OFF
FUEL PUMPS..... OFF
LANDING GEAR LEVER..... DOWN
THROTTLES IDLE
MIXTURES.....CUT-OFF
COWL FLAPS..... OPEN
TRIMSNEUTRAL
FUEL SELECTORS..... ON
ELECTRICAL SWITCHES OFF
BATTERY MASTER SWITCH ON
*Battery master will be left on as little as possible to prevent draining the battery.
INTERIOR LIGHTING (NIGHT FLIGHT)....CHECK
FUEL GUAGES..... CHECK
*Verify fuel tank visually
LANDING GEAR LIGHTS 3 GREEN
PITOT HEAT..... ON

*Limit pitot heat on the ground to no more than 3 minutes.
EXTERNAL LIGHTS.....ON
*Exit aircraft to verify operation of all lights and pitot heat. Remove aircraft blankets at this time and stow in baggage compartment.
PITOT HEATCHECK
EXTERNAL LIGHTS.....CHECK
*Enter aircraft
PITOT HEAT SWITCH OFF
ALL LIGHTING SWITCHES OFF
BATTERY MASTER SWITCH..... OFF
EMERGENCY EXITSECURE
FLAPS.....SET 40°
WINDOWS/WINDSHIELD CLEAN
BAGGAGE SECURE
EMPTY SEATBELTS FASTEN
TOW BAR/CHOCKS.....SECURE
*Towbar and chocks need to be secured in its specifically designed holder or underneath the straps.
BAGGAGE DOOR CLOSED

RIGHT WING

FUEL SUMPS.....DRAIN
*If any contaminants are found, dump waste fuel into red containers along fence and take another sample.
WING SURFACES CHECK/CLEAN
*Ice, frost, and snow must be removed before attempting flight. If ice/frost is found on the wing, call Line Service for de-icing (507) 508-0323
FLAPS/HINGES CHECK
*Pushrods should have some wiggle
AILERON AND HINGES CHECK
*Pushrods should have some wiggle
STATIC WICKS CHECK
*IFR flights not allowed without all nine static wicks present
WING TIPS AND LIGHTS..... CHECK
LEADING EDGE..... CHECK
SCUPPER DRAIN..... CLEAR
FUEL VENT CLEAR
TIE DOWN/CHOCK..... REMOVE
FUEL TANK..... CHECK QUANTITY

NACALLE FUEL FILLER CAP.....CHECK/SECURE
OIL QUANTITY/CAP CHECK/SECURE
PROP AND SPINNER.....CHECK
ALTERNATOR BELT CHECK
FRESH AIR INLET CLEAR
COWLING INTERIOR..... CHECK
*Using a flashlight, look for loose/broken wires, baffle seals, and any foreign material such as metal shavings or bird feathers.
GEAR WELL AND DOORS CHECK
*Check for any obstructions that would prevent the gear from fully retracting.
GEAR LINE AND SWITCHES CHECK
CRANKCASE BREATHER TUBECLEAR
MAIN GEAR STRUT APROX 2.6”
*If the strut is not long enough, it requires more nitrogen the aircraft should be downed
*If a puddle is found by the landing gear it can be an indication of a hydraulic fluid leak and should be inspected by maintenance.
TIRE/BRAKEPAD/DISC..... CHECK
*Check for any erosion or deflation that would result in degraded braking action.
DOOR HINGES..... CHECK

NOSE SECTION

GENERAL CONDITION CHECK
WINDSHIELD CLEAR
BATTERY VENTS CLEAR
LANDING LIGHT CHECK
AIR INLETS CLEAR
HEATER INLET/EXHAUST CLEAR
CHOCKS REMOVE
NOSE GEAR STRUT APROX. 2.7”
*If the strut is not long enough, it requires more nitrogen the aircraft should be downed
*If a puddle is found by the landing gear it can be an indication of a hydraulic fluid leak and should be inspected by maintenance.
NOSE WHEEL TIRE..... CHECK
GEAR WELL AND DOORS CHECK
GEAR LINE AND SWITCHES CHECK

LEFT WING

WING SURFACES..... CHECK/CLEAN
*Ice, frost, and snow must be removed before attempting flight. If ice/frost is found on the wing, call Line Service for de-icing. (507) 508-0323
NOSE GEAR MIRROR..... CLEAN
LEADING EDGE..... CHECK
MAIN GEAR STRUT APROX 2.6”
*If the strut is not long enough, it requires more nitrogen the aircraft should be downed.
*If a puddle is found by the landing gear it can be an indication of a hydraulic fluid leak and should be inspected by maintenance.
TIRE/BRAKEPAD/DISC CHECK
*Check for any erosion or deflation that would result in degraded braking action.
TIE DOWN/CHOCK.....REMOVE
GEAR WELL AND DOORS CHECK
*Check for any obstructions that would prevent the gear from fully retracting.
GEAR LINES AND SWITCHES CHECK
CRANKCASE BREATHER TUBE CLEAR
COWLING INTERIOR..... CHECK
*Using a flashlight, look for loose/broken wires, baffle seals, and any foreign material such as metal shavings or bird feathers.
ENGINE COMPARTMENT..... CHECK
FUEL TANK..... CHECK QUANTITY
NACALLE FUEL FILLER CAP.....CHECK/SECURE
OIL QUANTITY/CAP..... CHECK/SECURE
PROP AND SPINNER CHECK
ALTERNATOR BELT..... CHECK
FRESH AIR INLET CLEAR
SCUPPER DRAIN..... CLEAR
FUEL VENT CLEAR
STALL WARNING VANES CHECK
TEMP PROBE CHECK
PITOT MAST..... UNOBSTRUCTED
WING TIPS AND LIGHTS..... CHECK
AILERON AND HINGES..... CHECK
*Pushrods should have some wiggle
FLAPS AND HINGES CHECK
*Pushrods should have some wiggle

STATIC WICKS..... CHECK
*Flight in IFR conditions is not allowed without all nine static wicks.

FUSELAGE/EMPENNAGE

GENERAL CONDITION..... CHECK
EMERGENCY EXITCHECK
FRESH AIR INLET..... CHECK
SURFACE CONDITION CLEAR
ANTENNAS CHECK
RUDDER..... CHECK
STABILATOR..... CHECK
ANTISERVO TAB..... CHECK
STATIC WICKS..... CHECK
*Flight in IFR conditions is not allowed without all nine static wicks.
TIE DOWNREMOVE AND CHECK
*Black paint should be on the bottom of the tie down. If the paint is scraped, it can be an indication of a tail strike and should be inspected by maintenance.
UNDERBELLY..... CHECK
BAGGAGE DOOR..... CLOSED AND LATCHED
CABIN DOOR..... CHECK

BEFORE STARTING ENGINE CHECKLIST

FLAPS..... ..RETRACT
PASSENGER BRIEFING..... COMPLETE
*See below
FLIGHT PLANNING.....COMPLETED
CABIN DOOR..... LATCHED
SEATS LOCKED
SEAT BELTSFASTEN
PARKING BRAKE SET
*Parking brake is set by pushing on the toe brakes and pulling the parking brake knob out.
LANDING GEAR LEVER..... DOWN
THROTTLES IDLE
PROPELLERS FULL INCREASE
*If the propellers are feathered on the ground do not attempt to start the engine.

MIXTURE IDLE CUT OFF
FRICTION HANDLE AS DESIRED
ALT AIR..... CLOSED
COWL FLAPS..... OPEN
STABILATOR & RUDDER TRIM..... SET
FUEL SELECTORS..... ON
L/R ALTERNATOR SWITCHES ON
E-BATT..... ARM
E-VOLTS.....VERIFY 23.3
*If E-volts are less than 23.3, the voltage can be checked again at the end of the GROUND CHECK. E-volts must not be less than 23.3 prior to flight.
*E-Battery usage should be kept to as little as possible to avoid draining the battery.
AVIONICS/ELECTR SWITCHES OFF
FIN STROBE ON
*Strobe lights must go on before mags as the strobe light is your warning to others your mags are on, and they should not approach the aircraft.
CABIN HEAT..... OFF

CIRCUIT BREAKERSCHECK IN

****PASSENGER BRIEF***

HOW/WHEN TO USE SEATBELTS

HOW TO OPEN/CLOSE THE DOOR

LOCATION/USE OF EMERGENCY EXITS

LOCATION/USE OF EMERGENCY EQUIPMENT

AID IN TRAFFIC SCANNING

STERILE COCKPIT FOR

TAXI/TAKEOFF/LANDING

NORMAL START CHECKLIST- COLD ENGINE

OIL TEMP BELOW 140°F

BATTERY MASTER SWITCH ON
GEAR POSITION INDICATIONS3 GREEN
CAS/PFD MESSAGESCHECK
THROTTLE.....1/4 INCH OPEN
PROPELLERS FULL INCREASE
*FUEL PUMP..... ON
MAG TAGS.....OFF

*LEFT/RIGHT MAGNETOSON
*MIXTURE.....PRIME THEN CUT OFF
*Priming the engine is done by advancing the mixture to full until fuel flow stabilizes or reaches 3.5 GPH
*PROP AREA..... CLEAR
*STARTERENGAGED
*No more than 10 sec at a time
*Wait 20 seconds between attempts.
*No more than 5 start attempts allowed.
*If the engine does not start after two attempts with priming, perform flooded engine start procedures.
*MIXTURE..... ADVANCE
*Advance mixture after the engine starts
*THROTTLE ADJUST TO 1000RPM
*OIL PSI..... CHECK
*VOLTS/AMPS CHECK
* FUEL PUMP..... .. OFF
*FUEL PRESSURE CHECK
REPEAT (*) STEPS FOR SECOND ENGINE

NORMAL START CHECKLIST- HOT ENGINE

OIL TEMP 140°F OR ABOVE

BATTERY MASTER SWITCHON
GEAR POSITION INDICATIONS..... 3 GREEN
CAS/PFD MESSAGES..... CHECK
THROTTLES 1/2 INCH OPEN
PROPELLERS..... FULL INCREASE
*MIXTURE..... CUT-OFF
*FUEL PUMP ON
MAG TAGSOFF
*LEFT/RIGHT MAGNETOS ON
*PROP AREA..... CLEAR
*STARTERENGAGED
*No more than 10 sec at a time
*Wait 20 seconds between attempts.
*No more than 5 start attempts allowed.
*If the engine does not start after two attempts with priming, perform flooded engine start procedures.

*MIXTURE.....ADVANCE
*Advance mixture after the engine starts
*THROTTLEADJUST TO LOW RPM
*OIL PSI..... CHECK
* VOLTS/AMPS..... CHECK
*FUEL PUMP..... OFF
*FUEL PRESSURE CHECK
IF ENGINE DOES NOT START, ADD A SMALL AMOUNT OF PRIME AND REPEAT THE ABOVE. REPEAT (*) STEPS FOR SECOND ENGINE

FLOODED ENGINE START

BATTERY MASTER SWITCHON
GEAR POSITION INDICATIONS..... 3 GREEN
CAS/PFD MESSAGES CHECK
THROTTLE..... OPEN FULL
PROPELLERS..... FULL FORWARD
MIXTURE IDLE CUT-OFF
*FUEL PUMP..... OFF
*LEFT/RIGHT MAGNETOS ON
*PROP AREA.....CLEAR
*STARTERENGAGED
*No more than 10 sec at a time
*Wait 20 seconds between attempts.
*No more than 5 start attempts allowed.
*MIXTURE.....ADVANCE
*THROTTLERETARD
*OIL PSI..... CHECK
*VOLTS/AMPS CHECK
* FUEL PUMP OFF
*FUEL PRESSURE CHECK
REPEAT (*) STEPS FOR SECOND ENGINE

EXTERNAL POWER START

BATTERY..... OFF
ALTERNATORS OFF
EXTERNAL POWER..... PLUG IN
GEAR POSITION INDICATIONS.....3 GREEN
CAS/PFD MESSAGESCHECK
THROTTLE.....1/4 INCH OPEN
PROPELLERS..... FULL INCREASE
*FUEL PUMP..... ON
MAG TAGS..... OFF
*MAGNETOS..... ON
*MIXTURE PRIME- IDLE CUT OFF
*PROP AREA..... CLEAR
*STARTER ENGAGE
 *No more than 10 sec at a time
 *Wait 20 seconds between attempts.
 *No more than 5 start attempts allowed.
 *If the engine does not start after two attempts with priming, perform flooded engine start procedures.
*MIXTURE..... ADVANCE
 *Advance mixture after the engine starts
*OIL PSI CHECK
REPEAT (*) STEPS FOR SECOND ENGINE
THROTTLE..... LOWEST POSSIBLE RPM
BATTERY MASTER..... ON
EXTERNAL POWER..... DISCONNECT
ALTERNATOR..... ON
*VOLTS/AMPS CHECK
 *Do not attempt flight if there is no indication of alternator output.
*FUEL PUMP..... OFF
*FUEL PRESSURE CHECK

BEFORE TAXI CHECKLIST

BATTERY MASTER SWITCH ON
FUEL SELECTORS..... ON,X-FEED FOR 30 SECS
AVION MASTER SWITCH..... ON
CIRCUIT BREAKERS CHECK IN
MFD.....CHECK DATABASE CURRENCY

*Flight into IFR conditions is not authorized when database is expired
FUEL TOTALIZER SYNC OR MANUAL
CAS/PFD MESSAGES CHECK
MSG SOFTKEY..... CHECK
TRAFFIC TEST/VERIFY ADSB IS ON
ANNUNCIATOR TEST..... CHECK
STANDBY INSTRUMENTS CHECK
LIGHTS..... AS REQUIRED
*PIC will consider exterior lights in accordance with 91.205 for nighttime and low visibility operations to preserve night vision
CABIN HEAT/DEFROST AS REQUIRED
AUTOPILOT TEST SELF/MANUAL
 *Autopilot and disengages can be tested manually by setting the Heading (HDG) and Vertical Speed (VS), then moving the heading bug and pushing the Nose Up/Nose Down buttons to see if the yoke moves in the correct direction.
 *Avoid allowing the controls to go full deflection when performing manual test.
TRIM NEUTRAL
FUEL SELECTORS VERIFY ON
RADIOS..... SET
ATIS/AWOS..... OBTAIN
ALTIMETER SET
 *If local altimeter setting not received, set field elevation.
STANDBY ALTIMETER SET
GPS/NAV/BUGS/AUTO PILOT SET
MIXTURE LEAN
 *Leaning for ground operations is done by leaning until RPM begins to decrease and enrichening to peak RPM.
MFD SET AIRPORT DIAGRAM
TAXI CLEARANCE OBTAIN
 *If at a towered airport, obtain IFR clearance as well
TRANSPONDER ALT/1200
TAXI BRIEF COMPLETE
 *See next page

****TAXI BRIEF***

RUNWAY IN USE
RUNWAY LENGTH/REQUIRED
ROUTE TO RUNWAY AND RUNUP
LOCATION OF HOTSPOTS
WHO WILL BE PIC
POSITIVE EXCHANGE OF FLIGHT CONTROLS

TAXI CHECKLIST

TAXI AREA..... CLEAR
PARKING BRAKE..... RELEASE
THROTTLE ADVANCE SLOWLY
BRAKES/STEERING CHECK
FLIGHT INSTRUMENTS CHECK
INSTRUMENT COCKPIT CHECK COMPLETE

RUN UP/GROUND CHECKLIST

BRAKES SET/HOLD
MIXTURE..... FULL RICH
PROPELLERS..... FULL INCREASE
ENGINE INSTRUMENTS CHECK
THROTTLE 1500 RPM
PROPELLERS..... FEATHER CHECK
 *The feather check is done by moving the prop lever all the way to the feather position then immediately back to full forward. Do not allow the RPM to drop more than 500rpm.
THROTTLE 2000 RPM
ENGINE GAUGES..... IN LIMITS
MAGNETOS..... CHECK
 *MAX DROP 175RPM, MAX DIFF. 50RPM
 *Magneto check is done by turning one magneto off and checking to see if all EGT's rise together. If an EGT were to rise slowly or decrease, it is possibly an indication of a bad or fouled spark plug.
 *A fouled spark plug can be corrected by leaning the mixture at high rpm to burn off the excess carbon build up. Perform magneto check again after attempting to correct for fouling.
 *If EGT drops to 0 then aircraft will be downed.

ALT AIRCHECK (~75 RPM)
 *Avoid prolonged ground operations with the alternate air source as the air is unfiltered.
THROTTLE 2200RPM
PROPELLERS..... EXERCISE 3 TIMES
 *Exercising the propellers is done by pulling back on the prop lever until the beginning of resistance and then returning to full forward. This allows fresh/warm oil into the prop hub.
 *MAX DROP 300RPM

GOVERNOR CHECK FFOD
 *Governor check is performed by reducing the propeller control until a drop of 100 or 200 rpm is noted, then advancing the throttle to get a slight increase in manifold pressure. RPM should remain the same when throttle is increased.

THROTTLE IDLE (550 TO 650 RPM)
RPM/OIL PRESSURE CHECK
FUEL PUMPS ON
THROTTLE 1000 RPM
ALTERNATE STATIC CHECK
 *Alternate static is checked by opening the alternate static port underneath the panel on the pilot side and noting an increase on the VSI. Alternate static should be closed prior to take off. If no change is observed on VSI, open door or window and perform test again.

FRICTION HANDLE SET
IFR CLEARANCE ACQUIRE
 *Consider weather and traffic for determining if a ground or airborne clearance is appropriate.
TAKE OFF BRIEFING COMPLETE

IF E VOLTS INDICATIONS LESS THAN 23.3 VOLTS DURING BEFORE STARTING ENGINE CHECKLIST

E-BATT ARM
AVION MASTER SWITCH OFF
ALTERNATORS OFF
BATT MASTER OFF
E VOLTS INDICATION..... 23.3 VOLTS MIN
IF E VOLTS LESS THAN 23.3, DETERMINE CAUSE AND CORRECT ISSUE PRIOR TO FLIGHT.

IF E VOLTS GREATER THAN OR EQUAL TO

23.3 VOLTS:

BATT MASTER SWITCH..... ON
ALTERNATORSON
AVION MASTER SWITCHON

BEFORE TAKE OFF CHECKLIST

FLIGHT CONTROLSFREE AND CORRECT
FLIGHT INSTRUMENTS CHECK/SET
ENGINE INSTRUMENTS CHECK
FUEL QUANTITYSUFFICIENT
PROPELLERS..... FULL INCREASE
MIXTURE.....FULL RICH

*If density altitude on the ground is 5000ft or greater,
lean to peak RPM.

ALT AIR.....CLOSED
COWL FLAPS OPEN
FLAPS SET
TRIM SET
FUEL SELECTORS.....ON
CAS/PFD MESSAGES CHECK
TRANSPONDER CODE/ALT VERIFY
DEPARTURE BRIEFING..... COMPLETE

*Initial heading/altitude/departure out of pattern

ELECTRIC FUEL PUMPS ON
PITOT HEAT AS REQUIRED

*Limit pitot heat on the ground to no more than 3
minutes.

LANDING LIGHT ON
STROBE LIGHTS..... FULL ON
NAV LIGHTS AS REQUIRED
DOOR/WINDOW CLOSED
TIME OFF NOTE
AUTOPILOT DISCONNECT
TAKE OFF CLEARANCE OBTAIN
FINAL APPROACH AREA CLEAR
PARKING BRAKE.....RELEASE

CLIMB CHECKLIST - ABOVE 1000’ AGL

LANDING GEARUP
FLAPS..... VERIFY RETRACTED
MIXTUREFULL RICH
ELECTRIC FUEL PUMPS ON
COWL FLAPS.....AS REQUIRED
CRUISE POWER..... 25”MP 2500 RPM
CRUISE CLIMB AIRSPEED 105 KIAS
*Climbs should be done at cruise climb as it results in
cooler engine temperatures and better forward
visibility.
AUTO PILOT..... ENGAGE
DEPARTURE AREA..... CLEAR

PRE-MANUEVER CHECKLIST

MIXTURE SET
ELECTRIC FUEL PUMP ON
FUEL SELECTORS..... ON
ALL LIGHTS ON
ALTITUDE..... MIN. SAFE
CLEARING TURNS COMPLETE

*Performed by two 90° turns or one 180° turn to look
for traffic, obstacles, and to become more visible to
other traffic. The proper scanning technique is to break
the area into sections and look in each section for 5-7
seconds.

RADIO CALL COMPLETE

POST MANUEVER CHECKLIST

LANDING/RECOG LIGHT OFF
ELECTRIC FUEL PUMPS OFF
FUEL SELECTORS..... ON
ENGINE GUAGES CHECK

*Consider an appropriate time to conduct approach and
landing checklist

CRUISE CHECKLIST

CRUISE POWER SET
PROPELLERS RPM SET
COWL FLAPS AS REQUIRED

*Cowl flaps should be closed during cruise to reduce
drag and increase airspeed. If CHT’s reach 400°F,
then cowl flaps should be opened to cool the engine
down.

TRIM..... AS REQUIRED
MIXTURE..... ADJUST

*Mixture should be leaned anytime above density
altitude 5000 ft to best performance or 100°F Rich of
Peak. Once mixture is set, monitor EGT gauges for
any changes.

LANDING/RECOG LIGHT.....OFF
FUEL PUMPSOFF

*Consider an appropriate time to conduct approach and
landing checklist

APPROACH AND LANDING CHECKLIST

WEATHER OBTAIN
INSTRUMENTS SET
RADIOSSET
ENVIRONMENT BRIEF

*Runway of intended use, patten entry, or approach
brief

SEATS/SEATBELTS LOCKED/FASTEN
FUEL PUMPS ON
FUEL SELECTORS ON
COWL FLAPS CLOSED

*Cowl flaps should be closed when operating at
reduced power settings such as descent to keep engine
warm.

HEATER..... OFF/AS REQUIRED
*When turning off the heater, it is required to allow the
heater to cool off by leaving the air intake open 15
seconds in the air or by activating the fan for 2 minutes
on the ground.

GEAR (BELOW 140 KIAS)..... DOWN
GEAR POSITION INDICATOR..... 3 GREEN
NOSE GEAR VERIFY MIRROR
MIXTURES..... FULL RICH

PROPELLERFULL INCREASE
ALT AIR AS REQUIRED
AUTOPILOTDISCONNECT

GO AROUND CHECKLIST (DUAL ENGINE)

MIXTURES.....FULL RICH
PROPELLERS.....FULL INCREASE
THROTTLE.....FULL OPEN
CONTROL WHEEL..... BACK PRESSURE
TO OBTAIN + CLIMB

FLAPS.....UP
GEAR.....UP
COWL FLAPS.....AS REQUIRED

AFTER LANDING CHECKLIST

RADIO CALL REPORT CLEAR
FLAPS RETRACT
COWL FLAPS OPEN
ALT AIR.....CLOSED
ELECTRIC FUEL PUMPS OFF
STROBE LIGHTFIN
LANDING LIGHT AS REQUIRED

*Lights should be kept at a minimum at all times on the
ground to protect night vision. Additional lights will be
used if required for night or low-visibility operations or as
preferred by PIC.

PITOT HEAT.....OFF
CABIN HEAT.....OFF/FAN (2MIN)

*When turning off the heater, it is required to allow the
heater to cool off by leaving the air intake open 15 seconds
in the air or by activating the fan for 2 minutes on the
ground.

TRANSPONDER ALT/1200
FLIGHT PLAN..... CLOSED
MIXTURE.....TAXI LEAN
MFD.....AIRPORT DIAGRAM
TAXI CLEARANCE OBTAIN

ENGINE SHUTDOWN CHECKLIST

PARKING BRAKE.....SET
VENT FAN/HEATER/DEFROST OFF
THROTTLE.....1000 RPM
AVION MASTER OFF
EMER BATT OFF
ALTERNATORS OFF
FUEL PUMPS..... OFF
ELECTRICAL EQUIPMENT OFF
THROTTLE..... IDLE
MIXTURE IDLE CUT-OFF
MAGNETOS OFF
INTERIOR/EXTEROR LIGHTS OFF
BATTERY MASTER..... OFF
STANDBY INST VERIFY SHUT DOWN
 *Do not push any buttons on the standby instrument
 as this will cause it to remain on. Verify that the
 instrument indicates it is in the shutdown process.
PARKING BRAKE RELEASE

POST FLIGHT INSPECTION

HOBBS/TACHRECORD
 *Send a photo of the tach and hobbs time to dispatch
 at (507)508-0706
CABIN INTERIOR CLEAN
MIXTURE CUT OFF
MASTER SWITCHES..... OFF
MAGNETOS..... OFF
MAG TAGS.....ON
WINDOW..... CLOSED
DOORCLOSED
RIGHT WING CONDITION... CHECK
 *Check for signs of birdstrike
 *Check for signs of propstrike
 *f there is a birdstrike the aircraft must be downed right
 away
 *A kit is located behind the pilot seat and must be
 filled out and accompanied by a safety report
CHOCKS INSERT
NOSE SECTION CONDITION.....CHECK
PROP BLANKETS ON
ENGINE BLANKETS ON
 *Blankets will be used when average ambient
 temperature is below 40° F

LEFT WING CONDITION..... CHECK
 *Check for signs of birdstrike
 *Check for signs of propstrike
FUSELAGE/EMPANNAGE... CHECK
 *Check for signs of tailstrike
TIE DOWN AS NECESSARY
DISCREPENCIES/SQUAWKSREPORT

This page is intentionally
left blank

ENGINE FIRE DURING START

Indications

Smoke/flames coming out of engine compartment

Actions to Take

Mixture Cut Off
Throttle Full Open
Starter Continue to Engage
Fuel Selectors Off
Fuel Pumps Off
Fire Extinguisher Use Aircraft
*The fire extinguisher uses halon which will remove the oxygen from the area to put out the fire.

ENGINE FIRE – IN FLIGHT

Indications

Smoke, smell, heat in the cabin, high CHT/EGT/oil temperatures, visible flames

Actions to Take

AFFECTED ENGINE

Fuel Selector Off
Throttle Close
Propeller Feather
Mixture Cut-off
Cowl flaps Open
Affected engine Secure (Pg 19)

*If fire persists, begin emergency descent (Pg 15)

LAND AS SOON AS POSSIBLE

ELECTRICAL FIRE

Indications

Smoke, heat, flames coming from panel, heat in the cabin

Actions to Take

Emergency Battery Verify Arm
Battery Master Off
Alternators Off
Vents Close
Cabin Heat Off
*If the fire persists, locate and use portable fire extinguisher located behind and between two front seats.
*The fire extinguisher uses halon, which will remove the oxygen from the area to put out the fire.
*Landing gear must be lowered manually

LAND AS SOON AS POSSIBLE

EMERGENCY DESCENT

Actions to Take

Alt Air Open
Throttles Closed
Propellers Full Increase
Mixture As Required
Gear Down (Below 140kts)
Airspeed 135kts
Bank 45°

ENGINE FAILURE – TAKEOFF

Below 75kts or Gear Down

Indications

Sudden yawing motion, low manifold pressure, Low RPM

Actions to Take

Throttles Immediately Closed
Brakes As Required
Directional Control Maintain
*Use rudder and aileron controls to maintain desired heading

If Insufficient Runway Remains

Brakes Maximum
Mixtures Cut-Off
Fuel Selectors Off
Magnetos L/R Off
Battery Master Off
Directional Control Maintain
Obstacles Avoid

ENGINE FAILURE – TAKEOFF

Above 75kts

Indications

Sudden yawing motion, low manifold pressure, low RPM

Actions to Take

If sufficient runway remains for a complete stop

Gear Verify Down
Land Straight Ahead
Directional Control Maintain
Throttles Closed
Brakes As Required

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

Directional Control Maintain
Airspeed At least Vyse (88kts)
Mixture Full Rich
Propellers Full Increase
Throttles Full Open
Flaps Up
Gear Up
Fuel Selectors On
Fuel Pumps On
Inop Engine Identify/Verify
*Identification of the failed engine can be done by noting a reduction in MP, RPM, CHT, and EGT or by determining which foot is not applying rudder pressure while maintaining desired heading.
*Verification of failed engine is done by reducing throttle of suspected failed engine and noting the absence of engine or aircraft response.
Throttle (inop) Close
Propeller (inop) Feather
Mixture (inop) Cut-Off
Bank 2°-3° into Oper Engine
Climb Speed Vyse (88kts)
Cowl Flaps (inop) Closed
Magnetos (inop) Off
Fuel Pump (inop) Off
Alternator (inop) Off
Fuel Selector (inop) Off

LAND AS SOON AS PRACTICAL

ENGINE FAILURE DURING FLIGHT

Indications

Sudden yawing motion, low manifold pressure, low RPM

Actions to Take

AirspeedVyse (88kts)
Directional Control Maintain
MixtureFull Rich
Propellers Full Increase
ThrottlesFull Open
Gear Up
Flaps Up
Inop Engine Identify/Verify

*Identification of failed engine can be done by noting a reduction in MP, RPM, CHT, and EGT or determining which foot is not applying rudder pressure while maintaining desired heading.

*Verification of failed engine is done by reducing throttle of suspected failed engine and noting the absence of engine or aircraft response.

FIX-BEFORE SECURING ENGINE

Fuel Quantity Check
Fuel Selector On/X-Feed
Fuel Pump On
Mixture Full Rich
Alt Air Open
Left Mag (inop) Off, then On
Right Mag (inop) Off, then On
Oil Temperature Check
Oil Pressure Check

FEATHER

*If engine does not restart, run engine securing checklist

On Operating Engine

PowerAs Required
Fuel Selector On
Fuel PumpAs Required
Cowl Flap As Required
Bank 2°-3° into Oper Engine
Airspeed.....at least Vyse (88kts)
Electrical Load.....Reduce

LAND AS SOON AS PRACTICAL

SPIN RECOVERY

Indications

Reduced airspeed, rapid rotation, altimeter rapidly descending, turn coordinator full deflection

Actions to Take

Throttles Closed
Rudder Full opposite to direction of spin
Control Wheel Full forward
Ailerons Neutral
Rudder Neutralize when Rotation Stops
Control Wheel Smooth back pressure

INTENTIONAL SPINS ARE PROHIBITED

This page is intentionally left blank

ENGINE SECURING PROCEDURE

Actions to Take

ON THE INOPERATIVE ENGINE

Throttle Closed
Propeller Feather
Mixture Cut-Off
Cowl Flaps Closed
Magneto Off
Fuel Pump Off
Alternator Switch Off
Fuel Selector Off
Electrical Load Reduce

LAND AS SOON AS PRACTICAL

ONE ENGINE INOP LANDING

Actions to Take

Inoperative Engine Secure
Seat Belts Fastened

OPERATIVE ENGINE

Fuel Selector On
Mixture Full Rich
Propeller Full Increase
Fuel Pump On
Cowl Flaps As required
Approach Normal
WHEN LANDING IS ASSURED
Gear Down
Flaps 25° (2nd notch)
Final Approach Speed 90kts

*As power is reduced, the aircraft will yaw in the direction of the operating engine. Under some conditions, aircraft single engine climb performance and obstacle clearance may make a single engine go around impossible.

ONE ENGINE INOP GO-AROUND

Actions to Take

Mixture (op engine) Full Rich
Propeller (op engine) Full Increase
Throttle Smoothly Advance
Airspeed at least Vyse (88kts)
Flaps Retract Incrementally
Gear Up
Bank 2°-3° into Good Engine
Rudder 1/2 trapezoid
Cowl Flaps As Required

ENGINE ROUGHNESS

Indications

Engine sputtering, unusual noise or vibrations

Actions to Take

ON AFFECTED ENGINE

Alt Air Open

If roughness continues after 1 min

Alt Air Close
Mixture Adjust for max smoothness
Fuel Pump On
Engine Gauges Check
Left Magneto Off, then On
Right Magneto Off, then On

*If at any time the engine begins to run smoothly, maintain settings that provide maximum smoothness.

UNFEATHERING PROCEDURES

Actions to Take

ON INOPERATIVE ENGINE

Fuel Selector On
Magneto On
Fuel Pump On
Throttle Open ¼ inch
Propeller Full increase
* If engine is stationary (not rotating) after 7 seconds, starter assist is required.
Mixture Advance (after prop rotation)
Throttle <15 MP until warm
*Keep the MP of the restarted engine as low as practical until the CHTs are above 200°F
Alternator On

If restart is not successful, secure inoperative engine (pg 19)

UNFEATHERING PROCEDURES/STARTER ASSISTED

Actions to Take

ON INOPERATIVE ENGINE

Fuel Selector On
Magneto On
Fuel Pump On
Throttle Open ¼ inch
Propeller Increase to cruise setting
Mixture Full rich
Eng start Engage until prop windmills
Throttle <15 MAP until warm
*Keep the MP of the restarted engine as low as practical until the CHTs are above 200° f
Alternator On

LOW/HIGH OIL PRESSURE

Indications

Master warning, triple chime, flashing red oil pressure

Actions to Take

ON AFFECTED ENGINE WITH LOW OIL P

Throttle Minimum
Propeller Decrease

*If accompanied by normal oil temp

LAND AS SOON AS PRACTICAL

*If low oil pressure is accompanied by high oil temperature, secure the affected engine and

LAND AS SOON AS POSSIBLE

*Loss of oil pressure can indicate oil exhaustion which will result in a serious emergency and severe engine damage. If oil is depleted, the engine will seize and if feathering is not initiated above 950

RPM the propeller may not feather.

HIGH OIL TEMP/CHT

Indications

L ENG CHT or **R ENG CHT** CAS message or flashing red oil temperature, master warning, triple chime

Actions to Take

ON AFFECTED ENGINE

Cowl Flaps Open
Mixture Enrichen
Power Reduce
Airspeed Increase

*High oil temperature or CHT's can be caused by low oil quantity.

*Monitor oil pressure gauge and if low...

LAND AS SOON AS PRACTICAL

LOSS OF FUEL FLOW

Indications

Fuel flow gauge abnormally low

Actions to Take

AFFECTED ENGINE

Fuel Pump On

FUEL QUANTITY

Indications

L FUEL QTY / R FUEL QTY

L FUEL QTY / R FUEL QTY

Master Warning/Caution,
Triple/Double Chime

Actions to Take

X-Feed.....As Necessary

*If one tank has low fuel quantity

LAND AS SOON AS PRACTICAL

*If both tanks have low fuel quantity

LAND AS SOON AS POSSIBLE

*Low fuel caution is activated at 10 gallons
remaining in either tank

*Low fuel warning is activated at 5 gallons
remaining in either tank

LANDING GEAR UNSAFE

Indications

CHECK GEAR CAS Messages and Aural Alert

Actions to Take

Gear Down

Gear Position 3 Green

LANDING GEAR MALFUNCTION/MANUAL EXTENSION

Indications

GEAR SYS or **GEAR SYS**, master
warning/caution, triple/double chime,
landing gear indication of ●

Actions to Take

Circuit Breaker Check

Battery Master.....On

Alternators Check

Airspeed Less than 100kts

Gear Knob Down

Emergency Gear Knob Pull

Gear Indications 3 Green

*Leave emergency gear knob out until the airplane
has been put on jacks to check the gear.

HYDRAULIC PUMP DOES NOT DEACTIVATE

Indications

HYDR PUMP ON CAS message, master
warning, triple chime

Actions to Take

Gear Pump Circuit Breaker..... Pull
(Row 2, Col 12)

* Prior to landing, reset the gear pump circuit breaker
to bring down the landing gear.

*If breaker opens, complete manual extension of
landing gear (pg 21)

HYDRAULIC PUMP DOES NOT ACTIVATE

Indications

Gear does not change position after moving
gear lever

Actions to Take

Gear Knob.....Return to original position

Gear Pump Circuit Breaker..... Reset
(Row 2, Col 12)

*After pulling a circuit breaker, wait 10 seconds for a
cool off period before pushing circuit breaker back in.

* Do not reset the circuit breaker a second time.

Gear Knob..... Reset

*If landing gear is still up, perform manual gear
extension. If gear is still down, keep airspeed below
VLE (140kts)

SINGLE ALTERNATOR FAILURE

Indications

L ALT FAIL or **R ALT FAIL** low
alternator amps, master warning, triple
chime

Actions to Take

Verify FailureAlt amps

Electrical Load65 amps or less

Alternator Switch Off

Alternator Field Circuit Breaker Reset
(Row 2, Col 15/16)

*After pulling a circuit breaker, wait 10 seconds for a
cool off period before pushing circuit breaker back in. Do
not reset the circuit breaker a second time.

Alternator On

IF ALTERNATOR IS STILL FAILED

Alternator Off

Alternator AmpsLess than 65 amps

DUAL ALTERNATOR FAILURE

Indications

L ALT FAIL and **R ALT FAIL**

Low alternator amps, master
warning, triple chime

Actions to Take

Verify Failure.....Alt amps

Alternator Switch.....Off

Alternator Field Circuit Breaker.....Reset
(Row 2, Col 15/16)

*After pulling a circuit breaker, wait 10 seconds for
a cool off period before pushing circuit breaker
back in. Do not reset the circuit breaker a second
time.

AlternatorOn

IF ONLY ONE ALTERNATOR RESETS

Operating AlternatorOn

Failed AlternatorOff

Alternator Amps..... Less than 65 amps

IF NEITHER ALTERNATOR RESETS

Alternators Both Off

Following Circuit BreakersPull

Non Ess Bus.....(Row 1, Col 1)

Lighting Bus.....(Row 1, Col 2)

Avionics Bus(Row 1, Col 3)

Avionics Master Off

Emergency Battery Verify Arm

**EXIT AND AVOID IMC AS SOON AS
PRACTICAL**

TO ENSURE 30 MINS OF BATTERY LIFE

Battery Amps.....-20 Amps Max

Pitot Heat.....Limit to 15 mins

Com Radio Limit to 3 mins

*With both alternators failed, the main battery
is the primary source of power.

COMPLETE ELECTRICAL FAILURE/EMERGENCY

Indications

EMERG BATT ON

E-Volts Indication on PFD

Actions to Take

Emergency Battery..... Verify arm
Standby Inst..... Verify on
Aircraft Control..... Use standby
Battery Master..... Off
Alternators..... Off

LAND AS SOON AS POSSIBLE

FLASHING RED E-VOLTS INDICATES THAT THE EMERGENCY BATTERY IS ALMOST DEAD AND COMPLETE ELECTRICAL FAILURE IS IMMINENT

*All lights and the landing gear pump is now inoperative.

*Only the following equipment is operational on the emergency bus: PFD, COM 1, NAV 1, audio panel, engine instruments, standby instruments, avionics lighting/dimming.

PFD FAILURE

Indications

PFD Screen goes black

Actions to Take

Standby Instruments..... Verify On
Aircraft Control..... Use Standby
Display Backup..... Red Button/Push
Com 2..... Activate (Com 1 is inop)
Nav 2..... Activate (Nav 1 is inop)
Com 2/Mic..... Select on Audio Panel

EXIT AND AVOID IMC AS SOON AS

PRACTICAL

* Auto Pilot is now Inoperative.

MFD FAILURE

Indications

MFD screen goes black

Actions to Take

Display Backup..... Red Button/Push
Com 1..... Activate (Com 2 is inop)
Nav 1..... Activate (Nav 2 is inop)

EXIT AND AVOID IMC AS SOON AS

PRACTICAL

*PFD should automatically revert to revisionary mode with MFD failure. Pushing the display backup button ensures this transition.

*The following Equipment are Inoperative with an MFD Failure: COM 2, NAV 2, GPS 2, XM, ADF, DME, ESP.

AHRS FAILURE

Indications

Sky/Ground presentation removed, course pointer straight up, Red X's and amber text on all attitude and heading indicators

Actions to Take

Standby Instruments..... Verify on/use
PFD Messages..... Consider
AHRS Circuit Breaker..... Reset

(Row 2, Col 8)

*After pulling a circuit breaker, wait 10 seconds for a cool off period before pushing circuit breaker back in. Do not reset the circuit breaker a second time.

EXIT AND AVOID IMC AS SOON AS

PRACTICAL

*Course information and Traffic Alerts are still available with an AHRS Failure.

*Autopilot will be inoperative if AHRS remains inoperative.

ADC FAILURE

Indications

Red X's and amber text on all Airspeed, Altitude and Vertical Speed indicators

Actions to Take

Standby Instruments..... Verify on/use
PFD Messages..... Consider
ADC Circuit Breaker..... Reset

(Row 2, Col 7)

*After pulling a circuit breaker, wait 10 seconds for a cool off period before pushing circuit breaker back in. Do not reset the circuit breaker a second time.

EXIT AND AVOID IMC AS SOON AS

PRACTICAL

*Traffic and Autopilot will become inoperative during ADC Failure.

ERRONEOUS/LOSS OF ENGINE SYSTEMS DISPLAY

Indications

Yellow X's over affected engine indications or fuel displays

Actions to Take

GEA Circuit Breaker..... Reset
(Row 2, Col 3)

*After pulling a circuit breaker, wait 10 seconds for a cool off period before pushing circuit breaker back in. Do not reset the circuit breaker a second time.

*Set power based on throttle lever position, engine sound and speed. Use known power settings from POH for approximate fuel flow values.

*All engine, electrical, and fuel indications are now invalid.

LAND AS SOON AS PRACTICAL

COOLING FAN FAILURE

Indications

AV FAN FAIL or **PFD FAN FAIL** or **MFD FAN FAIL** CAS messages

Actions to Take

Battery Master Verify On
Alternator Verify On

*If messages are displayed on the ground, do not fly.

*If message is displayed while in flight, it is permissible to continue the flight, fix the issue prior to next flight

*Dim displays

COMMUNICATIONS FAILURE

Indications

Inability to communicate/receive on Com 1 or Com 2

Actions to Take

Volume Knobs Check

Headset Jacks Troubleshoot

*Verify co-pilot side, check connection

Frequency Verify

IF COMMUNICATIONS ARE STILL FAILED

Audio panel circuit breaker Pull
(Row 2, Col 9)

EXIT AND AVOID IMC AS SOON AS PRACTICAL

*When power is lost to the Audio Panel, a failsafe connection activates between the pilot headset and Com 1.

PITOT HEAT FAILURE

Indications

PITOT HEAT FAIL CAS message, master caution, double chime

Actions to Take

Pitot Heat Off

Pitot Heat Circuit Breaker Reset
(Row 2, Col 2)

*After pulling a circuit breaker, wait 10 seconds for a cool off period before pushing circuit breaker back in. Do not reset the circuit breaker a second time.

Pitot Heat On

If pitot heat is still inop

EXIT AND AVOID IMC AS SOON AS PRACTICAL

DUAL GPS FAILURE

Indications

Amber DR on HSI and Amber DR on moving map display

Actions to Take

Navigation Use alternate source
(VOR, ILS, LOC, Pilotage/Dead Reckoning)

*DR mode (dead reckoning)-is active when in enroute mode (>30nm from destination airport in flight plan) and uses heading, airspeed, and last known position and can be used for 20 minutes.

LOSS OF NAVIGATION INFORMATION

Indications

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

Actions to Take

Autopilot Select another lateral mode

NAV source Identify

Autopilot Select NAV

If on instrument approach in IMC...Go missed

AUTOPILOT MALFUNCTION

Indications

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

Actions to Take

Control Wheel Grasp Firmly

Attitude Indicators Cross Check

Autopilot Disconnect

Pitch trim Retrim

Autopilot Circuit Breaker Pull
(Row 3, Col 2)

Autopilot Do not re-engage

AUTOMATIC AUTOPILOT DISCONNECT

Indications

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

Actions to Take

Autopilot Disconnect

Pitch trim Retrim

ELECTRIC PITCH TRIM FAILURE

Indication

Red boxed **PTRM** on PFD

Actions to Take

Autopilot Disconnect

ELECTRIC PITCH TRIM RUNAWAY

Indication

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

Actions to Take

Autopilot Disconnect

Control Wheel Grasp Firmly

Attitude Indicators Cross Check

Autopilot Disconnect

Pitch trim circuit breaker Reset
(Row 3, Col 2)

Trim Set Manually

AUTOPILOT OVERSPEED

Indications

MAXSPD annunciation at top of Airspeed tape

Actions to Take

Throttle Reduce

Autopilot Disconnect if need

Pitch Up

*In the event of an overspeed, the autopilot will pitch the aircraft nose up to slow the aircraft down

AUTOPILOT UNDERSPEED

Indications

MINS PD annunciation at top of
airspeed tape and **USP ACTIVE**
annunciation on PFD

Actions to Take

Autopilot Disconnect if need
Throttle Increase
Flap/Gear..... Consider

AUTOPILOT OUT-OF-TRIM

Indications

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

Actions to Take

IF← AIL or AIL→ annunciation Verify
Slip/Skid indicator centered
If↑ELE or ↓ELE annunciation.....Suspect
elevator trim issue

Control Wheel Grasp Firmly
Autopilot Disconnect
Pitch Trim Retrim
Autopilot Re-Engage if able

ABNORMAL FLIGHT DIRECTOR MODE TRANSITIONS

Indications

Flashing lateral or vertical modes on PFD

Actions to Take

Autopilot Mode Select different modes
*If on an instrument approach, disconnect the
autopilot and hand fly the approach.

AUTOPILOT PREFLIGHT TEST

FAILURE

Indications **PFT** on PFD

Actions to Take

Autopilot Circuit Breaker..... Pull
(Row 3, Col 2)
Pitch Trim Circuit Breaker Pull
(Row 3, Col 1)

*Reset both circuit breakers simultaneously
*After pulling a circuit breaker, wait 10 seconds for
a cool off period before pushing circuit breaker back in.
* Do not reset the circuit breaker a second time.
ONLY ATTEMPT ONCE

OPEN DOOR

Actions to Take

Airspeed Less than 82kts
Cabin Vents Closed
Storm Window Open
Door..... Latch

PROPELLER OVERSPEED

Indications

Excessively/Abnormally High RPM

Actions to Take

AFFECTED ENGINE

Throttle Reduce
Propeller..... Reduce
Oil Pressure Check
Airspeed Reduce
Throttles..... Below 2700 RPM
*The propeller overspeed is usually caused by a
malfunction in the propeller governor which allows
the blades to rotate to full low pitch.

EMERGENCY EXIT

Actions to Take

Thermoplastic Cover..... Remove
Emergency Exit Handle..... Pull Forward
Window Push Out

STARTER ENGAGED

Indications

L START ENG D or **R START ENG D** CAS
message, master warning, triple chime

Actions to Take

Throttle..... Reduce
Eng Start Circuit Breaker Pull
(Row 1, Col 12)

LAND AS SOON AS PRACTICAL

*If on the ground, immediately shut down
the engine.

HEATER OVERHEAT

Indications

HTR OVERHEAT CAS message, master
warning, triple chime

Actions to Take

Cabin Heat..... Off
*An overheat safety switch in the heater unit has
deactivated the heater. Resetting the overheat
safety switch can only be done on the ground by
removing the nose cover.

CARBON MONOXIDE INDICATION

Indications

CO LEVEL HIGH CAS message, master
warning, triple chime

Actions to Take

CO Reset..... Push
*Button can be found on engine information
page on MFD.
IF WARNING CONTINUES
Heater Shut Off
Vents Open
*CAS msg remains until CO level drops 50PPM
LAND AS SOON AS PRACTICAL