

Pilots' Checklist



SKYHAWK SP



Model 172S

NAV III AVIONICS OPTION - GFC 700 AFCS

Serials 172S10468, 172S10640 and 172S10656 and On

THIS CHECKLIST IS CURRENT WITH MODEL 172S NAV III - GFC 700 AFCS POH (SERIALS 172S10468, 172S10507, 172S10640 and 172S10656 AND ON) FAA APPROVED U.S. PILOT'S OPERATING HANDBOOK REVISION 1, DATED 12 JANUARY 2009. (PART NUMBER 172SPHBUS-01)

172S10776

COPYRIGHT © 2007
CESSNA AIRCRAFT COMPANY
WICHITA, KANSAS, USA

ORIGINAL ISSUE 20 DECEMBER 2007

172SCLBUS-01

REVISION 1

12 JANUARY 2009

NOTICE

THE PILOT'S CHECKLIST SHOULD NOT BE USED UNTIL THE FLIGHT CREW HAS BECOME COMPLETELY FAMILIAR WITH THE AIRPLANE AND SYSTEMS. ALL NORMAL AND EMERGENCY PROCEDURE ITEMS AND COMPLETE PERFORMANCE IN THE PILOT'S OPERATING HANDBOOK AND FAA APPROVED AIRPLANE FLIGHT MANUAL SHALL TAKE PRECEDENCE IN CASE OF CONFLICT.

REVISIONS

Changes and/or additions to this checklist will be covered by Owner

Advisory published by Cessna Aircraft Company. Owner Advisories are mailed automatically to owners of United States registered airplanes according to FAA records at the time of the insurance. Owner Advisories are mailed automatically to owners of other than United States registered airplanes, to the subscription address provided Cessna on an Owner Advisory Application.

NOTE

It is the responsibility of the owner to maintain this checklist in a current status when it is being used for operational purposes.

Owners should contact a Cessna Service Station whenever the revision status of their checklist is in question.

REVISED MATERIAL INDICATORS

A bar will extend the full length of deleted, new or revised text added on new or previously existing pages. This bar will be located adjacent to the applicable text in the margin on the left side of the page.

A bar in the footer will indicate a revision to the header/footer, a new page, format or spelling/grammar changes and/or that information has slipped to or from that page.

A bar located adjacent to the figure number in the margin on the left side of the page will be used to indicate that the figure number only has changed.

An asterisk located at the end of the figure number will be used to indicate that an illustration has been revised or is all new material (Ex: Figure 4*).

All revised pages will carry the revision number opposite the page number on the applicable page. A list of revisions is located at the beginning of the Log of Effective Pages.

LOG OF EFFECTIVE PAGES

Use this page to determine the currency and applicability of your Pilot's Checklist. Pages affected by the current revision are indicated by an asterisk(*) preceding the pages listed under the Page Number column. Following is a description of the Log of Effective Pages columns:

Page Number Pilot's Checklist Page Number.

Page Status Indicates if the page has been added, revised or deleted by the current revision.

Revision Number Indicates the revision number.

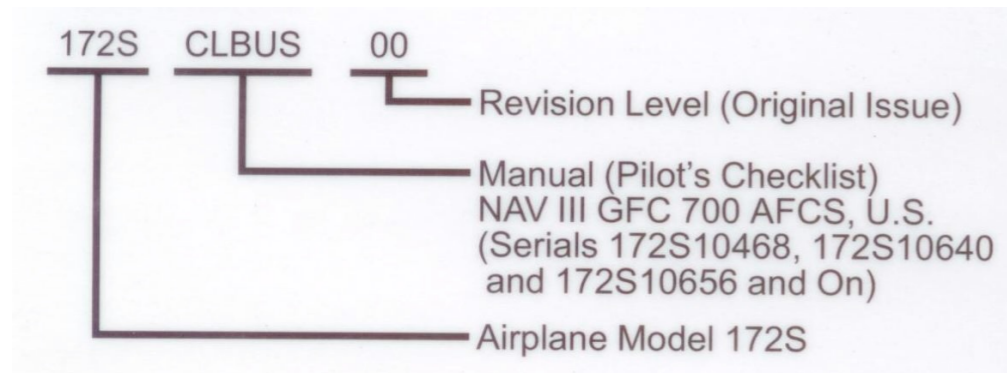
REVISION NUMBER	DATE
Original	20 December 2007
Revision 1	12 January 2009

PAGE NUMBER	PAGE STATUS	REVISION NUMBER
* Title	REVISED	1
* ii	ORIGINAL	0
* iii	REVISED	1
iv	ORIGINAL	0
N-1 thru N-12	ORIGINAL	0
* N-13	REVISED	1
N-14	ORIGINAL	0
* N-15	REVISED	1
N-16 thru N-26	ORIGINAL	0
E-1	ORIGINAL	0
* E-2	REVISED	1
E-3 thru E-24	ORIGINAL	0
* E-21	REVISED	1
E-22 thru E-24	ORIGINAL	0
P-1 thru P-10	ORIGINAL	0

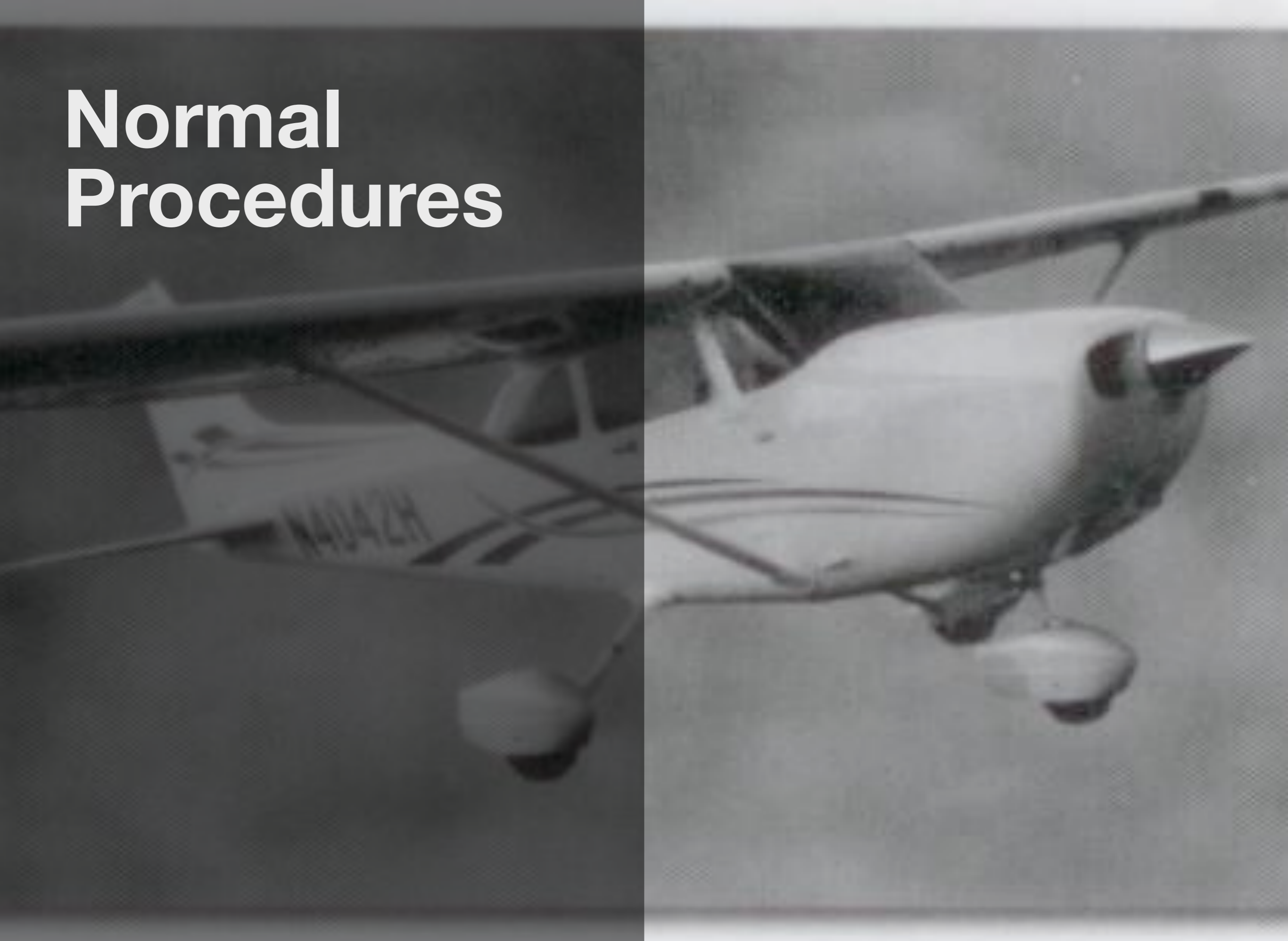
CHECKLIST PART NUMBER

Each page in this checklist contains the part number of the checklist and the page status of each page. Refer to the following example:

Basic Checklist



Normal Procedures



NORMAL PROCEDURES

TABLE OF CONTENTS

	Page
Airspeeds For Normal Operation	N-2
PREFLIGHT INSPECTION	N-3
Cabin	N-4
Empennage	N-5
Right Wing Trailing Edge	N-5
Right Wing	N-6
Nose	N-7
Left Wing Leading Edge	N-8
Left Wing	N-9
Left Wing Trailing Edge	N-9
Before Starting Engine	N-10
Starting Engine (With Battery)	N-11
Starting Engine (With External Power)	N-12
Before Takeoff	N-14
TAKEOFF	N-17
Normal Takeoff	N-17
Short Field Takeoff	N-17
Enroute Climb	N-18
Cruise	N-18
Descent	N-19
Before Landing	N-20
LANDING	N-20
Normal Landing	N-20
Short Field Landing	N-20
Balked Landing	N-21
After Landing	N-21
Securing Airplane	N-21

AIRSPEEDS

AIRSPEEDS FOR NORMAL OPERATION

Unless otherwise noted, the following speeds are based on a maximum weight of 2550 pounds and may be used for any lesser weight.

TAKEOFF

Normal Climb75 - 85 KIAS
Short Field Takeoff, Flaps 10°, Speed at 50 Feet 56 KIAS

ENROUTE CLIMB, FLAPS UP

Normal, Sea Level.75 - 85 KIAS
Normal, 10,000 Feet 70 - 80 KIAS
Best Rate of Climb, Sea Level 74 KIAS
Best Rate of Climb, 10,000 Feet 72 KIAS
Best Angle of Climb, Sea Level. 62 KIAS
Best Angle of Climb, 10,000 Feet 67 KIAS

LANDING APPROACH

Normal Approach, Flaps UP.65 - 75 KIAS
Normal Approach, Flaps FULL. 60 - 70 KIAS
Short Field Approach, Flaps FULL. 61 KIAS

BALKED LANDING

Maximum Power, Flaps 20° 60 KIAS

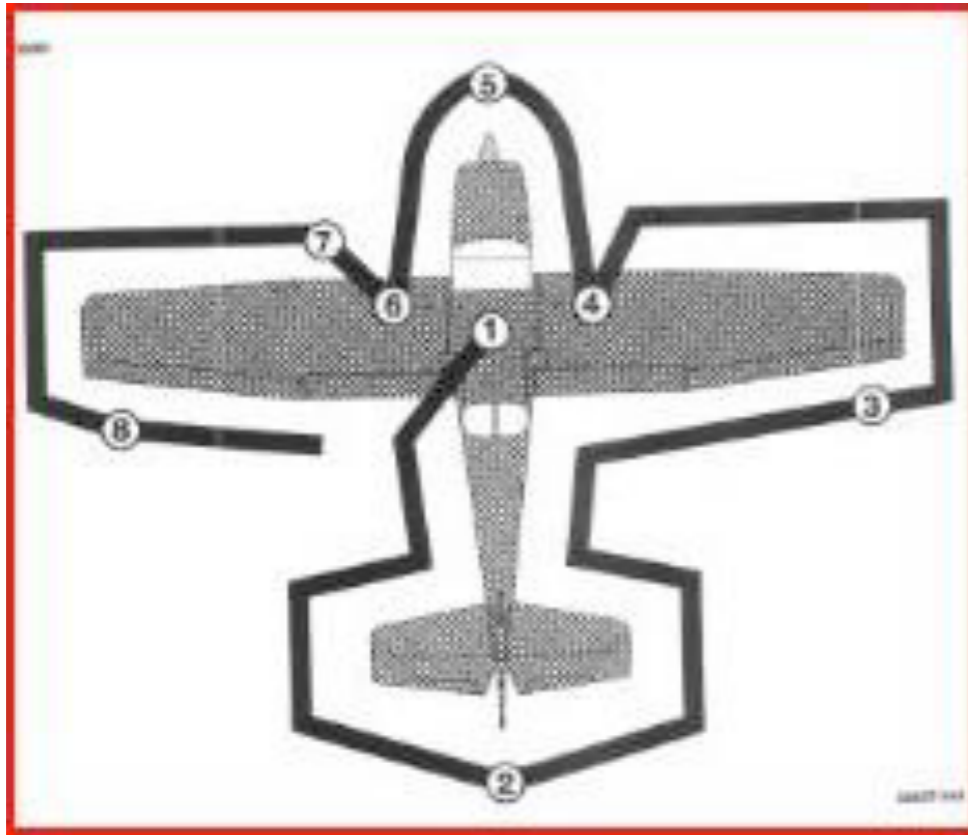
MAXIMUM RECOMMENDED TURBULENT AIR PENETRATION SPEED

2550 POUNDS.105 KIAS
2200 POUNDS. 98 KIAS
1900 POUNDS. 90 KIAS

MAXIMUM DEMONSTRATED CROSSWIND VELOCITY

Takeoff or Landing 15 KNOTS

NORMAL PROCEDURES PREFLIGHT INSPECTION



NOTE

Visually check airplane for general condition during walk-around inspection. Airplane should be parked in a normal ground attitude (refer to Figure 1-1 in the POH) to make sure that fuel drain valves allow for accurate sampling. Use of the refueling steps and assist handles will simplify access to upper wing surfaces for visual checks and refueling operations. In cold weather, remove even small accumulations of frost, ice or snow from wing, tail and control surfaces. Also, make sure that control surfaces contain no internal accumulations of ice or debris. Prior to flight, check that pitot heater is warm to the touch within 30 seconds with battery and pitot heat switches on. If a night flight is planned, check operation of all lights, and make sure a flashlight is available.

Figure 1

PREFLIGHT INSPECTION (Continued)

1. Cabin

1. Pitot Tube Cover – Removed (check for pitot blockage)
2. Pilot's Operating Handbook – Accessible to Pilot
3. Garmin G1000 Cockpit Reference Guide – Accessible to pilot
4. Airplane Weight and Balance – Checked
5. Parking Brake – Set
6. Control Wheel Lock – Removed

WARNING

WHEN THE MASTER SWITCH IS ON, USING AN EXTERNAL POWER SOURCE, OR MANUALLY ROTATING THE PROPELLER, TREAT THE PROPELLER AS IF THE MAGNETOS SWITCH WERE ON. DO NOT STAND, NOR ALLOW ANYONE ELSE TO STAND, WITHIN THE ARC OF THE PROPELLER SINCE A LOOSE OR BROKEN WIRE, OR A COMPONENT MALFUNCTION, COULD CAUSE THE ENGINE TO START.

7. MAGNETOS Switch – OFF
8. AVIONICS Switch (BUS 1 and BUS 2) – OFF
9. MASTER Switch (ALT and BAT) – ON
10. Primary Flight Display (PFD) – CHECK (Verify PFD is ON)
11. FUEL QTY (L and R) – CHECK
12. LOW FUEL L and Low Fuel R Annunciators – CHECK (verify annunciators are not shown on PFD)
13. OIL PRESSURE Annunciator – CHECK (verify annunciator is shown)
14. LOW VACUUM Annunciator – CHECK (verify annunciator is shown)
15. AVIONICS Switch (BUS 1) – ON
 - a. FLAPS DOWN - FULL

(Continued Next Page)

PREFLIGHT INSPECTION (Continued)

1. CABIN (Continued)

16. Forward Avionics Fan - CHECK
17. AVIONICS Switch (BUS 1) - OFF
18. AVIONICS Switch (BUS 2) - ON
19. Aft Avionics Fan - CHECK (verify fan is heard)
20. AVIONICS Switch (BUS 2) - OFF
21. PITOT HEAT Switch - ON (carefully check that pitot tube is warm to the touch within 30 seconds)
22. PITOT HEAT Switch - OFF
23. LOW VOLTS Annunciator - CHECK (verify annunciator is shown)
24. MASTER Switch (ALT and BAT) - OFF
25. Elevator Trim Control - TAKEOFF position
26. FUEL SELECTOR Valve - BOTH
27. ALT STATIC AIR Valve - OFF (push full in)
28. Fire Extinguisher - CHECK (verify gage pointer in green arc)

2. EMPENNAGE

1. Baggage Compartment Door - CHECK (lock with key)
2. Rudder Gust Lock (if installed) - REMOVE
3. Tail Tiedown - DISCONNECT
4. Control Surfaces - CHECK (freedom of movement and security)
5. Elevator Trim Tab - CHECK (security)
6. Antennas - CHECK (security of attachment and general condition)

3. RIGHT WING Trailing Edge

1. Flap - CHECK (security and condition)
2. Aileron - CHECK (freedom of movement and security)

(Continued Next Page)

4. RIGHT WING

1. Wing Tiedown - DISCONNECT
2. Main Wheel Tire - CHECK (proper inflation and general condition (weather check, tread depth and wear, etc.))
3. Fuel Tank Sump Quick Drain Valves - DRAIN
Drain at least a capful of fuel (using sampler cup) from each sump location to check water, sediment, and roper fuel grade before each flight and after each refueling. If water is observed, take further samples until clear and then gently rock wings and lower tail to the ground to move any additional contaminants to the sampling points. Take repeated samples from **all** fuel drain points until **all** contamination has been removed. If contaminants are still present, refer to WARNING below and do not fly the plane.

NOTE

Collect all sampled fuel in a safe container. Dispose of sampled fuel so that it does not cause a nuisance, hazard or damage to the environment.

WARNING

IF, AFTER REPEATED SAMPLING, EVIDENCE OF CONTAMINATION STILL EXISTS, THE AIRPLANE SHOULD NOT BE FLOWN. TANKS SHOULD BE DRAINED AND SYSTEM PURGE BY QUALIFIED MAINTENANCE PERSONNEL. ALL EVIDENCE OF CONTAMINATION MUST BE REMOVED BEFORE FURTHER FLIGHT.

4. Fuel Quantity - CHECK VISUALLY (for desired level)
5. Fuel Filler Cap - SECURE and VENT CLEAR

(Continued Next Page)

5. NOSE

1. Fuel Strainer Quick Drain Valve (located on bottom of fuselage) – DRAIN
Drain at least a cupful of fuel (using sampler cup) from valve to check for water, sediment and proper fuel grade before each flight and after refueling. If water is observed, take further samples until clear and then gently rock wings and lower tail to the ground to move any additional contaminants to the sampling points. Take repeated samples from **all** fuel drain points, including the fuel reservoir and fuel selector, until **all** contamination has been removed. If contaminants are still present, refer to warning below and do not fly the airplane.

NOTE

Collect all sampled fuel in a safe container. Dispose of sampled fuel so that it does not cause a nuisance, hazard or damage to the environment.

WARNING

IF, AFTER REPEATED SAMPLING, EVIDENCE OF CONTAMINATION STILL EXISTS, THE AIRPLANE SHOULD NOT BE FLOW. TANKS SHOULD BE DRAINED AND SYSTEM PURGED BY QUALIFIED MAINTENANCE PERSONNEL. ALL EVIDENCE OF CONTAMINATION MUST BE REMOVED BEFORE FURTHER FLIGHT.

2. Engine Oil Dipstick / Filler Cap:
 - a. Oil Level – CHECK
 - b. Dipstick / Filler Cap – SECURE

Do not operate with less than 5 quarts. Fill to 8 quarts for extended flight.

(Continued Next Page)

PREFLIGHT INSPECTION (continued)**5. NOSE** (Continued)

3. Engine Cooling Air Inlets – CHECK (clear of obstructions)
4. Propeller and Spinner – CHECK (for nicks and security)
5. Air Filter – CHECK (for restrictions by dust or other foreign matter)
6. Nose Wheel Strut and Tire – CHECK (proper inflation of strut and general condition of tire (weather checks, tread depth and wear, etc.))
7. Static Source Opening (left side of fuselage) – Check (verify opening is clear)

6. LEFT WING Leading Edge

1. Fuel Tank Vent Opening – CHECK (blockage)
2. Stall Warning Opening – CHECK (Blockage)

NOTE

To check the system, place a clean handkerchief over the vent opening and apply suction; a sound from the warning horn will confirm system operation.

3. Landing/Taxi Light(s) – CHECK (condition and cleanliness of cover)

(Continued Next Page)

PREFLIGHT INSPECTION (Continued)**7. LEFT WING**

1. Wing Tiedown – DISCONNECT
2. Fuel Quantity – CHECK VISUALLY (for desired level)
3. Fuel Filler Cap – SECURE and VENT CLEAR
4. Fuel Tank Sump Quick Drain Valves – DRAIN
Drain at least a capful of fuel (using sampler cup) from each sump location to check water, sediment, and proper fuel grade before each flight and after each refueling. If water is observed, take further samples until clear and then gently rock wings and lower tail to the ground to move any additional contaminants to the sampling points. Take repeated samples from **all** fuel drain points until **all** contamination has been removed. If contaminants are still present, refer to warning below and do not fly the plane.

NOTE

Collect all sampled fuel in a safe container. Dispose of sampled fuel so that it does not cause a nuisance, hazard or damage to the environment.

WARNING

IF, AFTER REPEATED SAMPLING, EVIDENCE OF CONTAMINATION STILL EXISTS, THE AIRPLANE SHOULD NOT BE FLOWN. TANKS SHOULD BE DRAINED AND SYSTEM PURGED BY QUALIFIED MAINTENANCE PERSONNEL. ALL EVIDENCE OF CONTAMINATION MUST BE REMOVED BEFORE FURTHER FLIGHT.

5. Main Wheel Tire - CHECK (proper inflation and general condition (weather checks, tread depth and wear, etc.))

8. LEFT WING Trailing Edge

1. Aileron – CHECK (freedom of movement and security)
2. Flap – CHECK (security and condition)

BEFORE STARTING ENGINE

1. Preflight Inspection – COMPLETE
2. Passenger Briefing – COMPLETE
3. Seats and Seat Belts – ADJUST and LOCK (verify inertia reel locking)
4. Brakes – TEST and SET
5. Circuit Breakers – CHECK IN
6. Electrical Equipment – OFF
7. AVIONICS Switch (BUS 1 and BUS 2) – OFF

CAUTION

THE AVIONICS SWITCH (BUS 1 AND BUS 2) MUST BE OFF DURING ENGINE START TO PREVENT POSSIBLE DAMAGE TO AVIONICS.

8. FUEL SELECTOR Valve – BOTH
9. FUEL SHUTOFF Valve – ON (push full in)

STARTING ENGINE (With Battery)

1. Throttle Control – OPEN ¼ inch
2. Mixture Control – IDLE CUTOFF (pull full out)
3. STBY BATT Switch:
 - a. TEST – (hold for 20 seconds, verify that green TEST lamp does not go out)
 - b. ARM – (verify that PFD comes on)
4. Engine Indicating System – CHECK PARAMETERS (verify no red X's through ENGINE page indicator's)
5. BUS E Volts – CHECK (verify 24 volts minimum show)
6. M BUS Volts – CHECK (verify 1.5 volts or less shown)
7. BATT S Amps – CHECK (verify annunciator is shown)
8. STBY BATT Annunciator – CHECK (verify annunciator is shown)
9. Propeller Area – CLEAR (verify that all people and equipment are at a safe distance from the propeller)
10. MASTER Switch (ALT and BAT) – ON
11. BEACON Light Switch – ON

NOTE

If engine is warm, omit priming procedure steps 12 thru 14 below.

12. FUEL PUMP Switch – ON
13. Mixture Control – SET to FULL RICH (full forward) until stable fuel flow is indicated (approximately 3-5 seconds), then set to IDLE CUTOFF (full aft) position.
14. FUEL PUMP Switch – OFF
15. MAGNETOS Switch – START (release when engine starts)
16. Mixture Control – ADVANCE SMOOTHLY TO RICH (when engine starts)

NOTE

If the engine is primed too much (flooded), place the mixture control to IDLE CUTOFF position, open the throttle control ½ to full, and engage the starter motor (START). When the engine starts, advance the mixture control to FULL RICH position and retard the throttle control promptly.

(Continued Next Page)

STARTING ENGINE (With Battery) (Continued)

17. Oil Pressure – CHECK (verify that oil pressure increases into the GREEN BAND range in 30-60 seconds)
18. AMPS (M BATT and BATT S) – CHECK (verify charge shown (positive))
19. LOW VOLTS Annunciator – CHECK (verify annunciation is not shown)
20. NAV Light Switch – ON as required
21. AVIONICS Switch (BUS 1 and BUS 2) – ON
22. FLAPS - RETRACT

STARTING ENGINE (With External Power)

1. Throttle Control – OPEN ¼ inch
2. Mixture Control – IDLE CUTOFF (pull full out)
3. STBY BATT Switch:
 - a. TEST – (hold for 20 seconds, verify that green TEST lamp does not go out)
 - b. ARM – (verify that PFD comes on)
4. Engine Indicating System – CHECK PARAMETERS (verify no red X's through ENGINE page indicators)
5. BUS E Volts – CHECK (verify 24 volts minimum show)
6. M BUS Volts – CHECK (verify 1.5 volts or less shown)
7. BATT S Amps – CHECK (verify annunciator is shown)
8. STBY BATT Annunciator – CHECK (verify annunciator is shown)
9. AVIONICS Switch (BUS 1 and BUS 2) – OFF
10. MASTER Switch (ALT and BAT) – OFF
11. Propeller Area – CLEAR (verify that all people and equipment are at a safe distance from the propeller)
12. External Power – CONNECT (to ground power receptacle)
13. Master Switch (ALT and BAT) – ON
14. BEACON Light Switch – ON
15. M BUS VOLTS – CHECK (verify that approximately 28 VOLTS is shown)

NOTE

If engine is warm, omit priming procedure steps 16 thru 18 below.

16. FUEL PUMP Switch – ON

17. Mixture Control – SET to FULL RICH (full forward) until stable fuel flow is indicated (approximately 3-5 seconds), then set to IDLE CUTOFF (full aft) position.
18. FUEL PUMP Switch – OFF
19. MAGNETOS Switch – START (release when engine starts)
20. Mixture Control – ADVANCE SMOOTHLY TO RICH (when engine starts)

·NOTE

If the engine is primed to much (flooded), place the mixture control to IDLE CUTOFF position, open the throttle control ½ to full, and engage the starter motor (START). When the engine starts, advance the mixture control to FULL RICH position and retard the throttle control promptly.

21. Oil Pressure – CHECK (verify that oil pressure increases into the GREEN BAND range in 30-60 seconds)
22. Power – REDUCE TO IDLE
23. External Power – DISCONNECT FROM GROUND POWER (latch external power receptacle door)
24. Power – INCREASE (to approximately 1500 RPM for several minutes to charge battery)
25. AMPS (M BATT and BATT S) – CHECK (verify charge shown (positive))
26. LOW VOLTS Annunciator – CHECK (verify annunciator is not shown)
27. Internal Power – CHECK
 - a. MASTER SWITCH (ALT) – OFF
 - b. TAXI and LAND Light Switches – ON
 - c. Throttle Control – REDUCE TO IDLE
 - d. MASTER Switch (ALT and BAT) – ON
 - e. Throttle Control – INCREASE (to approximately 1500 RPM)
 - f. M BATT Ammeter – CHECK (verify battery charging, amps positive)
 - g. LOW VOLTS Annunciator – CHECK (verify annunciator is not shown)

(Continued Next Page)

START ENGINE (With External Power) (Continued)**WARNING**

IF M BATT AMMETER DOES NOT SHOW POSITIVE CHARGE (+ AMPS), OR LOW VOLTS ANNUNCIATOR DOES NOT GO OFF, REMOVE THE BATTERY FROM THE AIRPLANE AND SERVICE OR REPLACE THE BATTERY BEFORE FLIGHT.

28. NAV Light Switch - ON (as required)
29. AVIONICS Switch (BUS 1 and BUS 2) - ON

BEFORE TAKEOFF

1. Parking Break – SET
2. Pilot and Passengers Seat Backs – MOST UPRIGHT POSITION
3. Seat and Seat Belts – CHECK SECURE
4. Cabin Doors – CLOSED and LOCKED
5. Flight Controls – FREE and CORRECT
6. Flight Instruments (PFD) – CHECK (no red X's)
7. Altimeters:
 - a. PFD (BARO) – SET
 - b. Standby Altimeter – SET
8. ALT SEL – SET
9. Standby Flight Instruments – CHECK
10. Fuel Quantity – CHECK (verify level is correct)

NOTE

Flight is not recommended when both fuel quantity indicators are in the yellow band range.

11. Mixture Control - RICH
12. FUEL SELECTOR Valve - SET BOTH
13. Autopilot - ENGAGE (if installed)
(push AP button on either PFD or MFD bezel)
14. Flight Controls - CHECK (verify autopilot can be overpowered in both pitch and roll axes)

(Continued Next Page)

BEFORE TAKEOFF (Continued)

15. A/P TRIM DISC Button - PRESS (if installed)
(verify autopilot disengages and aural alert is heard)
16. Flight Director - OFF (if installed)
(push FD button on either PFD or MFD bezel)
17. Elevator Trim Control - SET FOR TAKEOFF
18. Throttle Control - 1800 RPM
 - a. MAGNETOS Switch - CHECK (RPM drop should not exceed 150 RPM on either magneto or 50 RPM differential between magnetos)
 - b. VAC Indicator - CHECK
 - c. Engine Indicators - CHECK
 - d. Ammeters and Voltmeters - CHECK
19. Annunciators - CHECK (verify no annunciators are shown)
20. Throttle Control - CHECK IDLE
21. Throttle Control - 1000 RPM or LESS
22. Throttle Control Friction Lock - ADJUST
23. COM Frequency(s) - SET
24. NAV Frequency(s) - SET
25. FMS/GPS Flight Plan - AS DESIRED

NOTE

Check GPS availability on AUX-GPS STATUS page. No annunciation is provided for loss of GPS2.

26. XPDR - SET

(Continued Next Page)

BEFORE TAKEOFF (Continued)

27. CDI Softkey - SELECT NAV SOURCE

CAUTION

THE G 1 0 0 0 HSI SHOWS A COURSE DEVIATION INDICATOR FOR THE SELECTED GPS, NAV 1 OR NAV2 NAVIGATION SOURCE. THE G 1 0 0 0 HSI DOES NOT PROVIDE A WARNING FLAG WHEN A VALID NAVIGATION SIGNAL IS NOT BEING SUPPLIED TO THE INDICATOR. WHEN A VALID NAVIGATION SIGNAL IS NOT BEING SUPPLIED, THE COURSE DEVIATION BAR (D-BAR) PART OF THE INDICATOR IS NOT SHOWN ON THE HSI COMPASS CARD. THE MISSING D-BAR IS CONSIDERED TO BE THE WARNING FLAG.

WARNING

WHEN THE AUTOPILOT IS ENGAGED IN NAV, APR OR BC OPERATING MODES, IF THE HSI NAVIGATION SOURCE IS CHANGED MANUALLY, USING THE CDI SOFTKEY, THE CHANGE WILL INTERRUPT THE NAVIGATION SIGNAL TO THE AUTOPILOT AND WILL CAUSE THE AUTOPILOT TO REVERT TO ROL MODE OPERATION. NO AURAL ALERT WILL BE PROVIDED. IN ROL MODE, THE AUTOPILOT WILL ONLY KEEP THE WINGS LEVEL AND WILL NOT CORRECT THE AIRPLANE HEADING OR COURSE. SET THE HDG BUG TO THE CORRECT HEADING AND SELECT THE CORRECT NAVIGATION SOURCE ON THE HSI, USING THE CDI SOFTKEY, BEFORE ENGAGING THE AUTOPILOT IN ANY OTHER OPERATING MODE.

29. CABIN PWR 12V Switch – OFF
30. Wing Flaps – Up - 10° (10° preferred)
31. Cabin Windows – CLOSED and LOCKED
32. STROBE Light Switch – ON
33. Brakes – RELEASE

TAKEOFF

NORMAL TAKEOFF

- a. Wing Flaps – UP or 10° (10° preferred)
- b. Throttle Control – FULL (push full in)
- c. Mixture Control – RICH (above 3000 feet pressure altitude, lean for maximum RPM)
- d. Elevator Control – LIFT NOSEWHEEL AT 55 KIAS
- e. Climb Airspeed – 70-80 KIAS
- f. Wing Flaps – RETRACT (at safe altitude)

SHORT FIELD TAKEOFF

- a. Wing Flaps - 10°
- b. Brakes – APPLY
- c. Throttle Control – FULL (push full in)
- d. Mixture Control – RICH (above 3000 feet pressure altitude, lean for maximum RPM)
- e. Brakes – RELEASE
- f. Elevator Control – SLIGHTLY TAIL LOW
- g. Climb Airspeed – 56 KIAS (until all obstacles are cleared)
- h. Wing Flaps – RETRACT SLOWLY (when airspeed is more than 60 KIAS)

ENROUTE CLIMB

1. Airspeed – 70-85 KIAS
2. Throttle Control – FULL (push full in)
3. Mixture Control – RICH (above 3000 feet pressure altitude, lean for maximum RPM)

NOTE

For maximum performance climb speeds refer to Section 5, figure 5-6, Maximum Rate of Climb at 2550 Pounds.

CRUISE

1. Power – 2100 to 2700 RPM (no more than 75% power recommended)
2. Elevator Trim Control – ADJUST
3. Mixture Control – LEAN (for desired performance or economy)
4. FMS/GPS – REVIEW and BRIEF (OBS/SUSP softkey operation for holding pattern procedure (IFR))

DESCENT

1. Power – AS DESIRED
2. Mixture – ADJUST (if necessary to make engine run smoothly)
3. Altimeters:
 - a. PFD (BARO) – SET
 - b. Standby Altimeter – SET
4. ALT SEL – SET
5. CDI Softkey – SELECT NAV SOURCE
6. FMS/GPS – REVIEW and BRIEF (OBS/SUSP softkey operation for holding pattern procedure (IFR))

CAUTION

IF G100 HSI SHOWS A COURSE DEVIATION INDICATOR FOR THE SELECTED GPS, NAV 1 OR NAV 2 NAVIGATION SOURCE. THE G1000 HSI DOES NOT PROVIDE A WARNING FLAG WHEN A VALID NAVIGATION SIGNAL IS NOT BEING SUPPLIED TO THE INDICATOR. WHEN A VALID NAVIGATION SIGNAL IS NOT BEING SUPPLIED. THE COURSE DEVIATION BAR (D-BAR) PART OF THE INDICATOR IS NOT SHOWN ON THE HSI COMPASS CARD. THE MISSING D-BAR IS CONSIDERED TO BE THE WARNING FLAG.

WARNING

WHEN THE AUTOPILOT IS ENGAGED IN NAV, APR OR BC OPERATING MODES, IF THE HSI NAVIGATION SOURCE IS CHANGED MANUALLY, USING THE CDI SOFTKEY, THE CHANGE WILL INTERRUPT THE NAVIGATION SIGNAL TO THE AUTOPILOT AND WILL CAUSE THE AUTOPILOT TO REVERT TO ROL MODE OPERATION. NO AURAL ALERT WILL BE PROVIDED. IN ROL MODE, THE AUTOPILOT WILL ONLY KEEP THE WINGS LEVEL AND WILL NOT CORRECT THE AIRPLANE HEADING OR COURSE. SET THE HDG BUG TO THE CORRECT HEADING AND SELECT CORRECT NAVIGATION SOURCE ON THE HSI, USING THE CDI SOFTKEY, BEFORE ENGAGING THE AUTOPILOT IN ANY OTHER OPERATING MODE.

7. FUEL SELECTOR Valve – BOTH
8. Wing Flaps – AS DESIRED (UP - 10° below 110 KIAS)
(10° to FULL below 85 KIAS)

BEFORE LANDING

1. Pilot and Passenger Seat Backs – MOST UPRIGHT POSITION
2. Seats and Seat Belts – SECURED and LOCKED
3. FUEL SELECTOR Valve – BOTH
4. Mixture Control – RICH
5. LAND and TAXI Light Switches – ON
6. Autopilot – OFF (if installed)
7. CABIN PWR 12V Switch – OFF

LANDING

NORMAL LANDING

1. Airspeed - 65-75 KIAS (Flaps UP)
2. Wing Flaps - AS DESIRED (UP - 10° below 110 KIAS)
(10° - FULL below 85 KIAS)
3. Airspeed - 60-70 KIAS (Flaps FULL)
4. Elevator Trim Control - ADJUST
5. Touchdown - MAIN WHEELS FIRST
6. Landing Roll - LOWER NOSEWHEEL GENTLY
7. Braking - MINIMUM REQUIRED

SHORT FIELD LANDING

1. Airspeed - 65 - 75 KIAS (Flaps UP)
2. Wing Flaps - FULL
3. Airspeed - 61 KIAS (until flare)
4. Elevator Trim Control - ADJUST
5. Power - REDUCE TO IDLE (as obstacle is cleared)
6. Touchdown - MAIN WHEELS FIRST
7. Brakes - APPLY HEAVILY
8. Wing Flaps - UP

(Continued Next Page)

LANDING (Continued)

BALKED LANDING

1. Throttle Control – FULL
2. Wing Flaps – RETRACT to 20°
3. Climb Speed – 62 KIAS
4. Wing Flaps - 10° (as obstacle is cleared), then UP (after reaching a safe altitude and 65 KIAS)

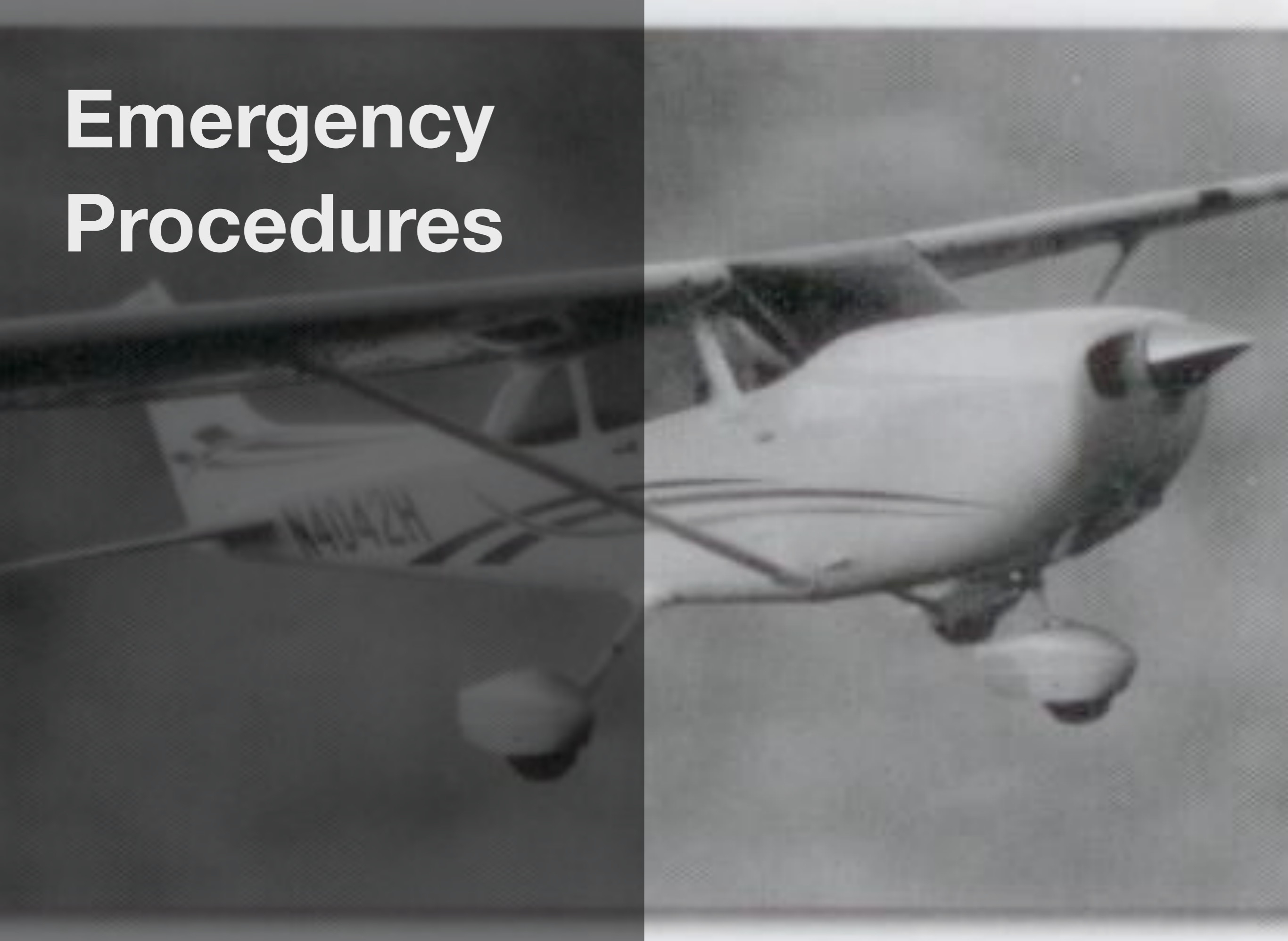
AFTER LANDING

1. Wing Flaps - UP

SECURING AIRPLANE

1. Parking Brake – SET
2. Throttle Control – IDLE (pull full out)
3. Electrical Equipment – OFF
4. AVIONICS Switch (BUS 1 and BUS 2) – OFF
5. Mixture Control – IDLE CUTOFF (pull full OUT)
6. MAGNETOS Switch – OFF
7. MASTER Switch (ALT and BAT) – OFF
8. STBY BATT Switch – OFF
9. Control Lock – INSTALL
10. FUEL SELECTOR Valve – LEFT or RIGHT (to prevent crossfeeding between tanks)

Emergency Procedures



EMERGENCY PROCEDURES

TABLE OF CONTENTS

Airspeeds For Emergency Operations

ENGINE FAILURES

Engine Failure During Takeoff Roll

Engine Failure Immediately After Takeoff

Engine Failure During Flight (Restart Procedures)

FORCED LANDINGS

Emergency Landing Without Engine Power

Precautionary Landing With Engine Power

Ditching

FIRES

During Start On Ground

Engine Fire In Flight

Electrical Fire In Flight

Cabin Fire

Wing Fire

ICING

Inadvertent Icing Encounter During Flight

STATIC SOURCE BLOCKAGE

(Erroneous Instrument Reading Suspected)

EXCESSIVE FUEL VAPOR

Fuel Flow Stabilization Procedures

ABNORMAL LANDINGS

Landing With A Flat Main Tire

Landing With A Flat Nose Tire

Page
E-3
E-4
E-4
E-4
E-5
E-6
E-6
E-6
E-7
E-8
E-8
E-9
E-10
E-11
E-11
E-12
E-12
E-13
E-13
E-13
E-13
E-14
E-14
E-14

TABLE OF CONTENTS (Continued)

	Page
ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS	E-15
High Volts Annunciator Comes On or	
M BATT AMPS More Than 40	E-15
LOW VOLTS Annunciator Comes On Below 1000 RPM	E-17
LOW VOLTS Annunciator Comes On or	
Does Not Go Off at Higher RPM	E-17
AIR DATA SYSTEM FAILURE	E-19
Red X - PFD Airspeed Indicator	E-19
Red X - PFD Altitude Indicator	E-19
ATTITUDE AND HEADING REFERENCE SYSTEM (AHRS)	
FAILURE	E-19
Red X - PFD Attitude Indicator	E-19
Red X - Horizontal Situation Indicator (HSI)	E-19
AUTOPILOT OR ELECTRIC TRIM FAILURE (if installed)	E-20
AP or PTRM Annunciator(s) Come On	E-20
VACUUM SYSTEM FAILURE	E-21
LOW VACUUM Annunciator Comes On	E-21
HIGH CARBON MONOXIDE (CO) LEVEL ADVISORY	E-22
CO LVL HIGH Annunciator Comes On	E-22
CO LVL HIGH Annunciator Remains On	E-22
MAXIMUM GLIDE	E-23

(Continued Next Page)

AIRSPEEDS

AIRSPEEDS FOR EMERGENCY OPERATIONS

ENGINE FAILURE AFTER TAKEOFF

Wings Flaps UP 70 KIAS
Wing Flaps 10° - FULL 65 KIAS

MANEUVERING SPEED

2550 POUNDS 105 KIAS
2200 POUNDS 98 KIAS
1900 POUNDS 90 KIAS

MAXIMUM GLIDE 68 KIAS

PRECAUTIONARY LANDING

WITH ENGINE POWER 65 KIAS

LANDING WITHOUT ENGINE POWER

Wings Flaps UP 70 KIAS
Wing Flaps 10° - FULL 65 KIAS

EMERGENCY PROCEDURES

Procedures in the Emergency Procedures Checklist portion of this section shown in **bold faced** type are immediate action items which should be committed to memory.

ENGINE FAILURES

ENGINE FAILURES DURING TAKEOFF ROLL

1. **Throttle Control - IDLE (pull full out)**
2. **Brakes - APPLY**
3. Wing Flaps - RETRACT
4. Mixture Control - IDLE CUTOFF (pull full out)
5. MAGNETOS Switch - OFF
6. STBY BATT Switch - OFF
7. MASTER Switch (ALT and BAT) - OFF

ENGINE FAILURE IMMEDIATELY AFTER TAKEOFF

1. **Airspeed - 70 KIAS - Flaps UP**
65 KIAS - Flaps 10° - FULL
2. Mixture Control - IDLE CUTOFF (pull full out)
3. FUEL SHUTOFF Valve - OFF (pull full out)
4. MAGNETOS Switch - OFF
5. Wing Flaps - AS REQUIRED (FULL recommended)
6. STBY BATT Switch - OFF
7. MASTER Switch (ALT and BAT) - OFF
8. Cabin Door - UNLATCH
9. Land - STRAIGHT AHEAD

(Continued Next Page)

ENGINE FAILURES (Continued)

ENGINE FAILURE DURING FLIGHT (Restart Procedures)

1. **Airspeed - 68 KIAS (best glide speed)**
2. **FUEL SHUTOFF Valve - ON (push full in)**
3. **FUEL SELECTOR Valve - BOTH**
4. **FUEL PUMP Switch - ON**
5. **Mixture Control - RICH (if restart has no occurred)**
6. MAGNETOS Switch - BOTH (or START if propeller is stopped)

NOTE

If the propeller is windmilling, engine will restart automatically within a few seconds. If propeller has stopped (possible at low speeds), turn MAGNETOS switch to START, advance throttle slowly from idle and lean the mixture from full rich as required to obtain smooth operation.

7. FUEL PUMP Switch - OFF

NOTE

If the indicated fuel flow (FFLOW GPH) immediately drops to zero, a sign of failure of the engine-driven fuel pump, return the FUEL PUMP switch to the ON position.

FORCED LANDINGS

EMERGENCY LANDING WITHOUT ENGINE POWER

1. Pilot and Passenger Seat Backs - MOST UPRIGHT POSITION
2. Seats and Seat Belts - SECURE
3. Airspeed - 70 KIAS (Flaps UP)
65 KIAS (Flaps 10° - FULL)
4. Mixture Control - IDLE CUTOFF (pull full out)
5. FUEL SHUTOFF Valve - OFF (pull full out)
6. MAGNETOS Switch - OFF
7. Wing Flaps - AS REQUIRED (FULL recommended)
8. STBY BATT Switch - OFF
9. MASTER Switch (ALT and BAT) - OFF
(when landing is assured)
10. Doors - UNLATCH PRIOR TO TOUCHDOWN
11. Touchdown - SLIGHTLY TAIL LOW
12. Brakes - APPLY HEAVILY

PRECAUTIONARY LANDING WITH ENGINE POWER

1. Pilot and Passenger Seat Backs - MOST UPRIGHT POSITION
2. Seats and Seat Belts - SECURE
3. Airspeed - 65 KIAS
4. Wing Flaps - 20°
5. Selected Field - FLY OVER
(noting terrain and obstructions)
6. Wing Flaps - FULL (on final approach)
7. Airspeed - 65 KIAS
8. STBY BATT Switch - OFF
9. MASTER Switch (ALT and BAT) - OFF
(when landing is assured)
10. Doors - UNLATCH PRIOR TO TOUCHDOWN
11. Touchdown - SLIGHTLY TAIL LOW
12. Mixture Control - IDLE CUTOFF (pull full out)
13. MAGNETOS Switch - OFF
14. Brakes - APPLY HEAVILY

(Continued Next Page)

172SCLBUS-00

FORCED LANDINGS (Continued)

DITCHING

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

NOTE

If no power is available, approach at 70 KIAS with Flaps UP or at 65 KIAS with Flaps 10°.

7. Approach:
 - a. High Winds, Heavy Seas - INTO THE WIND
 - b. Light Winds, Heavy Swells - PARALLEL TO SWELLS
8. Cabin Doors - UNLATCH
9. Touchdown - LEVEL ATTITUDE AT ESTABLISHED RATE
OF DESCENT
10. Face - CUSHION AT TOUCHDOWN (with folded coat)
11. ELT - ACTIVATE
12. Airplane - EVACUATE THROUGH CABIN DOORS

NOTE

If necessary, open window and flood cabin to equalize pressure so doors can be opened.

13. Life Vests and Raft - INFLATE WHEN CLEAR OF AIRPLANE

172SCLBUS-00

E-7

FIRES

DURING START ON GROUND

1. **MAGNETOS Switch - START**
(continue cranking to start the engine)

IF ENGINE STARTS

2. Power - 1800 RPM (for a few minutes)
3. Engine - SHUTDOWN (inspect for damage)

IF ENGINE FAILS TO START

2. **Throttle Control - FULL (push full in)**
3. **Mixture Control - IDLE CUTOFF (pull full out)**
4. **MAGNETOS Switch - START (continue cranking)**
5. **FUEL SHUTOFF Valve - OFF (pull full out)**
6. **FUEL PUMP Switch - OFF**
7. **MAGNETOS Switch - OFF**
8. **STBY BATT Switch - OFF**
9. **MASTER Switch (ALT and BAT) - OFF**
10. Engine - SECURE
11. Parking Brake - RELEASE
12. Fire Extinguisher - OBTAIN
(have ground attendants obtain if not installed)
13. Airplane - EVACUATE
14. Fire - EXTINGUISH
(using fire extinguisher, wool blanket, or dirt)
15. Fire Damage - INSPECT
(repair or replace damaged components and/or wiring before conducting another flight)

(Continued Next Page)

FIRES (Continued)

ENGINE FIRE IN FLIGHT

1. **Mixture Control - IDLE CUTOFF (pull full out)**
2. **FUEL SHUTOFF Valve - OFF (pull full out)**
3. **FUEL PUMP Switch - OFF**
4. **MASTER Switch (ALT and BAT) - OFF**
5. Cabin Vents - OPEN (as needed)
6. CABIN HT and CABIN AIR Control Knobs - OFF (push full in)
(to avoid drafts)
7. Airspeed - 100 KIAS
(If fire is not extinguished, increase glide speed to find an airspeed, within airspeed limitations, which will provide an incombustible mixture)
8. Forced Landing - EXECUTE
(Refer to EMERGENCY LANDING WITHOUT ENGINE POWER, page E-6)

(Continued Next Page)

FIRES (Continued)

ELECTRICAL FIRE IN FLIGHT

1. **STBY BATT Switch - OFF**
2. **MASTER Switch (ALT and BAT) - OFF**
3. **Cabin Vents - CLOSED (to avoid drafts)**
4. **CABIN HT and CABIN AIR Control Knobs - OFF (pull full in)
(to avoid drafts)**
5. **Fire Extinguisher - ACTIVATE (if available)**
6. **AVIONICS Switch (BUS 1 and BUS 2) - OFF**
7. **All Other Switches (except MAGNETOS switch) - OFF**

WARNING

**AFTER THE FIRE EXTINGUISHER HAS BEEN USED,
MAKE SURE THAT THE FIRE IS EXTINGUISHED
BEFORE EXTERIOR AIR IS USED TO REMOVE
SMOKE FROM THE CABIN.**

8. **Cabin Vents - OPEN**
(when sure that fire is completely extinguished)
9. **CABIN HT and CABIN AIR Control Knobs - ON (pull full out)**
(when sure that fire is completely extinguished)

**IF FIRE HAS BEEN EXTINGUISHED AND ELECTRICAL
POWER IS NECESSARY FOR CONTINUED FLIGHT TO
NEAREST SUITABLE AIRPORT OR LANDING AREA**

10. **Circuit Breakers - CHECK (for OPEN circuit(s), do not reset)**
11. **MASTER Switch (ALT and BAT) - ON**
12. **STBY BATT Switch - ARM**
13. **AVIONICS Switch (BUS 1) - ON**
14. **AVIONICS Switch (BUS 2) - ON**

(Continued Next Page)

FIRES (Continued)

CABIN FIRE

1. **STBY BATT Switch - OFF**
2. **MASTER Switch (ALT and BAT) - OFF**
3. **Cabin Vents - CLOSED (to avoid drafts)**
4. **CABIN HT and CABIN AIR Control Knobs - OFF (push full in)
(to avoid drafts)**
5. **Fire Extinguisher - ACTIVATE (if available)**

WARNING

**AFTER THE FIRE EXTINGUISHER HAS BEEN USED,
MAKE SURE THAT THE FIRE IS EXTINGUISHED
BEFORE EXTERIOR AIR IS USED TO REMOVE
SMOKE FROM THE CABIN.**

6. **Cabin Vents - OPEN**
(when sure that fire is completely extinguished)
7. **CABIN HT and CABIN AIR Control Knobs - ON (pull full out)**
(when sure that fire is completely extinguished)
8. **Land the airplane as soon as possible to inspect for damage.**

WING FIRE

1. **LAND and TAXI Light Switches - OFF**
2. **NAV Light Switch - OFF**
3. **STROBE Light Switch - OFF**
4. **PITOT HEAT Switch - OFF**

NOTE

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

ICING

INADVERTENT ICING ENCOUNTER DURING FLIGHT

1. **PITOT HEAT Switch - ON**
2. **Turn back or change altitude (to obtain an outside air temperature that is less conducive to icing)**
3. **CABIN HT Control Knob - ON (pull full out)**
4. **Defroster Control Outlets - OPEN**
(to obtain maximum windshield defroster airflow)
5. **CABIN AIR Control Knob - ADJUST**
(to obtain maximum defroster heat and airflow)
6. Watch for signs of induction air filter icing. A loss of engine RPM could be caused by ice blocking the air intake filter. Adjust the throttle as necessary to hold engine RPM. Adjust mixture as necessary for any change in power settings.
7. Plan a landing at the nearest airport. With an extremely rapid ice build-up, select a suitable off airport landing site.
8. With an ice accumulation of 0.25 inch or more on the wing leading edges, be prepared for significantly higher power requirements, higher approach and stall speeds, and a longer landing roll.
9. Leave wing flaps retracted. With a severe ice build-up on the horizontal tail, the change in wing wake airflow direction caused by wing flap extension could result in a loss of elevator effectiveness.
10. Open left window and, if practical, scrape ice from a portion of the windshield for visibility in the landing approach.
11. Perform a landing approach using a forward slip, if necessary, for improved visibility.
12. Approach at 65 to 75 KIAS depending upon the amount of ice accumulation.
13. Perform landing in level attitude.
14. Missed approaches should be avoided whenever possible because of severely reduced climb capability.

STATIC SOURCE BLOCKAGE (ERRONEOUS INSTRUMENT READING SUSPECTED)

1. **ALT STATIC AIR Valve - ON (pull full out)**
2. Cabin Vents - CLOSED
3. CABIN HT and CABIN AIR Control Knobs - ON (pull full out)
4. Airspeed - REFER TO POH
(Refer to Section 5, Figure 5-1 (Sheet 2) Airspeed Calibration,
Alternate Static Source correction chart.)

EXCESSIVE FUEL VAPOR

FUEL FLOW STABILIZATION PROCEDURES

(If flow fluctuations of 1 GPH or more, or power surges occur.)

1. FUEL PUMP Switch - ON
2. Mixture Control - ADJUST
(as necessary for smooth engine operation)
3. Fuel Selector Valve - SELECT OPPOSITE TANK
(if vapor symptoms continue)
4. FUEL PUMP Switch - OFF
(after fuel flow has stabilized)

ABNORMAL LANDINGS

LANDING WITH A FLAT MAIN TIRE

1. Approach - NORMAL
2. Wing Flaps - FULL
3. Touchdown - GOOD MAIN TIRE FIRST
(hold airplane off flat tire as long as possible with aileron control)
4. Directional Control - MAINTAIN
(using brake on good wheel as required)

LANDING WITH A FLAT NOSE TIRE

1. Approach - NORMAL
2. Wing Flaps - AS REQUIRED
 - a. 85 to 110 KIAS - Flaps UP - 10°
 - b. Below 85 KIAS - Flaps 10° - FULL
3. Touchdown - ON MAINS
(hold nosewheel off the ground as long as possible)
4. When nosewheel touches down, maintain full up elevator as airplane slows to stop.

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS

HIGH VOLTS ANNUNCIATOR COMES ON OR M BATT AMPS MORE THAN 40

1. MASTER Switch (ALT Only) - OFF
2. Electrical Load - REDUCE IMMEDIATELY as follows:
 - a. AVIONICS Switch (BUS 1) - OFF
 - b. PITOT HEAT Switch - OFF
 - c. BEACON Light Switch - OFF
 - d. LAND Light Switch - OFF (use as required for landing)
 - e. TAXI Light Switch - OFF
 - f. NAV Light Switch - OFF
 - g. STROBE Light Switch - OFF
 - h. CABIN PWR 12V Switch - OFF

NOTE

- The main battery supplies electrical power to the main and essential buses until M BUS VOLTS decreases below 20 volts. When M BUS VOLTS falls below 20 volts, the standby battery system will automatically supply electrical power to the essential bus for at least 30 minutes.
- Select COM1 MIC and NAV1 on the audio panel and tune to the active frequency before setting AVIONICS BUS 2 to OFF. If COM2 MIC and NAV2 are selected when AVIONICS BUS 2 is set to OFF, the COM and NAV radios cannot be tuned.

(Continued Next Page)

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS (Continued)

HIGH VOLTS ANNUNCIATOR COMES ON OR M BATT AMPS MORE THAN 40 (Continued)

- i. COM1 and NAV1 - TUNE TO ACTIVE FREQUENCY
- j. COM1 MIC and NAV1 - SELECT
(COM2 MIC and NAV2 will be inoperative once AVIONICS BUS2 is selected to OFF)

NOTE

When AVIONICS BUS 2 is set to OFF, the following items will not operate:

Autopilot	Audio Panel
COMM 2	NAV 2
Transponder	MFD

- k. AVIONICS Switch (BUS 2) - OFF (KEEP ON if in clouds)
3. Land as soon as practical.

NOTE

Make sure a successful landing is possible before extending flaps. The flap motor is a large electrical load during operation.

(Continued Next Page)

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS (Continued)

LOW VOLTS ANNUNCIATOR COMES ON BELOW 1000 RPM

1. Throttle Control - 1000 RPM
2. LOW VOLTS Annunciator - CHECK OFF

LOW VOLTS ANNUNCIATOR REMAINS ON AT 1000 RPM

3. Authorized maintenance personnel must do electrical system inspection prior to next flight.

LOW VOLTS ANNUNCIATOR COMES ON OR DOES NOT GO OFF AT HIGHER RPM

1. MASTER Switch (ALT Only) - OFF
2. ALT FIELD Circuit Breaker - CHECK IN
3. MASTER Switch (ALT and BAT) - ON
4. LOW VOLTS Annunciator - CHECK OFF
5. M BUS VOLTS - CHECK 27.5 V (minimum)
6. M BATT AMPS - CHECK CHARGING (+)

IF LOW VOLTS ANNUNCIATOR REMAINS ON

7. MASTER Switch (ALT Only) - OFF
8. Electrical Load - REDUCE IMMEDIATELY as follows:
 - a. AVIONICS Switch (BUS 1) - OFF
 - b. PITOT HEAT Switch - OFF
 - c. BEACON Light Switch - OFF
 - d. LAND Light Switch - OFF (use as required for landing)
 - e. TAXI Light Switch - OFF
 - f. NAV Light Switch - OFF
 - g. STROBE Light Switch - OFF
 - h. CABIN PWR 12V Switch - OFF

(Continued Next Page)

ELECTRICAL POWER SUPPLY SYSTEM MALFUNCTIONS (Continued)

IF LOW VOLTS ANNUNCIATOR REMAINS ON (Continued)

NOTE

- The main battery supplies electrical power to the main and essential buses until M BUS VOLTS decreases below 20 volts. When M BUS VOLTS falls below 20 volts, the standby battery system will automatically supply electrical power to the essential bus for at least 30 minutes.
- Select COM1 MIC and NAV1 on the audio panel and tune to the active frequency before setting AVIONICS BUS 2 to OFF. If COM2 MIC and NAV2 are selected when AVIONICS BUS 2 is set to OFF, the COM and NAV radios cannot be tuned.
 - i. COM1 and NAV1 - TUNE TO ACTIVATE FREQUENCY
 - j. COM1 MIC and NAV1 - SELECT
(COM2 MIC and NAV2 will be inoperative once AVIONICS BUS 2 is selected to OFF)

NOTE

When AVIONICS BUS 2 is set to OFF, the following items will not operate:

Autopilot	Audio Panel
COMM 2	NAV 2
Transponder	MFD

- k. AVIONICS Switch (BUS 2) - OFF (KEEP ON if in clouds)
9. Land as soon as practical.

NOTE

Make sure a successful landing is possible before extending flaps. The flap motor is a large electrical load during operation.

AIR DATA SYSTEM FAILURE

RED X - PFD AIRSPEED INDICATOR

1. ADC/AHRS Circuit Breakers - CHECK IN
(ESS BUS and AVN BUS 1)

If open, reset (close) circuit breaker. If circuit breaker opens again, do not reset.

2. Standby Airspeed Indicator - USE FOR AIRSPEED
INFORMATION

RED X - PFD ALTITUDE INDICATOR

1. ADC/AHRS Circuit Breakers - CHECK IN
(ESS BUS and AVN BUS 1)

If open, reset (close) circuit breaker. If circuit breaker opens again, do not reset.

2. Standby Altimeter - CHECK current barometric pressure SET
USE FOR ALTITUDE INFORMATION.

ATTITUDE AND HEADING REFERENCE SYSTEM (AHRS FAILURE)

RED X - PFD ATTITUDE INDICATOR

1. ADC/AHRS Circuit Breakers - CHECK IN
(ESS BUS and AVN BUS 1)

If open, reset (close) circuit breaker. If circuit breaker opens again, do not reset.

2. Standby Attitude Indicator - USE FOR ATTITUDE
INFORMATION

RED X - HORIZONTAL SITUATION INDICATOR (HSI)

1. ADC/AHRS Circuit Breakers - CHECK IN
(ESS BUS and AVN BUS 1)

If open, reset (close) circuit breaker. If circuit breaker opens again, do not reset.

2. Non-Stabilized Magnetic Compass - USE FOR HEADING
INFORMATION

AUTOPILOT OR ELECTRIC TRIM FAILURE
(if installed)**AP OR PTRM ANNUNCIATOR(S) COME ON****1. Control Wheel - GRASP FIRMLY**

(regain control of airplane)

2. A/P TRIM DISC Button - PRESS AND HOLD

(throughout recovery)

3. Elevator Trim Control - ADJUST MANUALLY

(as necessary)

4. AUTO PILOT Circuit Breaker - OPEN (pull out)**5. A/P TRIM DISC Button - RELEASE****WARNING****FOLLOWING AN AUTOPILOT, AUTOTRIM OR MANUAL
ELECTRIC TRIM SYSTEM MALFUNCTION, DO NOT
ENGAGE THE AUTOPILOT UNTIL THE CAUSE OF THE
MALFUNCTION HAS BEEN CORRECTED.**

VACUUM SYSTEM FAILURE

LOW VACUUM ANNUNCIATOR COMES ON

- 1. Vacuum Indicator (VAC) - CHECK EIS ENGINE PAGE**
(make sure vacuum pointer is in green band limits)

CAUTION

IF VACUUM POINTER IS OUT OF THE GREEN BAND DURING FLIGHT OR THE GYRO FLAG IS SHOWN ON THE STANDBY ATTITUDE INDICATOR, THE STANDBY ATTITUDE INDICATOR MUST NOT BE USED FOR ATTITUDE INFORMATION.

HIGH CARBON MONOXIDE (CO) LEVEL ADVISORY

CO LVL HIGH ANNUNCIATOR COMES ON

- 1. CABIN HT Control Knob - OFF (push full in)**
- 2. CABIN AIR Control Knob - ON (push full out)**
- 3. Cabin Vents - OPEN**
4. Cabin Windows - OPEN
(163 KIAS maximum windows open speed)

CO LVL HIGH ANNUNCIATOR REMAINS ON

5. Land as soon as practical.

MAXIMUM GLIDE

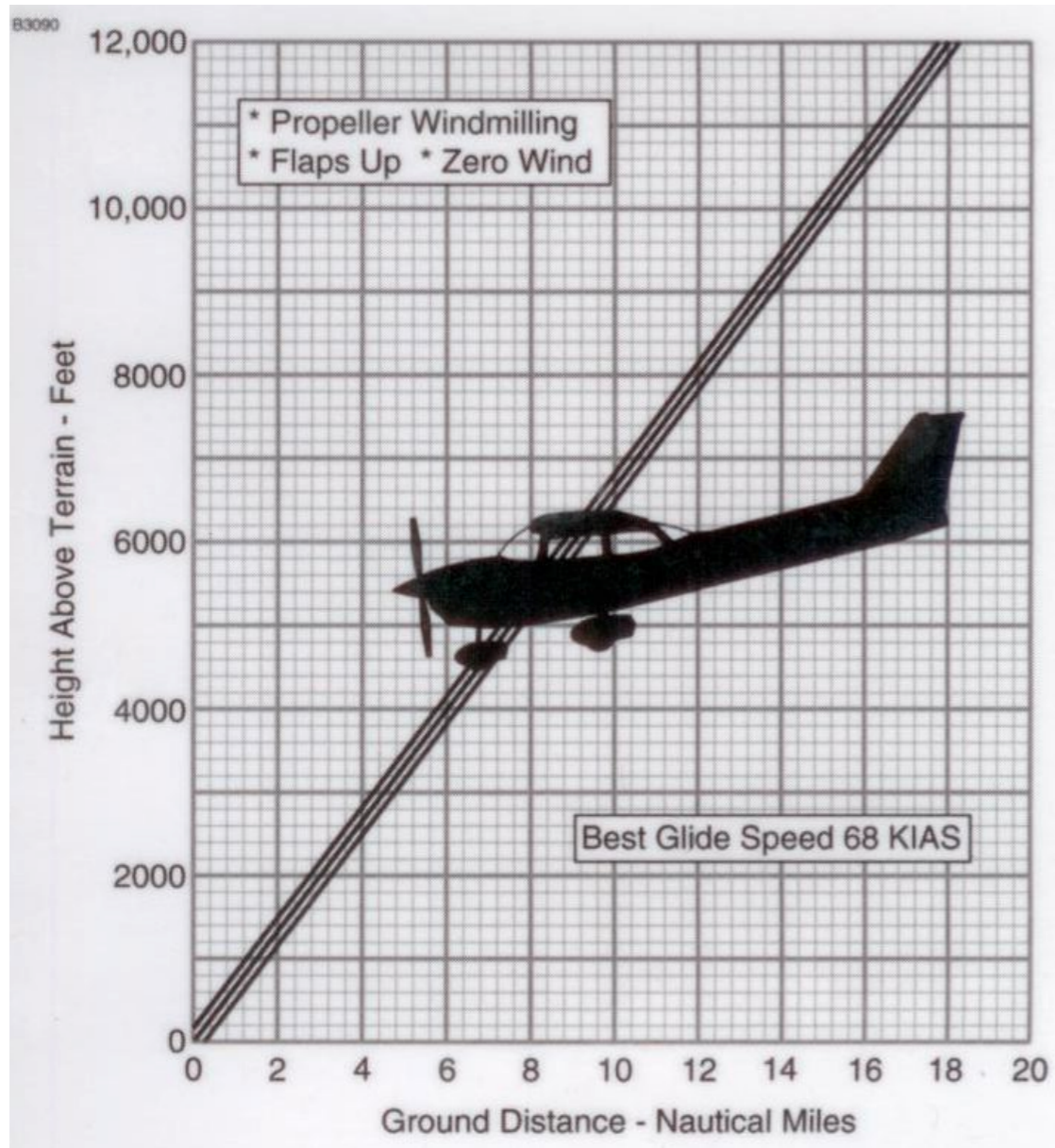


Figure 2

NOTES

NM	GS								
	80	90	100	110	120	130	140	150	160
10	0:07	0:06	0:06	0:05	0:05	0:04	0:04	0:04	0:03
15	0:11	0:10	0:09	0:08	0:08	0:07	0:06	0:06	0:06
20	0:15	0:13	0:12	0:10	0:10	0:09	0:08	0:08	0:07
25	0:19	0:17	0:15	0:14	0:13	0:12	0:11	0:10	0:09
30	0:22	0:20	0:18	0:16	0:15	0:13	0:12	0:12	0:11
35	0:26	0:23	0:21	0:19	0:18	0:16	0:15	0:14	0:13
40	0:30	0:26	0:24	0:21	0:20	0:18	0:17	0:16	0:15
45	0:34	0:30	0:27	0:25	0:23	0:21	0:19	0:18	0:17
50	0:37	0:33	0:30	0:27	0:25	0:23	0:21	0:20	0:18
55	0:41	0:37	0:33	0:30	0:28	0:25	0:24	0:22	0:21
60	0:45	0:40	0:36	0:32	0:30	0:27	0:25	0:24	0:22
65	0:49	0:43	0:39	0:35	0:33	0:30	0:28	0:26	0:24
70	0:52	0:46	0:42	0:38	0:35	0:32	0:30	0:28	0:26
75	0:56	0:50	0:45	0:41	0:38	0:35	0:32	0:30	0:28
80	1:00	0:53	0:48	0:43	0:40	0:36	0:34	0:32	0:30
85	0:64	0:57	0:51	0:46	0:43	0:39	0:36	0:34	0:32
90	1:07	1:00	0:54	0:49	0:45	0:41	0:38	0:36	0:33
95	1:11	1:03	0:57	0:52	0:48	0:44	0:41	0:38	0:36
100	1:15	1:06	1:00	0:54	0:50	0:46	0:42	0:40	0:37
200	2:30	2:13	2:00	1:49	1:40	1:32	1:25	1:20	1:15
300	3:45	3:20	3:00	2:43	2:30	2:18	2:08	2:00	1:52
400	5:00	4:26	4:00	3:38	3:20	3:04	2:51	2:40	2:30
500	6:15	5:33	5:00	4:32	4:10	3:50	3:34	3:20	3:07
600	7:30	6:40	6:00	5:27	5:00	4:36	4:17	4:00	3:45
700	8:45	7:46	7:00	6:21	5:50	5:23	5:00	4:40	4:22
800	10:00	8:53	8:00	7:16	6:40	6:09	5:42	5:20	5:00
	TIME								

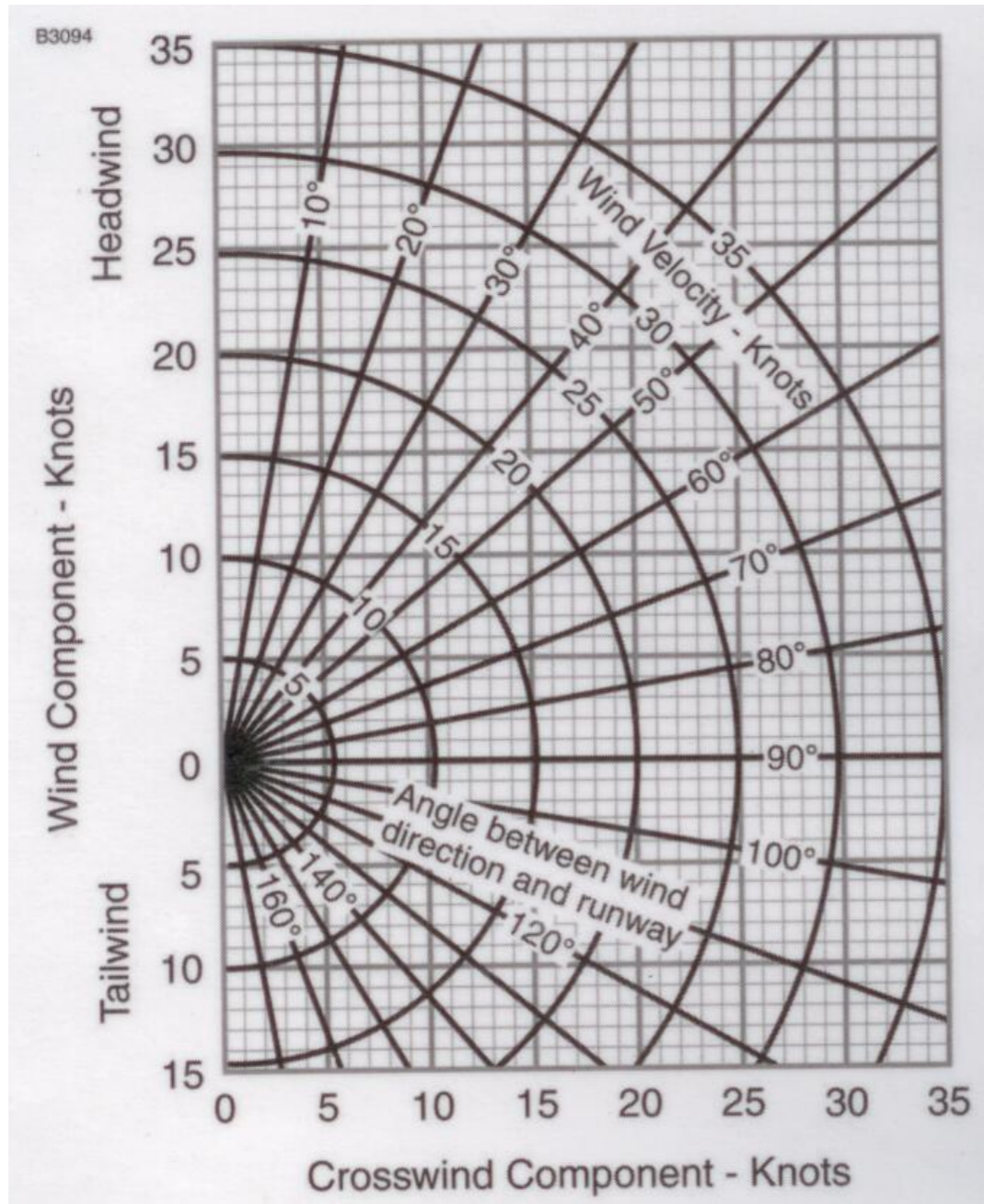
Performance



PERFORMANCE

TABLE OF CONTENTS

	Page
Crosswind Component	P-2
TAKEOFF	
Short Field Takeoff Distance at 2550 Pounds	P-3
Short Field Takeoff Distance at 2400 Pounds	P-4
Short Field Takeoff Distance at 2200 Pounds	P-5
CRUISE	
Cruise Performance at 2550	P-6
LANDING	
Short Field Landing Distance at 2550 Pounds	P-8
Density Altitude Chart	P-9

CROSSWIND COMPONENT**NOTE**

Maximum demonstrated crosswind velocity is 15 knots (not a limitation).

Figure 3

SHORT FIELD TAKEOFF DISTANCE AT 2550 POUNDS

CONDITIONS:

Flaps 10°
Full Throttle Prior to Brake Release
Paved, Level, Dry Runway
Zero Wind

Lift Off: 51 KIAS
Speed at 50 feet: 56 KIAS

Pressure Altitude Feet	0°C		10°C		20°C		30°C		40°C	
	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst
S.L.	860	1465	925	1575	995	1690	1070	1810	1150	1945
1000	940	1600	1010	1720	1090	1850	1170	1990	1260	2135
2000	1025	1755	1110	1890	1195	2035	1285	2190	1380	2355
3000	1125	1925	1215	2080	1310	2240	1410	2420	1515	2605
4000	1235	2120	1335	2295	1440	2480	1550	2685	1660	2880
5000	1355	2345	1465	2545	1585	2755	1705	2975	1825	3205
6000	1495	2605	1615	2830	1745	3075	1875	3320	2010	3585
7000	1645	2910	1785	3170	1920	3440	2065	3730	2215	4045
8000	1820	3265	1970	3575	2120	3880	2280	4225	2450	4615

NOTE

- Short field technique as specified in NORMAL PROCEDURES page N-17.
- Prior to takeoff from fields above 3000 feet pressure altitude, the mixture should be leaned to give maximum RPM in a full throttle, static run-up.
- Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
- For operation on dry grass runway, increase distances by 15% of the "ground roll" figure.

SHORT FIELD TAKEOFF DISTANCE AT 2400 POUNDS

CONDITIONS:

Flaps 10°
Full Throttle Prior to Brake Release
Paved, Level, Dry Runway
Zero Wind

Lift Off: 48 KIAS
Speed at 50 feet: 54 KIAS

Pressure Altitude Feet	0°C		10°C		20°C		30°C		40°C	
	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst
S.L.	745	1275	800	1370	860	1470	925	1570	995	1685
1000	810	1390	875	1495	940	1605	1010	1720	1085	1845
2000	885	1520	955	1635	1030	1760	1110	1890	1190	2030
3000	970	1665	1050	1795	1130	1930	1215	2080	1305	2230
4000	1065	1830	1150	1975	1240	2130	1335	2295	1430	2455
5000	1170	2015	1265	2180	1360	2355	1465	2530	1570	2715
6000	1285	2230	1390	2410	1500	2610	1610	2805	1725	3015
7000	1415	2470	1530	2685	1650	2900	1770	3125	1900	3370
8000	1560	2755	1690	3000	1815	3240	1950	3500	2095	3790

NOTE

- Short field technique as specified in NORMAL PROCEDURES page N-17.
- Prior to takeoff from fields above 3000 feet pressure altitude, the mixture should be leaned to give maximum RPM in a full throttle, static run-up.
- Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
- For operation on dry grass runway, increase distances by 15% of the "ground roll" figure.

SHORT FIELD TAKEOFF DISTANCE AT 2200 POUNDS

CONDITIONS:

Flaps 10°

Full Throttle Prior to Brake Release

Paved, Level, Dry Runway

Zero Wind

Lift Off: 44 KIAS

Speed at 50 feet: 50 KIAS

Pressure Altitude Feet	0°C		10°C		20°C		30°C		40°C	
	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst
S.L.	610	1055	655	1130	705	1205	760	1290	815	1380
1000	665	1145	720	1230	770	1315	830	1410	890	1505
2000	725	1250	785	1340	845	1435	905	1540	975	1650
3000	795	1365	860	1465	925	1570	995	1685	1065	1805
4000	870	1490	940	1605	1010	1725	1090	1855	1165	1975
5000	955	1635	1030	1765	1110	1900	1195	2035	1275	2175
6000	1050	1800	1130	1940	1220	2090	1310	2240	1400	2395
7000	1150	1985	1245	2145	1340	2305	1435	2475	1540	2650
8000	1270	2195	1370	2375	1475	2555	1580	2745	1695	2950

NOTE

- Short field technique as specified in NORMAL PROCEDURES page N-17.
- Prior to takeoff from fields above 3000 feet pressure altitude, the mixture should be leaned to give maximum RPM in a full throttle, static run-up.
- Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
- For operation on dry grass runway, increase distances by 15% of the "ground roll" figure.

CRUISE PERFORMANCE

CONDITIONS:

2550 Pounds

Recommended Lean Mixture

Pressure Altitude Feet	RPM	20°C BELOW STANDARD TEMP			STANDARD TEMPERATURE			20°C ABOVE STANDARD TEMP		
		%	KTAS	GPH	%	KTAS	GPH	%	KTAS	GPH
		MCP			MCP			MCP		
2000	2550	83	117	11.1	77	118	10.5	72	117	9.9
	2500	78	115	10.6	73	115	9.9	68	115	9.4
	2400	69	111	9.6	64	110	9.0	60	109	8.5
	2300	61	105	8.6	57	104	8.1	53	102	7.7
	2200	53	99	7.7	50	97	7.3	47	95	6.9
	2100	47	92	6.9	44	90	6.6	42	89	6.3
4000	2600	83	120	11.1	77	120	10.4	72	119	9.8
	2550	79	118	10.6	73	117	9.9	68	117	9.4
	2500	74	115	10.1	69	115	9.5	64	114	8.9
	2400	65	110	9.1	61	109	8.5	57	107	8.1
	2300	58	104	8.2	54	102	7.7	51	101	7.3
	2200	51	98	7.4	48	96	7.0	45	94	6.7
6000	2650	83	122	11.1	77	122	10.4	72	121	9.8
	2600	78	120	10.6	73	119	9.9	68	118	9.4
	2500	70	115	9.6	65	114	9.0	60	112	8.5
	2400	62	109	8.6	57	108	8.2	54	106	7.7
	2300	54	103	7.8	51	101	7.4	48	99	7.0
	2200	48	96	7.1	45	94	6.7	43	92	6.4

NOTE

- Maximum cruise power using recommended lean mixture is 75% MCP. Power settings above 75% MCP are listed to aid interpolation. Operations above 75% MCP must use full rich mixture.
- Cruise speeds are shown for an airplane equipped with speed fairings. Without speed fairings, decrease speeds shown by 2 knots.

CRUISE PERFORMANCE (Continued)

CONDITIONS:

2550 Pounds

Recommended Lean Mixture

Pressure Altitude Feet	RPM	20°C BELOW STANDARD TEMP			STANDARD TEMPERATURE			20°C ABOVE STANDARD TEMP		
		%	KTAS	GPH	%	KTAS	GPH	%	KTAS	GPH
		MCP			MCP			MCP		
8000	2700	83	125	11.1	77	124	10.4	71	123	9.7
	2650	78	122	10.5	72	122	9.9	67	120	9.3
	2600	74	120	10.0	68	119	9.4	64	117	8.9
	2500	65	114	9.1	61	112	8.6	57	111	8.1
	2400	58	108	8.2	54	106	7.8	51	104	7.4
	2300	52	101	7.5	48	99	7.1	46	97	6.8
	2200	46	94	6.8	43	92	6.5	41	90	6.2
	10,000	2700	78	124	10.5	72	123	9.8	67	122
2650		73	122	10.0	68	120	9.4	63	119	8.9
2600		69	119	9.5	64	117	9.0	60	115	8.5
2500		62	113	8.7	57	111	8.2	54	109	7.8
2400		55	106	7.9	51	104	7.5	49	102	7.1
2300		49	100	7.2	46	97	6.8	44	95	6.5
12,000	2650	69	121	9.5	64	119	8.9	60	117	8.5
	2600	65	118	9.1	61	116	8.5	57	114	8.1
	2500	58	111	8.3	54	109	7.8	51	107	7.4
	2400	52	105	7.5	49	102	7.1	46	100	6.8
	2300	47	98	6.9	44	95	6.6	41	92	6.3

NOTE

- Maximum cruise power using recommended lean mixture is 75% MCP. Power settings above 75% MCP are listed to aid interpolation. Operations above 75% MCP must use full rich mixture.
- Cruise speeds are shown for an airplane equipped with speed fairings. Without speed fairings, decrease speeds shown by 2 knots.

SHORT FIELD LANDING DISTANCE AT 2400 POUNDS

CONDITIONS:

Flaps FULL

Power IDLE

Maximum Braking

Zero Wind

Paved, Level, Dry Runway

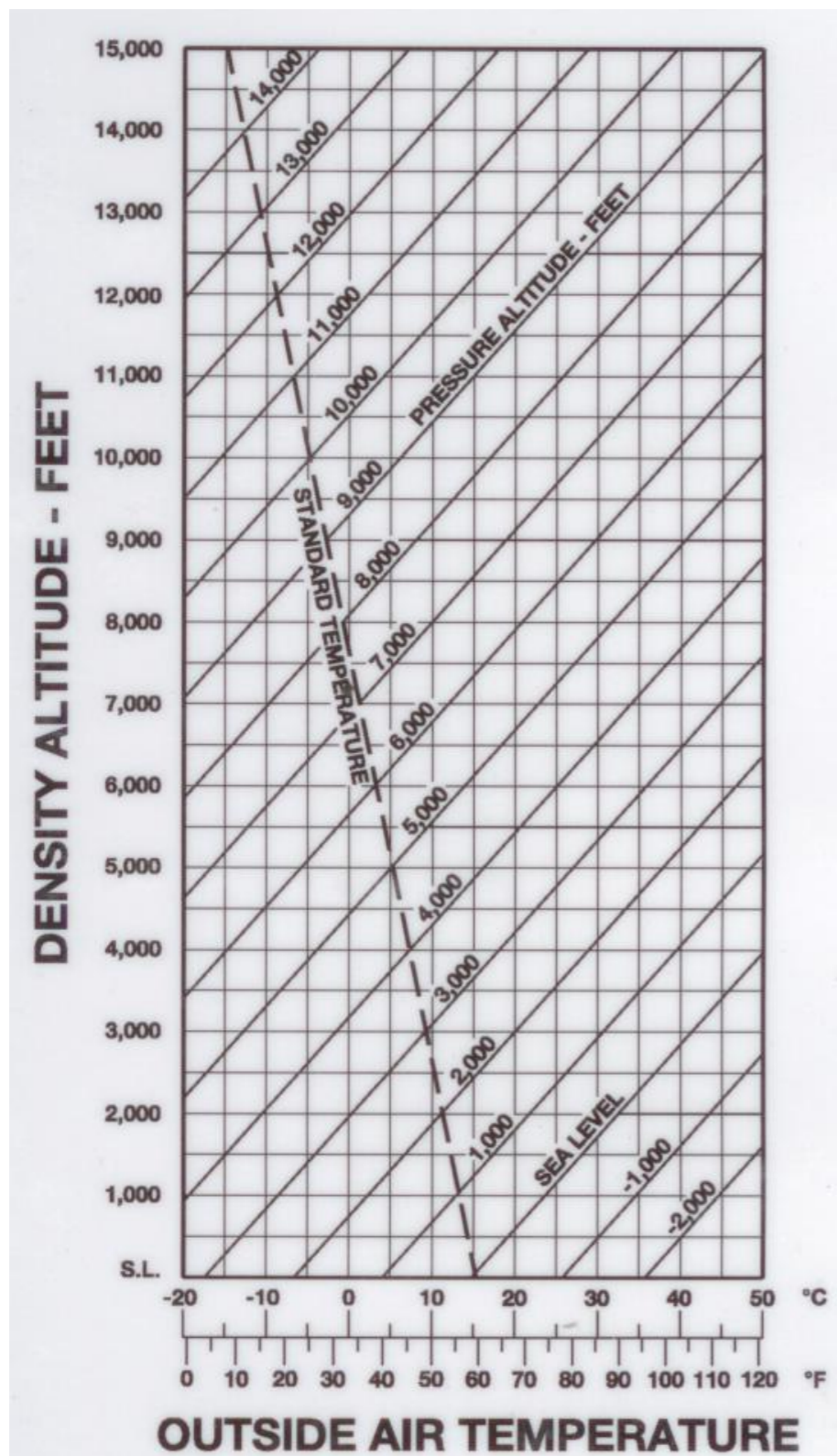
Speed at 50 feet: 61 KIAS

Pressure Altitude Feet	0°C		10°C		20°C		30°C		40°C	
	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst	Ground Roll Feet	Total Feet To Clear 50 Foot Obst
S.L.	545	1290	565	1320	585	1350	605	1380	625	1415
1000	565	1320	585	1350	605	1385	625	1420	650	1450
2000	585	1355	610	1385	630	1420	650	1455	670	1490
3000	610	1385	630	1425	655	1460	675	1495	695	1530
4000	630	1425	655	1460	675	1495	700	1535	725	1570
5000	655	1460	680	1500	705	1535	725	1575	750	1615
6000	680	1500	705	1540	730	1580	755	1620	780	1660
7000	705	1545	730	1585	760	1625	785	1665	810	1705
8000	735	1585	760	1630	790	1670	815	1715	840	1755

NOTE

- Short field technique as specified in NORMAL PROCEDURES page N-20.
- Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
- For operation on dry grass runway, increase distances by 45% of the "ground roll" figure.
- If landing with flaps up, increase the approach speed by 9 KIAS and allow for 35% longer distances.

DENSITY ALTITUDE CHART



NOTES