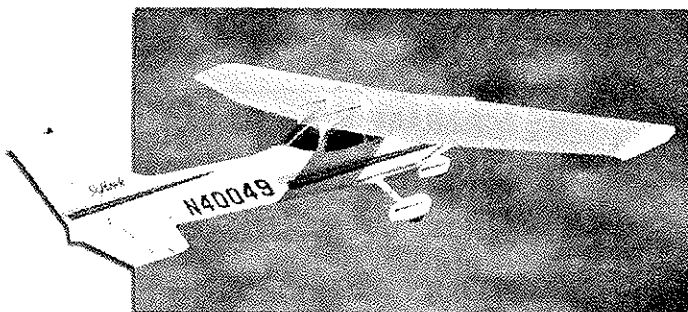




**Pilot's Operating Handbook  
And FAA Approved  
Airplane Flight Manual**

# SKYHAWK



Member of GAMA

**Model 172R**  
NAV III Avionics - GFC 700 AFCS  
Serials 17281497 and On

SERIAL NUMBER 17281520  
REGISTRATION NUMBER N62539

**LN-NKF**

This publication includes the material required to be furnished to the pilot by 14 CFR 23.

APPROVED BY FAA APPROVED UNDER 14 CFR PART 21 SUBPART J  
Cessna Aircraft Co.  
Delegation Option Authorization DCA-22094-02  
*RLS* 10/10/07/07 AR

DATE OF APPROVAL 20 December 2007

COPYRIGHT © 2007  
CESSNA AIRCRAFT COMPANY  
WICHITA, KANSAS, USA

ORIGINAL ISSUE - 20 DECEMBER 2007

172RPHBUS-00

U.S.

CESSNA  
MODEL 172R NAV III  
GFC 700 AFCS

SECTION 4  
NORMAL PROCEDURES

## NORMAL PROCEDURES

### TABLE OF CONTENTS

	Page
Introduction .....	4-3
Airspeeds For Normal Operation .....	4-3
<b>NORMAL PROCEDURES</b> .....	4-4
Preflight Inspection .....	4-4
Cabin .....	4-5
Empennage .....	4-6
Right Wing Trailing Edge .....	4-6
Right Wing .....	4-7
Nose .....	4-8
Left Wing Leading Edge .....	4-9
Left Wing .....	4-10
Left Wing Trailing Edge .....	4-10
Before Starting Engine .....	4-11
Starting Engine (With Battery) .....	4-12
Starting Engine (With External Power) .....	4-13
Before Takeoff .....	4-15
Takeoff .....	4-18
Normal Takeoff .....	4-18
Short Field Takeoff .....	4-18
Enroute Climb .....	4-19
Cruise .....	4-19
Descent .....	4-20
Before Landing .....	4-21
Landing .....	4-21
Normal Landing .....	4-21
Short Field Landing .....	4-21
Balked Landing .....	4-22
After Landing .....	4-22
Securing Airplane .....	4-22

(Continued Next Page)

172RPHBUS-00

U.S.

4-1

**TABLE OF CONTENTS** (Continued)

	Page
<b>AMPLIFIED NORMAL PROCEDURES</b> .....	4-23
Preflight Inspection .....	4-23
Starting Engine .....	4-25
Recommended Starter Duty Cycle .....	4-26
Leaning For Ground Operations .....	4-26
Taxiing .....	4-27
Before Takeoff .....	4-29
Warm Up .....	4-29
Magneto Check .....	4-29
Alternator Check .....	4-29
Elevator Trim .....	4-30
Landing Lights .....	4-30
Takeoff .....	4-30
Power Check .....	4-30
Wing Flap Settings .....	4-31
Crosswind Takeoff .....	4-31
Enroute Climb .....	4-32
Cruise .....	4-33
Leaning Using Exhaust Gas Temperature (EGT) .....	4-35
Fuel Savings Procedures For Flight Training Operations .....	4-38
Fuel Vapor Procedures .....	4-39
Stalls .....	4-40
Spins .....	4-40
Landing .....	4-43
Normal Landing .....	4-43
Short Field Landing .....	4-43
Crosswind Landing .....	4-44
Balked Landing .....	4-44
Cold Weather Operations .....	4-45
Starting .....	4-46
Winterization Kit .....	4-47
Hot Weather Operations .....	4-48
Noise Characteristics .....	4-48

**INTRODUCTION**

Section 4 provides procedures and amplified instructions for normal operations using standard equipment. Normal procedures associated with optional systems can be found in Section 9, Supplements.

**AIRSPEEDS FOR NORMAL OPERATION**

Unless otherwise noted, the following speeds are based on a maximum weight of 2450 pounds and may be used for any lesser weight.

**TAKEOFF**

Normal Climb ..... 70 - 80 KIAS  
Short Field Takeoff, Flaps 10°, Speed at 50 Feet ..... 57 KIAS

**ENROUTE CLIMB, FLAPS UP**

Normal, Sea Level ..... 75 - 85 KIAS  
Normal, 10,000 Feet ..... 70 - 80 KIAS  
Best Rate of Climb, Sea Level ..... 79 KIAS  
Best Rate of Climb, 10,000 Feet ..... 71 KIAS  
Best Angle of Climb, Sea Level ..... 60 KIAS  
Best Angle of Climb, 10,000 Feet ..... 65 KIAS

**LANDING APPROACH**

Normal Approach, Flaps UP ..... 65 - 75 KIAS  
Normal Approach, Flaps FULL ..... 60 - 70 KIAS  
Short Field Approach, Flaps FULL ..... 62 KIAS

**BALKED LANDING**

Maximum Power, Flaps 20° ..... 55 KIAS

**MAXIMUM RECOMMENDED TURBULENT AIR PENETRATION SPEED**

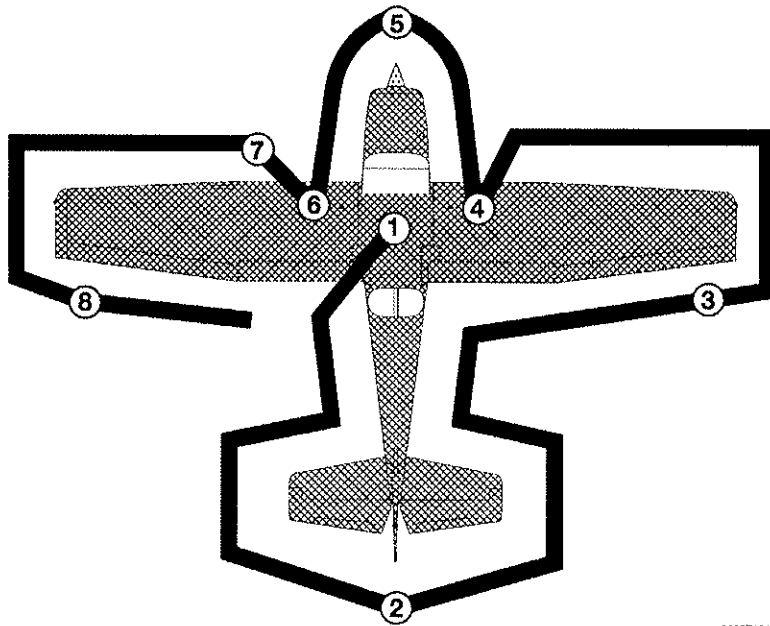
2450 POUNDS ..... 99 KIAS  
2200 POUNDS ..... 94 KIAS  
1600 POUNDS ..... 82 KIAS

**MAXIMUM DEMONSTRATED CROSSWIND VELOCITY**

Takeoff or Landing ..... 15 KNOTS

## NORMAL PROCEDURES PREFLIGHT INSPECTION

B3091



058511010

### 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) to make sure that fuel drain valves allow for accurate sampling. Use of the refueling steps and assist handles will simplify access to the 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 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 4-1

## PREFLIGHT INSPECTION (Continued)

### ① CABIN

1. Pitot Tube Cover - REMOVE (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 - REMOVE

### 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
16. Forward Avionics Fan - CHECK (verify fan is heard)

(Continued Next Page)

## PREFLIGHT INSPECTION (Continued)

### ① CABIN (Continued)

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)

## PREFLIGHT INSPECTION (Continued)

### ④ RIGHT WING

1. Wing Tiedown - DISCONNECT
2. Main Wheel Tire - CHECK (proper inflation and general condition (weather checks, tread depth and wear, etc.))
3. Fuel Tank Sump Quick Drain Valves - DRAIN  
Drain at least a cupful of fuel (using sampler cup) from each sump location to check for 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 airplane.

#### NOTE

Collect all sampled fuel in a safe container. Dispose of the 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.**

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

(Continued Next Page)

## PREFLIGHT INSPECTION (Continued)

### 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 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, 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 the 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.**

2. Engine Oil Dipstick/Filler Cap:
  - a. Oil level - CHECK
  - b. Dipstick/filler cap - SECURE

#### NOTE

**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. Nosewheel 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 cupful of fuel (using sampler cup) from each sump location to check for 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 airplane.

#### NOTE

Collect all sampled fuel in a safe container. Dispose of the 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 1/4 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 off)
  - 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 shown)
6. M BUS Volts - CHECK (verify 1.5 VOLTS or less shown)
7. BATT S Amps - CHECK (verify discharge shown (negative))
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 to 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 in the IDLE CUTOFF position, open the throttle control 1/2 to full, and engage the starter motor (START). When the engine starts, advance the mixture control to the 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 to 60 seconds)
18. AMPS (M BATT and BATT S) - CHECK (verify charge shown (positive))
19. LOW VOLTS Annunciator - CHECK (verify annunciator is not shown)
20. NAV Light Switch - ON as required
21. AVIONICS Switch (BUS 1 and BUS 2) - ON

### STARTING ENGINE (With External Power)

1. Throttle Control - OPEN 1/4 INCH
2. Mixture Control - IDLE CUTOFF (pull full out)
3. STBY BATT Switch:
  - a. TEST - (hold for 20 seconds, verify green TEST lamp does not go off)
  - b. ARM - (verify that PFD comes on)
4. Engine Indication System - CHECK PARAMETERS (verify no red X's through ENGINE page indicators)
5. BUS E Volts - CHECK (verify 24 VOLTS minimum shown)
6. M BUS Volts - CHECK (verify 1.5 VOLTS or less shown)
7. BATT S Amps - CHECK (verify discharge shown (negative))
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

(Continued Next Page)

### STARTING ENGINE (With External Power) (Continued)

17. Mixture Control - SET to FULL RICH (full forward) until stable fuel flow is indicated (approximately 3 to 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 too much (flooded), place the mixture control in the IDLE CUTOFF position, open the throttle control 1/2 to full, and engage the starter motor (START). When the engine starts, advance the mixture control to the FULL RICH position and retard the throttle control promptly.

21. Oil Pressure - CHECK (verify oil pressure increases into the GREEN BAND range in 30 to 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)

### STARTING 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 Brake - SET
2. Pilot and Passenger Seat Backs - MOST UPRIGHT POSITION
3. Seats 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 G1000 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 THE CORRECT NAVIGATION SOURCE ON THE HSI, USING THE CDI SOFTKEY, BEFORE ENGAGING THE AUTOPILOT IN ANY OTHER OPERATING MODE.

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

## TAKEOFF

### NORMAL TAKEOFF

1. Wing Flaps - UP - 10° (10° preferred)
2. Throttle Control - FULL (push full in)
3. Mixture Control - RICH (above 3000 feet pressure altitude, lean for maximum RPM)
4. Elevator Control - LIFT NOSEWHEEL AT 55 KIAS
5. Climb Airspeed - 70 - 80 KIAS
6. Wing Flaps - RETRACT (at safe altitude)

### SHORT FIELD TAKEOFF

1. Wing Flaps - 10°
2. Brakes - APPLY
3. Throttle Control - FULL (push full in)
4. Mixture Control - RICH (above 3000 feet pressure altitude, lean for maximum RPM)
5. Brakes - RELEASE
6. Elevator Control - SLIGHTLY TAIL LOW
7. Climb Airspeed - 57 KIAS (until all obstacles are cleared)
8. 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 2450 Pounds.

## CRUISE

1. Power - 2000 - 2400 RPM (no more than 80% 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

THE G1000 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 THE 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° - 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 - 62 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 (push full in)
2. Wing Flaps - RETRACT to 20°
3. Climb Speed - 55 KIAS
4. Wing Flaps - 10° (as obstacle is cleared), then UP (after reaching a safe altitude and 60 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)