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All airspeeds quoted in this section are indicated airspeeds (IAS) and assume zero instrument error.

AIRSPEEDS FOR SAFE OPERATION (5500 LBS)

Maximum Demonstrated Crosswind Component . . . . . 22 kts

Takeoff:

- Rotation . . . . . 85 kts
- 50-ft Speed . . . . . 100 kts

Two-Engine Best Angle-of-Climb (V_X) . . . . . 92 kts

Two-Engine Best Rate-of-Climb (V_Y) . . . . . 105 kts

Cruise Climb . . . . . 136 kts

Turbulent Air Penetration . . . . . 156 kts

Landing Approach (5400 lbs):

- Flaps Down (30°) . . . . . 95 kts

Balked Landing Climb . . . . . 95 kts

Intentional One-Engine-Inoperative Speed (V_{SSE}) . . . . . 88 kts

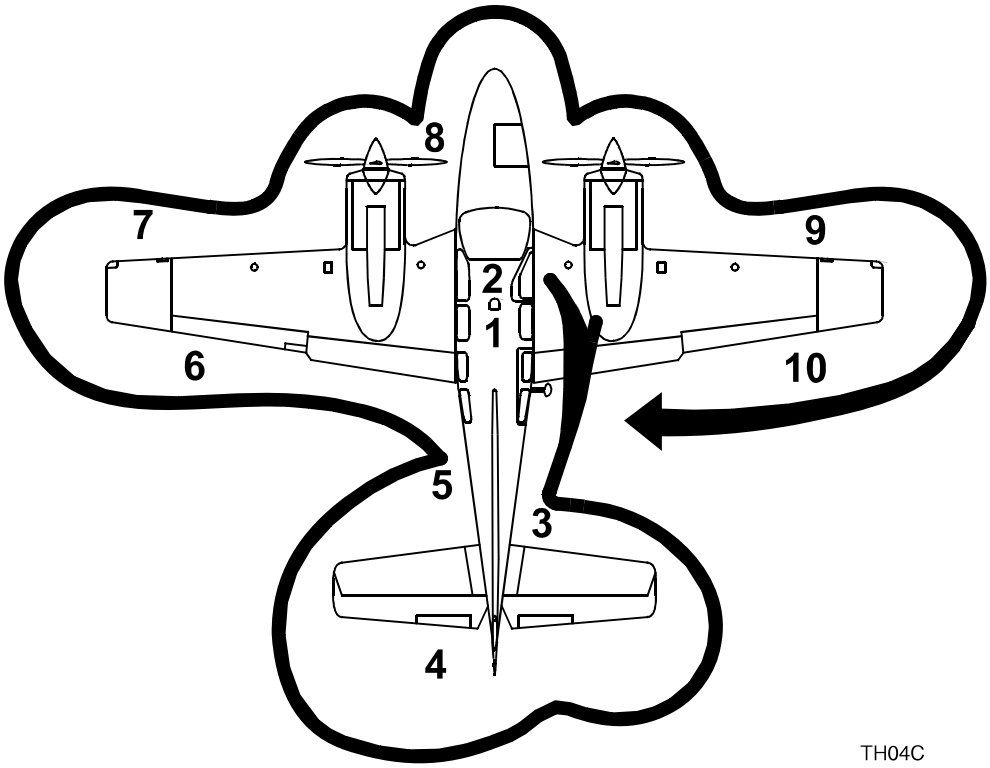
Air Minimum Control Speed (V_{MCA}) . . . . . 84 kts

Minimum During Icing Conditions . . . . . 130 kts

NOTE

Refer to all applicable Hawker Beechcraft Corporation Supplements and STC Supplements for flight phase procedures for optional equipment installed in the airplane.

PREFLIGHT INSPECTION



TH04C
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1. CABIN
   a. Emergency Exits. . . . . CHECK
      1) Safety Wire (Beneath Cover). . . . . INTACT
      2) Windows . . . . . CLOSED & LOCKED
   b. Seats and Seat Belts . . . . . PROPERLY INSTALLED
   c. Baggage . . . . . SECURE

2. COCKPIT

a. Landing Gear Emergency Handcrank . . . . STOWED AND ACCESSIBLE

b. Fire Extinguisher . . . . . CHECK

c. Parking Brake . . . . . SET

d. Control Locks . . . . . REMOVE

e. All Switches . . . . . OFF

f. Landing Gear Handle . . . . . DOWN

g. Trim Tabs . . . . . SET TO ZERO

h. Battery System . . . . . CHECK

1) L BAT and R BAT . . . . . ON

2) PFD . . . . . VERIFY REVERSIONARY MODE

3) Soft Keys . . . . . SELECT ENGINE & SYSTEM

4) L Bus & R Bus Voltages . . . . . CHECK

a) L Bus = 23 Volts minimum

b) R Bus = 23 Volts minimum

i. Landing Gear Position Lights . . . . CHECK 3 GREEN

j. Annunciator Test Button . . . . . PRESS

• Gear In-Transit Light and Flap Lights . . . . . ILLUMINATED

k. Exterior/Interior Lights . . . . . CHECK, AS REQUIRED

l. Standby Attitude Indicator . . . . . FLAG PULLED

m. L BAT & R BAT . . . . . OFF

n. Standby Attitude Indicator . . . . . YELLOW LED BLINKING

• Will automatically shutdown after 1 minute

3. RIGHT FUSELAGE

• Static Port . . . . . CLEAR

4. EMPENNAGE
   a. Vertical & Horizontal Stabilizers . . . . . CHECK
   b. Deice Boots . . . . . CHECK
   c. Rudder & Elevator . . . . . CHECK MOVEMENT & SECURITY
   d. Rudder & Elevator Trim Tab . . . . CHECK SECURITY, ALIGNMENT WITH ELEVATOR & RUDDER
   e. Static Wicks . . . . . CHECK
   f. Nav Light and Rotating Beacon . . . . . CHECK
   g. Tie Down . . . . . REMOVE
5. LEFT FUSELAGE
   a. Cabin Air Intake . . . . . CLEAR
   b. Cabin Air Exhaust . . . . . CLEAR
   c. Static Port . . . . . CLEAR
   d. All Antennas . . . . . CHECK
   e. Lower Flashing Beacon . . . . . CHECK
6. LEFT WING TRAILING EDGE
   a. Fuel Sump Aft of Wheel Well . . . . . DRAIN & CHECK FUEL
   b. Fuel Vents . . . . . CLEAR
   c. Flap . . . . . CHECK
   d. Aileron Trim Tab . . . . . CHECK SECURITY, ALIGNMENT WITH AILERON
   e. Aileron . . . . . CHECK MOVEMENT & SECURITY
   f. Static Wicks . . . . . CHECK
   g. Wing Tip . . . . . CHECK
7. LEFT WING LEADING EDGE
   a. Navigation and Strobe Lights . . . . . CHECK

b. Fuel . . . . . .CHECK QTY, O RING, CAP SECURE
(Always check wing tip tank (if installed) first; do not remove inboard cap if fuel is visible in tip tank.)

c. Wing Tip Tank Sump (if installed) . . . . . .DRAIN & CHECK FUEL

d. Siphon Break Port . . . . . CLEAR

e. Deice Boots . . . . . CHECK

f. Stall Warning Vane . . . . . CHECK MOVEMENT

g. Tie Down . . . . . REMOVE

h. ADC OAT Probe . . . . . CHECK

i. Fuel Sight Gage . . . . . CHECK

j. Engine Oil . . . . . 10 QTS MINIMUM

k. Engine Cowling . . . . . .SECURE

l. Landing Light . . . . . CHECK

m. Engine Air Intake . . . . . CLEAR

n. Propeller / Spinner . . . . . CHECK (Nicks, Leaks, Deice Boots)

o. Cowl Flap . . . . . CHECK

p. Left Main Gear . . . . . CHECK

1) Gear Doors . . . . . .SECURE & FLUSH

2) Landing Gear Uplock Roller . . . . . CHECK

3) W.O.W. Switch Linkage . . . . . .SECURE

4) Scissor Linkage . . . . . .SECURE

5) Shock Strut . . . . . .PROPER INFLATION

6) Tire . . . . . CONDITION

7) Chocks . . . . . REMOVE

q. Fuel Strainer and Selector Drains . . . . . .DRAIN & CHECK FUEL

r. Fuel Sump Drain . . . . . DRAIN & CHECK FUEL

8. NOSE SECTION
   a. OAT Probe . . . . . CHECK
   b. Heat Air Inlet. . . . . CLEAR
   c. Pitot . . . . . CLEAR
   d. Taxi Light . . . . . CHECK
   e. Nose Gear . . . . . CHECK
      1) Gear Doors . . . . . SECURE
      2) Shock Strut . . . . . PROPER INFLATION
      3) Shimmy Damper . . . . . SECURE
      4) Scissor Linkage & Tow Pins . . . . . CHECK
      5) Tire. . . . . CONDITION
      6) Chocks. . . . . REMOVE
   f. Baggage Compartment . . . . . CHECK
      1) Brake Fluid Reservoir . . . . . CHECK
      2) Circuit Breakers . . . . . CHECK
      3) Baggage . . . . . SECURE
      4) Baggage Compartment Door. . . . . CLOSE & SECURE
   g. Cabin Heater Over-Temperature Switch . . . . CHECK
   h. Heater Exhaust Outlet . . . . . CHECK
   i. Heater Fuel Drain Line . . . . . CHECK
9. RIGHT WING LEADING EDGE
   a. Fuel Strainer and Fuel Selector Drains . . . . . DRAIN & CHECK FUEL
   b. Fuel Sump Drains. . . . . DRAIN & CHECK FUEL
   c. Left Main Gear . . . . . CHECK
      1) Gear Doors . . . . . SECURE & FLUSH
      2) Landing Gear Uplock Roller. . . . . CHECK
      3) W.O.W Switch Linkage . . . . . SECURE
      4) Scissors Linkage . . . . . SECURE

5) Shock Strut . . . . . PROPER INFLATION
6) Tire . . . . . CONDITION
7) Chocks . . . . . REMOVE

d. Cowl Flap . . . . . CHECK
e. Engine Oil . . . . . 10 QTS MINIMUM
f. Engine Cowling and Doors . . . . . SECURE
g. Landing Light . . . . . CHECK
h. Engine Air Intake . . . . . CLEAR
i. Propeller / Spinner . . . . . CHECK
(Nicks, Leaks, Deice Boots)
j. Fuel Sight Gage . . . . . CHECK
k. Deice Boots . . . . . CHECK
l. Tie Down . . . . . REMOVE
m. Fuel . . . . . CHECK QTY, O RING, CAP SECURE
(Always check wing tip tank (if installed) first; do not remove inboard cap if fuel is visible in tip tank.)
n. Wing Tip Tank Sump (if installed) . . . . . DRAIN & CHECK FUEL
o. Siphon Break Port . . . . . CLEAR
p. Navigation and Strobe Lights . . . . . CHECK

10. RIGHT WING TRAILING EDGE

a. Wing Tip . . . . . CHECK
b. Static Wicks . . . . . CHECK
c. Aileron . . . . . CHECK MOVEMENT & SECURITY
d. Flaps . . . . . CHECK
e. Fuel Vents . . . . . CLEAR
f. Fuel Sump Aft of Wheel Well . . . . . DRAIN & CHECK FUEL
g. Utility Doors . . . . . CLOSED AND LOCKED

BEFORE ENGINE STARTING

1. Seats . . . . . POSITION FOR TAKEOFF
2. Rudder Pedals. . . . . ADJUST
3. Seat Belts and Shoulder Harnesses . FASTEN/ADJUST
4. Parking Brake . . . . . .CONFIRM SET
5. Left Side Circuit Breakers . . . . . IN
6. Static Air Source . . . . . DRAIN
   - Emergency Static Air Source. . . SELECT EMERGENCY POSITION THEN RETURN TO NORMAL
7. Subpanel Switches . . . . . .OFF, BEACON ON
8. Landing Gear Handle . . . . . DN
9. Throttles . . . . . CLOSE
10. Propellers . . . . . HIGH RPM
11. Mixture. . . . . .FULL RICH
12. Flaps . . . . . UP
13. Cowl Flaps. . . . . OPEN
14. Avionics Circuit Breakers . . . . . IN
15. ELT Switch . . . . . ARM
16. Battery System Check. . . . . CONFIRM COMPLETE
17. L & R BAT, L & R ALT. . . . . ON
18. PFD . . . . . .VERIFY REVERSIONARY MODE
19. White [TAWS TEST] (if installed) . . . . . ILLUMINATED (Indicates TAWS-B system test is in progress)
20. Alerts . . . . . .CHECK & CONSIDERED
21. White [TAWS TEST] (if installed) . . . . EXTINGUISHED (Indicates TAWS-B system test was satisfactory)
22. Fuel Remaining . . . . . SET
    a. Select ENGINE and SYSTEM Soft Keys
    b. With Full Fuel . . . . . Press 194 GAL (or 166 GAL)

c. With Partial Fuel (if required) . . . . . Press DEC FUEL or INC FUEL (to adjust GAL REM)

23. Fuel Selector Valves . . . . . .ON (feel for detent; confirm visually)

WARNING

Do not take off if fuel quantity indication is in the yellow band or with less than 13 gallons in each tank.

24. R Fuel Boost Pump . . . . . .VERIFY OPERATION

a. R Fuel Boost Pump . . . . . .SELECT LO, LISTEN FOR OPERATION

b. R Fuel Boost Pump . . . . . SELECT OFF

25. L Fuel Boost Pump . . . . . .VERIFY OPERATION

a. L Fuel Boost Pump . . . . . .SELECT LO, LISTEN FOR OPERATION

b. L Fuel Boost Pump . . . . . SELECT OFF

ENGINE STARTING (BATTERY)

CAUTION

Do not engage starter for more than 30 seconds in any 4-minute period.

COLD STARTS

1. Throttle . . . . . FULL OPEN
2. Propeller . . . . . HIGH RPM
3. Mixture . . . . . .FULL RICH
4. Fuel Boost Pump . . . . . HI UNTIL FUEL FLOW PEAKS THEN OFF

5. Throttle . . . . . CLOSE, THEN OPEN APPROXIMATELY 1/2 INCH
6. Magnetos/Start Switch . . . . . START (Release to BOTH when engine starts)

• The [START ENGD] Caution Alert will illuminate during the Start and should extinguish when starter is released.

7. Throttle (after start) . . . . . 900 to 1000 RPM
8. Oil Pressure. . . . . .CHECK

CAUTION

Engine oil pressure must be out of the red band within 30 seconds.

9. Other Engine . . . . . START REPEAT STEPS 1 - 8

FLOODED ENGINE

1. Mixture. . . . . CUT OFF
2. Propeller . . . . . HIGH RPM
3. Throttle . . . . . OPEN
4. Magneto / Start Switch . . . . . START (Release to BOTH when engine starts)
5. As Engine Starts:
   a. Throttle . . . . . IDLE
   b. Mixture . . . . . .FULL RICH

HOT STARTS

1. Mixture. . . . . CUT OFF
2. Propeller . . . . . HIGH RPM
3. Fuel Boost Pump. . . . . HI FOR 30-60 SECONDS, THEN OFF
4. Mixture. . . . . .FULL RICH

5. Throttle . . . . . FULL OPEN
6. Fuel Boost Pump . . . . . HI UNTIL FUEL FLOW PEAKS THEN OFF
7. Throttle . . . . . CLOSE; THEN OPEN APPROXIMATELY 1/2 INCH
8. Magneto/Start Switch . . . . . START (Release to BOTH when engine starts)
9. Fuel Boost Pump . . . . . HI (Momentarily after starting to purge the system)
10. Fuel Boost Pump . . . . . OFF

BEFORE TAXI

1. Throttles . . . . . 900 to 1000 RPM
2. Oil Pressure and Temperature . . . . . CHECK

CAUTION

Engine oil and oil pressure must be in green band prior to engine run-up above 1200 RPM.

3. Avionics Master . . . . . ON
4. Autopilot Preflight Test . . . . . COMPLETE
   a. Red AFCS Message . . . . . ILLUMINATED WHILE AHRS ALIGNS
   b. Red AFCS Message . . . . . EXTINGUISHED
   c. White PFT Message . . . . . ILLUMINATED (~ 5 Seconds)
   d. White PFT Message . . . . . EXTINGUISHED
   e. Autopilot Disconnect Tone . . . . . SOUNDS
5. MFD . . . . . AVIATION DATABASE ACKNOWLEDGE (press ENT to continue)
6. PFD and MFD . . . . . DISPLAYED IN NORMAL MODE
7. AHRS . . . . . ALIGNED

8. Electrical System. . . . . .CHECK
   a. MFD Soft Keys . . . SELECT ENGINE AND SYSTEM
   b. L Alt and R Alt Load . . . . . .POSITIVE
   c. L Bus and R Bus Voltage . . . . . 27.5 - 29.0 Volts
   d. L Alt . . . . . OFF
      1) L Alt Load. 0%
      2) Alerts . . . . . .[L ALT INOP] - ILLUMINATED
      3) L Bus . . . . . Reads Battery Voltage
   e. L ALT . . . . . BUS TIE
      1) R Alt Load . . . . . .MONITOR INCREASE
      2) Alerts . . . . . .[BUSES TIED] - ILLUMINATED
      3) L Bus and R Bus Voltage. . . . . 27.5 - 29.0 Volts
   f. L ALT . . . . . ON
      1) L Alt and R Alt Load. . . . . .POSITIVE
      2) Alerts . . . . . .[L ALT INOP] & [BUSES TIED] - EXTINGUISHED
      3) L Bus and R Bus Voltage. . . . . 27.5 - 29.0 Volts
   g. Steps (d) - (f) . . . . . .REPEAT for R ALT
9. Lights. . . . . .AS REQUIRED
10. Avionics. . . . . CHECK & SET
   a. Radios - Comm and Nav
   b. Altimeter
   c. CDI Nav Source
   d. Transponder
   e. Altitude Preselect
   f. Flight Plan
11. TAS (if installed) . . . . . TEST
   a. Large FMS Knob (if reqd.) . . SELECT MAP GROUP
   b. Small FMS Knob. . . . . SELECT TRAFFIC MAP

c. TEST Softkey . . . . . PRESS
   1) Test Pattern . . . . . VERIFY ON MFD
   2) [TRAFFIC] . . . . . VERIFY ON PFD
d. Verify Voice Message . . . . . "Traffic Advisory System Test Passed"
e. ALT MODE . . . . . SET AS DESIRED
f. Small FMS Knob . . . SELECT DESIRED MAP PAGE

12. TAWS (if desired) (if installed) . . . . . TEST
    a. Large FMS Knob (if reqd.) . . . SELECT MAP GROUP
    b. Small FMS Knob . . . . . SELECT THE TAWS PAGE
    c. Press the MENU Key
    d. Small FMS Knob . . . . . SELECT "Test TAWS"
    e. Press ENT Key
    f. Verify a white [TAWS TEST] is displayed on the PFD.
    g. Verify the TAWS page turns black, a yellow [TAWS TEST] is displayed in the center of the page and a white [TAWS TEST] is displayed in the lower right corner.
    h. Verify "TAWS SYSTEM TEST, OK" is heard at the end of the test.
13. Standby Attitude Indicator . . . . . CHECK
    a. Standby Battery . . . . . CHECK IF DESIRED (see OTHER NORMAL PROCEDURES)
    b. STBY PWR LED . . . . . EXTINGUISHED
    c. Flag . . . . . PULLED
    d. PULL-TO-CAGE Knob . . . . . PULL TO ERECT (release knob slowly)

CAUTION

The indicator may be damaged if the PULL-TO-CAGE knob is released with a snap.

14. Standby Altimeter . . . . . SET
15. Brakes . . . . . .RELEASE AND CHECK

CAUTION

Never taxi with a flat shock strut

BEFORE TAKEOFF (RUNUP)

1. Parking Brake . . . . . SET
2. Seat Belts and Shoulder Harnesses . . . . . .CONFIRM BUCKLED
3. Engine Instruments . . . CHECK WITHIN OPER. LIMITS
4. Flight Instruments . . . . . .CHECK
5. Throttles . . . . . 2200 RPM
6. Propellers . . . . . .EXERCISE (to obtain 200 to 300 RPM drop)
7. Throttles . . . . . 1700 RPM
8. Magnetos. . . . . .CHECK
   a. Variance between individual magnetos should not exceed 50 RPM
   b. Maximum drop should not exceed 150 RPM
9. Throttles . . . . . 1500 RPM
10. Propellers . . . . . .FEATHERING CHECK
    a. Move the propeller controls past the detent
    b. Do not allow an RPM drop of more than 300 RPM on either engine.

CAUTION

Failure to observe the RPM limits during the FEATHERING CHECK will impose high stresses on the propeller mechanisms, blade shanks and engines.

11. Electric Elevator Trim . . . . . CHECK
    a. Left and Right Segments . . . . . ACTUATE INDIVIDUALLY
       (verify there is no trim movement. Red PTRM illuminated on PFD if actuated for >4 sec.)
    b. Left and Right Segments . . . ACTUATE TOGETHER
       (verify proper trim movement)
    c. AP DISC Switch . . . . . ACTUATE WITH TRIM IN MOTION
       (verify trim motion stops)
12. Trim. . . . . SET
    a. Aileron and Rudder . . . . . NEUTRAL
    b. Elevator . . . . . SET WITHIN GREEN BAND
13. Flaps . . . . . CHECK OPERATION, SET FOR TAKEOFF
14. Flight Controls. . . .CHECK FREEDOM OF MOVEMENT AND PROPER DIRECTION OF TRAVEL
15. Doors and Windows . . . . . SECURE
    • Cabin Door Lock Indicator. . . . . CHECK CLOSED
16. Fuel Selectors . . . . . ON
    (feel for detent; confirm visually)
17. Fuel Boost Pump . . . . . OFF
    (if ambient temperature is 32°C or above, use LOW pressure boost)
18. Alerts/Messages . . EXTINGUISHED OR CONSIDERED
19. PFD Attitude and Heading . . . . . NORMAL
20. GPS Position . . . . . VALID
    ('LOI' not annunciated on HSI)
21. Standby Attitude Indicator. . . . . ERECT AND NORMAL
22. Parking Brake . . . . . RELEASE

BEFORE TAKEOFF (FINAL ITEMS)

1. Ice Protection Systems . . . . . .AS REQUIRED
2. Lights. . . . . .AS REQUIRED
3. Transponder Code . . . . . .CONFIRM SET
4. Rotation Speed . . . . . .CONFIRM
   (for 5500 lbs., Flaps Up = 85 KTS)

TAKEOFF

1. Take-off Power . . . . . SET
   a. Throttles . . . . . .FULL FORWARD
   b. Propellers . . . . . HIGH RPM
   c. Mixtures . . . . . SET FUEL FLOW AT CYAN CLIMB FUEL FLOW MARKER
2. Brakes . . . . . .RELEASE
3. Instruments . . . . . .CHECK
   (MAP, RPM, Fuel Flow, Oil Temp/Press)
4. Rotation Speed . . . . . .ROTATE
5. Landing Gear
   (when positive R/C established) . . . . . RETRACT

CLIMB

1. Power . . . . . SET
   a. Throttles . . . . . .FULL FORWARD
   b. Propellers . . . . . .MCP Climb - 2700 RPM
      Cruise Climb - 2500 RPM
   c. Prop Sync. . . . . ON
   d. Mixtures . . . . . .MAINTAIN FUEL FLOW AT CYAN CLIMB FUEL FLOW MARKER

NOTE

The fuel flow marker will not revert to the Cruise Climb schedule until the RPM is initially reduced to 2490 or below. The Cruise Climb schedule will be available up to 2530 RPM.

2. Cowl Flaps . . . . . AS REQUIRED
3. Airspeed . . . . . 105 KTS FOR MCP CLIMB
   136 KTS FOR CRUISE CLIMB
4. Engine Temperatures . . . . . MONITOR
5. Fuel Boost Pump . . . . . AS REQUIRED

CAUTION

Engine roughness, fuel flow fluctuation or low fuel flow can occur when climbing on hot days. These can be eliminated by switching the fuel boost pump from OFF to LO and leaning the fuel flow to the cyan climb fuel flow marker.

The cyan climb fuel flow marker on the fuel flow indicator is programmed to follow the schedule noted below when climbing at 2700 RPM. When climbing at 2500 RPM, the fuel flow marker is programmed to follow a schedule which is 2 GPH less than that shown below.

PRESSURE ALTITUDE (FT)	CYAN CLIMB FUEL FLOW MARKER @ 2700 RPM* (GPH)
SL	26.6
2000	25.9
4000	24.3
6000	22.8
8000	21.8
10,000	20.9
12,000	20.0
14,000	19.1
16,000	18.3
17,000	18.0

* Subtract 2 GPH when cruise climbing at 2500 RPM.

CRUISE

1. Cowl Flaps. . . . . CLOSE
2. Power . . . . . SET
   (See Cruise Tables in Section 5, PERFORMANCE)

NOTE

Return the mixture control to full rich before turning the Fuel Boost Pump off.

3. Fuel Boost Pump (if selected on for climb) . . . . . OFF
4. Mixtures. . . . . LEAN USING EGT
   (See Leaning Using EGT Indication in Other Normal Procedures. Cyan Climb Fuel Flow Marker will extinguish as fuel flow is leaned.)

NOTE

When not using the ENGINE SYSTEM page or the LEAN PAGES the MFD should be kept at all time on the main ENGINE page.

DESCENT

1. Altimeter (PFD and Standby) . . . . . SET
2. Cowl Flaps. . . . . CONFIRM CLOSED
3. Power . . . . . AS REQUIRED
   (Avoid prolonged idle settings. Cylinder head temperatures should not fall below the green band.)
4. Mixtures. . . . . ENRICH AS REQUIRED
   (The mixtures must be manually enriched as the airplane descends. An optional procedure is to retard the throttles as the airplane descends to maintain a constant manifold pressure. Then adjust the mixtures to maintain the EGTs within their limits.)
5. Engine Temperatures . . . . . MONITOR
6. Flaps . . . . . AS REQUIRED

7. Windshield Defroster. . . . . AS REQUIRED
(ON before descent into warm, moist air)
8. Descent Speed . . . . . RECOMMENDED
16,000 to 13,000 ft . . . . . 160 KTS
Below 13,000 ft . . . . . 170 KTS

BEFORE LANDING

1. Seat Belts and Shoulder Harnesses . . . . . FASTENED
2. Seat Backs . . . . . POSITION FOR LANDING
3. Fuel Selector Valves . . . . . CHECK ON
(feel for detent; confirm visually)
4. Fuel Boost Pumps . . . . . OFF OR LOW AS PER AMBIENT TEMPERATURE
5. Cowl Flaps . . . . . AS REQUIRED
6. Mixture Controls . . . . . FULL RICH
(or as required by field elevation)
7. Landing Gear (152 kts or below). . DOWN AND CHECK
8. Landing Lights . . . . . AS REQUIRED
9. Propellers . . . . . HIGH RPM

NORMAL LANDING

1. Flaps (122 kts or below) . . . . . FULL DOWN
2. Airspeed . . ESTABLISH NORMAL APPROACH SPEED
3. Yaw Damp . . . . . OFF

BALKED LANDING

1. Throttles and Propellers . . . . . FULL FORWARD
2. Airspeed . . . . . 95 KTS
3. Flaps . . . . . UP
4. Landing Gear . . . . . RETRACT
5. Cowl Flaps . . . . . AS REQUIRED

AFTER LANDING

1. Landing, Taxi and Strobe Lights . . . . . .AS REQUIRED
2. Flaps . . . . . UP
3. Cowl Flaps. . . . . OPEN
4. Trim Tabs . . . . . RESET AS REQUIRED
5. Fuel Boost Pumps. . . . . .AS REQUIRED

SHUTDOWN AND SECURING

1. Parking Brake . . . . . SET
2. Avionics. . . . . OFF
   a. MFD . . . . . EXTINGUISHED
   b. PFD . . . . . .VERIFY REVERSIONARY MODE
3. Electrical Equipment . . . . . OFF
4. Throttles . . . . . 1000 RPM
5. Fuel Boost Pumps. . . . . OFF
6. Mixture Controls . . . . . CUT OFF
7. Magnetos. . . . . OFF
   (after engines stop)
8. L ALT and R ALT. . . . . OFF
9. L BAT and R BAT . . . . . OFF
10. Standby Attitude Indicator (if desired) . . . . . .CHECK
    EMERGENCY MODE
    (See OTHER NORMAL PROCEDURES)
11. Control Locks . . . . . .INSTALL
12. Wheel Chocks . . . . . .INSTALL
13. Parking Brake . . . . . .RELEASE

NOTE

Induction air scoop covers, included in the loose tools and accessories, are to prevent foreign matter from entering the air scoops while the airplane is parked.

OTHER NORMAL PROCEDURES

EXTERNAL POWER

The following precautions shall be observed using external power:

1. Batteries must be installed in the airplane. This protects the voltage regulators and associated equipment from voltage transients (power fluctuations).
2. The airplane has a negative ground system. Connect the positive lead of the external power unit to the positive terminals of the airplane's external power receptacle and the negative lead of the external power unit to the negative terminal of the external power receptacle.
3. In order to prevent arcing, ensure external power unit is off while the connection is being made.

ENGINE STARTING USING EXTERNAL POWER

1. L BAT and R BAT . . . . . .OFF
2. L ALT and R ALT . . . . . .OFF
3. Avionics Master Switch . . . . . .OFF
4. Electrical Equipment . . . . . .OFF
5. External Power Source . . . . . SET OUTPUT, THEN OFF (27.0 to 28.5 volts)
6. External Power Source . . . . . CONNECT
7. L BAT and R BAT . . . . . .ON
8. External Power Source . . . . . .ON
9. Alerts. . . . . [BUSES TIED] ILLUMINATED
10. Right Engine . . . . . START USING NORMAL PROCEDURES
11. External Power Source . . OFF AFTER ENGINE START
12. Alerts. . . . . .[BUSES TIED] EXTINGUISHED
13. External Power Source . . . . . DISCONNECT

14. L ALT and R ALT. . . . . ON
15. Left Engine . .START USING NORMAL PROCEDURES
16. L and R ALT LOAD . . . . . MONITOR

STANDBY ATTITUDE INDICATOR

AFTER STARTING

After allowing the gyro to spin up for approximately one minute, the PULL-TO-CAGE knob must be pulled fully out and held momentarily until the display stabilizes, then released slowly.

CAUTION

The indicator may be damaged if knob is released with a “snap”.

BEFORE TAKEOFF

Standby Battery Check

The status of the standby battery may be checked as follows:

1. STBY PWR Button . . . . . PRESS AND HOLD UNTIL STBY PWR LED STARTS FLASHING (places battery in one minute test mode)
2. Green Test LED . . . . . ILLUMINATED
3. Red Test LED . . . . . EXTINGUISHED
4. Emergency LED Lighting. . . . . ILLUMINATED
5. Amber Standby Power LED . . . . . EXTINGUISHED (after approx. 1 minute)
6. Green Test LED . . . . . EXTINGUISHED

CAUTION

If the red test LED illuminates any time during the one minute test, the standby battery is not sufficiently charged. This may indicate that additional charging is required, or that the standby battery must be removed for service or replacement.

NOTE

All LEDs extinguish after one minute. Thus, the red LED could illuminate towards the end of the test period and then extinguish when the test is complete without the pilot's knowledge unless the display is continually monitored.

SHUTDOWN

During a normal shutdown, the Standby Power LED will flash for approximately one minute after power is removed. No action is required and the standby attitude indicator will automatically shutdown after the one minute has elapsed. If desired, the STBY PWR button may be pushed TWICE to manually turn the indicator off.

NOTE

A momentary pause must occur between each push of the STBY PWR button. If the second push of the button occurs too quickly, it will not be recognized. If the processor detects only one push of the STBY PWR button the standby battery will be latched on and continue to power the indicator. This will cause the standby battery to completely drain if not turned off by a second push of the button. If the standby battery is allowed to completely drain, it will have to be removed and serviced prior to the next flight. The airplane power will not adequately recharge a completely drained battery.

Emergency Mode

The emergency mode may be checked during shutdown after all power has been removed from the airplane as follows:

1. L BAT and R BAT . . . . . OFF
2. Amber Standby Power LED . . . . . FLASHING
3. STBY PWR Button . . . . . PRESS ONCE
   (latches standby battery on)
   - Gyro Warning Flag. . . . . OUT OF VIEW
   - Amber Standby Power LED. . . . . EXTINGUISHED
4. STBY PWR Button . . . . . PRESS ONCE
   (disconnects standby battery)
   - Gyro Warning Flag. . . . . IN VIEW
5. R BAT . . . . . ON
   - Gyro Warning Flag. . . . . OUT OF VIEW

6. R BAT . . . . . .OFF
   - Amber Standby Power LED . . . . . .FLASHES FOR ONE MINUTE, THEN EXTINGUISHES
7. Gyro Warning Flag . . . . . IN VIEW

LEANING USING THE EXHAUST GAS TEMPERATURE (EGT) INDICATION

A thermocouple-type exhaust gas temperature (EGT) probe is mounted in each cylinder exhaust. All probes interface with the Engine/Airframe Unit (GEA 71). The indicators are calibrated in degrees Celsius. Use the EGT system to lean the fuel/air mixture when cruising at 2500 rpm and 25 in. Hg manifold pressure power setting or less in the following manner:

See the following information in Section 5, PERFORMANCE:

- MANIFOLD PRESSURE vs RPM graph for leaning limitations
- CRUISE POWER SETTING tables

The EIS Lean page is found on the MFD.

1. ENGINE Softkey . . . . . PRESS
2. LEAN Softkey . . . . . PRESS
   a. Rich of Peak: Slowly lean the mixture and note the first cylinder EGT to peak. Then enrich the mixture to the desired cruise mixture. Enriching the mixture is referred to as operation on the rich side of peak EGT.
   b. Lean of Peak: Slowly lean the mixture and note the last cylinder EGT to peak. Further lean the mixture to the desired cruise mixture. Further leaning is referred to as operation on the lean side of peak EGT.

3. The engine should not be operated closer to peak EGT than 20°C (rich side or lean side) as indicated on the MANIFOLD PRESSURE vs RPM graph (Section 5, PERFORMANCE).
4. If engine roughness is encountered operating at lower power settings on the lean side of peak, enrich the mixture slightly for smooth engine operation.
5. If required fuel flows cannot be achieved when leaning to the rich side of peak, switch the fuel boost pump to LO, then lean as required.
6. Changes in altitude and power settings require the peak EGT to be rechecked and the mixture reset.
7. MFD Softkeys . . . . .RETURN TO MAIN ENGINE PAGE

NOTE

A Lean Assist function is available through the Garmin software utilizing the CYL SLCT and ASSIST Softkeys. Reference Garmin Cockpit Reference Guide for details on the procedure.

MONITORING ENGINE SYSTEMS (OIL, FUEL, ELECTRICAL)

The Engine Systems page is found on the MFD.

1. ENGINE Soft Key . . . . . PRESS
2. SYSTEM Soft Key. . . . . PRESS
3. MFD Softkeys . . . . .RETURN TO MAIN ENGINE PAGE

NORMAL PROCEDURES

AVIONICS

AUTOPILOT/FLIGHT DIRECTOR

GENERAL

NOTE

If above 150 KTS, operation in the PIT mode can result in nuisance pitch pulsing when using the NOSE-UP or NOSE-DOWN command keys. Transition to ALT, FLC or VS mode prior to using NOSE-UP or NOSE-DOWN keys. With the autopilot engaged, recommended climb or descent rate is 800 fpm or less.

AVIONICS

AUTOPILOT/FLIGHT DIRECTOR

AUTOPILOT/FLIGHT DIRECTOR PROCEDURES

Engaging the Autopilot (90-210 KTS)

NOTE

Without the FD selected, trim and stabilize airplane in desired flight condition prior to engaging the autopilot.

With the FD selected, center the command bars and trim the airplane prior to engaging the autopilot.

FAA Approved by: _____

Thomas Tremain
Raytheon Aircraft Company
DOA-230339-CE

MONITORING THE CHTs AND EGTs

Specific EGT and CHT values for each cylinder are found on the MFD.

1. ENGINE Soft Key . . . . . PRESS
2. LEAN Soft Key . . . . . PRESS
3. CYL SLCT Soft Key . . . . . PRESS
   (Each press of the key cycles the display to the next cylinder. The selected cylinder display number changes color from white to cyan and the digital displays show the absolute temperature and deviation from Peak temperature for the selected cylinder.)
4. MFD Softkeys . . . . . RETURN TO MAIN ENGINE PAGE

AVIONICS

AUTOPILOT/FLIGHT DIRECTOR

GENERAL

WARNING

It is the responsibility of the Pilot to monitor the autopilot when it is engaged. The pilot should be prepared to immediately disconnect the autopilot and take prompt corrective action in the event of unexpected or unusual autopilot behavior.

Do not attempt to manually fly the airplane with the autopilot engaged except when using the Control Wheel Steering (CWS) button. The autopilot pitch servo will oppose pilot pitch inputs and will trim the elevator in the opposite direction of the pilot input. This could lead to a significant out-of-trim condition in the pitch axis. Disconnect the autopilot using the AP DISC switch, the left side of the trim switch, or the AP key if manual control is desired.

The pilot must use proper autopilot modes and proper engine power settings to ensure that airplane speed is maintained between 90 KTS and 210 KTS. Operation in the pitch (PIT) or vertical speed (VS) modes below 90 KTS can result in a stall. If an inadvertent stall is encountered as indicated by the stall warning horn, airframe buffeting, or loss of control effectiveness, disconnect the autopilot using the AP DISC switch and manually return the airplane to stabilized flight prior to re-engaging the autopilot.

AUTOPILOT/ FLIGHT DIRECTOR PROCEDURES

The following are basic guidelines for operation of the autopilot and Flight Director. They are one way, but not necessarily the only way; of operating the AFCS. See Section 2, LIMITATIONS; Section 3, EMERGENCY PROCEDURES; Section 3A, ABNORMAL PROCEDURES; Section 7, SYSTEMS DESCRIPTION; and the Garmin G1000 Cockpit Reference Guide or G1000 Pilot's Guide for more information.

Yaw Damp (With Autopilot Off)

To Engage the Yaw Damper:

1. YD Key . . . . . PRESS
   Green [YD] Displayed

To disengage the YD use one of the following methods. The green [YD] *will change to a black* [YD] on a yellow background, *flash for 5 seconds*, then extinguish.

1. AP DISC Switch . . . . . PRESS

(or)

2. YD Key . . . . . PRESS

Engaging the Autopilot (90 - 210 KTS)

1. AP Key . . . . . .PRESS TO ENGAGE AUTOPILOT & YD
   green [ROL], [AP], [YD], [PIT], & white [ALT] Displayed
2. ALT Key . . . . .PRESS TO HOLD EXISTING ALTITUDE
   [PIT] & [ALT] are replaced by a green [ALT XXXXX$_{FT}$]
3. HDG Knob (if required) . . . . . .SET DESIRED HEADING
4. HDG Key. . . . . PRESS
   [HDG] replaces [ROL]
5. CRS Knob (if required) . . . . . SET DESIRED COURSE
6. NAV Key (if required) . . . . . PRESS
   [VOR] or [GPS] or [LOC] Displayed

Disengaging the Autopilot or Autopilot & Yaw Damper

When the autopilot is manually disengaged the green [AP] will change to a black [AP] on a yellow background, flash for 5 seconds, then extinguish, and a 2-second aural alert will sound. The [YD] will also change color and flash if it disconnects

*To disengage only the AP and leave the FD and YD engaged use one of the following method*s:

1. Left Side of Trim Switch . . . . . ACTUATE

(or)

2. AP Key . . . . . PRESS

To disengage the AP and YD and leave the FD engaged:

1. AP DISC Switch . . . . . PRESS

Use of Roll Mode [ROL]

1. AP Key . . . . . PRESS TO ENGAGE AUTOPILOT & YD
   green [ROL], [AP], [YD], [PIT], & white [ALT] Displayed

If bank angle is ≥ 6°:

2. Bank Angle is Maintained

If bank angle is < 6°:

3. Existing heading is maintained

To Change Bank Angle or Heading:

4. CWS Switch . . . . . PRESS
5. Heading or Bank Angle . . . . . CHANGE AS DESIRED
6. CWS Switch . . . . . RELEASE

Use of Heading Hold Mode [HDG]

1. Heading Knob . . . . . SET DESIRED HEADING
   a. Press knob to select existing heading.
   b. Rotate knob to select a new heading.
   c. New heading will be displayed in box to left of HSI for 3 seconds.
2. HDG Key . . . . . PRESS
   [HDG] Displayed
3. The airplane will turn in the direction the HDG bug is moved unless the heading change is greater than 340°.

Use of Navigation Mode [GPS], [VOR], [LOC], or [BC]

If not initially established on the desired course:

1. CDI Key . . . . . SELECT NAVIGATION SOURCE
2. CRS Knob (if required) . . . . . SET DESIRED COURSE
   (course will be displayed in the box to right of HSI for 3 seconds)
3. HDG Knob . . . . . SELECT INTERCEPT HEADING

4. HDG Key . . . . . PRESS
[HDG] Displayed

5. NAV Key . . . . . PRESS

If CDI Deviation is > 1Dot:

a. [GPS], [VOR], [LOC], or [BC] . . . . . DISPLAYED IN WHITE

When CDI Deviation is ≤ 1 Dot:

b. [GPS], [VOR], [LOC], or [BC] . . . . . DISPLAYED IN GREEN

Use of Altitude Preselect

1. ALT Knob . . . . ROTATE TO SET DESIRED ALTITUDE
(Desired altitude displayed in altitude reference box above altitude display)

2. PIT, VS, or FLC Mode . . . . . SET TO INTERCEPT ALTITUDE

a. At 1000 feet from desired altitude, the altitude in the reference box will change from cyan digits on a black background to black digits on a cyan background, and the box will flash for 5 seconds.

b. At 300 feet from the desired altitude, a cyan altitude reference bug will be visible on the left side of the altitude display opposite the desired altitude.

c. At 200 feet from the desired altitude, the altitude in reference box returns to cyan digits on a black background, will flash for 5 seconds, and a tone will sound.

d. When established on the desired altitude, the altitude reference bug will be aligned with the indicated altitude. The white [ALT] in the AFCS Status Bar will be replaced with a green [ALT $XXXXX_{FT}$]. The [ALT] will flash for 10 seconds.

e. If the indicated altitude deviates more than ± 200 feet, the altitude reference box will change to yellow digits on a black background and will flash for 5 seconds. A tone will be heard. The yellow display will remain until the deviation is corrected or the desired altitude is changed.

Use of the Pitch Mode (PIT)

1. ALT Knob . . . . .SET DESIRED LEVEL-OFF ALTITUDE
   a. Preset Altitude is displayed in window above the altimeter display.
2. Deselect other vertical modes (VS or FLC), if required.
3. Green [PIT] and White [ALT] . . . . . DISPLAYED IN AFCS STATUS BAR
4. NOSE UP or NOSE DN Key . .PRESS AS REQ TO SET CLIMB OR DESCENT PITCH ATTITUDE (each press changes pitch by 0.5 degrees)

(or)

5. CWS Switch . . . . . PRESS AND HOLD WHILE ADJUSTING PITCH, THEN RELEASE (Pitch reference will change to that which exists when switch is released.)
6. Power . . . . . .AS REQUIRED
7. Upon Reaching the Preset Altitude, the green [PIT] and white [ALT] will be replaced by a green [ALT] and [$XXXXX_{FT}$] and the green [ALT] will flash 10 seconds and then become steady.

Use of Altitude Hold Mode [ALT]

To Maintain a desired altitude:

1. ALT Key . . . . . PRESS
   Green [ALT XXXXX$_{FT}$] Displayed

To change the selected altitude:

2. CWS Switch . . . . . PRESS AND HOLD
3. Airplane Altitude . . . . . CHANGE AS DESIRED
4. CWS Switch . . . . . RELEASE
   (new altitude will be displayed next to [ALT])
5. Barometric Changes . . . . . .AIRPLANE WILL CLIMB OR DESCEND TO MAINTAIN SELECTED ALTITUDE

Use of the Vertical Navigation Mode [VNV] (if installed)

NOTE

Vertical navigation will only function when the navigation source is GPS. The airplane's heading must be within 75 degrees of the desired GPS course and within 10 NM cross track error in order for VNAV to function.

VNAV functions only for enroute and terminal descents. Vertical navigation is not available during climbs or descents between the final approach fix (FAF) and the missed approach point (MAP).

For VNAV Descent

1. ALT knob . . . . . SET DESIRED ALTITUDE
2. VNV . . . . . .PRESS WITHIN 5 MINUTES OF THE TOD
3. 1 Minute Prior to TOD . . . . . .VERIFY
   a. VNAV target altitude on PFD.
   b. Vertical Deviation Indicator (VDI) on PFD.

NOTE

If the VNV softkey is pressed more than 5 minutes before the top of descent (TOD) or the altitude preselect is not reset to a lower altitude, VPTH will begin to flash inverse video (white/black) when the aural "Vertical Track" alert sounds 1 minute prior to TOD. Pressing the VNV softkey and/or resetting the altitude preselect to a lower altitude cancels the flashing VPTH and the autopilot will capture and track the vertical profile. If the VNV softkey is not pressed, or the altitude preselect is not reset to a lower altitude, VPTH stops flashing at the TOD and the airplane will remain in ALT mode and not descend.

4. At TOD . . . . . VERIFY
   a. Green [VPTH] in the AFCS status window on PFD.
   b. White [ALTS] or [ALTV] in the AFCS armed window on PFD.
   c. Airplane tracks vertical path.
5. Power . . . . . .AS REQUIRED

For Vertical DIRECT TO

1. ALT knob . . . . . SET DESIRED ALTITUDE
2. VNV Softkey . . . . . PRESS
3. VNV ⊟⇾ Softkey on MFD flight plan page . . . . . PRESS
4. Desired Waypoint . . . . . SELECT AND ACTIVATE

Use of the Vertical Speed Mode [VS]

1. ALT Knob . . . . . SET DESIRED LEVEL-OFF ALTITUDE
   a. Preset Altitude is displayed in window above the altimeter display.

NOTE

If the Flight Director is in Altitude Hold (green [ALT XXXXX$_{FT}$] displayed in the AFCS status bar), the desired altitude must be set either above or below the Altitude Hold value for the VS mode to function.

2. VS Key . . . . . PRESS
   a. Green [VS] and green current vertical speed [XXXX$_{FPM}$] displayed in AFCS status bar.
   b. Current vertical speed displayed in window above (for a climb) or below (for a descent) the Vertical Speed display.
   c. Cyan VS Reference bug displayed on left side of VS display.
   d. White [ALT] Displayed in AFCS Status Bar.
3. NOSE UP or NOSE DN Key . . . . . PRESS AS REQ TO SET CLIMB OR DESCENT VS (each press changes VS by 100 fpm)

(or)

4. CWS Switch . . . . . PRESS AND HOLD WHILE ADJUSTING PITCH TO CHANGE VS, THEN RELEASE (VS reference will change to that which exists when switch is released.)
5. Power . . . . . ADJUST AS REQUIRED FOR DESIRED AIRSPEED

6. Maximum and minimum VS references are 1500 fpm R/C and -3000 fpm R/S.

NOTE

The VS pointer will only indicate a maximum of -2000 FPM; however, the digits in the pointer will continue to indicate the vertical speed up to -3000 FPM.

7. Upon Reaching the Preset Altitude, the green [VS], [$XXXX_{FPM}$], and white [ALT] will be replaced by a green [ALT] and [$XXXXX_{FT}$], and the green [ALT] will flash for 10 seconds and then become steady.

Use of the Flight Level Change Mode [FLC]

1. ALT Knob . . . . .SET DESIRED LEVEL-OFF ALTITUDE
   a. Preset Altitude is displayed in window above the altimeter display.

NOTE

If the Flight Director is in Altitude Hold (green [ALT $XXXXX_{FT}$] displayed in the AFCS status bar), the desired altitude must be set either above or below the Altitude Hold value for the FLC mode to function.

2. FLC Key . . . . . PRESS
   a. Green [FLC] and green current airspeed [XXX_{KT}] displayed in AFCS status bar.
   b. Current airspeed displayed in window above the airspeed display.
   c. Cyan airspeed reference bug displayed on right side of the airspeed display.
   d. White [ALT] Displayed in AFCS Status Bar.

3. NOSE UP or NOSE DN Key . . . . . PRESS AS REQ TO SET CLIMB OR DESCENT SPEED (each press changes speed by 1 knot)

(or)

4. CWS Switch . . . . . PRESS AND HOLD WHILE ADJUSTING PITCH TO CHANGE AIRSPEED, THEN RELEASE (FLC airspeed reference will change to the airspeed that exists when switch is released.)
5. Power . . . . . ADJUST AS REQUIRED FOR DESIRED R/C OR R/S
6. Maximum and minimum FLC reference airspeeds are 210 and 90 Kts.
7. Upon Reaching the Preset Altitude, the green [FLC], [XXX_{KT}], and white [ALT] will be replaced by a green [ALT] and [$XXXXX_{FT}$], and the green [ALT] will flash for 10 seconds and then become steady.

APPROACH PROCEDURES

VOR or ILS Approaches [VAPP] or [LOC] & [GS]

1. CDI Key . . . . . SELECT VOR 1 OR VOR 2
2. CRS Knob . . . . . .SET REQUIRED COURSE
3. HDG Knob . . . . . SELECT INTERCEPT HEADING
4. HDG Key . . . . . PRESS [HDG] Displayed
5. APR Key . . . . . PRESS White [VAPP] Display for VOR Approaches White [LOC], & [GS] Displayed for ILS Approaches
6. Airspeed . . . . . ESTABLISH
7. AFCS Status Bar . . . . . VERIFY MODE IS CAPTURED (white annunciator(s) turns green)

GPS Approach [GPS]

(Software Version 0500.01 or 0500.02)

1. CDI Key . . . . . SELECTED GPS
2. Approach . . . . . VERIFY ACTIVATED
3. NAV or APR Key . . . . . PRESS
   [GPS] Displayed
4. Airspeed . . . . . ESTABLISH
5. PFD . . . . . VERIFY [GPS APR] MODE
   WITHIN 2 NM OF FAF

GPS Approach [LPV] or [L/VNAV]

(Software Version 0857.05 or 0857.06)

1. Baro Minimums . . . . . SET
2. CDI Key . . . . . SELECTED GPS
3. Approach . . . . . VERIFY ACTIVATED
4. APR Key . . . . . PRESS
   Green [GPS] and White [GP] Displayed
5. Airspeed . . . . . ESTABLISH
6. AFSC Status Bar . . . . . VERIFY [GPS] AND [GP]
   MODES ARE CAPTURED

GPS Approach [LNAV+V]
(Software Version 0857.05 or 0857.06)

1. Baro Minimums . . . . . SET
2. CDI Key . . . . . SELECTED GPS
3. Approach . . . . . VERIFY ACTIVATED
4. Altitude Preselect . . . . . SET
5. NAV Key . . . . . PRESS
   Green [GPS] Displayed
6. Airspeed . . . . . ESTABLISH
7. AFSC Status Bar . . . . . VERIFY [GPS] MODES ARE CAPTURED

NOTE

During LNAV+V approaches it will be necessary to follow the glide path using either the [VS] or [PITCH] modes in order for the airplane to level off at the preselected MDA.

Back Course Approach [BC]

1. CDI Key . . . . . SELECT VOR 1 OR VOR 2
2. CRS Knob . . . . . SET TO ILS FRONT COURSE
3. HDG Knob . . . . . SELECT INTERCEPT HEADING
4. HDG Key . . . . . PRESS
   [HDG] Displayed
5. NAV Key . . . . . PRESS
   White [BC] Displayed
6. Airspeed . . . . . ESTABLISH
7. AFCS Status Bar . . . . . VERIFY MODE IS CAPTURED
   (white [BC] annunciator turns green)

Go Around [GA] & [GA] (With an Active Approach Loaded)
(Software Version 0500.01 or 0500.02)

1. Go Around Button on Throttle . . . . . PRESS
2. Throttles and Propellers . . . . . FULL FORWARD
3. Flaps . . . . . UP
4. Landing Gear. . . . . UP
5. Missed Approach. . . . . EXECUTE
6. CDI Key (if required) . . . . . PRESS TO SELECT GPS
7. SUPS (if required) . . . . . PRESS TO INITIATE GPS MISSED APPROACH SEQUENCE
8. ALT Knob (if required) . . . . . SET ALTITUDE

At 400 feet minimum:

9. AP Key . . . . . PRESS TO ENGAGE AUTOPILOT
10. CWS . . . . . PRESS TO CNX GA MODE & ADJUST PITCH
11. HDG or NAV Key. . . . . PRESS

Go Around [GA] & [GA] (With an Active Approach Loaded)
(Software Version 0857.05 or 0857.06)

1. Go Around Button on Throttle . . . . . PRESS
2. Throttles and Propellers . . . . . FULL FORWARD
3. Flaps . . . . . UP
4. Landing Gear. . . . . UP
5. Missed Approach. . . . . EXECUTE
6. CDI Key (if required) . . . . . PRESS TO SELECT GPS
7. ALT Knob (if required) . . . . . SET ALTITUDE

At 400 feet minimum:

8. AP Key . . . . . PRESS TO ENGAGE AUTOPILOT

9. CWS . . . . . PRESS TO CNX GA MODE & ADJUST PITCH
10. HDG or NAV Key . . . . . PRESS

TRAFFIC INFORMATION SERVICE (TIS)

1. If the SKY497 TAS system is installed, TIS will not be available.
2. TIS is only available when the airplane is within the service volume of a TIS capable terminal radar site.
3. TIS information is displayed on the MFD on the Traffic Map page of the Map Group.
4. Rotate the RANGE knob to change the display range.

L-3 COMMUNICATIONS SKYWATCH SKY497 TRAFFIC ADVISORY SYSTEM (TAS) (IF INSTALLED)

WARNING

The SKY497 can only detect aircraft that are equipped with operating transponders.

1. Traffic information shown on the PFD and MFD is provided as an aid in visually acquiring traffic. Pilots must maneuver the airplane based only upon ATC guidance or positive visual acquisition of conflicting traffic.
2. If the pilot is advised by ATC to disable transponder altitude reporting, the SKY497 must be placed in STANDBY.

COLD WEATHER OPERATION

PREFLIGHT INSPECTION

Verify that the tires are not frozen to the ramp, and that the brakes are free of ice contamination. Deicing or anti-icing solutions may be used on the tires and brakes if they are frozen. Solutions which contain a lubricant, such as oil, must not be used as they will decrease the effectiveness of the brakes.

In addition to the normal exterior preflight inspection, special attention should be given all vents, openings, static ports, control surfaces, hinge points, the stall warning vane, the windshield, and the wing, tail, and fuselage surfaces for accumulations of ice or snow. Removal of these accumulations is necessary prior to takeoff. The removal of frozen deposits by chipping or scraping is not recommended. A soft brush, squeegee, or mop may be used to clear snow that is not adhering to the surfaces. Airfoil contours may be altered by the ice and snow to the extent that their lift qualities will be seriously impaired. Ice and snow on the fuselage can increase drag and weight. Frost that may accumulate on the wing, the tail surfaces, or on any control surface, must be removed prior to flight.

Conditions for accumulating moisture in the fuel tanks are most favorable at low temperatures due to the condensation increase and the moisture that enters as the system is serviced. Therefore, close attention to draining and sampling the fuel system will assume particular importance during cold weather.

Use Approved Engine Oil in accordance with Section 8, HANDLING, SERVICING AND MAINTENANCE. Always pull the propeller through by hand, opposite the direction of rotation, several times to clear the engine and “limber up” the cold, heavy oil before using the starter. This will also lessen the load on the battery if external power is not used.

Under very cold conditions, it may be necessary to preheat the engines prior to a start. Particular attention should be given to the oil cooler, engine sump and propeller hub to ensure proper preheat. A start with congealed oil in the system may produce an indication of normal pressure immediately after the start, but then the oil pressure may decrease when residual oil in the engine is pumped back with the congealed oil in the sump. If an engine heater capable of heating both the engine sump and cooler is not available, the oil should be drained while the engine is hot and stored in a warm area until the next flight.

AFTER STARTING

If there is no oil pressure within the first 30 seconds after start, or if oil pressure drops after a few minutes of ground operation shut down and check for broken oil lines, oil cooler leaks, or congealed oil.

NOTE

It is advisable to use external power for starting in cold weather.

During warm-up, monitor engine temperature closely since it is quite possible to exceed the cylinder head temperature limit in trying to increase the oil temperature. Exercise the propeller several times to remove cold oil from the pitch change mechanism. The propellers should also be cycled occasionally in flight.

TAXIING

Avoid taxiing through water, slush or muddy surfaces if possible. In cold weather, water, slush or mud splashed onto landing gear mechanisms or control surface hinges may freeze, preventing free movement and resulting in structural damage.

BEFORE TAKEOFF

After completion of the normal Before Takeoff checklist, verify that the airplane is still free of frozen contaminants.

Ensure the runway is free from hazards such as snow drifts, glazed ice, and ruts.

TAKEOFF

Allow additional take-off distance when snow or slush is on the runway. Extra cycling of the landing gear when above 500 feet AGL may help clear any contamination from the gear system.

DESCENT

During descent and landing, give special attention to engine temperatures, since the engines will have a tendency toward overcooling.

LANDING

Braking and steering are less effective on slick runways. Also, hydroplaning may occur under wet runway conditions at higher speeds. Use the rudder to maintain directional control until the tires make solid contact with the runway surface.

HEATER OPERATION

NOTE

During preflight, ensure the heater over-temperature switch located on the aft end of the heater is not tripped. Push the switch in to reset, if required.

1. Cabin Vent Air Control . . . . . ON (½ OR MORE)

NOTE

Heater will not operate if control is pulled aft more than half way.

2. Heater Switch . . . . . .ON
3. Heater Blower Switch . . . . . .ON

NOTE

Blower will automatically turn off when the landing gear is retracted.

4. Cabin Heat Control . . . . . .PULL AFT TO INCREASE TEMPERATURE
5. Pilot Air, Copilot Air, Defrost Controls. . . . . PULL OUT TO INCREASE AIR FLOW

To Increase Heat To The Cabin:

6. Pilot Air, Copilot Air, Defrost Controls. . . . . PUSH IN

To Turn Heater Off During Ground Operations:

7. Cabin Heat Control . . . . . PUSH IN
8. Cabin Vent Air. . . . . .ON (Full Forward)
9. Heater . . . . . .OFF
10. Heater Blower (a minimum of 2 minutes after turning heater off) . . . . . .OFF

NOTE

Blower must be left on for a minimum of two minutes after turning the heater off to ensure heater does not over temp causing the over-temperature switch to open.

WINDSHIELD DEFOGGING

To Achieve Maximum Windshield Defogging:

1. Heater Switch . . . . . ON
2. Heater Blower Switch . . . . . ON
3. Cabin Heat Control . . . . . .PULL AFT TO INCREASE TEMPERATURE
4. Pilot Air and Copilot Air Controls . . . . . .PUSH IN
5. Defrost Control . . . . . PULL OUT

If View Through Windshield Is Insufficient For Landing:

6. Pilot's Storm Window . . . . . .OPEN

ICE PROTECTION SYSTEMS

Airplanes are approved for flight in icing conditions only when properly equipped and operated per the procedures herein and the applicable Title 14 CFRs. No multiengine airplane is approved for flight into severe icing conditions and none are intended for indefinite flight in continuous icing conditions. The pilot should exit icing conditions if the capacity of the ice protection system is exceeded or any of the required ice protection equipment fails in flight (also refer to the Kinds Of Operations Equipment List in Section 2, LIMITATIONS).

BEFORE TAKEOFF

CABIN HEATER

1. Cabin Vent Air Control . . . . . ON (1/2 OR MORE)
2. Heater Switch . . . . . .ON
3. Heater Blower Switch . . . . . .ON
4. Operate Heater . . . . . TWO MINUTES (MIN)

SURFACE DEICE SYSTEM

1. Right Throttle . . . . . .2000 RPM
2. Surface Deice . . . . . .AUTO (up), and RELEASE
   a. Check visually for inflation and 15 psi minimum deice pressure.
   b. Check visually for hold down when cycle is complete.
3. Right Throttle . . . . . IDLE
4. Left Throttle. . . . . .2000 RPM (Repeat Step 2)
5. Surface Deice . . . . . MAN (down) UNTIL PRESSURE PEAKS (not more than 8 seconds) Then RELEASE
   a. Check visually for inflation and 15 psi minimum deice pressure.
   b. Check visually for hold down when cycle is complete.
6. Left Throttle. . . . . IDLE

ELECTROTHERMAL PROPELLER DEICE

1. Propeller Deice . . . . . .ON
2. Propeller Deice Ammeter . . . . . CHECK (14 to 18 amps)
3. Propeller Deice . . . . . .OFF (if not required for takeoff)

FUEL VENT HEAT, STALL WARNING HEAT, PITOT HEAT, WINDSHIELD HEAT, AND ICE LIGHT

1. MFD Soft Keys . . . . . SELECT ENGINE AND SYSTEM
2. Switches . . . . . CYCLE ON AND OFF, ONE AT A TIME
3. L ALT and R ALT. . . MONITOR FOR LOAD INCREASE

NOTE

Some systems only produce a slight increase after a short time delay.

IN FLIGHT

WARNING

Minimum airspeed for flight in icing conditions is 130 KIAS. This applies to all phases of flight except takeoff and landing. If airspeed is decreasing due to ice accumulation, and power or altitude changes fail to curtail airspeed deceleration, alter flight to exit icing conditions before speeds of less than 130 KIAS are reached.

CAUTION

Flight in icing conditions may eventually cause the cowling inlets to become partially blocked, resulting in higher cylinder head temperatures. If cowl flaps are required to keep cylinder head temperatures below the red line, the flight should be altered to leave the icing conditions as soon as possible.

SURFACE DEICE SYSTEM

NOTE

Deicing pressure gage will indicate approximately 5 psi during periods when boots are not utilized.

When ice accumulates 1/2 to 1 inch:

1. Surface Deice . . . . . .AUTO (up)
2. Deice Pressure:
   a. While Boots Are Inflating . . . . . 9 TO 20 PSI
   b. When Boots Are Fully Inflated . . . . 15 PSI MINIMUM
3. Repeat . . . . . .AS REQUIRED

CAUTION

Rapid cycles in succession or cycling before at least 1/2 inch of ice has accumulated may cause the ice to grow outside the contour of the inflated boots and prevent ice removal.

NOTE

Either engine will supply sufficient vacuum and pressure for deice operation.

ELECTROTHERMAL PROPELLER DEICE

- Propeller Deice. . . . . .ON
  (the system may be operated continuously in flight and will function automatically until the switch is turned OFF)

ELECTROTHERMAL HEATED WINDSHIELD SEGMENT

Prior to Entering Icing Conditions:

• Windshield Heat . . . . . ON

NOTE

Continuous operation is permitted.

PITOT HEAT, STALL WARNING HEAT, AND FUEL VENT HEAT

Switches should be ON prior to entering icing conditions. Switches may be left ON during flight.

AFTER LANDING

• Fuel Vent, Stall Warning, Pitot, Propeller and Windshield Heat . . . . . OFF

SIMULATING ONE-ENGINE-INOPERATIVE (ZERO THRUST)

Use the following power setting (only on one engine at a time) to establish zero thrust. Use of this power setting avoids the difficulties of restarting an engine and preserves the availability of power to counter potential hazards.

The following procedure should be accomplished by alternating small reductions of propeller and then throttle, until the desired setting has been reached.

1. Propeller Lever . . . . . RETARD TO FEATHER DETENT
2. Throttle . . . . . .SET 12 in. Hg MANIFOLD PRESSURE

NOTE

This setting will approximate Zero Thrust using the recommended One-Engine-Inoperative Climb speed.

PRACTICE DEMONSTRATION OF V_{MCA}

V_{MCA} demonstration may be required for multi-engine pilot certification. The following procedure shall be used at a safe altitude of at least 5000 feet above the ground in clear air only.

WARNING

INFLIGHT ENGINE CUTS BELOW V_{SSE} SPEED OF 88 KTS ARE PROHIBITED.

1. Landing Gear . . . . . UP
2. Flaps . . . . . UP
3. Airspeed . . . . . ABOVE 88 KTS (V_{SSE})
4. Propeller Levers . . . . . HIGH RPM
5. Throttle (simulated inoperative engine). . . . . IDLE
6. Throttle (other engine) . . . . . MAXIMUM MANIFOLD PRESSURE
7. Airspeed . . . . . REDUCE APPROXIMATELY 1 KNOT PER SECOND UNTIL EITHER V_{MCA} OR STALL WARNING IS OBTAINED.

CAUTION

Use rudder to maintain directional control (heading) and ailerons to maintain 5° bank towards the operative engine (lateral attitude). At the first sign of either V_{MCA} or stall warning (which may be evidenced by: inability to maintain heading or lateral attitude, aerodynamic stall buffet, or stall warning horn sound) immediately initiate recovery: reduce power to idle on the operative engine and immediately lower the nose to regain V_{SSE}.

ENGINE BREAK-IN INFORMATION

Refer to Section 7, SYSTEMS DESCRIPTION.

NOISE CHARACTERISTICS

Approach to and departure from an airport should be made so as to avoid prolonged flight at low altitude near noise-sensitive areas. Avoidance of noise-sensitive areas, if practical, is preferable to overflight at relatively low altitudes.

For VFR operations over outdoor assemblies of persons, recreational and park areas, and other noise-sensitive areas, pilots should make every effort to fly not less than 2000 feet above the surface, weather permitting, even though flight at a lower level may be consistent with the provisions of government regulations.

NOTE

The preceding recommended procedures do not apply where they would conflict with Air Traffic Control clearances or instructions, or where, in the pilot's judgement, an altitude of less than 2,000 feet is necessary to adequately exercise his duty to see and avoid other airplanes.

Flyover noise level established in compliance with 14 CFR Part 36 is:

Using Maximum Continuous Power:

Full Throttle at 2700 RPM . . . . . 77.4 dB(A)

No determination has been made by the Federal Aviation Administration that the noise level of this airplane is or should be acceptable or unacceptable for operation at, into, or out of any airport.