

Training Air Wing FIVE TH-57B

Expanded Checklists

The following checklists are intended for use in the CPTs. As such, they are tailored for daytime contact operations in the TH-57B. In most cases, the steps that pertain to the TH-57C have been omitted for clarity. They are based on the NATOPS checklists, but do not supersede the NATOPS checklists. The verbal replies to checklist challenges offered below appear in all caps and in quotation marks to distinguish them from non-verbal actions directed in the NATOPS manual. They are not to be construed as the only appropriate verbal responses to checklist challenges. Where any ambiguity in procedure or verbal response exists, refer to the NATOPS manual.

Once the rotor is turning, a qualified helicopter pilot or pilot under instruction must be at the controls. The person at the controls must keep both feet on the pedals and a grip on the cyclic stick with either hand. Guard the collective with your leg and the free hand is used to execute the checklist. Touch each switch called for in the checklist.

PRESTART CHECKLIST

1. Pedals..... "ADJUSTED".
2. Seatbelt & inertia lock.... Check and report: "FASTENED, AND ADJUSTED".
3. Flight controls.....Check as follows: Cyclic: cockpit wipe out in a box pattern, watching blades respond. Pedals: check for full throw of each. Collective: move full up and full down. Normally, raising collective without hydraulic boost causes the cyclic to move forward ("coupling"). Check for binding on all controls. "FREE AND COUPLED"

Note: There is no requirement to tell the instructor to watch his/her knees since the instructor initiated the control check with the challenge.

4. Searchlight.....Check in the off position. "OFF"
5. Lower Circuit Breakers..... Check both in (left CB is mode C of the transponder, right CB is the torque gauge). "IN"
7. Avionics..... Check UHF, VHF, and transponder off. "OFF"
9. Engine Anti-Icing..... Check off. "OFF"
10. Hydraulic System..... Check boost switch on. "ON"
12. Instruments..... Check gauge indications in a static condition. "STATIC CHECK. ALL GAUGES ZERO, CLOCK WOUND, CORRECT TIME, OAT IS ___ °C."
13. Radar Altimeter..... Check DH bug set to zero. "SET TO ZERO"

14. **ECS Switch**..... Check the three-way Air Cond/Off/Fan switch in the off (center) position. **"OFF"**
15. **Overhead switches**..... Check all overhead switches to the aft position. Note: Center is off for the MAIN GEN switch and two other switches, the 'Bright/Dim' switch and the position light switch, do not have an 'off' position. **"OFF"**
16. **Overhead Circuit Breakers**..... **"IN"**
17. **Instrument Lights**..... Check "clicked" off for daylight starts (on for night operations). **"OFF"**
19. **Cabin Heat Valve**..... Not installed in CPT's, but in the aircraft is found on the upper panel, aft and to the right of the upper CB's. Check it in the off (counterclockwise) position. **"OFF"**
20. **Cockpit Lights**..... Check the rheostat in off position for daylight operations. **"OFF"**
22. **Anti Collision Lts** Remain off at night, but turned on for daylight operations. **"ON"**
23. **Position Lts**..... Set to flashing/bright for night starts, but off for day starts. **"OFF"**
24. **Helmets (and Battery/GPU/Battery Cart)**..... Challenge normally combined with steps 25 and 26, Battery and ICS. Don headset, turn battery on, check battery voltage at minimum 22 volts, and report:
"BATTERY ON __VOLTS, ICS CHECK". Loud and clear
"I READ YOU THE SAME".
25. **BATTERY/GPU/BATTERY CART**.....Normally checked on previous step.
26. **ICS**.... Normally checked on the previous step. If good ICS comms are not established, troubleshoot the system. Ensure the volume knob on the ICS panel is turned up (as well as the volume knob on the CPT headset). Ensure that the ICS cord in the cockpit is plugged into the proper socket for pilot or co-pilot as appropriate.
27. **Aud/Mute Switch**..... Move switch to the Audio (up) position, listen for the beeping Engine OUT tone, then back down to Mute. **"AUD THEN MUTE"**
28. **Fire Detector Test**..... Push the 'FIRE DET TEST' button and look at the Caution Panel for the red 'ENG FIRE' caution light. Release the button when the light is observed. **"TEST"**
29. **Caution Light Test**..... Check for the following five caution lights: GEN FAIL, HYDRAULIC PRESSURE, TRANS OIL PRESSURE, ENG OUT, ROTOR LOW RPM, and report: **"FIVE NORMAL"**. Push the CAUTION LT TEST button and hold it for at least two seconds, observe all caution lights and the CLEAR CHIP button illuminated, and report: **"FULL PANEL"**. Release the CAUTION LT TEST button. All caution lights should extinguish except for the three chip warning lights and the CLEAR CHIP button. When the chip lights extinguish, report: **"CONTINUITY CHECK"**.
30. **Fuel quantity**.....**"__ GALLONS"**.

START CHECKLIST

1. **Force Trim**..... "ON"
2. **Twist Grip**.... Check the twist grip full open, idle, and closed. "CLOSED"
3. **Fuel Valve**..... "ON, FUEL PRESSURE IN THE GREEN"
4. **BAT Switch**..... "ON" (OFF for battery cart start)
5. **Rotors**..... "CLEAR RIGHT, NO TIEDOWN", Clear left, no tiedown.
6. **Fireguard**..... Give engine start signal to the plane captain and receive his acknowledgement. "SET"
7. **Engine Start**..... Complete the engine start sequence as follows:
Uncover the engine starter switch. Pick a whole number on the clock on which you intend to engage the starter, and report:
 - a. "TELL ME IF THE ROTORS AREN'T TURNING BY 25% Ng, STARTING ON THE ____." Engage starter and check voltmeter for minimum 17 volts.
 - b. "STARTER ON, ____ VOLTS" Note: If TOT begins to rise when starter is engaged, the twist grip was not properly closed, and the start must be aborted.
 - c. Battery relay caution light applies to the TH-57C only.
 - d. Engine oil pressure rising. Check for rise in engine oil pressure off the peg, and report:
 "ENGINE OIL PRESSURE RISING"
 - e. TOT is less than 150 degrees C. If the engine had been running in the last few hours, the TOT may be above 150 before engaging the starter, but it should decrease as the compressor draws ambient air into it. Report:
 "TOT LESS THAN 150"
 - f. Twist grip - Flight idle at a minimum of 12% Ng. Check Ng at minimum 12%, then rotate the twist grip (away from you) past the idle position until the idle release button pops up, then back to the idle position. Place the thumb on the idle release button to be ready for abort start, should it be necessary. Do not put your thumb on the idle release button while introducing fuel; do it only after the twist grip has been opened and the button has popped up.
 - g. "Ng ABOVE 12%, FLIGHT IDLE, LIGHT OFF, MONITOR TOT" Observe engine light-off, normally immediately after introducing fuel. It is accompanied by a noticeable increase in engine noise, a rise in TOT, Ng, and Nf/Nr. In the actual aircraft, the rotor will be turning by this point. Monitor TOT, and abort start if any of the following criteria are met:
 - (1) No light-off within a few seconds of introducing fuel.
 - (2) An excessive rise in TOT, TOT rapidly accelerating through 840C, or battery stabilized below 17 volts on starter engagement.
 - (3) Rotor not turning by 25% Ng

(4) Illumination of Engine Fire caution light or "lazy eight" signal from Plane Captain (Emergency Shutdown).

(5) Ng rises slowly and stabilizes below 58%.

(6) Starter limit reached prior to Ng reaching 58% or above.

Note that the scale on the TOT gauge expands after 700 degrees, so a slight jump in the TOT needle is expected as TOT passes 700. TOT may rise, decrease, then rise again as the secondary fuel manifold becomes operational. When TOT peaks and decreases toward normal idle temperature (around 500 degrees), check transmission oil pressure.

h. Transmission pressure should be rising. Report:

"TRANSMISSION OIL PRESSURE RISING." Abort start if positive transmission oil pressure indication is not received by 30% Nr.

i. Starter - OFF at 58% Ng. Close cover on starter switch to secure the starter after Ng reaches 58% and report:

"STARTER OFF."

Engine should stabilize with Ng 59-65%

j. Battery relay light... Applies to TH-57C only.

8. Engine/XMSN Oil Pressures.... Engine oil pressure is typically near 130 psi at this point, even though the minimum pressure at idle is 50 psi. On the first start on a cold day, the oil pressure may exceed red line, up to 150 psi. However, it must decrease below 130 psi before moving the twist grip past idle. Transmission oil pressure must show a positive indication, although it does not need to be above the normal in-flight minimum of 30 psi at this point. Illumination of the Transmission Oil Pressure caution light, while not typical, is acceptable at this point. In cold weather, transmission oil pressure up to 70 psi is acceptable following a cold start. However, it must return below 50 psi before moving the twist grip past idle.

"ENGINE OIL PRESSURE IN THE GREEN." (Ng will be below 79%, min oil pressure is 50 PSI so can actually be in the yellow arc.), **"TRANSMISSION OIL PRESSURE"** either **"...IN THE GREEN"** or **"...NORMAL FOR THIS PHASE"** (above zero).

9. Position Lts..... Not normally used for day contact flights. **"OFF"**

10. BAT switch..... **"ON"** (Battery is turned on at this point if a battery cart was used for the start.)

11. GPU/Battery cart..... If GPU/cart is used, give the remove signal or, **"NOT USED"**

12. Audio/Mute..... **"AUD"**

13. Instruments..... Check for normal indications. Nf and Nr are not "in the green", but should be normal, married up between 60%-70%. If starting in cold weather, and engine and transmission oil pressures were higher than normal on start, they should be back in normal limits before continuing with the Pre-Takeoff Checklist. Likewise, transmission oil temp should be at least 15 degrees C. If the above conditions are not met because the engine or transmission oil is still cold, allow the engine to idle until engine and transmission temps and pressures are normal. **"CHECKED"**

14. Caution Panel Check for normal caution lights for this stage, Gen Fail and Rotor Low RPM normally but TRANS OIL PRESS may also be on. **"CHECK FOR NORMAL CAUTION LIGHTS"**

PRETAKEOFF CHECKLIST

CAUTION: Do not go above flight idle until transmission oil temp is at least 15 degrees C, transmission oil pressure is 50psi or below and engine oil pressure is below 130 psi.

1. **Twist Grip**..... **"ENGINE AND TRANSMISSION OIL PRESSURES WITHIN LIMITS, TRANSMISSION OIL TEMPERATURE ABOVE 15°"** Slowly rotate twist grip to 70% Ng. Once there, report **"70% Ng"**

3. **Main Gen Switch**..... Move Generator switch to the reset position, then to ON, and observe indications.

"RESET, THEN ON, GENERATOR LIGHT OUT, RISE IN VOLTS AND LOAD."

7. **Avionics**..... UHF to BOTH, VHF to ON, and transponder to STANDBY.
"BOTH, ON, AND STANDBY"

8. **Loadmeter**..... Check below 50%. If above 50%, monitor the loadmeter, and hold off on engaging the ECS until below 50%. Generator load should decrease as battery recharges, and current flow from the generator to the battery drops off. In no case should it be above 70%. **"BELOW 50%"**

9. **ECS**..... Do not engage if the loadmeter indicates greater than 50 percent load. Otherwise, select Air Conditioner, OFF, or Fan. If Cabin Heat is desired, select ECS to FAN/HI and open Cabin Heat valve on the overhead console. Respond with **"FAN ON"**, **"HEAT ON"**, **"A/C ON"** or **"OFF"** as appropriate. If windscreen is fogged up, the Defog Blower may be engaged.

10. **Flight controls**..... Check rotor arc clear before moving the rotor disk. Personnel can be inside the rotor arc during the check as long as they remain close to the fuselage.

a. **"CLEAR RIGHT"**, Clear Left.

b. Force Trim check

(1) Cyclic FT button - Depress. Check for cyclic freedom of movement by moving cyclic in an "X" pattern. Do not displace the cyclic more than 2 inches from center to avoid contacting the static stops.

(2) Cyclic FT button- Release, move cyclic in "+" pattern. Should feel force gradient as cyclic is displaced. When pressure is relieved, cyclic should return to its trimmed position. Check tip-path for proper deflection as cyclic is moved.

Note: Yaw force trim check - Pedals are not trimmed on the TH-57B. Check pedal trim on the TH-57C only.

c. FORCE TRIM - OFF (Guard the collective with your leg and turn the force trim switch off), **"FORCE TRIM - OFF"**,

(1) Check the Cyclic ("X" pattern). Cyclic movement should feel smooth, with no force gradient and no binding.

(2) Check pedal movement in each direction (2")

(3) Collective check. Raise collective 1 - 2 inches, check for any binding, and listen for the Low Nr audio tone (steady tone). Return collective to full down position.

d. HYDRAULIC BOOST- Guard the collective with your leg and turn the HYD BOOST switch off, **"HYDRAULICS OFF, LIGHT ON"**, "Hydraulic Pressure" caution

light should illuminate. Check for freedom of control movement by moving cyclic in an "X" pattern. Raise the collective approx 2" and return it to the full down position. Control movement will require more force than with boost on and some feedback will be felt in the controls.

- e. "HYDRAULICS ON, LIGHT OUT"
- f. "FORCE TRIM ON. CONTROL CHECK COMPLETE".

13. Engine Anti-Icing..... Check as required

- a. OAT 10C or higher - not required. "OFF".
- b. OAT less than 10 degrees - "ANTI-ICE ON, RISE IN TOT. ANTI-ICE OFF, DECREASE IN TOT". A normal rise is approximately 10-15 degrees.

14. Pitot Heat..... Check as required

- a. OAT 10 degrees or higher - Not required. "OFF"
- b. OAT less than 10 degrees - "PITOT HEAT ON, RISE IN LOADMETER. PITOT HEAT OFF, DECREASE IN LOAD". A normal rise is approximately 3%.

15. Cargo Hook..... Check as required. Cargo hooks are removable, and are not installed in every aircraft. Either skip this step, or respond with "NOT INSTALLED."

16. Twist grip... FULL OPEN

- a. Check instrument panel. "GAUGES AND CAUTION LIGHTS NORMAL"
- b. Signal to plane captain. Note: NATOPS specifies signalling the plane captain only two times during the checklist; 1. when first starting to ensure he is set for the start and 2. the very first time we go to full open to verify that he has completed a satisfactory leak check prior to accelerating the engine to full open. There is no other NATOPS requirement to signal the plane captain when opening the twist grip.

"CLEAR RIGHT" Clear left

c. "TWIST GRIP TO FULL OPEN, NOT TO EXCEED 40% TORQUE". After advising co-pilot, begin to open the twist grip. Torque at idle will be between 10-14%. At full open, collective full down, torque will be between 26-30%. While opening the twist grip, torque will approach 40%, but then decrease as the rotor speeds up. Exceeding 40% torque on engine run-up may cause engine chugging or compressor stall. Continue until twist grip is full open, then check Nf/Nr. If it is not 100%, use the GOV RPM INC/DECR switch to adjust the power turbine speed to 100%.

- d. "FULL OPEN, Nf/Nr 100 PERCENT".

17. Left Twist Grip..... Note the second hand on the clock or count the seconds to verify the Ng deceleration time from 100% Nr to 65% Ng is not less than 2 seconds. Left seat pilot rotates twist grip to idle to check idle detent. Rotor Low caution light should illuminate at 90% Nr +/- 3%. Nf and Nr should remain married as they decrease to normal idle. Student checks idle Ng (59% to 65%).

"DECELERATION TOOK ____ SECONDS, Ng STABILIZED AT ____ PERCENT"

COMM / NAV CHECKLIST

This checklist is part of the "Pretakeoff Checklist". It is listed separately here for ease of use. The letters used for steps in the checklist correspond to those in the NATOPS manual. Steps for the TH-57C are omitted

19. COMM/NAV Equipment -

a. Clock..... "SET AND WOUND"

c. Attitude Gyro.....Pull out on knob on front of indicator. "CAGED"

d. BAR ALT ... Set Barometric Alt to 177'. "SET TO FIELD ELEVATION"

e. RMI..... Ensure Free/Slave switch is in the Slave position and the needle is aligned with the index mark in the small window. Verify the RMI is in agreement with the corrected wet compass (correction from the compass deviation card applied) and report:

"SLAVED AND ALIGNED".

If not in agreement, turn off Landing Light and Searchlight, A/C, Pitot Heat, and Defog Blower (L.A.P.D.), and check again. If still off, put slave switch in Free position and adjust with clockwise/counterclockwise toggle switch. On the compass slaving panel observe the small window, and check that the white needle is aligned with the white horizontal line. Move the switch from Free back to Slave. Turn LAPD items back on as required.

g. RAD ALT...Test Radar Altimeter as follows:

(1) Set bug to 25 ft. DH light should illuminate and tone should sound.

(2) Press Test button, needle should rise to 50 ft +/-5 with an off flag. As needle passes the bug, the warning light and tone should cease.

(3) Release. As needle drops past DH bug, DH light should illuminate and tone should sound again. Off flag should disappear behind the mask.

(4) Push DH button. The warning light and tone should cease. Set bug to zero for daylight operations.

"TEST AND SET".

h. VHF...Test as follows. Begin on Audio Control Panels.

(1) Select mixer switches #1 and #2 (up), and de-select all others (down) for both pilot and co-pilot.

(2) Switch Transmit Selector to #2 (VHF transmit) for both pilots

(3) Disable squelch by pulling OUT on the ON/OFF/VOLUME knob, and use the background static, or "white noise" to adjust volume.

(4) Tune the Standby frequency to 121.95, Instructor Common, and push the white "USE" button to select the freq, swapping it to the left side. (Note: With the non-volatile memory, the frequencies may already be set.)

(5) Tune the Standby frequency to 124.85, PNS Approach.

(6) Each pilot squeezes the ICS/RADIO trigger to the second (radio) detent, independently, looking for "T" to appear in display.

(7) Switch Transmit Selector to #1 (UHF transmit) for both pilots.

"TEST AND SET".

i. VOR

(1) Tune the Standby frequency to 108.8, SAUFLEY VOR, and push the white "USE" button to select the freq, swapping it to the left side.

(2) Tune the Standby frequency to 110.55, South Whiting Localizer.

(Note: With the non-volatile memory, the frequencies may already be set.)

"TUNED AND SET".

l. Transponder

(1) Turn selector to Test, look for all 8's, modes, carets(^), then set back to Stdbby

(2) Push and release "Emergency" button. Beacon code should reset to 7700

(3) Set in local outbound beacon code (squawk) of 0100 by adjusting digit over caret, then pushing button to move caret. (Squawk 0400 when inbound.)

"TEST AND SET"

n. UHF

(1) Turn squelch off, adjust volume, turn squelch on

(2) Select Guard mode. Display should read 243.0

(3) Select Manual mode. Move the four frequency selector toggle switches up and down and confirm that they work properly.

(4) Select Preset mode. Turn Channel Selector knob to your Base freq. (Ch-5 for HT-8, Ch-6 for HT-18, Ch-7 for HT-28) If already on your base channel, confirm that the Channel Selector works by moving off your channel and then back again.

(5) Push the Read switch. Display should show correct Base freq for several seconds before returning automatically to the preset digit.

Note: Checking the switch in BOTH is not IAW the Instrument FTI P. 2-7 and there is no reason to check it since the pilot set it to both when he first turned it on.

(6) Move Bright dim all the way clockwise to test position, and check for all 8's. Set brightness to desired level.

"TEST AND SET"

PRETAKEOFF RADIO CALLS

1. Call outbound to base.

HT-8: Ch-5, "EIGHTBALL BASE, EIGHTBALL _____ OUTBOUND, TO _____(site), WITH _____(student's last name)"

HT-18: Ch-6, "SKEDS, FACTORYHAND ..."

HT-28: Ch-7, "LUCKY BASE, LUCKY ..."

2. Switch to Ch-1 for ATIS or ask co-pilot to switch. If copying ATIS, maintain a grip on the cyclic with either hand and guard collective position by leaning your left leg against it.

3. **"SWITCH TO GROUND"** (Ch-3). Do not call Ground Control until takeoff checklist is complete

HYDRAULICS CHECK

{Aircraft Clear} Note: Exercise extreme caution when moving controls since Nf/Nr is 100%.

1. Check the collective full down with friction removed.
2. Check the twist grip full open, Nf/Nr 100%
3. Turn force trim off.
4. Turn the hydraulic boost switch off.
5. Check the cyclic centered with the friction removed and then Check cyclic in an "X" pattern (approx. 1"). Center cyclic.
6. COLLECTIVE.....
Check for normal operations by increasing collective slightly (no more than 2 inches). Repeat three times. Return to full down position.
7. HYDRAULIC BOOST switch.....ON
8. FORCE TRIM.....ON
9. CYCLIC AND COLLECTIVE FRICTION.....SET AS DESIRED

"HYDRAULIC CHECK COMPLETE"

TAKEOFF CHECKLIST

1. **Twist Grip**.....**"FULL OPEN, Nf/Nr 100%"**
2. **Instruments**..... **"CHECKED WITHIN LIMITS"**. All instruments should now be in the normal, or green range.
3. **Caution Lts**..... **"CHECKED"**
4. **Force Trim**..... **"ON"**
5. **Engine Anti-Icing**..... **"OFF"** or **"ON"**
6. **Pitot Heat**..... **"OFF"** or **"ON"**
7. **Shoulder Harness**..... **"LOCKED ON THE RIGHT"**, Locked on the left.
8. **Doors**..... **"SECURED ON THE RIGHT"**, Secured on the left.
9. **Crew and passengers**..... Crew or passengers (if aboard) will respond "secured". Otherwise, report **"NONE"**

TAKEOFF RADIO CALLS

1. "SOUTH GROUND, EIGHTBALL/FACTORYHAND/LUCKY _____, TAXI VFR TO SPENCER/SANTA ROSA, 4+00, 3 SOULS, FROM _____(parking spot), WITH INFORMATION _____."

Once cleared to taxi and prior to lifting report:

TWIST GRIP IS FULL OPEN, Nf/Nr 100%, GAUGES ARE GREEN, FUEL IS _____GALLONS, CAUTION PANEL IS CLEAN, CLEAR RIGHT AND ABOVE." Clear left and above.

2. "SWITCH TO TOWER" (Ch-4) "SOUTH TOWER, EIGHTBALL/FACTORYHAND/LUCKY _____ NUMBER 1 HOLDING SHORT OF SPOT _____, ABLE/BAKER DEPARTURE."

3. When cleared by Tower for takeoff, complete the takeoff checks with the "4 T's": Time, Tank, Transponder, and Torque. Torque is checked when stabilized in a five-foot hover over the takeoff spot, with the nose aligned with direction of departure.

"TIME IS _____, FUEL _____ GALLONS, SWITCH TRANSPONDER ALTITUDE, AND TORQUE IN A HOVER IS _____%".

PRELANDING RADIO CALLS

1. Heading back get ATIS and call Base, then switch to Tower

2. "SOUTH TOWER, EIGHTBALL/FACTORYHAND/LUCKY _____, POINT WHISKEY, INFORMATION _____."

3. "SOUTH TOWER, EIGHTBALL/FACTORYHAND/LUCKY _____, POINT IGOR FOR SPOT 1." Tower will respond with "Report left downwind," "Report left base," or "Report one mile final" as appropriate for requested landing spot and runway in use.

LANDING CHECKLIST

1. Twist Grip..... "FULL OPEN, Nf/Nr 100%"
2. Shoulder Harness..... "LOCKED", or "LOCKED ON THE RIGHT"
3. Crew/passengers..... Crew or passengers (if aboard) will respond "secured". Otherwise, report "NONE"
4. Landing Light and Searchlight.... For daytime contact flights, "OFF".
5. RADALT..... "SET TO ZERO"(Once on deck ensure pitot heat - OFF)

LANDING RADIO CALLS

"SOUTH TOWER, EIGHTBALL/FACTORYHAND/LUCKY _____ LEFT BASE/DOWNWIND/ONE MILE FINAL FOR SPOT 1"

When clear of the spot:

"SWITCH BUTTON 3 AND TRANSPONDER TO STBY"

"SOUTH GROUND, LUCKY __, CLEAR OF SPOT ____ FOR MY LINE

SHUTDOWN CHECKLIST

HYDRAULICS CHECK

{Aircraft Clear} Note: Exercise extreme caution when moving controls since Nf/Nr is 100%.

1. COLLECTIVE.....FULL DOWN, FRICTION REMOVED.
2. TWIST GRIP.....FULL OPEN, Nf/Nr 100%
3. FORCE TRIM.....OFF
4. HYDRAULIC BOOST SWITCH.....OFF
5. CYCLIC.....CENTERED, FRICTION REMOVED.
Check cyclic in an "X" pattern (approx. 1"). Center cyclic.
6. COLLECTIVE.....
Check for normal operations by increasing collective slightly (no more than 2 inches). Repeat three times. Return to full down position.
7. HYDRAULIC BOOST switch.....ON
8. FORCE TRIM.....ON
9. CYCLIC AND COLLECTIVE FRICTION.....SET as desired
10. **Twist Grip**..... Rotate to Flight Idle, then check position of second hand on the clock. Report, "**FLIGHT IDLE ON THE ONE** (or **TWO, THREE**)" Time for two minutes, if the TOT was not stabilized during the last 30 seconds of the two minutes wait longer than the two minutes until at least 30 seconds of stabilized TOT is achieved.
11. **Engine Anti-Icing**..... "OFF"
12. **Landing Lts/Searchlights**... "OFF"
13. **Pitot Heat**..... "OFF"
14. **Defog Blower**..... "OFF"
15. **Cabin Heat Valve**..... "OFF"
16. **Avionics**..... "OFF"

After 2 min at flight idle and TOT stable for at least 30 seconds.

17. ECS..... "OFF"
 18. Aud/Mute Switch..... "MUTE"
 19. Main Gen..... "OFF, LIGHT ON"
 20. Position Lts..... "OFF"
 21. Twist Grip..... Close, while watching Nf/Nr and TOT. Be prepared for POSTSHUTDOWN FIRE. "CLOSED, GOOD SPLIT."
- Note: Securing the engine with the fuel shutoff valve may prevent engine light-off on subsequent start.
22. Anti-collision lights....."OFF"
 23. Overhead Switches..... "OFF"
 24. Battery.....(TOT stabilized below 400°C and Ng 0%)..."OFF"