

ERA22FA279

OPERATIONAL FACTORS

Group Chair's Factual Report - Attachment 10

Safety Pilot's UH-1B Checklist

November 2, 2022

UH-1B Start/Shut Down Checklist

3-21 Before Starting Engine

- a. Cyclic and collective – UNLOCKED**
- b. Cyclic, collective pitch, and pedals – Actuate through full travel and center**
- c. AC Circuit Breaker Panel: Circuit breakers IN**
- d. Collective pitch control head – All switches OFF**
- e. Engine Control Panel:**
 - a. Fuel start and main – OFF**
 - b. Oil valve – OPEN**
 - c. Hot Air Valve – CLOSE**
 - d. Governor – AUTO**
 - e. Low RPM – OFF**
- f. Communications Group:**
 - a. Pedestal panel right side – all communications systems – OFF**
 - b. Pedestal panel left side – all communications systems – OFF**
- g. DC Circuit Breaker – IN**
- h. Dome lights and pitot heater Control Panel - OFF**
- i. Exterior Lights Control Panel – Nav as required/ anti-collision – OFF**
- j. Miscellaneous Control Panel:**
 - a. Cargo release – OFF**
- k. Cabin Heater Control Panels – All selectors OFF or NORMAL**
- l. Instrument lights control panel – as desired**
- m. AC Power Panel:**
 - a. VM – AC Phase**
 - b. Invtr – Spare OFF**
- n. DC Power Panel:**
 - a. VM – AC phase**
 - b. Main Gen – ON (Safety cover closed)**
 - c. Battery - ON**
 - d. Start-Gen – START**
 - e. Non-Ess Bus – NORMAL ON**
- o. Copilot inst group – Check static limitations, slippage marks, and operating ranges**
 - a. Airspeed**
 - b. J-8 Attitude indicator**
 - c. Altimeter - set field elevation**

UH-1B Start/Shut Down Checklist

- a. Check through full travel and return to flight idle
- b. Check operation of flight idle stop, then move throttle to **FULL CLOSED**
- c. Position the throttle as near as possible to the flight idle stop **ON THE DECREASE SIDE**
- d. Governor RPM INC-DEC switch – Decrease for 10 seconds

3-22. ENGINE

- a. Check Rotor Blades – CLEAR

CAUTION: If voltage drops below 14 volts, abort start

CAUTION: Limit starter energize time to 40 seconds. If engine does not start, a three minute cooling period is recommended after which a second starting cycle may be attempted. Only three 40-second starting attempts are permissible in any one hour period.

- b. Energize started and Start Clock
- c. Start Fuel Switch - OFF at 400 degrees C

*CAUTION: Monitor EGT to avoid a hot start. If uneven or intermittent acceleration is accompanied by a rapid rise in EGT, shut the engine down and immediately investigate. During starting or acceleration **MAXIMUM** allowable EGT is 760 degrees C. If this limit is exceeded, perform a hot end inspection. If during the start operation, EGT exceeds 650 degrees C for more than five seconds, perform a hot end inspection.*

- d. Release Starter Switch at 40% N1 speed
- e. Slowly advance throttle over the **FLIGHT IDLE** stop
- f. **INVERTER – Spare ON**
- g. **APU – N/A Battery start**

CAUTION: If no oil pressure is evident at this time, shut the engine down immediately and investigate the cause

- h. **ENGINE AND TRANSMISSION OIL PRESSURE – Check**
- i. Start Fuel Switch – OFF
- j. Radios and headsets – ON

UH-1B Start/Shut Down Checklist

3.23. Engine RUN-UP

- a. Retard throttle to the FLIGHT IDLE stop and check the following”
- b. GAS PRODUCER RPM:
 - a. T53-L-9/11 – 56% - 58%
- c. Engine and Transmission OIL PRESSURE – in the green
- d. FUEL PRESSURE – in the green
- e. CAUTION Panel and MASTER CAUTION – all lights off.
- f. LOW RPM switch – Audio, then OFF
- g. Copilot Attitude Gyro – CAGE
- h. Fuel Quantity Gage test switch – TEST
- i. Pilot’s attitude Gyro: Fuel Boost Pump Check – left fuel boost CB out, check for indication, then pull right fuel boost CB; leave both CB out for at least ten seconds, checking for a fuel pressure indication of zero and continued normal engine operation; left fuel boost CB IN. Check for pressure indication. Place right fuel boost CB IN.
- j. PITOT HEATER – ON- note LOAD meter increase then OFF
- k. AC power voltmeter – CHECK all phases for 115 volts (on SPARE INVERTER)
- l. INVERTER – MAIN ON
- m. AC power voltmeter – CHECK all phases for 115 volts
- n. VM selector – CHECK all positions and leave in NON-ESSENTIAL BUS position
- o. STARTER GENERATOR – StandBY GENERATOR
- p. MAIN GENERATOR – OFF. Note MAIN GENERATOR LOADmeter zeros and STANDBY GENERATOR and LOADmeter registers
- q. DC Voltmeter – CHECK voltage zero
- r. NON-ESSENTIAL BUS – MANUAL ON – Note voltage restored
- s. VM selector – check all positions (one volt less than main generator voltage) – Leave in MAIN GENERATOR position
- t. MAIN GENERATOR – ON – note that MAIN GENERATOR LOAD meter registers and STANDBY GENERATOR LOADmeter zeros.
- u. STARTER GENERATOR – As desired
- v. Increase throttle slowly to FULL OPEN, noting that the engine RPM stabilizes at 6000 (+/- 50). Then accomplish the following:
 - a. All engine and transmission instruments normal or in the green

UH-1B Start/Shut Down Checklist

- b. Hot air valve of DE-ICE switch – ON, note EGT increase**
- c. Hot air valve of DE-ICE switch – OFF, note EGT decrease**
- d. LOW RPM switch – Audio**
- e. GOVERNOR RPM INCREASE-DECREASE switch. Actuate through full range: 6000 – 6700, set at 6600**
- f. FORCE TRIM – OFF Check control freedom**
- g. HYDRAULIC CONTROL – OFF – CAREFULLY check control travel, then ON**
- h. FORCE TRIM – ON (Check Operation of the cyclic force trim button**
- i. Communication and Navigation Radios – As desired**

3-24. BEFORE TAKE-OFF

- a. Collective pitch control – Minimum pitch and friction adjusted as desired**
- b. Cyclic control – Adjust friction as desired**
- c. Flight instruments – Check operation and settings**
- d. Pitot heat – On, as required**
- e. Cabin heater – Off for take-off**

3-48. ENGINE SHUT-DOWN

- a. Governor RPM increase-decrease switch – decrease 10 seconds. Move throttle to Flight Idle: GAS PRODUCER RPM: 56% to 58%**
- b. LOW RPM switch – OFF after checking for AUDIO operation**
- c. FORCE TRIM – ON**
- d. Starter-Generator switch – START**
- e. Anti-collision light – OFF**
- f. Radio and ICS switches - OFF**
- g. EGT – stabilize for two minutes**
- h. Engine Oil Pressure – 25 psi minimum**
- i. Engine Oil Temperature – 93C maximum**
- j. Transmission Oil Temperature – 100C maximum**
- k. Transmission Oil Pressure – 30 psi minimum**
- l. Inverter switch – OFF**

UH-1B Start/Shut Down Checklist

- m. Throttle – FULL OFFF**
- n. FUEL START switch – OFF**
- o. FUEL MAIN Switch – OFF**
- p. All electrical switches - OFF**
- q. Battery Switch – OFF**
- r. Collective – Full down, engage lock**
- s. Cyclic friction – ON**