

# UH-60L - Normal Procedures

# V2.0

Based on the Real manual, Mod's Guide, and Lucas Orsi videos.

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Blue: optional items. Red: items not applicable or not implemented on DCS.

## BEFORE STARTING ENGINES

If at night, turn on the Flashlight with [LAlt + L].

To request fuel or armament prior to having electric power, it's necessary to open the pilot door, with [LCtrl + C], or the Ground Crew won't be able to hear you. The door is not clickable yet.

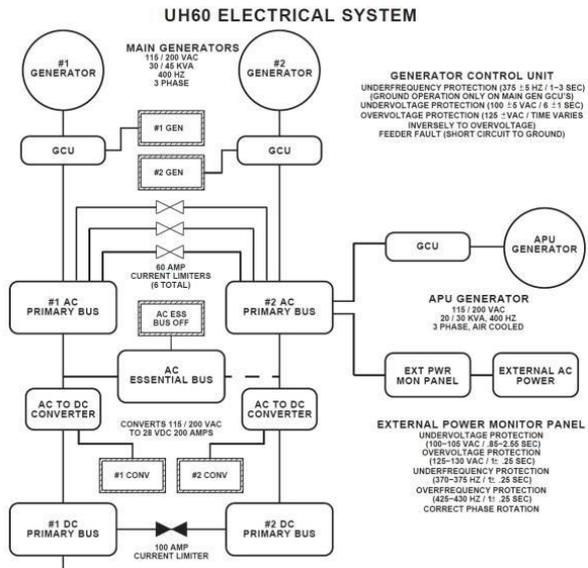
### 1. PARKING BRAKE - Release, then set.

The parking brakes are applied by pressing the toe brake pedals, pulling the parking brake handle to its fully extended position, and then releasing the toe brakes while holding the handle out.

If there is electric DC power, an advisory light will go on, indicating PARKING BRAKE ON.

Pressing either pilot or copilot left brake pedal will release the parking brakes, the handle will return to the off position and the advisory light will go off

### 2. GENERATORS NO. 1 and NO. 2 switches – Set to ON, with a right click.



3. AIR SOURCE HEAT/START switch – Set to APU (OFF for external airsource), with a right click.

The pneumatic start system uses an air turbine engine start motor for engine starting. Three pneumatic sources may provide air for engine starts: the APU, engine cross-bleed, or a ground source.

4. BATT(ERY) switch – ON, with a right click.

A 24-volt DC battery provides secondary or emergency DC power, supplied to the battery and battery utility buses for operating DC essential equipment during cold start or primary DC malfunction.

The BATT switch should be ON when either external power, APU generator or main generator power is applied to the helicopter. This will recharge the battery.

#### **COCKPIT EQUIPMENT CHECKS.**

5. Caution/advisory panel BRT/DIM-TEST switch - Press button to test, with a Left click. Caution/advisory/warning lights illuminate steady. FUEL LOW #1 and #2 caution lights flashing.

6. APU Fuel Pump – Set to APU BOOST, with a left click.

APU fuel is supplied to the APU from the left main fuel tank. The FUEL PUMP switch must be at APU BOOST for all APU operation, except engine priming.

7. APU CONTR switch – ON (right click).

The APU system provides pneumatic power for main engine starting and cabin heating, and electrical power for ground and emergency in-flight electrical operations.

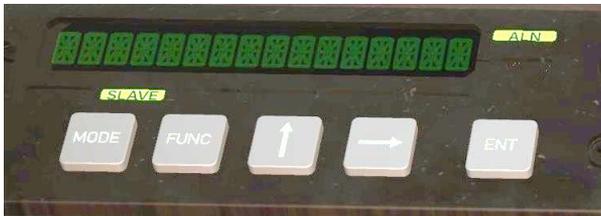
The APU CONTR switch, controls the operation of the APU. Placing the switch ON starts the APU and allows it to operate. The APU is off when the switch is OFF. The APU ON green advisory will illuminate once the APU is running.

The APU FAIL caution light will be on any time the APU automatically shutsdown. The APU OIL TEMP HI caution light is on when APU oil temperature is above normal range.

8. APU generator switch – ON, with a right click.

Emergency power is provided by a generator driven by the auxiliary power unit (APU). The APU generator is capable of supplying all flight-essential AC and DC bus loads. The green advisory APU GEN ON will illuminate once the generator is online.

9. The AHRS (Attitude and Heading Reference System) begins its inertial alignment as soon as AC power is being generated.



While aligning it will display both the ALN and the SLAVE flags, once the alignment is complete only the SLAVE flag will remain lit.

Lighting of the lower Console is needed to be able to see the AHRS alignment lamps.

The AHRS uses an inertial unit to measure the angular rate, acceleration, and Earth's magnetic field. These measurements can then be used to derive an estimate of the object's attitude and heading.

10. Interior/exterior lighting – Set as needed.

10.1 Console Lighting – NVG lights are provided for both the Upper and Lower Consoles:

Upper Console knob

Lower Console knob

10.2 Cockpit Dome Lighting switch – Two blue-green and two white cockpit flood lights are on the overhead cockpit floodlight panel, marked BLUE (for NVG (Night Vision Goggles)), OFF and WHITE.

10.3 Glare shield Lights knob – Adjusts six lights installed in the instrument panel glare shield, providing secondary lighting for the instrument panel.

10.4 Instrument Lights - Instrument lights are grouped into flight instrument and non-flight instruments. The flight instrument lights are divided into pilot's and copilot's. Lights are controlled by individual rotary intensity controls:

CPLT FLT INSTR knob

PILOT FLT INSTR knob

NON FLT knob

10.5 Lighted Switches knob – It's a dimmer control to reduce illumination level of some switches. The Caution/advisory panel BRT/DIM-TEST switch works as a toggle for this knob, switching between max brightness or rotary dimmer.

10.6 Position Lights – As desired.

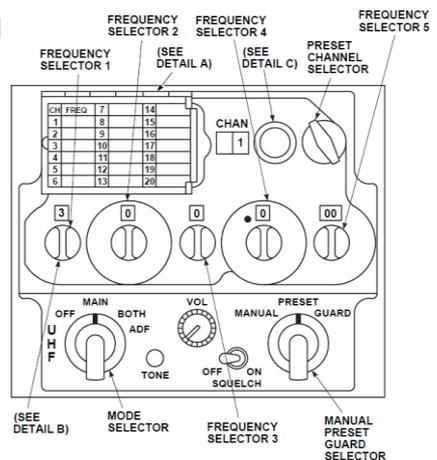
10.7 Navigation Lights – As desired

10.8 Anti-collision Lights – As desired

10.9 Formation Lights – As needed.

11. Tune UHF Radio to ATC frequency.

11.1 Set UHF Function knob to MAIN or BOTH.



11.2 Set the frequency knobs to ATC's frequency.

12. Set Mode knob to MNL, for manual frequency tuning.

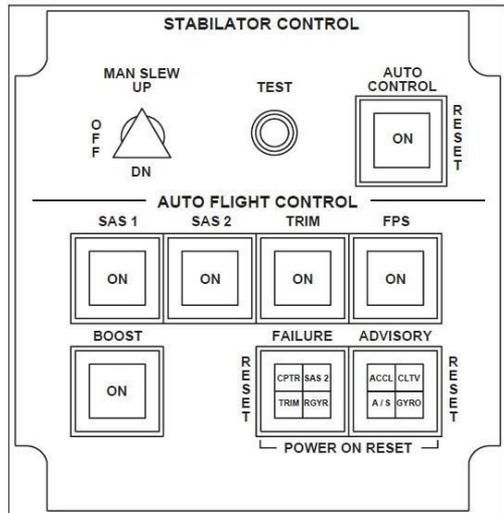
13. Request start-up clearance.

Click the PTT to get the Communications Menu. Press F5 for ATC, select the airbase and request clearance for Start-Up.

14. Automatic Flight Control System – Configure.

The AFCS enhances the stability and handling qualities of the helicopter. It is comprised of four basic subsystems: SAS, Trim, FPS and Stabilator:

14.1 Stability Augmentation System (SAS):



The stability augmentation system provides short-term rate damping in the pitch, roll, and yaw axes. In addition, both SAS 1 and SAS 2 enhance turn coordination at airspeeds greater than 60 knots.

SAS 1 – Set to OFF for now, because lack of AC power causes erratic operation of SAS 1. When this condition is encountered in flight, the pilot must manually disengage SAS 1.

SAS 2 – Set to ON.

14.2 Trim System:

When the TRIM is engaged on the AUTO FLIGHT CONTROL panel, the pitch, roll and yaw trim systems are activated to maintain position of the cyclic and tail rotor controls. Proper operation of the yaw trim requires that the BOOST on the AUTO FLIGHT CONTROL panel be on.

TRIM – Set to ON BOOST - Push ON. Flight Path Stabilization (FPS):

Proper FPS operation requires that the BOOST, TRIM and SAS 1 and/or SAS2 functions have been set to ON.

FPS – Push to ON.

### 14.3 Stabilator System:

The helicopter has a variable angle of incidence stabilator to enhance handling qualities. The automatic mode of operation positions the stabilator to the best angle of attack for the existing flight conditions.

Check that AUTO CONTROL is ON.

When the automatic mode is engaged, no further pilot action is required for stabilator operation.

### 15. Stabilator POS - Check.

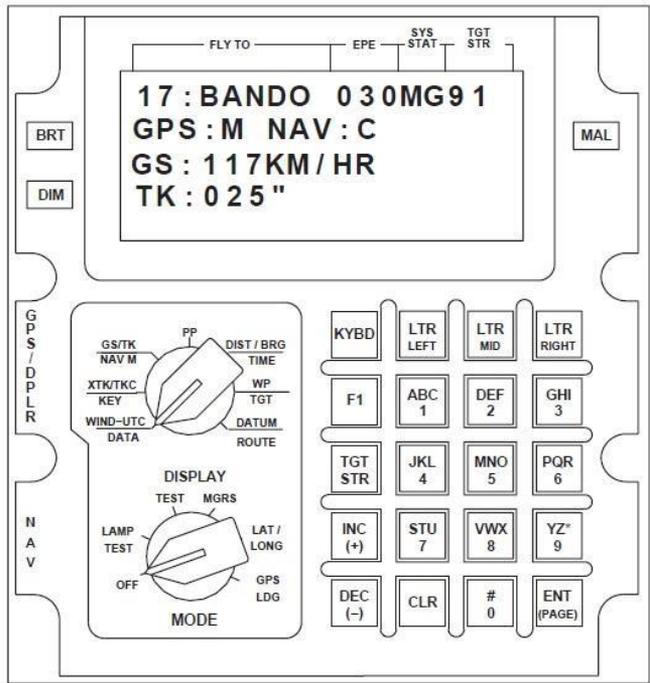
The STAB POS indicator should be between 34° and 42° down.



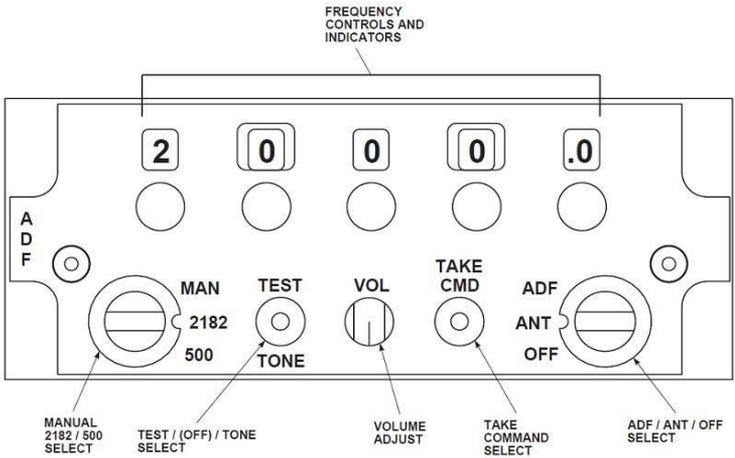
### 16. Avionics - On.

16.1. Doppler/GPS – Turn it on turning the MODE knob to either MGRS or LAT/LONG.

Press ENT (PAGE) button to accept its start-up data, press it a second time to accept the DAFIF STATUS, you should now be on the WIND- UTC DATA page.

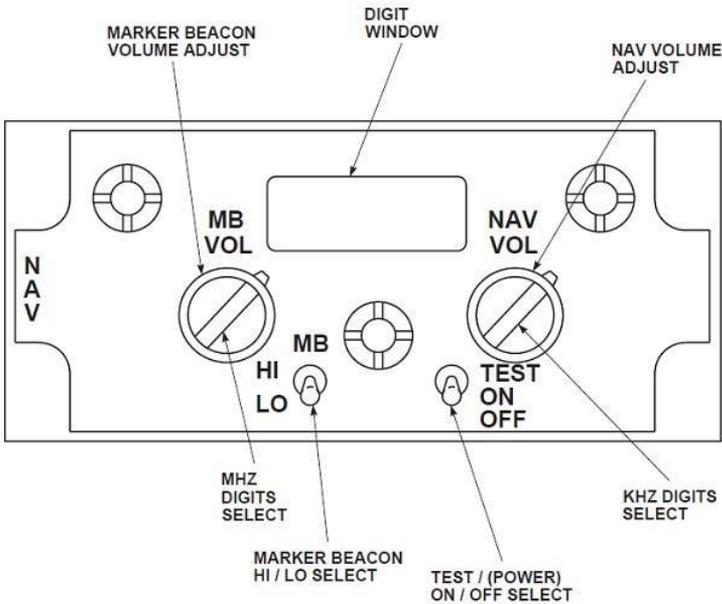


16.2. ADF Control – Set to ANT or ADF.



### 16.3. VOR/ILS Control – Set to ON

Check AHRS - SLAVE indicator must be lit and alignment complete (ALN indicator is off). Check that HSI heading matches the one on the magnetic compass.



### 16.4. Radios - AS NEEDED

16.5. RWR - AS NEEDED and adjust brightness on front instrument panel

16.6. Helmet Mounted Sight - AS NEEDED

16.7. Barometric altimeters - Set.

16.8. Radar Altimeter – Set LOW and High alarms, by turning its knobs.

## 17. STARTING ENGINES.

17.1. ENG FUEL SYS selector - As required. Each fuel system has a selector valve which is manually operated through the ENG FUEL SYS selector lever on the overhead engine control quadrant.

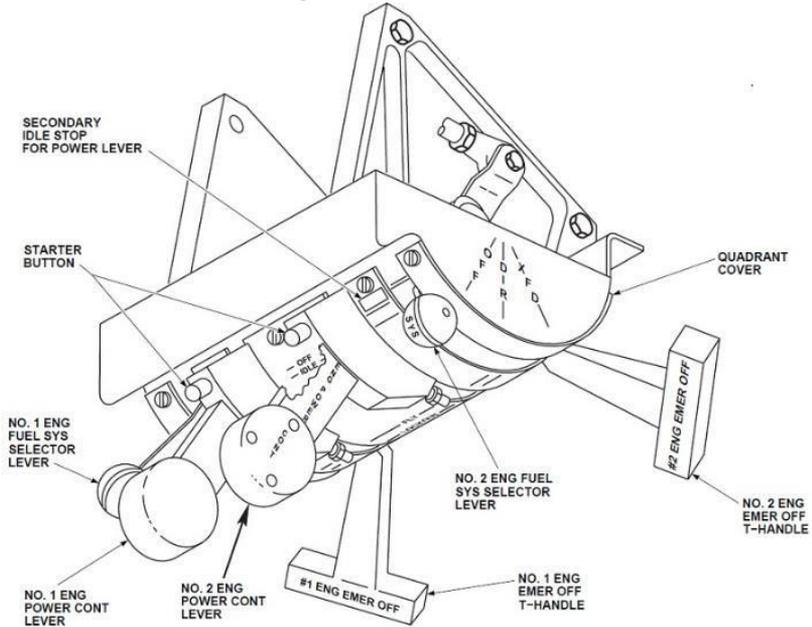
17.2 With the selectors at OFF, the control valves are closed,

allowing no fuel flow to the engines. When the selectors are moved forward to DIR, the selector valves are opened, providing fuel flow for each engine from its individual fuel tank.

17.3 If a tank is empty, or you wish to equalize fuel in the tanks, the ENG FUEL SYS selector of the engine that normally feeds from the empty or low-level tank is moved to XFD. This connects that engine to the other tank through the cross-feed system.

- ENGINE IGNITION switch - ON. (Not simulated)

18. GUST LOCK caution light – Check it is Off.



19. Start #2 (Second) Engine – Either engine can be started first. Start is as follows:

19a. Starter button – Press and hold until Ng SPEED increases; release.

When the start button is pressed, air from the selected source is directed through the start control valve to the engine start motor. The #1 ENGINE STARTER or #2 ENGINE STARTER caution light will go on at this time and remain on until the starter drops out.

19b. TGT - Check it's below 80°C, before advancing the ENG POWER CONT lever to Idle.

19c. ENG POWER CONT lever – Advance to IDLE detent for light-off and acceleration, by clicking on its base.

19d. System indications – Check.

19e. ENGINE STARTER caution light. Check it's off at 52-65% Ng SPEED.

20. Start #1 (First) Engine – Start is as follows:

20a. Starter button – Press and hold until Ng SPEED increases; release. The #1 ENGINE STARTER caution light will go on at this time and remain on until the starter drops out

20b. TGT - Check it's below 80°C, before advancing the ENG POWER CONT lever to Idle.

20c. ENG POWER CONT lever – Advance to IDLE detent for light-off and acceleration, by clicking on its base.

20d. System indications – Check.

20e. ENGINE STARTER caution light. Check it's off at 52-65% Ng SPEED.

21. Systems - Check.

21a. Ng SPEEDS 63% or greater and within 3% of each other.

21b. % RPM - Check that % RPM 1 or 2 is not in the range of 20% to 40% or over 70%. Adjust ENG POWER CONT levers as required.

21c. XMSN PRESS – Check, should be 30 to 65 psi, maximum

130 psi. 21d. ENG OIL PRESS – Check, should be 26 to 100 psi,

maximum 120 psi.

- 21e. #1 and #2 HYD PUMP caution lights - Check off.
- 22. Engine warmup - If temperature is below -17 °C, warm engines at IDLE for 3 minutes.
- 23. ENGINES RUN-UP
  - 23a. ENG POWER CONT lever(s) – Advance into FLY position.
  - 23b. #1 and #2 GEN caution lights. – Check OFF.
  - 23c. % TRQ 1 and 2 – Check they are matched within 5%.
- 24. FUEL PUMP switch - OFF.
  - 24a. APU GEN – OFF.
- 25. APU CONTR switch - OFF.
- 26. AIR SOURCE HEAT/START switch - As required.
- 27. ENG FUEL SYS selectors - As required.
- 28. SAS1 - ON.
- 29. Doppler/GPS mode select switch – On instruments panel, set DPLR GPS and NAV MODE buttons to ON.