Section 2

NORMAL PROCEDURES

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Section 2

NORMAL PROCEDURES

2-1. INTRODUCTION

This section contains instructions and procedures for operating helicopter from planning stage, through actual flight conditions, to securing helicopter after landing.

Normal and standard conditions are assumed in these procedures. Pertinent data in other sections is referenced when applicable.

Instructions and procedures contained herein are written for purpose of standardization and are not applicable to all situations.

2-2. FLIGHT PLANNING

Planning of mission to be accomplished will provide pilot with data to be used during flight. Information to be used can be compiled as follows:

Check type of mission to be performed and destination.

Select appropriate performance charts to be used from Section 4.

2-2-A. TAKEOFF AND LANDING

Refer to Section 1 for takeoff and landing weight limits and to Section 4 for takeoff and landing data.

2-2-B. WEIGHT AND BALANCE

Determine proper weight and balance of helicopter as follows:

Consult applicable weight and balance instructions provided in Section 5.

Determine weight of fuel, oil, load, etc., compute takeoff and anticipated landing GW, and check helicopter CG locations.

Ensure weight and balance limitations in Section 1 are not exceeded.

2-3. PREFLIGHT CHECK

Pilot is responsible for determining whether helicopter is in condition for safe flight. Refer to Figure 2-1 for preflight check sequence.

NOTE

Preflight check is not intended to be a detailed mechanical inspection, but a guide to check condition of helicopter. This check may be made as comprehensive as conditions warrant.

All areas checked shall include a visual check for evidence of corrosion, particularly when helicopter is flown near or over salt water or in areas of high industrial emissions.

2-3-A. BEFORE EXTERIOR CHECK

Flight planning — Completed.

Gross weight and CG — Compute (BHT-212-MD-1, Section 1).

Publications — Checked.

Portable fire extinguisher — Condition and security.

Fuel sumps — Drain samples as follows:

BOOST PUMP switches — OFF.

FUEL switches — OFF.

BATTERY BUS 1 switch — ON.

Fuel sump drain buttons (left and right) — Depress.

Fuel filters — Drain before first flight of day as follows:

BOOST PUMP switches — ON.

FUEL switches — ON.

NOTE

Drain each side independently for a duration not to exceed 15 seconds.

Fuel filter (left and right) — Drain samples.

FUEL switches — OFF.

BOOST PUMP switches — OFF.

BATTERY BUS 1 switch — OFF.

2-3-B. EXTERIOR CHECK

WARNING

IF HELICOPTER HAS BEEN EXPOSED TO SNOW OR ICING CONDITIONS, SNOW AND ICE SHALL BE REMOVED PRIOR TO FLIGHT.

1. FUSELAGE — FRONT

Rotor blade — Condition and cleanliness.

Cabin area — Condition, all glass clean.

Pitot tube(s) — Cover(s) removed, unobstructed.

Static ports (left and right) — Unobstructed.

Remote hydraulic filter bypass indicator — Verify normal.

Cabin nose ventilators — Unobstructed.

Nose compartment — Condition and doors secured.

Battery vent and drain tubes — Unobstructed.

Searchlight and landing light — Stowed.

Antenna — Condition, security.

Deleted

Deleted

FUSELAGE — CABIN LEFT SIDE

Copilot and passenger doors — Condition and operation, glass clean. Security of emergency release handles.

Position lights — Condition.

Landing gear — Condition, ground handling wheels removed.

Engine air intake — Cover removed, unobstructed.

3. FUSELAGE — AFT LEFT SIDE

Drain lines — Clean, unobstructed.

Engine compartment — Check.

Engine oil level — Verify presence of oil in sight gauge and proper oil level.

Engine governor spring — Condition.

Engine fire extinguisher — Bottle pressure gauge and temperature range.

Combining gearbox filter — Bypass indicator retracted.

Access doors and engine cowling — Secured.

Engine exhaust ejector tubes — Covers removed, unobstructed.

4. FUSELAGE — AFT

Tailboom — Condition.

Tail rotor driveshaft covers — Secured.

Synchronized elevator — Condition, security.

Main rotor blade — Condition, cleanliness. Remove tie-down.

Tail rotor gearbox — Verify presence of oil and proper level in sight gauge, filler cap, and chip detector plug security.

Tail rotor — Condition, free movement on flapping axis.

Tail rotor yoke — Evidence of static stop contact damage (deformed static stop yield indicator).

Intermediate gearbox — Verify presence of oil and proper level in sight gauge, filler cap, and chip detector plug security.

Tail skid — Condition, security.

Synchronized elevator — Condition, security.

Tailboom — Condition.

Baggage compartment — Check smoke detector; condition and security. Cargo and door secured.

5. FUSELAGE — AFT RIGHT SIDE

Engine fire extinguisher — Bottle pressure gauge and temperature range.

Combining gearbox oil — Verify presence of oil and proper level in sight gauge. Close access door.

Engine compartment — Check.

Engine oil level — Verify presence of oil and proper level in sight gauge.

Access doors and engine cowling — Secured.

Fuel filler — Check fuel quantity, secure cap.

6. FUSELAGE — CABIN RIGHT SIDE

Engine air intake — Cover removed, unobstructed.

Transmission oil — Verify presence of oil and proper level in sight gauge.

Pilot and passenger doors — Condition and operation, glass clean. Security of emergency release handles.

Position lights — Condition.

Landing gear — Condition, ground handling wheels removed.

7. CABIN TOP

Main rotor and controls — Condition, fluid levels in all reservoirs.

Transmission oil filler cap — Secured.

Hydraulic oil reservoirs — Check sight glasses for proper fluid levels. Caps secured.

Antenna(s) — Condition and security.

Combining gearbox oil filler cap — Secured.

Anticollision light — Condition and security.

CAUTION

IF ANY TEMP-PLATE IS MISSING OR HAS BLACK DOTS, MAINTENANCE PERSONNEL SHALL ASSIST IN DETERMINING AIRWORTHINESS AS STATED IN THE BHT-212-MM.

Main driveshaft and coupling — Condition, security, and grease leakage. Check Temp-Plates (four places each coupling) for evidence of elevated temperature indicated by dot changing color to black.

Engine air intakes — Unobstructed, particle separator doors closed.

Engine and transmission cowling — Secured.

Fresh air inlet screen — Unobstructed.

2-4. INTERIOR AND PRESTART CHECK

Cabin interior — Cleanliness, security of equipment.

Portable fire extinguishers — Proper charge, secured.

Passenger seats — Secured, each occupied seat equipped with seat belt.

Crew and passenger doors — Secured.

Cargo load — Secured.

Protective breathing equipment (if required) — Condition and properly serviced.

Seat and pedals — Adjust.

Seat belt and shoulder harness — Fasten and adjust.

Shoulder harness inertia reel and lock — Check.

Flight controls — Freedom of movement, position for start.

Cyclic — Centered, friction as desired.

Collective — Full down.

Transmission chip detector indicators (if installed) — Check.

Lower pedestal circuit breakers — In.

Collective control head switches — OFF.

COMPASS CONTROL slaving switch(es) — MAG (slave position).

Radio equipment — OFF.

Fuel INTCON switch — Normal.

ENGINE 1 BOOST PUMP and ENGINE 2 BOOST PUMP switches — OFF.

Fuel XFEED switch — NORM.

ENGINE 1 FUEL and ENGINE 2 FUEL switches — OFF.

ENGINE NO. 1 PART SEP and ENGINE NO. 2 PART SEP switches — NORM (if installed).

ENGINE NO. 1 GOV and ENGINE NO. 2 GOV switches — AUTO.

HYDR SYS NO. 1 and HYDR SYS NO. 2 switches — ON.

STEP switch (if installed) — As desired.

FORCE TRIM switch — ON, cover down.

Instruments — Static check.

STATIC SOURCE switch (if installed) — PRI.

Altimeter(s) — Set.

Clock — Set and running.

FIRE EXT switch — OFF.

FIRE PULL handles — In (forward).

AFT DOME LT rheostat and switch — OFF.

PITOT STATIC HEATERS switch — OFF.

WIPERS switch — OFF.

CARGO REL switch (if installed) — OFF.

VENT BLWR switch — OFF.

HEAT AFT OUTLET switch — OFF.

SYSTEM SELECTOR switch — OFF.

AIR COND TEMP CONT switch (if installed) — As desired.

NAV AC switch (if installed) — NORM.

Overhead circuit breakers — In.

All light rheostats — OFF.

EXTERIOR LIGHT POSITION switch — OFF.

EXTERIOR LIGHT ANTI COLL switch — OFF.

INV 1, INV 2, and INV 3 switches — OFF.

NON ESS BUS switch — NORMAL.

GEN 1 and GEN 2 switches — OFF.

External power — Connect (as desired). Check DC voltmeters for 27 ±1 volts. Adjust external power source, if required.

BATTERY BUS 1 and BATTERY BUS 2 switches — ON, check BATTERY caution light illuminates (S/N 30554 and subsequent).

NOTE

Test all lights when night flights are planned or anticipated. Accomplish light tests with external power connected or during engine run-up.

MASTER CAUTION switch (overhead) — TEST, check all caution panel lights extinguish except CAUTION PANEL segment and MASTER CAUTION light. (Both ENG OUT lights and RPM light will dim during test (S/N 30597 and subsequent.))

CAUTION

ROTOR BRAKE HANDLE SHALL BE IN DETENT POSITION (OFF) AT ALL TIMES WHEN ENGINES ARE RUNNING.

ROTOR BRAKE lights (if installed) — Test. Pull brake lever and check that both lights illuminate; return to off and check lights extinguish.

FIRE PRESS TO TEST switch — Press and release. FIRE PULL 1 and FIRE PULL 2 warning lights illuminate when switch is pressed and extinguish when switch is released.

BAGGAGE FIRE warning light TEST button — Press to test (verify light flashes).

CARGO RELEASE ARMED light (if installed) — TEST.

Caution panel light test switch — TEST and RESET.

INV 1 switch — ON, check No. 1 AC voltmeter for 104 to 122 volts (S/N 30554 and subsequent).

INV 2 switch — ON, check No. 2 AC voltmeter for 104 to 122 volts (S/N 30554 and subsequent).

FUEL QTY SEL switch — LEFT, then RIGHT; check fuel quantity gauge indicates lower fuel cell quantity of 270 to 300 pounds (each).

2-5. ENGINE START

NOTE

If helicopter has been cold soaked in ambient temperatures of -18°C (0°F) or less, both throttles will be difficult to move and follow-through coupling may be increased.

Throttles — Rotate engine 1 throttle full open, then back against idle stop. Actuate ENG 1 IDLE STOP REL, roll engine 1 throttle to full closed, then adjust friction as desired. Repeat procedure using engine 2 throttle and ENG 2 IDLE STOP REL.

NOTE

When either IDLE STOP REL is actuated, appropriate idle stop plunger is automatically held open for 5 seconds. Idle stop plunger will not release if pressure is applied toward closed position of throttle.

Moderate frictions should be applied to overcome follow-through coupling between throttles.

RPM INCR DECR switch — DECR for 8 seconds.

NOTE

Either engine may be started first; however, following procedure is provided for starting engine 1 first.

2-5-A. ENGINE 1 START

ENGINE 1 BOOST PUMP switch — ON, check ENG 1 FUEL BOOST caution light extinguished.

ENGINE 1 FUEL switch — ON. (ENG 1 FUEL VALVE caution light will illuminate momentarily (S/N 30597 and subsequent)).

Engine 1 FUEL PRESS — Check.

Rotor — Clear.

CAUTION

PROLONGED EXPOSURE TO AMBIENT TEMPERATURES OF 0°C (32°F) OR LESS MAY FREEZE MOISTURE IN ENGINE FUEL CONTROL SYSTEM. MONITOR ENG RPM (N_2) DURING COLD WEATHER STARTING FOR OVERSPEED. IF AN OVERSPEED APPEARS IMMINENT, ABORT START AND CLOSE THROTTLE TO OFF POSITION.

EITHER WAIT 3 MINUTES AND RESTART THE ENGINE OR START THE OTHER ENGINE. THE HEAT GENERATED WILL MELT THE MOISTURE, ALLOWING THE FUEL CONTROL TO FUNCTION NORMALLY.

START switch — ENG 1 position. Observe starter limitations.

Engine 1 ENGINE OIL pressure — Indicating.

Engine 1 throttle — Open to idle at 12% GAS PROD RPM (N_1) minimum.

Engine 1 ITT — Monitor to avoid a hot start. Maximum ITT during start is 1090°C, not to exceed 2 seconds above 810°C for PT6T-3 or 2 seconds above 960°C for PT6T-3B. If ITT continues to rise, abort start by activating ENG 1 IDLE STOP release and rolling throttle fully closed. Starter should remain engaged until ITT decreases. Do not attempt restart until corrective maintenance has been accomplished.

NOTE

If engine fails to start, refer to ENGINE FAILS TO START procedures in this section.

START switch — Off at 55% GAS PROD RPM (N_1).

GAS PROD RPM (N_1) — Check 61 ±1% when throttle is on idle stop.

If battery start:

GAS PROD RPM (N_1) — Check 71% minimum.

GEN 1 switch — ON.

AMPS 1 — Check at or below 150 amps.

NOTE

During extremely cold ambient temperatures, idle rpm will be high and ENGINE OIL, XMSN OIL, and GEAR BOX OIL pressures may exceed maximum limits for up to 2 minutes after starting.

Do not increase ROTOR above 80% RPM until XMSN OIL temperature is above 15 °C.

ENGINE OIL, XMSN OIL, AND GEAR BOX OIL pressures — Check.

ENG 1 PART SEP OFF caution light — Extinguished.

Engine 1 throttle — Increase to 85% ENG RPM (N_2). Friction as desired.

2-5-B. ENGINE 2 START

ENGINE 2 BOOST PUMP switch — ON, check ENG 2 FUEL BOOST caution light extinguished (FUEL XFEED caution light will illuminate momentarily SN 30597 and subsequent.)

ENGINE 2 FUEL switch — ON. (ENG 2 FUEL VALVE caution light will illuminate momentarily SN 30597 and subsequent.)

Engine 2 FUEL PRESS — Check.

START switch — ENG 2 position. Observe starter limitations.

Engine 2 ENGINE OIL pressure — Indicating.

Engine 2 throttle — Open to idle at 12% GAS PROD RPM (N_1) minimum.

Engine 2 ITT — Monitor. Observe ITT limitations.

START switch — Off at 55% GAS PROD RPM (N_1).

GAS PROD RPM (N_1) — Check 61 ± 1% when engine 2 throttle is on idle stop.

CAUTION

ENSURE SECOND ENGINE ENGAGES AS THROTTLE IS INCREASED. A NON-ENGAGED ENGINE IS INDICATED BY 10 TO 15% HIGHER ENG RPM (N_2) THAN ENGAGED ENGINE AND NEAR ZERO TORQUE. IF A NON-ENGAGEMENT OCCURS, CLOSE THROTTLE OF NON-ENGAGED ENGINE. WHEN NON-ENGAGED ENGINE HAS STOPPED, SHUT DOWN ENGAGED ENGINE.

IF SUDDEN (HARD) ENGAGEMENT OCCURS, SHUT DOWN BOTH ENGINES. MAINTENANCE ACTION IS REQUIRED.

Engine 2 throttle — Increase slowly to 85% ENG RPM (N_2). Monitor tachometer and torquemeter to verify engagement of second engine.

Engine 2 ENGINE OIL pressure — Check.

ENG 2 PART SEP OFF light — Extinguished.

2-5-C. POST START

External power — Disconnect if used, GEN 1 switch — ON.

GEN 2 switch — ON (BATTERY BUS 1 will switch OFF automatically SN 30554 and subsequent).

CAUTION

IF OPERATING ON BATTERY BUS 1, POSITION *INV 3* SWITCH TO *ON DC BUS 1* (SN 30554 and subsequent).

ONLY ONE BATTERY SWITCH SHALL BE ON DURING FLIGHT (S/N 30554 AND SUBSEQUENT).

Caution lights — Check all extinguished.

ENGINE OIL, XMSN OIL, and GEAR BOX OIL temperatures and pressures — Within limits.

AMPS 1 and AMPS 2 — Within limits.

NOTE

AMPS 2 will indicate a higher load than AMPS 1 until battery is fully charged.

Radios — ON, as required.

ELT (if installed) — Check for inadvertent transmission.

2-5-D. ENGINE FAILS TO START

When engine fails to light off within 15 seconds after throttle has been opened to idle, following action is recommended:

IDLE STOP REL switch — Actuate.

Throttle — Fully closed.

START switch — OFF.

ENGINE (1 or 2) BOOST PUMP switch — OFF.

ENGINE (1 or 2) FUEL switch — OFF.

After GAS PROD RPM (N_1) has decreased to zero, allow 30 seconds for fuel to drain from engine. Conduct a dry motoring run (paragraph 2-5-E) before attempting another start.

2-5-E. DRY MOTORING RUN

The following procedure is used to clear an engine whenever it is deemed necessary to remove internally trapped fuel and vapor.

Throttle — Fully closed.

ENGINE (1 or 2) BOOST PUMP switch — ON.

ENGINE (1 or 2) FUEL switch — ON.

ENG IGN SYS circuit breaker — Pull out.

START switch — Engage for 15 seconds, then disengage.

ENGINE (1 or 2) FUEL switch — OFF.

ENGINE (1 or 2) BOOST PUMP switch — OFF.

ENG IGN SYS circuit breaker — In.

Allow required cooling period for starter before proceeding. Follow normal start sequence as described on preceding pages. Refer to Section 1, paragraph 1-12-C.

2-6. SYSTEMS CHECK

2-6-A. FORCE TRIM CHECK

Flight controls — Friction off; collective lock removed.

Cyclic and pedals — Move slightly each direction to check force gradients.

Cyclic FORCE TRIM release button — Press; check trim releases with button pressed, reengages with button released.

FORCE TRIM switch — OFF; check trim disengages.

FORCE TRIM switch — ON.

2-6-B. PRELIMINARY HYDRAULIC CHECK

Throttles — Set to idle.

NOTE

Uncommanded control movement or motoring with either hydraulic system off may indicate hydraulic system malfunction.

HYDR SYS NO. 1 switch — OFF, then ON.

HYDR SYS NO. 2 switch — OFF, then ON.

2-6-C. ENGINE FUEL CONTROL CHECK

NOTE

Perform the Engine Fuel Control Check when required by maintenance.

Throttles — Idle.

NOTE

Do not allow GAS PROD (N_1) RPM to decrease below 50%.

At approximately 8000 feet H_P, GAS PROD RPM (N_1) may not change significantly when manual fuel control is selected.

GOV switch (ENGINE NO. 1 or 2) — MANUAL, observe change in GAS PROD RPM (N_1). Open respective throttle carefully to ensure GAS PROD RPM (N_1) responds upward, then return throttle to idle. Return GOV switch to AUTO. Check for return to original GAS PROD RPM (N_1). Check other governor in same manner.

2-6-D. GOVERNOR CHECK

No. 1 throttle — Full open. Check ENG RPM (N_2) stabilizes at 95 ±1%.

No. 2 throttle — Full open. Check ENG RPM (N_2) increases 2% and both engines stabilize at 97 ±1%.

RPM INCR DECR switch — INCR to 100% (N_2).

2-6-E. FUEL CROSSFEED VALVE CHECK

2-6-E-1. S/N PRIOR TO 30554

FUEL PUMP CROSSFEED switch — NORMAL. Position ENGINE 1 BOOST PUMP switch to OFF. Note pressure drop on No. 1 FUEL PRESS gauge, followed by a return to normal indication, showing crossfeed valve has opened and check valve is functioning properly.

Position ENGINE 1 BOOST PUMP switch to ON and position ENGINE 2 BOOST PUMP switch to OFF. Note pressure drop on No. 2 FUEL PRESS gauge, followed by a return to normal indication, showing crossfeed valve has opened and check valve is functioning properly.

NOTE

If in either of the above checks; fuel pressure is 4 to 6 PSI below normal (10 ±4 PSI), appropriate check valve is not functioning properly.

ENGINE 2 BOOST PUMP switch — ON.

FUEL PUMP CROSSFEED switch — OVERRIDE CLOSE. Position either BOOST PUMP switch to OFF. Note fuel pressure drops to zero. Position BOOST PUMP switch to ON and FUEL PUMP CROSSFEED switch to NORMAL.

2-6-E-2. S/N 30554 AND SUBSEQUENT

FUEL XFEED test switch — TEST BUS 1 and hold.

NOTE

If, after turning either boost pump off, fuel pressure remains 4 to 6 PSI below normal (10 ±4 PSI), appropriate check valve is not functioning properly.

ENGINE 1 BOOST PUMP switch — OFF. Check No. 1 FUEL PRESS decreases, then returns to normal. (This indicates that crossfeed valve has opened by bus No. 1 power and check valve is functioning properly.) ENGINE 1 BOOST PUMP switch — ON.

FUEL XFEED test switch — TEST BUS 2 and hold.

ENGINE 2 BOOST PUMP switch — OFF. Check No. 2 FUEL PRESS decreases, then returns to normal. ENGINE 2 BOOST PUMP switch — ON.

FUEL XFEED test switch — NORM.

FUEL XFEED switch — OVRD CLOSE.

ENGINE 1 (or ENGINE 2) BOOST PUMP switch — OFF. Check fuel pressure drops to zero on selected system. ENGINE 1 (or ENGINE 2) BOOST PUMP switch — ON.

FUEL XFEED switch — NORM.

2-6-F. ELECTRICAL SYSTEMS CHECK

DC voltmeters — Check 27 ±1 VDC.

AC voltmeters — Check 104 to 122 VAC.

AC system — Check as follows:

INV 3 switch (if installed) — ON DC BUS 2; check INVERTER 3 caution light extinguishes.

INV 2 switch — OFF, INVERTER 2 caution light illuminates. Check No. 2 AC voltmeter for indication INVERTER 3 (if installed) has assumed the load.

INV 2 switch — ON.

INV 3 switch (if installed) — OFF; confirm INVERTER 2 caution light extinguishes and INVERTER 3 caution light illuminates.

INV 3 switch (if installed) — ON DC BUS 1, check INVERTER 3 caution light extinguishes.

INV 1 switch — OFF, INVERTER 1 caution light illuminates. Check No. 1 AC voltmeter for indication INVERTER 3 (if installed) has assumed the load.

INV 1 switch — ON.

INV 3 switch (if installed) — OFF, confirm INVERTER 1 caution light extinguishes and INVERTER 3 caution light illuminates.

INV 3 switch (if installed) — ON DC BUS 2; check INVERTER 3 caution light extinguishes.

2-6-G. CABIN HEATER CHECK

GAS PROD — Check 75% RPM (N_1) minimum (both engines).

Thermostat knob — Full COLD.

CAUTION

HEATER SWITCH SHALL BE TURNED OFF WHEN HEATED AIRFLOW DOES NOT SHUT OFF AFTER THERMOSTAT IS TURNED TO FULL COLD, HEATER AIR LINE LIGHT ILLUMINATES, OR CABIN HTR CIRCUIT BREAKER TRIPS.

CAUTION

DO NOT OPERATE HEATER ABOVE 21°C OAT.

HEATER switch — ON.

VENT BLOWER switch — ON.

Thermostat setting — Increase and observe heated airflow.

DEFROST lever — ON. Check airflow is diverted from pedestal outlets to windshield nozzles. Return lever to OFF.

AFT OUTLET switch — ON. Check airflow distributed equally between pedestal outlets and aft outlets. Return switch to OFF.

NOTE

Heater operation affects performance. Refer to Hover Ceiling and Rate of Climb charts for HEATER ON in Section 4.

HEATER switch — As desired.

VENT BLOWER switch — As desired.

2-6-H. HYDRAULIC SYSTEMS CHECK

NOTE

This check is to determine proper operation of hydraulic actuators for each flight control system. If abnormal forces, unequal forces, control binding, or motoring is encountered, it may be an indication of a malfunction of a flight control actuator.

FORCE TRIM switch — OFF.

Collective — Down, friction removed.

ROTOR RPM (N_R) — Set to 100%.

Cyclic — Centered, friction removed.

Hydraulic system — Check as follows:

HYDR SYS NO. 1 switch — OFF. Check MASTER CAUTION light illuminates and HYDRAULIC caution light illuminates. Hydraulic system No. 1 pressure decreases.

Cyclic — Check normal operation by moving cyclic in an 'X' pattern, right forward to left aft, then left forward to right aft (approximately 1 inch). Center cyclic.

Collective — Check normal operation by increasing collective slightly (1 to 2 inches). Return to down position.

NOTE

Boost for tail rotor controls is furnished by hydraulic system No. 1 only. When hydraulic system No. 1 is being checked, tail rotor controls will be unboosted.

Pedals — Displace slightly left and right. Note an increase in force required to move pedals.

WARNING

DO NOT TURN BOTH HYDRAULIC SYSTEMS OFF AT SAME TIME DUE TO EXCESSIVE FORCE REQUIRED TO MOVE FLIGHT CONTROLS.

HYDR SYS NO. 1 switch — ON. Check MASTER CAUTION light extinguishes and hydraulic system No. 1 pressure returns to normal. HYDRAULIC caution light extinguishes.

HYDR SYS NO. 2 switch — OFF. Check MASTER CAUTION light illuminates and hydraulic system No. 2 pressure decreases. HYDRAULIC caution light illuminates.

Cyclic — Check normal operation of cyclic controls by moving cyclic in an 'X' pattern, right forward to left aft, then left forward to right aft (approximately 1 inch). Center cyclic.

Collective — Check normal operation by increasing collective slightly (1 to 2 inches). Return to down position.

Pedals — Displace slightly left and right. Note no increase in force required to move pedals.

HYDR SYS NO. 2 switch — ON. Check MASTER CAUTION light extinguishes and hydraulic system No. 2 pressure returns to normal. HYDRAULIC caution light extinguishes.

Cyclic and collective friction — As desired.

FORCE TRIM switch — ON.

WARNING

BOTH HYDRAULIC SYSTEMS SHALL BE OPERATIONAL PRIOR TO TAKEOFF.

System 1 will normally operate 10 to 20°C cooler than system 2.

2-7. BEFORE TAKEOFF

Engine, transmission, gearbox, hydraulic, and electrical instruments — Check readings within operational range.

Flight instruments — Check operation and set.

Position lights — As required.

Magnetic compass — Fluid level and heading.

Anticollision lights — As required.

Pitot heater — As required.

Radio(s) — Check operation and set.

Cyclic — Friction as desired.

NOTE

Moderate friction shall be applied to each throttle to overcome follow-through coupling between twist grips.

Throttles — Full open, adjust friction.

ENG RPM (N_2) — 100% (both engines).

FORCE TRIM switch — As desired.

COCKPIT VOICE RECORDER TEST switch (if installed) — Press and hold for 3 seconds. Verify meter indicates GOOD.

Passenger step switch (if installed) — As desired.

Passenger seat belts — Fastened.

All doors — Secured.

Caution and warning lights — Extinguished.

2-7-A. POWER ASSURANCE CHECK

Perform power assurance check daily. Refer to Section 4.

2-8. TAKEOFF

ENG RPM (N_2) — 100%.

NOTE

No more than 15% torque above hover power shall be used accelerating to Takeoff Climbout Speed.

Collective — Initiate takeoff from a hover height of 4 feet.

NOTE

Takeoff must be executed in accordance with height-velocity limitations for type of operation being conducted. Refer to Section 1.

Refer to Section 4 for additional climb performance data.

2-9. IN-FLIGHT OPERATIONS

ENG RPM (N_2) — Adjust INCR DECR switch to select desired RPM between 97 and 100% (100% is normal RPM.)

Airspeed — Within limits for GW and flight altitude.

Engine, gearbox, and transmission instruments — Within limits.

NOTE

Refer to applicable operating rules for high altitude operations.

2-10. DESCENT AND LANDING

CAUTION

CONDITIONS INCLUDING, BUT NOT LIMITED TO, WIND DIRECTION AND VELOCITY, CENTER OF GRAVITY, AND THE CONDITION OF THE SLOPE (LOOSE ROCK, SOFT MUD, SNOW, WET GRASS, ETC.) MAY LIMIT THE MAXIMUM SLOPE THE HELICOPTER CAN BE SAFELY LANDED ON.

Flight controls — Adjust friction as desired.

Throttles — Full open.

ENG RPM (N_2) — 100%.

FORCE TRIM switch — As desired.

Passenger STEP switch — As desired.

Flight path — Avoid critical areas of HV diagram from which a safe landing may not be made in case of single engine failure. For landing distance information in event of engine failure during approach, refer to Section 4.

2-11. ENGINE SHUTDOWN

Collective — Down.

Cyclic control and pedals — Centered and frictioned.

FORCE TRIM switch — ON.

Throttles — Idle.

ITT — Stabilize for 1 minute at idle prior to shutdown.

Engine instruments — Within limits.

ELT (if installed) — Check for inadvertent transmission.

Radios — OFF.

IDLE STOP REL switch — ENG 1.

Engine 1 throttle — Closed. Check ITT and GAS PROD RPM (N_1) decreasing.

BATTERY BUS 1 switch — ON (S/N 30554 and subsequent).

IDLE STOP REL switch — ENG 2.

Engine 2 throttle — Closed. Check ITT and GAS PROD RPM (N_1) decreasing.

GEN 1 and 2 switches — OFF.

All invertors — OFF.

ENGINE 1 FUEL switch — OFF.

ENGINE 1 BOOST PUMP switch — OFF.

ENGINE 2 FUEL switch — OFF.

ENGINE 2 BOOST PUMP switch — OFF.

CAUTION

AVOID RAPID ENGAGEMENT OF ROTOR BRAKE IF HELICOPTER IS ON ICE OR OTHER SLIPPERY OR LOOSE SURFACE TO PREVENT ROTATION OF HELICOPTER.

Rotor brake — Apply at or below 40% ROTOR RPM (N_R); return to stowed position after main rotor stops.

Pilot — Remain at flight controls until rotor has come to a complete stop.

Lighting and miscellaneous switches — OFF.

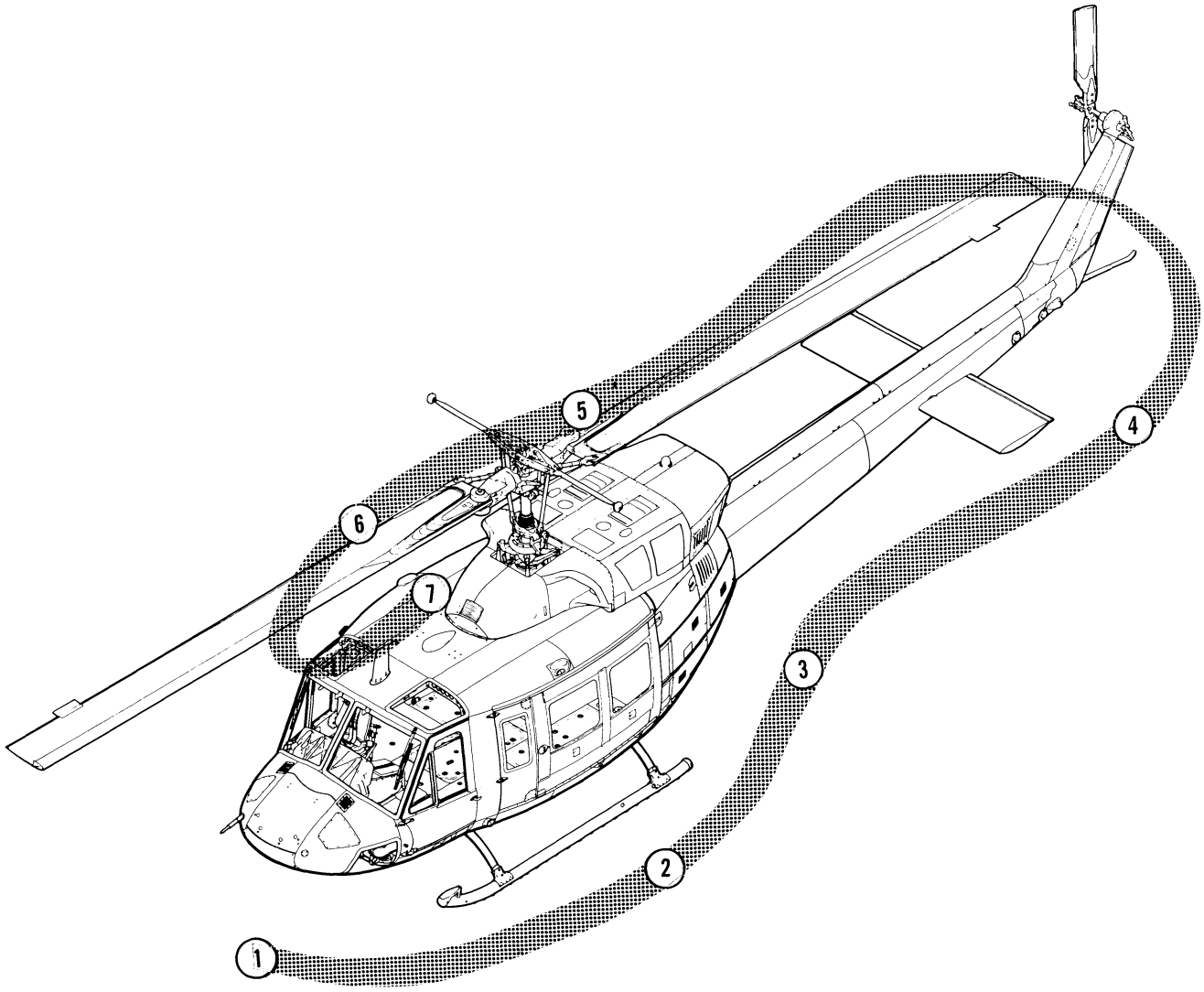
BATTERY switch(es) — OFF.

2-12. POSTFLIGHT CHECK

Main rotor and tail rotor blades — Tie down when any of following conditions exist:

- **Thunderstorms exist in local area or are forecast.**
- **Winds in excess of 20 knots or a gust spread of 15 knots exist or is forecast.**
- **Helicopter is parked within 150 feet of hovering or taxiing aircraft that are in excess of basic helicopter GW.**
- **Helicopter is to be left unattended.**

Protective covers (engine exhaust and pitot tube) — Install.



212VFR-FM-2-1

Figure 2-1. Exterior check diagram