

# **TM 1-1520-228-CL**

**TECHNICAL MANUAL  
OPERATOR'S AND  
CREWMEMBER'S  
CHECKLIST**

**ARMY MODEL  
OH-58A/C  
HELICOPTER**

**DISTRIBUTION STATEMENT A: Approved for public  
release; distribution is unlimited.**

This manual supersedes TM 55-1520-228-CL,  
dated 17 January 1989, including all changes.

**HEADQUARTERS  
DEPARTMENT OF THE ARMY**

**28 JULY 2000**

## GENERAL INFORMATION AND SCOPE

**SCOPE.** This checklist contains the checks to be accomplished during normal and emergency procedures.

**GENERAL INFORMATION.** The checklist consists of three parts: normal procedures, emergency procedures, and performance.

### NOTE

This checklist does not replace the amplified version of these procedures found in the operator's manual (TM 55-1520-228-10), but is a condensed version of each procedure.

All OH-58A and OH-58C model aircraft are now equipped with the T63-A-720 Engine.

Any items identified by the designator symbol **A** apply only to the OH-58A helicopter. Any items identified by **C** apply only to the OH-58C Helicopter. No differential identification means the information is applicable to both OH-58A and OH-58C helicopters.

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**Normal Procedures Pages.** The contents of the normal procedures of this manual are a condensation of the amplified checklists appearing in the Normal Procedures or Crew Duties portion of the applicable operator's manual. A thru-flight checklist is provided in this section and consists of asterisked "Thru-Flight" items. In addition to thru-flight, this checklist may be used for combat/tactical operations when authorized by the commander.

**Emergency Procedures Pages.** The requirements of this section of the condensed checklist manual (CL) are identical to those for the normal procedures, except that the information is drawn from the amplified checks in the emergency procedures portion of the operator's manual. The emergency requirements are subdivided into 11 classifications as follows: engine; rotors, transmission, and drive systems; fire; electrical; hydraulic; landing and ditching; flight control; lightning strike; wire strike; warning panel lights; and caution panel lights. Underlined items are the steps that must be performed immediately without reference to the checklist.

**Performance Pages.** This section consists of charts, tables, and checklists for use during preflight, takeoff, cruise, landing, and shutdown.

### **Symbols preceding numbered steps:**

- \* Indicates performance of steps is mandatory for all thru flights.
- L Indicates that a detailed procedure for this step is located in the Performance section of the condensed checklist.
- O Indicates if installed.

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**REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS.**

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of the Operator's Manual directly to: Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-LS-LP, Redstone Arsenal, AL 35898-5230. A reply will be furnished to you. You may also send in your comments electronically to our e-mail address <ls-lp@redstone.amy.mil> or by fax at (256) 842-6546 or DSN 788-6546. Instructions for sending an electronic DA Form 2028 may be found in the back of the Operator's Manual.

## **HELICOPTER AND SYSTEMS**

### **BEFORE EXTERIOR CHECK.**

1. Armament system – Not applicable.
2. Publications – Check.
- \*3. Covers, locking devices, tiedowns (except main rotor), and grounding cables – Removed and secured.
- \*4. Ignition switch – On.
5. Cockpit – Check.

### **EXTERIOR CHECK.**

#### **AREA 1 – FUSELAGE – CABIN RIGHT SIDE.**

1. Cabin interior – Check.
2. Fuselage – Check.

#### **AREA 2 – TAILBOOM – RIGHT SIDE.**

1. Tailboom – Check.
- \*2. Main rotor blade – Check.

#### **AREA 3 – TAILBOOM – LEFT SIDE.**

- \*1. Tail rotor gearbox – Check.
- \*2. Tail rotor – Check.
3. Tailboom – Check.

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**AREA 4 – AFT FUSELAGE – LEFT SIDE.**

1. Fuselage – Check.
2. Main rotor blade– Check.

**AREA 5 – FUSELAGE – CABIN LEFT SIDE.**

1. Fuselage top – Check.
2. Main rotor system – Check.
3. Fuselage – Check.
4. Cockpit – Check.

**AREA 6 – FUSELAGE – FRONT.**

1. Fuselage – Check.
- L** \*2. Crew and passenger briefing – Complete.

**BEFORE STARTING ENGINES.**

1. Armament system – Not applicable.
2. Shoulder harness lock(s) – Check.
3. Overhead switches and circuit breakers – Set.
- \*4. GPU – Connect for GPU start.
5. Avionics – Off and set.
6. Instrument panel instruments and switches – Check and set.
- \*7. Flight controls – Check and set.
- \*8. Throttle – Check. Move to open, then to idle stop; press idle release and close.

## STARTING ENGINE.

- \*1. Fireguard – Post if available.
- \*2. Rotor blades – Check clear and untied.
- L \*3. Engine – Start.

### WARNING

**Do not have battery switch on and APU system charging simultaneously for more than 2 minutes. This will prevent an unmonitored battery from overheating and possibly exploding.**

- \*4. GPU – Disconnect; then BAT switch – BAT.
- \*5. N2 – Stabilized.
- \*6. THROTTLE ADJUST – 70 percent N1.
- \*7. GEN switch – GEN.
- \*8. DC amps – Check 60 or less.
- \*9. INV switch – INV.
- \*10. Avionics – On.

## ENGINE RUNUP.

- \*1. Engine and transmission instruments – Check.
- \*2. Throttle – Slowly increase to open. Set N2 to 100 percent.
- 3. HEAT and DEICE systems – Check if use is anticipated; then set as required.
- 4. Avionics – Check as required.

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5. Armament system – Not applicable.
- \*6. Flight instruments – Check and set.
- \*7. Doors, armor side panels and seat belts – Secure.
8. Health indicator test (HIT) – Check.
- L** 9. Deceleration check – Perform if required.

### **HOVER CHECK.**

1. Flight controls – Check.
2. Engine and transmission instruments – Check.
3. Flight instruments – Check as required.
4. Power – Check.

### **BEFORE TAKEOFF.**

- \*1. N2 – 100 percent.
- \*2. Systems – Check.
- \*3. Crew, passengers, mission equipment, and seat belts – Check.
- \*4. Avionics – As required.

### **BEFORE LANDING.**

1. Crew, passenger and mission equipment – Check.
2. Landing light – As required.



## **ENGINE SHUTDOWN.**

1. Throttle – Engine idle for two minutes.
2. FORCE TRIM switch – FORCE TRIM.
3. FUEL BOOST switch – OFF.
4. LDG LTS/LANDING LIGHT switch – OFF.
5. Control frictions – On.
6. Avionics – Off.
7. Armament system – Not applicable.
8. Overhead switches and circuit breakers – Set.
9. Battery charge – Check.
10. Throttle – Close.
11. Overhead switches – OFF as required.
12. Ignition switch – OFF (Keys as required).
- O 13. Doors – Close immediately after exiting.

## **BEFORE LEAVING THE HELICOPTER.**

1. Main rotor blades – Tie down as required.
2. Walk-around – Complete.
3. Mission equipment – Secure.
4. Complete DA Form 2408-12 and DA Form 2408-13-1.
5. Secure helicopter – As required.

## THRU-FLIGHT CHECKLIST

### HELICOPTER AND SYSTEM CHECKS.

#### PREFLIGHT.

1. Covers, locking devices, tiedowns (except main rotor), and grounding cables – Removed and secured.
2. Ignition switch – On.
- O 3. Cargo/loose equipment – Check.
- O 4. Auxiliary fuel cell – Check.
5. Passenger seats and belts – Check.
6. Hydraulic reservoir/servos and flight controls – Check.
7. Transmission compartment – Check.
8. Fuel – Check quantity.
9. Main rotor blade – Check, tiedown removed.
10. Tail rotor gearbox – Check.
11. Tail rotor – Check.
12. Engine oil level – Check.
- L 13. Crew and passenger briefing – Complete.

## **BEFORE STARTING ENGINES.**

1. ANTI COLL LTS switch – As required.
2. POS LTS switch – As required.
3. BAT switch – As required.
4. GPU – Connect for GPU start.
5. Flight controls – Check and set.
6. Throttle – Check. Move to open, then to idle stop; press idle release and close.

## **STARTING ENGINE.**

1. Fireguard – Post if available.
2. Rotor blades – Check clear and untied.
- L** 3. Engine – Start.

### **WARNING**

**Do not have battery switch on and APU system charging simultaneously for more than 2 minutes. This will prevent an unmonitored battery from overheating and possibly exploding.**

4. GPU – Disconnect; then BAT switch – BAT.
5. N2 – Stabilized.
6. THROTTLE ADJUST – 70 percent N1.
7. GEN switch – GEN.
8. DC amps – Check 60 or less.
9. INV switch – INV.
10. Avionics – On.

## **ENGINE RUNUP.**

1. Engine and transmission instruments - Check.
2. Throttle - Slowly increase to open. Set N2 to 100 percent.
3. Flight instruments - Check and set.
4. Doors, armor side panels, and seat belts - Secure.

## **BEFORE TAKEOFF.**

1. N2 - 100 percent.
2. Systems - Check engine, transmission, electrical, and fuel systems indications.
3. Crew, passengers, mission equipment, and seat belts - Check.
4. Avionics - As required.

**EMERGENCY PROCEDURES  
CHECKLIST**

**SECTION I. HELICOPTER SYSTEMS**

**ENGINE MALFUNCTION.**

**ENGINE FAILURE - HOVER.**

AUTOROTATE.

**ENGINE FAILURE - LOW ALTITUDE/LOW  
AIRSPEED OR CRUISE.**

1. AUTOROTATE.
2. EMER SHUTDOWN.

**ENGINE RESTART - DURING FLIGHT.**

1. Throttle - Close.
2. Attempt start.
3. LAND AS SOON AS POSSIBLE.

**ENGINE COMPRESSOR STALL.**

1. Collective - Reduce.
2. ENG DEICE and HTR switches - OFF.
3. LAND AS SOON AS POSSIBLE.

**ENGINE OVERSPEED.**

1. Collective – Increase.
2. Throttle – Adjust.
3. LAND AS SOON AS POSSIBLE.

If RPM cannot be controlled manually:

4. AUTOROTATE.
5. EMER SHUTDOWN.

**ENGINE UNDERSPEED.**

- a. If powered flight with rotor in the green can be accomplished, LAND AS SOON AS POSSIBLE.
- b. If engine underspeed below 94% N2, then:
  1. AUTOROTATE.
  2. EMER SHUTDOWN.

**ENGINE SURGES.**

If surges in engine RPM are experienced:

1. GOV RPM switch – INCR.
2. Throttle – Adjust to 98% N2.
3. LAND AS SOON AS POSSIBLE.

If engine surges are not controlled in steps 1 and 2 above:

4. AUTOROTATE.
5. EMER SHUTDOWN.

**ROTORS, TRANSMISSION, AND  
DRIVE SYSTEMS MALFUNCTIONS.**

**LOSS OF TAIL ROTOR EFFECTIVENESS  
(LTE).**

1. Pedal – Full Left.
2. Cyclic – Forward.
3. As recovery is effected, adjust controls for normal flight.

**MAIN DRIVESHAFT FAILURE.**

1. AUTOROTATE – Establish a power on autorotational glide.
2. EMER SHUTDOWN after landing.

**CLUTCH FAILS TO DISENGAGE.**

1. Throttle – Open.
2. LAND AS SOON AS POSSIBLE.

**MAST BUMPING.**

LAND AS SOON AS POSSIBLE.

**FIRE.**

**HOT START.**

1. STARTER switch - Press.
2. Throttle - Close.

**ENGINE/FUSELAGE/ELECTRICAL FIRE -  
GROUND.**

EMER SHUTDOWN.

**ENGINE/FUSELAGE FIRE - IN-FLIGHT.**

**If Power-On landing:**

1. LAND AS SOON AS POSSIBLE.
2. EMER SHUTDOWN after landing.

**If Power-Off landing:**

1. AUTOROTATE.
2. EMER SHUTDOWN.

**ELECTRICAL FIRE - FLIGHT.**

1. BAT and GEN switches - OFF.
2. LAND AS SOON AS POSSIBLE.
3. EMER SHUTDOWN after landing.

**SMOKE AND FUME ELIMINATION.**

1. Vents - Open.
2. DEFOG & VENT switch - ON.



## **ELECTRICAL SYSTEM MALFUNCTIONS.**

### **GENERATOR FAILURE – NO OUTPUT.**

1. GEN FIELD, GEN and BUS RESET circuit breakers – Check In.
2. GEN switch – RESET then GEN – Do not hold the switch in the RESET position.

If the generator is not restored, or if it goes off the line again:

3. GEN switch – OFF.
4. Turn OFF all unnecessary electrical equipment.
5. LAND AS SOON AS PRACTICABLE.

### **OVERHEATED BATTERY.**

1. BAT switch – OFF.
2. LAND AS SOON AS POSSIBLE.
3. EMER SHUTDOWN after landing.

## HYDRAULIC SYSTEM MALFUNCTION.

### HYDRAULIC POWER FAILURE.

1. Airspeed – Adjust.
2. HYD BOOST SOL circuit breaker – Out.

If hydraulic power is not restored:

3. HYD BOOST SOL circuit breaker – In.
4. HYD BOOST switch – OFF.
5. LAND AS SOON AS PRACTICABLE.

## LANDING AND DITCHING.

### DITCHING – POWER ON.

1. Doors – Jettison at a hover.
2. Crew (except pilot) and passengers – Exit.
3. Hover a safe distance away from personnel.
4. AUTOROTATE.
5. Pilot – Exit when the main rotor stops.

### DITCHING – POWER OFF.

1. AUTOROTATE.
2. Doors – Jettison.
3. Crew and passengers – Exit when the main rotor stops.

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## FLIGHT CONTROL MALFUNCTIONS.

1. LAND AS SOON AS POSSIBLE.
2. EMER SHUTDOWN after landing.

## LIGHTNING STRIKE.

LAND AS SOON AS POSSIBLE.

## IN-FLIGHT WIRE STRIKE.

LAND AS SOON AS POSSIBLE.

## WARNING PANEL LIGHTS.

<u>WARNING LIGHT</u>	<u>CORRECTIVE ACTION</u>
ROTOR RPM (Red)	<u>Verify condition.</u> <u>Adjust collective.</u>
MASTER CAUTION	<u>Check for Caution Panel</u> <u>segment light illumination.</u> <u>If none, LAND AS SOON</u> <u>AS POSSIBLE.</u>
ENGINE OUT (Red)	<u>Verify condition.</u> <u>AUTOROTATE.</u>
XMSN OIL PRESS (Red)	<u>LAND AS SOON AS</u> <u>POSSIBLE.</u>
XMSN OIL HOT (Red)	<u>LAND AS SOON AS</u> <u>POSSIBLE.</u>

**CAUTION PANEL LIGHTS.**

<u>CAUTION LIGHT</u>	<u>CORRECTIVE ACTION</u>
FUEL BOOST	LAND AS SOON AS PRACTICABLE.
20 MIN FUEL	LAND AS SOON AS PRACTICABLE
FUEL FILTER	<u>LAND AS SOON AS POSSIBLE.</u>
ENG OIL BYPASS	<u>LAND AS SOON AS POSSIBLE.</u>
ENG CHIP DET	<u>LAND AS SOON AS POSSIBLE.</u>
XMSN CHIP DET	<u>LAND AS SOON AS POSSIBLE.</u>
T/R CHIP DET	<u>LAND AS SOON AS POSSIBLE.</u>
INST INVERTER	Information/system status
DC GENERATOR	Refer to emergency procedures.
HYD PRESS	Refer to emergency procedures.
IFF	Information/system status
SPARE	<u>LAND AS SOON AS POSSIBLE.</u>

**SECTION II. MISSION EQUIPMENT/  
ARMAMENT**

This section has been removed from this checklist.

## PERFORMANCE DATA.

### ENGINE – START.

- a. FUEL BOOST switch – FUEL BOOST.
- b. STARTER switch – Press and hold.
- c. TOT – Check below 200° C.
- d. Throttle – Open to engine idle at peak of N1 RPM, provided the following limits are maintained.

	<u>FAT</u>	<u>MINIMUM N1</u>
(1)	Above 7° C	15%
(2)	-18° C to 7° C	13%
(3)	Below -18° C	12%

- e. Engine Oil Pressure N1 – Check for increase by 20% N1.
- f. Main rotor – Check moving by 30% N1.
- g. TOT – Monitor for OVERTEMP conditions.
- h. STARTER switch – Release at 58-62% N1.
- i. Engine oil pressure – Check.
- j. ENGINE OUT and XMSN OIL PRESS warning lights – Check out.
- k. N1 – 62-64 percent.

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**PASSENGER BRIEFING.** The following guide may be used in accomplishing required passenger briefings; items that do not pertain to a specific mission may be omitted.

1. Crew introduction.
2. Equipment.
  - a. Personal, to include ID tags.
  - b. Professional.
  - c. Survival.
3. Flight data.
  - a. Route.
  - b. Altitude.
  - c. Time en route.
  - d. Weather.
4. Normal procedures.
  - a. Entry and exit of helicopter.
  - b. Seating.
  - c. Seat belts.
  - d. Movement in the helicopter.
  - e. Internal communication.

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- f. Security of equipment.
  - g. Smoking.
  - h. Oxygen.
  - i. Refueling.
  - j. Weapons.
  - k. Protective masks.
  - l. Parachutes.
  - m. Hearing protection.
  - n. Aviation life support equipment (ALSE).
5. Emergency procedures.
- a. Emergency exits.
  - b. Emergency equipment.
  - c. Emergency landing/ditching procedures.
  - d. Bail out.
  - e. Survival.
  - f. Recovery.

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**DECELERATION CHECK.** Perform – if required.  
See Chapter 5, FUEL OPERATION LIMITS.

- a. GEN switch – OFF.
- b. N2 RPM – 100%. Stabilize 15 seconds.
- c. Throttle – Idle. Simultaneously start a time count.
- d. Stop as N1 passes through 65%.

**NOTE**

Multiple attempts may be required before proficiency is obtained in timing the deceleration.

- e. Check deceleration time. Minimum allowable time is 2 seconds. If deceleration time is less than 2 seconds, make two checks to confirm the time.
- f. If deceleration time is less than 2 seconds, aircraft will not be flown. Enter conditions in the "Remarks" section on DA Form 2408-13-1.
- g. GEN switch – GEN.

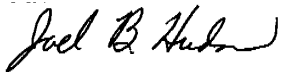


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**By Order of the Secretary of the Army:**

**Official:**

ERIC K. SHINSEKI  
*General, United States Army*  
*Chief of Staff*



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**DISTRIBUTION:**

To be distributed in accordance with Initial Distribution No.  
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## **The Metric System and Equivalents**

### ***Linear Measure***

1 centimeter = 10 millimeters = .39 inch  
1 decimeter = 10 centimeters = 3.94 inches  
1 meter = 10 decimeters = 39.37 inches  
1 dekameter = 10 meters = 32.8 feet  
1 hectometer = 10 dekameters = 328.08 feet  
1 kilometer = 10 hectometers = 3,280.8 feet

### ***Weights***

1 centigram = 10 milligrams = .15 grain  
1 decigram = 10 centigrams = 1.54 grains  
1 gram = 10 decigrams = .035 ounce  
1 dekagram = 10 grams = .35 ounce  
1 hectogram = 10 dekagrams = 3.52 ounces  
1 kilogram = 10 hectograms = 2.2 pounds  
1 quintal = 100 kilograms = 220.46 pounds  
1 metric ton = 10 quintals = 1.1 short tons

### ***Liquid Measure***

1 centiliter = 10 milliliters = .34 fl. ounce  
1 deciliter = 10 centiliters = 3.38 fl. ounces  
1 liter = 10 deciliters = 33.81 fl. ounces  
1 dekaliter = 10 liters = 2.64 gallons  
1 hectoliter = 10 dekaliters = 26.42 gallons  
1 kiloliter = 10 hectoliters = 264.18 gallons

## **Temperature Conversion**

$$\text{\_C to \_F} = (9/5 \times \text{\_C}) + 32$$

$$\text{\_F to \_C} = (\text{\_F} - 32) \times 5/9$$