## **TECHNICAL MANUAL**

OPERATOR AND
CREWMEMBER CHECKLIST
ARMY MODELS
EH-1H/X HELICOPTERS

HEADQUARTERS
DEPARTMENT OF THE ARMY
5 NOVEMBER 1983

## **URGENT**

TM 55-1520-247-CL C2

CHANGE

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 2 August 1988

NO. 2

Operator and Crewmember Checklist

ARMY MODELS EH-1H/X HELICOPTERS

TM 55-1520-247-CL, 5 November 1983, is changed as follows:

1. Remove and insert pages as indicated below. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

Remove pages Insert pages

E-11 and E-12 E-11 and E-12

2. Retain these sheets in front of manual for reference purposes.

# By Order of the Secretary of the Army:

CARL E. VUONO, General, United States Army Chief of Staff

Official:

## R. L. DILWORTH

Brigadier General, United States Army The Adjutant General

#### DISTRIBUTION:

To be distributed in accordance with DA Form 12-31, -10 & CL Requirements for UH-1D/H Helicopter, Utility, EH-1H Helicopter, Electronic Countermeasure, and EH-1X Helicopter, Countermeasure & Intercept.

### **URGENT**

TM 55-1520-247-CL C 1

CHANGE

NO. 1

HEADQUARTERS
DEPARTMTENT OF THE ARMY
WASHINGTON, D.C., 5 July 1984

Operator and Crewmember Checklist

#### ARMY MODELS EH-1H/X HELICOPTERS

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1. Remove and insert pages as indicated below. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

Remove pages Insert pages

E-17/E-18 E-17/E-18

2. Retain these sheets in front of manual for reference purposes.

#### NOTE

Laminated pages will be provided in next normal change.

# By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR. General, United States Army Chief of Staff

Official:

ROBERT M. JOYCE
Major General, United States Army
The Adjutant General

## DISTRIBUTION:

To be distributed in accordance with DA Form 12-31, CL Requirements for UH-1D/H, EH-1H aircraft.

#### GENERAL INFORMATION AND SCOPE

**SCOPE.** This checklist contains the operator's and crewmember's checks to be accomplished during normal and emergency operations.

**GENERAL INFORMATION.** The checklist consists of three parts: normal procedures, emergency procedures, and performance data. Normal procedures consist of the procedures required for normal flight. Emergency procedures are subdivided into 10 classifications as follows: engine, rotor, fire, fuel, electrical (Elect), hydraulic (Hyd), landing and ditching (Ldg/Dtch), flight controls (Fit Con), bailout or ejection (Bailout) (Eject), and mission equipment (Msn/Eqpt.), as applicable Performance data consists of performance checks.

## NOTE

This checklist does not replace the amplified version of the procedures in the operator's manual (TM 55-1520-247-10), but is a condensed version of each procedure.

Normal Procedures Pages. The contents of the normal procedures of this manual are a condensation of the amplified checklist appearing in the normal procedures or crew duties portion of the applicable operator's manual.

Emergency Procedures Pages. The requirements in this section of the condensed checklist (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 the 10 classifications listed above.

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Symbols Preceding Numbered Steps.

- \* -- Indicates performance of steps is mandatory for all "Thru Flights".
- N -- Means performance of step is mandatory for "Night Flights".
- ★ -- Indicates a detailed procedure for this step is included in the Performance Checks section, located at the back of the checklist.
- I -- Indicates mandatory check for "Instrument Flights".
- O -- Indicates if installed

Immediate action emergency items are underlined.

# REPORTING 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. Mall your letter, DA Form 2028 (Recommended Changes to Publications and Blank

Forms) or DA Form 2028-2 located in the back of the applicable Aircraft Operator's Manual direct to Commander, US Army Troop Support and Aviation Materiel Readiness Command, ATTN. DRSTSD-MPSD, 4300 Goodfellow Blvd., St Louis, MO 63120. A reply will be furnished to you.

## **WARNING**

# Do not preflight until armament systems are safe.

## BEFORE EXTERIOR CHECK.

- 1. Publications Check.
- \*2. Ignition keylock switch ON.
- 3. AC circuit breakers Check in.
- 4. Mission avionics switches and circuit breakers Set.
- 5. BAT switch ON. Check voltage.
- 6. Lights ON. Check, then off.
- \*7.Fuel Check quantity Caps secure.
- 8. Fuel sample Check.
- 9. BAT switch OFF.
- \*10. Helicopter covers, locking devices, tiedowns, and grounding cables Removed and secured.

## EXTERIOR CHECK.

#### AREA 1.

- Main rotor blade Check.
- 2. Fuselage Check.

#### AREA 2.

- 1. Fuselage Check
- 2. Engine compartment Check Cowling secure.
- O 3. M-130 Chaff dispenser Check

### AREA 3.

- 1. Tailboom Check.
- <sup>4</sup> 2. Main rotor blade Check, tiedown removed.
- \*3. Tail rotor Check

#### AREA 4.

- \*1. Tail rotor gearboxes (90 and 42 degrees) Check.
- 2. Tailboom Check.
- 3. Engine exhaust Check
- 4. Oil cooling fan and heater compartments Check.
- O 5. M-130 Flare/chaff dispenser Check.

## AREA 5.

- 1. Engine compartment Check, cowling secure.
- \*2. Hydraulic fluid sight gage Check.
- \*3. Fuselage Check.

## AREA 6.

- \*1. Main rotor system Check.
- 2. Transmission area Check.

## **INTERIOR CHECK - CABIN.**

- \*1. Transmission oil level Check.
- \*2. Cabin area Check.
- 3. Crew briefing Complete as required.

## BEFORE STARTING ENGINE.

- ★ \*1. Overhead switches and circuit breakers Set.
  - \*2. Ground power unit Connect for GPU start.
  - 3. FIRE warning indicator light Test.
  - 4. Press to test caution/warning lights Check as required.
  - 5. Flight instruments Check and set as required.
  - 6. Systems instruments Check.
  - 7. COMPASS switch As required.
- ★ \*8. Pedestal switches Set.
  - 9. Flight controls Check.
  - 10. Altimeters Set.

#### **★\*STARTING ENGINE.**

- 1. Rotor blades Check.
- 2. Engine Start.
- 3. Engine and transmission oil pressures Check.
- 4. GPU Disconnect.

## **ENGINE RUNUP.**

- \*1. Avionics On Check as required.
- \*2. E STARTER GEN switch STBY GEN.
- \*3. EB X START/CONVERTER switch CONVERTER.
- \*4. Systems Check.
  - a. Engine.
  - b. Transmission.
- \*5. RPM 6600.
- \*6. Mission switches Set.
- 7. Electrical systems Check.
- 8. Health Indicator Tests (HIT) check Perform as required.

## \*HOVER/TAXI CHECK.

- 1. Flight controls Check
- 2. Engine and transmission instruments Check.
- 3. Flight instruments Check.
- 4. Power Check.

## \* BEFORE TAKEOFF.

- 1. RPM 6600.
- 2. Systems Check.
- 3. Avionics As required.
- 4. Crew and mission equipment Check.

## BEFORE LANDING.

- 1. Crew and mission equipment Check.
- 2. MISSION ANTENNAS switch RETRACT.

## AFTER LANDING.

- 1. Landing light As required.
- 2. Avionics As required.

## **ENGINE SHUTDOWN.**

- 1 Throttle Engine Idle for two minutes.
- 2 FORCE TRIM switch ON.
- 3. Mission switches Set.

#### NOTE

## Steps 4 through 10 are for the last flight of the day.

- 4. PILOT HTR Check, then OFF.
- 5. BLEED AIR switch ON; Check, then OFF.
- \*6. EB X DE ICE switch ON, Check, then OFF.
- 7. INVTR switch OFF, then STBY.
- 8. AC voltmeter Check 1 12 to 1 18 volts.
- 9. E MAIN GEN switch OFF. Check DC voltage.
- 10. E NON-ESS BUS Check.
- 11. E STARTER GEN switch START.
- 12. EB X START/CONVERTER switch START.
- 13. Throttle OFF.
- Pedestal switches Off.
- 15. Overhead switches and circuit breakers -Set
- 16. Ignition lock switch Remove key as required

# BEFORE LEAVING THE HELICOPTER.

- 1. Walk-around Complete.
- 2. Mission equipment Secure.
- 3. Complete DA Forms 2408-12 and -13.
- 4. Secure helicopter.

## ENGINE.

## FLOODED ENGINE.

- 1. Ignition keylock switch OFF.
- 2. FUEL switch OFF.
- 3. Throttle Off.

Prior to attempting another start, wait 3 minutes

- 1. Ignition key lock switch ON.
- 2. FUEL switch ON.
- 3. Throttle Set for start.

#### **EMERGENCY START.**

- 1. Throttle Off.
- 2. GOV switch EMER.
- 3. Starter switch Press.
- 4. <u>Throttle Open</u> slowly to the engine idle position as N1 passes through 8 percent.
- 5. Starter switch Release at 40 percent N1.
- 6. <u>Throttle Open</u> slowly to 80 percent N1, then decrease slowly to engine idle.
- 7. GOV switch AUTO as N1 decreases from 80 percent to engine idle.

#### **ENGINE FAILURE - LOW ALTITUDE/LOW AIRSPEED.**

- 1. Collective pitch Adjust.
- 2. GOV switch EMER.
- 3. Throttle Adjust.

If engine power Is not regained.

- 4. <u>Mission antennas emergency retract switch Press.</u>
- 5. Land.

## **ENGINE FAILURE - TAKEOFF.**

Refer to ENGINE FAILURE - LOW ALTITUDE/LOW AIRSPEED.

## **ENGINE FAILURE - CRUISE.**

- Collective pitch Down.
- 2. <u>Mission antennas emergency retract switch Press.</u>
- 3. Land.

### **ENGINE RESTART - DURING FLIGHT.**

- 1. Throttle Off.
- 2. E STARTER GEN EB X START/CONVERTER switch START.
- 3. GOV switch EMER.
- 4. Attempt start.
- 5. Land as soon as possible

## **ENGINE COMPRESSOR STALL.**

- 1. Reduce power.
- 2. DE-ICE switch OFF.
- 3. BLEED AIR switch OFF.
- 4. Land as soon as possible.

## PARTIAL POWER.

## **Droop Compensator Failure.**

- 1. Collective pitch Down.
- 2. Throttle Engine idle.
- 3. GOV switch EMER.
- 4. Throttle Open.
- 5. Land as soon as possible.

#### Governor Control Failure.

- 1. Throttle Engine idle.
- 2. GOV switch EMER.
- 3. Throttle Open.
- 4. Land as soon as possible.

## **ENGINE OVERSPEED.**

- 1. Collective pitch Increase.
- 2. Throttle Reduce.

If reduction of throttle does not reduce rpm as required:

- 3. GOV switch EMER.
- 4. Throttle Adjust.
- 5. Land as soon as possible.

## **ENGINE UNDERSPEED.**

# Engine Underspeed - Low Altitude/Low Airspeed.

- 1. Collective pitch Adjust as required.
- 2. GOV switch EMER.
- 3. Throttle Adjust as required.
- 4. Land as soon as possible.

# **Engine Underspeed - Cruise.**

- 1. Collective pitch Down.
- 2. N1 Check.
- 3. Throttle Engine Idle.
- 4. GOV switch EMER.
- 5. Throttle Open.
- 6. Land as soon as possible.

# ENGINE CHIP DET CAUTION LIGHT ILLUMINATION.

Land as soon as possible.

#### **ENGINE OIL - HOT OR LOW PRESSURE.**

Land as soon as possible.

# ENGINE INLET FILTER CLOGGED/ENGINE INLET AIR CAUTION LIGHT ILLUMINATION.

Land as soon as possible.

## ROTORS, TRANSMISSIONS, AND DRIVE SYSTEMS.

#### MAIN DRIVESHAFT/CLUTCH FAILURE.

## Inflight

- 1 Collective pitch Adjust.
- 2. Throttle Off.
- 3. <u>Mission antennas emergency retract switch Press.</u>
- 4. Land.

#### On the Ground.

- 1. Throttle Off.
- 2. Complete shutdown.

#### CLUTCH FAILS TO DISENGAGE.

- 1. Throttle Open.
- 2. Land as soon as possible.

#### MAIN ROTOR SYSTEM MALFUNCTION.

- 1. Land as soon as possible.
- 2. Throttle off as soon as the helicopter is on the ground.
- 3. FUEL switch OFF.
- 4. BAT switch OFF.

#### TRANSMISSION OIL - HOT OR LOW PRESSURE.

Land as soon as possible.

#### CHIP DETECTORS.

Land as soon as possible.

## FIRE.

## **ENGINE FIRE.**

## Hot Start - Emergency Shutdown.

- 1. Starter switch Press.
- 2. Throttle Off.
- 3. FUEL switch, OFF.

## **FUSELAGE FIRE - GROUND.**

- 1. Throttle Off.
- 2. FUEL switch OFF.
- 3. BAT switch OFF.
- 4. Clear the helicopter.

## **FUSELAGE FIRE - FLIGHT.**

- 1. Land as soon as possible.
- 2. Throttle Off as soon as the helicopter is on the ground.
- 3. FUEL switch OFF.
- 4. BAT switch OFF.
- 5. Clear the helicopter.

## **ENGINE FIRE - FLIGHT.**

## Low Altitude.

- 1. Land as soon as possible.
- 2. Throttle Off as soon as the helicopter is on the ground.
- 3. FUEL switch OFF.
- 4. BAT switch OFF.
- 5. Clear the helicopter.

#### Cruise Altitude.

- 1. <u>Collective pitch Down,</u> autorotate.
- 2. <u>Mission antennas emergency retract switch Press.</u>
- 3. Throttle Off.
- 4. FUEL switch OFF.
- 5. BAT switch OFF.
- 6. Land.
- 7. Clear the helicopter.

## **ELECTRICAL FIRE.**

# **Electrical Fire - Flight.**

- 1. BAT switch OFF.
- 2. <u>E STARTER GEN EB X START/CONVERTER switch START.</u>
- 3. <u>E MAIN GEN EB X GEN switch OFF</u>.
- 4. MISSION POWER switch OFF.
- 5. <u>E MISSION INVTR switch MISSION INVTR.</u>
- 6. Land as soon as possible.
- 7. Engine shutdown.

# **Electrical Fire - Flight Continued.**

- 1. Complete steps 1 through 5 above.
- 2. Circuit breakers Out.

As each of the following steps are accomplished, check for indications of the source of the fire.

- 3. E MAIN GEN EB X GEN switch ON.
- 4. E STARTER GEN switch STBY GEN.
- 5. <u>EB X START/CONVERTER switch CONVERTER.</u>
- 6. BAT switch ON.
- 7. <u>Circuit breakers In</u> one at a time in the priority required, GEN & BUS RESET first. When malfunctioning circuit is identified, pull the applicable circuit breaker out.

#### Electrical Fire - Ground.

- 1. Throttle Off.
- 2. FUEL switch OFF.
- 3. BAT switch OFF.
- 4. <u>E STARTER GEN EB X START/CONVERTER switch START.</u>
- 5. E MAIN GEN EB X GEN switch OFF.
- 6. Clear the helicopter.

## SMOKE AND FUME ELIMINATION.

Doors, windows, and vents - Open.

#### **FUEL SYSTEM.**

#### FUEL BOOST CAUTION LIGHT ILLUMINATED.

**a. One Boost Pump.** If the fuel pressure gage indicates a drop in pressure and/or one FUEL BOOST caution light illuminates:

Land as soon as practicable.

- **b. Two Boost Pumps.** If the fuel pressure gage indicates zero pressure and/or both FUEL BOOST caution lights illuminate, proceed as follows:
  - 1. FUEL switch Check ON.
  - 2. Descend to a pressure altitude of 4600 feet or less if possible.
  - 3. Land as soon as practicable.

No attempt should be made to troubleshoot the system while in flight.

#### FUEL FILTER CAUTION LIGHT ILLUMINATED.

Land as soon as possible.

ENGINE FUEL PUMP CAUTION LIGHT ILLUMINATED.

Land as soon as possible.

THROTTLE FAILURE - EMERGENCY SHUTDOWN.

Fuel switch - OFF.

### ELECTRICAL.

## OVERHEATED BATTERY.

- 1. BAT switch OFF.
- 2. <u>Land as soon as possible</u>. If condition is corrected, flight may be resumed with battery switch OFF.
- 3. Engine shutdown.
  - a. Rapid If battery Is In forward location.
    - (1) Throttle Off.
    - (2) FUEL switch OFF.
  - b. Normal If battery is in aft location, perform a normal shutdown.
- 4. <u>Clear the helicopter</u>.

## SPARE CAUTION LIGHT ILLUMINATION.

Land as soon as possible.

## MASTER CAUTION LIGHT ILLUMINATION.

Land as soon as possible.

## E GENERATOR MALFUNCTION.

- 1. MISSION POWER switch OFF.
- 2. MISSION INVTR switch MISSION INVTR
- 3. MAIN GEN & BUS RESET circuit breaker In.
- 4. MAIN GEN switch RESET then ON.

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

5. MAIN GEN switch - OFF.

## **EB X ALTERNATOR MALFUNCTION.**

- 1 MISSION POWER switch OFF
- 2. START/CONVERTER switch START
- 3 ALT switch OFF. RESET then ON

If the alternator is not restored on if it goes of the line again

4. ALT switch OFF.

If the alternator is restored.

START/CONVERTER switch CONVERTER.

#### HYDRAULIC.

#### HYDRAULIC POWER FAILURE.

- 1. <u>Airspeed Adjust.</u>
- HYD CONT circuit breaker Out; check for restoration of hydraulic power.
- 3. <u>HYD CONT circuit breaker In,</u> if hydraulic power is not restored.
- 4. HYD CONT switch OFF.
- 5. Mission antennas emergency retract switch Press.
- 6. Land as soon as practicable.

#### CONTROL STIFFNESS.

- HYD CONT switch OFF then ON. Check for normal flight control movements.
- 2. <u>HYD CONT switch OFF</u> if cycling the switch fails to restore controls.
- 3. <u>Mission antennas emergency retract switch Press.</u>
- 4. Land as soon as possible.

### CYCLIC HARDOVER.

On the ground - HYD CONT switch ON.

- 1. HYD CONT switch OFF.
- 2. Complete a normal engine shutdown.

On the ground - HYD CONT switch OFF.

- 1. HYD CONT switch ON.
- 2. Complete a normal engine shutdown.

In flight - HYD CONT switch ON.

- 1. HYD CONT switch OFF then ON.
- 2. Land as soon as practicable.

If malfunction is not corrected:

- 3. HYD CONT switch OFF.
- 4. <u>Mission antennas emergency retract switch Press.</u>
- 5. Land as soon as practicable.

In flight - HYD CONT switch OFF.

- 1. HYD CONT switch ON.
- 2. <u>Mission antennas emergency retract switch Press.</u>
- 3. Land as soon as practicable.

# LANDING AND DITCHING.

# **DITCHING - POWER ON.**

- 1. Mission antennas emergency retract switch Press.
- 2. Cockpit doors Jettison.
- 3. Cabin doors Open.
- 4. Crew (except pilot) Exit.
- 5. <u>Hover a safe distance away from personnel.</u>
- 6. Throttle Close and execute an auto-rotation.
- 7. Pilot Exit.

## **DITCHING - POWER OFF.**

- 1. Cockpit doors Jettison.
- 2. Cabin doors Open.
- 3. Land.
- 4. Crew Exit.

### FLIGHT CONTROLS.

## MAST BUMPING.

- 1. Reduce severity of maneuver.
- 2. Land as soon as possible.

#### COLLECTIVE BOUNCE.

- 1. Relax pressure.
- 2. Make a significant pitch application.
- 3. Increase collective pitch friction.
- 4. Land as soon as practicable.

## FLIGHT CONTROL MALFUNCTIONS.

- 1. Land as soon as possible.
- 2. Throttle off.
- 3. FUEL switches OFF.
- 4. BAT switch OFF.

## LIGHTNING STRIKE.

Land as soon as possible.

#### BEFORE STARTING ENGINE.

- ★ \*1. Overhead switches and circuit breakers Set as follows:
  - DC circuit breakers In, except for FWD RETR ANT CONT and AFT RETR ANT CONT.
  - b. DOME LT switch As required.
  - c. PITOT HTR switch OFF.
  - \*d. EXT LTS switches Set as follows:
    - (1) ANTI COLL switch ON.
    - (2) POSITION lights switches As required; STEADY/FLASH for night, OFF for day.
  - e. WIPERS switch OFF.
  - CABIN HEATING switches OFF.
  - g. E MISSION AC PWR switches Set as follows:
    - (1) GND PWR/STBY GEN switch GND PWR.
    - (2) MISSION INVTR switch-MISSION INVTR.

- h. INST LTG switches As required.
- AC POWER switches Set as follows:
  - (1) PHASE switch AC.
  - (2) EB X MALT switch -ON.
  - \*(3) INVTR switch MAIN.

#### DC POWER switches - Set as follows:

- (1) MAIN GEN switch ON and cover down.
- (2) VM selector ESS BUS.
- (3) NON-ESS BUS switch MANUAL ON.
- (4) E STARTER GEN switch-START.
- (5) EB X START/CONVERTER switch START.
- (6) BAT switch ON.

#### NOTE

The copilot attitude indicator must be caged and held momentarily as the BAT switch is turned on and inverter power is applied.

- ★ \*8. Pedestal switches -- Set as follows:
  - a. Avionics equipment OFF; set as desired.
  - b. MISSION POWER switch OFF.
  - c. External stores jettison handle-Check safetled.
  - d. GOV switch AUTO.
  - e. DE-ICE switch OFF.
  - \*f. FUEL switch ON.
    - g Caution panel lights TEST and RESET.
  - h. HYD CONT switch ON.
  - i. FORCE TRIM switch ON.
  - j. CHIP DET switch BOTH.

#### \* \*STARTING ENGINE.

- Rotor blades Check clear and untied.
- 2. Engine Start.
- **a.** Throttle Set for start. Check full travel and return to engine idle stop. Check operation of the engine idle stop, then close the throttle; position the throttle as near as possible (on decrease side)to the engine idle stop.
- **b. Start switch -** Press and hold; start time. Note DC voltmeter indication. A minimum of 24 volts should ld be indicated on the DC voltmeter before attempting start. Battery starts can be made when voltages less than 24 volts are indicated, provided the voltage does not drop below 14 volts when cranking through 10 percent N1 speed.
- **c. Main rotor -** Check that the main rotor is turning as N1 reaches 15 percent. If the rotor is not turning, abort the start.
- **d. Start switch -** Release at 40percent N 1 or after 40 seconds, whichever occurs first. Refer to chapter 5 for starter limitations.
- **e.** Throttle Slowly advance past the engine idle stop to the engine idle position. Manually check the engine idle stop by attempting to close the throttle.

- f. N1 68 to 72 percent Hold a very slight pressure against the engine idle stop during the check. A slight rise in N1 may be anticipated after releasing pressure on throttle.
- 3. Engine and transmission oil pressures Check.
- 4. GPU Disconnect.

# By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR. General, United States Army Chief of Staff

Official:

ROBERT M. JOYCE Major General, United States Army The Adjutant General

## DISTRIBUTION:

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★ U.S. G.P.O. 1983-764-120/31

## The Metric System and Equivalents

#### Linear Measure

- 1 Centimeter = 10 millimeters = .32 inch
- 1 decimeter = 10 centimeters = 3.94 inches
- 1 meter = 10 decimeters = 39.27 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 grams
- 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 hecotliters = 264.18 gallons

#### RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

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