TECHNICAL MANUAL

Operator's and Crewmember's Checklist

ARMY MODEL

RC-12H

AIRCRAFT

Pilot's Checklist

This copy is a reprint which includes current pages from Change 1.

HEADQUARTERS,
DEPARTMENT OF THE ARMY

30 DECEMBER 1988

CHANGE

NO. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 30 April 1993

Operator's and Crewmember's Checklist
Army Model RC-12H Aircraft
Pilot's Checklist

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TM 55-1510-221-CL, 30 December 1988, is changed as follows:

1. Remove and insert pages as indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

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N-7 through N-12	N-7 through N-12
E-1 and E-2	E-1 and E-2
P-1 through P-14	P-1 through P-13/ (P-14 blank)

2. Retain this sheet in front of manual for reference purposes.

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URGENT

CHANGE
NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 17 August 1992

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Army Model RC-12H Aircraft

Pilot's Checklist

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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 and those required for "Before Landing". The normal procedures portion will be subdivided to include the before landing checks of Chapter 8 of the Operator's Manual. Emergency procedures are subdivided into 7 classifications as follows: engine, propeller, (prop), fire, fuel, electrical (elect), landing and ditching (ldg/ dtch), and flight controls (fit cont). Performance data consists of performance checks.

NOTE

This checklist does not replace the amplified version of the procedures in the operator's manual (TM 55-1510-221-10), 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 for 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 the 7 classifications listed above. Immediate action items shall be underlined.

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.

(3) Copilot duties. To be performed at pilot's command.

Immediate action emergency items are underlined.

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You con 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 or 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 Aviation Systems Command, ATTN: AMSAV-MMD, 4300 Goodfellow Blvd., St. Louis, MO 63120-1798. A reply will be furnished directly to you.

BEFORE EXTERIOR CHECK

* 1. Publications - Check.
* 2. Oxygen system - Check.
* 3. Flight controls - Unlock and check.
* 4. Parking brake - Set.
* 5. Elevator trim - Set to -0- (neutral).
* 6. Gear - DN.
* 7. Ice vane pull handles - In.
* 8. Keylock switch - ON.
* 9. Battery switch - ON.
10. Ice vane switches - RETRACT.
11. Lighting systems - Check as required.
12. Fuel gages - Check fuel quantity and gage operation.
☆13. Pitot tubes (2), stall warning vane, heated fuel vents (2) - Check.
14. Battery switch - As required.
15. Mission equipment and circuit breakers - Check and set.
16. Toilet- Check.
17. Emergency equipment - Check.
(18.) Parachutes - Check.

EXTERIOR CHECK

FUEL SAMPLE

* 1. Fuel sample - Check collective fuel sample from all drains for possible contamination.

LEFT WING, AREA 1

1. Left wing area - Check.

LEFT MAIN LANDING GEAR

1. Left main landing gear - Check.

LEFT ENGINE AND PROPELLER

1. Left engine - Check.

CENTER SECTION, LEFT SIDE

1. Center section - Check.

FUSELAGE UNDERSIDE

1. Fuselage underside - Check.

NOSE SECTION, AREA 2

1. Nose section - Check.

CENTER SECTION, RIGHT SIDE

1. Center section - Check.

RIGHT ENGINE AND PROPELLER

1. Right engine and propeller - Check.

RIGHT MAIN LANDING GEAR

1. Right main landing gear - Check.

RIGHT WING, AREA 3

1. Right wing - Check.

FUSELAGE RIGHT SIDE, AREA 4

1. Fuselage right side - Check.

EMPENNAGE, AREA 5

1. Empennage - Check.

FUSELAGE, LEFT SIDE, AREA 6

1. Fuselage - Check.

INTERIOR CHECK

1. Cargo/loose equipment - Check secure.
2. Cabin/cargo doors - Test and lock.
3. Emergency exit - Check secure and key removed.
4. Mission cooling ducts - Check open and free of obstructions.
5. Flare/chaff dispenser preflight test - Completed.
6. KY-28/58 key loaded - As required.

☆ 7. Crew briefing - As required.

BEFORE STARTING ENGINES

☆ 1. Oxygen system - Check as required.

2. Circuit breakers - Check in.

* 3. Overhead control panel switches - Set.

* 4. Fuel panel switches - Check.

5. Magnetic compass - Check.

* 6. Pedestal controls - Set.

* 7. Pedestal extension switches - Set.

8. Gear alternate engage and ratchet handles Stowed.
9. Outside air temperature gage - Check, note current reading.
10. Instrument panel - Check and set.
11. Deleted.
12. Mission panel switches and circuit breakers - Set and OFF.

13. Pressurization controls - Set.
14. Subpanels - Check and set.
15. Pilot's static air source - NORMAL.
16. Pilot's and copilot's audio control panels - As required.
17. Deleted.
☆ 18. Fuel pumps/crossfeed operation - Check.
19. AC and DC GPU - As required.
20. External power advisory annunciator lights - As required.
21. DC power - Check. (22 VDC minimum for battery, 28 maximum for GPU starts).
☆ 22. Annunciator panels - Test as required.
☆ 23. Stall and gear warning system - Check.
☆ 24. Fire Protection system - Check.
25. INS - Align as required.

*** FIRST ENGINE START (BATTERY START)**

1. Avionics master switch - OFF.
2. Exterior light switches - As required.
3. Propeller - Clear.
4. Ignition and engine start switch - ON.
5. Condition lever (after N_1 RPM stabilizes, 12% minimum) - LOW IDLE.
6. TGT and N_1 - Monitor (TGT 1000°C maximum, N_1 52% minimum).
7. Oil pressure - Check (60 PSI minimum).
8. Ignition and engine start switch - OFF, after 50% N_1.

9. Condition lever - HI IDLE.
10. Generator switch - RESET, then ON.

SECOND ENGINE START (BATTERY START)

1. First engine generator load - 50% or less.
2. Propeller - Clear.
3. Ignition and engine start switch - ON.
4. Condition lever (after N, RPM passes 12% minimum) - LOW IDLE.
5. TGT and N_1, -Monitor (TGT 1000°C maximum N_1 52% minimum).
6. Oil pressure - Check (60 PSI minimum).
7. Ignition and engine start switch - OFF after 50% N_1.
8. Battery charge light - Check.
9. Inverter switches - ON, check INVERTER lights extinguished.
10. Second engine generator - RESET, then ON.
11. Condition levers - As required.

ABORT START

1. Condition lever - FUEL CUTOFF.
2. Ignition and engine start switch - STARTER ONLY.
3. TGT - Monitor for drop in temperature.
4. Ignition and engine start switch - OFF.

ENGINE CLEARING

1. Condition lever - FUEL CUTOFF.

2. Ignition and engine start switch OFF (5 minute minimum).
3. Ignition and engine start switch STARTER ONLY (15 seconds minimum, 30 seconds maximum).
4. Ignition and engine start switch OFF.

* **FIRST ENGINE START (GPU START)**

1. INS As required.
2. Avionics master switch As required.
3. Exterior light switches As required.
4. Propeller Clear.
5. Ignition and engine start switch ON.
6. Condition lever (after NI, RPM stabilizes, 12% minimum) -LOW IDLE.
7. TGT and N_1, -Monitor (TGT 1000°C maximum, N_1 52% minimum).
8. Oil pressure Check (60 PSI minimum).
9. Ignition and engine start switch OFF after 50% N_1.
10. Condition lever Hi IDLE.
11. DC GPU Disconnect as required.
12. Generator switch (GPU disconnected) RESET, then ON.

SECOND ENGINE START (GPU START)

1. Propeller - Clear.
2. Ignition and engine start switch - ON.
3. Condition lever (after N_1, RPM passes, 12% minimum) LOW IDLE.
4. TGT and N_1 -Monitor (TGT 1000°C maximum, N_1, 52% minimum).

5. Oil pressure Check (60 PSI minimum).
6. Ignition and engine start switch OFF, after TGT stabilized.
7. Propeller levers FEATHER.
8. GPU Disconnect. (Check aircraft external power and mission external power light extinguished.)
9. Propellers levers HIGH RPM.
10. Aircraft inverter switches ON, check #1 INVERTER and #2 INVERTER annunciator lights extinguished.
11. Generator switches- RESET, then ON.
12. Condition levers - As required.

BEFORE TAXING

* 1. Brake de-ice - As required.

* 2. Cabin temperature and mode - Set.

☆* 3. AC/DC power - Check.

* 4. Avionics master switch - ON.

5. Mission panel - Set and checked as required.

☆ 6. Automatic flight control system - Check.

7. Electric elevator trim - Check.
8. Avionics - Check and set as required.
9. INS - NAV mode, if on.
10. Flaps - Check.
11. Altimeters - Check and set.

TAXIING

1. Brakes - Check.
2. Flight instruments - Check for normal operation.

ENGINE RUNUP

1. Mission control panel - Set.
☆ 2. Propeller manual feathering - Check.
☆ 3. Autofeather - Check.
☆ 4. Overspeed governors - Check.
☆ 5. Primary governors - Check.
☆ 6. Ice vanes - Check.
7. Condition levers - HI IDLE.
8. Power levers - IDLE.
☆ 9. Anti-ice and de-ice systems - Check.
☆ 10. Pneumatic pressure - Check.
☆ 11. Pressurization system - Check.
12. Condition levers - As required.
13. Windshield anti-ice - As required.

BEFORE TAKEOFF

(1.) Autofeather switch - ARM.
(2.) Bleed air valves - As required.
(3.) Ice and rain switches - As required.
(4.) Fuel panel - Check fuel quantity and switch positions.
(5.) Flight and engine instruments - Check for normal indications.
(6.) Cabin altitude and rate-of-climb controller - Set.
(7.) Annunciator panels - Check (note indications).
8. Propeller levers - HIGH RPM.
9. Flaps - As required.
10. Trim - Set.
11. Avionics-Set.

12. Flight controls - Check.

☆**(13.)** Departure briefing - Complete.

LINE UP

(1.) Transponder- As required.

(2.) Engine autoignition switch - ARM.

3. Power stabilized - Check approximately 25% minimum.

(4.) Condition levers - LOW IDLE.

5. Lights - As required.

6. Mission control panel - Set.

AFTER TAKEOFF

1. Gear - UP.

2. Flaps - UP.

3. Landing lights - OFF.

4. Climb power- Set.

5. PROP SYNC switch - As required.

(6.) Yaw damp - As required.

(7.) Autofeather switch -As required.

(8.) Brake de-ice - As required.

(9.) Windshield anti-ice - As required.

10. Cabin pressurization Check, adjust RATE control knob so that cabin rate-of-climb equals one-third aircraft rate-of-climb.

(11.) Wings and nacelles - Check.

(12.) Flare/chaff dispenser safety pin (electronic module) - Remove.

(13.) Chaff function selector switch - As required.

(14.) APR-39 and APR-44 - As required.

CRUISE

1. Power - Set.
2. Ice and rain switches - As required.
(3.) Auxiliary fuel gages - Monitor.
(4.) Altimeters - Check.
(5.) Engine instrument indications - Check.
6. Recognition lights - As required.

DESCENT - MAX RATE (CLEAN)

(1.) Cabin pressurization - Set.
2. Power levers - IDLE.
3. Propeller levers - HIGH RPM.
4. Flaps - UP.
5. Gear - UP.
6. Airspeed - V_{mo}
(7.) Ice and rain switches - As required.
8. Recognition lights - As required.

DESCENT - MAX RATE (LANDING CONFIGURATION)

(1.) Cabin pressurization - Set.
2. Power levers - IDLE.
3. Propeller levers - HIGH RPM.
4. Flaps - APPROACH.
5. Gear - DN.
6. Airspeed 180 KIAS maximum.
(7.) Ice & rain switches - As required.
8. Recognition lights - As required.

DESCENT-ARRIVAL

(1.) Cabin pressurization - Set.

(2.) Ice and rain switches - As required.

(3.) Windshield anti-ice - As required.

4. Recognition lights - ON.
5. Altimeters - Set to current altimeter setting.
6. Flare/chaff dispenser arm-safe switch - SAFE.
7. Flare/chaff dispenser safety pin (electronic module) - Insert.

☆ 8. Crew briefing - Complete.

BEFORE LANDING

1. Propeller synchronization switch - OFF.

(2.) Autofeather switch - ARM.

3. Propeller levers - As required.
4. Flap switch (below 198 KIAS) - APPROACH.
5. Gear- DN.
6. Landing lights - As required.

(7.) Brake de-ice - As required.

LANDING

1. Autopilot and yaw damp - Disengaged.
2. Gear down lights - Check three green.
3. Propeller levers - HIGH RPM.

TOUCH-AND-GO LANDINGS

(1.) Propeller levers - HIGH RPM.

(2.) Flaps - As required.

(3.) Trim - Set.

4. Power stabilized - Check approximately 25% minimum.
5. Takeoff power- Set.

GO-AROUND

1. Power-As required.
2. Gear-UP.
3. Flaps - UP.
4. Landing lights - OFF.
5. Climb power-Set.

(6.) Yaw damp - As required.

(7.) Brake de-ice - OFF.

AFTER LANDING

(1.) Condition levers - As required.

(2.) Engine autoignition switch - OFF.

(3.) Ice and rain switches - OFF.

(4.) Flaps - UP.

(5.) Transponder - As required.

(6.) Radar -As required.

7. Lights - As required.

(8.) Mission control panel - Set.

ENGINE SHUTDOWN

1. Brake de-ice - OFF.
2. Parking brake - Set.
3. Landing/taxi lights - OFF.
4. Cabin temperature mode selector switch - OFF.
5. Autofeather switch - OFF.

6. Vent and aft vent blower switches - AUTO.
7. INS - OFF.
8. Mission equipment - OFF, as required.
9. Inverter switches - OFF.
10. Battery condition - Check as required.
11. TGT - Check.
12. Propeller levers - FEATHER.
13. Condition levers - FUEL CUTOFF.
14. Exterior lights - OFF.
15. Master panel lights switch - OFF.
16. Avionics master switch - Off.
17. Master switch - OFF.
18. Keylock switch - OFF.
19. Oxygen system - OFF.

BEFORE LEAVING AIRCRAFT

1. Wheels - Chocked.
2. Parking brake - As required.
3. Flight controls - Locked.
4. Overhead flood lights - Off.
5. Standby fuel pump switches - OFF.
6. Transponder - OFF.
7. Mode 4 - As required.
8. KY-28/58 - Zeroize as required.
9. Emergency exit lock - As required.
10. Aft cabin light - OFF.
11. Door light - OFF.
12. Walk-around inspection - Complete.

13. Aircraft forms - Complete.
14. Aircraft - secured.

NOTE

The urgency of certain emergencies requires immediate and instinctive action by the pilot. The most important single consideration is aircraft control. All procedures are subordinate to this requirement.

ENGINE MALFUNCTION

ENGINE MALFUNCTION BEFORE LIFTOFF (ABORT)

1. Power levers - IDLE.
2. Braking - As required.
3. Condition levers - FUEL CUTOFF.
4. Fire pull handles- Pull.
5. Master switch - OFF.

ENGINE MALFUNCTION AFTER LIFTOFF (ABORT)

1. Power levers - Reduce.
2. Gear - DN.
3. Complete a normal landing.

NOTE

If able to land on remaining runway, check gear down and use brakes and reverse thrust as required. If insufficient runway remains for stopping, perform the following:

4. Condition levers - FUEL CUTOFF.
5. Fire pull handles - Pull.
6. Master switch - OFF.

ENGINE MALFUNCTION AFTER LIFTOFF (FLIGHT CONTINUED)

1. Power- Maximum controllable.
2. Gear- UP.
3. Flaps- UP.
4. Landing light - OFF.
5. Brake de-ice - OFF.
6. Engine cleanup - Perform.
7. Generator load - 100% max.

ENGINE MALFUNCTION DURING FLIGHT

1. Autopilot/yaw damp - DISENGAGE
2. Power- As required.
3. Dead engine - Identified.
4. Power lever (dead engine) - IDLE.
5. Propeller lever (dead engine) FEATHFR.
6. Propeller synchronization switch - OFF.
7. Gear - As required.
8. Flaps - As required.
9. Generator load - 100% max.
10. Power - Set for single engine cruise.
11. Engine cleanup - Perform.

ENGINE MALFUNCTION DURING FINAL APPROACH

1. Power- As required.
2. Gear - DN.

ENGINE MALFUNCTION (SECOND ENGINE)

1. Airspeed - 140 KIAS.

2. Power lever - IDLE.
3. Propeller lever - Do not FEATHER.
4. Conduct engine restart procedure.

ENGINE SHUTDOWN IN FLIGHT

1. Power lever - IDLE.
2. Propeller lever - FEATHER.
3. Condition lever - FUEL CUTOFF.
4. Engine cleanup - Perform.

ENGINE CLEANUP

1. Autoignition switch - OFF.
2. Autofeather switch - OFF.
3. Generator switch - OFF.
4. Propeller synchronization switch - OFF.

ENGINE RESTART DURING FLIGHT USING STARTER

1. Cabin temperature mode selector switch - OFF.
2. Electrical load - Reduce to minimum.
3. Fire pull handle - In.
4. Power lever - IDLE.
5. Propeller lever - FEATHER.
6. Condition lever - FUEL CUTOFF.
7. TGT (operative engine) - 700°C or less.
8. Ignition and engine start switch - ON.
9. Condition lever - LOW IDLE.
10. TGT - Monitor (1,000°C for 5 seconds maximum).
11. Oil pressure - Check.

12. Ignition and engine start switch - OFF at 50% N_1.
13. Generator switch - RESET, then ON.
14. Engine cleanup Perform if engine restart unsuccessful.
15. Cabin temperature mode selector switch As required.
16. Electrical equipment - As required.
17. Autoignition switch - ARM.
18. Propellers - Synchronize.
19. Power - As required.

ENGINE RESTART DURING FLIGHT (NOT USING STARTER)

1. Cabin temperature mode selector switch - OFF.
2. Electrical load - Reduce to minimum.
3. Generator switch (affected engine) - OFF.
4. Fire pull handle - Check in.
5. Power lever - IDLE.
6. Propeller lever - HIGH RPM.
7. Condition lever - FUEL CUTOFF.
8. Airspeed - 140 KIAS minimum.
9. Altitude below 20,000 feet - Check.
10. Engine autoignition switch - ARM.
11. Condition lever - LOW IDLE.
12. TGT - Monitor (1,000°C for 5 seconds maximum).
13. Oil pressure - Check.
14. Generator switch - RESET then ON.
15. Engine Cleanup - Perform if engine restart unsuccessful.

16. Cabin temperature mode selector switch - As required.
17. Electrical equipment - As required.
18. Autoignition switch - ARM.
19. Propellers - Synchronized.
20. Power - As required.

LOW OIL PRESSURE

1. Oil pressure below 105 PSI below 21,000 feet or 85 PSI 21,000 feet and above, torque 49% maximum.
2. Oil pressure below 60 PSI Perform engine shutdown, or land as soon as practicable using minimum power to insure safe arrival.

CHIP DETECTOR WARNING LIGHT ILLUMINATED

If a L CHIP DETR or a R CHIP DETR warning light illuminates, and safe single-engine flight can be maintained; perform engine shutdown.

DUCT OVERTEMP CAUTION ANNUNCIATOR LIGHT ILLUMINATED

1. Cabin air control - In.
2. Cabin temperature mode selector switch - AUTO.
3. Cabin temperature control rheostat - Full decrease.
4. Vent blower switch - HI.
5. Cabin temperature mode selector switch - MAN COOL.
6. Manual temperature switch - DECREASE (hold).
7. Left bleed air valve switch - ENVIRO OFF.

8. If the light is still illuminated after 30 seconds: Left bleed air valve switch - OPEN.
9. Right bleed air valve switch - ENVIRO OFF.
10. If the light is still illuminated after 30 seconds: Right bleed air valve switch - OPEN.

ICE VANE FAILURE

1. Airspeed - 160 KIAS or below.
2. Ice vane control circuit breaker - Pull.
3. Ice vane - Operate manually.
4. Airspeed - Resume normal airspeed.

ENGINE BLEED AIR SYSTEM FAILURE

BLEED AIR FAILURE LIGHT ILLUMINATED

1. Brake de-ice switch - OFF.
2. TGT and torque - Monitor (note readings).
3. Bleed air valve switch - PNEU & ENVIRO OFF.
4. Cabin pressurization - Check.

EXCESSIVE DIFFERENTIAL PRESSURE

1. Cabin altitude and rate-of-climb controller - Select higher setting.
2. If condition persists: LEFT BLEED AIR VALVE switch - ENVIRO OFF (light illuminated).
3. If condition still persists: RIGHT BLEED AIR VALVE switch - ENVIRO OFF (light illuminated).
4. If condition still persists - Descend immediately.
5. If unable to descend: CABIN PRESS DUMP switch - CABIN PRESS DUMP.
6. Bleed air valve switches - OPEN, if cabin heating is required.

LOSS OF PRESSURIZATION (ABOVE 10, 000 FEET)

1. Crew oxygen masks - 100% and on.

CABIN DOOR CAUTION LIGHT ILLUMINATED

1. Bleed air valve switches - ENVIRO OFF.
2. Descend below 14,000 feet as soon as practicable.
3. Oxygen - As required.

SINGLE-ENGINE DESCENT/ARRIVAL

1. Cabin controller - Set.
2. Ice and rain switches - As required.
3. Altimeters - Set.
4. Recognition lights - ON.

☆ 5. Arrival briefing - Complete.

SINGLE-ENGINE BEFORE LANDING

1. Propeller lever - As required.
2. Flaps - APPROACH.
3. Gear - DN.
4. Landing lights - As required.
5. Yaw damp - OFF.
6. Brake de-ice - OFF.

SINGLE-ENGINE LANDING CHECK

1. Autopilot/yaw damp - Disengaged.
2. Gear lights - Check (three green).

3. Propeller lever (operative engine) - HIGH RPM.

SINGLE-ENGINE GO-AROUND

1. Power - Maximum allowable.
2. Gear - UP.
3. Flaps - As required.
4. Landing lights - OFF.
5. Power - As required.
6. Yaw damp - As required.

PROPELLER FAILURE (OVER 2080 RPM)

1. Power lever (affected engine) - IDLE.
2. Propeller lever - FEATHER.
3. Condition lever - As required.
4. Propeller synchronization - OFF.
5. Engine cleanup - As required.

FIRE

ENGINE/NACELLE FIRE DURING START OR GROUND OPERATIONS

1. Propeller levers - FEATHER.
2. Condition levers - FUEL CUTOFF.
3. Fire pull handle - Pull.
4. Push to extinguish switch - Push.
5. Master switch - OFF.

ENGINE FIRE IN FLIGHT (FIRE PULL HANDLE LIGHT ILLUMINATED)

1. Power lever - IDLE.

2. If fire pull handle light out is extinguished: Advance power.
3. If fire pull handle light is still illuminated: Engine fire in flight procedures (identified) - Perform.

ENGINE FIRE IN FLIGHT (IDENTIFIED)

1. Power lever - IDLE.
2. Propeller lever - FEATHER.
3. Condition lever - FUEL CUTOFF.
4. Fire pull handle - Pull.
5. Fire extinguisher - Actuate as required.
6. Engine cleanup - Perform.

FUSELAGE FIRE

1. Fight the fire.
2. Land as soon as possible.

WING FIRE

1. Perform engine shutdown on affected side.
2. Land as soon as possible.

ELECTRICAL FIRE

1. Crew oxygen - 100%.
2. Master switch - OFF (visual conditions only).
3. All nonessential electrical equipment - OFF.
4. Battery switch - ON.
5. Generator switches (individually) - RESET, then ON.
6. Circuit breakers - Check for indication of defective circuit.
7. Essential electrical equipment - On (individually until fire source is isolated).

8. Land as soon as practicable.

SMOKE AND FUME ELIMINATION

1. Crew oxygen - 100% and ON.
2. Bleed air valve switches - ENVIRO OFF.
3. Vent blower switch - AUTO.
4. Aft vent blower switch - OFF.
5. Cabin temperature mode selector switch - OFF.
6. If smoke and fumes are not eliminated: Cabin pressure dump switch -CABIN PRESS DUMP.
7. Engine oil pressure - Monitor.

FUEL SYSTEM

FUEL PRESSURE WARNING ANNUNCIATOR LIGHT ILLUMINATED

1. Standby pump switch - ON.
2. Fuel pressure warning annunciator light - Check extinguished.
3. If fuel pressure warning light is still illuminated: Record unboosted time.

NO FUEL TRANSFER CAUTION ANNUNCIATOR LIGHT ILLUMINATED

1. AUX TRANSFER switch (affected side) - OVER-RIDE.
2. Auxiliary fuel quantity - Monitor.
3. AUX TRANSFER switch (after respective auxiliary fuel has completely transferred) - AUTO.

NACELLE FUEL LEAK

1. Perform engine shutdown.

2. Fire pull handle - Pull.
3. Land as soon as practicable.

FUEL CROSSFEED

1. AUX TRANSFER switches - AUTO.
2. Standby pumps - OFF.
3. Crossfeed switch - As required.
4. Fuel crossfeed advisory annunciator light - Check illuminated.
5. Fuel pressure light extinguished - Check.
6. Fuel quantity - Monitor.

ILLUMINATION OF THE #1 NAC LOW OR #2 NAC LOW CAUTION ANNUNCIATOR LIGHT.

1. Twenty minutes fuel remaining - Confirm.
2. Land as soon as possible.

ELECTRICAL SYSTEM

DC GENERATOR CAUTION ANNUNCIATOR LIGHT ILLUMINATED

1. Generator switch - OFF, RESET, then ON.
2. Generator switch (no reset) - OFF.
3. Mission control switch - OVERRIDE.
4. Operating loadmeter - 100% maximum.

BOTH DC GENERATOR WARNING ANNUNCIATOR LIGHTS ILLUMINATED

1. All nonessential equipment - OFF.
2. Land as soon as practicable.

EXCESSIVE LOADMETER INDICATION (OVER 100%)

1. Battery switch - OFF (monitor loadmeter).
2. Loadmeter over 100% - Nonessential electrical equipment OFF.
3. Loadmeter under 100% - BATT switch ON.

INVERTER CAUTION ANNUNCIATOR LIGHT ILLUMINATED

1. Affected #1 INVERTER or #2 INVERTER switch - OFF.

INST AC WARNING ANNUNCIATOR LIGHT ILLUMINATED

1. N_1 and TGT indications - Check.
2. Other engine instruments - Monitor.

CIRCUIT BREAKER TRIPPED

1. BUS FEEDER breaker tripped - Do not reset.
2. Nonessential circuit - Do not reset.
3. Essential circuit - Reset once.

BATTERY CHARGE LIGHT ILLUMINATED.

If the BATTERY CHARGE caution light illuminates during normal cruise flight, perform the following:

1. Battery Volt-Ampmeter - Monitor. If battery current continues to increase, turn battery switch off.
2. Battery switch (landing gear/flap extension only) - ON.

EMERGENCY DESCENT

1. Power lever - IDLE.

2. Propeller lever - HIGH RPM.
3. Flaps - APPROACH.
4. Gear - DN.
5. Airspeed - 180 KIAS maximum.

LANDING EMERGENCIES

LANDING GEAR UNSAFE INDICATION

1. Gear- DN.
2. Gear lights - Check (three green).
3. Landing gear relay circuit breaker - Check in.

LANDING GEAR EMERGENCY EXTENSION

1. Airspeed - 130 KIAS.
2. LANDING GEAR RELAY circuit breaker - Out.
3. Gear - DN.
4. Landing gear alternate engage handle - Lift and turn clockwise to the stop.
5. Alternate landing gear extension handle - Pump.
6. Gear lights - Check (three green).

GEAR-UP LANDING (ALL GEAR UP OR UNLOCKED)

1. Crew emergency briefing - Complete.
2. Loose equipment - Stowed.
3. Bleed air valves - ENVIRO OFF.
4. Cabin pressure dump switch - CABIN PRESS DUMP.
5. Cabin emergency hatch - Remove and stow.
6. Seat belts and harnesses - Secured.

7. Landing gear alternate engage handle - Disengaged.
8. Alternate landing gear extension handle - Stowed.
9. Gear relay circuit breaker - In.
10. Gear - UP.
11. Nonessential electrical equipment - OFF.
12. Flaps - As required (DOWN for landing).
13. Power levers (runway assured) - IDLE.
14. Condition levers - FUEL CUTOFF.
15. Fire pull handles - Pull.
16. Master switch - OFF.

LANDING WITH NOSE GEAR UNSAFE

1. Crew emergency briefing - Complete.
2. Loose equipment - Stowed.
3. Bleed air valves - ENVIRO OFF.
4. Cabin pressure dump switch - CABIN PRESS DUMP.
5. Cabin emergency hatch - Remove and stow.
6. Seat belts and harnesses - Secured.
7. Nonessential electrical equipment - OFF.
8. Power levers (runway assured) - IDLE.
9. Condition levers - FUEL CUTOFF.
10. Fire pull handle - Pull.
11. Master switch - OFF.

LANDING WITH ONE MAIN GEAR UNSAFE

1. Crew emergency briefing - Complete.
2. Loose equipment - Stowed.

3. Bleed air valve switches - ENVIRO OFF.
4. Cabin pressure dump switch - CABIN PRESS DUMP.
5. Cabin emergency hatch - Remove and stow.
6. Seat belts and harnesses - Secured.
7. Nonessential electrical equipment - OFF.
8. Touchdown - On safe main gear first.
9. Power levers (runway assured) - IDLE.
10. Condition levers - FUEL CUTOFF.
11. Fire pull handle - Pull.
12. Master switch - OFF.

CRACKED WINDSHIELD

EXTERNAL CRACK

No action is required in flight.

INTERNAL CRACK

1. Descend to below 25,000 feet.
2. Cabin Pressure - Reset pressure differential to 4 PSI or less within 10 minutes.

CRACKED CABIN WINDOW

CRACKED CABIN WINDOW (OUTER PANEL)

1. Descend to below 25,000 feet.
2. Cabin pressure - 4.6 PSI maximum.
3. Do not operate more than 20 flight hours.

CRACKED CABIN WINDOW (INNER PANEL)

1. Oxygen - As required.

2. Cabin pressure - Depressurize.
3. Descend - As required.

DITCHING

1. Radio calls/transponder - As required.
2. Crew emergency briefing - As required.
3. Bleed air valves - ENVIRO OFF.
4. Cabin pressure dump switch - CABIN PRESS DUMP.
5. Cabin emergency hatch - Remove and stow.
6. Seat belts and harnesses - Secured.
7. Gear - UP.
8. Flaps - DOWN.
9. Nonessential electrical equipment - OFF.
10. Approach - Normal, power on.
11. Emergency lights - As required.

FLIGHT CONTROLS MALFUNCTION

AUTOPILOT/YAW DAMPER EMERGENCY DISCONNECTION:

The autopilot can be disengaged by any of the following methods:

1. Pressing the DISC - TRIM - AP - YD disconnect switch (control wheels).
2. Pressing the autopilot AP ENGAGE pushbutton on the autopilot mode selector control panel.
3. Pressing the go-around switch (left power lever), (yaw damper will remain on).
4. Pulling the AP CONTR and AFCS DIRECT circuit breakers (overhead control panel).

5. Setting AVIONICS MASTER PWR switch (overhead control panel) to the OFF position.
6. Setting aircraft MASTER switch (overhead control panel) to the OFF position.

UNSCHEDULED RUDDER BOOST ACTIVATION

1. Rudder boost - OFF. If condition persists:
2. Bleed air valve - PNEU & ENVIRO OFF.
3. Rudder trim - Adjust.

UNSCHEDULED ELECTRIC ELEVATOR TRIM

1. Elevator trim switch - OFF.
2. Elevator trim circuit breaker - Out.

BAILOUT

1. Notify crew to prepare to bail out.
2. Distress message - Transmit.
3. Voice security - ZEROIZE.
4. Transponder - 7700.
5. Mode 4 - Zeroize.
6. Flaps - DOWN.
7. Airspeed - 100 KIAS.
8. Trim - As required.
9. Autopilot - Engage.
10. Cabin pressure switch - DUMP.
11. Parachute - Attach to harness.
12. Cabin door - Open.
13. Abandon the aircraft.

PERFORMANCE CHECKS

ENGINE FIRE EXTINGUISHER PRESSURE

A gage calibrated in PSI, is mounted on each supply cylinder to display the level of gaseous charge and should be checked during preflight against the table below:

ENGINE FIRE EXTINGUISHER GAGE PRESSURE

Temp° C	-40	-29	-18	-06	04	16	27	38	48
PSI	190 to 240	220 to 275	250 to 315	290 to 365	340 to 420	390 to 480	455 to 550	525 to 635	605 to 730

CREW BRIEFING

Use the following guide to conduct crew briefings. Items not relevant to a specific mission may be omitted.

CREW INTRODUCTION

EQUIPMENT

1. Personal to include ID tags.
2. Professional (medical equipment, etc.).
3. Survival.

FLIGHT DATA

1. Route.
2. Altitude.
3. Time enroute.
4. Weather.

NORMAL PROCEDURES

1. Entry and exit of aircraft.
2. Seating and seat position.
3. Seat belts.

4. Movement in aircraft.
5. Internal communications.
6. Security of equipment.
7. Smoking.
8. Oxygen.
9. Refueling.
10. Weapons and prohibited items.
11. Protective masks.
12. Toilet.

EMERGENCY PROCEDURES

1. Emergency exits.
2. Emergency equipment.
3. Emergency landing/ditching procedures.

PITOT TUBES, STALL WARNING VANE AND HEATED FUEL VENTS

1. Stall warning heat switch - ON.
2. Pitot heat switches (2) - ON. Check cover removed.
3. Fuel vent heat switches (2) - ON.
4. Left wing heated fuel vent - Check by feel for heat and condition.
5. Stall warning vane - Check by feel for heat and condition.
6. Right wing heated fuel vent - Check by feel for heat and condition.
7. Stall warning heat switch - OFF.
8. Pitot heat switches (2) - OFF.
9. Heated fuel vent switches (2) - OFF.

OXYGEN SYSTEM

1. Oxygen supply pressure gages - Check.
2. Supply control lever (green) - ON.
3. Diluter control lever - 100% OXYGEN.
4. Emergency control lever (red) - Set to TEST MASK position while holding mask directly away from face, then return to NORMAL.
5. Oxygen masks - Put on and adjust.
6. Emergency pressure control lever - Set to TEST MASK position and check mask for leaks, then return lever to NORMAL.
7. Flow indicator - Check. During inhalation blinker appears, during exhalation blinker disappears. Repeat a minimum of 3 times.

FUEL PUMPS/CROSSFEED OPERATION

1. Fire pull handles - Pull.
2. Standby fuel pump switches - ON.
3. Battery switch - ON.
4. #1 fuel pressure and #2 fuel pressure warning lights - Illuminated.
5. Fire pull handles - In.
6. #1 fuel press and #2 fuel press warning annunciator lights - Extinguished.
7. Standby fuel pump switches- Off.
8. #1 fuel pressure and #2 fuel pressure warning lights - Illuminated.
9. Crossfeed - Check. Check system operation by activating switch momentarily left then right, noting that #1 FUEL PRESS and #2 FUEL PRESS warning annunciator lights extinguish and that the FUEL CROSS-FEED advisory annunciator light illuminates as switch is energized.

ANNUNCIATOR PANELS TEST

1. MASTER CAUTION, MASTER WARNING, #1 FUEL PRESS, #2 FUEL PRESS, GEAR DN, L BL AIR FAIL, R BL AIR FAIL, INST AC, #1 DC GEN, #1 INVERTER, #1 NO FUEL XFR, #2 NO FUEL XFR, #2 INVERTER, #2 DC GEN, - Check illuminated.
2. ANNUNCIATOR TEST switch - Press and hold. Check that the annunciator panels, FIRE PULL handle lights, marker beacon lights, antenna azimuth indicator, MASTER CAUTION and MASTER WARNING lights are illuminated. Release switch and check that all lights except those in step 1 are extinguished.
3. MASTER CAUTION and MASTER WARNING lights - Press. Check that both lights extinguish.

STALL AND GEAR WARNING SYSTEM

1. STALL WARN TEST switch - TEST. Check that warning horn sounds.
2. LDG GEAR WARN TEST switch - TEST. Check that warning horn sounds and that the LDG GEAR CONTR handle warning lights (2) illuminate.

FIRE PROTECTION SYSTEM

1. Fire Detector Test switch - Rotate counterclockwise to check three DETR positions. FIRE PULL handles should illuminate in each position. Reset MASTER WARNING in each position.
2. Fire Detector Test switch - Rotate counterclockwise to check two EXTGH positions. SQUIB OK light, associated #1 EXTGH DISCH and #2 EXTGH DISCH annunciator caution light and MASTER CAUTION LIGHT should illuminate in each position.

AC/DC POWER

CHECK FOR:

1. AC frequency - 394 to 406 Hz.
2. AC voltage - 104 to 124 VAC.
3. DC load - Check.
4. DC voltage - 27.0 to 28.5 VDC.

AUTOMATIC FLIGHT CONTROL SYSTEM

NOTE

Pause a few seconds between each step to allow time for the proper indications.

1. Set alert controller more than 1000 feet above altitude indicated on pilot's altimeter. The pilot's altimeter alert light should be extinguished.
2. Decrease the alert controller to within 1000 feet of the pilot's altimeter setting. The alert light should illuminate.
3. Decrease the controller to less the 250 feet above the pilot's altimeter setting. The alert light should extinguish.
4. Increase the controller to 300 (50 feet above the pilot's altimeter indication) and check that the alert light illuminates.
5. Set the desired altitude.
6. Autopilot controller UP TRIM, DN TRIM annunciators CHECK not illuminated.

CAUTION

A steady illumination of UP TRIM or DN TRIM annunciator indicates that the automatic synchronization is not functioning and the autopilot should not be engaged.

7. Turn knob - Center.

8. Elevator trim control switch - ON.
9. Control wheel - Hold to mid travel.
10. AP button - Press. AP ENGAGE/YD ENGAGE annunciators on.
11. Deleted.
12. Deleted.
13. Control wheel - Hold aft of mid travel. Trim wheel should run nose down after approximately 3 seconds. Trim down annunciator should illuminate after approximately 8 seconds.
14. Control wheel - Hold forward of mid travel. Trim wheel should run nose up after approximately 3 seconds, trim up annunciator should illuminate after approximately 8 seconds, and AP TRIM FAIL annunciator and MASTER WARNING flasher should illuminate after approximately 15 seconds.

WARNING

The elevator trim system must not be forced beyond the limits which are indicated on the elevator trim tab indicator.

15. AP/YD & TRIM DISC Button - Depress through second level. Autopilot and yaw damper should disengage and ELECT TRIM OFF annunciator should illuminate. AP ENG and YD ENG annunciators on instrument panel should flash 5 times.
16. Elevator trim control switch - OFF, then ON. (ELEC TRIM OFF annunciator should extinguish).
17. AP button - Re-engage.
18. Turn controller - Check that control wheel follows in each applied direction, then center.
19. Pitch wheel - Check that trim responds to pitch wheel movement. (UP TRIM and DN TRIM annunciators may illuminate).

20. Heading bug - Center and engage HDG. Check that control follows a turn in each direction.
21. Disengage AP by selecting GA. Check that AP disengages and FD commands 7 ° nose up, wings level attitude YD disengage, mode selector push standby.
22. Elevator trim switch - ON.
23. Pilot and Copilot trim switches - Check operation.

WARNING

Operation of the electric trim system should occur only by movement of pairs of switches. Any movement of the elevator trim wheel while depressing only one switch element denotes a system malfunction. The electric elevator trim control switch must then be turned OFF and flight conducted by operating the elevator trim wheel manually. Do not use autopilot.

24. Pilot and Copilot. Check individual element for no movement of trim, then check proper operation of both elements.
25. Check Pilot switches override Copilot switches while trimming in opposite directions, and trim moves in direction commanded by Pilot.
26. Check Pilot and Copilot trim disconnects while activating trim.
27. Elevator trim switch - OFF then ON (ELECT TRIM OFF annunciator extinguishes).

PROPELLER MANUAL FEATHERING

1. Condition lever- LOW IDLE.
2. Left propeller lever - FEATHER. Check that propeller feathers.
3. Left propeller lever - HIGH RPM.
4. Repeat procedure for right propeller.

AUTOFEATHER

1. Condition levers - LOW IDLE.
2. Autofeather switch - Hold to TEST. (#1 AUTOFEATHER and #2 AUTOFEATHER advisory annunciator lights should remain extinguished.)
3. Power levers - Advance to approximately 22% torque, then move autofeather switch to TEST. Both #1 AUTOFEATHER and #2 AUTOFEATHER advisory annunciator lights should illuminate.
4. Left power lever - Retard.
    a. At approximately 16 to 21% torque, check #2 AUTOFEATHER advisory annunciator extinguished.
    b. At approximately 9 to 14% torque, check #1 AUTOFEATHER advisory annunciator light extinguished. (Left propeller starts to feather.)
5. Left power lever - Set approximately 22% torque.
6. Repeat steps 1 through 4 for right engine.

OVERSPEED GOVERNORS

1. Power levers - Set approximately 1950 RPM (both engines).
2. #1 propeller governor test switch - Hold to TEST position.
3. #1 propeller RPM 1830 to 1910 - Check.
4. Repeat steps 2 and 3 for #2 engine.
5. Power levers - Set 1800 RPM.

PRIMARY GOVERNORS

1. Power levers - Set 1800 RPM.
2. Propeller levers - Move aft to detent. Check that propeller RPM drops to 1600 to 1640 RPM.
3. Propeller levers - HIGH RPM.

ICE VANES

1. Ice vane switches - EXTEND. Verify torque drop, TGT increase, and #1 ICE VANE EXTEND and #2 ICE VANE EXTEND annunciators illuminate.
2. Ice vane switches - RETRACT. Verify return to original torque and TGT, and that #1 ICE VANE EXTEND and #2 ICE VANE EXTEND annunciators extinguish.

ANTI-ICE AND DE-ICE SYSTEMS

1. Windshield anti-ice switches - NORMAL and Hi. Check PILOT and COPILOT (individually) for loadmeter rise, then OFF.
2. Propeller switches - INNER and OUTER (momentarily). Check for loadmeter rise.
3. Surface de-ice switch - SINGLE CYCLE AUTO. Check for a drop in pneumatic pressure and wing de-ice boot inflation and after 6 seconds for a second drop in pneumatic pressure.
4. Surface de-ice switch - MANUAL. Check that surface boots inflate, and remain inflated, then OFF.
5. Antenna de-ice switch - SINGLE. Check for a drop in pneumatic pressure and antenna de-ice boot inflation.
6. Antenna de-ice switch - MANUAL. Check that boots inflate, and remain inflated, then OFF.

7. Engine inlet lip heat switches - ON. Check that #1 LIP HEAT ON and #2 LIP HEAT ON advisory annunciator lights are illuminated, and the #1 LIP HEAT and #2 LIP HEAT caution annunciator lights are extinguished, then OFF.
8. RADOME anti-ice switch ON. Check that RADOME HEAT annunciator is illuminated, then OFF.

PNEUMATIC PRESSURE

1. Left bleed air valve switch - PNEU & ENVIRO OFF.
2. Pneumatic pressure - Check 12 to 20 PSI.
3. Right pneumatic and environmental switch - PNEU & ENVIRO OFF. Check that L BL AIR FAIL and R BL AIR FAIL annunciator lights, and L BL AIR OFF and R BL AIR OFF annunciator lights are illuminated.
4. Pneumatic pressure Verify zero.
5. Left pneumatic and environmental switches OPEN. Check that L BL AIR FAIL and R BL AIR FAIL annunciator lights, and L BL AIR OFF and R BL AIR OFF annunciator lights are extinguished.
6. Pneumatic pressure - Verify 12 to 20 PSI.
7. Right Pneumatic and environmental switches - OPEN.

PRESSURIZATION SYSTEM

1. Cabin door caution light - Check extinguished.
2. Storm windows - Check closed.
3. Bleed air valve switches - Check OPEN.
4. Cabin altitude - Set 500 feet lower than airfield elevation.

5. Cabin pressure/dump switch - TEST (hold).
6. Cabin rate-of-climb gage - Check for descending indication and, when confirmed, release cabin pressure/dump switch from TEST.
7. Aircraft altitude - Set to planned cruise altitude plus 500 feet. (If this setting does not result in a CABIN ALT indication of at least 500 feet over takeoff field pressure altitude, adjust as required.)
8. Rate control - Set between 9 and 12 o'clock.

DEPARTURE BRIEFING

ATC CLEARANCE - REVIEW

1. Routing.
2. Initial altitude.

DEPARTURE PROCEDURE - REVIEW

1. SID.
2. Noise abatement procedure.
3. VFR departure route.

COPILOT DUTIES - REVIEW

1. Adjust takeoff power.
2. Monitor engine instruments.
3. Power check at 65 knots.
4. Call out engine malfunctions.
5. Tune/ident all nav/com radios.
6. Make all radio calls.
7. Adjust transponder and radar as required.
8. Complete flight log during flight (note altitudes and headings).

9. Note departure time.

PPC - REVIEW

1. Takeoff power.
2. V_r.
3. V_y (climb to 500' AGL).
4. V_{yse}.

ARRIVAL BRIEFING

WEATHER/ALTIMETER SETTING

AIRFIELD/FACILITIES REVIEW

1. Field elevation.
2. Runway length.
3. Runway condition.

APPROACH PROCEDURE - REVIEW

1. Approach plan/profile.
2. Altitude restrictions.
3. Missed approach.
    a. Point.
    b. Time.
    c. Intentions.
4. Decision height or MDA.
5. Lost communications.

BACK UP APPROACH/FREQUENCIES

COPILOT DUTIES - REVIEW

1. Nav/Com set-up.
2. Monitor altitude and airspeeds.
3. Monitor approach.
4. Call out visual/field in sight.

LANDING PERFORMANCE DATA- REVIEW

1. Approach speed.
2. Runway required.

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By Order of the Secretary of the Army:

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General, United States Army
Chief of Staff

Official:

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The Adjutant General

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P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

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 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 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 milliters = .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

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

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