

TM 1-1520-238-PM

TECHNICAL MANUAL

**PHASED MAINTENANCE INSPECTION CHECKLIST
FOR**

**ARMY
AH-64A HELICOPTER**

“Approved for public release; distribution is unlimited”

TM 1-1520-238-PM dated TBD supersedes TM 1-1520-238-PM dated 30 June 1994, including all changes.

**HEADQUARTERS, DEPARTMENT OF THE ARMY
28 FEBRUARY 2002**

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DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 28 February 2002**

AH-64A HELICOPTER

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WARNING

CERTAIN INSPECTIONS ARE MANDATORY SAFETY-OF-FLIGHT REQUIREMENTS, AND THE INSPECTION INTERVALS CANNOT BE EXCEEDED. IN THE EVENT THESE INSPECTIONS CANNOT BE ACCOMPLISHED AT THE SPECIFIED INTERVAL, THE AIRCRAFT CONDITION STATUS SYMBOL WILL BE IMMEDIATELY CHANGED TO A RED X. MANDATORY SAFETY-OF-FLIGHT INSPECTION ITEMS ARE PRINTED IN BOLD FACE TYPE.

NOTE

INSPECTION ITEMS CONTAINED IN THIS MANUAL ARE CONSIDERED THE MINIMUM REQUIREMENTS FOR PERFORMING PHASED MAINTENANCE AND MUST BE PERFORMED. THE CUMULATIVE EFFECTS OF INSPECTION DEFERRALS ARE UNKNOWN AND COULD RESULT IN CATASTROPHIC FAILURE OR INCREASED MAINTENANCE AT A LATER DATE. THEREFORE, THE USE OF SPECIAL LETTERING TO EMPHASIZE MANDATORY SAFETY-OF-FLIGHT INSPECTION ITEMS IS NOT TO BE CONSTRUED AS AUTHORITY FOR DEFERRAL OF OTHER INSPECTIONS.

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SECTION I. GENERAL INFORMATION

PHASED SCHEDULE. Phased maintenance inspection contains requirements for inspection of the AH-64A helicopter on a phased schedule having a 1000-hour cycle with 250-hour phases. Each requirement included herein is designated for accomplishment at least once, but not more than four times during the 1000-hour cycle.

EXCEEDING THE PHASED SCHEDULE. The phased maintenance inspection intervals designated are the maximum and shall not be exceeded except in actual operational emergencies as explained herein. It is the Commander's responsibility to determine (on an individual aircraft basis) when inspection intervals may be exceeded. For this purpose, operational emergencies are conditions of combat, or conditions of disaster which necessitate flight to evacuate aircraft or personnel. Those inspections annotated by a "C" in the Inspect Phase Nos. column, along with the DA Form 2408-18 (Equipment Inspection List), are considered the MINIMUM mandatory combat maintenance inspection requirements for helicopters scheduled for imminent deployment to or stationed in a combat environment. Under no circumstances will two combat maintenance inspections be performed sequentially. When aircraft are operated beyond the normal inspection due time because of such emergency situations, a circled red X status symbol and an appropriate statement (to include authority) must be entered in block 16 and 17 of DA Form 2408-13 (Aircraft Inspection and Maintenance Record) until such time as the inspection is complete. When inspections are delayed to meet emergency requirements, Commanders will assure that the aircraft status symbol reverts to a red X and that delayed inspections are accomplished immediately upon termination of the emergency. When unusual local conditions (utilization, type of mission, personnel, periods of inactivity, environmental conditions, etc.) dictate, it is the prerogative and responsibility of the Maintenance Officer to increase the scope and/or frequency of maintenance or inspection as necessary to ensure safe operation (TM 1-1500-328-23).

MAINTENANCE ACTIVITIES. The inspections prescribed by this checklist will be accomplished at specified phases by Aviation Unit Maintenance (AVUM) activities with assistance of Aviation Intermediate Maintenance (AVIM) and Depot Maintenance activities when required. The inspection of the part/component is visual unless stated otherwise.

LIMITATIONS. The checklist does not contain instructions for repair, adjustment, or other means of rectifying conditions. Neither does it contain special tolerances, limits, or instructions for special troubleshooting to find causes for malfunctions. Such data will be obtained from the latest issue of the aircraft TM 1-1520-238-23 –series Maintenance Manuals.

CHANGEOVER TO THE PHASED MAINTENANCE SYSTEM. Changeover shall be accomplished in accordance with instructions provided in TB 55-1500-337-24 entitled, "Phased Maintenance System for Army Aircraft." The requirements of this TB must be accomplished prior to implementation of Phase 1 inspection requirements specified in this checklist.

PRE-INSPECTION MAINTENANCE TEST FLIGHT (MTF). A pre-inspection MTF to duplicate non-hazardous equipment problems, determine unsatisfactory conditions, determine equipment operation problems, etc., is recommended prior to start of aircraft disassembly for phased maintenance inspection. The decision to perform the pre-inspection MTF, however, shall be the responsibility of the unit Maintenance Officer.

SPECIAL INSPECTIONS, CALENDAR INSPECTIONS, AND LUBRICATION REQUIREMENTS. Special inspections, calendar inspections, and lubrication requirements contained in TM 1-1520-238-23 and those listed on the aircraft's DA Form 2408-18 shall be reviewed and accomplished in accordance with the "inspection due" requirements specified in those documents.

TM 1-1520-238-PM

TIME BETWEEN OVERHAUL (TBO) AND RETIREMENT LIFE ITEMS CHECK. Prior to start of the applicable phased maintenance inspections and lubrication, a check will be made of components and their remaining operating hours prior to removal. The latest issue of the aircraft's TM 1-1520-238-23 and DA Form 2408-16 shall be referred to for a complete listing of components and their TBO and retirement life.

USING THE PHASED INSPECTION CHECKLIST.

a. A new checklist shall be used each time phased maintenance is due on the aircraft. This checklist is arranged such that it can be separated by area and distributed to the maintenance crew.

(1) Space is provided on each checklist form for entering the following data:

- (a) The number of the maintenance inspection being performed.
- (b) Aircraft serial number.
- (c) Date of inspection.
- (d) Total hours. (Block provided for local use.)

(2) For each inspection item a column is provided for entering the following data:

- (a) Status of the aircraft as the result of the inspection requirement.
- (b) Aircraft fault and/or remarks indicated by the inspection requirement.
- (c) Action taken to correct the fault.
- (d) Initials of person performing the corrective action.

b. This checklist is formatted to eliminate the requirements to use DA Form 2404 as temporary records during phased inspections. Figures 1 thru 3 show examples of methods used to make entries on the phased maintenance checklist forms and the use of supplemental sheets for continuation purposes. This checklist pertains to all AH-64A helicopters and may, therefore, contain inspection requirements applicable to specific equipment not installed on individual aircraft. When this situation is encountered, those requirements that are not applicable need not be performed.

c. A supplemental Checklist Sheet form (DA Form 4676-R) (figure 3, Sheet 2) provided at the end of Section I of this checklist is to be used for local reproduction. Copies of this form will be used to write up faults, remarks, and corrective actions when additional space is required. These supplemental sheets will be used instead of DA Form 2404 in the accomplishment of the phased maintenance inspections.

d. Faults and remarks on the DA Form 2408-13 and DA Form 2408-14 may be transcribed to this checklist at the discretion of the unit Maintenance Officer.

PHASE NUMBERS. In the column headed "Inspect Phase Nos." and adjacent to the sequence number of each inspection requirement, there will appear the word "ALL" or a series of numbers. The word "ALL" indicates that inspection requirements shall be accomplished at each phase (or at every 250-hour interval of the 1000-hour cycle). The numbers represent the phase number at which that inspection requirement is to be accomplished. For example, if the numbers 2 and 4 are shown, that inspection requirement is to be accomplished at phases 2 and 4 only (or at 500-hour interval). If only one number is indicated, then that inspection requirement is accomplished at that phase (or at every 1000-hour interval). At the completion of phase 4, the cycle starts over again with Phase 1.

TM 1-1520-238-PM

STATUS SYMBOLS. All faults and deficiencies discovered during the inspection will be recorded on DA Form 2408-13-1/2408-13-1-E. The status symbols used are the same as those defined in DA PAM 738-751. The status symbol shall be entered by the person(s) performing the inspection and is determined by the type of fault that is found. Do not enter a horizontal dash (–) on the checksheet merely to show a particular inspection requirement is due. If an inspection reveals no fault, a status symbol will not be entered. The person clearing the fault shall place his last name initial over the status symbol. A red X or a circled red X symbol will not be initialed over until after the corrective action has been approved and signed off by a Technical Inspector or designated supervisor.

FAULTS AND/OR REMARKS. Fault entries in the Faults and/or Remarks column shall be brief remarks which describe the conditions resulting from the inspection and which require corrective action. The initials of the person making the entry will be entered immediately after the entry. If no fault is found, this column will be left blank.

ACTION TAKEN.

a. Entries in the Action Taken column shall be brief remarks which describe the action taken to correct the fault described in the adjacent Faults and/or Remarks column. When faults are assigned a red X status, the corrective action shall be inspected and signed off by the Technical Inspector or designated supervisor.

b. If no fault was found, an appropriate remark shall be entered in this column to indicate that the inspection was accomplished, e. g., “Inspected and found OK.” If an inspection item is not applicable to the particular inspection phase number in work or to specific equipment installed on an individual aircraft, a “N/A” entry is required. The initials of the person making the entry shall be entered in the Initial column.

INITIAL. The person correcting the indicated fault shall enter his initials in the initial column opposite the first line of the Action Taken entry.

FINAL RECORDS CHECK. After all corrective actions have been completed and following completion of the phased inspection, the Technical Inspector or designated supervisor shall verify that all applicable forms and records have been properly updated. All uncorrected faults shall be entered on DA Form 2408-13, prepared for that date or to the DA Form 2408-14. A Final Records Checklist (table I) is provided to ensure forms and records have been inspected for completeness and accuracy prior to release of the aircraft from the phased maintenance inspection. The inspector verifying the final records check shall enter his initials adjacent to the indicated form on the Final Records Checklist. The initials entered shall be registered on the Signature Sheet (table II) adjacent to that person’s signature.

SIGNATURE SHEET. All personnel performing inspection and/or maintenance tasks shall place their signatures and initials on the signature sheet (table II). The purpose of the signature sheet is to provide a correlation between initials entered on the individual checklist sheets and the actual names of the personnel accomplishing these tasks.

MAINTENANCE OPERATIONAL CHECKS. After the completion of any required corrective actions to any of the components of a functional system of the aircraft, maintenance operational checks (MOC) shall be performed on that system to determine the effectiveness of the maintenance actions performed and to verify the proper operation of that system. These MOC shall be performed in accordance with TM 1-1500-328-23. Copies of supplemental sheets (DA Form 4676-R) may be used to record and sign off the Maintenance Operational Checks performed.

MAINTENANCE TEST FLIGHT. When all required inspections in Section II have been accomplished and initialed in accordance with the above procedure, a daily inspection in accordance with the TM specified in Section II will be performed on the aircraft to permit performance of a maintenance test flight (MTF). The MTF shall be performed in accordance with the requirements of TM 1-1520-238-23 and TM 1-1500-328-23 using the MTF form in the MTF technical manual. A suggested maintenance test flight checksheet (figure 4) and a rotor smoothing record (figure 5) are provided at the end of Section I.

TM 1-1520-238-PM

CHECKLIST DISPOSITION. The completion of each phased maintenance inspection shall be recorded on DA Form 2408-13 and 2408-15 as prescribed by DA PAM 738-751. The signed checklist, together with all continuation sheets, shall be attached to DA Form 2408-13 and filed for the six months period as required by DA PAM 738-751. At the end of the six months period, records will be destroyed per disposition instruction for DA Form 2408-13-1/2408-13-1-E in paragraph 2-9.D.(2) of DA Pamphlet 738-751.

INSPECTION AREAS. Figure 6 reflects the inspection areas of the AH-64A helicopter. Those areas are titled as shown. Figure 7 shows the location of access doors and panels which require removal at various phased maintenance inspections.

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. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-MMC-MA-NP, Redstone Arsenal, AL, 35898-5230. A reply will be furnished to you.

| PHASE NO. <u>1</u> | | PHASED MAINTENANCE CHECKLIST | | | |
|---|--|---------------------------------|--|--------------------------------|-----------------------------|
| Area Name and No. LEFT FORWARD AVIONICS BAY AND MLG | | Aircraft Serial No. 77-23259 | | Date 4 APR 81 | Total Hrs. This Area 510 |
| Inspect Phase Nos. | Inspection Requirements | Status | Faults and/or Remarks | Action Taken | Initial |
| ALL C | 1. MLG wheel for cracks, distortion, or corrosion. Hub for grease leakage. Tire for INDICATES COMBAT SITUATION INSPECTION | | | <i>Insp - OK</i> | <i>WCB</i> |
| ALL C | 2. MLG wheel brake for fluid leakage, cracked housing or corrosion. Check brake pucks for wear. | <i>B</i> | <i>corrosion on bottom of brake housing WCB</i> | <i>Cleaned off</i> | <i>WCB</i> |
| | | <i>B</i> | <i>Leakage from housing inlet connection WCB (continued on Supplemental Sheet)</i> | <i>Inlet fitting tightened</i> | <i>WCB</i> |
| 2,4 | 3. Search light for corrosion, loose or missing fasteners, and security. Lens for cracks or evidence of overheating. Wiring for loose connections. Chafing, deterioration, and security. | | THIS ITEM NOT APPLICABLE TO PHASE NO. 1 | <i>N/A</i> | <i>WCB</i> |
| <p>EXAMPLE</p> <p>HEAVY LINES ADDED TO SEPARATE FAULTS WITHIN A BLOCK</p> <p>Entries shown above are fictitious and are intended only to illustrate usage of form.</p> | | | | | |

Figure 1. Example of Phased Maintenance Checklist Title Sheet

| PHASE NO. <u>2</u> | | Area Name and No. MAIN TRANSMISSION - 9 | | Aircraft Serial No. 77-23259 | | Date 4 APR 81 | |
|--------------------|--|--|---|----------------------------------|--------------------------|------------------|--|
| Inspect Phase Nos. | Inspection Requirements | Status | Faults and/or Remarks | Action Taken | Initial | | |
| 2,4 | 5. Breathers cleaned. Access L200, R200 | | | <i>Insp - OK</i> | <i>WCB</i> | | |
| ALL | 6. Lube oil and filters changed. Access L200, R200 | | | <i>Insp - OK</i> | <i>WCB</i> <i>GDL</i> | | |
| ALL | 7. Lube oil level sight gages for cleanliness, leakage, and security. Clean lenses. Access L200, R200 | <i>B</i> | <i>Sight gage Loose WCB</i> | <i>Tightened</i> | <i>WCB</i> | | |
| 2,4 | 8. Input shafts and couplings for cracks, dents, distortion, and corrosion. Access L200, R200, LN6, RN6 | <i>X</i> | <i>No. 2 shaft input Coupling diaphragm cracked WCB</i> | <i>Coupling replaced</i> | <i>WCB</i> | | |
| | | | | <i>QA SIGN OFF.</i> | | | |
| | | | | <i>Insp - OK Harold S. Smith</i> | <i>HSS</i> | | |
| | <i>Uncorrected Fault/ Discrepancy from DA form 2408-13</i> | <i>X</i> | <i>(6 Mar 81) Defective Chip</i> | <i>Rewired</i> | <i>RCJ</i> <i>RMP</i> | | |
| | INSPECTION ITEM ADDED TO AVAILABLE SPACE ON A CHECKLIST PAGE. | | | | | | |

EXAMPLE

TWO PEOPLE PERFORMED THIS INSPECTION. BOTH HAVE INITIALED.

NOTE THAT THE SAME PERSON (WCB) DISCOVERED AND CORRECTED THE FAULT.

QA INITIALS ON LAST LINE.

A DIFFERENT PERSON CORRECTED THIS FAULT.

Entries shown above are fictitious and are intended only to illustrate usage of form.

Figure 2. Example of Phased Maintenance Checklist Continuation Sheet