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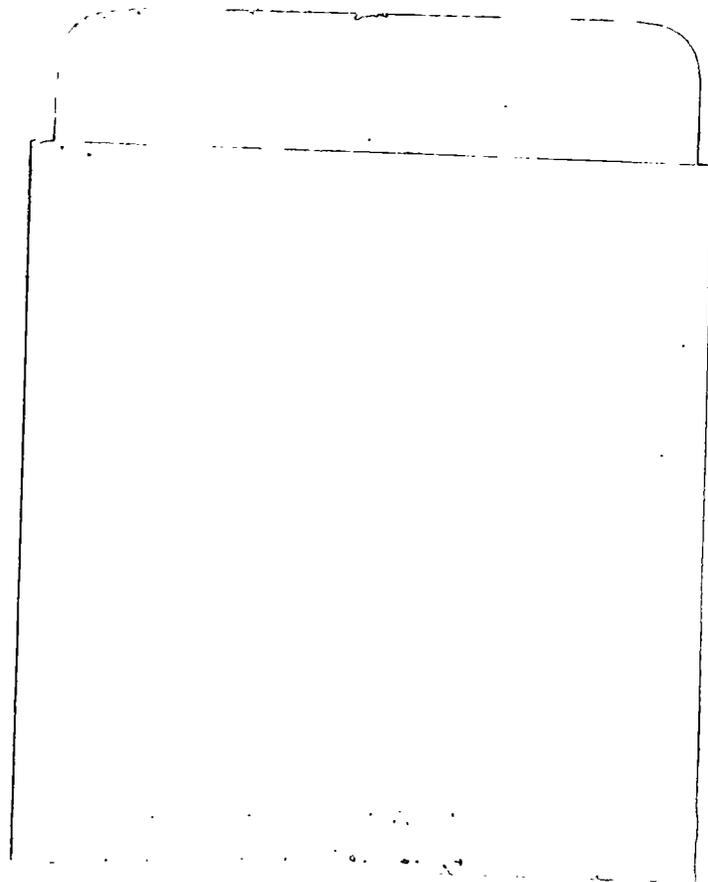
ARMY AIRCRAFT QUALITY CONTROL AND TECHNICAL INSPECTION



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HEADQUARTERS, DEPARTMENT OF THE ARMY

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HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 30 January 1981

ARMY AIRCRAFT QUALITY CONTROL AND TECHNICAL INSPECTION

PREFACE

This manual describes the duties and responsibilities of aircraft maintenance quality control personnel — specifically, the technical inspector. It is designed as a general reference for aviation unit maintenance (AVUM) and aviation intermediate maintenance (AVIM) inspectors. Specific instructions are found in technical manuals and Army regulations. Subjects such as nondestructive inspections, the preventive maintenance inspection system, diagnostic equipment, etc., are only briefly discussed. Subjects of this nature are covered in depth in other technical publications. In all cases, the applicable publication number is given so the inspector can readily gain further information.

The U.S. Army Transportation School is the proponent for FM 55-411. Recommended changes and comments for its improvement will be appreciated. Prepare comments and recommended changes on DA Form 2028 and forward to:

COMMANDANT
US ARMY TRANSPORTATION SCHOOL
ATTN: ATSP-TD-TL
FT EUSTIS, VA 23604

This FM supersedes TM 55-411, 20 February 1967, including all changes.

ARMY AIRCRAFT QUALITY CONTROL AND TECHNICAL INSPECTION

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NOTE: The words "he," "him," "his," and "men," when used in this publication, represent both the masculine and feminine genders unless specifically stated otherwise.



CHAPTER 1

QUALITY CONTROL DUTIES AND RESPONSIBILITIES

Quality control (QC) activities complement those of production control to complete the overall control aspect of maintenance management. The quality control supervisor (67W) coordinates the efforts of the QC team, while the narrow-range technical inspectors (67N30, 67Y30, 68B30, etc.) do the actual inspecting. Quality control management is coordinated with all phases of production and workload control to ensure that maximum production effectiveness is maintained. Properly designed quality control procedures can assure an acceptable level of quality and a decrease in inspection requirements and management effort. However, in no event are quality standards sacrificed solely to increase production. Your duty as a technical inspector is to ensure that the aircraft are as mechanically safe as possible. The purpose of this chapter is to introduce you to the functions of a quality control section.

Specifically, this chapter covers:

- Aircraft Maintenance Quality Control
- Responsibilities of the Technical Inspector
- Technical Inspector's Quality Control Duties.

AIRCRAFT MAINTENANCE QUALITY CONTROL

WHAT IS QUALITY CONTROL?

Quality control is a management function. It ensures that the maintenance is performed correctly and is in accordance with the maintenance manuals for the specific aircraft. An appropriate balance must be established, to maintain maximum production effectiveness without lowering quality standards. By demanding high levels of quality, unscheduled maintenance, which disrupts flight and maintenance schedules, can be decreased. Thus, more aircraft will be available to fly.

WHY DO WE NEED QUALITY CONTROL?

The application of a high level of quality control will minimize waste of time, labor, and material. It will also lessen the possibility of maintenance error or inadequate inspection of aircraft, which can lead to aircraft damage, personal injury, and even death.

As a technical inspector, you are the commanders' system of "checks and balances." You ensure that the entire maintenance effort is of the highest quality. If high standards of quality are constantly maintained, the need for quality control will be satisfied.

RESPONSIBILITIES OF THE TECHNICAL INSPECTOR

As a technical inspector, you are responsible to the unit commander, the maintenance officer, and the aircrew members.

THE UNIT COMMANDER

Your primary responsibility is to the commander. You are his representative in areas concerning aircraft safety of flight. He is your only boss. If it were any other way, conflicts of interest could arise and objectivity would be sacrificed. For this reason, it is highly recommended that the rating official for Senior Enlisted Evaluation Report (SEER) purposes not be involved in the maintenance production area. If a quality control officer is assigned, he should be the rater; otherwise, it should be the unit commander or the executive officer with the commander as endorser. The commander relies on you to ensure that the maintenance performed is of the highest quality and is conducted with a maximum of safety.

THE MAINTENANCE OFFICER

The inspectors are under the operational control, not supervision, of the maintenance officer. Your primary responsibility to the maintenance officer is also to ensure that maintenance is of the highest quality. Additionally, through quality control, material and man-hour waste can be held to a minimum.

THE AIRCREW MEMBERS

The people flying the aircraft depend upon you for assurance that their aircraft is as safe as humanly possible. Although the mechanics are very capable, nothing can be left to chance. When your "inspected okay" goes into a logbook, the aircrew is depending upon your knowledge and ability for their safety.

TECHNICAL INSPECTOR'S QUALITY CONTROL DUTIES

As a technical inspector (TI), your primary duties involve more than inspection of aircraft, but you must remember that aircraft inspection is your **most critical duty**. When inspecting an aircraft or component, keep in mind that human lives depend on how well you do your job. As a technical inspector, your duties fall in the following areas.

PUBLICATIONS

Technical Manual (TM) Library. Quality control personnel establish and maintain a complete and up-to-date set of all technical publications applying to the maintenance performed in a shop. These publications include technical manuals (TM), technical bulletins (TB), Army Regulations (AR), modification work orders (MWO), and field manuals (FM). They provide instructions on the operation, maintenance, repair, modification, serviceability standards, testing, storage, issue, and inspection of equipment and procedures.

TM Familiarization Chart. A technical data familiarization chart as shown on the next page will be used and maintained by quality control.

The chart can be used to ensure that maintenance personnel are familiar with the contents of each technical manual pertaining to their responsibilities. The chart should list all technical manuals pertinent to that equipment for which the shop has maintenance responsibilities. The manuals can be listed in columns at the left of the chart, with the names of the maintenance personnel listed diagonally across the top. Maintenance personnel initial the appropriate block of the chart to indicate an understanding of the

technical manuals. When an organization contains ten or fewer maintenance personnel, a familiarization chart will not be required. In this case, the maintenance personnel should indicate their understanding by initialing each manual. It is recommended that the individual shops maintain separate charts listing the personnel and manuals pertaining only to that shop. You, as an inspector, should check the individual charts on a monthly basis to ensure that:

- All manuals used by that shop are listed
- All assigned shop personnel are listed
- All personnel have initialed to indicate that they are familiar with manual contents.

Revision of Publications. Periodically, but no less frequently than every 3 months, the publication files in use throughout the shops will be inspected to ensure that complete, current publications are in use. At this time, pinpoint distribution requirements will be reviewed and updated. The quality control supervisor will ensure that all applicable incoming publications are read by the quality control personnel. During each inspection, inspectors will determine whether personnel in the maintenance activity are familiar with pertinent directives and are using them in conjunction with repair actions.

Quality control will initiate and follow up all correspondence necessary for clarification of technical publications when the intent or requirement is not clear or specific. All recommendations for changes to Department of the Army (DA) publications, by use of DA Form 2028, will be routed through quality control by the person or section recommending the change.

Quality control will be responsible for ordering all required publications, using DA Form 4569. In cases where required publications are not on hand, or have not been initially distributed, refer to DA Pam 310-10-2 *The Standard Army Publications Systems (STARPUBS) Resupply Guide*.

FORMS AND RECORDS

In general, the technical inspectors are responsible for monitoring all forms and records used in aircraft maintenance for accuracy and completeness. This duty area includes:

TECHNICAL DATA FAMILIARIZATION CHART

**TECHNICAL MANUAL	M SGT LAYMAN	M SGT MATTOX	SFC BARR	SFC GAST	SPG HONEYCUTT	SPG WILEY	SGT MAZER	SP6 KAY	SP6 KEMP	SP5 FAUSTICH	SP5 WESLEY	SP5 KRAFT							
55-1510-201-23	L	M	B			M					K								
55-1510-202-23	L	M	B			M				W	K								
55-1510-205-23	L	M	B			M													
55-1510-206-23	L	M	B			M		K											
55-1520-202-23	L	M	B		H	M													
55-1520-203-23	L	M	B		H	M													
55-1520-204-23	L	M	B		H	W	M	K											
55-1520-205-23	L	M	B				M		J										
55-1520-206-23	L	M	B				M	X											
55-1520-208-23	L	M	B			W	M												
55-1520-210-23	L	M	B		H		M												
38 750	L	M	B	B	H		M	K	J										
55-1500-204-25/1	L	M	B	B	H		M	K	J										

*Enter name of section or shop. List manuals used by that shop.

**Enter manuals most commonly used in performing shop's or section's duties.

As changes are received, the latest change number is posted and the initials are erased. The mechanics reinitial the board as they review the changes.

- ⊙ Aircraft historical records
- ⊙ Weight and balance records
- ⊙ Aircraft maintenance records
- ⊙ Files management
- ⊙ Blank forms
- ⊙ Equipment improvement recommendations.

Aircraft Historical Records. You are required to maintain the historical records for each aircraft assigned to your unit. These records consist of DA Forms 2408-5, 2408-9, 2408-15, 2408-16, 2408-17, and 2408-19. For specific information, refer to AR 750-31 and TM 38-750.

Weight and Balance Records. As stated in AR 95-16, a weight and balance technician is required to be appointed on unit orders. The assigned technician is responsible for maintaining the aircraft's weight and balance records. The inspectors must coordinate with the technician any time maintenance that could affect weight and balance is performed on the aircraft. AR 95-16, TM 55-405-9, the aircraft operator's manual, and AVUM maintenance manual can be referred to for more information.

Aircraft Maintenance Records. All records used in conducting aircraft maintenance must be monitored by the inspectors for accuracy and

completeness. These forms include DA Forms 2404, 2405, 2407, 2408-13, 2408-4, 2408-12, 2408-14, 2408-18, 2410, 2410-1 and material condition tags. TB 750-126 and TM 38-750 can be referred to for complete information.

Files Management. As with any management function, certain files are required to be maintained. As far as quality control is concerned, the most important files are the teletypewriter exchange (TWX) files. These files consist of electrically transmitted messages that may direct grounding of an aircraft, impose operating limitations, or provide general information on aircraft maintenance techniques. Separate TWX files will be maintained for each model of aircraft assigned or supported, and one file for general messages. These messages apply to all models of aircraft or are of a general informational nature. Each aircraft TWX file will be separated into two sections:

- Safety-of-flight (SOF) messages
- Maintenance/technical advisory messages.

More guidance on files management and SOF messages can be found in AR 95-18, AR 340-2, and AR 340-18-1.

Blank Forms. You are required to ensure that an adequate supply of blank forms is on hand at all times for use by the maintenance section. Specific quantities depend upon many variables. However, enough should be on hand to support operations for a 30-day period.

Equipment Improvement Recommendations (EIR). You must check all EIR's submitted for accuracy and completeness. The EIR file should be reviewed to see if any trends are developing. If so, this fact should be mentioned in the EIR being submitted, and reference should be given to the previous EIR numbers. QC should also determine the EIR priority and the need for an EIR exhibit, and dispose of the exhibit as directed by TSARCOM.

INSPECTION

Aircraft. Your most critical duty is inspection of aircraft. The safety of the aircraft and crew depends upon how well you do your inspections. A Preventive Maintenance Inspection System

(PMIS) is discussed in chapter 3; however, certain actions not covered in PMIS need to be brought to mind. They are:

- Turn-in/pick-up of aircraft at AVIM
- Aircraft technical compliance
- Investigation of repetitive deficiencies
- Army Oil Analysis Program (AOAP).

Turn-in/Pick-up of Aircraft at AVIM. The inspector is the most knowledgeable person concerning what must be accomplished while the aircraft is in support maintenance. For this reason, he will accompany the aircraft any time it is turned in for AVIM maintenance. The inspector should:

- ✓ ○ Review records with AVIM personnel and resolve questions on the spot
- Perform a joint inventory with AVIM personnel
- Accompany AVIM inspectors on the initial inspection
- Upon completion of repairs and accepting aircraft:
 - Perform a joint inventory with AVIM personnel
 - Review aircraft records for accuracy and completeness
 - Inspect the aircraft to ensure that:
 - Requested work was performed
 - Required parts were ordered for work requested but not performed.

Aircraft Technical Compliance (MWO's and TB's). The inspector ensures that all requirements of applicable aircraft TB's and MWO's are met and required DA Form entries made. The inspectors are responsible for:

- Grounding the aircraft if required by the TB or MWO (AR 95-18)
- Ensuring that needed MWO kits are ordered and DA Form 2408-17 entry made upon their receipt (TM 38-750)
- Forwarding DA Form 2407 as stated in TM 38-750

- Maintaining a card file showing the status of MWO/TB compliance for all assigned aircraft (see Chapter 4)
- Submitting reports required by AR 95-18 to report TB compliance.

Investigation of Repetitive Deficiencies. Any deficiency that repeats itself on a continuing basis usually indicates a defect in either material or workmanship. The inspector's duty is to investigate the problem and get corrective action started.

If a material defect is involved, an EIR must be submitted to inform TSARCOM of the problem. If the defect is due to workmanship, all maintenance personnel must be made aware of the fact, and must be fully informed of:

- The problem
- Its possible effects
- How to correct it.

It is only through effective communication that the problem can be solved.

Army Oil Analysis Program. The inspectors are responsible for ensuring that all aircraft are entered in the program and the required records are maintained. Refer to Chapter 3 and TB 43-0106 for specific instructions.

Components. Two areas fall under the heading of component inspection:

- Time change components — time between overhaul (TBO)
- TBO component chart.

Time Change Components (TBO). Quality control will monitor the time in service of all aircraft components required to be replaced on an hourly or calendar basis. For a list of these components, refer to the AVUM/AVIM maintenance manual for the aircraft concerned. Additionally, the inspections ensure that component lives are not overflown unless specifically authorized in TM 55-1500-328-25.

TBO Component Chart. There are two chart variations for use by quality control personnel: the Time Change Component Schedule Chart, and the Time Change Bar Graph Component

Schedule. Samples of these two charts are shown on the next two pages. Use of either chart will provide confidence that the aircraft component will be subjected to inspection at the appointed time, since both give ready reference to hours remaining until replacement on all installed aircraft time change components.

Quality Control personnel must coordinate with maintenance officers and NCO when:

- One hundred hours remain to change on hourly components
- Two months remain to change on calendar components.

This notification is to allow replacement parts to be ordered in advance of their replacement time.

Shop Inspection. This duty is divided into two areas:

- Facility/equipment inspection (shop safety)
- Accuracy of test equipment.

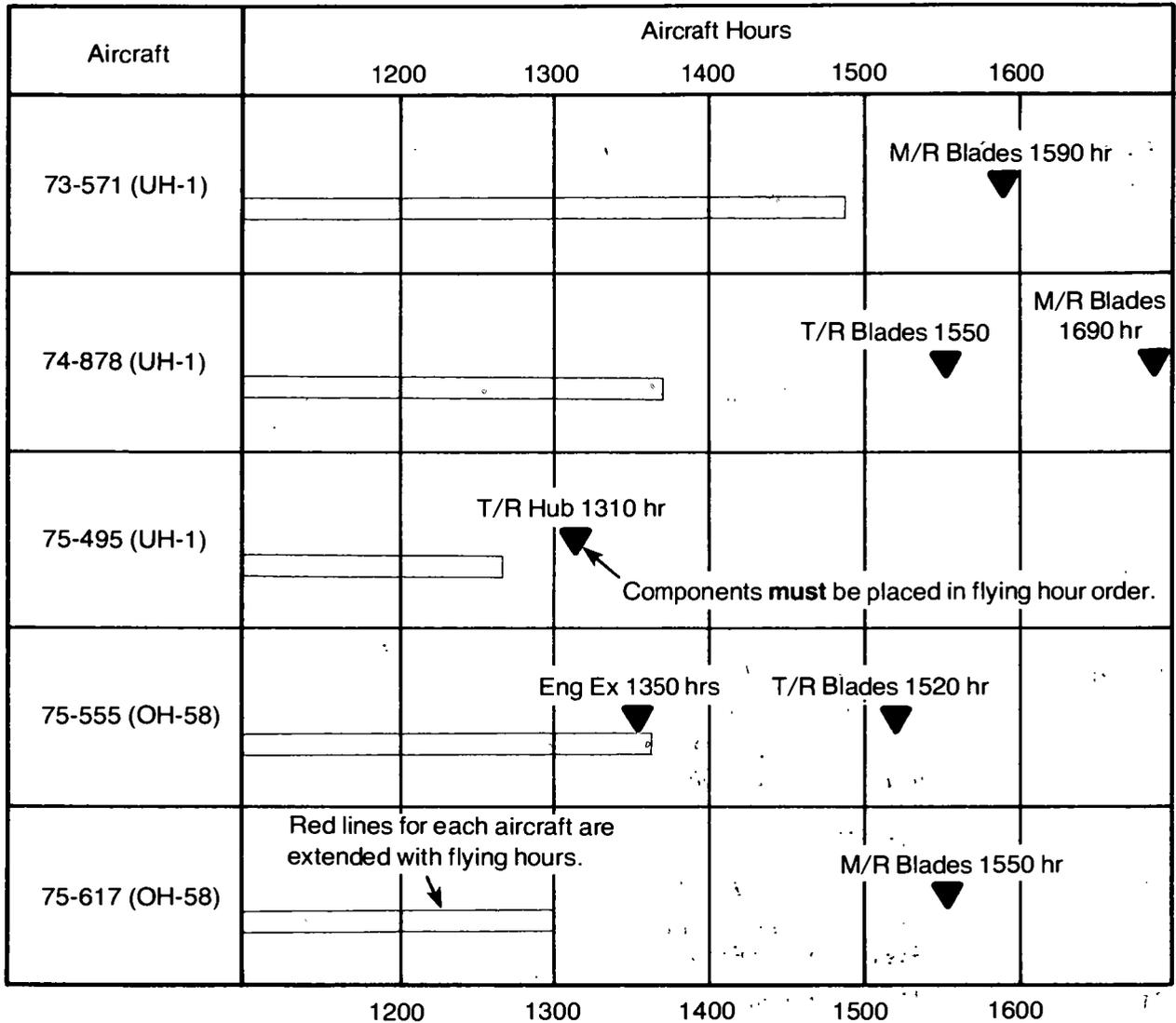
Facility/Equipment Inspection. Inspection of this area consists of checking the shop and shop equipment for:

- Proper layout
- Clear fire lanes
- Fire extinguisher serviceability
- Equipment safety devices installed and used.

The inspection procedures and what to look for are more fully covered in Chapter 4. Other details are provided in TM 55-1500-204-25/1.

Accuracy of Test Equipment. Quality control is responsible for ensuring that all calibration requirements are met. The technical inspector must:

- Ensure that items requiring calibration are calibrated at proper intervals. Refer to TB 43-180 and TB 43-180-1 for items requiring calibration and intervals.
- Check individual items to ensure that calibration intervals are not being exceeded.
- Ensure that DA Form 2416 is maintained for each item requiring calibration. Refer to TM 38-750.



SAMPLE BAR GRAPH COMPONENT CHART

○ Ensure that DA Label 80 is attached to items requiring calibration. If the calibration due date on the label is within seven days, that item must be separated from the others to ensure that its calibration date will not be exceeded. It must then be turned in for calibration. Refer to TB 43-180 and TB 43-180-1 to determine where particular items are calibrated (i.e., support unit or area calibration team).

As a quick review, this chapter points out that:

- Quality control is the basis for ensuring that all aircraft maintenance is performed at highest standards possible.
- Your duties as a technical inspector involve more than the inspection of aircraft; inspection of facilities, records, and equipment are also part of your job.
- As a technical inspector, you have loyalties and responsibilities toward the unit commander, maintenance officer, and aircrew members.

TIME CHANGE COMPONENT SCHEDULE

Posted 1 JULY 1971

- (Black) Replacement time
- (Red) Item on requisition
- (Green) Item on hand

Replacement Due

Acft Type	Acft Serial No.	Total hrs	Periodic due	Replacement Due														
U8D	65-12345	50	100	2000	2000	JULY 76	DEC 72											

TIME CHANGE COMPONENT CHART



CHAPTER 2 PUBLICATIONS

Army publications describe the policies and procedures used in maintaining aircraft and accomplishing maintenance management. Many different types of publications are required to be on hand in the maintenance area. Quality control personnel must ensure that these publication libraries are constantly updated with the latest changes. Additionally, the master reference library is set up and maintained by the technical inspectors. The purpose of this chapter is to familiarize you with Army publications and technical libraries. It covers:

- Types of publications
- Updating publications
- Technical libraries.

TYPES OF PUBLICATIONS

ARMY REGULATIONS (AR's)

AR's provide policies and responsibilities and govern administrative procedures for all levels of the Army. Only the information required to ensure compliance with policies and provide uniformity is included. An index of all AR's is contained in DA Pam 310-1.

AR's are numbered according to the basic subject category. For example, all AR's in the 95 series are concerned with aviation. A subnumber preceded by a dash provides additional information about the basic subject. For example:

- AR 95-16 *Weight and Balance — Army Aircraft*
- AR 95-34 *Non-Standard Aircraft Policy.*

DEPARTMENT OF THE ARMY PAMPHLETS (DA PAM)

DA Pam's contain information or reference material of a permanent nature. The primary DA Pam's used by technical inspectors will be in the 310 series — "Publications." Within this series are the indexes of all Army publications.

DA Pam's are numbered in the same manner as Army Regulations; that is, a basic number identifies the subject matter. A subnumber, preceded by a dash, is a serial number distinguishing between DA Pam's with the same basic number. For example:

- DA Pam 310-1 *Index of Administrative Publications*
- DA Pam 310-2 *Index of Blank Forms.*

DA Pam 310-1 includes an index of all DA Pamphlets.

FIELD MANUALS (FM's)

FM's outline military doctrine, tactics, and techniques. Instructions and reference material relating to training and operations are included. Technical reference material concerning maintenance management and aircraft systems repair theory is also contained in field manuals.

Field manuals are numbered in the same manner as AR's and DA Pam's; that is, a basic number identifies the primary subject. A subnumber indicates manuals within the same primary subject area. For example:

- FM 55-42 *Aviation Intermediate Maintenance*
- FM 55-63 *Fundamentals of Airframe Maintenance.*

The index of FM's is DA Pam 310-3.

TECHNICAL MANUALS (TM's)

TM's fall into two categories: either they provide information on specific items of equipment or they provide training information on a variety of subjects.

TM's for specific items of equipment provide instructions on operation, maintenance, overhaul, and parts lists and breakdowns.

TM's providing training information contain material of a nonspecific nature covering theory and general procedures.

TM's are numbered depending upon their use. TM's for training have a basic number that indicates the subject matter. Subnumbers denote different manuals within the same basic subject. For example:

TM 55-412 *Fundamentals of Aircraft Instruments.*

TM's prepared for specific items of equipment are numbered as follows: The first two digits identify the preparing technical service of the TM; for example, 55 denotes transportation.

A dash and a four-digit number indicates the federal supply classification code, to include the group of equipment within the federal supply class; for example, -1510 represents fixed-wing aircraft and -1520 denotes rotary-wing aircraft.

A dash and a three-digit number indicates the mission, design, and series (MDS) of the particular aircraft; for example, -210 denotes UH-1D/H, -228 is for the OH-58A.

A dash and two-digit number denotes the category of maintenance. For example, -10 is for operators, -23 is combined AVUM and AVIM.

A serial number preceded by a slash is added when a manual is published in more than one volume; for example, /1, /2, and so forth.

The letter P is used as a suffix when the repair parts and special tools lists are published in a volume separate from the maintenance instructions. This volume will have the same basic number as the technical manuals with which it is used. Following is an example after consolidating the above:

TM 55-1510-209-23/1 Volume of the U-21A
AVUM/AVIM Maintenance Manual

TM 55-1520-210-23 UH-ID/H/EH-IH
Aviation Unit and Intermediate Maintenance Instructions

TM 55-1520-228-23P OH-58A Aviation Unit
and Intermediate Maintenance Repair Parts and Special Tools List.

The index of Technical Manuals is DA Pam 310-4.

TECHNICAL BULLETINS (TB's)

TB's contain technical information pertaining to equipment or professional management techniques. The most common TB's, as far as quality control personnel are concerned, are those directing one-time inspections of aircraft or components. Urgent inspection requirements are initially sent to the units in the form of an electrically transmitted message (TWX). The subsequent TB then supersedes the TWX. TB's directing one-time inspections are classified by priorities as follows.

Urgent. The condition stated in urgent TB's affects aircraft safety of flight. The condition may cause:

- Damage or destruction to aircraft
- Death or injury to personnel.

The urgent TB may direct grounding of all aircraft of a certain type. Normally, this grounding must take place within a certain flying hour or calendar time period. In any case, specific procedures to follow will be given in the TB.

Limited Urgent. A limited urgent TB may allow the aircraft to be operated, but only under specific conditions or limitations. These conditions will be specified in the TB.

Normal. Normal TB's are issued as a result of problems which can reduce efficiency, life expectancy, or utilization.

These TB's do not impose any operating limitations. However, they must be accomplished within a specified time period.

TB's pertaining to specific items of equipment are numbered the same way as the TM for that item. An added number, preceded by a slash, differentiates between different TB's on the same item. The two-digit group indicating the category of maintenance indicates what category must perform the TB requirements.

TB's pertaining to two or more different items of equipment within the same FSC class will have a zero for the third digit in the four digit group.

Following are examples of TB numbers:

1. 2. 3.

TB 55-1510-209-20/1

1. Pertains to U-21 fixed wing aircraft.
2. Performed by AVUM.
3. First U-21 AVUM TB published.

1. 2. 3.

TB 55-1520-210-30/5

1. Pertains to UH-1D/H helicopters.
2. Performed by AVIM.
3. Fifth UH-1 AVIM TB published.

1. 2.

TB 55-1500-307-24

1. Pertains to all aircraft.
2. Information applies to AVUM through depot level maintenance.

See DA Pam 310-4 for an index of TB's.

MODIFICATION WORK ORDERS (MWO's)

MWO's are the only publications that authorize modification or alteration of Army equipment. MWO's are issued in order to:

- Increase safety of personnel
- Provide compatibility with newer equipment
- Prevent serious damage to equipment
- Increase operational effectiveness
- Reduce support requirements.

Each MWO contains specific instructions as to:

- Time limit for compliance
- Maintenance category that must apply the MWO
- Parts required
- Man-hours required
- Form entries required

- Method of performing the modification.

As with Technical Bulletins, MWO's are assigned priorities. The priority classifications are the same as for TB's.

The numbering system for MWO's is the same as for TB's. Refer to DA Pam 310-7 for an index of MWO's.

SAFETY-OF-FLIGHT MESSAGES

Safety-of-flight messages provide information concerning the safe operation of an entire model or series of Army aircraft. These messages are transmitted by electrical means to all organizations concerned. There are two types of safety-of-flight messages: procedural and technical.

Procedural. Procedural safety-of-flight messages impose operating limitations on the specified aircraft. These messages are issued by the US Army Safety Center.

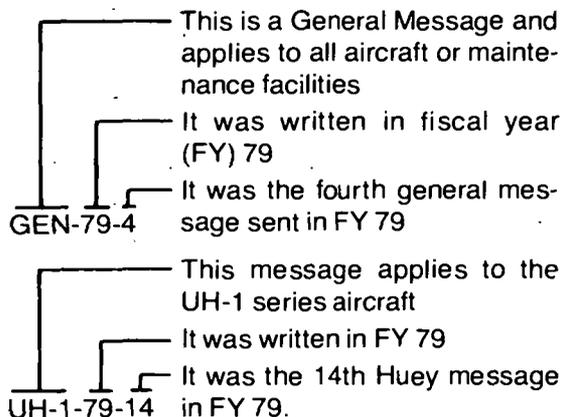
Technical. Technical safety-of-flight messages may ground the specified aircraft. These messages usually require removal and replacement or modification of the parts or components and/or modification of the aircraft. They are issued by TSARCOM and are later published as urgent action TB's or MWO's.

Technical messages are further broken down into two categories:

- *Maintenance Advisory.* These messages advise maintenance personnel of:
 - Changes in procedures
 - Changes in operating hours of TBO components
 - Defects in POL products
 - Aircraft problems that do not warrant grounding the aircraft.
- *Safety-of-flight.* These messages are of a serious nature. They usually denote hazardous aircraft conditions that may cause aircraft damage or injury to personnel. Safety-of-flight messages are later published as urgent action TB's or MWO's.

The safety-of-flight message number indicates whether it's of a general nature that applies

to all aircraft, or if it applies only to a specific series of aircraft. For example:



Every 6 months the Army Aviation Systems Command publishes an index of all messages they transmitted for that 6-month period. The message file should be checked when the index is received to ensure that all required messages are on hand.

SUPPLY LETTERS

Supply letters provide important supply information to maintenance personnel. The following information is generally published in supply letters:

- Stock number changes
- Direct exchange list changes
- Reports on new material
- Information on Aircraft Intensively Managed Items (AIMI).

Supply letters are numbered in numerical sequence by calendar year. They generally contain an expiration date at which time the message must be destroyed.

FEDERAL AVIATION ADMINISTRATION (FAA) PUBLICATIONS

The FAA publishes many books on aviation and aircraft maintenance. They may be used to improve and increase knowledge on aviation subjects. Army publications are the only authorized manuals to be used in accomplishing aircraft maintenance. In no case will FAA or any other federal agency publications be used to maintain Army aircraft.

UPDATING PUBLICATIONS

The quality and effectiveness of aircraft maintenance requires that the latest technical information be on hand at all times. Army publications are continually being updated to reflect the latest information.

CHANGES

Rather than reprint an entire manual, changes are published to update existing manuals. Minor changes are allowed to accumulate prior to their being printed. Serious errors in publications result in the immediate printing of a change to a manual. Immediate printing of a change to a publication may be issued as an immediate action interim change (IAIC). The IAIC is only printed one time and is not stocked for reorder.

REVISION

A revision is a complete, new edition of an existing publication. It replaces or supersedes the preceding issue and includes any changes, supplements, and appendices that were included in the original manual.

SAFETY-OF-FLIGHT SUPPLEMENTS

Safety-of-flight supplements are used as a quick means to provide safety information when a hazardous condition exists. These supplements contain important operational, precautionary, and restrictive instructions that cause flight limitations. In order to focus immediate attention upon the importance of these supplements, the first page is printed with a bold red border of FS initials and the words SAFETY-OF-FLIGHT appear at the top and bottom of the page. Supplements also bear the same title as the basic publication they supplement. When safety-of-flight information is applicable to more than one type of aircraft, an individual supplement is issued for each type of aircraft involved. These supplements may be issued in one of two forms, interim or formal.

Interim supplements. Interim supplements are publication changes issued by electrical transmission when loss of life or serious injury to personnel is involved.

Formal supplements. Formal supplements are issued and distributed through normal channels

when serious damage to the aircraft is involved or to replace previously issued interim supplements.

RESCISSION

A publication is rescinded (canceled) after it has served the purpose for which it was written or when its material becomes obsolete.

The DA Pam indexes contain a section on publications that have been rescinded. If any of these publications are in the library, they must be destroyed.

DISTRIBUTION OF PUBLICATIONS AND CHANGES

Quality control is responsible for ensuring that adequate quantities of current publications are on hand. For this reason you must have an understanding of how the publications distribution system operates.

DA Pam 310-10, *Guide for Publications Supply Personnel*, is a must for the technical inspector. It explains:

- How initial distributions and resupplies are made
- Which DA forms are required for ordering publications
- Where publications are ordered from
- How a publications account is set up.

Refer to DA Pam 310-10 for the above information.

TECHNICAL LIBRARIES

TYPES OF LIBRARIES

Libraries for which the technical inspector is responsible fall into two categories.

Quality Control Master Library. This library, located in the Quality Control Office, is for the use of all personnel. It must contain the publications required to maintain all series of aircraft supported by the shop. Refer to Appendix I for the publications required to be in the master library.

Shop Libraries. The individual shops may have libraries containing manuals covering the specific duties of the shop. The inspectors are responsible for ensuring that these manuals are also up-to-date.

CURRENCY OF MASTER LIBRARY

The importance of a current library cannot be overstressed. DA Pam 310-13, *Posting and Filing Publications*, is required reading for technical inspectors. It explains setting up, maintaining, and posting changes to technical libraries.

INSPECTION OF LIBRARIES

The master and shop libraries will be checked by the technical inspectors monthly to ensure that:

- All required manuals are on hand or on order
- Libraries are located conveniently to users
- Unnecessary publications are not on hand
- Changes are properly posted
- Superseded or rescinded manuals are not used
- Classified manuals are controlled as stated in the AR 380 series

Disposal of Publications. Publications are disposed of when they have been rescinded, replaced, or superseded. However, old publications should not be discarded until the new publications are reviewed.

- *Unclassified Publications.* Unclassified publications are normally disposed of in accordance with instructions from the local salvage officer.
- *Classified Publications.* The disposal of classified publications must be accomplished in accordance with AR 380-5.

Publications in Excess of Needs. If publications are received in your unit over and above what you need, contact other aviation units to see if they need them. If they do not, contact the Post AG Publications Officer for disposal instructions. Review the DA Form 12 series; it may show quantities over what you need. If so, update the

DA Form 12' series following instructions contained in DA Pam 310-10.

Some of the important points to remember from this chapter are:

- AR's, DA Pam's, FM's, TM's, TB's, MWO's, Safety-of-Flight Messages and Supply Letters are sources of information on the policies and procedures used in maintaining aircraft
- All publications must be updated to ensure that the latest technical information is on hand
- Quality Control master libraries contain all publications supporting shop aircraft; shop libraries contain manuals covering the specific duties of the shop.

CHAPTER 3

PREVENTIVE MAINTENANCE INSPECTION SYSTEM

The intent of the preventive maintenance inspection system is to discover minor faults and correct them before they become major. In other words, damage to aircraft is **prevented** through detailed and timely inspection. The purpose of this chapter is to give the technical inspector a general background of the preventive maintenance inspection system. For more detailed information, refer to TM 55-1500-328-25. This chapter discusses:

- Scheduled inspections
- ⊕ Unscheduled inspections
- ⊕ Special inspections
- ⊕ Other inspections.

SCHEDULED INSPECTIONS

✓ Scheduled inspections are those that are required to be performed at specific flying hour intervals. These inspections can be further broken down into:

- ⊕ Preventive maintenance services
- ⊕ Phase maintenance.

All Army aircraft are inspected and maintained under one of these two maintenance systems. Continuous inspection is an optional method of performing either of the two. A transition is under way which will eventually convert all Army aircraft to the phased maintenance system.

PREVENTIVE MAINTENANCE SERVICES (PMS)

PMS Requirements. PMS inspection requirements are contained in the TM published for each series of aircraft. The TM number is the same as the TM for the aircraft. The only difference is that the two-digit group denoting the category of maintenance is dropped. The letters "PMS" are substituted. For example:

TM 55-1500-340-PMS U-21 PMS Inspection Requirements.

Inspection Areas. In the PMS manual, the aircraft is divided into areas, each of which is assigned a number. A decimal number after the area lists the specific item to be inspected. This method allows thorough and orderly inspection without overlap, and eliminates the possibility of an item's being overlooked.

Inspection Intervals. Inspection intervals are given in the appropriate PMS manual. The only time these intervals may be exceeded is in case of operational emergency. For explicit guidance in this area, refer to TM 55-1500-328-25.

Daily Inspection. Daily inspection is a visual and operational check of an aircraft to assure continuing safe and reliable operation. Disassembly of components is not required unless a discrepancy is detected. Removal of cowling and inspection plates is held to a minimum. The daily inspection is accomplished after the last flight of the day or prior to the first flight of the next day.

A daily inspection must be performed every 7 days if an aircraft has not flown during that period. This time period may change as new aircraft enter the Army inventory. For example, the UH-60 requires an inspection every 10 days if the aircraft has not been flown. To be sure, always refer to TM 55-1500-328-25 for the most current information.

PHASE MAINTENANCE

Phase maintenance was designed to replace the PMS system. It was found through experience and computer evaluation that the PMS system required excessive inspection. Phase maintenance is intended to decrease inspection requirements without sacrificing maintenance safety and reliability. The advantages of phase maintenance are:

- Improve operational readiness
- Decrease maintenance man-hours
- ⊕ Reduce scheduled maintenance downtime

- Reduce repair parts consumption
- Maintain present high level of safety and reliability
- Eliminate intermediate inspections.

NOTE: Daily inspections will continue in progress.

Implementation. Further information and implementation instructions are contained in TB 55-1500-337-24.

CONTINUOUS INSPECTION

Continuous inspection is a method of accomplishing the PMS or phase maintenance requirements by carrying out the inspection requirements during available downtime between flights. This method may be employed at the discretion of the unit commander. It is recommended that this method not be employed in TO&E units. Very rigid production and quality control standards must be maintained to ensure meeting all inspection requirements.

UNSCHEDULED INSPECTIONS

Unscheduled inspections are not controlled by a set number of flying hours or precise calendar date. Examples of unscheduled inspections are:

- Maintenance Manhour Expendability Limits
- Serviceable parts inspections
- Commander's inspections
- Maintenance Assistance Instruction Team.

The last two are not inspections of aircraft or components. They are examinations of the maintenance operation itself, and are designed to aid the maintenance section.

MAINTENANCE MANHOUR EXPENDABILITY LIMITS (MMEL)

MMEL is performed on damaged aircraft by AVIM quality control personnel in order to determine:

- Extent of damage
- Amount of repair required

- Parts and manhour requirements needed to return the aircraft to service.

For further information and procedures, refer to TB 43-0002-3.

SERVICEABLE PARTS INSPECTION

The serviceable parts inspection determines the serviceability of parts removed from unserviceable aircraft. The following areas are governed by the indicated manuals:

- Parts inspection and disposition — AR 750-1, TM 55-1500-328-25
- DA Form requirements — TM 55-1500-307-25, TB 750-126, TM 38-750.

COMMANDER'S INSPECTION

Commanders' inspections are both formal and informal inspections conducted by commanders and staff personnel to determine reliability and performance of equipment, efficiency of operations, and effectiveness of maintenance programs. A commander's inspection of a maintenance program includes such inspection items as sample quantities of equipment, records, and maintenance procedures. Equipment readiness is estimated through the use of equipment serviceability criteria. Guidelines for commanders' inspections and equipment serviceability criteria are given in DA Pam 750-1.

MAINTENANCE ASSISTANCE INSTRUCTION TEAM (MAIT)

The MAIT program is intended to provide maintenance assistance and instruction in order to help units reach a high state of readiness. Assistance and instruction is given in the following areas:

- Equipment repair and preventive maintenance
- Equipment condition and serviceability
- Proper use of tools and test equipment
- Repair parts supply and direct exchange
- Records and reports management
- Personnel management and training
- Publications

- Shop layout
- Production and quality control procedures
- Introduction to new techniques and doctrine.

For further information on MAIT, refer to AR 750-51.

SPECIAL INSPECTIONS

Special inspections supplement scheduled inspections, but are not based on airframe operating time or inspection intervals. A brief description of special inspections follows.

SPECIFIC INCIDENT

A specific incident inspection becomes due as a result of exceeding an aircraft limitation. Inspection requirements will vary depending upon the type of aircraft involved. Refer to the AVUM maintenance manual for specific requirements. Examples of specific incidents that result in a requirement for inspection are:

- Overspeed
- Overtorque
- Sudden stoppage
- Hard landing.

Since these incidents may result in undetected aircraft damage, it is mandatory that the aircraft be grounded until the inspection can be performed.

CALENDAR INSPECTION

Calendar inspections are those that become due on a calendar basis. A list of these inspections is contained in the specific aircraft AVUM maintenance manual. All calendar inspections must be entered on DA Form 2408-18 in accordance with TM 38-750.

At times, the DA Form 2408-18 shows only the month and year that the inspection becomes due. If this is the case, the inspection will be due as of the first day of the month.

Calendar inspections may be performed during the nearest intermediate, periodic, or phase inspection. Refer to TM 55-1500-328-25 for further information.

DEFINITE INSPECTION OF ENGINES

The definite inspection is typically known as the "hot end," and is based on engine operating hours. Refer to the AVUM maintenance manual for specific intervals.

DUAL INSPECTION CRITERIA

Dual inspections become due on a dual basis; i.e., aircraft hours and calendar days. They normally become due at **less** than the normal intermediate inspection interval.

The DA Form 2408-18 entry for these inspections will reflect both the calendar and hour due time. The inspection interval, calendar and hour, for dual inspections will not be exceeded.

OTHER INSPECTIONS

There are several other inspections that you will be involved with that cannot be classified in the first three major headings. These are discussed below.

TRANSFER INSPECTION

A transfer inspection is a check of the aircraft's serviceability prior to transfer to another unit. It is performed by the losing organization. The inspection is conducted in accordance with the requirements of TM 55-1500-326-24.

ACCEPTANCE INSPECTION

An acceptance inspection is performed by the gaining unit on newly assigned aircraft. The following items must be accomplished:

- Perform safety-of-flight inspection
- Perform aircraft DA Form 2408-17 inventory
- Review all files and records for accuracy and completeness in accordance with TM 38-750 and TM 55-405-9
- Enter the aircraft in the Army Oil Analysis Program in accordance with TB 43-0106.

ONE-TIME INSPECTION

The one-time inspection is performed when directed by a technical bulletin or safety-of-flight message. Specific instructions are given in the

TB or message as to procedures, DA Form entries, status symbols, etc.

ARMY OIL ANALYSIS PROGRAM (AOAP)

AOAP was designed to evaluate the internal condition of aircraft oil-wetted components. This is accomplished by measuring the quantity of wear-metal in an oil sample taken from the component. Quality control personnel will make certain that:

- Oil samples are entered on DA Form 2408-18
- When the sample is due, entry is made on DA Form 2408-13
- DD Form 2026, Oil Analysis Request, is reviewed for accuracy and completeness
- Oil samples are sent to the laboratory serving your unit as soon as possible
- A record is made showing when samples are due and taken for each aircraft (see example on the next page)
- The laboratories' recommendations concerning special oil samples, aircraft grounding, and/or component replacements are followed to the letter.

For detailed information and procedures, refer to TB 43-0106, *Spectrometric Oil Analysis*.

MAINTENANCE OPERATIONAL CHECK (MOC) AND MAINTENANCE TEST FLIGHT (MTF)

MOC's and/or MTF's are conducted to ensure the airworthiness of aircraft and/or systems. Refer to TM 55-1500-328-25 for specific reasons when MOC's and MTF's are due, and the general procedures to follow.

A technical inspector will thoroughly brief the test flight crew as to what maintenance is to be performed, why the flight is required, and what portions of the test flight must be performed if it is only a limited test flight.

Additionally, a technical inspector will accompany the flight crew during the test flight. During flight, his duties will be to:

- Read off the check list requirements to the pilot

- Monitor and record the gage readings
- Alert the pilot to any unusual noises or vibrations
- Perform any duties requested by the pilot.

The TI will also ensure that all test flight requirements of the aircraft AVUM manual or MTF technical manual are met (if a limited test flight, only those requirements for the items being checked need be met); and aid the pilot in performing a post test flight inspection of the aircraft.

INSPECTION OF AIRCRAFT BEING TRANSFERRED TO MILITARY ASSISTANCE PROGRAM (MAP)

Army aircraft scheduled to be transferred to eligible foreign recipients under the Military Assistance Program (MAP) are inspected in accordance with AR 750-55 to ensure that the aircraft meet standards of serviceability and appearance as set forth in AR 795-17 and AR 795-204.

Aircraft designated for transfer are inspected as soon as practical for condition and completeness of equipment. Adjustment of shortages for aircraft found to be incomplete is accomplished in accordance with AR 735-11.

Who Performs Inspection. Upon receipt of instructions to transfer aircraft, CONUS organizations contact their AVIM Unit. The AVIM conducts a special inspection of the aircraft to determine the supply and maintenance actions required.

Overseas organizations contact the activity designated by the major overseas commander in regard to performance of a special inspection and determination of supply and maintenance actions required.

Depot Maintenance. If results of the inspection indicate that an aircraft cannot be made serviceable at AVIM, the aircraft is designated for depot maintenance. The entire condition of the aircraft is accurately recorded on DA Form 2404. A complete work package is prepared by the supporting AVIM teams and includes the following items:

OIL ANALYSIS REQUEST				KEYPUNCH CODE
TO	OIL ANALYSIS LAB			1-3
FROM	MAJOR COMMAND			4
	OPERATING ACTIVITY (Include ZIP Code/APO) DODAAD			5-10
EQUIPMENT MODEL/APL				11-14
EQUIPMENT SER. NO.				15-20
END ITEM MODEL/HULL NO.				
END ITEM SER. NO./EIC				
DATE SAMPLE TAKEN (Day, Mo., Yr)			LOCAL T TAKEN	21-24
HOURS/MILES SINCE OVERHAUL				25-29
HOURS/MILES SINCE OIL CHANGE				30-33
REASON FOR SAMPLE LAB <input type="checkbox"/> ROUTINE <input type="checkbox"/> REQUEST				34
OIL ADDED SINCE LAST SAMPLE				35-36
ACTION TAKEN				
DISCREPANT ITEM				
HOW MALFUNCTIONED				
HOW FOUND <input type="checkbox"/> AIR OR GROUND CREW				
HOW TAKEN <input type="checkbox"/> DRAIN		TEMPERATURE <input type="checkbox"/> COLD	TYPE OIL	37-38
REMARKS				
<i>FOR LAB USE ONLY</i>				
SAMPLE RESPONSE TIME				38-40
FE 41-43	AG 44-46	AL 47-48	CR 50-52	CU 53-55
MG 56-58	NI 59-61	PB 62-64	SI 65-67	SN 68-70
TI 71-73	MO 74-76			
LAB RECOMMENDATION				77-78
SAMPLE NO.	SIGNATURE	FILE MAINT 78	DATA SEQ 80	

DD FORM 1 NOV 77 2026 PREVIOUS EDITION WILL BE USED

- Work requirements
- Outstanding modifications
- Component replacement requirements
- Known material requirements
- Estimated maintenance man-hour requirements.

Pretransfer Inspection. Aircraft scheduled for delivery to a depot maintenance facility for rehabilitation and modification do not require a pretransfer inspection unless the maintenance officer considers it necessary to place the aircraft in a safe flying condition. If a pretransfer inspection is considered necessary, the next intermediate inspection is accomplished, including special inspection items. All AVUM and AVIM maintenance faults revealed by the inspection should be corrected. When it is required, a functional test flight is conducted in accordance with TM 55-1500-328-25 to ensure that the aircraft is in safe operational condition for the intended flight.

Here are a few of the key things mentioned about preventive maintenance inspections:

- Scheduled inspections are of two types — preventive maintenance and phase maintenance.
- Maintenance Manhour Expendability Limits (MMEL), serviceable parts inspections, commander's inspections and maintenance assistance instruction teams (MAIT) are all types of unscheduled inspections.
- Special inspections are used in addition to regular scheduled inspections, but do not have to be carried out during airframe operating time or at inspection intervals. Examples of such inspections are specific incident, calendar inspections, hot end inspections and dual inspection criteria.
- Certain circumstances may arise requiring other types of inspections to be performed other than those mentioned as scheduled, special, and unscheduled.

CHAPTER 4

TECHNICAL INSPECTION PROCEDURES

Technical inspections of aircraft maintenance are performed to ensure adherence to the standards and practices established by applicable publications. These inspections assure that all applicable technical requirements are complied with and that the maintenance shop is organized and operating in such a way as to produce quality work in an efficient manner. Prior to performing an inspection, quality control personnel will review all the latest applicable reference material available to ensure that the inspection is adequate to meet current requirements. A reference guide is provided in Appendix II to assist the personnel in this review.

To ensure uniform safety and reliability, inspection procedures must be standardized. This chapter discusses standardized procedures, in the following order:

- General procedures
- Aircraft inspection
- Technical compliance
- Shop inspection.

GENERAL PROCEDURES

Before specific technical inspection procedures can be discussed, there are a few general procedures that must be brought to mind. These are discussed below.

RED-X AUTHORIZATION

As a technical inspector, you are the commander's designated representative concerning aircraft maintenance quality control. As stated in TM 38-750, you, or any other individual authorized to sign off red-x or circle red-x conditions, must be so designated in writing. This requirement is accomplished by use of DA Form 2496, *Disposition Form (DF)*. This DF must contain, as a minimum, your name, rank, duty position, and the statement: "Authorized to inspect and/or sign off red-x and circle red-x conditions on aircraft and components."

NOTE: If authorization is given to sign off red-x and/or circle red-x conditions on only specific aircraft models or components, the DF must list these specific items. The DF must contain the commander's signature. A copy of this authorization must be kept on file in the quality control office for 6 months after the individual departs the unit or the commander decides to remove the individual from inspection status.

The individual concerned should sign and initial the authorization. Your initials and signature are all that is required to release an aircraft for flight. A representative sample of your signature and initials will help eliminate unauthorized use by other personnel.

DESIGNATED REPRESENTATIVES

Several manuals contain phrases stating that an individual (commander, property book officer, etc.) or his designated representative must perform a particular function. Examples of these instances are:

- Entering deferred maintenance on DA Form 2408-14
- Authorizing evacuation of aircraft to support maintenance on a one-time flight basis
- Inspecting first aid kits.

This authority must also be designated in writing. This requirement can be met by using:

- DA Form 2496, *Disposition Form*
- DA Form 1687, *Notice of Delegation of Authority-Receipt for Supplies*.

Whichever form is used, it must specifically state the function that is delegated.

Again, the individual concerned should sign and initial either the DF or the DA Form 1687 in the spaces provided. The completed forms must be kept on file in the quality control office as stated for red-x authorizations.

INSPECTION STAMPS

TM 38-750 permits the use of inspection stamps. Use of an inspection stamp is evidence of a satisfactory condition; it carries the same weight as an inspector's signature. It must be guarded against unauthorized use at all times. The following requirements must be met if stamps are used:

- The size of the stamp must comply with AR 715-20
- The stamp must include the company designation and a number used to identify the inspector
- Stamps not issued must be kept under lock and key
- Stamps that become illegible must be destroyed
- A stamp inventory/register must be kept (see illustration).

DESIGNATED INSPECTORS WHO PERFORM MAINTENANCE

A technical inspector or maintenance supervisor who works on a red-x or circle red-x fault cannot also sign off the work as his own inspector. The work must be inspected and signed

off by another individual who is designated in writing by the commander to sign off those conditions.

If only an inspection is required — no repair work or maintenance is involved — the TI may perform the inspection and sign it off with no recheck.

CLASSIFICATION OF DEFECTS

For a discussion of aircraft defects (status symbols) refer to TM 38-750.

AIRCRAFT INSPECTION

As stated previously, aircraft inspection is the most critical duty of technical inspectors. Aircraft are inspected to ensure:

- Adherence to published specifications
- Compliance with all maintenance requirements
- Quality work in an efficient manner.

Many times an inspector may not be completely familiar with the area or item to be inspected. If this is the case, a review of the manuals pertaining to the subject area or item must be conducted.

STAMP NUMBER*	ASSIGNED TO	DATE ASSIGNED	DATE RELIEVED
1			
2			
3			
4			
5			
6	STAMP DESTROYED (LOST)		

* All stamp numbers must be included and accounted for.

SAMPLE INSPECTION STAMP INVENTORY/REGISTER

In general, you must monitor maintenance procedures to ensure that:

- Proper tools and equipment are used
- Aircraft and components are maintained in accordance with the specific publications
- Current publications are being used when performing maintenance
- All forms and records are complete and accurate
- All safety precautions are observed.

The most common aircraft technical inspections are discussed below.

FORMS AND RECORDS

The first item that should be checked in any aircraft inspection is forms and records pertaining to the aircraft. All form entries must adhere to the policies as stated in TM 38-750 (TM 55-405-9 for weight and balance records). Refer to AR 750-31 for the required locations of the various forms. All form entries are important; however, close attention will be paid to the following.

DA Form 2408-12. Hours and landings are correctly totaled.

DA Form 2408-13. Hours and landings are correctly carried forward from the 2408-12.

Time to date (Block 8) and previous landings (Block 10) are correctly carried forward from previous 2408-13.

Total time and total landings are correct.

Status in Block 7 reflects the most serious uncorrected fault that is listed in Block 16 of the 2408-13 or column b of the 2408-14.

All corrected red-x and circle red-x faults in blocks 16 and 17 were inspected by an authorized inspector or supervisor.

All entries signed off on the previous 2408-13 as carried forward (CF) in Block 18 are on the latest 2408-13.

Entries are carried forward word for word and status symbol (Block 16) is correct.

Inspection times (Block 9) are correctly carried forward from previous 2408-13.

DA Form 2408-14. Faults in column b are transcribed word for word from DA Form 2408-13 or 2404.

Reason for delay (column c) is valid.

Individual's signature (column e) is an authorized signature, as designated in writing.

DA Form 2408-18. All required inspection items are entered. Any inspection that is due is entered on the 2408-13.

DA Form 2408-5. All applicable modifications are entered in section 4.

For modifications not complied with, the required completion date is entered in pencil in Block 5f.

DA Form 2408-9. A properly completed acceptance report is on hand for all applicable items (Appendix E, TM 38-750).

DA Form 2408-15. The form is on hand for aircraft and for each gas turbine engine.

Significant historical data are shown as stated in TM 38-750.

Turbine engine analysis checks are listed on 2408-15 for turbine engines.

DA Form 2408-16. Required forms are on hand as listed in TB 55-1500-307-24.

Serial numbers on the form (Block 7c) match component serial numbers on the aircraft.

Replacement due time (Block 7k) is correct and not past due.

DA Form 2408-17. All applicable items listed in the Master Inventory Guide (refer to AVUM manual) are shown in column b.

Property additions and deletions made after delivery of the aircraft are reflected in column b.

All equipment checks made in section d have a signature in the corresponding numbered block at the bottom of the form.

All items added, deleted, or short are explained on the back of the form. Refer to TM 38-750.

DA Form 2408-19. A properly completed 2408-19 form is on hand for each gas turbine and engine turbine wheel.

DA Form 365 Series. Forms are on hand and up to date as required by AR 95-16 and TM 55-405-9.

INITIAL INSPECTION

An initial inspection is performed by AVIM inspectors prior to the aircraft's entering the shop for maintenance. This inspection determines:

- Deficiencies
- Extent of work required
- Economical repairability of aircraft and components
- Accountability of equipment
- Extent of AVUM deficiencies (minor AVUM deficiencies will not justify refusal to accept an aircraft into the AVIM shops).

All deficiencies will be entered on DA Form 2404 in two copies. The original is returned to production control after completion of the inspection. The duplicate is filed in the quality control office until all maintenance is completed. At that time, it will be destroyed.

It should be noted that AVUM inspectors do not perform initial inspections on aircraft entering periodic or phase maintenance. The inspection performed by the maintenance crew using the PMS or PM checklist meets all inspection requirements.

The initial inspection is performed in order to verify that the aircraft and/or components meet the specifications of the published maintenance manuals. Removal of cowling and access panels is limited to those panels required to be removed to inspect the faults listed on DA Form 2407 by the AVUM unit.

ONE HUNDRED PERCENT INSPECTION

If numerous faults are found as a result of the initial inspection, a 100% inspection will be conducted. All cowling and access panels will be removed. The entire aircraft, including all systems and components, will be inspected. As in all inspections, items to be looked for are:

- Correct assembly
- Proper safety techniques (for example, wire and cotter pins)

- Wear
- Rigging
- Leaks
- Structural defects (cracks, punctures, base rivets, separation in honeycomb panels, etc.)
- Security of components.

IN-PROCESS INSPECTION

The in-process inspection is performed by AVUM and AVIM technical inspectors. Its purpose is to:

- Assure reliability of the final product
- Ensure that areas are inspected prior to their being covered by access panels or components
- Ensure that mistakes are discovered and corrected on the spot.

A separate DA Form 2404 (two copies) will be used for this inspection and all deficiencies entered.

AVUM Inspectors. Prior to performing an in-process inspection on aircraft in phase maintenance, the DA Forms 2404 completed by the maintenance crew will be reviewed. Any deficiencies missed by the maintenance team will be entered on the in-process 2404 by the inspector performing the in-process inspection.

Procedure. The in-process inspection is a continuing inspection performed periodically throughout the period the aircraft or component is in the shop. You should be readily available at all times to answer mechanics' questions and resolve problems. Failure to do this can result in wasted man hours, unanticipated rework, damaged equipment, and the possibility that mistakes may go unseen.

Inspection Stations. Stations should be set up in large shops to locate the inspector near the work being performed. Equipment at each station should include all items needed to perform an inspection of the subject aircraft or component. All the necessary forms, publications, tools, and test equipment should be available at the inspection station.

✓ FINAL INSPECTION

Final inspection is a complete inspection and functional test (if required) of all aircraft or components released from the shop after completion of all maintenance. It is performed to determine:

- Whether all repairs meet the specifications of the maintenance manuals
- Whether all work requested on DA Form 2407 was performed
- Whether all DA Form entries are complete and accurate.

All defects will be entered on DA Form 2404. Red-x deficiencies will be corrected prior to the aircraft's leaving the shop.

✓ NON-DESTRUCTIVE INSPECTION (NDI)

Non-destructive inspection (NDI) is a tool of quality control. Aircraft components may have suspected metal flaws; this suspicion must be confirmed or denied in some manner. It may be that a defect is visible but the seriousness of it is not known; for example, scratches can look like cracks and hairline cracks can look like scratches. In any case, confirmation of the suspicion must be made. That is when the technical inspector turns to non-destructive inspection.

The details and procedures of NDI are fully discussed in the following publications:

TC 55-17, *Non-Destructive Inspections*

TM 43-0103, *Non-Destructive Inspection Methods*.

Acceptance or Rejection of Work. Acceptance or rejection of work is a responsibility of quality control. The decision to accept or reject will be based on evidence that:

- The work was performed in the prescribed manner
- The correct tools and equipment were used
- The aircraft or component conforms to prescribed standards.

Major (red-x) deficiencies must be corrected before the aircraft or component leaves the shop.

Minor (red diagonal) shortcomings will be corrected based on the availability of parts and manhours. All deferred maintenance must have a valid requisition or work order number (see TM 38-750). The decision to defer maintenance rests with the commander or his designated representative as stated in TM 38-750.

TECHNICAL COMPLIANCE

Technical compliance refers to the monitoring of:

- Modification Work Orders (MWO)
- Technical Bulletins (TB)
- Technical Messages (TM).

Ensuring that the requirements of these publications are met is a responsibility of the technical inspector.

MODIFICATION WORK ORDERS

The procedures to follow to ensure MWO compliance are listed below.

DA Form 2408-5. Upon receipt of an MWO that applies to several numbered aircraft assigned to your unit, enter the MWO information on DA Form 2408-5 as stated in TM 38-750. This includes MWO's whose application is to be directed by a higher commander. Also enter MWO's that will only be applied to aircraft based at specific locations. If your aircraft serial numbers are included, the MWO goes on the 2408-5.

DA Form 2407. If the MWO must be applied by a higher category of maintenance, forward a DA Form 2407 to that unit. This enables the support unit to order the required number of kits and schedule supported aircraft for modification. See TM 38-750.

MWO Kits. If your category of maintenance is responsible for applying the MWO, requisition the required number of kits.

Deferred Application. Upon receipt of the kit, if the MWO will not be immediately applied, the kit must be entered on the aircraft DA Form 2408-17. Refer to TM 38-750.

DA Form 2408-13. If the MWO is not applied by the time compliance date specified, enter the

MWO on the 2408-13. It may then be transcribed to the 2408-14. Refer to TM 38-750.

MWO Compliance. Once the MWO is applied, the action must be reported on DA Form 2407. See TM 38-750.

Complete the DA Form 2408-5 showing MWO compliance. Again, refer to TM 38-750.

Sign off the MWO entry on DA Form 2408-13.

TECHNICAL BULLETINS

An aircraft technical bulletin directs a one-time inspection of an aircraft or component.

The following procedures will be followed.

DA Form 2408-13. Enter the one-time inspection due on the aircraft 2408-13. Use status symbol as directed by the TB. Normally, if a TB is not applied within a specified time frame, the aircraft is to be grounded. Instructions will be contained in the TB.

Inspection. Perform the inspection using instructions in the TB.

No Defects. If no defects are found, sign off the inspection due on the 2408-13.

Defects Found. If defects are discovered, enter them on the 2408-13, then notify maintenance personnel for corrective action. After the defect has been corrected:

- Inspect the corrective action
- Sign off the inspection due on the 2408-13.

DA Form 2408-15. A one-time inspection of aircraft is significant historical data and will be entered on the 2408-15 for the aircraft. Enter TB's for turbine engines on the engine 2408-15.

DA Form 2408-5. TB's applying to components will be entered in a 2408-5 for that component. See TM 38-750; the procedure is the same as for MWO's.

DA Form 2408-16. If a TB is applied to a component on which a 2408-16 is maintained, enter TB compliance in Block 8. TB 55-1500-307-24 lists all components that require a 2408-16.

Reports. Submit a report of TB compliance as stated in the TB. This report is also required by AR 95-18.

Recurring Inspection. A TB may require a recurring inspection at specified intervals. If so, this inspection must be entered on DA Form 2408-18 for the aircraft.

SAFETY-OF-FLIGHT MESSAGES

Procedural. A procedural safety-of-flight message imposes a limitation on the aircraft. The limitation will be entered on DA Form 2408-13.

Technical. Technical safety-of-flight messages immediately or conditionally ground an aircraft. Requirements are the same as for technical bulletins.

These messages are normally superseded by a TB. If this is the case, the message will reflect the future TB number. This number should be used for all DA Form entries.

CONFIGURATION CONTROL

A card file (see the illustration on the next page) will be maintained to show the status of all MWO's, TB's, and messages that are not fully complied with. These records give a ready reference of the technical compliance status of the aircraft. Production control may use them to schedule aircraft maintenance. Specific requirements follow.

Card File:

- Maintain one card for each serial number aircraft
- List all MWO's, TB's, and safety-of-flight messages not fully complied with
- Show status of compliance of all requirements not met, listing the following:
 - Publication time compliance date
 - Requisition number of MWO kits required
 - Work order number of those requirements that must be accomplished by support maintenance
- Line out entries as they are accomplished on the aircraft.

INSPECTION TO DETERMINE PREVIOUS COMPLIANCE

Newly assigned aircraft or aircraft entering AVIM will be inspected to ensure that all MWO

technical requirements are met. Specific procedures are as follows.

Configuration Check Sheet. (See illustration on the next page.) List all applicable MWO's on a check sheet (see example). Using the check sheet, inspect the following areas:

- DA Form 2408-5. Check to ensure that all MWO's are entered. If any are missing, enter them as stated in TM 38-750.
- DA Form 2408-13. Check to ensure that all MWO's not applied that have an expired time compliance date are entered. Any MWO's that should be entered, but are not entered, must be written up.
- Aircraft. Visually inspect the aircraft to ensure that all MWO's shown as complied with on the 2408-5 have, in fact, been applied. Refer to TM 38-750 for specific instructions, if any discrepancies are found as a result of the above inspection.

INSPECTION TO ENSURE SATISFACTORY COMPLIANCE

Any MWO which has been applied must be inspected by quality control personnel to ensure that:

- All requirements have been met
- Any required functional tests have been made
- Test flight has been performed if required. (Refer to TM 55-1500-328-25.)

SHOP INSPECTION

A shop that is below standards cannot put out quality work. For this reason you should conduct an informal inspection of the various shops on a periodic basis; probably once a month. Any deficiencies or safety hazards found will be brought to the attention of the shop supervisor or person responsible for the subject area.

Several publications outline safety procedures to be followed, and no attempt to duplicate other publications will be made. An excerpt is provided from the US Army Safety Center (USASC) publication, *Guide to Aviation Resources Management for Aircraft Mishap Prevention*. The excerpt

pertains to the shop inspection requirements of the technical inspector. Copies of the Guide may be obtained from your unit safety officer. Minor changes to the Guide will appear in the USASC publication *Flightfax*, which is distributed weekly to all aviation units.

Other publications outlining specific safety precautions are:

FM 10-68, *Aircraft Refueling*

FM 55-36, *Aircraft Intermediate Maintenance*

TM 55-1500-204-25/1, *General Aircraft Maintenance Manual*.

The following checklist will help familiarize the inspector with facility inspection requirements.

AIRCRAFT OPERATIONS

Are the following available in each aircraft?

- Required number of first aid kits? *AR 95-1; CTA 8-100; TM 55-1500-328-25.*
- Fire extinguisher? *AR 95-1.*
- Aircraft dash 10 and dash 10CL in TM 1500-2 binder? *AR 95-1; 750-31.*

Are the following being complied with?

- Pilots check DA Form 2408-13 and -14 status? *TM 38-750.*

Fuel sample bottles available and convenient for use in preflight; proper storage of fuel sample bottles. *FM 10-68.*

- No smoking within 50 feet of the aircraft *AR 95-1*
- Flashlights used in night preflight *AR 95-1.*

Are flight and ground crews familiar with fuel servicing and defueling operations as prescribed in TM 55-1500-204-25/1 and FM 10-68?

PETROLEUM, OIL, LUBRICANT (P.O.L.)

Are prescribed fuel servicing procedures followed? *FM 10-68.*

Is fuel in aircraft tanks checked prior to first flight of each working day for water and other contaminants? Is the fuel in the refueler sampled and tested for water daily? *FM 10-68.*

Are aircraft tiedown anchors kept free of debris when used as refueling servicing grounding points? *TM 5-678; FM 10-68.*

Are fuel servicing points and equipment properly maintained and regularly inspected? *TM 10-1113; FM 10-68.*

Are ground rods installed at each refueling point? Were the grounding points electrical resistance-tested when they were installed, and retested if mechanical damage occurred?

Are the points marked in accordance with FM 10-68 and logs maintained to show the identification of each rod, the date tested, and the electrical resistance in ohms? *FM 10-68.*

Are refueling vehicles marked with the appropriate fuel grade? *AR 746-1; TB 746-91-1; TM 10-1113; FM 10-68.*

Do vehicles have chocks on board? Are they used during refueling? *FM 10-68.*

Are fire extinguishers mounted on vehicles' dispensing units? *TM 10-1113; FM 10-68.*

Are petroleum products stored separately from paint, thinners, etc.? *TM 55-1500-204-25/1.*

Are refueling personnel prohibited from carrying lighters or matches on their person, and are other personnel prohibited from carrying lighters or matches within 50 feet of an aircraft being refueled?

Are refueling personnel wearing protective clothing as outlined in FM 10-68?

QUALITY CONTROL

Are aircraft maintenance publications up to date? *DA Pams 310-1, -3, -4, -6, -7, -10, and -13; FM 55-411.*

Do the aircraft maintenance areas have sufficient quantities of manuals for assigned work? *AR 750-31.*

Are appropriate publications used at all times when working on aircraft? *FM 55-42.*

Is the DA Form 12 series available and updated? Do the Q.C. personnel know what publications they are to receive? *DA Pam 310-10; DA Form 12 series; FM 55-411.*

Are red-x conditions properly signed off in the proper sequence by qualified supervisory or technical inspectors who are designated in writing? *TM 38-750; DA Pam 600-8 w/C9.*

Does the unit maintain a safety-of-flight (SOF) TWX file? Is it separated by aircraft mission, type, design, and series? *AR 340-18-1.*

Are there procedures whereby quality control personnel and maintenance personnel are required to familiarize themselves with publications? Is there a Technical Data Familiarization Chart, or are the manuals initialed? *FM 55-411; FM 55-42.*

Do the quality control personnel conduct in-process inspection of products to assure reliability of the completed assembly? *FM 55-411; FM 55-42.*

Does the unit actively participate in the submission of:

- Recommended changes to publications? *DA Form 2028*
- Quality Deficiency Report (QDR)? *SF 368.*

Is Quality Deficiency Report (QDR), SF 368, submitted for each Preliminary Report of Aircraft Mishap (PRAM) for material failure or malfunction, when applicable? *TM 38-750; AR 310-1; FM 55-411.*

Are aircraft maintenance and flight forms and records properly filled out and filed? *TM 38-750; Local SOP's.*

Are all assigned aircraft involved in the Army Oil Analysis Program? Is the program functioning? Are crew and maintenance personnel familiar with the oil sampling procedure? Are records being maintained? *AR 750-43; TB 43-0106.*

Are aircraft being inspected in accordance with established aircraft maintenance procedures, and not being flown beyond the required inspection intervals? *TM 55-1500-328-25.*

Are test flight check sheets part of the DA Form 2408-13 for all test flights? *TM 55-1500-328-25.*

Is the equipment calibrated in the specified time interval and stored properly? *TB 43-180, TB 43-180-1.*

Are calibration records maintained? *TM 38-750.*

Are DER/TEAC/HIT Check procedures being performed and are they recorded on the DA Form 2408-13, DA Form 2408-14, DA Form 2408-15, and charts? *TM 38-750; applicable dash 23 technical manuals; applicable dash 24 engine technical manuals.*

Was an inventory accomplished upon initial receipt of the aircraft; when property is added or removed from the aircraft; or every 12 months of possession of the aircraft? *DA Form 2408-17; TM 38-750.*

Is the safety inspection and testing of lifting devices monitored? Are forms and records maintained? *TB 43-0142.*

MAINTENANCE

Does the shop foreman emphasize accident prevention measures in all maintenance operations? Check for marking and width of personnel safety aisles, safety and warning posters, and smoking and nonsmoking areas? *TM 55-1500-204-25/1; AR 385-30; FM 55-41; DA Pam 385-1.*

Is all stationary and portable shop electrical equipment properly grounded? *TM 55-1500-204-25/1; FM 55-411; National Electrical Codes.*

Is there a program in effect to encourage the reporting of hazards, near accidents, unsafe shop practices, etc.? *AR 95-5; AR 95-1.*

Are equipment and vehicle operators thoroughly familiar with the operation, handling, care and preventive maintenance of equipment?

- Check for operators permit. *AR 600-55*
- Check to see that the maintenance manual is with equipment. *FM 55-41*
- Check to see if equipment or vehicle is properly maintained. *Organizational and Operator's Manuals.*

When parts or items have been removed from aircraft, are they marked and stored so as to be plainly seen? *FM 55-41.*

Are proper safety procedures practiced concerning foreign objects when maintenance is being performed on turbine engines?

Are parking areas, runways, taxiways, runup and exhaust areas policed? Are there sufficient containers available for trash and loose objects? Are loose hardware and other foreign objects removed? *TM 55-1500-204-25/1.*

Are grounding cables provided for aircraft in hangars? Are they used? Has an initial electrical resistance test been performed and recorded on grounding points? *National Fire Codes; TM 55-1500-204-25/1; FM 10-68; FM 55-36.*

Is adequate lighting provided for maintenance shops and hangars? *FM 55-411.*

Are all parts removed from aircraft written up immediately on appropriate forms? *TM 38-750.*

Are the required numbers and types of fire extinguisher(s) available? Are aircraft and ground fire extinguishers checked as required? Are shop personnel trained in the use of firefighting equipment? *TM 55-1500-204-25/1; FM 55-411; FM 55-41.*

If special equipment such as the ejection seat, armament, etc., is installed in unit aircraft, are trained specialists available to maintain this equipment? *FM 55-41; AR 95-1.*

Are shops kept clean and free of accumulation of grease on floors? *FM 55-41.*

Do personnel using power tools (e.g., drills, grinders, lathes, torches, etc.) wear safety goggles and noise attenuating devices as required? Have mechanics removed rings, watches, ID bracelets, etc., while performing maintenance? *TM 55-1500-204-25/1; AR 40-5; AR 385-32.*

Are hoisting instructions for lifting aircraft components or aircraft followed? Have cranes, hoists, cables, slings, and forklift trucks been inspected, weight tested, and stenciled with the load rating? *TB 43-0142.*

Are aircraft on jacks so labeled and is access to them restricted? Are aircraft jacks marked with the maximum lifting capacity? *55-1500-204-25/1; OSHA Std. 1910.244; FM 55-41.*

Is the battery storage area (battery shop) properly vented? Are acids stored properly? Are lead acid batteries stored separately from nicad batteries? Is separate equipment used to maintain

each type? Are face shields, aprons, and rubber gloves worn by workmen? Do personnel remove all rings, wrist watches, etc., when working near battery terminals? Are explosion-proof lights and electrical plugs installed? *OSHA Std. 1910.178; FM 55-411; TM 55-1500-204-25/1; FM 55-41.*

Are oily rags stored in closed metal containers? Are containers properly labeled? *TM 55-1500-204-24/1; FM 55-41.*

Are hydraulic, fuel, and oil lines protected from dirt while disconnected? *TM 55-1500-204-25/1; FM 55-409.*

Are all ammunition and pyrotechnics removed from aircraft prior to performing maintenance and prior to putting aircraft in hangars? *TM 55-1500-204-25/1.*

Are engine, hydraulic, prop and rotor, tech supply, and other work areas kept clean and well arranged? *TM 55-1500-204-25/1; FM 55-41; FM 55-411.*

Are the oxygen gaseous storage areas properly marked? Are oxygen gaseous cylinders stored in a separate building (area) from aircraft servicing and maintenance areas? Are empty and full cylinders stored separately? *TM 55-1500-204-25/1; National Fire Codes Standard 410B.*

Are sample bottles available for checking fuel contamination in aircraft fuel tanks during pre-flight? *FM 10-68.*

Are proper containers used and stored? Are containers clean and adequate? Are samples discarded properly (sealed containers)? Is a fire point nearby?

Are complete daily inspections conducted? *PMD and PMS cards; FM 55-411; DA Form 2408-13.*

Are tops of booths, shelves, and other surfaces in the paint shop cleaned to prevent accumulation of lint? Are dope or paint deposits removed from the floor? Is there no more paint and dope stored in the paint shop than will be used during the work shift? Are there fire blankets at strategic points and the required number (and correct type) of fire extinguishers provided throughout the paint shop area? Is electrical

equipment in the paint shop explosion-proof? Are smoking restrictions enforced? *TM 55-1500-204-25/1.*

Are containers of hydraulic fluid which have been left unsealed considered contaminated, and destroyed? *TM 55-1500-204-25/1.*

Are the assigned aircraft marked and painted to include warnings, etc., in accordance with the applicable dash 23 Technical Manual and TB 746-93-2?

Are the necessary accident prevention signs posted in the shop areas? *AR 385-30.*

Are aircraft parked in hangars? Have batteries disconnected? Have static ground cables attached? Have drip pans placed beneath them?

Does gasoline powered equipment (tugs, APU's, etc.) parked in hangars overnight have full fuel tanks?

GROUND SUPPORT EQUIPMENT

If deficiencies are noted during a reinspection of new or repaired equipment that has previously been inspected and classified serviceable, has an EIR been submitted? *TM 55-1500-204-25/1.*

In addition to special inspections, are regular periodic inspections performed? *TM 55-1500-204-25/1.*

Is equipment free of mud and other debris? Is equipment receiving proper lubrication?

Are seals that show definite leakage replaced? *TM 55-1500-204-25/1.*

For equipment with batteries, are the battery terminals and posts tight, clean, and with no corrosion? *TM 55-1500-204-25/1.*

Are the ignition systems clean, wiring correct, coils and condensers operating properly? *TM 55-1500-204-25/1.*

In general, is ground support equipment in good enough condition to meet the performance requirements of new equipment and meet all general safety requirements? *TM 55-1500-204-25/1.*

If the ground support equipment is in storage, is there a prescribed interval of inspection? *TM 55-1500-204-25/1.*

Is the equipment used on landing strips, taxiways, and other flight areas painted and reflectorized as per *TM 55-1500-204-25/1*, *AR 58-1*, *AR 746-1*, and *FM 1-55*?

Are the markings on the equipment maintained in accordance with *TM 55-1500-204-25/1*, *TB 746-93-1*, and *AR 746-1*?

Is the proper polarity marked on all male and female electrical receptacles of the APU's and aircraft? *TM 55-1500-204-25/1.*

If the two-wheel type of APU is used, are there procedures to ensure that the appropriate inspections are accomplished at the end of the day or at the completion of 8-hour operations? *TM 55-1500-204-25/1.*

Are there procedures to ensure that the required inspections of the three-wheel APU are accomplished? *TM 55-1500-204-25/1.*

Are the maintenance work stands, adjustable height and fixed height, stenciled with the load rating? *TB 43-0142.*

Are major welds sound? Are the handrails and steps cracked or worn? Are flexible hoses, fittings, and tube assemblies damaged or leaking? *TM 55-1500-204-25/1.*

Are adequate provisions taken to protect electrically and gasoline driven air compressors from severe weather and extreme temperature? *TM 55-1500-204-25/1.*

Do the compressors have belt and flywheel guards installed? *TM 55-1500-204-25/1.*

Are daily inspections accomplished on the air compressors? Are the compressors drained at least twice daily if they are operated in extreme moisture condition? *TM 55-1500-204-25/1.*

Is a hydrostatic test accomplished annually on the air compressors? Is the tank stenciled with the date the test is accomplished? *TB 43-0151.*

Are periodic inspections of 10- and 100-hour intervals accomplished on compressor and carrying case assemblies? *TM 55-1500-204-25/1.*

Is the high pressure air pump in good operating condition? *TM 55-1500-204-25/1.*

Are aircraft jacks stenciled with the maximum lifting capacity? *TB 43-0142; TM 55-1500-204-25/1.*

Are the jacks periodically disassembled, cleaned, inspected, and reassembled, replacing defective rubber packings? *TM 55-1500-204-25/1.*

If engine- or motor-driven hydraulic test stands are used daily, are daily inspections accomplished? *TM 55-1500-204-25/1.*

Is preventive maintenance performed on the hydraulic test stands? *TM 55-1500-204-25/1.*

Do grease guns have the type of lubricant identified? Are the identification tags protected from deterioration and obliteration by grease, and securely attached to the grease gun? *TM 55-1500-204-25/1.*

Is the electrical wiring insulation defective or frayed on the portable lighting equipment? *TM 55-1500-204-25/1.*

AVIONICS SHOP

Does the unit have a training program which provides personnel with information concerning safe practices? *AR 385-10; DA Pam 385-1.*

Are the necessary technical publications and regulations on hand? Have the latest changes been posted? *FM 55-36; DA Pam 310 Series.*

Are maintenance forms and records properly maintained? *TM 38-750.*

Are calibration requirements of test equipment being kept up to date? *TB 43-180; TB 750-25; TM 38-750; TB 43-180-1.*

Are test equipment and aircraft systems being properly used? *TM 11-4000; TM 11-664; appropriate equipment operators manual.*

Are technical inspections of repaired equipment being accomplished? *FM 55-411.*

Are work benches wired in accordance with the National Electrical Code? *National Electrical Code.*

Are rubber floor mats or similar insulating materials provided in front of repair positions? *TM 11-4000; TB 385-4.*

Are all power attachment plugs and connectors so constructed that there are no exposed current-carrying parts except the prongs? *National Electrical Code, ART 410-52(d).*

Are hazardous power sources (other than 110-volt convenience outlets) appropriately color-coded? *AR 385-30.*

Is all test equipment properly grounded? *TM 55-1500-204-25/1; FM 55-411; National Electrical Code, ART 250-45d; TB 385-4.*

Have all physical hazards been identified and appropriately color-coded? *AR 385-30.*

Have compass systems been properly calibrated? *TM 55-1500-204-25/1; TM 11-4920-292-15.*

Has the avionics equipment in the aircraft been properly safety-wired? *TM 55-1500-323-25, Section 16; appropriate Aircraft 11-Series Manual.*

Are the necessary accident prevention signs posted in the shop areas? *AR 385-30.*

ARMAMENT SHOP

Are aircraft pyrotechnics (flares and signals) removed from the aircraft when not required? *TM 9-1370-200.*

Are ground safety pins inserted in the ejector racks after the helicopter has been shut down after each flight? *TM 55-1520-221-23.*

Are jettison cartridges removed from the pylon stores ejection device prior to placing aircraft in a hangar for maintenance or storage? *TM 55-1520-221-23.*

Are jettison cartridges marked on the cartridge base each time the cartridge is removed from the ejection rack? *TM 55-1520-221-23.*

Are weapon record data forms maintained? *TM 38-750.*

Do personnel performing ground crew operations, servicing, and maintenance on weapon subsystems, especially in the areas of loading

and unloading and operational checks, observe the following safety precautions:

- Ensure that the aircraft is positioned so that the weapons are aimed into clear or revetted areas?
- Thoroughly understand and comply with the arming procedures for assigned weapon subsystems and use of hand signals IAW FM 21-60?
- Thoroughly understand and comply with the routine and emergency or unsafe dearming procedures?

HAND TOOLS AND EQUIPMENT

Are racks, shelves, and/or toolboxes provided for tools not in use to ensure immediate accessibility and to eliminate the hazards created by misplaced or forgotten tools?

When tools are used on ladders, scaffolds, platforms, or other elevations, are special precautions observed to prevent them from being dropped from or falling from these levels?

Are tools inspected frequently by responsible personnel, and defective tools removed from service for repair or salvage?

Are tools with sharp cutting edges carried in protective covers?

Are power tools equipped with guards, all electrical contacts on power tools enclosed, and all wiring well insulated and grounded?

Are exposed sharp edges smoothed down on completion of work?

Are only proper ladders used rather than such improvised ladders as packing cases or barrels?

When parts or items have been removed from aircraft, careless placement about the work area should be avoided. Are the items stowed out of the way or marked so they can be plainly seen either day or night?

Do sharp edges of material stored protrude?

Electric tools should not be used inside aircraft. The commutator gives off sparks and is a potential source of ignition.

Are nuts and bolts torqued as outlined in the appropriate TM? Over-torquing results in destroyed or broken parts.

Are items stored in the tool crib:

- Clean?
- Lubricated to prevent rust?
- Within calibration due date if calibration is required? *TB 43-180; TB 43-180-1*

Are grease guns labeled as to contents?

WELDING EQUIPMENT

During welding or cutting operations, is extreme caution observed to prevent sparks from starting fires? A fire extinguisher should always be available during these operations.

Are safety goggles provided for operators of oxyacetylene equipment?

During electric welding operations, the operator will wear a face shield or helmet with a shaded filter glass, protective sleeves, gloves, and apron. When other personnel are in the vicinity, welding operations will be screened off.

FIRE EXTINGUISHERS

Conspicuously marked fire extinguishers of the appropriate type will be provided in armament, maintenance, and training areas.

Are all fire extinguishers properly charged and periodically tested, ready for instant use?

Are all unit personnel trained in the proper use of fire extinguishers?

GENERAL HOUSEKEEPING

Are covered fire-resistant rubbish cans used?

Are self-closing covered metal waste cans conveniently located about the work area for disposal of oily rags and waste?

Volatile flammable liquids are not used for washing or cleaning parts and must not remain

in open containers. Are working quantities of such liquids confined to approved containers?

Is dripping or spilling of oil prevented and drip pans or other suitable means provided to collect excess oil?

TECH SUPPLY

Are all items issued on a first in, first out (FIFO) basis?

Are assigned shelf lives not being exceeded?

Are unserviceable/repairable parts turned in on a timely basis?

Is the required paperwork turned in with parts?

Are unserviceable/repairable parts inspected by the technical inspector prior to turn-in?

Is the material condition tag signed?

Are excess reuseable containers turned in?

From your reading on technical inspection procedures, here are some important points to remember:

- To ensure uniform and high quality results, inspection procedures are standardized
- The inspection of aircraft consists of:
 - Checking forms and records
 - Performing initial inspection
 - Performing a 100% inspection, if required
 - Performing a final inspection on all repaired aircraft components
 - Performing non-destructive tests
- Technical inspectors must ensure that all standards set by technical publications have been complied with
- An informal shop inspection should be conducted at least once a month to maintain a well-organized and efficient operation.

CHAPTER 5

DIAGNOSTIC AND TEST EQUIPMENT

Diagnostic and test equipment refers to testers, test sets, and other test equipment used to verify proper functioning of aircraft systems or to indicate the possible causes of malfunctions. Diagnostic and test equipment can be portable or fixed in place, depending upon the design of the equipment. This chapter includes a brief description of typical diagnostic and test equipment, identified by national stock number or type, with references to the applicable technical manual for details of description and operation.

Whether or not your unit contains specific items of equipment depends upon your category of maintenance (AVUM or AVIM) and the unit TO&E. This chapter serves as a brief introduction. It lets the inspector know just what type of test equipment is available. For further information and operating instructions, refer to the listed technical manuals.

Specifically, this chapter covers:

- Purpose of Diagnostic and Test Equipment
- Equipment Description.

PURPOSE OF DIAGNOSTIC AND TEST EQUIPMENT

Diagnostic and test equipment is used for functional tests of aircraft, components, and accessories. The equipment tests for proper functioning of systems, analyzes malfunctioning units, and presents an accurate picture of serviceability. Diagnostic and test equipment is a necessary requirement for quality control inspectors who are responsible for monitoring maintenance procedures. Safe and economical operation of Army aircraft is dependent upon extensive use of diagnostic and test equipment in a comprehensive maintenance program.

EQUIPMENT DESCRIPTION

EXHAUST GAS TEMPERATURE TESTER (4920-00-673-5514)

The exhaust gas temperature (EGT) tester is a portable unit primarily used to check the entire EGT indicating system of a gas turbine engine. All tests may be conducted without running the engine.

Other systems the EGT tester can check are:

- Compressor speed indicating system
- Fire detector system
- Overheat detector
- Engine anti-icing systems.

Specific functions of the EGT tester are to check:

- The entire jet aircraft exhaust gas temperature (EGT) system for error functionally without running the engine or disconnecting the wiring
- Individual thermocouples as a bench check before placement in the parallel harness
- Each engine thermocouple in the parallel harness for continuity
- The resistance of the EGT circuit without the EGT indicator to within allowable limits of applicable technical manuals
- The insulation of the EGT circuit for shorts to ground
- EGT circuits for shorts between leads
- The engine thermocouple and paralleling harness on the engine with the engine removed from the aircraft

- To read the engine with an accuracy of plus or minus 0.1 percent during engine runup.

Refer to TM 55-4920-244-14, for operating instructions.

VIBRATION TESTER (4920-00-973-2149)

The vibration tester measures turbine engine vibration at specified operating speeds to determine whether or not maximum permissible engine vibration is being exceeded. Vibration pickups are attached to adapters mounted on the engine, transmitting electrical impulses through cables to the vibration meter. The vibration meter indicates the total amount of engine movement. Refer to TM 55-4920-326-40 for operation.

ELECTRONIC BLADE TRACKER (4920-00-623-5954)

The electronic blade tracker is a portable instrument designed to detect and measure the out-of-track condition of helicopter rotor blades. The three major units of the electronic blade tracker are the electrooptical pickup unit, electronic conversion unit, and magnetic phase detector. The electrooptical pickup unit has two photoelectric cell-and-lens assemblies and is placed on the ground under the rotor blades. As the rotor blades cut through the photoelectric cell-and-lens assemblies, the out-of-track distance or difference in blade planes is indicated on a meter appearing on the electronic conversion unit. Any number of blades from two to six can be tracked on single or dual-rotor installations. The magnetic phase detector is mounted on the rotor swashplate or near any component having the same rpm as the rotor blades.

TM 11-4920-215-15 describes operation of this instrument.

PROPELLER BALANCING KIT (4920-00-572-0987)

As its name implies, the propeller balancing kit is used to balance fixed-wing aircraft propellers. The maximum weight of propellers that can be balanced is 550 pounds. It can balance propellers with spline sizes of SAE 20 through 50 and flange sizes of SAE 1 through 4.

Refer to TM 55-4920-201-14 for operation.

ELECTRONIC WEIGHING KIT (6670-00-526-8498)

The electronic weighing kit can be used to weigh aircraft up to 150,000 pounds. It consists of three cells that are placed between the aircraft jack points and the pad on the hydraulic jacks. The cells are connected by electrical cables to a control unit. The control unit is used to zeroize the kit and read out the aircraft weight when the aircraft is on jacks. TM 55-6670-200-14, covers operating procedures for this instrument.

FUEL QUANTITY GAGE TESTER (6625-00-302-4802)

This instrument is used to check the accuracy of fuel indicating systems which use capacitance-type fuel probes. Details of operation and maintenance are contained in TM 11-6625-363-15.

AIRCRAFT ELECTRONIC FUEL SYSTEM TEST SET (6625-00-987-9868)

The aircraft electronic fuel system test set provides a means of checking the serviceability of capacitance-type fuel gaging systems on Army aircraft. The test set is used to measure the capacitance of fuel gaging systems and to calibrate fuel quantity indicators in compensated and noncompensated fuel gaging systems. It is also used to measure the insulation resistance of tank units, fuel quantity indicators, cables, and fittings.

Details of operation are in TM 11-6625-560-12.

GYROCOMPASS TESTER (4920-00-341-1892)

The gyrocompass tester is used to check the accuracy of gyromagnetic compasses in aircraft. Flux valve, slaving, and power supply checks can be made. Refer to TM 11-6625-247-15.

INSTRUMENT TESTER KIT (4920-00-348-2445)

This instrument provides a calibrated rotating base for mounting compass system components. It provides left or right turn azimuth at a rate of 36°, 90°, 180°, 360°, and 1080° per minute. Operation and maintenance details are in TM 55-4620-233-15.

FIRE DETECTOR SYSTEMS TEST SET (4920-00-334-9595)

The fire detector systems test set is designed to test 28-volt aircraft fire detector systems. The test set has capabilities for testing all major components of an aircraft fire detector system. The test set is used to substitute equivalent circuits into the aircraft fire detector system in order to test the system or any of its major components. Refer to TM 55-4920-228-15 for operation.

PITOT-STATIC SYSTEM TESTER (4920-00-474-8311)

The pitot and static system tester is a self-contained pressure and vacuum system whose primary function is to test aircraft instruments, such as altimeters, rate-of-climb indicators, airspeed indicators, and manifold and fuel pressure gages. The tester accurately simulates engine or atmospheric pressures and vacuum such as those encountered in the normal operation of an aircraft. This is accomplished by a small high-speed pump capable of producing pressures up to 50 psi and a vacuum equivalent to an altitude of 80,000 feet.

Refer to TM 55-4920-231-14 for operating instructions.

HYDRAULIC TEST STAND (55-4920-00-141-880-1)

The hydraulic test stand contains a complete hydraulic system with the necessary valves, controls, and gages for creating and controlling varying hydraulic systems. Several sizes of hydraulic fluid hoses are provided for conducting fluid to the hydraulic system of the aircraft being tested.

See TM 55-4920-232-15 for operation.

TORQUE TESTER (6635-00-514-4836)

The torque tester is an instrument which provides a simple positive method of testing the accuracy of torque wrenches. The principle of operation is based on a geared-down pendulum. Torque applied to the input segment transmits movement to the pendulum, which in turn moves an indicator calibrated in both inch-pounds and

foot-pounds. The scale is trigonometric, and is based on the angle through which the pendulum is moved. The reading on the scale is compared with the torque wrench readings to determine torque wrench accuracy.

TB 9-6635-200-50 gives operating details.

AIRCRAFT INSPECTION TOOL KIT (5180-00-323-5114)

The items in this kit consist of those primarily used by the technical inspector in the performance of his duties. The kit consists of a briefcase, a clip board, and various flashlights, mirrors, tools, and measuring instruments. Exact contents are subject to change. Refer to SC 5180-99-CL-A09 for specific contents.

Let's review some main highlights.

- Diagnostic and test equipment is used to check the proper functioning of aircraft systems.
- There are many testing and diagnostic devices used in the maintenance of aircraft. Some of the most frequently used are the:
 - Exhaust gas temperature tester
 - Vibration tester
 - Electronic blade tracker
 - Propeller balancing kit
 - Electronic weighing kit
 - Fuel quantity gage tester
 - Aircraft electronic fuel system test set
 - Gyrocompass tester
 - Instrument tester kit
 - Fire detector systems test set
 - Pitot-static system tester
 - Hydraulic test stand
 - Torque tester
 - Aircraft inspection tool kit.



APPENDIX A

QUALITY CONTROL REQUIRED PUBLICATIONS

ARMY REGULATIONS

95-1	<i>Army Aviation: General Provisions and Flight Regulations</i>
95-5	<i>Aircraft Accident Prevention, Investigation, and Reporting</i>
95-16	<i>Weight and Balance - Army Aircraft</i>
95-18	<i>Safety-of-Flight Messages</i>
95-33	<i>Army Aircraft Inventory, Status, and Flying Time (RCS AMC 130)</i>
310-50	<i>Authorized Abbreviations and Brevity Codes</i>
340-2	<i>Maintenance and Disposition of Records in TOE Units of the Active Army and the Army Reserve</i>
340-15	<i>Preparing Correspondence</i>
340-18-1	<i>The Army Functional Files System General Provisions</i>
340-18-12	<i>Maintenance and Disposition of Transportation Functional Files</i>
385-40	<i>Accident Reporting and Records</i>
750-1	<i>Army Materiel Maintenance Concepts and Policies</i>
750-31	<i>Technical Publications for Aircraft Files</i>
750-51	<i>Maintenance Assistance and Instruction Team (MAIT) Program</i>

FIELD MANUALS

10-68	<i>Aircraft Refueling</i>
11-60	<i>Communications-Electronics Fundamentals: Basic Principles Direct Current</i>
29-2	<i>Organizational Maintenance Management</i>
29-25	<i>Direct Exchange, Shop Supply, and Operational Readiness Float Procedures</i>
55-41	<i>Aircraft Organizational Maintenance Management</i>
55-42	<i>Army Aviation Intermediate Maintenance</i>
55-63	<i>Fundamentals of Airframe Maintenance</i>
55-413	<i>Aerial Recovery of U.S. Army and Air Force Aircraft</i>
55-506-1	<i>Basic Electricity</i>

TECHNICAL MANUALS

1-series	(Shipping Manuals)
11-1510 series	(For assigned fixed wing aircraft); includes -23, -23P
11-1520 series	(For assigned helicopters); includes -23, -23P
11-663	<i>Electronic Power Supplies</i>
11-664	<i>Theory and Use of Electronic Test Equipment</i>
11-681	<i>Electrical Fundamentals (Alternating Current)</i>
11-684	<i>Principles and Applications of Mathematics for Communications-Electronics</i>

11-6140-203-15-1	<i>Operator, Organizational, DS, GS, and Depot Maintenance Manual; Aircraft and Non-aircraft</i>	55-1500-322-24	<i>Organizational, DS, GS, and Depot Maintenance Manual: Maintenance of Aeronautical Antifriction Bearings</i>
11-6140-203-14-2	<i>Operator's, Organizational, Direct Support, General Support and Depot Maintenance Manual Including Repair Parts and Special Tools Lists: Aircraft Nickel-Cadmium Batteries</i>	55-1500-323-25	<i>Organizational, DS, GS, and Depot Maintenance Manual: Installation Practices for Aircraft Electric and Electronic Wiring</i>
38-750	<i>The Army Maintenance Management System (TAMMS)</i>	55-1500-326-24	<i>Standards of Serviceability for Transfer of Aircraft</i>
43-0103	<i>Nondestructive Inspection Methods</i>	55-1500-328-25	<i>Aeronautical Equipment Maintenance Management Policies and Procedures</i>
55-405-9	<i>Army Aviation Maintenance Engineering Manual: Weight and Balance</i>	55-1510 series	(For assigned fixed wing aircraft); includes -10, AVUM, AVIM, -P, ESC, LDAP, MTF, PM, PMS
55-405-10	<i>Army Aviation Maintenance Engineering Manual: Ground Handling Test and Service Equipment</i>	55-1520 series	(For assigned helicopters); includes -10, AVUM, AVIM, -P, ESC, LOAP, MTF, PM, PMS
55-406	<i>Fundamentals of Aircraft Powerplant Maintenance</i>	55-2620-200-24	<i>Inspection, Maintenance Instructions, Storage, and Disposition of Aircraft Tires and Inner Tubes</i>
55-407	<i>Fundamentals of Electricity, Army Aircraft</i>	55-2810 series	(Assigned aircraft reciprocating engines); includes -20, -23, -34, 20P, -23P, -34P
55-409	<i>Fundamentals of Aircraft Hydraulics</i>	55-2840 series	(Assigned aircraft gas turbine engines); includes -20, -23, -20P, -34, -23P, -34P
55-410	<i>Aircraft Maintenance, Servicing, and Ground Handling Under Extreme Environmental Conditions</i>	55-6600-200-20	<i>Organizational Maintenance Manual: Marking of Instruments and Interpretation of Marking</i>
55-412	<i>Fundamentals of Aircraft Instruments</i>	750-134	<i>Procedures for Rapid Deployment, Redeployment, and Retrograde of U.S. Army Rotary Wing Aircraft</i>
55-414	<i>Fundamentals of Aircraft Propeller and Rotor Maintenance</i>	750-143	<i>Procedures for Rapid Deployment, Redeployment, and Retrograde of U.S. Army Aircraft (Fixed Wing)</i>
TM 55-1500-322-24	<i>General Aircraft Maintenance Manual</i>		

750-199 *Procedures for Rapid Deployment, Redeployment and Retrograde of U.S. Army Aircraft Components Spare Parts, and Support Equipment (Class II (A) and Class IV (A) Supplies)*

750-244-1-3 *Procedures for the Destruction of Aviation Ground Support Equipment (FSC 1700) to Prevent Enemy Use*

750-244-1-5 *Procedures for the Destruction of Aircraft and Associated Equipment to Prevent Enemy Use*

DA PAMPHLETS

310-1 *Index of Administrative Publications (regulations, circulars, pamphlets, posters, Joint Chiefs of Staff publications, DOD regulations and manuals, and general orders)*

310-2 *Index of Blank Forms*

310-3 *Index of Doctrinal, Training, and Organizational Publications*

310-4 *Index of Technical Manuals, Technical Bulletins, Supply Manuals (types 7, 8, and 9), Supply Bulletins, and Lubrication Orders*

310-7 *Military Publications: US Army Equipment Index of Modification Work Orders*

310-10 *Guide for Publications Supply Personnel*

310-13 *Military Publications: Posting and Filing Publications*

TECHNICAL BULLETINS

11-6140-219-35/1 *Shop Maintenance of Lead-Acid Aircraft Batteries*

43-0001-1-1 *Equipment Improvement Report and Maintenance Digest: (Fixed Wing Aircraft) (Air Delivery Equipment)*

43-0001-1-2 *Equipment Improvement Report and Maintenance Digest: (Fixed Wing Aircraft) (Air Delivery Equipment)*

43-0106 *Aeronautical Equipment Army Oil Analysis Program*

43-0107 *Aircraft Quality Summary Acceptance Inspection*

43-180-43-180-1 *Calibration Requirements for the Maintenance of Army Materiel*

55-1500 series (For assigned aircraft)

55-1500-307-25 *Handling, Storage, and Disposal of Army Aircraft Components Containing Radioactive Materials*

55-1510 series (For assigned fixed wing aircraft)

55-1520 series (For assigned helicopters)

55-9150-200-24 *Engine and Transmission Oils, Fuels, and Additives for Army Aircraft*

746-93-2 *Painting and Marking of Army Aircraft*

750-1 *Aviation Electronics Configuration Directory*

750-126 *Use of Materiel Condition Tags and Labels on Army Aeronautical and Air Delivery Equipment*

DA FORMS

- 12 Series *Requirements for Distribution of Publications and Blank Forms*
- 1687 *Notice of Delegation of Authority - Receipt for Supplies*
- 2028 *Recommend Changes to Publications and Blank Forms*
- 2404 *Equipment Inspection and Maintenance Worksheet*
- 2407 *Maintenance Request*
- 2408-5 *Equipment Modification Record*
- 2408-9 *Equipment Control Record*
- 2408-12 *Army Aviator's Flight Record*
- 2408-13 *Aircraft Inspection and Maintenance Record*
- 2408-14 *Uncorrected Fault Record*

- 2408-15 *Historical Record for Aircraft*
- 2408-16 *Aircraft Component Historical Record*
- 2408-17 *Aircraft Inventory Record*
- 2408-18 *Equipment Inspection List*
- 2408-19 *Aircraft Engine Turbine Wheel Historical Record*
- 2496 *Disposition Form*

DD FORMS

- 365 Series *Weight Checklists*
- 2026 *Oil Analysis Request*

STANDARD FORMS

- 368 *Quality Deficiency Report*

APPENDIX B

REFERENCE GUIDE FOR THE TECHNICAL INSPECTOR

This reference guide is intended to aid quality control personnel in locating publications pertaining to a particular subject. The listings are not for specific aircraft but pertain to Army aircraft in general. Refer to the DA Pam 310-series (indexes) for publication titles.

SUBJECT	REFERENCE
Acceptance inspection	TM 55-1500-326-25 TM 55-1500-328-25
Accidents	AR 95-5 AR 385-40
AVIM procedures	FM 55-42
Avionics	TB 750-1
AVUM procedures	FM 55-41
Batteries	FM 55-506-1
General	TM 11-6140-203-14-1
Nickel-cadmium	TM 11-6140-203-14-2
Bearings	TM 55-1500-322-24
Calibration	AR 750-25 TB 43-180 TB 43-180-1 TM 38-750
Cannibalization	AR 750-1
Cleaning, aircraft	TM 55-1500-333-24
Components, time change	TB 55-1500-307-24 TM 55-1500-328-25
Condition tags, material	TB 750-126
Correspondence	AR 340-15
Corrosion control	TM 43-0105 TM 55-1500-204-25/1
Deployment, Rapid	
Fixed wing	TM 750-143
Rotary wing	TM 750-134
Parts and ground support equipment	TM 750-199

SUBJECT	REFERENCE
Destruction	
Aircraft	TM 750-244-1-3
Ground support equipment	TM 750-244-1-5
Electricity	
Basic	FM 55-506-1
AC	TM 11-681
Mathematics	TM 11-684
Power supplies	TM 11-663
Systems, inspection	TM 55-1500-204-25/1
Test instruments	TM 11-664
Wiring, installation	TM 55-1500-323-25
Engines	TM 55-406 TM 55-1500-204-25/1
Quality Deficiency Report	TM 38-750
Fabrication material	FM 55-63
Fabrication, material	TM 55-1500-204-25/1
Files, office	AR 340-2 AR 340-18-1 AR 340-18-12 AR 340-18-14
Fire extinguishers, aircraft	TM 55-1500-204-25/1
First aid kits	TM 55-1500-328-25
Forms and records	
Logbook, maintenance, historical records	TM 38-750 AR 750-31 TB 55-1500-307-24
Weight and balance	TM 55-405-9
Fuel	
Approved types	TB 55-9150-200-24
Equipment, handling	
Refueling	FM 10-68
Safety procedures	TM 55-1500-204-25/1
System repair	TM 55-1500-204-25/1

SUBJECT	REFERENCE	SUBJECT	REFERENCE
Ground support equipment	TM 55-1500-204-25/1 TM 55-405-10	Marking of aircraft	TB 746-93-2
Grounding of aircraft	AR 95-18	Marking of instruments	TM 55-6600-200-20
Ground operation, aircraft	AR 95-1 TM 55-1500-204-25/1	Material readiness reporting	AR 95-33
Ground points, hangar and flight line	FM 10-68	Modifications	
Hardware, common	TM 55-1500-204-25/1 FM 55-63	Configuration control	
Historical records, aircraft	TM 38-750	Forms	TM 38-750
Hydraulics	TM 55-409 TM 55-1500-204-25/1	General policies	AR 750-1
Identification tapes, hose, and tubing	TM 55-1500-204-25/1	Mutilation of condemned equipment	TM 55-1500-328-25
Index, publications	DA Pam 310 series	Non-Destructive Inspection (NDI)	TC 55-17 TM 43-0103
Inspection	TM 55-411	Oil analysis	TB 43-0106
Aircraft and systems	TM 55-1500-204-25/1	Oxygen systems	TB 55-6650-300-15
MAIT	AR 750-51	Painting, aircraft	TB 746-93-2
Phase	TB 55-1500-337-24	Phase maintenance	TB 55-1500-337-24
Preventive maintenance inspection system	TM 55-1500-204-25/1	Preservation of equipment	TM 38-230-1 TM 38-230-2 TM 55-1500-204-25/1
Lifting devices, testing	TB 43-0142	Publications	AR 750-31 DA Pam 310-10 DA Pam 310-13
Maintenance Assistance Instruction Teams	AR 750-51	Quick change assemblies	TM 55-1500-328-25
Maintenance management, policies	AR 750-51	Recovery of aircraft	FM 55-413
Aeronautical equipment	TM 55-1500-328-25	Repair kits	TM 55-1500-328-25
AVIM	FM 55-42	Repaired equipment, VFR and IFR	AR 95-1
AVUM	FM 55-41	Restraint equipment, personnel	TM 55-1500-204-25/1
Production control	FM 55-42	Safety	AR 95-5 AR 385-40 FM 55-42
Quality control			
Maintenance man-hour limitations	TB 43-0002-3		
Maintenance operational checks	TM 55-1500-328-25		

SUBJECT	REFERENCE	SUBJECT	REFERENCE
Security	AR 385-5	Test flights	TM 55-1500-328-25 TM 38-750
Shipment of aircraft	TM 38-250 TM 1 series	Tires	TM 55-2620-200-24 TM 55-2260-201-24
Shop practices	TM 55-1500-204-25/1	Tools	TM 9-243 TM 55-1500-204-25/1 FM 55-63
Standard torque values	TM 55-1500-204-25/1	Transfer, aircraft	TM 55-1500-326-24
Status symbols	TM 38-750	Weight and balance	AR 95-16 TM 55-405-9
Structural repair	FM 55-63 TM 55-1500-204-25/1		
Supply procedures	AR 710-2 FM 29-25 FM 55-42 FM 55-41		



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FM 55-411

30 JANUARY 1981

By Order of the Secretary of the Army:

E. C. MEYER

*General, United States Army
Chief of Staff*

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