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1299-02-83-CR

Manpower and Personnel Requirements Determination Methodologies Manual (MANPERS Manual)

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and
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**Submitted by
CHIEF
SYSTEMS MANNING TECHNICAL AREA**

**Certified as technically adequate
and approved for publication by
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**Office, Deputy Chief of Staff for Personnel
Department of the Army**

DECEMBER 1983

DTIC QUALITY INSPECTED *

19970512 190

**Army Project Number
2Q263743A791**

SYSTEMS MANNING

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER 0002AF	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) MANPERS Manual		5. TYPE OF REPORT & PERIOD COVERED Final 3 May 1982-15 Dec 1983
		6. PERFORMING ORG. REPORT NUMBER 1299-03-83-CR
7. AUTHOR(s) Francis O. Deppner, B. Leon Elder, Oscar J. Harrison, Lawrence B. Nadler		8. CONTRACT OR GRANT NUMBER(s) MDA903-82-C-0269
9. PERFORMING ORGANIZATION NAME AND ADDRESS General Research Corporation 7655 Old Springhouse Road McLean, Virginia 22102 (Cont.)		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 612722, 623731
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Research Institute for the Behavioral and Social Sciences (Attn: PERI-SM) (Cont.)		12. REPORT DATE December 1983
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		13. NUMBER OF PAGES 383
		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Qualitative and Quantitative Personnel Requirements Information, Basis of Issue Plan Feeder Data, Basis of Issue Plan, Project Management, Manpower Personnel, Training, Life Cycle System Management Model, Force Structure Change, Combat Developer, Materiel Developer,		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This is a final manual on Manpower and Personnel Requirements Deter- mination Methodologies (MANPERS). It covers information sources, data collection, and how-to instructions for the purpose of preparing the Basis of Issue Plan Feeder Data, Qualitative and Quantitative Personnel Requirements Information, and Basis of Issue Plan. In addition, it presents an overview of the Life Cycle System Management		

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Block 9 (Continued)

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Block 11 (Continued)

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Block 19 (Continued)

Logistics Support Analysis, Manpower Requirements Analysis.

Block 20 (Continued)

Model and the flow and processing of the various documents required
in the Basis of Issue Plan development process.

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PREFACE

This Manpower and Personnel Requirements Determination Methodologies Manual, hereafter called the MANPERS Manual, covers specific material that must be employed to identify manpower requirements and to define personnel skills during the process of research, development, and acquisition of new equipment and weapons. This manual is intended to serve as a tool to introduce new employees to some of the manpower and personnel requirements determination events which are part of the life cycle system management model (LCSMM). It will also serve as a tool to standardize these detailed procedures for the more experienced employees.

PROCEDURAL GUIDANCE

This manual is intended to provide detailed procedural guidance that is supportive of and a complement to Army Regulation 71-2, Force Development [Basis of Issue Plans (BOIPs) and Qualitative and Quantitative Personnel Requirements Information (QQPRI)]. It also provides information to relate: (a) the life cycle system management model; (b) planning, programming, budgeting, and execution; and (c) manpower, personnel, and training to the critical processes associated with determining manpower and personnel requirements as part of research, development, and acquisition of new equipment and weapons.

APPLICABILITY

This manual, therefore, pertains only to the aforementioned processes when and where a need is identified to prepare Qualitative and Quantitative Personnel Requirements Information and Basis of Issue Plans. Further, this manual pertains primarily to: (a) the Materiel Developer - the US Army Materiel Development and Readiness Command (DARCOM), and (b) the Combat Developer - the US Army Training and Doctrine Command (TRADOC).

USERS

The actual users of this manual will be located at major subordinate commands and activities of DARCOM and TRADOC where the Basis of Issue Plan Feeder Data (BOIPFD), QQPRI, and BOIP are actually prepared. In this respect, the target audience of this manual are those personnel involved in the basis of issue plan development and decision process with the principal target audience being in the Project Manager's Office, HQ TRADOC, integrating centers, and service schools. Those personnel employed in Project Manager's (PM) Office or DARCOM major subordinate commands who have been assigned responsibility for preparing the (a) basis of issue plan feeder data, and (b) the qualitative and quantitative personnel requirements information will be the principal materiel development users of this manual. The principal combat development users of this manual will be those personnel employed by TRADOC who have been assigned responsibility for (a) the receipt, review, registration, and assignment of control serial numbers of BOIPFD and QQPRI at HQ TRADOC, (b) the official tasking of TRADOC subordinate commands with BOIP preparation and development responsibility; and (c), BOIP preparation and development responsibility at integrating centers and service schools, either proponent schools or coordinating schools.

MANUAL ORGANIZATION AND CONTENTS

The MANPERS Manual contains six sections. Each section concentrates on specific subject material. Figure 1 presents the manual's organization. A general description of each section's contents follows:

SECTION	CONTENTS
Overview	A discussion of the total manual contents and how it relates to life cycle system management and planning, programming, budgeting, and execution with respect to determining manpower and personnel requirements.
MPT Requirements	An explanation of manpower, personnel, and training with respect to the materiel research, development, and acquisition process. Included is information concerning the need for accurate MPT requirements information to properly field new equipment and weapons in the process of modernizing the US Army.
Document Flow	An explanation of a detailed document flow diagram which describes responsibilities and document preparation processes, how and where documents flow between organizations to include HQDA, and general information concerning the total BOIP preparation and development process.
BOIPFD	A detailed description of basis of issue plan feeder data information sources and how to prepare DA Form 3362b-R. It includes identification of data sources and origins of BOIPFD information which covers developmental LIN numbers, ASIOE, and TMDE.
QQPRI	This section is devoted to manpower and personnel information. It covers the requirements to identify the number of operators and maintainers at all echelons to include maintenance man hours. Selection of military occupational specialty or specification of task data is described through the use of two classification schemes. This document is to identify selected training information.

BOIP

The BOIP development process is described in this section with respect to the table of organization and equipment number and the table of distribution and allowance that it impacts. These two-type organizational structures cover combat, combat support, and combat service support, as well as base operations. This process identifies equipment and personnel impacts in all organizational structures concerning operations, maintenance, and support at all levels exclusive of depot operations.

This manual covers detailed explanations of the complete processes to determine manpower and personnel requirements that are associated with the research, development, and acquisition of equipment and weapons. This manual is not intended to be utilized for other purposes.

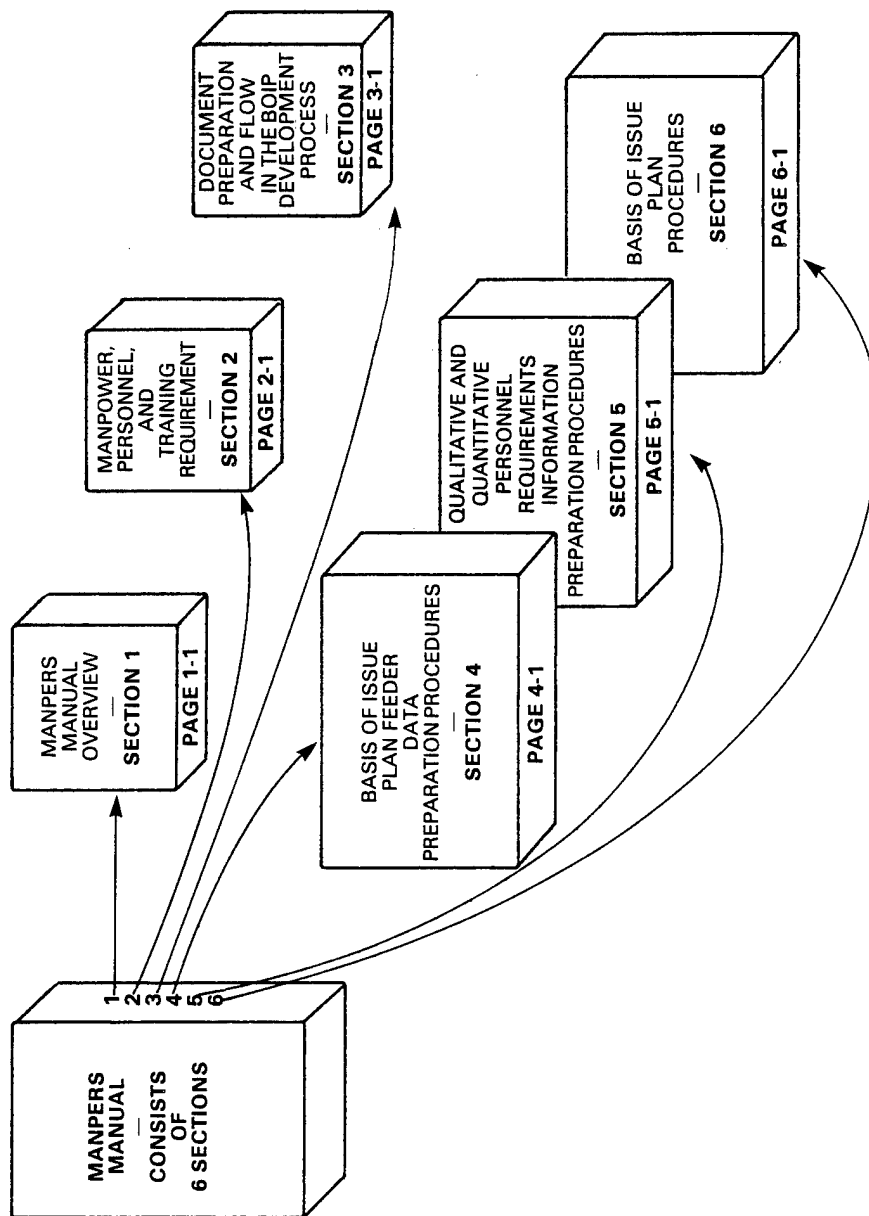


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Section 1

OVERVIEW

INTRODUCTION

The purpose of the Manpower and Personnel Requirements Determination Methodologies (MANPERS) manual is to provide:

- a. Procedural guidance on how to prepare the Basis of Issue Plan Feeder Data (BOIPFD), the Qualitative and Quantitative Personnel Requirements Information (QQPRI), and the Basis of Issue Plan (BOIP).
- b. Identification and discussion of data sources required for the proper and complete preparation of these documents.
- c. Job aids and suggested work and recording sheets to assist in the preparation of these documents.
- d. Cautionary, experiential, and highlighted advisory notes and information to assist in the preparation of these documents and to avoid deficiencies in data contained in them.
- e. The flow of these documents from originating organizations through their various stages until approval and publication.

In addition to the foregoing, this manual will touch on the Life Cycle System Management Model (LCSMM) as implemented in the US Army by various service doctrines, pamphlets, and other guidance documents.

Major command (MACOM) commanders, at their discretion, may use the MANPERS manual in lieu of or in conjunction with existing operational guidance.

The contents of this manual are intended as a guide to assist Materiel and Combat Development personnel in determining and documenting personnel and equipment requirements for new equipment and weapons. This manual addresses documenting changes in either personnel or equipment requirements at any stage in developing new equipment and weapons, in Product Improvement Programs (PIP), or in subsequent deployment which may impact one or more unit-type organizations at the Table of Organization and Equipment (TOE) level of force structure. Tables of Distribution and Allowance (TDA) units are impacted based upon respective missions.

BOIPs are required to support Manpower, Personnel, and Training (MPT) requirements associated with the development and fielding of new equipment and weapons and improvements to fielded systems that have MPT requirement changes. The BOIP is initiated simultaneously with, or as a result of, specific events that occur within the LCSMM. Based on information developed during LCSMM events, the documents identified above are prepared, submitted, processed, and resubmitted as changes occur to information previously submitted. Such changed information must be prepared, submitted, and processed through the same procedures and data flow as the original submission. The initial or original document submission is tentative and the subsequent submission is identified either as an amendment or final. When changed

information is submitted, it is identified as an amendment to information previously submitted, either tentative or final. Amendments will be numbered chronologically (for BOIPFD - 1, 2, etc., in the amendment block; for QQPRI - A1FQQPRI, A2FQQPRI, etc.).

DOCUMENTS

Army policy on the BOIPFD is published in Chapter 2, AR 71-2. The BOIPFD must contain complete and accurate information pertaining to all developmental (Z LIN) items, Associated Support Items of Equipment (ASIOE) components, and Test, Measurement, and Diagnostic Equipment (TMDE), whether type classified or not type classified. Major components such as generators, air conditioners, and similar items are usually separately type classified and assigned their own line item number (LIN). ASIOE includes components and TMDE; therefore, the term ASIOE as used in this manual is an all-inclusive term to identify support equipment regardless of its actual application. Early in the development process, when the tentative information is being formulated, complete information may not be available, especially with respect to complete ASIOE. It is essential to establish information based on the best available data or, lacking "hard" data, the best estimate.

Army policy on the QQPRI is published in Chapter 3, AR 71-2. QQPRI must contain complete and accurate manpower and personnel requirements information pertaining to the equipment to be operated and maintained, to include manpower and personnel requirements associated with ASIOE. The personnel information must be at a level of detail which completely specifies and describes the:

- a. Number of direct operators (crew composition to operate the equipment for one shift).
- b. List of duty positions by descriptive tasks (jobs) required to operate and support the equipment.
- c. Number of direct productive annual maintenance man hours (DPAMMH) required to maintain each item of equipment (LIN) by level of maintenance.
- d. List of system-unique duties and tasks to be performed by each identified operator or maintainer position.
- e. Information concerning contractor or New Equipment Training Team (NETT) training.

As in the case of preparing the BOIPFD, best judgment information must be submitted in the tentative QQPRI. This information should be coordinated with the equipment developer and applicable service schools.

The BOIP, when completed, represents a statement of requirements by specific elements of information which exactly identify:

- a. Personnel by military occupational specialty (MOS), additional skill identifier (ASI), if used, grade, and number.
- b. LIN and quantity for:
 - (1) The new item(s) of equipment or weapon.
 - (2) ASIOE (encompasses all categories of support equipment).

- c. Initial training for developmental and operational testing is usually provided by the NETT. Training device requirements, if and when identified, are documented in a separate BOIP. Service School Training requirements are identified by the amount of classroom instruction (in hours) required by operation and/or maintainer personnel and are documented separately.

Army policy on BOIP preparation is published in Chapter 4, AR 71-2. The BOIP development process is initiated by the Materiel Developer [usually a Project Manager (PM) or the US Army Materiel Development and Readiness Command (DARCOM)] through preparation of the BOIPFD and the QQPRI. Materiel Developers within DARCOM are usually resident at a major subordinate command (MSC). Materiel Developers other than DARCOM can be the:

- a. Surgeon General (SG)
- b. Computer Systems Command (CSC)
- c. Office of the Chief of Engineers (OCE)
- d. Intelligence and Security Command (INSCOM)
- e. Defense Communications Agency (DCA)
- f. National Security Agency (NSA)

Specific identification of submissions is provided below:

Submission Type	Document Identification and Type
Tentative (T)	BOIPFD TQQPRI TBOIP
Amendment (A)	ABOIPFD A*TQQPRI A*TBOIP
Final (F)	BOIPFD FQQPRI FBOIP
Amendment (A)	ABOIPFD A*FQQPRI A*FBOIP

Consideration must be given to the critical need for accurate information and its timely submission. Submissions must be identified by date and type of document. A firm rule that must be followed is that as information previously submitted changes, an amended document will be submitted. Amendment is intentionally listed twice to show how it is utilized with the tentative and final document identification. There is no limit on the number of amendment submissions to either the tentative or final documents. The asterisk with amendments for either the T or FQQPRI indicates that an arabic numeral must be used to chronologically number the changes. The BOIPFD amendment block must be numbered chronologically. In each case the numbering is 1, 2, 3, etc.

THE LIFE CYCLE SYSTEM MANAGEMENT MODEL (LCSMM) PROCESS

The US Army uses the Department of Defense (DOD)-prescribed LCSMM when developing and acquiring new equipment and weapons. The LCSMM is explained in Department of the Army (DA) Pamphlet 11-25 and consists of four phases:

- a. Concept Exploration
- b. Demonstration and Validation
- c. Full-Scale Development
- d. Production and Deployment

Each phase consists of many events, and the results of each phase are documented in a Decision Coordinating Paper (DCP), Decision Program Memorandum (DPM), or Amended Program Memorandum (APM). The results serve as the basis for a decision briefing to a Defense System Acquisition Review Council (DSARC), Army System Acquisition Review Council (ASARC), or an In-Process Review (IPR). The threshold for each decision level is generally as listed below:

Decision Level	Briefing Type	Threshold
Office of the Secretary of Defense (OSD) (JMSNS Required)	DSARC	Research, Development, Test, and Evaluation Funds: \$200 million; or Procurement funds: \$1 billion
Office of the Assistant Secretary of the Army (Research, Development, and Acquisition) [ASA (RDA)] (JMSNS Required)	ASARC	Major systems less than OSD level but more than the DCSRDA level
Office of the Deputy Chief of Staff for Research, Development and Acquisition (DCSRDA)	IPR	Research, Development, Test, and Evaluation Funds: less than \$150 million; or Procurement Funds: less than \$600 million
HQ, US Army Materiel Development and Readiness Command (DARCOM)	IPR	Non-major items below the previously cited thresholds

Each LCSMM milestone is the culmination of the preceding phase and serves to support a decision required to allocate resources to achieve the next milestone. The required decision ensures Defense and service resource support via the Planning, Programming, Budgeting, and Execution System (PPBES) actions for the next phase. The four LCSMM phases, and their resultant decision processes, are related to and support specific LCSMM milestones. The milestones are:

Phase	Milestone
Concept Exploration	I
Demonstration and Validation	II
Full-Scale Development	III
Production and Deployment	no number

To meet each milestone, the Materiel Developer must: (1) accomplish the events preceding the milestone; (2) secure approval through presenting a decision briefing to obtain approval for support to continue the development and acquisition process based on having accomplished previous events.

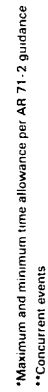
The LCSMM process is initiated by HQ, US Army Training and Doctrine Command (TRADOC) based upon overall direction from HQDA. TRADOC studies a capability of the US Army considering the perceived threat to the United States from aggressor nations and what is needed to mitigate or counter a potential threat. These studies, called Mission Area Analyses (MAA), include one or more scenarios under which the appropriate capability of the US Army force structure is modeled. The MAA is used to determine force structure deficiencies, if they exist, for a given time period studied. The MAA also serves to determine changes in the modeled capabilities and force structure required to remedy the deficiency.

If the identified deficiency is to be remedied by a research and development thrust, the overall MAA results in a mission need determination and is succinctly documented in a Justification for a Major System New Start (JMSNS). It addresses systems estimated to involve Research, Development, Test, and Evaluation (RDTE) resources based on the thresholds listed on the preceding page. The JMSNS approval authority resides at either the OSD or Army level. If the RDTE resources are estimated to be less than the \$150 million, a Required Operational Capability (ROC), Letter Requirement (LR), Training Device Requirement (TDR) or Training Device Requirements Letter (TDRL) is prepared to support and justify the expenditure of resources for Research, Development, and Acquisition (RDA).

Figure 1.1 is an overview of the LCSMM depicting the milestones (i.e., decision points) and phases containing the RDA events. The events preceding each milestone produce the paperwork which supports the milestone decision process. At each milestone, the decision may be:

- a. **Approved** — The RDA processes continue and resources will continue to be provided.
- b. **Repeat Selected Events** — Approval is withheld pending completion of additional work. Resources are approved and provided for that work. The milestone must be repeated.
- c. **Disapproved** — All activity must stop. Limited resources are provided to close out all Government and contract activity.

Maximum time between events from date of Z LIN assignment and minimum time to first unit equipped are also depicted on this figure. The tentative BOIPFD, QQPRI, and BOIP are prepared initially to be submitted to HQDA (ODCSOPS) approximately 345 days after Z LIN assignment. Subsequent submissions of these documents are either amendments or the final. The final BOIP and all associated documentation must be submitted to HQDA 32 months prior to first unit equipped (FUE) date.



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SECTION 2

MANPOWER, PERSONNEL, AND TRAINING (MPT) REQUIREMENTS

GENERAL

The availability, validity, and adequacy of Manpower, Personnel, and Training (MPT) requirements information are more critical now than at any time in the Army's history for the successful management and upgrade of the Army. This is because the Army is in a transitory state between the concepts, doctrines, and equipment of the past and those currently under research, development, and acquisition. The emerging concepts, doctrines, equipment, and weapons are aimed at establishing highly-trained, mobile, fast, hard-hitting, and flexible light and heavy forces, structured around state-of-the-art technology and equipment and weapons. This involves computerized weaponry ranging from individual weapons to missiles. To achieve required force structures, significant changes are being initiated throughout the Army. Revisions to the force structure are input as BOIP which change existing type units organized under a Table of Organization and Equipment (TOE) and identified by a TOE number [formerly Standard Requirements Code (SRC)]. TOEs are model organizations and, when implemented, are identified in the force structure as a modified TOE (MTOE). This is an appropriate identification since differences in unit mission and location create a need to modify the model under which a unit is organized and equipped for day-to-day operations. In the event an existing TOE does not accommodate the necessary revision to the force structure, a totally new TOE must be developed. A new TOE is initiated through Automated Unit Reference Sheets (AURSs) and through draft plan TOE (DPTOE) which identify complete personnel and equipment requirements for a new unit and which can form the basic test unit for development and testing of new materiel. In this respect, either an AURS or a DPTOE forms the basis for a test unit and usually is the precursor to a totally new TOE.

MANPOWER

In the context of this manual, manpower has two meanings:

- a. Requirements for manpower to meet the wartime force structure at full combat authorized levels. The BOIP is formulated from the context of a full combat Authorized Level of Organization (ALO) 1.
- b. Requirements for manpower to meet the peacetime force structure at reduced authorized levels, i.e., some units structured at less than ALO 1.

In day-to-day Army operations within the controls and constraints of the Planning, Programming, Budgeting, and Execution System, Army managers face the realities of the Congressionally authorized end-strengths (which generally do not vary significantly from year to year). Therefore, when peacetime manpower requirements increase in the active force structure, e.g., any manpower needs associated with new equipment and weapons, such increase is typically satisfied by decreasing authorized strength from existing peacetime force structure in a trade-off manner. The end-strengths that are annually imposed and approved by Congress consist of:

- a. Transients, Trainees, Holdees, and Students (TTHS) which represent that portion of the manpower to sustain the required Active Army Force Structure Allowance (FSA). The TTHS are a number of personnel who are required as overhead and called the Individuals Accounts. These accounts consist of transients (individuals en route from one duty station to another); trainees (individuals undergoing basic training or initial MOS training); holdees (individuals assigned to hospital detachments as patients and individuals carried on the rolls of a confinement facility); and students (individuals already trained in one MOS and undergoing training in another and those attending a civilian educational facility on a full time basis). These individuals are not part of the present for duty unit operating force. However, these individuals occupy Congressionally authorized spaces which cannot be included in unit authorizations as part of the force structure allowance.
- b. FSA which represents that portion of the end-strength that can be structured in mission units of the Army. Mission units consist of MTOE and Table of Distribution and Allowances (TDA) units which are assigned combat, combat support, combat service support, and base-support missions.

The peacetime manpower represents either all, or a portion, of the wartime requirement. If less than wartime requirements are authorized, it is said that the ALO is less than ALO 1 which is 100 percent. Manpower is structured in the TOE as the requirements and authorizations. Manpower, whether requirements or authorizations, in Army jargon is identified as "spaces." Spaces in an aggregate form represent a required number of personnel. The personnel required to fill the spaces that become authorizations are "faces" and such authorizations require detailed information as to MOS, grade, and number. Therefore, spaces have a qualitative and a quantitative component; quantitative relates to number of spaces in the aggregate and qualitative relates to a breakdown by number, skill, and grade of spaces. The qualitative detail by occupation is applicable to officer, warrant officer, enlisted, and civilian positions.

For the manpower requirements to be identified with new equipment and weapons, a study of manpower needs, as identified by the new equipment or weapon developer, is prepared. This document is the QQPRI. The QQPRI expresses manpower requirements for one piece of equipment or weapon. It identifies maintenance personnel in terms of DPAMMH, and other personnel required to accommodate combat support and combat service support. Personnel needs are identified by specific MOS, or by a job description if an MOS cannot be identified. The QQPRI does not relate these personnel requirements to any TOE or TDA organization. TRADOC performs analyses and coordinates organizational impacts.

The manpower requirements identified in the QQPRI are extrapolated into BOIPs (by TOE number) for each TOE impacted. Impacts may be recommendations to increase, decrease, or maintain current strength. Careful attention is always given to selecting the correct MOS and grades for any recommended change to a TOE structure.

PERSONNEL

Personnel, in the context of this manual, has only one meaning: human resources, sometimes called personnel assets or "faces." Personnel assets are those personnel that have been recruited and trained, or are undergoing training, to qualify for a specific MOS.

While this manual does not dwell on personnel, it is important to understand that manpower requirement statements prepared in the form of the QQPRI can cause future manpower, MOS, grade, and quantity requirements to change. Changes in manpower requirements by MOS, grade, and number, when aggregated by this detail, may dictate changes in recruiting, training, and distribution objectives. The manpower requirements, when associated with new equipment and weapons production schedules, establish time-phased requirements for trained personnel which must be filled to meet equipment fielding schedules.

While determining the time-phased trained personnel requirements by MOS, grade, and number may seem simple, it is not. The problem is quite complex and may involve a lead time of as much as four years. This lead time is necessary to accommodate changing recruiting quotas, establishing and allocating or redistributing school resource requirements, and conducting the training, to ensure a supply of trained personnel to man and support new materiel to include sustaining the flow of trained personnel.

TRAINING

Training, in the context of this manual, is defined as instruction provided by the equipment developer's New Equipment Training Team (NETT) or by a service school to qualify personnel to operate, maintain, and/or support new equipment and weapons. The training may take as little as two weeks to qualify personnel in an ASI, or as long as 48 weeks to qualify personnel in an MOS.

The determination of specific skill requirements for new systems is critical to training program development. If the skills associated with new equipment and weapons correspond to skills already utilized, then only an increased number of soldiers must be trained. If, however, the skills do not correspond to skills already utilized, either an ASI or a new MOS must be established, dictating associated changes in training requirements. In either case, school resources are involved. The service school providing the ASI or MOS training must plan for the changed or new program of instruction. Instructors must be qualified before they can teach classes, classroom facilities must be provided, training devices must be developed and procured, students must be scheduled to attend classes, and many other details must be handled to absorb an increased student load and/or teach new skills. To respond to changing skill requirements, the service schools responsible for training must be allowed sufficient reaction time. The US Army Military Personnel Center must also have sufficient reaction time for personnel planning. Once specific personnel skill requirements are properly identified and documented in the BOIP processes, the reaction time requirement can be as long as four years. Resources must be provided through the annual PPBES and may include both trade-off and new resources. Because of resource level changes among HQDA, TRADOC, and the ASI or MOS proponent school, a well coordinated and balanced program of resource change is essential to achieve the desired training program or schedule.

All manpower, personnel, and training requirements originate from documenting operator and maintainer requirements in the QQPRI. The QQPRI data, when incorporated into BOIP and when BOIP is incorporated into force structure changes, identify the actual change in number of spaces broken into MOS and grade detail. These data, appropriately aggregated, determine the MPT programs that are incorporated into PPBES.

SECTION 3

DOCUMENT PREPARATION AND FLOW IN THE BASIS OF ISSUE PLAN (BOIP DEVELOPMENT PROCESS)

DOCUMENT PREPARATION RESPONSIBILITY — OVERVIEW

The overall BOIP development process includes three distinctly different documents, each one prepared by a different individual, usually in a different organization. These documents are: the Basis of Issue Plan Feeder Document (BOIPFD), the Qualitative and Quantitative Personnel Requirements Information (QQPRI), and Basis of Issue Plan (BOIP). These documents are prepared by:

a. The Logistics Analyst or the Materiel Systems Coordinator

This individual is responsible for preparing the BOIPFD and is assigned to a DARCOM agency [which may be a Project Manager (PM) or a Major Subordinate Command (MSC)], and may prepare BOIPFD either as a full- or part-time job.

b. The New Equipment Training Analyst or Manager

This individual is responsible for preparing the QQPRI, and is assigned to a DARCOM agency (which may be a PM or an MSC), and may prepare QQPRI as a full- or part-time job. This individual may or may not be located in the same unit and/or installation as the logistics analyst. QQPRI development is sometimes included as a contractual requirement for the Full-Scale Development (FSD) contractor.

c. The Personnel and Equipment Analyst, HQ TRADOC (ATCD-OB)

This individual receives the BOIPFD and the QQPRI from the US Army Equipment Authorization Review Activity (EARA); is the HQ TRADOC person responsible for initiating and monitoring the development of the BOIP through the TRADOC activities; and at HQ TRADOC is required to:

(1) Perform a cursory review of the BOIPFD and QQPRI for completeness and propriety in accordance with the AR 71-2 requirements and standards.

(2) Enter the appropriate information in the BOIP log and assign the BOIP serial number.

(3) Prepare tasking correspondence for transmittal of BOIPFD and QQPRI to the integrating center or proponent school(s). Multiple tasking may be appropriate based upon the complexity of the QQPRI, perceived training device requirements, and operational and maintenance requirements.

- (4) Receive completed BOIP from the proponent school(s) through the appropriate center (combined arms, logistics, or soldier support).
- (5) Review for completeness based on tasking, Basis of Issue Narrative Guidance (BOING), and Required Operational Capability (ROC).
- (6) Coordinate for worldwide TDA requirements from other major commands, as appropriate.
- (7) Present the BOIP to TRADOC review board.
- (8) Include automated unit reference sheets (AURS) if tentative BOIP. Include draft plan TOE (DPTOE) if final BOIP. AURS and DPTOE are required only when complete new unit structures are involved.
- (9) Forward to HQDA, ODCSOPS (DAMO-FD) for approval.
- (10) Publish BOIP, after approved by HQDA.

d. The BOIP Analyst

This individual is responsible for preparing the BOIP and is usually assigned to a TRADOC activity, either an integrating center or a service school. The service school may be either a proponent or a coordinating school. Principal BOIP inputs are the BOIPFD and the QQPRI. They form the basis for determining new requirements and implementing changes in TOE and/or TDA equipment and/or personnel lists. The BOIP analyst, in conjunction with the TRADOC Personnel and Equipment Analyst, is responsible for coordinating all maintenance, and other logistical support requirements with the appropriate responsible schools and the Logistics Center (LOGCEN); administrative support requirements with the Soldier Support Center (SSC); and all combat and combat service support requirements with the Combined Arms Center (CAC).

PROJECT DEVELOPMENT — OVERVIEW

Many personnel, organizations and actions are involved in developing requirements for new equipment or weapons. Coordination and processing actions introduce significant complexities in BOIP development. Although the first document prepared is usually the BOIPFD, it is preceded or accompanied by other documents such as the letter of agreement (LOA) or ROC.

However, prior to initiating research, development, and acquisition of a new capability under the LCSMM, DOD and Army directives may require a study of Army force structure in the applicable mission area. The mission areas and proponents are:

Mission Area	Proponent
Aviation	Aviation Center
Air Defense	Air Defense School
Battlefield (Theater Nuclear Warfare)	Combined Arms Center
Combat Support (Engineering and Mine Warfare)	Engineer School
Combat Support	Ordnance School
Combat Support (Nuclear, Biological and Chemical Warfare)	Chemical School
Combat Service Support	Logistics Center
Combat Service Support	Soldier Support Center
Close Combat (Heavy)	Armor School
Close Combat (Light)	Infantry School
Command and Control (Nuclear, Biological and Chemical Warfare)	Combined Arms Center
Communications	Signal School
Fire Support	Field Artillery School
Intelligence and Electronic Warfare	Intelligence School
Special Operation Forces	Center for Military Assistance

Mission Area Analyses

Although HQDA, DOD and other services may become very involved in any mission area, TRADOC (Combat Development) has primary responsibility for conducting Mission Area Analyses (MAA) or capability studies, cataloging results of such studies and identifying deficiencies, and determining what is necessary to remedy the deficiency(-ies). The required "fix" may involve force modernization only; it may require a product improvement; or it may involve research, development, and acquisition (RDA) which, if approved, usually leads to force modernization. In instances where RDA is involved, a conceptual framework of need is developed, along with perceptions of how the need can be satisfied.

TRADOC, as the Army's Combat Developer, has overall MAA responsibility. Included in the MAA deliberations are representatives from the appropriate service schools and integrating centers, and DARCOM major subordinate commands. Together, these representatives identify deficiencies which may consist of structure, concepts, and needs. They are appropriately documented by TRADOC. Based on analyzing the MAA results, decision documents or requirements statements may be initiated.

Mission needs are documented in a Justification for Major System New Start (JMSNS) or ROC, sometimes both; and if approved, they become the basis for initiating the concept exploration phase and the initial logistics support analysis to include preparation of the Letter of Agreement (LOA). The LOA is a joint HQDA, TRADOC, and DARCOM record of agreements, responsibilities, and the nature and characteristics of the proposed system or product improvement. These LCSMM tasks are required to accomplish Milestone I. With the appropriate Milestone I approval(s), the tasks necessary to demonstrate and validate the concept are initiated. Research and development continues and is directly dependent upon results and the subsequent milestone decisions at DSARC, ASARC, or IPR, as appropriate.

DOCUMENTATION, FLOW, AND USE

In previous sections, the BOIPFD, QQPRI, and BOIP responsibilities were discussed. Before proceeding, it should be pointed out that the BOIP is not an authorization document but is, rather, a planning document identifying personnel and equipment required to field a new capability. It identifies TOE [at ALO 1 (wartime)], TDA, Common Table of Allowances (CTA), and Additive Operational Projects (AOP), which may be designated to receive new items of equipment or weapon systems. The BOIP also identifies support personnel and equipment requirements by TOE and TDA. In addition, it touches on many other aspects of Army operations and requirements; therefore, its preparers must fully understand its many purposes.

The BOIP is used to:

- a. Predict quantitative requirements for both personnel and equipment early in the materiel RDA process.
- b. Identify qualitative personnel requirements and changes.
- c. Provide a basis for determining training requirements.
- d. Provide a basis for determining recruiting objectives.
- e. Provide occupation data, in conjunction with the QQPRI, for recommendations and decisions by the Materiel Developer, Combat Developer, the ARSTAF and DCSPER by MOS and Special Skills Indicator (SSI) to include Additional Skill Identifier (ASI), Special Qualification Identifier (SQI), and Standard of Grade Authorization (SGA).
- f. Provide data to the MACOMs for:
 - (1) Programming personnel requirements in Program Development Increment Packages (PDIP).

- (2) Programming additional equipment.
- (3) Programming additional facilities or changes in facilities.
- (4) Programming funds [Operations and Maintenance, Army (OMA), Military Construction, Army (MCA) and others] required to support new materiel systems.
- g. Forecast the Army Acquisition Objective (AAO) through the Logistics Structure and Composition System (LOGSACS).
- h. Forecast the Army personnel authorizations change by MOS and grade through the Personnel Structure and Composition System (PERSACS).
- i. Ensure that minimum essential quantities of equipment are included in organizational requirement documents (TOE and TDA).
- j. Provide data for studies, program requirements, cost estimates, and trade-off analyses.

Figure 3.1 illustrates the flow of the BOIPFD, QQPRI, and BOIP documents from the preparing organization to the organization that is a user, processor, recommender, or decision maker. This flow starts with the documentation and processing initiated by DARCOM; it continues through the TRADOC staff entities and subordinate organizations, and on to HQDA and the ARSTAF, where the BOIP is approved. It continues with TRADOC's publishing and distributing the BOIP to the MACOMs, where PDIPs are submitted to request resources which, when approved, become the basis for authorizing and for documenting BOIP personnel and equipment change in The Army Authorization Document System (TAADS). Subheadings on Figure 3.1 reflect the actual document-preparing and/or document-processing organizations.

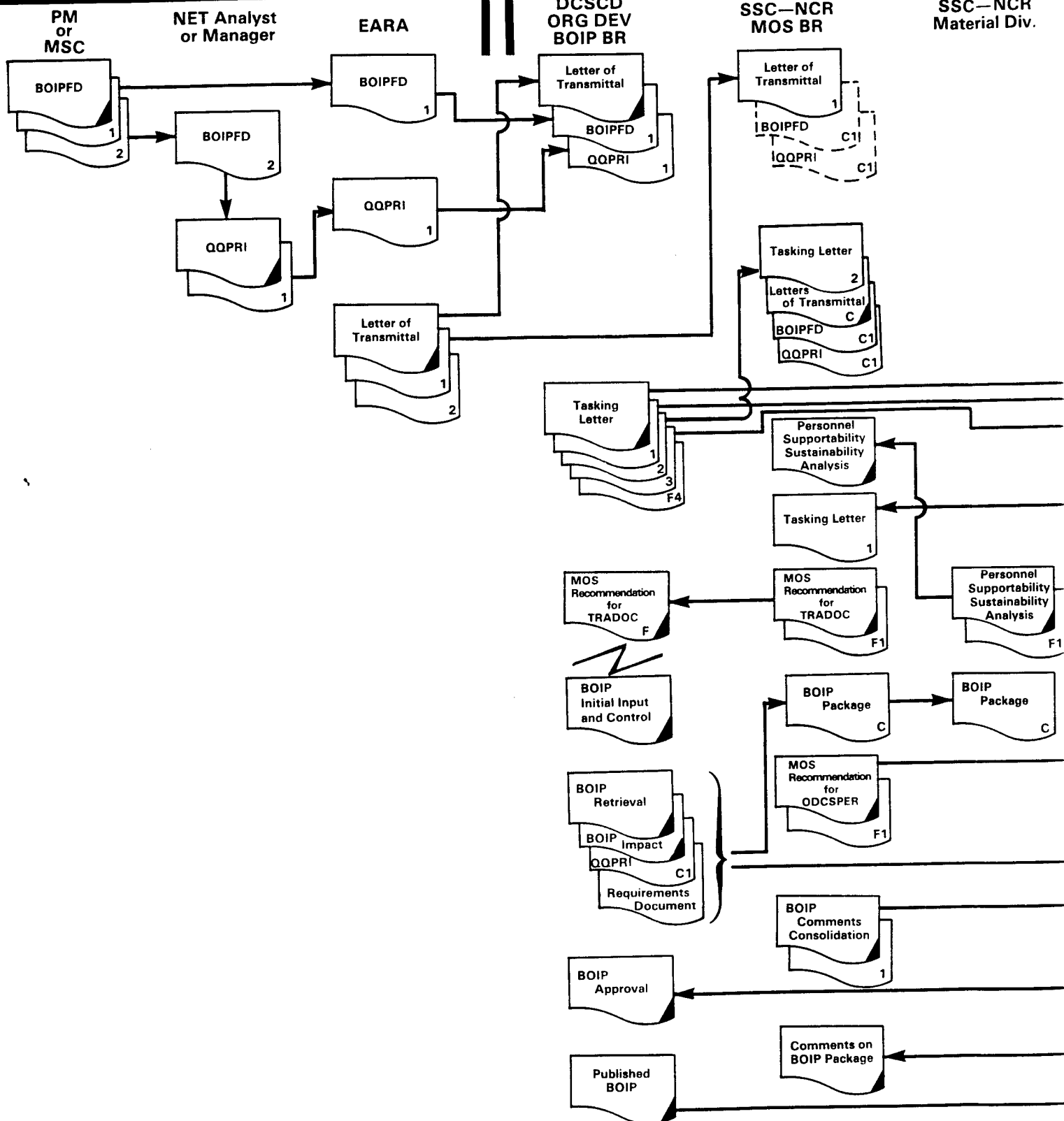
DARCOM Documents and Flow

DARCOM is usually assigned project RDA responsibility through a jointly prepared (DARCOM and TRADOC with ARSTAF participation) Letter of Agreement (LOA). Upon completion and approval of the LOA, DARCOM has assumed/been given project responsibility. At this point in the LCSMM, the system concept takes form. Project management responsibility (i.e., a PM) is assigned, or the project is assigned, without specific PM designee, to an MSC. A specific description (nomenclature or name) and a developmental line item number (Z LIN) are given to the item for initial identification. Additional items required to make the basic equipment or weapon a completely separate operational piece of equipment or weapon are also identified. These may include:

- a. Components
- b. ASIOE
- c. TMDE

At this point, the PM or MDC/MRC responsible person designates an individual (usually identified as the logistics analyst) who prepares the BOIPFD. Section 4 provides procedural guidance material concerning "how to" prepare the BOIPFD. When completed, the BOIPFD is forwarded to the:

DARCOM



Legend

- = Automation
- = Originates/Originals
- F = File
- C = Copy
- = Direction of Flow
- = Documents sometimes excluded

①

TRADOC

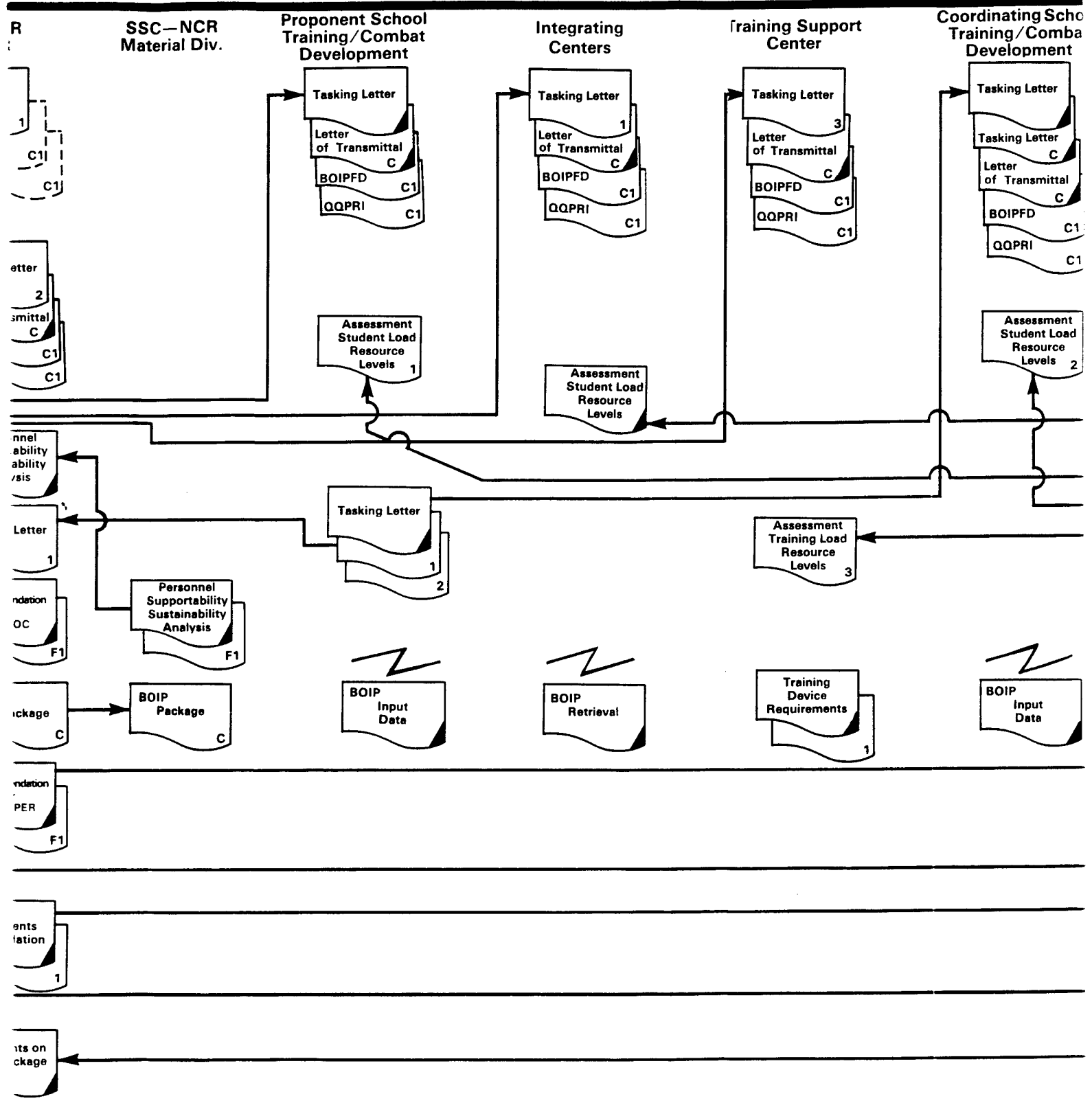


Figure 3.1 Overview of the BOIPFD, QQPRI and BOIP Document Development and Flow Process.



HQDA

MACOM

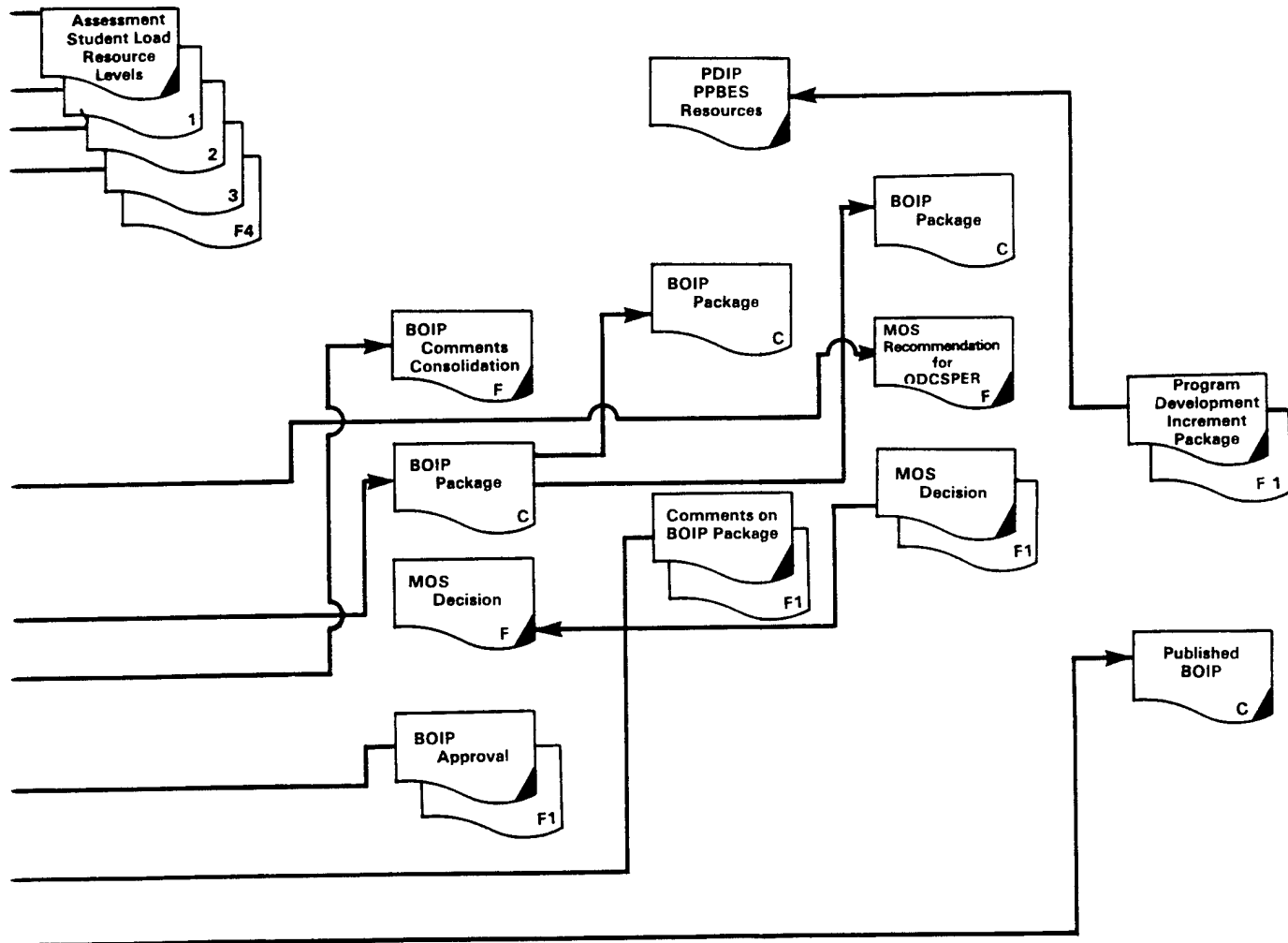
DCS Training

ODCSOPS

ARSTAF

ODCSPER

Major Commands
Worldwide



4

- a. US Army Equipment Authorization Review Activity (EARA), and the
- b. New Equipment Training Analyst (NETA) or manager (usually within the same installation, although there are exceptions)

EARA, upon receipt of the BOIPFD, performs a review and edit. The EARA review is to ensure that the developmental item does not duplicate an item currently in the Army inventory, and that the components and ASIOE have been identified so that the developmental item is complete from an operational viewpoint, and that it can be maintained and supported. Components may or may not be separately type-classified or may be developmental items. Additionally, EARA receives the QQPRI and reviews it to ensure it is supportive of and in synchronization with the BOIPFD.

The QQPRI

Upon receipt of the BOIPFD, the NETA or manager is responsible for preparing the QQPRI. The QQPRI is based on the requirements to operate, maintain, and support the equipment listed on the BOIPFD. Questions concerning equipment listed on the BOIPFD should be directed to the BOIPFD preparer. Coordination should take place with EARA, as required, to ensure complete understanding of the BOIPFD so that accurate information is included in the QQPRI. The QQPRI is prepared to reflect the BOIPFD equipment (by LIN), both developmental and type-classified, and the personnel required to operate, maintain, and support the equipment. In this process, operators for one 12-hour shift are identified, and maintainers are related to each LIN, by MOS, and DPAMMH. In the event the current Army military occupational guides (AR 611-series) do not include a job description for a required skill, then the QQPRI preparer must include task descriptive data with the QQPRI. The job descriptive data usually are obtained from the Logistics Support Analysis Records (LSAR). Section 5 presents procedural guidance material concerning "how to" prepare the QQPRI. Subsections of this procedural guidance address:

Subsection	Title
5A	DPAMMH Procedures for QQPRI
5B	MOS and Task Selection Aid
5C	Identification of Support Personnel for the Fifth QQPRI Requirement
5D	Drafting MOS Specifications

The Materiel Developer [usually DARCOM (PM or MSC)], through the preparation of the QQPRI, is responsible for selecting and recommending the initial operator and maintainer MOS or, in the absence of MOS, providing appropriate task descriptive data. The preparing NETA or manager must forward the completed QQPRI to EARA.

The BOIPFD and QQPRI

EARA accomplishes an important Materiel Developer responsibility by ensuring that each BOIPFD has a corresponding QQPRI and that the QQPRI supports the BOIPFD.

When this is not the case, EARA must resolve the discrepancy through coordination with the preparers or may return either or both documents to be corrected. When the BOIPFD and QQPRI are acceptable to EARA, they are transmitted to HQ TRADOC [the Deputy Chief of Staff for Combat Development (DCSCD)], Organizational Development Division, BOIP Branch; and an information copy of the transmittal, along with a copy of the BOIPFD and QQPRI, is simultaneously forwarded to the Soldier Support Center-National Capital Region (SSC-NCR).

TRADOC Documents and Flow

EARA forwards the BOIPFD and QQPRI to TRADOC. The TRADOC BOIP Branch is responsible for assigning a Basis of Issue Plan Serial Number to the BOIPFD and QQPRI and entering the Z LIN and item descriptive information from the BOIPFD into the automated BOIP system. These data are used to identify the BOIP through all subsequent development and processing actions until such time as it is retired to a history file.

The BOIP Responsibility

The BOIPFD and the QQPRI are the primary inputs to the BOIP development process. Development of the BOIP is initiated by HQ TRADOC BOIP Branch when the Personnel and Equipment Analyst accepts responsibility for the BOIPFD and QQPRI and assigns a Basis of Issue Plan Serial Number. The analyst then inputs the data to the automated BOIP system, and initiates a tasking letter to transmit the BOIPFD and QQPRI to a Proponent School (PS) or Integrating Center (IC) for BOIP preparation. Information about the tasking is also forwarded to SSC-NCR.

TRADOC organization and skill development responsibilities are assigned for all TOE and MOS to appropriate integrating centers and service schools. Tasking is determined based on these assigned responsibilities. Consequently, any service school may be a proponent for developing a BOIP. For the same BOIP, any (or all) service schools and integrating centers may be coordinating activities. The three ICs are heavily involved in BOIP development since their integrating responsibilities include ensuring that combat forces are properly balanced. Also, integrating centers are responsible for reviewing the BOIP development results before HQ TRADOC submits the BOIP to the TRADOC BOIP Review Board. The overall IC responsibilities are:

Integrating Center	Responsibility
Combined Arms Center	Combat and Combat Support
Logistics Center	Combat Service Support
Soldier Support Center	Soldier and Administrative Support

The BOIP Development

TRADOC (DCSCD), having assigned the initial BOIP serial number control and tasked the BOIP development responsibility to a proponent, then monitors the overall BOIP development process. The integrating center or school must take the action to develop the detailed information concerning organizational changes.

At each service school, BOIP development responsibility resides in the combat development structure, where a BOIP analyst has direct responsibility for developing, coordinating, and tasking other service schools. The BOIP analyst works through the TRADOC automated BOIP system and inputs organizational structure changes as they are developed. This is done in accordance with TRADOC coding instructions and TRADOC supplement to AR 71-2. In the process of reviewing the BOIPFD and QQPRI, organizations are identified (by TOE number) that are impacted by LIN and/or various MOS. Using these indications as a basis, the BOIP analyst prepares a letter tasking other service schools (coordinating schools) that will be involved in some aspect of preparing the particular BOIP.

In preparing the BOIP, the TRADOC guidance must be followed, as well as AR 71-2. To supplement these publications, Section 6 provides additional procedural details on developing BOIPs. Subsections of this procedural guidance cover:

Subsection	Title
6A	BOIP Preparation Procedures
6B	MACRIT Procedures for BOIP
6C	BOIP Cover Sheet Procedures
6D	BOIP Continuation Sheet Procedures

HQDA, TRADOC, and these instructions contain procedures which require the BOIP analyst to determine and input the Basis of Issue Narrative Guidance (BOING). The BOING must include organizational and operational conceptual information to include identification of organizational, Direct support (DS), and General Support (GS) maintenance personnel. It is essential that the BOIP analyst input BOING into the automated system for retrieval by the BOIP analysts at other schools, integrating centers, and HQ TRADOC. Once the foregoing is accomplished, the BOIP analysts at the schools review their assigned TOE numbers for required personnel and equipment changes concerning:

- a. Deleting equipment by LIN and associated personnel by MOS and grade.
- b. Replacing equipment by LIN and associated personnel by MOS and grade.
- c. Adding equipment by LIN and associated personnel by MOS and grade.

This review is accomplished for the developmental items and ASIOE. It results in revised equipment lists (by TOE number), which become the basis for revised personnel lists (by MOS and grade). In some instances, equipment changes do not cause personnel changes whereas in other instances some personnel changes are based on workload and have no equipment impact.

The operational changes producing the revised TOE equipment lists are also used to determine changes in maintenance at organizational, DS, and GS levels based upon

equipment density. These lists may change the amount of maintenance and type skills needed to support this equipment. To determine maintenance resource changes, DPAMMH must be computed by organization equipment density and skill. If, with the equipment change, DPAMMH and skill requirements are unchanged, there is no impact. If there is a DPAMMH change and no skill change, then the impact will be an increase or decrease to the manpower required, without a skill change. If there is no DPAMMH change but a skill change, then the deletion and addition of skills (MOS) are required. If DPAMMH and skill change, then the appropriate skills are added and deleted and the manpower requirements are incremented or decremented by each skill.

The operational changes must be reviewed for impact on operators and maintainers at all echelons. Therefore, organizational, DS, and GS requirements must be reviewed by the BOIP analyst at both the service schools and the integrating centers to determine organizational change requirements at the TOE number level by equipment (LIN detail) or personnel (MOS and grade detail) for input into the automated BOIP system. The BOIP analyst is responsible for notifying the responsible IC when the BOIP development actions are complete. The IC reviews the BOIP and in turn notifies HQ TRADOC(DCSCD) that the BOIP is complete. It should be noted that HQ TRADOC, TRADOC ICs, and TRADOC service schools have access to the automated BOIP system and data bases that are physically located at the Combined Arms Center (CAC), Fort Leavenworth. Therefore, BOIP inputs, regardless of source, reside on a single data base from which HQ TRADOC, the IC, and schools can retrieve data and determine BOIP status.

The service schools determine the training impacts such as course length, student course load, and training resource requirements. While this takes place, DCSCD provides SSC-NCR a copy of the BOIP to include the QQPRI and an impact report (by TOE number). SSC-NCR conducts reviews for DCSR covering the TRADOC MOS recommendations, SGA, personnel asset supportability and sustainability, and overall manpower and personnel implications, e.g., training and personnel management considerations, which include informal coordination with the US Army Military Personnel Center (MILPERCEN). SSC-NCR provides HQ TRADOC (DCSCD) specific information on each of these points, as applicable, and the SSC input becomes the basis for the TRADOC MOS recommendation.

Upon completion of the internal TRADOC processing of the BOIPFD and QQPRI to develop and coordinate all equipment and personnel changes, HQ TRADOC coordinates with MACOMS for TDA requirements. Upon inputting of any TDA requirements, HQ TRADOC(DCSCD) convenes a BOIP review board to determine that standards have been properly applied and that the BOIP package is ready for submission to HQDA (ODCSOPS) for approval. The BOIP package is then reproduced and submitted to HQDA. It consists of:

- a. Letter of transmittal
- b. Requirement document(s) (if not previously submitted and approved)
- c. BOIP [may include AURS (proposed TOE)]
- d. QQPRI (to include MOS recommendations)
- e. Impact report (by TOE number)

At HQDA, DCSOPS distributes this package to the ARSTAF to include ODCSPER and SSC-NCR. The DCSOPS transmittal instructs respondents to provide comments to SSC-NCR. SSC-NCR reviews the package and formally coordinates with MILPERCEN. This coordination involves the MILPERCEN short- and long-range personnel management considerations with respect to the projected schedule for fielding the new equipment or weapon system. MILPERCEN provides formal comments to SSC-NCR. SSC-NCR conducts its review and takes three actions:

- a. Consolidates ARSTAF (to include MILPERCEN) comments and provides them to ODCSOPS (DAMO-RQ).
- b. Provides ODCSPER (DAPE-MB) information upon which to base the DCSPER MOS decision.
- c. Prepares and presents an MOS decision briefing to the DCSPER or designated decision authority.

The ODCSPER (DAPE-MB) provides the ODCSOPS with written MOS decision information.

ODCSOPS (DAMO-RQ) reviews ARSTAF comments and the MOS decision, resolves problem areas, and provides HQ TRADOC (DCSCD) with written approval of the BOIP. Upon receipt of this approval, HQ TRADOC publishes the approved BOIP to appropriate Army organizations including MACOMs. MACOMs, upon receipt of DA-approved BOIP, must request resources for implementing the BOIP. MACOMs submit Program Development Increment Packages (PDIP) through procedures applicable to the PPBES.

The foregoing is intended to describe the overall procedures and document flow for manpower and personnel requirements development associated with RDA of new equipment or weapons. For additional details concerning the process for developing the BOIPFD, QQPRI, and BOIP, refer to Sections 4, 5, and 6 of this manual.

SECTION 4

PROCEDURES FOR COMPLETING THE BASIS OF ISSUE PLAN FEEDER DATA (BOIPFD)

This section describes step-by-step procedures for completing the BOIPFD. A completed BOIPFD contains a description of the new or improved equipment or weapon and intended use, as well as a complete and accurate listing of components, ASIOE, and TMDE. Components are of two types of major equipment end items identified as (a) components of end items and (b) components of equipment assemblies and sets. Additional explanation can be found in AR 310-34 - Equipment Authorization and Utilization Policies and Criteria, and Common Tables of Allowance. Major-item components are normally Government-Furnished Equipment (GFE) and may either be installed when the system is being built or, subsequently, at a depot. Major item component requirements are identified in the data interchange process. ASIOE are separately authorized end items required for the operation, maintenance, and/or transportation of a BOIP item and are listed on the BOIP of the supported item. ASIOE have their own LIN and are separately documented in TOEs. TMDE are used to perform a measurement function for adjustment, calibration, or repair purposes on another piece of equipment and are like ASIOE, separately authorized and listed on the BOIP of the supported item.

Components of end items or equipment assemblies and sets must be separately identified and input to the Standard Study Number Cross Reference File. This responsibility has been assigned to the US Army Equipment Authorization Review Activity (EARA). EARA must be provided this information by the Materiel Developer on the BOIPFD or other acceptable document. Without a proper and complete Cross Reference File the computation of requirements concerning components may result in incomplete or inaccurate requirement statements and improper procurements.

The BOIPFD is extremely important because it serves as the foundation document for all subsequent equipment and personnel requirement estimates. The BOIPFD is usually compiled in the Project Manager's Office by a logistics analyst or materiel systems coordinator on DA Form 3362b-R (April 1982) and is forwarded to EARA and the NET Analyst or Manager. The NET Analyst or Manager uses the BOIPFD to prepare the QQPRI, which is also sent to EARA. EARA is responsible for performing a review of the BOIPFD and QQPRI to ensure compatibility and completeness of both the BOIPFD and QQPRI. All versions of these documents flow through EARA without exception. EARA performs a critical review of these documents as the Materiel Developer's representative.

The importance of the BOIPFD cannot be overemphasized. Its importance to the Army modernization process cannot be stressed too much. Instructions for completing each block of the BOIPFD are presented on the following pages. The left column lists required inputs or data sources necessary for completing each BOIPFD block; the right

column indicates the process or the result of using the appropriate input. An example of an actual BOIPFD is included at Appendix A. The example used pertains to a Meteorological Data System; it is an amended final BOIPFD. The example of QQPRI and BOIP follows from this AFBOIPFD. Note that this example does not include an amendment serial number as required by the newly published C1, AR 71-2, dated 15 August 1983. It should be noted that a 45-day suspense over BOIPFD preparation and forwarding is established by paragraph 2-2, AR 71-2 as revised. It must be forwarded to EARA and to the NET within this period.

Figure 4.1 is a pictorial portrayal of the policy guidance and information sources required for BOIPFD preparation. The Materiel Developer initiates the BOIPFD under the policy guidance published in AR 71-2, as changed.

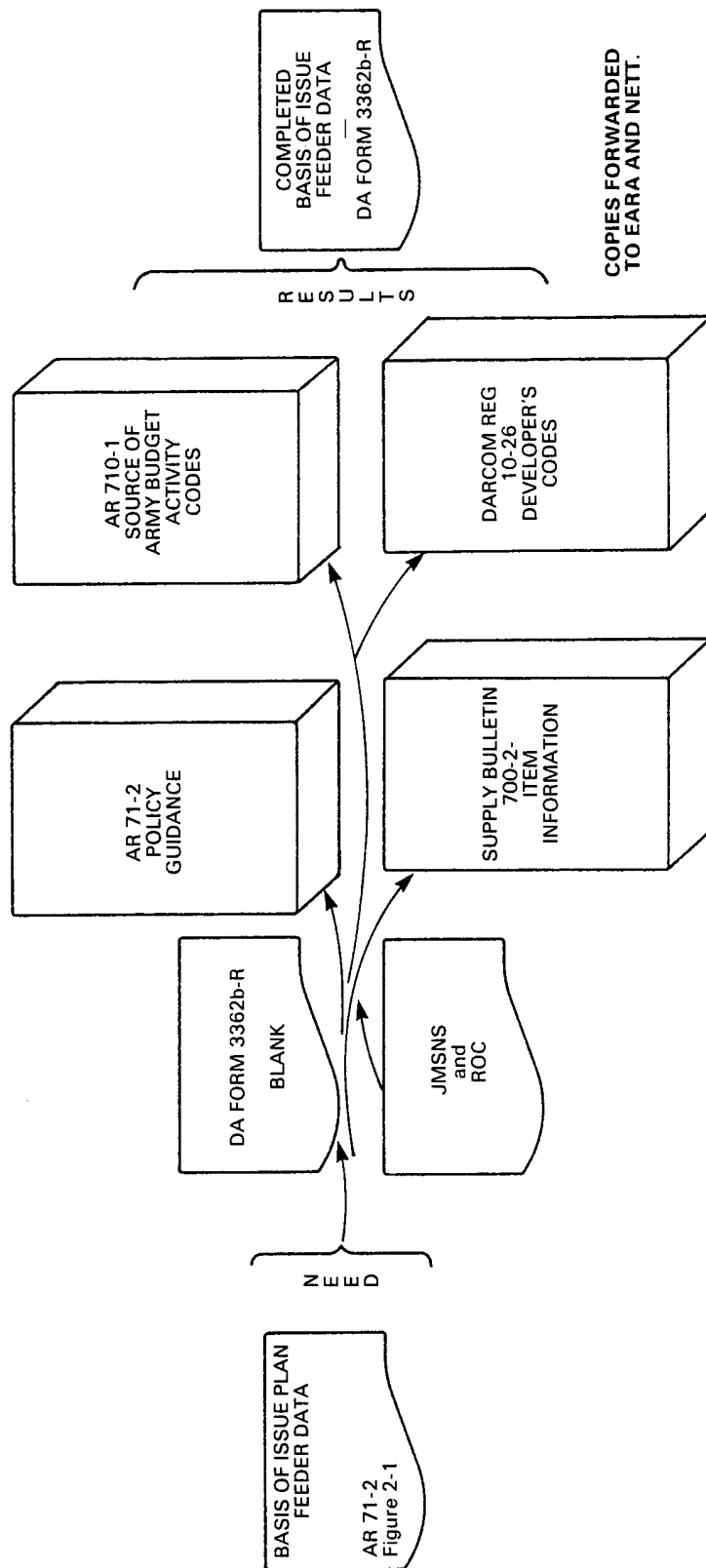


Figure 4.1. Guidance and Source Material to Prepare a BOIPFD

Block No. 1 — BOIP Plan Number

The BOIP Serial Number is assigned by TRADOC; however, not until the tentative BOIPFD and QQPRI have been forwarded, received and accepted at HQ TRADOC. Thus, the BOIP Serial Number is not available for the Tentative BOIPFD, and the block will not have an entry other than NYA for not yet assigned. The BOIP Serial Number eventually will be available and must be listed for all subsequent (i.e., Amended Tentative, Final, and Amended Final BOIPFD) submissions.

BASIS OF ISSUE PLAN FEEDER DATA FLOW

Start

Input Data

BOIP Plan Serial Number
assigned by TRADOC.

Process

1. Enter BOIP Serial Number. If initial BOIPFD submission, it is identified as the tentative BOIPFD. In which case, enter NYA-not yet assigned. All other BOIPFD submissions should have the Plan Serial Number.

Example: Block No. 1

1. BOIP PLAN NUMBER
77-0102-F

Block No. 2 — Appropriate BOIPFD Version

Identify the particular version as:

- a. Tentative BOIPFD -T BOIPFD
- b. Amended Tentative BOIPFD (number sequentially 1, 2, 3, etc.) -ATxBOIPFD
- c. Final BOIPFD -F BOIPFD
- d. Amended Final BOIPFD (number sequentially 1, 2, 3, etc.) -AFxBOIPFD

The Amended Tentative and Amended Final BOIPFD refer only to those versions in which substantive (not clerical) changes have been made and consensus has been reached (i.e., MCS, EARA, and the logistics analyst agree) that the version requires amendment. Informal changes made during the internal preparation process by the logistics analyst are not amendments. Amendments must be submitted when ASIOE or component items change.

Input Data

Place an "x" in one of the 4 boxes to designate the BOIPFD iteration being prepared. Note: Amended versions (T or F) refer to substantive formal changes unanimously agreed upon and not informal changes made during the internal preparative process.

Process

2. Indicate appropriate BOIPFD version. If an amended document is submitted, assign a sequential number starting with 1.

Example: Block No. 2

2.	☐	TENTATIVE	☐	AMENDED
	☒	FINAL	☒	AMENDED

Block No. 3 — Preparation Date

Record the date on which the BOIPFD (Form 3362b-R) is completed. The year, month, and day are identified for historical tracking purposes. This date must be less than 45 days from the Z LIN assignment date per paragraph 2-2, AR 71-2, as changed.

Input Data

BOIPFD preparation.

Process

3. List BOIPFD form completion date.

Example: Block No. 3

3. PREPARATION DATE
4 Nov 82

Block No. 4a — Generic Description

Enter the generic nomenclature as it will appear in Supply Bulletin (SB) 700-20. If necessary, consult the PM and/or the MSC developer to obtain clarification of these data. Provide full descriptive information without abbreviations.

Input Data

Generic nomenclature from SB 700-20 or from the PM and/or developer. Note: Do not use abbreviations.

Process

4a. Identify and list generic nomenclature.

Block No. 4b — NSN Description

Block 4b is used to enter the National Stock Number (NSN) nomenclature to be included in SB 700-20. If the NSN nomenclature is already in SB 700-20, simply transcribe these data into Block 4b. If not, check Chapter 4, SB 700-20 for Z LINs (if the item has been in the inventory for some time). If it is not in Chapter 4, consult the PM and/or the MSC developer to obtain these data. In all cases, identify the source of this information. The final assignment of description is the responsibility of the Defense Logistics Agency - Catalog Agency. If description is not available, complete with not yet assigned - NYA.

Input Data

Utilize nomenclature from SB 700-20. If necessary, consult the PM and/or the developer for this information. If not available, enter NYA.

Process

4b. Identify and list NSN nomenclature.

Example: Blocks No. 4a & 4b

4.	DESCRIPTION
a. GENERIC	Meteorological Data System
b. NATIONAL	Field Artillery Meteorological Acquisition System: AN/TMQ-31

Block No. 5 — Estimated Type Classification (TC) Date

Block 5 requires entering the estimated type classification (TC) date specified by year, month, and day. This step may require estimating the developmental lead time prior to the TC date. The TC should occur at Milestone III in the LCSMM. In conjunction with AR 71-2, knowledge of the development lead time associated with the item under development should be applied.

Input Data

Specify the TC date by year, month, and day. If necessary, estimate the developmental lead time prior to the TC date. Coordinate date with the PM or Materiel Developer at the MSC.

Process

5. Project an estimated type classification date.

Example: Block No. 5

5. EST TC DATE 83 0315

Block No. 6 — Enter The First Unit Equipped (FUE) Date (Formerly the Estimated Availability Date)

This step involves using experience with similar equipment to estimate production lead time. Enter the projected availability date of the first production unit to be TC by calendar year, month, and day. If the ASIOE or a component item (or substitute item) availability date is after the BOIP principal item scheduled availability, the pacing item should be shown in this block and noted in Block 18. This date must be 39 months before FBOIPFD and FQQPRI are submitted by the Materiel Developer to HQ TRADOC.

Input Data

Use experience with similar equipment to determine approximately when first unit will be equipped. This is the availability date. If possible, utilize production delivery schedules as basis for FUE.

Process

6. Estimate and enter availability date.

Example: Block No. 6

6. EST FUE DATE
85 0615

Block No. 7a — Developmental LIN

Enter the "Z" LIN for the developmental item. The Z LIN information needed for Block 7a is obtained from the Catalog Data Agency (CDA). The Z LIN continues in Block 7a even if the Standard (STD) LIN appears in Block 7b. Note: Organizational responsibility assignments at each MSC may mean that Z LIN assignment is handled somewhat differently. For example, the local comptroller may obtain Z LIN assignments from CDA.

Input Data

Obtain Z LIN from
the appropriate
office.

Process

7a. Enter Z LIN.

Block No. 7b — STD LIN

The STD LIN is not assigned until the item has been TC; thus, it cannot be listed for the TBOIPFD. For the Final BOIPFD, it may be entered and it may be obtained from the CDA or MSC comptroller. However, since FBOIPFD is submitted prior to TC, the standard LIN will most likely not be available.

Input Data

STD LIN is usually not assigned until the item has been TC. Therefore, for FBOIPFD the STD LIN may not be available, in which case enter NYA.

Process

7b. Enter STD LIN or NYA.

Block No. 7c — Supply Class (SC)

Completion of Block 7c involves entering the two digit SC from SB 700-20. Class VII-Major End Items is the usual supply class to be entered in Block 7c; however, supply class II is sometimes used. If necessary, consult with the equipment or weapon developer.

Input Data

The two-digit SC can be found in SB 700-20. Supply class consists of roman numerals I through X. If supply classes VII or II are to be used, their use should be verified and justified.

Process

7c. Enter two-digit SC.
Confirm correctness of supply class.

Block No. 7d - Standard Study Number (SSN)

The SSN is entered in this block. It is mandatory for supply class VII items and discretionary for other classes. An SSN should be assigned at the same time that a Z LIN is assigned.

Input Data

Obtain the SSN from the MDC
comptroller.

Process

7d. Enter SSN.

Example: Blocks No. 7a to 7d

7. LINE ITEM NUMBER			
a. DEV Z 26863	b. STD NYA	c. SC 7G	d. SSN K2780100GWC

Block No. 8 — National Stock Number (NSN)

Record the NSN, which corresponds to the item nomenclature found in Block 4b of this BOIPFD. The NSN may not be available until after the Final BOIPFD is submitted.

Input Data

The NSN corresponds to the NSN nomenclature. May not be available until FBOIPFD is submitted, in which case enter NYA.

Process

8. Enter NSN.

Example: Block No. 8

8. NATIONAL STOCK NO. NYA

Block No. 9 — Description

Block 9 describes the BOIP item and its functional capability. When the BOIP item itself is part of a larger assemblage, this fact should be stated, including the quantity of BOIP items per assemblage. To obtain this information, contact the design engineer and/or the MSC. If necessary, coordinate with EARA, the NET analyst, and in some instances, the Combat Developer at the TRADOC service school. A continuation sheet may be needed to complete this block.

Input Data

This information should be developed by the PM Office. If the item supports a larger assemblage, include this fact. If sets, kits, or outfits (SKO) are involved, include a complete Class VII component and common tools listing to include component quantities (the ratio to the BOIP items). Include special and electrical characteristics (e.g., amperes, maximum watts, precision tolerance or requirements, etc.). Special environmental requirements such as humidity, cooled air, etc. must be included.

Process

9. Describe the BOIP item and its functional capability. Refer to Table 2-1, AR 71-2.

Example: Block No. 9

9. DESCRIPTION

The AN/TMQ-31 is a Meteorological Data System. It tracks a radiosonde as it rises through the atmosphere; receives meteorological and position data; automatically processes it into meteorological messages for immediate transmission to the user. It consists of an S-280 shelter (or hardened shelter when available) which houses telemetry receiving data processing and communications equipment. It also contains a modified M-105 trailer containing a tracking antenna. Refer to attached sheet for a listing of included equipment.

Block 9

COMPONENT ITEMS (CONT')

<u>LIN</u>	<u>NOMENCLATURE</u>	<u>QTY</u>
W95811	Trailer 1 1/2 Ton, 2 Wheel M-105	1 ea.
A 23990	Air Conditioner (Vertical Compact) 9000 BTU	2 ea.
	Shelter, Electrical Equipment S-280	1 ea.
	AN/UYK-19 Computer (No LIN)	1 ea.
	Magnetic Tape Transport AN/UYH-6 (No LIN)	1 ea.
	Teleprinter TT-773 (P)/G (No LIN)	1 ea.
	TACFIRE Remote Data Terminal (No LIN)	1 ea.
	Power Supply PP-7607/C (No LIN)	1 ea.
N 30594	Oscilliscope AN/USM-296A	1 ea.

Block No. 10 — Primary Usage

Block 10 requires a non-technical description of the item's major uses based on current knowledge. This should include organizational and operational information in an abbreviated statement of who, when, where, why, and what concerning use. Information should be obtained from the Required Operational Capability (ROC) or other documented sources of use information.

Input Data

Use knowledge of the item. All item-peculiar requirements must be provided that may infringe on usage.

Process

10. Describe the major uses of the item. Include needs, features, and environment of item use.

Example: Block No. 10

10. PRIMARY USAGE *(Non-technical Description of Major uses)*

Ballistic correction for gun and missile firings
Fallout prediction data input
Support Air Force in synoptic data generation

Block 11 - List by LIN ASIOE, TMDE, and Special Tools Sets.

Blocks 11a through 11f require listing (by LIN) all ASIOE, needed to operate, maintain, and/or transport the principal item. These are Class II or VII items.

Block No. 11a — LIN

Enter the LIN listed in SB 700-20. Consult the PM/MSC and/or the developer to obtain this information.

Input Data

LIN.

Process

11a. Enter LIN.

Block No. 11b — Nomenclature

Enter the nomenclature listed in SB 700-20. Consult the PM/MSC and/or the developer to obtain this information.

Input Data

Nomenclature.

Process

11b. Enter item
nomenclature.

Block No. 11c — Commodity Manager Code

Enter the commodity manager code as it appears in SB 700-20. Consult the PM/MSC and/or the developer for this information.

Input Data

Commodity manager code..

Process

11c. Enter commodity
manager code.

Block No. 11d. — New STD — Logistics Control Code (LCC)

Enter the LCC for TC items already in the supply system. The Materiel Developer must initiate action to acquire Z LIN and provide BOIPFD for new items. Consult the PM/MSC and/or developer for this information. Refer to SB 700-20.

Input Data

LCC.

Process

11d. Enter LCC.

Block No. 11e — Level of Maintenance

Enter the recommended level of maintenance [i.e., Organizational, DS, GS, Aviation Unit Maintenance (AVUM), Aviation Intermediate Maintenance (AVIM)]. Consult the PM/MS, the developer, and/or maintenance engineer for these maintenance estimates.

Input Data

Maintenance level.

Process

11e. Enter recommended
level of maintenance.

Block No. 11f — Quantity

Enter the recommended quantity of ASIOE needed to support each principal item. When an ASIOE supports the principal developmental item, that quantity will also be entered. Consult the PM/MS, the developer, and/or the maintenance engineer for these estimates.

Input Data

ASIOE quantity estimates.

Process

11f. Enter the recommended quantity of ASIOE.

Example: Blocks No. 11a to 11f

11. ASSOCIATED/SUPPORT ITEMS (Use blank sheet if additional space is required)					
LINE ITEM NUMBER (a)	NOMENCLATURE (b)	CC/SICC (c)	NEW/BOIP STD-LCC (d)	LEVEL OF MAINTENANCE (e)	QUANTITY (f)
	See attached sheet				

Block 11.

ASSOCIATED/SUPPORT ITEMS

a. LINE ITEM NO.	b. NOMENCLATURE	c. CC/ SICC	d. NEW STD-LCC	e. LEVEL OF MAINT.	f. QTY
A 46470	Amplifier, Audio Frequency AM 1780/URC	OK	STD A		1 ea
E 94970	Control, Radioset Set C-2299/VRC		STD A		2 ea
K14814	Handset H-189/CR		STD A		1 ea
K23514	Headset Microphone H-182/U	OK	STD A		1 ea
L84093	Loudspeaker, LS 454/U		STD A		1 ea
A79381	Antenna, OE-254/GRC		STD A		2 ea
B33019	Barometer ML-333/TM		STD A		1 ea
C68719	Cable Telephone, WD-1/TT DR-8		STD A		3 reels
H01836	Electronic Key Generator TSEC/KG-31-12		STD A		1 ea
H02300	Electronic Key Generator TSEC/KW-7		STD A		1 ea
J44055	Generator Set, Gas Engine 1.5 KW, 28VDC		STD A		1 ea
K87536	Installation Kit, MK-1878 VRC F/KY-57 with AM/VRC-46 mounted in M151A1, Installation Kit, MK-1838 with VRC		STD A		1 ea
M 80242	Multimeter AN/USM-223		STD A	O F	1 ea ---
Q53001	Radio Set AN/VRC-46				2 ea
Q78282	Radio Set Control Group AN/GRA-39		STD A		1 ea
R30662	Receiver Transmitter Control Group, AN/GRA-6		STD A		1 ea
R59160	Reeling Machine, RL-39		STD A		1 ea
S01373	Speech Security Equipment TSEC/RV-57		STD A		2 ea
V31211	Telephone Set, TA-312/PT		STD A		1 ea
V31244	Terminal Telegraph-Telephone AN/TCC-29		STD A		1 ea
V95788	Vehicular Power Supply HYP-57/TSEC		STD A		2 ea

Block 11.

ASSOCIATED/SUPPORT ITEMS

a. LINE ITEM NO.	b. NOMENCLATURE	c. CC/ SICC	d. NEW STD-LCC	e. LEVEL OF MAINT.	f. QTY
W37483	Tool Kit, Electronic Equipment TK-101/GSC		STD A	O	
W37251	Tool Kit, Electronic Equipment TK-100/G		STD A	F,H	
W37388	Tool Kit, Electronic Equipment TK-105/G		STD A	F,H	
W60351	Wire Line Adapter HYX-57/TSEC		STD A		1 ea
W95400	Trailer, Cargo 1/4 ton		STD A		1 ea
W98825	Trailer, Tank Water, 400 gal		STD A		1 ea
X40931	Truck, Cargo, 5 Ton, Drop Sides, 6x6 w/ winch (w/100 amp alternator kit)		STD A		3 ea
X60833	Truck, Utility, 1/4 ton, 4x4 M151A 1		STD A		1 ea
J42100	Generator Set, Gas Engine TM: 10 KW 60 Hz		STD A		1 ea
Z 27113	Meteorological Station AN/TMQ-33		NEW		1 ea
K 87564	Installation Kit, MK-1866, VRC-F/KY-57 w/AN/VRC-46 mounted in S-280 shelter, Install Kit MK-1866		STD A		1 ea
Z 84564	Automatic Test and Repair System AN/MSM-105(V)I			H <i>IN PART</i>	
P38314	Power Supply PP-2309/U		STD A	F	
N30572	Oscilloscope		STD A	F DS	
Y14526	Voltmeter, Digital AN/CSM-64B		STD A	F DS	
J53782	Signal Generator AN/USM-44C		STD A	F DS	
Z50138	RF Power Meter AM/USM-193			F	
K87243	Installation Kit AN/VRC-46 on M151		STD A		1 ea

Block 12 — Replaced Items

Blocks 12a through 12d entail listing (by LIN) the items to be replaced, including their support items and ASIOE. A separate sheet may be used, if necessary.

Block No. 12a. — LIN

Enter the LIN of replaced items. If nothing is being replaced, enter NA (not applicable) in Blocks 12a - 12d.

Input Data

LIN.

Process

12a. Enter LIN for items to be replaced.

Block No. 12b — Nomenclature

Enter the nomenclature of each item being replaced. Use the LIN shown in Block 12a to reference SB 700-20 for item nomenclature.

Input Data

Nomenclature.

Process

12b. Enter nomenclature of
items to be replaced.

Block No. 12c — Completely or In Part

Enter the item being replaced, completely or in part. Explain in Block 18 and include the ratio, if appropriate. Use the LIN shown in Block 12a to reference SB 700-20 for item identification.

Input Data

LIN.

Process

12c. Enter item being replaced.

Block No. 12D — Recommended Type Classification (TC) or Reclassification

This recommendation is based on planned item utilization as described in the requirements document. Included should be information of phasing in the new item while phasing out the old item; what is to happen to the old item; reclassification of item, if required; support for old item to include period of time.

Input Data

Information developed by the BOIP preparer.

Process

12d. Enter recommended TC or reclassification information in adequate detail.

Example: Blocks No. 12a to 12d

12. ITEMS TO BE REPLACED/ASSOCIATED SUPPORT			
LINE ITEM NUMBER (a)	NOMENCLATURE (b)	COMPLETE OR IN PART (c)	RECOMMENDED TC/RTC (d)
	See attached sheet		

BOIP Feeder Data

FAMAS, AN/TMQ-31

Block 12 (Items to Be Replaced)

LIN

NOMENCLATURE

C73685	Calibrator, Frequency standard TS-65()/FMQ-1
M36739	Meteorological Station, Manual AN/TMQ-4
R16476	Rawin Set, AN/GMD-1()
R50043	Recording Set, Weather Data, AN/TMQ-5()
V88438	Test Set Radio TS-538 ()/U
	Radiosonde AN/AMT-4
	Radiosonde AN/AMT-12
	Baseline Check Set AN/GMM-1

Block No. 13 — DA Approved Statement of Requirement

Identify and provide the DA authority for the developmental or nondevelopmental item of equipment. Consult the PM/MSc to obtain this information. The source may be a JMSNS or a lesser authorizing document.

Input Data

Consult PM/MSc for this information.

Process

13. Enter DA authority.

Example: Block No. 13

13. DA APPROVED STATEMENT OF REQUIREMENT (LOA, LR, ROC, TDR, TDLR, OTHER DA AUTHORITY) ROC

Block No. 14 — Reference Number

Enter the appropriate reference number (e.g., CARDS, TELER, NSA, or PIP). If the item is being developed by the Army Communications Command, it will be the source of the TELER number. The National Security Agency will provide NSA numbers for items they are developing. The CARDS number, obtained from HQDA (DCSOPS), and the PIP number, obtained from DARCOM, may pertain to any equipment item and may be assigned by one of a number of sources in these organizations. This number is unlikely to be available for the TBOIPFD, but **it must be included in the FBOIPFD.**

Input Data

Reference number.

Process

14. Enter the reference number.

Example: Block No. 14

14. REFERENCE NO. 0449

Block 15 — Miscellaneous Data

Block No. 15a — Army Budget Activity (ABA)

Indicate the ABA code. This information may be obtained from AR 710-1.

Input Data

ABA.

Process

15a. Enter ABA code.

Block No. 15b — Routing Identifier Code (RIC)

The three-position RIC can be obtained from SB 700-20 or the MSC.

Input Data

RIC.

Process

15b. Enter RIC.

Block No. 15c — Developer's Code

Enter the assigned developer's two-digit code provided by DARCOM. Consult the PM/MSD or DARCOM Regulation 10-26 (Appendixes A and B), or call EARA for this information.

Input Data

Developer's code.

Process

15c. Enter assigned developer's two-digit code provided by DARCOM.

Block No. 15d — New Equipment Training Plan (NETP)

Enter the NETP number, when it is available, from the appropriate NET manager for TBOIPFD preparation. It will be available from the NET manager for FBOIPFD preparation. In the event no training is required, a new equipment training plan is not prepared.

Input Data

NETP Number.

Process

15d. Enter the NETP number.

Example: Blocks No. 15a to 15d

15a. ABA P	15b. RIC B16	15c. DEV CODE CU	15d. NETP EL 32
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Block No. 16 — Estimated Cost of Production Model

Use existing empirical evidence, PM/MSC experience, and/or design engineering experience to estimate the cost of production model. Obtain and incorporate inflation indices from the Comptroller of the Army or other creditable source applying them on a year-by-year compounding basis, if determined appropriate to present realistic estimates.

Input Data

Cost data.

Process

16. Enter the estimated cost of production model.

Example: Block No. 16

16. EST COST PROD MOD \$1,200,000.00

Block 17 — Project Identification Data

Block No. 17a — Project or Task Number

Enter the internally generated project or task number. This number may be obtained from the project or item manager. The item's Requirement Document may be a useful source document for this information. If RDTE funds are involved, this number is usually assigned by HQDA (ODCSRDA). If RDTE funds are not involved or if a nondevelopmental item, a project or task number may not be available in which case enter NA.

Input Data

Project or task number.

Process

17a. Enter project or task number.

Block No. 17b — Title of Project or Task

Enter the title assigned to the item by the developing agency.

Input Data

Obtain the title assigned by the developing agency and associated with the project or task.

Process

17b. Enter item title.

Example: Blocks No. 17a & 17b

17. ROTE PROJECT OR TASK (If Applicable)	
a. NUMBER 1F 64726 D511 08	b. TITLE Field Artillery Meteorological Acq Sys (FAMAS)

Use this block to provide additional data gained from consultation with the PM/MSO to elaborate upon previously provided information, or to provide data not already identified in the BOIPFD. For example, information that might help the QPPI preparer to determine the tasks, skills, or occupations (MOS) required for the developmental item should be entered here; information and coordination with the central TMDE activity should be specified; and if ATBOIPFD or AFOIPFD submission, state whether or not an amended tentative or final QPPI is required based on personnel changes.

Varied; see instructions.

18. Enter additional data. Provide as much specific information as appropriate and not included elsewhere in the BOIPFD.

18. REMARKS	
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Block No. 19 — Developing Agency, Location, File Symbol, and Telephone Number

The developing agency must be identified using the RIC, as shown in Block 15b.

Input Data

Identify the agency, address, and point of contact that coincides with the RIC of Block 15b.

Process

19. Enter agency having developmental responsibility.

Example: Block No. 19

19. DEVELOPING AGENCY, LOCATION, FILE SYMBOL, AND TELEPHONE NUMBER ERADCOM CSTA Laboratory Ft. Monmouth, NY DELCS-S AV 996-5525

Block No. 20 — Typed Name and Title of Preparer

Type the name and title of the person who prepared the BOIPFD. If appropriate, identify ILS logistics analysts.

Input Data

Name of the person
who actually prepared
the BOIPFD.

Process

20. Enter typed name and
title of preparer.

Example: Block No. 20

20. TYPED NAME AND TITLE OF PREPARER

Joe Shellman, EE

Block No. 21 — Signature

The preparer identified in Block 20 or other responsible person should sign the BOIPFD form.

Input Data

Self explanatory.

Process

20. Enter signature of preparer.

Example: Block No. 21

21. SIGNATURE

SECTION 5

QQPRI PREPARATION JOB AID

INTRODUCTION

The QQPRI is a compilation of organizational, doctrinal, training, duty position, and personnel information. It is prepared for new or improved materiel systems by the Materiel Developer (NET analyst or manager) in coordination with the Combat and Training Developer. The QQPRI is developed from the BOIPFD received from the Logistics Analyst/Materiel Systems Coordinator within the PM or MSC responsible for the developmental item. The QQPRI is essential for constructing organizational personnel requirements to operate, maintain, and support the new or improved item. QQPRI apply to new equipment and weapons, and product improvement programs. QQPRI can be identified in several categories as follow:

Tentative	—	TQQPRI
Amended Tentative	—	A*TQQPRI
Final	—	FQQPRI
Amended Final	—	A*FQQPRI
Condensed	—	CQQPRI
Amended Condensed	—	A*CQQPRI
Expedited	—	EXQQPRI
Amended Expedited	—	A*EXQQPRI

The asterisk represents chronological numbering for amendments (1, 2, 3, etc).

The QQPRI submission requirements are to be supportive of and coordinated with the BOIPFD submissions. The schedule for submission is triggered by the assignment of the developmental LIN and the submission of the BOIPFD. The specific schedule requirements related to events are published in AR 71-2, as changed, and below:

<u>EVENT</u>	<u>TIME</u>	<u>SUBMISSION</u>	
		<u>FROM</u>	<u>TO</u>
TQQPRI	60 days	NETP	EARA
TQQPRI	30 days	EARA	TRADOC
FQQPRI	39 months (prior to FUE)	EARA	TRADOC
FQQPRI	32 months (prior to FUE)	TRADOC	HQDA

As a minimum, at least two versions of QQPRI are prepared during the materiel acquisition process. A Tentative QQPRI (TQQPRI) is the initial document identifying personnel required to operate and maintain one piece of new equipment. It must be sent to EARA and on to TRADOC within 30 days of receipt at EARA. EARA ensures that the QQPRI submission is in synchronization with the BOIPFD prior to EARA transmitting these two documents to HQ, TRADOC. Each QQPRI submission (Tentative, Amendments, and Final) contains data developed and submitted for use in MOS decisions, unit restructuring, or establishing TOEs.

Condensed and Expedited QQPRI are prepared under special circumstances which are explained in paragraphs 3-6 and 3-7, AR 71-2, as changed. Basically, these type QQPRI are submitted to accommodate special situations, such as:

- a. Condensed QQPRI is usually submitted when there are no personnel or training changes.
- b. Expedited QQPRI is usually submitted when non-developmental items are being acquired.

The following sections provide step-by-step procedural guidance for completing the QQPRI. The seven QQPRI requirements are addressed in terms of where and how to obtain information necessary to prepare this document. The QQPRI preparer should pay very close attention to providing complete and accurate information since the QQPRI becomes the foundation document for determining personnel quality and quantity, and restructuring Army units to accommodate the operation, maintenance, and support of new equipment and weapons.

Before continuing through this manual, other guidance material should be available to the QQPRI preparer. This guidance material consists of the overall policy guidance published in AR 71-2, entitled, Force Development, with subtitles of Basis of Issue Plans, (BOIPs) and Qualitative and Quantitative Personnel Requirements Information (QQPRI), and:

- a. AR 570-2 - Organization and Equipment Authorization Tables - Personnel
- b. AR 700-127 - Integrated Logistics Support
- c. DA PAM 11-25 - Life Cycle System Management Model

Familiarity with these materials will provide beneficial overall guidance and information concerning the preparation and use of the QQPRI and its importance in the materiel acquisition process. The QQPRI is the single document in the materiel acquisition process that carries personnel data that is the basis for formulating personnel changes in organizational structures.

In addition to being familiar with policy guidance material, the QQPRI preparer should have knowledge and possession of:

- a. Basis of Issue Plan Feeder Data (BOIPFD)
- b. Logistics Support Analysis - Task and Skill Analysis Data (LSA-TASA)
- c. New Equipment Training Program (NETP)
- d. Individual Training Plan Proposal (ITPP)

To assist the preparer in following the procedural steps described on subsequent pages, an overview of the seven QQPRI requirements is provided on the pages immediately following this page.

Figure 5.1 is a graphic portrayal which relates the above documents to specific sections of the QQPRI. The sections relate to specific regulatory requirements as follows:

AR 71-2 - Regulatory Requirement	QQPRI Requirement or Section
Paragraph 3-9a	1
3-9b	2
3-9c	3
3-9d	4
3-9e	5
3-9f	6
3-9g	7

Each numbered procedural step defined on subsequent pages corresponds to the QQPRI Requirement or Section listed above. In addition, this QQPRI Preparation Job Aid has four sub-sections as follows:

- 5A DPAMMH Procedures for QQPRI
- 5B MOS Selection Procedures and Defining Task Structure for New MOS.
- 5C Identification of Support Personnel for the Fifth QQPRI Requirements
- 5D Drafting MOS Specifications

In order to complete QQPRI Requirement 3 (Step 3), it is necessary to select an MOS or determine that no appropriate MOS exists in which case tasks must be defined. In this respect, it is recommended that QQPRI requirements be completed in the sequence depicted on Figure 5.2.

QUALITATIVE AND QUANTITATIVE PERSONNEL REQUIREMENTS INFORMATION (QQPRI)

This is the Army Regulation prescribed format and statement of each QQPRI requirement. No preprinted form is utilized.

1. Title:

The title of the QQPRI will identify the type of QQPRI, the title of the principal item, the LIN, PIP number, and the NETP number as stated on the BOIPFD. This same title will be used on all correspondence forwarding the QQPRI through channels.

2. First Requirement (par 3-9a, AR 71-2):

Identity of draft or DA-approved statement of requirement or procurement directive (e.g., ROC, LR, TDR, TDLR, CARDS, TELER, System Coordinating Paper, and JSOR, PIP and New Equipment Training Plan (NETP) number assigned). The QQPRI will contain the action officer and date it is prepared. This paragraph is required for a condensed QQPRI (para 3-5).

3. Second Requirement (par 3-9b, AR 71-2):

A brief description of the equipment to be operated and maintained, including special test equipment and support requirements. Identity of the equipment with generic nomenclature and LIN. This paragraph is required for a condensed QQPRI (para 3-5).

4. Third Requirement (par 3-9c, AR 71-2):

Direct Productive Annual Maintenance Man-Hours (DPAMMH). These will be expressed in the number of hours required by MOS, SSI, civilian occupational series for each category of maintenance (organizational, less operator, DS/GS). These hours will be based on the empirical data or, as a minimum, estimates may be submitted and so identified. Direct Productive Annual Maintenance Man-Hours will be provided on the principal item, major components, associated items, and support and test equipment. Items that have been type classified will show DPAMMH. The following will be stated for each item:

- a. The LIN.
- b. The generic nomenclature.
- c. The MOS, SSI, and civilian occupational series for each category of maintenance. If the principal item has associated items that are type-classified or are not type-classified, major components, and support and test equipment.:
 - (1) The principal item will be included in paragraph a.
 - (2) Each associated item that is type-classified or not type-classified major component, and support and test equipment will be included in subsequent paragraphs. If the alphabet has been completely used (b-z), restart alphabet (i.e., aa, ab, ac, etc.)

This paragraph is required for a condensed QQPRI (para 3-5, AR 71-2)

If the third requirement cannot be met, provide the best estimate using the format below.

There is no DPAMMH data available for this information; however, the manufacturer recommends three maintenance personnel 6024 DPAMMH, for 24-hour per day operation.

5. Fourth Requirement (par 3-9d, AR 71-2):

The number of direct operators needed to make up a crew or to operate the item as a single shift. This paragraph is not required for condensed QQPRI.

6. Fifth Requirement (para 3-9e, AR 71-2):

A listing of duty positions, by descriptive title, required for operation and support of the equipment. Also, suggested placement of duty positions within a current, revised, or new commissioned officer SSI, or warrant officer or enlisted MOS or SQI or ASI, or civilian occupational series. This paragraph will be used for a condensed QQPRI (para 3-5).

- a. Do not include skill levels. The SGA determines the skill level.
- b. Include MOS that support the maintenance levels of all associated equipment.
- c. For aviation equipment, include any ground maintenance that is not authorized in AVUM/AVIM, but are at the organizational, direct support and general support level of maintenance.

7. Sixth Requirement (par 3-9f, AR 71-2):

A listing of the individual item-unique duties and tasks to be performed in each of the above identified positions requiring new, revised, or current MOS, SSI, and civilian occupational series. If the current MOS, SSI, and civilian occupational series duties and tasks are adequate for the new or improved system, so indicate. Do not repeat duties or tasks for a given MOS or SSI listed in AR 611-101, AR 611-112, or AR 611-201. Procedures for new or revised MOS, SSI, ASI, or SQI are provided at appendix D.

8. Seventh Requirement (par 3-9g, AR 71-2):

If contractor or New Equipment Training was used or will be used to qualify personnel for test and evaluation, provide the following with the QQPRI. (Under separate cover provide copy to HQ TRADOC, ATTN: ATTNG-TRA, Ft. Monroe, VA 23651.)

- a. A copy of the Individual Training Plan Proposal (ITPP).
- b. If not shown in the ITPP, provide the following:
 - (1) The name of the contractor.
 - (2) The title and length of the course.
 - (3) The duty positions for which the course trains.
 - (4) The prerequisites for attendance.

Note: Appendix C, AR 71-2, covers Amended QQPRI and indicates that only those changed requirements need be submitted on Amended QQPRI. The QQPRI sample included in this manual at Appendix A is an Amended QQPRI. To ensure no loss of information, all QQPRI requirements were included in the amendment. This is a preferred method.

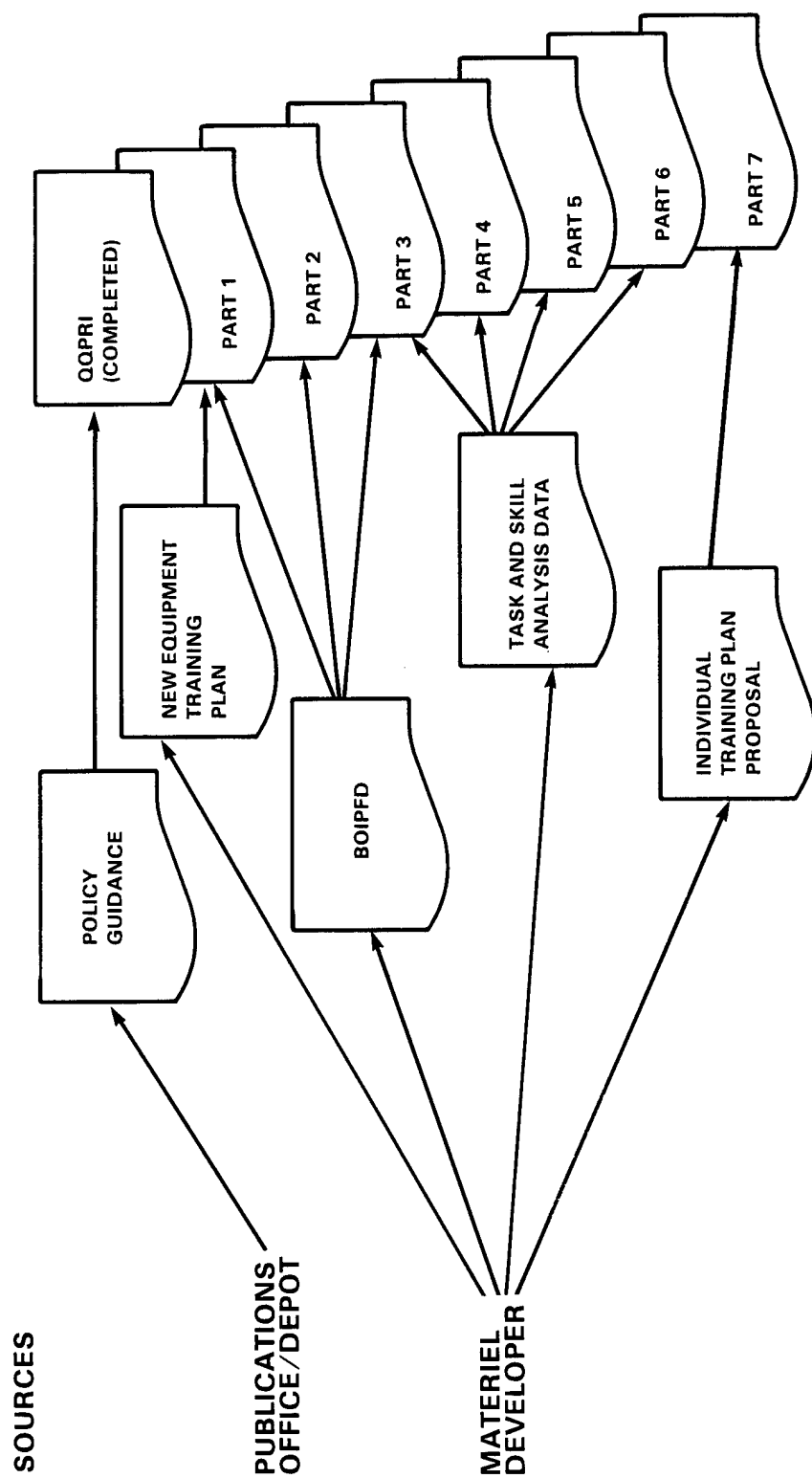
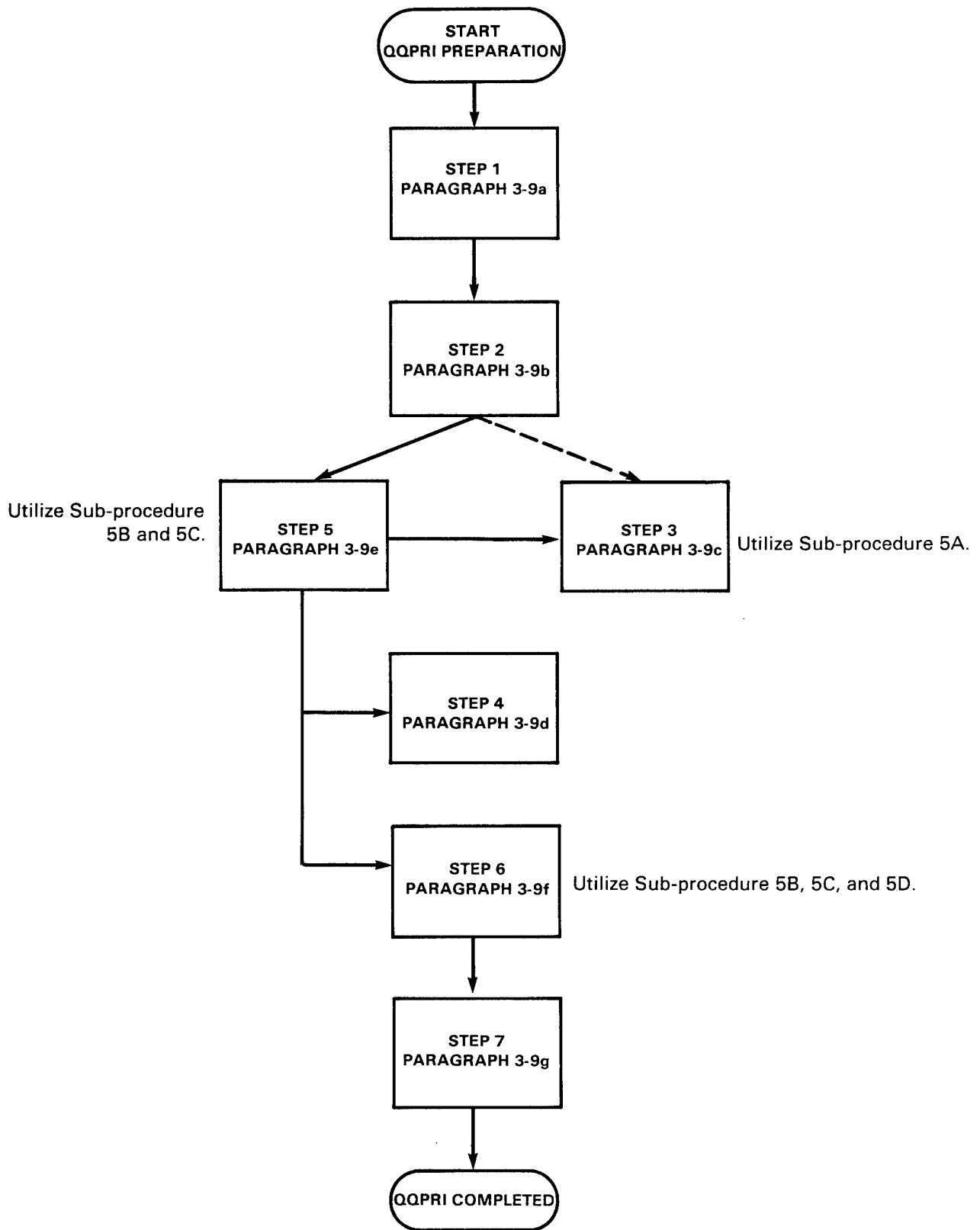


Figure 5.1 Source and Input Requirements to Formulate QQPRI



Note: Paragraph numbers relate to AR 71-2 - QQPRI Requirements.
Figure 5.2 — QQPRI Requirements — Logical Order of Preparation

TITLE BLOCK

The Title Block of the QQPRI provides background information concerning the equipment. The example below depicts a typical Title Block, using as an example the Meteorological Data System: AN/TMQ-31C(). This example is carried through the remaining QQPRI requirements, as described on the following pages.

Example: Title Block

AMENDMENT NO. 3 (SEE NOTE) TO FINAL QUALITATIVE AND QUANTITATIVE
PERSONNEL REQUIREMENTS INFORMATION (FQQPRI) FOR THE
AN/TMQ-31 METEOROLOGICAL DATA SYSTEM, LIN Z26863, EL-32

NOTE: For clarification purposes and to include all updated data in a single document, all of the required data and information are contained in this Amendment No. 3.

STEP 1 — IDENTIFY DA-APPROVED STATEMENT OF REQUIREMENT

Identify the draft or DA-approved statement of requirement or procurement directive (e.g., ROC, LR, TDR, TDLR, CARDS, TELER, System Coordinating Paper, JSOR, PIP, and NETP number if assigned). This information can be obtained from blocks 13 and 14 of the BOIPFD (Form 3362b-R), which you must have prior to QQPRI preparation. Also, the Z LIN should be copied from Block 7a of the BOIPFD, the SSN from Block 7d, and the BOIP serial number (if entered) from Block 1 of the BOIPFD. Finally, the QQPRI must contain the name of the action officer and the data prepared.

Input Data

BOIPFD-Blocks 7a, 7d,
13, 14 and 15d.

Process

1. Statement of Requirement

Example: Step 1

Amendment No. 3. Statement of Requirement or Procurement Directive:

a. Required Operational Capability (ROC) for the Field Artillery Meteorological Acquisition System (FAMAS), approved by Department of the Army on 2 August 1979. The TRADOC Control Number for this equipment is ACN 23710. Catalog of Army Required Documentations (CARDS) reference number is 0449. Army Line Item Number is Z26863.

b. NETP EL-32.

c. A3FQQPRI dated 3 November 1982 was prepared by Joseph J. Rankin, CECON, AUTOVON 992-5143.

STEP 2 — DESCRIPTION OF EQUIPMENT

Provide the item description of the equipment to be operated and maintained. The generic item nomenclature and LIN of the equipment, its purpose, and unique characteristics must be identified. The equipment to be described includes the developmental item, TC and non-TC components, ASIOE, and TMDE. For the developmental item, the generic nomenclature may be obtained from Block 4a of the BOIPFD, the LIN from Block 7a (this usually will be a "Z LIN"), the item's purpose from Block 10, and a description of the item from Block 9 of the BOIPFD. For all associated equipment (i.e., components, ASIOE, TMDE), Blocks 11, 11a, and 11b of the BOIPFD will provide the generic nomenclature and LIN. If Block 11 involves a continuation sheet, include the items it contains. Any additions to the list should be coordinated with the originator of the BOIPFD rather than simply adding them. If this occurs, the BOIPFD should be returned to the originator for corrections. Coordination to resolve questions must take place between the preparer of the BOIPFD and EARA.

Input Data

BOIPFD

- See Blocks 4a, 7a, 9 and 10 for developmental item.
- See Blocks 11, 11a and 11b for associated items or equipment.

Process

2. Equipment description

Example: Step 2

2. Brief Description of the Equipment/System: The AN/TMQ-31 Meteorological Data System (MDS) is a highly mobile, automated meteorological acquisition and data processing system. The system will provide ballistic and target acquisition meteorological messages to division artillery and other users. The ballistic messages will enhance the field artillery's predicted fire accuracy. The system will be capable of satisfactory operation in any type of climatic area and over any type of terrain where Army tactical operations require the employment of field artillery, be capable of sounding the atmosphere for artillery purposes at hourly intervals over extended periods, and be capable of automatically transmitting meteorological data in the appropriate format from the meteorological section to TACFIRE and the Battery Computer System (BCS) as well as the present Army tactical area communications system. The system comprises the following component items and associated items:

a. Component Items.

(1) No LIN S-280 Shelter, Electrical Equipment - Standard Army Equipment (SAE).

(2) No LIN AN/UYK-19(V) Data Processing Set

(3) No LIN AN/UYH-6 Magnetic Tape Transport

(4) No LIN TT-773-(P)/(G) Teleprinter, SAE

(5) No LIN TACFIRE Remote Data Terminal

(6) No LIN AN/UYQ-10 Plasmascopes

(7) No LIN PP-7607/G Power Supply

(8) N30594 AN/USM-296A Oscilloscope, SAE

(9) A23990 Air Conditioner 9,000 BTU (Vertical Compact) SAE

(10) W95811 M-105 Trailer, 1½-Ton, 2 Wheel SAE

b. Associated and Support Equipment.

(1) W37483 TK-101/GSC Tool Kit, Electronic Equipment, SAE

(2) W37251 TK-100/G Tool Kit, Electronic Equipment, SAE

(3) W37388 TK-105/G Tool Kit, Electronic Equipment, SAE

(4) W60351 HYX-57/TSEC Wire Line Adapter, SAE

(5) W95400 Trailer, Cargo, ¼-Ton, SAE

(6) W98825 Trailer, Tank Water, 40 Gallon, SAE

(7) X40931 Truck, Cargo, 5-Ton, Drop Sides, 6X6 w/wench (w/100 amp alternator kit), SAE

(8) X60833 M151A-1 Truck, Utility, ¼-Ton, 4X4, SAE

(9) J42100 Generator Set, Gas Engine, 10 KW, 60Hz, SAE

(10) Z27113 AN/TMQ-33 Meteorological Station

(11) K87564 MK-1866/VRC-F/KY 57 Installation Kit, with AN/VRC-46 mounted in S-280 Shelter

(12) K87243 Installation Kit for AN/VRC-46, mtd on M-151

(13) Z84564 AN/MSM-105(V)1 Automatic Test and Repair System

- (14) P38314 PP-2309/U Power Supply, SAE
- (15) N30572 AN/USM-281C Oscilloscope, SAE
- (16) Y14526 AN/GSM-64B Digital Voltmeter, SAE
- (17) J53782 AN/USM-44C Signal Generator, SAE
- (18) Z50316 AN/USM-193 RF Power Meter
- (19) A46470/URC Amplifier, Audio Frequency, SAE
- (20) E94970 C-2299/VRC Control, Radio Set, SAE
- (21) K14814 H-189/GR Handset, SAE
- (22) K23814 H-182/U Headset Microphone, SAE
- (23) L84098 LS-454/U Loudspeaker, SAE
- (24) A79381 OE-254/GRC Antenna, SAE
- (25) B33019 ML-333TM Barometer, SAE
- (26) C68719 WD-1/TT DR-8 Cable, Telephone, SAE
- (27) H01836 TSEC/KG-31-12 Electronic Key Generator, SAE
- (28) H02300 TSEC/KW-7 Electronic Key Generator, SAE
- (29) J44055 Generator Set, Gas Engine, 1.5 KW, 28 VDC, SAE
- (30) K87536 MK-1878/VRC for KY-57 with AN/VRC-46 Installation
Kit mounted in M151A-1, MK-1838/VRC Installation Kit, SAE
- (31) M80242 AN/USM-223 Multimeter, Analog, SAE
- (32) Q53001 AN/VRC-46 Radio Set, SAE
- (33) Q78282 AN/GRA-39 Radio Set Control Group, SAE
- (34) R30662 AN/GRA-6 Receiver-Transmitter Control Group, SAE
- (35) R59160 RL-39 Reeling Machine, Cable, SAE
- (36) S01373 TSEC/KY-57 Speech Security Equipment, SAE
- (37) V31211 TA-312/PT Telephone Set, SAE
- (38) V57914 AN/TCC-29 Telegraph - Telephone Terminal, SAE
- (39) V98788 HYP-57/TSEC Vehicular Power Supply, SAE

c. Special Test Equipment (STE): None

STEP 3 — DETERMINE DPAMMH

This entails determining the Direct Productive Annual Maintenance Man Hours (DPAMMH) required to maintain the new equipment or weapon and its associated items of equipment (i.e., components, ASIOE, TMDE). Procedures for obtaining DPAMMH for all equipment, regardless of TC, are provided in Section 5A. Within the QQPRI, DPAMMH for the principal item, non-TC ASIOE, major components, and TMDE are expressed in terms of the number of hours required by each MOS, SSI, and civilian occupational series for each category of maintenance (i.e., organizational [less operator], DS, and GS). The design engineer's estimates, when available, are usually the best data source for the developmental item, ASIOE, components, and TMDE. However, if any item is TC, the LOGCEN data base or AR 570-2 (in that order) should be the data source. The supporting MSC may have DPAMMH information for non-TC components.

The LOGCEN (AMMH) data base and AR 570-2 provide annual maintenance man hour information, which can be converted easily to DPAMMH. Generally the rule is divide the AMMH by 1.4 to obtain DPAMMH. The 1.4 factor may vary by commodity or item. Therefore, consult AR 570-2 or local manpower requirements determination personnel to obtain the correct factor. This conversion process reflects the fact that AMMH includes indirect productive time in addition to DPAMMH. AR 570-2 explains indirect production time.

NOTE: Prior to accomplishing this step, the procedures to Identify Duty Positions, Step 5, should be performed to define the duty positions by descriptive MOS and titles which encompass maintenance positions for which DPAMMH must be determined. Once Step 5 is accomplished and level of maintenance is determined, the DPAMMH information by MOS for each maintenance level can be obtained.

Example: Step 3

3. Direct Productive Annual Maintenance Manhours (DPAMMH): Actual field demonstrated quantitative manhour figures for the maintenance support of the AN/TMQ-31 are not available at this time. Lack of this concrete information impacts the MOS quantitative computations. Data on Mean-Time-Between-Failure (MTBF) on the items comprising the computer equipment group is provided as estimates from the equipment manufacturer. The resulting estimated DPAMMH takes into account the Minimum Acceptable Value (MAV) when these equipments are integrated into a land-based mobile system which has in interconnection and adaptation many other contractor developed (CFE) items as well as GFE. The calculation uses 6840 hours of annual operation for the system. Firm data will be available in 3d quarter FY-83.

a. Z 26863 AN/TMQ-31 Meteorological Data System

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)	367.5			
26B(X5)		10		
35C			73.6	
* 63H				
34Y		25		
* 52C				
31J		2	6	
* 35H				
* 63B				
* 63W				
* 63G				
2600 Series				98.4

* Items have been typed, classified, and require No DPATMH.

The above manhours are for the AN/TMQ-31 and include the DPATMH figures for the component items.

(1) No LIN S-280 Shelter, Electrical Equipment

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
44B				
63H				

(2) No LIN AN/UYK-19(V) Data Processing Set

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93(HI)	3			
34Y		9		
35C			27	
2600 Series				24.5

(3) No LIN AN/UYE-6 Magnetic Tape Transport

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(HI)	1			
34Y		2		
35C			6	
2600 Series				20.5

(4) No LIN TT-773/(P)/(G) Teleprinter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(HI)	1			
31J		2	6	
2600 Series				12.5

(5) No LIN, TACFIRE Remote Data Terminal

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(HI)	3			
34Y		10	8	
2600 Series				12.2

(6) No LIN AN/UYQ-10 Plasmascope

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)	2			
34Y		4		
35C			12	
2600 Series				20.5

(7) No LIN PP-7607/G Power Supply

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)	2.5			
26B(X5)		4	6	
2600 series				8.2

(8) N30594 AN/USM-296A Oscilloscope

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)				
35H				

(9) A23990 Air Conditioner

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
52C				

(10) W95811 M-105 Trailer, 1 1/2-Ton, 2 Wheel

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63B				
63W				
63G				

b. Associated Support Items for the MDS are as follows:

(1) W37483 TK-101/GSQ Tool Kit, Electronic Equipment

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)				
31V				

(2)	W37251 TK-100/G Tool Kit, Electronic Equipment				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	93F(H1)				
	31E				
(3)	W37388 TK-105/G Tool Kit, Electronic Equipment				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	26B(K1)				
	34Y				
	2600 series				
(4)	W60351 HX-57/TSEC Wire Line Adapter				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	31S				
(5)	W95400 Trailer, Cargo, 1/4-Ton				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	63B				
	63G				
	63W				
	WG5818				
(6)	W98825 Trailer, Tank Water, 400 Gallon				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	63B				
	63G				
	63W				
	WG 5818				
(7)	X40931 Truck Cargo, 5-Ton, Drop Side, 6X6 w/winch (w/(100 Amp Alternator Kit)				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	63S				
	63W				
	63G				
	WG 5818				
(8)	X60833 M151A1 Truck, Utility, 1/4-Ton, 4X4				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	63B				
	52D				
	WG 2601				

(9) J42100 PU-619/U Generator Set, Gas Engine

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63B				
52D				
WG 2601				

(10) Z27113 AN/TMQ-33 Meteorological Station

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)	180			
41B		8	3	
41C		2.8	2.1	
WG 2601				

(11) K87564 MK-1866/VRC for KY-57 Installation Kit with AN/VRC-46, mounted in S-280 Shelter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				

(12) Z84564 AN/MSM-105(V)1 Automatic Test and Repair Station

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
35C		632	450	440
2600 series				420

(13) P3814 PP-2309/U Power Supply

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
35H				
WG 2602				

(14) N30572 Oscilloscope

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
35H				

(15) Y14526 AN/GSM-64B Digital Voltmeter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
35H				
WG2602				

(16) J53782 AN/USM-44C Signal Generator

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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35H
WG 2602

(17) Z50316 AN/USM-193 RF Power Meter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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35H
WG 2602

(18) K87243 Installation Kit for AN/VRC-46 mtd, on M-151

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E

(19) A46470 AM-1780/VRC Amplifier Audio Frequency

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E
WG 2608

(20) E94970 C-2299/VRC Control Radio Set

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E
WG 2608

(21) K14814 H-189/GR Handset

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E
WG 2608

(22) K23814 H-182/P Headset Microphone

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E
WG 2608

(23) L84098 LS-454/U Loudspeaker

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
WG 2608				

(24) A79381 OE-254/GRC Antenna

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31E				

(25) B33019 ML-333/TM Barometer

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)				
WG 2601				

(26) C68719 WD-1/TT DR-3 Cable, Telephone

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
36C				

(27) H01836 TSEC/KG-31-12 Electronic Key Generator

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31T				
WG 2608				

(28) H02300 TSEC/KW-7 Electronic Key Generator

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31T				
WG 2608				

(29) J44055 Generator Set, Gas Engine

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63B				
52D				

(30) K87536 MK-1878/VRC for KY-57 with AN/VRC-46 Installation Kit mounted in M151-A1, MK-1838/VRC Installation Kit

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				

(31) M80242 AN/USM-223 Multimeter, Analog

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
35H				
WG 2608				

(32) Q53001 AN/VRC-46 Radio Set

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
WG 2608				

(33) Q78282 AN/GRA-39 Radio Set Control Group

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
WG 2608				

(34) R30662 AN/GRA-6 Receiver-Transmitter Control Group

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
WG 2608				

(35) R59160 RL-39 Reeling Machine, Cable

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
36C				

(36) S01373 TSEC/KY-57 Speech Security Equipment

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31S				
WG 2608				

(37) V31211 TA-312/PT Telephone Set

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
36H				
WG 2608				

(38) V57914 AN/TCC-29 Telegraph-Telephone Terminal

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31J				
WG 2608				

(39) V98788 HYP-57 Vehicular Power Supply

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31S				

STEP 4 — DETERMINE NUMBER OF DIRECT OPERATORS

The number of direct operators needed to make up a crew to operate the system in a single 12-hour shift must be stated. The best source of this information is the Logistics Support Analysis Record (LSAR) or the equipment or weapon design engineer. This information must include data regarding operators: number per shift, descriptive titles, and a list of corresponding tasks. An indirect source of operator information is the BOIPFD. Although it does not explicitly identify operator personnel, reasonable inferences can be drawn from the equipment descriptions in Blocks 4a, 7a, and 9 to 11 of Form 3362b-R.

Input Data

Obtain engineer's estimates, BOIPFD-see Blocks 4a, 7a, 9 and 11 of the BOIPFD.

Process

4. Determine and list number of direct operators.

Example: Step 4

4. Number of Direct Operators: The AN/TMQ-31 Meteorological Data System (MDS) team will consist of six meteorological crewmen of MOS 93F - Field Artillery Meteorological Crewmen. Two of these members will be specifically trained, and awarded the ASI of H1, to be capable of performing organizational maintenance on the MOS peculiar items. Two teams of AN/TMQ-31 will be situated at division artillery and one team at each Field Artillery Group and artillery battalion assigned to separate brigades. At corps level, the team will be augmented to include, for command control purposes, a Warrant Officer - MOS 201A and an NCOIC with the grade of SFC, and holding MOS 93F40 (reference EOIP No. 77-0102-F). Normal assembly, site selection, antenna positioning and orientation, and disassembly for transport require the cooperation of all team members. For conducting a flight of radiosonde, two of those men are needed for these preliminary operations and launch, while only a single operator is required once successful launch and track lock-on have been achieved and the telemetered data transmission occurs.

STEP 5 — IDENTIFY DUTY POSITIONS

List duty positions (i.e., MOSs), by descriptive titles, needed for the operation, maintenance, and support of the equipment. This can be facilitated by a structured procedure for making MOS determinations from LSA task descriptive data derived from equipment specifications. An MOS Selection Aid is provided in Sections 5B and 5C to assist in MOS identifications for direct operators and maintainers, supervisory personnel, personnel associated with the combat support equipment, and combat service support personnel.

Input Data

Use MOS Selection Aid (Sections 5B and 5C) and AR 611-201. If a new MOS is needed, use Task Structure Aid to develop the new MOS (Section 5B, Table 5B-2).

Process

5. List all duty positions.

Example: Step 5

5. Duty Position by Descriptive Title:

Descriptive Title

Recommended MOS

Operator

Field Artillery Met Crewmember

MOS 93F

Automatic Test Station AN/MSM-105(V)1 Operator

MOS 35C

Descriptive TitleRecommended MOSOrganizational

MDS Organizational Maintenance Mechanic	MOS93F(E1)
Tactical Communications Equipment Repairer	MOS 31V
Light Wheel Vehicle/Power Generation Mechanic	MOS 63B
Utilities Equipment Repairer	MOS 52C
Heavy Wheel Vehicle Mechanic	MOS 63S
Wire Systems Installer/Operator	MOS 36C
Power Generator Equipment Repairer	MOS 52D
Wheel Vehicle Repairer	MOS 63W
Dial/Manual Central Office Repairer	MOS 36H
Utilities Equipment Repairer	MOS 52C
Fuel and Electrical Systems Repairer	MOS 63G
Topographical Instrument Repairer	MOS 41B

Direct Support/General SupportRecommended MOS

Calibration Specialist	MOS 35H
Automatic Test Station Repairer	MOS 35C
Teletypewriter Repairer	MOS 31J
Topographical Instrument Repairer	MOS 41B

Direct Support/General SupportRecommended MOS

Metal Worker	MOS 443
Field Artillery Computer Repairer	MOS 34Y
Field Radio Repairer	MOS 31E
Wire Systems Installer/Operator	MOS 36C
Weapon Support Radar Repairer	MOS 26B(XS)
Field General COMSEC Repairer	MOS 31S
Field Systems COMSEC Repairer	MOS 31T
Fire Control Instrument Repairer	MOS 41C
Equipment Specialist (Electronics)	GS-1670
Electronic Weather Equipment Maintenance	WG 2601
Electronic Test Equipment Repairing	WG 2602
Radio Equipment Installing and Repairing	WG 2603
Automotive Equipment Repairing, Fuel and Electric Systems	WG 581S

STEP 6 — IDENTIFY SYSTEM-UNIQUE DUTIES AND TASKS

The sixth QQPRI requirement results in a listing of the individual system-unique duties and tasks to be performed in each of the identified positions requiring new, revised, or current MOS. If the current MOS duties and tasks are adequate for the new or improved system, so indicate. Do not repeat duties and tasks for a given MOS listed in AR 611-201, but include added tasks and identify tasks to be deleted. For a new or revised MOS, as determined by the MOS Selection Aid (Section 5B), provide draft proposed job specifications. Consult and use the Task Structure (Section 5B), which provides a systematic procedure for generating task lists for new MOS. Consult and use the sub-procedure 5D to draft new job description.

Input Data

Task Structure Aid and AR 611-201.
If existing MOS is used, do not repeat list of tasks in Ar 611-201.
For a new MOS (or for new tasks in an existing MOS), a task list must be generated. Use the Task Structure Aid-Sub-procedure 5B and Drafting MOS Specifications - Sub-procedure 5D.

Process

6. List all system duties and tasks

Example: Step 6

6. Individual Duties and Tasks:

Warrant Officers

MOS 201A performs duties and tasks as listed in AR 611-112.

Enlisted Members:

MOS 93F

Performs preflight checkout of radiosonde sensor equipment; operates hydrogen generator, balloon inflation and launching device, and prepares for launch selecting the appropriate sonde transmitter based on the frequency needs and mission requirements. Deploys and sets up RDF directional tracking antenna. Performs necessary calculations related to sonde pressure data measurement and altitude fix. Starts, fuels, operates, and monitors power generator.

Initializes ground terminal RDF/NAVAID subsystem and the functional processing subsystems, acquires MET data, selects proper message format and transmits MET messages to users. Performs antenna slewing, orientation and manual lock-on as required in the mode of operation. Functions as part of a crew of six that is able to locate, set up and deploy all elements of the system in 30 minutes, and can convert from an emplaced operating station to travel/mobility station in 20 minutes for RDF subsystem and in 10 minutes for NAVAID subsystem. Performs operator maintenance, preusage checks/tests and scheduled preventive maintenance.

MOS 93F(H1)

Analyzes system malfunctions and localizes defective element down to a major component assembly or subassembly utilizing the computer aided diagnostic procedures and programs, Built-in-Test-Equipment (BITE) capability, and has the capability to perform organizational maintenance and make necessary realignment, adjustment in the major components, assembly, and subassembly. Utilizes to the fullest extent the test provisions of the individual subsystems and components. Exploits system and subsystems go-no-go equipment status indications and checks and fault isolates to the suspected defective item. The maintenance at this level is performed without the use of any special test equipment or tools. Is called upon to perform specific function in controlling, monitoring and displaying the telemetered data received, and makes use of TMDE in the accomplishment of the position's maintenance functions.

MOS 26B(X5)

Repairs the equipment at the DS level. Standard TMDE will be employed and faults and malfunctions will be localized to a replaceable module or assembly. Repair will also include the necessary adjustments, realignment and calibration following installation of a new part. Supplemental and additional checks/testing will be conducted; repair parts, assemblies and subassemblies may be made available through an Operational Readiness Float (ORF) capability.

MOS 34Y performs duties and tasks as listed in AR 611-201

MOS 63B performs duties and tasks as listed in AR 611-201

MOS 63S performs duties and tasks as listed in AR 611-201

MOS 52C performs duties and tasks as listed in AR 611-201

MOS 31V performs duties and tasks as listed in AR 611-201

MOS 35C performs duties and tasks as listed in AR 611-201

MOS 52D performs duties and tasks as listed in AR 611-201

MOS 52D performs duties and tasks as listed in AR 611-201
MOS 31E performs duties and tasks as listed in AR 611-201
MOS 31S performs duties and tasks as listed in AR 611-201
MOS 31T performs duties and tasks as listed in AR 611-201
MOS 36H performs duties and tasks as listed in AR 611-201
MOS 63G performs duties and tasks as listed in AR 611-201
MOS 44B performs duties and tasks as listed in AR 611-201
MOS 31J performs duties and tasks as listed in AR 611-201
MOS 36C performs duties and tasks as listed in AR 611-201
MOS 41B performs duties and tasks as listed in AR 611-201
MOS 41C performs duties and tasks as listed in AR 611-201

STEP 7 — PREPARE INDIVIDUAL TRAINING PLAN

The seventh QQPRI requirement involves the Individual Training Plan Proposal (ITPP). If contractor or new equipment training was used or will be used to qualify personnel for test and evaluation, provide the following information with the QQPRI.

- a. A copy of the ITPP
- b. If not shown in the ITPP, provide the following:
 - (1) The name of the contractor
 - (2) The title and length of the course
 - (3) The duty positions for which the course trains
 - (4) The prerequisite for attendance

A copy of the ITPP must be sent to HQ TRADOC, ATTN: ATTNG-TRA, Ft. Monroe, VA 23651.

Input Data

Consult with PM for
new equipment training.

Process

7. ITPP description

Example: Step 7

7. Contractor or Other Training for Test and Evaluation:

a. The following training was presented by the Bendix Corporation Environmental Precision Instruments Division (EPID) at their facility in Towson, MD, for preparing TRADOC key instructors to train the DT/OT Test personnel.

- | | |
|---------------------------------------|-----------|
| (1) Operator Training Course | 160 hours |
| (2) Organization Maintenance Course | 160 hours |
| (3) DS/GS Maintenance Training Course | 80 hours |

b. Duty positions for which training was given are: MOS 93F MET Crewmember; MOS 93F (H1) MDS Equipment Mechanic; MOS 26B(X5) Weapon Support Radar Repairer.

c. Prerequisite for attendance was familiarity with meteorological equipment (current AN/GMD-1 system).

d. Training material was presented to TRADOC, USAFAS, ATTN: ATSF-TAD.

TRAINER INPUT TO QQPRI

SCHOOL USAFAS

QQPRI FOR MDS 'AN/TMQ-31

(Item/System)

General MOS and training data.

<u>Level</u>	<u>MOS^{1/}</u>	<u>Hours to Train</u>	
		<u>New Input^{2/}</u>	<u>Transition^{3/}</u>
Operator	New Revised <u>93F10</u> No Change ASI Rqd	320	240
Organizational	New Revised No Change ASI Rqd <u>93F10H1</u>	320	200
Direct Support	New <u>34Y</u> Revised <u>26B20X5</u> No Change ASI Rqd	896 2008	120 112
General Support	New Revised No Change ASI Rqd		
Type training required.			

Each MOS action proposed in paragraph 1 must be reflected in this paragraph.

<u>MOS</u>		<u>Scope of Change Required</u>		
New	Revised	Add-On	No Change	Scope ^{4/} Hours Estimated
a.	93F10	X		(See Note 1, next page)
b.	93F10H1	X		(See Note 2, next page)
CONTINUED ON NEXT PAGE.				
1. Existing courses increase/decrease.				
Course (MOS)	No Change <u>5/</u>		Hours Additional	Hours Decreased
a. 420-93F10 (93F10)	X			
b. 420-AS1H1 (93F10H1)				200 (See Note 4, next page)
CONTINUED ON NEXT PAGE.				
1. If new course is required, identify and include length in hours.				

1/ MOS must be listed in each case.

2/ Represents new trainee or soldier entering this field for first time, i.e. from start

3/ Represents soldiers transitioning from replaced equipment to newer models.

4/ Scope column will reflect broad areas such as turret and fire control, armament, power train, etc.

5/ Enter "X" if training required replaces equal amount in existing course.

TRAINER INPUT TO QQPRI (CONT)

2. Type training required. Continued from paragraph 2, page 1.

a. Note 1. Scope: 93F10

To provide the 93F10 adequate technical knowledge and skills to emplace the MDS, execute system pre-flight procedures for all operational modes, perform in flight contingency tasks and transmit MET messages to appropriate subscribers.

b. Note 2. Scope: 93F10H1

To provide adequate technical knowledge, in addition to that of an operator, required to effectively maintain the Meteorological Data System (MDS-AN/PMQ-31). This includes the ability to service, trouble shoot, isolate and replace defective line replaceable units.

Paragraph 2 continued from page 1:

<u>New</u>	<u>Revised</u>	<u>Add-on</u>	<u>No Change</u>	<u>Scope</u>
2 c.	26B20X5	112 hours added		See Note 3 below
2 d. 34Y		120 hours added		AN/UYK-19 maint.

c. Note 3. Scope: 26B20X5

To provide technical knowledge required to effectively support US Army Field Artillery units. This includes basic electronic digital fundamental logic and transistor circuits; operation of radar sets AN/TPQ36 and AN/TPQ37; direct support maintenance and calibration procedures required to provide mission support maintenance of field artillery firefinder radar equipment, M95 chronograph, and the MDS-AN/PMQ31.

3. Existing courses-increase/decrease. Continued from paragraph 3, page 1.

b. Note 4. Hours Decreased: 420-AS1H1 (93F10H1)

A 93FH1 POI, which includes 200 hours of DS maintenance has been sent to TRADOC for approval. Upon approval the current 384 hour POI will change to a 520 hour POI. The MDS organizational maintenance course will delete the 200 hours of DS maintenance from organizational maintenance POI.

Paragraph 3 continued from page 1:

<u>Course (MOS)</u>	<u>Hours Additional</u>	<u>No Change</u>	<u>Hours Decreased</u>
3 c. 104-26B, 104-AS1X5 (26B20X5)	112		
3 d. 34Y	120		

SECTION 5A

DPAMMH PROCEDURES FOR QQPRI

INTRODUCTION

The generation of reasonably accurate requirements for maintenance man hours for new equipment items is most important, and perhaps the most difficult part of QQPRI preparation. This difficulty is caused by inadequate early estimating procedures that provide empirical or more precise data at early development stages. In recognition of this deficiency, the Army is currently in the process of reviewing procedures that form the basis for maintenance manpower requirements. See note below.

The requirement needs DPAMMH data for the principal developmental item, TC and non-TC components, ASIOE, and TMDE. An example of an actual QQPRI, requirement 3, is provided along with these blocks. This illustration involves a sampling of equipment associated with the Meteorological Data System AN/TMQ-31 (). It should be noted that this example is an Amended Final. Also, note that the amendment is number 3 - the third time the final QQPRI has been amended. This amendment is a complete resubmission to uphold the need to keep information intact.

NOTE: The term Manpower Authorization Criteria (MACRIT) is being changed to Manpower Requirements Criteria (MARC). The transition from MACRIT to MARC data will likely transition over a period of from 1 to 5 years.

STEP 1 — LIST LINS FOR DEVELOPMENTAL ITEM, COMPONENTS, ASIOE, AND TMDE

This step requires listing the LIN for the developmental item to include component identification, if any, ASIOE, and TMDE. For the developmental item, this information can be acquired from block 7a of the BOIPFD. It will be expressed as a "Z LIN". For components, ASIOE, and TMDE, the LINS can be found in block 11, 11a and 11b of the BOIPFD. This information also will have been compiled for the second QQPRI requirement and thus should be readily available. Any questions regarding the equipment items should be addressed to the Logistics Analyst at the MSC responsible for compiling the BOIPFD. EARA, the agency responsible for an equipment analysis of the BOIPFD for DARCOM, may also be queried.

Input Data

BOIPFD Blocks 7a, 11, 11a, and 11b. Coordination with the Logistics Analyst and EARA is suggested to verify questionable entries.

Process

1. Obtain LINS for developmental item to include components, ASIOE, and TMDE.

Example: Step 1

- a. Developmental Item: Z26863 - Field Artillery Meteorological Acquisition System: AN/TMQ-31.
- b. Components, ASIOE and TMDE: See Section 4, Blocks 11, 11a and 11b.

STEP 2 — IDENTIFY TC/NON-TC LINs

This step involves differentiating all LINs identified in Step 1 in terms of whether or not they are TC. Various information sources are available and should be consulted to make these determinations. For example, Supply Bulletin 700-20 devotes Section 2 to listing TC items and Section 4 to non-TC equipment. Finally, the Logistics Analyst and EARA can and should be consulted, as required.

Input Data

SB 700-20 (Section 2 for TC items, Section 4 for non-TC items). Consult logistics analyst and EARA as required.

Process

2. Differentiate which LINs in Step 1 are/are not TC

Example: Step 2

- a. Z26863 - Field Artillery Meteorological Acquisition System:
AN/TMQ-31 - Non-TC
- b. W95811 - Trailer, 1 1/2-Ton, 2 Wheel M-105 - TC
- c. A23990 - Air Conditioner (Vertical Compact) 9000 BTU - TC
- d. N30594 - Oscilloscope AN/USM-296A - TC

STEP 3 — DETERMINE MOSs ASSOCIATED WITH LINs

The third step requires identifying the MOS associated with each LIN identified in Steps 1 and 2. The primary data source is the MOS Selection Aid, found in Section 5B of this manual. Also, AR 611-201 provides task descriptions for enlisted MOS. Further, the design engineer and MOS proponent school might be consulted to determine MOS for each LIN. Finally, the LOGCEN MACRIT data base could be searched for TC items, where MACRIT is cross-referenced by LIN and MOS. List the MOS by LIN and identify the DPAMMH data by MOS.

NOTE: See Figure 5.2. QQPRI Requirement 5 should be completed before QQPRI Requirement 3. In this sequence, the MOSs have been determined. If the use of the MOS Selection Aid (Section 5B), AR 611-201, and information from other data sources indicate that no existing MOS is appropriate for the LIN (i.e., it is not possible to relate a current MOS to a LIN or a set of maintenance tasks), then enter "unknown" instead of an MOS so that the maintenance workload is accurately represented. In such cases, DPAMMH should be estimated for the set of tasks using the "unknown" stub entry rather than an MOS. When an MOS is identified, it will be identified in subsequent QQPRI submissions.

Input Data

MOS Selection Aid, engineering data, AR 611-201, Proponent School analyst, and possibly LOGCEN MACRIT data base.

Process

3. Determine MOS for all LINs and identify source and date of information

Example: Step 3

- a. Z26863 AN/TMQ-31 Meteorological Data System - Non-TC

MOS

93F(H1)
26B(X5)
35C
63H
34Y
52C
31J
35H
63B
63W
63G
2600 Series

- b. W95811 M-105 Trailer, 1 1/2-Ton, 2 Wheel - TC

MOS

63B

63W

63G

- c. A23990 Air Conditioner - TC

MOS

52C

- d. N30594 AN/USM-296A Oscilloscope - TC

MOS

93F(H1)

35H

STEP 4 — REVIEW MAINTENANCE CONCEPT/DETERMINE MAINTENANCE LEVELS

This step involves ascertaining the maintenance types/levels (i.e., organization, DS/GS, or AVUM/AVIM) associated with the equipment items. You may obtain this maintenance information, which primarily entails the maintenance concept, from the designers (i.e., project manager, logistics analyst, and maintenance engineer). The responsible Army Maintenance Center may be consulted as another source of this information. List the maintenance levels by MOS within LINs (see Step 3), which will create the structure needed to display the DPAMMH estimates.

Input Data

Obtain maintenance information from designers (i.e., project managers, logistics analyst, maintenance engineer) regarding levels (i.e., organizational, direct support or general support of maintenance planned for the equipment. Consult Army Maintenance Center, if appropriate.

Process

4. Review maintenance concept and determine maintenance levels

Example: Step 4

- a. Z26863 AN/TMQ-31 Meteorological Data System - Non-TC

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)				
26B(X5)				
35C				
63H				
34Y				
52C				
31J				
35H				
63B				
63W				
63G				
2600 Series				

b. W95811 M-105 Trailer, 1 1/2-Ton, 2 Wheel - TC

MOS

ORG

DS

GS

DEPOT

63B

63W

63G

c. A23990 Air Conditioner - TC

MOS

ORG

DS

GS

DEPOT

52C

d. N30594 AN/USM-296A Oscilloscope - TC

MOS

ORG

DS

GS

DEPOT

93F(H1)

35H

STEP 5 — OBTAIN AND LIST DIRECT PRODUCTIVE ANNUAL MAINTENANCE MANHOURS

NOTE: Direct Productive Annual Maintenance Manhours (DPAMMH) are required for the QQPRI per Section II (paragraph 3-9c), AR 71-2. To understand the difference between DPAMMH and AMMH, consult AR 570-2.

DPAMMH must be stated for the developmental principal item, associated items of equipment, major components, support equipment, and test, measurement, and diagnostic equipment. Non-type-classified items will show DPAMMH.

- a. Non-type-classified items will reflect DPAMMH based on empirical data or estimates. Review LSAR data.
- b. Type-classified items will reflect DPAMMH that is stated in AR 570-2 or the Logistic Center Data Base.

As an aid in determining DPAMMH, comparable item data of record may be of use for reference purposes in estimating DPAMMH for new items of equipment or weapons.

Input Data

DPAMMH

- a. actual
- b. empirical
- c. estimates

Process

5. List DPAMMH for each TC and Non TC item by maintenance category, LIN and MOS.

Example: Step 5

a. Z26863 AN/TMQ-31 Meteorological Data System

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)	367.5			
26B(X5)		10		
35C			73.6	
* 63H				
34Y		25		
* 52C				
31J		2	6	
* 35H				
* 63B				
* 63W				
* 63G				
2600 Series				98.4

* Items have been typed, classified, and require No DPAMMH.

The above manhours are for the AN/TMQ-31 and include the DPAMMH figures for the component items.

(1) No LIN S-280 Shelter, Electrical Equipment

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
44B				
63H				

(2) No LIN AN/UYK-19(V) Data Processing Set

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93(HI)	3			
34Y		9		
35C			27	
2600 Series				24.5

(3) No LIN AN/UYE-6 Magnetic Tape Transport

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(HI)	1			
34Y		2		
35C			6	
2600 Series				20.5

(4) No LIN TT-773/(P)/(G) Teleprinter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(HI)	1			
31J		2	6	
2600 Series				12.5

(5) No LIN, TACFIRE Remote Data Terminal

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(HI)	3			
34Y		10	8	
2600 Series				12.2

(6) No LIN AN/UYQ-10 Plasmascopes

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)	2			
34Y		4		
35C			12	
2600 Series				20.5

(7) No LIN PP-7607/G Power Supply

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)	2.5			
26B(X5)		4	6	
2600 series				8.2

(8) N30594 AN/USH-296A Oscilloscope

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)				
35H				

(9) A23990 Air Conditioner

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
52C				

(10) W95811 M-105 Trailer, 1 1/2-Ton, 2 Wheel

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63B				
63W				
63G				

b. Associated Support Items for the MDS are as follows:

(1) W37483 TK-101/GSQ Tool Kit, Electronic Equipment

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)				
31V				

- (2) W37251 TK-100/G Tool Kit, Electronic Equipment

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)				
31E				

- (3) W37388 TK-105/G Tool Kit, Electronic Equipment

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
26B(K1)				
34Y				
2600 series				

- (4) W60351 HXX-57/TSEC Wire Line Adapter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31S				

- (5) W95400 Trailer, Cargo, 1/4-Ton

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63E				
63G				
63W				
WG5818				

- (6) W98825 Trailer, Tank Water, 400 Gallon

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63B				
63G				
63W				
WG 5818				

- (7) X40931 Truck Cargo, 5-Ton, Drop Side, 6X6 w/winch (w/(100 Amp Alternator Kit)

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63S				
63W				
63G				
WG 5818				

- (8) X60833 M151A1 Truck, Utility, 1/4-Ton, 4X4

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63B				
52D				
WG 2601				

(9) J42100 PU-619/U Generator Set, Gas Engine

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63B				
52D				
WG 2601				

(10) Z27113 AN/TMQ-33 Meteorological Station

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)	180			
41B		8	3	
41C		2.8	2.1	
WG 2601				

(11) K87564 MK-1866/VRC for KY-57 Installation Kit with AN/VRC-46, mounted in S-280 Shelter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				

(12) Z84564 AN/MSM-105(V)1 Automatic Test and Repair Station

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
35C		632	450	440
2600 series				420

(13) P3814 PP-2309/U Power Supply

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
35H				
WG 2602				

(14) N30572 Oscilloscope

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
35H				

(15) Y14526 AN/GSM-64B Digital Voltmeter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
35H				
WG2602				

(16) J53782 AN/USM-44C Signal Generator

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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35H
WG 2602

(17) Z50316 AN/USM-193 RF Power Meter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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35H
WG 2602

(18) K87243 Installation Kit for AN/VRC-46 mtd, on M-151

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E

(19) A46470 AM-1780/VRC Amplifier Audio Frequency

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E
WG 2608

(20) E94970 C-2299/VRC Control Radio Set

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E
WG 2608

(21) K14814 H-189/GR Handset

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E
WG 2608

(22) K23814 H-182/P Headset Microphone

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E
WG 2608

(23) L84098 LS-454/U Loudspeaker

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
WG 2608				

(24) A79381 OE-254/GRC Antenna

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31E				

(25) B33019 ML-333/TM Barometer

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)				
WG 2601				

(26) C68719 WD-1/TT DR-3 Cable, Telephone

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
36C				

(27) H01836 TSEC/KG-31-12 Electronic Key Generator

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31T				
WG 2608				

(28) H02300 TSEC/KW-7 Electronic Key Generator

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31T				
WG 2608				

(29) J44055 Generator Set, Gas Engine

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63B				
52D				

(30) K87536 MK-1878/VRC for KY-57 with AN/VRC-46 Installation Kit mounted
in M151-A1, MK-1838/VRC Installation Kit

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				

(31) M80242 AN/USM-223 Multimeter, Analog

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
35H				
WG 2608				

(32) Q53001 AN/VRC-46 Radio Set

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
WG 2608				

(33) Q78282 AN/GRA-39 Radio Set Control Group

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
WG 2608				

(34) R30662 AN/GRA-6 Receiver-Transmitter Control Group

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
WG 2608				

(35) R59160 RL-39 Reeling Machine, Cable

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
36C				

(36) S01373 TSEC/KY-57 Speech Security Equipment

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31S				
WG 2608				

(37) V31211 TA-312/PT Telephone Set

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
36H				
WG 2608				

(38) V57914 AN/TCC-29 Telegraph-Telephone Terminal

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31J				
WG 2608				

(39) V98788 HYP-57 Vehicular Power Supply

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31S				

SECTION 5B

JOB AID FOR MOS SELECTION PROCEDURES AND DEFINING STRUCTURES FOR NEW MOS

A. OVERVIEW

What is the JOB AID for MOS Selection Procedures all about?

- **GOAL**

1. The purpose of this Job Aid is to provide procedures for making MOS recommendations for personnel to operate, maintain, and support the equipment or new weapon.
2. It is for MOS selection for Enlisted personnel only.
3. It is for use in the initial selection of MOS and all phases of review.

- **OBJECTIVES**

1. To determine whether an existing MOS is appropriate or if a new MOS is needed.
2. To identify any additional tasks and duties required for an existing MOS or required in a new MOS.

- **INPUT**

The input to this Job Aid is any information which may be obtained about the equipment or weapon, its use and operation, and the tasks and duties of the personnel who will operate, maintain and support it. Information sources are listed on page 5B-16.

PRODUCTS

1. A list of all the MOS, new or current, required to operate, maintain, and support the new equipment or weapon (Requirement 5 of the QQPRI).

2. A list of system unique duties and tasks to be performed in each position requiring a new, revised or current MOS (Requirement 6 of the QQPRI).

- **USING THE JOB AID**

The Job Aid is in five parts:

- A. Overview
- B. Using the MOS Structure Table
- C. Logic for Determining Tentative MOS
- D. Using the Task Structure Table
- E. Steps to follow in MOS Selection Process

BEFORE YOU BEGIN THE MOS SELECTION PROCESS FOR OPERATORS, MAINTAINERS AND SUPPORT POSITIONS FOR A SPECIFIC NEW PIECE OF EQUIPMENT OR WEAPON, DO THE FOLLOWING:

1. Review Part B to learn what MOS Structure Table is, what it is used for, and how it is used. You will use the table later when you go through the MOS selection process.
2. Next, review Part C. Part C includes a diagram of the logic for determining tentative MOS—an existing MOS which is tentatively appropriate for the operation, maintenance or support of the new equipment or weapon. The logic diagram is included for the general information of the reader. It does not parallel exactly the steps described in Part B. However, you may apply the logic to use the MOS Structure Table. Terminology used in the logic diagram relates to that used in the table (e.g., category, level of maintenance).
3. Next, review Part D to learn what the Task Structure Table is, what it is used for, and how it is used.

When you have completed your review of Parts B, C and D, you should be familiar with the tools provided. The tools being the MOS Structure Table, the Logic Diagram and the Task Structure Table. Worksheets, another tool, are described in Step 2 of Part E. You will not need the worksheets until you start following the steps in Part E.

AFTER YOU HAVE REVIEWED PARTS B, C AND D, PROCEED TO PART E AND FOLLOW THE STEPS DESCRIBED FOR THE MOS SELECTION PROCESS.

B. USING THE MOS STRUCTURE TABLE

What is an MOS Structure Table?

The MOS Structure Table is a table of MOS with corresponding job titles categorized by primary military function. It is derived from AR 611-201, Enlisted Career Management Fields and Military Occupational Specialties.

The MOS Structure Table is included in this manual starting on page 5B-25. It is recommended that you make a copy of the table and refer to it during the following discussions on what it is, what the table is used for, and how it is used.

The table is in three parts:

Part 1. Direct Operators and Maintainers.

Categories 1.1 through 1.7 are major military functions:

1.1 Aviation	1.4 Infantry	1.7 Communications
1.2 Artillery	1.5 Air Defense	
1.3 Armor	1.6 Electronics	

Categories 1.8 through 1.11 represent secondary or support functions:

1.8 Engineering	1.10 Special Support Functions
1.9 Transportation	1.11 General Supervisory Functions

Operators and maintenance indicators for each MOS are indicated on the right side of the table by X's in the Functions column. Operators and maintainers are grouped to MOS associated with a particular kind of equipment, especially those positions that both "operate" and "maintain."

Part 2. Associated Functions.

Includes supervisory and other MOS associated with equipment functions that correspond with categories in Part 1. A common numbering system is used for Parts 1 and 2 to facilitate finding all MOS associated with a particular item.

Part 3. MOS Not Related to Categories of Equipment and MOS for Reserve Forces.

This part is intended to insure consideration of all MOS. However, the characteristics of these MOS (e.g., band members) have little application in considering the personnel requirements associated with a new item. Category 3.8 includes MOS for reserve forces only. Although some MOS in this part are direct operators and maintainers, they are separated from Part 1 because they are primarily applicable to emergency or wartime need associated with skills found in the private sector.

What is the MOS Structure Table Used For?

It is used to select those existing MOS which may be considered for the operation, maintenance and support of the new equipment or weapon. It is used in the initial MOS selection by providing a method to narrow the number of possible MOS down to the best alternative MOS.

If all positions of operator, maintainers and support personnel have been identified by MOS, there will be no need to use the MOS Selection Table. If there is no identified MOS, the MOS Selection Table is used.

Remember that this table represents a method for reducing the field of consideration to the most likely MOS while minimizing the risk of ignoring an appropriate MOS.

How is the MOS Structure Table Used?

The following steps are to demonstrate how the table is used.

To Use Part 1 of the Table

Step 1. Selecting a military function (category 1.1-1.11) which relates to the new equipment or weapon.

- If the item relates to a primary military function, select from categories 1.1 through 1.7.

EXAMPLE: To select a category for a new field artillery cannon, you would select the major military function category 1.2 (Artillery/Ballistics/Hand Combat Missile Systems).

- If the item relates to a secondary or support function, select from categories 1.8 through 1.11.

Step 2. Identifying the most likely existing MOS within the selected category to operate the new equipment or weapon.

- If the item is related to a primary military function and in a category where all MOS are generic, look in categories like 1.1 Aviation, 1.2.3 Artillery Cannon, 1.5.2 AD Radar, 1.6 Electronic Sensors and 1.7 Communications. MOS in these categories are associated with several items and are not system specific.

EXAMPLE: To select an existing MOS which may be appropriate for the Gunner position for the field artillery cannon, look at subcategory 1.2.3 (Cannon). In this subcategory there is a title for a Cannon Crewman with a 13B MOS. The other listed titles can

easily be eliminated from consideration. To the right of the title Cannon Crewman is an X in the Function column indicating a Cannon Crewman 13B is an operator. Therefore, MOS 13B is easily selected as the tentative MOS (TMOS).

- If the item is related to a primary military function and is in a category where all MOS are system-specific, look in categories like 1.2.1 Artillery Missiles, 1.3 Armor and 1.5.4 AD Missile Systems. MOS in these categories are associated with one specific piece of equipment or weapon.

If the item is not related to a primary military function (a secondary or support function) look within categories 1.8 through 1.11.

Step 3. Identifying the most likely existing MOS for other operator positions or crew members.

This procedure requires repeating steps 1 and 2 for any other operator positions which may be required to operate the item.

In the example used, all of the direct operators are Cannon Crewman (13B) and there would be no other job position (MOS) to identify.

CAUTION: In choosing the category, remember that maintenance MOS are directly related to the kind of equipment involved and operator MOS are determined by the person's responsibilities in the unit. For instance, if the new item is designed for infantry, the maintenance MOS will be for infantry systems. The operators, however, might be members of a fire support team for locating artillery targets, so their MOS would be listed under Field Artillery (specifically, Field Artillery Target Acquisition).

Step 4. Identifying the most likely existing MOS for direct maintainers.

To perform, repeat the procedures in steps 1 and 2 above except this time look for maintainers instead of operators. Search for X's in the Function column under "O" (organizational maintenance) and titles which may be appropriate.

EXAMPLE: To search for the organizational maintainer for an artillery weapon, check the same subcategories under category 1.2. In this case, there are no X's under "O" in the Functions column associated with an appropriate title. This does not mean there is no organizational maintenance. It means there is no identified separate MOS for maintenance at the organizational level. In this case, review the position description for operator personnel in AR 611-201 for indication of maintenance duties. A look at the position

description for 13B will indicate that maintenance at the organizational level is an operator function. Therefore, there will not be an additional listing for direct maintainers on the worksheet. It is already covered under the entry for operator.

Step 5. Identifying the most likely existing MOS for other maintainers of the item.

Search the selected MOS category and subcategories for X's in the Functions column under S (Support), DS (Direct Support), GS (General Support), and D (Depot) to include corresponding titles.

EXAMPLE: A search for the other maintainers of the artillery weapon will reveal in subcategory 1.2.3 the title of Artillery Repairer, MOS 45L, with maintenance functions at the Direct Support and General Support levels. Therefore, the most likely existing MOS for performing maintenance above the organizational level will be performed by personnel in MOS 45L.

Going through these five steps will give you a good understanding of the table and how it is used to quickly identify any existing MOS which may be tentatively considered for the operation, maintenance or support of the the new equipment or weapon, and also to determine the absence of a candidate MOS which may indicate the need for a new MOS.

Figure 5B-1 is a diagram of the logic for determining tentative MOS. The diagram is located on pages 5B-10 and 5B-11. This logic is used with the MOS Structure Table. After reviewing this part on using the MOS Structure Table, it is suggested you review the logic diagram. When you use the MOS Structure Table, you may choose to use the logic as a guide rather than going through the detailed steps presented above.

To Use Part 2 of the Table

This part of the table is used to identify supervisory and other MOS associated with the use of the item which may need to be considered. For instance, the selection of an MOS in category 1.1.2.2 (On Board Equipment) in Part 1 may, or may not, require consideration of the need for a parachute rigger listed in category 2.1.2.2 of Part 2.

EXAMPLE: MOS 13B and 45L were selected for consideration for operator and maintainer positions under MOS category 1.2.3 in Part 1. In the corresponding section, category 2.2.3 (Cannon) of Part 2, there is no entry for MOS. Although no MOS entries are listed as directly associated with the cannon, look at the titles included under the broader category 2.2 (Artillery) and decide if MOS 13Z and 13Y need to be considered.

To Use Part 3 of the Table

To use Part 3 simply scan the list of titles by category to see if there are any positions listed which need to be considered. This part is to insure consideration of all MOS, i.e., that none are overlooked.

C. LOGIC FOR DETERMINING TENTATIVE MOS

Suggested logic for determining tentative MOS (TMOS) is presented in Figure 5B-1. This logic is used with the MOS Structure Table.

The required inputs for using the logic are:

1. A description of the new equipment or weapon
2. One job position (a crew member, operator or maintainer)
3. Classification of job position as
 - a. operator
 - b. organizational maintenance
 - c. support maintenance
4. General information about duties and tasks involved (e.g., maintenance concept).

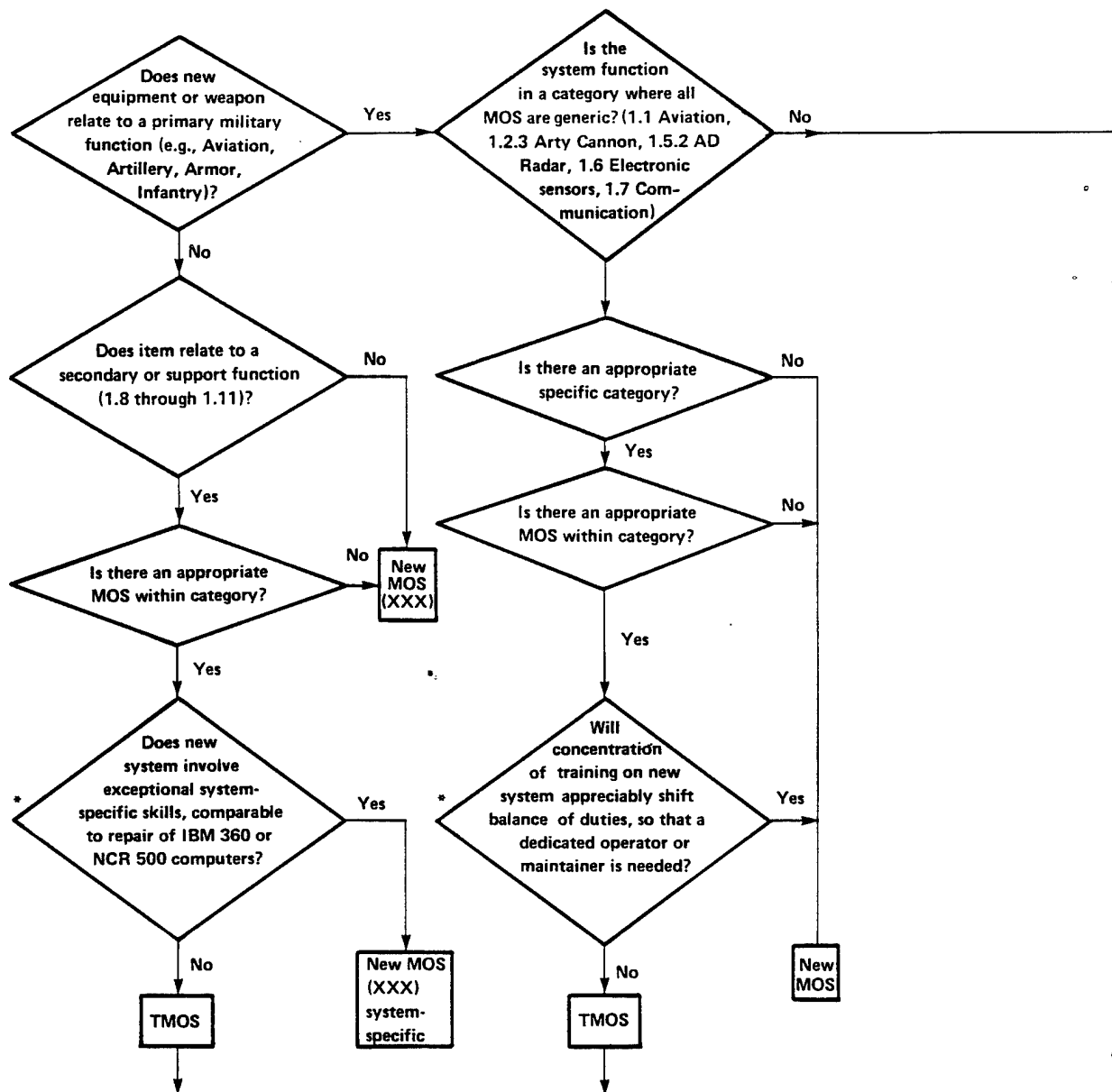
Times when a new MOS will probably be required:

- When a new item of equipment or weapon requires exceptional system-specific skills, comparable to repair of the IBM 360 or NCR 500 computer, a new system-specific MOS will probably be required.
- When the training requirements for a new system appreciably shifts the balance of duties to be performed so that a dedicated operator or maintainer is needed for the system, a new MOS is required.
- When adding a new system results in an appreciable increase (on the order of 40%) in training which is already long for an existing MOS, a new MOS will probably be required.

Although most MOS are generic, associated with several items instead of one specific system, many are system-specific. Sometimes a system-specific MOS can be redefined to cover the new item if the requirements are similar. (See CAUTION on page 5B-23 for additional information).

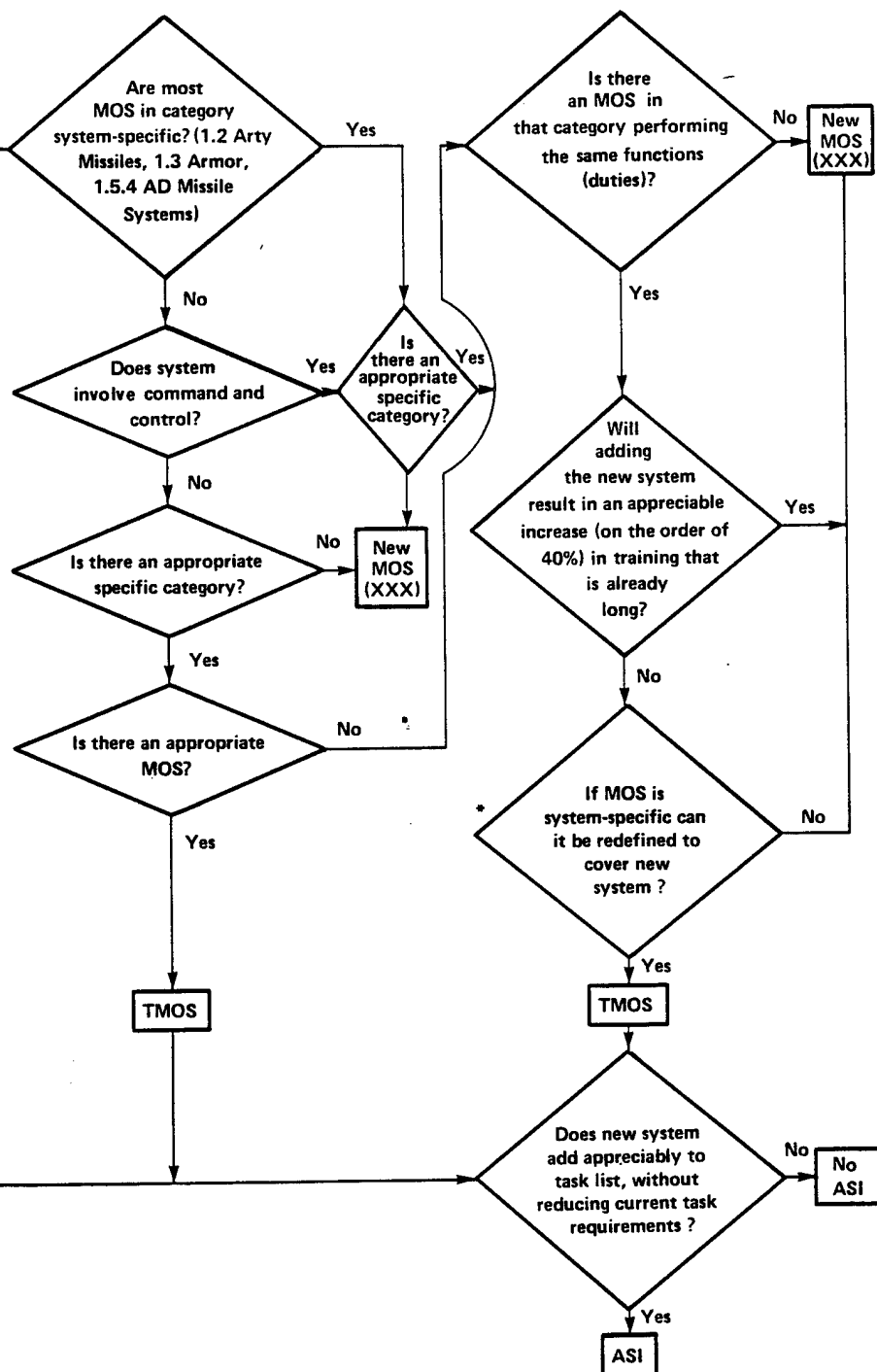
When the use of this logic indicates a tentative MOS (TMOS), the position description for that MOS in AR 611-201 should be reviewed in detail before the MOS is recommended. When the end result is a new MOS, the Task Structure Table should be used as an aid in developing a list of tasks and duties required to operate, maintain or support the new weapon or system as a precursor to a new job (MOS) description.

After review of the logic depicted in Figure 5B-1, proceed to Part D of this job aid.



* There is no corresponding information for these blocks in the steps demonstrating use of the MOS Structure table (Part B).

Figure 5B.1. Logic for Determining Tentative MOS (TMOS)



* There is no corresponding information for these blocks in the steps demonstrating use of the MOS Structure table (Part B).

Figure 5B.1. Logic for Determining Tentative MOS (TMOS) (Continued)

D. USING THE TASK STRUCTURE TABLE

What is a Task Structure Table?

The Task Structure Table appears starting on page 5B-44. It is recommended you make a copy of the table and refer to it during the following discussion of the table.

The Task Structure Table classifies MOS performance elements (duties/tasks) as specified in AR 611-201. It is a list of all the tasks, in general and sometimes specific terms, that Army personnel perform in duty positions. The table also lists examples of tasks performed. The examples are listed to the right of the task categories.

Task categories are listed in five parts as follows:

Part 1. Common Soldier Tasks.

Part 2. Operation of Systems.

Section A—Primary Functions. Vehicle operation, target engagement, and communications.

Section B—Subordinate Functions. Power generation, safety, computer operations.

Part 3. Administrative, Job Guidance, and Constraints.

Part 4. Maintenance Functions.

Part 5. Supervisory Functions in Maintenance.

What is the Task Structure Table used for?

It is used to develop an organized position task list which can be compared with the position descriptions in AR 611-201 to:

- Support the selection of an existing MOS as appropriate for the operation or maintenance of an item or associated equipment item.
- Identify tasks which could be covered by an Additional Skill Indicator (ASI) when added to an existing MOS.
- Determine the basis for recommending a new MOS.

Use of the Task Structure Table will generate an organized position task list—a list of all the tasks, in general or specific terms, that a person would perform in one specific job position.

How is the Task Structure Table used?

Use of the Task Structure Table is straightforward. All that is needed to get started is a copy of the table and some knowledge of the job position (operator, maintainer or support person for a piece of equipment or weapon) for which a task list is needed.

To Use the Table

Step 1. Go through the Task Structure Table and circle the numbers or letters under categories for the tasks required of a person in the particular duty position being reviewed.

Suggestion. Use of a pencil to circle the numbers or letters will permit erasure and reuse of the table.

- a. Circle specific categories when possible, but if the more specific category cannot be determined, the more general categories should be circled.

EXAMPLE:

Part 4: Maintenance (Continued)		
<u>Categories</u>	<u>Examples</u>	
A general category → (B.) Testing and Diagnostics	(1.) Troubleshooting (isolation of fault to specific assembly or part)	Troubleshoots rotor system malfunction
	2. Testing	
Specific task categories circled → (a.) Initial and final checkout	b. "Test Operates"	Performs initial and final checkout and inspection of designated system items, their assemblies and subassemblies.
	c. Performing special test procedures	Test fires weapons.
		Performs gas pressure tests.
	(3.) Precision measurement (of dimension)	Measures tolerances of parts with precision instruments and special tools.
C. Decisions		
1. Determination of level of repair (organizational, support)		Evaluates the condition of small arms and mines echelon of maintenance or repair
2. Determination of kind of repair		

- b. If unable to classify the duties and tasks associated with a position, it will be necessary to review the position's basic function. After doing so, cycle back through the table with the accumulated knowledge and complete the circling process.

Upon completion of the circling process, a set of task categories (the circled items on the table) comprising the given position will be identified.

Step 2. Compare the generated task list with the task/duties described in AR 611-201 for the selected MOS.

Use the following sequential process:

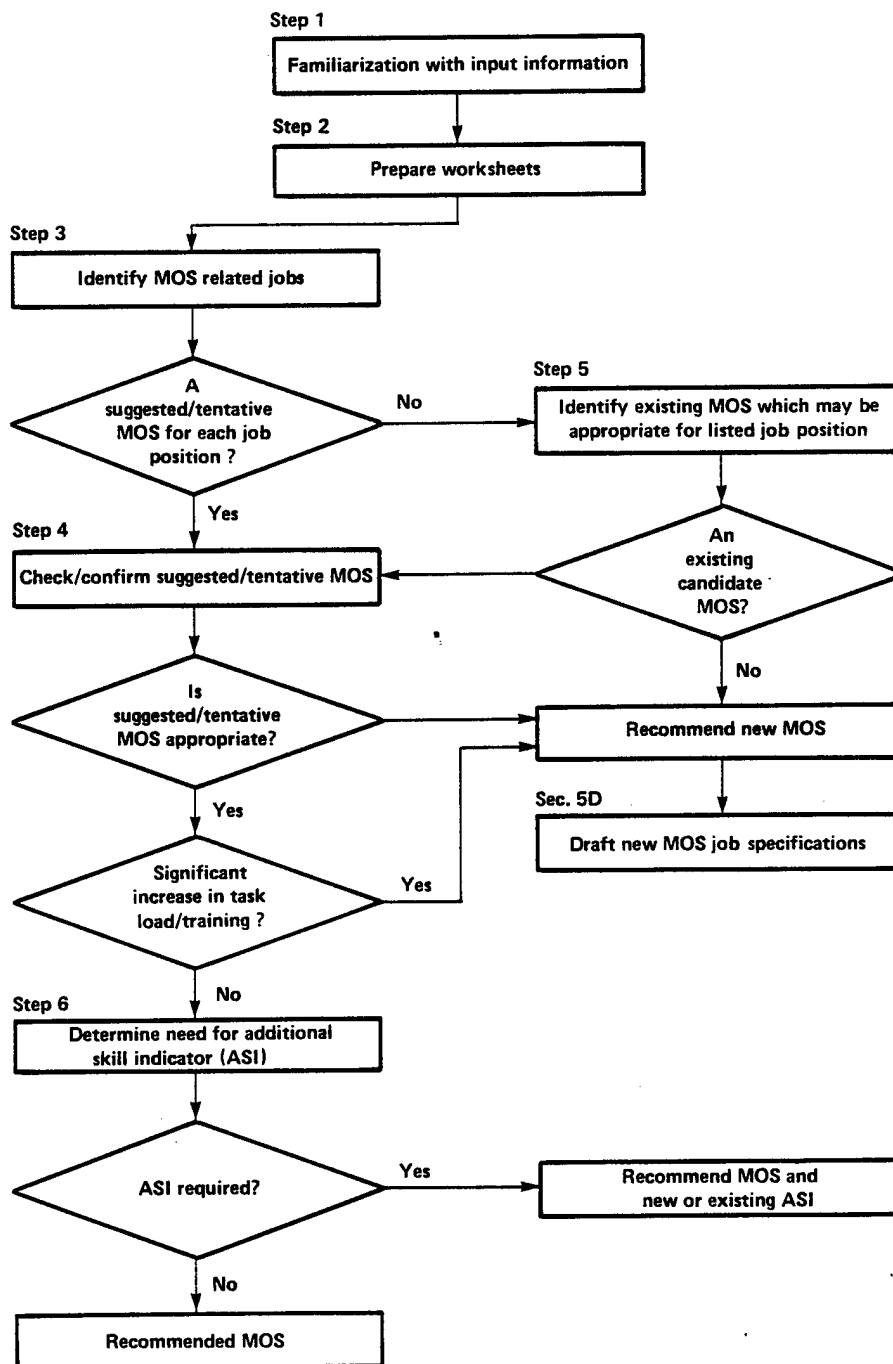
- a. Put a minus sign (-) beside those tasks in the current MOS description (i.e., AR 611-201) that will not be required with the new item.
- b. Put a plus sign (+) beside each circled category on the Task Structure Table to indicate a new task (a task not listed in the MOS position description).
- c. For the remaining tasks (i.e., not + or -) place a check (✓) by those tasks in the MOS position description which will be changed appreciably. Briefly explain the nature of each change on the worksheet.

This comparison identifies how well the selected existing MOS fits the new requirements. This information is used to either verify the selection of the existing MOS or identifies the system unique duties and tasks which must be covered in an ASI or in a new MOS.

The steps to follow in the MOS selection process are covered in the following part.

E. STEPS TO FOLLOW IN MOS SELECTION PROCESS

The following is a flow diagram of steps in the MOS selection process. The steps are explained in detail in the remainder of this Part.



Step 1. Familiarization with Input information

- **Requirement:** Complete understanding of the new equipment or weapon which will need to be operated, maintained, and supported.

The more that is known about the new equipment or weapon and its operation and use, the easier the job will be of determining job position and MOS needs.

What input information is available?

The following sources are normally available:

<u>CATEGORY</u>	<u>SOURCE</u>
Direct Operators and Crew Members	If requirement 4 of the QQPRI has been completed, it will identify the number of operators associated with the item. Sometimes both MOS and qualitative description of direct operators are included.
Maintenance Positions	Direct maintenance data are required to complete the 3rd QQPRI requirement. If the requirement has been completed, a listing of the equipment to be maintained and suggested maintenance MOS for each item are included.
Support Positions	Support personnel may be included in the above sources.
	<u>OTHER SOURCES</u> ● Consultation with the Project Manager (PM), or Major Subordinate Command (MSC) personnel. ● The Basis of Issue Plan Feeder Document (BOIPFD) contains a detailed description of the item which can be used to draw inferences of operator positions. Source—PM. ● The Logistics Support Analysis Record (LSAR) documentation contains initial task and skill analysis information. Source—PM. ● Use your own prior experience and knowledge to complete identification of jobs needed.

Step 2. Prepare Worksheets

- **Requirement:** Prepare a set of worksheets for listing job positions required to operate, maintain and support the item or system.

An example of the worksheets is shown below. Start with three columns. Label the columns MOS, Title, and Unique Duties. Depending on the number of jobs/MOS involved, there may be a need for a separate page for the operator positions and for each level of maintenance.

EXAMPLE:

The diagram illustrates a set of four overlapping worksheets. The top-most worksheet is labeled "Depot". Below it is "Direct Support/General Support", then "Organizational". The bottom-most and largest worksheet is titled "MOS WORKSHEET". This worksheet has a header section with the following labels: "Operators/Crew" (underlined), "MOS" (underlined), "Title" (underlined), and "Unique Duties" (underlined). The "MOS WORKSHEET" is shown as a large rectangular area with these labels at the top left, indicating where data would be entered.

Step 3. Identify MOS-Relatable Jobs.

- **Requirement:** List all the job positions for which MOS are needed.

Identify all direct operators, and maintainers of the equipment or weapon. Be sure to include all indirect operators, maintainers and support positions—positions involved with support, ancillary or peripheral equipment.

OBJECTIVE

To make the list of jobs for which MOS are needed as complete as possible.

How are the job positions for which MOS are needed identified?

The job positions are identified through the sources identified in Step 1.

How are the jobs for which MOS are needed listed?

The job positions are listed on the worksheets described in Step 2. Follow steps 3₁ - 3₃ to list the positions.

Step 3₁. List Direct Operator Positions.

List positions by descriptive title. Always include the suggested or tentative MOS when the input information includes MOS.

The direct operators to operate the new equipment or weapon usually will already have been suggested by maintenance engineers and developing engineers, before the QQPRI is generated. Therefore, a review of requirement 4 of the QQPRI will usually identify the number of operators along with suggested MOS and descriptive titles.

Sometimes the information may be incomplete. There may only be a description of the item. There may be task descriptive data for operators. From the available information, list operator positions on the worksheets.

EXAMPLE:

The first entry below is for a crew member to operate the new Meteorological Data System (MDS): AN/TMQ-31 without designation of a tentative MOS. The second entry is an example for a member of a crew to operate the MDS showing a tentative MOS and title.

<u>Operators/Crew</u>		
<u>MOS</u>	<u>Title</u>	<u>Unique Duties</u>
XXX	Crew members for Operation of MDS-AN/TMQ-31	
93F	^{OR} Field Artillery Meteorological Crew member	

Include positions that both operate and maintain.

Step 3₂. List Direct Maintainer Positions.

Direct maintainers provide maintenance at the organizational level. Identification of direct maintainers is required to complete the 3rd QQPRI requirement. List the job positions identified.

In the absence of complete data from the 3rd requirement of the QQPRI, a list of maintainer positions will have to be created. In this event, review all the materials from all available sources to include review of the full description of the equipment or weapon and generate a list of direct maintainers.

EXAMPLE:

This entry shows MOS 93F with an H1 ASI tentatively identified as appropriate for performing organizational maintenance on the MDS.

<u>Organizational</u>		
<u>MOS</u>	<u>Title</u>	<u>Unique Duties</u>
93F(H1)	FA Meteorological Maintenance Crew member	

Step 3₃. List Other Support Positions Required.

Other support positions are positions required to maintain the item and any associated equipment at the Direct Support/General Support level and at Depot level. Use the same information available in Step 3₂ to identify and list the support positions. See Section 5C for additional information on identification of support personnel.

EXAMPLE:

<u>Direct Support/General Support</u>		
<u>MOS</u>	<u>Title</u>	<u>Unique Duties</u>
41B	Topographical Instrument Repairer	

When the listing is complete, there should be a descriptive title listed on the worksheets for each job position required to operate, maintain or support the equipment or weapon. For most of the positions, there will be a suggested or tentative MOS.

Starting with the first listed operator or crew member, do one of the following:

- For a position where no MOS is indicated, go to Step 5 for procedures on checking for an existing appropriate MOS.
- For a position with a suggested or tentative MOS, go to Step 4 for procedures to confirm the MOS.

Step 4. Check/Confirm Suggested MOS.

- **Requirement:** Compare known duties and tasks for the suggested MOS for operators and maintainer positions with the MOS position specification in AR 611-201.

Step 4₁. Compare the known duties and tasks for a suggested MOS with the MOS position specifications in AR 611-201.

How is the comparison made?

The comparison is judgmental. It involves reading the MOS job specifications in AR 611-201 and deciding if they match the duties and tasks required to operate or maintain the new equipment or weapon.

Be Careful

For maintenance MOS, devote particular attention to the required levels of maintenance (i.e., organizational, DS/GS, AVUM/AVIM). The specifications in AR 611-201 must cover the needed level for the MOS to be considered.

Consider the type of performance (e.g., troubleshoot), type of equipment, kind of unit, and entry level position (e.g., 11B10).

Step 4₂. If the MOS specification matches the known duties and tasks, recommend that MOS. Add a notation on the worksheet that the match was made.

EXAMPLE:

<u>Operator/Crew</u>		
<u>MOS</u>	<u>Title</u>	<u>Unique Duties</u>
11M	Fighting Vehicle Lafayette	Perform duties specified in AR 611-201

If there is a match, you have a confirmed MOS to recommend and you can move to the next listed job position.

If there are differences between the MOS job specification in AR 611-201 and the duties and tasks required to operate or maintain the item, these differences must be specified. For a non-match, go to Step 4₃.

Step 4₃. Use the Task Structure Table to generate an organized task list to compare with the MOS job specifications in AR 611-201. As the similarity increases between the two task listings, the degree of correctness for recommending the existing MOS increases.

EXAMPLE:

A new Meteorological Data System (MDS) will replace the existing (GMD-1) system. The tasks for operator of the new MDS, identified through use of the Task Structure Table, are the same as those duties and tasks for MDS 93F described in AR 611-201. Tasks involved with balloon inflation and launching equipment, preparing and operating power generators, inflating and releasing balloons, pre-flight checks and tests of the Radiosonde are the same for both systems. Therefore, the unique duties for the operator are those duties unique to the physical and procedural operation of the new MDS.

Operator/Crew		
<u>MOS</u>	<u>Title</u>	<u>Unique Duties</u>
93F	Field Artillery Meteorological Crew Member	In addition to the duties and tasks specified in AR 611-201, the Operator will need to be taught the procedural operation of the new MDS system, emplacement and displacement procedures, execution of system pre-flight procedures for in-flight contingency tasks and procedures for handling met messages.

The outcome of Step 4 will be either:

- Confirmation that the existing MOS is correct, and so noted on the worksheet.
- The identification of differences. If few differences exist, the MOS recommendation is supported. If significant differences are detected, it may be necessary to change the MOS recommendation or establish an additional skill indicator (ASI) with the MOS. What to do for these possibilities are covered in Steps 5 and 6 of this Job Aid.

Step 5. Identify existing MOS which may be appropriate for a listed job position.

- **Requirement:** Determine if there is an existing MOS which is appropriate in following MOS situations:
 - a. No suggested or tentative MOS with position listing on worksheet.
 - b. No MOS is suggested in QQPRI requirement 3 and 4.
 - c. An MOS suggested under QQPRI requirement 3 and 4 is deemed inappropriate in Step 2.

In these instances, use the MOS Structure Table to determine whether an existing MOS, as described in AR 611-201, is appropriate for the duties and tasks associated with operator, maintainer, and support positions for the new equipment or weapon.

If, in following the procedures for use of the MOS Structure Table none of the specific level categories is appropriate, a new MOS may be needed. This situation is very rare and it is much more likely that a MOS exists which will be appropriate. Be sure to search all likely categories and titles for a candidate MOS and eliminate each based on a review of the job position description in AR 611-201. If the case requires a new MOS, the Task Structure Table can be used to generate a task list for the creation of a new recommended MOS job description. Specifically, the task categories circled on the table will constitute the basis for the new MOS.

When recommending a new MOS, the job specifications must be drafted like those in AR 611-201. Refer to Section 5D of this manual for special procedures for drafting MOS specifications.

CAUTIONS: A problem may arise when a system-specific MOS is the only one appropriate. While most MOS are generic, some MOS are defined in terms of specific systems. These MOS specify the system in their title (e.g., 24J-Improved Hawk Pulse Radar Repairer). Such system-specific MOS are excluded from consideration for the new and developmental equipment or weapon. However, if the requirements are similar, that MOS might be a source of personnel. When a developmental system falls in a category where system-specific MOS are the rule, no existing MOS is likely to be appropriate, and a new MOS will probably be required.

Step 6. Determine need for Additional Skills Indicator (ASI).

- **Requirement:** Determine if adding an Additional Skill Indicator (ASI) to an existing MOS will make that MOS appropriate for the operation or maintenance of the new item.

While an existing MOS may be appropriate for manning a new item or system, it may not correspond exactly with the new duties and tasks required. As a result, one option is to supplement the MOS with an ASI. The ASI specifies the skills needed for the new item and is appropriate when the new item requires most of the skills of an existing MOS, plus different ones. Specifically, an ASI is appropriate when there are many added (+) tasks, but few deleted (-) tasks, and when changed (✓) tasks do not require contradictory techniques. This can be determined through use of the Task Structure Table.

An ASI should be used when only a few of the existing MOS holders will have to perform the tasks (e.g., equipment that is unit- or MACOM-specific). Current practice allows as many as 6 ASI per MOS.

Determining the need for ASI completes an MOS selection procedures cycle. Be sure to cycle through Steps 4, 5, and 6 for each job and MOS listed in Step 3.

When finished there should be one of the following for each job identified in Step 1:

- For a verified match in MOS—
MOS (indicate any ASI) performs duties and tasks as listed in AR 611-201.
- For MOS which does not include system unique duties—
MOS (indicate any ASI) (system-unique duties).
Other duties and tasks are listed in AR 611-201.
- For an MOS needing revision—
Revised MOS (indicate any current or new ASI).
Draft proposed job specifications are attached at enclosure (specify).
Other duties and tasks are listed in AR 611-201.
- For a new MOS, ASI—
New MOS XXX (any new ASI). Draft proposed job specifications are at enclosure (specify).

These items are used to complete requirements 5 and 6 of the QQPRI.

TABLE 5B.1
MOS STRUCTURE TABLE
Part 1: Direct Operators and Maintainers

Category	Title	MOS	Page in AR 611-201	Functions				
				Operate	O	S	Maintain (DS GS D) ¹	
1.1	Aviation							
1.1.1	Aircraft							
1.1.1.1	Operator (Officer and Warrant Officer (WO))							
1.1.1.2	Maintenance							
1.1.1.2.1	By Type Aircraft							
	Utility Helicopter Repairer	67N	3-67-9	X	X	X	X	X
	Utility/Cargo Airplane Repairer	67G	3-67-5	X				
	Observation/Scout Helicopter Repairer	67V ²	3-67-7	X	X	X	X	X
	Tactical Transport Helicopter Repairer	67T	3-67-39	X	X	X	X	X
	Attack Helicopter Repairer	67Y	3-67-11	X	X	X	X	X
	Medium Helicopter Repairer	67U	3-67-19	X	X	X	X	X
	Heavy Lift Helicopter Repairer	67X	3-67-15	X	X	X	X	X
	Observation Airplane Repairer	67H	3-67-41	X				
1.1.1.2.2	By Aircraft Component ²							
	Aircraft Weapon Systems	68M	3-67-37		X			
	Aircraft Fire Control Repairer	68J	3-67-35		X			
	Aircraft Power Plant Repairer	68B	3-67-21		X			
	Aircraft Powertrain Repairer	68D	3-67-23		X	X	X	X
	Aircraft Electrician	68F	3-67-25		X	X	X	X
	Aircraft Structural Repairer	68G	3-67-27		X	X	X	X
	Aircraft Pneudraulics Repairer	68H	3-67-31		X	X	X	X

¹Maintenance column headings: O = Organizational maintenance, S = Support, DS = Direct Support, GS = General Support, D = Depot. Support level maintenance (S) implies DS and GS, and sometimes depot maintenance. It may also imply support other than maintenance at one of these levels.

²Aircraft component repairers were classified as support level maintenance personnel, even though this generally was not explicit in the MOS specification.

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE

Part 1: Direct Operators and Maintainers (Continued)

Category	Title	MOS	Page in AR 611-201	Functions				
				Operate	O	S	Maintain (DS GS D)	
1.1.2	Associated Equipment							
1.1.2.1	Ground Control Equipment ¹							
	ATC Radar Controller	93J	3-64-47	X				
	Ground Controlled Approach Radar Repairer	26D	3-28-5		X	X		X
1.1.2.2	On Board Equipment							
1.1.2.2.1	Sensors							
	Aerial Electronic/Warning Defense Equipment Repairer	26K	3-28-13		X	X	X	X
	Aerial Photoactive Sensor Repairer	26F	3-28-35		X	X	X	X
	Aerial Surveillance Sensor Repairer	26E	3-28-9		X	X	X	X
	Aerial Sensor Specialist (OV-ID) Operator	96H	3-96-23	X				
1.1.2.2.2	Avionics							
	Avionic Mechanic	35K	3-38-23		X	X	X	X
	Avionic Communication Equipment Repairer	35L	3-28-25			X	X	X
	Avionic Navigation and Flight Control Equipment Repairer	35M	3-28-27		X	X	X	X
	Avionic Special Equipment Repairer	35R	3-28-31		X	X	X	X
1.2	Artillery/Ballistic/Land Combat Missile Systems							

¹MOS associated with radar that are not components of specific systems are classified functionally under Aviation (air traffic control), Field Artillery (target acquisition), and Air Defense (AD Radar). Miscellaneous radars are covered under Electronic Sensor (Radar).

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE
Part 1: Direct Operators and Maintainers (Continued)

Category	Title	MOS	Page in AR 611-201	Functions				
				Operate	O	S	Maintain (DS GS D)	
1.2.1	Specific Systems							
	PERSHING Missile Crewmember	15E	3-13-19	X				
	PERSHING Electronics Material Specialist	21G	3-27-5		X			
	PERSHING Electronics Repairer	21L	3-27-7			X		
	PERSHING Electrical Mechanical Repairer	46N	3-27-9			X	X	X
	Multiple Launch Rocket Systems Crewmember	13M	3-13-41	X				
	MLRS Repairer	27M	3-27-39		X			
	MLRS/LANCE Operation/Fire Direction Specialist	15J	3-13-23	X				
	Land Combat Support System Test Specialist/LANCE Repairer	27B	3-27-11		X		X	X
	LANCE Missile Crewmember	15D	3-13-17	X				
1.2.2	FA Target Acquisition ¹							
	Field Artillery Target Acquisition Specialist	17C	3-13-27	X				
	Field Artillery Radar Crewmember	17B	3-13-25	X				
	Field Artillery Firefinder	13R	3-13-39	X				
	Field Artillery Meteorological Crewmember	93F	3-13-33	X				

¹MOS associated with radar that are not components of specific systems are classified functionally under Aviation (air traffic control), Field Artillery (target acquisition), and Air Defense (AD Radar). Miscellaneous radars are classified under Electronic Sensors (Radar).

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE
Part 1: Direct Operators and Maintainers (Continued)

Category	Title	MOS	Page in AR 611-201	Functions				
				Operate	O	S	Maintain (DS GS D)	
1.2.3	TACFIRE Operations Specialist	13C	3-13-35	X				
	Tactical Fire Control Systems Repairer	45G	3-63-81		X	X	X	
	Cannon Fire Direction Specialist	13E	3-13-7	X				
	Field Artillery Computer Repairer ¹	34Y	3-74-33		X	X	X	X
	Cannon							
	Cannon Crewman	13B	3-13-5	X	X	X	X	
	Fire Control Instrument Repairer ¹	41C	3-63-43		X	X	X	
	Artillery Repairer	45L	3-68-49			X	X	
	Self-Propelled Field Artillery Turret Mechanic	45D	3-63-55		X			
	Self-Propelled Field Artillery System Mechanic	63D			X			
1.3	Armor ^{1,2}							
	M48-M60 Armor Crewman	19E	3-19-7	X				
	M60A1/A3 Tank System Mechanic	63N	3-68-67		X			
	M60 Tank Turret Mechanic	45N	3-63-65		X			
	Tank Turret Repairer	45K	3-63-47			X	X	
	M60A2 Tank System Mechanic	63R			X			
	M60A2 Tank Turret Mechanic	45R			X			
	M1 Abrams Tank Turret Mechanic	45E	3-63-59		X			
	M1 Abrams Tank Systems Mechanic	63E	3-63-61		X			
	M1 Abrams Armor Crewman	19K	3-19-21	X				

¹Fire control computers for both Armor and Artillery maintained by 34Y (FA, Target Acquisition).

²Fire control instrument repairer (41C) maintains for Armor as well as FA cannon.

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE
Part 1: Direct Operators and Maintainers (Continued)

Category	Title	MOS	Page in AR 611-201	Functions				
				Operate	O	S	Maintain (DS GS D)	
1.4	Infantry							
	Infantryman	11B	3-11-5	X				
	Indirect Fire Infantryman	11C	3-11-9	X				
	Fighting Vehicle Infantryman	11M	3-11-13	X				
	Cavalry Scout ¹	19D	3-19-5	X				
	Improved TOW Vehicle/Infantry Fighting Vehicle/Cavalry Fighting Vehicle Turret Mechanic	45T ¹	3-63-75		X			
	Improved TOW Vehicle/Infantry Fighting Vehicle/Cavalry Fighting Vehicle System Mechanic	63T	3-63-77		X			
	Heavy Anti-Armor Weapons Infantryman	11H	2-11-11	X				
	TOW/DRAGON Repairer	27E	3-27-15			X	X	X
	SHILLELAGH Repair	27H	3-27-21					
	Air Defense							
	Light AD Systems							
	VULCAN Repairer	27F	3-27-17				X	X
	VULCAN System Mechanic	24M	3-27-25		X			
	ADA Short Range Gunnery Crewman	16R	3-16-19	X				
1.5	ADA Short Range Missile Crewman	16P	3-16-15	X				
	CHAPARRAL System Mechanic	24N	3-27-27	X				
	CHAPARRAL/REDEYE Repairer	27G	3-27-19			X	X	X
	MANPADS Crewman	16S	3-16-25	X				

¹Cavalry Scout is listed under Infantry because of similarity of duties, and tasks, even though it is part of Armor CMF.

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE
Part 1: Direct Operators and Maintainers (Continued)

Category	Title	MOS	Page In AR 611-201	Functions				
				Operate	O	S	Maintain (DS)	GS D)
1.5.2	AD Radar (Separate from Systems) ¹							
	Defense Acquisition Radar Operator	16J	3-16-23	X				
	Defense Acquisition Radar Mechanic	24P	3-23-21		X			
	Air Defense Radar Repairer	26H	3-23-13			X	X	X
1.5.3	Forward Area Alerting Radar Repairer	27N	3-27-31			X	X	X
	AD Command and Control Systems							
	AN/TSQ-73 Air Defense Artillery							
	Command & Control System Operator							
1.5.4	Repairer	25L	3-23-71	X				
	Operations Central Repairer							
	(AN/TSQ-38)	25J	3-23-59		X	X	X	X
	AD Missile Systems							
	PATRIOT Missile Crewmember	16T	3-16-27	X				
	PATRIOT Operator and System							
	Mechanic	24T	3-23-73	X	X			
	ROLAND Crewmember	16G	3-16-29	X				
	ROLAND Mechanic	24S	3-27-33			X	X	X
	ROLAND FMTS Repairer	27D	3-27-37			X	X	X
	ROLAND Repairer	27C	3-27-35		X			
	HAWK Missile Crewmember	16D	3-16-11	X				
	HAWK Fire Control Crewmember	16E	3-16-13	X				
	Improved HAWK Firing Section							
	Mechanic	24C	3-23-39		X			

¹Radars associated with specific functions but not specific systems are for Aviation (air traffic control), Field Artillery (target acquisition), and Air Defense (AD Radar). Miscellaneous radars are covered under Electronic Sensor (Radar).

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE

Part 1: Direct Operators and Maintainers (Continued)

Category	Title	MOS	Page in AR 611-201	Functions				
				Operate	O	S	Maintain (DS GS D)	
	Improved HAWK Information Coordination Central Mechanic	24G	3-23-41		X			
	Improved HAWK Fire Control Mechanic	24E	3-23-43			X	X	X
	Improved HAWK Pulse Radar Repairer	24J	3-23-47			X	X	X
	Improved Fire Control Repairer	24H	3-23-45			X	X	X
	Improved HAWK Launcher/Mechanical Systems Repairer	24L	3-23-51			X	X	X
	Improved HAWK Fire Continuous Wave Radar Repairman	24K	3-23-49			X	X	X
	Improved HAWK Maintenance Chief	24V	3-23-53			X	X	X
	Improved HAWK Master Mechanic	24R	3-25-75		X			
	HERCULES Fire Control Crewmember	16C	3-16-9	X				
	HERCULES Missile Crewmember	16B	3-16-7	X				
	NIKE HERCULES Fire Control Mechanic	24Q	3-23-17					X
	HERCULES Electronics Mechanic	24U	3-23-19					X
	NIKE HERCULES Missile Launcher Repairer	22N	3-23-7			X	X	X
	NIKE High Power Radar-Simulator Repairer	23U	3-23-11			X	X	X
	NIKE Track Radar Repairer	23N	3-23-9			X	X	X
	NIKE Test Equipment Repairer	22L	3-23-5		X		X	X
	NIKE Maintenance Chief	23W	3-23-15		X		X	X
1.6	Electronic Sensors (Excluding AD, Airborne Systems)							
1.6.1	Radar ¹							

¹MOS associated radars that are not components of specific systems are classified under the function they serve. Therefore, see also Aviation (air traffic control), Field Artillery (target acquisition), and Air Defense (AD Radar). Miscellaneous radars are covered under Electronic Sensors (Radar).

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE
Part 1: Direct Operators and Maintainers (Continued)

Category	Title	MOS	Page in AR 611-201	Functions				
				Operate	O	S	Maintain (DS GS D)	
1.6.2	Ground Surveillance Radar Crewman	17K	3-96-31	X				
	Weapons Support Radar Repairer	26B	3-29-5		X	X	X	X
	Combat Area Surveillance Radar Repairman	26C	3-29-7		X	X	X	X
	EW/SIGINT							
	EW/SIGINT Emitter Identifier/Locator	05D	3-98-7	X				
1.6.3	EW/SIGINT Morse Interceptor	05H	3-98-5	X				
	EW/SIGINT Noncommunications Interceptor	98J	3-98-19	X				
	EW/SIGINT Non-Morse Interceptor	05K	3-98-11	X				
	EW/SIGINT Voice Interceptor	98G	3-98-21	X				
	EW/Intercept Systems Repairer	33S	3-33-5	X				
1.7	Other Sensors							
	Unattended Ground Sensor Specialist	17M	3-96-35	X				
	Communication Operator/Installer							
	Radio Operator	05B	3-31-5	X				
	Tactical Wire Operations Specialist	36K	3-31-45	X				
1.7.1	Wire Systems Installer	36C	3-31-37	X				
	Data Communications Switching Center Specialist	72G	3-31-53	X				
	Telecommunications Center Operator	72E	3-31-47	X				
	Strategic Satellite Microwave Systems Operator	26R	3-31-13	X				
	Tactical Satellite/Microwave Systems Operator	26Q	3-31-9	X				

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE
Part 1: Direct Operators and Maintainers (Continued)

Category	Title	MOS	Page in AR 611-201	Functions				
				Operate	O	S	Maintain (DS	GS D)
1.7.2	Multichannel Communications Equipment Operator	31M	3-31-17	X				
	Radio Teletype Operator	05C	3-31-7	X				
	Station Technical Controller	32D	3-31-33	X				
	Tactical Circuit Controller	31N	3-31-21	X				
	Tactical Communications System Operator Mechanic	31V	3-31-25	X	X			
	Central Office Operations Operator	72H	3-31-57	X				
	Maintenance							
	Component Repairer							
	Field Radio Repairer	31E	3-29-23		X	X	X	X
	Systems Repairer							
1.7.2.1	SATCOM Equipment Repairer	26Y	3-29-19	X	X	X	X	X
	Fixed Ciphony Repairer	32F	3-29-29		X	X	X	
1.7.2.2	Fixed Cryptographic Equipment Repairer	32G	3-29-43					
	Fixed Station Radio Repairer	32H	3-29-47		X	X	X	
	Teletypewriter Repairer	31J	3-19-27		X	X	X	X
	Electronic Switching Systems Repairer	36L	3-29-67					
	Dial/Manual Central Office Repairer	36H	3-29-63		X	X	X	X
	Field General COMSEC Repairer	31S	3-29-31		X	X	X	
	Field Systems COMSEC Repairer	31T	3-29-35			X	X	
	Strategic Microwave Systems Repairer	26V	3-29-15		X	X	X	X
	Tactical Microwave Systems Repairer	26L	3-29-11		X	X	X	X
	Antenna Installer Specialist	36D	3-31-41		X	X	X	
	Cable Splicer	36E	3-31-43	X				

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE
Part 1: Direct Operators and Maintainers (Continued)

Category	Title	MOS	Page In AR 611-201	Functions				
				Operate	O	S	Maintain (DS GS D)	
1.8	Engineering (Combat, General and Topographic) ¹							
	Engineer Tracked Vehicle Crewman (Combat)	12F	3-12-23	X				
	Track Vehicle Mechanic	63Y	3-63-37		X			
	Track Vehicle Repairer	63H	3-63-23			X	X	X
	Heavy Construction Equipment Operator	62E	3-51-45	X				
	Lifting and Loading Equipment Operator	62F	3-51-47	X				
	Quarrying Specialist	62G	3-51-37	X				
	Concrete and Asphalt Equipment Operator	62H	3-51-39	X				
	General Construction Equipment Operator	62J	3-51-41	X				
	Construction Equipment Repairer Specialist	62B	3-63-15		X	X	X	X
	Topographic Instrument Repair Specialist	41B	3-81-5		X	X	X	X
1.9	Transportation and Power Generation Maintenance							
1.9.1	Ground Transport, Generators							
	Motor Transport Operator	64C	3-64-5	X				
	Light Wheel Vehicle/Power Generator Mechanic ²	63B	3-63-33		X			

¹Fuel and electrical systems for engineering vehicles are maintained by 63G, under transportation.

²Tactical power generators are maintained by MOS 63B, 52D, and 63G listed under transportation.

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE

Part 1: Direct Operators and Maintainers (Continued)

Category	Title	MOS	Page In AR 611-201	Functions			
				Operate	O	S	Maintain (DS GS D)
1.9.2	Heavy Wheel Vehicle Mechanic	63S	3-63-31		X		
	Wheel Vehicle Repairer	63W	3-63-21			X	X
	Fuel and Electrical Systems Repairer ^{1,2}	63G	3-63-27			X	X
	Power Generation Equipment Repairer ²	52D	3-62-19			X	X
1.10	Marine Transport						
	Watercraft Operator	61B	3-64-13	X			
	Marine Hull Repairer	61F	3-64-21				
	Watercraft Engineer	61C	3-64-17		X	X	X
1.10.1	Special Support Factors						
	Utilities						
	Utilities Equipment Repairer	52C	3-63-13		X	X	X
	Power Generator ² (see 1.9.1)						
1.10.2	Instrument Maintenance						
	Electronic Instrument Repairer	35B	3-29-55			X	X
	Calibration Specialist	35H	3-29-59				
	Special Electronic Devices Repairer	35E	3-29-57		X	X	X
1.10.3	Automatic Test Equipment Repairer	35C	3-29-71		X	X	X
	Ammunition						
	Fuel (Petroleum)						
	Data Processing, Computers & Office						
1.10.4	Machines						
	Operators						
	Computer/Machine Operator	74D	3-74-7	X			

¹Fuel and electrical systems for engineering vehicles are maintained by 63G, under transportation. "Power Generation" is included as a functional category here only to ensure reference to the other category when appropriate.

²Tactical power generators are maintained by MOS 63B, 52D, and 63G listed under transportation.

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE
Part 1: Direct Operators and Maintainers (Continued)

Category	Title	MOS	Page in AR 611-201	Functions			
				Operate	O	S	Maintain (DS GS D)
1.10.6.2	Maintenance						
	DSTE Repairer	34F	3-74-23			X	X
	Punchcard Machine Repairer	34B	3-74-19		X	X	X
	Office Machine Repairer	41J	3-63-5			X	X
	Decentralized Automated Service						
	Support Computer Repairer	34C	3-74-31		X	X	X
1.10.7	ADMSE Repairer	34H	3-74-29			X	X
	IBM 360 Repairer	34K	3-74-27			X	X
	NCR 500 Computer Repairer	34E	3-74-21			X	X
	Chemical						
	Smoke Operations Specialist	54C	3-54-5	X	X		
	NBC Specialist	54E	3-54-7	X	X		
1.10.8	Miscellaneous Maintenance (used by many branches)						
	Metal Worker						
	Machinist	44B	3-63-7				
	Small Arms Repairer	44E	3-63-9				
	Quartermaster & Chemical Equipment Repairer	45B	3-63-45			X	
		63J	3-63-29	X	X	X	X
1.10.9	Materiel Logistics						
1.10.10	Intelligence						
1.11	General Supervisors						

TABLE 5B.1
MOS STRUCTURE TABLE

Part 2: Associated Functions (MOS)¹

Category	Title	MOS	Page in AR 611-201
2.1	Aviation ²		
2.1.1	Aircraft		
2.1.1.2	Maintenance		
	Aircraft Maintenance Senior Sergeant	67Z	3-67-13
	Aircraft Quality Supervisor	67W	3-67-17
2.1.1.2.1	By Type		
2.1.1.2.2	By Component		
	Aircraft Components Repair Supervisor	68K	3-67-33
2.1.2.1	Ground Control Equipment		
	Air Traffic Control (ATC) Tower Operator	93H	3-64-45
	Meteorological Observer	93E	3-64-49
	Flight Operations Coordinator	71P	3-64-43
2.1.2.2	On Board Equipment		
	Parachute Rigger	43E	3-76-27
2.1.2.2.1	Sensors		
2.1.2.2.2	Avionics		
	Avionic Equipment Maintenance Supervisor	35P	3-28-29
2.2	Artillery		
	Field Artillery Senior Sergeant	13Z	3-13-13
2.2.1	Specific Systems		
	Cannon/Missile Senior Sergeant	13Y	3-13-11
2.2.2	FA Target Acquisition		
	Field Artillery Target Acquisition Senior Sergeant	13W	3-13-9
	Fire Support Specialist	13F	3-13-35
	Field Artillery Surveyor	82C	3-13-29
2.2.3	Cannon		
2.2.3.1	Weapon System		
	Armament/Fire Control Maintenance Supervisor	45Z	3-63-51
2.2.3.2	Vehicle Maintenance		
2.3	Armor		
	Armor Senior Sergeant	19Z	3-19-11
2.4	Infantry		
2.5	Air Defense		
	Ballistic/Land Combat/Light Air Defense Systems		
	Maintenance Chief	27Z	3-27-29
	Air Defense Artillery Senior Sergeant	16Z	3-16-5
	ADA Operations and Intelligence Assistant	16H	3-16-21

¹Numbering of sections corresponds with Part 1.

²Air Transport functions are coordinated by transportation personnel.

(Continued)

**TABLE 5B.1
MOS STRUCTURE TABLE**

Part 2: Associated Functions (MOS) (Continued)

Category	Title	MOS	Page in AR 611-201
2.5.1	Light AD Systems		
2.5.2	AD Radar (separate from systems)		
2.5.3	AD Command and Control Systems		
2.6	Electronic Sensors (excluding AD)		
2.6.1	Radar		
2.6.2	EW/SIGINT		
	EW/SIGINT Chief	98Z	3-98-25
	EW/SIGINT Analyst	98C	3-98-17
2.6.3	Other Sensors		
2.7	Communication		
	Communications-Electronics Operations Chief	31Z	3-31-29
2.7.1	Operator/Installer		
	Signal Security Specialist	05G	3-98-13
2.7.2	Maintenance		
2.8	Engineering		
2.8.1	Combat Engineering		
	Atomic Demolition Munitions Specialist	12E	3-12-17
	Combat Engineer	12B	3-12-5
	Bridge Crewman	12C	3-12-11
	Combat Engineering Senior Sergeant	12Z	3-12-21
2.8.2	General Engineering		
	General Engineering Supervisor	51Z	3-51-23
2.8.2.1	Construction Engineering		
	Construction Engineering Supervisor	51H	3-51-31
	Construction Equipment Supervisor	62N	3-51-43
	Plumber	51K	3-51-51
	Electrician	51R	3-51-15
	Construction Surveyor	82B	3-51-7
	Carpentry and Masonry Specialist	51B	3-51-29
	Structures Specialist	51C	3-51-33
2.8.2.2	Technical Engineering		
	Technical Engineering Supervisor	51T	3-51-9
	Material Quality Specialist	51G	3-51-5
	Technical Drafting Specialist	81B	3-51-11
	Construction Supervisor	82B	
2.8.2.3	Power Engineering		
	Transmission and Distribution Specialist	52G	3-51-53
	Prime Power Production Specialist	52E	3-51-13
2.8.2.4	Specialty Engineering		
	Water Treatment and Plumbing Systems Specialist	51N	3-51-19
	Firefighter	51M	3-51-25
	Diver	00B	3-51-35

(Continued)

**TABLE 5B.1
MOS STRUCTURE TABLE**

Part 2: Associated Functions (MOS) (Continued)

Category	Title	MOS	Page in AR 611-201
2.8.3	Topographic Engineering		
	Photo and Layout Specialist	83E	3-81-21
	Photolithographer	83F	3-81-17
	Topographic Engineering Supervisor	81Z	3-81-15
	Topographic Surveyor	82D	3-81-7
	Cartographer	81C	3-81-11
2.9	Transportation ¹		
	Cargo Specialist	57H	3-64-9
2.9.1	Surface Operations		
	Transportation Senior Sergeant	64Z	3-64-11
	Traffic Management Coordinator	71N	3-64-7
2.9.2	Marine Operations		
	Marine Senior Sergeant	61Z	3-64-23
2.10	Special Support Factors		
2.10.1	Utilities		
2.10.2	Power Generation		
2.10.3	Instrument Maintenance		
2.10.4	Ammunition		
	Ammunition Supervisor	55Z	3-55-17
2.10.4.1	Nuclear		
	Nuclear Weapons Maintenance Specialist	55G	3-55-13
	Nuclear Weapons Electronics Specialist	35F	3-55-19
2.10.4.2	Conventional		
2.10.4.2.1	Disposal		
	Explosive Ordnance Disposal Specialist	55D	3-55-9
2.10.4.2.2	Supply and Accounting		
	Ammunition Inspector	55X	3-55-15
	Ammunition Stock Control & Accounting Specialist	55R	3-55-21
	Ammunition Specialist	55B	3-55-5
2.10.5	Fuel (petroleum)		
	Petroleum Laboratory Specialist	92C	3-92-11
	Petroleum Supply Specialist	76W	3-92-5
2.10.6	Data Processing, Computer, and Office Machines		
	Data Processing NCO	74Z	3-74-15
	Programmer/Analyst	74F	3-74-11
2.10.6.1	Operators		
2.10.6.2	Maintenance		
	ADP Maintenance Supervisor	34Z	3-74-17

¹Air transport functions are coordinated by transportation personnel.

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE

Part 2: Associated Functions (MOS) (Continued)

Category	Title	MOS	Page in AR 611-201
2.10.7	Chemical		
	Chemical Senior Sergeant	54Z	3-54-13
	Chemical Laboratory Specialist	92D	3-54-11
2.10.8	Miscellaneous Maintenance		
2.10.9	Material Logistics		
	Material Control and Accounting Specialist	76P	3-76-13
2.10.10	Intelligence		
	Counterintelligence Agent	97B	3-96-5
	Interrogator	96C	3-96-9
	Image Interpreter	96D	3-96-17
	Image Interpreter	96D	3-96-17
	Area Intelligence Specialist	97C	3-96-37
	Intelligence Analyst	96B	3-96-13
	Intelligence Senior Sergeant	96Z	3-96-21
2.11	General Supervisors		
	Communications-Electronics Maintenance Chief	32Z	3-29-51
	Mechanical Maintenance Supervisor	63Z	3-63-39
	Senior Supply Sergeant	76Z	3-76-26.3

TABLE 5B.1
MOS STRUCTURE TABLE

Part 3: MOS Not Related to Categories of Equipment and MOS for Reserve Forces

Category	Title	MOS	Page in AR 611-201
3.1	Administrative		
3.1.1	General Purpose		
	Secretary	71C	3-71-7
3.1.2	Specific Functions		
3.1.2.1	Finance		
	Finance Senior Sergeant	73Z	3-71-37
	Finance Specialist	73C	3-71-31
	Accounting Specialist	73D	3-71-35
3.1.2.2	Legal		
	Legal Clerk	71D	3-71-39
	Court Reporter	73C	3-71-43
3.1.2.3	Other		
	Equal Opportunity NCO	00U	3-71-47
	Chapel Activities Specialist	71M	3-71-15
	Administrative Specialist	71L	3-71-9
	Physical Activity Specialist	03C	3-71-5
	Correctional Specialist	95C	3-95-11
	Graves Registration Specialist	57F	3-76-35
3.2	Personnel		
	Personnel Actions Specialist	75E	3-71-25
	Personnel Administration Specialist	75B	3-71-19
	Personnel Information System Management Specialist	75F	3-71-49
	Personnel Management Specialist	75C	3-71-21
	Personnel Records Specialist	75D	3-71-23
	Personnel Sergeant	75Z	3-71-27
3.3	Service		
	Food Service Specialist	94B	3-94-5
	Military Police	95B	3-95-5
	Club Manager	00J	3-71-45
	Fabric Repair Specialist	43M	3-76-31
	Laundry and Bath Specialist	57E	3-76-33
	Unit Supply Specialist	76Y	3-76-25
	Subsistence Supply Specialist	76X	3-76-21
3.4	Special Status		
	Command Sergeant Major	00Z	1-10
	Commissioned Officer Candidate	09S	14-1
	Warrant Officer Candidate	09W	14-1
	College Trainee	09C	14-1
	Recruiter	00E	3-79-5
	Reenlistment NCO	79D	3-95-9
	Special Duty Assignment	00D	14-1
	Special Agent	95D	3-95-15

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE

Part 3: MOS Not Related to Categories of Equipment and MOS for Reserve Forces (Continued)

Category	Title	MOS	Page in AR 611-201
3.5	Medical		
	Psychiatric Specialist	91F	3-19-19
	Environmental Health Specialist	91S	3-91-53
	Operating Room Specialist	91D	3-91-15
	Cardiac Specialist	91N	3-91-35
	Optical Laboratory Specialist	42E	3-91-61
	Clinical Specialist	91C	3-91-11
	ENT Specialist	91U	3-91-37
	Nuclear Medicine Specialist	91W	3-91-43
	Animal Care Specialist	91T	3-91-56.2
	Orthopedic Specialist	91H	3-91-23
	Eye Specialist	91Y	3-91-39
	Dental Laboratory Specialist	42D	3-91-5
	Dental Specialist	91E	3-91-7
	Occupational Therapy Specialist	91L	3-91-33
	Patient Administration Specialist	71G	3-91-63
	Veterinary Specialist	91R	3-91-57
	Behavioral Sciences Specialist	91G	3-91-21
	Biological Sciences Assistant	01H	3-91-79
	Biomedical Equipment Specialist, Basic	35G	3-91-67
	Biomedical Equipment Specialist, Advanced	35U	3-91-77
	X-Ray Specialist	91P	3-91-45
	Physical Therapy Specialist	91F	3-91-31
	Cytology Specialist	92E	3-91-81
	Orthotic Specialist	42C	3-91-25
	Respiratory Specialist	91V	3-91-41
	Pharmacy Specialist	91Q	3-91-47
	Hospital Food Service Specialist	94F	3-91-9
	Medical Laboratory Specialist	92B	3-91-49
	Medical Specialist	91B	3-91-27
	Practical Nurse	91C	3-91-11
	Medical Supply Specialist	76J	3-76-5
3.6	Public Affairs and Audio Visual		
	Audio TV Specialist	84F	3-84-19
	Audio-Visual Equipment Repairer	41K	3-84-7
	Journalist	71Q	3-84-9
	Broadcast Journalist	71R	3-84-11
	Public Affairs/Audiovisual Chief	84Z	3-84-23
	Radio/Television Systems Specialist	26T	3-84-5
	Motion Picture Specialist	84C	3-84-17
	Illustrator	81E	3-84-13
	TV/Radio Broadcast Operations Chief	84T	3-84-21
	Still Photographic Specialist	84B	3-84-15

(Continued)

TABLE 5B.1
MOS STRUCTURE TABLE

Part 3: MOS Not Related to Categories of Equipment and MOS for Reserve Forces (Continued)

Category	Title	MOS	Page in AR 611-201
3.7	Band		
	Woodwind Group Leader	02Q	3-97-15
	Percussion Player	02M	3-97-7
	Oboe Player	02H	3-97-7
	Trombone Player	02E	3-97-7
	Tuba Player	02F	3-97-9
	Saxophone Player	02L	3-97-7
	Enlisted Band Leader	02Z	3-97-17
	Special Bandperson	02S	3-97-19
	French Horn Player	02D	3-97-7
	Cornet or Trumpet Player	02B	3-97-7
	Percussion Group Leader	02R	3-97-15
	Clarinet Player	02J	3-97-7
	Piano Player	02N	3-97-11
	Guitar Player	02T	3-97-13
	Baritone or Euphonium Player	02C	3-97-7
	Bassoon Player	02K	3-97-7
	Brass Group Leader	02P	3-97-15
	Flute or Piccolo Player	02G	3-97-7
3.8	Reserve Forces MOS		
	Railway Car Repairer (RESERVE FORCES)	65D	3-64-29
	Railway Movement Coordinator (RESERVE FORCES)	65K	3-64-39
	Locomotive Electrician (RESERVE FORCES)	65F	3-64-27
	Locomotive Operator (RESERVE FORCES)	65H	3-64-35
	Locomotive Repairer (RESERVE FORCES)	65B	3-64-25
	Aerial Sensor Specialist (OV-IB/C/RESERVE FORCES)	17L	3-96-27
	Aerial Surveillance Photographic Equipment Repairer (RESERVE FORCES)	41G	3-28-33
	Railway Senior Sergeant (RESERVE FORCES)	65Z	3-64-41
	Aerial Surveillance Infrared Repairer (RESERVE FORCES)	26N	3-28-21
	UNIVAC 1004-1005, DCT 9000 System Repairer	34J	3-74-25
	Railway Section Repairer (RESERVE FORCES)	65G	3-64-33
	Industrial Gas Production Specialist (RESERVE FORCES)	53B	3-51-49
	Card and Tape Writer (RESERVE FORCES)	74B	3-74-5
	Light Air Defense Artillery Crewman (RESERVE FORCES)	16F	3-16-17
	Train Crew Member (RESERVE FORCES)	65J	3-64-37
	Airbrake Repairer (RESERVE FORCES)	65E	3-64-31
	Aerial Surveillance Radar Repairer (RESERVE FORCES)	26M	3-28-7

TABLE 5B.2
TASK STRUCTURE TABLE

Part 1: Common Soldiers Tasks (Excluding firing weapons and communications)

<u>Categories</u>		<u>Examples</u>
I.	Construction	
	A. Individual positions	Constructs individual fighting positions.
	B. Unit positions	Unit Defense. Constructs fortifications, bunkers, and crew-served weapons emplacements.
	C. Cover and concealment	Employs principles of cover, concealment, and camouflage.
	D. Breaching, Bridging, Demolition	Assists in breaching minefields and obstacles.
II.	Other Unit Functions	
	A. Guard duty, Security	Performs outpost and security guard duties, using passwords and countersign.
	B. Miscellaneous tasks	Performs drill and ceremonies and other post, camp and station duties as required.
III.	Patrol	
	A. Movement techniques	Employs proper dismounted movement techniques as part of a dismount team.
	B. Land Navigation	Land Navigation. Locates points on map, distinguishes topographic features, and uses compass.
	C. Reconnaissance	
	1. Gathering information	Collects and reports tactical information as a member of combat or reconnaissance patrol.
	2. Taking prisoners	Captures prisoners. Renders verbal reports on activities.

(Continued)

TABLE 5B.2
TASK STRUCTURE TABLE

Part 1: Common Soldiers Tasks (Excluding firing weapons and commissions) (Continued)

<u>Categories</u>		<u>Examples</u>
IV. Battlefield Survival		
A. Protection from contaminants (NBC)	Protects self, weapons and equipment from chemical and other contaminants.	
B. First Aid sanitation	Administers first aid and applies field sanitation methods.	
C. Physical readiness	Ensures highest state of physical readiness at all times.	

Table 5B.2

TASK STRUCTURE TABLE

Part: 2 Operation of Systems

Section A: Primary Functions (Vehicle operation, target engagement, and communication)

Categories	Examples
I. Vehicle Operation	
A. Watercraft operation	
B. Driving (land vehicles)	
1. Tactical driving (against threat)	Driving. Operates Infantry Fighting Vehicle (IFV) over varied terrain . . .
a. Selecting routes, firing positions.	Selects routes and defilade firing positions.
b. Driving during target engagement.	Provides a steady platform for stabilized weapons fire.
2. Transportation of people, equipment.	
a. Loading	Loads/unloads cargo and equipment onto vehicles and unloads from vehicles.
b. Transport	Transports personnel, supplies and equipment, and weapons and small arms ammunition in vehicles.
3. Guidance	
a. Visual signals	Uses and responds to visual signals.
b. Land navigation	Maintains orientation in moving vehicle by comparing terrain with map.
4. Operating ancillary equipment	Operates special purpose equipment such as bridge launching/retrieving mechanisms, lifting devices, power winches, and bulldozer moldboards.

(Continued)

TABLE 5B.2

TASK STRUCTURE TABLE

Part 2: Operation of Systems

Section A: Primary Functions (Vehicle operation, target engagement, and communication) (Continued)

<u>Categories</u>	<u>Examples</u>
5. Servicing operations	
a. Pre/post inspection, operator maintenance	Performs before/during/after operation and scheduled vehicle services.
b. Refueling	Assists in refueling and vehicle recovery operations.
c. Recovery	Assists in recovery operations for light wheeled and tracked vehicles.
II. Preparing system for operation (weapons or communication)	
A. Putting system in place	
1. Installation	Performs cabling and equipment installation and removal.
2. March order and emplacement	Performs march order and emplacement of the launchers and associated equipment.
B. Putting system into operation (not in context of installation or emplacement).	
1. Weapons and ammunition	
a. Ammunition	
(1) Missiles	Performs missile loading and unloading duties. Assists in canning and decanning and assembly of missile

(Continued)

TABLE 5B.2

TASK STRUCTURE TABLE

Part 2: Operation of Systems

Section A: Primary Functions (Vehicle operation, target engagement, and communication) (Continued)

<u>Categories</u>	<u>Examples</u>
(2) Conventional rounds	Secures, prepares, and stows ammunition for IFV turret weapons. Applies safety procedures in handling ammunition, fuses and charges.
b. Adjusting weapon tube, sights	Assists in boresighting and zeroing the 25mm Automatic Cannon . . .
2. Preparing plans	Prepares range cards. (Prepares OPORDERS, SITREP, other plans)
a. Compiling, posting, plotting of firing data	
b. Planning unit operations	
3. Activating command station (including FDC's, and control station for electronic equipment)	
a. Adjusting electronic equipment	Prepares battery computer unit for operation.
(1) Computers	Adjusts equipment for operation on desired frequency and ensures that frequency is within specified tolerance.
(2) Other electronic equipment	Operates chronograph to compute muzzle velocities.
b. Using special purpose equipment	
III. System Operation	
A. Target engagement	
1. Target acquisition	
a. Visually acquired	

(Continued)

TABLE 5B.2

TASK STRUCTURE TABLE

Part 2: Operation of Systems

Section A: Primary Functions (Vehicle operation, target engagement, and communication) (Continued)

<u>Categories</u>	<u>Examples</u>
(1) Detection, identification, discrimination	
(a) Visual detection, identification	Identifies enemy armor and other targets.
(b) Electronic discrimination	Applies knowledge of IR discrimination techniques to detect, acquire, and engage hostile targets.
(2) Ranging	
(a) Visual range estimation	Estimates ranges to targets.
(b) Using range finder	Prepares rangefinder. Determines range to target.
b. Electronically acquired (e.g., by radar)	Detects, locates and reports target data by operating radar.
2. Operating Electronic Command Station	Operates the Target Area Display System and other fire control devices.
3. Firing on Target	
a. Loading	Loads and clears machine guns.
b. Aiming, firing weapons	
(1) Missiles	Fires missiles.
(2) Mortar	Fires Mortar. Sets/lays mortar for deflection and elevation. Maintains proper sight picture. Loads and fires mortar.

(Continued)

TABLE 5B.2

TASK STRUCTURE TABLE

Part 2: Operation of Systems

Section A: Primary Functions (Vehicle operation, target engagement, and communication) (Continued)

<u>Categories</u>	<u>Examples</u>
(3) Conventional rounds	
(a) Light infantry weapons	Fires individual and crew-served weapons in defense of position.
(b) Cannon, vehicle-mounted weapons	Sets and lays for quadrant elevation.
c. Immediate action	Takes immediate action on misfire.
d. Requesting, adjusting fire support	Requests and adjusts indirect and aerial fire.
B. Communication Systems (electronic)	
1. Complete systems (transmit and receive)	
a. Common radio or wire communication	Uses radiotelephone procedures.
b. Specialized systems	
(1) Adjustments	
(a) Tuning and adjustment	Tunes, adjusts and aligns receiving and transmitting equipment for maximum performance.
(b) Antijamming	Recognizes and reports electronic countermeasures. Applies electronic countermeasures.
(2) Using designated devices or procedures	
(a) Security measures	Coordinates utilization of cryptographic or other security measures.
(b) Devices	Operates patch and test facilities and interconnect facilities as directed.

(Continued)

TABLE 5B.2

TASK STRUCTURE TABLE

Part 2: Operation of Systems

Section A: Primary Functions (Vehicle operation, target engagement, and communication) (Continued)

Categories	Examples
(c) Procedures	Performs satellite systems handover and power balancing procedure as required.
(3) Circuit control	Places spare equipment in operation during failure of on-line unit.
(a) Adapting to malfunctions	Places additional authorized circuits in operation as required by traffic load.
(b) Circuit utilization	Coordinates with local using agencies, other military service, and commercial communicating organizations in matters related to circuit performance, capabilities and utilization.
(4) Administration	Stores, processes, updates, inventories, identifies and files magnetic tapes in the tape library.
(a) Coordination with other broadcasters	Provides radar approach control services. . .
(b) Tape storage	MOSC 72H10: Operates communications equipment in support of the President, Vice President, their staffs, the Secret Service support elements of the Executive Branch of the Government.
c. Special jobs	
(1) GCA: Ground control of aircraft from radar	
(2) Civilian executive communication	

(Continued)

TABLE 5B.2

TASK STRUCTURE TABLE

Part 2: Operation of Systems

Section A: Primary Functions (Vehicle operation, target engagement, and communication) (Continued)

<u>Categories</u>		<u>Examples</u>
2. EW/SIGINT Systems (receive only)		
a. Common EW tasks		
(1) Operating basic electronic equipment		Operates basic electronic equipment configurations comprised of radio receivers, special typewriters, teletype keyboard input devices.
(2) Electronic support measures (ESM)		Performs electronic support measures (ESM) for EW operations.
b. Message Analysis		
(1) Electronic analysis to locate, identify transmitters		Employs special identification techniques (SIT) including DF/AIT to recognize, identify and locate foreign radio transmitters.
(2) Content analysis		
(a) Collecting messages of potential value		Searches radio frequencies to collect and identify target communications.
(b) Translation Language		Provides translation assistance to nonlanguage qualified analysts.
Morse Code		
(3) Conversion to ADP format		Reduces target communication data into automatic data processing (ADP) format.

TABLE 5B.2

TASK STRUCTURE TABLE

Part 2: Operation of Systems

Section B: Subordinate Functions

<u>Categories</u>		<u>Examples</u>
I. Power Generation		Starts and adjusts power units to assure delivery of power at prescribed readings.
II. Safety, First Aid, and Fire Prevention (in operating systems)		
III. Computer Operations (when not used with a combat system)		
A. Preparing equipment for operation		Prepares peripheral equipment such as mounting tapes on tape drives and loading cards on card reader/punch unit(s).
B. Operating machines		Operates tabulating equipment to prepare rosters and lists.
C. Functional analysis of wiring		Prepares wiring diagrams and wires control panels for the basic machine operations.
D. Administrative functions		
1. Scheduling		Performs functions of a scheduling clerk such as ensuring that run book/sheets are prepared, ...
2. Tape control		Performs duties of tape librarian such as logging of output tapes, pulling tapes for processing runs, ...
3. Input/Output function		Performs input/output functions such as decollating reports, booking or binding of reports.

TABLE 5B.2

TASK STRUCTURE TABLE

Part 3: Administrative, Job Guidance, and Constraints (for either operation or maintenance)

<u>Categories</u>	<u>Examples</u>
I. Administrative tasks	
A. Standard forms	Completes required operator forms and records. Prepares requests for turn-ins and repair parts.
B. Logs, records, files	Maintains station and equipment logs and records.
II. Understanding, following job guidance	
A. Using printed job aids such as TMS, FMS, schematics	Interprets use of military maps, communications charts and traffic diagrams and straight line power diagram. Reads and understands technical manuals pertaining to repair of artillery.
B. Interpreting specialized codes or signals	Interprets information on grade stakes.
C. Applying theory	Applies electrical theory to series and parallel circuitry motors and generators.
III. Constraints	
A. Complying with regulations or SOP	Applies FAA and Army air traffic rules and regulations.
B. Safeguarding classified material	Safeguards classified material through proper use, distribution, storage and destruction.

TABLE 5B.2
TASK STRUCTURE TABLE
Part 4: Maintenance

<u>Categories</u>	<u>Examples</u>
I. General Description	
A. General operator maintenance (without mention of specific actions)	
B. Generic specification of equipment maintained (usually used in combination with some action from the other categories, e.g., "troubleshoots electronic equipment.")	
	1. Electronic 2. Electrical 3. Electro-mechanical 4. Mechanical 5. Hydraulic 6. Pneumatic 7. Optical 8. Infrared 9. Digital control 10. Heat transfer 11. Training devices 12. Microwave 13. Radar 14. Laser 15. Other (list)
II. Maintenance Actions	
A. Preventive Maintenance	
	1. Inspection a. Of general appearance

(Continued)

TABLE 58.2

TASK STRUCTURE TABLE

Part 4: Maintenance (Continued)

<u>Categories</u>		<u>Examples</u>
(1) Electrical (2) Other b. By moving parts manually c. By observing in action 2. Adjustment 3. Servicing 4. Disassembly or reassembly B. Testing and Diagnostics	(1) Electrical	Visually inspects circuits for faulty insulation, poor electrical contacts, and broken or worn electrical components
	(2) Other	Inspects major components of weapons for such defects as rust, scale, looseness of sights, and condition of barrel.
	b. By moving parts manually	Operates assemblies manually to test functioning and ease of operation.
	c. By observing in action	Observes action of main electrical, hydraulic, and mechanical components for evidence of abnormal operations.
2. Adjustment 3. Servicing 4. Disassembly or reassembly B. Testing and Diagnostics	2. Adjustment	Adjusts mechanical and optical components.
	3. Servicing	Cleans, lubricates, paints and conditions.
	4. Disassembly or reassembly	
	B. Testing and Diagnostics	
1. Troubleshooting (isolation of fault to specific assembly or part) 2. Testing a. Initial and final checkout b. "Test Operates" c. Performing special test procedures 3. Precision measurement (of dimension)	1. Troubleshooting (isolation of fault to specific assembly or part)	Troubleshoots rotor system malfunctions.
	2. Testing	
	a. Initial and final checkout	Performs initial and final checkout and inspection of designated system items and their assemblies and subassemblies.
	b. "Test Operates"	Test fires weapons.
c. Performing special test procedures 3. Precision measurement (of dimension)	c. Performing special test procedures	Performs gas pressure tests.
	3. Precision measurement (of dimension)	Measures tolerances of parts with precision instruments and special tools.

(Continued)

TABLE 58.2

TASK STRUCTURE TABLE

Part 4: Maintenance (Continued)

<u>Categories</u>		<u>Examples</u>
C.	Decisions	
1.	Determination of level of repair (organizational, support)	Evaluates the condition of small arms and determines echelon of maintenance or repair required.
2.	Determination of kind of repair	
3.	Disposition of unserviceable equipment	
D.	Corrective actions	
1.	Removal, replacement	
2.	Calibration	Performs "C" level calibration and repair as authorized on designated test equipment.
3.	Repair	
a.	Overhauling	Rewires circuits.
b.	Repairing electrical system	Performs repair operations by filing, boring, grinding, and drilling with hand and power tools.
c.	Mechanical repair, fabrication	Provides technical assistance in orientation, alignment, or synchronization of ICWAR, ICC, IPCP, BTE, and IFF.
4.	Alignment (of systems with each other, and with geography)	
III.	Tools and Methods Used on Job	
A.	Using tools and test equipment	
1.	Electronic, electrical	Employs common and specialized mechanic's handtools.
2.	Mechanical	Operates Shops 2 and 3 in conjunction with other HAWK MOS personnel.
3.	Special shops	

(Continued)

TABLE 58.2

TASK STRUCTURE TABLE

Part 4: Maintenance (Continued)

<u>Categories</u>	<u>Examples</u>
4. Maintenance of test equipment a. Operator maintenance b. Other	Uses and performs user maintenance on common and special tool and ground support equipment required for helicopter maintenance and ground handling.
B. Safety practices in maintenance, and related actions	Applies safety precautions when working around high voltages and performs emergency action in the event of injury.
C. Special operation, requirements	Operates hoisting equipment to move and position heavy parts.
1. Hoisting, rigging, hauling of heavy objects	Climbs poles and operates pump equipment.
2. Climbing, or other unusual maneuvers	

TABLE 5B.2

TASK STRUCTURE TABLE

Part 5: Supervisory Functions In Maintenance

<u>Categories</u>	<u>Examples</u>
I. Direct Contributions to Unit Maintenance	
A. Scheduling work	Coordinates, plans and schedules electrical work assignments.
B. Providing guidance in work	
1. Instruction, demonstration	
a. On-the-job training (OJT)	
(1) Maintainers	Conducts on-the-job training.
(2) Operators	Assists in training of operators in operator level maintenance.
b. Helping to solve difficult problems	Gives direction and instructions in resolving complex maintenance problems. Diagnoses causes of unusual malfunctions.
2. Monitoring	
a. Inspecting products of work	Inspects work or repair crews engaged in maintenance of artillery pieces.
b. Checking work methods	Certifies airworthiness of aircraft.
	Determine faulty work practices and demonstrates proper maintenance and troubleshooting techniques.
II. Administration of Unit Maintenance	
A. Establishing, maintaining systems	
1. Programs (for effective work procedures)	Supervises the aircraft configuration control program and the spectrometric analysis program. Ensure compliance in the test measuring/diagnostic equipment calibration and recertification interval schedules.

(Continued)

TABLE 5B.2

TASK STRUCTURE TABLE

Part 5: Supervisory Functions in Maintenance (Continued)

Categories	Examples
2. Files of publications and data	Maintains reference library of technical manuals and regulations.
3. Requisitioning and spare parts	Supervises the requisitioning and stockage of supplies and repair parts.
B. Planning and reporting	Estimates man-hours, parts and cost required in repair of crash-damaged aircraft.
	Supervises the preparation of technical forms and reports.
C. Personnel functions	
1. Evaluation of personnel	Prepares evaluation reports of subordinate personnel.
2. Testing, and preparation for testing	Assists personnel in preparing for skill qualification tests.
3. Personnel actions	Recommends personnel for promotion, reduction and separation, disciplinary action and court-martial.
III. Personal Leadership Roles	
A. Special positions	Performs heavy lift helicopter crewchief duties.
B. Technical advisory service	Advises aircraft technical inspectors on maintenance practices, procedures, and techniques.

(Continued)

TABLE 5B.2
TASK STRUCTURE TABLE

Part 5: Supervisory Functions in Maintenance (Continued)

<u>Categories</u>	<u>Examples</u>
IV. Functions in Other Units	
A. Inspection	Inspects equipment of using units periodically, prepares inspection reports, and advises using units on operation and minor maintenance of equipment.
B. Mobile technical assistance	Provides technical assistance to supported units.

SECTION 5C

IDENTIFICATION OF SUPPORT PERSONNEL FOR THE FIFTH REQUIREMENT OF QQPRI

The fifth requirement of QQPRI involves listing duty positions (by MOS and descriptive title) for operation and support of the equipment. Many of these MOS are for direct operators and maintainers listed for QQPRI Requirements 3 and 4, but must also include MOS of personnel affected indirectly by the system, e.g., support personnel and supervisors.

The additional support MOS are not generally identified with support equipment, e.g., a Machinist (44E) or Metal Worker (44B), may be needed for occasional repair of the equipment but not associated directly with the developmental item or its support equipment. Many kinds of service require support chains of MOS, e.g., providing fuel requires fuel specialists to manage distribution, truck drivers to transport the fuel, and mechanics to maintain the trucks that transport the fuel. When a developmental system is apt to change fuel consumption, all of these MOS are likely to be affected. Identifying the support chains assists in generating a comprehensive list of support MOS, as exemplified by the sample on pages B-3 and B-4 of AR 71-2.

Prominent support chains of MOS are listed in Table 5C-1. When a developmental system is apt to involve these functions, use these chains to identify affected MOS. The corresponding MOS can be identified in Part 1 of the MOS Structure Selection Aid, Section 5B.

MOS for supervisory and other personnel associated with direct operators and maintainers in their units must also be identified. These are identified by noting all categories for direct operators and maintainers in Part 1 of the MOS Structure, and then locating the corresponding categories in Part 2. The supervisory MOS are located within these categories.

TABLE 5C-1
COMMON SUPPORT CHAINS OF MOS

Prominent support chains are identified in the following list, which is used in conjunction with Table 5B-1 (MOS Structure) to determine the MOS involved:

1. **Fuel.** Fuel specialist MOS are listed in Section 2.10.5 of Part 2 of Table 3-1. This chain would also involve transportation for the fuel (Section 1.0), including truck drivers, maintainers, and related personnel.
2. **Transportation** (Section 1.9). Heavy combat equipment, including vehicles, generally must be driven to the battle zone. A somewhat different transportation factor is involved with systems that are regularly mounted on a standard truck, because this requires a dedicated vehicle.
3. **Ammunition** (Section 2.10.4). This section lists several MOS, which are peculiar to certain kinds of systems. This chain would also involve transportation, as did fuel.
4. **Power Generation** (Section 1.9.1). Personnel for operating generators come from particular systems using power, but maintenance is combined with vehicle maintenance.
5. **Utilities** (Section 1.10.1). Certain systems require air conditioning or special heating.
6. **Instrument Maintenance** (Section 1.10.3). Some kinds of systems are particularly dependent on this kind of maintenance specialist.
7. **Miscellaneous Maintenance** (Section 1.10.8). Certain kinds of systems are dependent upon Machinists (44E) and Metal Workers (44B).
8. **Construction, Engineering** (Section 1.8). These MOS should be considered when a developmental system is apt to involve requirements for construction.

SECTION 5D

DRAFTING MOS SPECIFICATIONS

INTRODUCTION

The sixth requirement of QQPRI involves listing the system unique duties and tasks to be performed by each MOS listed for QQPRI Requirements 3, 4, and 5. For most systems, this involves only a short statement describing the manner in which job duties are modified for some MOS. For example, a statement concerning how duties are modified may be adequate. This is an example of recent usage.

6. Individual Duties and Tasks

Some additional training for operator and maintenance personnel in existing skills will be required to use and maintain the interface between the fire support team equipment and the vehicle.

Other cases will require a more extensive listing of system-unique duties or tasks for each MOS, or even a new MOS. In cases of extensive revision or a new MOS, you must draft the narrative part of the specification consistent with the specifications in AR 611-201. The following procedures will assist in completing this task.

PROCEDURE FOR DRAFTING MOS SPECIFICATIONS

Step 1 — Indicate Applicable Categories

Put a check () by categories in the Task Structure Selection Aid, Sub-procedure 5B, to indicate duties or tasks required for the new system. Where possible, check specific categories, but check general categories as applicable when specific categories cannot be determined. Check categories as appropriate in each of the following Parts or Selections of the Task Structure Selection Aid in Section 5B.

- a. Common Soldier Tasks in Part 1.
- b. Primary functions for the operator in Part 2, Section A (vehicle operation, target engagement, and communications).
- c. Secondary functions in Part 2, Section B. (Power generation, safety, computer operations.)
- d. Administration, job guidance, and constraints in Part 3.
- e. Maintenance functions in Part 4.

Step 2 — Getting Content Statements

For each category checked, modify the sample statement from the right hand column of the Task Structure Selection Aid to describe the duties of the new MOS at the entry level.

Step 3 — Selecting a Similar Example

Select an MOS specification from AR 611-201 that is similar to the one you need to write. One approach is to identify the specific-level MOS category for the new system using the method described in Section 5B, Step 3. Within that category, select the MOS **most similar** to the one required, by reading the MOS specifications in AR 611-201.

Step 4 — Draft Narrative Specification

Incorporate the statements from Step 2 into the example from Step 3. Combine statements and modify as appropriate to obtain a draft specification to meet QQPRI Requirement 6.

Step 5 — Complete the MOS Specification

Follow the instructions in AR 71-2, Appendix D, for drafting the remaining areas of the MOS specifications. These areas include requirements for knowledges, skills, physical and mental factors, security clearance, special licenses or certifications, and supervision.

SECTION 6

PROCEDURES FOR PREPARING BOIP

INTRODUCTION

A BOIP is a planning document developed to show equipment and personnel changes to existing organizational structures based on the development and acquisition of new equipment and/or weapons. A BOIP identifies the recommended changes to base Tables of Organization and Equipment (TOE), Tables of Distribution and Allowances (TDA), Common Tables of Allowances (CTA), (This manual does not address CTA development since CTAs do not impact manpower requirements. See paragraph 1-8d (5), AR 71-2, which does not require QQPRI.) Joint Tables of Allowances (JTA), and Additive Operational Projects (AOP). A BOIP is not an authorization document. BOIP also differs from Automated Unit Reference Sheets (AURSSs), which are submitted for systems requiring development of a completely new organization (i.e., TOE). AURSSs usually are precursors to draft plan TOE (DPTOE).

The BOIP, like the BOIPFD and QQPRI, may have two or more submissions—a Tentative BOIP (TBOIP) and a Final BOIP (FBOIP). Amended BOIPs are used to document significant equipment-related changes resulting from amended BOIPFD. These updates are triggered by:

- a. : Revised requirement document, operational support, organizational concepts, and results of user testing.
- c. : Changes in estimated date of type classification and/or first unit equipped (FUE) date.
- b. : Changes in cost figures that have budgetary implications.

Changed information must be marked with an asterisk. If the changed information is caused by BOIPFD or QQPRI, the BOIPFD or QQPRI will cause the initiation of the BOIP change.

The TBOIP is an initial estimate of the planned placement of a new item of equipment. It identifies anticipated changes in TOE/TDA/CTA/JTA/AOP. The TBOIP provides HQDA with information essential for initial planning and programming computations made in the Structure and Composition System (SACS). The TBOIP, FBOIP, and amended AxBOIP are all complete plans identifying the organizations to receive the new item. It must be submitted to HQDA by the Combat Developer at least 32 months before the first unit equipped (FUE) date.

AR 71-2 established criteria for generating BOIPs, including the following:

- a. Items to be procured in response to a requirements document (e.g., JMSNS, LR, ROC, TDR, TDLR, and TELER) which will result in a new item. This usually requires assignment of a developmental LIN and subsequent type-classification action.
- b. Product Improvement Programs (PIP) which change the performance characteristics and capabilities of the system, causing a new ROC, LR, TDR, or TDLR to be prepared. This usually requires assignment of a developmental LIN and subsequent type-classification action.
- c. PIP items that cause personnel changes or require additional items of equipment to support the PIP item.
- d. Major end items not required as components of sets, kits, outfits (SKO) and assemblages when they are to be separately TC for separate authorization and issue.

In preparing or updating BOIP, the following factors must be considered:

- a. Organizational, operational, and integrated logistic concepts (or revisions) in the JMSNS, ROC, LR, TDR, TDLR, or other requirements document.
- b. Information in the QQPRI and its impact on Standard of Grade Authorizations (SGA) for quantitative change.
- c. Results of developmental and operational testing.
- d. Decisions made by an ASARC, DSARC, or IPR.
- e. Initial or revised data from the Materiel Developer about an item of equipment and related personnel implications, if any, in a JMSNS, ROC, LR, TDR, TDLR, or other requirements document.
- f. Preparing, as early as possible in the development cycle, additional BOIP for new items that result from associated items or equipment change information. When a new item is needed to support the principal item, the Materiel Developer will concurrently prepare BOIPFD and QQPRI. The BOIPFD and QQPRI will be sent to TRADOC as a package for the complete system. BOIP, QQPRI, and the proposed MOS decision for the new item of equipment will be sent to HQDA in accordance with the time frame previously identified. This permits adequate planning, programming, and budgeting to support deploying the principal item.
- g. Special guidance issued by HQDA.

The following sections outline procedures for developing the BOIP. These procedures focus upon sources of input, data processing, and output information. The sections are:

Section	Title
6A	BOIP Preparation Procedures
6B	MACRIT Procedures for BOIP
6C	BOIP Cover Sheet Procedures
6D	BOIP Continuation Sheet Procedures

The final results of the BOIP development process are computer output listings and automated records output via magnetic tape and provided HQDA for use within the Structure and Composition System which supports the personnel and logistics function.

SECTION 6A

BOIP PREPARATION PROCEDURES

The primary purpose of the BOIP is to provide a planning document that identifies proposed equipment and personnel changes to TOE and TDA. Specifically, the BOIP depicts additions and deletions for all affected organizational units. In this regard, the BOIP preparer must know how and where to obtain the required information and must be especially attuned to the relationship between equipment and personnel. This section describes procedures for determining and documenting equipment and personnel impacts in the BOIP process. The BOIP, as a planning document, is a precursor to publishing formal changes to TOE through the annual CTU.

The BOIP is initiated at HQ TRADOC, after the BOIPFD and QQPRI have been accepted by assigning a BOIP serial number and inputting initial information to the TRADOC automated BOIP system. Upon accomplishing these actions, the Personnel and Equipment Analyst, HQ TRADOC (ATCD-OB) prepares correspondence to task the appropriate subordinate integrating center and school. See Section 3 -Document Preparation Responsibility - Overview.

The following actions are those taken by the BOIP Analyst at either an integrating center or school.

STEP 1 — IDENTIFY REPLACED LINS

Step 1 involves identifying (by LIN) the equipment to be replaced, added or deleted from using units. Obtain the LINs of this equipment from Blocks 7, 11, and 12 of the BOIPFD. The LINs for all items, ASIOE, and TMDE must be included. If the BOIPFD is inadequate, review TOE equipment lists (by LIN) to identify all associated equipment. Check with the design engineer, maintenance engineer, integrating centers, and coordinating schools if you suspect that additional equipment, relative to the principal items, is involved.

Input Data

Use Blocks 7, 11, and 12 of the BOIPFD for principal item, ASIOE and TMDE.

Process

1. Identify replaced, added and deleted equipment LINs.

Example: Step 1

BOIP Feeder Data

FAMAS, AN/TMQ-31

Block 12 (Items to Be Replaced)

LIN

NOMENCLATURE

C73685	Calibrator, Frequency standard TS-65()/FMQ-1
M36739	Meteorological Station, Manual AN/TMQ-4
R16476	Rawin Set, AN/GMD-1()
R50043	Recording Set, Weather Data, AN/TMQ-5()
V88438	Test Set Radio TS-538 ()/U
	Radiosonde AN/AMT-4
	Radiosonde AN/AMT-12
	Baseline Check Set AN/GMM-1

STEP 2 — IDENTIFY USER UNITS

The second step entails identifying the TOE units using the replaced equipment. This step encompasses the using unit(s), maintenance unit(s), and support unit(s). Using the LINs identified in Step 1, consult the Organizational Equipment List (OEL), which depicts the TOE units associated with the LINs. The OEL shows the Army units which currently utilize the replaced/displaced equipment. If necessary, query the TRADOC automated system and retrieve data based on LIN. This should identify TOE units that currently have the LIN on their equipment list.

Input Data

Consult the OEL to determine TOEs associated with replaced LINs

Process

2. Identify units using the replaced equipment.

Example: Step 2

<u>TOE NO.</u>	<u>DESCRIPTION</u>
a. 06185H000	FA Bn, 105mm T Sep Inf B
b. 06186H000	HHB, FA Bn, 105mm T
c. 06201H300	HHB, Abn Div Arty

STEP 3 — IDENTIFY RECIPIENT UNITS

Although the TOE units using the replaced equipment are identified in Step 2, not all units may actually lose this equipment in favor of the new equipment items. Therefore, Step 3 requires determining which of these units will receive the new equipment. This step is accomplished by reviewing the Organizational and Operational (O and O) concept which describes the units that will be involved with the new item. Coordination with the TRADOC system manager, the developer, and Integrating Center may assist in specific organization identification. If a unit identified in the OEL cannot be identified through use of the O and O concept (included in Block 18, BOIPFD), it may be in a maintenance unit category. Thus, the maintenance concept and the maintenance engineer should be consulted to identify TOE units. If a unit in the OEL cannot be identified through these methods, it receives no further consideration. For affected units, the BOIPFD should be checked for the LINs of the new equipment. Specifically, Block 7a provides the "Z" LIN for the developmental item, and Block 11a includes the LIN for all ASIOE and TMDE.

Input Data

Check the O and O concept (Block 18, BOIPFD) and maintenance concept for affected units. Check BOIPFD Block 7a for "Z" LIN of developmental, principal item and block 11a for LIN of associated items. Extensive coordination is required.

Process

3. Identify TOE units receiving the new equipment.

Example: Step 3

METEOROLOGICAL DATA SYSTEMS AN/TMQ-31 ()

18. ORGANIZATIONAL/OPERATIONAL CONCEPTS AND MOS/QQPRI INFORMATION (BOING-BASIS OF ISSUE NARRATIVE GUIDANCE)

THE MOS WILL PROVIDE UPPER ATMOSPHERIC DATA PRIMARILY FOR METEOROLOGICAL CORRECTION FOR GUN AND MISSILE FIRINGS AND FALLOUT PREDICTION INFORMATION TO ALTITUDES UP TO 30 KM. MDS TEAMS WILL NORMALLY BE DEPLOYED ON A CORPS BASIS AND ARE SITED SO AS TO GIVE THE BEST METEOROLOGICAL COVERAGE TO THE CORPS AREA. BASIS OF ISSUE FOR MDS IS TWO PER DIVISION ARTILLERY AND ONE PER FA BDE AND SEPARATE BDE WITH METEOROLOGICAL SECTION. A 5 TON TRK W/WINCH WAS SELECTED BY THE MAT DEV AS THE PRIME MOVER FOR MDS, AFTER THEY WERE ADVISED THAT THE 2 1/2T TRK WOULD BE REPLACED. THE MET SECTION, BY DOCTRINE, OPERATES AUTONOMOUSLY WITHIN THE DIV, REQUIRING A 5 TON TRK W/WINCH.

STEP 4 — IDENTIFY OPERATOR CHANGES

The fourth step involves determining the personnel impacts on equipment or weapon operators, in terms of additions and deletions, caused by the equipment changes described in Steps 1-3. Here, it is necessary to identify the number of operators, by grade, MOS, and ASI, involved with the replaced equipment. This minus entry is straight forward and requires determining the size of the crew operating the equipment as represented in the TOE. Also, it is necessary to document the personnel additions to the TOE which are related to the incoming equipment. For all personnel additions, coordinate and check with the integrating centers, and the coordinating schools to ensure that personnel changes meet the Standards of Grade Authorization (SGA). Direct coordination with SSC—NCR is suggested. Specifically, ensure that a workable pyramidal requirements structure exists for a Career Management Field (CMF) and that, within and across organizational structures, the units require these individuals in a manner consistent with the desired force structure. At this point, the QQPRI, MOS Structure Scheme, and Task Structure Scheme (see Section 5 and the associated tables), as well as the O and O concept, can be used to identify and verify MOS for the personnel pluses, which must be reflected in the BOIP.

Input Data

Check TOE for operator minuses.
Use QQPRI, MOS Structure Scheme, and Task Structure Scheme (see Section 5) as well as O and O Concept for operator pluses.

Process

4. Identify operator pluses and minuses

Example: Step 4

<u>TOE</u>	<u>DESCRIPTION</u>	<u>GR</u>	<u>MOS</u>	<u>PLUS</u>	<u>MINUS</u>
06116H000	HH&S Btry, FA Bn, 105mm, Meteorological Sec	E5	93F20		1
		E4	93F10		2
		E4	93F10H1	1	
		E3	93F1000		1

PRESENT (GMD-1)

PROPOSED (AN/TMQ-31)

TOE/TDA	PARA	LINE	DUTY POSITION	MOS	GR	TOE AUT.	DUTY POSITION	MOS	GR	TOE AUTH
06116H000 Includes the following UIC: WASNAA	07	01	Met Technician	201A0	W0	1	Met Technician	201A()	W0	1
		02	Met Section Chief	93F40	E7	1	Met Section Chief	93F40()	E7	1
		03	FA Met Crewman	93F20H1	E5	1	FA Met Crewmember	93F20(*)	E5	1
		04	FA Met Crewman	93F10	E4	3	FA Met Crewmember	93F10()	E4	1
							FA Met Crewmember	93F10(*)	E4	1
		05	FA Met Crewman	93F10	E3	3	FA Met Crewmember	93F10()	E3	2
		06	FA Met Crewman	93F30	E6	1	FA Met Crewmember	93F30()	E6	1
		07	FA Met Crewman	93F20	E5	1				
* denotes organizational maintenance trained.										

STEP 5 — IDENTIFY ORGANIZATIONAL MAINTAINER CHANGES

The fifth step is similar to Step 4, but focuses upon organizational maintainers. Maintenance personnel pluses and minuses must be identified for the new and replaced equipment. This analysis must be performed from qualitative and quantitative standpoints. For quantity, it is necessary to determine if there is a change in DPAMMH which is the basis for determining how many maintainers are deleted and/or added and then document the overall difference. If there is no difference, then no organizational maintainer impact exists. If maintainers are minused, they must be reduced from the existing TOE. The QQPRI will identify personnel that should be plused. From a qualitative standpoint, the MOS Structure and Task Structure in Section 5 could be used to examine task content to identify specific MOS involved. In this process, it is necessary to determine the impact of the new equipment in terms of changes in DPAMMH requirements. Section 6B (MACRIT Procedures) describes procedures for examining maintenance man hour impacts in terms of the personnel implications within TOE based upon equipment density that requires maintenance support.

Input Data

Relate LIN to MOS of maintainers in TOE for organizational maintainer minuses. Use QQPRI for organizational maintainer pluses.

Process

5. Identify organizational maintainer pluses and minuses

STEP 6 — IDENTIFY DS/GS MAINTAINER CHANGES

The maintenance concept should identify type and location of maintenance. The TOE will identify unit maintenance capabilities relative to equipment density. Equipment being deleted will form the basis for personnel minuses, while the QQPRI will depict personnel pluses for these maintenance levels. The MOS Structure and the Task Structure job aids will assist with MOS selection determinations. Also, refer to the MACRIT Procedures (Section 6B) to determine the impact of the new equipment on maintenance man hour demands across MOS within TOE based upon equipment density changes for a brigade, division, corps, or Army area.

Input Data

Equipment changes and associated density that cause DS and GS level maintainer minuses. Use QQPRI and MOS Structure and Task Structure job aids for pluses here, if different MOS and tasks are involved.

Process

6. Identify DS and GS level maintainer pluses and minuses

STEP 7 — IDENTIFY SUPPORT LEVEL CHANGES

The seventh step entails support which may be combat support or combat service support, a category mutually exclusive of principal using or maintenance units. It is very important to be aware of the support impacts associated with new equipment and weapons. For example, fuel, ammunition, and rations may be required in greater amounts in conjunction with a new system, which can establish needs for considerably more personnel. In this case, support personnel requirements must be considered in determining and planning for the overall personnel impacts of the new system. The workload associated with handling an increased amount of supplies must be included in combat service support organizations by TOE. Associated support equipment requirements such as additional trucks for moving supplies must also be considered.

Input Data

Research support requirements and determine what and where support changes will be implemented. Use QQPRI, BOIPFD, empirical information, and other available data.

Process

7. Identify support level pluses and minuses

SECTION 6B

MACRIT PROCEDURES FOR BOIP

Note: The definition of Manpower authorization criteria (MACRIT) is in the process of being revised. New definitions and a new term have been coined. It is manpower requirements criteria (MARC). New procedures are in the process of being formulated. Therefore, consult recent Army publications for changes. Before proceeding through this section, obtain AR 570-2 and become familiar with its contents. It provides background information and basic manpower requirements criteria.

This section provides detailed procedures for determining the impact of new equipment on maintenance workload demands within a TOE organization. It specifically focuses upon changes in Annual Maintenance Man Hour (AMMH) requirements directly related to changes in equipment density within each identified TOE. In assessing the change in AMMH requirements (by and across MOS within a TOE), it is possible to determine the personnel changes caused by the addition of new equipment and/or deletion of existing equipment and this effect on aggregate manpower requirements by skill.

To determine the personnel impact on each organization resulting from changing AMMH workloads, it is helpful to understand the relationship among the TRADOC activities involved. All TOE are assigned to a service school, as are all MOS. At any time, any service school can be the proponent for the new equipment item or can serve as a coordinating school for the item. The proponent schools are responsible for examining their assigned TOE for three types of impact:

- a. Mission equipment.
- b. Operator, maintenance, and support personnel associated with equipment changes.
- c. Organizational equipment or clothing associated with changes in the number of personnel.

BOIP preparation procedures require the identification of organizations affected by the introduction of a developmental item into the Army. Thus, the BOIPFD must be examined to determine the equipment being replaced. Next, the Organizational Equipment List (OEL) is consulted to ascertain which units currently use the equipment identified in the BOIPFD. As it is not certain that all these units will receive the new equipment, or will lose the current equipment, it is necessary to read and understand the requirement document's O and O concept, which describes the units associated with the new equipment. Additionally, the BOING is a likely source of guidance. If a unit identified in the OEL cannot be identified using the O and O concept, it may be a maintenance category unit. In this case, consult the maintenance concept to identify these units. If a unit in the OEL cannot be identified from either the O and O concept or the maintenance concept, it should receive no further consideration.

At this point, it is possible to consider the personnel impacts, (in terms of pluses and minuses), caused by the changes in equipment density. Specifically, for each TOE all MOS must be examined to document changes in AMMH requirements caused by the introduction of the new equipment and the deletion of replaced equipment in the TOE. This AMMH analysis is performed to produce quantitative (i.e., sheer numerical change in man-hour requirements) and qualitative (i.e., AMMH changes by MOS) results. After determining the personnel impact on AMMH, it is possible to decide, from a manpower standpoint, whether more or fewer soldiers are needed, and from a personnel standpoint, the MOS (skill) required with the manpower change. MOS may or may not be changed.

This analysis is closely related to the Manpower Authorization Criteria (MACRIT), which prescribes criteria for the authorization of military positions in TOE. The objective of MACRIT is to establish an equitable relationship in a TOE between the services performed and the number and types of personnel utilized in their performance, according to AR 570-2. MACRIT, which consists of LOGCEN MACRIT and AR 570-2, are data sources which identify the DPAMMH or AMMH requirements associated with equipment (LIN) to maintain the equipment in an operationally ready status.

Table 6B-1 lists the following terms which are relevant to calculating the number of repairers required for an estimated annual workload.

Explanation

- A. Time Required to Repair** — The workload represented by one or more items of equipment. The related terms are:
- Direct (wrench-turning) time.
 - Indirect (mostly travel to job site) time.
 - AMMH is the measure of annual work represented by each item of equipment with a LIN.
- B. Time Available to Repair** — The number of annual man hours each repairman is expected to be available under sustained operating conditions (e.g., wartime).
- This formula understates the military repairmen requirements during peacetime (i.e., 40-hour week).
 - The terms are self-explanatory except perhaps the unit movement term, which refers to the tactical displacement of the supporting unit.
- C. Number of Repairers Required** — In this formula, the annual maintenance workload is divided by the annual available man hours of one repairman to develop the total number of required repairmen.

**TABLE 6B-1
TIME DEFINITIONS**

A. TIME REQUIRED TO REPAIR

DPAMMH - Direct Productive Annual Maintenance Man Hours: The estimated wrench-turning time required to repair a component or assembly.

$$\text{DPAMMH} = \frac{\text{Equipment Usage Rate}}{\text{Mean Time Between Repair}} \times \text{Mean Time to Repair}$$

IPAMMH - Indirect Productive Annual Maintenance Man Hours: The estimated time related to job performance but not in the "hands-on" mode. Examples are: parts chasing, tool cleaning, and travel to and from the maintenance job.

$$\begin{aligned} \text{IPAMMH} = & + 40\% \text{ at Organizational level} \\ & + 40\% \text{ at DS/GS level} \\ & + 22\% \text{ at Depot level} \end{aligned}$$

AMMH - Annual Maintenance Man Hours: The sum of the direct and indirect productive times (required to repair an item).

$$\text{AMMH} = \text{DPAMMH} + \text{IPAMMH}$$

B. TIME AVAILABLE TO REPAIR

TTA - Total Time Available:	Man Day	(single shift)	12 hours
TTA - Total Time Available:	Man Day	(365 days)	$\times 365$
			4380 hours

_____ minus these hours _____

	%	hours	
NPT - Nonproductive Time			
Security	5.33	234	
Kitchen police	2.00	88	
Work details	3.33	146	
Messing	6.24	273	
Casualties/R&R	3.00	130	
Personal needs	4.10	180	
	24.00	1051	-1051 hours

<u>% of time unit on the move</u>			
Category	I TOE	25.00	830
	II TOE	19.00	630
	III TOE	7.00	230
			-830 hours

AAMMH - Annual Available Maintenance Man Hours	2500 hours
[e.g., Category I TOE (rounded)]	

C. NUMBER OF REPAIRERS REQUIRED

$$\text{Repairers required} = \frac{\text{equipment density} \times \text{AMMH}}{\text{AAMMH}}$$

The remaining portion of this section provides a set of detailed procedures and a work sheet for obtaining and using AMMH information to make organizational manpower and personnel decisions to accommodate new equipment. The accompanying MACRIT Worksheet (Figure 6B-1) will assist in completing the necessary computations.

Note that each information element has a letter designation [i.e., (A) through (U)]. An explanation of each information element, by its letter designation, is provided. The first step is to identify the TOE and the particular MOS involved, realizing that a separate worksheet must be filled out for each MOS in the organization that will be affected by the introduction of the new equipment. Entries (A) through (E) and (S) pertain to TOE and MOS of existing equipment while entries (F) through (J) and (T) pertain to new equipment. Entry U represents the grand total.

- (A) **LIN.** Enter the LIN of the existing equipment being omitted or replaced by the developmental item. This information can be obtained by consulting Block 12 of the BOIPFD. Note that sometimes the introduction of the developmental item will involve a plus-up of some existing TOE equipment, e.g., ASIOE or TMDE. In this case, the equipment can be identified from Block 11 of the BOIPFD. This information must be listed under LIN (A) of the MACRIT worksheet and includes minuses as well as pluses to current equipment (by TOE and MOS).
- (B) **Change in Density.** This column involves the change in equipment density of all LINs listed in Column (A) of the MACRIT worksheet. Consult the OEL to determine the equipment density of replaced LINs within the TOE. (Note: Also check the O and O and maintenance concept to identify all TOEs receiving the new equipment. If TOE is not receiving new equipment, it should usually not be identified as losing existing equipment.) At this point, enter the equipment density of the LINs, using a **minus** sign to designate any replaced equipment. To identify the density of equipment items which involve a plus-up within the TOE (i.e., existing ASIOE that will increase as a function of the new equipment), examine the O and O and maintenance concept. The plus or minus change indicator and number are entered under Column (B) to indicate the increase or decrease in existing equipment within the TOE.
- (C) **DPAMMH.** Enter DPAMMH required to maintain each LIN identified in Column (A). The DPAMMH for each LIN may be obtained from AR 570-2 or the LOGCEN MACRIT data base. If DPAMMH is obtained by converting AMMH, consult AR 570-2 for the conversion factor. Enter DPAMMH under Column C.
- (D) **Total DPAMMH.** Multiply the equipment density change by the DPAMMH [i.e., Column (B) X Column (C)] and enter the product under Column (D) for all LINs identified in Column (A) of the MACRIT Worksheet.
- (E) **Convert to AMMH.** Multiply the total DPAMMH estimate for each LIN in column (A) by the factor from AR 570-2. (Note: The LOGCEN MACRIT and AR 570-2 provide **AMMH** and require no conversion.) However, if QQPRI is the DPAMMH source, conversion is required. Use the AR 570-2 factors.
- (F) **LIN.** Record the LIN for each new item of equipment to be added to the OEL of the TOE. This information can be obtained by consulting Block 7 and 11 of the BOIPFD and examining the O and O concept to identify TOE receiving the developmental item.
- (G) **Change in Density.** Enter the density of all LINs identified in Column (F). This information is contained in the BOING and the O and O concept. Also, enter a plus sign with the number to designate the amount of equipment added to the TOE.

- (H) **DPAMMH.** Enter the DPAMMH for each item of equipment listed in Column (G). These data are available in the QQPRI. List this information for a single piece of the equipment.
- (I) **Total DPAMMH.** Compute the total DPAMMH for each LIN identified in Column (F). Multiply the equipment density by the DPAMMH [Column (G) x Column (H)] to derive the total DPAMMH.
- (J) **Convert to AMMH.** Convert the total DPAMMH to AMMH. For each LIN in Column (F), multiply the Column (I) figure by the appropriate AR 570-2 factor and enter this number under Column (J).
- (K) **Total (Change in Density).** Column (K) represents change in the number of existing equipment items within the TOE and is obtained by summing the entries in Column (B) of the MACRIT worksheet.
- (L) **Total (DPAMMH).** Sum the DPAMMH estimates in Column (C) for all existing equipment affected by the introduction of the developmental item into the TOE.
- (M) **Total (Total DPAMMH).** Sum the entries in Column (D). Column (M) represents the overall change in DPAMMH requirements for existing equipment for the given MOS within the TOE.
- (N) **Total (Converted AMMH).** This entry is the total of the overall change in AMMH for existing equipment for the given MOS within the TOE. Sum the entries under Column (E) to derive this figure.
- (O) **Total (Change in Density).** Column (O) represents change in the number of existing equipment items within the TOE, and is obtained by summing the entries in Column (G) of the MACRIT worksheet.
- (P) **Total (DPAMMH).** Sum the DPAMMH estimates in Column (H) for all new equipment items within the TOE for the given TOE.
- (Q) **Total (Total DPAMMH).** Sum the entries in Column (I) to obtain this total. Entry (Q) represents the overall DPAMMH requirements for all new equipment items for the given MOS within the TOE.
- (R) **Total (Converted AMMH).** This entry is the sum of AMMH in Column (J) associated with all new equipment items for the given MOS within the TOE.
- (S) **Total Category 1.** Columns (S) and (T) relate to the number of maintainer positions to be added or deleted which are affected by introduction of the new equipment into the TOE. For example, Column (S) involves dividing the number in Column (N) by either **2500** (Category 1 TOE) or **2700** (Category 2 TOE) hours. The number of maintenance positions related to the existing equipment is a function of the AMMH divided by the **annual** available maintenance man hours (see Figure 6B-2). This calculation determines the change in the number of repairers of a given MOS required to support the existing equipment within a given category of TOE. (In this case, category 1 and 2 impact is being computed for Career Management Field 41.)

- (T) **Total Category 2.** Column (T) is similar to (S), requiring a determination of the number of repairers for the new items of equipment. The Column (R) figure (i.e., total AMMH) is divided by either 2500 or 2700 hours [i.e., annual available maintenance man hours) to derive the entry for Column (T)].
- (U) **Totals — Category 1 and Category 2.** Sum Columns (S) and (T) to determine the overall impact of introducing new equipment for the given MOS within the TOE. The sum of (S) or (T) indicates the increase or decrease of personnel by MOS required to maintain the equipment within the TOE.

Finally, one must consider the cumulative impact of the new equipment on staffing requirements across all MOS within the TOE. Sum Column (U) for all MOS (see Figures 6B-2 and 6B-3 for examples). If the total is **positive**, decide how to apportion the new, required positions across the MOS. If the total is **negative**, decide which MOS will be decreased in quantity within the TOE. Figure 6B-4 provides an example of this decision process.

MACRIT WORKSHEET

TOE No _____

I. MOS _____

EXISTING EQUIPMENT					NEW EQUIPMENT				
LIN (A)	CHANGE IN DENSITY (B)	DPAMMH (C)	TOTAL DPAMMH (D)	CONVERT TO AMMH (E)	LIN (F)	CHANGE IN DENSITY (G)	DPAMMH (H)	TOTAL DPAMMH (I)	CONVERT TO AMMH (J)
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									
TOTALS	(K)	(L)	(M)	(N)	TOTALS	(O)	(P)	(Q)	(R)
CATEGORY 1	2500				CATEGORY 1		2500		
TOTAL (S)					TOTAL (T)				
CATEGORY 2	2700				CATEGORY 2		2700		
TOTAL (S)					TOTAL (T)				
					(U) CATEGORY 1				
					(U) CATEGORY 2				
					GRAND TOTAL FOR MOS				

MACRIT WORKSHEET

TOE: Topography Unit

I. MOS 41B

EXISTING EQUIPMENT					NEW EQUIPMENT				
LIN (A)	CHANGE IN DENSITY (B)	DPAMMH (C)	TOTAL DPAMMH (D)	CONVERT TO AMMH (E)	LIN (F)	CHANGE IN DENSITY (G)	DPAMMH (H)	TOTAL DPAMMH (I)	CONVERT TO AMMH (J)
1. A36901	-3	42	-126	-176.4					
2. A95693	-4	21	-84	-117.6					
3. B07752	-2	20	-40	-56.0					
4. E63591	+2	185	+370	+518.0					
5. E79284	-5	17	-85	-119.0					
6.					Z70864	+3	221	663	928.2
7.					Z71138	+4	1030	4120	5678.0
8.					Z71275	+2	265	530	745.0
9.					Z71412	+4	17	68	95.2
10.					Z26745	+5	28	140	196.0

TOTALS	-12	285	35	-149.0	TOTALS	18	1561	5521	7732.4
	(K)	(L)	(M)	(N)		(O)	(P)	(Q)	(R)
+ CATEGORY	1	2500			+ CATEGORY	1	2500		
TOTAL	(S)	-06			TOTAL	(T)	3.09		
+ CATEGORY	2	2700			+ CATEGORY	2	2700		
TOTAL	(S)	-06			TOTAL	(T)	2.86		
					(U) CATEGORY	1	3.03		
					(U) CATEGORY	2	2.80		

FIGURE 6B.2

MACRIT WORKSHEET

TOE: Topography Unit

MOS 41C

EXISTING EQUIPMENT					NEW EQUIPMENT				
LIN (A)	CHANGE IN DENSITY (B)	DPAMMH (C)	TOTAL DPAMMH (D)	CONVERT TO AMMH (E)	LIN (F)	CHANGE IN DENSITY (G)	DPAMMH (H)	TOTAL DPAMMH (I)	CONVERT TO AMMH (J)
1. W58486	-6	168	-1008	-1411.2					
2. W90927	-1	986	-986	-1380.4					
3. W90790	-2	1281	-2562	-3586.8					
4. W90105	+2	1051	+2102	2942.8					
5. Y36034	-5	280	-1300	-1820.0					
6.					Z47110	+4	82	328	459.2
7.					Z62258	+3	143	429	600.6
8.					Z62259	+5	168	840	1176.0
9.					Z76669	+10	271	2710	3794.0
10.					Z76997	+4	198	792	1108.8
TOTALS	-12	3766	-3754	-5255.6	TOTALS	26	862	5099	7138.6
	(K)	(L)	(M)	(N)		(O)	(P)	(Q)	(R)
÷ CATEGORY 1	2500			÷	÷ CATEGORY 1	1	2500		÷
TOTAL (S)	-2.10				TOTAL (T)	2	2.86		
÷ CATEGORY 2	2700				÷ CATEGORY 2	2	2700		
TOTAL (S)	-1.95				TOTAL (T)	2	2.64		
					(U) CATEGORY 1	1	.76		
					(U) CATEGORY 2	2	.69		
					GRAND TOTAL FOR MOS 41C				
					ACROSS MOS WITHIN THE TOE				
					CATEGORY 1	1	3.79		
					CATEGORY 2	2	3.49		

Figure 6B.3

MACRIT—ORGANIZATIONAL IMPACT

TOE: Topography Unit

CATEGORY 1

<u>MOS</u>	<u>REPAIRERS REQUIRED</u>
From Figure 6B-2 41B	3.03
From Figure 6B-3 41C	.76
TOTAL	<u>3.79</u> — Impact across CMF within TOE

Figure 6B-4

SECTION 6C

BOIP COVER SHEET PROCEDURES

The BOIP cover and continuation sheets are prepared in accordance with Appendix E, AR 71-2 through TRADOC automated procedures. The data are input by the Personnel and Equipment Analysts, (PEA), HQ TRADOC and by BOIP Analysts at Integrating Centers, Proponent Schools, and Coordinating Schools. The PEA generally inputs data applicable to Blocks 1 through 17, BOIP cover sheet, whereas the BOIP Analyst inputs data applicable to Blocks 18 through 21 and, as required, the data applicable to the continuation sheet.

TRADOC Supplement to AR 71-2 and Mohawk Data Services (MDS) Series 21 — Organizational Development — TOE/BOIP Manual contain additional and specific automation instructions that apply to MDS equipment operations and how to access and utilize the BOIP Automated System resident on the USACAC computer at Fort Leavenworth.

The instructions that follow are in accordance with AR 71-2. The TRADOC instructions applicable to automated procedures must be explicitly followed in utilizing the MDS remote data entry and retrieval equipment. TRADOC instructions are not incorporated in this manual. TRADOC instructions must be followed in the BOIP development process; consequently, the instructions that follow do not supersede or replace any TRADOC instructions.

A sample BOIP cover sheet is presented on the next three pages.

THE HQS WILL PROVIDE UPPER ATMOSPHERIC DATA ORIGINALLY FOR METEOROLOGICAL BALLISTIC CORRECTION FOR GUN AND MISSILE FIRINGS AND FOLLOW-UP PREDICTION INFORMATION TO ALTITUDES UP TO 30 KM. HQS TEAMS WILL NORMALLY BE DEPLOYED ON A CORPS BASIS AND ARE SITED SO AS TO GIVE THE BEST METEOROLOGICAL COVERAGE TO THE CORPS AREA. BASIS OF ISSUE FOR HQS IS TWO PER DIVISION ARTILLERY AND ONE PER FA BDE AND SEPARATE BDE WITH METEOROLOGICAL SECTION. A 5 TON TRK W/MINCH WAS SELECTED BY THE MAT DEV AS THE PRIME MOVER FOR HQS. AFTER THEY WERE ADVISED THAT THE 2-1/2 T TRK WOULD BE REPLACED, THE NET SECTION BY DOCTRINE, OPERATES AUTONOMOUSLY WITHIN THE DIV, REQUIRING A 5 TON TRK W/MINCH.

19. ASSOCIATED /RELATED BOIP/LIN

LINE	NOMENCLATURE	ITEM	ASSOC BOIP NO.	REMARKS
A.			C.	D.
A46470	AMPLIFIER AUDIO FREQUENCY: AM-1700/GR		GP A	
A79381	ANTENNA GROUP: DE-25611/GR		GP A	
B33019	BAROMETER ANEROID: ML-333/TM		GP A	
C62315	CASE: BATTERY 2-A11/1SEC		GP A	
C68719	CABLE TELEPHONE: WD-1711 DR-B 1320 FT		GP A	0101
E94970	CONTROL RADIO SET: C-2299/VRC		GP A	
I01836	ELECTRONIC KEY GENERATOR HALF DUPLEX TACTICAL: TSEC/KG31-12		GP A	
I02300	ELECTRONIC TELETYPE/TELETYPE SECURITY EQUIPMENT: TSEC/KM-7		GP A	
J42100	GEN ST GAS ENG TM: 10KW 60HZ 1-3PH AC 120/240 120/208V PU-619/M		GP A	
J44055	GEN ST GAS ENG: 1-5KW DC-28V SHOCK TACTICAL UTILITY		GP A	
J53782	GENERATOR SIGNAL: AN/USM-44		GP A	
K14814	HANDSET: H-189/GR		GP B	
K23814	HEADSET-MICROPHONE: H-182/PT		GP A	
K81263	INSTALLATION KIT: MK-1234/G F/AN/VRC-46 53 64 GRC125 160 IN M151		GP A	
K87536	INSTALLATION KIT: MK-1836/VRC F/AY-57 W/AN/VRC-46 IN M151A1		GP A	
K87564	INSTL KIT: MK-1866/VRC E/AY-57 W/AN/VRC-46 IN 5250 DR 5280		GP A	
L84098	LIQUID SPEAKER PERMANENT MAGNET: LS-454/U		GP A	
M80242	MULTIMETER: AN/USM-223		GP A	
N30572	OSCILLOSCOPE: AN/USM-281		GP A	
P38314	POWER SUPPLY: PB-2309/U		GP A	
Q53001	RADIO SET: AN/VRC-46		GP A	

DATE OF RUN: 03/06/28

BASIS OF ISSUE PLAN COVER SHEET

1. PAGE 2

2. HQIP SERIAL NO. 3. CHG NO. 4. INITIAL DATE 5. ESTIMATED DATE 6. AVAILABILITY DATE 7. ESTIMATED UNIT COST 8. DOPRI 9. STANDARD 10. CARDS NO
 11. NFIP 12. LINE ITEM 13. NOMENCLATURE 14. APC = 9 15. IAT DA FOR APPROVAL 16. ABA 15. RIC 16. SC 17. AN DA IC 551
 17-0102-F 82/06/30 84/06/30 \$285,000 AM K2780100GMC 0449
 EL-32 226863 WEATHEROLOGICAL DATA SYSTEM: AN/TMO-31(1) P 016 A22 TL

19. ASSOCIATED /RELATED HQIP/LIN

LINE ITEM	NOMENCLATURE	ASSOC HQIP NO. OR STD-LCC	REMARKS
078282	RADIO SET CONTROL GROUP: AN/GRA-39	GP A	
020662	RECEIVER-TRANSMITTER-CONTROL GROUP: AN/GRA-6	GP A	
059160	KEELING MACHINE CABLE HAND: RL-39	GP A	
051573	SPEECH SECURITY EQUIPMENT: TSEC/RY-57	GP A	
159346	TRUCK CARGO: TACTICAL 5/4 TON 4X4 W/24 VOLT 100 AMP M1008	GP A	
031211	TELEPHONE SET: TA-312/PI	GP A	
057729	TERMINAL TELEGRAPH: TH-22/TG	GP A	
098708	POWER SUPPLY: VEHICLE HYPSZ/ISEC	GP A	
037251	TOOL KIT ELECTRONIC EQUIPMENT: TK-100/G	GP A	
037388	TOOL KIT ELECTRONIC EQUIPMENT: TK-105/G	GP A	
037483	TOOL KIT ELECTRIC EQUIPMENT: TK-101/G50	GP A	
060351	WIRELINE ADAPTER: HXX-57/ISEC	GP A	
098825	TRAILER TANK: WATER 400 GALLON 1-1/2 TON 2 WHEEL W/E	GP A	
040931	TRUCK CARGO: DROP SIDE 5 TON 6X6 W/4 INCH W/E	GP A	
014526	AM/GSH-64C DIGITAL VOLTMETER 5 1/2 DIGIT	GP A	
227112	FIELD ARTILLERY WEATHEROLOGICAL ACQUISITION: AN/TMO-33	GP A	0101 CONSIDERED

20. REPLACED EQUIPMENT

LINE ITEM	NOMENCLATURE	PRINCIPAL/ASSOC	REMARKS
073685	CALIBRATOR FREQUENCY: TS-65/FHQ-1	PH ASSOCIATED	
045836	GEN ST GAS ENG: 3KW 400HZ 1-3PH AC 120/208/240V IAC U11L	GM ASSOCIATED	
036739	WEATHEROLOGICAL STATION MANUAL: AN/TMO-4	PH ASSOCIATED	
078282	RADIO SET CONTROL GROUP: AN/GRA-39	GM ASSOCIATED	
095810	RADIOSONDE BASELINE CHECK SET: AN/GMW-1A	PH ASSOCIATED	
016476	RAMIN SET: AN/GND-1	RM PRINCIPAL	0101
050043	RECORDING SET WEATHER DATA: AN/TMO-5	PH ASSOCIATED	
084052	REPRODUCER SIGNAL DATA:	GM ASSOCIATED	
159346	TRUCK CARGO: TACTICAL 5/4 TON 4X4 W/24 VOLT 100 AMP M1008	GM ASSOCIATED	CONSIDERED
088438	TEST SET RADIO: TS-538/10	PH ASSOCIATED	CONSIDERED
095537	TRAILER CARGO: 3/4 TON 2 WHEEL W/E	GM ASSOCIATED	
095811	TRAILER CARGO: 1-1/2 TON 2 WHEEL W/E	GM ASSOCIATED	
039432	TRUCK CARGO: TACTICAL 1-1/4 TON 4X4 W/E	GM ASSOCIATED	
040008	TRUCK CARGO: 2-1/2 TON 4X4 W/E	GM ASSOCIATED	
062360	TRUCK VANS SHOP 7-1/2 TON 6X6 W/E	GM ASSOCIATED	
194160	TRUCK UTILITY: 1-1/4 TON 4X4 W/E HMMV	GM ASSOCIATED	

DATE OF RUN 03/06/20

DATE OF UP-TO-DATE PLAN COVER SHEET

2. BODY SERIAL NO. 3. CHG NO. 4. INITIAL OR REVISION DATE 5. ESTIMATED DATE OF TC STD-A 6. AVAILABILITY DATE 7. ESTIMATED UNIT COST 8. QOPRI STATUS 9. STANDARD STUDY NO. 10. CARDS NO

77-0102-F 82/04/15 82/06/30 82/06/30 8285.000 AM K2760100GNC 0469
11. METP 12. LINE ITEM 13. NOMENCLATURE 14. ABA 15. RIC 16. SC 17. AD DA TC SSC
NUMBER

EL-32 226663 METEOROLOGICAL DATA SYSTEMS ANALYSIS 21. PERSONNEL 016 422-11

NO	TITLE	REPLACEE/ASSOC	REMARKS
A.		C.	D.
201A0	METEOROLOGY TECH	GM ASSOCIATED	CONSIDERED
93F10	FA MET CREW MEMBER	GM ASSOCIATED	
93F1P	FA MET CREW MEMBER	GM ASSOCIATED	
93F20	FA MET CREW MEMBER	GM ASSOCIATED	
93F2P	FA MET CREW MEMBER	GM ASSOCIATED	
93F40	FA MET CREW MEMBER	GM ASSOCIATED	CONSIDERED
93F4P	FA MET CREW MEMBER	GM ASSOCIATED	CONSIDERED
201A0	METEOROLOGY TECH	GP ASSOCIATED	
201A7	METEOROLOGY TECH	GP ASSOCIATED	
201A8	METEOROLOGY TECH	GP ASSOCIATED	
26E3H	CBT AREA SVL-RDR-REP	GP ASSOCIATED	
286A8	COMM-ELCT EQ REP TECH	GP ASSOCIATED	
3224H	C-E MAINTENANCE CHIEF	GP ASSOCIATED	
3275H	C-E MAINTENANCE CHIEF	GP ASSOCIATED	
93F10	FA MET CREW MEMBER	GP ASSOCIATED	
93F1P	FA MET CREW MEMBER	GP ASSOCIATED	
93F20	FA MET CREW MEMBER	GP ASSOCIATED	
93F2P	FA MET CREW MEMBER	GP ASSOCIATED	
93E3H	FA MET CREW MEMBER	GP ASSOCIATED	
93F30	FA MET CREW MEMBER	GP ASSOCIATED	
93E3P	FA MET CREW MEMBER	GP ASSOCIATED	
93F4H	FA MET CREW MEMBER	GP ASSOCIATED	
93E40	FA MET CREW MEMBER	GP ASSOCIATED	
93F4P	FA MET CREW MEMBER	GP ASSOCIATED	
94E4H	WOSP FOOD SERVICE SP	GP ASSOCIATED	CONSIDERED

Block 1A Enter the page number of the cover sheet. This step is straight forward and simply requires that pages be numbered in sequential order.

Input Data

Go to Process.

Process

1A. Enter page number

Block 1B Count the total number of pages in the BOIP and enter this information.

Input Data

The number of BOIP pages

Process

1B. Enter the total number
of pages in BOIP

Block 2 Enter the BOIP serial number assigned by TRADOC. The BOIP is given this number when it is entered into the BOIP Tracking System.

The BOIP serial number consists of the last two digits of the fiscal year in which it is assigned, a four digit sequence number, and a letter code "T" (tentative) or "F" (final). For example, 78-0012-F is the final version and the 12th BOIP initiated in fiscal year 1978. BOIP serial numbers remain constant throughout the item's developmental life cycle.

Input Data

Obtain BOIP serial number from TRADOC BOIP serial number log.

Process

2. Enter BOIP serial number

Block 3 The change number is generated in the computer system based upon program logic. It is generated sequentially starting with the digit 1.

Block 4 Enter the date that the BOIP was initially prepared. Note that this date will not be changed unless there are major changes requiring HQDA approval.

Input Data

The date the BOIP was initially prepared.

Process

4. Enter the date of initial BOIP preparation

Block 5 Enter the estimated date of Type Classification (TC) as determined by the Materiel Developer. This date must be expressed in terms of calendar year, month, and day, and can be obtained by consulting Block 5 of the BOIPFD. Report major changes to this date as a change to the BOIP.

Input Data

Block 5 of the BOIPFD for the estimated TC date.

Process

5. Enter the estimated TC date

Block 6 Enter the First Unit Equipped (FUE) date of the equipment item expressed in terms of calendar year, month, and day. This date can be obtained by checking Block 6 of the BOIPFD.

Input Data

Block 6 of the BOIPFD for the FUE date.

Process

6. Enter the FUE date.

Block 7 Enter the estimated unit cost of the production item as stated in Block 16 of the BOIPFD. Report major changes to cost estimates.

Input Data

Block 16 of the BOIPFD for the estimated unit cost of the production item.

Process

7. Enter the estimated unit cost fo the production item

Block 8

Note: Information for this Block is entered by PEA, HQ TRADOC only.
Enter the status of the QQPRI/MOS. Examine the QQPRI and identify whether it is TA or FA (tentative or final approved by HQDA), TB or FB (tentative or final at HQDA for approval), CA (condensed approved by HQDA), CB (condensed at HQDA for approval), or NR (QQPRI not received from Materiel Developer).

Input Data

Determine if QQPRI is in TA, FA, TB, FB, CA, CB, or NR status

Process

8. Enter the status of the QQPRI/MOS

Block 9 Record the SSN assigned to the BOIP item. This 11-position number can be obtained from Block 7d of the BOIPFD. Enter NA if not applicable.

Input Data

Block 7d of the BOIPFD for the
BOIP item's SSN

Process

9. Enter SSN of the BOIP
item

Block 10 Enter the appropriate reference number (e.g., NSA, or PIP). This number can be obtained by checking Block 14 of the BOIPFD.

Input Data

Block 14 of the BOIPFD for the appropriate reference number

Process

10. Enter the appropriate reference number

Block 11 Enter the New Equipment Training Plan (NETP) number. This number can be obtained from Block 15d of the BOIPFD.

Input Data

Process

Block 15d of the BOIPFD for the
NETP number

11. Enter the NETP
number

Block 12 Record the assigned LIN for the equipment item. This number can be obtained by checking Block 7a of the BOIPFD.

Input Data

Block 7a of the BOIPFD for the assigned LIN

Process

12. Enter assigned LIN

Block 13 Normally, this input is required for new developmental LIN only. Enter the nomenclature of the equipment item. Consult Block 4a of the BOIPFD for these data. If the LIN has been previously input to the automated BOIP system or is already in SB 700-20, the automated system utilizes the available nomenclature of record.

Input Data

Block 4a of the BOIPFD.
Nomenclature in SB 700-20

Process

13. Enter nomenclature of the
item, if required.

Block 14 Enter the Army Budget Activity (ABA) code from Block 15a of the BOIPFD.

Input Data

Block 15a of the BOIPFD for
ABA code.

Process

14. Enter the ABA code

Block 15 Record the Routing Identifier Code (RIC) from Block 15b of the BOIPFD.

Input Data

Block 15b of BOIPFD for RIC

Process

Enter the RIC

Block 16

Enter the Supply Class (SC) obtained from Block 7c of the BOIPFD.

Input Data

Block 7c of BOIPFD for
supply class

Process

Enter supply class

Block 17 Enter the HQDA, TRADOC, and SSC action officers' codes. HQDA has approximately 20 Force Integration Staff Officers (FISO), each with an area of responsibility which has a particular code. Thus, consult DAMO-FD FISO of HQDA ODCSOPS for the appropriate code. Contact the Organizational Directorate of HQ TRADOC for the TRADOC code. Finally, the SSC-NCR code can be obtained by calling the Soldier Support Center-National Capital Region (SSC-NCR).

Input Data

Consult HQDA (DAMO-FD) ODCSOPS for FISO code. Consult Org. Directorate of HQ TRADOC FOR TRADOC code. Consult SSC-NCR code for Soldier Support Center Code.

Process

17. Enter HQDA, TRADOC, and SSC action officer codes

Block 18 Enter the O and O concepts contained in the requirement document, QQPRI and MOS decision information used to generate personnel entries in the BOIP, and the Basis of Issue Narrative Guidance (BOING). The organizational and operational concepts, which can be drawn from the requirement document (e.g., letter of agreement [ROC], etc.), should be described in this paragraph. The QQPRI should be examined to provide a description of what the system's operators and maintainers (MOS) will do at each support level. Finally, the BOING, which involves a short, succinct description of organizational and operational concepts, should be transcribed to complete this block. Continuation sheet may be used.

Input Data

Description of O and O concept from requirements document. Obtain operator and maintainer information from the QQPRI. Obtain BOING from HQTRADOC (Combat Developments) if necessary

Process

18. Enter O and O concept, QQPRI, MOS decision information and BOING

Block 19A Enter the LIN for items associated with and supporting the principal LIN. This list includes TC and non-TC items of equipment. Include those end items needed to operate, transport, or maintain the principal item (e.g., vehicular radio installation kits, generators for power, vehicles for transportation, special tool sets, and TMDE. This information can be obtained from Block 11a of the BOIPFD.

It is also necessary to enter all LIN and BOIP related to the principal item. In other words, if associated equipment regarding the principal system is developmental, then this equipment will have its own BOIP and LIN, which must be identified in this block. (For example, associated support, operating or training BOIP and LIN supporting the XM-1 Tank will be listed on the XM-1 Tank BOIP [the principal]. Conversely, the XM-1 Tank BOIP will be listed on the BOIP for all associated or supporting equipment.) Thus, for LIN related to the principal item, because they are components, ASIOE, or TMDE, examine the BOIPFD and coordinate with the Integrating Centers and Coordinating Schools.

Input Data

For LIN of associated items, consult Block 11a of BOIPFD. For LIN related to principal item, examine BOIPFD and coordinate with integrating centers and coordinating schools.

Process

19A. Enter LIN for items associated with and supporting principal LIN and LIN related to principal item

Block 19B Enter the standard nomenclature for items shown in Block 4a of the BOIPFD for developmental items. If LIN is in SB 700-20 or previously input to the automated system, the nomenclature already automated will be utilized.

Input Data

Block 4a of the BOIPFD. If not already automated.

Process

19B. Enter standard nomenclature, if required.

Block 19C Enter the BOIP serial number for the developmental ASIOE or TMDE LIN by checking TRADOC's BOIP tracking system. For standard items, enter the Logistics Control Code (LCC) from SB 700-20.

Input Data

Obtain BOIP serial number for developmental items from TRADOC's BOIP Tracking system. Obtain LCC from SB 700-20 for standard items.

Process

19C Enter BOIP serial number for developmental ASIOE and the TMDE LIN and LCC for standard items.

Block 19D Use this block to enter remarks about the components, ASIOE, and/or TMDE items.

Input Data

BOIPFD for components,
ASIOE, and TMDE require-
ments and characteristics
Block 12a of BOIPFD for LIN of
items replaced.

Process

19D Enter remarks about all
items

Block 20A Record the LIN for items replaced by the principal LIN. Include items associated with the principal replaced items which are also being replaced. This information can be obtained from Block 12a of the BOIPFD.

Input Data

Block 12a of BOIPFD for standard nomenclature of replaced items.

Process

20A Enter LIN for items replaced by principal LIN

Block 20B Record the standard nomenclature of all replaced or displaced items identified in Block 20A. This information can be obtained from Block 12b of the BOIPFD. Input is not required if recorded in SB 700-20 or previously input.

Input Data

Block 12b of BOIPFD for standard nomenclature of replaced or displaced items

Process

20B. Enter standard nomenclature of replaced items, if required.

Block 20C Enter "PRINCIPAL" if the LIN is being replaced by the principal developmental LIN and "ASSOCIATED" if the item is associated with the principal replaced LIN and is also being replaced. Use your knowledge of the LIN and the BOIPFD to make this determination.

Input Data

Process

Based on knowledge of LIN and BOIPFD, determine nature of replaced LIN.

20C Enter "PRINCIPAL" in LIN is replaced by principal LIN, "ASSOCIATED" if associated with principal replaced LIN.

Block 20D

Enter remarks about the replaced LIN.

Input Data

BOIPFD for replaced LIN
characteristics.

Process

20D Enter remarks about
replaced LIN

Block 21A Enter the MOS appropriate for operating, maintaining, or supporting the BOIP item of equipment. Examine the QQPRI, Requirement 5, for this information. Block 21A must relate to Block 21C comments (by MOS) so that the rationale for MOS selection and category is logically explained.

Input Data

QQPRI for MOS

Process

21A Enter MOS

Note:

In completing Blocks 21A, 21B, 21C and 21D, consult with the NET Analyst/Manager for additional information in the event the QQPRI provides inadequate MOS information. In addition, consult the appropriate service school trainers to ensure completeness of information, as required.

Block 21B Record the MOS title for the BOIP item of equipment. Examine the QQPRI, Requirement 5, for this information. Information in this block must relate and cross-reference to Blocks 21A and 21C.

Input Data

Process

QQPRI for MOS title

21B Enter MOS title

Block 21C Enter the appropriate comment in this block, cross-referencing this information to the MOS in Block 21A.

Input Data

Explanitory Information.

Process

21C. Enter appropriate comment.

Block 21D Enter remarks about the MOS in this block, including criteria for selection or rejection of MOS.

Input Data

QQPRI

Process

21D. Enter remarks about MOS

SECTION 6D

BOIP CONTINUATION SHEET PROCEDURES

Refer to the instructions on Page 6C-1. Selected pages from a BOIP continuation sheet are displayed on the next four pages for the purpose of illustration. A complete continuation sheet is included in Appendix A.

CONTINUATION SHEET FOR BQIP 77-0102-F LIN 22663

DATE OF RUN 03/06/28

NOTE 201

PLUS MINUS

AST

MUS

GR

CURR

PRIN

REQ

UNIT

DESCRIPTION

PAR

4UG

(1)

FA 8N 105M T, LT INF 8

06115H000

(1)

E5 93F20

(1)

E4 93F10 H1

(1)

E3 93F10 00

(1)

A66470

(1)

A79381

(2)

C68719

(1)

C73685

(2)

E94970

(1)

H01836

(1)

H02300

(1)

J42100

(1)

J44055

(1)

K14814

(1)

K23814

(1)

K97243

(1)

K87536

(1)

K87544

(1)

L84098

(1)

M36739

(1)

M80242

(2)

Q53001

(1)

Q95810

(1)

R16476

(1)

R30662

(2)

R50043

(1)

S01373

(1)

T59346

(1)

V57729

(2)

V98788

(1)

W37483

(1)

X40009

(3)

X40931

(1)

X62340

(1)

HUES 8TRY, FA 8N, 105M

06116H000

E5 93F20

E4 93F10 H1

E3 93F10 00

(1)

A66470

(1)

A79381

(2)

C68719

(1)

C73685

(2)

E94970

(1)

H01836

(1)

H02300

(1)

J42100

(1)

J44055

(1)

K14814

(1)

K23814

NOTE NO. NOTE DESCRIPTION

001 A MDS TEAM WILL CONSIST OF THE FOLLOWING PERSONNEL:

GRADE	DUTY TITLE	NUMBER	MDS'S	ASI'S
WO	MET TECHNICIAN	1	201A0	(1)
E-7	MET SEC CHIEF	1	93F40	(1)
E-6	FA MET CREWMAN	1	93F30	(1)
E-5	FA MET CREWMAN	1	93F20	(1)
E-4	FA MET CREWMAN	2	93F10	(1)
E-3	FA MET CREWMAN	2	93F10	(1)

* AN ASI HAS BEEN REQUESTED FOR THOSE PERSONNEL WHO WILL RECEIVE TRAINING FOR THE AN/TMO-31 (MDS). AFTER THE NEW SYSTEM HAS BEEN FULLY FIELDED, THE ASI'S WILL BE DELETED EXCEPT FOR THE E5 AND 1 E4 WHO WILL RETAIN THE MAINT ASI.
ALL EQUIPMENT IN EACH METEOROLOGICAL SECTION HAVE BEEN ADJUSTED TO STANDARDIZE EQUIPMENT REQUIREMENTS FOR THE MDS TEAMS. EQUIPMENT ADJUSTMENTS MADE ARE TO FACILITATE MAINTENANCE COMMUNICATION, TRANSPORTATION, AND OPERATION OF THE METEOROLOGICAL DATA SYSTEM (MDS). THE 400 GAL WATER TRAILER PRIMARY PURPOSE IS TO PROVIDE SUFFICIENT QUANTITIES OF WATER USED IN THE PRODUCTION OF HYDROGEN GAS BY THE HYDROGEN GENERATOR, AN/TMO-3.

002 SEP BDE WITH MET SECTIONS IN ASSIGNED FA BNS WILL REQUIRE ONE MDS TEAM.

003 FA BDE REQUIRES ONLY ONE MDS TEAM.

004 DIVISION ARTILLERY REQUIRES TWO MDS TEAMS.

005 THE SIX MDS SETS AND ADJUSTMENT OF SUPPORT EQUIPMENT IS THE MINIMAL ESSENTIAL REQUIREMENTS TO FACILITATE INSTRUCTION OF MDS AT USAFAS. THE PLUS UP OF EQUIPMENT IS FOR MDS, THE OTHER EQUIPMENT SHOWN UNDER THE TIE COLUMN SUPPORTS OTHER SYSTEMS. I-E FIREFINDER, RADAR AND GMD AND CANNOT SUPPORT THE MDS CLASSES BEING TAUGHT SIMULTANEOUSLY. EQUIPMENT WILL BE REQUIRED OCT 85.

007 TWO MDS WILL REPLACE THE TWO RAWIN SETS CURRENTLY IN USE. EQUIPMENT WAS ADJUSTED TO FACILITATE THE MDS.

008 PERSONNEL REQUIRED ARE BASED UPON NUMBER OF PEOPLE TO BE TRAINED. THE FREQUENCY AND MDS COURSES TO BE PROVIDED BY USAFAS ARE AS FOLLOWS:

TYPE	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92
OPERATOR CMS							
93F ASI	60	132	231	258	321	339	321
ORG MAINT							
93F ASI	20	50	98	124	156	164	156
OS MAINT							

Note: This information is automatically generated by the computer system based upon cover sheet information. This is true for continuation sheet item 1A through item 6A.

Blocks 1A, 2, and 3 contain exactly the same information in both the BOIP cover and continuation sheets. Each continuation sheet used for a single BOIP should reflect identical information.

- Block 1A Enter the sequential page number on the continuation sheet. Numbering of the BOIP continuation sheet starts with 2 and continues sequentially.
- Block 2 Transcribe information from Block 2 of the BOIP cover sheet. The BOIP serial number is exactly the same on the BOIP cover sheet and each BOIP continuation sheet.
- Block 3 As above, copy the change number from Block 3 of the BOIP cover sheet to Block 3 of each continuation sheet.

Input Data

BOIP cover sheet, Blocks 1, 2, and 3, and transcribe information.

Process

1A-3. Enter:

- 1 Page (number sequentially)
- 2 BOIP serial number
- 3 Change number

Block 4 Consult Block 12 of the BOIP cover sheet and transcribe the LIN found there to the continuation sheet. Do this for each continuation sheet accompanying the BOIP cover.

Input Data

Block 12, BOIP cover sheet and
transcribe information

Process

4. Enter LIN

Block 5 Refer to the BOIP cover sheet, Block 13, and transcribe the nomenclature listed. Do this for each continuation sheet accompanying the BOIP cover sheet.

Input Data

Block 13, BOIP cover sheet and
transcribe information

Process

5. Enter nomenclature

Block 6A Block 6A identifies the organization that will have equipment (LIN) and personnel changes (MOS and grade). To identify which organizations require change, use the Organizational Equipment List (OEL) to identify the nine-digit TOE numbers. If the item is developmental, an AURS may be required. Use the O and O concept for developmental items. TOE references combat related items only. For non-combat related items (TDA, JTA), enter the proponent code and UIC. For the Additive Operational Project (AOP) number, see AR 710-1. Enter organizational identity number in column a. For Blocks 6A through 6O, additional sources of information include TRADOC - proponent schools, integrating centers, and coordinating schools.

Input Data

The TRADOC OEL 9-digit TOE number; see O and O concept for developmental items. For non-combat related items (TDA, JTA), enter proponent code and UIC. For AOP number, see AR 710-1

Process

6A Enter TOE number, TDA, JTA or AOP number.

Block 6B Refer to Block 6A for TOE. Consult the index column of the TOE to identify the TOE paragraph number. Transcribe to Block 6B. This identification is the paragraph or paragraphs within TOE that will be changed regarding equipment and/or personnel.

Input Data

Block 6A for TOE reference.
Enter unit designation (TOE title, paragraph description, TDA title, JTA title, or title and proponent of AOP).

Process

6B. Enter TOE paragraph number

Block 6C Refer to block 6A. Note positions 8 and 9 of TOE numbers to determine if augmentation is indicated. "00" indicates no augmentation; therefore, leave block blank. If augmentation is indicated, enter "A" in this block.

Input Data

Enter "A" if the TOE paragraph or line is in augmentation. see positions 8 and 9 or TOE number (Block 6A)

Process

6C. Enter augmentation code

Block 6D Consult Block 6A (TOE). Locate unit designation for referenced TOE and transcribe to this block. (This designation will be in the form of TOE title and paragraph description. Non-combat related items: TDA title, JTA title, AOP title and proponent.) If, under Block 6A multiple TOE identifications were made, then multiple TOE titles and paragraph descriptions are required here.

Input Data

See Block 6A for TOE reference. Enter unit designation (TOE title, para. description, TDA title, JTA title, or title and proponent of AOP)

Process

6D. Enter unit designation

Block 6E A unit multiplier is generated by the TRADOC automated tracking system for use in computing battalion recapitulations. **The preparer leaves this block blank.**

Input Data

Machine generated battalion recapitulations in the TRADOC automated system. Preparer does **not** enter.

Process

6E. Enter unit multiplier through the TRADOC automated system.

Block 6 F List the quantity of the principal items needed for TOE. Consult the O and O concept to identify the type of units that will get the new principal item and the BOING to determine the equipment quantity. Multiply the number of companies times the number of pieces of equipment per company to compute total. Enter this total of additional equipment into the block. ALO 1 only is applicable.

Input Data

Consult the O and O concept. Multiply the number of companies times the number of pieces of equipment per company.

Process

6F. Enter principal requirements

Block 6G This entry is machine generated by the TRADOC automated tracking system. **The preparer leaves this block blank.** The required information is the sum total of the principal item currently listed in TOE, TDA, JTA, or AOP. This block addresses any deletions to be computed for completing total organizational impact.

Input Data

Machine generated, preparer does not enter. If item is not listed, leave blank.

Process

6G. Enter items currently listed (TOE, TDA, JTA, or AOP)

Block 6H Enter the current or projected Equipment Readiness Code (ERC) for the principal, associated, or support items and the replaced, associated, or support LIN. The ERC, which is one alphabetical character, designates the item priority (by LIN) in relation to the unit mission. See the narrative portion of the TOE where the unit mission is documented. Consult the appropriate school (armor, infantry, etc.) for ERC designation. Not all items (LINs) have ERCs, and not all items (LINs) within the same unit have the same ERC, since each item (LIN) contributes differently to the unit's mission. In some cases, an ERC may not be available, in which case it will remain blank.

Input Data

Enter the current or projected ERC for the principal, associated, or support, replaced, associated, or support LIN. See TOE for principal and associated support; see OEL for displaced and replaced items and associated support.

Process

6H. Enter ERC

Block 6I Record, for each organization, the LIN of items to be added or deleted due to added or deleted principal items. This information is available in Blocks 19A (items added) and 20a (items deleted) of the BOIP cover sheet. Additionally, the TOE code identifying MOS and series to be added or deleted should be listed. This TOE entry can be found under Section 2 of the TOE. The same procedure is followed for a TDA line number entry.

Input Data

For each organization, enter LIN of items to be added or deleted due to quantity change of principal items. See Blocks 19a and 20a of BOIP cover sheet.

Process

6I. Enter LIN and TOE

Block 6J This block and the two subsequent blocks (6K and 6L) pertain principally to personnel considerations. The example used in 6J, 6K and 6L pertain to enlisted personnel. However, this requirement is also applicable to commissioned officer or warrant officer positions under consideration. Sources of information for all three blocks will be AR 611-201 and the QQPRI. Block 6J requires identification of grades for commissioned officers. The grades shown in the BOIP should conform to SGA in AR 611-201. For warrant officers, use "WO" as the single grade designator. For commissioned officers, a two-position, alpha-numeric identifier is used to designate grade. Refer to paragraph A-19, AR 310-49 and AR 680-29 for grade designators.

Input Data

AR 611-201 and QQPRI to identify
MOS codes and requirements.

Process

6J. Enter grade

Block 6K This block requires listing of MOS for enlisted personnel. Enlisted MOS are designated by a 5-position, alpha-numeric code. The fifth position of the MOS indicates Skill Qualification Indicator (SQI), if required. See AR 611-201 and QQPRI. Warrant officer MOS requirements are designated by 4-position, alphanumeric designators and can be obtained from AR 611-112. Commissioned officers' equivalent to MOS are Specialty Skill Indicators (SSI), found in AR 611-101.

Input Data

AR 611-201 and QQPRI to identify MOS codes and requirements.

Process

6K. Enter MOS

Block 6L This block requires the Additional Skill Indicator (ASI) designation for enlisted personnel. As in Blocks 6J and 6K, see AR 611-201 and QQPRI. ASIs are associated with certain enlisted MOS. Place ASI designation in block. If there is no ASI, leave blank. Warrant officer ASI requirements are identified in AR 611-112 and commissioned officer ASI requirements in AR 611-101. Follow the same procedure as for enlisted ASI.

Input Data

See 611-201 and QQPRI for enlisted personnel requirement for ASI

Process

6L. Enter enlisted ASI

Block 6M List the quantity of both personnel and equipment to be added **per organization**. See Blocks 6I, 6J, 6K, 6L, and the QQPRI to identify the equipment and associated personnel for each piece of equipment. Refer to the O and O concept to determine the organizational requirements and compute total additions per organization.

Input Data

See 6I, 6J, 6K, 6L and QQPRI for identification of equipment and personnel to be added. Use O and O concept to compute total per organization. See sub-procedures 6A and 6B.

Process

6M. Enter personnel and equipment to be added.

Block 6N Enter the quantity of both personnel and equipment to be deleted **per organization**. Blocks 12a of BOIPFD and Blocks 6I, 6J, 6K, and 6L to identify the equipment and associated personnel for each item of equipment. Cross-check with IEL for items that are to be displaced or replaced within the organization structure indicated in the O and O concept. Compute the total deletions per organization.

Input Data

Blocks 6I, 6J, 6K, 6L, and 12A of BOIPFD. Cross-check with OEL for items to be replaced and compute total deletions per organization. See sub-procedures 6A and 6B.

Process

6N. Enter personnel and equipment to be deleted

Block 60 To complete this block, enter note numbers only. Note numbers are keyed to explanatory notes or rationale which occur at the end of the BOIP or on the rationale enclosures. Note numbers are 3-position numeric or alphanumeric numbers and are chosen, when needed, from a list of standardized, sequenced remarks related to a specific type of unit, piece of equipment, or personnel designation. See AR 310-49, select the appropriate remark, and reference it. An example explanatory note would be a code (XXX) designating DA civilian (job series) personnel requirements.

Input Data

Enter 3-position note numbers only, e.g., RO1, RO2. These numbers are keyed to explanatory notes at end of BOIP or on rationale enclosure.

Process

60. Enter rationale/explanatory note numbers

APPENDIX A

Sample Documents With Associated Correspondence:

Document	Page
Letter of Transmittal to HQDA	A-2
BOIP Cover Sheet	A-4
BOIP Continuation Sheet	A-7
BOIPFD	A-35
Letter of Transmittal To TRADOC (BOIP & QQPRI)	A-40
Amended Final QQPRI	A-69

Note: Included with these sample documents are basic transmittal letters and associated indorsements that reflect particular processing. The correspondence associated with the QQPRI and BOIP are indicative of the type processing that can take place while developing a BOIP. These sample documents represent the actual ones used in processing the Meteorological Data System: AN/TMQ-31 (). However, in case of conflict with current DA directives and procedures, current promulgations should be followed.



DEPARTMENT OF THE ARMY Mr. Sevier/bs/680-3874
HEADQUARTERS UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND
FORT MONROE, VIRGINIA 23651

REPLY TO
ATTENTION OF:

ATCD-OB

13 July 1983

SUBJECT: Basis of Issue Plan (BOIP) for the Meteorological Data System:
AN/TMQ-31()

HQDA (DAMO-RQR (BOIP))
WASH DC 20310

1. Reference AR 71-2.
2. BOIP for the subject item of equipment is attached as Encl 1 and is forwarded for approval. DA Form 3362b containing technical and administrative data is attached to the BOIP.

<u>BOIP NO</u>	<u>LIN</u>	<u>NOMENCLATURE</u>
77-0102-F	Z26863	Meteorological Data System: AN/TMQ-31()

3. The following information is provided:

- a. The Basis of Issue Narrative Guidance in Block 18 of the attached BOIP is appropriate for publication in AR 310-34.

- b. The ROC for this item was approved by HQDA on August 1979 and was assigned CARDS Number 0449.

- c. The Amendment No. 3 to Final Qualitative and Quantitative Personnel Requirements Information (QQPRI) and proposed MOS decision are attached as Encl 2.

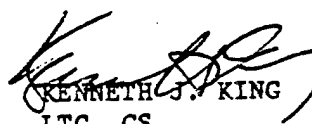
4. Recommend approval of the attached BOIP and announcement of the MOS decision.

5. POC at HQ TRADOC is Mr. Sevier, AUTOVON 680-3874.

FOR THE COMMANDER:

2 Encl
as

CF: (Over)


KENNETH J. KING
LTC, GS
Asst AG

ATCD-OB

13 July 1983

SUBJECT: Basis of Issue Plan (BOIP) for the Meteorological Data System:
AN/TMQ-31()

CF: w/encl

HQDA (DAEN-ZCI/DAEN-ZCM/

DAEN-MPE-T)

HQDA (DAPE-HRS)

National Guard Bureau (NGB-ARO-U)

National Guard Bureau (NGB-ARL-PFM)

CINCUSAREUR & Seventh Army (AEAGF-ADE)

CINCUSAREUR & Seventh Army (AEAGC-FMD)

Cdr

Eighth USA (EAGJ-FD-M)

FORSCOM (AFOP-FDO)

USACAC (ATZL-CAF-SD)

USACDEC (ATEC-RM-FD)

USA DARCOM (DRCDE-P)

USA DARCOM, MRSA (DRXMD-MD)

USA Electronics Research & Development

Comd (DRDEL-PO-IL)

USARJ (AJGC-FDA)

USALOGC (ATFL-FO)

USASSC, NCR (ATZI-NCR-MJ)

USAWESTCOM (APOP-FDT)

Comdt

USAFASCH (ATSF-CF)

USAFASCH (ATSF-TSM-TD)

Dir, USA EARA (DRXEA-MC)

TRADOC LO

Federal Republic of Germany

USMC Development & Education Comd

DATE OF RUN 83/06/28				BASIS OF ISSUE PLAN COVER SHEET				1. PAGE 10E36			
3. CHG NO.		4. INITIAL DA		5. ESTIMATED DATE		6. AVAILABILITY		7. ESTIMATED A. OPERI		9. STANDARD 10. CARDS	
NUMBER		REVISION DATE		OF TC STD-A		DATE		UNIT COST		STATUS STUDY NO. MO	
77-0102-F		82/04/15		82/06/30		84/06/30		\$285,000		AW	K2780100GMC 0449
11. NFTP	17. LINE ITEM NUMBER	13. NOMENCLATURE		APC = B	14. DA FOR APPROVAL			15. RIC	16. SC	17. AD	
								DA	TC	SSC	
11-32	226063	METEOROLOGICAL DATA SYSTEMS (W/THO 344)						016	76	422-11-M09	
18. ORGANIZATIONAL/OPERATIONAL CONCEPTS AND MOS/OPRI INFORMATION (ISSUE-BASIS OF ISSUE NARRATIVE GUIDANCE)											
THE MOS WILL PROVIDE UPPER ATMOSPHERIC DATA PRIMARILY FOR METEOROLOGICAL BALLISTIC CORRECTION FOR GUN AND MISSILE FIRINGS AND FALLOUT PREDICTION INFORMATION TO ALLITUDES UP TO 30 KM. MOS TEAMS WILL NORMALLY BE DEPLOYED ON A CORPS-BASIS AND ARE SIZED SO AS TO GIVE THE BEST METEOROLOGICAL COVERAGE TO THE CORPS AREA. BASIS OF ISSUE FOR MOS IS TWO PER DIVISION ARTILLERY AND ONE PER FA BDE AND SEPARATE BDE WITH METEOROLOGICAL SECTION. A 5 TON TRK W/ WINCH WAS SELECTED BY THE MAT DEV AS THE PRIME MOVER FOR MOS. AFTER THEY WERE ADVISED THAT TIME 2-1/2Y TRK WOULD BE REPLACED. THE MET SECTION BY DOCTRINE, OPERATES AUTONOMOUSLY WITHIN THE DIV, REQUIRING A 5 TON TRK W/ WINCH.											
19. ASSOCIATED /RELATED ROIP/LIN											
LINE ITEM	NOMENCLATURE	ASSOC ROIP NO. OR STD-LCC	REMARKS								
A46470	AMPLIFIER AUDIO FREQUENCY: AM-1780/GR	GP A									
A39381	ANTENNA GROUP: DE-25411/GR	GP A									
B33019	RADOMETER AERODID: ML-3337/M	GP A									
C62375	CASE: BATTERY 2-A1J/1SEC	GP A									
C68719	CABLE TELEPHONE: WD-1/TT OR-B 1320 FT	GP A	0101								
E94970	CONTROL RADIO SET: C-2299/VRC	GP A									
H01836	ELECTRONIC KEY GENERATOR HALF DUPLEX TACTICAL: ISEC/MG31-12	GP A									
H02300	ELECTRONIC TELETYPE/ARTILLER SECURITY EQUIPMENT: ISEC/MN-7	GP A									
J42100	GEN ST GAS ENG TH: 10KW 60HZ 1-3PH AC 120/240 120/208V PU-619/M	GP A									
J44055	GEN ST GAS ENG: 1.5KW DC 28V SHOCK TACTICAL UTILITY	GP A									
J53782	GENERATOR SIGNAL: AN/USM-44	GP A									
K14814	HANDSET: H-189/GR	GP H									
K23814	HEADSET-MICROPHONE: H-182/PT	GP A									
K87243	INSTALLATION KIT: MK-1236/G E/AN/VRC-46 53 64 GRCL25 160 IN M151 GP	GP A									
K87536	INSTALLATION KIT: MK-1836/VRC F/RY-57 W/AN/VRC-46 IN M151A1 GP	GP A									
K87564	INSUL KIT: MK-1866/VRC E/RY-57 W/AN/VRC-46 IN S250 OR S280 GP	GP A									
L84098	LINDSPEAKER PERMANENT MAGNET: LS-454/U GP	GP A									
M80242	MULTIMETER: AN/USM-223 GP	GP A									
N30572	OSCILLOSCOPE: AN/USM-281 GP	GP A									
P34314	POWER SUPPLY: PB-2309/U GP	GP A									
Q53001	RADIO SET: AN/VRC-46 GP	GP A									

Encl 1

2. NOIP SERIAL NO. 3. CHG NO. 4. INITIAL DATE 5. ESTIMATED DATE 6. AVAILABILITY 7. ESTIMATED UNIT COST 8. DOPRI 9. STANDARD 10. CARDS NO
 11. MFTP 12. LINE ITEM 13. NOMENCLATURE 14. APC = 8 15. DA FOR APPROVAL 16. RIC 17. AO 18. FC SSC
 77-0102-F 82704/15 82706/30 84706/30 \$285,000 NW K278010UCNC 0649
 EL-32 226863 METEOROLOGICAL DATA SYSTEM: AN/TMO-311 P 016 A22.11

19. ASSOCIATED /RELATED 801P/LIN ASSOC-801P NO. REMARKS
 OR STD-LCC
 LINE NOMENCLATURE
 ITEM
 078282 RADIO SET CONTROL GROUP: AN/GRA-39 GP A
 830462 RECEIVER-TRANSMITTER-CONTROL GROUP: AN/GRA-6 GP A
 R59160 REELING MACHINE CABLE HAND: RL-39 GP A
 501379 SPEECH SECURITY EQUIPMENT: TSEC/RY-57 GP A
 T59346 TRUCK CARGO: TACTICAL 5/4 TON 4X4 W/24 VOLT 100 AMP M1008 GP A
 V31311 TELEPHONE SET: TA-3122PI GP A
 V57729 TERMINAL TELEGRAPH: TH-227IC GP A
 V98788 POWER SUPPLY: VEHICLE-HYDRA/ISEC GP A
 W37251 TOOL KIT ELECTRONIC EQUIPMENT: TK-100/G GP A
 W32388 TOOL KIT ELECTRONIC EQUIPMENT: TK-105/G GP A
 W37483 TOOL KIT ELECTRIC EQUIPMENT: TK-101/GSO GP A
 W60351 WIRELINE ADAPTER: HYX-57/ISEC GP A
 W98825 TRAILER TANK: WATER 400 GALLON 1-1/2 TON 2 WHEEL W/E GP A
 X40831 TRUCK CARGO: DROP SIDE 5 TON 6X6 W/MINCH W/E GP A
 Y14526 AN/GSM-64C DIGITAL VOLTMETER 5 1/2 DIGIT GP A
 Z27112 FIELD ARTILLERY METEOROLOGICAL ACQUISITION: AN/TMO-33 GP A 0101 CONSIDERED

20. REPLACED EQUIPMENT
 LINE NOMENCLATURE
 ITEM
 C73685 CALIBRATOR FREQUENCY: TS-65/FMO-1 C
 W5836 GEN SET GAS ENG: 3KW 400HZ 1-3PH AC 120/208/240V IAC IIIII PM ASSOCIATED
 W36739 METEOROLOGICAL STATION MANUAL: AN/TMO-4 PM ASSOCIATED
 U78282 RADIO SET CONTROL GROUP: AN/GRA-39 PM ASSOCIATED
 W95010 RADIOSONDE BASELINE CHECK SET: AN/GMM-1A PM ASSOCIATED
 R16476 RAMIN SET: AN/GMD-1 RM PRINCIPAL 0101
 R50043 RECORDING SET WEATHER DATA: AN/TMO-5 PM ASSOCIATED
 R84052 REPRODUCER SIGNAL DATA: GM ASSOCIATED
 T59346 TRUCK CARGO: TACTICAL 5/4 TON 4X4 W/24 VOLT 100 AMP M1008 GM ASSOCIATED
 W80438 TEST SET RADIO: TS-538/0 GM ASSOCIATED
 W95537 TRAILER CARGO: 3/4 TON 2 WHEEL W/E GM ASSOCIATED
 W95011 TRAILER CARGO: 1-1/2 TON 2 WHEEL W/E GM ASSOCIATED
 X39432 TRUCK CARGO: TACTICAL 1-1/4 TON 4X4 W/E GM ASSOCIATED
 X40009 TRUCK CARGO: 2-1/2 TON 6X6 W/E GM ASSOCIATED
 X62340 TRUCK VANS SHOP 2-1/2 TON 6X6 W/E GM ASSOCIATED
 Z94109 TRUCK UTILITY: 1-1/4 TON 4X4 W/E HMMV GM ASSOCIATED

2. B01P SERIAL 3. ENG NO. 4. INITIAL OR 5. ESTIMATED DATE 6. AVAILABILITY DATE 7. ESTIMATED UNIT COST 8. QOPRI 9. STANDARD 10. CARDS NO
 REVISION DATE OF TC STD-A

77-0102-F 82/06/15 82/06/30 84/06/30 AM K2760100GWC 0449

11. NFTP 12. LINE ITEM 13. NOMENCLATURE APC = 8 (AT DA FOR APPROVAL) 14. ABA 15. RIC 16. SC 17. AD DA TC SSC

CL-32 276863 METEOROLOGICAL DATA SYSTEMS ANALYSIS 816 A22 Y1

HDS	TITLE	REPLACE/ASSOC	REMARKS
A.	B.	C.	D.
201A0	METEOROLOGY TECH	GM ASSOCIATED	CONSIDERED
93F10	FA MET CREW MEMBER	GM ASSOCIATED	
93F1P	FA MET CREW MEMBER	GM ASSOCIATED	
93F20	FA MET CREW MEMBER	GM ASSOCIATED	
93F2P	FA MET CREW MEMBER	GM ASSOCIATED	CONSIDERED
93F40	FA MET CREW MEMBER	GM ASSOCIATED	CONSIDERED
93F4P	FA MET CREW MEMBER	GM ASSOCIATED	
201A0	METEOROLOGY TECH	GP ASSOCIATED	
201A7	METEOROLOGY TECH	GP ASSOCIATED	
201A8	METEOROLOGY TECH	GP ASSOCIATED	
26C3H	EBT AMEA-SVL-RDR REP	GP ASSOCIATED	
28A48	COMM-ELCT EQ REP TECH	GP ASSOCIATED	
32E4H	C-E MAINTENANCE CHIEF	GP ASSOCIATED	
3275H	C-E MAINTENANCE CHIEF	GP ASSOCIATED	
93E10	FA MET CREW MEMBER	GP ASSOCIATED	
93E1P	FA MET CREW MEMBER	GP ASSOCIATED	
93E20	FA MET CREW MEMBER	GP ASSOCIATED	
93E2P	FA MET CREW MEMBER	GP ASSOCIATED	
93E30	FA MET CREW MEMBER	GP ASSOCIATED	
93E3P	FA MET CREW MEMBER	GP ASSOCIATED	
93E40	FA MET CREW MEMBER	GP ASSOCIATED	
93E4P	FA MET CREW MEMBER	GP ASSOCIATED	
94E4H	HOSP EQUIP SERVICE SP	GP ASSOCIATED	CONSIDERED

[illegible]

CONTINUATION SHEET FOR RQIP 77-0102-E LIN 26663

DATE OF RUN 83/06/28

NOTE NO.

PLUS MINUS

ASI

NOS

GR

CURR

FRC

LINE

NO.

UNIT

DESCRIPTION

WDET

PRIN

REQ

0416H000 07 METEOROLOGICAL SEC

8 637483

A X40009

A X40931

A X62340

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06105H000 FA-BN-105NM T SEP INF B

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E5 93F20

E4 93F10

E3 93F10

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06186H000 HHB FA BN 105NM T

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CONTINUATION SHEET FOR BULP 77-0102-F LIN 226863

DATE OF RUN 83/06/28

NOTE NO.

PLUS MINUS

MODS

ASL

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PRIN

REQ

CURR

UNIT DESCRIPTION

MULT

PAR

AUG

061464000-00

METEOROLOGICAL SEC

UNIT NO.

061464000-00

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WB-201A7

E7 93F4P

E6-93F3P

E5 93F2P

E4-93F1P-HI

E3 93F1P

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A46470

A79381

B33019

C68719

C72685

E94970

H01824

H02300

J42100

J44055

K14814

K23014

K82243

K87536

K82564

L84098

M36739

M80242

M53001

Q78282

Q95810

R16476

R30862

R50043

R59160

S01373

T59346

V31211

V57729

V98788

X37483

X60351

X95537

X98825

X40931

X62340

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CONTINUATION SHEET FOR 801P-77-0102-F LIN-226863											PAGE 9	
UNIT NO.	PAR	AUG	UNIT DESCRIPTION	MULT	PRIN REQ	CURR	ENG LINE/LINE CR	MOS	ASF	PLUS	MINUS	NOTE NO.
062011500	09		METEOROLOGICAL SEC				01	WB-201A7		1		
							02	E7 93F4P		1		
							03	E6 93F3P		1		
							04	E5 93F2P			1	
							05	E5 93F2P			1	
							N1	E5 93F2P H1		2		
							06	E4 93F1P			1	
							N2	E4 93F1P H1		2		
							07	E3 93F1P		1		
							A	A66470		2		
							A	A79381		3		
							B	B33019		1		
							A	C68719		5		
							B	C73685			1	
							A	E96970		4		
							A	H01836		2		
							A	H02300		2		
							A	J42100		2		
							A	J44055		2		
							A	K14814		2		
							A	K23814		2		
							A	K87243		2		
							A	K87536		2		
							A	K87564		2		
							A	L84098		2		
							B	M36739		1		
							B	M80242			1	
							A	Q53001		5		
							B	Q78282			1	
							B	Q95810			1	
							B	R16476			1	
							A	R30662		2		
							B	R50043			1	
							A	R59160		1		
							A	S01373		5		
							A	T59346		2		
							A	V31211		1		
							A	V57729		2		
							A	V98788		3		
							B	W37483		3		
							B	W60351		2		
							B	W95537			2	
							A	W98825		2		
							A	X40931		6		
							A	X62340			1	
							A	Z94109			3	
FA-8N-105-F-SEP-A3N-HD (11)											(11)	
E5 93F2P (11)											(11)	
E4 93F1P H1 (11)											(11)	

CONTINUATION SHEET FOR SDIP 77-0102-F LIN 22663

DATE OF RUN 03/06/20

UNIT NO.

PAR-AUG

UNIT-DESCRIPTION

MJLT PRIN-REQ

CURR-ENC LIN/LINE GR

NDS-AST

PLUS

MINUS

NOTE NO.

062054340 FA-8N-105-F-SEP-88N-RO

E3 93FIP 00

(1)

A46470

(1)

A79381

(1)

C68719

(2)

C73685

(1)

E94970

(2)

H01836

(1)

H02300

(1)

J42100

(2)

J44055

(2)

K14814

(1)

K23814

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K87243

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K87536

(1)

K87564

(1)

L84098

(1)

M36729

(1)

M80242

(1)

Q53001

(2)

Q95810

(1)

R16476

(1)

R50043

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S01373

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T59346

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Y57729

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V98788

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M37483

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M95537

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M98425

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X40931

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Y62340

(1)

Z94109

(3)

062064320 HHS BTRY 105MMT SEP 88N

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E5 93FIP

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E4 93FIP

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E3 93FIP 00

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A46470

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A79381

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C68719

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C73685

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E94970

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H01836

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J42100

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J44055

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K16814

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K23814

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K87564

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303116VNH11003 NO11AVNH11003 133NS 4100 004 2010-11-17 001 22682

DAVID-UN-630628-82490434-NUN-10-1146

[illegible]

~~002060920~~ ~~HH5 01RY 105MMT SEP ADN~~

860501

6E19EH
M36739

24208H

1002-12
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053001

6-9501A-
45501

01966
016676

01401X
-E70050

44003
44003

77E031
E1E105

954651
v57739

67115A
40400M

88486A

LE 3301
E87L3M

JE556N

528867

1E607X

X62340

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CONTINUATION SHEET FOR BUYP 77-0102-F LIN 726863													PAGE 15
DATE OF RUN	PAR AUG	UNIT DESCRIPTION	MULT	PRIN REQ	CURR	ENC	LIN/LINE GR	NDS	AST	PLUS	MINUS	NOTE NO.	
06302H020	08	METEOROLOGICAL SEC											
		B C62375								2			
		A C68719								5			
		B C73685									1		
		A H01836								2			
		A H02300								2			
		A J42100								2			
		A J44055								2			
		A K14814								2			
		A K23814								2			
		A K87243								2			
		A K87536								2			
		A K87564								2			
		A L84098								2			
		B M36739									1		
		B M80242								1			
		A 053001								5			
		B 078282									1		
		B 095810									1		
		B K16476									1		
		B K50043									1		
		A 501373								5			
		A T59346								2			
		A V91211								1			
		A V57729								2			
		A V98788								5			
		B W37483									3		
		B W60351								2			
		B W95811									1		
		B W98825								1			
		A X40009									1		
		A X40931								6			
		A X62340									1		
HH8-DIV ARTY HVT-DIV													(2)
06302J200		WD 201A0									(1)		
		E7-93F48									(1)		
		E6 93F30									(1)		
		E5-93F28									(1)		
		E4 93F10									(1)		
		E3-93F18									(1)		
		A46470									(2)		
		A79381									(3)		
		B33019									(1)		
		C62375									(2)		
		C68719									(5)		
		C73685									(1)		
		E94970									(4)		
		H01836									(2)		
		H02300									(2)		
		J42100									(2)		

CONTINUATION SHEET FOR DDIP 77-0102-F LIN 228863									
DATE OF RUN	PAR LOG	UNIT DESCRIPTION	MULT	PRIN REQ	CURR	ERC	LIN/LINE	GR	WDS
UNIT NO.	PAR LOG	UNIT DESCRIPTION	MULT	PRIN REQ	CURR	ERC	LIN/LINE	GR	WDS
06302J200	08	METEOROLOGICAL SEC							
		A K87293							2
		A K87536							2
		A K87564							2
		A L84098							2
		B M36739							1
		B M80242							1
		A Q53001							5
		B Q78282							1
		B Q95810							1
		B R16476							1
		A R30662							2
		B R50043							1
		A R59160							1
		A S01373							5
		A T59346							2
		A V31211							1
		A V57729							2
		A V98788							5
		B W57483							3
		B W60351							2
		B W95811							1
		B W98825							1
		A X40809							1
		A X40931							6
		A X62340							1
FA BN. 155 SP. SEP AR BD (1)									
063751000									
		E5 99F20							(1)
		E4 93F10							(1)
		E3 93F10							(1)
		A46470							(1)
		A79361							(1)
		C68719							(2)
		C73685							(1)
		E94970							(2)
		H01836							(1)
		H02300							(1)
		J42108							(1)
		J44055							(1)
		K14814							(1)
		K23814							(1)
		M87243							(1)
		K87536							(1)
		K87564							(1)
		L84098							(1)
		M36739							(1)
		Q53001							(2)
		Q95810							(1)
		R16476							(1)
		R50943							(1)

CONTINUATION SHEET FOR BUFP 77-0102-F LTN 226863

DATE OF RUN 83/06/78

UNIT NO. PAR AUG UNIT DESCRIPTION HOLY PRIN RED CURR ERC LTN/LINE CR NOS ASI PLUS MINUS NOTE NO.

06376H000 09 METEOROLOGICAL SECTION

A C8719	2	1	
A C73685	2		
A E94970	1		
A H01836	1		
A H02300	1		
A J42100	1		
A J44055	1		
A K14814	1		
A K23814	1		
A K87243	1		
A K87536	1		
A K87564	1		
A L84098	1		
B K36739	1		
A Q53001	2		
B Q95810	1		
B R16476	1		
B R50043	1		
A S01373	2		
A T59346	1		
A V57729	1		
A V98768	2		
B W37483	1		
B W95811	1		
A X40009	1		
A X40931	3		
A X62340	1		

06375H020 FA BN. 155 SP. SEP 1 (M) (1)

E5-93F20	(1)		
E4-93F10	(1)		
E3-93F10	(1)		
A46470	(1)		
A79381	(1)		
C68719	(2)		
C73685	(1)		
E94970	(2)		
H01836	(1)		
H02300	(1)		
J42100	(1)		
J44055	(1)		
K14814	(1)		
K23814	(1)		
K87243	(1)		
K87536	(1)		
K87564	(1)		
L84098	(1)		
M96739	(1)		
Q53001	(2)		
Q95810	(1)		

CONTINUATION SHEET FOR 801P-77-0102-F LIN 726663

DATE OF RUN 83/76/28

NOTE NO.

UNIT NO.	PAR AUG	UNIT DESCRIPTION	MULT	PRIN REQ	CURR	ERC	LIN/LINE	GR	MDS	ASL	PLUS	MINUS
06401J320	IT	METEOROLOGICAL SECT										
		A E95970									2	
		A H01836									1	
		A H02300									1	
		A J42100									1	
		A J44055									1	
		A K14814									1	
		A K23814									1	
		A K87243									1	
		A K87536									1	
		A K87564									1	
		A L84098									1	
		B M36739									1	
		A Q53001									2	
		B Q95810									1	
		B R16476									1	
		A R30662									1	
		A S01373									1	
		A T59346									1	
		A V31211									1	
		A V57129									1	
		A V96788									1	
		B W37483									1	
		B W95811									1	
		A X39432									1	
		A X40809									1	
		A X40931									3	
		A X62340									1	
06401J320		HH8. FA BDE	(XX-8	(1)								
		E7-93F40									(1)	
		E5 93F20									(1)	
		E4-93F18									(1)	
		E3 93F10									(1)	
		A46470									(1)	
		A79381									(1)	
		C68719									(2)	
		C73685									(1)	
		E94970									(2)	
		H01836									(1)	
		H02300									(1)	
		J42100									(1)	
		J44055									(1)	
		K14814									(1)	
		K23814									(1)	
		K87243									(1)	
		K87536									(1)	
		K87564									(1)	
		L84098									(1)	
		M36739									(1)	
		Q53001									(2)	

CONTINUATION SHEET FOR 801P 77-0102-F LIN 226863

DATE OF RUN 83/06/28

NOTE NO.

PLUS MINUS

ASL

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DESCRIPTION

PAR

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A X40931

A X62340

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CONTINUATION SHEET FOR R01P 77-0102-F LIN 22663

DATE OF RUN 87/06/28

NOTE NO.

PLUS MINUS

AST

RDS

CURR

ERC

LIN

LINE

GR

WJLT

PRIN

REQ

UNIT DESCRIPTION

PAR 106

90 USA FLD ARTILLERY

TCN053AA

J42100

J44055

J45836

K16814

K23814

K87243

K87536

K87564

L84098

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CONTINUATION SHEET FOR BOP 77-0102-F LIN 226863

DATE OF PUN 63/06/78

NOTE NO. NOTE DESCRIPTION

001 A MDS TEAM WILL CONSIST OF THE FOLLOWING PERSONNEL:
 GRADE DUTY TITLE NUMBER MDS'S ASI
 M0 MET TECHNICIAN 1 201A0 (1)
 E-7 MET SEC CHIEF 1 93F40 (1)
 E-6 FA MET CREWMAN 1 93F30 (1)
 E-5 FA MET CREWMAN 1 93F20 (1)
 E-4 FA MET CREWMAN 2 93F10 (1)
 E-3 FA MET CREWMAN 2 93F10 (1)

002 AN ASI HAS BEEN REQUESTED FOR THOSE PERSONNEL WHO WILL RECEIVE TRAINING FOR THE AN/TQ-31 (MDS). AFTER THE NEW SYSTEM HAS BEEN FULLY FIELDED, THE ASI'S WILL BE DELETED EXCEPT FOR THE E5 AND 1 E4 WHO WILL RETAIN THE MAINT ASI.
 ALL EQUIPMENT IN EACH METEOROLOGICAL SECTION HAVE BEEN ADJUSTED TO STANDARDIZE EQUIPMENT REQUIREMENTS FOR THE MDS TEAMS. EQUIPMENT ADJUSTMENTS MADE ARE TO FACILITATE MAINTENANCE COMMUNICATION, TRANSPORTATION, AND OPERATION OF THE METEOROLOGICAL DATA SYSTEM (MDS). THE 400 GAL WATER TRAILER PRIMARY PURPOSE IS TO PROVIDE SUFFICIENT QUANTITIES OF WATER USED IN THE PRODUCTION OF HYDROGEN GAS BY THE HYDROGEN GENERATOR, AN/TQ-3.

003 SEP BDE WITH MET SECTIONS IN ASSIGNED FA BNS WILL REQUIRE ONE MDS TEAM.

004 FA BDE REQUIRES ONLY ONE MDS TEAM.

005 DIVISION ARTILLERY REQUIRES TWO MDS TEAMS.

006 THE SIX MDS SETS AND ADJUSTMENT OF SUPPORT EQUIPMENT IS THE MINIMAL ESSENTIAL REQUIREMENTS TO FACILITATE INSTRUCTION OF MDS AT USAFAS. THE PLUS UP OF EQUIPMENT IS FOR MDS. THE OTHER EQUIPMENT SHOWN UNDER THE TDE COLUMN SUPPORTS OTHER SYSTEMS, I.E. FIREFINDER, RADAR AND GMD AND CANNOT SUPPORT THE MDS CLASSES BEING TAUGHT SIMULTANEOUSLY. EQUIPMENT WILL BE REQUIRED OCT 85.

007 TWO MDS WILL REPLACE THE TWO RAWIN SETS CURRENTLY IN USE. EQUIPMENT WAS ADJUSTED TO FACILITATE THE MDS.

008 PERSONNEL REQUIRED ARE BASED UPON NUMBER OF PEOPLE TO BE TRAINED. THE FREQUENCY AND MDS COURSES TO BE PROVIDED BY USAFAS ARE AS FOLLOWS:

TYPE	STUDENT LOAD							
	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92	
OPERATOR CKS								
93F ASI	60	132	231	258	321	339	321	
886 MAINT								
93F ASI	20	50	98	124	156	164	156	
DS MAINT								

NOTE NO. NOTE DESCRIPTION

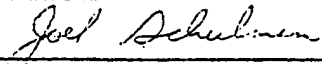
008 260VS 64 64 64 64 64 64 64 64 64 64

		CLASSES PER YEAR									
TYPE		FY 86	FY 87	FY 88	FY 89	FY 90	FY 91	FY 92			
OPERATOR CRS	4	6	12	12	12	12	12	12			
ORG MAINT CRS	2	4	8	12	12	12	12	12			
DS MAINT CRS	8	8	8	8	8	8	8	8			

INCREASE IN CIVILIAN PERSONNEL ARE AS FOLLOWS:

CIV	GRADE	POSITION
2	GS 1712-11	INSR
4	GS 1712-09	INSR

ACN 36537

BASIS OF ISSUE PLAN FEEDER DATA For use of this form, see AR 71-2; the proponent agency is DCSOPS.		1. BOIP PLAN NUMBER 77-0107-F	2. ☐ TENTATIVE ☐ AMENDED ☒ FINAL ☒ AMENDED	PAGE NO. 1 3. PREPARATION DATE 4 NOV 82	
4. DESCRIPTION					
a. GENERIC Meteorological Data System			5. EST TC DATE 83 0315		
b. NATIONAL Field ART METEOROLOGICAL ACQ SYS: AN/TMD-31			6. EST AVAIL DATE 85 0615		
7. LINE ITEM NUMBER					
a. DEV Z 26863	b. STD NYA	c. SC 6660 76	d. SSN 22780006WC D2780000 GWC	8. NATIONAL STOCK NYA	
9. DESCRIPTION The AN/TMQ-31 is a meteorological Data System. It tracks a radiosonde as it rises through the atmosphere; receives meteorological and position data; automatically processes it into meteorological messages for immediate transmission to the user. It consists of an S-280 shelter (or hardened shelter when available) which houses telemetry receiving data processing and communications equipments. It also contains a modified M-105 trailer containing a tracking antenna. Refer to attached sheet for a listing of included equipment.					
10. PRIMARY USAGE (Non-technical Description of Major uses) Ballistic correction for gun and missile firings Fallout prediction data input Support Air Force in synoptic data generation					
11. ASSOCIATED/SUPPORT ITEMS (Use blank sheet if additional space is required)					
LINE ITEM NUMBER (a)	NOMENCLATURE (b)	CC/SICC (c)	NEW/BOIP STD-LCC (d)	LEVEL OF MAINTENANCE (e)	QUANTITY (f)
	See attached sheet				
12. ITEMS TO BE REPLACED/ASSOCIATED SUPPORT					
LINE ITEM NUMBER (a)	NOMENCLATURE (b)	COMPLETE OR IN PART (c)	RECOMMENDATION TC/RTC (d)		
	See attached sheet				
13. DA APPROVED STATEMENT OF REQUIREMENT (LOA, LR, ROC, TDR, TDLR, OTHER DA AUTHORITY) ROC					
14. REFERENCE NO. 0449	15a. ABA P	15b. RIC B16	15c. DEV CODE CU	15d. NETP EL 32	16. EST COST PROO \$1,200,000.00
17. RDTE PROJECT OR TASK (If Applicable)					
a. NUMBER 1F6 64726 D511 08			b. TITLE Field Artillery Meteorological Acq Sys (FAMAS)		
18. REMARKS 					
19. DEVELOPING AGENCY, LOCATION, FILE SYMBOL, AND TELEPHONE NUMBER ERADCOM CSTA Laboratory Ft Monmouth, NJ DELCS-S AV 996-5525			20. TYPED NAME AND TITLE OR PREPARER JOEL SCHULMAN, EE 21. SIGNATURE 		

DAI

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Block 9

COMPONENT ITEMS (CONT')

<u>LIN</u>	<u>NOMENCLATURE</u>	<u>QTY</u>
W95811	Trailer 1 1/2 Ton, 2 Wheel M-105	1 ea.
A 23990	Air Conditioner (Vertical Compact) 9000 BTU	2 ea.
	Shelter, Electrical Equipment S-280	1 ea.
	AN/UYK-19 Computer (No LIN)	1 ea.
	Magnetic Tape Transport AN/UYH-6 (No LIN)	1 ea.
	Teleprinter TT-773 (P)/G (No LIN)	1 ea.
	TACFIRE Remote Data Terminal (No LIN)	1 ea.
	Power Supply PP-7607/C (No LIN)	1 ea.
N 30594	Oscilloscope AN/USM-296A	1 ea.

Block 11.

ASSOCIATED/SUPPORT ITEMS

a. LINE ITEM NO.	b. NOMENCLATURE	c. CC/ SICC	d. NEW STD-LCC	e. LEVEL OF MAINT.	f. QTY
A 46470	Amplifier, Audio Frequency AM 1780/URC	OK	STD A		1 ea
E 94970	Control, Radioset Set C-2299/VRC		STD A		2 ea
K14814	Handset H-189/CR		STD A		1 ea
K23514	Headset Microphone H-182/U	OK	STD A		1 ea
L84093	Loudspeaker, LS 454/U		STD A		1 ea
A79381	Antenna, OE-254/GRC		STD A		2 ea
B33019	Barometer ML-333/TM		STD A		1 ea
C68719	Cable Telephone, WD-1/TT DR-8		STD A		3 reels
H01836	Electronic Key Generator TSEC/KG-31-12		STD A		1 ea
H02300	Electronic Key Generator TSEC/KW-7		STD A		1 ea
J44055	Generator Set, Gas Engine 1.5 KW, 28VDC		STD A		1 ea
K87536	Installation Kit, MK-1878 VRC F/KY-57 with AM/VRC-46 mounted in M151A1, Installation Kit, MK-1838 with VRC		STD A		1 ea
M 80242	Multimeter AN/USM-223		STD A	O F	1 ea ---
Q53001	Radio Set AN/VRC-46				2 ea
Q78282	Radio Set Control Group AN/GRA-39		STD A		1 ea
R30662	Receiver Transmitter Control Group, AN/GRA-6		STD A		1 ea
R59160	Reeling Machine, RL-39		STD A		1 ea.
S01373	Speech Security Equipment TSEC/RV-57		STD A		2 ea
V31211	Telephone Set, TA-312/PT		STD A		1 ea
V31244	Terminal Telegraph-Telephone AN/TCC-29		STD A		1 ea
V95788	Vehicular Power Supply HYP-57/TSEC		STD A		2 ea

Block 11.

ASSOCIATED/SUPPORT ITEMS

a. LINE ITEM NO.	b. NOMENCLATURE	c. CC/ SICC	d. NEW STD-LCC	e. LEVEL OF MAINT.	f. QTY
W37483	Tool Kit, Electronic Equipment TK-101/GSC		STD A	O	
W37251	Tool Kit, Electronic Equipment TK-100/G		STD A	F,H	
W37388	Tool Kit, Electronic Equipment TK-105/G		STD A	F,H	
W60351	Wire Line Adapter HYX-57/TSEC		STD A		1 ea
W95400	Trailer, Cargo 1/4 ton		STD A		1 ea
W98825	Trailer, Tank Water, 400 gal		STD A		1 ea
X40931	Truck, Cargo, 5 Ton, Drop Sides, 6x6 w/ winch (w/100 amp alternator kit)		STD A		3 ea
X60833	Truck, Utility, 1/4 ton, 4x4 M151A 1		STD A		1 ea
J42100	Generator Set, Gas Engine TM: 10 KW 60 Hz		STD A		1 ea
Z 27113	Meteorological Station AN/TMQ-33		NEW		1 ea
K 87564	Installation Kit, MK-1866, VRC-F/KY-57 w/AN/VRC-46 mounted in S-280 shelter, Install Kit MK-1866		STD A		1 ea
Z 84564	Automatic Test and Repair System AN/MSM-105(V)I			H <i>IN PART</i>	
P38314	Power Supply PP-2309/U		STD A	F	
N30572	Oscilloscope		STD A	F DS	
Y14526	Voltmeter, Digital AN/CSM-64B		STD A	F DS	
J53782	Signal Generator AN/USM-44C		STD A	F DS	
Z50138	RF Power Meter AM/USM-193			F	
K87243	Installation Kit AN/VRC-46 on M151		STD A		1 ea

BOIP Feeder Data

FAMAS, AN/TMQ-31

Block 12 (Items to Be Replaced)

LIN

NOMENCLATURE

C73685	Calibrator, Frequency standard TS-65()/FMQ-1
M36739	Meteorological Station, Manual AN/TMQ-4
R16476	Rawin Set, AN/GMD-1()
R50043	Recording Set, Weather Data, AN/TMQ-5()
V88438	Test Set Radio TS-538 ()/U
	Radiosonde AN/AMT-4
	Radiosonde AN/AMT-12
	Baseline Check Set AN/GMM-1



DEPARTMENT OF THE ARMY J. Black/fmh/AV 639-1200
UNITED STATES ARMY FIELD ARTILLERY SCHOOL
FORT SILL, OKLAHOMA 73503

MAY 27 1983

ATSF-CF

SUBJECT: Basis of Issue Plan (BOIP) and Amendment No. 3 to Final Qualitative and Quantitative Personnel Requirements Information (FQQPRI) for the Meteorological Data System (AN/TMQ-31)

Commander
US Army Training and Doctrine Command
ATTN: ATCD-OB
Fort Monroe, Virginia 23651

1. Reference 2d Indorsement to Basic Letter dated 29 April 1983, subject as above.
2. Recommend establishment of new Additional Skill Identifiers (ASIs) for the Meteorological Data System operator and organizational maintenance personnel.
3. The old Meteorological Data System (GMD-1) will remain on an active status for approximately seven years during the fielding of the new Meteorological Data System (MDS AN/TMQ-31). During this time we must be able to track both MOSSs. An ASI is one solution to this problem. Current and proposed MOSSs are as follows:

CURRENT

201A0

93F40

93F10, 20, and 30

93F20H1

93F10H1

TITLE

Meteorology Technician

Meteorology Section Chief

FA Meteorological Crewman

FA Meteorological Crewman with ASI H1
(Meteorological Equipment Repairer)

PROPOSED

201A0 ()

93F40 ()

TITLE

Meteorology Technician with ASI denoting
AN/TMQ-31 (MDS) qualified

Meteorology Section Chief with ASI
denoting AN/TMQ-31 (MDS) qualified

1 JUN REC'D - 26

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Encl 2 to Encl 2

ATSF-CF

SUBJECT: Basis of Issue Plan (BOIP) and Amendment No. 3 to Final Qualitative and Quantitative Personnel Requirements Information (FQQPRI) for the Meteorological Data System (AN/TMQ-31)

PROPOSED

TITLE

93F10 (), 93F20 ()
93F30 ()

FA Meteorological Crewmember with ASI
denoting AN/TMQ-31 (MDS) qualified.

93F10 ()
93F20 ()

FA Meteorological Crewmember with ASI
denoting AN/TMQ-31 (MDS) Organizational
Maintenance qualified

4. In addition to tasks which are the same for both systems, i.e., assembly and disassembly of balloon inflation and launching equipment, preparing and operating electrical power generators, inflating and releasing balloons, pre-flight checks and tests of the Radiosonde, the Meteorological Data System crewman will be taught to emplace and displace the MDS, execute system pre-flight procedures for all operate modes, perform inflight contingency tasks and transmit met messages to appropriate subscribers.

5. In addition to the skills of an operator, the organizational maintenance repairer will be taught to service, troubleshoot, isolate and replace defective Line Replaceable Units (LRUs) of the Meteorological Data System AN/TMQ-31.

6. There will be no requirement for an ASI for DS maintenance. The 26B currently performs DS maintenance on the GMD-1 Rawin System. The 26BX5 POI will be changed to reflect an additional 120 hours of DS maintenance training on the new Meteorological Data System AN/TMQ-31. All 26BX5s will receive MDS training.

7. Proposed formal training and course lengths are as follows:

- a. Field Artillery Meteorological Data System Operator Course....^(93F)320 hours
- b. Field Artillery Meteorological Data System Organizational Maintenance Course^(13B)....320 hours
- c. Firefinder Radar Repairer^(26B)944 hours, plus 120 hours (MDS pure)....1064 hours

8. Two Material Readiness Command (MRC) personnel and three TRADOC instructors will constitute three New Equipment Training Teams (NETT). They will receive training from the contractor. Selected training sites are Vilseck and Grafenwohr, Germany, and Fort Sill, Oklahoma. Sustainment training will be conducted by the US Army Field Artillery School, Fort Sill, Oklahoma.

9. Positions in TOE/TDA can be identified in BOIP 77-0102-F dated 82/04/15 and enclosure 1.

10. Answers to paragraph 2c and 2e reference 1 are as follows:

ATSF-CF

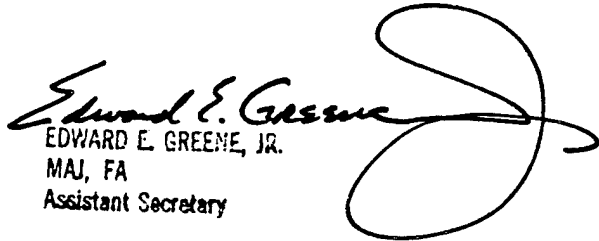
SUBJECT: Basis of Issue Plan (BOIP) and Amendment No. 3 to Final Qualitative and Quantitative Personnel Requirements Information (FQQPRI) for the Meteorological Data System (AN-TMQ-31)

a. BOIP 77-0102-F has been changed to reflect the reinstatement of the W0 and E7. The organized and operational concept (O&O) will also be changed.

b. The question in paragraph 2e has been referred to LTC Korkalo, DA DCSOPS, who is responsible for the Meteorological Data System Fielding Plan. The BOIP and QQPRI does not reflect this type of information.

11. Points of contact for this action are Mr. Charles Taylor, Target Acquisition Department, AV 639-2408 and Mrs. Judy Black, Directorate of Combat Developments, AV 639-1200.

FOR THE COMMANDANT:


EDWARD E. GREENE, JR.
MAJ, FA
Assistant Secretary

1 Encl
as

PRESENT (GMD-1)

PROPOSED (AN/TMQ-31)

TOE/TDA	PARA	LINE	DUTY POSITION	MOS	GR	TOE AUT.	DUTY POSITION	MOS	GR	TOE AUTH
06116H000 Includes the following UIC: WASNAA	07	01	Met Technician	201A0	W0	1	Met Technician	201A()	W0	1
		02	Met Section Chief	93F40	E7	1	Met Section Chief	93F40()	E7	1
		03	FA Met Crewman	93F20H1	E5	1	FA Met Crewmember	93F20(*)	E5	1
		04	FA Met Crewman	93F10	E4	3	FA Met Crewmember	93F10()	E4	1
		05	FA Met Crewman	93F10	E3	3	FA Met Crewmember	93F10(*)	E4	1
		06	FA Met Crewman	93F30	E6	1	FA Met Crewmember	93F10()	E3	2
		07	FA Met Crewman	93F20	E5	1	FA Met Crewmember	93F30()	E6	1
* denotes organizational maintenance trained.										

ENC 1 TO ENC 2

ENC 1 TO ENCL 2

PRESENT (GND-1)

PROPOSED (AN/TMQ-31)

TOE/TDA	PARA	LINE	DUTY POSITION	MOS	GR	TOE AUTH	DUTY POSITION	MOS	GR	TOE AUTH	
06201H300 UIC: WABDAA	09	01	Met Technician	201A0	W0	1	Met Technician	201A0	W0	2	
		02	Met Section Chief	93F4P	E7	1	Met Section Chief	95F4P()	E7	2	
		03	FA Met Crewman	93F3P	E6	1	FA Met Crewmember	93F3P()	E6	2	
		04	FA Met Crewman	93F2P	E5	1	FA Met Crewmember	93F2P(*)	E5	2	
		05	FA Met Crewman	93F2P	E5	1					
		06	FA Met Crewman	93F1P	E4	3	FA Met Crewmember FA Met Crewmember	93F1P() 93F1P(*)	E4 E4	2 2	
		07	FA Met Crewman	93F1P	E3	3	FA Met Crewmember	93F1P()	E3	4	
*Denotes org maint trained.											
06206H320	07	01	Met Technician	201A0	W0	1	Met Technician	201A0()	W0	1	
		02	Met Section Chief	93F4P	E7	1	Met Section Chief	93F4P()	E7	1	
		03	FA Met Crewman	93F2P	E5	1					
		04	FA Met Crewman	93F1P	E4	3	FA Met Crewmember FA Met Crewmember	93F1P() 93F1P(*)	E4 E4	1 1	
		05	FA Met Crewman	93F1P	E3	3	FA Met Crewmember	93F1P()	E3	2	
		06	FA Met Crewman	93F3P	E6	1	FA Met Crewmember	93F3P()	E6	1	
		07	FA Met Crewman	93F2PH1	E5	1	FA Met Crewmember	93F2P(*)	E5	1	
* Denotes org maint trained.											

PRESENT (GMD-1)				PROPOSED (AH/TMQ-31)							
TOE/IDA	PARA	LINE	DUTY POSITION	NOS	GR	TOE AUTH	DUTY POSITION	NOS	GR	TOE AUTH	
06302H000 Includes the following UICs: WAGJAA WACZAA WAHGAA WADUAA WAJAAA WAEPA WAPAAA WAG6AA WAPAAA WAKOAA WAPKAA WDF3AA WAQRAA WAL3AA WPFJAA WPG8AA WPN8AA WTSKAA WPRZAA WPUJAA WPD1AA WPENAA	10	01	Met Technician	201A0	W0	1	Met Technician	201A0()	W0	2	
		02	Met Section Chief	93F40	E7	1	Met Section Chief	93F40()	E7	E7	2
		03	FA Met Crewman	93F30	E6	1	FA Met Crewmember	93F30()	E6	E6	2
		05	FA Met Crewman	93F20	E5	1					
		06	FA Met Crewman	93F20H1	E5	1	FA Met Crewmember	93F20(*)	E5	E5	2
		07	FA Met Crewman	93F10	E4	3	FA Met Crewmember	93F10()	E4	E4	2
							FA Met Crewmember	93F10(*)	E4	E4	2
		09	FA Met Crewman	93F10	E3	3	FA Met Crewmember	93F10()	E3	E3	4

PRESENT (GMD-1)				PROPOSED (AN/TMQ-31)							
TOE/TCA	PARA	LINE	DUTY POSITION	MOS	GR	TOE AUTH	DUTY POSITION	MOS	GR	TOE AUTH	
06302H020	08	01	Met Technician	201A0	W0	1	Met Technician	201A0()	W0	2	
		02	Met Section Chief	93F40	E7	1	Met Section Chief	93F40()	E7	2	
		03	FA Met Crewman	93F30	E6	1	FA Met Crewman	93F30()	E6	2	
		04	FA Met Crewman	93F20	E5	1					
		05	FA Met Crewman	93F20H1	E5	1	FA Met Crewmember	93F20(*)	E5	2	
		06	FA Met Crewman	93F10	E4	3	FA Met Crewmember	93F10()	E4	2	
		07	FA Met Crewman	93F10	E3	3	FA Met Crewmember	93F10(*)	E4	2	
								93F10()	E3	4	
							*Denotes org maint trained.				

PRESENT (GMD-1)				PROPOSED (AN/TMQ-31)							
TOE/TDA	PARA	LINE	DUTY POSITION	MOS	GR	TOE AUTH	DUTY POSITION	MOS	GR	TOE AUTH	
06302J200	08	01	Met Technician	201A0	W0	1	Met Technician	201A0()	W0	2	
		02	Met Section Chief	93F40	E7	1	Met Section Chief	93F40()	E7	2	
		03	FA Met Crewman	93F30	E6	1	FA Met Crewmember	93F30()	E6	2	
		04	FA Met Crewman	93F20H1	E5	1	FA Met Crewmember	93F20(*)	E5	2	
		05	FA Met Crewman	93F20	E5	1					
		06	FA Met Crewman	93F10	E4	3	FA Met Crewmember FA Met Crewmember	93F10() 93F10(*)	E4 E4	2 2	
		07	FA Met Crewman	93F10	E3	3	FA Met Crewmember	93F10()	E3	4	
* Denotes org maint trained.											

PRESENT (GMD-1)

PROPOSED (AN/TMO-31)

TOE/TCA	PARA	LINE	DUTY POSITION	MOS	GR	TOE AUTH	DUTY POSITION	MOS	GR	TOE AUTH
06376H000 Includes the following UTCs: WAZBAA WADXT0 WPHGAA WPJDAA WPK6AA WPL3AA WP37AA WPNQAA WP57AA WP4XAA	09	01	Met Technician	201A0	W0	1	Met Technician	201A0()	W0	1
		02	Met Section Chief	93F40	E7	1	Met Section Chief	93F40()	E7	1
		04	FA Met Crewman	93F30	E6	1	FA Met Crewmember	93F30()	E6	1
		05	FA Met Crewman	93F20H1	F5	1	FA Met Crewmember	93F20(*)	E5	1
		06	FA Met Crewman	93F20	E5	1				
		07	FA Met Crewman	93F10	E4	3	FA Met Crewmember FA Met Crewmember	93F10() 93F10(*)	E4 E4	1 1
		08	FA Met Crewman	93F10	E3	3	FA Met Crewmember	93F10()	E3	2
06376H020	09	01	Met Technician	201A0	W0	1	Met Technician	201A0()	W0	1
		02	Met Section Chief	93F40	E7	1	Met Section Chief	93F40()	E7	1
		03	FA Met Crewman	93F30	E6	1	FA Met Crewmember	93F30()	E6	1
		05	FA Met Crewman	93F20	E5	1				
		06	FA Met Crewman	93F20H1	E5	1	FA Met Crewmember	93F20(*)	E5	1
		07	FA Met Crewman	93F10	E4	3	FA Met Crewmember FA Met Crewmember	93F10() 93F10(*)	E4 E4	1 1
		09	FA Met Crewman	93F10	E3	3	FA Met Crewmember	93F10()	E3	2

PROPOSED (AN/TWQ-31)

PRESENT (GMD-1)

TOE/TDA	PARA	LINE	DUTY POSITION	MOS	GR	TOE AUTH	DUTY POSITION	MOS	GR	TOE AUTH
06401H200 Includes the following UICs:	14	01	Met Technician	201A0	W0	1	Met Technician	201A0()	W0	1
		02	Met Section Chief	93F40	E7	1	Met Section Chief	93F40()	E7	1
		03	FA Met Crewman	93F30	E6	1	FA Met Crewmember	93F30()	E6	1
		04	FA Met Crewman	93F20H1	E5	1	FA Met Crewmember	93F20(*)	E5	1
		05	FA Met Crewman	93F20	E5	1				
		06	FA Met Crewman	93F10	E4	3	FA Met Crewmember FA Met Crewmember	93F10() 93F10(*)	E4 E4	1 1
		07	FA Met Crewman	93F10	E3	3	FA Met Crewmember	93F10()	E3	2
							* Denotes org. maint. trained.			

PRESENT (GMD-1)

PROPOSED (AN/TMQ-31)

TCE/TDA	PARA	LINE	DUTY POSITION	MOS	GR	TCE AUTH	DUTY POSITION	MOS	GR	TCE AUTH	
06401J310 and 06401J320	11	01	Met Technician	20140	W0	1	Met Technician	201A0()	W0	1	
		02	Met Section Chief	93F40	E7	0	Met Section Chief	93F40()	E7	1	
		03	FA Met Crewman	93F30	E6	1	FA Met Crewmember	93F30()	E6	1	
		04	FA Met Crewman	93F20H1	E5	1	FA Met Crewmember	93F20(*)	E5	1	
		05	FA Met Crewman	93F20	E5	1					
		06	FA Met Crewman	93F10	E4	3	FA Met Crewmember FA Met Crewmember	93F10() 93F10(*)	E4 E4	1 1	
		07	FA Met Crewman	93F10	E3	3	FA Met Crewmember	93F10	E3	2	
*Denotes org maint trained.											

PRESENT (GMD-1)			PROPOSED (AN/TMQ-31)								
TOE/TDA	PARA	LINE	DUTY POSITION	MOS	GR	TOE AUTH	DUTY POSITION	MOS	GR	TOE AUTH	
06701J000 UTC: WAB7AA	08	01	Met Technician	201A0	W0	1	Met Technician	201A0()	W0	2	
		02	Met Section Chief	93F40	E7	1	Met Section Chief	93F40()	E7	2	
		03	FA Met Crewman	93F30	E6	1	FA Met Crewmember	93F30()	E6	2	
		04	FA Met Crewman	93F20	E5	1					
		05	FA Met Crewman	93F20H1	E5	1	FA Met Crewmember	93F20(*)	E5	2	
		06	FA Met Crewman	93F10	E4	3	FA Met Crewmember FA Met Crewmember	93F10() 93F10(*)	E4 E4	2 2	
		07	FA Met Crewman	93F10	E3	3	FA Met Crewmember	93F10()	E3	4	
* Denotes org maint trained.											

Met Division (Cont)		PRESENT			PROPOSED					
TOE/TDA	PARA	LINE	DUTY POSITION	NOS	GR	TOE AUTH	DUTY POSITION	NOS	GR	TOE AUTH
		05	Tng NCO	93F40	E7					
		06	Sr. Instructor	93F4H	E7					
		07	Instructor	93F3H	E6					
		07	Instructor	93F3H	E6					
		07	Instructor	93F3H	E6					
		07	Instructor	93F3H	E6					
		07	Instructor	93F3H	E6					
		07	Instructor	93F3H	E6					
		07	Instructor	93F3H	E6					
		07	Instructor	93F3H	E6					
		07	Instructor	93F3H	E6					
		07	Instructor	93F3H	E6					
		07	Instructor	93F3H	E6					
		07	Tng Specialist	01712	GS9					
			<u>Merc Br</u>							
	009H	01	Chief	201A0	W0					
		02	Sr. Instructor	20148	W0					
		03	Sr. Instructor	32Z4H	E7					
		04	Sr. Instructor	93F4H	E7					
		05	Instructor	93F3H	E6					
		05	Instructor	93F3H	E6					

MET Division, TGT ACQ Dept			PRESENT (GMD-1)			PROPOSED (AN/TWQ-31)					
TOE/TDA	PARA	LINE	DUTY POSITION	MOS	GR	TOE AUTH	DUTY POSITION	MOS	GR	TOE AUTH	
W2NTAA	009E	01	Chief	13A54	04	5	Met Technician	201A8()	W0	7	
		02	Met Technician	201A0	W0		Met Section Chief	93F4H()	E7	6	
		03	Tng NCO	13W50	E8		FA Met Crewmember	93F3H()	E6	7	
		04	FA Specialist	00301	GS11						
	009F			<u>Chanute</u>							
		01	Alt Rep/Inst	93E4H	E7						
		02	Instructor	93E3H	E6						
		02	Instructor	93E3H	E6						
		02	Instructor	93E3H	E6						
		02	Instructor	93E3H	E6						
		02	Instructor	93E3H	E6						
	009G			<u>FAMCC BR</u>							
		01	Chief	201A0	W0						
		02	Instructor	201A08	W0						
		02	Instructor	201A08	W0						
		03	Chief Instructor	13W5H	E8						
		04	Sr. Instructor	93F4H	E7						
		04	Sr. Instructor	93F4H	E7						
		04	Sr. Instructor	93F4H	E7						
04	Sr. Instructor	93F4H	E7								
04	Sr. Instructor	93F4H	E7								

PROPOSED

PRESENT

Met Division (Cont)

TOE/TDA	PARA	LINE	DUTY POSITION	MOS	GR	TOE AUTH	DUTY POSITION	MOS	GR	TOE AUTH
		05	Instructor	93F3H	E6					
		06	Instructor	34Y3H	E6					
		07	Instructor	93F3H	E6					
		08	Tng Specialist	01712	GS9					
			<u>Met Maint Br</u>							
		01	NC01C	93F40	E7					
		02	FA Met Crewman	93F20	E5					
		03	FA Met Crewman	93F10H1	E4					
		03	FA Met Crewman	93F10H1	E4					
		04	FA Met Crewman	93F10H1	E3					
		05	Elec Mechanic	02614	WG11					

US Army FA Board

PRESENT (GMD-1)

PROPOSED (AN/TMQ-31)

TOE/IDA	PARA	LINE	DUTY POSITION	MOS	GR	TOE AUTH	DUTY POSITION	MOS	GR	TOE AUTH
W04SAA	006A	01	Met Technician	201A0	W0	1	Met Technician	201A()	W0	1
		02	Met Section Chief	93F40	E7	1	Met Section Chief	93F40()	E7	1
		03	Chief Met Computer	93F30	E6	1	FA Met Crewmember	93F30()	E6	1
		04	Sr. Met Computer	93F20	E5	2	FA Met Crewmember	93F20()	E5	1
		05	FA Met Crewman	93F10	E4	2	FA Met Crewmember	93F20(*)	E5	1
		06	FA Met Crewman	93F10H1	E4	1	FA Met Crewmember	93F10(*)	E4	1
		07	FA Met Crewman	93F10	E3	2	FA Met Crewmember	93F10()	E4	2
							* Denotes org maint trained.			

29 APR 1983

ATCD-OB (7 Mar 83) 8d Ind

SUBJECT: Basis of Issue Plan (BOIP) and Amendment No. 3 to Final Qualitative and Quantitative Personnel Requirements Information (FQQPRI) for the Meteorological Data System: AN/TMQ-31 ()

HQ TRADOC, Ft Monroe, VA 23651

TO: Commandant, US Army Field Artillery School, ATTN: ATSF-CF, Ft Sill,
OK 73583

1. Request information be furnished this headquarters to resolve issue addressed in paragraphs 2a, b, c, d, f and 3. The issue expressed in paragraph 2a is not a matter of BOIP or QQPRI preparation so should be disregarded.
2. Any corrections in quantitative requirements should be made in BOIP 77-0102-F.
3. It is also requested that action be taken to resolve questions expressed Encl 7.
4. Request the above action be expedited to allow the BOIP and QQPRI to be sent to HQDA in time to meet projected fielding.
5. POC at HQ TRADOC is Mr. Sevier, AV 680-3874.

FOR THE COMMANDER:

3 Encl
Added Encl 7

CF: wo encl
Cdr, USASSC, NCR (ATZI-NCR-MO-N)

28 Apr 83

MFR: Self-explanatory.

COORD: None reqd AKL

s/cb
COLLETTE BOSTON
ASSISTANT ADJUTANT GENERAL

*16 May 83
Copy mailed to Ft Sill
as they say they did not receive*

Mr. Sevier, AO

28 Apr 83

DATE

LTC Pickett, C, BOIP

DATE

RELEASED BY

COL KAISER, DIR, ORGD

DATE

28 APR 83

~~CONFIDENTIAL~~



DEPARTMENT OF THE ARMY Mr. Sevier/kd/680-3874
HEADQUARTERS UNITED STATES ARMY TRAINING AND DOCTRINE COMMAND
FORT MONROE, VIRGINIA 23651

REPLY TO
ATTENTION OF:

S: 25 Apr 83

ATCD-OB

7 MAR 1993

SUBJECT: Basis of Issue Plan (BOIP) and Amendment No. 3 to Final Qualitative and Quantitative Personnel Requirements Information (FQQPRI) for the Meteorological Data System: AN/TMQ-31 () 77-0102-F

Commander
US Army Soldier Support Center
National Capital Region
ATTN: ATZI-NCR-MO-N
Alexandria, VA 22332

1. The BOIP and Impact Statements for subject equipment are attached at Enclosures 1 and 2 in three copies.
2. This office concurs with comments provided by US Army Combined Arms Center, (Encl 3). Copies of the DARCOM submitted Amendment No. 3 are attached at Enclosure 4.
3. Request your comments and proposed MOS recommendations NLT 25 Apr 83.

FOR THE COMMANDER:

4 Encl
as

Collette Boston
COLLETTE BOSTON
ASSISTANT ADJUTANT GENERAL

CF: wo encl
HQDA (DAMO-RQR (BOIP))

~~CONFIDENTIAL~~

ATZI-NCR-MO-N(7 Mar 83) 1st Ind

Mr. Helferd/csh/325-0242 (M09)

SUBJECT: Basis of Issue Plan (BOIP) and Amendment No. 3 to Final Qualitative and Quantitative Personnel Requirements Information (FQQPRI) for the Meteorological Data System: AN/TMQ-31 ().

U.S. Army Soldier Support Center - National Capital Region, 200 Stovall Street, Alexandria, VA 22332.

19 APR 1983

TO: Commander, U.S. Army Training and Doctrine Command, ATTN: ATCD-OB, Fort Monroe, VA 23651.

1. The proposed final MOS decision for the AN/TMQ-31 is at Inclosure 5.

2. Areas which must be addressed prior to obtaining DA approval are:

a. Consideration of the need for an ASI for MOS 93F to indicate the recipients of the operator and organizational maintainer training for the AN/TMQ-31. In view of the 9- week parallel courses for the AN/GM-1 (old equipment) and the AN/TMQ-31 (new equipment), a separate identifier to assure accurate personnel assignments and to prevent loss of trained assets is in order.

b. A similar consideration is required for MOS 26B. The addition of 232 hours to the MOS curriculum is significant.

c. Analysis of the personnel impact incident to fielding the AN/TMQ-31 shows that the BOIP incorrectly deletes the WO and E7 in SRC 6-401H200 (Meteorological Section, Headquarters and Headquarters Battery, Field Artillery Brigade) and in the 172d, 194th, and 197th Infantry Brigades. Action should be taken to restore the requirements.

d. Actual field demonstrated manhour data for maintenance support of the AN/TMQ-31 are unavailable. Therefore, personnel analysis omits the MOS 26B impact. It is understood that firm data will be available in the 3d quarter of FY 83.

e. The 4th Brigade, 4th Infantry Division (Forward) is scheduled for inactivation in the 4th quarter, FY 84. Where will the AN/TMQ-31 being distributed to the 2/2 Field Artillery be assigned? The Artillery unit supports the 4/4 Infantry Brigade.

f. It appears that revised manpower information should be:

<u>MOS</u>	<u>GRADE</u>	<u>ADD</u>	<u>DELETE</u>
286A8	WO	1	
201A0	WO	7	
32Z5H	E8	1	
4H	E7	1	
93F4H	E7	4	
3H	E6	9	
30	E6	18	
20	E5		

26 APR 83 - OB

T-1

-13

SUBJECT: Basis of Issue Plan (BOIP) and Amendment No. 3 to Final Qualitative and Quantitative Personnel Requirements Information (FQQPRI) for the Meteorological Data System: AN/TMQ-31 ().

f. cont'd

<u>MOS</u>	<u>GRADE</u>	<u>ADD</u>	<u>DELETE</u>
93F20H1	E5	5	
10	E4		-36
10H1	E4	44	
10	E3	10	
26C3H	E6	3	
Civ GS	1712	4	
		+109	-49
		TOTAL IMPACT +60	

3. MOS 41B (Topographic Instrument Repair Specialist) is omitted from the MOS proposal. This MOS is not authorized in any TOE receiving MDS.

4. USA MILPERCEN comments regarding supportability are at Inclosure 6.

5. Recommend:

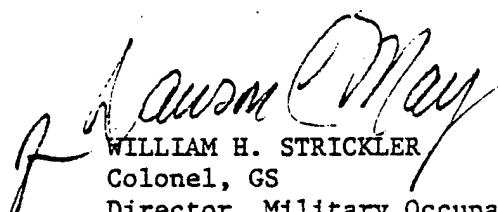
a. Approval of the MOS proposal.

b. Paragraph 2, above, be addressed and resolved prior to requesting HQ DA approval of the BOIP/MOS proposal.

c. Should ASI be required, the information prescribed in paragraph 3-11b, AR 71-2, BOIP/QQPRI, be submitted.

FOR THE DEPUTY COMMANDER:

6 Incl
1-4 wd
6 added
as


WILLIAM H. STRICKLER
Colonel, GS
Director, Military Occupational
Development

CF:

HQ TRADOC, ATTN: ATIC-DST
ATTG-TTA
ATZI-NCR-PM
HQ DA, ATTN: DAMO-RQR
MILPERCEN, ATTN: DAPC-PL

SUBJECT: Proposed Final MOS Decision for the Meteorological Data System,
AN/TMQ-31 and Associated Items of Equipment (LIN: Z26863)
(NETP: EL-32) (BOIP: 77-0102-F)

1. The recommended final MOS decision for the AN/TMQ-31 is:

a. Operator

Enlisted MOS 93F (Field Artillery Meteorological Crew Member - CMF - 13).

b. Organizational Maintenance

Enlisted MOS 31V (Tactical Communications Systems Operator/Mechanic -
CMF 31).

MOS 52C (Utilities Equipment Repairer - CMF 63).

MOS 52D (Power Generation Equipment Repairer - CMF 63).

MOS 63B (Light Wheel Vehicle Mechanic - CMF 63).

MOS 93F (Field Artillery Meteorological Crew Member - CMF 13)

with ASI H1 (Meteorological Equipment Maintenance).

c. Direct Support Maintenance

Enlisted MOS 31S (Field General COMSEC Repairer - CMF 29).

MOS 31T (Field Systems COMSEC Repairer - CMF 29).

d. Direct and General Support Maintenance

Enlisted MOS 26B (Weapons Support Radar Repairer - CMF 29) with ASI X5
(Radar Maintenance (FIREFINDER)).

MOS 31J (Teletypewriter Repairer - CMF 29).

MOS 34Y (Field Artillery Computer Repairer - CMF 74).

MOS 35C (Automatic Test Equipment Repairer - CMF 29).

MOS 35H (Calibration Specialist - CMF 29).

MOS 36H (Dial/Manual Central Office Repairer - CMF 29).

MOS 41B (Topographic Instrument Repairer Specialist - CMF 81).

MOS 41C (Fire Control Instrument Repairer - CMF 63).

MOS 44B (Metal Worker - CMF 63).

MOS 52C (Utilities Equipment Repairer - CMF 63).

MOS 52D (Power Generation Equipment Repairer - CMF 63).

MOS 63G (Fuel and Electrical Systems Repairer - CMF 63).

MOS 63W (Wheel Vehicle Repairer - CMF 63).

Civilian GS Series 1670 (Equipment Specialist (Electronic)).

WG Series 2600 (Electronic Equipment Instrument and

Maintenance Family).

WG Series 2602 (Electronic Measurement Equipment
Mechanic).

WG Series 2604 (Electronic Mechanic).
WG Series 5823 (Automotive Mechanic).

e. General Support Maintenance

Enlisted MOS 31S (Field General COMSEC Repairer - CMF 29) with ASI X9 (General COMSEC Maintenance (SRA)).

MOS 31T (Field Systems COMSEC Repairer - CMF 29) with ASI X8 (COMSEC System Maintenance (SRA)).

2. This correspondence constitutes the proposed final MOS decision relevant to the operation and maintenance of the subject equipment in accordance with AR 71-2, Force Development, Basis of Issue Plans (BOIP), Qualitative and Quantitative Personnel Requirements Information (QQPRI). This correspondence does not authorize the requisitioning for or assignment of personnel to units to which this equipment may be distributed.

3. The Action Officer is Mr. Helferd (Local (202) 325-0242 or AUTOVON 221-0473).

ATTG-TTA (3 Mar 83)

SUBJECT: Basis of Issue Plan (BOIP) and Qualitative and Quantitative Personnel Requirements Information (QQPRI) for the Meteorological Data System: AN/TMQ-31 ()

TO DCSCD
ATTN: ATCD-08

FROM DCST

22 Apr 83 CMT 2
Mr. Antolick/lw/4441

1. This office has reviewed basic document for trainer information content.
2. The following comments are provided:

a. Trainer input to QQPRI contained in this document appears to be in contradiction to a recently submitted Individual Training Plan Proposal (ITPP) for MOS 93F. The USAFAS, according to the ITPP, is planning to conduct training beginning in FY 85 on two systems; the present Rawinsonde System currently being taught, and the Meteorological Data System (MDS) which will completely replace the present system by FY 90. The ITPP indicates two separate Programs of Instruction (POI) will be used to conduct the training, one for each system. FONECON between Mrs. Robertson, ATSF-RPC, USAFAS, and Lt Robertson, this headquarters, confirmed that the AN/TMQ-31 is going to replace the Rawinsonde system currently trained in the ASI H1 course. Furthermore, the AN/TMQ-31 will not be added to the ASI H1 course; it will be a separate course with its own POI.

b. The course for MOSC 26B20X5 indicates 112 hours added. The current POI on hand at this headquarters indicates a course length of 23 weeks, 4 days, with no increase as stated. Additionally, to date, USAFAS has not submitted to this headquarters Course Administrative Data (CAD) to indicate intended changes in POI. This CAD is required 18 months prior to the beginning of the fiscal year in which the course is to be implemented.

c. The course for MOS 34Y indicates an add-on of 120 hours to support the AN/UYK-19 maint. Be advised that MOS 34Y presently provides direct support maintenance repair to eight (8) systems, with thirteen (13) more proposed, not including this system. Adding another system to MOS 34Y is not recommended, considering the present 37 weeks training period and the number of systems it supports.

d. Recommend this document be staffed through the USAOC&S, USAES, and USASC&FG for possible trainer impact. Several MOS are identified as having certain maintenance responsibilities, and any trainer impact should be identified early in order to preclude possible future problems.

e. Recommend further that the USAFAS review its training concept for this system based on the 5-year changeover period and other comments contained in 2a above, in the event that changes to AR 611-201 may be required in order to identify trained personnel by MOS or other identifier for this system.

3. Based on the above comments, this office nonconcur with basic document as written.

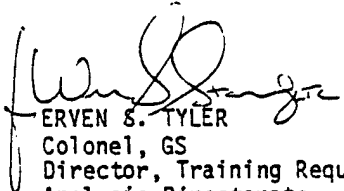
4. POC for this action is Mr. Antolick, ATTG-TTA, AV 680-4441.

26 APR 1983 -08

FOR THE DEPUTY CHIEF OF STAFF FOR TRAINING:

T-1

wd all encl


ERVEN S. TYLER
Colonel, GS
Director, Training Requirements
Analysis Directorate

DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

S-25 April 1983

REFERENCE OR OFFICE SYMBOL

ATCD-OB

SUBJECT

Basis of Issue Plan (BOIP) and Qualitative and Quantitative Personnel Requirements Information (QQPRI) for the Meteorological Data System: AN/TMQ-31 ()

TO DCST

ATTN: ATTG-TTA

FROM DCSCD

DATE 3 Mar 83

CMT 1

Mr. Sevier/kd/3874

1. The attached BOIP and QQPRI have not been before a TRADOC Review Board. This BOIP and QQPRI have been forwarded to Soldier Support Center-National Capital Region (SSC-NCR) for review and a proposed MOS decision prior to being boarded and forwarded to HQDA.
2. Request you review the attached documents for all trainer information content and return your concurrence, comments or recommended changes to this office prior to 25 Apr 83. POC for this office is Mr. Sevier, Ext 3874.
3. Direct coordination with affected TRADOC Schools, Integrating Centers and SSC-NCR should be accomplished if additional information is necessary.

2 Encl

1. BOIP
2. QQPRI/Trainer Input

John B. Oblinger, Jr.
JOHN B. OBLINGER, JR.
Major General, GS
Deputy Chief of Staff
for Combat Developments

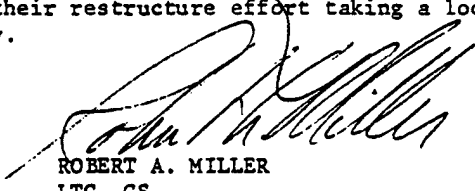
G. F. KAISER
Colonel, GS
Director, Organization
Documents Directorate

FORM
AUG 80 2496

PREVIOUS EDITIONS WILL BE USED

DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL	SUBJECT
DAPC-EPH-A	BOIP and Amendment No. 3 to FQQPRI for the Meterological Data System: AN/TMQ-31 ()
TO ATZI-NCR-MO-N	FROM DAPC-EPH-A
	DATE 18 April 1983 CMT 1 MAJ Arnold/rf/325-0239
1. Nonconcur. According to COPO 45 ME dated Feb 83, there are 19 authorizations for 26EX5, the majority of which are at pay grade E5. The course required to obtain this ASI is 24 weeks in length. MOS 26B becomes 26C at pay grade E6 and in many cases, a soldier is promoted shortly after course completion thus becoming ineligible to hold the ASI. This concern has been brought to our attention numerous times by the field and most recently by V Corps IG inspection report dated 15 Feb 83. In noting the use of MOS 26EX5 and 26C by the AN/TMQ-31, we recommend that 26C be authorized to hold ASI X5. 2. Recommend Ft Sill consider as part of their restructure effort taking a look at 93F, specifically E5 to E6 promotion opportunity.  ROBERT A. MILLER LTC, GS Chief, Programs Branch	

DA FORM 2496
AUG 80

PREVIOUS EDITIONS WILL BE USED

ATZL-CAF-SD (9 Dec 82) 1st Ind

Mr. Kennedy/aj/3614

SUBJECT: Update Basis of Issue Plan (BOIP) and Amendment No. 3 to Final
Qualitative and Quantitative Personnel Requirements (FQQPRI)
for the AN/TMQ-31 Meteorological Data System (MDS)

Headquarters, US Army Combined Arms Center and Fort Leavenworth,
ATTN: ATZL-CAF-SD, Fort Leavenworth, Kansas 66027 7 JAN 1983

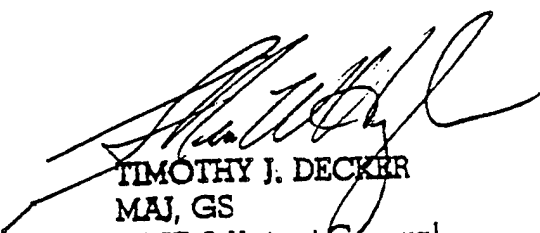
TO: Commander, US Army Training and Doctrine Command, ATTN: ATCD-OS,
Fort Monroe, Virginia 23651

1. USACAC has reviewed subject BOIP and Amendment No. 3 to FQQPRI and recommended changes are listed on attached DA Form 2028 (Incl 3). In addition, a completely revised trainer input inclosure has been developed at this headquarters, in close coordination with the Field Artillery School, and identified as inclosure 2.

2. Point of Contact this headquarters is Mr. Condon P. Kennedy,
AUTOVON 552-3614.

FOR THE COMMANDER:

3 Encl
Added 1 encl
3. DA Form 2028


TIMOTHY J. DECKER
MAJ, GS
ASST Adjutant General

71
1 JAN 1983 - OB

Encl 3 to Encl 2



DEPARTMENT OF THE ARMY J. Black/fh/AV 639-1200
UNITED STATES ARMY FIELD ARTILLERY SCHOOL
FORT SILL, OKLAHOMA 73503

ATSF-CF

DEC 6 1982

SUBJECT: Update Basis of Issue Plan (BOIP) and Amendment No. 3 to Final Qualitative and Quantitative Personnel Requirements (FQQPRI) for the AN/TMQ-31 Meteorological Data System (MDS)

THRU: Commander
US Army Combined Arms Center
ATTN: ATZL-CAF-SD
Fort Leavenworth, Kansas 66027

TO: Commander
US Army Training and Doctrine Command
ATTN: ATCD-OB
Fort Monroe, Virginia 23651

1. References:

- a. Letter, ATCD-OS, HQ TRADOC, 2 Apr 82, subject: Updated Basis of Issue Plan (BOIP) for Meteorological Data System AN/TMQ-31, EL-32.
- b. Letter, ATCD-OS, HQ TRADOC, 7 Apr 82, subject: Amendment No. 2 Final Qualitative and Quantitative Personnel Requirements Information (A2FQQPRI) for Meteorological Data Set AN/TMQ-31, EL-32.
- c. Meeting, Wallops Island, VA, 7-8 Jul 82, subject: BOIP, QQPRI Review of MDS.
- d. Meeting, CSTA Laboratory, Fort Monmouth, NJ, 3-4 Nov 82, subject: Finalized QQPRI for MDS.

2. The MDS BOIP, 77-⁰¹1202-F has been reviewed and updated to reflect current TOE/TDA requirements and are in the computer for your retrieval.

3. Coordinated and consolidated input for the MDS A3FQQPRI was provided by the MOS proponent schools at the meeting in reference 1c above, and is reflected in the attached A3FQQPRI (Incl 1).

TI
10 JAN 83 - OB

DEC 9 1982

ATSF-CF

SUBJECT: Updated Basis of Issue Plan (BOIP) and Amendment No. 3 to Final Qualitative and Quantitative Personnel Requirements (FQQPRI) for the AN/TMQ-31 Meteorological Data System (MDS)

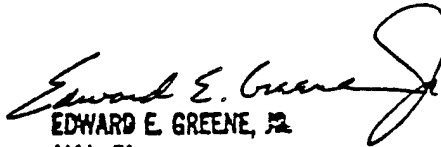
4. Trainer input for operator, organizational, and direct support maintenance training is at Incl 2. GS maintenance will be performed by the Equate system. Fielding of MDS will have no impact on USAOC&S, USA Engineer School, and USASCFG proponent DS/GS maintenance support units.

5. The USA Logistics Center was represented at the meeting in reference 1c and concurred with the changes made on the BOIP and QQPRI for MDS. The meeting on 3-4 Nov 82 at Fort Monmouth, NJ was held to expedite the processing of the BOIP and QQPRI. No significant changes occurred and the Logistics Center concurred by FONECON.

6. POC is Judy Black, Autovon 639-1200/5879.

FOR THE COMMANDANT:

2 Incl
as


EDWARD E. GREENE, JR.
MAJ, FA
Assistant Secretary

CF:
USA Log Cen (ATCL-FO)
USASSC (ATZI-NCR-MO-M)

AMENDMENT NO. 3 (SEE NOTE) TO FINAL QUALITATIVE AND QUANTITATIVE
PERSONNEL REQUIREMENTS INFORMATION (FQQRPI) FOR THE
AN/TMQ-31 METEOROLOGICAL DATA SYSTEM, LIN Z26863, EL-32

NOTE: For clarification purposes and to include all updated data in a single document, all of the required data and information are contained in this Amendment No. 3.

Amendment No. 3. Statement of Requirement or Procurement Directive:

a. Required Operational Capability (ROC) for the Field Artillery Meteorological Acquisition System (FAMAS), approved by Department of the Army on 2 August 1979. The TRADOC Control Number for this equipment is ACN 23710. Catalog of Army Required Documentations (CARDS) reference number is 0449. Army Line Item Number is Z26863.

b. NETP EL-32.

c. A3FQQRPI dated 3 November 1982 was prepared by Joseph J. Rankin, CECOM, AUTOVON 992-5143.

2. Brief Description of the Equipment/System: The AN/TMQ-31 Meteorological Data System (MDS) is a highly mobile, automated meteorological acquisition and data processing system. The system will provide ballistic and target acquisition meteorological messages to division artillery and other users. The ballistic messages will enhance the field artillery's predicted fire accuracy. The system will be capable of satisfactory operation in any type of climatic area and over any type of terrain where Army tactical operations require the employment of field artillery, be capable of sounding the atmosphere for artillery purposes at hourly intervals over extended periods, and be capable of automatically transmitting meteorological data in the appropriate format from the meteorological section to TACFIRE and the Battery Computer System (BCS) as well as the present Army tactical area communications system. The system comprises the following component items and associated items:

a. Component Items.

(1) No LIN S-280 Shelter, Electrical Equipment - Standard Army Equipment (SAE).

Encl 1

- (2) No LIN AN/UYK-19(V) Data Processing Set
- (3) No LIN AN/UYH-6 Magnetic Tape Transport
- (4) No LIN TT-773-(P)/(G) Teleprinter, SAE
- (5) No LIN TACFIRE Remote Data Terminal
- (6) No LIN AN/UYQ-10 Plasmascope
- (7) No LIN PP-7607/G Power Supply
- (8) N30594 AN/USM-296A Oscilloscope, SAE
- (9) A23990 Air Conditioner 9,000 BTU (Vertical Compact) SAE
- (10) W95811 M-105 Trailer, 1 1/2-Ton, 2 Wheel SAE

b. Associated and Support Equipment.

- (1) W37483 TK-101/GSC Tool Kit, Electronic Equipment, SAE
- (2) W37251 TK-100/G Tool Kit, Electronic Equipment, SAE
- (3) W37388 TK-105/G Tool Kit, Electronic Equipment, SAE
- (4) W60351 HYX-57/TSEC Wire Line Adapter, SAE
- (5) W95400 Trailer, Cargo, 1/4-Ton, SAE
- (6) W98825 Trailer, Tank Water, 40 Gallon, SAE
- (7) X40931 Truck, Cargo, 5-Ton, Drop Sides, 6X6 w/wench (w/100
amp alternator kit), SAE
- (8) X60833 M151A-1 Truck, Utility, 1/4-Ton, 4X4, SAE
- (9) J42100 Generator Set, Gas Engine, 10 KW, 60Hz, SAE
- (10) Z27113 AN/TMQ-33 Meteorological Station
- (11) K87564 MK-1866/VRC-F/KY 57 Installation Kit, with
AN/VRC-46 mounted in S-280 Shelter

- (12) K87243 Installation Kit for AN/VRC-46, mtd on M-151
- (13) Z84564 AN/MSM-105(V)1 Automatic Test and Repair System
- (14) P38314 PP-2309/U Power Supply, SAE
- (15) N30572 AN/USM-281C Oscilloscope, SAE
- (16) Y14526 AN/GSM-64B Digital Voltmeter, SAE
- (17) J53782 AN/USM-44C Signal Generator, SAE
- (18) Z50316 AN/USM-193 RF Power Meter
- (19) A46470/URC Amplifier, Audio Frequency, SAE
- (20) E94970 C-2299/VRC Control, Radio Set, SAE
- (21) K14814 H-189/GR Handset, SAE
- (22) K23814 H-182/U Headset Microphone, SAE
- (23) L84098 LS-454/U Loudspeaker, SAE
- (24) A79381 OE-254/GRC Antenna, SAE
- (25) B33019 ML-333TM Barometer, SAE
- (26) C68719 WD-1/TT DR-8 Cable, Telephone, SAE
- (27) H01836 TSEC/KG-31-12 Electronic Key Generator, SAE
- (28) H02300 TSEC/KW-7 Electronic Key Generator, SAE
- (29) J44055 Generator Set, Gas Engine, 1.5 KW, 28 VDC, SAE
- (30) K87536 MK-1878/VRC for KY-57 with AN/VRC-46 Installation Kit mounted in M151A-1, MK-1838/VRC Installation Kit, SAE
- (31) M80242 AN/USM-223 Multimeter, Analog, SAE
- (32) Q53001 AN/VRC-46 Radio Set, SAE
- (33) Q78282 AN/GRA-39 Radio Set Control Group, SAE
- (34) R30662 AN/GRA-6 Receiver-Transmitter Control Group, SAE
- (35) R59160 RL-39 Reeling Machine, Cable, SAE

- (36) S01373 TSEC/KY-57 Speech Security Equipment, SAE
- (37) V31211 TA-312/PT Telephone Set, SAE
- (38) V57914 AN/TCC-29 Telegraph - Telephone Terminal, SAE
- (39) V98788 HYP-57/TSEC Vehicular Power Supply, SAE

c. Special Test Equipment (STE): None

3. Direct Productive Annual Maintenance Manhours (DPAMMH): Actual field demonstrated quantitative manhour figures for the maintenance support of the AN/TMQ-31 are not available at this time. Lack of this concrete information impacts the MOS quantitative computations. Data on Mean-Time-Between-Failure (MTBF) on the items comprising the computer equipment group is provided as estimates from the equipment manufacturer. The resulting estimated DPAMMH takes into account the Minimum Acceptable Value (MAV) when these equipments are integrated into a land-based mobile system which has in interconnection and adaptation many other contractor developed (CFE) items as well as GFE. The calculation uses 6840 hours of annual operation for the system. Firm data will be available in 3d quarter FY-83.

a. Z 26863 AN/TMQ-31 Meteorological Data System

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)	367.5			
26B(X5)		10		
35C			73.6	
* 63H				
34Y		25		
* 52C				
31J		2	6	
* 35H				
* 63B				
* 63W				
* 63G				
2600 Series				98.4

* Items have been typed, classified, and require No DPAMMH.

The above manhours are for the AN/TMQ-31 and include the DPATMH figures for the component items.

(1) No LIN S-280 Shelter, Electrical Equipment

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
44B				
63H				

(2) No LIN AN/UYK-19(V) Data Processing Set

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93(HI)	3			
34Y		9		
35C			27	
2600 Series				24.5

(3) No LIN AN/UYE-6 Magnetic Tape Transport

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(HI)	1			
34Y		2		
35C			6	
2600 Series				20.5

(4) No LIN TT-773/(P)/(G) Teleprinter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(HI)	1			
31J		2	6	
2600 Series				12.5

(5) No LIN, TACFIRE Remote Data Terminal

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(HI)	3			
34Y		10	8	
2600 Series				12.2

(6) No LIN AN/UYQ-10 Plasmascopes

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)	2			
34Y		4		
35C			12	
2600 Series				20.5

(7) No LIN PP-7607/G Power Supply

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)	2.5			
26B(X5)		4	6	
2600 series				8.2

(8) N30594 AN/USM-296A Oscilloscope

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)				
35H				

(9) A23990 Air Conditioner

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
52C				

(10) W95811 M-105 Trailer, 1 1/2-Ton, 2 Wheel

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63B				
63W				
63G				

b. Associated Support Items for the MDS are as follows:

(1) W37483 TK-101/GSQ Tool Kit, Electronic Equipment

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)				
31V				

(2)	W37251 TK-100/G Tool Kit, Electronic Equipment				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	93F(H1)				
	31E				
(3)	W37388 TK-105/G Tool Kit, Electronic Equipment				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	26B(K1)				
	34Y				
	2600 series				
(4)	W60351 HYX-57/TSEC Wire Line Adapter				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	31S				
(5)	W95400 Trailer, Cargo, 1/4-Ton				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	63B				
	63G				
	63W				
	WG5818				
(6)	W98825 Trailer, Tank Water, 400 Gallon				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	63B				
	63G				
	63W				
	WG 5818				
(7)	X40931 Truck Cargo, 5-Ton, Drop Side, 6X6 w/winch (w/(100 Amp Alternator Kit)				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	63S				
	63W				
	63G				
	WG 5818				
(8)	X60833 M151A1 Truck, Utility, 1/4-Ton, 4X4				
	<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
	63B				
	52D				
	WG 2601				

(9) J42100 PU-619/U Generator Set, Gas Engine

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63B				
52D				
WG 2601				

(10) Z27113 AN/TMQ-33 Meteorological Station

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)	180			
41B		8	3	
41C		2.8	2.1	
WG 2601				

(11) K87564 MK-1866/VRC for KY-57 Installation Kit with AN/VRC-46, mounted in S-280 Shelter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				

(12) Z84564 AN/MSM-105(V)1 Automatic Test and Repair Station

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
35C		632	450	440
2600 series				420

(13) P3814 PP-2309/U Power Supply

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
35H				
WG 2602				

(14) N30572 Oscilloscope

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
35H				

(15) Y14526 AN/GSM-64B Digital Voltmeter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
35H				
WG2602				

(16) J53782 AN/USM-44C Signal Generator

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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35H
WG 2602

(17) Z50316 AN/USM-193 RF Power Meter

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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35H
WG 2602

(18) K87243 Installation Kit for AN/VRC-46 mtd, on M-151

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E

(19) A46470 AM-1780/VRC Amplifier Audio Frequency

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E
WG 2608

(20) E94970 C-2299/VRC Control Radio Set

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E
WG 2608

(21) K14814 H-189/GR Handset

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E
WG 2608

(22) K23814 H-182/P Headset Microphone

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
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31V
31E
WG 2608

(23) L84098 LS-454/U Loudspeaker

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
WG 2608				

(24) A79381 OE-254/GRC Antenna

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31E				

(25) B33019 ML-333/TM Barometer

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
93F(H1)				
WG 2601				

(26) C68719 WD-1/TT DR-3 Cable, Telephone

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
36C				

(27) H01836 TSEC/KG-31-12 Electronic Key Generator

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31T				
WG 2608				

(28) H02300 TSEC/KW-7 Electronic Key Generator

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31T				
WG 2608				

(29) J44055 Generator Set, Gas Engine

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
63B				
52D				

(30) K87536 MK-1878/VRC for KY-57 with AN/VRC-46 Installation Kit mounted
in M151-A1, MK-1838/VRC Installation Kit

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				

(31) M80242 AN/USM-223 Multimeter, Analog

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
35H				
WG 2608				

(32) Q53001 AN/VRC-46 Radio Set

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
WG 2608				

(33) Q78282 AN/GRA-39 Radio Set Control Group

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
WG 2608				

(34) R30662 AN/GRA-6 Receiver-Transmitter Control Group

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31E				
WG 2608				

(35) R59160 RL-39 Reeling Machine, Cable

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
36C				

(36) S01373 TSEC/KY-57 Speech Security Equipment

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31S				
WG 2608				

(37) V31211 TA-312/PT Telephone Set

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
36H				
WG 2608				

(38) V57914 AN/TCC-29 Telegraph-Telephone Terminal

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31J				
WG 2608				

(39) V98788 HYP-57 Vehicular Power Supply

<u>MOS</u>	<u>ORG</u>	<u>DS</u>	<u>GS</u>	<u>DEPOT</u>
31V				
31S				

4. Number of Direct Operators: The AN/TMQ-31 Meteorological Data System (MDS) team will consist of six meteorological crewmen of MOS 93F - Field Artillery Meteorological Crewmen. Two of these members will be specifically trained, and awarded the ASI of H1, to be capable of performing organizational maintenance on the MOS peculiar items. Two teams of AN/TMQ-31 will be situated at division artillery and one team at each Field Artillery Group and artillery battalion assigned to separate brigades. At corps level, the team will be augmented to include, for command control purposes, a Warrant Officer - MOS 201A and an NCOIC with the grade of SFC, and holding MOS 93F40 (reference EOIP No. 77-0102-F). Normal assembly, site selection, antenna positioning and orientation, and disassembly for transport require the cooperation of all team members. For conducting a flight of radiosonde, two of those men are needed for these preliminary operations and launch, while only a single operator is required once successful launch and track lock-on have been achieved and the telemetered data transmission occurs.

5. Duty Position by Descriptive Title:

<u>Descriptive Title</u>	<u>Recommended MOS</u>
Operator	
Field Artillery Met Crewmember	MOS 93F
Automatic Test Station AN/MSM-105(V)1 Operator	MOS 35C

Descriptive TitleRecommended MOSOrganizational

MDS Organizational Maintenance Mechanic	MOS93F(E1)
Tactical Communications Equipment Repairer	MOS 31V
Light Wheel Vehicle/Power Generation Mechanic	MOS 63B
Utilities Equipment Repairer	MOS 52C
Heavy Wheel Vehicle Mechanic	MOS 63S
Wire Systems Installer/Operator	MOS 36C
Power Generator Equipment Repairer	MOS 52D
Wheel Vehicle Repairer	MOS 63W
Dial/Manual Central Office Repairer	MOS 36H
Utilities Equipment Repairer	MOS 52C
Fuel and Electrical Systems Repairer	MOS 63G
Topographical Instrument Repairer	MOS 41B

Direct Support/General SupportRecommended MOS

Calibration Specialist	MOS 35H
Automatic Test Station Repairer	MOS 35C
Teletypewriter Repairer	MOS 31J
Topographical Instrument Repairer	MOS 41B

Direct Support/General Support

Recommended MOS

Metal Worker	MOS 44B
Field Artillery Computer Repairer	MOS 34Y
Field Radio Repairer	MOS 31E
Wire Systems Installer/Operator	MOS 36C
Weapon Support Radar Repairer	MOS 26B(X5)
Field General COMSEC Repairer	MOS 31S
Field Systems COMSEC Repairer	MOS 31T
Fire Control Instrument Repairer	MOS 41C
Equipment Specialist (Electronics)	GS-1670
Electronic Weather Equipment Maintenance	WG 2601
Electronic Test Equipment Repairing	WG 2602
Radio Equipment Installing and Repairing	WG 2603
Automotive Equipment Repairing, Fuel and Electric Systems	WG 5813

6. Individual Duties and Tasks:

Warrant Officers

MOS 201A performs duties and tasks as listed in AR 611-112.

Enlisted Members:

MOS 93F

Performs preflight checkout of radiosonde sensor equipment; operates hydrogen generator, balloon inflation and launching device, and prepares for launch selecting the appropriate sonde transmitter based on the frequency needs and mission requirements. Deploys and sets up RDF directional tracking antenna. Performs necessary calculations related to sonde pressure data measurement and altitude fix. Starts, fuels, operates, and monitors power generator.

Initializes ground terminal RDF/NAVAID subsystem and the functional processing subsystems, acquires MET data, selects proper message format and transmits MET messages to users. Performs antenna slewing, orientation and manual lock-on as required in the mode of operation. Functions as part of a crew of six that is able to locate, set up and deploy all elements of the system in 30 minutes, and can convert from an emplaced operating station to travel/mobility station in 20 minutes for RDF subsystem and in 10 minutes for NAVAID subsystem. Performs operator maintenance, preusage checks/tests and scheduled preventive maintenance.

MOS 93F(H1)

Analyzes system malfunctions and localizes defective element down to a major component assembly or subassembly utilizing the computer aided diagnostic procedures and programs, Built-in-Test-Equipment (BITE) capability, and has the capability to perform organizational maintenance and make necessary realignment, adjustment in the major components, assembly, and subassembly. Utilizes to the fullest extent the test provisions of the individual subsystems and components. Exploits system and subsystems go-no-go equipment status indications and checks and fault isolates to the suspected defective item. The maintenance at this level is performed without the use of any special test equipment or tools. Is called upon to perform specific function in controlling, monitoring and displaying the telemetered data received, and makes use of TMDE in the accomplishment of the position's maintenance functions.

MOS 26B(X5)

Repairs the equipment at the DS level. Standard TMDE will be employed and faults and malfunctions will be localized to a replaceable module or assembly. Repair will also include the necessary adjustments, realignment and calibration following installation of a new part. Supplemental and additional checks/testing will be conducted; repair parts, assemblies and subassemblies may be made available through an Operational Readiness Float (ORF) capability.

MOS 34Y performs duties and tasks as listed in AR 611-201

MOS 63B performs duties and tasks as listed in AR 611-201

MOS 63S performs duties and tasks as listed in AR 611-201

MOS 52C performs duties and tasks as listed in AR 611-201

MOS 31V performs duties and tasks as listed in AR 611-201

MOS 35C performs duties and tasks as listed in AR 611-201

MOS 52D performs duties and tasks as listed in AR 611-201

MOS 52D performs duties and tasks as listed in AR 611-201
MOS 31E performs duties and tasks as listed in AR 611-201
MOS 31S performs duties and tasks as listed in AR 611-201
MOS 31T performs duties and tasks as listed in AR 611-201
MOS 36H performs duties and tasks as listed in AR 611-201
MOS 63G performs duties and tasks as listed in AR 611-201
MOS 44B performs duties and tasks as listed in AR 611-201
MOS 31J performs duties and tasks as listed in AR 611-201
MOS 36C performs duties and tasks as listed in AR 611-201
MOS 41B performs duties and tasks as listed in AR 611-201
MOS 41C performs duties and tasks as listed in AR 611-201

7. Contractor or Other Training for Test and Evaluation:

a. The following training was presented by the Bendix Corporation Environmental Precision Instruments Division (EPID) at their facility in Towson, MD, for preparing TRADOC key instructors to train the DT/OT Test personnel.

- | | |
|---------------------------------------|-----------|
| (1) Operator Training Course | 160 hours |
| (2) Organization Maintenance Course | 160 hours |
| (3) DS/GS Maintenance Training Course | 80 hours |

b. Duty positions for which training was given are: MOS 93F MET Crewmember; MOS 93F (H1) MDS Equipment Mechanic; MOS 26B(X5) Weapon Support Radar Repairer.

c. Prerequisite for attendance was familiarity with meteorological equipment (current AN/GMD-1 system).

d. Training material was presented to TRADOC, USAFAS, ATTN: ATSF-TAD.

TRAINER INPUT TO QQPRI

SCHOOL USAFAS

QQPRI FOR MDS 'AN/TMQ-31

(Item/System)

General MOS and training data.

Level	MOS ^{1/}	Hours to Train	
		New Input ^{2/}	Transition ^{3/}
Operator	New		
	Revised 93F10	320	240
	No Change		
	ASI Rqd		
Organizational	New		
	Revised		
	No Change		
	ASI Rqd 93F10H1	320	200
Direct Support	New 34Y	896	120
	Revised 26B20X5	2008	112
	No Change		
	ASI Rqd		
General Support	New		
	Revised		
	No Change		
	ASI Rqd		

Type training required.

Each MOS action proposed in paragraph 1 must be reflected in this paragraph.

MOS		Scope of Change Required		
New	Revised	Add-On	No Change	Scope ^{4/} Hours Estimated
a.	93F10	X		(See Note 1, next page)
b.	93F10H1	X		(See Note 2, next page)

CONTINUED ON NEXT PAGE.

Existing courses increase/decrease.

Course (MOS)	No Change ^{5/}	Hours Additional	Hours Decreased
a. 420-93F10 (93F10)	X		

b. 420-AS1H1 (93F10H1)

200 (See Note 4, next page)

CONTINUED ON NEXT PAGE.

If new course is required, identify and include length in hours.

1/ MOS must be listed in each case.

2/ Represents new trainee or soldier entering this field for first time, i.e. from start.

3/ Represents soldiers transitioning from replaced equipment to newer models.

4/ Scope column will reflect broad areas such as turret and fire control, armament, power train, etc.

5/ Enter "X" if training required replaces equal amount in existing course.

Encl 2

TRAINER INPUT TO QQPRI (CONT)

2. Type training required. Continued from paragraph 2, page 1.

a. Note 1. Scope: 93F10

To provide the 93F10 adequate technical knowledge and skills to emplace the MDS, execute system pre-flight procedures for all operational modes, perform in flight contingency tasks and transmit MET messages to appropriate subscribers.

b. Note 2. Scope: 93F10H1

To provide adequate technical knowledge, in addition to that of an operator, required to effectively maintain the Meteorological Data System (MDS-AN/PMQ-31). This includes the ability to service, trouble shoot, isolate and replace defective line replaceable units.

Paragraph 2 continued from page 1:

<u>New</u>	<u>Revised</u>	<u>Add-on</u>	<u>No Change</u>	<u>Scope</u>
2 c.	26B20X5	112 hours added		See Note 3 below
2 d. 34Y		120 hours added		AN/UYK-19 maint.

c. Note 3. Scope: 26B20X5

To provide technical knowledge required to effectively support US Army Field Artillery units. This includes basic electronic digital fundamental logic and transistor circuits; operation of radar sets AN/TPQ36 and AN/TPQ37; direct support maintenance and calibration procedures required to provide mission support maintenance of field artillery firefinder radar equipment, M95 chronograph, and the MDS-AN/PMQ31.

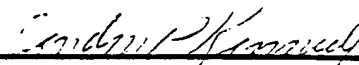
3. Existing courses-increase/decrease. Continued from paragraph 3, page 1.

b. Note 4. Hours Decreased: 420-AS1H1 (93F10H1)

A 93FH1 POI, which includes 200 hours of DS maintenance has been sent to TRADOC for approval. Upon approval the current 384 hour POI will change to a 520 hour POI. The MDS organizational maintenance course will delete the 200 hours of DS maintenance from organizational maintenance POI.

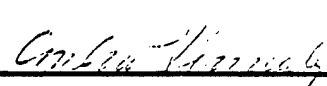
Paragraph 3 continued from page 1:

<u>Course (MOS)</u>	<u>Hours Additional</u>	<u>No Change</u>	<u>Hours Decreased</u>
3 c. 104-26B, 104-AS1X5 (26B20X5)	112		
3 d. 34Y	120		

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 310-1; the proponent agency is the US Army Adjutant General Center.						Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).		DATE 22 Dec 82
TO: (Forward to proponent of publication or form) (Include ZIP Code) Commander US Army Training and Doctrine Command ATTN: ATCD-OB Ft Monroe, VA 23651						FROM: (Activity and location) (Include ZIP Code) Commander US Army Combined Arms Control ATTN: ATZL-CAF-SD Ft Leavenworth, KS 66027		
PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS								
PUBLICATION FORM NUMBER						DATE 9 Dec 1982		TITLE Update of Basis Issue Plan (BOIP) and Amendment No. 3 to FQOPRI
ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO.*	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Exact wording of recommended change must be given)		
1						General Comment. The following recommendations apply to each MDS section whether employed as a single team as in the artillery battalion with the separate brigade or as multiple teams as in division artillery. a. Delete from each MDS Team. One truck, utility, 1/4 ton (LIN X60833); one trailer, cargo, 1/4 ton (LIN W95400); one radio AN/VRC 46 (LIN Q53001); associated radio equipment, one each, (LIN's K87243, K87536, S01373, V98788). REASON. None of these items has been justified in the O&O Concept for MDS. b. Recommend the radio control group AN/GRA 39 (LIN Q95810) and the wireline adaptors (LIN W60351) be deleted. REASON. There is no apparent requirement for the capability to remote a radio. The wire line adaptor requirement is based on the AN/GRA39. c. Recommend the Tool Kit (LIN W37483) be reduced from 2 to 1. REASON. There is only one mechanic identified who has the requirement for this tool set. AR310-34 basis of issue is one per mechanic. d. Recommend the water trailers be reduced from 2 to 1. REASON. The O&O Concept for MDS identifies the requirement for only one. 2. Recommend truck cargo 2 1/2 ton (LIN X40009) be added to the minus column as it appears to have been inadvertently left out of the BOIP. REASON. The O&O Concept for MDS provides for 3 trucks, cargo 5T. f. Recommend radio control group (LIN E94970) be deleted.		
*Reference to line numbers within the paragraph or subparagraph.								
TYPED NAME, GRADE OR TITLE MR. KENNEDY						TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION 552-3614		SIGNATURE 

DA FORM 2028
1 FEB 74

REPLACES DA FORM 2028, 1 DEC 68, WHICH WILL BE USED.

RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS For use of this form, see AR 310-1; the proponent agency is the US Army Adjutant General Center.						Use Part II (reverse) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).		DATE 22 Dec 82
TO: (Forward to proponent of publication or form) (Include ZIP Code) Commander US Army Training and Doctrine Command ATTN: ATCD-OB Ft Monroe, VA 23651						FROM: (Activity and location) (Include ZIP Code) Commander US Army Combined Arms Control ATTN: ATZL-CAF-SD Ft Leavenworth, KS 66027		
PART I - ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS								
PUBLICATION/FORM NUMBER						DATE 9 Dec 1982		TITLE Update of Basis Issue Plan (BOIP) and Amendment No. 3 to EQPPI
ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO.*	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Exact wording of recommended change must be given)		
						REASON: There is no apparent requirement for this piece of equipment.		
*Reference to line numbers within the paragraph or subparagraph.								
TYPED NAME, GRADE OR TITLE MR. KENNEDY						TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION 552-3614		SIGNATURE 

DA FORM 2028
1 FEB 74

REPLACES DA FORM 2028, 1 DEC 58, WHICH WILL BE USED.

ACRONYMS

A	Amended
AAMMH	Available Annual Maintenance Man Hours
AAO	Army Acquisition Objective
ABA	Army Budgeting Activity
ALO	Authorized Level of Organization
AMMH	Annual Maintenance Man Hours
AOP	Additive Operation Project
APM	Amended Program Memorandum
ARMPREP	Army Manpower and Personnel Requirements Process
ARSTAF	Army Staff
ASA	Army Security Agency
ASA (RDA)	Office of the Assistant Secretary of the Army (Research, Development, and Acquisition)
ASARC	Army Systems Acquisition Review Council
ASI	Additional Skill Identifier
ASIOE	Associated Support Item of Equipment
AURS	Automated Unit Reference Sheet
AVIM	Aviation Intermediate Maintenance
AVUM	Aviation Unit Maintenance
BOI	Basis of Issue
BOING	Basis of Issue Narrative Guidance
BOIP	Basis of Issue Plan
BOIPFD	Basis of Issue Plan Feeder Data
CAC	Combined Arms Center
CARDS	Catalog of Approved Requirement Documents
CC	Communications Command
CCT	Consolidated Change Table (replaced by CTU)
CIVPERCEN	US Army Civilian Personnel Center
CMF	Career Management Field
COEA	Cost and Operational Effectiveness Analysis
CQQPRI	Condensed Qualitative and Quantitative Personnel Requirements Information
CS	Coordinating School
CTA	Common Table of Allowances
CTU	Consolidated Table of Organization and Equipment Update
DARCOM	US Army Materiel Development and Readiness Command
DCP	Decision Coordinating Paper
DCSCD	Deputy Chief of Staff for Combat Developments (TRADOC)
DCSLOG	Deputy Chief of Staff for Logistics (HQDA)
DCSRDA	Office of the Deputy Chief of Staff for Research, Development, and Acquisition (HQDA)
DLOA	Draft Letter of Agreement
DPAMMH	Direct Productive Annual Maintenance Man Hours
DPM	Decision Program Memorandum
DS	Direct Support

DSARC	Defense Systems Acquisition Review Council
DT	Developmental Test
EAD	Equipment Availability Date (replaced by FUE)
EARA	US Army Equipment Authorization Review Activity
ERC	Equipment Readiness Code
EXQQPRI	Expedited Qualitative and Quantitative Personnel Requirements Information
F	Final
FIS	Force Integration Staff Officer
FSA	Force Structure Allowance
FSD	Full-Scale Development
FUE	First Unit Equipped
GFE	Government-Furnished Equipment
GS	General Support
HQDA	Headquarters, Department of the Army
IC	Integrating Center
ILS	Integrated Logistics Support
ILSMM	Integrated Logistics Support Management Model
IPMMH	Indirect Productive Maintenance Man-Hours
IIQ	Initial Issue Quantity
IOC	Initial Operational Capability
IPR	In-Process Review
ITP	Individual Training Plan
JMSNS	Justification for Major System New Start
JSOR	Joint Staff Operational Requirement
JTA	Joint Table of Allowances
L	Limited
LCC-A	Logistics Control Code A
LCSMM	Life Cycle System Management Model
LIN	Line Item Number
LOA	Letter of Agreement
LOGCEN	Logistics Center
LOGSACS	Logistics Structure and Composition System
LP	Limited Production
LR	Letter Requirements
LSA	Logistics Support Analysis
LSAR	Logistics Support Analysis Record
MAA	Mission Area Analysis
MAC	Maintenance Allocation Chart
MACOM	Major Commands
MACRIT	Manpower Authorization Criteria
MANPERS	Manpower and Personnel System
MAP	Manpower Analysis Paper
MARC	Manpower Requirements Criteria
MCA	Military Construction, Army

MDC	Material Development Center (replaced by MSC)
MENS	Mission Essential Needs Statement (replaced by JMSNS)
MILPERCEN	US Army Military Personnel Center
MOS	Military Occupational Specialty
MPT	Manpower, Personnel, and Training
MRC	Material Readiness Center (replaced by MSC)
MRSA	US Army Materiel Readiness Support Activity
MTOE	Modification Table of Organization and Equipment
MSC	Major Subordinate Command (DARCOM)
NET	New Equipment Training
NETA	New Equipment Training Analyst
NETP	New Equipment Training Plan
NETT	New Equipment Training Team
NSA	National Security Agency
NSN	National Stock Number
NYA	Not Yet Available
O and O	Organizational and Operational Concept
OCE	Office of the Chief of Engineers
ODCSOPS	Office of the Deputy Chief of Staff for Operations and Plans (HQDA)
ODCSPER	Office of the Deputy Chief of Staff for Personnel (HQDA)
OEL	Organizational Equipment List
OMA	Operations and Maintenance, Army
OSD	Office of the Secretary of Defense
OT	Operational Test
OTEA	Operational Test and Evaluation Agency
PDIP	Program Development Increment Package
PIP	Product Improvement Program
PM	Project Manager
PPBES	Planning, Programming, Budgeting, and Execution System
PS	Proponent School
PSN	Plan Serial Number (identifies each BOIP)
QQPRI	Qualitative and Quantitative Personnel Requirements Information
RDA	Research, Development, and Acquisition
RDTE	Research, Development, Test, and Evaluation
RIC	Routing Identifier Code
ROC	Required Operational Capability
SACS	Structure and Composition System
SB	Supply Bulletin
SC	Supply Class
SG	Surgeon General
SGA	Standards of Grade Authorization
SKO	Sets, Kits and Outfits
SQI	Special Qualification Identifier
SRC	Standard Requirements Code (replaced by TOE number)
SSC	Soldier Support Center
SSC-NCR	Soldier Support Center-National Capitol Region
SSI	Specialty Skill Identifier

SSN
STD
STD LIN

Standard Study Number
Standard
Standard LIN

T
TAADS
TC
TDA
TDLR
TDR
TELER
TMDE
TOE
TRADOC
TSM
TTHS

Tentative
The Army Authorization Document System
Type Classification
Table of Distribution and Allowances
Training Device Letter Requirements
Training Device Requirements
Telecommunications Requirements
Test, Measurement, and Diagnostic Equipment
Table of Organization and Equipment
Training and Doctrine Command
TRADOC Systems Manager
Trainees, Transients, Holdees, and Students

UIC

Unit Identification Code

Z LIN

Developmental Line Item Number

GLOSSARY

Additional Skill Identifier (ASI)

Consists of a letter and a number and may be added to the basic five-character MOS code to identify certain highly specialized skills that are in addition to the skills required by the MOS.

Additive Operation Project (AOP)

A project that consists of equipment requirements besides the initial issue allowances in MTOE, TDA, and CTA. It automatically increases the Army acquisition objective (AAO) by the quantities cited in the project. It is an authorization for major commands to acquire materiel for theaters or CONUS stockage for the purpose of supporting specific operations, contingencies, or war plans for specific geographic areas and world-wide base development.

Amended QQPRI

QQPRI prepared when changes affect data submitted in an earlier QQPRI (Tentative Final, Condensed, or Expedited) to revise that data.

Annual Available Maintenance Man Hours (AAMMH)

See MACRIT.

Annual Maintenance Man Hours (AMMH)

See MACRIT.

Army Acquisition Objective (AAO)

The quantity of an item of equipment or ammunition needed to equip the approved US Army Force and sustain that force, together with specified allies. This applies in wartime from D-Day through the period prescribed and at the support level directed in the latest OSD Consolidated Guidance.

Army Program for Individual Training (ARPRINT)

A computer-developed document that identifies officer and enlisted training requirements. It also contains programs for the Active Army, Reserve Components, other US Services, and foreign military.

Associated Support Items of Equipment (ASIOE)	An end item required for the operation, maintenance, and/or transportation of a BOIP item. ASIOEs are listed on the BOIP of the item they support. ASIOEs have their own LIN and are separately documented into TOE/VTAADS.
Authorization Documents	Included are Modification Table of Organization and Equipment (MTOE), Table of Distribution and Allowances (TDA), Common Tables of Allowances (CTA), Joint Tables of Allowances (JTA), and Additive Operation Projects (AOP). They show the requirements and authorizations for personnel, equipment, and other equipment and consumable items required by an organizational structure of a unit.
Automated Unit Reference Sheet (AURS)	A document which, generally, proposes or portrays certain basic personnel and equipment data for organizational development. It provides information for use in developing BOIP and Draft Plan TOE to support concepts and doctrine studies, computer assisted war game simulations, and operational testing.
Availability Date (ADATE)	Estimated date on which the production items will be available for initial issue to an organization after type classification Standard LCC A. The ADATE can be the first unit equipped (FUE) date.
Basis of Issue (BOI)	Authority which prescribes the number of items that may be issued to an individual, a unit, or an activity. It is stated in authorization documents.
Basis of Issue Narrative Guidance (BOING)	The basis for incorporating personnel and equipment in BOIP and expressed in narrative terms (like the CTA BOIP) for publication in AR 310-34.
Basis of Issue Plan (BOIP)	A planning document that lists certain TOE (Level), TDA, CTA, JTA, and AOP in which a new item will be placed; the number of items to be included in each organization element; and other equipment and personnel changes needed because of the new item. BOIP is not an authorization document.

Career Management Fields (CMF)	A Career Management Field is a grouping of related MOS that are meaningfully managed in terms of both manpower and personnel considerations.
Catalog of Approved Requirement Documents (CARDS)	A DA catalog of approved requirements which provides current information to combat developers and the research and development communities on approved requirements.
Combat Developer	The command or agency responsible for doctrine, concepts, requirements, and organizations. This includes systems for retail level logistics support, primarily for Army forces in a theater of operations.
Combat Development Item	A new item of equipment developed or procured in response to a DA-approved materiel requirement document. It is intended mainly to be used in a theater of operations or to control civil disturbances.
Common Table of Allowances (CTA)	An authorization document for items needed for common usage by individuals and by MTOE, TDA, or JTA units and activities Army-wide.
CTA Item	An item that can be authorized by common or specific usage criteria. It does not require a centralized computation of requirements by the Structure and Composition System (SACS).
Component	An equipment item which is separately type-classified, i.e., a stand-alone item which can perform other functions, such as generator, compressor, air conditioner, etc. Major items, when listed as components, will not be listed separately in authorization documents. Major item components are normally government-furnished equipment (GFE) and installed at depot or higher level when the system is being built due to wiring, mounting, and system interface. Major item component requirements are identified in the data interchange process.

Condensed QQPRI	QQPRI prepared when the materiel developer determines the materiel system will not require: (1) revising the MOS, SSI, or civilian occupational series structure; (2) making changes to training; or (3) adding or deleting personnel requirements and authorizations.
Consolidated Table of Organization and Equipment Update	Replaces the semi-annual update of TOE with approved changes. Previously identified as Consolidated Change Table.
Coordinating School (CS)	Any Army service school other than the Proponent School (PS) that may be involved in a specific BOIP development.
Depot Support	That support mission, maintenance and supply, which provides the reserve and potential which are required to ensure an uninterrupted flow of supplies into the combat zone or area of operations. This support mission is provided by fixed type units operating in the communications zone or zone of interior.
Development Plan	A document which records program decisions, contains the user's requirement, provides appropriate analysis of technical options and the life cycle plans for development, testing, production, training, and logistic support of systems or items. The development plan is used for both developmental and nondevelopmental items. It is the document of record maintained to reflect all phases of planning and program execution.
Development Types	Required types of equipment that are being developed to meet approved military characteristics.
Direct Productive Annual Maintenance Man Hours (DPAMMH)	See MACRIT.
Direct Support (DS) Maintenance	That maintenance normally authorized and performed by designated maintenance activities in direct support of using organizations. This category of maintenance is limited to the repair of end items or unserviceable assemblies in support of using organizations on a return to user basis. (This function was formerly known as 3rd echelon maintenance.)

Direct Support Unit (DSU)	Unit which has the mission of supporting another unit of the command. It receives and executes missions directly on call from, and gives priority of effort to, the supported unit. It is not attached to a supported unit but remains under the command of its normal high commander.
Direct Operator	An equipment or weapon system operator with direct operational control responsibility for the immediate functions of equipment.
Equipment Availability Date (EAD)	This term is replaced with first unit equipped date (FUE).
Equipment for Training	Items of tactical equipment, or components, used for training. They do not lose their identity as end items (e.g., rifles, vehicles, and aircraft).
Expedited QQPRI	QQPRI prepared by the materiel developer for nondevelopmental (commercial, off-the-shelf) items at the same time of the requirements document.
First Unit Equipped (FUE)	The date when the first production equipment will be available to equip the first unit.
General Support (GS) Maintenance	That maintenance authorized and performed by designated table of organization and equipment and table of distribution organizations in support of the Army supply system. Normally, table of organization and equipment and table of distribution general support maintenance organizations will repair or overhaul materiel to required maintenance standards in a ready-to-issue condition based upon applicable supported Army area supply requirements. (This function was formerly known as 4th echelon maintenance.)
Indirect Productive Annual Maintenance Man Hours (IPAMMH)	See MACRIT.
Initial Issue Quantity (IIQ)	The total number of a certain item needed to initially equip the units in a force structure.
Integrating Center (IC)	An activity specifically authorized and designated to formulate, develop, and integrate concepts, doctrine, organization, materiel requirements, systems, and training in broad functional areas.

Joint Tables of Allowances (JTA)

The JTA is a requirements/authorization document of equipment for units operated jointly by two or more military services, such as MAAG and missions.

Line Item Number (LIN)

The LIN is a six-character alphanumeric identification of the generic nomenclature assigned to identify nonexpendable, and development and type-classified nonexpendable/durable items of equipment during that life cycle authorization and/or supply management.

Manpower Authorization Criteria (MACRIT)

The number of direct workers required to effectively perform a specified work activity.

A principal computational component of MACRIT is the estimate of Annual Maintenance Man Hours (AMMH) and its variations (AAMMH, IPAMMH, and DPAMMH), each of which represents different contributing factors to the overall maintenance manpower and personnel determination. AAMMH, AMMH, DPAMMH, and IPAMMH are MACRIT components of the time required to repair a given system or equipment components of a system from the perspective of the factors each represents. These MACRIT components are defined below:

Annual Available Maintenance Man Hours (AAMMH).

The number of annual man-hours each repairer is expected to be available under sustained operating conditions (e.g., wartime).

Annual Maintenance Man Hours (AMMH). The sum of the direct and indirect productive time required to repair an item.

(AMMH DPAMMH IPAMMH).

Direct Productive Annual Maintenance Man Hours (DPAMMH). The estimated wrench-turning time required to repair a component or assembly.

$$DPAMMH = \frac{\text{Equipment Usage Rate}}{\text{Mean Time Between Repair}}$$

$$\times \text{Mean Time to Repair}$$

Indirect Productive Annual Maintenance ManHours (IMPAMMH). The estimated time related to job performance but not in the "hands-on" mode. Examples are: parts chasing, tool cleaning, and travel to and from the maintenance job.

IPAMMH 40% at Organizational level
 40% at DS/GS level
 22% at Depot level

Manpower Requirements Criteria (MARC)

This is a recently coined term that will eventually replace MACRIT.

Maintainer

A maintainer is a person assigned maintenance duties, either on an exclusive basis or as a part of regular duties. A maintainer may be authorized to perform organizational, direct support, or general support maintenance. Maintainers perform general and specific maintenance tasks and are frequently qualified to perform highly specialized tasks.

Maintainer Categories

A designation within a system of maintenance of materiel which is based on the extent of capabilities, facilities, and skills required for the operation categories of maintenance or organizational maintenance, direct support maintenance, general support maintenance, and depot maintenance.

Maintenance Concept

A concept which describes the manner in which an end item will be maintained and supported. It indicates maintenance capabilities required of the using unit and supporting units and provides information concerning tactical employment, usually maintenance environment, mobility consideration, allowable down-time, and other considerations. Additionally, the technical information required to develop military and civilian occupational series codes to recognize new or changed-skill requirements is included.

Manpower

The personnel strength as expressed in terms of the number of men and women available to or required by the Army.

Materiel Developer

The command or agency responsible for research, development, and production of a system (including the system for its wholesale level logistics support) which responds to HQDA-approved materiel requirements.

Military Occupational Specialty

A term used to identify a grouping of duty positions possessing such close occupational or functional relationship that an optimal degree of interchangeability among persons so classified exists at any given level of skill. **Advanced:** One which reflects specialized occupational qualifications above the entry military occupational specialty level required for performance in those duty positions which represent the journeyman, supervisory, or leadership levels of skill.

Duty: One in which the soldier is actually performing duty.

Entry: One which reflects the occupational qualifications required for performance in those duty positions which represent the lowest level of skill within an entry group.

Primary: One (entry or advanced) representing the highest or most significant job skill which the individual can best perform. **Secondary:** Any awarded, other than that designated primary.

Military Occupational Specialty Code (MOS)

A fixed number which indicates a given military occupational specialty. Also known as military occupational specialty number and specification serial number.

MOS Specification

The MOS specification contains the information that is required for classification of positions and personnel. It describes the more significant duties and tasks that are performed in representative positions comprising the MOS.

MOS Structure

A hierarchically arranged MOS classification system derived from AR 611-201. This term is unique to this MANPERS Manual.

Modified Table of Organization and Equipment (MTOE)

The MTOE is a requirement/authorization document which prescribes the modification of a basic TOE necessary to adapt it to the needs of a specific unit or type of unit at the unit identification code level and recorded in the Army Authorization Documents System.

Noncombat Development Item

A new item, developed or procured, in response to a DA-approved materiel requirement document. It is not intended to be used in a theater of operations or to control civil disturbances.

Nondevelopmental Items	Items available for procurement with no expenditure of Army Research, Development and Evaluation (RDTE) funds. These items are: (a) items commercially available; (b) items developed and accepted by other military services (this includes cryptologic items developed by the National Security Agency); (c) items of other governmental agencies or countries.
Nonstandard Item	Materiel or equipment type-classified other than Standard or not type-classified.
Parent Units	For the purpose of this manual, the following: a. TOE. (1) Units of battalion or equal level. (2) Separate companies, batteries, troops, or detachments that are not an organic element of a battalion. b. TDA. Units organized under a TDA. These include both separate TDA units and TDA augmentations to TOE units. c. JTA. Units organized under a JTA and operated jointly by two or more military services, such as Military Assistance and Advisory Groups (MA-AG) and Missions. (See AR 1-75). d. AOP. A document that consists of requirements besides the initial allowances in MTOE, TDA and CTA.
Principal Item	The item for which the BOIP is developed. Organizational, doctrinal, training, and personnel data developed by the materiel developer, in coordination with TRADOC, for new or modified materiel items.
Proponent	(1) An Army organization or staff which has been assigned primary responsibility for materiel or subject matter in its area of interest (e.g., proponent school, proponent staff agency, proponent center, etc.); (2) To be charged with accomplishment of a task.
Qualitative and Quantitative Personnel Requirements Information (QQPRI)	Organizational, doctrinal, training, and personnel data developed by the materiel developer, in coordination with TRADOC, for new or modified materiel items.

Requirements Documents

(a) **Materiel requirements documents:** Documents which require preparation of and are supported by a BOIP unless exempted by AR 71-2. Examples are Required Operational Capabilities (ROC), Letter Requirements (LR), Training Device Requirements (TDR), Training Device Letter Requirements (TDLR), and Letters of Agreement (LOA).

(b) **Tables of Organization and Equipment (TOE):** A table which prescribes the normal mission, organizational structure, and personnel and equipment requirements for a military unit. It is the basis for an authorization document.

Routing Identifier

A three-position code that identifies a specific supply and distribution organization as to its military service or governmental ownership and its geographical location.

Standard Nomenclature

System of uniform designation of items of Army materiel in which the designating noun or phrase is given first, followed by the modifiers in reverse of the normal conversational order. Tank, Medium, M46 is an example of standard nomenclature.

Standard Requirements Code (SRC)

A 9-position numeric code that identifies specific TOE. It consists of a basic set of codes, integral to each current table of organization and equipment for the purpose of expressing each and every possible combination or variation thereof, which , when associated with organizational data, is the basis for personnel and supply computations. The acronym SRC has been replaced by TOE number, as a more descriptive term.

Standard Study Number (SSN)

An 11-position alpha numeric code assigned by an MRC. It indicates either a single LIN or Department of Defense Ammunition Code (DODAC) or group of LIN or DODAC that require computations on Army Materiel Plan (AMP) and Total Army Equipment Distribution Program (TAEDP).

Standard of Grade Authorization (SGA)

Standard of grade authorizations authorize grades for representative positions classified by the MOS, and provide guidance for authorizing equitable grades for all other positions classified by the MOS in authorization documents. Through this guidance, positions requiring similar skills, knowledges, and abilities are graded equally, and positions requiring diverse skills, knowledges, and abilities are graded differently. Standard of grade authorizations do not authorize positions. Instead, they provide the basis for determining equitable grades for positions after the number of positions and the MOS classification have been established.

Structure and Composition System (SACS)

A system which relates Force Accounting System (FAS), The Army Authorization Documents System (TAADS), Basis of Issue Plans System (BOIPS), and Table of Organizational Equipment (TOE) System data bases into one computation.

Support Chain

Related to indirect support requirements such as machinists, fuel handlers, support vehicle drivers, etc., and generally occur in Combat Service Support Units.

Support Echelon

(1) Those elements that furnish logistical assistance to combat units; (2) those units that support by fire the commander's plan of maneuver.

Support Forces

Those units and elements whose missions are to perform logistical, intelligence, and administrative functions not as part of operating forces. This category is largely in the continental United States but includes some installations and dependent personnel support in overseas theaters.

Support Unit

Unit that acts with, and assists or protects, another unit, but that does not act under the orders of the commander of the protected unit, of which it is not an organic part.

Task Structure Taxonomy

A classification system involving performance elements of MOS specified in AR 611-201. Aid for generating task lists for the following purposes: (1) to confirm MOS recommendations for direct operators and maintainers; (2) to develop new MOS; and (3) to assist in training design. The use of this term is unique to the MANPERS Manual.

Table of Distribution and Allowances

The TDA is a requirements/authorization document which prescribes the organizational structure, personnel and equipment authorizations, and requirements of a military unit to perform a specific mission for which there is no appropriate TOE.

Telecommunications Requirement (TELER)

A TELER is a statement of a requirement on which planning, programming, budgeting, justification, and management evaluation is based for all nontactical telecommunications services, facilities, systems, equipment, and engineering and technical assistance. It is considered an authorization document until the equipment required for the project is operational, assigned standard line item numbers, and included in appropriate TDA.

Table of Organization and Equipment (TOE)

The TOE is a table which prescribes the normal wartime mission, organizational structure, and personnel and equipment requirements for a military unit, and is the basis for an authorization document, the MTOE. The TOE is not an authorization document.

Training Device

Item which simulates or demonstrates the function of equipment or systems such as three-dimensional models, mock-ups, or exhibits. It is designed, developed, or procured solely for training support.

Type Classification (TC) or Reclassification

Items of Army materiel entering the inventory or items procured to fulfill operational needs normally required to be type-classified before procurement.

Z Line Item Number (LIN)

A temporary number assigned by DARCOM, for planning purposes, to a developmental or nondevelopmental item before the TC Standard (LCC A) (AR 708-1).

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