**DEPARTMENT OF THE NAVY**
HEADQUARTERS UNITED STATES MARINE CORPS
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MARINE CORPS ORDER 4790.2

From: Commandant of the Marine Corps
To: Distribution List

Subj: FIELD-LEVEL MAINTENANCE MANAGEMENT POLICY (FLMMP)

Ref: (a) MCO 4790.25
(b) MCO 4400.150
(c) MCO 3000.13
(d) MCO 3000.11E
(e) MCBUL 3000 (canc: Mar 16)
(f) SECNAV-M 5210.1
(g) SECNAVINST 4410.23
(h) TM-4700-15/1H
(i) MSG 141835Z Nov 14
(j) MCO 5040.6H
(k) NAVMC DIR 5040.6H
(l) MCO 4400.160
(m) MCO 4400.16H
(n) MCO P4400.82F
(o) GPN 2-14
(p) DLM 4000.25-1
(q) MCO 4733.1C
(r) MCO 5100.29B
(s) MCO 5215.1K
(t) MCO 1553.3B
(u) MCO P3500.72A
(v) MCO 4855.10C
(w) NAVMC 4855.1
(x) DoD Directive 4151.18, “Maintenance of Military Material,” March 31, 2004
(y) MCO 4105.2
(z) MCO 5600.31A
(aa) MCO 4790.24
(ab) MCO 4790.18C
(ac) SECNAVINST 5211.5E
(ad) TM 10793A-OD/1
(ae) TI 10793-ID

1. Situation. In accordance with references (a) through (ae), this Order outlines the Commandant of the Marine Corps’ (CMC)

policy for implementing and managing field level maintenance. It is designed to integrate requirements, policy, programs, and procedures to synchronize maintenance and sustainment activities. When properly implemented, this Policy will significantly increase equipment readiness and effectively apply maintenance resources.

2. Cancellation. MCO P4790.2C.

3. Mission. To define and establish Marine Corps maintenance and maintenance management policies and procedures in order to improve staff planning, organization, direction, coordination, and unit readiness.

4. Execution

a. Commander's Intent and Concept of Operations

(1) Commander's Intent. Purpose: To enable commanders to prioritize and manage maintenance resources, increase equipment availability through a comprehensive maintenance effort, accomplish the unit's maintenance mission, improve overall readiness, and extend the useful life of Marine Corps equipment. Method: Define and establish uniform management policies and procedures for ground equipment maintenance management. End state: Achievement of a ground maintenance management system that supports and extends operations by identifying requirements, optimizing maintenance actions, minimizing resource consumption, and properly managing information.

(2) Concept of Operations. Accountability and equipment stewardship is accomplished by the execution of the programs directed herein and references (a) and (b) and applies to all levels of leadership. Organizations will perform Field Level maintenance actions as prescribed in their respective mission statement and reference (a). Maintenance will be performed at the lowest unit level possible, consistent with the mission, nature of the repair, authorized repair parts, tactical situation, time available, personnel, skill set, logistical lift, stock positioning of inventory/spares, and authorized tooling.

(3) Subordinate Element Missions. The Marine Corps Total Force and supporting establishments responsible for informal and formal weapon systems and equipment training will ensure that the provisions of this Order are effected in the

administration of the Marine Corps maintenance and maintenance management programs. All commanders will ensure that the procedures in this Order are followed. Specific responsibilities are as follows:

(a) Deputy Commandant, Installations and Logistics (DC I&L)

1. Serve as the Marine Corps Enterprise Ground Equipment Manager, responsible for ensuring the roles and responsibilities identified in this Order are adhered to by the appropriate stakeholders in order to achieve and maintain strict equipment accountability and visibility.

2. Serve as the functional advocate for logistics information systems; ensure these systems are available and effective to enable Total Life Cycle Systems Management of ground equipment.

3. Ensure that the Field Supply and Maintenance Analysis Office (FSMAO) conduct analyses for compliance with this Order and provide assistance to Marine Corps organizations as necessary.

4. Coordinate with Commanding General, Training and Education Command (CG TECOM) to ensure that effective training programs are implemented on the contents of this Order.

5. Coordinate with Commander Marine Corps Systems Command (COMMARCORSYSCOM) and affiliated Program Executive Offices (PEO), in the development of maintenance policy.

(b) Deputy Commandant, Plans, Policies, & Operations (DC PP&O). Support field level maintenance in accordance with reference (a).

(c) Deputy Commandant, Combat Development and Integration (DC CD&I)

1. Coordinate efforts with DC I&L to ensure this Order is both implemented and in consonance with current doctrine.

2. Coordinate with CG MARCORLOGCOM and COMMARCORSYSCOM/PEO to ensure Total Force Structure Management System data reflects the most current and accurate information

available to enable effective ground equipment maintenance operations at the field level.

(d) Deputy Commandant, Programs and Resources (DC P&R). In coordination with DC I&L, CG MARCORLOGCOM and COMMARCORSYSCOM/PEO, and Marine Forces (MARFORs), to ensure adequate resources are programmed through the Program Objective Memorandum process to support Intermediate and Organizational maintenance and Secondary Reparable (SecRep) replenishment.

(e) Commanding General, Marine Corps Logistics Command (CG MARCORLOGCOM)

1. Support field level maintenance in accordance with reference (a).

2. Serve as the Marine Corps Enterprise Ground Inventory Manager for military equipment, ensuring policies contained in this directive are supported and that emerging maintenance and maintenance management practices are addressed herein.

(f) Commanding General, Training and Education Command (CG TECOM). Establish entry-level training for ground maintenance and maintenance management programs. Coordinate with occupational field advocates to establish intermediate maintenance and maintenance management programs as appropriate.

(g) Commander, Marine Corps Systems Command (COMMARCORSYSCOM)/Program Executive Offices (PEO)

1. Support field level maintenance in accordance with reference (a).

2. Monitor and analyze Logistics Information Systems to determine trends impacting equipment readiness and asset availability.

3. Establish and maintain a principal agent that will serve as the Command’s representative for integrated product support providing processes, policy, tools, training and services that enable Program Managers to support the warfighter and Total Lifecycle Systems Management (TLCSM).

(h) Commanders, Marine Corps Forces. Support field level maintenance in accordance with reference (a).

(i) Commanders

1. Ensure field level maintenance is conducted on assigned equipment in accordance with reference (a).

2. Ensure maintenance management and maintenance receive full command support.

3. Establish training programs which address maintenance management, reliability, and continuous process improvement targeting equipment operator(s), maintenance personnel, clerical, and supervisory personnel.

4. Develop and implement a comprehensive internal maintenance management inspection program to ensure command policies, procedures, and training are focused on compliance with maintenance policy.

5. Coordinate and integrate the maintenance management and maintenance efforts of command activities, and implement internal control procedures to ensure compliance with maintenance policy.

6. Coordinate Contracted Logistics Support (CLS) and warranty support maintenance and sustainment actions throughout respective areas of operation.

7. Capture and report data used in assessing performance and sustainment metrics, operational readiness assessments, costs and ground equipment condition readiness reporting in accordance with references (c), (d) and (e).

8. Provide feedback on deficiencies or initiatives within maintenance procedures, concepts and plans, policy, technical data, equipment design, or logistics chain processes to the appropriate authority via official channels, and through participation in the appropriate Operational Advisory Groups.

b. Coordinating Instructions

(1) Develop, review, update, and implement internal policies and procedures to facilitate the intent and execution of this Order.

(2) Ensure accurate reporting of requirements, readiness status and other data into appropriate supporting maintenance and sustainment systems.

5. Administration and Logistics

a. Recommendations concerning the contents of this Order are invited and should be submitted to Assistant Deputy Commandant, Installation and Logistics (LP) attention Logistics Policy and Capabilities Branch via the appropriate chain of command.

b. Records created as a result of this Order shall be managed according to National Archives and Records Administration (NARA) approved dispositions per reference (f) to ensure proper maintenance, use, accessibility and preservation, regardless of format or medium.

c. The generation, collection or distribution of personally identifiable information and management of privacy sensitive information shall be in accordance with the Privacy Act of 1974, as amended, per reference (ac). Any unauthorized review, use, disclosure or distribution is prohibited.

6. Command and Signal

a. Command. This Order is applicable to the Marine Corps' Total Force as outlined herein:

(1) To organizations with assigned Table of Organization and Equipment (T/O&E), including task organized units, except as indicated below:

(a) Aviation materiel furnished by the Navy which is subject to policy prescribed by the Chief of Naval Operations.

(b) Medical and dental materiel which are subject to the policies of Bureau of Medicine and Surgery.

(c) Musical instruments.

(d) Industrial plant equipment.

(e) Government Furnished Materiel (GFM), Government Furnished Property (GFP), Government Furnished Equipment (GFE), or Non-Tactical Vehicle, when specific procedures are delineated in other directives.

(f) Research and Development equipment unless specified by MARCORSYSCOM/PEO and/or the Marine Corps Warfighting Laboratory (MCWL).

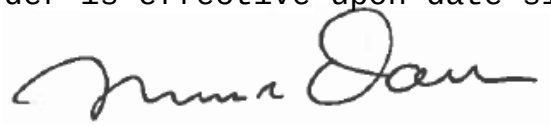
(g) Class V (W), ground conventional ammunition.

(h) Dive equipment.

(2) This Order applies to equipment maintained by the Marine Corps under approved PBA, Inter-service Support Agreement (ISSA), Memorandum of Agreement (MOA), Memorandum of Understanding (MOU), Statement of Work (SOW), etc.

(3) Ground equipment maintenance will be managed as outlined in this and other directives and manuals in the 4790 series.

b. Signal. This Order is effective upon date signed.



M. G. DANA
Deputy Commandant for
Installations and Logistics

DISTRIBUTION: PCN 10206545100

# Marine Corps Order

# (MCO) 4790.2

# Field-Level

# Maintenance Management Policy

LOCATOR SHEET

Subj: FIELD-LEVEL MAINTENANCE MANAGEMENT POLICY

Location: _____
(Indicate location(s) of copy(ies) of this Order.)

# RECORD OF CHANGES

Log completed change action as indicated.

| Change Number | Date of Change | Date Entered | Signature of Person Incorporated Change |
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# Chapter 1

## Maintenance Management

1. General. Maintenance management integrates requirements, policy, programs and procedures to synchronize maintenance and sustainment activities. Maintenance Management plays a critical role in maintaining unit readiness and, as such, Commander's will assign a Maintenance Management Officer (MMO), in writing, when the billet is not identified by the T/O.

2. Responsibilities

a. Maintenance Management Officer. The MMO serves as special staff officer to the Commander under either the staff cognizance of the G-4/S-4 with respect to ground equipment field level maintenance management. The MMO supports and provides oversight of the eight functional areas of maintenance management; maintenance administration, training, records and reports, PMCS, equipment availability, publications control, supply support and maintenance programs. The MMO will:

(1) Plan, organize, and coordinate the use of all maintenance resources within the unit.

(2) Establish, plan and document the execution of the unit's maintenance related inspection program in order to conduct detailed inspections ensure effective maintenance operations through oversight of the maintenance management functional areas.

(3) Conduct assessments of the maintenance management functional areas to ensure effective maintenance operations.

(4) Establish, monitor and coordinate with responsible officers and maintenance commodity managers to ensure the timely performance of corrective and preventive maintenance programs.

(5) Coordinate with commodity and maintenance officers to establish and monitor quality control programs.

(6) Establish evacuation procedures of equipment to external maintenance activities.

(7) Monitor the documentation of labor hours and tasks within the Major Automated Information System (MAIS).

(8) Coordinate with supporting/supported maintenance activities and ensures compliance with established procedures and assist in ensuring prompt submission and retrieval of equipment.

(9) Coordinate with the G-3/S-3 in the balancing of operational requirements with maintenance scheduling.

(10) Coordinate with the G-4/S-4 in identifying facility requirements for maintenance operations and training, and coordinates= the use of available facilities with commodity managers.

(11) Assist commodity managers in the development and maintenance of desk-top procedures/turnover files for each maintenance management functional area.

(12) Establish and monitor procedures for validation and reconciliation procedures.

(13) Coordinate with commodity managers to ensure the establishment and administration of the functional areas outlined below:

(a) Maintenance Administration.

(b) Training.

(c) Publications Control.

(d) Equipment Availability.

(e) PMCS and Corrective Maintenance (CM).

(f) Supply Support.

(g) Maintenance Programs.

(h) Records and Reports.

b. Maintenance Officer/Commodity Manager

(1) Serves as the technical adviser to the commander on all commodity maintenance functions.

(2) Schedules, directs, and supervises the maintenance operations for the commodity.

(3) Coordinates efforts with internal and external activities for maintenance related operations and issues.

c. Responsible Officer/Equipment Owner

(1) Develops and maintains an effective scheduled/preventive maintenance program within his assigned capability.

(2) Coordinates with supporting maintenance activities for scheduling of equipment requiring preventive/corrective maintenance.

(3) Responsible for the accurate and timely reporting of the current operational status of equipment.

3. Maintenance Administration

a. Desk-Top Procedures and Turnover Folders

(1) Desktop Procedures

(a) The frequent change of personnel within units results in a lack of expertise and continuity in day-to-day operations. Proper use of desk-top procedures and turnover folders greatly alleviates this situation and improves the overall efficiency of an organization. Maintenance Management Standard Operating Procedures/Maintenance Management Policy Letter (MMSOP/MMPL) can state the requirements, contents, details, and the billets that require desk-top procedures and turnover files.

(b) Each unit/section will prepare desk-top procedures for each billet involving administrative and management functions. For example, desk-top procedures will be established for personnel serving the following billets:

1. Maintenance personnel in key billets (Quality Control, Maintenance Chief, etc.).

2. Shipping and Receiving.

3. Publications Clerks.

4. Supply Clerks.

5. Dispatchers.

6. Equipment Readiness.

(c) It is not intended that desk-top procedures be all inclusive or formalized but, rather, a simple listing of significant items or notes pertinent to everyday operations within a particular billet. Normally, they would include such items as current references, procedures for carrying out required duties, telephone numbers of individuals who might need to be contacted, and reports required. Each will prescribe steps to follow in the accomplishment of all authorized maintenance or related actions. Procedures will standardize requirements, actions, and recordkeeping.

(2) Turnover Folders

(a) A turnover folder will include information about policy, personnel, status of pending projects, references, management controls, functioning of the section, ways and means of accomplishing routine as well as infrequent tasks, and other information of value to an individual assigned to that billet. The MMSOP/MMPL can outline the requirement, contents, details, and the billets that require turnover folders.

(b) Folders will be arranged in such a manner as to permit ease in changing those sections requiring frequent modification. The degree of detail must be flexible and is subject to the discretion of organizational commanders. The important consideration is that the content of folders be directed towards rendering maximum assistance to the relief. Turnover folders may be organized by functional area. At a minimum, turnover folders will be prepared for the following billets:

1. Maintenance Management Officer.

2. Maintenance Management Chief.

3. Maintenance Officer.

4. Maintenance Chief.

(c) Turnover folders will be titled with the billet and contain, at a minimum, statements concerning the following:

1. To whom the individual occupying the billet reports and incumbent billets subordinate thereto.

2. The mission of the billet (broad billet responsibilities).

3. The functions involved in accomplishing the mission (principal action taken).

4. Tasks and basic operations regularly performed in accomplishing specific functions.

5. List of orders or other directives pertinent to the billet.

6. List of required reports and dates of submissions.

7. List the relationship with activities both in the official and unofficial chain of command, including unofficial liaison and coordinating functions. Brief statements concerning the type of matters with which these agencies are consulted will be included.

8. Contacts within or external to the command, listing telephone numbers and/or addresses. The purpose served by the contact will be included.

9. Miscellaneous information will be included. For example, administrative or operational procedures peculiar to the billet, such as dual responsibility for certain functions or limitations in responsibility or authority within particular functions. Include any other information that might assist in carrying out the responsibilities.

10. Past, pending, and anticipated projects will be itemized and kept current. A short resume of past projects considered unusually important to include, a status report of each pending project, a brief outline of the project, and a brief outline of projects considered worthwhile for future implementations.

b. Standard Operating Procedures and Policies. Marine Force or Major Command (MajCom) Commanders will designate which subordinate commands will publish an MMSOP/MMPL. The instructions contained in the MMSOP/MMPL will be clear and applicable to the unit level, and detailed to ensure each subordinate unit can perform its maintenance mission. A MMPL is warranted when amplification or clarification to an order/ directive or higher level directive (e.g., MMSOP) is required.

If MMPLs are used they must also include justification as to why the guidance provided within the order/directive or MMSOP is inappropriate or requires clarification.

c. Assessments and Inspections

(1) Assessments. Internal assessments are utilized to measure, preserve and support the unit's maintenance management program. Through proper implementation, units will ensure effective use of resources. These assessments will identify the unit's strengths and weaknesses and will assist in evaluating the command's current processes, procedures and training requirements. Below are some guidelines in conducting internal assessments:

(a) Designate times for internal assessments, (i.e. on the Training Exercise and Employment Plan (TEEP), and unit training plan).

(b) Use or incorporate HQMC or HHQ checklist questions in your unit's internal assessment.

(c) Involve Marines in the process; invite HHQ or external support if needed. The quality and effectiveness of the assessment is reliant on subject matter expertise and experience.

(d) Read and understand the references in the checklist (seek assistance if unsure): be critical, thorough and systematic.

(e) Document discrepancies and establish corrective actions and follow on review of discrepancies.

(f) Pick a sample of items to review (you don't need to look at 100%).

(g) Conduct causative research as needed.

(h) Develop and execute a plan to correct records and procedures.

(i) Follow MMSOP or MMPL to report corrections.

(j) Update desk-top procedures and turnover folders.

(k) Create and follow-up on corrective action plans with a focus on discrepant areas from the initial assessment.

(l) Retain internal assessment results.

(m) Verify that Marines have access to required MAIS.

(n) The effectiveness of reconciliations; ensure they are comprehensive and timely.

(2) Inspections. Inspections are one of the principal means available to unit commanders to ascertain whether planning and organization are sound and their staffs are functioning effectively. Inspections are either formal or informal and can be performed by internal or external sources. When conducted inspections should document, corrective actions initiated through follow on review of discrepancies. Local policy will dictate the frequency of the required inspections. The following are typical inspections that maintenance management officer may be subject to:

(a) Informal Inspections. Informal inspections may examine the unit or certain areas of the unit's activity to the same extent as a formal inspection or to any lesser extent. A spot-check inspection of equipment or personnel in the conduct of routine operations is an example of the simplest of the informal inspections. Inspection checklist may be prescribed; however, are not necessary. Results can be communicated written or orally.

(b) Formal Inspections

1. Field Supply and Maintenance Analysis Office (FSMAO). Scheduled FSMAO analysis of field units are designated as formal analyses. Reports are filed at the conclusion of each analysis. The FSMAO's mission includes identifying and reporting deficiencies in supply and maintenance operations, compliance to policy, and recommending remedial action. In addition to the formal analysis, the unit commander can request assistance in specific problem areas. Details of the FSMAO's mission and responsibilities are found in reference (l).

2. Inspector General of the Marine Corps (IGMC). The IGMC ensures that unit's maintain the highest level of readiness, effectiveness, discipline, efficiency, integrity, morale, economy, and ethics encouraging public confidence. This

program is administered under the Marine Corps Readiness Inspections and Assessments references (j) and (k). The IGMC conducts inspections, investigations, or inquiries into any and all matters of deemed important within a command and includes the Commanding General's Inspection Program and Command Inspection Program (CIP).

4. Supply Support. Effective supply support requires close, and continuous, coordination between the MMO, supply officer, equipment owner and maintenance officer to ensure:

a. Requisitioning. Standardized submission and requisitioning procedures are established for the unit through the MAIS that supports and ensures:

(1) Repair parts and maintenance related supplies are requisitioned in accordance with time standards outlined in reference (m). The application of the time standard will be applied from identification of the equipment problem or stock list item shortage to submission into the MAIS.

(2) Requisition priorities are equal to, or lower than, the priority of the associated maintenance repairs being conducted and consistent with the mission essentiality of the item being requisitioned.

b. Validation and Reconciliation. The preservation and management of resources through implementation of effective validation and reconciliation procedures ensures repair parts, secondary reparables, components, and collateral equipment, unless properly controlled, represent a continuing drain on the unit's resources. Effective validation and reconciliation procedures will ensure that requirements are known, promptly processed, and applied when received.

(1) Validation. The process used to confirm repair part requirements. It involves confirmation of requirements that are still needed, cancellations, receipts, scrounges, and current status. When confirming needed requirements, the customer must ensure that the items have been made known, still exist, and are resident in the supply system.

(a) Ensure that all receipts, cancellations, and scrounges have been identified and that required transactions have been submitted and processed within the MAIS.

(b) Ensure all parts requirement can be associated to open requests.

1. Weekly

a. Deadline operational status of readiness reportable equipment against the MAIS.

b. Readiness reportable equipment report within the MAIS to ensure operational statuses is correct.

c. Supporting maintenance activities for unit-owned and temp loaned equipment that is in the maintenance cycle.

d. Review readiness, management and production reports within the MAIS to identify the following:

(1) Recurring Errors. Trends in data input errors should prompt a review of a unit's procedures or discussions with the Logistics Systems Coordination Office (LSCO) concerning possible system problems. Any program/system issues will be identified to the chain of command.

(2) Requisitioning Delays. Comparing the date of the status, the approval date, and document transaction run date will reveal any delays in processing requisitions and identify the source of the delay.

2. Monthly

a. Unit readiness report within the MAIS with the T/O&E, and reference (e) to ensure all readiness reportable ground equipment reflects the correct authorized quantity.

b. Unit readiness report within the MAIS and the Mechanized Allowance List (MAL) with the equipment physically on-hand to ensure "possessed" quantities are reported correctly.

c. Any program/system issues will be identified to the chain of command.

(2) Reconciliation. Reconciliation is the process used to ensure that validated requirements are properly logged within the MAIS.

(a) Proper reconciliation between the maintenance and supply sections.

(b) Continuous monitoring of requisitions.

(c) Commodity Manager/Shop/Maintenance Officer. After the weekly validation, the commodity manager or shop/maintenance officer or chief will accomplish the following with the MMO and Supply:

1. Ensure that the supply status provided is current, acceptable, and understood. Request the supply office clarify any status that is not understood or does not sufficiently correspond to requisition priority.

2. Identify corrections and necessary updates and assist Responsible Officers, maintenance commodity sections, and the supply section to correct and update the MAIS.

c. New Equipment Fielding. Fielding of new equipment involves coordination throughout the using unit amongst the supply officer, gaining responsible officer and maintenance commodity. The Commanding Officer will place newly fielded equipment into service in accordance with the fielding plan prior to conducting operations. The MMO will ensure:

(1) Fielding plans (FP) are reviewed to ensure maintenance resource planning is coordinated.

(2) Validate or initiate the equipment's life-cycle attributes within the MAIS to include: warranty, configured status validated, PMCS interval validated, PMCS scheduled established, counter established, and counter reading entered.

d. Demand Supported Items (DSI). Monitor approved DSI inventories and strict adherence to reference (b), to ensure proper accounting and capture of class IX (repair parts) through the MAIS.

e. Funds. Whether in terms of hard dollars, budgets, or operating targets, funds are not directly seen by the MMO or maintenance sections. The adequacy of funding is indicated in a maintenance section by the availability of repair parts, tools, and other maintenance related supplies. Even though the impact of funding is indirect, the role of the MMO is vital. Coordination ensures the input of maintenance requirements for all commodity areas.

(1) In the budgeting process the MMO ensures that the data collection is accurate. All costs of repair parts will be captured when funds are expended. Field budget guidance and staff coordination with G-3/S-3 and G-4/S-4 will provide the information regarding the tempo of future operations, logistic commitments, and new equipment receipts. Using this information will assist commodity and maintenance sections in expressing requirements while fulfilling staff responsibility for input to the budget process.

(2) Planning. Information will be captured routinely in the MAIS or local system routinely on the obligation and subsequent expenditure of funds.

(3) Control. Once allocated, funds must be controlled. There are numerous regulations concerning obligation authority. The MMO's responsibilities include providing staff advice on internal allocation/reallocation, ensuring that funds obligated for maintenance resources are applied in the best manner, and ensuring that periodic fiscal reviews are conducted. Below are two examples that best illustrate the control function of the MMO:

(a) The MMO fulfills the control function and meets a staff responsibility by coordinating with the supply, maintenance and fiscal officers and then presenting the commander with the necessary information to decide on the allocation/reallocation of funds, cancellation of requisitions, or request for additional funds.

(b) The MMO, in conjunction with the unit's supply and fiscal officers and in coordination with the command's comptroller, must develop the unit's job order number structure allowing information collection and permitting sound command decisions based on readily available information.

5. Equipment Availability. The MMO advises the commander on all matters relative to equipment readiness and the impact to the unit's mission. Timely and accurate reporting of all equipment and its operational status shall be executed in accordance with references (b), (c), (d), and (e).

# Chapter 2

## Maintenance Resources

1. General. Maintenance resources are time, personnel, maintenance training, materiel, facilities, and funds. Commanders influence the allocation of maintenance resources through budget submissions, T/O revisions, and T/E changes.

2. Time. Commanders at all levels must plan time for the effective accomplishment of maintenance operations. Doing so increases command attention on the importance of maintenance and facilitates increased equipment and personnel availability. Maintenance Officers, Chiefs and MMOs must maintain awareness of time as a resource and shall continuously monitor to ensure maintenance and non-maintenance activities are synchronized in an effective manner.

3. Personnel. Commanders will ensure the proper allocation of human resources to accomplish all maintenance tasks in support of an organization's assigned equipment. The allocation will address the required manning levels and skill sets. Equipment to manpower reviews will be continuous and official Table of Organization and Equipment Change Request (TOECR) will be submitted when required.

4. Maintenance Training. A critical aspect of personnel resourcing, in support of maintenance operations, is the effective management and oversight of maintenance training. Maintenance Officers, Chiefs and MMOs must continuously evaluate mission requirements and tables of organization against on-hand personnel training readiness levels. Doing so ensures that appropriately trained personnel exist to support maintenance requirements. Effective planning and forecasting is required in ensuring that training remains aligned to mission requirement. Maintenance personnel should become familiar with training systems and shall coordinate closely with unit training personnel to ensure proper scheduling and effective execution of maintenance training. Maintenance personnel and MMOs will utilize applicable Training and Readiness (T&R) Manuals as guides to ensure training readiness is maintained and provided in the most appropriate method.

5. Materiel. Consists of all materiel items required to support the operation and maintenance of military equipment. Materiel to be considered in resource planning include, but are not limited to, Class IX repair parts, Class III fluids and

lubricants, required tools, test or support equipment, and technical publications. Maintenance personnel shall continuously consider and plan for materiel requirements throughout phases of maintenance.

6. Facilities. Facilities are real estate or structures that provide support for missions, functions, and tasks. It is important that land and facilities be accorded the same commitment, concern, and support as other war fighting systems. The staff functions and considerations and factors effecting site selection, shop layout, and organization are established in Appendix B (Shop Organization).

7. Funds. The funding of maintenance at the field level is achieved by accurate budget planning. Budget submissions will account for forecast based on historical demand for repair parts, future estimates for operations and exercises, appropriate materiel forecast, new equipment fielding, aged equipment and average cost of maintenance programs.

# Chapter 3

## Field Maintenance Production

1. General. Maintenance involves those actions taken to restore or retain materiel in serviceable or operational condition. Maintenance tasks are grouped into two types, preventive and corrective. Preventive maintenance is the practice of maintaining equipment on a regular schedule based on elapsed time or counter reading. Corrective maintenance involves those actions to restore materiel to a serviceable condition.

a. Maintenance Authority. A unit's authority to perform maintenance tasks corresponds directly to the assigned capabilities and available resources for accomplishment of the mission. Units are not authorized to conduct maintenance outside of their assigned capabilities except when coordinated through the supporting/supported relationship or as outlined in reference (a). An organization's assigned personnel and authorized equipment form the foundation of the assigned capability. The concept of operations for a given mission that establishes the supporting and supported relationships will influence and further refine the assigned capability. Reference (a) is the principal document that provides maintenance authority and defines maintenance capability within a two level of maintenance concept:

b. Levels of Maintenance (LOM). Field and Depot. The distinction between field and depot LOM is based on the maintenance tasks performed, within each LOM and as communicated through the Source Maintenance Recoverability (SMR) code. The levels of maintenance are summarized below however; reference (a) is the principal document that establishes the levels of maintenance for the Marine Corps.

(1) Field LOM. Field maintenance is any maintenance that does not require depot maintenance capability and is performed by equipment operator(s) and mechanics/technicians within Marine Corps organizations and activities, and/or by approved commercial/contract sources. Maintenance tasks performed within the field LOM are categorized as organizational or intermediate. A unit may perform any field maintenance tasks for which it is manned, trained and equipped. Units are not authorized to conduct maintenance outside of their assigned capabilities. However, supported and supporting unit commanders

are authorized to coordinate in order to ensure the most effective use of maintenance resources within their respective capabilities, and will incorporate local standard operating procedures to ensure the same. Additionally, commanders must consider their impacts not only to their own operations and resources, but also on those of their supporting/supported units.

(2) Depot LOM. Maintenance actions taken on material or software involving the inspection, repair, overhaul, or the modification or reclamation (as necessary) of weapons systems, equipment end items, parts, components, assemblies, and subassemblies that are beyond field maintenance capabilities, and/or are authorized and directed by HQMC.

2. Maintenance Phases. Appendix C provides a series of steps depicting a logical sequence necessary to complete the various types of maintenance functions, which are described below.

a. Acceptance Phase. The acceptance phase is the initial step of the maintenance production process. It consists of inspection, scheduling, and assignment within the maintenance activity.

(1) Inspection. The purpose of the acceptance inspection is to verify that the equipment is complete and prepared for the required maintenance service and is conducted upon initial receipt by the maintenance activity. The procedures to be followed in the acceptance inspection are as follows:

(a) Determine that the equipment is complete by locating, identifying, and inventorying equipment and its components and ensuring that appropriate operator maintenance, including cleaning, configuration and application of appropriate modification has been performed. Remove and store collateral materiel and annotate accompanying documentation unless collateral equipment is required during the active maintenance phase. Equipment incomplete or not properly prepared by the unit or activity requesting maintenance should be reported to the owning unit via the MMO.

(b) Verify the request for maintenance has been properly prepared in order to facilitate any maintenance requirements.

(c) Accept the equipment for the required service.

(d) Assign a production priority for use within the maintenance section. This priority will be based upon the Urgency of Need Designator (UND) assigned and as outlined in reference (m).

(2) Acceptance Scheduling. The purpose of acceptance scheduling is to have equipment requiring maintenance arrive at the maintenance facility at or after the time that the required maintenance resources are available. This procedure allows the equipment owner maximum operational use of this equipment while avoiding needlessly large concentrations of equipment awaiting maintenance at the maintenance facility. Acceptance scheduling applies to maintenance functions performed at the field level. To be effective close coordination between the equipment owner and the maintenance section is required. Acceptance scheduling normally applies to all PMCS, modification, calibration, or routine repairs. Procedures for acceptance scheduling are as follows:

(a) Initiation of requests through local procedures.

(b) Validate and or assign the UND in accordance with reference (m).

(c) Acceptance by the maintenance section includes establishment, when appropriate, of the date for delivery of the equipment for the required service.

(d) Tentative scheduling of the equipment to a specific maintenance section/shop within the maintenance activity.

(e) Determining the parts required for the service and initiating requisitions to ensure availability of parts at the time of the service.

(3) Shop Assignment. The assignment of equipment to a specific maintenance section/shop within the maintenance activity occurs upon completion of the acceptance inspection and scheduling, when appropriate. In maintenance activities comprised of only one maintenance shop, shop assignment occurs at the time of acceptance of the equipment during the acceptance inspection. Procedures to be followed in the shop assignments are as follows:

(a) Identify the type of shop to perform the required service.

(b) Review the workloads and available resources of individual shops within the maintenance section and determine which shop should be assigned responsibility for repairs.

(c) Assign the responsibility to a specific maintenance shop. When assigning, always consider the UND assigned to ensure that the equipment readiness of supported units is not impaired.

(d) Assign the DSI required for the service to ensure availability at the time of induction.

b. Induction Phase

(1) Induction is the physical delivery of the equipment requiring service to the maintenance activity.

(2) Induction of equipment into a specified maintenance activity must be by the priority established in the equipment acceptance phase.

c. Active Maintenance Phase. Production actions performed following induction of the equipment into a maintenance shop constitute the active maintenance phase and the beginning of the repair process. This phase is performed in a sequence of logical steps designed to ensure that the required services are conducted in an efficient and effective manner. During this phase, continual emphasis is placed on quality control of the actions and tasks performed. The frequency of quality control inspections will depend on the skill and experience of the individual technicians or mechanics and the overall complexity of the actions. The steps to be followed in the conduct of active maintenance are described in the following:

(1) Inspection. Maintenance personnel assigned to perform the service will perform a detailed inspection of the equipment upon its induction into the maintenance activity. This inspection serves as a basis for the performance of the maintenance and includes verifying all equipment records associated with the required service is current.

(2) Preparation. Preparation includes the assembly of the appropriate technical publications and other technical

information, support equipment, and Test Measurement and Diagnostic Equipment (TMDE) to perform required service. Adequate preparation reduces the actual time required to perform the maintenance and ensures that maintenance actions are not initiated when the required resources are not available.

(3) Performance. Maintenance tasks such as PMCS, CM, calibrations, and modifications will be performed per the appropriate technical publication by qualified personnel.

(4) Quality Control (QC). QC requires a complete inspection of equipment to determine completion of maintenance actions and update of equipment records within the MAIS (if required). Equipment will be inspected by assigned quality control personnel. Equipment not performing satisfactorily will be rejected and recommendations made for further maintenance action. Acceptable performance results in the completion of the active maintenance phase and the movement of the equipment to the closeout phase.

d. Maintenance Closeout Phase

(1) The closeout phase of the maintenance process commences when equipment has been repaired or disposition has been executed. Maintenance personnel will ensure that the closeout process is accurate, complete, and coordinated.

(2) The closeout phase requires close coordination with owning unit personnel to ensure that they are notified as soon as the equipment is ready for pickup. Special packaging, preservation, transportation, and shipping requirements must be taken care of at this time. Adhering to the UND timelines established in reference (m) the using unit must make every effort to pick up completed equipment promptly.

(3) In the closeout phase, owning unit maintenance and supply personnel must ensure that equipment records accountability records have been updated; this includes but not limited to ensuring proper accounting of class IX, documenting maintenance tasks performed, level of effort (time) to conduct the tasks, and updating of equipment readiness status.

3. Maintenance Cycle Time (MCT). Maintenance Cycle Time is the period of time covered from the initiation of maintenance actions until repairs and maintenance records are complete. Maintenance cycle time begins when the equipment is

inducted/accepted into the maintenance activity and ends upon the closeout.

a. Maximum Maintenance Cycle Time (MMCT). The MMCT is the maximum prescribed time an asset is to remain in the maintenance cycle. The prescribed time is established as a decision making threshold. Every asset type has a unique maintenance cycle time and therefore maintenance managers will focus on minimizing maintenance cycle times and will only reach the maximum by exception.

(1) End Items. An end item is a full equipment capability set. It includes all components assembled and configured to form a specific mission. An end item is a class VII supply item.

(a) MMCT for end items will be 120 days CONUS / 150 days OCONUS.

(b) MMCT for an end item is measured from the date the organizational level maintenance activity receives the item for maintenance until all maintenance actions are close. This time includes any days the end item or one of its component items is evacuated to an intermediate maintenance activity.

(2) Component Items. Component items are assets that are configured to end items. A component item can sometimes be categorized as an end item, if it is not configured under a different end item. An example is a truck. A truck can be an end item or it can be a component of a system. A component item is also a class VII supply item.

(a) MMCT for a component items is 60 days CONUS / 90 days OCONUS.

(b) MMCT for a component item is measured from the date the maintenance activity receives the item in for maintenance until all maintenance actions are closed. In cases where the Intermediate Maintenance Activity (IMA) has received an end item, the component item MMCT applies. The owning organization is capturing the MMCT for the end item.

(3) Secondary Reparable (SecRep). A SecRep is a class IX supply item that is not consumable. It is repaired and returned to a class IX supply block.

(a) MMCT for a SecRep is 45 days CONUS / 60 days OCONUS.

(b) MMCT for a SecRep is measured from the date the IMA receives the item in for maintenance until all maintenance actions are close.

b. Expiration of MMCT. When the MMCT expires or documentation shows that repairs cannot be completed within the MMCT, the following action will be followed:

(1) Organizational Maintenance Activity Actions

(a) If the asset is not evacuated to an IMA, the organization will submit an official request for disposition per references (n) and (o) on controlled items. Include in the remarks paragraph of the disposition report all actions taken to obtain required parts.

(b) Other-than-controlled items will be disposed of per appropriate orders and reference (i).

(c) Exceptions. Maintenance cycle times can be extended when directed via disposition instruction. Commanders may extend maintenance cycle times for any unique scenarios that are not due to supply support or maintenance resources, which are covered by official request for disposition.

(2) IMA Actions (End Items and Component Items)

(a) IMAs will submit an official request for disposition per references (n) and (o) on controlled items. Include in the remarks paragraph of the disposition report all actions taken to obtain required parts, including follow-up message traffic to the Marine Corps Logistics Command (MARCOLOGCOM).

(b) Other-than-controlled items will be disposed of per appropriate orders and reference (i).

(c) Exceptions. The supporting maintenance activity's maintenance officers are authorized to extend the MMCT when directed via disposition instruction. Commanding officers of the owning organization must approve all MMCT extensions for any unique scenarios that are not due to supply

support or maintenance resources, which are covered by official request for disposition.

(3) IMA Actions (SecReps)

(a) Supporting maintenance activities will conduct a review with the Reparable Issue Point (RIP) manager to determine the appropriate action.

(b) RIP managers are responsible for all requests for disposition of SecReps or for initiating the Material Returns Program (MRP).

(c) Exceptions. The supporting maintenance activity's maintenance officers are authorized to extend the MMCT when directed via disposition instruction. RIP managers must approve all MMCT extensions for any unique scenarios that are not due to supply support or maintenance resources, which are covered by official request for disposition. Each extension will be no longer than 30 days, at which time the need will be revalidated prior to any subsequent extensions.

c. Documentation

(1) Commanders shall establish local procedure for the extension of MMCT.

(2) Personnel authorized to extend MMCT shall be appointed in writing.

(3) Maintenance Officers and Maintenance Management Officers will ensure that all approved extension letters and/or extension documentations be added within the MAIS. At a minimum, the record will be annotated to explain the reason the cycle was extended, who approved the extension, and the length of the extension.

4. Preventive Maintenance Checks and Services (PMCS). PMCS is a sub-function of field maintenance and is performed by equipment operator(s) and maintenance personnel; it includes servicing, adjustment, and tuning for the purpose of maintaining equipment in an operationally ready condition. PMCS is condition based and shall be accomplished by systematic inspection, detection, and correction of failures as set forth in applicable equipment technical publications.

a. Scheduled PMCS. Scheduled PMCS are maintenance tasks that are required to be scheduled; the performance will be by trained maintenance personnel and assisted by the equipment operator(s) as required.

(1) Intervals are established for equipment at the program office level and within the MAIS in accordance with applicable technical publications.

(2) Scheduled PMCS is the responsibility of the equipment owner or unit using the equipment.

(a) Commanders are authorized to increase the frequency for scheduled PMCS, when operating conditions warrant.

(b) PMCS will be scheduled and recorded within the MAIS.

(c) For equipment with no PMCS interval designated, the commanding officer will designate an interval not to exceed annual.

(d) Equipment not under a warranty period may have PMCS intervals deferred when placed in administrative storage or administrative dead-line per this Order. Equipment under warranty will have the respective technical publication reviewed to determine appropriate procedures for inclusion into an administrative storage program.

(e) Commanders are not authorized to deviate beyond the minimum established schedule(s) for the conduct of PMCS tasks. When tasks are identified that are either redundant and conditions warrant change Commanders will recommend changes to these tasks to the appropriate program manager via NAVMC 10772 or PQDR.

(3) PMCS tasks conducted by equipment operators are not required to be scheduled or captured within the MAIS.

b. Equipment Counters. Equipment counters are used to measure the operating intervals of equipment. Equipment requiring a measurement of use (i.e. hours, miles or rounds) will be configured with a counter(s) within the MAIS. Commanders will ensure equipment counters are updated and reconciled against the MAIS at a minimum of monthly or as operational conditions warrant.

5. Relationship of PMCS to CM. The objective of PMCS is to reduce or identify CM requirements and increase the useful life-cycle of equipment. When defects are identified a decision must be made whether to perform the CM independently or in conjunction with the PMCS. Equipment requiring evacuation for CM shall be closely coordinated between the using unit and the supporting maintenance activity. Time, distance between the organizations, available personnel, quantity and nature of the equipment involved are factors to be considered in determining if the owner or the supporting maintenance activity will perform PMCS.

6. Corrective Maintenance. CM consists of all maintenance actions performed, as a result of a failure, to restore equipment to an operational condition. The CM process commences when equipment is reported as requiring CM. It terminates when equipment is either restored to a serviceable condition, determined not reparable through disposition instructions. The owning unit is responsible for the timely performance of all CM actions within its responsibility. The designated supporting maintenance activity is responsible for the timely performance of all CM actions exceeding the owning unit's capacity/capability. CM will be performed per the procedures established in appropriate equipment technical publication. Deviations from these procedures must be minimized and consistent with the effective performance of the specific maintenance action. Recommendations for the improvement of established CM procedures will be forwarded to the appropriate PM via NAVMC 10772, to include the challenge of an SMR code. CM process is contained in Appendix C.

a. Field Maintenance – Organizational Category

(1) Field maintenance in the organizational category is normally performed by the owning organization with its assigned capabilities and resources. This is commonly referred to as organizational maintenance.

(2) Organizations will perform all CM tasks that are within their assigned capabilities/responsibilities. If an asset requires maintenance that exceeds the assigned capability/capacity, the items will be evacuated to the supporting maintenance activity.

(3) Organizations will replace defective secondary reparable components by conducting an exchange with the supporting RIP. SecReps with a source maintenance and recoverability (SMR) code with an "O" in the 3rd character position are authorized to conduct an exchange. SecReps with an SMR code of "F", "H", "D", or "L" in the 3rd character position, require the end item to be evacuated to the appropriate supporting maintenance activity.

b. Field Maintenance – Intermediate Category. Field maintenance in the intermediate category is normally performed by an organization that has been established and assigned a mission to perform maintenance tasks that require a higher level of technical training, specialized tools and/or facilities. Command maintenance support relationships must define the link between supporting maintenance and supported organizations. A typical example is the Marine Logistics Group's Maintenance Battalion providing general support (GS) intermediate maintenance to the supported Marine Expeditionary Force (MEF). Regardless of the nature of the supporting/supported relationship, the procedures for conducting intermediate maintenance will be the same.

(1) Military Equipment

(a) Equipment will be accepted into the supporting maintenance activity with the priority assigned by the owning organization. Authorized personnel in the supporting maintenance activity are authorized to approve Urgency Need Designator (UND) "A", "B" and "C" requisitions consistent with the originating unit's request and reference (M).

(b) Supporting maintenance activities will replace defective secondary reparable components on military equipment by conducting an exchange with the supporting RIP. Supporting maintenance activities are authorized to conduct the exchange of SecReps with an SMR code of "F" and "H" in the 3rd character. If the secondary reparable has a "D" or "L" in the 3rd character position, the unit must request disposition.

(2) Secondary Reparables (SecReps). SecReps are generally categorized as Line Replacement Units (LRUs) and Shop Replacement Units (SRUs). An LRU is a direct sub-assembly to military equipment. An SRU is a direct sub-assembly to an LRU. A systematic SecRep exchange is required, no matter if the item is an SRU being exchanged against and LRU or an LRU being

exchanged against an end item. The process and system requisition flow will follow the same general procedures. Typically SRUs are only exchanged by SecRep repair activities while performing maintenance on LRUs.

(a) SecRep Repair Field. Field LOM on SecReps consists of testing and verification, verification of modifications, software restoration, tuning and alignments, fault isolation, replacement of defective pieces, parts and subassemblies. The authorized LOM on SecReps within the MARFORS will not exceed the field LOM as defined by this Order and reference (a). The intent is to rapidly perform repairs and return serviceable components to RIP stocks in a condition code "A" status.

(b) SecRep Repair Depot. Depot LOM on SecReps consists of in depth testing and verification, repair and restoration, overhaul and rebuild of a component and its subassemblies. Depot LOM on SecReps often requires specialized TMDE and tools, the intent of depot LOM on SecReps is to restore an item to a like new/OEM specification. Depot LOM is provided by Third Party Logistics (3PL) providers, Original Equipment Manufacturers (OEM) and DoD depot maintenance.

(c) Supporting Maintenance Activity/Reparable Issue Point (RIP) Relationship. LSCOs within the MARFORS will ensure these systematic relationships are established within the MAIS.

(d) SecRep Maintenance Capacity. Capacity management will be achieved through the observation of production, throughput over time, and resource availability, which will guide management decisions. Analyses will be made on each asset type/group (NIIN level) while considering the following key variables.

1. Throughput Ratio. This is the ratio of the number of unserviceable assets received into the work section compared to the number of serviceable assets returned to stocks; over a time span long enough to form a production analysis. (Will differ depending on the asset group)

2. RIP Stock Levels/Backorders. Assets that have customer backorders registered at the RIP, or low stock levels require thorough capacity review. RIP managers and maintenance officers will collaborate when these variables exist.

3. Maintenance Cycle Times. Maintenance cycle times are variables that will aid capacity managers in determining the volume of assets that can be effectively managed over time.

4. Repair Parts Availability. The availability of consumable and reparable supplies that support SecRep maintenance is a variable that maintenance officers will continuously monitor.

5. SecRep Budgets. RIP managers will routinely communicate fiscal concerns to maintenance officers to better inform capacity management decisions.

6. ME Readiness. ME readiness is addressed by maintaining adequate stock levels at the RIP to meet demands. However, when backorders/low stock levels exist on multiple asset types, ME readiness will aid in establishing priorities for capacity management. RIP managers and maintenance officers will collaborate when these variables exist.

7. Manpower. Manpower analyses will consider the availability of trained personnel who possess the appropriate core competencies. Maintenance officers must ensure manpower issues are considered and mitigated to the maximum extent possible.

8. Workspace. Shortage of workspace (Shop/floor/bench) is a variable that can have a negative impact on capacity. Maintenance officers must ensure workspace issues are considered and mitigated to the maximum extent possible.

(e) SecRep Source of Repair Decision. Decisions in determining source(s) of repair at the RIP are inherently the responsibility of the RIP manager. Backorders, stock levels, and warranty information will have an impact to the source of repair decision. The following considerations will aid in the determination of source of repair:

1. Warranty, if applicable, and within the scope of coverage.

2. Capabilities of the supporting maintenance activity.

3. Maintenance capacity of the supporting maintenance activity (current throughput ratios and average maintenance cycle times).

4. Results of initial testing, if applicable. (field or depot level maintenance requirements). Some assets will require a repair source determination that can only be obtained by limited testing (e.g. engine tested on a dynamometer). If the asset has no obvious defects (e.g. visible engine block damage) and the local maintenance organization is capable of performing a test, it will do so prior to making the repair source decision. The purpose of the initial test is to determine the required LOM. Initial testing will be documented on the system generated maintenance record within the MAIS. It is not cost effective to exercise MRP, 3PL, or OEM actions on SecReps without testing and screening for field level repair candidates when the capability exists. Source of repair decision should normally be completed on the same day the unserviceable item is received at the RIP. This process will not exceed 5 days and inclusive of the MMCT. The intent is to allow time for initial testing, when necessary (e.g. an asset is scheduled for a dynamometer test on day 5 and found to be within the field LOM and can be accepted). If the item under test is found to be outside the scope of the field LOM, maintenance officers will ensure the MAIS is documented accordingly to capture the resources used, and testing performed (e.g., accept, record, and close) and inclusive of the MMCT.

(f) SecRep Configuration. Approved configuration checklists are published by MARCORLOGCOM. SecReps will be inspected for configuration by trained maintenance personnel upon arrival to the RIP, regardless of the source of repair decision.

(g) Close out Condition Code Assignment(s). Assets restored to a serviceable condition will be closed out with a serviceable status ready for issue. Unserviceable assets will be returned to the RIP in a condition code (F) status for processing under the following conditions:

1. Uneconomical to Repair. A SecRep is considered uneconomical to repair if the repair cost exceeds 45% of the replacement cost, and a replacement is obtainable. During combat operations, time and stock posture will be considered over cost of repair.

2. If after acceptance into maintenance, is found to require repairs that exceed the field LOM.

3. If the item exceeds the MMCT identified herein, and does not have a valid authorization for extension and an extension is not anticipated.

4. Supply Support. Supply support determinations will to be made within 5 days from the date of requisition. In those instances where supply support cannot be obtained a supply assistance report (SAR) will be submitted in accordance with reference (p). Repair parts that are clearly obtainable, but historically have a slower lead time will be reported to the supporting Supply Management Unit. Organizations are authorized to establish and hold DSI in order to reduce maintenance cycle times. SecRep repair is repetitive in nature and maintenance managers shall stay abreast of supply support issues that impact maintenance and must be capable of making these decisions early in the maintenance cycle.

5. Product Quality Deficiency Program (PQDR) (SecRep). Often times a customer rejected asset will be reevaluated by the supporting maintenance section and result in a PQDR submission. SecRep maintainers have the technical expertise to observe quality deficiency trends on assets that are undergoing repairs. Regardless of the scenario, the supporting maintenance activities will submit a PQDR when quality deficiency trends are discovered in accordance with references (v) and (w). RIP managers will be notified on all PQDR submissions for SecReps. This requirement does not relieve RIP customers from their responsibility in PQDR submissions.

7. Overflow Maintenance. Overflow maintenance is maintenance tasks within the unit’s responsibility but beyond its capacity because of restrictive and/or unusual circumstances and is consequently performed by another unit or supporting maintenance activity. The following conditions may prevail:

a. Insufficient maintenance resources; for example, shortage of technicians or mechanics, shop space or facilities, maintenance equipment, or inadequate supply support.

b. Cost-effectiveness; for example, instances when it would be more cost-effective for the supporting maintenance facility to perform organizational maintenance on supported equipment in conjunction with or independent of intermediate maintenance.

Such overflow maintenance will be contingent on the availability of maintenance resources at the supporting activity and agreement between the support activity and the supported organization.

8. Exceptional Maintenance Practices. Exceptional maintenance practices require continual monitoring in order to ensure these practices do not become common place. Within the Marine Corps there are two exceptional maintenance practices; Cannibalization and Selective Interchange. When reviewing requests for the conduct of cannibalization and selective interchange each should be reviewed on a case-by-case basis, and authorized only when operational availability of the equipment is essential to mission accomplishment. Cannibalization and selective interchange are exceptions to established Marine Corps maintenance practices. These practices increase maintenance workload, complicates lifecycle planning and serialized management of materiel, increase the potential for degraded asset performance and reliability relative to established standards, and may result in the failure of demand to be registered within the supply chain. Due to these challenges and risks, approval of request to conduct will be closely scrutinized and authority to execute will be granted when it is absolutely necessary for mission accomplishment. These practices will be documented, recorded and reported as directed in reference (x) and outlined below.

a. Cannibalization. The removal of serviceable parts or components, without replacement, from one unserviceable end item of equipment in order to install them on another unserviceable end item of equipment in order to restore equipment to an operational condition. The purpose of cannibalization is to restore equipment when those items are required for mission accomplishment and the required repair parts are not readily available through the supply chain.

(1) Authority. Marine Corps Logistics Command (MARCORLOGCOM), as the Marine Corps Ground Asset Manager for military equipment, is the sole approval authority for cannibalization. Commands and maintenance activities will submit requests for cannibalization via the disposition process to MARCORLOGCOM. MARCORLOGCOM will provide an appropriate response approving/disapproving the removal of repair parts.

(2) Commands and maintenance activities will not conduct cannibalization with the objective of building an inventory of

operational stocks. When cannibalization has been authorized by a MARCORLOGCOM item inventory manager, serviceable parts will be returned to the supply system for accountability and reissue.

(3) Organizations conducting maintenance on Marine Corps ground equipment via memoranda of agreement or maintenance contract will not conduct cannibalization without prior approval from the appropriate MARCORLOGCOM inventory manager.

(4) Commands and maintenance activities will implement strict internal control procedures to ensure that cannibalization is not conducted unless authorized by MARCORLOGCOM. Commands and maintenance activities will also publish standard operating procedures for conducting, capturing and recording cannibalization.

(5) Documentation of cannibalization. The MAIS will capture the minimum data requirements for use by HQMC to report to the Office of the Assistant Secretary of Defense (OASD) as required by reference (x).

(6) Reporting. Commands and maintenance activities will capture when parts or components are removed from equipment that will not be returned to service and applied to other equipment in order to render it operational.

(7) Cannibalization of Small Arms/Light Weapons (SA/LW) is not authorized.

b. Selective Interchange. The controlled removal and replacement of an unserviceable repair part or component from one end item with a serviceable part or component from another end item to return the end item to an operational status. Parts or components must be exchanged between end items for the action to qualify as selective interchange. A requisition for the replacement part or component may be used in lieu of the actual unserviceable part or component in the exchange. Selective Interchange is a lesser degree of Cannibalization as defined by the Marine Corps.

(1) Authority

(a) Operating Forces. Battalion/squadron commanders are authorized to approve selective interchange.

(b) Supporting Establishment (SE). Supporting establishment commanders are authorized to approve selective interchange in support of field level maintenance requirements.

(c) Intermediate Maintenance Activities. Direct and general support maintenance activities are authorized to conduct selective interchange for equipment within their purview, and under the conditions specified in paras below:

1. The equipment or secondary reparable is in the intermediate category of maintenance.

2. The commander of the unit accountable for the equipment from which the serviceable part or secondary reparable is to be removed has authorized the interchange.

(d) Organizations conducting maintenance of Marine Corps ground equipment via memoranda of agreement or maintenance contract will not conduct selective interchange without prior approval from the appropriate battalion/squadron commander (accountable officer (AO) responsible for the equipment).

(e) Commands and maintenance activities will implement strict internal control procedures to ensure that selective interchange is not conducted unless authorized by the appropriate Commander. Commands and maintenance activities will publish standard operating procedures for conducting, capturing and recording selective interchange.

(2) Documentation and Reporting. Units will utilize the MAIS to capture the minimum data requirements for OASD reporting as directed in reference (x). Commands and maintenance activities will use the selective interchange function within the MAIS when serviceable parts or components are removed from equipment in exchange for unserviceable parts or components. A requisition for the replacement part or component may be used in lieu of the actual unserviceable part or component in the exchange.

9. Additional Maintenance Considerations

a. Maintenance Stand-Down. Maintenance stand-downs are a pause in training that permits the unit to focus on maintenance requirements. An effective maintenance stand-down requires

consideration of all maintenance resources and establishment of clear objectives in order to maximize results. Maintenance stand-downs can be initiated to address but are not limited to the following issues:

(1) Low readiness either throughout the unit or when an equipment platform has specific issues.

(2) Post inspection where the results indicate a trend that could be addressed via a stand-down.

(3) Maintenance requirements following exercises or operations.

b. Mobile Maintenance Teams (MMT). The mission of maintenance teams is to diagnose problems, route repairs, and replace combat unit equipment as far forward as possible on the battlefield. There are two types of maintenance teams: maintenance contact teams and maintenance support teams.

(1) Maintenance Contact Teams (MCT). The maintenance contact team is a key element of organizational maintenance. The maintenance contact team has organizational maintenance repairmen with tools, test equipment, technical publications, and limited repair parts. The maintenance contact team may have communications, engineer, motor transport, or ordnance repair personnel depending on the table of equipment. The unit commander determines the exact number of personnel and mix of skills in the maintenance contact team. The MCT is reactionary in nature. Normally the MCT is quickly tasked organized to respond to a remote maintenance requirement. The MCT skill sets and maintenance resources are normally tailored to respond to the maintenance requirement. Normally an MCT will be dispatched for a specific task, or set of task and return their origin upon completion.

(2) Maintenance Support Teams (MST). The Logistics Command Element (LCE) commander may form maintenance support teams from available assets. The LCE commander determines the task organization of the maintenance support team. At a minimum, the maintenance support team contains intermediate level maintenance (i.e., engineer, motor transport, ordnance, or communications-electronic), special tools, and transportation, as required. The LCE commander uses maintenance support teams to support either organizational maintenance contact teams within the Marine Air Ground Task Force (MAGTF) or to augment

subordinate LCE capabilities during surge periods. The MST is normally formed with a robust spectrum of capabilities. Normally the MST is planned in advance to an operation. The MST is capable of providing support for an extended period of time. A key enabler to a successful MST is the proper planning of maintenance resources. Typically the MST will be capable of dispatching MCTs as remote maintenance requirements arise.

c. Equipment Recovery

(1) Definition. Recovery of equipment is the removal of the equipment or a component or part of it from an area where it has been disabled due to the effects of terrain, enemy action, or mechanical malfunction. It also includes the recovery of specified components or parts from equipment declared unserviceable or otherwise identified for disposal.

(2) Responsibility. Equipment recovery is the responsibility of the using unit. Recovery operations not within the capability of the using unit will be performed by the designated supporting unit. The recovery of equipment will be accomplished per the instructions contained in appropriate technical publications.

# Chapter 4

## Maintenance Management Programs

1. General. This chapter outlines the maintenance programs which fall under the purview of the maintenance management officer. The programs as outlined within this chapter

2. Training Program. Maintenance and maintenance management training requirements will be included in the unit's training plan in accordance with reference (u). Training standards, regulations and policies regarding the training of Marines and assigned Navy personnel in ground combat, combat support, and combat service support occupational fields are established in reference (t). Unit readiness and individual readiness are directly related. Individual training and the knowledge of individual core skills serve as the building blocks for unit combat readiness.

a. The Commander's unit training plan or local policy must include the following: the Commander's policy on maintenance and maintenance management training. The policy will establish the minimum hourly training requirements for maintenance personnel, maintenance management clerks and maintenance supervisors (officers/chiefs).

b. To ensure maintenance and maintenance management training objective are met the MMO will coordinate with the G-3/S-3 to ensure standardized lesson plans are prepared, identification of qualified instructors, documentation of classes conducted/attended, and feedback/evaluation of training conducted. The MMO will coordinate and ensure that unit the training program addressees but is not limited to the following:

(1) Maintenance management functional areas

(2) The functions of maintenance.

(3) Uniform Materiel Movement and Issue Priority System (UMMIPS) will ensure training, proper and effective application of UMMIPS for all personnel in their commands who assign UNDs.

c. Training will enforce the objectives of this policy, maintenance production process, and the responsibilities of maintenance personnel within the unit maintenance management program and the functional areas of maintenance management.

d. Training and Readiness standards will be sustained and evaluated in the conduct of training.

3. Product Quality Deficiency Report (PQDR) Program. Establish and maintain standardized procedures for submission and monitoring of the unit's PQDR per references (v) and (w).

4. Modification Control Program. Establish and maintain standardized procedures that identify, perform, records and monitors equipment modifications records within the MAIS. Equipment modification consists of those maintenance actions performed to change the design or assembly characteristics of equipment systems, end items, components, assemblies, subassemblies, or parts in order to improve equipment functioning, maintainability, reliability, and/or safety characteristics. Field recommendations for equipment improvement (PQDRs, beneficial suggestions) frequently establish the requirement for equipment modification.

a. Validation. Equipment records will be inspected upon initial receipt and during the acceptance phase of maintenance to ensure all MI have been recorded and verified within the MAIS. Discrepancies noted during equipment record(s) inspection require physical action to validate completion or application of required modification(s).

b. Modification Instructions. Modification Instructions (MI) provide detailed step-by-step procedures for accomplishment of equipment modifications. MI identifies specific types and items of equipment to be modified as well as the maintenance resources, skills, and time necessary for their accomplishment. MI specifies the authority to perform the modification. Equipment requiring modification is identified by nomenclature, ID number, National Stock Number (NSN), and the manufacturer's serial number for individual equipment, when appropriate. Modification kits, or parts or fabrication materials are identified by NSN and quantity.

c. Modification Authorization. Marine Corps equipment will be modified only as directed by HQMC.

d. Modification Category. Modifications are classified in two categories "URGENT" and "NORMAL". The MI will state if a modification is "URGENT" or "NORMAL."

(1) Urgent. Those modifications that are implemented in order to prevent death or serious injury to personnel prevent

major damage to equipment, or make changes considered so essential to equipment that their application must be accomplished at the earliest possible time are designated “URGENT”. MI categorized as “URGENT” shall specify a required completion date and may contain restrictive operating conditions.

(2) Normal. MI categorized as “NORMAL” may be scheduled to coincide with PMCS periods. These MI will be accomplished with 1 year of the effective date of the MI, unless the MI indicates otherwise. Equipment in level “A” or an administrative storage program status need not be opened to perform a normal MI. The modification will be applied when the equipment is removed from that status.

5. Calibration and Maintenance Program (CAMP). The Marine Corps CAMP supports the unit by ensuring TMDE are properly calibrated and available for safe maintenance operations. The MMO will; coordinate and document an annual validation of the unit’s TMDE, in accordance with reference (q) and as outlined below:

a. Identify. Using the unit’s T/O&E, the MMO and maintenance personnel must identify all items of TMDE within the unit.

b. Locate. All TMDE within the unit should be located. As the equipment is located, the section holding the equipment must ensure records within the MAIS are current and updated as required. Locating TMDE includes items that are component parts; for example, pressure gages, meters, micrometers, etc.

c. Account. When all equipment has been located, the MMO and maintenance section representatives should match the equipment, equipment calibration records, and the T/E and unit allowances to ensure that all items have been inventoried, and complete.

d. Schedule. The end result is the establishment or validation of calibration categories and due dates within the MAIS for proper scheduling.

e. Control. The MMO will designate which techniques for calibration control will be used and by what section within the unit and when they will be used.

6. Publications Control Program. The MMO coordinates with G-1/S-l and commodity managers to establish an internal publications management program that supports the identification, and internal distribution of publications for the unit's equipment to support safe and continuing maintenance operations that ensures:

a. Standardizes use of a publications Information Technology (IT) system that identifies and manages technical, non-technical publications and directives inventory.

b. Adequate quantities of maintenance and maintenance management related publications and directives are resident on the unit's current publications listing (PL) in accordance with reference (z) (if applicable).

c. Establish the internal distribution list.

d. All publication libraries are up-to-date and that all shortages obtained through requisition or electronic distribution.

e. Establishes procedures for periodic reconciliation of technical publication libraries.

f. Establishes training in the proper use of Recommend Changes to Technical Publications Form NAVMC 10772.

7. Corrosion Prevention and Control (CPAC). The MMO will establish a CPAC program in accordance with reference (ab) that ensures established procedures for assessments, and scheduling of corrosion related services including:

a. Monitor and provide the corrosion condition of equipment to the Commander.

b. Conduct and or coordinate corrosion assessments to identify equipment corrosion category codes in accordance with reference (ab).

c. Nominate, coordinate and prioritize the induction of equipment into the Corrosion Repair Facility (CRF) utilizing the CPAC Database.

d. Initiate internal corrosion related programs that address the servicing of equipment.

e. Review the CPAC database for CCC 5 assets and coordinates/initiates disposition.

f. Coordinate and schedule with Corrosion Service Team (CST) for corrosion related services.

8. Deferred Maintenance Programs

a. Administrative Storage Program (ASP). ASP is a method of deferring maintenance that allows commanders to preserve resources when operational conditions allow. Major Commands (MajCom) or Major Subordinate Command (MSC) Commanders are authorized to authorize, establish or operate an ASP. Unit Commanders inducting/operating an ASP will ensure equipment inducted into the ASP meets the following criteria:

(1) Stored no less than 18 months and no more than 36 months.

(2) Maintained and reported in a mission capable status.

(3) Equipment is current on all scheduled PMCS prior to induction into the program.

(4) Visually inspected quarterly.

(5) Exercised semi-annually.

(6) Scheduled PMCS conducted/validated upon removal.

(7) Current CPAC assessment and servicing.

(8) Corrosion Category Code Condition (CCC) 3 or better.

b. Administrative Deadline (ADL) Program. The ADL program is a method of deferring maintenance that allows unit Commanders to preserve resources when operational conditions allow. Commanding Officers may; authorize, establish and operate an ADL program. When authorized, equipment inducted into the ADL program will meet the following criteria:

(1) Stored less than 18 months.

(2) Maintained and reported in a mission capable status.

(3) Equipment is current on all required scheduled PMCS prior to induction into the program.

(4) Visually inspected quarterly.

(5) Exercised semi-annually.

(6) Scheduled PMCS validated/conducted prior to removal.

(7) Current CPAC assessment and servicing.

(8) Corrosion Category Code Condition (CCC) 3 or better.

c. Equipment Used as Training Aides. Individual training command formal learning centers may defer maintenance for equipment maintained as training aides. Applicable equipment will not be dispatched, operated outside of the maintenance bays/classrooms, or returned to the Operational Forces until required scheduled PMCS have been completed.

(1) Individual Training Command (TrngCmd) formal learning centers will create and maintain a complete list, by TAMCN, NSN and serial number, of each type 1 and 2 allowance training aid.

(2) TrngCmd is required to maintain a compiled list, by school, TAMCN, NSN and serial number, of each type 1 and 2 allowance training aide.

9. Enterprise Lifecycle Maintenance Program (ELMP). In accordance with reference (aa), ELMP is managed by Marine Corps Logistics Command. In support of ELMP the MMO must ensure equipment is properly accounted for, reported and equipment returns are processed and monitored within the MAIS.

10. Warranty Program. Establish warranty procedures within the unit that identifies equipment under warranty and ensures induction and recording procedures for proper execution of warrantied maintenance in accordance with references (v), (w) and (y).

11. Inventory (Tool) Control Program. Tools, test and maintenance support equipment are key enablers to effective execution of maintenance production. The MMO will establish procedures in accordance with reference (b) to ensure effective inventory control and management measures are implemented to ensure.

a. Inventory periodicity requirements are established to increase accountability and reduce losses.

b. Validate tool, test and maintenance support equipment requirements during scheduled command TO/E reviews.

c. Garrison tool allowance requirements are identified, authorized and inventoried.

12. Miniature/Micro-Miniature (2M) Maintenance Program. 2M is a multi-service (Navy, Marine Corps and Coast Guard) program and is conducted by Marine Corps organizations who have assigned capabilities for circuit card testing stations to conduct field level maintenance on electrical/electronic equipment. This Order will align with the multi-service efforts, and establish a reporting requirement that promotes compliance as delineated within references (ad) and (ae). These technical publications provide the framework to properly administer the 2M program. The intent is to perform, capture and report 2M repairs and expenditures of materiel and labor resources on electronic circuit cards and components located thereon and within, wires, terminals, connectors, flexible printed circuitry and edge lighted plastic panels.

a. Quarterly Reporting. 2M cost-avoidance is reported to the Naval Undersea Warfare Center (NUWC), Field Engineering Office, Detachment, Norfolk, Virginia and in accordance with reference (ae). In addition to documenting these criteria within MAIS, these organizations are required to use the Module Test and Repair Tracking System (MTRTS) resident on the test station controllers, to submit cost-avoidance data in accordance with reference (ae). The MMO of these units will establish procedures for reporting. The reporting must be done within 15 days of each quarter.

b. "Gold Disk" Repair Capability. Navy, Coast Guard and Marine (Ground and Air) conduct standardized and precise testing on select circuit cards to capture suspect electronic signatures that are matched against "known good" signatures. Circuit cards that have these signatures documented are referred to as being "Gold Disk". Matching "Gold Disk" information from a suspected circuit card avoids/averts and reduces costs by repairing SecReps and minimizing depot level maintenance program requirements. "Gold Disk" repair procedures are developed at the field level by maintenance activities in accordance with reference (ad).

13. Safety Program. A comprehensive, effective, and continuous safety program institutes effective and safe operating conditions and is achieved through supervision of work methods

which minimizes risk to personnel and equipment. Safety programs will be implemented in accordance with reference (r) and applicable directives.

# Appendix A

## MAINTENANCE MANAGEMENT STANDARD OPERATING PROCEDURES AND MAINTENANCE MANAGEMENT POLICY LETTERS

1. Introduction. An MMSOP or MMPL are directives used to provide local policies and procedures. The publication of these directives reduces the impact of personnel turnover by establishing a reference point for all members of the command. When published, these directives reduce training requirements by standardizing the manner that maintenance operations are performed. Further, they conserve time by prescribing how repetitive functions will be accomplished. This appendix contains guidance as to content to be considered for inclusion into an MMSOP or MMPL. MMSOPs or MMPL will be written in accordance with reference (s).

2. Preparation

a. These directives must be written so that it is understood by all personnel required to use it. When published, these directives must be detailed enough that personnel can follow it with as little additional guidance as possible. To be of value, it must be available to and understood by all.

b. The directives need not contain all of the procedures necessary to accomplish the command’s functions when those procedures are already established and readily available for use (e.g. UM or TM). Additionally, these directives should minimize duplicating higher level policies and procedures.

3. Contents

a. Introduction. The MMSOP must contain an introduction statement on the scope and objectives.

b. Command Responsibilities

(1) Specify that subordinate commanders will be held responsible for the proper conduct of the equipment maintenance program within their units. This responsibility must extend down to and include the lowest tactical and administrative elements of all subordinate units.

(2) State responsibilities of subordinate commanders in the conduct of the subordinate unit's equipment maintenance program.

(3) Require subordinate commanders to always be prepared to advise the higher headquarters on the status of maintenance within their respective units.

(4) Specify the responsibilities of all levels of command to report all maintenance problems that cannot be resolved through normal channels and procedures.

(5) Designate an individual(s) who will be responsible to ensure maintenance is conducted on all equipment within the unit.

(6) State the authorized levels of maintenance and the sources of maintenance support for all equipment commodity areas.

c. MajCom/MSC and subordinate unit’s organization for maintenance, to include established maintenance support relationships between subordinate units within the MajCom or MSC.

d. Desk-Top Procedures and Turnover Folders

(1) State the billets that require desk-top procedures and turnover files.

(2) State the required contents and details of desk-top procedures and turnover folders.

e. Maintenance Policy

(1) Outline any unique maintenance policies or procedures that are not covered by current orders and directives.

(2) Identify requirements for the conduct of the subordinate unit's equipment maintenance program (e.g., PMCS, or CM).

f. Allocation of Maintenance Training/Performance Time

(1) Contain a statement on the importance of placing equal emphasis on both maintenance and tactical training.

(2) Contain a policy requiring allowance of adequate time for maintenance following deployments, tactical exercises, or training.

(3) Contain a policy for conducting PMCS and supervision of personnel. Time, distance between the organizations, available personnel, and quantity and nature of the equipment involved are factors to be considered in determining if the owner or the intermediate maintenance activity will perform PMCS.

g. Shop Operations. Establish policy and procedures on internal shop operations.

(1) A statement that maintenance services be forecasted and scheduled.

(2) A quality control program will be established.

(3) Designate the title, authority, and responsibilities of key personnel in shop organization.

(4) Designate responsibility and procedures for assignment of priorities for maintenance, tasks, and parts requirements priorities by authorized and trained skilled personnel.

(5) Contain procedures for changing the priority designator and operational status for maintenance, tasks, or parts requirements.

h. Equipment That Exceeds Maintenance Capabilities

(1) Establish policy for evacuation of equipment exceeding maintenance capabilities.

(2) Establish policy and procedures for requesting maintenance support teams and/or overflow maintenance, to include justifying circumstances.

i. Performance Of Maintenance Services. The performance of maintenance services will establish and outline the following:

(1) Commander's policy for scheduling and the performance of required PMCS, to include changing the frequency of scheduled PMCS.

(2) Maintenance processes for any commercial off the shelf equipment purchased by the command, to include PMCS schedules and maintenance recording procedures.

(3) Procedures for integration of maintenance services with other operational requirements of MSC and subordinate units.

(4) Responsibility for the performance of each type of maintenance service.

(5) Outline the procedures to process the equipment through each phase of maintenance.

j. Records. State who is responsible for the preparation, filing and disposition of equipment maintenance records and ensure procedures are in compliance with higher headquarters' directives.

k. Reports

(1) Provide policy and procedures for the use of MAIS, addressing report preparation and submission, distribution, handling, reconciliation, validation, and use of output reports.

(2) Provide policy and procedures for reporting requirements to higher headquarters.

l. Modification of Equipment

(1) Establish modification control points.

(2) Establish procedures for modification control:

(a) Identification of modifications.

(b) Performance of modifications.

(c) Recording modifications.

m. Support and Test Equipment

(1) Establish a calibration control point and the method of control.

(2) Establish procedures for the evacuation and servicing, use, and accounting for support equipment and TMDE.

n. Recognition of Performance. Establish procedures to participate in higher headquarters maintenance recognition programs (e.g. Phoenix award, MT Marine of the year, etc.).

o. Supply Support

(1) Establish policy and procedures for unique procedures not covered by higher level policy.

(2) Establish policy and procedures for coordination between maintenance and supply elements to achieve maximum equipment readiness.

p. Repair Parts Request Process

(1) Establish policy and procedures for the requisitioning of system and non-system repair parts, exchanging secondary reparables. When such procedures are contained in the supply Standard Operating Procedures (SOP), the MMSOP/MMPL needs only to reference the appropriate sections of the supply SOP.

(2) Establish policy and procedures for determining, warehousing, replenishing and maintaining DSI.

(3) Establish policy and procedures for the upgrade/downgrade of requisition priority designators.

(4) Establish policy and procedures for the proper use of required delivery dates.

q. Repair Parts Control

(1) Establish policy and procedures for the receipt, storage, and use of repair parts and maintenance materials by maintenance elements.

(2) Establish policy and procedures for the establishment and use of DSI at the unit level.

(3) Establish policy and procedures for storage, use, and turn-in of excess repair parts and maintenance materials.

(4) Establish policy and procedures for cannibalization/selective interchange and procedures for reclaiming repair parts.

(5) Establish policy and procedures for the creation, use, and management of parts locations, to include the inventory frequency of created locations and control of parts bins and the responsibility for maintenance and control.

(6) Establish policy and procedures for accounting and usage of repair parts received from other than normal supply sources, such as scrounged parts.

(7) Establish policy and procedures for annotation of the maintenance requests as parts are received into the parts bin, transferred, and issued for installation on equipment.

r. Direct Exchange. This paragraph is not required for the MajCom or MSC and subordinate units that do not have access to a maintenance float.

(1) Establish policy and procedures for the use of floats for secondary reparable items and end items.

(2) Establish policy and procedures for the management of direct exchange secondary reparables and end items.

(3) Establish policy and procedures for requesting and processing float items.

(4) Establish policy and procedures for the preparation and submission of recommendations and maintenance float allowance changes.

(5) Establish policy and procedures for the implementation of higher headquarters' directives concerning secondary reparable/end item floats when reparable/end item floats or sub-floats are authorized.

s. New Equipment. Establish policy and procedures for the introduction of new equipment and cite the appropriate directives on the activation of new equipment.

t. Validation and Reconciliation

(1) State the frequency of validation and reconciliation of supply requirements with maintenance records.

(2) State the procedures for validation and reconciliation of supply requirements with maintenance records.

(3) State the procedures for validation of parts received and in parts locator bins.

(4) State the procedures to validate the status of SecReps within the MAIS.

(5) State the procedures to ensure all SecReps are properly transferred to and from the RIP on and off of the unit property control records.

(6) Ensure proper accountability of SecReps for parent child relationship.

u. Sets, Kits, Outfits and Tools (SKOT)

(1) State the requirements/procedures for the control of tool room and SKOT for both commonly and individually assigned items.

(2) State the procedures for maintaining tools in a serviceable condition.

(3) State the procedures for requisitioning replacements for missing/unserviceable tools.

(4) Validate the parent child relationship of serialized assets on property control records with the ROs.

v. Maintenance Training

(1) State the procedures for implementing the maintenance and maintenance management training policy of higher headquarters.

(2) Emphasize command interest and intent towards a workable training program.

(3) State specific responsibilities of general/executive and special staff officers and subordinate commanders with respect to maintenance and maintenance management training.

w. Training Requirements

(1) State the minimum time requirements of higher headquarters for both maintenance management and maintenance training in the MajCom/MSC's and subordinate unit's annual training plan.

(2) State the policy and procedures for maintenance schools or classes and assign staff responsibility for them.

(3) State the policy and procedures for:

(a) Applications for service school quotas.

(b) Prerequisites for selection of individuals for service school training.

(4) State the policy and procedures for subordinate commanders and staff officers to ensure that only qualified personnel are sent to service schools.

(5) Track the enrollment and completion of resident training at major commands.

x. Field Training

(1) List the minimum number of hours of training in the designated training period to be devoted to maintenance training in the field.

(2) List the requirement to conduct field training using only T/E equipment.

(3) List the requirement to conduct field training exercises including recovery, evacuation, and use of field maintenance expedients.

y. Managed-On-The-Job Training (MOJT)

(1) State the requirement that MOJT be scheduled and recorded and those trainees are periodically tested to determine progress.

(2) State the policy and procedures for obtaining training assistance from support maintenance activities.

(3) Emphasize the availability of maintenance-oriented correspondence courses and the desirability of participation in such courses.

(4) State the policy and procedures for unskilled personnel to be provided supervision by skilled personnel.

z. Technical Training

(1) Specify that technical training be conducted whenever new equipment is introduced or new maintenance personnel are introduced to the subordinate unit's equipment.

(2) Specify the requirement for testing the technical knowledge of maintenance personnel and presentation of refresher training, as necessary.

(3) Specify the requirement for training in the use of the various tools and TMDE used within the MajCom/MSC and subordinate units.

aa. Cross-Training

(1) State policy and procedures for cross-training of mechanics and technicians, both within that individual's field and related occupational fields.

(2) State policy and procedures for maintaining records of the personnel who have been cross-trained.

ab. Inspections/Visits and Quality Control. State policy on inspections/visits, minimum inspection requirements, and quality control procedures.

(1) Formal Inspections

(a) Provide specific instructions for the conduct of formal inspections within the MajCom/MSC and subordinate units, to include out briefs and follow up inspections.

(b) Require the use of maintenance inspection checklists.

(c) Outline the types of formal inspections used within the MajCom/MSC and subordinate units.

(2) Informal Inspections. State policy and assign areas of responsibility for informal inspections/visits within the MajCom/MSC and subordinate units.

(3) FSMAO Analysis Visits. Outline procedures for preparing for FSMAO visits and forwarding analysis reports.

(4) Inspection Reports

(a) Require that a critique be held immediately after each inspection conducted within the MajCom/MSC and subordinate units.

(b) Require the preparation and submission of inspection reports on all formal inspections within the MajCom/MSC and subordinate units.

(c) Establish a system for the consolidation and analysis of inspection reports by higher headquarters, the MajCom/MSC, or subordinate units.

(d) Require each element within the MajCom/MSC and subordinate units to maintain on file for a specified period those inspection reports conducted by a higher headquarters.

(5) Correction of Discrepancies

(a) Establish quality control program, and identify by billet those authorized to inspect, accept, and approve work.

(b) Establish the billet within the MajCom/MSC and subordinate units that are responsible for managing the PQDR program and procedures for its accomplishment.

ac. Facilities

(1) Assignment and Responsibilities

(a) Specify staff responsibility for assignment of maintenance facilities.

(b) State the procedure for requesting additional facilities in garrison.

(2) Administrative Storage and Deadline

(a) Specify the availability and procedures for use of storage facilities, to include dehumidified storage facilities and their use.

(b) State the procedure for equipment storage in maintenance facilities.

ad. Publications

(1) State the requirement that a full allowance of required maintenance publications be maintained.

(2) Provide procedures for determining all allowances and acquiring and maintaining maintenance publications.

(3) Specify each subordinate unit's responsibility during a PL review.

(4) Specify the location and quantity of publications libraries that are maintained to support the subordinate unit's concept of employment; for example, task organizations, detachments, or deployments.

(5) Specify procedures for quarterly validation of on hand technical publications with the SL-1-3/1-2.

(6) Responsibilities

(a) Specify staff responsibilities for timely submission of request for publications.

(b) Establish the points/locations that maintenance publications will be held.

(c) Require that each commodity section or activity maintain a consolidated list of publications required in its area of responsibility.

(d) State the requirement for maintaining any technical publications allowances for contingency deployments.

(e) Identify by billet the individual responsible for publications control and internal distribution control.

(f) Specify the method to be used for publications control and internal distribution.

(g) Specify the policy for use of form NAVMC 10772.

ae. Maintenance Programs

(1) Contain a general statement for the relationship of maintenance personnel to maintenance programs.

(2) Specify unit staff and maintenance section/activity requirements/responsibility for contribution to maintenance programs.

(3) State the required Maintenance Automated Information System.

(4) State the element responsible for the input.

(5) Provide the procedures for developing and providing input.

(6) Contain policy and procedures for the ASP and ADL.

# Appendix B

## Shop Organization

1. Introduction. Maintenance personnel and support equipment assigned to a unit comprises the primary resources for the performance of a unit's maintenance mission. Since both are required to satisfy the unit's maintenance requirements, they must be considered as complementary to each other in determining the unit's organization for maintenance operations. The unit's mission may require the establishment of a central maintenance shop(s) or the use of contact teams to perform maintenance on site or a combination of both to accomplish maintenance. When maintenance shops are established, their layout must be planned to ensure the efficient flow of equipment requiring maintenance. The establishment of standard procedures for maintenance operations, both within the maintenance shop and by contact teams, is essential to the efficient conduct of the unit's equipment maintenance program.

a. The maintenance management techniques and procedures used in the accomplishment of maintenance requirements are standard, whether maintenance is being performed in an operational platoon of a using unit (organizational) or in supporting maintenance unit or activity (intermediate). The maintenance workload will vary with the size of the unit, complexity of the unit's mission, and the unit's maintenance capabilities and requirements; but basic maintenance management requirements will not change.

b. The maintenance management techniques are standard as well as the techniques for shop organization. The same functions and tasks must be performed, regardless of the unit size or assigned maintenance mission. The difference between maintenance shops will be the workload associated with each function or task and the resultant resources required. This appendix discusses the functions and tasks rather than the personnel and equipment, thus the organization shown herein will fit any circumstance once the work assignments are made to fit the available resources.

2. Site Selection

a. Maintenance area site selection is governed by the characteristics as follows: terrain, environment, tactical situation, size and mission of the unit, and the maintenance requirements dictated by the mission. In organizational units,

the maintenance area will normally be within the limits of the unit's command post. The location of a unit's maintenance facilities in this type of unit is largely determined by the unit's S-1 in coordination with the S-4 which has responsibility for the selection of the specific command post site and the allocation of space within it. Maintenance areas are not normally required in those using units where maintenance capabilities are assigned directly to the supported elements of the unit.

b. In major and force level commands, the logistic areas of subordinate service support units will normally be located separate from the major or force level unit command post. A maintenance area within the logistic areas of these type units will be selected by the unit's G-3/S-3 with the assistance of the unit's MMO.

c. Field Site Selection. All basic considerations that pertain to command post site election are applicable to the selection of maintenance sites in the field; for example, cover, concealment, perimeter security. Other factors include:

(1) Space Requirements. Space limitations in a maintenance area can cause congestion which could impair maintenance efficiency and safety. A maintenance area should be large enough to provide for the adequate dispersal of equipment and maintenance activities.

(2) Terrain Features. Ideally the terrain should offer concealment from ground and air observation; favor defense against air or ground attacks and facilitate local security; have a hardstand for vehicles and equipment; and be accessible to road, water, and air routes for evacuation and resupply.

(3) Access Routes. Access routes should avoid congested areas and be convenient to users of the maintenance facilities of the unit. A maintenance area of support maintenance units should be located along the main supply route to provide easy access to supported units and to allow for the evacuation of equipment.

(a) Proximity to Supported Units. A maintenance area should be positioned to allow each maintenance section to effectively perform its mission. A maintenance area of support maintenance units should be located far enough from supported combat elements to allow continuity of maintenance operations.

(b) Proximity to Other Logistic Elements. A maintenance area should be located in close proximity to other logistic elements of the unit to maximize use of common facilities and services.

d. Garrison Site Selection. With the exception of the tactical influence, considerations in selecting maintenance areas in garrison do not differ appreciably from field site considerations. Since mobility normally is not a major factor in garrison, restrictions on the amount of maintenance capability to be collocated with the commodity users are limited only by the unit's maintenance capabilities. Commercial equipment resources should be used to the maximum extent practicable in garrison to extend the life of tactical equipment. Proximity of the unit's maintenance area to dining, billeting, and administrative facilities will reduce time lost due to travel.

3. Organization of the Maintenance Area. Organization requires the active participation of the unit's MMO in coordination with maintenance/commodity officers.

a. The MMO will advise the commander and commander's staff on the assignment of facilities, placement of maintenance areas, distribution of utilities, and the priority of installation within the maintenance area. The MMO will establish positions for common services (such as welding) and when possible, avoid duplication of effort. Except for purely tactical considerations, the MMO's recommendations apply equally to the maintenance area in garrison.

b. Maintenance management officer will coordinate the organization of the maintenance area with unit staff officers applying the following principles:

(1) Facilities will be assigned according to equipment size, density, and the anticipated maintenance workload.

(2) Shops will be positioned according to equipment types. Tracked vehicle maintenance normally will be conducted outside or on the outer limits of the central maintenance area. Structures will be erected or assigned according to needs for equipment protection from climate and essential comfort of personnel. Drainage considerations are paramount when assigning outside work and Storage areas.

(3) Shops with a common requirement for extensive electrical power will be positioned so that generators can be shared. Wash racks will be established to serve several users.

(4) Defensive positions will be accessible to the place of work.

(5) Maintenance hardstands will be installed where needed.

(6) Outside illumination will be positioned and used so as not to jeopardize tactical soundness.

(7) Necessary secure areas will be established away from the perimeter of the unit and where a minimum number of personnel need be in attendance.

(8) Common issue points will be located where more than one shop can be served; commodity-oriented issue points, where they can best serve the Commodity shop.

(9) Storage areas will be designated for fuel and other flammables.

(10) A fire plan will be established, and fire-fighting equipment positioned.

(11) Points of access to and egress from the maintenance area will be established, and traffic will be regulated within the maintenance area.

(12) Hazardous work areas will be designated.

(13) In tactical situations, protection for personnel and equipment must be provided.

c. Figure B-1 is an example of a maintenance support area in the field.

4. Organization for Maintenance

a. Information. A unit’s organization for maintenance is dependent on the unit’s T/O&E. The T/O&E provides the resources and the structure; however, the actual arrangement of the personnel, equipment, and other resources is dependent upon the mission, situation, facilities, terrain, and other circumstances

at that time. The alternative organizations are central shop, contact teams, task organizations, or a mixture of these.

b. Central Shop

(1) The organization of unit maintenance personnel and equipment into a central maintenance shop, when compatible with the unit's mission, is normally preferred over distribution of maintenance personnel throughout equipment operating elements. Central maintenance shops provide for increased economy in operation and decreased time required for maintenance while improving the quality of maintenance.

(2) A maintenance shop's organization will vary. In general, it will consist of a shop office/operations Section, administrative section, services Section, maintenance section, and an issue point as shown in figure B-2. The issue point is not an organic element of the shop. The issue point may be internal or external to the shop or a central issue point serving a MajCom or geographical location.

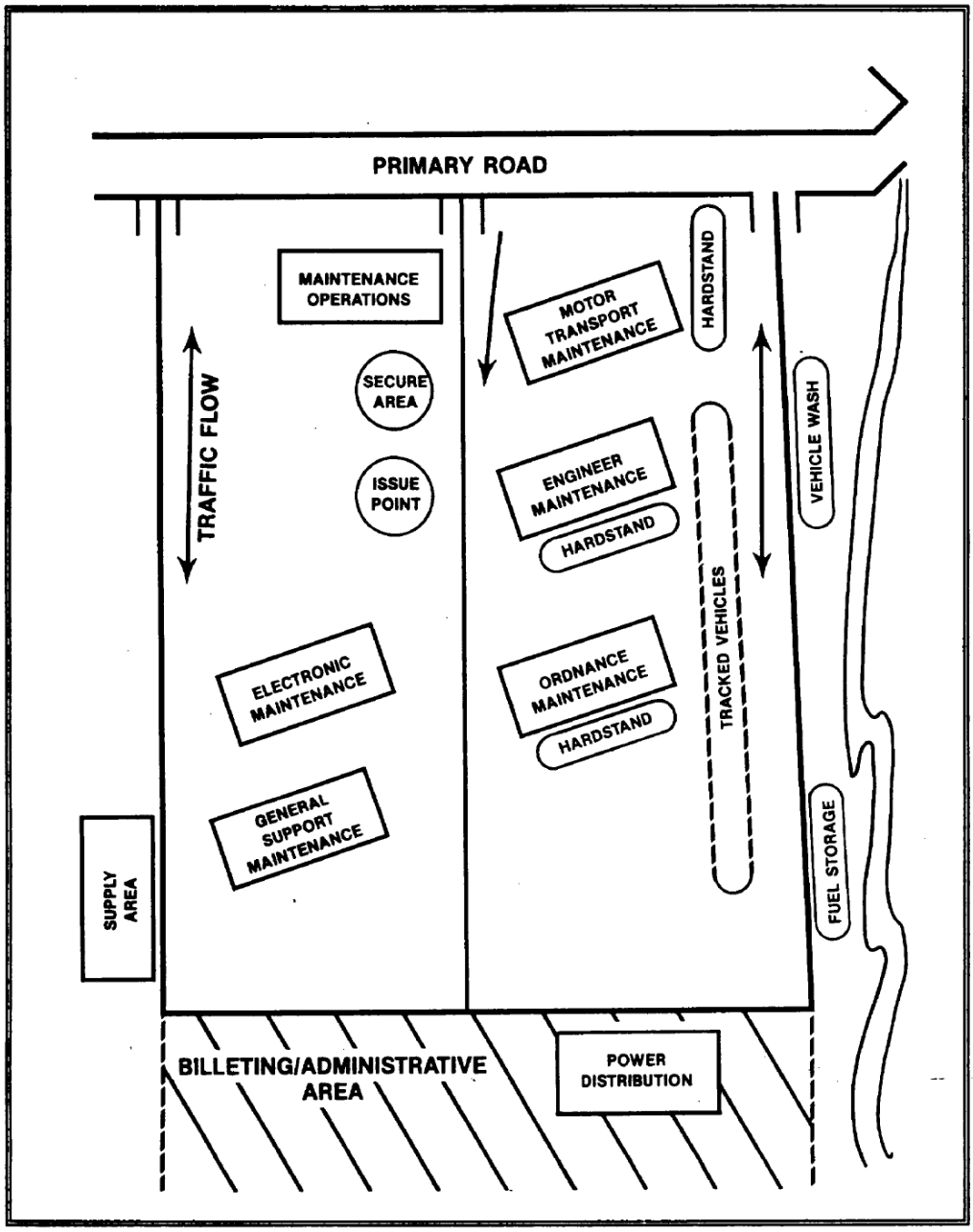


Figure B-1.--Field Layout of a Maintenance Support Area.

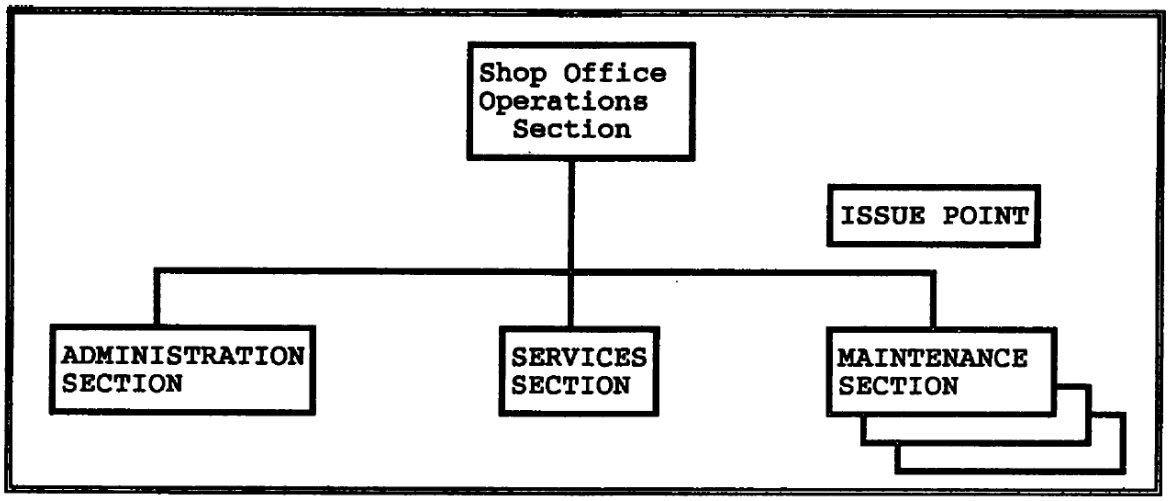


Figure B-2.--Central Shop Organization.

(a) Shop Office/Operations Section. A shop office manages the overall conduct of maintenance within the shop. This includes:

1. Assigning personnel within the shop.

2. Scheduling maintenance and the orderly flow of equipment requiring maintenance through the shop.

3. Ensuring the economic use of maintenance resources, including the proper use of Repairable Issue Points.

4. Ensuring that maintenance operations interface with maintenance programs.

5. Establishing and executing the shop safety program.

6. Supervising maintenance training within the shop.

7. Ensuring that proper transactions are submitted into the supporting logistics information technology maintenance actions completed and changes in operational status.

(b) Administrative Section. An administrative section performs functions associated with equipment receipt and transfer, technical data research, tool issue, shop property control, and the recording and reporting of completed

maintenance actions within the shop. In large maintenance shops, there may be several personnel in each element of the section. In small shops, one individual may perform all of these functions.

1. Shipping and Receiving. Shipping and receiving functions include:

a. Receipting for equipment.

b. Conducting the equipment acceptance inspection.

c. Requesting required repair parts that are identified during the acceptance inspection.

d. Administrating of repair parts bins.

e. Storing and securing equipment awaiting induction, customer pickup, or disposition.

f. Issuing equipment and allowing maintenance personnel to conduct active maintenance.

g. Releasing equipment to the customer or shipment or evacuation upon completion of maintenance.

h. Ensuring in storage maintenance of equipment awaiting maintenance, pickup, or evacuation.

2. Technical Library. Each shop has a requirement for access to current technical publications. Technical library functions include:

a. Identifying required publications, and review of the unit's table of allowance for publications and distribution control forms.

b. Maintaining an inventory of current maintenance and supply publications for the types of equipment supported.

c. Providing assistance to maintenance personnel in the cataloging and identification of salvaged maintenance parts.

d. Providing contingency packages of maintenance and supply publications for equipment to be supported.

e. Assisting maintenance personnel in the proper identification of parts required.

f. Issuing appropriate technical data to maintenance sections.

3. Tool Issue

a. Central tool issue provides for economic use of and property controls for commonly used maintenance tools and test equipment. The performance of this function includes:

(1) Issuing tools.

(2) Repairing or replacing controlled issue unserviceable tools.

(3) Servicing and maintaining controlled issue test equipment.

(4) Providing secure storage for tools and other support and test equipment.

b. Support and test equipment items peculiar to a particular equipment type should be located in the maintenance section which is performing repairs to that equipment type. Support and test equipment items having common application should be distributed among the maintenance sections in a quantity proportionate to workload and available personnel. Low-density items with common application should be controlled from a central issue point.

c. In establishing allowances and issuing test instruments, the requirement for calibration and the recall cycle must be considered in order to stagger equipment turn-in times. Low-usage items are best retained at a central point to prevent their cluttering the work area and to control maintenance and calibration schedules.

d. Whenever the authorized allowance permits, each mechanic or technician will be issued an individual toolbox. Tool boxes should be complete with

serviceable tools, and secure storage should be provided when the tools are not in use.

4. Shop Supply. Internal shop property control and supply needs will be accomplished by the shop supply activity. Shop supply functions include:

a. Maintenance of custody receipts on shop equipment.

b. Requisition and replacement of unserviceable shop property.

c. Requisition of materiel to maintain minimum levels of DSI.

d. Requisition of lubricants, solvents, rags, and other consumables (shop overhead).

e. Maintenance of the layette bins for the shop when not maintained by the unit supply or central issue point.

5. Information. Recording and reporting of shop action within the MAIS to include:

a. Recording work performed, expenditures, and changes.

b. Reporting of maintenance actions performed, including completions and changes of shop status per reference (e).

c. Reporting/recording modifications performed per reference (i).

d. Reporting per Marine Corps maintenance programs; for example, recoverable items, secondary reparables, etc.

(c) Services Section

1. Services section performs functions in support of equipment maintenance; for example, welding, battery shop, inspection, and quality control.

2. In small shops or shops not requiring all of these services, the functions of the services section may be performed by one individual or assigned to other sections.

3. The inspection and quality control functions are required in all shops. This function may be performed by one individual, several individuals, or a team. The individual(s) must be designated and assigned the following responsibilities of inspecting equipment:

a. Before induction to ensure completeness, performance of lower maintenance tasks maintenance, and when possible determination of parts requirements.

b. After completion of maintenance to ensure proper performance of maintenance actions.

c. Prior to delivery to and prior to acceptance from higher external maintenance activities.

d. Commanders will provide procedures to ensure in those instances where there is only one mech/tech quality control measure are addressed/supervised.

4. The assistance of other individuals in various sections may be required for specific equipment.

(d) Maintenance Sections. The actual performance of maintenance is accomplished by the maintenance sections. These sections may be organized in a number of different ways as shown in the following:

1. By function; for example, PMCS, CM, modification.

2. By equipment; for example, heavy, single side band, specific equipment type.

3. By commodity; for example, communications, engineer, motor transport, ordnance.

c. Mobile Maintenance Teams. Mobile maintenance teams are comprised of MCT, MST, and Limited Technical Inspection (LTI) team.

(1) When it is impractical to deliver equipment to a supporting maintenance activity or the equipment type is concentrated in a particular location, it is often economical to divide the total maintenance capability and locate a mobile maintenance team on site. The establishment and operation of this team may be for a limited or extended period of time and is an extension of the central maintenance activity.

(2) An MCT is a temporary organization consisting of one or more maintenance personnel (with tools and equipment/repair parts) formed to accomplish its specific task and dissolved upon completion thereof. A mobile maintenance team is normally tailored to a commodity or weapon system. It performs onsite maintenance or provides technical assistance.

(3) Use of mobile maintenance teams normally should be restricted to periods of short duration and for specific maintenance requirements. The team should consist of the minimum number of qualified personnel to expeditiously complete the job and be equipped with the minimum essential tools, test equipment, and necessary materiel for repair to perform the assigned maintenance. Maintenance resources available at the equipment site will be used to the extent practicable. Transportation must be coordinated to keep travel time to a minimum.

(4) Management decisions to use mobile maintenance teams depend on the following:

(a) Equipment Size and Complexity. Large equipment systems, such as an inoperable Amphibious Assault Vehicle, tank, or radar set, often make it impractical to transport the equipment to the maintenance activity. A team may be deployed to make an initial determination of maintenance requirements and a second team sent equipped per recommendations made from the initial diagnosis to affect repairs.

(b) Equipment Installation. Equipment installed in a fixed or semi-fixed manner may necessitate use of mobile maintenance teams.

(c) Equipment Security Classification. Classification of the equipment may necessitate that it be located in a secure area and preclude shipping to a maintenance activity.

(d) Distance From the Maintenance Area. The road network, transportation requirements, and tactical situation may necessitate onsite maintenance.

(e) Quantity of Equipment Involved. Large quantities of equipment requiring maintenance service may justify use of a mobile maintenance teams. Examples of this include an LTI of equipment to determine serviceability, LTI of an equipment type to determine need for modification, and onsite performance of equipment modification.

(f) Availability of Qualified Personnel and Serviceable Test Equipment. Shortage of skills or test equipment may preclude use of mobile maintenance teams when the general maintenance effort is a prime factor.

(g) Availability of Repair Parts and Supplies. Lack of repair parts and supplies may delay or prevent the use of mobile maintenance teams. Coordination between the supporting and supported unit to determine the availability of required repair parts and supplies must be accomplished prior to dispatching the mobile maintenance team.

(h) Transportation and Travel Time. In planning for mobile maintenance team support, consideration should be given to the effect of type, size, and speed of available transportation on the contact team size; its ability to carry necessary tools and test equipment; and the time spent by the team away from the central maintenance activity.

d. Mobile and Portable Maintenance Facilities

(1) Mobile and portable maintenance facilities are authorized to individual support units by their T/Es. These facilities are compact, self-contained units which are self-propelled, towed, or otherwise lend themselves to easy movement. They consist primarily of maintenance shop vans and shelters. The inherent mobility of these facilities allows the rapid deployment of support maintenance units with minimal interruption of the maintenance effort or loss of maintenance capabilities. Mobile and portable maintenance facilities augment unit maintenance capabilities while in garrison but serve as principal support facilities in field operations. These facilities must be used while in garrison to enhance the maintenance production and training effort of the unit.

(2) Unit maintenance managers are responsible for the proper upkeep, readiness, and use of unit mobile maintenance facilities. PMCS and CM on these maintenance facilities must be accomplished per applicable TMs. Scheduling of PMCS on mobile maintenance facilities must be accomplished in such a manner that the regular maintenance mission of the unit will not be impaired.

(3) Intermediate and MajCom maintenance management officers will review subordinate units' use of mobile and portable maintenance facilities to ensure their optimum use.

e. Task-Organized Maintenance

(1) Because of the Marine Corps mission and air-ground task force organization, maintenance units must not only be capable of supporting task organizations but also themselves be capable of task organizing.

(2) Task-organized maintenance units, whether part of a logistics support unit or a detachment itself, are central shops, the composition of which is determined based on the same factors listed in paragraph 4c, preceding. Two other factors must be considered: the duration and mission of the task organization being supported.

5. Shop Layout

a. Information. Shop layout concerns itself with organization of the equipment and area assigned a particular shop for the conduct of maintenance operations after the site for the maintenance area has been selected and specific shop sites designated. Shop layout provides for efficient work flow, safety to personnel, and economic use of support and test equipment.

(1) Inspection Area. An initial inspection and holding area to serve as a control point for equipment entering the shop is the first step in promoting orderly work flow. This area can be divided so that it also provides for final inspection and holding of items of equipment upon which maintenance has been completed. This area prevents overcrowding the active maintenance area of the shop by controlling input, holding completed work, and eliminating customers from the active maintenance area.

(2) Shop Office. The shop office should be located adjacent to the inspection and holding area for convenience in processing paperwork and contact with shop customers. The administrative and management support provided by the shop office require that office personnel have easy access to the remainder of the shop.

(3) Common-Use Items. Areas and equipment to which access is required by all maintenance personnel of the shop should be located so that they are easily accessible.

(a) Support and Test Equipment. The central location of low-density common-use tools at an easily accessible issue point facilitates tools availability. Support and test equipment used primarily by one mechanic or workday should be located at the point where it is used most.

(b) Technical Library. The shop library should be immediately accessible to the work area.

(c) Repair Parts and Materials. Shop stores and DSI should be located in proximity to the work areas.

(d) Scrap Collection Point. A central collection point for scrap should be established to keep work areas clear and facilitate easy collection and removal of refuse from the shop.

(4) Active Maintenance Area. The area in which equipment maintenance is actually performed should be large enough to sustain the maintenance requirements of the shop. Its use should be restricted to active maintenance. Support and test equipment, technical data, supplies, and administrative support required should be so positioned that they are convenient to the mechanics and technicians. The work area should be divided into groupings of like maintenance operations which have common power, lighting, or ventilation requirements. Adequate space should be kept clear as aisle ways to allow for safe movement of personnel and controlled movement of mobile equipment. Figure B-3 shows an example of maintenance shop layout.

b. Work Flow. The flow of work through the shop is controlled by the shop office through the inspection and holding area. Every effort is made to prevent work stoppages on work begun so that active maintenance space is not taken up by equipment which cannot be worked on.

c. Records Flow. Records whether electronic, paper, logbooks, and other equipment records, as appropriate, should accompany the equipment through the active maintenance process and phases. At the acceptance inspection, a Service Request (SR) and other equipment records necessary for the performance and recording of maintenance actions are checked for accuracy and completeness. During the active maintenance phase, it is necessary that the SR and other appropriate equipment records be available to mechanics and technicians performing the work.

(1) A shop office monitors and controls the process flow. Monitors and logs and status boards where automated reports are not available, are recommended methods for monitoring both supply and maintenance actions.

(2) Accuracy and completeness of SR which include equipment record entries for maintenance actions are essential aspects of quality control. Accuracy recording and reporting of maintenance information are essential shop functions and must be controlled in quality as are the actual maintenance actions.

(3) When active maintenance is completed and the equipment is ready to leave the shop, records must be returned to the administrative section for processing and SRs must be closed. When equipment is picked up, the person receiving it must ensure that all records delivered with the equipment are present and complete.

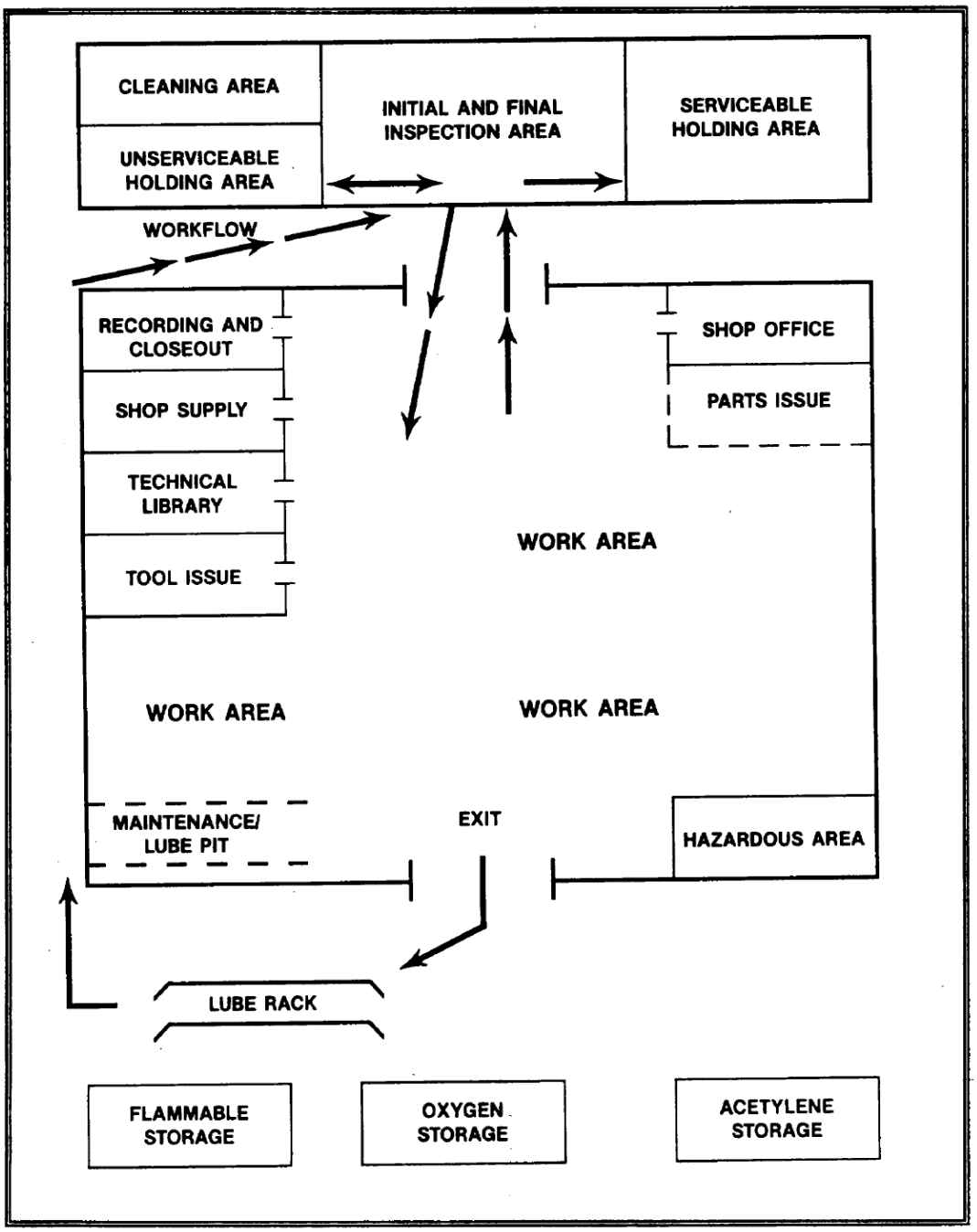


Figure B-3.--Maintenance Shop Layout.

# Appendix C

## Maintenance Production Process

1. Introduction. The following series of steps depict the logical sequence necessary to complete the various types of maintenance functions.

2. General Information

a. Equipment requiring Field Maintenance is conducted in four phases, acceptance, induction, active and closeout phase. Field maintenance units will capture the maintenance effort and requisition supplies through the authoritative MAIS or Accountable Property System of Records (APSR).

b. The terms maintenance “activity” and “section” are defined as any activity, section, and/or commodity that has been assigned capability to conduct maintenance.

c. Update the equipment’s operational status as it changes through the maintenance production process.

3. Acceptance Phase. Field-Level Maintenance includes Preventive Maintenance Checks and Services (PMCS), CM, Modification, and calibration of TMDE such as SKOT.

a. Step 1. The preparing activity will accomplish all maintenance tasks within their assigned capability/ responsibility if all resources are available. The preparing activity will ensure that the SR is initiated and assigned to the appropriate resource group of the supporting maintenance activity. If the automated system incorporates the integration of equipment records, then physical paper based records do not have to accompany the equipment for induction.

b. Step 2. During acceptance, the supporting maintenance activity will ensure all maintenance within the preparing activity’s assigned capability/responsibility is completed and the SR contains all required information. Maintenance not completed due to unfulfilled requirements, such as open requisitions, may be deferred until maintenance tasks can be completed at the supporting maintenance activity.

(1) In the event that incomplete maintenance at preparing activity’s assigned capability/responsibility prohibits the maintenance activity from performing maintenance

and/or the preparing activity's SR is incomplete; return equipment and reassign SR to the preparing activity. Once accepted by the supporting maintenance activity, the maintenance production process should not be interrupted.

(2) The preparing activity will reassign the SR and return the equipment to the supporting maintenance activity once all identified deficiencies have been corrected.

c. Step 3. When all prerequisites have been met, the supporting maintenance activity will accept the equipment. The supporting maintenance activity will record information validated during induction within the MAIS. This step does not apply when the equipment owner and supporting maintenance activity are the same entity. Examples of information to be validated will include, but are not limited to:

(1) Each SL-3 component accepted will be listed. If all SL-3 items are accepted, a statement of "accepted SL-3 complete" will be entered as a task note.

(2) If there are no visual defects, other than normal wear or tear, a statement of "no visual defects" will be entered as a task note. If a visual defect is identified that requires further investigation (e.g., SF-91 Motor Vehicle Accident Report) the acceptance inspection stops until the equipment has been released from investigation.

d. Step 4. In the event where equipment is evacuated outside the preparing activity's assigned capability/ responsibility the supporting maintenance activity will print and sign a custody receipt for the equipment owner. Custody receipts are not required for inter-shop transfers or when the equipment owner and supporting maintenance activity are the same organization.

e. Step 5. The maintenance activity will record maintenance actions via the designated MAIS. Maintenance activity/section will accomplish the following:

(1) Manage work flow.

(2) Ensure the current job and operational status of maintenance is reflected throughout the maintenance production process.

f. Step 6. The maintenance section will determine the type of maintenance actions required and will record each major task accomplished.

(1) Determining required maintenance actions include, but is not limited to, validating the original discrepancy as identified by the preparing activity. Additional discrepancies will be identified and annotated for corrective action.

(2) Determine and indicate any modification requirements.

(3) Determine and indicate any modification requirements for SecReps. This process will be coordinated with the RIP.

4. Induction Phase

a. Step 1. The maintenance section will determine the maintenance resources required. Maintenance activities will accomplish the following:

(1) When maintenance resources become available initiate the DRIS by changing the status of the SR to “EQUIP ACCEPTED.”

(2) Prepare and submit a parts requirement on a “Maintenance” task type when identified parts and materiel are required.

(3) If equipment is requested for recall by the preparing activity, determine if the equipment is suitable for Unit Recall utilizing the following guidelines.

(a) The following general guidelines include, but are not limited to, in determining equipment’s suitability for Unit Recall.

1. Parts required do not deadline or cause further deterioration of equipment’s capability.

2. Unit can continue to operate equipment safely.

3. Geographical location of preparing activity will not impede the supporting maintenance activity’s ability to complete required maintenance.

(b) When equipment is suitable for unit recall, the maintenance section will accomplish the following:

1. Upon approval notify the preparing activity.

2. Change the SR job status to “Unit RCL.”

3. Once the preparing activity has recovered the equipment the supporting maintenance activity will recover the custody receipt.

4. Continuously monitor Maintenance Production Reports and layettes for parts availability.

5. Notify the preparing activity when receipt of all required parts, the availability of the Mechanic/ Technician, and a suitable maintenance area support the induction of equipment back into the maintenance cycle.

6. Upon receipt of equipment, update status of the SR to reflect current maintenance posture and provide a custody receipt to the preparing activity.

(c) When equipment is not suitable for unit recall the maintenance activity will retain the equipment.

b. Step 2. When resources and maintenance area become available; induct the equipment into the active maintenance phase.

5. Active Maintenance Phase

a. Step 1. Upon induction the maintenance activity will accomplish the following:

(1) Commodity managers will assign equipment, SR and appropriate resources to a mechanic/technician or maintenance team.

(2) Maintenance personnel assigned the SR will conduct a detailed inspection of the equipment.

(3) Completion of tasks within the maintenance section’s assigned capability/responsibility consists of, but is not limited to, the following:

(a) Parts and DSI requirements identified.

(b) Maintenance actions performed for CM, PMCS, Modifications and Calibration

(c) Identification of PQDR requirements.

(d) Inter-shop repair requirements.

(e) SecRep requirements.

(f) Warranty replacement.

(g) Validation of outstanding requisitions.

b. Step 2. When the required maintenance is beyond the maintenance activity's assigned capability/responsibility the following will be accomplished:

(1) Complete all maintenance tasks within assigned capability responsibility utilizing available resources.

(2) Change the status of original SR to "AWTG EVC" and coordinate with supporting maintenance activity for acceptance process and procedures.

(3) Create a copied SR and link the copied SR to the original, by use of the "related objects" tab and assign the copied SR to the supporting maintenance activity group.

(4) Upon induction to the supporting maintenance activity, change the status of the original SR to "EVC HECH."

(5) When all maintenance actions have been completed by the supporting maintenance activity follow steps provided in the Closeout Phase.

6. Closeout Phase

a. Step 1. When all required maintenance is completed, the maintenance activity/section will ensure the following:

(1) Materiel (parts) requirements are received or closed within the MAIS.

(2) Materiel, labor (tasks) are properly documented within the MAIS.

(3) Quality assurance measures will be conducted to ensure equipment and MAIS reflect maintenance actions performed and documented.

(4) Ensure operational status reflects the current status of equipment.

(5) Notify preparing activity of equipment availability (if applicable).

(6) Ensure all equipment counters are updated.

b. Step 2. Upon notification that equipment is ready for pick-up, the equipment owner is required to complete the following:

(1) Inspect equipment to ensure that required maintenance was properly completed.

(2) Validate all maintenance requirements were properly documented within the MAIS.

c. Step 3. If the equipment owner has determined that all maintenance requirements were not/improperly completed or the SR did contain all required information, the following actions will be taken:

(1) Notify the maintenance section that all required maintenance is incomplete or unsatisfactory.

(2) Notify the maintenance section that all required elements have not been annotated on the SR.

d. Step 4. When the preparing activity has determined that all maintenance requirements have been properly completed and the SR contains all required information, the following actions will be taken:

(1) Return the custody receipt for the equipment to the maintenance section (No requirement for retention).

(2) When required, update the equipment records within the MAIS with information provided in the SR (e.g., Item Instance Note, Mods, PMCS, Cal, etc.).

(3) Set SR status to “CLOSED.”

7. Evacuation of Equipment. Evacuation of equipment for maintenance includes PMCS, CM, Modification, and TMDE for calibration. All units will prepare a maintenance requests to evacuate equipment for maintenance.

a. Prepare the appropriate maintenance type SR to evacuate equipment requiring maintenance using the type of SRs outlined below:

(1) Maintenance Mod.

(2) Cannibalization.

(3) Maintenance Cal. Calibration

(4) Maintenance CM. Corrective Maintenance on ME

(5) Maintenance MISC.

(6) Maintenance SL-3.

(7) Maintenance SRP. Secondary Reparable Maintenance.

(8) Maintenance PM. Preventive Maintenance

(9) Selective Interchange

b. When the maintenance activity cannot complete the maintenance on the type SR initiated due to a requirement for corrective maintenance, change the operational status if required and document the CM task utilizing the type of tasks. The maintenance activity must notify the owning unit when changing the operational status.

c. Use the appropriate maintenance type task to capture maintenance tasks outlined below:

(1) Calibration.

(2) Maintenance.

(3) Preventive Maintenance.

(4) Recovery.

(5) Requisition.

(6) Resource Move.

(7) Selective Interchange.

(8) Cannibalization.

# Appendix D

## Acronyms

| | |
|---|---|
| AO | Accountable Officer |
| ASP | Administrative Storage Program |
| APSR | Accountable Property Systems of Record |
| CAMP | Calibration and Maintenance Program |
| CIP | Command Inspection Program |
| CLS | Contracted Logistics Support |
| CM | Corrective Maintenance |
| CMC | Commandant of the Marine Corps’ |
| CPAC | Corrosion Prevention and Control |
| DRIS | Date Received in Shop |
| DSI | Demand Supported Items |
| FLMMP | Field Level Maintenance Management Policy |
| FP | Fielding Plan |
| FSMAO | Field Supply and Maintenance Analysis Office |
| GFE | Government Furnished Equipment |
| GFM | Government Furnished Materiel |
| GFP | Government Furnished Property |
| IGMC | Inspector General of the Marine Corps |
| IMA | Intermediate Maintenance Activity |
| ISSA | Inter-Service Support Agreement |
| LCE | Logistics Combat Element |
| LOM | Level of Maintenance |

| | |
|---|---|
| LPC | Logistics Policy and Capabilities |
| LTI | Limited Technical Inspection |
| MAGTF | Marine Air Ground Task Force |
| MAIS | Major Automated Information System |
| MajCom | Major Command (MEF or Supporting Establishment Equivalent) |
| MAL | Mechanized Allowance List |
| MARCORSYSCOM | Marine Corps Systems Command |
| MARFORs | Marine Forces |
| MI | Modification Instruction |
| MCO | Marine Corps Order |
| MCT | Maintenance Cycle Time |
| MCWL | Marine Corps Warfighting Laboratory |
| ME | Military Equipment |
| MMO | Maintenance Management Officer |
| MOA | Memorandum of Agreement |
| MOU | Memorandum of Understanding |
| MSC | Major Subordinate Command |
| NAVMC | Navy, Marine Corps |
| NARA | National Archives and Records Administration |
| NSN | National Stock Number |
| PBA | Performance Based Agreement |
| PCN | Publication Control Number |
| PMCS | Preventive Maintenance Checks and Services |

| | |
|---|---|
| PQDR | Product Quality Deficiency Report |
| R&E | Replacement and Evacuation |
| SE | Supporting Establishment |
| SKOT | Sets, Kits, Outfits and Tools |
| SMR | Source Maintenance Recoverability |
| SOP | Standard Operating Procedures |
| SOW | Statement of Work |
| TAMCN | Table of Authorized Materiel Control Number |
| TEEP | Training Exercise Employment Plan |
| TLCSM | Total Lifecycle Systems Management |
| TMDE | Test Measurement Diagnostic Equipment |
| T/O&E | Table of Organization and Equipment |
| TOECR | Table of Organization and Equipment Change Request |
| T&R | Training and Readiness |
| TRNGCMD | Training Command |
| UMMIPS | Uniform Materiel Movement and Issue Priority System |
| UND | Urgency of Need Designator |