



DEPARTMENT OF THE NAVY  
HEADQUARTERS UNITED STATES MARINE CORPS  
3000 MARINE CORPS PENTAGON  
WASHINGTON, DC 20350-3000

MCO P4790.2C Ch 2  
LPC-1  
17 Dec 12

MARINE CORPS ORDER P4790.2C Ch 2

From: Commandant of the Marine Corps  
To: Distribution List

Subj: MIMMS FIELD PROCEDURES MANUAL

Ref: (a) MCO 5215.1K

Encl: (1) MCO P4790.2C W/CH 1

1. Situation. The Marine Corps Integrated Maintenance Management System (MIMMS) is a set of manual procedures by which the effective use of personnel, money, facilities, and materiel as applied to the maintenance of ground equipment is controlled.

2. Mission. To establish the policy and procedures for management of Marine Corps ground equipment maintenance in units of the regular establishments and ground and aviation units of the Selected Marine Corps Reserve.

3. Execution. Administrative changes are as follows:

a. The sponsor of this order is now HQMC, LPC-1.

4. Administration and Logistics

a. Distribution Statement. Directives issued by the CMC are published electronically and can be accessed online via the Marine Corps Publications Electronic Library at:  
<http://www.marines.mil>.

b. Access to an online medium will suffice for directives that can be obtained from the Internet, CD-ROM, or other sources. For purposes of inspection, electronic files will suffice and need not be printed. For commands without access to the Internet, hard copy, and CD-ROM versions of Marine Corps directives can be obtained through Marine Corps Publications Distribution System (MCPDS).

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distribution is unlimited.

c. Recommendations concerning the contents of this Order are invited. Such recommendations will be forwarded to the Commandant of the Marine Corps (CMC) Logistics Policy (LP) via the appropriate chain of command.

5. Command and Signal

a. Command. This Order is applicable to the Marine Corps Total Force.

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



M. G. DANA  
Director Logistics Plans,  
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Division

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**Headquarters, U.S.  
Marine Corps**

**MCO P4790.2C  
PCN 10206545100**



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**MIMMS FIELD  
PROCEDURES  
MANUAL**

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DEPARTMENT OF THE NAVY  
HEADQUARTERS UNITED STATES MARINE CORPS  
2 NAVY ANNEX  
WASHINGTON, DC 20380-1775

MCO P4790.2C  
LPP-3  
19 Jul 94

MARINE CORPS ORDER P4790.2C W/CH 1

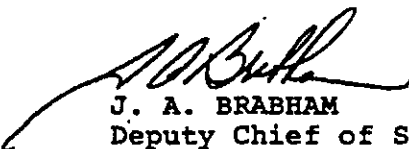
From: Commandant of the Marine Corps  
To: Distribution List

Subj: MIMMS FIELD PROCEDURES MANUAL

Ref: (a) MCO P4790.1

Encl: (1) Locator sheet

1. Purpose. To establish the policy and procedures for management of Marine Corps ground equipment maintenance in units of the Regular Establishments and ground and aviation units of the Selected Marine Corps Reserve.
2. Cancellation. MCO P4790.2B.
3. Summary of Revision. This revision contains a substantial number of changes and should be completely reviewed.
4. Recommendations. Recommendations concerning the contents pertaining to the MIMMS Field Procedures Manual are invited. Submit recommendations via the appropriate chain of command to the Commandant of the Marine Corps (CMC) (LPP) for evaluation.
5. Reserve Applicability. This Manual is applicable to the Marine Corps Reserve.
6. Certification. Reviewed and approved this date.

  
J. A. BRABHAM  
Deputy Chief of Staff  
for Installations and Logistics

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MCO P4790.2C Ch 1  
LPP-3  
8 Dec 94

MARINE CORPS ORDER P4790.2C Ch 1

From: Commandant of the Marine Corps  
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Subj: MIMMS FIELD PROCEDURES MANUAL

Encl: (1) New page inserts to MCO P4790.2C

1. Purpose. To transmit new page inserts to the basic Manual.
2. Action
  - a. Remove pages 1-9, 1-10, 1-13, 1-14, 2-15, 2-16, 3-3, 3-4, 3-9, 3-10, and 3-21 through 3-24 of the basic Manual and replace with corresponding pages contained in the enclosure.
  - b. Remove pages D-1, D-2, D-7, and D-8 of appendix D and replace with corresponding pages contained in the enclosure.
3. Summary of Change. To redefine the medical and dental exception, preventive maintenance checks and services responsibility, the accurate source for equipment calibration operational test code (OTC), and correct typographic errors.
4. Change Notation. Significant changes in the revised pages for this Change are denoted by an arrow (>) symbol.
5. Filing Instructions. This Change transmittal page will be filed immediately following the signature page of the basic Manual.
6. Certification. Reviewed and approved this date.



J. A. BRABHAM  
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LOCATOR SHEET

Subj: MARINE CORPS INTEGRATED MAINTENANCE MANAGEMENT SYSTEM  
FIELD PROCEDURES MANUAL

Location: \_\_\_\_\_  
(Indicate the location(s) of the copy(ies) of this  
Manual.)

ENCLOSURE (1)



MIMMS FIELD PROCEDURES MANUAL

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MIMMS FIELD PROCEDURES MANUAL

CHAPTER 1

MAINTENANCE MANAGEMENT

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# MIMMS FIELD PROCEDURES MANUAL

## CHAPTER 1

### MAINTENANCE MANAGEMENT

#### 1000. INTRODUCTION

1. Background. The Marine Corps Integrated Maintenance Management System (MIMMS) is a set of manual procedures by which the effective use of personnel, money, facilities, and materiel as applied to the maintenance of ground equipment is controlled. MIMMS is supported by an Automated Information System (AIS) that functions as a stand alone class 1 system that interfaces with existing Marine Corps systems and programs. MIMMS and MIMMS/AIS apply to all command levels and maintenance echelons. They provide management visibility to the user level while simultaneously collating maintenance engineering analysis information for item management. This Manual addresses the policy and procedures for field MIMMS.

#### 2. Definitions

a. Maintenance. All action taken to retain materiel in or restore it to a specified condition. It includes: inspection, testing, servicing, classification as to serviceability, repair, rebuilding, and reclamation.

b. Maintenance Engineering. The application of techniques, engineering skill, and effort organized to ensure that the design and development of weapons systems and equipment provide adequately for their effective and economical maintenance.

c. Maintenance Production. The activity of equipment maintenance which involves the physical performance of those actions and tasks attendant to the equipment maintenance function for servicing, repairing, testing, overhaul, modification, calibration, modernization, conversion, and inspection. The accomplishment of these tasks is normally carried out at three categories of maintenance.

d. Maintenance Levels. Maintenance is divided into field and depot level maintenance. Field and depot level maintenance are divided into maintenance categories and echelons as follows:

(1) The categories of maintenance and corresponding echelons of maintenance (EOM) are organizational (first and second echelons), intermediate (third and fourth echelons), and depot (fifth echelon).

(a) Organizational maintenance is maintenance production, scheduled or unscheduled, which is the responsibility of and performed by the using unit on table of equipment (T/E) and special allowance assigned equipment.

(b) Intermediate maintenance is performed by designated activities in direct support of using organizations. It includes calibration and repair/replacement of damaged or unserviceable parts and provides technical assistance, support through a secondary repairable issue point, and/or contact team support to using organizations. Intermediate maintenance normally includes third and fourth EOM's and in instances when supporting overflow organizational requirements may include second echelon as well.

(c) Depot Maintenance is maintenance requiring major overhaul or complete rebuild of parts, subassemblies, assemblies or end items, including the manufacture of parts and performance of required modifications, testing, and reclamation. Depot maintenance serves to support lower categories of maintenance by providing technical assistance and performing maintenance beyond their responsibility. Depot maintenance provides stocks of serviceable equipment by using more extensive repair facilities than are available in lower level maintenance activities. Fifth, echelon maintenance is normally associated with this category and is scheduled to employ production and assembly line methods whenever practicable.

(2) The Marine Corps further subdivides the maintenance categories into EOM's to more accurately identify capabilities. So tasks most appropriate to the unit's available commodity, personnel, tools, equipment, and parts, can be identified.

(a) First EOM is maintenance performed by the user or operator of the equipment. It includes the proper care, use, operation, cleaning, preservation, lubrication, and such adjustment, minor repair, testing, and parts replacement as may be prescribed by pertinent technical publications, tools and parts allowances. There is no requirement to collect MIMMS/AIS data at first echelon.

(b) Second EOM is maintenance performed by specially trained personnel in the organization. Appropriate publications authorize the second EOM, additional tools and necessary parts, supplies, test equipment, and skilled personnel to perform maintenance beyond the capabilities and facilities of first echelon. This includes performance of scheduled maintenance, diagnosis and isolation of readily traced equipment malfunctions, replacement of major assemblies/modular components which can be readily removed/installed and do not require critical adjustment, and replacement of easily accessible piece parts not authorized at first echelon.

(c) Third EOM is maintenance authorized by appropriate publications to be performed by specially trained personnel either in an intermediate or organizational role. Third echelon includes diagnosis and isolation of equipment/modular malfunctions

including: adjustment and alignment of modules using test, measurement, and diagnostic equipment (TMDE); repair by replacement of modular components and piece parts which do not require extensive post maintenance testing or adjustment; limited repair of modular components requiring cleaning; seal replacement; application of external parts; repair kits; and accomplishment of minor body work and evaluation of emissions of internal combustion engines.

(d) Fourth EOM is maintenance normally associated to semi-fixed or permanent shops of intermediate maintenance activities and frequently associated to organizational shops of units with a commodity peculiar mission. Fourth EOM includes diagnosis, isolation, adjustment, calibration, alignment, and repair of malfunctions to the internal piece part level. Fourth EOM also includes replacement of defective modular components not authorized at lower echelons; repair of major modular components by grinding or adjusting items such as valves, tappets or seats; replacing internal and external piece parts to include solid state integrated circuits and printed circuit boards/cards; and performance of heavy body, hull turret, and frame repair.

(e) Fifth EOM is maintenance normally performed by depot maintenance activities and at intermediate maintenance activities when specially authorized by the CMC (LPP). It includes overhaul/rebuild of end items/modular components; repairs which exceed the capability of lower echelon units where special environmental facilities or specific tolerances are required; nondestructive testing; special inspection/modification requiring extensive disassembly, or elaborate test equipment; manufacturing items not provided or available; and provision of wholesale level direct exchange support.

e. Reportable Equipment. Marine Corps Automated Readiness Evaluation System (NARES) reportable equipment is defined as an item of equipment which is contained in a Marine Corps bulletin (MCBul) in the 3000 series. Before items can be included in this Bulletin, they must be principal end items that are 85 percent fielded Marine Corps-wide, to include the Reserves. They must be nominated for MARES reporting by either the field commands or Headquarters Marine Corps, and accepted for inclusion (or deletion) by the CMC (L). The term, fielded Marine Corps-wide, means that the weapon systems manager in coordination with the project manager for the principal end items requiring addition has verified to CMC that the sufficient quantities are distributed through out the FMF and Reserves to meet the 85 percent criteria. To remain a force in readiness, the Marine Corps plans, programs, and budgets annually for the modernization of its equipment and capabilities. The modernization of mission-essential equipment could have a substantial effect on MARES reporting. Accordingly, a replacement item and the item it is replacing may be excluded from MARES reporting during the modernization (phase-in/phase-out) of equipment.

(1) Combat essential equipment (CEE) items are defined as mission essential primary weapon system(s) assigned to the unit to accomplish its wartime mission. The term CEE is synonymous with pacing items.

(2) Items designated as CEE (or pacing items) are of such importance that they are subject to continuous monitoring and management at all levels of command. Items eligible for nomination as CEE items must be listed in the Joint Chiefs of Staff (JCS) Major Equipment (MEQPT) file. This JCS file is maintained by the CMC (POC).

(3) CEE items are designated by table of authorized material control number (TAMCN) in a MCBul in the 3000 series.

(4) CEE items may be low density equipment. Therefore, small changes in quantities possessed or operationally ready can lead to wide fluctuations in the unit's "S" and "R" ratings.

f. Equipment Readiness. Refers to the portion of the unit's equipment readiness or ability to perform its mission as determined by the condition of the equipment resources allocated to the unit. Equipment readiness will be maintained by replacing unserviceable equipment or restoring unserviceable equipment to a serviceable condition.

g. Equipment Readiness Ratings. The equipment readiness information is used to support the Status of Resources and Training System (SORTS) measured resource areas of equipment/supplies on hand "S" and equipment readiness "R" ratings reported by the unit in SORTS.

(1) It is the responsibility of the organization which owns an item to determine its deadline status and to ADD the item to deadline. It is also the responsibility of the organization which owns an item to DELETE the item from deadline (when previously in a deadline status).

(2) It is the responsibility of the organization performing the repair to a deadlined item to report any CHANGES in the condition of that item; for example, not mission capable maintenance (NMCM) to not mission capable supply (NMCS).

h. Equipment Mission Capable. A term describing the equipment condition/status which indicates that it can perform its designed primary combat function. The lack of noncritical repair parts (such as fenders, windshields, or canvas), routine modifications, or scheduled maintenance will not, under normal circumstances, be considered as justification for deadlining an item.

i. Not Mission Capable. A term describing the equipment condition/status which indicates that it cannot perform its designed primary function. When equipment is not mission capable, it will be reported as:

(1) NMCM indicates that an item is not mission capable because of lack of personnel, space, or tools.

(2) NMCS indicates that an item is not mission capable because of lack of repair parts, secondary repairables, or funds.

j. Deadlined Equipment. Equipment is considered deadlined when it is not mission capable; that is, cannot perform its designed combat mission due to the need for critical repairs, and the has been "not mission capable" in excess of 24 hours. When the deadlined item is evacuated to a service organization for critical repairs, the item will be reported to deadline without regard to the 24-hour grace period. Routine modifications, preventive maintenance checks and services, or lack of noncritical repair parts will not cause a reportable deadline condition.

k. Commodity Area. Refers to a grouping or range of items containing similar characteristics, have similar applications, and are susceptible to similar logistics management methods. The Marine Corps uses the first position of the TAMCN to designate commodity areas as follows:

- (1) Communication and Electronics (C&E) A, H, and T.
- (2) Engineer (Eng) B, J, and U.
- (3) General Supply (GS) C, K, and V.
- (4) Motor Transport (MT) D, M, and W.
- (5) Ordnance (Ord) E, N, and X.
- (6) Nuclear, Biological, Chemical (NBC) A, B, C, H, J, K, T, U, and V.
- (7) Garrison Mobile Equipment (GME) G.

l. Maintenance Float. Refers to end items or components of equipment authorized for stockage at installations or activities for replacement of unserviceable items of equipment when immediate repair of unserviceable equipment cannot be accomplished.

m. Allowance Items. Refers to the quantity of items of supply or equipment prescribed by Marine Corps T/E or other authorized allowance publications.

## 1001. MARINE CORPS INTEGRATED MAINTENANCE MANAGEMENT SYSTEM

1. Introduction. MCO P4790.1 establishes MIMMS as the ground equipment maintenance program throughout the Marine Corps. MIMMS is an integrated management system encompassing all equipment commodity areas, based on standard policies and procedures.

a. Marine Corps maintenance policy is as follows:

(1) The commander is responsible for the successful accomplishment of the maintenance functions within the unit. The planning, directing, and controlling of the maintenance operations will receive the personal attention of commanders at all levels.

(2) Maintenance will be accomplished at the lowest authorized echelon and as far forward as possible. The evacuation of equipment reduces combat and combat-support strength. Evacuation to a higher EOM will be accomplished only after prescribed fault diagnosis and isolation have been accomplished at the lowest authorized echelon.

b. These policies and procedures apply to all levels of command and EOM's except depot maintenance activities (fifth EOM). When properly used, MIMMS will significantly increase equipment readiness and reduce consumption of maintenance resources. MIMMS is user oriented and designed to work with other logistics systems.

2. TM-4700-15/1 provides instructions for the preparation, use, and disposition of required forms and records associated with the operation and maintenance of Marine Corps ground equipment.

3. MIMMS Subsystems. MIMMS Subsystems includes policies, procedures, and AIS. MIMMS Subsystems cover the entire Marine Corps and at the same time recognize the distinct requirements of each MIMMS Subsystem.

a. Headquarters Maintenance Subsystem. Headquarters Maintenance Subsystem (HMSS) supports personnel at HQMC. MCO P4790.7 contains the policy for the HMSS. The AIS supporting the Headquarters maintenance management is HMSS MIMMS/AIS.

b. Depot Maintenance Management System. The Depot Maintenance Management System (DMMS) supports the depot maintenance effort. MCO P4790.3 contains the policy for the DMMS. The AIS supporting the depot maintenance management is DMMS MIMMS/AIS.

c. Field Maintenance Subsystem. The Field Maintenance Subsystem (FMSS) supports the field maintenance effort. This Manual contains the policy for the FMSS. The AIS supporting the field maintenance management is FMSS MIMMS/AIS. UM-4790-5 governs FMSS MIMMS/AIS.

1002. APPLICABILITY

1. A commander is responsible for the operational readiness of T/E items and for maintaining T/E items within the authorized EOM in the unit's table of organization (T/O) logistics capabilities statement. Intermediate and depot maintenance activities are responsible to support maintenance required beyond the unit's authorized EOM.

2. The same policies and procedures apply to all commands, all ground equipment commodity areas, and all EOM as follows:

a. This Manual applies to all items appearing on the appropriate T/E's, allowance lists and special allowances except as indicated below.

b. This Manual does not apply to the following:

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

(2) Medical and dental materiel that are subject to the maintenance policies prescribed by the Chief of Naval Operations through the Surgeon General of the Navy (N093)/Chief, Bureau of Medicine and Surgery/Assistant Chief for Logistics.

(3) Musical instruments maintained per MOO 4225.2.

(4) Industrial plant equipment which does not appear on T/E's or NAVMC 1017 (table of authorized material (TAM)).

(5) GME when specific procedures are delineated in MCO P11240.106.

(6) Development equipment.

c. This Manual applies to Navy-furnished equipment maintained by the Marine Corps under an interservice support agreement (ISA) or directive; for example, helicopter mounted M6 .50 caliber and M60 machine guns, per NAVMATINST 8300.1.

3. Ground equipment maintenance will be managed as outlined in this Manual, other manuals in the 4790 series, and as amplified by the directives of the CMC.

1003. MAINTENANCE MANAGEMENT POLICIES AND ELEMENTS

1. Policies. MCO P4790.1 establishes MIMMS and maintenance production policy. The following paragraphs contain excerpts of the policies concerning organizational and intermediate maintenance:



a. The management of equipment maintenance at all levels of command in the Marine Corps will be accomplished through the formally established, standardized maintenance management system established in this Manual, other Marine Corps directives in the 4790 series, and as specified in other maintenance related directives issued by the CMC.

b. Standard ground equipment policies and procedures will be followed at all levels of command, for all equipment commodity areas, and all EOM's throughout the Marine Corps. Maintenance and maintenance management procedures and systems used when the unit is deployed will not differ from those used in a garrison environment.

c. Maintenance production in units under the cognizance of this Manual is limited to organizational and intermediate category of maintenance. FMF units are not authorized to perform depot category maintenance, except as specifically authorized by the CMC (L).

d. MCO P11240.106 and TM-4700-15/1 will be used throughout the Marine Corps for collecting equipment and maintenance information and maintaining equipment and maintenance records. Recording information related to maintenance actions will normally be limited to that required by local commanders for local use and the routine upkeep of equipment records. Maintenance management information will be entered into an automated system only when required by higher authority and when a cost benefit analysis has indicated that automatic information processing is appropriate for this information.

e. Movement, protection, preservation, and general care of repairable materiel in an unserviceable condition will be the same as that afforded like serviceable materiel. It is essential that such care be given to unserviceable equipment to preclude further deterioration and to minimize the use of maintenance resources necessary to return the equipment to a serviceable condition.

f. The time that repairable materiel remains in an unserviceable condition will be minimized, in that it represents a significant investment. During the period equipment is in an unserviceable condition, the owning unit is either denied its use or a serviceable like item must be provided while the unserviceable item is being repaired. Consequently, delays in accomplishing required maintenance or in evacuating unserviceable equipment must be eliminated.

g. All organizations will perform only the authorized maintenance actions as prescribed in their respective T/O logistics capabilities statement.

(1) Repairs will be performed at the lowest authorized EOM consistent with the nature of the repair, authorized repair parts, tools, equipment, time available, capabilities of personnel, the

tactical situation of FMF organizations, or local conditions, as appropriate. Tactical situations or temporary shortages of personnel or support equipment may dictate that the unit evacuate equipment within its EOM.

(2) Materiel requiring repairs beyond the scope or capability of one echelon will be evacuated to the next higher echelon.

(3) Each echelon is authorized to and will perform any maintenance function of lower echelons when required by practical considerations or tactical situations.

(4) Organizations will not perform maintenance actions beyond its EOM or maintenance actions assigned to a higher EOM.

h. Major subordinate command (MSC) commanders are authorized to approve temporary (6 months or less), increases in the authorized EOM. Such assignments must provide for the more effective use of available maintenance resources, enhance combat readiness, reduce excessive backlogs existing at higher EOM, or result in an overall savings in maintenance costs. When increases in authorized EOM are required for periods greater than 6 months, a T/O logistics capabilities statement change will be requested. A request for a T/O logistics capabilities statement change is governed by MCO P5311.1. Commanders who are authorized to make temporary assignments of higher EOM to subordinate units will be guided by the following considerations:

(1) Necessary maintenance resources and personnel are or can be made available.

(2) The assignment will not interfere with the accomplishment of the regularly assigned levels of maintenance or the general mission of the unit concerned.

(3) Higher echelon maintenance activities cannot perform the required maintenance normally assigned within acceptable time limitations.

i. The Commanding Generals, 4th Marine Division and 4th Marine Aircraft Wing, may grant extensions to the 6-month limitation normally imposed for temporary increases in EOM and may waive associated T/O change request requirements subject to the following guidance:

(1) When temporary increases in echelon of maintenance are granted due to the establishment of T/E special allowances and associated T/O billets provided by higher headquarters or support maintenance organizations, the 6-month time limitations and the requirements for submitting T/O change requests may be waived. Such waivers will be reviewed semiannually to determine continued validity.

(2) Upon mobilization of Marine Corps Reserve units, temporary increases approved in conjunction with special allowances and associated T/O billets will be automatically rescinded.

(3) All other approvals for increased EOM will be subject to the criteria, time limitations, and T/O change requirements outlined in paragraph 1003.1h.

j. Maintenance by cannibalization and selective interchange.

(1) The following definitions provide guidance/clarification concerning cannibalization and selective interchange:

(a) Cannibalization is the removal of serviceable parts from one item of equipment to install them on another item of equipment.

(b) Selective interchange is the exchange of selected serviceable repair parts/components from a deadlined item of equipment for unserviceable repair parts/components from a like item. The exchange must be complete to qualify as selective interchange. The exchange, however, may take the form of a requisition for the replacement repair part/component in lieu of the actual unserviceable repair part/component.

(2) The difference between the two definitions is that selective interchange addresses the replacement of the removed serviceable repair part/component, whereas cannibalization does not. This fact has led maintenance personnel to erroneously believe that selective interchange is not cannibalization. By definition (removal of serviceable parts/components from one item for use in repairing another item) selective interchange is, in fact, a lesser degree of cannibalization. As such, the conduct of selective interchange will require the same authorization as cannibalization.

(3) Maintenance by cannibalization or selective interchange will not be employed except:

(a) To ensure that a minimum number of equipment is deadlined at any one time for lack of a critical repair part. Maintenance by cannibalization or selective interchange is considered to be an exceptional procedure and is authorized only for equipment when an operational commitment is imminent, and only when it appears that the required part cannot be obtained on a timely basis. At the time of the interchange, strict managerial control practices must be implemented at the command and maintenance facility to ensure that the commander of the unit that owns the equipment the serviceable parts/components are to be removed from has concurred with the interchange. As a general rule, such procedures will be done at the lowest echelon having the maintenance capability to accomplish the same.

(b) The equipment that serviceable parts/components are to be removed from will not, as a result of such removal, become a candidate for the Recoverable Items Program by exceeding the one-time cost-of-repair authorization or by exceeding the maximum maintenance cycle time for repair. The conduct of the secondary reparable interchange must be in the best interest of the Marine Corps; that is, it must be cost-effective and result in the removal of one item of equipment from deadline without degrading another item of equipment beyond economical repair.

(c) The unserviceable parts/components and associated supply requisitions become identified with the item of equipment from which the serviceable items were removed. Unserviceable parts/components that are not reparable will be disposed of per current instructions and replacement items placed on requisition. When considering secondary reparable interchange action, sufficient time must remain within the maximum allowable maintenance cycle time for supply to properly respond to the requisition. Commanders must use caution to ensure that this process does not create items to become permanently deadlined.

(d) Commercial-type items of station property must:

1 Have an original acquisition cost of \$1,000 or less.

2 When, in the opinion of the supporting establishment commander the item is no longer:

a Usable in its present condition and cannot be economically repaired and used for the purpose originally intended.

b Expected to realize a fair market value when used for trade in purposes.

(4) Maintenance by selective interchange must be on a case-by-case basis and authorized by:

(a) The CMC (LP).

(b) The major subordinate command (MSC) commander.

(c) The commander of any unit authorized by the T/O cover page to perform at least intermediate third echelon maintenance and/or be an authorized maintenance float or subfloat holder. The commander must ensure that:

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

2 The commander of the unit that owns the equipment from which the serviceable part or secondary reparable is to be removed from has concurred with the interchange.

>2. Maintenance Management Elements. There are four principal elements of maintenance management: command, resources, production, and information. These four elements are comprised of factors determining the manner in which the elements are applied in a maintenance management program. Figure 1-1 depicts the maintenance management elements and related factors. The element of command is discussed in this chapter; the other elements are the topics of separate chapters in this Manual. Maintenance management is the retention or restoration of materiel to a serviceable condition through the efforts of other people.

Maintenance Management			
<u>Command</u>	<u>Resources</u>	<u>Production</u>	<u>Information</u>
Interest	Time	Preventive Maintenance Checks and Services	Records
Organization	Personnel	Corrective Maintenance	Reports
Policies	Repair Parts	Modification	AIS
Procedures	Tools and Equipment	Calibration	Readiness Reporting
Supervision	Facilities	Fabrication	
	Funds		
	Publications		

Figure 1-1.--Maintenance Management Elements.

#### 1004. COMMAND

1. General Information. Command is the single most important element of maintenance management. It is the commander's interest, organization, policies, and procedures defining the application of the other maintenance management elements.

#### 2. Interest

a. Commanders provide technical direction as specified in the Marine Corps Manual. Technical direction will include:

- (1) Establishing standards or procedures for performing a technical function.
- (2) Providing professionally trained and qualified personnel to perform a technical function.
- (3) Providing professional advice, guidance, or assistance.
- (4) Performing a technical function as a service to the command.

b. While commanders cannot be expected to possess the expertise of technicians or mechanics, they must demonstrate genuine interest in and enthusiasm for their respective unit's maintenance efforts. This interest is the most essential factor of a successful ground equipment maintenance program. Command interest must reflect the responsibility inherent in command for equipment readiness.

### 3. Organization

a. Commanders at all levels, including detached or separate commands, will assign a maintenance management officer (MMO) in writing when their command is authorized second echelon or higher maintenance for more than one commodity area. The MMO will coordinate and integrate the maintenance efforts of all command activities.

b. The T/O's of battalion/air group and larger FMF units reflect MMO billets or additional duty assignments by T/O line number. In comparable size units requiring an MMO where the T/O does not identify the MMO billet, the commander will assign an officer the duties of MMO. These responsibilities may be assigned as additional duty for an officer or as a primary duty for a staff noncommissioned officer when a full time officer assignment is not required.

c. In units authorized second or higher echelon maintenance in only one commodity area, the commodity manager will perform the maintenance management functions and need not be designated as the MMO.

d. An MMO need not be assigned in the headquarters and service company of a battalion, in the headquarters company of a regiment, or in the headquarters squadron of a group when the parent organization has an MMO assigned and maintenance functions are performed under the cognizance of members of the executive/special staff.

e. Duties of the MMO involve the management and coordination of eight maintenance management functional areas. These duties/functional areas cross all commodity lines. The eight maintenance management functional areas are as follows:

#### (1) Maintenance Administration

(a) Serves as special staff officer to the unit commander under either the staff cognizance of the G-4/S-4 with respect to organizational equipment maintenance management, or under the staff cognizance of the combat service support section (CSSS) in support maintenance units with respect to support maintenance management.

(b) Plans, organizes, and coordinates the use of all maintenance resources within the unit.

(c) Develops and implements the standing operating procedures for maintenance management in conjunction with commodity managers.

(d) Plans and conducts detailed maintenance related inspections to ensure effective maintenance operations.

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

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

(g) Coordinates with commodity managers and maintenance officers, to ensure that an annual inventory of all the unit's support equipment and TMDE is conducted and test equipment is properly maintained and calibrated.

(h) Coordinates 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.

(i) Coordinates with commodity managers and maintenance officers to ensure shop safety programs are established.

## (2) Personnel and Training

(a) Coordinates with G-1/S-1 and commodity managers regarding personnel requirements and assignments.

(b) Maintains an aggressive operator, technical, and maintenance supervisor training program for all maintenance and equipment related military occupational specialties (MOS) in conjunction with commodity managers.

(c) Assists the G-3/S-3 on matters relative to unit operations, training of maintenance personnel, and scheduling of preventive/corrective maintenance periods during field operations.

## (3) Records and Reports

(a) Assists commodity managers in the preparation and maintenance of maintenance resource records as well as equipment records per TM-4700-15/1.

(b) Maintains standardized procedures for the submission of Product Quality Deficiency Reports (PQDR) per TM-4700-15/1.

(c) Coordinates with commodity managers to ensure the establishment and maintenance of modification control records per TM-4700-15/1.

(d) Ensures that effective modification control procedures are established.

(e) Coordinates with commodity managers and maintenance officers, to ensure the proper establishment and use of calibration control records per TM-4700-15/1.

(f) Monitors the MIMMS/AIS reports to ensure timely and accurate reporting of equipment maintenance readiness condition.

(g) Monitors the MIMMS/AIS input and output to detect and correct trend errors in the unit's maintenance reporting or possible systems problems.

(h) Ensures that the unit's maintenance MIMMS/AIS and Supported Activities Supply System (SASSY) files reflect similar status information.

#### (4) Publications Control

(a) Coordinates with G-1/S-1 and commodity managers to ensure that adequate quantities of maintenance and maintenance management related publications are resident on the unit's current publications listing (PL).

(b) Coordinates with G-1/S-1 to ensure that effective publication internal distribution control procedures are established.

(c) Coordinates with commodity managers to ensure that all publication libraries are up-to-date and that all shortages are on order.

(d) Coordinates with commodity managers to ensure the proper use of Form NAVMC 10772 (Recommend Changes to Technical Publications).

#### (5) Equipment Availability

(a) Advises the commander on all matters relative to equipment readiness and the impact of the unit's maintenance efforts on combat readiness.

(b) Ensures that all shortages of MARES reportable equipment have been identified and possess a valid supply status.

(c) Ensures that MARES reportable excesses and deficiencies have been properly declared or authorized by special allowance or authorization as appropriate.



(d) Ensures that procedures are established for the employment of the maximum maintenance cycle time program.

(6) Preventive Maintenance Checks and Services (PMCS) and Corrective Maintenance (CM)

(a) Coordinates with the G-3/S-3 to establish PMCS periods for all commodity areas.

(b) Coordinates with commodity managers, to ensure that proper followup procedures are established for correcting discrepancies noted during the performance of PMCS.

(c) Coordinates with commodity managers to ensure that maintenance production procedures are established.

(d) Coordinates with commodity managers, to ensure effective reconciliation with respective supporting maintenance activities.

(e) Coordinates with commodity maintenance officers, to ensure quality control programs are established.

(f) Coordinates with commodity managers and maintenance officers, to ensure the unit's PQDR program is centrally controlled unless this function has been delegated to the unit's quality assurance section.

(7) Supply Support

(a) Coordinates with the supply officer, to ensure that the unit has an established policy for the support of new equipment.

(b) Assists the supply officer in all matters relative to support maintenance requirements and repair parts support.

(c) Assists the supply officer in budget preparation by identifying maintenance and repair part funding requirements and executing the approved budget.

(d) Coordinates with commodity managers and maintenance officers, to ensure that TMDE allowances are adequate.

(8) Maintenance Related Programs. Coordinates the unit's participation in maintenance related programs. Examples of such programs are:

(a) Administrative storage and administrative deadline programs.

(b) Contact team/limited technical inspection maintenance support.

(c) Maintenance standdown.

(d) Joint Oil Analysis Program (JOAP).

(e) Replacement and Evacuation (R&E) Program.

(f) Inspect and Repair Only as Necessary (IROAN).

(g) Corrosion and Wear Control (CWC) Program.

f. Duties of the maintenance officer/commodity manager are as follows:

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

(2) Supervises the maintenance/commodity operations for the unit.

(3) Plans maintenance workload based on the maintenance level authorized, priority, availability of parts, tools, equipment, level of personnel experience, and tactical situation.

(4) Schedules, directs, and supervises the care, inspection, and maintenance of the unit's equipment.

(5) Inspects equipment periodically and ensures that performed maintenance conforms to established standards and that equipment records are maintained per TM-4700-15/1.

(6) Maintains staff responsibility for the operation and functioning of the MIMMS within the respective area of responsibility.

(7) Plans and coordinates a program of resources management, including the following:

(a) Training and use of maintenance personnel.

(b) Availability of tools and support equipment.

(c) Availability and use of technical information and maintenance facilities.

(d) Maintenance funding and contract maintenance.

(e) Use of repair parts.

(f) Accurate submission of equipment and resource information.

(8) Coordinates effective repair parts support with the unit's supply officer.

(9) Analyzes maintenance information to evaluate equipment performance and maintenance production.

(10) Acts as liaison with internal and external agencies on maintenance matters and coordinates efforts in the maintenance related programs.

(11) Establishes maintenance production and quality control programs.

(12) Maintains staff responsibility for the operation and functioning of the unit's calibration control, PMCS, modification control, and technical publications control programs.

#### 4. Standing Operating Policies and Procedures

a. Commanders at major subordinate commands (MSC) will publish maintenance management standing operating procedures (MMSOP's). The instructions contained in the MSC MMSOP need not contain all subordinate unit functions but they will be sufficiently clear, completely applicable at the unit level, and sufficiently detailed to ensure each subordinate unit can perform its maintenance mission.

b. Commanders at subordinate command levels, including detached or separate commands, authorized second echelon or higher maintenance capability for more than one commodity area will publish MMSOP's except when maintenance procedures are adequately covered in the MSC MMSOP. In such cases the MSC MMSOP may be used in lieu of the unit MMSOP.

c. Commanders at subordinate command levels, including detached or separate commands, authorized second echelon or higher maintenance capability for only one commodity area will publish maintenance management procedures in either a commodity maintenance/unit logistics standard operating procedures (SOP) or the MMSOP except when maintenance procedures are adequately covered in the MSC MMSOP.

d. Commanders at subordinate command levels, including detached or separate commands, authorized only first echelon maintenance capability for organic equipment will publish, as a minimum, maintenance management procedures as part of one of the unit's logistics SOP's or in a maintenance policy letter for the unit's commodity areas except when maintenance procedures are adequately covered in the MSC MMSOP.

e. Where the maintenance mission at subordinate command levels, including detached or separate commands requires deviation from or amplification to the MSC MMSOP, clearly defined local

written procedures will be included in the unit maintenance policy letter identifying the commander's additional policy guidance. These procedures will also include rationale for why the MSC MMSOP guidance is inappropriate.

f. The MSC MMSOP will include the procedures necessary for the subordinate command levels, including detached or separate commands to implement the policies and procedures included in this Manual, other Marine Corps directives, and those directives by higher headquarters.

g. The MSC MMSOP will be prepared per appendix A.

## 1005. DESK-TOP PROCEDURES AND TURNOVER FOLDERS

### 1. Desk-Top 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. The MSC MMSOP must 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 are appropriate for clerks in the shop office, shipping and receiving shop, library, shop supply, MMO office, dispatchers, and toolroom personnel. 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. The listing of procedures will not be voluminous, as this will tend to discourage its use. Each will prescribe steps to be followed 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 MSC MMSOP must state the requirement, contents, details, and the billets that require turnover folders.

b. To be of any real value, turnover folders will contain, as a minimum, statements concerning the following:

- (1) Title of the billet.
- (2) To whom the individual occupying the billet reports and incumbent billets subordinate thereto.
- (3) The mission of the billet (broad billet responsibilities).
- (4) The functions involved in accomplishing the mission (principal action taken).
- (5) Tasks and basic operations regularly performed in accomplishing specific functions.
- (6) List of orders or other directives pertinent to the billet.
- (7) List of required reports, dates of submissions.
- (8) 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.
- (9) Contacts within or external to the command, listing telephone numbers and/or addresses. The purpose served by the contact will be included.
- (10) 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.
- (11) 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.

c. 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.

MIMMS FIELD PROCEDURES MANUAL

CHAPTER 2

MAINTENANCE RESOURCES

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# MIMMS FIELD PROCEDURES MANUAL

## CHAPTER 2

### MAINTENANCE RESOURCES

#### 2000. INTRODUCTION

1. General Information. The commander and staff, principally the MMO, influence the allocation of maintenance resources through budget submissions, T/O revisions; and T/E changes. The emphasis at the unit level is on internal allocation and efficient use of resources.

2. Management. A process of establishing and attaining objectives to carry out responsibilities. Management consists of those continuing actions of planning, organizing, directing, coordinating, controlling, and evaluating the use of personnel, money, materials, and facilities to accomplish missions and tasks. Management is inherent in commanding, but does not include as extensive authority and responsibility as command.

3. Resources. Maintenance Resources are time, personnel, repair parts, tools and support equipment, facilities, publications, and funds.

2001. AUTHORITY. The authority to hold and use resources is contained in several documents. The principal documents are described in the following paragraphs.

1. T/E. The T/E is a list of equipment the unit is authorized and required to possess and maintain to accomplish its mission.

2. T/O. The T/O indicates the maintenance authority of each unit based on the capabilities, personnel, equipment rated, and careful consideration of the unit's wartime mission.

a. The unit's T/O logistics capabilities statement determines the personnel skills and equipment the unit requires. The logistics capabilities statement determines the T/E type 1, 2, and 3 equipment requirements. Any resource requirement review starts with the logistics capabilities statement.

b. The organization paragraph contains a listing of the unit's subordinate elements and identifies the source of the internal maintenance support and maintenance requirements.

c. The concept of employment is as vital to the commander and staff as to the operations staff. The concept of employment will determine the type of support required and the manner the support must be provided.



d. The administrative and logistics capabilities paragraphs specify the exact administrative, supply, and maintenance functions authorized the unit.

3. TAM. The TAM (NAVMC 1017) is a listing of information used for logistics planning with respect to selected materiel authorized for use by organizations, activities, and detachments of the Marine Corps, both Regular and Reserve. The TAM contains a listing of types 1, 2, and 3 materiel, subsistence, and fuel, petroleum, oil, and lubricant items. A detailed explanation of NAVMC 1017 is provided in its general instructions section and should be reviewed by the commander and staff.

2002. TIME. The MMO must view time from two aspects: the equipment and the mechanic. Time, as it relates to the mechanic, must be adequate and productive.

1. Equipment's Time

a. The MMO's goal is to maximize equipment availability by eliminating shortages of maintenance resources that stop the maintenance production.

b. Shortages include the lack of needed tools, publications, space, parts, skills, supervision, and funds.

c. The shortages listed in paragraph 2002.1b, generally correspond to the maintenance resources. The unit's maintenance resources will be managed on the unit level. When the needed items are not available at the work site, time is wasted. The maintenance management resource effort must extend all the way from the commander to the mechanic.

2. Mechanic's Time

a. The productivity of mechanics/technicians has been estimated to be as low as 30 percent for maintenance. This is misleading to the extent that the other 70 percent of the time is nonproductive only as maintenance training, administration, and other requirements. Effective time management includes recognizing these nonmaintenance requirements and coordinating with other staff officers, subordinate commanders, and NCOIC's, to consolidate maintenance and nonmaintenance times into usable blocks.

b. Only after the mechanic's productivity has been maximized can the determination be made as to the adequacy of allocated time. When the workload still cannot be met, then the time available must either be increased, or the workload reduced, or a degraded readiness condition accepted. The techniques for making these trade-offs are numerous; for example, administrative storage, split shifts, and reduced operations.

2003. PERSONNEL. The success of the unit's maintenance effort rests on its personnel strength comprised of quantity and quality.

1. Quantity

a. The numbers, grades, and allocations of the unit's personnel are the primary staff responsibilities of the G-1/S-1 and are determined by the unit's T/O as modified by manning levels. Annually, the MMO is responsible for coordinating a review of the T/O by equipment commodity section and advising the commanding officer and G-1/S-1 of recommended changes. Further, when logistics capabilities statement, concepts of employment, or capability statements are changed, the MMO will coordinate the review of these changes by equipment commodity section to determine the impact. The MMO will submit to the G-1/S-1 any recommendation for personnel changes necessitated by these changes to the T/O cover page.

b. Within a unit, there are also personnel requirements which impact on maintenance personnel availability. The MMO's role in this area is two-fold.

(1) The MMO advises the commander and G-1/S-1 on assignment and use policies for maintenance and maintenance management personnel.

(2) The MMO assists the commodity officers and subordinate commanders with implementing management techniques to reduce the impact of personnel requirements for nonmaintenance functions.

2. Maintenance Training. Maintenance training is a command responsibility at all levels. The responsibility for training new personnel rests with every leader, from the detachment to the force level. Training can take many forms ranging from the highly formal classroom type to a shop floor demonstration.

a. MCO 1500.40 sets training definitions and establishes six training priorities. The first two priorities are mission-oriented training and skill progression MOS training. The remaining training priorities, in descending order are: functional training, professional development education, battle skills training, and MOS related training.

b. The unit MMO will ensure maintenance and maintenance management training requirements are included in the unit's annual training plan. An equipment operator is the key element in equipment readiness, since the equipment operator performs first echelon PMCS and identifies equipment defects. It is essential that both mission and MOS training requirements recognize the need for operator training. In addition to operator training, it is also necessary that training be conducted for supervisors. Supervisor training may address the same topics, with emphasis placed on the implementation, direction, control, and review of the program.

c. The annual training plan will include the commander's policy on maintenance and maintenance management training. Further, it will include the minimum maintenance and maintenance management training requirements.

d. The MMO will coordinate with the G-3/S-3 and the commodity officers in the development of unit training schedules, preparation of standard lesson plans, documentation of training, and identification of qualified instructors to effect the most efficient use of the available training hours; for example, a class on tool control can be given to all commodity areas at the same time.

e. Maintenance personnel, maintenance management personnel, and their supervisors are highly encouraged to complete Marine Corps Institute (MCI) courses dealing with maintenance and maintenance management. One method of structured training would be to conduct group training, using MCI courses ash base.

f. Newly joined and inexperienced personnel must be trained with skilled and experienced maintenance personnel.

3. Formal Schools. Formal schools augment the unit's training and improve the skills of personnel in the unit's maintenance program. The MMO will coordinate with the G-3/S-3 in requesting and assigning formal school quotas.

4. Managed-On-The-Job Training (MOJT). While MOJT was discussed in general terms as part of the unit's training program, it must be noted that MOJT can be a practical valuable training technique when properly used. MOJT accomplishes training and work simultaneously. As an example, every operator must receive MOS training in first echelon maintenance. An opportunely scheduled MOJT class on PMCS will accomplish both the PMCS and training requirement at the same time.

#### 5. Licensing

a. All equipment operators who operate mobile, self-propelled equipment will normally be licensed. The license will be issued and recorded in the individual's service record book on the administrative remarks page.

b. Equipment operators of the types of equipment not included in the provisions of paragraph 2003.5a may require licensing because of the special requirements of that type of equipment. The licensing requirement will be specified in operator-level technical manuals (TM) or appropriate Marine Corps directives.

6. TMDE. Training in the use of TMDE must be given special consideration in the unit's training program. Although mechanics and technicians attend formal schools, the TMDE and equipment used in the various schools are not always the same as that held by the unit. New TMDE and equipment, while performing the same function,

might require different techniques. Proper use of TMDE during troubleshooting procedures will reduce fault location time, improve adjustment techniques, and reduce erroneous replacement of serviceable components.

7. Safety. In all maintenance operations, a comprehensive, effective, and continuous safety program will be employed. The layout of a shop or maintenance facility has a large impact on shop safety. MCO 5100.8 is the primary reference for safety matters. Safety must be a key element in training. Continuous vigilance by all maintenance personnel is required to ensure that operating procedures and work methods do not expose personnel to injury, or property to loss or damage.

2004. REPAIR PARTS. The term "repair parts" as used in this Manual refers to replacement parts and secondary repairables.

1. Responsibility. Commanders are responsible for ensuring that repair parts and maintenance related supplies are requisitioned when required, accounted for, and safeguarded. Required repair parts must be placed on requisition as soon as possible after the requirement is identified as consistent with the urgency of need for the repair part. The Uniform Materiel Movement and Issue Priority System (UMMIPS) time standards for "requisition submission" (in calendar days for priority designators), contained in MCO 4400.16 will be applied. UMMIPS will be applied from the point in time of origination of the requirement within the maintenance facility to the submission of the requirement to the supporting supply section, and from the point in time of receipt of the requirement within the supply section to the assignment of the requisition document number.

2. Requisitioning. All repair parts and maintenance related supplies for FMSS supported units will be requisitioned on an Equipment Repair Order Shopping/Transaction List (EROSL), (Form NAVMC 10925). TM-4700-15/1 provides instructions for the preparation, use, and disposition for the EROSL. Use of the EROSL is optional for non-FMSS supported units until converted to an automated system. When the Form (DD 1348-I) is used in lieu of the EROSL, disposition instructions will be the same as for the EROSL. The requisition priority must be equal to, or lower than, the priority of the associated Equipment Repair Order (ERO), consistent with the mission essentiality of the item being requisitioned. The EROSL will be the source document for supply support input to MIMMS/AIS for FMSS supported units.

3. Reconciliation. Reconciliation of supply requirements between the maintenance section and its supply source will be conducted at least every 2 weeks. Each MSC is required to prepare an MSC MMSOP and will include the required frequency of reconciliations and the detailed procedures to be followed. When a command elects to follow the procedure detailed in appendix C, or a major command

specifies a reconciliation procedure, the MSC MMSOP may reference the appropriate directive rather than reprinting the details.

4. ERO Parts Bin. ERO parts bin (ERO bin), sometimes referred to as a layette, is a means of controlling or accounting for repair parts.

a. An ERO bin is an area where the parts ordered on an EROSL for an ERO are stored while waiting to be placed on the equipment. The area can be a shelf, box, or something similar. All parts for the same ERO are kept together in the same bin, and the location is normally indicated by the ERO number. Parts requiring a larger area are normally stored together and must be marked with the applicable ERO number.

b. Repair parts can be traced from requisition to receipt, through SASSY and MIMMS/AIS. However, once repair parts are received automated accounting stops.

c. Material in ERO bins must be validated at least every 2 weeks. ERO bins validation must be accomplished per appendix C of this Manual.

d. The EROSL will be annotated to indicate the receipt of all repair parts by the maintenance section from the unit supply activity, except as stated in paragraph 2004.4h.

e. The EROSL will be annotated to indicate the removal of repair parts from the ERO bin.

f. The EROSL will be annotated to indicate the transfer of parts from one ERO to another when the parts have already been received by the unit. Before receipt by the unit, parts may be transferred between ERO's in the MIMMS/AIS and associated EROSL's will be annotated.

g. When repair parts are applied to equipment, the maintenance action will be annotated on the ERO, including the hours expended. In most cases, the maintenance action will be identified by a defect code. Any parts removed from the ERO bin must be substantiated by a maintenance action on the appropriate ERO.

h. Annotation of the EROSL is not required when all of the parts are installed upon receipt from the unit supply. However, annotation of the ERO indicating the maintenance action performed is required.

i. The same procedures will apply to non-FMSS supported units.

5. Control. All repair parts held by the maintenance section must be indicated on an EROSL associated with an ERO/shop repair order (SRO), or in an authorized preexpended bin. Any repair part not indicated on an EROSL associated with an ERO/SRO or in an

authorized preexpended bin will be reported to the unit's supply officer for disposition.

6. Planning. SASSY records recurring demand based on usage, will automatically resupply the general account and any unit authorized Purpose Code A stocks with repair parts. SASSY is totally dependent upon past usage to accomplish this process. Therefore, the MMO must:

a. Ensure that the Activity Usage Accounting File (AUAF) is reviewed to determine when an item qualifies for stockage, is on the verge of qualifying for stockage, and if the unit is using the correct demand code. The AUAF displays a history of a national stock number (NSN) usage for the last 12 months for recurring demands and the last 30 days usage for nonrecurring demands. The results of this review will be coordinated with maintenance officers or maintenance chiefs and furnished to the supply officer.

b. Ensure that the Loaded Unit Balance File (LUBF) is reviewed to determine when the quantities for NSN's stocked by the unit are sufficient and that the correct requirement codes are used to determine stockage computations for those NSN's. The LUBF displays, along with other information, the requisitioning objective (RO), reorder point (ROP), requirement code, and average 30 day usage for the NSN. Recommendations for increased stockage must be based on qualified technical expertise and the quantity and age of equipment being supported. The results of this review will be furnished to the unit supply officer.

c. Ensure that PMCS are evenly distributed. Not only is this required to balance the maintenance workload but, in SASSY, a balanced PMCS schedule will cause a more even demand history over time. A sudden surge in a particular PMCS can distort the maintenance workload and will result in a back order for the parts to complete the PMCS.

d. Ensure that operational requirements causing changes in demand or demand for different parts are recognized and are translated into specific requirements. The experience of preparing equipment for a cold weather operation requiring special lubricants, that are not available, can be frustrating. This can be prevented by operations and maintenance personnel determining requirements beforehand and coordinating with supply personnel in sufficient time for supply to act rather than react.

7. Preexpended Bin (PEB)

a. Proper use of a PEB provides maintenance with ready access to a source of common, low-cost, high-usage hardware items. PEB criteria is established in MCO P4400.150. A PEB is not a substitute for the normal means of obtaining seldom used repair parts. The items authorized in a PEB can ensure adequate stockage of fast-moving items and require planning and coordination among

the MMO, maintenance section, and supply officer. The result of this planning and coordination is an across the counter issue rather than a back order.

b. The unit commander's decision to authorize a PEB and what it contains will be made with consideration of the following:

(1) Time and effort of maintenance personnel that will be required to store, stock, and account for the material.

(2) The unit's funds will be expended before the material is used, rather than when the material is used, as is the case with Purpose Code A stocks.

c. When it is determined that a preexpended bin will enhance the maintenance effort, the unit commander will publish a letter authorizing specific items to be included in the PEB. The letter will contain, as a minimum, the following information concerning the items authorized for storage:

(1) Nomenclature.

(2) NSN/Part Number.

(3) Maximum Quantity Authorized.

(4) Unit of Issue.

(5) Unit Price.

(6) Extended Price (Quantity Authorized Multiplied by Unit Price).

d. Once an item is procured and issued to the PEB, no further supply accounting is required. However, prudent management dictates that simple procedures are required for locating/identifying the items and establishing the appropriate time to replenish the items in the PEB. Some examples of such procedures are as follows:

(1) Within the PEB, separate the items by specific NSN into a separate compartment/box/container labeled with the NSN.

(2) Establish a reorder point in the authorization letter (this requires periodic review of assets held within the PEB to determine when the ROP has been reached).

(3) Place the reorder point quantity of items in a bag. When the bag must be opened, the quantity must be ordered to equal the total authorized.

(4) As parts are used, the usage is recorded (by actual notation/use of cards or chips), and after a specified quantity is expended, the item is reordered.

e. Periodically the unit needs to requisition repair parts with a multiple unit of issue containing a quantity greater than quantity required to repair the item of equipment; for example, hundred, box, pack. When the multiple unit of issue is received, the unit will apply the quantity required to repair the item of equipment and determine additional requirements for the remaining.

(1) The remains will be added to the PEB list indicating broken unit of issue. Use until exhausted when additional requirements exist, and do not reorder for the PEB.

(2) When additional requirements exist, the unused portion of the unit of issue will be added to the PEB list. Indicate the PEB listing with broken unit of issue, use until exhausted, and do not reorder.

f. Procedures established for identifying, locating, and reordering PEB items must be included in the MSC MMSOP.

8. Shop Overhead ERO. Shop overhead ERO's will be used to initiate and record shop requirements; for example, preexpended bin lubricants, and shop supplies. Shop overhead ERO's will use Category Code O and be prepared per TM-4700-15/1.

9. Reparable Issue Point. MCO P4400.82 contains information on the operation of the reparable issue point program. The automated float program interfaces with MIMMS/AIS to enable the customer to place demands in the same manner as for repair parts.

10. Requisitioning Procedures. The MSC MMO will include in the MSC MMSOP detailed procedures for requisitioning both system and nonsystem repair parts, exchanging secondary repairables, and operating PEB's. When such procedures are contained in the supply SOP, the MSC MMSOP needs only to reference the appropriate sections of the supply SOP.

#### 11. Collateral Equipment

a. Collateral equipment consists of secondary items that are functionally related to end items but are not considered a part of them. The materiel is identified in the SL-3 for the end item under the headings supply system responsibility, using unit responsibility, and collateral materiel. An end item will be complete only when the total quantity of items shown in the SL-3 under the headings supply system responsibility, using unit responsibility, and collateral materiel are on hand.

b. SL-3 components may be ordered through the MIMMS/AIS, using the procedures in TM-4700-15/1.

c. Units will ensure end items are maintained complete. Collateral materiel lost, damaged beyond repair, or worn out in service will be replaced by requisitioning the required items.



12. Source Maintenance Recoverability Codes. The authorized reference for the maintenance code of the Source Maintenance Recoverability (SMR) Code is listed in the equipment appropriate SL or TM. The maintenance code in the appropriate SL or TM is for the specific part to an end item. When no SMR Code can be found in either the appropriate SL-4 or TM, use the SMR Code listed in the SL-6 or FED LOG. When the appropriate SL-4 or TM lists a SMR Code different from the SL-6 or FED LOG SMR Code, the appropriate SL-4 or TM SMR Code will be used.

2005. SUPPORT EQUIPMENT AND TMDE

1. Definition. As a maintenance resource, the term "support equipment and TMDE" includes tool sets, kits, chests, hoists, jacks, stands, and TMDE.

2. Requirement. The unit MMO will establish tool control and calibration control programs for the unit. Control of tool sets, chests, and kits procedures will be established and maintained per appendix D of this Manual.

3. Procedures. In developing the specific control procedures for the unit, the unit MMO must establish a balance between the need for control of support equipment and TMDE to avoid loss, and the need for access to increase productivity. This same compromise must be made for calibration, in that the need for TMDE must be balanced against the calibration requirements.

4. Maintenance. Support equipment and TMDE also require PMCS and corrective maintenance. Defective support equipment and TMDE can be a safety hazard and detrimental to the unit's readiness. During scheduled inventories, support equipment and TMDE will be checked for cleanliness and serviceability. Unserviceable items will either be repaired, evacuated for repair, or disposed of per SMR codes and appropriate directives.

a. Operator PMCS combined with an operational check per equipment technical manuals constitutes organizational PMCS.

b. Intermediate PMCS conducted by the calibration laboratory and units authorized intermediate maintenance on test equipment will be accomplished during calibration.

c. Support equipment and TMDE require no PMCS scheduled.

5. Calibration. Calibration control will be established and maintained per appendix D of this Manual. The method used for calibration control must be included in the MSC MMSOP.

a. The use of calibration categories is important to the effective use of calibration laboratory resources. Calibration categories are explained as follows:

(1) Calibrated applies to instruments with all ranges and functions tested and found within applicable tolerances.

(2) Special Calibration applies to instruments with only a portion of ranges and functions tested and found within applicable tolerances.

(3) Inactive applies to instruments that will not be used in the foreseeable future. Equipment will not be left in an inactive status for longer than 3 years by Organizational or intermediate maintenance units. At that time, units will reevaluate the need for the equipment and, if still required, request a new "Inactive" label from the supporting calibration laboratory.

(4) Calibration Not Required (CNR) applies to instruments which will be used to make measurements of a noncritical nature or for instructional purposes only (some instructional equipment will require calibration or special calibration).

b. Test equipment will be assigned the best calibration category, and the requirement will be established to allow a balanced schedule. A balanced schedule will ensure that all of the unit's test equipment of a specific type is not in for calibration at the same time and will provide continuous calibrated equipment support.

6. Training. Although training was addressed in paragraph 2003.3 and TMDE training in paragraph 2003.6, the need for training exists in the use of all tools and equipment. The requirement exists not only to improve productivity but also to prevent injury. Accidents occur because of carelessness and ignorance.

2006. FACILITIES. The MMO has prime staff responsibility for the allocation and use of maintenance facilities between commodity areas. The staff functioning considerations and factors affecting site selection, shop layout, and shop organization are established in appendix E.

2007. FUNDS. Funds, whether in terms of hard dollars, budgets, or operating targets, 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. The MMO must coordinate and ensure the input of maintenance requirements for all commodity areas.

1. Planning. Whether the source is MIMMS/AIS, SASSY, SABRS, or a local system, AIS information can be captured quickly and routinely on the obligation and subsequent expenditure of funds.

a. The MMO's first task in the budgeting process is to ensure that the historical information is correct and accurate. The cost of "scrounged" parts will not appear in any list of expenditures even though the "scrounges" were reported.

b. Past expenditures are historical. They say nothing about the future unless the causes of the expenditures are compared with what is expected in the future. Field budget guidance and staff coordination with G-3/S-3 and G-4/S-4 will provide the important facts regarding the tempo of future operations, logistic commitments, and new equipment receipts. Using this information, the MMO can assist commodity and maintenance sections in expressing requirements while fulfilling staff responsibility for input to the budget process.

2. Control. Once allocated, funds must be controlled. There are numerous regulations concerning obligation authority. The MMO's responsibilities include providing staff advice on internal reallocation of money, ensuring that funds obligated for maintenance resources are applied in the best manner, and ensuring that periodic fiscal reviews are conducted. Two examples will save to best illustrate the control function of the MMO:

a. On the unit's Daily Process Report, a status change indicates that a MARES reportable item is deadlined in a short funds status. A quick check of the Daily Process Report shows numerous noncritical repair parts (Priority 13) on order in all commodity areas for both MARES reportable and non-MARES items. The MMO fulfills the control function and meets a staff responsibility by coordinating with the supply and fiscal officers and presenting the commander with the necessary information to decide on the 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.

## 2008. PUBLICATIONS CONTROL

1. General Information. Publication control system operations are normally managed by the S-1/adjutant, supply officer, and MMO. Publication control is divided into four functional areas: automatic distribution control, internal distribution control, inventory control, and order control.

a. Automatic Distribution Control. The automatic distribution control system is managed via the PL. The PL is a listing of all publications automatically distributed to the activity from the publications stock control point at the Marine Corps Logistics Base, Albany, Georgia 31704. Activities will conduct a review

of the PL update per MCO P5600.31 (Marine Corps Publications and Printing Regulations).

(1) The activity's S-1/adjutant, with the advice and assistance of the MMO, is responsible for the maintenance and review of the PL and for ensuring that all necessary publications are established as required. In many cases, publication inadequacies are made worse by irregular and/or improper PL reviews. Left untouched, the PL will often become outdated. An outdated PL will cause the activity to go without essential information and will often cause the activity to receive publications that are no longer required. When the activity fails to periodically conduct PL reviews and change the PL distribution, information in the PL will remain unchanged.

(2) Necessary PL changes are identified during a PL review. The PL must be thoroughly reviewed in order to maintain it as an effective publications management tool. The PL must be kept current allowing revisions and new publications to be received via automatic distribution.

(3) Participants in a PL review must include a chairman (usually the executive officer), all commodity managers, section heads, and others who receive publications on automatic distribution such as the chaplain and career planner.

(4) With the exception of HQMC, all PL changes must be initiated by the commander. As activity T/O and T/E are revised, publications requirements change. Effective PL reviews are time-consuming and dependent upon attention to detail. MCO P5600.31 contains procedures for the PL or changes.

b. Internal Distribution Control. The publications internal distribution control system ensures that automatically distributed publications are properly routed to people who need them. The internal distribution control system is managed by the S-1/adjutant with the advice and assistance of the MMO.

(1) The key to the internal distribution control system is annotating the location and quantity being managed on the NAVMC 2761, PL, a local internal distribution control form, or an automated control system. These are designed to provide a graphic display and location of all publications received on automatic distribution. Each internal distribution control form, corresponding publication or title, and associated distribution quantities are identified with specific copy location and quantity. MCO P5600.31 provides detailed guidance for the establishment of an internal distribution control system and the preparation of the internal distribution control form. Commodity managers must be well aware of the internal distribution control system to properly manage the publications on hand and recommend timely changes to update the internal distribution control form and the PL.

(2) The most important feature of the internal distribution control form is the total number on automatic distribution. The total number on automatic distribution listed on the internal distribution control form must match the corresponding quantity found on the unit's most up-to-date PL. A mismatch between PL quantities and the total number on automatic distribution causes confusion regarding exactly how many copies of a specific publication are inbound and to whom they belong. Often the activity will diligently conduct a PL review and make changes without ensuring that the internal distribution control form is concurrently updated. A simple comparison of two documents will quickly pinpoint problem areas.

c. Inventory Control. The inventory control system deals with the proper maintenance of publication libraries. Well managed publication inventories complement well thought out internal distribution control systems. An effective inventory control system must ensure the adequacy of two elements: publication conditions and on-hand quantities.

(1) Publication conditions relate to the status of directives and manuals on the library shelf. Publications must be up-to-date with all changes properly entered. A positive means of verifying publication conditions is a thorough review of NAVMC 2761 (Catalog Of Publications) and Marine Corps Stock List SL-1-3/1-2 (Index of Authorized Publication for Equipment Support Stocked by the Marine Corps) and comparison with on-the-shelf publications. On-hand quantities in each library must match the total quantities shown in the Location of Copy column of the internal distribution control form. When on-hand quantities fail to match the total quantities, the cause could be an ineffective internal distribution control system.

(2) Two inventory methods used are wall-to-wall and update inventories. Wall-to-wall inventories must be conducted when libraries are in extreme disrepair. Update inventories must be taken when an updated NAVMC 2761 or SL-1-3/1-2 is received. An effective inventory control system will preclude rapid decay of publication libraries.

(3) TI-5600 (Publication Information Marine Corps Equipment) provides a more timely listing of technical publications promulgated to the field and will be used to supplement the SL-1-3/1-2 between promulgation periods.

d. Order Control. The order control system is an outgrowth of the inventory control system. When publications are becoming worn out in use or on-hand quantities do not match total quantities, shortfalls must be replaced.

(1) Per MCO P5600.31 an order for the publication is made on line in the Marine Corps Publications Distribution System (MCPDS).

(a) The Marine Corps publication stock points require separate request for each publication control number.

(b) When a basic publication and its changes are required, only the basic publication will be requested. All changes will be furnished automatically. When a specific change is required, only the change will be requested.

(2) An effective requisition control system depends on the regular reconciliation of individual libraries with the unit publication control point (UPCP).

(3) Although not normally directly involved in the order control system, the UCP plays an important part.

(a) All publications are sent through the U.S. Postal Service, including those automatically distributed and those sent in response to an order. The UCP must ensure that mail room and publications personnel are able to differentiate between automatically distributed and ordered publications.

(b) Publications received to fill an order will be accompanied by a release/receipt document and must be sent directly to the UCP for closeout and distribution.

(c) Automatically distributed publications are normally shipped without documentation and must be matched with the internal distribution control form for proper distribution.

2. Procedures. Appendix B of this Manual establishes publications control procedures.

3. Information System for Publications Feedback. Technical publications play a critical role in achieving system and equipment readiness. Because of this factor, the currency and accuracy of the information published in these documents are essential. The NAVMC 10772 provides a medium for accelerating information feedback. Units will obtain and maintain a supply of NAVMC 10772. Refer to the SL-8-09993 for the NAVMC 10772 NSN. The NAVMC 10772 will be used per MCO P5215.17 and prepared per TM-4700-15/1.

MIMMS FIELD PROCEDURES MANUAL

CHAPTER 3

MAINTENANCE PRODUCTION

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MIMMS FIELD PROCEDURES MANUAL

CHAPTER 3

MAINTENANCE PRODUCTION

3000. GENERAL INFORMATION

1. Production

a. The maintenance production element involves the physical performance of the various maintenance functions. These functions are PMCS, corrective maintenance (CM), modification, calibration, conversion, modernization, overhaul, and rebuild. Some of the functions generally are performed only by depots, while others generally are performed by field units (see figure 3-1). Maintenance production procedures are provided in appendix F.

b. As noted in figure 3-1, some of the maintenance functions are authorized to be performed by field units (those units authorized first through fourth EOM's). These functions are PMCS, CM, calibration, and modification.

2. Other. A number of actions related to maintenance production, such as recovery, quality control, and equipment inspection, will be presented in this chapter due to their close relationships to maintenance production.

Maintenance Production			
Preventive Maintenance Checks and Services	Corrective Maintenance	Overhaul	Rebuild
Calibration	Modification	Conversion	Modernization
Field Functions		Depot Functions	
1. Preventive Maintenance Checks and Services	1. All Field Functions		
2. Corrective Maintenance	2. Overhaul		
3. Calibration	3. Conversion		
4. Modification	4. Rebuild		
5. Fabrication	5. Fabrication		
	6. Modernization		

Figure 3-1.--Maintenance Production Function.

3001. MAINTENANCE PHASES

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

a. Acceptance 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 section. The procedures to be followed in the acceptance inspection are as follows:

(1) Determine that the equipment is complete and that appropriate operator maintenance, including cleaning, has been performed. Remove and store collateral equipment and annotate the equipment repair order (ERO) unless collateral equipment is required during the maintenance action. Equipment incomplete or not properly prepared by the unit or activity requesting maintenance should be reported to the using unit commander. Equipment is considered incomplete when it does not contain the required equipment maintenance records.

(2) Verify the ERO has been prepared per TM-4700-15/1.

(3) Accept the equipment for the required service. Acceptance is noted on the ERO by the person authorized to accept equipment into the maintenance section.

(4) Assign a production priority for use within the maintenance section. This priority will be based on the ERO priority and other appropriate criteria established by the maintenance officer or chief.

b. 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 normally applies to all PMCS, modification, calibration, or routine repairs. To be effective close coordination between the equipment owner and the maintenance section is required. Procedures for acceptance scheduling are as follows:

(1) Preparation off a deferred or unit recall ERO by the owning unit.

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

(3) Tentative scheduling of the equipment to a specific maintenance shop within the maintenance section.

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

c. Shop Assignment. The assignment of equipment to a specific maintenance shop within the maintenance section occurs upon completion of the acceptance inspection and scheduling, when appropriate. In maintenance sections 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:

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

(2) Review the workloads and available resources of individual shops within the maintenance section and determine which shop should be assigned the ERO.

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

(4) Assign the preexpended parts required for the service to the ERO to ensure availability at the time of induction.

## 2. Equipment Induction Phase

a. Induction is the physical commitment of an ERO and associated equipment requiring service to the assigned shop.

b. Induction of equipment into a specified shop must be by the priority established in the equipment acceptance phase. The equipment should be requested by the maintenance shop when the necessary maintenance resources are available to perform the required services.

3. Active Maintenance Phase. Production actions performed following induction of the ERO and its associated 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:

a. Inspection of the Equipment. Maintenance personnel assigned to perform the service will perform a detailed inspection of the equipment upon its induction into the shop. This inspection serves as a basis for the performance of the maintenance and includes:

(1) Locating, identifying, and inventorying equipment and its components.

(2) Verifying all equipment records associated with the required service are prepared per TM-4700-15/1 and appropriate equipment publications.

b. Preparation for the Performance of Maintenance Actions. This preparation includes the assembly of the appropriate technical manuals and other technical information, support equipment, and 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.

c. Performance of Maintenance Actions. Performance of maintenance actions will be per the appropriate technical manual. Appendix F contains the maintenance process and the relationship of maintenance production to information flow.

(1) Preventive Maintenance Checks and Services

(a) Obtaining Required Materials. Maintenance personnel, before requisitioning the materials to perform the PMCS, will verify the required material by proper research procedures and the correct use of technical publications. Proper operating levels of consumable supplies used in the performance of PMCS should be maintained within each shop to ensure that their nonavailability does not interfere with maintenance operations. Consumable supplies required for PMCS must be requested on an ERO in sufficient time for the scheduled PMCS.

(b) Performance of PMCS. Performance of PMCS will be per the procedures established in the applicable technical publication. During PMCS, a check will be made to determine the status of required modifications. This check will involve the physical examination of the equipment, equipment records, the SL-1-2, and the TI-5600 series. Upon PMCS completion, update the ERO and the equipment records per TM-4700-15/1.

(2) CM

(a) Isolation of the Cause of the Equipment Malfunction. During this step, maintenance personnel, using appropriate support equipment and TMDE and the proper step-by-step procedures described in the applicable technical manual, isolate the cause of the equipment malfunction. Once the cause is isolated and fault diagnosis confirmed, an estimate of the cost of the

required maintenance is made to determine if the equipment is economically repairable. When the equipment is determined not to be economically repairable, active maintenance is terminated, and the equipment enters the maintenance closeout phase.

(b) Obtaining Required Repair Parts and Secondary Repairables. Maintenance personnel, before requisitioning required repair parts and secondary repairables, will verify the material required by proper research procedures and the correct use of technical publications. Preexpended bin levels should be maintained within each shop to ensure the ready availability of preexpended bin items. Demands will be expeditiously submitted when parts requirements become known.

(c) Correction of the Equipment Fault. Fault correction is the goal of all CM actions. Proper maintenance techniques must be employed to ensure that repair parts are installed correctly. Reassembly will be accomplished in sequence, including proper servicing and the use of test and measurement devices at the appropriate stages of equipment reassembly. Completed maintenance actions will be recorded on the ERO providing information for future management decisions and appropriate entries on equipment records.

### (3) Modification Control

(a) Obtaining Required Materials. Maintenance personnel, before requisitioning the materials to perform modifications, will verify the required material by proper research procedures and the correct use of technical publications. Proper operating levels of expendable and consumable materials used in the performance of modifications should be attained and positioned within each shop to ensure that their nonavailability does not interfere with maintenance operations. When an ERO is prepared requesting modification, the ERO and appropriate equipment records must be recorded per TM-4700-15/1.

(b) Application of the Modification. The MI directing the modification contains detailed procedures for its application. Maintenance personnel must ensure that these procedures are followed for correct application of the modification. Application of the modification must include both servicing and the use of prescribed test and measurement devices, when appropriate. Upon completion of the modification, update the ERO and appropriate equipment records per TM-4700-15/1.

(4) Calibration. Performance of calibration will be per the procedures established in MCO 4733.1 and only at approved calibration laboratories.

(a) During the calibration process, a check will be made to determine the status of any required modifications. This check will involve the physical examination of the equipment, equipment records, SL-1-2, and TI-5600 series.

(b) During the calibration process, test instruments requiring repair will be administered per the procedures for CM. Upon completion of the CM, the equipment must be calibrated to ensure that it meets standards.

(c) During the calibration process, the calibration laboratory will conduct any intermediate PMCS required as stated in the item's appropriate publication.

(d) Upon completion of the calibration process, the calibration laboratory will annotate the ERO with the date calibrated, the next calibration due date, and apply the calibration label to the item. The ERO and equipment records will be updated per TM-4700-15/1.

d. Checking of Completed Maintenance Actions on an ERO. Maintenance personnel will check their completed work by performing the necessary final adjustments on the repaired equipment. Adjustment procedures in the applicable technical publication must be followed in detail. Bringing the equipment performance to within tolerances specified in technical publications is a positive indication that the action has been successfully completed. Adjustment will be performed by, or under the supervision of qualified personnel, using standards and gauges, and meeting or exceeding minimum acceptable standards contained in MCO 4733.1.

e. Quality Control. Quality control requires a complete equipment check out to determine proper completion of maintenance actions and that equipment records are completed per TM-4700-15/1. Equipment check out will be conducted by qualified supervisory personnel under actual or simulated operating conditions. 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.

f. Clean up of the Maintenance Area. Time and resources must be allocated to clean up the maintenance area. Support and TMDE, including tools, must be cleaned, serviced, and inventoried allowing use for future maintenance actions. Technical publications must be returned to the library. Defective parts and other residue must be removed from the maintenance area using proper disposal procedures.

#### 4. Maintenance Closeout Phase

a. The closeout phase of the maintenance process commences when equipment has been repaired and the serviceable item is to be returned to the owner, or when a decision has been made to evacuate or dispose of the equipment. Maintenance personnel will ensure that the closeout process is accurate, complete, and coordinated.

b. 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. Any special packaging, preservation, transportation, and shipping requirements must be taken care of at this time. The using unit must make every effort to pick up completed equipment promptly.

c. In the closeout phase, maintenance personnel must ensure that the ERO and equipment records have been correctly completed per TM-4700-15/1.

## 3002. MAINTENANCE FUNCTION-PREVENTIVE MAINTENANCE CHECKS AND SERVICES

>1. Responsibility. The unit owning or using the equipment must establish a program and perform timely PMCS on equipment. PMCS will be scheduled per the commodity chapter of TM-4700-15/1, and when due the PMCS will be conducted per the applicable equipment technical publications. When no requirement to conduct PMCS is stated in the appropriate equipment technical manual or no equipment manual exists for equipment; for example, television sets and video monitors, no scheduled PMCS interval need be designated and no scheduled PMCS need be accomplished beyond first echelon. For those items with a stated scheduled PMCS requirement and no interval designated, the commanding officer will designate an interval not to exceed the designated interval listed in the appropriate commodity chapter of TM-4700-15/1. The unit using the equipment is responsible for PMCS of equipment and maintenance of equipment records for equipment on loan. PMCS process is contained in appendix F.

### 2. General Information

a. PMCS includes the checking and servicing performed by personnel for maintaining equipment in satisfactory operating condition. This is achieved by accomplishing systematic inspection, detection, and correction of incipient failures either before they occur or before they develop into major defects. A systematic PMCS program consisting of inspecting, cleaning, servicing, lubricating, and adjusting is the key to equipment readiness. It is normally a function of organizational maintenance and accomplished by the unit's operational and maintenance personnel. Effectively administered PMCS will help prevent early breakdown or failure of equipment, and prevent costly, complex, and time-consuming repairs and allow the optimum use of maintenance resources.

b. PMCS generally is cyclic in nature, one cycle being completed each year of the equipment's life. They are frequently referred to as scheduled maintenance and include PMCS performed by:

(1) The operator, user, or crew before, during, and after operation.

(2) The operator or crew on an hourly, daily, monthly, or special occurrence basis.

(3) Organizational maintenance personnel, assisted by the operator or crew, on a calendar, mileage, rounds-fired, or hours-of-operation basis.

(4) Operational and maintenance personnel in conjunction with the preceding mentioned services of a special nature.

c. Completed PMCS will be recorded per TM-4700-15/1. The reporting of completed PMCS will be accomplished on the ERO for PMCS performed in organizational or support activity maintenance shops.

d. The operator or crew will perform a scheduled PMCS when it is within their authorized echelon of maintenance (EOM). In the event that equipment must be evacuated to a maintenance section for scheduled maintenance, the operator or crew will accompany the equipment, if feasible, and assist in the performance of the specified PMCS. There are certain items which due to technological advances, use different criteria for scheduling PMCS. The appropriate technical publication provided for the individual equipment is the basic guide for performing PMCS requirements.

e. Although equipment modification is a separate, distinct process, the equipment modification status can best be determined as a part of the PMCS process. Because of the regular inspection of equipment during PMCS, combining PMCS with modification requirements can reduce both maintenance resource requirements and inconveniences to the unit's operation. Modification requirements identified can then be fulfilled either concurrently with the PMCS or independently, as appropriate.

3. Daily PMCS. Daily PMCS is performed by the operator or crew each day that equipment is operated. Equipment operated infrequently or intermittently normally does not require daily PMCS. Care must be exercised to ensure that the maintenance of such equipment is not neglected. Daily PMCS is divided into before, during, and after operation services.

a. Before operation PMCS is performed on equipment to determine if the equipment's condition has changed since last observed and to ensure that it is ready for operation. A wide range of events can occur between service checks; for example, physical damage from handling; corrosion of electrical connections; leakage of lubricants, coolants, operating fluids and gases. This service should never be omitted despite adverse weather or tactical situations. A thoroughly trained operator or crew must efficiently perform this service as a matter of habit. When equipment is found to be unserviceable or requires CM, this fact must be reported promptly to the squad, section, platoon leader, or other designated individuals so that appropriate maintenance action can be taken.

b. During operation PMCS is performed while the equipment is operating. The operator or crew must be alert for any unusual noises or odors, abnormal instrument readings, or any other



irregularities indicating equipment malfunction. Every operation must be considered a test, and all unusual or unsatisfactory performance must be noted. When the equipment is not operating, all deficiencies noted during operation must be investigated and corrected or reported.

c. After operation PMCS is performed after the equipment was operated. After operation PMCS is to prepare the equipment to operate again at a moment's notice. The operator or crew inspects the equipment thoroughly to detect any deficiencies that may have developed during operation. Assemblies requiring inspection or service while still at operating temperature must be inspected as soon as possible after equipment operation has ceased. All defects and irregularities that occur during operation must either be corrected or reported to the echelon that can perform repairs when not within the echelon of the operator or crew.

4. Monthly PMCS. Monthly PMCS is designed to reinforce daily PMCS. It is generally the same checks performed during the daily PMCS. Monthly PMCS provides management with a good indication of the quality of the daily maintenance performed by the operator or crew. Adequate supervision and inspection by qualified supervisory personnel will be provided to ensure the proper performance of monthly PMCS. Performance of monthly PMCS by the operator or crew without adequate supervision can be detrimental to the effective operation of the unit's maintenance program and is to be avoided whenever possible.

5. Quarterly PMCS. Quarterly PMCS is performed by maintenance personnel, assisted by the operator or crew. The normal interval between PMCS's is 3 months for a quarterly PMCS. This period may be shortened when units of operation are accumulated beyond a figure set in the TM for the particular equipment. Quarterly PMCS will include all PMCS required for quarterly PMCS and lower. Quarterly PMCS provides for a comprehensive check of equipment to ensure trouble-free operation until the next scheduled PMCS. Economy of operation demands that, within sound practices of safety and reliability, maximum useful life be obtained from materiel resources. Worn parts and materials will be replaced during PMCS only when it is determined, after due consideration of life expectancy and the nature of anticipated operations, that they cannot be expected to provide safe, reliable service until the next scheduled PMCS. The operator or crew of the equipment will be queried by maintenance personnel, when possible, to obtain first-hand information on irregularities or indications of equipment malfunction.

6. Semiannual PMCS. Semiannual PMCS is performed by maintenance personnel, assisted by the operator or crew. The normal interval between PMCS's is 6 months for a semiannual PMCS. This period may be shortened when units of operation are accumulated beyond a figure set in the TM for the particular equipment. Semiannual PMCS will include all PMCS required for semiannual PMCS and lower. Semiannual PMCS provides for a comprehensive check of equipment to

ensure trouble-free operation until the next scheduled PMCS. Economy of operation demands that, within sound practices of safety and reliability, maximum useful life be obtained from materiel resources. Worn parts and materials will be replaced during PMCS only when it is determined, after due consideration of life expectancy and the nature of anticipated operations, that they cannot be expected to provide safe, reliable service until the next scheduled PMCS. The operator or crew of the equipment will be queried by maintenance personnel, when possible, to obtain first-hand information on irregularities or indications of equipment malfunction.

7. Annual PMCS. Annual PMCS is performed by maintenance personnel, assisted by the operator or crew. The normal interval between annual PMCS is 12 months but may be advanced when the operating criteria specified in the equipment's technical manual are achieved earlier. Annual PMCS will include all PMCS required for annual PMCS and lower. Annual PMCS is conducted for the same basic reason as the semiannual PMCS. However, annual PMCS is greater in scope, and additional time is required to accomplish annual PMCS requirements. The operator or crew of the equipment will be queried by maintenance personnel, when possible, to obtain first-hand information on irregularities or indications of equipment malfunction.

8. Biennial PMCS. Biennial PMCS is performed by maintenance personnel, assisted by the operator or crew. The normal interval between biennial PMCS is 24 months but may be advanced when the operating criteria specified in the equipment's TM are achieved earlier. Biennial PMCS will include all PMCS required for biennial PMCS and lower. Biennial PMCS is conducted for the same basic reason as the annual PMCS. However, biennial PMCS is greater in scope, and additional time is required to accomplish biennial PMCS requirements. The operator or crew of the equipment will be queried by maintenance personnel, when possible, to obtain first-hand information on irregularities or indications of equipment malfunction.

9. PMCS. Equipment procured with a manufacturer's warranty will have PMCS scheduled and performed as indicated in applicable TM's until expiration of the warranty period. Equipment procured under a warranty is identified by applicable materiel fielding plans. Equipment not procured with a manufacturer's warranty or when the warranty has expired will have the PMCS performed per the equipment's applicable technical manuals, and have its second and higher EOM PMCS scheduled per the commodity chapter of TM-4700-15/1.

10. TMDE. Operator PMCS combined with an operational check of the equipment per equipment TM's shall constitute organizational PMCS's for all categories of TMDE and requires no scheduling. The calibration laboratory and units authorized intermediate

maintenance on test equipment must conduct intermediate PMCS during calibration. Intermediate PMCS does not require scheduling.

11. Deferred PMCS. PMCS may be deferred or intervals extended for the following reasons: equipment is placed in administrative storage program or equipment is placed on administrative deadline. The criteria and PMCS requirements for equipment placed in administrative storage program or administrative deadline are as follows:

a. MSC Commanders may authorize administrative storage programs. When administrative storage programs are authorized, the equipment must:

- (1) not be stored less than 12 months or more than 30 months.
- (2) be in condition code A.
- (3) be visually inspected quarterly.
- (4) be exercised every 6 months.
- (5) have a semiannual PMCS before induction.
- (6) have any due PMCS conducted and a new PMCS scheduled upon removal.
- (7) be in level B preservation per MIL-V-62038.

b. Commanding officers may authorize administrative deadline. When administrative deadline programs are authorized, the equipment may have batteries and pilferable items removed and stored and must:

- (1) not be stored less than 6 months or more than 12 months.
- (2) be in a mission capable status.
- (3) be visually inspected monthly.
- (4) have a daily or equivalent PMCS performed in conjunction with quarterly exercise.
- (5) have a semiannual or annual PMCS performed within 30 days before induction.
- (6) have any due PMCS conducted and a new PMCS scheduled upon removal.

c. When TMDE is placed in administrative storage or on administrative deadline program, it must be classified as inactive, and the appropriate "Inactive" calibration label affixed.

12. Chances in PMCS Intervals. When the unit is operating under adverse climatic or terrain conditions for a period of time, commanders are authorized to reduce the intervals between the PMCS when conditions indicate the need.

13. Special PMCS

a. An operating force unit or Marine Corps Reserve unit alerted for a combat or training operation will perform a limited technical inspection (LTI) of all equipment before deployment. This LTI is an inspection performed by unit maintenance personnel to ensure that the equipment is complete, safe to operate, and capable of performing its designated primary combat function.

b. Upon receipt of all equipment, an appropriate acceptance LTI and such service required by the equipment's TM will be performed. This LTI will include the correction of defects and the inspection of the equipment to determine if required modifications have been applied. Upon completion of this LTI and PMCS, update ERO and equipment records per TM-4700-15/1.

c. Special PMCS procedures are necessary when equipment has been exposed to salt or fresh water, or has been operated in loose sand or mud. Equipment will be checked for all probable areas of contamination, washed thoroughly with fresh water, and appropriate services will be performed per the applicable TM. In most instances, this special PMCS will essentially be a semiannual, annual, or biennial service. Upon completion of this special PMCS, update the ERO and the equipment records per TM-4700-15/1. In such cases, the commander may authorize the modification of the PMCS schedule to reflect the PMCS's performed and reschedule existing PMCS's.

14. Relationship of PMCS to CM. The objective of PMCS is to reduce CM. The close relationship of these two forms of maintenance becomes evident in several areas.

a. Facilities. Common facilities are used for both PMCS and CM. PMCS requires close scheduling of facilities so that PMCS's may be performed allowing timely completion of CM.

b. Common Servicing. Sometimes a scheduled PMCS is required during CM; for example, an engine repair could require oil and filter change. When this occurs, the decision must be made whether to perform the full PMCS or to appropriately modify the PMCS. This decision must be made on a case-by-case basis, dependent upon the extent of tasks common to both the PMCS and CM requirements and the proximity of the next scheduled PMCS. When the PMCS is performed by the maintenance section, the ERO and equipment records will reflect the PMCS performance per TM-4700-15/1.

c. Defects Discovered During PMCS. PMCS frequently detect broken or worn parts before major damage occurs. When a defect is discovered during PMCS, a supervisor must be notified immediately.

When this occurs, the decision must be made whether to perform the necessary CM independently or in conjunction with the PMCS. This decision is based on the urgency of need for the repair and the relationship of the PMCS being performed to CM considerations. Second echelon or higher PMCS will be completed as far as practical, and the PMCS ERO will be closed. All remaining CM will be accomplished on a separate CM ERO.

d. Evacuation for CM. All PMCS's that are due will be performed before equipment is evacuated for CM. An exception to this policy would be the case where the PMCS would have to be repeated during the CM; for example, not changing oil when the engine will be replaced. Equipment awaiting or undergoing CM must still receive PMCS's. For equipment evacuated to an intermediate maintenance activity, PMCS's must be coordinated between the owner and the intermediate maintenance activity. The MSC SOP must reflect appropriate pertinent instructions. 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's. Upon completion of the PMCS's, update the ERO and equipment records per TM-4700-15/1.

### 3003. MAINTENANCE FUNCTION-CORRECTIVE MAINTENANCE

1. Responsibility. The owning unit is responsible for the timely performance of all CM actions within its authorized EOM. The designated intermediate maintenance activity is responsible for the timely performance of all CM actions exceeding the owning unit's authorized EOM.

2. General Information. CM consists of all maintenance actions performed, as a result of a failure, to restore equipment to a specific condition. The tasks comprising CM vary but when performed, CM will normally occur in the same sequence. The composite of these tasks is referred to as the CM process and, for any specified maintenance action, consists of those tasks to restore the equipment to the specified condition. The CM process commences when equipment is reported as requiring CM. It terminates when equipment is either restored to a serviceable condition, or declared not repairable, or as otherwise determined by competent authority.

3. Use of Established CM Procedures. CM actions will be performed per the procedures established in appropriate technical publications. 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 CMC (LP). CM process is contained in appendix F.

#### 4. Reparable Issue Point Procedures

a. A secondary reparable is a reparable component/part other than the principal unit/end item. They are not functional by themselves but are components of other items. These items are managed per MCO P4400.82. The two types of secondary reparable items are as follows:

(1) Field Repairables. Field reparable items are fourth echelon terminal and are identified with O, F, or H in the last position of the SMR code; for example, transmissions, and engines.

(2) Depot Repairables. Depot reparable items are fifth echelon terminal and are identified with D or L in the last position by the SMR code; for example, radio set receivers, transmitters, and module printed circuit boards.

NOTE: Examples cited in paragraphs 3003.4.a(2) are lower-order secondary repairables (a secondary reparable within a secondary reparable).

b. Maintenance sections will maintain a current listing or catalog of secondary repairables managed by their supporting reparable issue point. This will enable the maintenance section to determine what secondary repairables are available for exchange at the reparable issue point.

c. Information concerning organizational maintenance level shops is as follows:

(1) When an organizational maintenance shop determines that an end item has a secondary reparable (SMR Code O, F, H, D, or requiring repair, it must first determine if repair of the fault is within their authorized EOM. When it is, and the parts are available as an across-the-counter issue, the unit will perform the repairs to the secondary reparable. When the repair is beyond the unit's EOM, the next thing to be determined is if removal of the secondary reparable from the end item is within the unit's authorized EOM. If not, the end item must be evacuated to the next higher EOM. If so, it will be evacuated to the supporting reparable issue point. Before evacuating a secondary reparable or end item, all required organizational maintenance will be performed.

(2) When the fault has been isolated to a secondary reparable within a secondary reparable (lower-order secondary reparable) the faulty lower-order secondary reparable will be removed and evacuated when doing so is within the unit's authorized EOM. When replacement of the faulty lower-order secondary reparable is not within the unit's authorized EOM, the replacement of the next higher assembly within the unit's authorized EOM will be evacuated.

(3) An organizational maintenance shop with a secondary reparable requiring second and third EOM and does not have the parts to complete the second EOM will coordinate with the intermediate maintenance activity to evacuate the secondary reparable before completing second EOM repairs. All available second EOM parts will be installed before evacuation, unless it is obvious that the item will be coded out.

d. Information concerning intermediate maintenance category shops is as follows:

(1) When an intermediate category shop determines that an end item contains a secondary reparable requiring repair, it will perform the following actions:

(a) The faulty secondary reparable will be evacuated, unless parts to perform the repair are readily available. (A lower-order secondary reparable can be considered a part in this instance.)

(b) Check the faulty secondary reparable for any faulty lower-order secondary repairables.

(c) When a faulty lower-order secondary reparable is found and repair is within the unit's authorized EOM, repair will be performed when parts are readily available. When parts are not readily available, the lower-order secondary reparable will be evacuated.

(d) When replacement of the faulty lower-order secondary reparable is not within the unit's authorized EOM, the next higher assembly must be evacuated to the next higher echelon for repair.

(2) Faulty end items without faulty secondary repairables will be repaired using normal procedures.

e. When the faulty secondary reparable is not on the authorized allowance of the local reparable issue point, the secondary reparable cannot be exchanged. When repair of the secondary reparable is within the unit's authorized EOM, it will be repaired. When not, it will be evacuated to the next higher EOM for repair.

f. There are instances when it will be more practical from a mission or economic standpoint to vary from the preceding procedures. Changes in procedure must be coordinated with both the maintenance operations officer of the intermediate maintenance activity and the reparable issue point manager.

g. In all instances, any required PMCS must be performed before evacuation to the next higher EOM.

## 5. Maintenance Cycle Time

a. Definition. Maintenance cycle time is the period of time equipment is inoperative and requires repair.

### b. Maximum Maintenance Cycle Time

(1) This section is concerned with the maximum maintenance cycle time as it relates to intermediate maintenance. The maintenance cycle time commences on the date an item is received in the intermediate maintenance activity (IMA) (date received in shop (DRIS)). For those items evacuated for lack of supply support (not mission capable supply (NMCS)) the IMA will use the second echelon DRIS for determining the maximum maintenance cycle time. The following maximum maintenance cycle times are published for equipment inducted in the intermediate maintenance activity:

#### (a) End Items

1 One hundred and eighty days for West-/Mid-Pac units.

2 One hundred and twenty days for continental United States (CONUS) units.

#### (b) Secondary Repairables (Codes O, F, H, D, and L)

1 Ninety days for West-/Mid-Pac units.

2 Sixty days for CONUS units.

(2) Maximum maintenance effort is required to repair equipment before reaching the maximum maintenance cycle time. The following are some actions the intermediate maintenance shop must take to complete repairs before the maximum maintenance time:

(a) Detailed inspection of inducted equipment and requisition of known faulty components (secondary repairables/piece parts) will be accomplished within 5 working days from the DRIS.

(b) All supply sources will be used to obtain the required components as authorized by UM-4400-15 or UM-4400-124, as appropriate. This includes the requisitioning of not in stock parts from other sources including commercial procurement, fabrication, salvage, ISA, and contract maintenance.

(3) Supply followup actions will be conducted per UM-4400-15 and UM-4400-124.

c. Expiration of Maximum Maintenance Cycle Time. When the maximum maintenance cycle time expires or documentation shows that repairs cannot be completed within the maximum maintenance cycle time, the following action will be followed:



(1) Third echelon shops will report items exceeding the maximum maintenance cycle time to their supporting fourth echelon maintenance shop for disposition instructions or action. Documentation of the steps taken to obtain needed parts is extremely important to show that maximum maintenance effort has been exerted.

(2) Fourth echelon maintenance shops will:

(a) Submit Recoverable Item Reports per MCO P4400.82 on controlled items. Include in the remarks paragraph of the Recoverable Item Report all actions taken to obtain required parts, including followup message traffic to the Marine Corps Logistics Base (MCLB), Albany.

(b) Other-than-controlled items will be disposed of per UM-4400-15 or UM-4400-124.

d. Exceptions. The maintenance officer of the intermediate maintenance activity may extend the limits of the maximum maintenance cycle time, subject to approval of the equipment's unit commander, when economically justified and advantageous to mission completion. Documentation for required repair parts must support this decision.

6. Overflow Maintenance. Overflow maintenance is that maintenance within the unit's authorization EOM but beyond its capability because of restrictive and/or unusual circumstances and is consequently performed by another unit, usually a support 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. Evacuation for lack of supply support is an exceptional case and is employed only when:

(1) Proper reconciliation procedures are followed.

(2) Followup of supply documents is documented.

(3) Requisitioning of not in stock parts from other sources will not provide relief within the maximum maintenance cycle time.

b. Workload surge; for example, requirements to meet predeployment schedule or post deployment requirements, urgent modifications required on high density equipment.

c. 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.

3004. MAINTENANCE FUNCTION-MODIFICATION

1. Responsibility. The owning unit must ensure that all the unit's equipment requiring modifications have been completed and are recorded in the equipment records per TM-4700-15/1. Equipment modifications are published in MI's and listed in the Marine Corps SL-1-2 (MI's are announced in TI-5600).

2. General Information

a. 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 (PQDR's, beneficial suggestions) frequently establish the requirement for equipment modification. In such instances, the maintenance engineering activity of the Marine Corps uses these recommendations as the basis of the engineering analysis to correct the equipment deficiency.

b. Modifications required to prevent death or serious injury to personnel, prevent major damages to equipment, or make changes considered so essential to equipment that their application must be accomplished at the earliest possible time are designated "URGENT". Other modifications are designated "NORMAL".

c. Requirements for equipment modification, including the detailed step-by-step procedures for accomplishment, are published as MI's. They identify specific types and items of equipment to be modified as well as the maintenance resources, skills, and time necessary for their accomplishment. MI's specify the EOM authorized to perform the modification. Equipment to be modified is identified by nomenclature, ID number, NSN, and the manufacturer's serial number for individual equipment, when appropriate. Modification kits, or parts and fabrication materials when kits are not prescribed, are identified by NSN and quantity.

d. Marine Corps equipment will be modified only as directed by the CMC.

3. Modification Requirements Determination. Upon initial receipt of equipment items, they will be inspected to determine if all required modifications have been properly completed. When the nature of a required modification is such that the owning unit cannot determine if it has been completed, the equipment will be evacuated to an intermediate maintenance activity for such determination. Upon completion of the inspection, initiate an ERO requesting missing modifications be applied, and update the required equipment records per TM-4700-15/1.

#### 4. Urgency of the Required Modification

a. "URGENT" MI's require that equipment be deadlined or its use sharply curtailed until modifications are applied. Under such conditions, acceptance scheduling normally will not be feasible. Other "URGENT" modifications, though requiring timely application, may lend themselves to acceptance scheduling. In all instances, the urgency of the required modification must be considered when establishing the priority for its accomplishment. "URGENT" MI's specify a required completion date and may contain restrictive operating conditions. Instructions restricting operating conditions may be disseminated by message.

b. "NORMAL" modifications usually lend themselves to acceptance scheduling. Their scheduling should be planned, when possible, to coincide with the performance of other required maintenance actions. "NORMAL" MI's are accomplished on a scheduled basis within 1 year of the effective date of the MI, unless the MI indicates otherwise. Equipment in level "A" Pack need not be opened to perform "NORMAL" MI's. The required modification kits will be requisitioned and placed in an ERO bin. The modification will be applied as soon as the equipment is removed from level "A" pack.

c. Operational requirements of the using unit are a major factor in determining the time for application of modifications. Whenever possible, application of modifications should be planned so that they do not interfere with such requirements. Units should plan for the application of required modifications before deploying or going on extended operations.

5. Modification Control. The command will establish a single point responsible for reviewing the modification control program during unit internal reviews. When the unit is required to assign an MMO, the MMO will be responsible for reviewing the modification control program. When the unit is not required to assign an MMO, the commodity maintenance officer will be responsible for reviewing the modification control program. Equipment commodity managers will maintain modification records per TM-4700-15/1.

#### 3005. MAINTENANCE FUNCTION-CALIBRATION

1. The Calibration Program. The calibration program is conducted per MCO P4733.1 and TM-4700-15/1. Calibration laboratories are designated by HQMC and are authorized the necessary equipment to perform calibration and repair operations. The majority of TMDE used in performing maintenance and certain other measuring equipment require periodic calibration. Calibration production is contained in appendix F.

2. Using Unit Responsibility. The using unit is responsible for promptly submitting its TMDE for calibration. Calibration control procedure will be established and maintained per TM-4700-15/1 and appendix D of this Manual to ensure that all calibration is current. The MSC MMSOP will specify a calibration control point for the units and the method of control. The calibration of TMDE must be scheduled so that sufficient assets are on hand to preclude the unit from losing required test capabilities. In the maintenance process, the using unit ensures accurate checks and measurements where accuracy is required by using only test and measuring devices with current "Calibrated" or "Special Calibration" labels affixed and by periodically cross-checking these devices between calibration. A periodic evaluation of TMDE is required of the using unit. The purpose of evaluating each item of TMDE is two-fold. The first is to ensure that instruments used in measurement applications where accuracy is important are being calibrated on a periodic basis at established intervals. Without such calibration, the instrument user cannot be sure that the indications received from instruments are accurate. The second reason for evaluating each instrument is to reduce the calibration workload, thereby reducing the cost of calibration and turnaround time. This is achieved as follows:

a. By determining the instruments not being used within their full capability (only some ranges and functions are used) in this case, "Special Calibration" would be appropriate and only those capabilities used would be calibrated.

b. By determining instruments being used in applications where accuracy is of no importance; in this case "Calibration Not Required (CNR)" would be appropriate.

c. By determining instruments not being used or are not expected to be used in the foreseeable future (one calibration cycle/interval or more), in this case "Inactive" would be appropriate. Using organizations must follow through on the preceding determinations made during their evaluation, by requesting "Special Calibration" when the instrument is submitted for calibration, or by requesting the "Inactive" and "Calibration Not Required" labels from the supporting calibration laboratory.

NOTE: Even though "Special Calibration," "Inactive," or "Calibration Not Required" is determined for equipment, different labels may be requested when the situation within the using organization changes. Likewise, items evaluated as "Full Calibration" may be redesignated to another category, as appropriate.

>3. Calibration Laboratory Responsibility. Intermediate maintenance activities designated as calibration laboratories perform equipment repair and calibration for supported units within their authorized capability and forward equipment to higher EOM when repairs exceed their authorized levels. The calibration laboratory aids in the management of the calibration program by projecting calibration requirements and resources and by identifying the need for additional capability. They also provide the using unit intra- /inter-service support and use commercial contracts, as necessary, to satisfy calibration demands.

4. Infantry Weapons Gage Calibration Exchange Program (IWGCEP). Infantry weapons gages calibration control records will be maintained per TM-4700-15/1 and inducted for calibration per TI-4733-15/11.

#### 3006. LOAD TESTING AND SAFETY INSPECTIONS

>1. Load testing will be performed for all load lifting equipment per MCO P11262.2. Load testing records will be maintained per TM-4700-15/1.

>2. Safety inspections of hydraulic jacks and jack stands will be conducted per MCO P11262.2.

#### 3007. LIMITED TECHNICAL INSPECTION (LTI)

1. The LTI as a Maintenance Action. Maintenance sections are called upon to perform equipment inspections as one of their maintenance functions. These inspections are generally referred to as LTI's. They are limited in the sense that they do not require full examination of each technical facet of the equipment but have as their purpose a specific lesser objective. LTI's are directed, in general, at inspecting equipment conditions to determine the extent and EOM required to restore it to a specified condition. In some cases, an inspection might be limited to determining the modification status of equipment for which the status cannot be determined by the operator within the assigned EOM.

2. Specific LTI Requirements. LTI's are required to determine equipment status for candidates for maintenance related logistics programs. The LTI required for the recoverable item and the replacement and evacuation (R&E) programs are examples. In such cases, a record of the LTI performed by the maintenance activity is required for examination in determining the eligibility of the equipment for the specified program.

3. The Extent of the LTI. The extent of inspection required is determined by the use of the results. Therefore, LTI's may be performed at any echelon that has the requisite maintenance resources to obtain the degree of information required. Standard forms have been prepared as guides in conducting and recording LTI's for engineer and motor transport equipment, both have characteristics allowing standardization of inspection requirements. When standard forms do not exist, local checklists may be prepared using appropriate technical manuals as guides.

#### 3008. 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 support maintenance unit. The recovery of equipment will be accomplished per the instructions contained in appropriate technical publications.

3. Restoration. Restoration of recovered equipment will be accomplished per established procedures.

#### 3009. EQUIPMENT EVACUATION

1. Definition. Evacuation is a controlled process of moving equipment that cannot be repaired, modified, serviced, or used by the owner to the organization that can effect the necessary maintenance or redistribute the equipment to another user or storage/disposal facility. Evacuation is the responsibility of the owning unit. When evacuation is beyond the capability of the owning unit, it becomes the responsibility of the designated support maintenance unit. The owning unit will perform all pre-evacuation services within its assigned capability, except when equipment is awaiting disposition instructions and a condition code has been assigned. In this case, only the necessary maintenance to prevent deterioration from the stated condition must be performed.

2. Disposition of Unserviceable Materiel. Equipment end items, components, or parts declared unserviceable during the performance of maintenance will be disposed of per the assigned SMR code, UM-4400-15, and UM-4400-124. Garrison mobile equipment (GME) will be disposed of as established in Marine Corps directives in the 11240 series.

3. Records. Equipment records will accompany the equipment throughout the evacuation process. The unit or activity evacuating the equipment will prepare the ERO per TM-4700-15/1.

4. Sources of Maintenance Support. The main source of maintenance support for equipment evacuated is the next higher echelon in the maintenance chain. MSC MMSOP must specify the sources for maintenance support for the various commodity areas as defined in paragraph 1000.2.

5. Evacuation of Repairable Items. MCO P4400.82 contains procedures for evacuation of equipment that are repairable and are candidates for the Recoverable Items Program, Replacement and Evacuation Program, Inspect Repair Only As Necessary, or the Secondary Depot Repairables Program.

6. Recoverable Items Program. The Recoverable Items Program establishes policy and procedures for the recovery, reporting, and management of recoverable items that cannot be repaired within the resources available to the field commander, become excess to a command's allowances, or is beyond economical repair and requires disposal.

a. Determining the condition of equipment nominated for recoverability is a function of maintenance production. Recoverable items that cannot be repaired within the resources available to the unit or that are suspected of being beyond economical repair will be inducted into the supporting fourth echelon maintenance shop for an LTI and disposition. The fourth echelon maintenance facility will report the item via a WIR to MCLB, Albany, requesting disposition instructions.

b. MCO P4400.82 outlines submission of reports, repairs of recoverable items, salvage of repair parts, replacement of unserviceable recoverable items, and accounting instructions.

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CHAPTER 4

MAINTENANCE INFORMATION

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# MIMMS FIELD PROCEDURES MANUAL

## CHAPTER 4

### MAINTENANCE INFORMATION

#### 4000. GENERAL INFORMATION

1. Composition of Maintenance Information. Maintenance information provides the basis for the management of the unit's equipment maintenance program. Maintenance information is comprised of records, reports, and MIMMS/AIS. Proper use enables analysis and evaluation of maintenance performance and aids in identifying measures to be taken to correct deficiencies detracting from or prohibiting optimum unit performance.

2. Management/Disposal. The management of maintenance records and reports, like all other Marine Corps records and reports, comes within the purview of MCO 5210.11 and MCO-5-214.2. Commanders will ensure strict compliance with those directives in the management of their respective records and reports programs. Maintenance records will be properly and expeditiously disposed of per MCO P5215.1 and TM-4700-15/1.

3. Records and Reports. Preparing and maintaining records and reports consume both personnel and materiel resources. Records and reports must be kept to the minimum consistent with management information needs. Commanders will ensure that:

a. Records and reports required by Marine Corps directives and publications are administered per the applicable directive or publication.

b. Records and reports originated within the unit are kept to a minimum and are not prepared and used in lieu of or in addition to those required by Marine Corps directives and publications.

#### 4001. EQUIPMENT RECORDS

1. General Information. Equipment records are those records maintained for a specific item of equipment. TM-4700-15/1 provides instructions for the preparation, use, and disposition of required forms and records associated with the operation and maintenance of Marine Corps ground equipment.

2. Responsibility. Equipment records are an integral part of the equipment. Unit commanders are responsible for the proper completion and maintenance of all equipment records applicable to the equipment held by their units.

3. Equipment Records Accompany Equipment. TM-4700-15/1 requires equipment forms and records to accompany equipment when evacuated

for maintenance, transferred, or temporarily loaned to another unit. Equipment transferred or temporarily loaned will be tagged with the due date of the next scheduled PMCS.

#### 4002. RESOURCE RECORDS

1. Definition. Resource records are those records maintained to document the unit's maintenance efforts; for example, modification, PMCS, calibration. For those resource records pertaining solely to maintenance sections, TM-4700-15/1 provides instructions for the preparation, use, and disposition of required forms and records associated with the operation and maintenance of Marine Corps ground equipment.

2. Historical Information. Resource records are essentially historical information. They provide the basis for evaluation of past performance and planning future efforts.

4003. LOCAL RECORDS. Local records are those records developed and maintained by the unit over and above those required by Marine Corps directives and publications. Local records will be kept to the minimum essential to the use of the unit's maintenance effort. Local records will not be initiated unless a definite requirement has been established and it has been determined that records required by higher headquarters will not satisfy the requirement. Commanders will submit copies of local maintenance/maintenance management records developed by the local command to the CMC (LPP) for evaluation as to Marine Corps-wide application. When a local requirement exists for use of more copies of a form than authorized in TM-4700-15/1, the requirement will be identified to the CMC (LPP) for evaluation.

#### 4004. REPORTS

1. General Information. Maintenance reports contain information for determining policy, planning, controlling, evaluating operations and performance, and preparing other reports. They are generally summarized and may be transmitted on a recurring, one-time, or occasional basis.

2. Reports Control. Commanders will ensure that reports are required only to meet definitive data or information requirements, are economically designed, and are curtailed or canceled when obsolete.

3. Classes of Reports. Maintenance reports fall into one of the following classifications of reports required by:

a. HQMC Reports. Reports required by HQMC include maintenance reports required by both marine Corps directives and other forms of communication. They may be produced by either manual or automated means and will normally contain a report control symbol. Reports currently required on a recurring basis are listed in a MCBul in the 5214 series. The primary Source of HQMC required maintenance reports will be the MIMMS/AIS. UM-4790-5 describes maintenance reports required and provided, as well as their uses in field unit equipment maintenance programs.

b. Field Reports. HQMC reports, including those provided by the MIMMS/AIS FMSS, have been designed to Satisfy the maintenance data and information requirements of both HQMC and field units. Special requirements of field units may, nevertheless, necessitate the preparation and Submission of additional maintenance reports. Such reports, when required, will be held to the minimum consistent with management needs for maintenance data or information. Whenever a requirement for a field originated report is established on a recurring basis, it will be forwarded to the CMC (LPP) for nomination as a Standard report.

c. External Agency Reports. Reports required by activities outside the Marine Corps will be prepared and Submitted per the applicable directive or communication. Commanding officers receiving reporting requirements from external activities not containing report control Symbols will immediately notify the CMC (CCI). Requests for reports considered invalid will be referred to the next Senior unit in the administrative chain of command.

#### 4005. REPORTS IMPROVEMENT

1. Review of Reports. Commanders will review all reports required or Submitted by their units, using MCO 5214.2 and UM-4790-5 as guides. This review will ensure that:

a. Reports are being prepared per the requiring directive or other form of communication.

b. Duplication does not exist in reports Submitted by the unit or required of Subordinate Units.

c. Report formats are easily understood by both the originators and users of the report.

2. Recommendations. Recommendations for improvements in reports will be forwarded via the administrative chain of command to the headquarters requiring the report. Recommendations concerning

reports generated as a Marine Corps requirement will be forwarded to the CMC, to the attention of the department originating the reporting requirement. Recommendations for improvements in reports management or reporting requirements will be submitted to the CMC (CCI) when an apparent administrative burden has resulted through implementation of invalid reporting requirements or attendant procedures.

4006. MIMMS/AIS REPORTS. The MIMMS/AIS reports have replaced most of the manually prepared maintenance reports. UM-4790-5 contains a listing, descriptions, and use for all MIMMS/AIS reports. Report title, frequency, and principal/alternate user for MIMMS/AIS reports are contained in appendix G of this Manual.

4007. INSPECTIONS

1. Introduction. Inspections are one of the principal means available to the unit commander to ascertain whether planning and organization are sound, their staffs are functioning effectively; add directives are clear, well understood, and being effected by subordinates. Inspections further enable unit commanders to properly measure unit effectiveness in the use of maintenance resources. Without inspections, costly delays in the accomplishment of required equipment maintenance, identification of equipment defects, and faulty maintenance procedures are likely to occur.

2. Characteristics. Inspections may be conducted in a variety of manners to accomplish different objectives. However, there are several characteristics common to good inspections.

a. An inspection must be constructive and critical. A teaching opportunity exists when competent inspectors confront maintenance and maintenance management personnel who are eager to display their best. Procedures and areas that appear to be without defect must be scrutinized carefully so that accomplishment may be recognized and to determine if the procedures could be useful elsewhere.

b. An inspection must be both objective and based on realistic and measurable inspection standards. The inspected unit must comprehend the weight given to inspection evaluation. Judgments must be objective and devoid of emotion; the interplay of personalities, whether favorable or adverse, must not affect the outcome of the inspection.

3. Sources. Inspection reports come from two basic sources. They may be ordered by the inspected commander and conducted under the commander's direction or inspections ordered by a higher command. In both cases, inspection reports must be available for evaluation and corrective action.

4. Uses. The most important features of the inspection are the uses made of inspection results by the commander and staff of both the inspecting and inspected units. A commander must:

a. Realize that an inspection has a constructive and helpful purpose even though the resulting report may be adverse.

b. Analyze and evaluate inspection results for indications of trends that could adversely affect mission accomplishment.

c. Take aggressive remedial action to correct the deficiencies or irregularities encountered in the inspection.

d. Implement an adequate followup program for timely correction of deficiencies and to preclude problem recurrences.

e. Use inspection reports to identify unit and individual credit, where deserved, and highlight both the unit's strong and weak points.

5. Types of Inspections

a. Formal inspections are usually announced in advance and a standard procedure for the conduct of the inspection promulgated. A checklist will usually be prescribed, used by the inspection team, and may be used by the inspected unit to prepare for the inspection. Such an inspection routine assures the commander of the correction of many small faults or omissions that could otherwise fail to get accomplished during normal operations. Formal inspections become the primary activity of the inspected unit during the inspection, with personnel and equipment being made available to the fullest extent.

b. 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. The helpful instructional aspect of the inspection process may be more readily achieved with the informal inspection if that aspect is stressed. Inspection checklist may be prescribed; either written or oral reports may be rendered. Informal inspections, though previously announced, are frequently conducted simultaneously with and not in lieu of normal unit operations. Appendix H contains a maintenance management trouble shooting guide useful in analyzing inspection results.

6. Inspection Checklist. A commander must routinely prepare and use the inspection checklist during the inspection of maintenance sections. An inspection checklist is useful both for normal operations and in preparation for an inspection. The inspection checklist can be used by maintenance personnel to make a final

check on preparedness and to correct unresolved details. A good source for an inspection checklist is the Field Supply Maintenance Analyst Office (FSMAO) or MSC. A good inspection checklist ensures thoroughness in the conduct of the inspection and contributes to the uniform appraisal by all members of an inspection team. The inspection checklist becomes the skeleton for the inspection report, represents a logical sequence of facts, and provides information for an analysis of the inspected unit.

#### 4008. VISITS

1. Introduction. Visits, as inspections, are used to obtain first-hand information about the unit and its operating procedures. Visits may be conducted in a formal manner, taking on the aspects of a formal inspection, or they may be conducted in an informal manner, stressing the exchange of information and ideas. The feature distinguishing a visit from an inspection is the absence of a senior commander or officer designated as an inspector. Visits fall essentially into three categories:

a. Staff Visits. The most common type of visit is the staff visit, whereby one or more staff officers of a senior headquarters visit a subordinate unit for a specific purpose. Staff visits are performed between scheduled inspections to investigate troublesome areas and to exchange information with the opportunity for immediate feedback. The exchange of information includes visits specifically to provide assistance and instruction to the visited command. The unit commander should always be notified of the visit beforehand, with entry and exit interviews provided if so desired. Staff visits for familiarization of newly assigned staff officers are frequently conducted and afford a good opportunity for them to get to know the people with whom they will be working.

b. Liaison Visits. Visits for the exchange of information, familiarization, and coordination are frequently necessary between units without a senior-subordinate relationship although they may have a common superior. Visits between maintenance managers of units operating adjacent to each other and between supported units and their intermediate maintenance activity are encouraged. Prior arrangements must be made for such visits to ensure the availability of personnel and noninterference with unit operations.

#### c. FSMAO Visits

(1) Scheduled FSMAO visits to field units are designated as formal analyses. Reports are filed at the conclusion of each visit. The FSMAO's mission includes identifying and reporting deficiencies in supply and maintenance operations and recommending remedial action. In addition to the formal analysis, the unit commander may request assistance in specific problem areas. When assistance is requested a FSMAO team will be dispatched for an assistance visit when available.

(2) A FSMAO analysis is conducted on a formal basis. A FSMAO team is required to brief the commanding officer before and after the visit. A formal report of the visit will be submitted through the chain of command to major commands. Details of the FSMAO's mission and responsibilities are found in MCO P4400.160.

(3) As related to maintenance management, FSMAO's analyze the management and performance of equipment maintenance in the Marine Corps. These offices, as designated field activities of the CMC, are used to evaluate the effectiveness of equipment maintenance in supporting the equipment operational objectives of the Marine Corps. As part of the analysis of a command, they determine the command's compliance with maintenance directives and publications issued by the CMC.

(4) Unit commanders may request FSMAO to provide assistance and guidance when experiencing difficulties in establishing or implementing a maintenance management program. When FSMAO visits are requested by the commander, the report of the visit is provided only to the commander requesting the visit.



APPENDIX A

MAINTENANCE MANAGEMENT STANDING OPERATING PROCEDURES

1. Introduction. Paragraph 1004.4 of this Manual requires each MSC to publish an MMSOP or include the required portions of the MMSOP in a logistics SOP. This appendix contains guidance on the preparation of an MSC MMSOP. The format Presented in this appendix is not mandatory, but those areas indicated by the pound sign (#) must be addressed in the MSC's MMSOP. Those areas indicated by two pound signs (##) are required for all MSC's Supported by MIMMS/AIS FMSS.

2. MMSOP Preparation

a. An MSC MMSOP Specifies and disseminates the policies and procedures of the MSC. The Publication of an MSC SOP reduces the impact of personnel turnovers by establishing a reference point for all members of the MSC. The publication of an MSC MMSOP also reduces training requirements by Standardizing the manner that maintenance operations are performed within the MSC. Further, an MSC MMSOP conserves time by prescribing how repetitive functions will be accomplished.

b. An MSC MMSOP must be written so that it is understood by all personnel required to use it. The MSC MMSOP also 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 personnel, regardless of EOM.

c. An MSC MMSOP need not contain all of the procedures necessary to accomplish the MSC's functions. When the instructions published by a higher headquarters are Sufficiently clear, detailed, and completely applicable at the MSC level, and they may be referenced, required to be included in an individual's desk-top procedures, or extracted for inclusion in the MSC MMSOP. When the instructions are referenced, they must be made available to those individuals requiring their use.

d. Appendixes may be used to simplify Presentation in the MSC MMSOP or to provide detail that lends itself to such presentation; for example, a maintenance inspection checklist for formal inspections by the MSC Commander and subordinate commanders.

e. The appendixes within the MSC MMSOP may be used to publish any required MSC commodity SOP's or they may be published separately; for example, motor transport, engineer, and ordnance.

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### GENERAL INFORMATION

#1000. INTRODUCTION. The MSC MMSOP must contain an introduction statement on the MSC MMSOP scope and objectives.

#1001. COMMAND RESPONSIBILITIES. The MSC MMSOP must:

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 MSC Commander on the status of maintenance within their respective units.
4. Specify the responsibilities of the MSC Commander and subordinate commanders to report all maintenance problems that cannot be resolved through normal channels and procedures.
5. Designate an individual who will be responsible for the maintenance of all equipment within the MSC and subordinate units.
6. State the authorized levels of maintenance and the sources of maintenance support for all equipment commodity areas authorized the MSC and subordinate units.
7. State the sources for maintenance support for the various commodity areas as defined in paragraph 1000.2k.

1002. STAFF RESPONSIBILITIES. The MSC MMSOP should:

1. Contain a separate paragraph on each executive and special staff officer, stating the functions that individual is required to perform and the coordination requirements of that individual's office with respect to subordinate unit commanders and other executive and special staff officers. As a minimum, such a paragraph should be prepared for each of the following officers:
  - a. G-1/S-1 officer.
  - b. G-2/S-2 officer.
  - c. G-3/S-3 officer.
  - d. G-4/S-4 officer.

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- e. Supply officer.
  - f. Maintenance management officer.
  - g. Commodity managers.
2. Clearly state the MSC's and subordinate unit's organization for maintenance.

#1003. DESK-TOP PROCEDURES AND TURNOVER FOLDERS. The MSC MMSOP must:

1. State the requirement for desk-top procedures and turnover folders to be maintained by key maintenance personnel.
2. State the contents and details of desk-top procedures and turnover folders clearly so that they will complement the MSC MMSOP.
3. State the billets that require desk-top procedures and turnover files.

### OPERATIONS

#2000. MAINTENANCE POLICY. The MSC MMSOP must:

1. Outline policy for the implementation of the maintenance policies and procedures of higher headquarters.
2. Identify requirements for the conduct of the subordinate unit's equipment maintenance program; for example, PMCS, CM.

#2001. ASSIGNMENT OF OPERATORS. The MSC MMSOP must:

1. Contain a requirement that a specific operator/crew will be assigned to principal end items of equipment for the performance of operator maintenance on such equipment. Where necessary, operators may be assigned responsibility for more than one item of equipment. When responsibility for equipment cannot be assigned to a specific operator, the subordinate commander must consider placing that equipment in an administrative storage or administrative deadline program.
2. Contain conditions under which operators can operate equipment other than those they are specifically assigned. Operator maintenance requirements must be specified for such assignments.
3. Contain a requirement for the MSC and subordinate units to list those items requiring assignment of operators by TAMCN, ID number, and nomenclature.

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#2002. ALLOCATION OF MAINTENANCE TRAINING/PERFORMANCE TIME. The MSC MMSOP must:

1. Contain a policy statement equating emphasis on maintenance training to that given to 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's.

#2003. SHOP OPERATIONS. The MSC MMSOP must:

1. State policy on the internal shop operations of MSC and subordinate units. This statement must require that maintenance services be forecasted and scheduled and that a quality control program will be established and monitored within the MSC and subordinate units.
2. Designate areas where all maintenance actions will be performed.
3. Designate the title, authority, and responsibilities of key personnel in shop organization.
4. Designate responsibility and procedures for assignment of ERO/EROSL priorities by skilled personnel during active maintenance.
5. Contain procedures for changing the ERO priority and category codes.

#2004. EQUIPMENT THAT EXCEEDS MAINTENANCE CAPABILITIES. The MSC MMSOP must:

1. Contain policy for evacuation of equipment exceeding maintenance capabilities of MSC and subordinate units.
2. Contain procedures for evacuation of equipment and the sources of maintenance support authorized.
3. Contain policy and procedures for the administrative storage and administrative deadline program of equipment to conserve equipment or maintenance resources.

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#2005. PERFORMANCE OF MAINTENANCE SERVICES. The MSC MMSOP must:

1. Establish the commander's policy for scheduling and the performance of required PMCS, to include changing the frequency of scheduled PMCS.
2. Outline procedures for integration of maintenance services with other operational requirements of MSC and subordinate units.
3. Establish the responsibility for the performance of each type of maintenance service.
4. Establish procedures for opening, processing, and closing equipment in the maintenance phase.

#2006. RECORDS. The MSC MMSOP must:

1. Emphasize the importance of maintenance records to the command and the Marine Corps.
- ##2. State the policy and procedures for maintenance records to ensure compliance with higher headquarters directives. MSC MMSOP's of FMSS Supported units will indicate whether entries on the ERO under "status" and "status date" columns are either optional or mandatory.
3. State the responsibilities for the preparation, care, and handling of equipment records.
4. Establish the requirement for record improvement reviews.

#2007. REPORTS. The MSC MMSOP must:

- ##1. Provide policy and procedures for the MIMMS/AIS, addressing input report preparation and submission, distribution, handling, reconciliation, validation, and use of output reports.
- ##2. Provide policy and procedures for the document/information flow for the FMSS through the MSC MMSOP.
3. Provide policy and procedures for reporting requirements to higher headquarters.
4. Provide policy and procedures for specific responsibilities for report preparation, distribution, reconciliation, and validation within subordinate units. When a command elects to follow the procedure detailed in appendix C, or a major command specifies a reconciliation procedure, the MSC MMSOP may reference the appropriate directive rather than reprinting the details.

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#2008. MODIFICATION OF EQUIPMENT. The MSC MMSOP must:

1. Establish modification control points in the MSC and subordinate units.
2. Designate the method of modification control, except as specified for the MSC and subordinate units supported by the FMSS.
3. Establish procedures for modification control:
  - a. Identification of modifications.
  - b. Recording modifications.
  - c. Requesting modification performance from supported maintenance activities.
  - d. Performance of modifications.

#2009. SUPPORT AND TEST EQUIPMENT. The MSC MMSOP must:

1. Designate control procedures for the servicing, using, and accounting for support equipment and TMDE.
2. Designate procedures for opening a third echelon evacuation ERO for TMDE when a second echelon ERO is not used.
3. Designate responsibility and establish procedures for obtaining calibration service for equipment requiring calibration.
4. Designate the calibration control point for the units and the method of control.

#2010. SAFETY. The MSC MMSOP must:

1. Outline maintenance operations safety requirements.
2. Assign responsibility for the maintenance areas safety program.
3. Reference pertinent safety publications that provide precautions.

2011. RECOGNITION OF PERFORMANCE. The MSC MMSOP should:

1. Establish a program to evaluate performance of maintenance personnel and elements.
2. Provide for recognition of outstanding performance.
3. Provide for correction of substandard performance.

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SUPPLY SUPPORT

3000. GENERAL INFORMATION. The MSC MMSOP should:

1. Establish policy and procedures for following higher level policy with respect to repair parts and materials.
2. Establish policy and procedures for supply responsibilities in support of equipment maintenance.
3. Establish policy and procedures for coordination between maintenance and supply elements to achieve maximum equipment readiness.

#3001. REPAIR PARTS REQUEST SYSTEM. The MSC MMSOP must:

1. Establish policy and procedures for the requisitioning of both system and nonsystem repair parts, exchanging secondary repairables, and operating PEB's. When such procedures are contained in the supply SOP, the MSC MMSOP needs only to reference the appropriate sections of the supply SOP.
2. Establish policy and procedures for identifying, locating, and reordering PEB items.
3. Establish policy and procedures for the assignment of requisition priority designators and establish necessary controls for their proper use; for example, changes in priority due to deployment.
4. Establish policy and procedures for meeting required delivery dates (RDD's).

#3002. REPAIR PARTS CONTROL. The MSC MMSOP must:

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 preexpended bins.
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 use and control of ERO bins and the responsibility for maintenance and control.

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

7. Establish policy and procedures for annotation of the EROSL as parts are received into the ERO bin, transferred to a new ERO, and issued for installation on equipment.

#3003. DIRECT EXCHANGE. The MSC MMSOP must:

NOTE: This paragraph is only required for the MSC and subordinate units that 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 repairables 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 subfloats are authorized.

#3004. NEW EQUIPMENT. The MSC MMSOP must establish policy and procedures for the introduction of new equipment and cite the appropriation directives on the activation of new equipment.

#3005. MOUNT OUT. The MSC MMSOP must:

1. Establish policy and procedures for managing the subordinate unit's mount-out and garrison operating stocks.

2. Establish policy and procedures for periodic review and updating of the subordinate unit's mount-out stock by maintenance activities.

3. Establish policy and procedures for the coordination between subordinate unit's supply and maintenance elements for the periodic rotation and maintenance of mount-out stocks.



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#3006. VALIDATION AND RECONCILIATION. The MSC MMSOP must:

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 in ERO bins.

#3007. TOOL SETS, CHESTS, AND KITS. The MSC MMSOP must:

1. State the requirements/procedures for the control of tool room and tool sets, chests, and kits 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.

## MAINTENANCE TRAINING

#4000. GENERAL INFORMATION. MSC MMSOP must:

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.

#4001. TRAINING REQUIREMENTS. The MSC MMSOP must:

1. State the minimum time requirements of higher headquarters for both maintenance management and maintenance training in the 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 quotes.

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

c. The requirement that quotes when procured be met unless an exception is authorized.

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

4002. FIELD TRAINING. The MSC MMSOP should:

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.

#4003. ON-THE-JOB TRAINING (MOJT). The MSC MMSOP must:

1. State the requirement that MOJT be scheduled and recorded and that trainees be 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.

#4004. TECHNICAL TRAINING. The MSC MMSOP must:

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 MSC and subordinate units.

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#4005. CROSS-TRAINING. The MSC MMSOP must:

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.

### INSPECTION/VISITS AND QUALITY CONTROL

#5000. GENERAL INFORMATION. The MSC MMSOP must state policy on inspections/visits, minimum inspection requirements, and quality control procedures.

#5001. FORMAL INSPECTIONS. The MSC MMSOP must:

1. Provide specific instructions for the conduct of formal inspections within the MSC and subordinate units.
2. Require the use of maintenance inspection checklists.
3. Outline the types of formal inspections used within the MSC and subordinate units.

#5002. INFORMAL INSPECTIONS. The MSC MMSOP must state policy and assign areas of responsibility for informal inspections/visits within the MSC and subordinate units.

5003. FSMAO ANALYSIS VISITS. The MSC MMSOP should outline procedures for preparing for FSMAO visits and forwarding analysis reports.

#5004 INSPECTION REPORTS. The MSC MMSOP must:

1. Require that a critique be held immediately after each inspection conducted within the MSC and subordinate units.
2. Require the preparation and submission of inspection reports on all formal inspections within the MSC and subordinate units.
3. Establish a system for the consolidation and analysis of inspection reports by higher headquarters, the MSC, or subordinate units.
4. Require each element within the MSC and subordinate units to maintain on file for a specified period those inspection reports conducted by a higher headquarters.

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#5005. CORRECTION OF DISCREPANCIES. The MSC MMSOP must:

1. Establish quality control program, and identify by billet those authorized to inspect, accept, and approve work.
2. Establish the billet within the MSC and subordinate units that are responsible for managing the PQDR program and procedures for its accomplishment.

FACILITIES

6000. ASSIGNMENT AND RESPONSIBILITIES. The MSC MMSOP should:

1. Specify staff responsibility for assignment of maintenance facilities.
2. State the procedure for requesting additional facilities in garrison.

6001. STORAGE AND CONTROL. The MSC MMSOP should:

1. Specify the availability and procedures for use of Storage facilities.
2. State the procedure for equipment storage in maintenance facilities.

PUBLICATIONS

#7000. POLICY. The MSC MMSOP must:

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.

#7001. RESPONSIBILITIES. The MSC MMSOP must:

1. Specify staff responsibilities for timely submission of request for publications.
2. Establish the points that maintenance publications will be held.
3. Require that each commodity section or activity maintain a consolidated list of publications required in its area of responsibility.
4. State the requirement for maintaining any technical publications allowances for contingency deployments.
5. Identify by billet the individual responsible for publications control and internal distribution control.
6. Specify the method to be used for publications control and internal distribution.
7. Specify the policy for use of form NAVMC 10772.

#### MAINTENANCE-RELATED PROGRAMS

8000. GENERAL INFORMATION. The MSC MMSOP should:

1. Contain a statement for the relationship of maintenance personnel to maintenance-related Marine Corps programs.
2. Specify staff and maintenance section or activity responsibility for contribution to Marine Corps maintenance-related programs.

#8001. MAINTENANCE-RELATED PROGRAMS. The MSC MMSOP must:

1. State the required maintenance input.
2. State the element responsible for the input.
3. Provide the procedures for developing and providing input.
4. Cover each program in a separate paragraph.

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## APPENDIX B

### PUBLICATIONS CONTROL SYSTEM

1. Introduction. The primary purpose of this appendix is to provide guidelines for establishing and maintaining a publications library. Two basic facts must be considered:

a. When establishing a publications library, it is necessary to consider both technical publications and nontechnical publications

b. A publication library is dynamic in the sense that it is constantly changing; for example, new publications are added, changes are made to existing publications, publications are replaced, etc. Therefore, establishing a publications library is only half the mission. It is also necessary to maintain a system to support the continuing operation of a publications library.

### 2. Types of Publications

a. Technical Manuals (TM) furnish technical information, instructions, and procedures of a permanent nature on the operation, maintenance, and handling of equipment or material. The importance of these publications cannot be stressed enough. The information contained within a TM will vary according to the specific equipment or material and the echelon coverage intended.

b. Lubrication Instructions (LI) and Lubrication Orders (LO) furnish technical information and instructions on the service, lubrication, and related preventive maintenance checks and services requirements for equipment or material.

c. Modification Instructions (MI) authorize the modification of equipment or material and furnish technical instructions on how to accomplish the modification.

d. Technical Instructions (TI) furnish technical advice or information on equipment or materiel.

e. Supply Instructions (SI) furnish supply Support information on Specific supply problems or procedures for specific equipment or classes of materiel.

f. Support Concepts (SC) establish the Support policies developed for the logistic Support of specific items of equipment.

g. Stock Lists (SL) provide all levels of the Marine Corps Supply and maintenance operations with essential, up to date information for Marine Corps-managed items.

h. User Manuals (UM) provide procedures for formatting and entering information into the AIS.

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i. Marine Corps Orders (MCO) are directives that are permanent in nature.

j. Marine Corps Bulletins (MCBul) are temporary in nature.

3. Index of Publications. The Marine Corps has two types of publications, technical and nontechnical. Technical publications are divided into two types, equipment associated and nonequipment associated.

a. The NAVMC 2761 is the index and quarterly checklist for all directive type publications.

(1) Directive type publications are MCO's and MCBul's. MCO's and MCBul's are also contained in the SL-1-3.

(2) A decimal between the SSIC and the sequence indicates that the directive is an MCO, for example; 3000.11 is MCO 3000.11 and 3000 is MCBul 3000.

b. The SL-1-3 is the listing for all publications authorized use by the Marine Corps and stocked at the publications stock control point. Included are publications adopted for Marine Corps use that have been prepared by other Department of Defense activities and by commercial contractors. The SL-1-3 contents include:

(1) Table of Prefix Control Numbers. This table lists in sequence the prefix control number assigned to each publication series. Opposite the prefix control number is the title. The prefix plus the stock control number of the publication equals the publication control number (PCN) used throughout the SL-1-3.

(2) Section A - List of Publications in Prefix Control Number Sequence. This Section of the index divides the various types of publications into major categories. Each category is arranged by its respective PCN, publication number (short title), long title/change, and date.

(3) Section B - Cross-Reference List of Publications in Short Title Sequence. This section is a listing of publications by short title, long title, and PCN.

(4) Section C - List of Superseded or Canceled Publications in Prefix Control Number Sequence. This section lists superseded, rescinded, obsolete, deleted, and canceled publications since the last revision of the SL-1-3.

(5) Section D - List Those Publications That Are New Items in Prefix Control Number Sequence. This section lists new publications and changes to publications since the last revision of the SL-1-3.

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NOTE: The date listed in the SL-1-3 is five digits long with the middle digit standing for the month. The months with a two-digit number are listed with a letter, X for Oct, Y for Nov, and Z for Dec.

c. The SL-1-2 is the listing for all equipment associated publications. The contents of the SL-1-2 include:

(1) Item Designator (ID) Conversion Indexes. These listings provide users with an index of Item Designator (ID) numbers that have been superseded by Depot Repairable ID numbers, and conversely, Depot Repairable ID numbers reinstated to their former conventional ID numbers.

(2) Part I - Cross-Reference List of Equipment to Item Designator (ID) Numbers. This part lists end items, major components, and collection-type items-in alphabetical sequence with their ID numbers to provide a cross-reference to Part II. Equipment is identified by Federal item name, technical name, trade name, type or model number, or Joint Electronic Designator System nomenclature.

(3) Part II - Cross-Reference List of Equipment to Authorized Maintenance Publications. This part is arranged with the ID number sequence as a major entry on the same line with the name of the equipment. Indented under the ID number are sequential PCN's of supporting publications. A PCN is a prefix plus the stock control number of a publication. The publication number is indented under the equipment name. Next to the number are the publication titles and dates.

(4) Part III - Index of Superseded or Rescinded Publications. This part lists superseded, rescinded, obsolete, canceled, and deleted publications in PCN sequence, with the publication title, or number, and date. When a publication has been superseded, the PCN, title or number, and date of the new publication are listed. This part also lists whether the basic publication and all changes, or just selected changes, have been superseded or rescinded.

4. Technical Publication Identifications. A technical publication is identified by letters and numbers. The number will consist of four elements:

a. Type publication. The first two letters are the abbreviation of the publication; for example, TM, LI, SI, MI.

b. Basic number. One of three kinds of basic numbers will be assigned as described below:

(1) Item designator (ID) number. The equipment ID number, consisting of five digits suffixed by a letter of the alphabet (excluding O and I) assigned to a system, major item, or



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multiple-use major component. When the publication covers more than one model of the same equipment, the suffix letter will be dropped and specific models listed on the manual cover.

(2) National Supply Classification (NSC) number. The four-digit NSC number assigned to the materiel based on the group and class of materiel rather than on the ID number; for example, 6115, 6665.

(3) Standard subject identification codes (SSIC). The four- or five-digit SSIC is used when the publication provides general information on a wide range of equipment; for example electronics and motor transport. SSIC codes are listed in SECNAVINST 5210.11 and NAVMC 2761.

c. Maintenance echelon number. The EOM indicator is a significant information number provided to show the user the echelon of maintenance covered.

(1) -10. First echelon only (operator or crew).

(2) -20. Second echelon only (organizational maintenance).

(3) -30. Third echelon only (direct support (intermediate maintenance)).

(4) -40. Fourth echelon only (general maintenance support (intermediate) maintenance).

(5) -50. Fifth echelon only (depot maintenance).

(6) Any combination of these echelons to which a publication would apply:

(a) -12. First through second echelons.

(b) -13. First through third echelons.

(c) -14. First through fourth echelons.

(d) -15. First through fifth echelons.

(e) -23. Second through third echelons.

(f) -24. Second through fourth echelons.

(g) -25. Second through fifth echelons.

(h) -34. Third through fourth echelons.

(i) -35. Third through fifth echelons.

(j) -45. Forth through fifth echelons.

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(7) The letter "P" will follow the maintenance indicator number when the manual is a parts list. When a parts list is incorporated into the manual with text, the TM shall be designated "-12&P, -20&P, -30&P, -34&P" as applicable.

d. Sequence number. The sequence number follows the basic number or maintenance echelon indicator, as appropriate. The maintenance echelon indicator is not considered as part of the assigned sequence number. A virgule (/) separates the sequence number from the preceding element. The sequence number indicates a manual as being one of a series for a specific equipment.

e. Edition Designator. The edition designator, if applicable, is an alphabetic character, starting with capital suffix "A", that indicates each revision of a publication after its initial printing. The edition designator appears as the last element of the total identification number; thus, it immediately follows the maintenance of echelon number or sequence number, as appropriate.

5. Marine Corps Publications Distribution System (MCPDS). MCPDS is a system that provides services in support of the initial issuance of publications by Marine Corps publications sponsors and supports publications management by field commanders including the Reserve component. MCPDS provides distribution of Marine Corps publications to other government agencies and non-government entities with a bona fide reason for receiving them.

a. MCPDS AIS is a central component of MCPDS and is the on-line, interactive AIS resident on a mainframe computer located at Quantico, VA. MCPDS provides:

(1) Sponsor Support - Allows publications sponsors to electronically establish initial distribution for a new publication.

(2) Field user support - Allows electronic management of the activity's requirements for publications.

(3) Other government agencies and non-government entities support - is provided by the CMC (ARE).

b. All publications in MCPDS are available to Marine Corps activities. Units are authorized to use MCPDS in place of the SL-1-3/1-2.

6. Distribution. Distribution can be defined as the process of getting the required publication, in the right quantity, to the user of the publication. Activities can obtain publications by requisitioning or via automatic distribution. Publication distribution consists of two phases:

o Marine Corps Publication Distribution. From the publications stock control point, to the activity.

o Activity Internal Distribution. From the receiving point in the activity to the technical library.

In addition to the two phases of distribution, which describe the flow of an incoming publication there are two types of distribution.

o "Push" or Automatic Distribution. Result of automatic distribution based on quantities established in the PL. Quantities reflected on the PL will be automatically distributed to the activity only when a publication change or revision is published

o "Pull" or Requisitioning. Result of activity submitting a requisition to the publications stock control point.

a. Noncontrolled Publications. A publication in non-controlled unless it meets the definition of a controlled publication. Noncontrolled are those that apply to training supply, technical, or other miscellaneous publications stocked and distributed through the use of standard distribution list. Non-controlled publications may be requisitioned directly from the publications stock control point. PCN's are listed in NAVMC 2761 and SL-1-3/1-2.

b. Controlled Publications. Request for controlled publications must have a system sponsor approval via the CMC (AREB) whether for a one-time issue or continuing distribution. A letter of justification must be accompanied by properly prepared DD Form 1348. If approved by the sponsor, the request will be added to the activity's PL and the approved requisition will be forwarded to the publications stock control point for appropriate action. Request disapproved by sponsor will be returned without further action. Controlled publications are listed, identified, and regulated under standard PCN's in NAVMC 2761. Controlled publications are defined as:

- (1) Classified.
- (2) For Official Use Only.
- (3) Costly to print, for example; some TM's publications containing foldout pages/color, and recruiting aids.
- (4) Intended for HQMC use only.

c. PCN's

(1) All technical publications PCN's are found in the SL-1-3/1-2. Technical publications are equipment associated and nonequipment associated. For technical publications, nonequipment associated PCN's using the SL-1-3 will make the task more efficient. For technical publications, equipment associated PCN's using the SL-1-2 will make the task more efficient.

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(2) Nontechnical publications (directives) PCN's are found in NAVMC 2761. MCO's and MCBul's are also found in the SL-1-3.

7. Excess and Outdated Publications. When the following publications are in excess or outdated, they are not authorized for return to stock. They will be disposed of locally in the best interest of the Marine Corps.

- a. Obsolete or unserviceable publications.
- b. Letter-type directives.
- c. Publications that have a change(s) incorporated in the basic manual.
- d. Publications that cost less than \$50. The intent is to dispose of all printed matter locally whose value is less than the administrative cost involved in returning the material to stock.
- e. Publications not listed in the SL-1-3/1-2, except for current joint and other service publications, exceeding a value of \$50. These should be reported to the CMC (ARE) for determination of possible usage by other Services.

8. Internal Publication Control. Determine PCN's your section requires, and then contact the unit's publication control point (UPCP) via the MMO. They will assist you in setting up an internal publication control system.

9. Staff Cognizance. The UPCP has staff cognizance over control and internal distribution of publications and directives. This control and internal distribution of publications and directives is accomplished through an Organization Central Files Section. This section is responsible for the following:

- a. Determining organizational quantities for publications and directives.
- b. Determining and effecting internal distribution for publications and directives within the activity.
- c. Organizing and maintaining the Organizational Central Files and Directives Control Point.
- d. Assigning consecutive point numbers for command-issued directives and ensuring control and review of such directives both before and after issue.
- e. Maintaining, storing, accounting for, and controlling the organization's holdings for classified material and all related matters to include communication security material distributed under the Communication Security Material System and daily operation of the Classified Material Control Center.

10. Controlling Publications. You as a publications clerk are responsible for controlling publications as they apply to your section. Consequently, you will have to coordinate and communicate with your UPCP for distribution.

11. Publications Listing (PL). A PL is an electronic display of all publications in MCPDS. Each PL is unique because the system shows a value in the quantity field for a PCN for which the activity is currently on distribution. MCO P5600.31 contains the policy for the PL.

12. Developing the Publications Control System. A team assists the commander in operating a System to control publications. The team consists of the UPCP and the MMO who develop the system, and the executive officer and special staff officers and subordinate activity commanders who operate the System.

a. There is a series of management tasks to develop, operate, and manage a publications control system.

b. The UPCP and the MMO must work together to develop the publications control System. There are four interrelated functional areas of the system: publications allowance control (which publications are required), internal distribution control (how publications are handled to ensure that the right publications get to the right place in the right quantity), inventory control (how publications are maintained once they are in the library), and requisition control (how publication shortfalls are replaced).

c. The remainder of this appendix describes a publications control System that supports the activity's total publications library requirements. The emphasis is slanted toward the technical publications part of the publications control System. The non-technical publications part of the System is just as important, but the technical publications system in the Marine Corps is more difficult to understand and more awkward to work with and, therefore, requires greater explanation. Let's discuss the four functional areas in detail, which will bring the entire system into perspective.

13. The system outlined in this appendix may suit your activity's requirements as it is, or it may require modification because of your situation or organization, or you may not need this guide because you have your own system that functions perfectly well.

a. This appendix contains step-by-step procedures designed with a battalion headquarters in mind. It can be modified to fit the other levels that have their own PL, such as squadrons, separate companies, or regimental headquarters. This appendix was written on the basis of establishing a publications control system.

b. The term "technical library" will be frequently used in this appendix and encompasses both the technical and nontechnical publications that are used in the maintenance shops.

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c. There is no intent for the MMO to takeover the authority or responsibility in the business of publications control and distribution. The UPCP has primary staff cognizance in the area of overall publications control, and the MMO has primary staff cognizance in the area of technical publications. This appendix discusses a single publications control system for the activity, that encompasses both technical and nontechnical publications, and requires a joint effort on the part of the UPCP and the MMO.

### 14. Functional Area

a. Allowance Control. The publication allowance control functional area consists of step-by-step procedures beginning with what and how many publications are required and ending with a PL update. There are three categories of publications involved: technical publications that are associated with specific items of equipment; for example, LO for the M998 truck, SL-3 for the LAV, and TM for the M1A1 tank; technical publications that are nonequipment associated; for example, TM-4700-15,/1, SL-1-3/1-2, UM-4790-5; and nontechnical publications or directives; that is, orders and bulletins. These three categories of publications will be taken through a series of seven steps that will culminate in an updated PL. Because of basic differences among these three categories, each category will be taken separately through steps 1 through 4, starting with technical publications (equipment associated). Steps 5 through 7 are common to all three categories.

(1) Step 1. Determine what equipment is rated or supported by each maintenance/commodity section. Using your activity's T/E, activity allowance list, and any special allowances prepare a publication control form for each type of equipment rated.

(2) Step 2. Determine what publications are associated with each type of equipment rated using the SL-1-2. Locate each type of equipment in the SL-1-2 and record all the publications that are associated with that piece of equipment and within the authorized EOM for the activity on the publication control form. Your activity's T/O cover page and any special maintenance authorizations granted by higher headquarters will indicate your authorized EOM.

(a) All MI's will be maintained regardless of the authorized EOM. They are required to operate effective modification control and maintenance management programs.

(b) Support maintenance units require the publications for the T/E equipment of all units they support.

(c) Some end items of equipment have components that have publications of their own. The publications for those components are not always listed under the major end item in the SL-1-2. The component, that may be an end item itself, may have to be researched separately in the SL-1-2.

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(3) Step 3. Determining the number of copies for each publication needed requires a judgment call based on how many technical libraries are to be maintained and how many copies are needed in each library. Enter the quantity required per location and the total quantity required. Factors to be considered in determining the number of libraries are as follows:

(a) The activity's concept of employment contained in the T/O cover page.

(b) Contingency plans and periodic deployments, as well as mobilization.

(c) Is the shop spread out over several buildings or is it centralized? Factors to be considered in determining the number of copies of each publication in each library are:

1 The quantity of each type of equipment to be supported by the library.

2 The number of maintenance/operator teams that mad simultaneously require a given publication.

(d) Is the publication going to be used in a clean shop, or will it be used outside in the rain, snow, or around oil or grease where it will only last a short time? Enter the quantity required per library and the total quantity required in the appropriate columns of the publication control form.

(4) Step 4. Determine and record the PCN on the publication control form for each required publication. For technical publications, the only sure way is to check the PCN for each publication in the SL-1-3/1-2.

b. Now that you have completed the preliminary work with the technical publications that are associated with specific equipment items, go back through steps 1 through 4, as appropriate, for technical publications that are nonequipment associated and for nontechnical publications.

NOTES: 1. Determining requirements for technical publications that are nonequipment associated is not as clear as it is with equipment associated publications. Publications (nonequipment associated) will not normally be listed under an equipment ID number in the SL-1-2. Often discovering the existence of these publications comes from references in other Marine Corps directives, inspection reports, experience, or a thorough review of the SL-1-3. Determining the number of copies required and their PCN's is done essentially the same way as described in steps 3 and 4, preceding, for technical publications (equipment associated). A publication control

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form must be completed for publications (non-equipment associated); however, the publication control form does not have to be annotated with specific equipment information.

2. Determining of requirements for nontechnical publications (Orders, bulletins, instructions, etc.) is also based on a series of judgment calls. The basic criterion for deciding whether or not a publication is required is the answer to the question, "Does this publication contain information I need to accomplish the mission of my maintenance/commodity section?" References used to develop a nontechnical Publications Distribution Control form include SOP's or other orders of senior headquarters, inspection checklists, reports, etc. Record nontechnical publications information on the same publication control forms used for technical publications (nonequipment associated.) PCN's for non-technical publications are found in NAVMC 2761 and the SL-1-3.

(1) Step 5. Decide what publications you need, the quantity required, and record that information on the publication control form. Now it's time to sit down and really analyze and refine your requirements for the various publications. For example, you have decided that you require two copies of publication "B" distributed under PCN 222 222222 22, and you require three copies of publication "C" distributed under PCN 333 333333 33, this means you are going to have to list your PL distribution requirement for two copies of publication "B" PCN 222 222222 22 and three copies of publication "C" PCN 333 333333 33.

c. The analysis discussed in step 5, preceding, consists of sorting by PCN the publication control forms you have prepared. The equipment associated publication control forms will have to be moved from pile to pile as you work from one PCN to the next when there are several different PCN's among the publications listed on one publication control form. Then, by reviewing the requirements for the different publications distributed under each PCN, decide how many copies of the publication you require. On a sheet of paper, list the PCN's list you require and the quantity. You should have separate lists for each source of publications; for example, HQMC, Force headquarters, major commands, and MSC.

NOTES: 1. As a result of this analysis, you may need to change some of the quantities you originally entered on the publication control forms.

2. During your analysis, be alert to duplications, because some technical publications will apply to more than one type of equipment.



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3. Keep your publication control forms sorted by PCN to facilitate completion of the next step.

(1) Stem 6. Consolidate activity requirements at the activity level in preparation for updating the PL and recommending changes to PCN's for directives from senior commands. The UPCP and MMO should chair a meeting of the heads of all of the shops, sections, and offices that have a requirement for publications down to the chaplain and career planner. The publication control form should be used to record the information.

(2) Stem 7. The UPCP can prepare the necessary correspondence to update the PL per MCO P5600.31 Correspondence must also be prepared to request changes to distribution lists of other senior headquarters

d. Internal Distribution Control. The internal distribution control functional area consists of procedures designed to assign a chain of responsibility and designate the specific steps and tasks involved in getting a publication from the mail room, where it has arrived, through the UPCP, shop officer or Section head, and the publications librarian to the shelf of the proper library. The publication control form that was prepared during the development of Publications allowances, should be used as a rigid guideline for who gets each Publication. Also, Procedures must be established to ensure that publications received as a result of requisition are not treated the same as publications received on automatic distribution. In the case of Publications received on automatic distribution, the UPCP must make direct distribution based on copy location information found on the internal distribution control document. In the case of publications received in response to a requisition (there will be a copy of release/receipt document in the package of publications), UPCP must send the whole package to the supply officer who will forward the publications to the maintenance/commodity section that requisitioned them and close out the pending requisition on file.

15. Inventory Control. So far, this appendix has described how to determine what publications are required and how to establish allowances for automatic distribution, and listed the mechanics of getting publications to the shop or office when they are received. The inventory control functional area consists of procedures for handling publications once they have arrived at the shop or office. The procedures established in the inventory control functional area must be thoroughly employed by your publications librarians on a day-to-day basis to ensure that Marines have up-to-date publications available to them for daily tasks as well as operational deployments. Inventory control Procedures must address the following facets of library management:

a. The libraries to be established and their locations (the factors to be considered in determining the requirements for libraries were discussed in the publications allowance control functional area).

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b. The Physical arrangements of the different types of publications within a library. Nontechnical publications are maintained per MCO P5215.1. Technical Publications may be arranged in two ways: nonequipment associated publications in short title numerical sequence and equipment associated publications by equipment type with each equipment type in publication short title numerical sequence.

c. Procedures must be established to ensure that deployment and contingency libraries are identified, documented for embarkation, and arranged in such a fashion as to support embarkation plans, extended shipboard operations, and ashore.

d. Two types of publication inventories, wall-to-wall inventories and update inventories. In setting up a publications control system, there may have to be a wall-to-wall inventory to initially establish what is on hand. Update inventories will be conducted each time a new NAVMC 2761 or SL-1-3/-1-2 is Published.

e. Procedures must be established relative to the publication control forms and contain which form must be used to manage a publication control system. At a minimum, there will need to be a master card file at each maintenance/commodity section, using the publication control form or a locally produced form containing similar elements of information; a publication control form and an inventory list attached to each deployment and contingency library.

f. Procedures must be established for keeping track of publications checked in and out on a daily basis.

g. Procedures must be established on how to enter changes to the different types of publications and how to update records to reflect new publications, new changes, or requisitions that have been filled.

16. Requisition Control. The requisition control functional area consists of Procedures designed to ensure that publications, shortages are properly identified and promptly requisitioned, and that pending requisitions are updated in a timely fashion.

a. The identification of publications, shortages is accomplished during a wall-to-wall or an update inventory, as discussed earlier. A visual inspection of the "No. Rated on the PL" and "Publications On Hand" listed on the left hand margin is a good way to begin the requisition process. The accurate and careful use of the publication control form to Properly document the status of a publications library cannot be overemphasized.

b. Once publication shortages have been identified, the missing publications must be ordered per MCO P5600.31

17. Publication Control Form. The publication control form may be a local Produced form or an automated form. The MSC MMSOP will

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establish which form of control is used. The publication control form will contain at a minimum the following:

- a. Individual Activity Code/Activity.
- b. Equipment nomenclature. When the publication control form is used for equipment related publications, the equipment nomenclature will include item designator number (I.D. No.) and TAMCN.
- c. Date. The date the publication control form is being prepared.
- d. PCN. The publication's PCN as listed in the NAVMC 2761 or SL-1-3/1-2.
- e. Short Title. The publication's short title as listed in the NAVMC 2761 or SL-1-3/1-2.
- f. Publication Date. The publication's date as listed in the NAVMC 2761 or SL-1-3/1-2.
- g. Number of Changes. The number of changes to the basic publication as listed in the NAVMC 2761 or SL-1-3/1-2. When the SL-1-3/1-2 list changes separate, each change will be listed on a separate line.
- h. Location. The publication's location. The quantity of publications required at this location. This total quantity will equal the quantity listed in total quantity required.
- i. Total Quantity Required. This quantity will equal the total quantity for each location.
- j. Quantity On Hand. This quantity will equal the total quantity on hand and may be entered in pencil.

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## APPENDIX C

### VALIDATION AND REQUISITION PROCEDURES

#### 1. Maintenance Shop Procedures

a. Requirements. Repair parts, secondary repairables, components, and collateral equipment, unless properly controlled, represent a continuing drain on the unit's resources. Effective validation/reconciliation procedures will ensure that requirements are known, promptly processed, and when received, applied to the correct item.

#### b. Definitions

(1) Validation is 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.

(2) Reconciliation is the process used to ensure that validated requirements are properly logged within the MIMMS/SASSY (AIS) output reports.

(3) An ERO bin is an area where the parts ordered on an EROSL for an ERO are stored waiting to be placed on the equipment. The area can be a shelf, box, or something similar. All parts for the same ERO are kept together in the same bin, and the location is normally indicated by the ERO number. Parts requiring a larger area are normally stored together and must be marked with the applicable ERO number.

(4) Preexpended bin items are material kept in a maintenance activity to facilitate quick repair of equipment. Items in preexpended bin must meet the criteria established in MCO P4400.150.

(5) Shop overhead material is material kept on hand to maintenance activities to operate maintenance shops. This also includes preexpended bin items whose unit of issue is greater than the quantity required.

(6) Shop overhead labor is those tasks performed by shop maintenance personnel not directly related to the maintenance of specific equipment; for example, recordkeeping, operation of technical libraries, ERO bin clerks, and supervisors.

(7) Critical parts are those parts or secondary repairables that preclude equipment from performing its intended mission of shooting, moving, or communicating and require second through fifth echelon expenditure of maintenance hours.

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(8) Noncritical parts are those parts or accessories that affect an item in the performance of its intended mission but do not preclude it from shooting, moving, or communicating.

### 2. Procedures

#### a. Requisitioning

(1) All repair parts and secondary repairables will be requisitioned, using an EROSL.

(2) SL-3 components may be requisitioned using the EROSL and reported to MIMMS/AIS. Only SL-3 components will be ordered on a Category Code S ERO per TM-4700-15/1. When the lack of the SL-3 component causes an item to be deadlined, the SL-3 component must be ordered under the ERO that deadlines the equipment.

(3) Shop overhead ERO's citing ID numbers (00000A for communication-electronics, 00000B for engineer, 00000C for general supply, 00000D for motor transport, and 00000E for ordnance) must be opened before requisitioning preexpended bin items via the EROSL. Those preexpended bin items that are applied to equipment in quantities equal to or in multiples of the unit of issue will be recorded against the open ERO for that item of equipment, using a "4 Parts" transaction citing Advice Code "PB."

(4) Shop overhead material will be requisitioned the same as preexpended bin items.

#### b. Accounting

(1) The supply system accounts for material until it is issued by the organic supply/shop stores. To ensure accountability, maintenance shops will make the following annotations on the EROSL: the date/quantity the items are received, their ERO bin location, and date/quantity the items were issued for installation. The method of annotation may be by circling, check mark, use of the blanks in the heading of EROSL, use of the unused card columns, or written information on the EROSL, as directed by MSC MMSOP.

(2) Except for overhead material and those items meeting the criteria for inclusion in preexpended bin, all parts held by the maintenance shops must be associated with an open ERO.

(3) All parts obtained from sources other than the supply source must be reported to capture usage history via the "4 Parts" transaction. FMSS-supported units will cite Advice Code SC (scrounge) on the EROSL. Non-FMSS-supported units will comply with locally established procedures.

c. Validation Procedures

(1) Each day the MIMMS/records clerk will accomplish the following:

(a) Verify the Daily Transaction List (DTL).

(b) Check to ensure that ERO's shown on the Daily Process Report (DPR) are in the correct job status.

(c) Check those ERO's in a "SHORT PART" job status with no part on order to ensure that the EROSL's have been prepared and submitted. When an EROSL has not been submitted, submit one as soon as possible.

(d) Check off those parts transactions on the EROSL that have been submitted to the supply source and appear on the DPR. When all parts transactions on the EROSL do appear on the DPR, attach the EROSL and file with the pending copy of the ERO. When any parts transactions on the EROSL do not appear on the DPR, check off those transactions that do appear and file the ERO/EROSL in a pending file until all transactions are checked off. Always verify the input data to the EROSL for accuracy. An EROSL will have the following annotations for parts/material received from the supply source. The procedures for annotating the EROSL will be established in the MSC MMSOP.

1 The quantity received and date received.

2 The ERO bin location for those items placed in ERO bins. When the ERO number is used in ERO bin assignment, the annotation of the ERO bin location is not required.

3 When parts are issued to the shops for installation.

(2) Each day the commodity manager or shop/maintenance officer or chief will accomplish the following:

(a) When all critical parts have been received for a category code "M" ERO but noncritical parts remain outstanding, ensure that all critical parts are installed as well as those non-critical parts that are practical to install. Then either the category code will be changed or a new ERO will be opened.

(b) When a new ERO is opened, ensure that the following has been done.

1 All pending parts have been transferred to new ERO via an "8" transaction with Authority Code "9" (with the assistance of the supply officer).

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2 Ensure that any parts which have been received and could not be installed are placed in the newly assigned ERO bin.

3 Ensure that an ERO against which category code "M" parts have been received and installed is closed.

(3) Every 2 weeks, after completing the daily validation, the commodity manager or shop/maintenance officer or chief will accomplish the following:

(a) Review the daily validation procedures to ensure that they are done properly.

(b) Ensure that all ERO's cite the category codes that accurately reflect the actual condition and status of the equipment.

(c) Compare all ERO's on the DPR in a short parts status with the ERO and EROSL to ensure that:

1 ERO job status is correct.

2 ERO category codes and priority are valid.

3 An EROSL has been prepared, document numbers assigned, and transactions processed.

4 The priorities assigned to document numbers on an EROSL logically follow the priority and category code assigned to the ERO.

5 The priorities assigned meet the criteria contained in MCO 4400.16.

(e) Inventory the ERO bins by comparing the EROSL to the material/parts in the bin. Annotate the EROSL with any changes required. Ensure that corrective action on changes are entered into MIMMS/AIS. All of the repair parts in the ERO bin should be reflected as received on the DPR.

(f) Ensure that all open ERO's have been prepared per TM-4700-15/1.

### (4) Unit MMO Validation Responsibilities

(a) Weekly

1 Review RM4 remarks for accuracy and thoroughness.

2 Reconcile deadline status of equipment reflected on the LM2 Unit Report with the Weekly Owning Unit Maintenance Table of Authorized Materiel (TAM) Report and the Daily Process

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Report (DPR). Units will manually load to the LM2 Unit Report those active category code "M" (ERO's) which are not resident on the LM2 Unit Report.

(b) Every 2 weeks the unit MMO will review the DPR and Daily Transaction Listing (DTL) to identify the following:

1 Recurring errors on input transactions. Trends in input errors should prompt a review of a unit's procedures or discussions with the Maintenance Information System Coordinator Office (MISCO) concerning possible systems problems.

2 Requisitioning delays. Comparing the date of the EROSL, the document date, and "4 Parts" transaction run date will reveal any delays in processing requisitions and identify the source of the delay.

(c) Monthly

1 Reconcile the LM2 unit report with the EAF (or T/E), TAF (or T/A) and a MCBul in the 3000 series to ensure all MARES reportable equipment is listed on the LM2 unit report with the correct authorized quantity.

2 Reconcile the Mechanized Allowance List (MAL) and the LM2 Unit Report with the equipment physically on-hand to ensure "possessed" quantities are reported correctly.

### d. Reconciliation Procedures

(1) Every 2 weeks, after completing validation, the commodity manager or shop/maintenance officer or chief will accomplish the following:

(a) Ensure that all receipts, cancellations, and scrounges have been annotated on the EROSL and that required transactions have been submitted and processed.

(b) Ensure that the supply status provided is current, acceptable, and understood. Request the supply office to clarify any status that is not understood or does not sufficiently respond according to priority.

(c) Ensure that the DPR is annotated with the current and correct data and reconciled with supply against SASSY output reports. Prepare and submit the required transactions to correct invalid data reflected on the DPR.

### e. Validation/Reconciliation Procedures (Non-FMSS-Supported Units)

(1) Frequency. Validation/reconciliation must be accomplished daily and every 2 weeks. The minimum requirements for



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validation/reconciliation are explained in the following Paragraphs.

(2) Daily. A shop/records clerks will accomplish the following:

(a) Ensure that an ERO/SRO is prepared for each item of equipment that requires maintenance.

(b) Ensure that each ERO/SRO requiring a repair part or secondary reparable has requisition prepared and held by the organic supply source.

(c) Ensure that all material received from the supply source has been issued or stored in the ERO bin.

(3) Every 2 Weeks. Once every 2 weeks, the commodity manager or shop/maintenance officer, or chief will accomplish the following:

(a) Review the daily validation procedures to ensure that they are being done properly.

(b) Ensure that all ERO's/SRO's cite the actual condition and status of the equipment.

(c) Inventory the contents of all ERO bins by comparing the appropriate parts requisition to the quantity on hand. Annotate the parts requisition with any changes and report any requirements to unit supply.

(d) Reconcile each pending part requisition and accomplish the following:

1 Identify those parts no longer required and cancel requisitions.

2 Identify those parts received but not shown as received by unit supply; submit receipt transactions.

3 Identify those parts not received but shown as received; submit a new requisition.

4 Ensure that the supply status Provided is current, acceptable, and understood. Request the supply office to clarify any status that is not understood or does not Sufficiently respond according to priority.

(4) Reconciliation of Direct Support Stock Control-Stocked Items. Reconciliation of direct support stock control (DSSC) stocked items that were not in stock and of repair parts requisitioned via blanket purchase agreement will be accomplished per locally established procedures.

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### APPENDIX D

#### CONTROL OF TOOL SETS, CRESTS, AND KITS AND CALIBRATION OF TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE)

1. Introduction. MCO P4400.150 and MCO 4733.1 require the unit commander to establish procedures for the control of tool sets, chests, and kits and the calibration of TMDE.

a. The requirement for inventory of tool sets, chests, and kits is as follows:

(1) Tool sets, chests, and kits that are issued to an individual where locks and a secure storage area are provided will be inventoried at least semiannually.

(2) Tool sets, chests, and kits that are securely stored will be inventoried at least annually.

(3) Tool sets, chests, and kits that are issued to a responsible officer (RO) will also be inventoried upon change of RO.

b. MCO 4733.1 requires that all test and measuring equipment be in one of four calibration status categories: equipment requiring calibration, equipment requiring special calibration, equipment not requiring calibration, or equipment that is inactive. Calibration status of equipment must be kept current.

#### 2. Calibration Control Program

>a. Identify. Using the unit's T/E and allowance list (to include special allowance), the MMO and maintenance personnel must identify all items of TMDE authorized the unit per TM-4700-15/1.

b. Locate. All TMDE in the measurement areas of electrical/electronic, physical/mechanical, automotive/motor transport, radiac, and ordnance within the unit should be located. As the equipment is located, the section holding the equipment must prepare a calibration control record per the TM-4700-15/1. During the search to locate all TMDE, it must be kept in mind that many items are component parts; for example, pressure gages, meters, micrometers, etc.

c. Inventory. When all equipment has been located, the MMO and maintenance section representatives (to include NBC) should match the equipment, calibration control records, and the T/E and unit allowances to ensure that all items have been accounted for and are complete.

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d. Schedule. The end result of scheduling is the establishment of calibration due dates. However, when preparing the calibration schedule, the section/unit must ensure that sufficient assets are on hand for day-to-day operations.

(1) There are four categories of calibration as shown in the following. All TMDE should be assigned to one of those categories and have a current label affixed. Assignment should be based not only on the equipment's present use but also on requirements to task organize, form detachments, or field contact teams.

(a) Equipment Requiring Full Calibration. Those items which must be accurate across their full range of measurements.

(b) Special Calibration. Those items which must be accurate across a portion of their full range of measurements. Items labeled "Special Calibration" will have a tag affixed indicating limitations.

(c) CNR. Those items which are used for other than quality or quantity measurements and, therefore, the accuracy of the measurement is not a factor.

(d) Inactive. Those items not required for use for at least their next calibration period but which are still required for future contingencies.

(2) The following examples are provided to assist in the evaluation of TMDE. When the using organization requires assistance in making the appropriate determination for an instrument, advice should be obtained from the supporting calibration facility.

(a) Examples for "Special Calibration" Designation

### 1 Electrical/Electronic

a An AN/USM-116C Multimeter is used as follows:

- (1) 0 to 200 volts (V), direct current (dc)
- (2) 0 to 300 V, alternating current (ac) at 60 to 400 Hertz (Hz)
- (3) Used for relative radio frequency (RF) voltage measurements and peak output indications.
- (4) All resistance ranges are used.

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(5) No dc current ranges are used.

(6) Operated from 60 Hz power only.

b An AN/USM-383 Signal Generator is used as follows:

(1) RF is 30 to 76 megahertz (MHz).

(2) The output level is 0.1 microvolts (uV) to 500 uV.

(3) Intermediate frequency is not used.

(4) Modulation is internal only 0 to 50 kilohertz (KHz) deviation.

(5) Power input is 115 Vac, 60 Hz only.

2 Physical/Mechanical. A torque wrench having a range of 0 to 150 foot-pounds (ft-lb's) is used only for tightening cylinder head bolts and crankshaft main bearings. The torque range used for these purposes is 60 to 120 ft-lbs, and the torque is always applied in a clockwise direction. A hydraulic pressure gage test assembly, having a range of 0 to 4,000 lb per in<sup>2</sup>, is only used to measure pressures below 3,000 in<sup>2</sup>.

3 Automotive/Motor Transports. A battery starter test set with 6-, 32-, and 24-V ranges is used only on the 24-V range. An engine distributor and revolutions per minute test set are used to test 4- and 6-cylinder, 4-cycle engines only.

4 Radiac. An AN/DPR-27J Radiac Set is used for training purposes and has no other application in the organization's mission. In conduct of the training, no radiation levels above 2 milliroentgen per hour are measured.

NOTE: The opportunity for "Special Calibration" of radiac equipment is limited because it is not possible to estimate the levels to be encountered in an emergency situation. "Special Calibration" in the radiac area is limited to training equipment and special applications, such as instructions used for surveillance of radioactive materiel storage areas where the level is held below a specified amount.

5 Ordnance Gages. A trigger pull weight has a nominal weight of 3.68 lb but, for a certain application, 3.75 lb is required (no example shown).

NOTE: The opportunity for "Special Calibration" of ordnance gages is limited because they are usually designed for a single special-purpose measurement.

(b) "Inactive" Designation. With the exception of radiac equipment, this designation should be used in instances where use of the instrument is not currently required and is not expected to be required for some period of time, usually one calibration cycle/interval or longer. However, when the specific length of time is not known, designate the item as inactive. When use of the instrument is required later, it can then be submitted for "Calibration" or "Special Calibration," as appropriate. "Inactive" designation of radiac equipment is limited to those items which are normally used, but not presently required, for training purposes only or special purpose applications, such as surveillance of radioactive materiel storage areas and the instruments have no other application in the organization's mission.

(c) Examples of "CNR" Designation

1 Electrical/Electronic. An AN/PSM-4B Multimeter is used for only continuity checks to determine an open or short condition and to determine whether voltage is present on the power lines. The specific values of resistance and voltage are of no interest.

2 Physical/Mechanical. A T-16 surveying Theodolite is used for training purposes only and is not used for obtaining specific values.

3 Automotive/Motor Transport. An Allen Model 30-85 Ignition Coil Capacitor Resistor Test Set is used only for comparing known good components with components of unknown condition. The measurements obtained in this instance would be a comparison of relative values, and specific values would not be required.

4 Radiac. The PP-354D/PD Charger Radiac Detector does not require calibration by virtue of its use. TI-4733-35/9 provides information for calibration of radiac instruments. The PP-354D/PD along with other radiac equipment is listed as CNR in that TI. The opportunity for CNR designation of radiac instruments is limited to those listed in TI-4733-35/9 because the quantity of radioactivity being measured is important.

5 Ordnance Gages. No examples are given for the CNR designation of ordnance gages because they are designed for a single special purpose, and most are manufactured to close tolerances. However, when the using organization knows of gages where CNR would be appropriate, then that designation should be used.

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### (3) Calibration Scheduling

(a) Calibration scheduling is automatic; the next scheduled calibration period is that date entered on the calibration label affixed to the equipment by the calibration facility. Equipment must be promptly turned in for calibration. There are exceptions to this noted in the following:

1 Due to repair, new equipment, training exercises, etc., several items of the same type of equipment may come due for calibration at the same period.

2 Training/actual commitments may require a change in calibration categories.

3 An item due for calibration cannot be turned in for calibration as it is mission-essential, and its replacement has been delayed in its return from calibration. This instance presents a problem, as the unit must use an item whose accuracy is suspect. This situation should be avoided when possible. Efforts should be made to hasten the return of the replacement item from calibration.

(b) The preceding exceptions as well as poor management can cause uneven calibration scheduling. This can cause a reduced capability for the unit to perform its mission by having the majority of a specific type of equipment due for calibration during the same period. An even spread across the calibration cycle is required. To do this in an orderly manner, the MMO should establish a program which will include the items by serial number, calibration due dates, and the dates the unit plans to induct the items for calibration. This will provide a written notification for all to know why some items may be overdue/turned in early for calibration. Some cases may occur when an item due for calibration is required at the unit; but these instances should be few, and they should be documented on the calibration control record stating an explanation of the situation and notification of the MMO.

#### e. Control

(1) The MSC MMSOP will designate which techniques for calibration control are to be used and by what sections within the unit they will be used. Additionally, the MSC MMSOP should state the procedures for opening an ERO on, and evacuating TMDE, when the unit's policy is to open only a third echelon ERO, vice a second and third, prior to evacuation.

(2) The equipment calibration process is as follows:

(a) By the calibration due date, the equipment should be removed from the immediate working area to an area where it will be processed for induction into calibration. (This is necessary to prevent usage of an item whose accuracy is suspect.) An ERO will be prepared on the equipment when not prepared earlier and the

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equipment evacuated for calibration. A unit should not have an item due for calibration which does not have an ERO or which has been documented for an adjustment of calibration due date to allow a spread of equipment due across the calibration cycle.

(b) Units will normally collect items for calibration and induct them two to four times a month, depending on location, the number of items due for calibration, and need of the equipment. This means that items will be in the processing area awaiting evacuation past the calibration due date. This time will be kept to a minimum and will not be longer than 15 days past the calibration due date.

(c) The unit's MMO should coordinate the calibration control effort throughout the commodity areas, including NBC and GME. The amount of this coordination effort depends on the unit. The MMO of a supporting establishment or Reserve unit will usually become more involved in the evacuation process due to the location of the calibration facilities.

(d) At least annually, the unit will evaluate all of its TMDE and ensure that it is in the correct calibration category consistent with its mission as well as to determine when an item is required/not required.

(e) The calibration control record should contain the ERO number which inducts the item for calibration.

(f) Upon return of an item from calibration, the calibration control point must update the control record with the calibration due date from the sticker on the equipment per the TM-4700-15/1.

(g) Units on the FMSS will open a unit's ERO on TMDE due for calibration that month and close the ERO upon completion of the calibration.

f. Inspect. The MMO and maintenance officers will ensure that, as part of the normal inspection process within the unit, the equipment requiring calibration is properly labeled and falls within the calibration interval.

g. Inactive In Excess of 3 Years. All equipment which has been in an "INACTIVE" status for greater than 3 years must be reviewed to ascertain if the equipment is still required for use/contingency operations. When the item is still required, submit the item to the calibration laboratory for intermediate PM, functional check, and application of a new "INACTIVE" label. For those items no longer required, a request for deletion from the T/E should be submitted and the item tagged indicating this action.

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### 3. Tool Control

a. Identify. Using the unit's T/E and allowance list (to include special allowances), the MMO, supply officer, and maintenance officers must identify all tool sets, chests, and kits.

b. Locate. Each tool set, chest, and kit within the unit should be located; and responsibility for accounting for and maintaining the tool set, chest, or kit should be assigned.

> c. Inventory. When all of the equipment has been located, the MO, supply officer, responsible officer (RO), maintenance officers should match the tool sets, chests, and kits to the T/E and allowance list to ensure that all items have been accounted for.

> (1) A complete inventory of all tool sets, chests, and kits should be made using the appropriate SL-3, SL-3 extract, or U.S. Army supply catalog.

> (2) A local SL-3 or SL-3 extract will be established for sets, chests, and kits for which an SL-3 or U.S. Army supply catalog is not available; for example, commercial tap and dye sets and drill sets. The local SL-3 or SL-3 will be used for conducting the required inventories.

> (3) Special tools established per MCO P4400.150 must also be inventoried and contained on a SL-3 or SL-3 extract.

> (4) Each SL-3 Inventory/SL-3/SL-3 extract will be maintained per TM-4700-15/1.

> d. Excess Tools. Excess tools will be rolled back to the supply system per MCO P4400.150.

> e. Special Tool Allowances. Special tool allowances will be maintained per MCO P4400.150.

#### f. Control

(1) Categories that tool sets, chests, or kits can be placed in and their required inventory intervals are as follows:

(a) Tool sets, chests, and kits that are issued to an individual where locks and a secure storage area are provided will be inventoried at least semiannually.

(b) Tool sets, chests, and kits that are securely stored will be inventoried at least annually.

(c) Tool sets, chests, and kits that are issued to a RO will also be inventoried upon change of RO.



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(2) All tool sets, chests, or kits will be inventoried using the SL-3, SL-3 extract, or U.S. Army supply catalog. Any supply system responsibility item (SSRI) and using unit responsibility item (UURI) needing replacement will be requisitioned per MCO P4400.150. It is imperative that the unit budget for tool replacements to eliminate a shortage of funds when critical tools are required.

(3) Tool sets, chests, or kits issued to individuals will be secured when not in the custody of the individual. A duplicate key or a copy of the lock's combination should be maintained by the RO.

(4) Tool sets, chests, or kits held by the section's tool room for issue to individuals should be maintained in an area secure against pilferage. The MSC MMSOP will include a method to account for issues and receipts. Some examples of suggested techniques are:

- (a) Logbook.
- (b) Stamped tags (ID tag blanks).
- (c) Sign-out cards.

(5) Control must also be maintained over requisitions for components of tool sets, chests, or kits. Several techniques are available to exercise this control:

- (a) Logbook.
- (b) Suspense copies of the requisition.
- (c) Use of the reporting unit's demand listing by citing designated supplementary addresses on the requisitions (SASSY-supported units).
- (d) Use of MIMMS/AIS DPR by using ERO's as outlined in TM-4700-15/1 and appendix C of this Manual.

g. Inspect. Despite the requirement to conduct required inventory intervals, there still remains a requirement for the MMO to inspect tools and verify inventory records and requisitions during normally scheduled inspections with a unit.

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## APPENDIX E

### SHOP ADMINISTRATION PROCEDURES

#### 1. Introduction

a. The maintenance personnel and support and test equipment authorized a unit comprised of 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. 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 requirements. 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.

b. 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 (second echelon) or in a commodity-oriented maintenance unit or activity (third or fourth echelon). 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.

c. 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 shop size or authorized EOM. The difference between 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. Information

(1) 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 using 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 which has responsibility for the selection of the specific command post site

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and the allocation of space within it. Command post site selection and space allocation considerations for these units are contained in FMFM 3-1. Maintenance areas are not normally required in those using units where maintenance capabilities are assigned directly to the supported elements of the unit.

(2) 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.

b. 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.

(4) 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.

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

c. 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

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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

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 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.

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(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 E-1 is an example of a maintenance area in the field.

### 4. Organization for Maintenance

a. Information. A unit's organization for maintenance is dependent on the unit's T/O. The T/O 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 in the using unit will normally be organized to best satisfy the maintenance requirements for the unit's authorized EOM. In units authorized first and second EOM's, the organization will be geared primarily to the performance of scheduled PMCS. Increased emphasis in the maintenance organization must be placed on CM actions. In units requiring more than one maintenance shop, maintenance personnel and equipment must be distributed in proportion to maintenance requirements.

(3) 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 E-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 major command or geographical location.

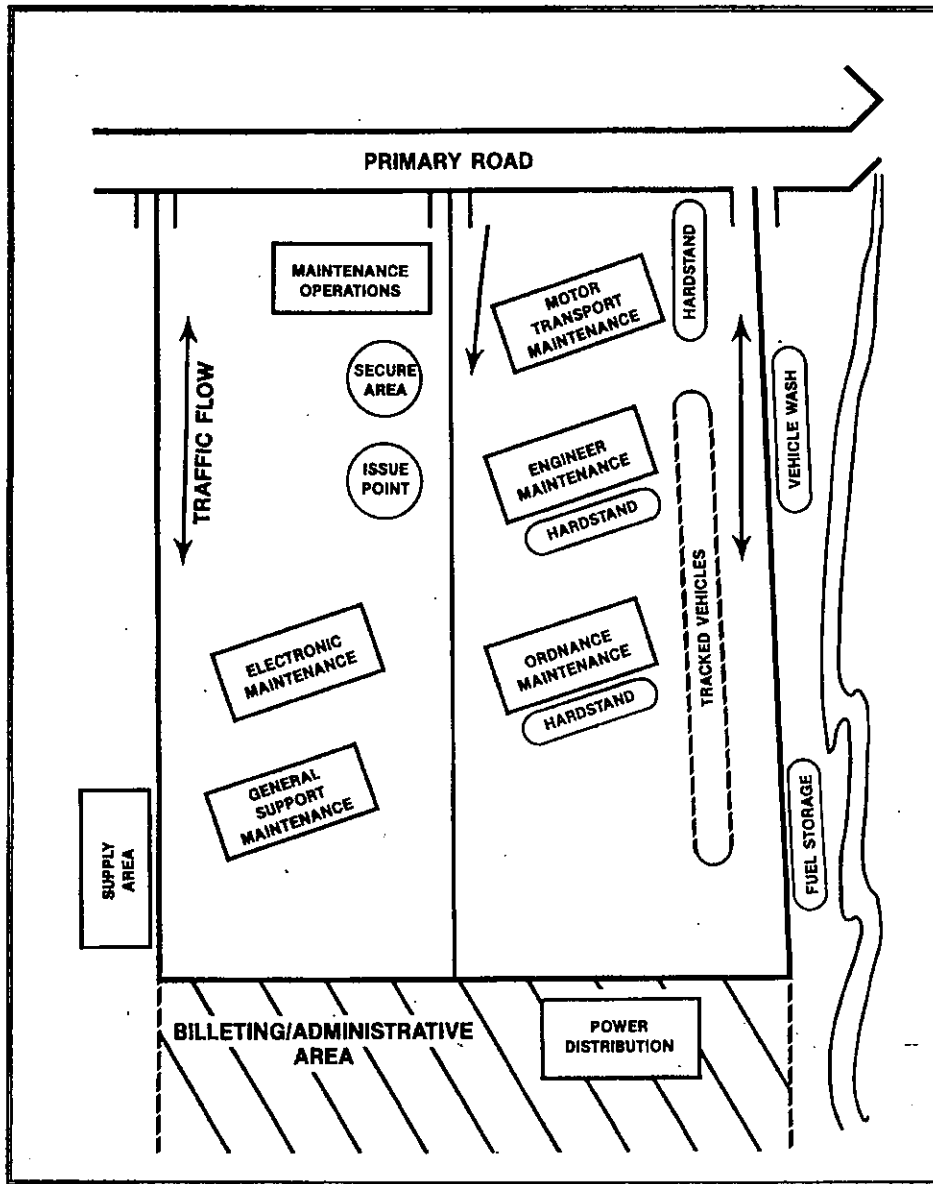


Figure E-1.--Field Layout of a Support Maintenance Activity

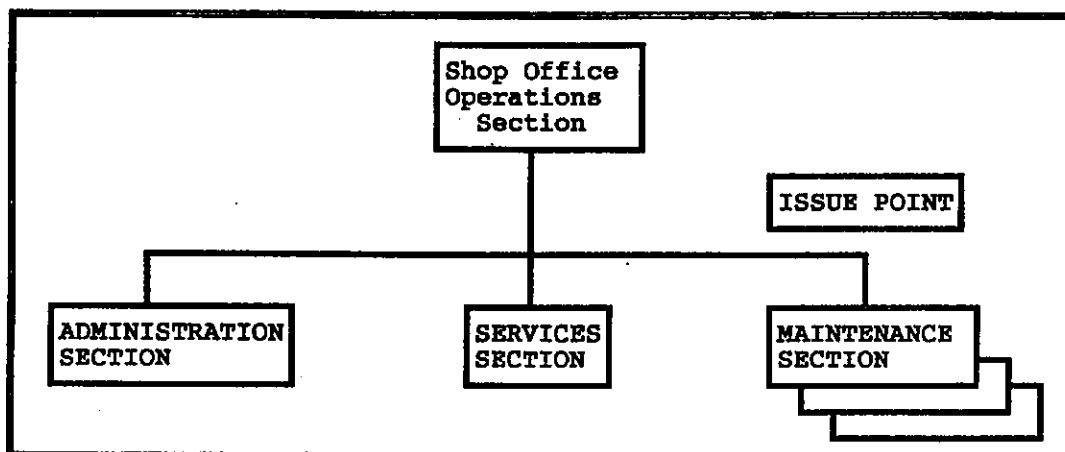


Figure E-2.--Central Shop Organization.

(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 maintenance floats.
- 4 Ensuring that maintenance operations interface with maintenance-related 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 FMSS for maintenance actions completed and changes in ERO 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.

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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 equipments 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.



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(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 preexpended bins.

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

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

5 Information. Recording and reporting of shop action include:

a Recording work performed, expenditures, and changes to ERO's per TM-4700-15/1 and UM-4790-5.

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b Reporting of maintenance actions performed, including completions and changes of shop status per TM-4700-15/1 and UM-4790-5.

c Reporting/recording modifications performed per TM-4700-15/1.

d Reporting per Marine Corps maintenance-related programs; for example, recoverable items, GME, Secondary repairables.

### (c) Services Section

1 A 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 echelons of 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 echelon maintenance activities.

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, motor transport, ordnance, engineer, GME.

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4 By echelon; for example, second, third, or fourth, second and third.

### c. Contact Team Maintenance

(1) When it is impractical to deliver equipment to a central shop for maintenance or the equipment type is concentrated in a particular location, it is often economical to divide the total maintenance capability and locate a contact 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 shop operations.

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

(3) Use of contact 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 contact teams depend on the following:

(a) Equipment Size and Complexity. Large equipment systems, such as an inoperable AAV, tank, or radar set, often make it impractical to transport the equipment to the shop. 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 effect repairs.

(b) Equipment Installation. Equipment installed in a fixed or semifixed manner may necessitate use of contact 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 shop.

(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 contact team. Examples of this include an LTI of ordnance

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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 contact 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 contact teams. Coordination between the central shop and the supported unit to determine the availability of required repair parts and supplies must be accomplished prior to dispatching the contact team.

(h) Transportation and Travel Time. In planning for contact 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 contact team away from the central shop location.

### d. Mobile and Portable Maintenance Facilities

(1) Mobile and portable maintenance facilities are authorized to individual support units by their T/E's or special allowance documents. 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 TM's. 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 major command 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 PEB's 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 E-3 shows an example of shop layout.

b. Work Flow. The flow of work through the shop is controlled by the shop office through the inspection and holding area. Work should not be inducted until adequate resources; for example, space, personnel, parts are available for its performance. 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. Paper Flow. ERO's, logbooks, and other equipment records, as appropriate, should accompany the equipment through the shop during the various phases of maintenance. At the acceptance inspection, an ERO 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 ERO and other appropriate equipment records be available to mechanics and technicians performing the work.

(1) A shop office monitors and controls the paper flow. The ERO 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 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 ERO's 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.

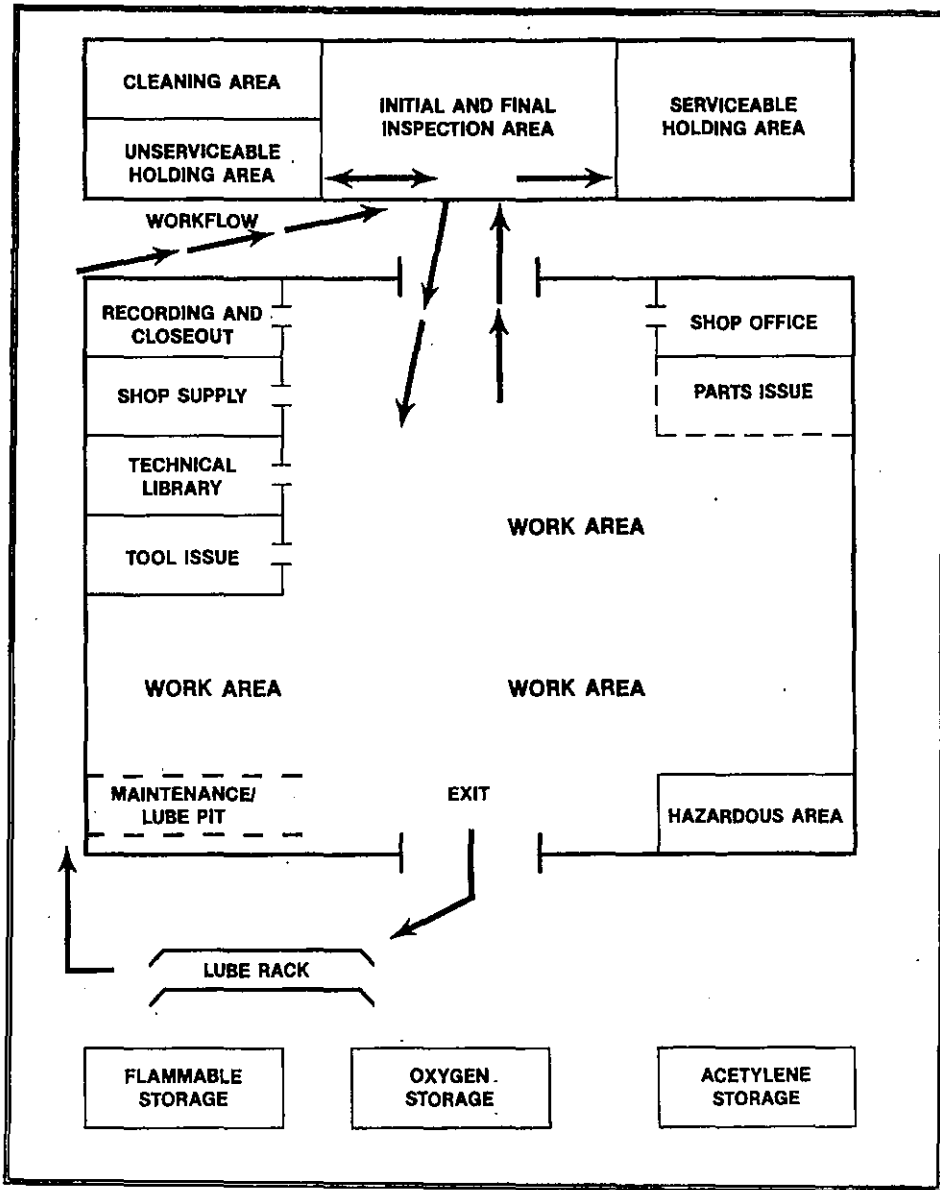


Figure E-3.--Maintenance Shop Layout

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## APPENDIX F

### MAINTENANCE PRODUCTION PROCESS

1. Introduction. This appendix contains a series of steps depicting the maintenance production processes. The steps are presented as guidance and they are intended to show the logical sequence of steps necessary to complete the various types of maintenance functions.

2. General Information

a. The Field Maintenance Subsystem (FMSS) requirements are also included in series of steps depicting the maintenance production processes. The term ERO/EROSL is used to represent the ERO/EROSL and the SRO and various supply request forms.

b. When the color parts of the ERO are specified, it is only to clarify, and it is not intended to direct the use of certain parts of the ERO. The yellow copy of the ERO will be used as a receipt copy in all cases and the white copy of the ERO will be the copy retained in the equipment records. TM-4700-15/1 contains the criteria for the use of the different color copies of the ERO.

c. The terms "shop office" and "shop section" also have only been used for clarify. The elements of a maintenance activity that perform these functions will depend on the size and structure of the maintenance activity and its command relationship to the equipment user.

3. Equipment Requiring Second EOM or Higher PMCS's

a. Step 1. The equipment owner will accomplish all maintenance within their authorized EOM that can be completed and ensure that the ERO is prepared per TM-4700-15/1. The equipment, equipment records, and ERO will be inducted into the maintenance acceptance phase.

b. Step 2. The maintenance section inspector will check to ensure that all maintenance within the owners authorized EOM work that can be completed is accomplished and that the ERO is properly prepared.

(1) When all maintenance within the equipment owner's authorized EOM is not accomplished or the ERO is not properly prepared, the equipment and ERO will be returned to the equipment owner per this Manual, the priority of the required maintenance, and MSC's MMSOP.

(2) The equipment owner will complete all maintenance within their authorized EOM that can be completed and properly prepare the ERO.



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(3) When the equipment owner has completed all maintenance within their authorized EOM and properly prepared the ERO, the owning unit will return the equipment, ERO, and equipment records to the maintenance section inspector.

c. Step 3. When all maintenance within the equipment owner's authorized EOM is accomplished and the ERO is properly prepared, the maintenance section will accept the equipment, ERO, and equipment records and the equipment owner will receive the yellow copy of the ERO.

d. Step 4. The maintenance section will be assigned an ERO number to the ERO. Units supported by the FMSS will accomplish the following:

(1) The maintenance section will submit the pink copy of the ERO for induction into FMSS and file the remaining copies of the ERO in the ERO tub/file.

(2) The maintenance section will compare the ERO with the next DTL to ensure that FMSS reports reflect the current status of the equipment.

e. Step 5. The maintenance section will determine the type of maintenance actions required.

(1) Determining the maintenance actions required includes determining modification requirements and indicating any required modifications on the ERO.

(2) The customer will request application of required modifications.

(3) Part of corrective maintenance process for secondary repairables is the application of required modifications and will be coordinated with the repairable issue point.

f. Step 6. The maintenance section will determine the maintenance resources required. Units supported by the FMSS will accomplish the following:

(1) The maintenance section will submit the pink copy of the ERO, when the equipment's status changes, for induction into FMSS and file the remaining copies of the ERO in the ERO tub/file.

(2) The maintenance section will prepare and submit an EROSL when parts are required.

(3) The maintenance section will compare the ERO with the DTL to ensure that FMSS reports reflect the current status of the equipment.

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(4) The maintenance section will compare the EROSL to the DTL to ensure that required parts post to FMSS and SASSY reports reflecting the correct information.

(5) The maintenance section will determine if the equipment is suitable for unit recall.

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

1 Submit the pink copy of the ERO for induction into FMSS to change the equipment's job status unit recall and file the remaining copies of the ERO in the ERO tub/file.

2 Compare the ERO to the DTL to ensure that FMSS reports reflect the current status of the equipment.

3 Notify the equipment owner that equipment is in a unit recall status, recover the yellow copy of the ERO, and file the ERO in the unit recall section of the ERO tub/file.

4 Monitor resources availability using the DPR and ERO parts bin.

5 Notify the equipment owner when the equipment can be returned for completion of maintenance.

(b) When equipment is not suitable for unit recall the maintenance section will accomplish the following:

1 Submit the pink copy of the ERO for induction into FMSS using the equipment's actual job status and file the remaining copies of the ERO in the ERO tub/file.

2 Compare the ERO to the DTL to ensure that FMSS reports reflect the current status of the equipment.

3 Maintain the equipment, equipment records, and file the ERO in the ERO tub/file that matches the equipment's status.

4 Monitor resources availability using the DPR and ERO parts bin.

g. Step 7. When resources become available, induct the equipment into the active maintenance phase. The maintenance section will accomplish the following:

(1) Assign equipment, ERO, and EROSL to mechanic or maintenance team.

(2) Complete all authorized EOM's in the active maintenance phase using the equipment's TM, ERO, and available resources.

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h. Step 8. When the required maintenance is beyond the maintenance section's authorized EOM, the maintenance section will accomplish the following:

(1) Complete all maintenance within their authorized EOM using the ERO, EROSL, available resources, and equipment's TM.

(2) Prepare the ERO per TM-4700-15/1 and evacuate the equipment to the next EOM.

(3) Induct the equipment, ERO, and equipment records in the maintenance acceptance phase at the supporting maintenance section.

i. Step 9. When the all required maintenance is accomplished, the maintenance section will accomplish the following:

(1) Induct the equipment in the maintenance closeout phase.

(2) Complete the ERO per TM-4700-15/1.

(3) Notify equipment owner that the equipment is ready for pick-up.

j. Step 10. When the equipment owner is notified that the equipment is ready for pick-up, the equipment owner will accomplish the following:

(1) Inspect the equipment to ensure that the maintenance was satisfactorily accomplished.

(2) Review the ERO to ensure it is properly completed.

k. Step 11. When the equipment owner determines that the maintenance was not satisfactorily accomplished or the ERO was not properly completed, the equipment owner will accomplish the following:

(1) Notify the maintenance section that the maintenance is not satisfactory.

(2) Notify the maintenance section that the ERO is not properly completed.

l. Step 12. When the equipment owner determines that the maintenance was satisfactorily accomplished and the ERO is properly completed, the equipment owner will accomplish the following:

(1) Return the yellow copy of the ERO to the maintenance section.

(2) Update the equipment records with information contained on the ERO per TM-4700-15/1.

4. Equipment requiring CM

a. Step 1. The equipment owner will accomplish all maintenance within their authorized EOM that can be completed and ensure that the ERO is prepared per TM-4700-15/1. The equipment, equipment records, and ERO will be inducted into the maintenance acceptance phase.

b. Step 2. The maintenance section inspector will check to ensure that all maintenance within the owner's authorized EOM work that can be completed is accomplished and that the ERO is properly prepared.

(1) When all maintenance within the equipment owner's authorized EOM is not accomplished or the ERO is not properly prepared, the equipment and ERO will be returned to the equipment owner per this Manual, the priority of the required maintenance, and MSC's MMSOP.

(2) The equipment owner will complete all maintenance within their authorized EOM that can be completed and properly prepare the ERO.

(3) When the equipment owner has completed all maintenance within their authorized EOM and properly prepared the ERO, the owning unit will return the equipment, ERO, and equipment records to the maintenance section inspector.

c. Step 3. When all maintenance within the equipment owner's authorized EOM is accomplished and the ERO is properly prepared, the maintenance section will accept the equipment, ERO, and equipment records and the equipment owner will receive the yellow copy of the ERO.

d. Step 4. The maintenance section will be assigned an ERO number to the ERO. Units supported by the FMSS will accomplish the following:

(1) The maintenance section will submit the pink copy of the ERO for induction into FMSS and file the remaining copies of the ERO in the ERO tub/file.

(2) The maintenance section will compare the ERO with the DTL to ensure that FMSS reports reflect the current status of the equipment.

e. Step 5. The maintenance section will determine the type of maintenance actions required.

(1) Determining the maintenance actions required includes determining modification requirements and indicating any required modifications on the ERO.

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(2) The customer will request application of required modifications.

(3) Part of corrective maintenance process for secondary repairables is the application of required modifications and will be coordinated with the reparable issue point.

f. Step 6. The maintenance section will determine the maintenance resources required. Units supported by the FMSS will accomplish the following:

(1) The maintenance section will submit the pink copy of the ERO, when the equipment's status changes, for induction into FMSS and file the remaining copies of the ERO in the ERO tub/file.

(2) The maintenance section will prepare and submit an EROSL when parts are required.

(3) The maintenance section will compare the ERO to the DTL to ensure that FMSS reports reflect the current status of the equipment.

(4) The maintenance section will compare the EROSL to the DTL to ensure that required parts post to FMSS and SASSY reports reflecting the correct information.

(5) The maintenance section will determine if the equipment is suitable for unit recall.

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

1 Submit the pink copy of the ERO for induction into FMSS to change the equipment's job status unit recall, and file the remaining copies of the ERO in the ERO tub/file.

2 Compare the ERO to the DTL to ensure that FMSS reports reflect the current status of the equipment.

3 Notify the equipment owner that equipment is in a unit recall status, recover the yellow copy of the ERO, and file the ERO in the unit recall section of the ERO tub/file.

4 Monitor resources availability using the DPR and ERO parts bin.

5 Notify the equipment owner when the equipment can be returned for completion of maintenance.

(b) When equipment is not suitable for unit recall, the maintenance section will accomplish the following:

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1 Submit the pink copy of the ERO for induction into FMSS using the equipment's actual job status and file the remaining copies of the ERO in the ERO tub/file.

2 Compare the ERO to the DTL to ensure that FMSS reports reflect the current status of the equipment.

3 Maintain the equipment, and equipment records, and file the ERO in the ERO tub/file that matches the equipment's status.

4 Monitor resources availability using the DPR and ERO parts bin.

g. Step 7. When resources become available, induct the equipment into the active maintenance phase. The maintenance section will accomplish the following:

(1) Assign equipment, ERO, and EROSL to mechanic or maintenance team.

(2) Complete all authorized EOM's in the active maintenance phase using the equipment's TM, ERO, and available resources.

h. Step 8. When the required maintenance is beyond the maintenance section's authorized EOM, the maintenance section will accomplish the following:

(1) Complete all maintenance within their authorized EOM using the ERO, EROSL, available resources, and the equipment's TM.

(2) Prepare the ERO per TM-4700-15/1 and evacuate the equipment to the next EOM.

(3) Induct the equipment, ERO, and equipment records in the maintenance acceptance phase at the supporting maintenance section.

i. Step 9. When the all required maintenance is accomplished, the maintenance section will accomplish the following:

(1) Induct the equipment in the maintenance closeout phase.

(2) Complete the ERO per TM-4700-15/1.

(3) Notify equipment owner that the equipment is ready for pick-up.

j. Step 10. When the equipment owner is notified that the equipment is ready for pick-up, the equipment owner will accomplish the following:

(1) Inspect the equipment to ensure that the maintenance was satisfactorily accomplished.

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(2) Review the ERO to ensure it is properly completed.

k. Step 11. When the equipment owner determines that the maintenance was not satisfactorily accomplished or the ERO was not properly completed, the equipment owner will accomplish the following:

(1) Notify the maintenance section that the maintenance is not satisfactory.

(2) Notify the maintenance section that the ERO is not properly completed.

l. Step 12. When the equipment owner determines that the maintenance was satisfactorily accomplished and the ERO is properly completed, the equipment owner will accomplish the following:

(1) Return the yellow copy of the ERO to the maintenance section.

(2) Update the equipment records with information contained on the ERO per TM-4700-15/1.

5. Equipment requiring modification

a. Step 1. The equipment owner will accomplish all maintenance within their authorized EOM that can be completed and ensure that the ERO is prepared per TM-4700-15/1. The equipment, equipment records, and ERO will be inducted into the maintenance acceptance phase.

b. Step 2. The maintenance section inspector will check to ensure that all maintenance within the owner's authorized EOM work that can be completed is accomplished and that the ERO is properly prepared.

(1) When all maintenance within the equipment owner's authorized EOM is not accomplished or the ERO is not properly prepared, the equipment and ERO will be returned to the equipment owner per this Manual, the priority of the required maintenance, and MSC's MMSOP.

(2) The equipment owner will complete all maintenance within their authorized EOM that can be completed and properly prepare the ERO.

(3) When the equipment owner has completed all maintenance within their authorized EOM and properly prepared the ERO, the owning unit will return the equipment, ERO, and equipment records to the maintenance section inspector.

c. Step 3. When all maintenance within the equipment owner's authorized EOM is accomplished and the ERO is properly prepared,

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the maintenance section will accept the equipment, ERO, and equipment records and the equipment owner will receive the yellow copy of the ERO.

d. Step 4. The maintenance section will be assigned an ERO number to the ERO. Units supported by the FMSS will accomplish the following:

(1) The maintenance section will submit the pink copy of the ERO for induction into FMSS and file the remaining copies of the ERO in the ERO tub/file.

(2) The maintenance section will compare the ERO with the next DTL to ensure that FMSS reports reflect the current status of the equipment.

e. Step 5. The maintenance section will determine the type of maintenance actions required.

(1) Determining the maintenance actions required includes determining modification requirements and indicating any required modifications on the ERO.

(2) The customer will request application of required modifications.

(3) Part of corrective maintenance process for secondary repairables is the application of required modifications and will be coordinated with the reparable issue point.

f. Step 6. The maintenance section will determine the maintenance resources required. Units supported by the FMSS will accomplish the following:

(1) The maintenance section will submit the pink copy of the ERO, when the equipment's status changes, for induction into FMSS and file the remaining copies of the ERO in the ERO tub/file.

(2) The maintenance section will prepare and submit an EROSL when parts are required.

(3) The maintenance section will compare the ERO to the DTL to ensure that FMSS reports reflect the current status of the equipment.

(4) The maintenance section will compare the EROSL to the DTL to ensure that required parts post to FMSS and SASSY reports reflecting the correct information.

(5) The maintenance section will determine if the equipment is suitable for unit recall.



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

1 Submit the pink copy of the ERO for induction into FMSS to change the equipment's job status unit recall and file the remaining copies of the ERO in the ERO tub/file.

2 Compare the ERO to the DTL to ensure that FMSS reports reflect the current status of the equipment.

3 Notify the equipment owner that equipment is in a unit recall status, recover the yellow copy of the ERO, and file the ERO in the unit recall section of the ERO tub/file.

4 Monitor resources availability using the DPR and ERO parts bin.

5 Notify the equipment owner when the equipment can be returned for completion of maintenance.

(b) When equipment is not suitable for unit recall, the maintenance section will accomplish the following:

1 Submit the pink copy of the ERO for induction into FMSS using the equipment's actual job status and file the remaining copies of the ERO in the ERO tub/file.

2 Compare the ERO with the DTL to ensure that FMSS reports reflect the current status of the equipment.

3 Maintain the equipment, equipment records, and file the ERO in the ERO tub/file that matches the equipment's status.

4 Monitor resources availability using the DPR and ERO parts bin.

g. Step 7. When resources become available induct the equipment into the active maintenance phase. The maintenance section will accomplish the following:

(1) Assign equipment, ERO, and EROSL to mechanic or maintenance team.

(2) Complete all authorized EOM's in the active maintenance phase using the equipment's TM, ERO, and available resources.

h. Step 8. When the required maintenance is beyond the maintenance section's authorized EOM, the maintenance section will accomplish the following:

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(1) Complete all maintenance within their authorized EOM using the ERO, EROSL, available resources, and equipment's TM.

(2) Prepare the ERO per TM-4700-15/1 and evacuate the equipment to the next EOM.

(3) Induct the equipment, ERO, and equipment records in the maintenance acceptance phase at the supporting maintenance section.

i. Step 9. When the all required maintenance is accomplished, the maintenance section will accomplish the following:

(1) Induct the equipment in the maintenance closeout phase.

(2) Complete the ERO per TM-4700-15/1.

(3) Notify equipment owner that the equipment is ready for pick-up.

j. Step 10. When the equipment owner is notified that the equipment is ready for pick-up, the equipment owner will accomplish the following:

(1) Inspect the equipment to ensure that the maintenance was satisfactorily accomplished.

(2) Review the ERO to ensure it is properly completed.

k. Step 11. When the equipment owner determines that the maintenance was not satisfactorily accomplished or the ERO was not properly completed, the equipment owner will accomplish the following:

(1) Notify the maintenance section that the maintenance is not satisfactory.

(2) Notify the maintenance section that the ERO is not properly completed.

l. Step 12. When the equipment owner determines that the maintenance was satisfactorily accomplished and the ERO is properly completed, the equipment owner will accomplish the following:

(1) Return the yellow copy of the ERO to the maintenance section.

(2) Update the equipment records with information contained on the ERO per TM-4700-15/1.

### 6. Equipment requiring calibration

a. Step 1. The equipment owner will accomplish all maintenance within their authorized EOM that can be completed and

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ensure that the ERO is prepared per TM-4700-15/1. The equipment, equipment records, and ERO will be inducted into the maintenance acceptance phase.

b. Step 2. The maintenance section inspector will check to ensure that all maintenance within the owner's authorized EOM work that can be completed is accomplished and that the ERO is properly prepared.

(1) When all maintenance within the equipment owner's authorized EOM is not accomplished or the ERO is not properly prepared, the equipment and ERO will be returned to the equipment owner per this Manual, the priority of the required maintenance, and MSC's MMSOP.

(2) The equipment owner will complete all maintenance within their authorized EOM that can be completed and properly prepare the ERO.

(3) When the equipment owner has completed all maintenance within their authorized EOM and properly prepared the ERO, the owning unit will return the equipment, ERO, and equipment records to the maintenance section inspector.

c. Step 3. When all maintenance within the equipment owner's authorized EOM is accomplished and the ERO is properly prepared, the maintenance section will accept the equipment, ERO, and equipment records and the equipment owner will receive the yellow copy of the ERO.

d. Step 4. The maintenance section will be assigned an ERO number to the ERO. Units supported by the FMSS will accomplish the following:

(1) The maintenance section will submit the pink copy of the ERO for induction into FMSS and file the remaining copies of the ERO in the ERO tub/file.

(2) The maintenance section will compare the ERO to the next DTL to ensure that FMSS reports reflect the current status of the equipment.

e. Step 5. The maintenance section will determine the type of maintenance actions required.

(1) Determining the maintenance actions required includes determining modification requirements and indicating any required modifications on the ERO.

(2) The customer will request application of required modifications.

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(3) Part of the calibration process is the application of required modification.

f. Step 6. The maintenance section will determine the maintenance resources required. Units supported by the FMSS will accomplish the following:

(1) The maintenance section will submit the pink copy of the ERO, when the equipment's status changes, for induction into FMSS and file the remaining copies of the ERO in the ERO tub/file.

(2) The maintenance section will prepare and submit an EROSL when parts are required.

(3) The maintenance section will compare the ERO with the DTL to ensure that FMSS reports reflect the current status of the equipment.

(4) The maintenance section will compare the EROSL with the DTL to ensure that required parts post to FMSS and SASSY reports reflecting the correct information.

(5) The maintenance section will determine if the equipment is suitable for unit recall.

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

1 Submit the pink copy of the ERO for induction into FMSS to change the equipment's job status unit recall and file the remaining copies of the ERO in the ERO tub/file.

2 Compare the ERO with the DTL to ensure that FMSS reports reflect the current status of the equipment.

3 Notify the equipment owner that equipment is in a unit recall status, recover the yellow copy of the ERO, and file the ERO in the unit recall section of the ERO tub/file.

4 Monitor resources availability using the DPR and ERO parts bin.

5 Notify the equipment owner when the equipment can be returned for completion of maintenance.

(b) When equipment is not suitable for unit recall, the maintenance section will accomplish the following:

1 Submit the pink copy of the ERO for induction into FMSS using the equipment's actual job status and file the remaining copies of the ERO in the ERO tub/file.

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2 Compare the ERO to the DTL to ensure that FMSS reports reflect the current status of the equipment.

3 Maintain the equipment, equipment records, and file the ERO in the ERO tub/file that matches the equipment's status.

4 Monitor resources availability using the DPR and ERO parts bin.

g. Step 7. When resources become available, induct the equipment into the active maintenance phase. The maintenance section will accomplish the following:

(1) Assign equipment, ERO, and EROSL to mechanic or maintenance team.

(2) Complete all authorized EOM in the active maintenance phase using the equipment's TM, ERO, and available resources.

h. Step 8. When the required maintenance is beyond the maintenance section's authorized EOM, the maintenance section will accomplish the following:

(1) Complete all maintenance within their authorized EOM using the ERO, EROSL, available resources and equipment's TM's.

(2) Prepare the ERO per TM-4700-15/1 and evacuate the equipment to the next EOM.

(3) Induct the equipment, ERO, and equipment records in the maintenance acceptance phase at the supporting maintenance section.

i. Step 9. When the all required maintenance is accomplished, the maintenance section will accomplish the following:

(1) Induct the equipment in the maintenance closeout phase.

(2) Complete the ERO per TM-4700-15/1.

(3) Notify equipment owner that the equipment is ready for pick-up.

j. Step 10. When the equipment owner is notified that the equipment is ready for pick-up, the equipment owner will accomplish the following:

(1) Inspect the equipment to ensure that the maintenance was satisfactorily accomplished.

(2) Review the ERO to ensure it is properly completed.

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k. Step 11. When the equipment owner determines that the maintenance was not satisfactorily accomplished or the ERO was not properly completed, the equipment owner will accomplish the following:

(1) Notify the maintenance section that the maintenance is not satisfactory.

(2) Notify the maintenance section that the maintenance ERO is not properly completed.

l. Step 12. When the equipment owner determines that the maintenance was satisfactorily accomplished and the ERO is properly completed, the equipment owner will accomplish the following:

(1) Return the yellow copy of the ERO to the maintenance section.

(2) Update the equipment records with information contained on the ERO per TM-4700-15/1.

7. ERO Category Code Assignment. The section preparing the ERO will accomplish the following:

a. Step 1. Determine if the equipment is readiness reportable.

(1) Use category code "M" for readiness reportable equipment requiring critical repair that places the equipment in a not mission capable status.

(2) Use category code "X" for readiness reportable equipment requiring critical repair that places the equipment in a degraded status.

(3) Use category code "N" for readiness reportable equipment requiring noncritical repair.

(4) Use category code "P" with a DCD for nonreadiness reportable equipment requiring critical repair that places the equipment in a not mission capable status.

(5) Use category code "P" without a DCD for nonreadiness reportable equipment requiring critical repair that places the equipment in a degraded status.

(6) Use category code "N" for nonreadiness reportable equipment requiring noncritical repair.

b. Step 2. Determine if the equipment requires calibration.

(1) When equipment requires calibration use category code

(2) When equipment requires calibration and is in a not mission capable status, use a category code that deadlines the item of equipment.

c. Step 3. Determine if the equipment is a secondary repairable.

(1) Use category code "D" for "D" coded secondary repairables.

(2) Use category code "H" for "H" coded secondary repairables.

(3) Use category code "F" for "F" coded secondary repairables.

(4) Use category code "O" for "O" coded secondary repairables.

d. Step 4. Determine if the equipment is a component of an end item.

(1) Use category code "C" for components of an end item.

(2) Use the appropriate category code for the end item.

e. Step 5. Determine if the requirement is for a shop overhead ERO.

(1) Use category code "O" for a shop overhead ERO.

f. Step 6. Determine if the equipment requires second EOM or higher.

(1) When the equipment does not require second EOM or higher, use category code "S" for SL-3 components.

(2) When an SL-3 component places equipment in a not mission capable status, use a category code that deadlines the item of equipment.

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## APPENDIX G

### SHOP ADMINISTRATIVE PROCEDURES

1. Introduction. The MIMMS/AIS is the information system developed to assist commanders at all levels in managing their ground equipment maintenance programs. The FMSS is a subsystem to support field users; UM-4790-5 governs the use of the FMSS. This appendix will address the procedures and logic required to mesh the real work flow with the information flow. Except for reference to AIS and its attendant codes, this appendix is equally applicable to units not supported by the FMSS. An ERO must be used and prepared per TM-4700-15/1.

2. Equipment. Equipment is considered to be deadlined, not mission capable, when it cannot perform its designed combat mission. Routine modifications, scheduled maintenance, or lack of non-critical repair parts; for examples fenders and windshields, will not cause a deadline condition. The organization which owns the item is responsible for determining the item's status and adding, deleting, and changing the deadline status. The two deadline statuses are Not Mission Capable Maintenance (NMCM) and, Not Mission Capable Supply (NMCS).

a. "Critical parts" are defined as those parts or secondary repairables which preclude an item from performing its intended mission to shoot, move, or communicate and which require second through fifth echelon maintenance.

b. "Noncritical parts" are those parts or accessories which affect an item's ability to perform its intended mission but do not preclude it from shooting, moving, or communicating.

### 3. Close out of ERO's

a. ERO's should not be closed out and reopened indiscriminately. The closeout of ERO's solely because they are 90/120 days old only increases the workload and causes confusion due to the transfer of open parts transactions. Therefore, in order to ensure the use of the MIMMS/AIS output and preclude the unnecessary expenditure of maintenance resources, the following procedure for the closeout of incomplete ERO's other than Category Code "M" or "P" is provided. ERO's should be closed out when one or more of the following conditions exist:

(1) The ERO has been open in excess of 60 days and it has in excess of 45 parts records against it, the majority of which have been received and applied.

(2) When PMCS has been completed the ERO will be closed out when the scheduled PMCS is completed. (Closeout of the ERO at this time provides a management tool to update the NAVMC 10561 and provides a documented date of PMCS completion.)



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(3) The ERO has been open in excess of 60 days and three defects as identified in UM-4790-5 have been identified and corrected thereby filling the three available task data fields on the ERO.

b. The procedure to be followed in closing out ERO's prior to receipt of all the ordered replacement parts is:

(1) Install as many received parts as practicable.

(2) Open a new ERO.

(3) Transfer all outstanding parts requisitions still required to the new ERO.

(4) Cancel any parts records that are no longer required.

(5) Annotate the EROSL's to indicate transferred/canceled parts records.

(6) Complete the old ERO to include chargeable labor hours and close the ERO.

#### 4. Shop Administration

##### a. General Information

(1) Appendix F, contains the ERO/equipment flow through the maintenance process; and the logic in deciding the appropriate category code for an ERO. This paragraph contains an explanation of a method which may be used to administer the flow of paper within the shop office so that paper is an asset to maintenance not a liability.

(2) This paragraph uses as an example a motor transport unit operating a central maintenance shop. The method can be used in any size shop at any EOM and any commodity area. The numbered shop sections, Job Status, and people will vary, depending on the size of the shop; but the method will remain the same.

##### b. Organization

(1) ERO Files. The first step is to structure the ERO files to reflect the work status. In this instance, the job status codes from UM-4790-5 have been grouped as shown in figure G-1 to show the groupings used in this shop. This grouping of job statuses is applied to a physical file of ERO's (sometimes known as ERO tub files). Each file has a divider which separates the ERO's in the file from those ERO's on which a change has been submitted to the FMSS but for which the change has not appeared on the DPR. The entire file system is shown in figure G-1.

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<u>ERO File</u>	<u>Job Status/Code</u>	<u>Shop Section</u>
Inspection	Awaiting Inspection/ATWG INS 00 Final Inspection/FINL INS 01 Inspection In Progress/INS PRS 02 Inspection Complete/RPR COMP 13 Job Close/JOB CLOS 15	V 1/
Work in Progress	Repair in Progress/RPR PRGS 12	5
Parts	Short Parts/SHT PART 25	N
Short	Short Test Equipment/SHT TEST 23 Short Working Space/SHT SPAC 26 Short Technician/SHT TECH 27 Short Funds/SHT FUND 20	P
Unit Recall	Unit Recall/UNIT RCL 24	Q
EVAC	WIR Submitted/WIR SUB 37 Evacuated Higher Echelon/EVC HECH 38 Evacuated for Washout/EVAC WASH 39	W 1/
	1/ Both of these job sections are assigned to commutations section equipment; but, since the unit does not require that many shop sections in the communication-electronic shop, the unit is authorized their use by the motor transport shop.	

Figure G-1.--ERO Files.

(2) DPR Structure. Once the ERO's have been physically arranged to reflect the equipment status, it is necessary to arrange the DPR to correspond. Using the shop section, codes shown in UM-4790-5, align the shop sections with the ERO files shown in figure G-2.

(3) Purpose. The purpose of all this becomes clear when it is recognized that the equipment status and location are reflected in the ERO location in both the ERO file and the DPR. This means that the efforts of the people in the shop office can be directed to and concentrated on those items of equipment of concern to them. For example, the shop chief can be given a copy of shop section 5 (work in progress) each day. Thus, the DPR becomes a scheduling tool for the shop office, a work assignment list for the shop chief, and the maintenance officer can use it as a progress report simply by job status dates.

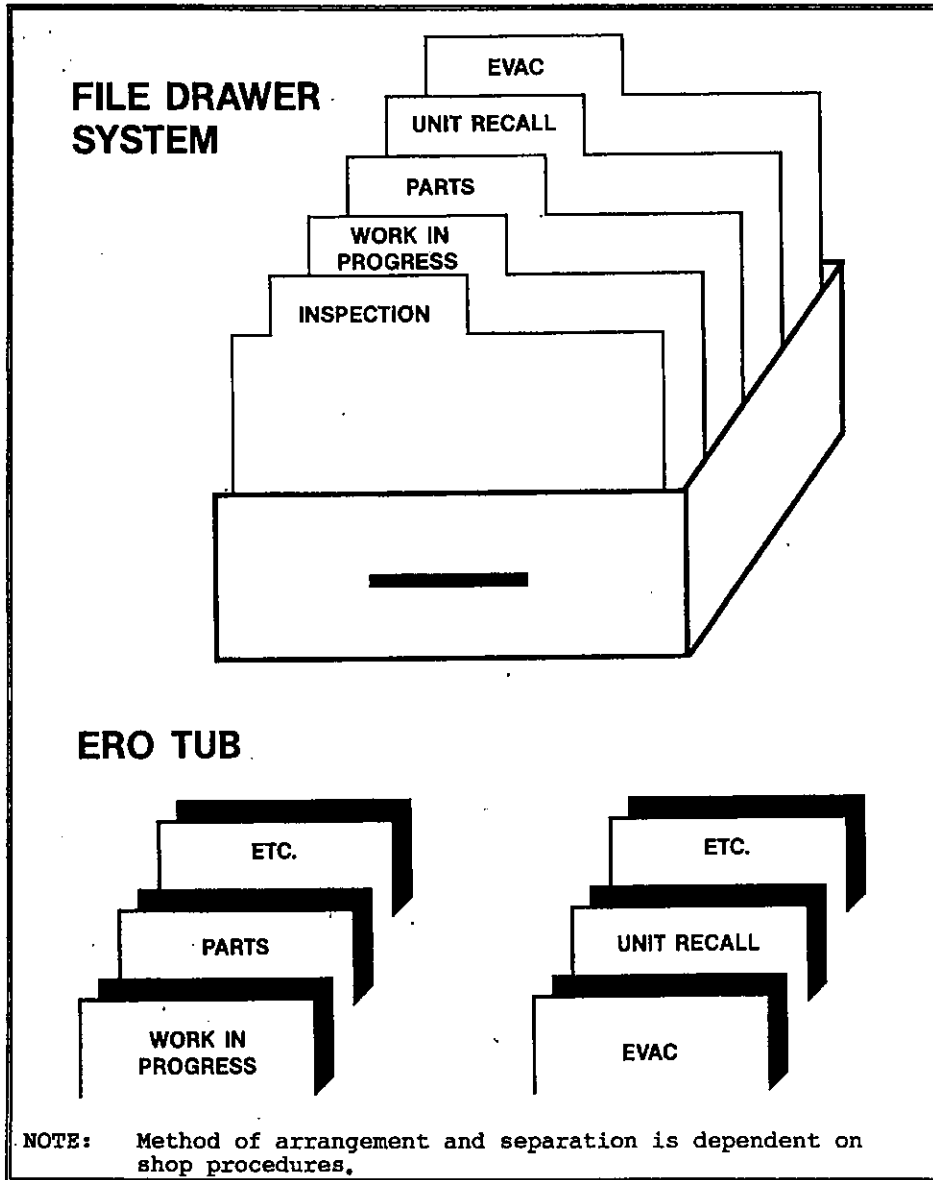


Figure G-2.--ERO Files

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c. Paper/Work Flow. The preceding paragraph explained the organization. This paragraph will describe the flow of two ERO's through the shop and the shop office.

(1) It is 1000 on Tuesday, and Marine A walks into the shop office. Marine B (the records clerk) has just finished checking the form NAVMC 10561 and is completing ERO number VT100 for an annual PMCS on a truck cargo, Serial Number 124567. Marine A's truck cargo, Serial Number 412618, has been towed into the lot with a broken drive shaft. Marine A has been sent to the shop office by the unit dispatcher to report the truck cargo as deadlined. Marine G (the records clerk) checks the truck cargo's record jacket for PMCS's or modifications due and completes ERO number VT101 for the deadlined truck cargo. Marine B hands both ERO's to Marine C (the maintenance chief) who reviews them and approves the assignment of category codes and priorities. Marine C passes the ERO's to Marine D and tells Marine D to run them to awaiting inspection.

(2) Marine D prepares the "O/A" transactions on the ERO's, puts both ERO's in Job Status 00, Shop Section V; and places the ERO in ERO sequence in the suspense port of the inspection file.

(3) At 1100, Marine E (the inspector) walks in and hands Marine C the copy of the shop section V and the ERO's drawn to be inspected. Marine C checks the ERO's, notes the status changes, hands them to Marine D, and tells Marine D to check to see if there is anything else to be inspected. ERO No's. VT100 and VT101 are pulled and given to Marine F. Marine F completes the inspection of ERO No's. VT100 and VT101, sees that both are acceptable, and signs the ERO's. On ERO number VT101, Marine E has identified the parts necessary to fix the broken drive shaft. Marine E completes the mechanic's portion of the EROSL for those parts. While inspecting ERO number VT100, Marine F determined that MI-1245-25/6 had not been completed on the truck cargo, serial number 124567, and noted such on the ERO. Marine E then returns the ERO's to the shop office.

(4) Marine F assigns ERO number VT100 to work in progress, Job Status 12, Shop Section 5; and ERO number VT101 to short parts, Job Status 25, Shop Section N. Marine D files the ERO's in the suspense portion of the file after making the "9" transactions. Marine B is told to complete an EROSL for the modification kit for Serial number 124567 under the Category Code "N" ERO number VT021 on unit recall and to straighten out Marine B's modification records.

(5) At 1500, Marine F (the parts person) comes in and checks the parts suspense file and unit recall suspense file for any new EROSL's on the way to the CIP. Taking EROSL's VT101 and VT021, Marine F leaves for the issue point. When Marine F returns, both EROSL's will be attached to the ERO's in the appropriate ZERO file and the parts placed in corresponding ERO bins.

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(6) At 1630, Marine D takes the pink copy of the ERO and heads for the data entry device at the data entry area.

(7) It is Wednesday; and Marine D has picked up the new DPR and Daily Transaction Listing (DTL), one copy of each of the shop sections. DPR's go to Marine G (the maintenance officer), and one copy of each shop section goes to the concerned people.

(8) Marine H (the shop chief) gets shop section 5 and tells Marine I to pull ERO number VT100, check for other parts on the Category Code "N" ERO number VB096, and pull the PMCS.

(9) Marine E gets shop section V and leaves to pull the final inspection on three ERO's completed yesterday.

(10) Marine C gets shop sections Q and W.

(11) Marine F gets shop section N and leaves to inventory the ERO bins since today is the day for validation.

(12) Marine G finishes reviewing the DPR notes which indicated that there is only one new ERO in work (VT100), three were completed, no new parts received to get anything off deadline, but a bunch of parts came in for Category Code "N" ERO's. Marine G tells Marine C to have Marine B check for two or three PMCS's coming due to be pulled in early and to check with Marine H to see if a person is available to pull some of the parts from the ERO bins, go out on the line, and put on some of the noncritical parts.

(13) Marine D has checked all of the suspense files and everything processed. Marine D pulls ERO number VT100 which was completed yesterday, checks to see that all of the "9" transaction information was listed on the ERO; for example, labor hours, meter reading completes the "9" transaction, and hands VT100 to Marine B for filing. Another day is underway.

d. Administrative ERO Numbers. There is a technique for linking various Category Code ERO's together which is a benefit in some commodity areas and some units.

(1) In the example in paragraph 3c, preceding, several times category code "N" ERO's for unit recall were checked to determine if noncritical parts were available to be applied. The checking would be easier if the two ERO numbers had something in common.

(2) Generally, each unit has the last three characters of the ERO number available for its use. If the third and fourth characters are used to create an "administrative number" which is carried over the equipment records, NAVMC 10561, and the ERO bins, then the ERO number becomes a convenient cross-reference.

(3) This system of administrative numbering is not universally applicable. It works best when the type of equipment

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often has noncritical parts on requisition, a reasonable density of equipment, and requires PMCS. The system is best suited for motor transport, engineer, and ordnance heavy equipment. A sample structure is shown in figure G-3.

1. The unit has been assigned ERO number VT000 through VT999 for motor transport.		
2. The unit rates 9 trucks water, 30 trucks cargo, 2 trucks ambulance, 4 trailers water, 9 trucks utility, and 26 trucks cargo.		
3. To establish administrative numbers, the following third and fourth ERO number characters would be allocated:		
Third Character	Fourth Character	Equipment
A	1-9	Truck Water
B, C, D	0-9	Truck Cargo
E	1-2	Truck Ambulance
F	1-4	Trailer Water
G	1-9	Truck Utility
H, J, K	1-9	Truck Cargo
4. The fifth character is used to distinguish between ERO's. Several alternatives may be used; for example, numbered sequentially, or odd numbers for "M" or "P" category codes, or even numbers for others. An ERO number may not be used again in the same month that it was closed; however, most units using this system have chosen not to use an ERO number twice in the same quarter as a safety measure.		

Figure G-3.--Administrative/ERO Numbers.

e. Amplification in the Use of Category Code "C" for ERO's. The Category Code "C" was established to provide a method of opening more than one ERO at the same echelon on the same item of equipment when the first ERO was a Category Code "M", "P", or "X".

(1) The Category Code "C" allows the unit to evacuate major components of an end item for maintenance to maintenance shops at the same echelon or to a higher echelon for maintenance. Additionally, it allows maintenance shops to intershop end items at the same echelon due to the restraint of one Category Code "M", "P", or "X" ERO at the same echelon.

(2) As there is no restriction on the number of Category Code "N" ERO's opened on an item of equipment, the opening of a Category Code "C" ERO on this type of item for intershop is optional.

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5. FMSS Reports. The FMSS produces a number of AIS reports. These reports have been designed for various levels of command. The Maintenance Information System Coordination Officer (MISCO), with the concurrence of the supported major command MMO's, may suppress any of the MIMMS/FMSS reports not required. Figure G-4 lists principal FMSS reports titles, frequency, and principal/alternate users.

Report Title	Frequency	Principal/Alternate Users
Daily SASSY Transaction Listing	Daily	Supply Officer/MMO
Daily Transaction Listing	Daily	Clerk/MMO MIMMS
Daily Process Report	Daily	Maintenance Officer or Chief /MMO Maintenance Operations Section/Supply Officer
Daily Intermediate Maintenance TAM Report	Daily	Maintenance Operations Section/MMO
Weekly LM2 Asset Listing	Weekly	MMO/S-4/Supply Officer
Weekly Major Command Report	Weekly	MMO/Commodity Staff Officers
Weekly/Monthly Maintenance Exception Report	Weekly	MMO/CO
Weekly Maintenance Shop Summary	Weekly	Maintenance Operations Section/MMO/CO
Weekly Owning Unit Maintenance TAM Report	Weekly	MMO/S-4/CO
Intermediate Maintenance Production Report	Weekly	Maintenance Operations /MMO
Equipment Status Exception Report	Weekly	Commodity Staff Officer/Major Command MMO
Equipment Status Report	Weekly	Commodity Staff Officer/Major Command MMO
LM2 Unit Report	Weekly	MMO/S-4/CO
History Process Report	Monthly	MIMMS Clerk/Shop Officer/MMO
Monthly Maintenance Financial Statement	Monthly	Comptroller/Maintenance Operations Section

Figure G-4.--FMSS Reports.

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### APPENDIX H

#### MAINTENANCE MANAGEMENT TROUBLESHOOTING PROCEDURES

1. Large number of nonavailable items due to failure of same part or component.

a. Deficiency in materiel composing part or deficiency in manufacture. Submit SF 368 for tactical equipment.

b. Improper use of equipment.

(1) Improve equipment use through unit training, MCI courses, and assignment to schools.

(2) Monitor equipment use.

(3) Provide the right equipment for the job.

(4) Take disciplinary action in cases of negligence.

c. Improper organizational maintenance or lack of such maintenance.

(1) Take command action in cases of negligence.

(2) Provide technical assistance and augmentation when due to lack of knowledge, skilled personnel, or time.

(3) Provide necessary training through unit training, MCI courses, and assignment to schools.

2. Excessive number of items not available due to nonavailability of repair parts or components.

a. Parts not available in unit supply.

(1) Initiate appropriate requisition and tracer action.

(2) Coordinate with the supporting supply elements to fulfill supply demands.

(3) Review the LUBF, and submit appropriate SASSY transactions to increase stock levels when justified.

b. Incorrect demand data, or clerical errors by the maintenance activity or supporting supply element in requisitioning required items.

(1) Improve demand data through unit training, MCI courses, and assignment to schools.



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(2) Provide proper supervision of maintenance and supply personnel.

(3) Review maintenance and supply procedures and revise when necessary.

(4) Provide technical assistance, as necessary.

c. Parts or components with Source Code X, XI, or X2 are not available as required.

(1) Ensure proper disposal procedures are followed to provide maximum availability of salvaged items.

(2) Initiate action when demand warrants to have part or component placed on stockage list.

d. Improper diagnosis and initial determination of parts required, causing a need for additional demands to complete repairs.

(1) Provide technical assistance, as required.

(2) Improve diagnostic performance through unit training, MCI courses, and assignment to schools.

(3) Ensure calibration requirements of support and test equipment are properly maintained.

3. High nonavailability of equipment within the unit.

a. Improper PMCS procedures.

(1) Improve proper PMCS procedures through unit training, MCI courses, and assignment to schools.

(2) Review PMCS schedules to ensure a balanced workload and PMCS parts are available.

b. Maintenance officers lacking knowledge of maintenance management functions and responsibilities.

(1) Provide technical assistance to develop knowledge of maintenance management functions and responsibilities.

(2) Improve maintenance officers maintenance management functions and responsibilities through unit training, MCI courses, and assignment to schools.

(3) Take corrective administrative action, as necessary.

c. Personnel shortages or skill level deficiencies exist.

(1) Initiate action to correct personnel shortages.

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- (2) Establish proper assignment of maintenance personnel.
  - (3) Economically use time on maintenance personnel toward the maintenance effort.
  - (4) Request augmentation, as appropriate.
  - (5) Improve skills through unit training, MCI courses, and assignment to schools.
- d. Greater equipment use due to unit commitments.
- (1) Augment or otherwise provide assistance to reduce maintenance backlog.
  - (2) Spread equipment use evenly throughout the fleet.
4. Substandard mean time between failure (MTBF) of equipment within the unit.
- a. Improper use of equipment.
    - (1) Improve proper use of equipment skills through unit training, MCI courses, and assignments to schools.
    - (2) Monitor equipment use.
    - (3) Provide the correct equipment for the job.
    - (4) Take disciplinary action in cases of negligence.
  - b. Improper maintenance or use of improper repair parts or components.
    - (1) Take command action in cases of negligence.
    - (2) Provide technical assistance and augmentation.
    - (3) Improve proper maintenance skills through unit training, MCI courses, and assignments to schools.
  - c. Deficiency in design of equipment, repair parts, or components.
    - (1) Submit Quality Deficiency Report (SF 368) for tactical equipment.
    - (2) Coordinate with the unit supply officer for discrepancies in preparation, packaging, or shipment of equipment, repair parts, or components.
5. Mean time to repair (MTTR) equipment is excessive.
- a. Maintenance personnel proficiency is inadequate.

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(1) Review maintenance personnel billets and fill deficient billets.

(2) Improve proficiency through unit training, MCI courses, and assignments to schools.

b. Supervision is inadequate.

(1) Review supervisory billets, and make required adjustments to fill any supervisory deficiency.

(2) Improve supervision through unit training, MCI courses, and assignments to schools.

(3) Take disciplinary action in cases of negligence.

c. Deficiency exists in maintenance organization and operation or in maintenance management procedures.

(1) Review MSC MMSOP; when deficiencies exist, request guidance and revision or publish additional maintenance management procedures in either a commodity maintenance SOP, unit logistics SOP, or unit MMSOP.

(2) Adhere to standards of SOP's in organization, operation, procedures, and training.

d. Improper or insufficient maintenance facilities and/or support and test equipment to support the unit's EOM.

(1) Reorganize available facilities or support and test equipment, as appropriate, for optimum use.

(2) Establish additional shifts, when necessary.

(3) Develop facilities field expedients; for example covered hardstands.

(4) Request facilities or support and test equipment augmentation, as appropriate.

(5) Evacuate backlog to support maintenance activity.

(6) Budget for adequate facilities or support and test equipment, as appropriate.

6. Excessive maintenance costs.

a. Improper equipment use.

(1) Improve proper equipment use through unit training, MCI courses, and assignments to schools.

(2) Monitor equipment use.

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- (3) Provide the correct equipment for the job.
  - (4) Take disciplinary action in cases of negligence.
  - b. Improper diagnosis and determination of parts requirements resulting in use of unneeded parts and labor to install.
    - (1) Provide technical assistance, as required.
    - (2) Improve proper diagnostic performance through unit training, MCI courses, and assignments to schools.
    - (3) Ensure calibration requirements for support and test equipment are maintained.
  - c. Maintenance personnel proficiency is inadequate.
    - (1) Fill deficient maintenance personnel billets.
    - (2) Improve maintenance personnel proficiency through unit training, MCI courses, and assignments to schools.
  - d. Supervision is inadequate.
    - (1) Fill deficient supervisory billets.
    - (2) Improve supervision through unit training, MCI courses, and assignments to schools.
    - (3) Take disciplinary action in cases of negligence.
  - e. Deficiencies exist in maintenance, organization, operation, or maintenance management procedures.
    - (1) Review MSC MMSOP when deficiencies exist, request guidance and revision or publish additional maintenance management procedures in either a commodity maintenance SOP, unit logistics SOP, or unit MMSOP.
    - (2) Adhere to standards of SOP's in organization, operation, procedures and training.
  - f. Damage to equipment through improper handling in transit.
    - (1) Coordinate with the unit supply officer for discrepancies in preparation, packaging, or shipment of equipment, repair parts, or components.
    - (2) Supervise transportation and handling of equipment.
7. Excessive ERO backlog.
- a. Supply support inadequate.

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- (1) Initiate appropriate requisition and tracer action.
  - (2) Coordinate with the supporting supply elements to fulfill supply demands.
  - (3) Review the LUBF, and submit appropriate SASSY transactions to increase stock levels when justified.
  - (4) Improve requisitioning skills through unit training, MCI courses, and assignment to schools.
  - (5) Provide proper supervision of maintenance and supply personnel.
  - (6) Review maintenance and supply procedures and revise, when necessary.
  - (7) Provide technical assistance, when necessary.
  - (8) Ensure proper disposal procedures are followed to provide maximum availability of salvaged items.
  - (9) Initiate action when demand warrants to have part or component placed on stockage list.
- b. Personnel shortages or maintenance personnel skills inadequate.
- (1) Initiate action to correct personnel shortages.
  - (2) Establish proper assignment of maintenance personnel.
  - (3) Economically use time of maintenance personnel toward the maintenance effort.
  - (4) Request augmentation, as appropriate.
  - (5) Increase skills through unit training, MCI courses, and assignments to schools.
- c. Improper or insufficient maintenance facilities or support and test equipment to support the unit's echelon of maintenance.
- (1) Reorganize available facilities or support and test equipment, as appropriate, for optimum use.
  - (2) Establish additional shifts, when necessary.
  - (3) Develop facilities field expedients; for example covered hardstands.
  - (4) Request facilities or support and test equipment augmentation, as appropriate.

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- (5) Evacuate backlog to support maintenance activity.
- (6) Budget for adequate facilities or support and test equipment, as appropriate.
- 8. Excessive intransit time.
  - a. Equipment owner has insufficient transportation.
    - (1) Validate transportation commitments.
    - (2) Request supporting unit transportation.
  - b. Equipment owner not notified when repaired equipment is ready for pick up.
    - (1) Instruct maintenance personnel on owning unit notification procedures.
    - (2) Establish appropriate supervisory procedures.
  - c. Improper transportation mode selected.
    - (1) Consult with transportation management officer on current mode.
    - (2) Improve proper transportation mode selection through unit training, MCI courses, and assignments to schools.
  - d. Owning unit failing to promptly receipt for repaired equipment.
    - (1) Notify owning unit commander.
    - (2) Initiate command action, when required.
- 9. General failure to meet standard delivery dates for ERO priorities assigned or meet RDD.
  - a. Supply support inadequate.
    - (1) Initiate appropriate requisition and tracer action.
    - (2) Coordinate with the supporting supply elements to fulfill supply demands.
    - (3) Review the LUBF, and submit appropriate SASSY transactions to increase stock levels when justified.
    - (4) Improve requisitioning skills through unit training, MCI courses, and assignment to schools.
    - (5) Provide proper supervision of maintenance and supply personnel.

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(6) Review maintenance and supply procedures and revise when necessary.

(7) Provide technical assistance, as necessary.

(8) Ensure proper disposal procedures are followed to provide maximum availability of salvaged items.

(9) Initiate action when demand warrants to have part or component placed on stockage list.

b. Personnel shortages or maintenance personnel skills level deficiencies exist.

(1) Initiate action to correct personnel shortages.

(2) Establish proper assignment of maintenance personnel

(3) Economically use time of maintenance personnel toward the maintenance effort.

(4) Request augmentation, as appropriate.

(5) Increase skills through unit training, MCI courses, assignments to schools, and use of contact teams.

c. Deficiencies exist in maintenance, organization, operation, or maintenance management procedures.

(1) Review MSC MMSOP, when deficiencies exist, request guidance and revision or publish additional maintenance management procedures in either a commodity maintenance SOP, unit logistics SOP, or unit MMSOP.

(2) Adhere to standards of SOP's in organization, operation, procedures, and training.

d. Assignment of unrealistic RDD's.

(1) Coordinate with equipment owner and determine actual requirements.

(2) Improve the use of RDD's through unit training, MCI courses, and assignment to schools.

10. Use of repair parts or components are excessive.

a. Deficiency in materiel composing part or deficiency in manufacture. Submit SF 368 on repair parts with deficiency in manufacture.

b. Improper diagnosis of equipment problem.

(1) Provide technical assistance, as required.

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(2) Improve proper diagnostic performance through unit training, MCI courses, and assignments to schools.

(3) Ensure calibration requirements for support and test equipment is maintained.

c. Equipment use improper.

(1) Improve proper equipment use through unit training, MCI courses, and assignments to schools.

(2) Monitor equipment use.

(3) Provide the correct equipment for the job.

(4) Take disciplinary action in cases of negligence.

d. Repair parts or components installed incorrectly.

(1) Improve repair parts and component installation through unit training, MCI courses, and assignments to schools.

(2) Review supervisory billets and fill and empty billets.

(3) Improve maintenance supervision through unit training, MCI courses, and assignments to schools.

(4) Take disciplinary action in cases of negligence.

11. Failure to complete modifications in specified time period.

a. Unit not maintaining current knowledge of applicable MI's.

(1) Establish procedures to ensure current knowledge of applicable MI's through periodic review of SL-1-2 and TI-5600.

(2) Review PL for publications to ensure unit is on distribution for all applicable MI's, and submit any required changes to PL per MCO P5600.31.

b. Unit not receiving modification kits in a timely manner.

(1) Initiate appropriate requisition and tracer action.

(2) coordinate with supporting supply elements to fulfill supply demands.

c. Scheduling for modification does not economically use time, personnel, and material available.



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(1) Review schedules to ensure a balanced workload and MI kits are available.

(2) Ensure that modifications are scheduled in conjunction with PMCS or CM.

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## APPENDIX I

### ACRONYMS

AIS	Automated Information System
AUAF	Activity Usage Accounting File
C&E	Communication and Electronics
CEC	Combat Essentiality Code
CEE	Combat Essential Equipment
CSSS	Combat Service Support Section
CM	Corrective Maintenance
CNR	Calibration Not Required
CONUS	Continental United States
CWC	Corrosion and Wear Control
DCD	Deadline Control Date
DMMS	Depot Maintenance Management System
DPR	Daily Process Report
DRIS	Date Received In Shop
DSSC	Direct Support Stock Control
DTL	Daily Transaction Listing
Eng	Engineer
EOM	Echelons Of Maintenance
ERO	Equipment Repair Order
ERO bin	ERO Parts Bin
EROSL	Equipment Repair Order Shopping/Transaction List
FMSS	Field Maintenance Subsystem
FSMAO	Field Supply Maintenance Analyst Office
GME	Garrison Mobile Equipment

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GS	General Supply
HMSS	Headquarters Maintenance Subsystem
ID	Item Designator
IROAN	Inspect and Repair Only As Necessary
ISA	Inter-service Support Agreement
IWGCEP	Infantry Weapons Gage Calibration Exchange Program
JCS	Joint Chiefs of Staff
JOAP	Joint Oil Analysis Program
LI	Lubrication Instruction
LO	Lubrication Order
LTI	Limited Technical Inspection
LUBF	Loaded Unit Balance File
MAL	Mechanized Allowance List
MARES	Marine Corps Automated Readiness Evaluation System
MCBul	Marine Corps Bulletin
MCLB	Marine Corps Logistics Base
MCI	Marine Corps Institute
MCO	Marine Corps Order
MEQPT	Major Equipment
MI	Modification Instruction
MIMMS	Marine Corps Integrated Maintenance Management System
MISCO	Maintenance Information System Coordinator Office
ML-MC	Management Data List Marine Corps
MMO	Maintenance Management Officer
MMSOP	Management Standing Operating Procedures

MIMMS FIELD PROCEDURES MANUAL

MOJT	Managed-On-The-Job Training
MOS's	Military Occupational Specialties
MSC	Major Subordinate Command
MT	Motor Transport
MTBF	Mean Time Between Failure
MTTR	Mean Time To Repair
NMCM	Not Mission Capable Maintenance
NMCS	Not Mission Capable Supply
NBC	Nuclear, Biological, Chemical
NSC	National Supply Classification
NSN	National Stock Number
ORD	Ordnance
OTC	Operational Test Code
PEB	Preexpended Bin
PCN	Publication Control Number
PL	Publications Listing
PMCS	Preventive Maintenance Checks and Services
PQDR	Product Quality Deficiency Report
RDD	Required Delivery Date
R&E	Replacement and Evacuation
RO	Requisitioning Objective
RO	Responsible Officer
ROP	Reorder Point
SASSY	Supply Supported Activities Supply System
SC	Support Concept
SI	Supply Instruction
SL	Stock List

MIMMS FIELD PROCEDURES MANUAL

SMR	Source Maintenance Recoverability
SOP	Standing Operating Procedures
SORTS	Status Of Resources and Training System
SRO	Shop Repair Order
SSIC	Standard Subject Identification Code
SSRI	Supply System Responsibility Item
TAM	Table of Authorized Material
TAMCN	Table of Authorized Material Control Number
T/E	Table of Equipment
TI	Technical Instruction
TM	Technical Manual
TMDE	Tests, Measurement, and Diagnostic Equipment
T/O	Table of Organization
UM	User Manual
UMMIPS	Uniform Materiel Movement and Issue Priority System
UPCP	Unit Publication Control Point
UURI	Using Unit Responsibility Item