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 P4400.15O.

(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.

(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).

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

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

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.

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.

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.

(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 in2, is only used to measure pressures below 3,000 in2.

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.

(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 ink 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

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.

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.

(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.

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 chop 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

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

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.

(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.

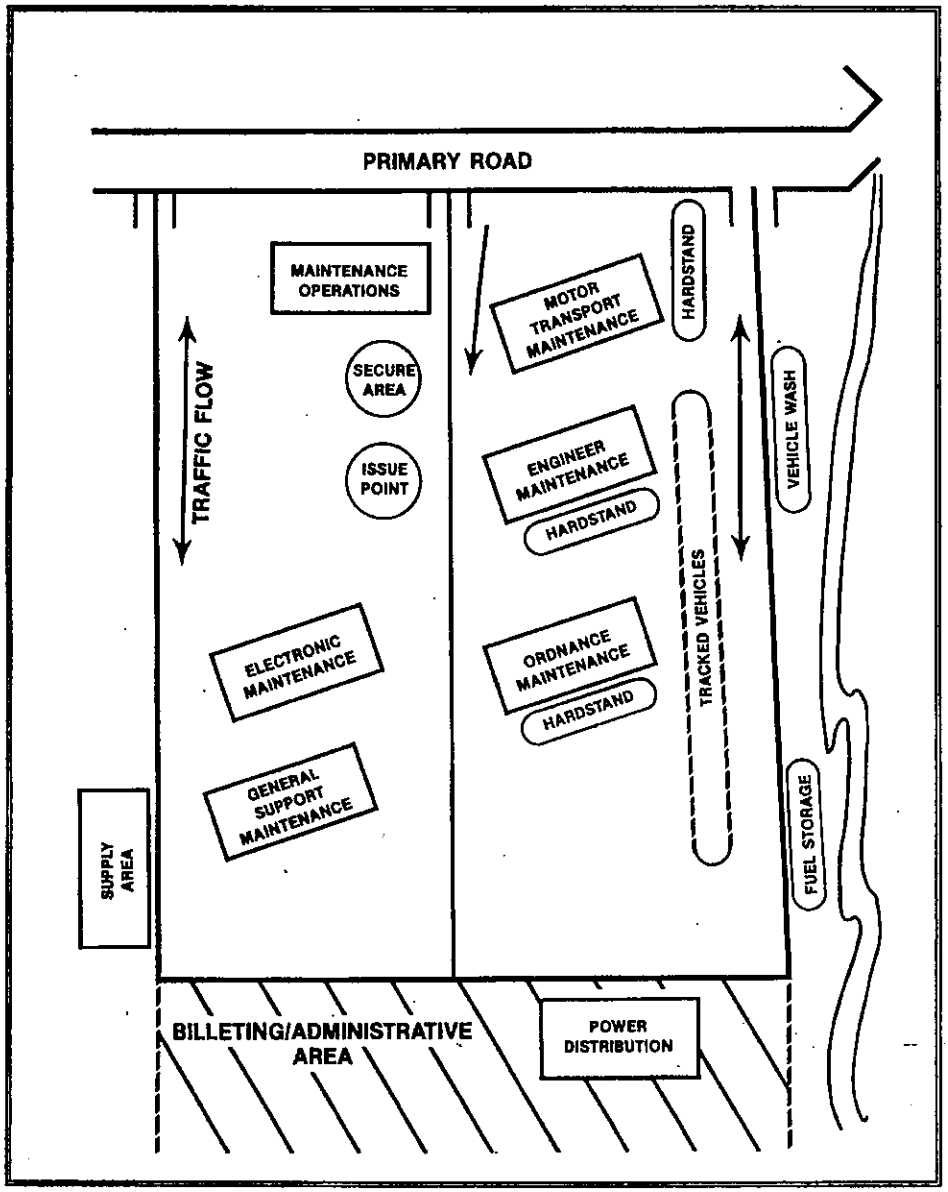

Figure E-1.--Field Layout of a Support Maintenance Activity

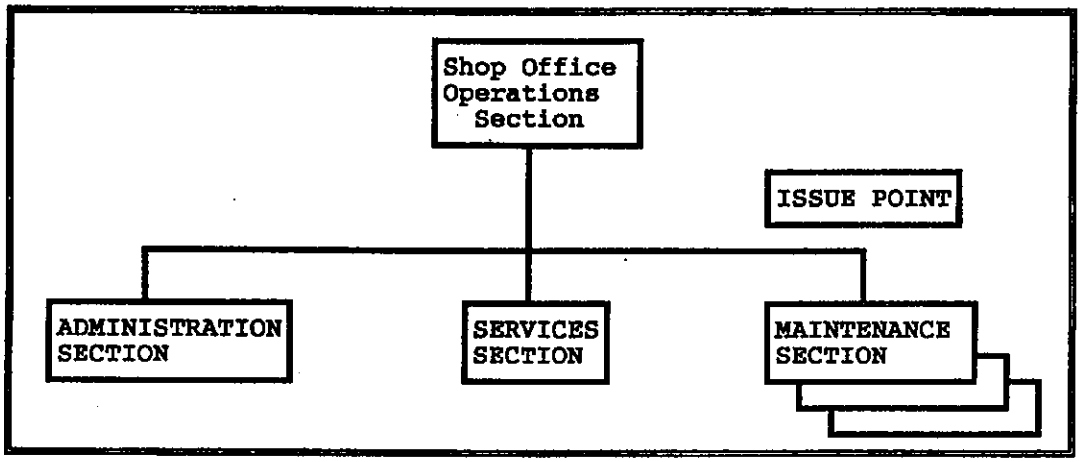

Figure E-2.--Central Shop Organization.

(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.

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.

(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.

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.

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

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.

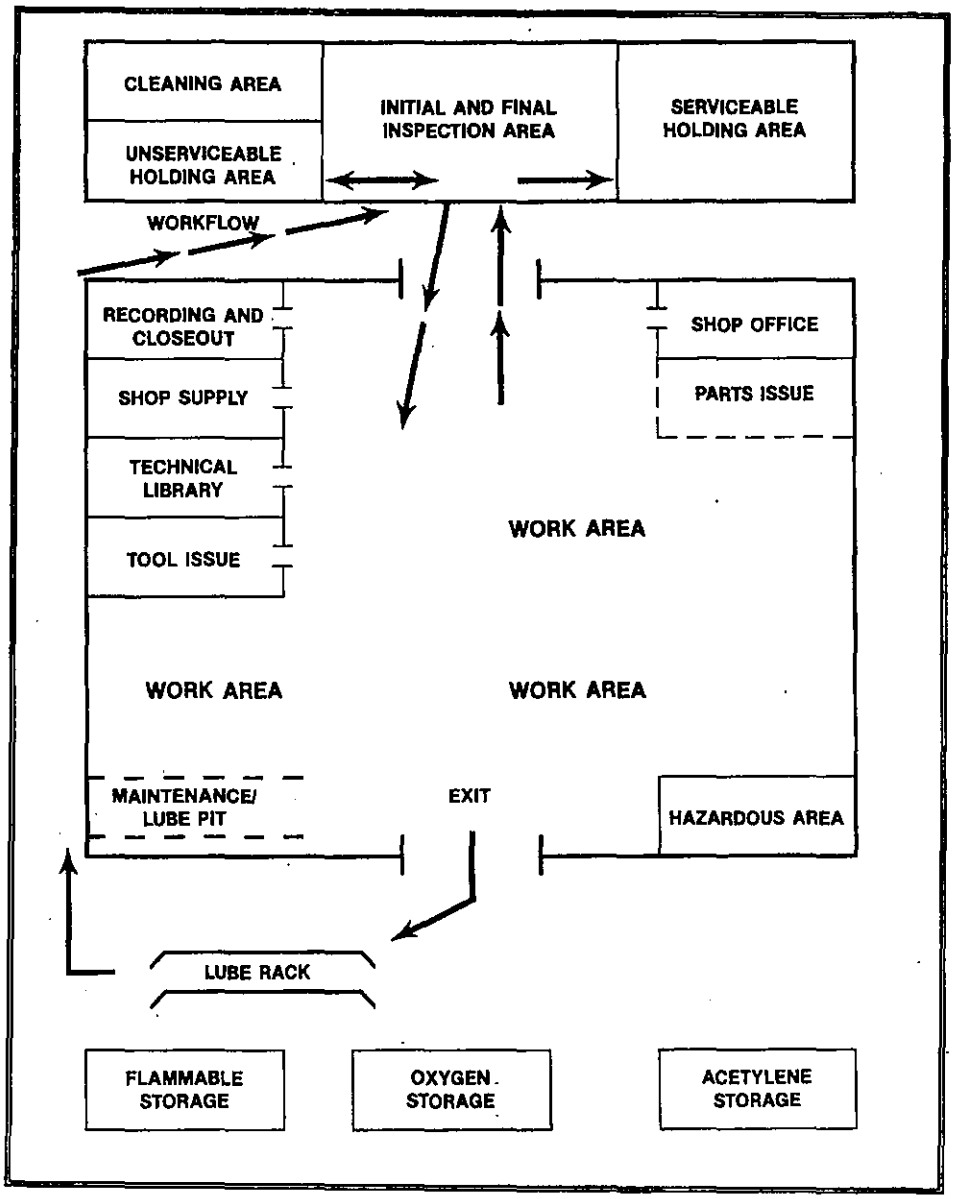

Figure E-3.--Maintenance Shop Layout

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.

(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 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 with 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:

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.

h. Stem 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. Stem 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. Stem 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. Stem 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.

(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 thee 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, 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.

(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,

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.

(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:

(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

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.

(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.

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.

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 reparable.

(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.

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.)

(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 shot;n in figure G-1.

ERO File	Job Status/Code	Shop Section
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.

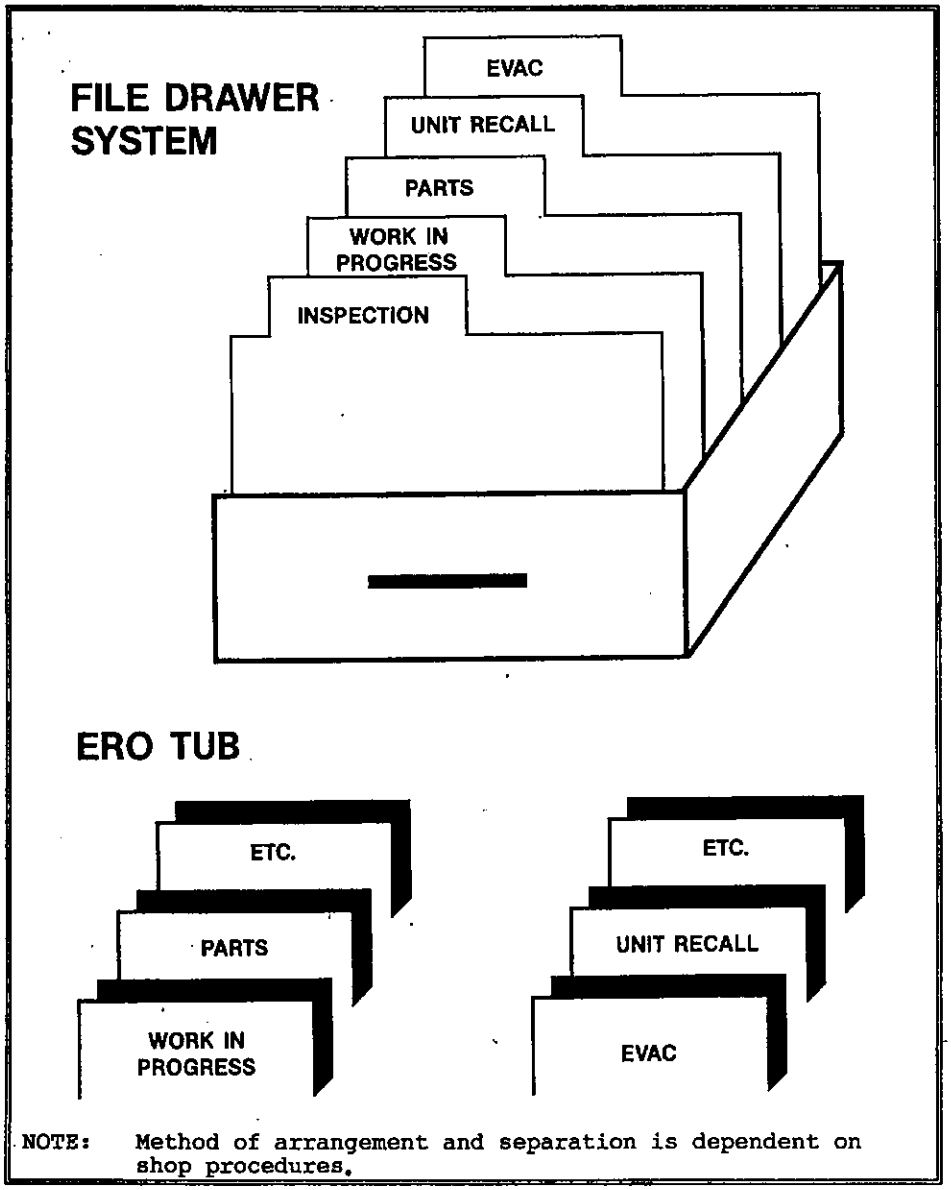

Figure G-2.--ERO Files

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 "0/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.

(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

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.

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.

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.

(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) Provided 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.

(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.

(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.

(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.

(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.

(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.

(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.

(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.

(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.

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

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

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

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