Document Change Record

Maintenance Operations Support (HQ Office)

MS-63, TL-8

The changes listed below are in chronological order with the most current on top. Please make the indicated changes in the body of the handbook and update the List of Changes table near the front of the volume. The next handbook update will incorporate any outstanding changes.

Date	Pg	Chg	CHANGES	Log
07/11/07	25	2	Page 25, 13.2.2, reverse the definintion of codes B and C, i.e., 1) Cross out "B" and write in "C", and 2) Cross out "C" and write in "B".	1027
09/12/06	27 28	1	Replace pages 27 and 28 with change page file: MS63pgs27and28.pdf. This changes Paragraph #: 14.5, Frequency C, from "Work scheduled October 1st, is due October 2nd." to "Work scheduled October 1st, is due October 22nd."	681

Instruction Sheet

MS-63
Maintenance Operations
(TL-8, June 22, 2006)

ORDERING INFORMATION

PSIN: HBKMS63

PSN: 7610-02-000-9959

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Instruction sheet
MS-63
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UNITED STATES POSTAL SERVICE

Maintenance Handbook MS-63
Maintenance Operations

Transmittal Letter 8
June 22, 2006

A. Explanation

This Maintenance Series (MS) handbook supports field personnel involved in maintenance operations. Updated versions or change packages will be issued as future needs demand.

B. Additional Copies

Order additional copies of MS-63 by submitting a PS Form 7380, *MDC Supply Requisition*, to the Topeka Material Distribution Center, specifying HBKMS63 in the Postal Service Item Number (PSIN) column. If ordering by Touchtone Order Entry, use PSN 7610-02-000-9959. To order a 3-ring handbook binder, use PSIN O399A or PSN 7510-02-000-8125.

C. Rescissions

MS-63 (TL-8, 06-22-06) rescinds MS-63 (TL-7, 08-31-96). Please discard all TL-7 and previous versions.

D. Comments and Questions

Suggestions for improving this handbook are solicited from all sources. To send us your comments and suggestions or to report MS Handbook errors, please use either the Comments/Suggestions link at http://www.mtsc.usps.gov or the preaddressed comment cards at the back of this handbook.

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MAINTENANCE OPERATIONS

Maintenance Series Handbook

MS-63

TL-8; June 22, 2006

Published by:

MAINTENANCE TECHNICAL SUPPORT CENTER
MAINTENANCE POLICIES AND PROGRAMS
UNITED STATES POSTAL SERVICE
600 WEST ROCK CREEK ROAD
PO BOX 1600
NORMAN, OK 73070-6708

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PSN: 7610-02-000-9959

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PSIN: O339A
PSN: 7510-02-000-8173

EFFECTIVE PAGES

The following is a list of effective pages and the current version of each page in the handbook.

PAGE NUMBER	EFFECTIVITY	PAGE NUMBER	EFFECTIVITY
ii through x	TL-8		
1 through 56	TL-8		

RECORD OF CHANGES

The following space is provided for changes you make to this handbook.

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1 INTRODUCTION

1.1 Overview

This manual provides guidance and defines general procedures for management of maintenance in Postal facilities. The first few sections deal with the mission of maintenance in the Postal Service, responsibilities of various levels of Maintenance management, methodologies, and strategies to accomplish the mission. Subsequent sections deal with more procedures. For coherence, the procedures are structured in sections roughly parallel to the modules in the present eMARS (Electronic Maintenance Activity Reporting and Scheduling) system of the Postal Service.

1.2 Mission Statement

The mission of the Maintenance organization is to ensure that physical assets of the Postal Service, such as buildings, building equipment, mail processing equipment and postal operating equipment are maintained to provide optimum performance, minimal down-time, and appropriate asset life, as well as to provide a safe, environmentally compliant, and energy efficient working environment. It is also part of the mission of the Maintenance organization to ensure that these ends are achieved in a cost-effective manner. The maintenance organization must participate throughout the asset lifecycle beginning with the design and acquisition phases to ensure maintainability and reliability of acquired assets. Training and development of maintenance personnel, proper parts support, availability of manuals and other documentation, and direct maintenance support must be provided as required. Furthermore, a maintenance information system that augments effective decision-making must be maintained.

2 RESPONSIBILITY

2.1 Headquarters

Maintenance Policies and Programs at Headquarters consists of three groups: Maintenance Planning and Logistics Policies, Maintenance Technical Support Center, and Performance Management and Administration. Each of these groups reports to the Manager, Maintenance Policies and Programs, who in turn reports to the Vice President, Engineering.

The functional responsibilities of the organization at this level are:

- Provide policy and strategy for maintenance of equipment, buildings and grounds.
- Provide Maintenance Engineering leadership and support.
- Provide Integrated Logistics Support Planning (ILSP) for nationally deployed equipment. ILSP is the system used to incorporate life-cycle maintenance considerations into new equipment acquisitions.
- Provide maintenance documentation for equipment and facilities to all levels of the maintenance organization.
- Provide direct field support in the form of the National Technical Support Network.
- Provide management and funding for depot-level repair facilities to ensure a reliable, economical source of repairable parts and assemblies.
- Support relations with craft and management organizations on issues related to Maintenance.
- Provide technical review and control of maintenance organization structures, position definitions, and position levels.
- Provide budget development, review, and management.
- Develop and provide field support for software systems, such as the current eMARS system, and other maintenance-related software, such as the Work Hour Estimator Program (WHEP).

- Coordinate with other Headquarters functions on Maintenance-related matters.

2.2 Area

At the Area level, the maintenance organization contributes to the “mission” as defined above (1.2). The responsibilities of Area Maintenance Support include performance monitoring, direct field support, software support, budget support, staffing reviews, and coordination between headquarters and field maintenance as well as other Area-level functional organizations. Area management must be aware of and implement national policies and procedures.

2.3 Local

At local maintenance offices, the maintenance organization contributes to the “mission” as defined above (1.2). The primary responsibility of the Maintenance organization at the field level is direct, “hands on” maintenance of equipment, facilities and grounds. They must ensure that these assets are maintained to provide optimum performance and minimal down-time, as well as provide a safe, environmentally compliant, and energy efficient environment for our internal and external customers, and to protect the capital investment of the Postal Service. Equipment includes automation, mechanization, material handling equipment, data systems equipment, and customer service equipment. Facilities and grounds include plants, bulk mail centers, stations, branches and associated offices. Maintenance tasks can be preventive, predictive, operational, reactive, or corrective.

Local management must ensure that they have adequate resources to fulfill this responsibility. These resources include the proper number of appropriately trained personnel, proper documentation for the assets to be maintained, adequate parts inventory, appropriate tools, and appropriate supervisory personnel. Local management must be aware of and implement national policies and procedures as they apply at their facility.

3 MAINTENANCE METHODOLOGIES

Large government and private sector maintenance organizations typically have a primary operating mode. Very basic or undeveloped organizations operate in a mode that is primarily “run to failure” or reactive maintenance. More developed organizations use preventive maintenance to some degree. An indication of the effectiveness of this type of organization is the percent of time spent on preventive maintenance compared to time spent on corrective and/or reactive maintenance. Further sophistication of the maintenance organization leads to predictive maintenance, condition-based maintenance, and reliability centered maintenance. To achieve world-class maintenance status, a maintenance organization must achieve the optimum balance in the use of each of these methodologies that is appropriate for the larger organization they serve.

The Postal Service maintenance organization is progressing toward this optimum balance. The Postal Service has a well-developed system of preventive maintenance. Recommended checklists are developed at the headquarters level for nationally deployed equipment and checklists are developed locally for other equipment. These preventive maintenance tasks are scheduled and tracked using the eMARS system. The Postal Service has taken some steps toward accomplishing predictive maintenance using temperature sensors and ultrasonic sensing equipment. Progress has been made in moving toward condition-based maintenance by defining different frequencies for preventive maintenance tasks depending upon equipment operating time. Reliability Centered Maintenance (RCM) principles are used when developing checklists. It is the intent of the organization to increase the use of predictive, condition-based and reliability centered maintenance, reduce traditional preventive maintenance tasks, and bring reactive or breakdown maintenance to an absolute minimum.

4 DEFINITIONS

4.1 Preventive Maintenance

Preventive maintenance is the scheduled, systematic inspection, examination, cleaning, lubricating, adjusting, servicing and custodial care to retain functional capabilities of buildings and equipment. The

objective is to improve and prolong building and equipment life, avoid unplanned maintenance activity and lower overall maintenance costs by eliminating all breakdown (reactive) maintenance and significantly reducing the number and frequency of corrective maintenance actions.

4.2 Predictive Maintenance

Predictive maintenance is the timely adjustment, repair, or replacement of a part, assembly, or subassembly before a failure or malfunction occurs. It is applicable to plant and postal systems and equipment. Predictive maintenance is based on condition data that have been collected and developed into trends and analyzed to determine optimum maintenance periods, warn of impending failure, and identify maladjusted or defective parts. Predictive maintenance is a sub-category of preventive maintenance.

4.3 Operational Maintenance

Operational maintenance is the use of maintenance or other postal personnel available in the vicinity of operational critical mechanized and automated equipment to ensure minimum downtime from equipment failure. Refer to the appropriate maintenance management order (MMO) for operational maintenance tasks and staffing recommendations.

4.4 Corrective Maintenance

Corrective maintenance is repair or replacement of a failed or defective part, subassembly, or assembly of an equipment item, or portion of a building or facility, which returns the equipment or unit to operating condition. Corrective maintenance may be scheduled (when the imminent failure of a part is detected) or reactive (when the failure occurs without warning).

4.5 Reactive Maintenance

Reactive maintenance consists of maintenance responses to equipment malfunctions or breakdowns after they occur. It is remedial maintenance that occurs when equipment fails and must be repaired on an emergency or priority basis.

4.6 Condition-Based Maintenance

Condition-based maintenance is a process wherein maintenance tasks are based upon knowledge of the condition of equipment or subcomponent. This knowledge is the result of continuous or periodic monitoring. Monitoring is accomplished by onboard sensors or periodic inspections.

4.7 Reliability Centered Maintenance

Reliability Centered Maintenance is a systematic process used to determine what must be done to ensure that any physical asset continues to fulfill its intended functions in its present operating environment. RCM involves identifying the maintenance required to support a system or piece of equipment throughout its life cycle, analyzing equipment failure modes and the effectiveness of maintenance actions, and then eliminating any unnecessary maintenance.

The four features that characterize RCM are the preservation of system function, the identification of failure modes that can defeat system functions, the assignment of priorities to failure modes, and the selection of only applicable and effective PM tasks.

5 eMARS

eMARS is a web-based Computerized Maintenance Management System (CMMS) that provides field maintenance personnel with the ability to schedule maintenance and personnel, track labor and material costs, maintain a spare parts inventory and report on maintenance operations. It also provides data input to NMARS for Area and National use.

The principle modules in eMARS are:

Administration	Reactive Maintenance
Personnel	Work Assignments
Equipment Inventory	Completed Actions
Work Orders	Inventory Management
Preventive Maintenance	Reports

5.1 eMARS Reports

eMARS provides reports to assist in analysis of maintenance performance and in achieving World Class Maintenance status. The information in the reports is generated from the data manually input or downloaded from other postal data systems. Information input into the eMARS system must be complete, accurate and timely in order to generate valid data. Local, Area and National reports are available from the eMARS system.

5.1.1 Types of Reports

Contract reports are used to monitor and track information and expenses for individual vendors, utilities, and other maintenance services that are contracted.

Equipment reports list active and inactive equipment inventory, and report history, labor cost and materials.

Inventory reports assist in checking, tracking and evaluating stockroom efficiency. These reports also help to monitor stockroom transactions and assist in maintaining accurate stock levels.

Manager reports are a tool to evaluate the performance and cost of the equipment, facilities and personnel.

Miscellaneous reports provide the code table reports, bar codes, inventory labels and user access.

Personnel reports provide employee data, crew information and employee training records, including lockout/tagout training.

Preventive Maintenance reports provide current and historical preventive maintenance route information.

Reactive Maintenance reports are used to monitor reactive maintenance activities.

PM Schedules provide a list of outstanding preventive maintenance routes.

Work Orders reports provide current and historical work order information.

5.1.2 Recommended Report Review Frequencies

Review the following reports in frequencies as indicated:

Manager Reports (review at least monthly):

Work Orders Past Due

PM Completion Rates

Failure Data – MTTR, MTBF

Maintenance Work Hours Operated and Material Cost

Machine Performance

Building Cost per Thousand Square Feet

Plant Maintenance Cost Summary

Inventory Reports:

Open Orders report – minimum weekly

Receipts – every time items are receipted

Orders Pending – every day

No Issues – monthly

Repairables Due Back – weekly

Preventive Maintenance:

Summary Daily/Senior by crew - weekly

Work Orders:

Open Work Orders – minimum weekly

Work Code 8 Work Orders – daily

Work Assignment report – daily for each crew

6 eNMARS

eNMARS provides Area and National level reports based on eMARS data collected at the local level. The following Report types are available:

PM Completion
PM Trends
PM Weekly Summary
Maintenance/Costs Breakdowns
Machine Performance Data
National Stock Room
Parts/Supplies Issues - Non Stock
Parts/Supplies Issues – Stocked
Contract Costs
Container Repair
Equipment Inventory
Modification Tracking
Inventory ROQ Exceptions
Inventory Valuation
Acronyms
Area Codes/Names
Acronym Categories
Site Information
Labor Rates
Site Identification Info

7 ADMINISTRATION

7.1 General

The eMARS system contains administrative data and tables that store "settings" to coordinate system interaction. Headquarters will issue any additions and changes to code tables (with the exception of "Employee-Courses," which can be entered locally). Data in "Security," "eMail Reports," "Office," and "DECR Rpt" must be kept current by local personnel.

7.2 eMARS Access

USPS policy requires that all users must have an approved eAccess user ID for the eMARS system. Once access is authorized and the user's name is in the security section, the system administrator can assign necessary user privileges.

7.3 Security

The local system administrator uses the security module to update user privileges. The senior maintenance official and/or designee determines the access privileges within modules/sections for each maintenance employee, according to the local office's needs.

User privileges are:

- Read - allows the user to view the information only.
- Write - allows the user to add, edit, and delete information.
- Supervisor - allows the user to "read" and "write" as defined above. It also provides certain approval capability, especially in the inventory module.

7.4 Code Tables

Codes help to standardize data input, resulting in consistent interpretation of data. These codes are controlled nationally in the eMARS system and are revised periodically as required (with the exception of Course codes, which can be revised locally).

Code tables are grouped in the following table categories:

7.4.1 Maintenance Codes

Cause Codes – These codes are used by the responding maintenance employee to define the cause of an equipment breakdown. They are input into the eMARS system in the Completed Actions module.

Verbs and Nouns – These two code types are used in the "Action" and "Taken" fields in Completed Actions. In this manner the employee can select and enter, for example, "remove/replace" (verb) "bracket" (noun) to define the action taken. In the Reactive Module, these same codes are used in the "Verb" and "Noun" fields.

PM Frequency – These codes define how often a route will be scheduled. They are used in the PM module, the Scheduling module, and the Completed Actions module.

Reactive – These codes identify the equipment, component, or condition that is the basis of the reactive event.

Work Code – This code describes the type of work accomplished (e.g., routine preventive maintenance, breakdown maintenance, etc.).

7.4.2 Equipment Codes

Acronyms – Acronyms are abbreviated forms of the name of an equipment or equipment group (e.g., DBCS for Delivery Bar Code Sorter). One or more class codes are also defined for each equipment type (e.g., DBCS, Class code DA for Delivery Bar Code Sorter, Expanded Capacity).

Condition Code -– These codes indicate machine status (i.e., Operational, Surplus, etc.).

Inspection Frequency – These codes indicate how often equipment is to be inspected. These codes are primarily used for building equipment such as boilers, elevators, etc., that require periodic safety inspections.

Inspection By – Indicates the entity that performs the required inspections (e.g., Elevators are to be inspected by certified inspectors only).

Production – This table is used to indicate maximum hours operated and pieces processed. This is intended to prevent accidental multiple entries when this data is entered manually.

7.4.3 Organization Codes

Department –Indicates the functional area of the requestor.

Equipment Group Code – These codes define equipment groupings such as “Major MPE” and “Major Bldg” report generation.

Labor Distribution (LDC) – These are the Labor Distribution Codes that are used throughout the Postal Service to define the labor group involved in a transaction (e.g., Mail Processing Equipment, Building Equipment).

7.4.4 Employee Codes

Course Codes – This table provides a listing of training courses, descriptions, and course numbers.

Labor Class – Indicates employee job titles.

Labor Group – These codes indicate category of maintenance service such as Mail Processing Equipment or Bldg. and Plant Facilities.

Level and Salary codes – These codes provide the employee levels used in Maintenance and the “loaded” (including benefits and overtime) salary for each level. This table is updated annually and used in calculating dollar costs for various maintenance categories (e.g., Cost per 1000 pieces, cost per thousand square feet).

7.4.5 Inventory Codes

Action Code – These codes indicate action taken to change inventory status.

FSC Codes – These are the standard Federal Supply Classifications used throughout the Federal government to classify parts and supplies in categories such as belting, bearings, etc.

Group Code – These codes are used to classify parts and supplies by the type of equipment they are used on.

Source Code – These codes identify the procurement source for each part in inventory.

Unit of Issue – These codes define the quantity variable for a given part (e.g., each, set, box, etc.).

AIC Code – Account Identifier Codes from F-20A, Accounting Service Center Accounting Guidelines. 6.2, E-Mail Reports

Daily and weekly informational reports can be automatically generated concerning breakdowns, work orders, PM performance, Daily Equipment Condition Report and reactive maintenance. Local maintenance management determines what reports will be distributed and to whom.

7.5 Office

Contains various facility-specific information (e.g., contact personnel, building areas, etc.) for the main facility and sub-sites.

7.6 Daily Equipment Condition Report Comments

This module provides the ability to enter comments on the Daily Equipment Condition Report to inform recipients of any issues relating to equipment. Comments must be entered into this module prior to MODS cutoff time that was entered in the EOR (End Of Run) system for your site. Comments will be automatically removed each day.

8 PERSONNEL

Personnel records form the human resource base for the maintenance organization and the eMARS system. Many of the eMARS system functions are dependent on the personnel records. Effective planning and control require that employee records are accurate, complete, and updated. These records allow offices to input scheduled leave, training, labor hours, and track crew and employee productivity.

8.1 Employee Details

A record is required for each maintenance employee, and employee details must be entered in the eMARS system in the Personnel module. The following information is required:

- Employee Number is automatically assigned by the eMARS system.
- Last Name and initials of the employee.
- Employee status; active or inactive. An active employee is available for work assignment. An inactive employee is an employee that is no longer employed at the local maintenance organization (e.g., retired, transferred, etc.). “Inactive” employees are retained in the eMARS system for current and two previous years.
- Title of the employee’s current job position.
- Level - The employee’s current pay grade.
- LDC (Labor Distribution Code) - Refer to definitions in HR manuals.
- Labor Group Code indicates the category of maintenance service such as Mail Processing Equipment or Bldg and Plant Facilities.
- Crew is used to assign an employee to a work group and supervisor for work assignment.
- Tour will automatically default upon crew assignment.
- Off days are the employees non-scheduled days. Valid numeric days are 1-Saturday, 2-Sunday, 3-Monday, 4-Tuesday, 5-Wednesday, 6-Thursday, and 7-Friday.
- Daily hours are work hours available for work assignment.
- Job Number is an optional field to be used at local maintenance discretion (e.g., bid number).
- Comments - optional.

8.2 Schedule

The Schedule section is used to record an employee’s scheduled leave and training so the supervisor can then determine available resources for employee work assignments.

When an employee is on leave or training, this is reflected in the eMARS system in the Work Assignment module. The records must be input for effective use of the employee work assignment process. Leave and training will be indicated with Leave or Train next to employee's name in the Work Assignment module.

8.3 Qualifications

When a supervisor believes the employee's technical knowledge and safety awareness are sufficient, or the employee demonstrates the ability to work without direct supervision on a specific type of equipment, this information can be entered in the eMARS system in the Qualifications section. An employee's qualification record is entered in the eMARS system only at the instruction of the supervisor or manager. This information assists the supervisor in work assignment and helps to identify future qualification needs.

8.4 Evaluations

A supervisor shall periodically evaluate the performance of each maintenance employee assigned to perform routes. Different routes must be scheduled each time the employee's performance evaluation is conducted. When performing the evaluation, the supervisor must accompany the employee during the entire route. The supervisor performing the evaluation must complete the *Maintenance Employee Evaluation Record*, shown below. The senior maintenance official or designee must keep the record of the review on file for two years. The supervisor is responsible for establishing and maintaining a schedule to show when the last evaluation was performed, when the next is due and any training the employee might need.

MAINTENANCE EMPLOYEE EVALUATION

Date of Evaluation	Employee Evaluated (Full Name)	Checklist/Route Sheet Number Evaluated	Evaluation Supervisor (Full Name)	Next Evaluation Due (Date)

Comments/Remarks:

Maintenance Employee Evaluation Record

8.5 Training

The training section allows for the reporting of courses that an employee has successfully completed. These records are maintained based on information provided by local management. Training information can be obtained from various sources including, but not limited to, the National Training Database, Postal Employee Development Center, and Automated Enrollment System. Employee training records should be entered on an as-needed basis. Local offices should devise a system that ensures these records are kept current.

Training that is required on a periodic basis or refresher training should be entered as an additional record. Successful training information should not be edited or deleted since this information is collected as historical data.

8.6 LO/TO (Lockout/Tagout)

The Lockout/Tagout certification section is used to document that an employee has successfully demonstrated lockout/tagout procedures as established nationally or locally. This information is by equipment type. Energy control procedures are established on various types of equipment by MTSC and are published in Maintenance Management Orders.

These records are maintained based on information provided by local management. Offices should devise a system that assures these records are kept current. Since lockout/tagout training is required on a periodic basis, the information should be entered as an additional record. Lockout/tagout information should not be edited or deleted since this information is collected as historical data.

8.7 Crews

Maintenance crews consist of groups of employees, usually performing the same type of maintenance, assigned to a supervisor. Each maintenance office establishes crews to perform work to meet their local needs. Crews may be assembled and created by job function, location, supervisor, area of responsibility, tour, etc. A supervisor can be responsible for more than one crew. Supervisors should be assigned to an administrative crew and not the crew(s) they supervise.

A crew may be created on an as-needed basis. It may be necessary to establish a crew for special seasonal work, or a special facility project. A crew record can be modified to reflect a change to the description, supervisor's name, and pay location. The crew number and tour information cannot be changed.

The only time a crew can be changed to inactive status is when all personnel are removed, and all associated PM routes are re-assigned to another crew or deleted. Work orders must also be closed out or re-assigned to another crew. The crew information will be maintained for the current year plus two previous years.

9 EQUIPMENT INVENTORY

9.1 General

Equipment inventory provides a way to collect historical data. Equipment history is maintained by the eMARS system and provides the location, cost, and other identifications to create work orders, establish preventive maintenance routes, and issue parts. The local maintenance organization inventories equipment within their facility(s) and records the required information in the eMARS system. Records must be maintained even if the equipment is under contract.

The equipment acronym code table defines which equipment requires an equipment record. The equipment identified in the table (under column Eq Rec) with an N can be changed by the local office to require an equipment record.

9.2 Coordination

Each office will establish local procedures to ensure that maintenance personnel are informed when equipment is added or removed within their facility(s). The material accountability officer should also be notified when capital equipment is involved.

9.3 Categories

Equipment is categorized as Major MPE (A), Major Building (B), Building Services (I), Minor MPE (M), other MPE (N), All Other (O), and Discontinued Acronyms (X). A list of acronyms and class codes within each of these categories can be found in eNMARS in the acronym categories report.

9.4 Definitions

9.4.1 Postal Equipment

Postal equipment is a broad range of equipment used either directly or indirectly in moving the mail and for providing customer services.

9.4.2 Building and Building Equipment

Building and Building Equipment is the building's physical structure, utilities and environmental systems.

9.5 Required Data

The following information must be entered in the eMARS system in the Equipment module:

- **Subsite** identifies the equipment location within the building. If additional subsites are required a request must be submitted to the eMARS system Project Office for approval.
- **Acronym and Equipment Class** identify the type of equipment, model, and equipment configuration within a given equipment type.
- **Equipment Number** is a locally assigned identification number that may be any combination of letters and numbers up to eight (8) characters. Equipment with the same acronym, regardless of the equipment class, must have a unique locally assigned number.
- **Serial Number** is obtained from the equipment manufacturer's nameplate. The serial number must be reported for major mail processing and building equipment.
- **Model** is obtained from the equipment manufacturer's nameplate. Model number must be reported for major mail processing and building equipment.
- **Condition Code** is the status of the equipment. The equipment condition codes are:

A Approved for Installation is used from the time the office is notified of impending installation of equipment until the equipment becomes operational. Parts can be issued but no work hours can be charged to the equipment while using this condition code.

NOTE

Upon acceptance, equipment condition code must be changed to **B** - Operational.

B Operational equipment has been accepted by the local site.

C Unserviceable equipment is scheduled to be out of service for more than 60 days. This condition may be temporary or permanent and can be the result of modification, or major refurbishment, uneconomical to repair, etc.

D Surplus equipment is classified as excess to current needs.

E Disposal Action Taken refers to equipment that has been scrapped, sold, or otherwise disposed of. Equipment in this condition is carried in the master file for the current year plus two years.

F Training Equipment is used when equipment is used for training purposes only.

G Non-USPS Maintained equipment is owned or leased but not maintained by USPS personnel. Contract costs must be reported in the eMARS system.

H Leased USPS Maintained equipment is owned by lessor and maintained by USPS.

NOTE

Parts and work hours can only be charged to equipment with active condition codes of B, F, and H. Condition code A is active, but only parts can be issued; no work hours can be charged. Equipment codes of C, D, E, and G are inactive, parts and work hours cannot be charged.

- **Condition Dat**e is the effective date of condition code.
- **Service Life** is the expected service life of equipment in years. This information can be obtained from capital equipment property control records or from like equipment.
- **Manufacturer** is the name of manufacturer listed on nameplate.
- **Size** identifies physical capability of system (such as length of conveyors or horsepower of boilers). Enter equipment's capability in whole numbers using numeric characters only. Do not include unit of measurement. If capability cannot be determined, leave blank. Samples of equipment and their sizes follow:

air conditioning chillers	total capacity	Tons
air handling units	total capacity	CFM
boiler	total capacity	HP
bulk belt conveyors	total length	FT
cooling tower	tonnage/cell	TN/CL
tray transport conveyors	total length	FT
elevators (passenger and freight)	total number of landings	
powered portable conveyors	total length	FT
window unit A/C	less than 5 tons	TN
direct expansion A/C	greater than 5 tons	TN

- **Contract Number** is the Procurement order or contract number by which equipment was originally purchased. If the number is unavailable, leave blank. Obtain information from office keeping capital equipment records.
- **Cost** is the original cost of equipment, entered in whole dollars.
- **Warranty Expiration Date** is generally for one (1) year and usually starts on acceptance date. Refer to specific equipment contract, or get warranty information from the Procurement office. This information is not necessary if warranty has expired.
- **Annual Maintenance Criteria** are routine, corrective and operational hours that are from the current Maintenance Management Orders for PM Servicing Guidelines by equipment acronym and class code, or local checklist.
- **Inspected By** indicates the entity that performs the required inspections. This information is only required for certain equipment types.

- **Inspection Frequency** identifies frequency of required inspection. This information is only required for certain equipment types.
- **Inspection Due Date** indicates next inspection due date. This information is only required for certain equipment types.
- **Capital ID** is the capital property number from PS Form 961A, *Capital Property Record*.
- **Equipment Comments** are additional equipment information as locally determined.

9.6 Update EOR (End of Run)

End of Run (EOR) is a system that collects and summarizes volume processed, run time and other machine run information. Maintenance uses data from EOR to ensure machine performance is at optimum level, improve Overall Equipment Effectiveness (OEE), analyze machine trends, monitor machine performance, determine Preventive Maintenance route severity (A, B, C, routes) and track maintenance cost.

End of run piece count and run time data are loaded automatically from the EOR server to the eMARS system. The eMARS system equipment acronym and number must be matched to the EOR acronym and number. Mail Processing may have several “MPE types” for each machine (e.g., DBCS, DBCS-ICS and DBCS-OSS). Therefore, more than one “MPE type” may need to be matched with a specific eMARS equipment number.

To match EOR data to the eMARS system data, refer to the eMARS System User Guide.

Information in the eMARS system needs to be updated as equipment is added to the equipment inventory and/or mail processing operations are changed or added. When equipment is added, EOR data will not be available until the following business day.

The EOR match report should be run at least monthly to verify that all equipment is matched correctly to insure that all piece count and run time data is being reported accurately. A typical EOR Match report follows.

eMARS EQUIPMENT
EOR Machines Match Report

ATLANTA
3900 CROWN ROAD S.W. RM 1800
ATLANTA, GA 30304-9361

U.S.P.S.: eMARS Reports
DATE: 01/20/2005
TIME: 14:28:26

		EOR Machine				eMARS Equipment	
ZIP Code	Site Name	MPE Type	Mach. No.	Subsite	Acronym	Equipment	Class
303049998	ATLANTA P&DC CENTER	AFCS	1	00	AFCS	1	AB
303049998	ATLANTA P&DC CENTER	AFCS	2	00	AFCS	2	AB
303049998	ATLANTA P&DC CENTER	AFCS	3	00	AFCS	3	AB
303049998	ATLANTA P&DC CENTER	AFCS	4	00	AFCS	4	AB
303049998	ATLANTA P&DC CENTER	AFCS	5	00	AFCS	5	AB
303049998	ATLANTA P&DC CENTER	AFCS	6	00	AFCS	6	AB
303049998	ATLANTA P&DC CENTER	AFCS	7	00	AFCS	7	AB
303049998	ATLANTA P&DC CENTER	AFCS	8	00	AFCS	8	AB
303049998	ATLANTA P&DC CENTER	AFSM100	1	00	AFSM100	1	AA
303049998	ATLANTA P&DC CENTER	AFSM100	2	00	AFSM100	2	AA
303049998	ATLANTA P&DC CENTER	AFSM100	3	00	AFSM100	3	AA
303049998	ATLANTA P&DC CENTER	AFSM100	4	00	AFSM100	4	AA
303049998	ATLANTA P&DC CENTER	AFSM100	5	00	AFSM100	5	AA
303049998	ATLANTA P&DC CENTER	AFSM100	9	00	AFSM100	5	AA
303049998	ATLANTA P&DC CENTER	DBCS-ICS	1	00	DBCS	1	CD
303049998	ATLANTA P&DC CENTER	DBCS-ICS	2	00	DBCS	2	CD
303049998	ATLANTA P&DC CENTER	DBCS-ICS	3	00	DBCS	3	CD
303049998	ATLANTA P&DC CENTER	DBCS-ICS	4	00	DBCS	4	CD

10 WORK ORDERS

10.1 General

A work order is a request to perform specific work and provides a description of required services. A work order provides information for planning repairs and estimating work hours and material. It also provides authorization and instructions for when and how a job is to be done. Work order information becomes a part of the equipment history record.

The local maintenance organization will generate work orders in the eMARS system for tasks that are not accomplished through a Preventive Maintenance (PM) program.

10.2 Types of Work Orders

10.2.1 Corrective Maintenance Work Orders

Corrective maintenance is repair or replacement of a failed or defective part, subassembly, or assembly of an equipment item, or portion of a building or facility, which returns the equipment or unit to operating condition. Corrective maintenance may be scheduled (when the imminent failure of a part is detected) or reactive (when the failure occurs without warning).

Corrective action is also required when a piece of equipment is operable but cannot function at an acceptable performance level; it is considered to be in a degraded status. The equipment can still function, but repairs or adjustments must be made to ensure that it operates at optimum capacity.

10.2.2 Standing Work Orders

A Standing Work Order is generated to record miscellaneous work performed.

It is extremely important to monitor and review standing work orders to avoid misuse. Appropriate uses for standing work orders are to record Operational Maintenance, travel and OJT. Inappropriate use would be a significant repair when a breakdown or corrective work order should be written.

10.2.3 Modification Work Orders

Modification Work Orders (MWO) contain instructions developed and distributed by MTSC to modify nationally deployed Postal Service equipment. MWOs are developed after approval by the Engineering Change Board and issuance of an engineering change order. The MWO gives all information required to implement the modification along with necessary changes to other documents and procedures.

10.2.4 Software Modification Orders

Software modification orders (SMOs) provide installation and modification procedures for changes to software in computer-controlled Postal Service equipment. Software modification orders have instructions necessary to install, check out, and use new or modified software programs. These documents are developed and distributed by MTSC.

10.2.5 Maintenance Service Bulletins

Maintenance service bulletins contain vendor-directed information that covers procedures, modifications, and information issued when systems are in the deployment stage. These documents are developed and distributed by MTSC.

10.3 Work Order Registers

Registers are used as a work order filing system. The register numbering system is a three digit number. The first number corresponds with the Fiscal Year (FY). For example registers for FY 2005 will start with the number 5. The next two numbers are selected from the eMARS system. Registers are defined locally for tracking corrective maintenance work orders. Separate registers should be established for

maintenance functional areas, station and branch subsite(s), associate office subsite(s), Modification Work Orders (MWO), Software Modification Orders (SMO) and Maintenance Service Bulletins (MSB).

Register number 90 is reserved for Reactive Maintenance. Register numbers 91 through 99 are reserved for modification work orders that are distributed by bulletins from Maintenance Technical Support Center.

Work orders are entered into the appropriate register. A work order number is then sequentially assigned.

The first 100 numbers in each work order register are reserved for standing work orders. The same standing work order number should be used throughout the fiscal year to ensure that the data input is consistent.

10.4 Reporting Needed Repairs and Adjustments

Postal employees are responsible for identifying and reporting needed repairs and adjustments, safety issues, or conditions indicating the possibility of such need. This notification must be delivered to the maintenance supervisor as soon as possible.

- Maintenance employees request work orders based on findings and observations made during daily work assignments.
- Operations management, administrative officials, customer service units, and other functional areas may request maintenance work.
- Modification Work Orders, Software Modifications, and Maintenance Service Bulletins are issued by MTSC.

Requests for changes to buildings or for modifications, additions, and removals of mail handling automation equipment may be locally initiated or received from Area or Headquarters sources.

The senior maintenance official or designee should discuss with the requestor any request that does not seem to be feasible, is contrary to policy, or when work hours and other costs may adversely affect the established budget.

10.5 Priorities

10.5.1 Priority Codes

Priorities for work orders must be determined by the nature of work requested, availability of funds, work hours, time and material. The priority code will be assigned based on the urgency of the work to be performed. The person requesting the work can ask that the work be completed by a specific date. Parts/supplies must be available before the work order is assigned to the employee(s).

Priority Code	Desired Completion
A	24 hours (includes emergency)
B	1 week
C	1 month
D	1 year

NOTE

Priority code (A) work orders are assigned as soon as possible when safety or revenue loss is involved. Work requests with this priority can be assigned verbally and should be started immediately.

Standing work orders are automatically assigned a “D” priority.

10.5.2 Priority Changes

The priority code assigned to work orders can be changed with the approval of the senior maintenance official or designee. The eMARS system automatically changes the scheduled completion date with the priority code change.

10.6 Equipment Outages

10.6.1 Breakdown

A breakdown is reported when equipment is scheduled for operation or in an operating status, and cannot perform its function at an acceptable performance level. A breakdown work order is to be initiated whenever equipment downtime is 18 minutes or more. Breakdowns of less than 18 minutes should be recorded as reactive maintenance.

A breakdown work order must be generated for all equipment that experiences a breakdown (as defined above) even though mail processing time is not lost because similar equipment is available. A piece of equipment is returned to an operational status when it can perform its function at an acceptable performance level.

10.6.2 Equipment Downtime

Equipment downtime is the total clock time that elapses when a breakdown occurs until the time a maintenance employee designates the equipment to be operational. Downtime is actual clock time and not just an accumulation of labor hours expended. (Refer to the current MMO listing for breakdown work codes). Downtime is reported in three different categories: maintenance downtime, parts downtime, and other downtime, as described below:

- Maintenance downtime is time elapsed during analyses, identification, and resolution of equipment problems. This includes, but is not limited to, troubleshooting, running diagnostics, adjusting, aligning, removing, and replacing defective parts.
- Parts downtime is time used to secure spare parts, tools, or support equipment. When a stock outage causes equipment downtime, the time from when the outage is discovered until the part is received at the site must be recorded.
- Other downtime may include, but not be limited to, time associated with work area cleanup, administrative delay, reassignment of personnel to higher priority work, etc.

NOTE

The total time of the breakdown includes the 18 minutes that elapsed when the equipment originally went down.

Example: A piece of equipment goes down; the technician determines that the ID tag reader is defective. The part is not in stock and must be transferred from another office. It will take 45 minutes for the part to arrive. Actual time to repair the equipment is thirty minutes. The downtime due to maintenance is reported as .5 (30 minutes) and downtime due to parts unavailability will be reported as .8 hours (45 minutes). Total downtime is 1.3 hours. Since two employees completed the repair the total labor hours expended is 1.0 hour.

10.6.3 Equipment Breakdown Investigation Report

An *Equipment Breakdown Investigation Report*, Form 4774, provides information to local offices about deficiencies in the maintenance or operation of equipment. The maintenance supervisor or designee on duty should prepare these reports when a breakdown occurs that causes downtime in excess of 18 minutes.

The maintenance supervisor or designee initiates the breakdown report, participates in the investigation, and recommends corrective action. The report should cover as much of the following as applicable:

- Exact nature of the breakdown.
- Root cause of breakdown.
- Date of the last scheduled examination or repair and the name of the person who performed work.
- Reason any defect causing the breakdown was not detected earlier.
- Cost of labor and material needed to repair the damage, including the cost of mail processing work hours lost and attributable to the breakdown or stoppage. This information must be shown on the recommendation portion of the form and include the signature and title of the operations supervisor.
- Action recommended to decrease recurrences of this type of breakdown.
- Actions taken to implement the recommendation.

10.7 Projects

Projects can be generated to group work orders. This allows offices to track the overall maintenance cost for projects involving several work orders. These projects can include building modifications and alterations, mail processing equipment installations, or custodial services projects. A project work order is entered into the eMARS system and assigned a system generated number. This number can be used with all work orders associated with a specific project. The labor hours and material cost reported on each work order can be tracked. This gives management a clear picture of the cost involved with the overall project as well as the work orders that are part of the project.

10.8 Training Work Hours

All work hours expended on required duties or hands-on On the Job Training (OJT) are to be reported as productive work hours (reported on the Preventive Maintenance route or the work order the employee has been assigned). All other on-site training should be recorded on a work order with the appropriate training work code and acronym. Formal off-site training hours need not be recorded in the eMARS system.

10.9 Cancellation of Work Requests

Cancellation of work requests must be made in a timely manner and approved by the site manager or a designee. The requestor must be notified of any such cancellation.

10.10 Closing Out Work Orders

Maintenance personnel must close out completed work orders each day using the eMARS Completed Actions module.

11 PREVENTIVE MAINTENANCE

11.1 General

An effective and efficient Preventive Maintenance (PM) program must be in place to ensure optimum performance, minimum downtime and appropriate service life of mail processing equipment, buildings, and building equipment.

11.2 Definition

Preventive Maintenance (PM)

Preventive maintenance is the scheduled, systematic inspection, cleaning, lubricating, adjusting, servicing and custodial care to retain functional capabilities of buildings and equipment. The objective is to improve and prolong building and equipment life, avoid unplanned maintenance activity and lower overall maintenance costs by eliminating all breakdown (reactive) maintenance and significantly reducing the number and frequency of corrective maintenance actions. Predictive maintenance is a sub-category of preventive maintenance. Checklists, routes, and schedules should be updated in a timely manner based on equipment condition and performance.

Schedule a PM by adding the route to the Preventive Maintenance module in the eMARS system and defining the scheduling period, week, day, crew and tour.

Create a work assignment by accessing the Assignment module in the eMARS system to assign daily tasks for employees.

11.3 Basis of PM Program

Organizing and maintaining a PM program involves:

1. Identifying equipment and components requiring maintenance
2. Preparing and maintaining PM checklists
3. Establishing and scheduling PM routes
4. Assigning PM routes
5. Following up to ensure the PM is completed and properly documented in a timely manner
6. Conducting annual route evaluations

11.4 PM Checklists

Checklists provide the instructions for completing PM tasks for equipment, building and custodial routes.

Checklists are developed using the RCM (Reliability Centered Maintenance) process:

- Functions and associated performance standards are identified.
- Potential modes of functional failures are identified.
- Potential causes of each potential failure mode are identified.
- Failure effects/consequences are analyzed.
- Proactive tasks are identified that will predict or prevent a failure.

11.4.1 Master Checklists

Master checklists, contained in Maintenance Management Orders (MMO) for mail processing and building equipment, are the basis for preparing detailed checklists for nationally deployed equipment.

Checklists that are developed from master checklists and vary more than 15 percent from the time allowed on the master checklists must be reviewed by the senior maintenance official.

Deviations from National checklists for valid reasons are at the discretion of local maintenance management. The over-riding consideration in approving a deviation must be preservation and performance of the affected equipment.

11.4.2 Local Checklists

Local checklists may be developed where a national PM checklist has not been issued. They are established from a variety of sources including but not limited to criteria found in maintenance handbooks. Sites may design and use a Preventive-Custodial Maintenance Route Checklist.

Some of the sources include:

- Handbook MS-1, Operation and Maintenance of Real Property
- Handbook MS-47, Housekeeping-Postal Facilities
- Manufacturer reference material
- Local historical data

11.5 Checklist Data

Work Code - The appropriate work code for the type of maintenance to be performed.

Equipment Acronym and Class Code - An acronym/class code identifies the type of equipment on which maintenance is to be performed such as AFSM100, DBCS-EC, AFCS, etc.

Checklist Number - The sequence of numbers that identifies a checklist; a number between 001 and 999. (The same checklist number may be used for identical pieces of equipment or for equipment that has very slight variations.)

Checklist Type - L for locally developed checklist or M for master checklist.

Equipment Type - A brief description of the equipment.

Sub-Equipment - A brief description of any sub-equipment associated with main equipment.

Model/Series - The model/series of equipment.

Original Issuance Date - The date checklist was developed and originally issued.

System Location - A brief description of the system location where maintenance is to be performed.

MMO Number - The MMO number as assigned by MTSC with master checklist only.

Last Revised Date - The date checklist was revised.

Revision Number - The number of times this checklist has been revised.

Approved By - After a checklist has been developed and reviewed by the equipment supervisor, making sure it is accurate, appropriate, and in compliance with latest guidelines, enter initials of responsible supervisor.

Part or Component - The name of the component or assembly to be serviced.

Item Number - The number assigned to a specific checklist instruction.

Instructions - Step by step instructions required to check or service component or assembly. Comply with all current safety precautions.

Estimated Time Required - Estimated time required to complete all tasks.

Frequency - Identifies how often the work is to be performed, D (daily), W (Weekly), etc. With Condition Based Maintenance or Reliability Centered Maintenance this could be run hours, pieces processed or other conditions.

Minimum skill level for each task - as identified in the equipment MMO.

11.6 Establish and Schedule PM Routes

PM routes define specific piece(s) of equipment on which a given checklist will be performed. The PM route also defines when a checklist will be performed and by what crew.

The following information is needed when establishing a route in the eMARS system:

Sub Site - The location of equipment.

Work Code - The appropriate work code for the type of maintenance to be performed.

Equipment Acronym - An acronym identifies the type of equipment on which maintenance is to be performed such as AFSM100, DBCS, AFCS, etc.

Equipment Number – Locally assigned number.

Route Number - The sequence of numbers that identifies the route; a number between 0001 and 9999.

Equipment Class - Appropriate information for equipment class can be found in current MMO.

Frequency - Identifies how often the work is to be performed, D (daily), W (Weekly), etc. With Condition Based Maintenance or Reliability Centered Maintenance this could be run hours, pieces processed or other conditions.

Checklist Details - A number assigned on MMO or locally established from 001 though 999 and type L (local) or M (master).

Effective Period - The scheduling period and day the route is to be effective (first scheduled date).

Schedule - The scheduling period, week, and day the route is to be performed.

Tour and Crew Assignment - The crew that will be mainly responsible for performing the route.

Estimated Time - The total time estimated for all equipment or areas listed on route. (Hours & Tenths)

Labor Group - Identifies the group of employees performing function in a particular area of maintenance.

Labor Class - The job classification assigned to the employee in maintenance.

Minimum Level - Minimum level of employee qualified to perform items on the checklist.

Comments - Special instructions.

11.7 Establishing Preventive Maintenance (PM) Frequencies

To establish a PM program for a facility or equipment, use the frequencies published by MTSC where available. An exception can be made if a manufacturer's warranty stipulates more frequent attention during the warranty period. If MTSC has not provided performance guidelines, or if local conditions dictate, frequencies are developed locally. Consider the following when establishing frequencies:

- Criticality of equipment
- Equipment failure
- Unusual operating or environmental conditions
- Wear of equipment or parts that may result in early failure or reduced effectiveness
- Failure that may endanger life, property, or both

11.8 Superseding/Cumulative Routes

Historically, Senior preventive maintenance checklists have been developed two different ways. For most nationally deployed equipment (AFCS, DBCS, etc.) tasks on Senior checklists are mutually excusive (i.e., the tasks that are defined for a Monthly checklist do not appear on a Quarterly checklist, the tasks on the Quarterly checklist do not appear on a Semi-annual checklist, etc.). However, for some older checklists and some locally developed checklists, each Senior route does include all of the tasks from the less

frequent Senior routes (i.e., the Annual checklist includes all items from the Semiannual, Quarterly and Monthly checklists).

The eMARS system has the capability to handle both cases:

Case A - Senior routes with mutually exclusive tasks (i.e., Annual route includes only Annual tasks, Semiannual route includes only Semiannual tasks, etc.)

Each route should have a separate route number. Routes may be scheduled on the same day or on different days, as conditions require. The eMARS system will schedule all routes with estimated times as input.

Case B - Senior routes include tasks from all lesser routes (i.e., Annual checklist includes Semiannual tasks, Quarterly tasks, Monthly tasks). Routes should have the same route number and be scheduled on the same day. The eMARS system will schedule only the Senior route (superseding lesser routes) and will add the times of the Senior and all lesser routes. Care must be exercised in entering the times for these routes in eMARS.

Case A

	Time on Checklist	Time in eMARS
Annual	4	4
Semiannual	6	6
Quarterly	8	8
Monthly	2	2

-different route numbers
-schedule same day or different day
-mutually exclusive checklist items

Case B

	Time on Checklist	Time in eMARS
Annual	20	4
Semiannual	16	6
Quarterly	10	8
Monthly	2	2

-same route numbers
-schedule same day
-Senior routes include items from less frequent routes

11.9 Suspend/Activate Routes

If a piece of equipment is out of service for an unknown period due to seasonal conditions, refurbishment, temporary loan to another office, etc., the Preventive Maintenance route(s) should be suspended. An individual route, all routes for an acronym/equipment number, or all routes for an acronym can be suspended utilizing the eMARS system. The routes need to be reactivated when the equipment is put back into service.

An effective scheduling period for the suspension or activation needs to be entered in the eMARS system. The suspension/activation scheduling period must be entered prior to that week's PM summarization. For example, if the suspension is for Scheduling Period 05 Week 2, the information must be entered in the eMARS system no later than Wednesday of Scheduling Period 5 Week 1. If it is entered after Wednesday the effective period will be Scheduling Period 5 Week 3.

11.9.1 Seasonal Suspension

Preventive Maintenance routes can be suspended for a pre-determined period of time using the Seasonal Suspension option. The "start" and "end" scheduling periods for the suspension must be entered in the appropriate fields in the PM catalog. The routes will automatically be suspended beginning at the selected "start" scheduling period and automatically reactivated after the selected "end" scheduling period.

11.10 PM Summarization

Once a week, the eMARS system performs a Preventive Maintenance Route summarization that consists of 'closing out' and 'scheduling' new PM routes.

PMs are divided into two types: Daily routes (frequencies D, E, F, G, H, and J) and Senior routes (frequencies of W, M, Q, S, A, etc.).

The following actions occur during summarization:

When the eMARS system runs the summarization program the system first looks at work scheduled for the previous week.

For daily routes, the eMARS system checks to see if the route has a status code entered. If no status code is found, the eMARS system bypasses the route with a bypass code of 0. The system then makes a copy of all the records and inserts the information into the history file.

For senior routes the eMARS system checks to see if the route has a status code entered or if the due date was in the previous week. If the due date was in the previous week and no status code is found, the eMARS system bypasses the route with a bypass code of 0. The system then makes a copy of all the records and inserts the information into the history file. If the due date was not in the previous week, the route is placed in backlog and remains available for scheduling.

After the previous week's schedule has been finalized, the eMARS system creates a schedule for the next week. The eMARS system checks the Preventive Maintenance catalog to determine what routes are to be scheduled for the upcoming week. A copy of the information is then placed into a file for next week's schedule. Each route is assigned a unique PM work order number. The routes are then available for next week's employee assignments.

The significance of the summarization process, from a user standpoint, is that before summarization, inputs may be made on current week's PM routes in Completed Actions; after summarization inputs cannot be made on current week's PM routes. Likewise, before summarization, next week's PMs cannot be scheduled; after summarization they can.

11.11 Annual Checklist/Route Review

Each checklist/route must be reviewed at least once a year to ensure that they are accurate, appropriate, and in compliance with latest guidelines. Checklist/route sheets are reviewed to verify existence and status of equipment, usage of appropriate checklists, and accuracy of estimated performance time.

The maintenance supervisor or designee conducting the review must sign, date, and list any comments, revisions, etc., in the appropriate space on the review record. Copies of reviewed checklists and the review record must be kept on file until the next review is completed.

12 REACTIVE MAINTENANCE

12.1 General

Reactive maintenance consists of maintenance responses to equipment malfunctions or breakdowns during equipment operation.

The local maintenance organization may use the Reactive Maintenance module in the eMARS system for requests that are not accomplished through a standard work order or a Preventive Maintenance (PM) route.

The eMARS system accesses the equipment files and automatically creates reactive work orders for active equipment only. These work orders are used to record reactive maintenance work hours in the system.

12.2 Add a Call

This section allows for reactive maintenance calls to be added, employees to be dispatched to specific machines, employees to be added to or removed from calls, and to close out reactive calls. A reactive call is logged into the eMARS system when maintenance is notified that a piece of equipment requires maintenance. Once a call is logged, employees are dispatched to make the repair. Additional employees/help can be dispatched to the job if needed. If the additional employee is no longer required,

the employee can be removed from the job. The employee's time is captured by the system, and will be processed during the summarization of the reactive files

12.3 Employees On Call

This section is used to select employees to be "on call" for reactive maintenance calls. Employees can be determined/selected by:

- all maintenance employees in the personnel files
- employees on specific work tours
- individual employees

Local offices determine the employees that are assigned to reactive calls, and the list can be updated as often as needed.

12.4 Open Reactive Calls

The call finder provides a means to find an open reactive maintenance call. The calls are color coded. The codes are as follows:

Green - Open call, assigned

Black - Open call, unassigned

Red - Call open more than 15 minutes

After 30 minutes, if a call is not completed, the calls are automatically closed and a breakdown (08) work order is generated by the system.

12.5 Call Log Report

This report provides the current day reactive log report. This report gives the date, acronym and equipment number, completed time, employee doing the work, the trouble, comments, and down time for each reactive call.

13 WORK ASSIGNMENTS

13.1 General

Maintenance requires comprehensive planning that best utilizes available labor resources, repair parts, supplies, and time allocated for maintenance activities. Effective planning and control requires using the eMARS system to enable maintenance personnel to assign, monitor and adjust work assignments in accordance with operational requirements. The eMARS system provides the tools necessary to effectively assign preventive maintenance routes and/or work orders.

13.2 Assigning Work

Assignments are made by date, crew and selected employee. Assignments can be made for the current day or assignments can be made proactively, ahead of the current date, until the end of the current week. Assignments can also be made retroactively for work accomplished as much as five days prior to the current date. This allows for assignment of work that may have been accomplished when no one was available to formally assign the work in eMARS.

Upon selection of a crew and employee, eMARS will display the work orders and preventive maintenance routes assigned to that crew. Generally, work will be selected from the displayed lists to define the employee's assignment for the selected date. The system also has the capability to "look for" and assign work that has been assigned to other crews.

The eMARS system has the capability to schedule more than one employee to the same job, to "move" assigned work from one employee to another, and to "copy" assigned work to other dates, crews, or employees.

13.2.1 Work Orders and Preventive Maintenance Routes

When work orders are initiated, they are assigned to a crew and are immediately available to be assigned to an employee. Preventive maintenance routes are scheduled to a particular crew when they are initially entered into the preventive maintenance module. They become available for assignment to individual employees approximately one week before they are to be accomplished. Weekly, the eMARS system closes out the previous week's preventive maintenance schedule and closes out routes that have been completed, partially completed, or bypassed, and creates preventive maintenance routes that need to be completed during the next week.

13.2.2 Types of PM Routes

There are four types of preventive maintenance routes:

A - Daily, routes that are scheduled to be completed from 2 to 7 days a week

B - Combined Daily, routes that are scheduled to be completed from 2 to 7 days a week

C - Senior, routes that are scheduled to be completed weekly or less frequently

D - Combined Senior, routes that are scheduled to be completed weekly or less frequently

NOTE

There will also be Condition Based Maintenance (CBM) routes, where the preventive maintenance route or task is initiated in response to a condition (e.g., hours run, pieces processed, etc.).

13.2.3 Route Due Dates

Senior routes that are not completed, bypassed, or expired prior to summarization will be automatically placed on the backlog list for reassignment. Routes must be completed or bypassed by the due date.

Routes with frequencies other than those indicated below should be bypassed with the appropriate bypass code if they are not completed on the scheduled date.

PM Frequency

FREQUENCY	DAYS TO COMPLETE	EXAMPLE
W - Weekly	3	Work scheduled Monday is due by Thursday.
B - Biweekly	5	Work scheduled Monday is due by Saturday.
M - Monthly	14	Work scheduled October 1st is due by October 15th.
C - Bimonthly	21	Work scheduled October 1st, is due by October 22nd and must be completed by October 22nd.
Q - Quarterly	42	Work scheduled October 1 must be complete by November 13.
S - Semiannually	42	Work scheduled October 1 must be complete by November 13.
A - Annually	90	Work scheduled October 1 must be complete by December 31.

13.2.4 Backlog

After summarization, a list of all senior routes not completed, bypassed, or expired will be placed on the backlog list and will be the first routes listed in the Senior section of the Weekly Workload Scheduling Report. Monitor due dates to assign for completion or use bypass code to avoid automatic bypass of 0.

13.2.5 Combining PM Routes

When preventive maintenance routes are created, they are individual Daily or Senior routes. The eMARS system has the ability to combine routes in the assignment module. Routes can be combined for either Daily or Senior, or both Daily and Senior. For routes to be combined they must have the same:

- Acronym
- Route Number
- Frequency
- Scheduled Date
- Work Code

Combining routes is often used when one employee will do the same preventive maintenance route on all "like" machines at a site. (e.g., one employee is assigned to do the daily routes on all four AFCS machines at a site).

13.2.6 Move and Copy

The eMARS system has the capability to schedule more than one employee to the same job, to "move" assigned work from one employee to another, and to "copy" assigned work to other employees or dates.

The "Move" option may be used to move work assignments from an employee to whom the work has been assigned. Example: Work has been assigned to an employee for a day's work, but the employee calls in sick. The "move" feature can be used to move the work to another employee on the same or different date, or the assignment can be moved to the same employee on a different date.

The "Copy" option can be used to duplicate a work assignment where the same work needs to be assigned on additional dates or to additional employees. Unlike the Move option, the Copy option does not remove the work from the person to whom it was initially assigned. Example: If a work assignment requires two or more employees, the work can be assigned to the first employee, and then copied to additional employees as required. Similarly, if the work will take more than one day, it can be assigned on the first day, and then copied for subsequent days' assignments.

13.3 Inspections

As jobs are completed, the supervisor periodically inspects the work. Time spent by each employee must be posted on the assignment work sheet. The information provides a means for evaluating performance of maintenance employees, condition of the equipment, and estimating future time allowances.

14 COMPLETED ACTIONS

14.1 General

The Completed Actions module is used to input labor hours, preventive maintenance routes, work order actions and status, mail transport equipment repair, contracts and contract cost.

14.2 Employee Worksheets

It is vital that all employee assignment worksheets are completed by the employee, reviewed by the supervisor and entered in the eMARS system in a timely manner. The information must be entered within five days of the scheduled date on the worksheet.

14.2.1 Hours Reported

Report all productive maintenance work hours on the worksheet. Report only the actual productive maintenance time, in hours and tenths, so the USPS can determine true maintenance costs for equipment and facilities.

14.2.2 Responsibilities

Each employee is responsible for accurately completing the worksheet in a timely manner. The supervisor is responsible for ensuring the completion and accuracy of all entries, accounting for all routes and work orders recorded on the assignment work sheet.

14.3 eMARS Data Entry

Prior to entering the data into the eMARS system, verify that the following information is correct for work accomplished for each work order and PM route.

- Time
- Action/Taken for Work Orders
- Action/Reason for PM
- Employee signature
- Supervisor's initials
- Breakdown work orders require additional documentation to close:
    - Cause code
    - Maintenance down time
    - Supply downtime
    - Other downtime

14.4 Preventive Maintenance Actions

(C) Completed: Used with both Daily and Senior routes. Indicates completion of the checklist items associated with the preventive maintenance route.

If two or more employees work on the same route and the route has been completed, enter a "C" on at least one worksheet to indicate that the route was completed.

(W) Working: Used with senior routes only. Indicates additional checklist items are to be completed on a future date(s).

After the remaining items are accomplished it is important that the employee enter a C (Completed) on their worksheet. If a route has been coded with a (W) and the "due date" arrives, the summary program changes this route to a partially completed route regardless of the time charged against the route.

(P) Partial: Used with Daily and Senior routes. Indicates checklist items that have not been completed and will not be accomplished. Use with caution since this closes out the route and no additional labor can be added.

(B) Bypass: Used for Daily and Senior routes when a route will not have any checklist items accomplished as scheduled. A route will automatically be bypassed by the eMARS system, with a code zero (0), if no entry is made for that route before the route's summarization occurs.

NOTE

There is a hierarchy associated with these codes. A "B" entered for a route will supersede any other code entered and the eMARS system will report the route as bypassed. A "C" will supersede a "P" or a "W". A "P" will supersede a "W".

If a route is bypassed, one of the following codes must be entered:

Bypass Codes

CODES	DESCRIPTION
0	Routes without any input will be reported as "bypassed" in the eMARS Report module automatically.
1	Non-Availability of Resources
7	Operational Requirements
8	Equipment not available for PM due to Maintenance (Correction of Modification).
9	Equipment not operational since last scheduled route or area did not need to be cleaned.

When a bypass code of 9 is used, the route is not considered to have been scheduled so this will not affect the preventive maintenance completion rate.

14.5 Days to Complete a Route

Routes must be completed or bypassed by the due date.

Days to Complete a Route

FREQUENCY	DAYS TO COMPLETE	EXAMPLE
W	3	Work scheduled Monday is due Thursday.
B	5	Work scheduled Monday is due Saturday.
M	14	Work scheduled October 1st is due October 15th.
C	21	Work scheduled October 1st, is due October 22nd.
Q	42	Work scheduled October 1st, must be complete by November 13.
S	42	Work scheduled October 1st, must be complete by November 13.
A	90	Work scheduled October 1st, must be complete by December 31.

Senior routes not completed, bypassed, or expired prior to summarization will be automatically placed on the backlog list for reassignment.

14.6 Work Order Actions

Work order information is entered with an action code, which is a description of the type of work that was performed, and a taken code, which is a description of the equipment, part of subassembly.

The list of approved Action (VERBS) and Taken (NOUNS) codes is located in the eMARS Administrative Module under Code Tables, Table Category of Maintenance. The lists are also available in the corresponding drop down fields when entering an Employee Worksheet.

14.7 Closing Work Orders

Work orders can be closed in the eMARS system while entering the worksheet information or using the Close Individual CM Work Order option.

Review work orders regularly to verify that there are no outstanding work orders that should be closed.

The work order closed date should be the date the work was completed, not the input date.

14.8 Contract Cost

Contract costs help to keep track of all building and equipment costs. Contract costs are charges paid to a contractor as result of a negotiated contract or procurement request for activities associated with the maintenance function. Examples are elevator, boiler, or roof contracts. Contract costs that are not associated with maintaining the building and equipment should not be tracked in the eMARS system. Some examples of contract cost that are not tracked are repair of a copier, office printer, or the cost of an interpreter for the Hearing Impaired.

Utility charges should also be entered in the eMARS system.

15 MAINTENANCE INVENTORY MANAGEMENT

15.1 General

The goal of the USPS is to maintain inventory management quality in Maintenance stockrooms in line with industry standards. The principles and practices of good inventory management must be part of standard operating procedures. Senior maintenance officials are responsible for ensuring that effective material management principles are implemented.

These procedures cover processes for maintaining stocks of spare parts, tools, safety and test equipment, and material for:

- Maintenance of mail processing equipment
- Maintenance and operation of buildings and building equipment
- Performance of custodial services
- Maintenance of other designated equipment

The Maintenance function provides the following in support of effective inventory management:

- Accurate, timely forecasting of material requirements
- Central receiving of material
- Secure and proper storage
- Accurate system of recording orders, receipts, issues, and transfers on all material managed by maintenance
- Accurate stockroom inventory

15.2 Responsibilities

Spare parts and inventories in maintenance stockrooms are Postal Service assets and are the responsibility of line management including Maintenance Managers, Plant Managers, District Managers and Area Vice Presidents. All United States Postal Service personnel are responsible for the accountability, control, and safeguarding of Postal Service inventory assets.

An effective maintenance management program requires control and accountability of stocked and non-stocked material (e.g., parts, tools, supplies, and equipment). Control and accountability are required to ensure the availability of parts, tools, and supplies to minimize equipment down time, optimize equipment performance, and expedite preventive maintenance, corrective maintenance and routine custodial work. To optimize inventory, minimal reserves of parts and material should be stocked, consistent with the goals stated above. Control is also necessary to prevent misuse and pilferage. Stocking or issuing parts in excess of normal requirements must be evaluated and corrective action taken as necessary.

15.3 Inventory Discipline

Inventory discipline is essential to successful stockroom management and applies to all maintenance personnel.

- Repetitive ordering increases costs. Reorder points and Recommended Order Quantities from the eMARS system must be used unless there is a valid reason for deviation.
- A genuine effort must be made to obtain the best value on all procurements, considering quality and cost of parts or supplies.
- Routine sources for acquisition of parts and supplies are MDC, excess items at other postal facilities, and commercial items available on eBUY.
- Routine maintenance acquisition of parts and material is made through eMARS. Items that are not centrally procured are purchased through eBUY.
- To maintain stockroom integrity, maintenance must record all stockroom transactions timely, completely and accurately.

15.4 eMARS

The stockroom's capability to support the maintenance effort depends on accurate inventory records and timely forecasts of material requirements. eMARS provides this capability. Data is input documenting the various stockroom activities; ordering, receiving, issuing, etc. Reports are generated providing, among other things, inventory value, potential excess inventory, inventory accuracy (IAR) and location accuracy (LAR) reports. If stockroom inventory accuracy or location accuracy goes below acceptable limits, action must be taken to evaluate causes and initiate corrective actions.

15.5 Stockrooms

15.5.1 Description

The maintenance stockroom maintains an inventory of parts and supplies, initiates replacement of stocked and non-stocked inventory items, and controls the flow and accountability of material. The efforts of stockroom personnel must be directed continually toward maintenance support. The maintenance organization’s capability to support the Postal Service’s mission depends on accurate inventory records and timely forecasts of material requirements.

15.5.2 Location

Stockrooms should be secured and convenient to the workroom floor. The shape and dimensions of stockrooms can vary and consist of one or more rooms and areas. Handbook AS-701, Material Management provides the USPS criteria for planning and layout of warehouse and storage space.

15.5.3 Layout

Most stock should be stored in cabinets, bins and/or shelves. Some open space is needed for floor storage of items such as heavy motors, large shafts, drums of solvents, and lubricants. Open space is also needed for palletized storage, for items such as paper towels.

15.5.4 Organization

When organizing the stockroom, make allowances for tool checkout and storage. Install pegboards for smaller tools, and use bins for items such as portable electric drills. Make specialty tools easily accessible. An organized stockroom should have the following:

a. Display the National Stock Number (NSN), nomenclature, and any cross-references to a secondary storage location on each storage location. Use barcoded labels to facilitate use of barcode scanners for daily inventory counts, etc.

b. Store parts and supplies so that items used most frequently are closest to the parts counter or checkout area.

c. Provide access for the passage of supply trucks, with consideration given to the accessibility of elevators, loading platforms, and ramps.

d. Store small items in compartment drawers of storage cabinets or in a single container large enough to hold the optimum inventory quantity. Larger items can be stored on shelves in the boxes in which they were received or in compartment storage cabinets. Loose and bulk items can be separated into normally issued units and placed in plastic bags to enable easy identification and to ensure that they are dust free.

e. Static-sensitive items must be stored in protective containers and handled according to current directives.

f. Procedures must be developed locally to ensure that all stockrooms (main and remote) are secure with controlled accessibility.

g. Procedures must be developed locally to ensure that all incoming parts, supplies, and tools are brought to the facility's receiving area. On receipt of new items, personnel should unpack, identify, receipt, and store parts or supplies in the proper location.

h. To avoid shelf life expiration old stock should be moved to the front when storing parts or supplies. When initially arranging supplies, some vacant space should be left for additional items. First in-First out (FIFO) should be utilized.

i. Safety rules must be observed when storing supplies. Storage cabinets must be securely anchored to the wall or floor, and back-to-back rows anchored to each other. Supplies must not be placed on top of cabinets or stored so that they extend into aisle space.

j. Hazardous material must be stored in proper cabinets. Flammable and combustible liquids such as lubricants, paints, and other items must be stored in an area constructed to conform to Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) standards.

k. Liquids should be stored on bottom shelves where feasible to minimize damage to other parts and supplies in case of leakage.

l. Ensure that climate sensitive items are stored in appropriate locations.

15.6 Remote Stockrooms

Remote stockrooms are located separately from the main stockroom in order to provide more convenient access for users. A remote stockroom must have the same level of control as the main stockroom. Procedures must be developed locally for controlling accessibility to remote stockrooms.

15.7 Bulk Stock Items

Bulk stock consists of high-usage, low-cost items (e.g., nuts, bolts, washers, nails, grommets, shear pins) that do not relate to a specific piece of equipment. These items are issued in bulk and usually kept in areas of maintenance activity, and placed in bins for easy access and withdrawal.

Bulk stock items are receipted and issued using the eMARS system. Bulk items may be issued to a Standing Work Order using the acronym “BULK”. Bulk stock is established at the option of the senior maintenance official. The quantities established should be based upon item cost and usage frequency.

15.8 Categories of Parts and Supplies

Stocked items are authorized to be maintained at the local site.

Non stocked items are obtained for infrequent or one time use and are not stocked at the site.

Locally procured items are not available through MDC or national contracts. The primary source code is L for Local.

Centrally procured items are ordered from the Material Distribution Centers. Primary source codes are T, 1, A, R, G, and D:

T - Non-repairable parts from MDC.

1 - Repairable, authorized for local stock, “one for one” (i.e., a defective repairable part must be shipped to and received by the MDC before a replacement is provided).

A - Repairable, authorized for local stock, based on issues (i.e., when the part is issued from stock, an order is generated by eMARS, and MDC ships a replacement).

R - Repairable items from Topeka MDC, not authorized for local stock (i.e., an electronic 4984, including justification, must be processed to obtain this type of part).

G - Items from GSA.

D - Items from Defense Logistics Agency (DLA).

(Other Source Codes are defined in the Code Tables of the eMARS system.)

15.9 Parts Identification

The following publications should be available to maintenance personnel to assist employees in identifying parts and supplies:

- SPEC (formerly Pub112), web-based Supplies Parts and Equipment Catalog
- Publication 247, Supply Catalog and Equipment Catalog
- Current General Services Administration (GSA) and Defense Logistics Agency (DLA) material listings
- Applicable manuals and handbooks
- Supply Bulletins/Repair Parts Bulletins
- Applicable technical directives

15.10 Assignment of National Stock Numbers (NSNs) to Locally Purchased Items

Items purchased locally for stock must have an assigned local stock number using the following standard 16-position (13-digit) NSN format:

- The first four digits of the assigned number are the four-digit Federal Supply Code (FSC), which may be obtained from the Federal Supply Class Code Table in the eMARS system.
- When the first four digits are input, the eMARS system will assign the remaining digits in accordance with the following.
    - The National Codification Bureau code (digits 5 and 6) is always 99 for locally purchased items.
    - Digits 7 through 13 are sequentially assigned from within each FSC beginning with 000-0001. For digits 7 through 13, when number 000-9999 is reached, the next sequential number is 001-0001.

15.11 Critical and Insurance Items

15.11.1 Critical Items

A critical item is a component part required to repair a major mail handling system whose failure would impair, impede, or stop the handling, processing, or delivery of mail. A critical item may also be items on hand for personnel health and safety.

15.11.2 Insurance Items

An insurance item is a component subassembly or assembly with a very low mortality rate, a long lead-time for procurement, and infrequent use. These items are stocked as insurance against lengthy equipment shutdown or a disruption of mail delivery service.

15.11.3 Responsibility

The identification of critical and insurance items is essential for achieving optimum service at each site at all times. Employees at each site must be aware of the existence of such items, their use, and their location, and they must ensure that the stock of such items is equal to the minimum requirements.

15.11.4 Local Review

An annual review of critical and insurance items is required at the local level to see if the designation is still applicable and that inventory level of these items is appropriate.

NOTE

The fact that an item is classified “critical” or “insurance” does not remove the need for prudent inventory control of these items.

15.12 Cannibalization

15.12.1 General

Cannibalization is the locally authorized removal of a specific assembly, subassembly, or part from one system, subsystem, or equipment for installation on another similar equipment end item to meet operational requirements with an obligation to replace the removed item. The senior maintenance official or designee must authorize any cannibalization of equipment. The senior maintenance official or designee must consider the effects of increased workload on the work force and schedules when making the decision to cannibalize.

15.12.2 Red Tagging

All cannibalized subassemblies and equipment must be red-tagged, using Form 4707, Out Of Order tag, to include a description of the item removed and the work order information. When the replacement part is received and work hours are required to make cannibalized equipment serviceable, the time expended should be charged to the original work order.

16 ORDERS

16.1 General

The eMARS system is used to order and document the orders of parts and supplies from various sources. Stocked items are normally ordered using the automatic replenishment process in the eMARS system. Automatic replenishment provides recommended reorder quantities that can be edited by local users. The user must review the recommended order quantity and process the order. Supervisory/Management approval is required for order quantities that exceed the system generated recommended order quantity (ROQ).

16.2 Types of Orders

Stocked and non stocked items can be ordered using the following processes:

1. Automatic replenishment is the predominant and preferred method of obtaining parts and supplies. In this process, the eMARS system generates orders from the Material Distribution Centers (MDCs) based on useage data.
2. Electronic orders are generated by the user in special circumstances where additional stock is needed but inventory level has not reached the reorder point. An example might be parts needed for equipment refurbishment.
3. Controlled Item orders are generated by the user for repairable items with a source code of 1, A and R that require individual justification.
4. Emergency orders are generated by the user when parts are needed in less time than the standard delivery time.
5. Telephone orders are generated by the user when requesting parts from another facility.
6. Local Orders are generated in the eMARS system using the automatic replenishment or Form 7381 process. The order is placed through eBUY and documented in the eMARS system for receipt and issue purposes. NOTE: Certain eBuy catalogs have been integrated with the eMARS inventory system and these items can be ordered using normal eMARS procedures.

16.3 Pending Orders

Orders are placed in a pending status for 1) all local orders, 2) orders that have an existing open order, and 3) orders that exceed the recommended order quantity. A review of these orders must be completed. The orders are either released, revised or cancelled based on the outcome of the review.

16.4 Calculations

In the automatic replenishment process, eMARS tracks the balance on hand (BOH) plus orders due in. This figure is compared to a calculated reorder Point (ROP). When the “BOH plus due in” quantity reaches a calculated reorder point (ROP), the system generates a recommended order quantity (ROQ). The ROP is a factor of average demand (AD), expected time to obtain the item in pipeline days (PLD), and a safety level (SL).

The Average Demand is calculated on each active NSN in the maintenance stockroom after the item has been in the inventory catalog for at least one month. The average demand is calculated the first day of

each month using NSN issue history for the immediate past year or the number of months that the NSN has been in the catalog, whichever is greater.

The formula for Average Demand is total quantity issued / the number of months in the catalog (not to exceed 1 year).	AD = issue history / total months
Safety Level = SL	SL = AD x .25
Reorder Point = ROP	ROP = (AD x PLD/28) + SL
Recommended Order Quantity = ROQ	ROQ = (AD + (AD x PLD/28)) / BPQ

ROQ Value = ROQ X Item Unit Cost

Pipeline Days = PLD

Bulk Pack Quantity = BPQ

If ROQ Value is less than $5.00, the quantity shown in the auto replenishment listing is:

3 x ROQ if ROQ value is less than $2.50

2 x ROQ if ROQ value is greater than $2.49 and less than $5.00

1 x ROQ if ROQ value is greater than $4.99

16.5 Outstanding Requisitions

Documents pertaining to outstanding requisitions (e.g., Form 4984 and Form 7381) should be maintained and reviewed once a week. Follow-up action must be taken as required. Emergency shipment requests should be reviewed daily.

16.6 eMARS

The eMARS system provides the user various search capabilities to obtain order history. Orders can be sorted by date, NSN, nomenclature, order type, requisition type, order status, order for, or source code.

17 RECEIPTS

17.1 General

Procedures must be devised locally to ensure that all parts, supplies, tools and associated shipping documents are brought to the stockroom as they are received. Designate a receiving area within the stockroom to process incoming materials. Use the following procedures:

a. Check carrier seals and physical condition of material (e.g., obvious evidence of damage or shortages). For processing claims, see Handbook AS-701.

b. Document discrepancies for overages or shortages of material.

c. Mark supplies properly before moving them to storage to ensure accurate stock records and inventories.

d. Record items and quantities received in the eMARS system.

e. Place items in appropriate location as quickly as possible.

f. If there is a discrepancy in the quantity, an incorrect item, damage, etc., contact the supplier.

17.2 Centrally Procured Items

When items that have been ordered from the MDC/GSA/DLA are received by the stockroom, the eMARS system is used to record the receipt of the items. MDC items received that have a MDIMS number should be received by using the “Receive MDIMS” function.

17.3 Locally Procured Items

Use the “Receive Purchase” function of the eMARS system when items are received that have been locally ordered in the Purchasing Module.

17.4 Transferred Items

Receipt all transferred items using the eMARS system.

17.5 eMARS

The eMARS system provides the user various search capabilities to provide receipt history. The listing can be sorted by date, period, NSN, nomenclature or shipment number.

18 ISSUES

18.1 General

The senior maintenance official initiates action to ensure that all items used in support of the maintenance functions, regardless of source, are accounted for using the eMARS system. Stocked and Non Stocked parts and supplies are issued using the eMARS system.

18.2 Issue Stocked Parts

Stocked parts are issued using the national stock number that has been assigned to the part. These parts are issued to an employee or “other.” “Other” is used when issuing parts to any entity other than employees identified in the eMARS system. The part is charged to a work order or preventive maintenance route. When a repairable item requiring a carcass (defective repairable item) return is issued, the status of the carcass will be recorded using the eMARS system.

18.3 Issue Non-Stocked Parts

Non stocked parts are issued using the national stock number or identification number of the part. The description, quantity, cost and whether the part is repairable must be recorded in the eMARS system. These parts are issued to an employee or “other.” The part is charged to a work order or a preventive maintenance route. When a repairable item requiring a carcass (defective repairable item) return is issued, the status of the carcass will be recorded using the eMARS system.

18.4 Return Parts to Stock

If stocked parts have been previously issued but are no longer required by the recipient, they are returned to the stock room inventory using the eMARS system.

18.5 Return Repairables

18.5.1 Locally Repaired

When a locally repairable item fails, the defective repairable item (carcass) must be returned to the stockroom. If a replacement item is issued before the carcass is returned, the status of the carcass will be recorded using the eMARS system. When the carcass is returned to the stockroom for the part that has previously been issued, the change in status is recorded in the eMARS system.

18.5.2 Centrally Repaired

Carcasses returned to central repair facilities are also logged in the eMARS system. In addition, the Electronic Return Program (ERP) must be used when returning a defective repairable item (carcass). The ERP, based on information provided by the local site, determines whether the carcass is to be returned to

the MDC, CRF, or IRF. The ERP generates a label that must be used when shipping the carcass. Offices returning a defective carcass will receive core credit when the carcass is received. This core credit is updated automatically in the eMARS system.

18.6 eMARS

The eMARS system provides the user various search capabilities to provide issue history. The listing can be sorted by date, period, NSN, nomenclature or shipment number.

19 MAINTENANCE INVENTORY SUPPORT PROCESS (MISP)

19.1 General

The Maintenance Inventory Support Process (MISP) is a tool to improve maintenance stockroom reliability, efficiency, and inventory accuracy.

The MISP module in the eMARS system is divided into three sections; Statistical, Optimization and History.

19.2 Statistical Sample

The statistical sampling is a periodic sampling of inventory and location accuracy. The inventory and location accuracy rates of this sample are used to determine whether or not processes need to be improved, or if the installation needs help or further analysis. Statistical sample frequencies are dependent on the extended dollar value of the inventory at the site:

Extended Dollar Value	Frequency
Site Inventory Value	
$1.0 million or more	4 times per year (quarterly)
$0.5M to $999,999.99	2 times per year (semiannually)
Less than $500,000 of inventory	1 time per year (annually)

Specific instructions for performing a Statistical Sample are contained in the eMARS User Guide.

IAR and LAR

IAR (Inventory Accuracy Rate) and LAR (Location Accuracy Rate) are calculated from the results of the statistical sampling process.

IAR = (Number of items inventoried – Number of items in error) / Number of items inventoried.

LAR = (Number of locations checked – Number of locations in error) / Number of locations checked.

The goals are 97.5+ for Location Accuracy Rate and 95+ for Inventory Accuracy Rate.

At the conclusion of each Statistical Count, if these goals have not been met, reports detailing probable causes, actions to be taken, and dates for such actions must be prepared. If poor transaction integrity is determined to be a cause of low accuracy rates, conducting more frequent statistical samples may be required. Among the possible causes of unsatisfactory inventory or location accuracy are:

- Poor physical security of the stockroom.
- Lack of access control.
- Poor or nonexistent standard operating procedures at satellite or remote stock locations.
- Lack of key control on tours without stockroom personnel on duty.
- Poor locator systems or bin markings.

- Lack of transaction integrity (failure to consistently record replenishment orders, receipts, transfers and issues).

19.3 Optimization

Optimization is a method used to identify items that should not be stocked, items over the optimum stock requirement, or the need to increase stock levels. Overstocking of parts is not cost efficient. Overstocking of parts requires additional floor space, storage cabinets and labor hours to perform daily and statistical cycle counts.

Optimization recommendations can be obtained for the entire catalog, single group code or a selection of group codes. The report will provide NSN, Nomenclature, Assets, Asset Value, Disposal Value, Catalog Add Date, 12 Month Usage, Group Code, Location and Suggested Disposal quantity.

The Inventory Optimization Analysis Worksheet should be reviewed by qualified personnel in conjunction with additional eMARS reports so the site can determine if they want to accept or change the suggested disposal amounts. A determination action of Disposed, Sold, Lost, Return, Transferred or Waste will be required for each selected NSN.

The eMARS system will generate a Request for Return Authorization for items that were selected for Return. The Request for Return Authorization must be submitted to the MDC for review and approval. Other excess items identified should be handled in accordance with current disposition procedures defined in Handbook AS-701, Material Management.

19.4 Potential Excess Inventory

Potential excess Inventory is the amount of stock that a site has in inventory in excess of the calculated optimal stock level and is determined in the eMARS system as follows:

Potential Excess Inventory = Assets - Optimal Stock Quantity

Optimal Stock Quantity = the greater of (SL + LTL + OL)

OR

Max Month where Max Month = maximum usage for any month within the past 12 months

AND

SL=Safety Level = (usually 1/4 * Average Month demand; there are exceptions defined in the code)

LTL=Lead Time Level = (Average Month DEMAND * Pipeline days)/ 28

OL = Operating Level = Average Month DEMAND * 2

Another factor that eMARS takes into consideration is that an item may be newly stocked (e.g., new equipment deployment spare parts) and have no usage history. In this case, the usage for the prior twelve months is zero, and the part would be immediately declared "potentially excess." The eMARS system checks to see if a part (line item) has been in stock for less than a year. If so, it is excluded from the calculation.

To arrive at Potential Excess Inventory, the system also excludes Critical and Insurance items.

It should be noted that this is "potential" excess, and is subject to review on a case by case basis.

19.5 Excess/Surplus Items

19.5.1 Annual Review

An excess item is material identified as not appropriate for retention. Offices must review each item in the stockroom at least once a year to determine whether the item can be declared excess/surplus. Those items declared excess/surplus must be reported in the eMARS system for either redistribution or disposal action. Excess material shall be disposed of in accordance with the AS 701.

19.5.2 Return of Excess Items to Material Distribution Center (MDC)

When the local office identifies excess repair parts, a request for return and credit must be submitted to the MDC. Upon MDC approval, the office should package the excess items for shipment. All items being returned must be identified and the quantity stated to receive proper credit from the MDC.

19.5.3 Return of Excess Items of General Services Administration (GSA) and Defense Logistics Agency (DLA)

Procedures for returning GSA items are described in the GSA Supply Catalog. Procedures for returning the DLA items are described in the DLA Catalog.

19.6 Suspense File

A copy of the “receipt of authority and disposition instructions” from the MDC should be filed in the suspense file until credit for the items has been obtained. If a credit does not appear within 28 days, a memorandum requesting credit should be prepared and forwarded to the manager of the MDC. A copy of this request should be filed in the suspense file for another 28 days or until a response is received from the MDC.

19.7 eMARS

The eMARS system displays Inventory History in the MISP module for current year and previous year’s data. The history will display Inventory values, transaction information, and Inventory and Location Accuracy Rates.

20 CATALOG UPDATES / ADJUSTMENTS

20.1 General

The Updates section of the eMARS system provides the capability to maintain the Inventory Catalog in a current, accurate status.

20.2 Automatic Updates

The eMARS system catalog can be automatically updated by the MDIMS system for centrally procured items. This includes NSN changes as well as changes of nomenclature, OEM, cage code, UOI, unit cost, group code, replacement NSNs and source codes. The items to be automatically updated may be selected by the local site. See the eMARS system user guide for detailed instructions.

20.3 Manual Updates

Manual changes to the catalogs should be made on a daily basis. Changes to the balance on hand, designation of an item as critical or insurance, and additions or deletions to stock require a supervisor’s review.

20.4 Daily Inventory Cycle Counts

The Daily Inventory Cycle Count is an important tool in maintaining accurate inventory records. USPS policy requires that each line item stored in a stockroom be inventoried at least once each Fiscal Year (FY). Daily cycle counts ensure that this requirement is met.

20.4.1 ABC Stratification

Three stratified categories (A, B, and C) are established based on value and demand. This classification is used to determine which inventory items must be controlled more closely than others. The system calculates the issue value (unit value X quantity issued past 12 months) for each line item. Then it ranks the line items from highest issue value to lowest.

'A' items are 5 percent of the total line items. They are inventoried four times a year.

'B' items are 15 percent of the total line items. They are inventoried twice a year.

'C' items are 80 percent of the total number of line items. They are inventoried once a year.

20.4.2 Daily Inventory Cycle Count Procedures

The Daily Inventory Cycle Count process is accomplished using the Updates section of the eMARS system.

1. The report can be printed from the module. A hard copy is not necessary if a scanner is used to do the inventory.
2. Go to each location to verify the location is correct and count the items.
3. Enter the count into the eMARS system screen, save and process.
4. A report is generated by the eMARS system identifying any discrepancies between the physical count and the BOH previously indicated in the eMARS system inventory catalog.
5. Investigate the discrepancies by reviewing the transaction summary for each of the NSNs with a count discrepancy and by physical recount.

20.5 Balance on Hand (BOH) Changes

The senior maintenance official or designee must review and approve any changes to the balance on hand (BOH) so that management is aware of any shortages or overages of parts in the stockroom. Adjustments to the inventory BOH should be the last option in record correction. Item demand history is lost when adjustments are made.

20.6 Initial Spare Part Kits

Items received as part of the initial spare parts kit for new equipment are processed in the catalog updates section of the eMARS system. The parts list for the kit is populated in eMARS at the time of equipment deployment. When the Spare Parts kit is received, the list is accessed and the items are added to the local inventory. Quantities of parts received must be verified and entered. These items will be issued at no cost until the quantity in the spares kit is depleted.

20.7 Direct Vendor Delivery

Certain vendors have national contracts to provide parts or supplies within a given category (e.g., custodial supplies) to the USPS via eBuy. Where these vendors supply maintenance products, their catalog is made available to local sites via eMARS. Parts and supplies received directly from the vendor may be added to the local eMARS catalog by using the updates portion of the eMARS system. After addition to the local eMARS catalog these products may then be ordered through the eMARS system.

20.8 Site Transfer of Parts

When a site transfers a part to another site, the transfer is recorded in the update section of eMARS. If the item is repairable, the receiving office returns the carcass to the repair site. The repair site will return a new or repaired item to the receiving site. The receiving site must send this replacement item to the original donor site.

21 CONTROL OF REPAIRABLE PARTS

21.1 General

There are several situations that require handling of repairable parts and assemblies. In each case it is necessary to track the item to assure it is processed properly and that charges/credits incurred are properly allocated.

The stockroom acts as a control center for repairable parts. When a repairable part or assembly has failed, it is brought to the stockroom. The stockroom logs it in, and in most cases, issues a new or repaired item to replace it. If the item is authorized for local repair, the stockroom will tag it and determine whether it will be repaired in-house or by a local contractor. If it is not authorized for local repair, it is sent to the appropriate repair facility for repair. In each case it is logged out of the stockroom and the action taken is recorded. The item is then tracked to assure that it is repaired and returned and that any charges/credits are properly recorded. The repaired part, when it is returned, is entered into stock and issued when needed.

21.2 Control of Locally Repaired Items

21.2.1 General

When a failure of a locally repairable part has occurred, a request is made to the stockroom for a replacement part. The replacement part is issued and an entry is made in eMARS indicating that the defective part, or carcass, is due into the stockroom. The replacement part is installed and the carcass is returned to the stockroom. An entry is made in eMARS acknowledging return of the carcass. The part is tagged and a Work Order is initiated for repair of the carcass. When the Work Order has been completed, the repaired item is returned to stock. It is then available to be issued, at zero cost.

21.2.2 Description

Locally repaired items are parts or assemblies procured from the MDC or any other source and repaired locally by USPS employees or by an outside contractor.

21.2.3 Form 4794

When a repairable is to be repaired locally, Form 4794, *Unserviceable/Repairable* (tag) (refer to page 60) must be prepared and attached to the part when it is removed from the equipment. The part Form 4794 must be completed, including acronym, equipment number, equipment class, work order number, part name, parts on order, requisition number and date.

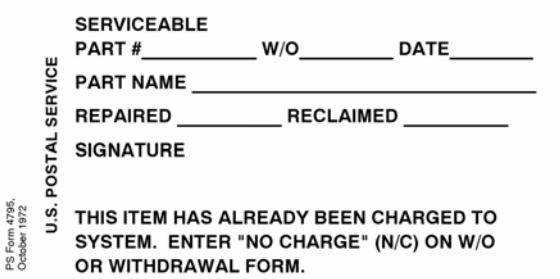
21.2.4 Work Orders and Preventive Maintenance

When items are to be repaired locally (in-house), a work order must be created to ensure that all work hours expended and parts used to repair the item are charged to the equipment from which the part was removed.

21.2.5 Contractor Repaired Items

When a contractor has repaired an item, costs are reported in the eMARS system. The cost must be charged against the specific piece of equipment from which the part was removed as indicated on the Form 4794.

Form 4795, *Serviceable* (tag) is attached to the locally repaired part. The part is placed in the stockroom at the proper location and issued at no cost.



Form 4795, *Serviceable Tag* Locally Repaired Items

21.2.6 Issuing Locally Repaired Items

Locally repaired items are to be issued as stocked items. The eMARS User Manual details procedures for issuing parts.

21.3 Control of Centrally Repaired Parts

21.3.1 General

All parts identified as centrally repairable by Inventory Management must be returned to the designated repair facility for repair or disposal. Items coded U that cannot be repaired locally must also be returned and reported in the eMARS system.

There are two types of Centrally Repaired parts designated as authorized for local stockage; Source code 1, “Repairable, Authorized for Local Stock, One for One,” and Source Code A, “Repairable, Authorized for Local Stock, Based on Issues.” The third type of centrally repaired spare part, Source Code R, is not authorized for local stockage, but can be ordered as needed to replace a failed part.

1 – Repairable, authorized for local stock, “one for one” (i.e., a defective repairable part must be shipped to and received by the MDC before a replacement is provided).

A – Repairable, authorized for local stock, based on issues (i.e., when the part is issued from stock, an order is generated by eMARS and MDC ships a replacement).

R – Repairable items from MDC, not authorized for local stock (i.e., an electronic 4984, including justification, must be processed to obtain this type of part).

In each of these cases, the defective repairable must be returned to the CRF utilizing the ERP procedures. For parts with Source Code 1 or R, an electronic Form 4984, *Repair Parts Requisition* is used to requisition repairable parts from the Material Distribution Center (MDC). Requests must include an explanation of the requirements and be approved by the senior maintenance official or designee.

21.3.2 Electronic Return Program (ERP) For Repairable Parts

In order to facilitate field returns of repairable assemblies, the Electronic Return Program (ERP) is to be used for returning repairable parts. This process provides the field sites with the capability to generate the address label, packing slip and site receipt, thereby eliminating the need for the Repairable Tag, Form 7433. This process is accomplished over the USPS Intranet.

Each carcass returned must be placed in a separate box and accompanied by a unique ERP label generated at the time of the return. The ERP, based on information provided by the local site, determines whether the carcass is to be returned to the MDC, CRF, or IRF. A unique ERP label ensures appropriate address labeling and that proper core credit is given. Core credit will not be issued for items that are not accompanied by an ERP-generated return label.

21.3.3 Reimbursement of Credit

Offices returning repairable items to the CRF will receive a credit. This credit is applied directly to the site's budget account. The site is notified of this credit by mail.

To receive this credit, the site must follow the directions precisely for the ERP as described above.

22 RETURN OF DEFECTIVE ON ARRIVAL (DOA) PARTS

22.1 Parts from MDC

Repairable parts received and found to be defective on arrival from the (CRF) or that fail within 24 hours after installation must be reported as follows:

1. An Electronic Return Program label must be prepared and attached to the item before packing and shipping.
2. Form 4901, *Defective on Arrival Report* (see page 57), must be completed and returned with the item following procedures described in applicable maintenance bulletins.

U.S. Postal Service
Central Repair Facility
Defective on Arrival Report

If you find this item to be defective upon installation, complete this card and return it with the item to:

CENTRAL REPAIR FACILITY
500 MONTARA PKWY
FORBES INDUSTRIAL PARK BLDG 8
TOPEKA KS 66624-9989
913-295-6184
PEN 750-6184

Description of Problem

Name

PEN Phone

Post Office

FEDSTRIP Address Code

Date Installed

Date Failed

PS Form 4901, February 1994

Facsimile, April 1996

Form 4901, *Defective on Arrival Report*

3. Form 4568, *Postal Equipment Problem Feedback*, must be forwarded with the repairable part to the designated repair facility and a copy filed in the suspense file.
4. Return must be entered into the eMARS system.

22.2 Parts Under Warranty

Parts under warranty that are determined to be defective must be returned to the source of supply, manufacturer, or as otherwise directed with a completed Form 4568, *Postal Equipment Problem Feedback*. A record must be established to track parts returned to the manufacturer or any other source to ensure replacement. The senior maintenance official or designee must maintain the record.

22.3 Parts Acquired Elsewhere

Parts acquired from sources other than the MDC, GSA, or the DLA that are determined to be defective must be returned for reimbursement according to procedures provided by the source of supply and entered into the eMARS system.

23 TOOLS AND TOOL BOXES

23.1 General

Tools and tool boxes are issued to maintenance employees to enable them to perform their assignments in a safe and efficient manner. Employees are responsible for maintaining the tools in a safe working condition.

Control is required to ensure that each employee has the proper types and quantities of tools. Tools and special devices must be maintained in working order and replaced when damaged or worn beyond repair. Since tools are subject to abuse or theft, tool accounting records must be kept.

23.2 Responsibilities

Issued tools are the responsibility of the employee, and replacement of worn, broken, or damaged tools may be made only with proper documentation and supervisory approval. A supervisor or designee is responsible for inspecting all tools returned to the stockroom. If a tool is returned in worn, broken, or damaged condition, the senior maintenance official or designee must be advised. If the tool shows evidence of misuse or unwarranted damage, the senior maintenance official may require the employee to submit a written statement detailing the reasons or causes for the damage. Other corrective action may be taken as appropriate.

23.3 Permanent Issue of Tools to an Employee

Tools that maintenance employees normally use in the performance of daily duties should be issued on a permanent basis. Durable personal protective equipment (PPE) and lock-out, tag-out equipment are also included. Employees are responsible for the safekeeping of all tools issued to them and for protecting them from loss, damage, or destruction. All tools permanently issued to employees must be recorded in the eMARS system. Employees must sign for all tools.

The employee to whom tools are permanently assigned must account for the tools and obtain a release of accountability when transferring from the position requiring their use, or before receiving final payment of salary when terminating employment.

23.4 Issue of Toolboxes

The eMARS system assigns an employee to a toolbox; the toolbox remains a part of the stockroom. When an employee leaves the facility maintenance function, the employee assignment is removed from the toolbox after it has been inventoried. The toolbox is restocked, tools are replaced if necessary, PPE (Personal Protective Equipment) that has been worn is replaced and the toolbox is made ready for the next employee to be assigned.

23.5 Permanent Issue of Tools and Test Equipment to Shop Toolbox

Permanent issue of tools and test equipment (excluding large fixed items) is made to a shop tool box assigned to a maintenance supervisor or employee designated by the senior maintenance official. A method must be established to secure or otherwise protect these tools.

23.6 Toolbox Accountability

Annual reviews of all tool boxes will be performed, including those assigned to employees, and all tools will be accounted for. The review will also ensure the tools are in a safe working condition. The completed and signed listing will be filed in the employee's tool file.

23.7 Tool Disposal

When it is not practical to repair a tool, it should be disposed of in accordance with procedures in Handbook AS-701, Material Management.

23.8 Lost or Stolen Tools

When tools are lost or stolen, the employee can be required to provide a written statement describing the circumstances of the loss or theft. The employee's supervisor must approve the statement before replacement tools are issued. The statement must be placed in the employee's tool file.

23.9 Replacements

When issuing replacements for tools that are broken, lost, stolen, or worn beyond repair, a copy of the signed document that includes an explanation of the circumstances for the replacement should be placed in the employee's tool file.

23.10 Tool Requisitions

The requisitioning of tools must be processed through the stockroom. Requests for tools must be approved by the employee supervisor. The delivery of the tools will be to the stockroom for proper issuance in the eMARS system and signing of forms for the employee tool file.

24 TOOL CRIB AND TOOL ROOM OPERATION

24.1 General

The tool room or tool crib is generally contained within the maintenance stockroom.

Control of specialized tools and test equipment is an essential maintenance function. A tool crib is defined as a storage and issue point for tools. Tool cribs must be limited to one per common work area.

24.2 Organization

A neat, clean, and well-arranged tool crib or tool room can efficiently provide required tool support. Special tools can be organized by applicable equipment or displayed on shadow boards. Each item displayed on a shadow board must be assigned an item location designation. This designation is imprinted on the tool and its storage position displayed on the shadow board. Item identification and location lists must be posted near issue counters. Common items and those items not suitable for shadow board locations must be stored in bins or cabinets.

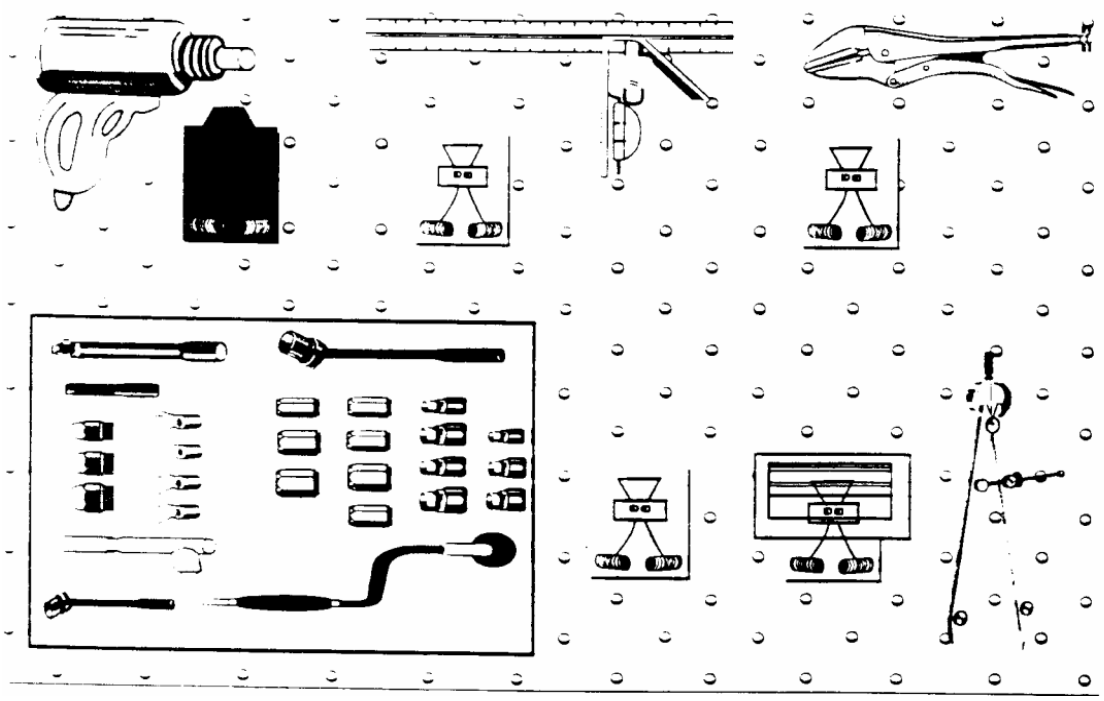


Figure 1

Tool Shadow Board

24.3 Tool Control

In addition to the everyday hand tools required, higher priced or specialized tools and instruments are needed. Control is required to ensure that the proper types and quantities of tools are available. Tools and special devices must be maintained in working order and replaced when damaged or worn beyond repair. Since tools are subject to abuse or theft, tool accounting records must be kept. Some test equipment requires calibration at stated intervals to ensure that accuracy is maintained. The date of the next calibration on each piece of equipment must be scheduled in the PM Master File.

24.4 Temporary Issue of Tools and Test Equipment

The system of accounting for a temporary loan or assignment of tools uses a sign out system. The tool is logged with the date, name of the tool or tool number, the printed name of the employee, and the employee’s signature. Forms shall be retained until tool is returned.

24.5 Special Tools

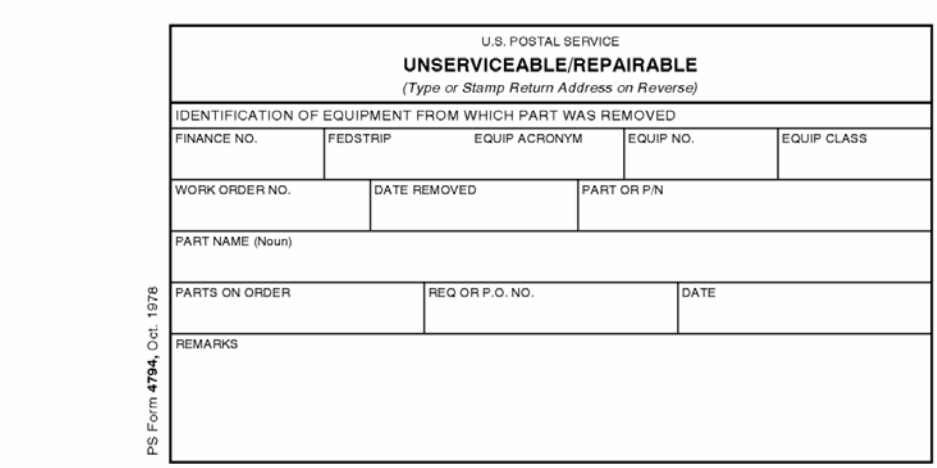
When a work order requires special tools, the employee obtains them from the stockroom at the same time the required parts and material are received. Tools are issued in accordance with local policy.

24.6 Retention of Tools

The need to retain a tool should be determined at the time of issue. If long-term retention is justified, the tool should be added to the employee's permanent kit with supervisory approval. Higher priced or special purpose instruments should not be permanently assigned.

24.7 Tool Repair

If a tool is to be repaired, Form 4794, *Unserviceable/Repairable* (tag) must be prepared and attached to the tool.



U.S. POSTAL SERVICE

UNSERVICEABLE/REPAIRABLE

(Type or Stamp Return Address on Reverse)

IDENTIFICATION OF EQUIPMENT FROM WHICH PART WAS REMOVED				
FINANCE NO.	FEDSTRIP	EQUIP ACRONYM	EQUIP NO.	EQUIP CLASS

WORK ORDER NO.	DATE REMOVED	PART OR P/N

PART NAME (Noun)

PARTS ON ORDER	REQ OR P.O. NO.	DATE

REMARKS

PS Form **4794**, Oct. 1978

Form 4794, *Unserviceable/Repairable* (Tag)

A repaired tool can be returned to service. An accumulation of damaged tool records by the same employee can indicate the need for additional training in the proper use of tools. This record can be found in the eMARS system.

APPENDIX A
FEDERAL SUPPLY CLASSIFICATION CODES

Code Nomenclature

5342 Abrasive disks/stones/belts
5350 Abrasive paper/powder/ compounds
8040 Adhesives
6350 Alarm and signal systems
6399 Alarm system
5915 Audio filters
2520 Automotive power transmission equipment
2530 Automotive steering/brake components
8105 Bags and sacks
6250 Ballasts/lamp holders/starters
6135 Batteries
6140 Batteries, rechargeable, wet/ dry cell
3030 Belting, drive belts, V belts
3110 Ball/roller bearings
5306 Bolts
8125 Bottles and jars
8115 Boxes/cartons/crates
7920 Brooms/brushes/mops/ sponges
8135 Bulk packaging material
5910 Capacitors
5820 CCTV equipment
4010 Chain and wire rope
6810 Chemicals, industrial
6850 Chemicals, miscellaneous
6505 Chemicals/reagents/medical
5925 Circuit breakers/beaters
7930 Cleaning compounds/ preparations
5950 Coils and transformers
5360 Coil/flat/sire springs
8120 Commercial gas cylinders
6830 Compressed/liquefied gases
4310 Compressor/vacuum pumps
8950 Condiments
7440 Data processing system components
5399 Deadbolt lock
7690 Decals/labels
6675 Drafting/surveying/ instruments
7230 Draperies/shades/blinds
5133 Drill bits/countersinks
8340 Drop cloths/tarpaulins
5977 Electrical brushes/electrodes
6840 Pest control/disinfectants
5961 Photocells/diodes/transistors

Code Nomenclature

5935 Electrical connectors/plus
6150 Electrical equipment, miscellaneous
5975 Electrical hardware
5970 Electrical insulators/ insulating material
6240 Electric lamp/bulb/tube
6105 Electrical motors
6145 Electric wire/cable
6625 Electric/electronic testing equipment
2940 Engine air/oil filters, strainers, cleaners
2930 Engine cooling system components
2920 Engine electrical system components
2910 Engine fuel system components
5325 Eyelets, grommets, fasteners
4140 Fan/blower equipment
5660 Fencing
4020 Fiber rope, cord and twine
4210 Firefighting equipment
8345 Flags and pennants
7220 Floor covering
7910 Floor polishers/vacuum cleaners
3930 Forklifts/platform trucks, mobile
7290 Furnishings, miscellaneous
5920 Fuses
3750 Gardening implements and tools
3665 Gas generating/dispensing equipment
2805 Gasoline reciprocating engine component
3020 Gears, pulleys, sprockets, chain
5620 Glass/tile/brick/block
5110 Hand tools, cutting
5120 Hand tools, other
5340 Hardware, miscellaneous
5965 Headsets/handsets/ microphones/speakers
4420 Heat exchangers, steam condensers
8415 Special purpose clothing
7810 Sporting equipment

Code Nomenclature

3950 Hoists and lifts
4720 Hose and flexible tubing
7105 Household furniture
4410 Industrial boilers
5830 Intercom/PA equipment
5962 Integrated circuits
5355 Knobs and pointers
6640 Laboratory supplies
8330 Leathers
6210 Lighting fixtures
4930 Lubrication equipment
8460 Luggage/briefcase
5940 Lug/terminal/terminal strips
5510 Lumber
3460 Machine tool accessories
3455 Machine tool cutting tools
3590 Mailbox/lock box parts and supplies
7490 Mail processing machinery
4910 Maintenance equipment
4920 Maint. equipment, special
4820 Manual valves
5210 Measuring tools/gauges
6515 Medical supplies
5670 Metal door/window frames/ sash
9620 Minerals
5610 Mineral construction material
7195 Miscellaneous furniture
6110 Motor starters/speed controls
5315 Mail keys and pins
3920 Non-powered trucks, hampers, handcarts
5310 Nuts and washers
4470 Nuclear reaction parts
7520 Office equipment
7110 Office furniture
7510 Office supplies
9150 Oils and greases
6650 Optical instruments
5330 Packing/gasket material
8020 Paintbrushes/rollers/ applicators
4940 Paint/cleaning spray equipment
8010 Paints/lacquers/enamels/ thinners
7350 Paper cups
7050 PC boards-amps
5905 Resistors
5365 Rings/shims/spacers

Code	Nomenclature
6750	Photographic supplies
3130	Pillow block/flange/take-up bearings
4710	Pipe and tube, rigid
4730	Pipe/hose/tube/grease fittings
9330	Plastic materials
4510	Plumbing fixtures and accessories
5530	Plywood
6230	Portable electric lighting
6230	Power supplies
4320	Power/hand pump
5130	Power hand tools
3825	Power sweepers and snow-blowers
4810	Power valves
8030	Preservative/sealing compounds
4330	Pressure/vacuum filters
3040	Shafts/shafting/collars
9905	Signs/advertising displays/ ID plates
3120	Sleeve bearings/bushings
9920	Smokers articles
4530	Space/domestic water heaters
7540	Standard forms
7530	Stationary/paper/tape/carbon
9510	Steel bars/rods
5307	Studs
5930	Switches
6680	Tachometers/counters/meters
5136	Taps, dies, collets
5805	Telephone Equipment
5815	Teletype equipment
8305	Textiles
6685	Thermometers/thermostats gauges
6645	Time measuring equipment
2630	Tires, solid and cushion
8510	Toilet preparations
8520	Toilet soap
8530	Toiletry articles
8540	Toiletry paper articles
5140	Tool boxes, pouches
5999	Printed circuit boards
3610	Printing equipment
9350	Refractory/fire surfacing material
4130	Refrigeration/air conditioning equipment
5945	Relay/contactors/solenoids
5320	Rivets
4240	Safety and rescue equipment
5440	Scaffolding/ladders/step ladders
6670	Scales and balances
5305	Screws
5180	Tool sets/kits
5960	Tubes, electronic
7240	Utility containers
3550	Vending machines
7460	Visible index equipment
5640	Wallboard/building paper/ insulation
4110	Water coolers
4610	Water purification equipment
5680	Weather Stripping
3439	Welding/soldering/brazing supplies
3540	Wrapping/packaging machinery

Facsimile April 1996
Federal Supply Classification Codes

APPENDIX B
FORMS RETENTION

FORM	DESCRIPTION	RETENTION TIME
4568	Postal Equipment Problem Feedback	6 Months
4707	Out of Order (tag)	Dispose of when defective equipment is returned to service
4774	Equipment Breakdown Investigation Report	1 year
4776	Prevention - Custodial Maintenance Route	
4777	Maintenance Checklist	For the life of the equipment
4794	Unserviceable/Repairable (tag)	No Retention Required
4795	Serviceable (tag)	No Retention Required
4805	Maintenance Work Order	No Retention Required
4901	Defective on Arrival Report	No Retention Required
Employee Assignment Work Sheet		1 year

Additional forms used for maintenance (but not listed above) should be kept for 1 year or as long as local requirements dictate. Files should not be discarded solely because the retention limit has been reached. Good judgment should be applied in all instances.

APPENDIX C
GLOSSARY

Availability Inherent availability of equipment. Equipment availability percentage is obtained by dividing the hours operated (MTBF) by the hours operated plus total equipment downtime (MTBF + MTTR) times 100. Inherent availability is the probability that a system or equipment (e.g., readily available tools, spares, or maintenance personnel) will operate satisfactorily at any point in time as required.

Average Demand (AD) The average number of parts of a specific type issued over a specific period of time. In eMARS it is calculated using the issue history and the number of months the record has been on file, up to 12. The AD that appears on eMARS reports is rounded to zero if the number is .4 or less and to 1 if the number is .5 to .9. The AD is used when calculating the reorder point (ROP).

Bench Check A workshop check that includes the typical check or actual functional test of an item to ascertain what is to be done to return the item to a serviceable condition, or ascertain the item's temporary or permanent disposition. This term includes any action by maintenance in determining the condition of an item and the determination of capability or lack of capability to return an item, removed for a malfunction or an alleged malfunction, to a serviceable status. It also includes repair action when the repair is accomplished concurrently with the bench check.

Checklist Technical orders that provide instructions in abbreviated form for use by maintenance employees in performing various tasks or operations sequence. Checklists contain what to do and the proper sequence of performance.

eMARS (electronic Maintenance Activity Reporting and Scheduling (eMARS) A computerized maintenance management system designed to automate the majority of administrative functions and assist in improving financial accountability of maintenance assets.

eSPIN (Enhanced Spare Parts Initiative) is a spare parts planning system integrated with the Materials Distribution and Inventory Management System (MDIMS) and eMARS.

Equipment Maintenance The sustaining of system, subsystem, or equipment in an operational status, restoring to a serviceable condition.

Equipment Modification Standard configuration changes to a piece of equipment. Modifications of selected major pieces of equipment are controlled by the Engineering Change Board (ECB). Approved changes are distributed by Modification Work Order (MWO) and Software Modification Order (SMO).

Equipment Overhaul Rebuilding and restoring of equipment to prolong equipment life and improve reliability.

Function The appropriate or assigned duties, responsibilities, or tasks of an individual, office, or activity.

Maintenance Capability The ability to provide resources, facilities, tools, test equipment, drawings, technical publications, trained maintenance employees, engineering support, and availability of spare parts, required to modify, retain, or restore system, subsystem, or equipment to a serviceable condition.

Maintenance Data Collection A procedure for recording and collecting production material, labor, and cost information for all tasks accomplished by maintenance employees.

Maintenance Operation The staff, management support, and maintenance production elements or activities directly or functionally responsible to a single maintenance manager.

Maintenance Responsibility The obligation and authority to complete assigned maintenance tasks and to direct and take necessary action to ensure the proper care, custody, and safekeeping of maintenance resources.

Management The process of planning, organizing, coordinating, directing, controlling, and evaluating the use of employees, money, material, and facilities to accomplish assigned tasks.

Mean Time Between Failure (MTBF) The average operating time between breakdowns. The average is calculated by dividing the hours operated by the number of breakdowns.

Mean Time To Repair (MTTR) The average maintenance time required to repair breakdowns. The average is calculated by dividing the total workhours (work code 08) reported to repair the breakdown by the number of reported breakdowns.

Operating Maintenance (Traveling/Stationary Routes) Monitoring, starting/stopping, logging, and performing minor maintenance and adjustments to building systems

Operational Maintenance The use of maintenance or other postal personnel available in the vicinity of operational critical mechanized and automated equipment to ensure minimum downtime from equipment failure.

Plant Equipment A building's physical structures, utilities, and environmental systems.

Postal Equipment Equipment used directly or indirectly in moving the mail (e.g., facer cancelers, letter sorting machines, collection boxes, scales, commodity vending machines).

Reorder Point The BOH (balance on hand) that triggers an action to order additional stock. In eMARS, the reorder point (ROP) is automatically calculated each month.

Reorder Quantity The amount of stock to be ordered when an item has reached its reorder point.

Standing Work Orders A work order for recording workhours expended during the performance of repetitive maintenance activities.

APPENDIX D
ABBREVIATIONS AND ACRONYMS

ABC – Activity Based Costing
ACE – Advanced Computing Environment
AIC – Account Identifier Code
BEM – Building and Equipment Maintenance
BOH – Balance On Hand
CMMS – Computerized Maintenance Management System
CAG – Cost Ascertainment Grouping
CM – Corrective Maintenance
CRF – Centralized Repair Facility
DECR – Daily Equipment Condition Report
DLA – Defense Logistics Agency
ECB – Engineering Change Board
ECO – Engineering Change Order
EOR – End of Run
eMARS – Electronic Maintenance Activity Reporting and Scheduling
ERP – Electronic Return Program
eSPIN – Enhanced Spare Parts Initiative
FEDSTRIP – Federal Standard Requisitioning and Issue Procedures
FMO – Field Maintenance Office
FSC – Federal Supply Code
FY – Fiscal Year
GSA – General Services Administration
IAR – Inventory Accuracy Rate
ILSP - Integrated Logistics Support Planning
IRF – Indianapolis Repair Facility
LAR – Location Accuracy Rate
LDC – Labor Distribution Code
LO/TO – Lockout/Tagout
LTL – Lead Time Level
MDC – Material Distribution Center
MDIMS – Materials Distribution and Inventory Management System
MM – Maintenance Manager
MMO – Maintenance Management Order
MMO – Manager Maintenance Operations
MMOS – Manager Maintenance Operations Support
MMTS – Material Management Technical Support
MOS – Maintenance Operations Support
MPE – Mail Processing Equipment
MPP – Maintenance Policies and Programs
MP&LP – Maintenance Planning and Logistics Policies
MSC – Maintenance Support Clerk

MSDS – Material Safety Data Sheet
MSB – Maintenance Service Bulletin
MTBF – Mean Time Between Failures
MTE – Mail Transport Equipment
MTTR – Mean Time to Repair
MWO – Modification Work Order
NMARS – National Maintenance Activity Reporting and Scheduling
NRFI _ Not Ready for Issue
NSN – National Stock Number
NTSN – National Technical Support Network
OEE – Overall Equipment Effectiveness
OEM – Original Equipment Manufacturer
OIG – Office of Inspector General
OJT – On the Job Training
OL – Operating Level
OSHA – Occupational Safety and Health Administration
PdM - Predictive Maintenance
PM – Preventive Maintenance
PLD – Pipeline Days
PPE – Personal Protective Equipment
RCM – Reliability Centered Maintenance
ROQ – Recommended Order Quantity
RSR – Route Sheet SC – Source Code
SMO – Software Modification Order
SMO – Supervisor Maintenance Operations
SMOS – Supervisor Maintenance Operations Support
SL – Safety Level
SP – Scheduling Period
SPEC – Supplies Parts and Equipment Catalog (Pub 112)
SPLY – Same Period Last Year
UOI – Unit of Issue

APPENDIX E
CONVERSION MINUTES TO DECIMALS

Estimated hours and tenths of hours reported in the eMARS system must not include locally authorized break periods. All work hours estimated must be reported in hours and tenths of hours (see time conversion chart).

Mins	100ths*	10ths	Mins	100ths	10ths	Mins	100ths	10ths
1	.02	0.0	21	.35	0.4	41	.68	0.7
2	.03	0.0	22	.37	0.4	42	.70	0.7
3	.05	0.1	23	.38	0.4	43	.72	0.7
4	.07	0.1	24	.40	0.4	44	.73	0.7
5	.08	0.1	25	.42	0.4	45	.75	0.8
6	.10	0.1	26	.43	0.4	46	.77	0.8
7	.12	0.1	27	.45	0.5	47	.78	0.8
8	.13	0.1	28	.47	0.5	48	.80	0.8
9	.15	0.2	29	.48	0.5	49	.82	0.8
10	.17	0.2	30	.50	0.5	50	.83	0.8
11	.18	0.2	31	.52	0.5	51	.85	0.9
12	.20	0.2	32	.53	0.5	52	.87	0.9
13	.22	0.2	33	.55	0.6	53	.88	0.9
14	.23	0.2	34	.57	0.6	54	.90	0.9
15	.25	0.3	35	.58	0.6	55	.92	0.9
16	.27	0.3	36	.60	0.6	56	.93	0.9
17	.28	0.3	37	.62	0.6	57	.95	1.0
18	.30	0.3	38	.63	0.6	58	.97	1.0
19	.32	0.3	39	.65	0.7	59	.98	1.0
20	.33	0.3	40	.67	0.7	60	.99	1.0

* Hundredths-of-hour figures are included for help with checklist calculations.

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