



Ready Reserve Force

# Logistics Management Manual

VOLUME I: MAY 15, 2004

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## RRF Logistics Management Manual

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# Chapter 1: Introduction to the RRF Logistics Support System

## 1.0 The Ready Reserve Force

The Ready Reserve Force (RRF) was established by the Maritime Administration (MARAD) in coordination with the U.S. Navy in 1976 as a support element for the deployment of U.S. forces. The RRF is an element of the National Defense Reserve Fleet (NDRF) that has been tasked to maintain an effective sealift capability in support of the Department of Defense (DOD). MARAD manages RRF vessel acquisitions, upgrades, activations, maintenance, and operations. RRF vessels are entrusted to contract ship managers, general agents, and a limited number of maritime academies.

## 1.1 RRF Logistics Management Manual

### 1.1.1 Purpose

The *RRF Logistics Management Manual* has been developed to provide logistics support guidance and operating procedures to MARAD Headquarters and region personnel. It also provides authoritative guidance and direction to Ship Managers, general agents, surveyors, support contractors (as provided for in their respective contracts) and selected maritime academies that have custody of an RRF vessel. This manual shall also serve as a reference for those Government agencies whose functions and responsibilities require them to interact with MARAD and the RRF.

The *RRF Logistics Management Manual* addresses MARAD supply management policies, procedures and responsibilities within the context of the RRF Logistics Support System.<sup>1</sup> It also prescribes uniform configuration management and provisioning requirements, applications, objectives, and definitions for the RRF, and assigns responsibilities related thereto.

When there is an apparent conflict between the terms of the Ship Manager's contract or the FAR and this manual, the contract or the FAR must take precedence.

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<sup>1</sup>Maritime Administrative Order 630-7, dated June 24, 1996.

### 1.1.2 Terms

The term "Ship Manager" will be used in this manual to indicate general agents, ship managers, and Chief Engineers of RRF vessels operated by maritime academies. The term "Government" will be used to indicate managers and employees of the Maritime Administration. The term "Region" will refer to managers and employees of the South Atlantic, Central and Western Regions of the Maritime Administration. A Glossary of logistics terms used in this manual is provided in Appendix A. The meaning of common acronyms is provided in Appendix B.

### 1.1.3 Manual Organization

The *RRF Logistics Management Manual* is divided into two volumes:

- a. Volume I: RRF Shipboard Logistics Management
- b. Volume II: RRF Shore-based Logistics Management

Chapters are numbered consecutively with paragraphs numbered in legal style. Users should examine the Table of Contents to obtain an overview of the contents of each chapter. Whenever possible, tables, figures and footnotes have been provided to clarify the processes or procedures contained in the text. Footnotes are numbered consecutively within each chapter. An index is provided at the end of each volume.

### 1.1.4 Changes to the Manual

Recommendations for changes to this manual are encouraged and should be sent to the Division of Logistics Support (MAR-614).

## 1.2 The RRF Logistics Support Concept

The RRF Logistic Support System is built around three critical programs: The Shipboard Supply Management Program, the Configuration Management Program and the RRF Shore-based Spares Program.<sup>2</sup>

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<sup>2</sup>Maritime Administrative Order 630-7, dated June 24, 1996.



### 1.2.1 Shipboard Supply Management Program

The Shipboard Supply Management Program addresses the logistics functions performed aboard ship or in direct support of shipboard operations. It encompasses allowance and inventory management policy, procedures, and information related to shipboard spare parts, outfitting material, and technical documentation.

### 1.2.2 Configuration Management Program

The Configuration Management Program provides a systematic means for documenting the configuration of shipboard equipment and includes provisions for configuration identification, change control, spare parts provisioning and allowance determination. An active Configuration Management Program is necessary for effective logistics support.

### 1.2.3 Shore-based Spares Program

The Shore-based Spares (SBS) Program provides guidelines for managing inventories of RRF equipment and repair parts critical to mission readiness but not readily available on the open market. The MARAD SBS warehouses also provide convenient temporary storage for spare parts, controlled material, and technical documentation removed from vessels undergoing overhaul, slated for disposal, etc.

### 1.2.4 MARAD Logistics Support System Database

The MARAD Logistics Support System (MLSS) database is the primary repository of all RRF equipment, spare part, outfitting, Accountable Property, technical manual, and vendor drawing information. Virtually all material management information is obtained, either directly or indirectly, from MLSS. Through MLSS data products (such as Ship's Allowance Lists) are made available to managers and other personnel.

### 1.2.5 Interagency Support

The Division of Logistics Support (MAR-614) is the central requisitioning point for spare parts available through the Federal Supply System (FSS).

## 1.3 Inspections and Reviews

MAR-614 conducts several types of formal and informal inspections as a way of monitoring the performance and effectiveness of the RRF Logistics Support Program.

### 1.3.1 Region Supply Readiness Assessment

MAR-614 will conduct periodic supply readiness assessments of ship-controlling Regions. The factors to be assessed will be published and provided in advance to each Region. The assessment will examine the degree to which Region practices conform to the policies and procedures contained in this manual, the FAR, Maritime Administrative Orders, and other MARAD directives. Such evaluations will also assess the effectiveness of these policies and procedures in supporting the operational logistics needs of the Regions.

### 1.3.2 Logistics Management Reviews

Logistics Management Reviews (LMRs) examine and evaluate the contract performance of Ship Managers and normally focus on a specific vessel. In the case of maritime schools that operate RRF owned vessels, LMRs will evaluate the control and management of federally owned property, while also assessing the effectiveness of the vessel's logistics management program. This manual, the Federal Acquisition Regulations (FAR) and the contract itself are used as the basis for these evaluations.

Regions will perform "routine" LMRs of RRF vessels. MARAD HQ will periodically perform unannounced or "no-notice" LMRs on selected vessels to assure the logistics management program onboard the vessel complies with the Ship Manager's contract, the FAR and the operational support requirements of the RRF. HQ LMRs are also used to gauge the effectiveness of region logistics management programs. The areas addressed during Logistics Management Reviews are published in the MAR-614 LMR Checklist.

### 1.3.3 Other Inspections and Reviews

MAR-614 or a Region may conduct other inspections and reviews on an ad-hoc basis to address specific logistics readiness concerns. These inspections (which may focus on a ship, a ship class or a MARAD Region), may be formally scheduled or conducted on a "no-notice" basis, as required.



### 1.4 Activity Phases

The life cycle of an RRF vessel may encompass many different events, including initial acquisition, routine maintenance periods, activation, and operation. These stages in the life cycle are referred to as *phases*, which are defined below:

- a. Phase I: Vessel Acquisition
- b. Phase II: Vessel Upgrade
- c. Phase III: Deactivation
- d. Phase IV: Maintenance
- e. Phase V: Exercise (i.e., activation and subsequently deactivation)
- f. Phase O: Operation

### 1.5 RRF Readiness Ratings

MAR-610 assigns overall RRF readiness ratings, which are provided below for informational purposes.

- a. C-1: No mission degrading deficiencies
- b. C-2: Documented and correctable mission degrading deficiencies
- c. C-3: Mission degrading deficiencies exist which cannot be corrected.
- d. C-4: Major deficiencies prevent the ship from performing its primary mission, which cannot be corrected within the assigned period.
- e. C-5: Scheduled major repairs in progress - unable to meet assigned readiness criteria.

### 1.6 Federal Government Property Regulations

All persons and activities involved in the RRF Logistics Support System may, at one time or another, find themselves accountable or responsible for Government property. The procedures contained in this manual are designed to accomplish the supply management mission while protecting this accountability. "Government property" is defined as all property owned by or leased to the Government, or acquired by the Government under the terms of a contract. It includes both Government-furnished property, and contractor-acquired property as defined in the Federal Acquisition

Regulations (FAR). It includes all facilities, material, special tooling, special test equipment, and agency-peculiar property. The following publications and instructions provide requirements and guidance for the management of such property:

- a. Federal Acquisition Regulations (FAR), 48 CFR Part 45. This publication prescribes policies and procedures for providing Government property to contractors; contractor's use and management of Government property; and reporting, redistributing, and disposing of contractor inventories of Government property.
- b. Federal Management Regulations (FMR), 41 CFR Chapters 101 and 102. This publication prescribes regulations, policies, and procedures pertaining to the management of Government property.
- c. Equipment Management and Control (DOT Order 4410.4). This order contains Department of Transportation (DOT) policy for the management, accountability, control, utilization, and disposal of Government-owned, leased, and/or borrowed equipment. It implements and supplements the FMR.

## Chapter 2: RRF Logistics Organization and Responsibilities

### 2.0 Organizational Responsibilities

The following paragraphs describe in general terms the responsibilities of the organizations and positions supporting the RRF Logistics Support System (RRF/LSS).

#### 2.1 MARAD/RRF Headquarters

MARAD Headquarters in Washington, D.C., provides overall RRF program policy, management, direction, and support through the offices and divisions described below:

##### 2.1.1 Associate Administrator for National Security (MAR-600)

The Associate Administrator for National Security has overall responsibility for ensuring the coordination and implementation of the policies and procedures contained in this manual.

##### 2.1.2 Office of Ship Operations (MAR-610)

The Director, Office of Ship Operations serves as the RRF Program Manager and is responsible for the coordination and implementation of the policies contained in this manual. Responsibilities include:

- a. Through management reports and general oversight, ensure that the RRF/LSS effectively supports the requirements of the RRF.
- b. Provide adequate funding and personnel to support all aspects of the RRF Logistics Support System.
- c. Approve the issue of instructions, manuals, and other directives required to implement RRF/LSS policies and procedures.
- d. Coordinate inter-agency support with the US Transportation Command (USTC), the Military Sealift Command (MSC) and other agencies.
- e. Approve proposed spare parts provisioning actions for vessels undergoing conversion, upgrade, or sealift enhancement.

##### 2.1.3 Chief, Division of Ship Maintenance and Repair (MAR-611)

The Chief, Division of Ship Maintenance and Repair supervises RRF maintenance and repair systems, funding, and methodologies. Responsibilities include:

- a. Provide technical assistance and guidance to MAR-614 in matters involving RRF logistics support.
- b. Advise MAR-614 of all issues that may impact RRF logistics readiness.
- c. Conduct a final review of excess material staged for disposal.
- d. Review all Allowance Change Requests (ACRs).
- e. Fund special programs.

##### 2.1.4 Division of Logistics Support (MAR-614)

The Chief, Division of Logistics Support serves as the RRF Logistics Support System Program Manager.<sup>1</sup> Responsibilities include:

- a. Develop and implement the policies, procedures, and systems necessary to provide effective logistics support for the RRF.
- b. Monitor and evaluate region logistics support programs and activities.
- c. Ensure that region Ship Managers, maritime schools operating RRF ships, and SBS Warehouse operations comply with established logistics support policies and procedures.
- d. Revise the *RRF Logistics Management Manual* (LMM), when required.
- e. Supervise the management, development, and operation of MLSS, PC-SAL and associated systems.
- f. Maintain and monitor the functionality and validity of MLSS and PC-SAL databases, in accordance with MAO 630-7 and the RRF Logistics Management Manual.
- g. Coordinate, develop and approve all RRF Shipboard Allowance Lists (SALs).

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<sup>1</sup>Maritime Administrative Order 630-7, dated June 24, 1996, paragraph 4.05.



- h. Coordinate logistics support requirements for new RRF vessel acquisitions, upgrades and conversions.
- i. Monitor the security and storage of RRF spare parts, outfitting items, Accountable Property and Shore-based Spares.
- j. Schedule periodic region Logistics Support Audits, RRF HQ LMRs, and validations of RRF vessel and SBS warehouse inventories.
- k. Develop and implement RRF configuration management and provisioning programs.
- l. Approve and direct the transfer of Shore-based Spares among regions.
- m. Exercise technical and administrative supervision and control over the Shore-based Spares Program.
- n. Provide logistics support training and guidance to Region personnel as required.
- o. Provide periodic financial accountability reports for Shore-Based Spares operations to the Chief, Division of Accounting Operations (MAR-333).
- p. Serve as the designated Accountable Property Officer (APO) for all Shore-based Spares, per MAO 330-13.
- q. Serve as the Property Administrator for all Accountable Property and spare parts onboard RRF vessels.
- r. Program and manage logistics support funds.

### 2.1.5 Division of Supply, Space and Office Services (MAR-313)

The Division of Supply and Space Management is responsible for all policy and procedures concerning matters of personal property management.

### 2.1.6 Division of Accounting Operations (MAR-333)

The Chief, Division of Accounting Operations is responsible for maintaining financial accountability records for Shore-based Spares based on periodic summary transaction reports received from MAR-614.

### 2.1.7 Office of Acquisition (MAR-380)

The Office of Acquisition provides contracting and purchasing support and guidance.

## 2.2 Region Offices

Of the five MARAD regions, only the South Atlantic, Central, and Western Regions have significant management responsibilities under the RRF Logistics Support Program. Each Region is organized in a similar, but not identical manner.

### 2.2.1 Region Director

The Region Director is the senior MARAD official in each region. Responsibilities include:<sup>2</sup>

- a. Appoint a region Logistics Management Officer (LMO) for the region.
- b. Appoint a region Accountable Property Officer (APO) for shipboard spare parts and Accountable Property.

### 2.2.2 Region Ship Operations and Maintenance Officer (SOMO)

The SOMO is responsible for scheduling activations, yard periods, and other RRF vessel evolutions, and as such must be aware of the logistics readiness status of the RRF vessels assigned to the Region. Responsibilities include:

- a. Approve Configuration Change Proposals (CCPs)<sup>3</sup>.
- b. Ensure the logistics policies and procedures outlined in this manual are carried out.
- c. Ensure ship manager turnovers are conducted properly.

### 2.2.3 Logistics Management Officer (LMO)

The region LMO reports to the region SOMO and liaises with MARAD Headquarters (MAR-614) on all logistics support related matters. Responsibilities include:

- a. Serve as the APO for all Accountable Property and spare parts on RRF vessels in the region. Coordinate overall RRF logistics support functions within the region.
- b. Review and document the performance of the Ship Managers and school ships with respect to configuration management, inventory management

<sup>2</sup>Maritime Administrative Order 630-7 dated June 24, 1996, paragraph 4.06.

<sup>3</sup>Maritime Administrative Order 630-7 dated June 24, 1996, paragraph 4.07.



- and control of Accountable Property.
- c. Review and document the Ship Manager's maintenance of PC-SAL databases.
  - d. Ensure Region and Ship Manager personnel are competent in the execution of logistics management responsibilities, including the use of PC-SAL and property management procedures.
  - e. Conduct periodic region LMRs to ensure compliance with the logistics support requirements set forth in the Ship Manager Contract and the Logistics Management Manual.
  - f. Authorize and coordinate the removal of excess spare parts and Accountable Property from RRF vessels.
  - g. Review the results of Accountable Property inventories.
  - h. Manage and safeguard regional Shore-based Spares inventory as directed by HQ and the Logistics Management Manual.
  - i. Responsible for the integrity of data entered into the SBS module.
  - j. Conduct a joint inventory of Accountable Property and spare parts upon award of a new Ship Manager contract, termination of a ship manager, transfer of a vessel from one region to another, or when there is reason to believe that significant deficiencies exist in property or spare parts accountability.
  - k. Supervise and train all region logistics support personnel.
  - l. Communicate and coordinate with MAR-614 on all region logistics related matters.
  - m. Keep the Region Director, the SOMO and MAR-614 informed of the operating status of the SBS warehouse.
  - n. Assure the safe operation and proper maintenance of the MARAD SBS warehouse facilities and MHE.
  - o. When authorized by MAR-614, review and evaluate the work of the MARAD logistics support contractor.
  - p. On an annual basis, provide a report to MARAD Headquarters (MAR-614) of all items surveyed as lost, damaged or destroyed in the region.<sup>4</sup>

### 2.2.4 Marine Surveyors

Marine surveyors are engineering and management representatives assigned to each RRF vessel by the region SOMO. They normally serve as the MARAD

Contracting Officer's Technical Representative (COTR) or Alternate COTR (ACOTR) for assigned vessel(s). Responsibilities include:

- a. Review and approve any new purchases of Accountable Property.
- b. Review and evaluate provisioning packages.
- c. Ensure the Chief Engineer and the Port Engineer review provisioning packages.
- d. Review and forward Configuration Change Proposals for vessels undergoing repair or overhaul.
- e. Ensure that shipyard work packages include provisions for reporting equipment additions, deletions, and change-outs.
- f. Ensure that all equipment change-out contracts provide for the proper disposal of scrap material, and the purchase of needed spare parts.
- g. Ensure that funding for the replenishment of spare parts is identified and requested.
- h. Participate in Headquarters and region LMRs.

### 2.2.5 SBS Warehouse Manager

The region LMO will appoint a Warehouse Manager for each MARAD SBS warehouse in the region. The Warehouse Manager will report to the region LMO on all logistics and warehouse management related issues. Responsibilities of the SBS Warehouse Manager are as follows:

- a. Enter data into MLSS.
- b. Identify and manage excess material.
- c. Serve as the initial point of contact for GSA Sales.
- d. Serve as a custodian for all Shore-based Spares and equipment in his or her assigned warehouse.
- e. Ensure the proper maintenance, cleanliness, security, and safety of warehouse facilities and Shore-based Spares.

### 2.2.6 Inventory Management Specialists

Under the direction of the region LMOs, inventory management specialists conduct region directed LMRs to evaluate the performance of Ship Managers and assess the overall readiness of assigned RRF vessels. Duties may also include logistics training and monitoring the performance of the logistics contractor.

<sup>4</sup>Maritime Administrative Order 630-7, dated June 24, 1996.



## 2.3 Ship Managers

All Ship Managers or state maritime academy representatives with current management responsibility of MARAD RRF property are considered “Property Custodians.” As such, they are responsible for the custody and security of shipboard spare parts, and Accountable Property in accordance with this manual, the FAR, the current Ship Manager’s contract, or applicable school ship custody agreement.

Responsibilities include:

- a. Update the equipment configuration, inventory management and Accountable Property information contained in PC-SAL.
- b. Supervise the receipt, protection, control, accountability, use and distribution of spare parts and Accountable Property in accordance with this manual.
- c. Submit complete and descriptive Reports of Survey (DOT Form 4410) to the Region APO as required by DOT Order 4410.4.
- d. Participate in Headquarters and Region LMRs.

## Chapter 3: MLSS and PC-SAL

### 3.0 MARAD Management Information Systems

The following chapter briefly describes the current information systems used by the RRF to manage vessel configuration and spare part inventories.

#### 3.1 MARAD Logistic Support System

The MARAD Logistics Support System database (referred to as MLSS) is the official repository of all RRF logistics data. MLSS contains data on:

- a. The equipment configuration of RRF vessels
- b. RRF shipboard spare parts, technical manuals and Accountable Property
- c. Excess property
- d. Spare parts and equipment stored in the three Shore-Based Spares (SBS) warehouses.

Other subordinate modules, such as PC-SAL and the Shore Based Spare Module transmit information into MLSS.

When fully implemented, MLSS will give authorized MARAD users visibility of all RRF spare parts and equipment data via the Internet. It will also provide the user with the capability to sort and view data in a variety of ways.

#### 3.2 PC-SAL Module

The PC-SAL (Personal Computer – Shipboard Allowance List) Module of MLSS allows users to access and revise the logistics information of a specific vessel. PC-SAL is installed on all ROS-4 and ROS-5 vessels. These vessels are referred to as having an “active PC-SAL.” Most ROS-10, ROS-20, and ROS-30 vessels do not have PC-SAL installed. These vessels are referred to as having an “inactive” PC-SAL. Until it is required, the information necessary to assemble a PC-SAL is stored in MLSS at MAR-614.

##### 3.2.1 Activating and De-Activating PC-SAL

Upon a request from the Region LMO, MAR-614 will “activate” a vessel’s PC-SAL by forwarding a copy of the vessel’s current logistics database either to the Region LMO or to the Ship Manager. Conversely, when it is no longer required the Region LMO can request that a vessel’s PC-SAL be “de-activated.”

##### 3.2.2 Hardcopy Ship’s Allowance Lists

In the past, vessels were required to maintain a hardcopy Ship’s Allowance List (SAL). PC-SAL obviates the need to maintain this rather large document, and RRF ships are no longer required to retain a hardcopy of the SAL onboard.

### 3.3 Database Reporting Requirements

Ship Managers and maritime academies will forward all equipment, technical manual, inventory, drawing and Accountable Property changes to MAR-614 on a monthly basis. How these changes are reported depends on whether the vessel has an active PC-SAL or an inactive PC-SAL.

#### 3.3.1 Vessels with an Active PC-SAL

Regardless of the Activity Phase of the vessel, each month the Ship Manager of a vessel with an active PC-SAL will either mail a back-up disk, or email a back-up file, to MAR-614. It is understood that mail from Phase “O” vessels will take longer to reach MAR-614 than vessels that have not been activated. An overview of PC-SAL reporting requirements is provided in Table 3-1.

#### 3.3.2 Vessels with an Inactive PC-SAL

As discussed below, vessels with an inactive PC-SAL can transmit database changes to MAR-614 by several different means. Regardless of how these changes are transmitted, the Ship Manager of a vessel with an inactive PC-SAL must report all changes to the vessel’s equipment configuration, spare parts inventory, and Accountable Property within thirty (30) days of the date of the change.



During periods of increased activity, it may be prudent for ROS-10, ROS-20 and ROS-30 vessels to activate the vessel’s PC-SAL to facilitate the entry of a large number of changes. This is especially true of ships that are activated for periods of more than 30 days. Once the activation is complete, the Ship Manager, via the LMO, can request that the ship’s PC-SAL be de-activated.

- a. Appendix D describes how MARAD equipment numbers are assembled and lists all the current MARAD Equipment Group Codes (EGC)
- b. Appendix E lists System Application Codes (SAC)
- c. Appendix F lists unit of issue codes
- d. Appendix G lists Condition Codes

**3.3.2.1 Update MLSS via the Web.**

When completed MLSS will allow authorized users with inactive PC-SALs to make changes to MLSS via the Internet.

**3.3.2.2 Manual Submission of Database Changes to the Region LMO**

Although not the preferred option, if changes can not be submitted via the Internet, Ship Managers may submit changes to the Region LMO using the following forms. The LMO will then coordinate the update of MLSS.

- a. Inventory Transaction Report, MA-973. Changes to RRF inventory balances can be reported to the region LMO on an MA-973.
- b. Equipment Validation Aid, MA-983. Changes in Configuration can be reported to the region LMO via an MA-983.
- c. Inventory Sheet for Controlled Material, MA-997. Changes in Accountable Property can be reported to the region LMO via an MA-997.

System	Reporting Requirement
Active PC-SAL*	Monthly via email or PC-SAL back-up disk
Inactive PC-SAL	The Ship Manger must report all changes within 30 days of the date of the change. Changes can be submitted via: <ul style="list-style-type: none"> <li>• Web Access (when available)</li> <li>• Mailed to the region LMO</li> </ul>

\*Includes vessels in Phase “O.”

**Table 3-1:** PC-SAL reporting requirements

Appendix C provides a complete list of logistics forms used by RRF vessels. A copy of each form is provided in the back of the manual.

**3.4 Codes used by MLSS and PC-SAL**

To assist the user, some of the more significant codes used by MLSS, PC-SAL and RECSMIS have been included as appendices to this manual:

## Chapter 4: Shipboard Logistics Management

### 4.0 Sustainability and Accountability

The primary purpose of the RRF Logistics Support System (RRF/LSS) is to enable an RRF vessel to sustain itself operationally for 180 days.<sup>1</sup> This capability is maintained through the strict management and accountability of the shipboard spare parts.

#### 4.1 Use of Shipboard Spare Parts

The Ship Manager is required to use shipboard spare parts to perform routine maintenance of RRF vessels.<sup>2,3</sup> However, in some situations the extensive use of shipboard spare parts to support *planned maintenance* is considered uneconomical. These situations are as follows:

##### 4.1.1 Overhauls and Availabilities

Ship overhauls and availabilities are considered planned maintenance. Routinely used spare parts that are necessary to complete maintenance or equipment change-outs during these periods will be purchased in advance, or provided by the shipyard or subcontractor. Shipboard spare parts can be used to support an overhaul or availability only in emergency situations

**The Ship Manager is required to use shipboard spare parts to perform routine maintenance of RRF vessels.**

when the lack of a unique spare part would impede the progress of the overhaul or ship availability.<sup>4</sup>

##### 4.1.2 Scheduled Repairs Accomplished by Outside Subcontractors

*Except in emergencies*, contracts for routine maintenance accomplished by outside subcontractors must require the vendor to provide common or routinely used parts.

#### 4.2 Control and Accountability of Shipboard Spare Parts

##### 4.2.1 The PC-SAL Module is an Accountable Record

MLSS, and its subordinate real-time module, PC-SAL, constitute the accountable record for the receipt and issue of all shipboard spare parts. The Ship Manager or Chief Engineer of a school ship will properly maintain PC-SAL at all times.<sup>5</sup>

##### 4.2.2 Care and Safekeeping of Government Property

The Ship Manager is responsible for the care and safekeeping of all spare parts on the vessel. This includes spare parts in boxes or drawers originally sealed by the Government, open boxes, and boxes temporarily sealed by the Ship Manager.<sup>6</sup>

##### 4.2.3 Seals

Seals are used to establish and maintain the accountability spare parts stored in boxes, cabinet drawers and storerooms. Although the physical barrier presented by a seal depends on the type of seal used, the purpose of the seal is to indicate whether a box, drawer or space has been entered.

The Government has sealed most boxes and drawers on RRF vessels. Seals applied by a Government representative are referred to as "Permanent Seals," and have a unique number and appear different in color or numeration than seals provided to Ship Managers. The

<sup>1</sup>Maritime Administrative Order 630-7, dated June 24, 1996, paragraph 5.05.3.

<sup>2</sup>Maritime Administration Policy Decision Memo 97-5, dated August 12, 1997.

<sup>3</sup>CFR 101-26.107

<sup>4</sup>Maritime Administration Policy Decision Memo 97-5, dated August 12, 1997.

<sup>5</sup>Federal Acquisition Regulations (FAR) Subpart 45.505 Management of Government Property in the Possession of Contractors.

<sup>5</sup>Federal Acquisition Regulations (FAR) Subpart 45.505 Records and Reports of Government Property.

<sup>6</sup>Federal Acquisition Regulations (FAR) Subpart 45.5 Management of Government Property in the Possession of Contractors.



Government is NOT required to seal boxes and may choose not to do so. The absence of a seal, a broken seal, or a seal with a number different from the number recorded in the Seal Log (a database contained in PC-SAL) indicates the accountability for that particular box, drawer or space may have been compromised.

#### 4.2.4 Maintaining the Accountability of Spare Parts Boxes

The Ship Manager or maritime academy is responsible for properly maintaining the PC-SAL database of all boxes or drawers unsealed by the ship's crew until they are re-sealed with a Permanent Seal by the Government.

#### 4.2.5 Opening Sealed Boxes and Drawers

When a Ship Manager needs to obtain a spare part, the ship's crew will locate the appropriate box or drawer using PC-SAL, cut the seal, and retrieve the part. Except as provided for in paragraph 4.2.9, the spare parts box or drawer will be sealed immediately using a unique, numbered seal provided to the Ship Manager by the region LMO, called a "Temporary Seal." Open spare parts boxes or drawers must not be left unattended.<sup>8</sup>

**Open spare parts boxes or drawers must not be left unattended.**

#### 4.2.6 Changes to Seal Logs

After the ship's crew enters a sealed spare parts box or drawer, the Ship Manager will update the vessel's PC-SAL Seal Log. The Ship Manager will record the following in the vessel's Seal Log:

- a. The identification number of the seal cut to obtain the part;
- b. The number of the Temporary Seal affixed by the Ship Manager; and
- c. Any other pertinent information required by the *PC-SAL 4.0 User Guide*.

#### 4.2.7 Government Sampling and Re-sealing of Spare Parts Boxes

On a regular basis, the region LMO, or members of the region logistics staff *may* (but are not required to) remove Temporary Seals applied by the Ship Manager and sample the contents of the spare parts boxes or drawers. The LMO or the region logistics staff will then apply a Permanent Seal and update PC-SAL.

#### 4.2.8 Contractor Application of Permanent Seals

*Under no circumstances will the Ship Manager apply Permanent Seals or document the application of Permanent Seals in PC-SAL.*

On rare occasions Permanent Seals may be sent to an RRF vessel in advance of a visit by MARAD logistics personnel. These packages will be held in the custody of the Chief Engineer until MARAD representatives arrive.

#### 4.2.9 Padlocks

Padlocks must not normally be used to secure MARAD spare parts boxes or drawers. The Ship Manager may, on occasion, use a padlock to temporarily lock an open box or drawer that holds parts for an ongoing repair. However, once the repair is complete the Ship Manager must re-seal the box or drawer with a Temporary Seal provided by the region LMO. The large-scale use of padlocks to secure spare parts boxes or drawers is not authorized.

#### 4.2.10 Storeroom Security and Cleanliness

When not in use, and where physically possible, storerooms on ROS-4 and ROS-5 day vessels will be locked. Storerooms on RRF-10, RRF-20 and RRF-30 day ships should be locked, and sealed, where possible.

Storerooms will be kept neat and clean. All repair parts listed in PC-SAL must be properly stowed. Those parts that are too large to fit in a drawer must be mounted on a bulkhead, or placed in a secure location. Hazardous items will be stowed in accordance with Appendix J.

<sup>8</sup> *Federal Acquisition Regulations (FAR)*, Subpart 45.502, Contractor Responsibility.



### 4.3 Material Issue

To issue material, the ship's crew will cut the security seal and remove the needed item. After the part has been issued, the ship's crew must inventory the contents of the box or drawer and apply a Temporary Seal. This process, called a *perpetual inventory*, is the approved inventory methodology for use on the Ship Manager's contract.<sup>9</sup> Ship Managers are always free to inventory any spare parts box or drawer; however, this does not relieve them of their responsibility to conduct a perpetual inventory when the box is unsealed.

The following will be documented in PC-SAL after a perpetual inventory of a box or drawer has been conducted:

- a. Items issued for ship repairs
- b. Items found to be missing
- c. Items in the box or drawer but not listed in PC-SAL

**After a part has been issued, the ship's crew must inventory the contents of the box or drawer and apply a Temporary Seal.**

### 4.4 Contractor Responsibility to Initiate the Replenishment of Spare Parts

If a repair part line item falls below its allowance in PC-SAL, the Ship Manager must either:

- a. Generate a purchase order in PC-SAL to replenish the item up to its allowance; or
- b. Forward an Allowance Change Request (ACR) to reduce the allowance.

If additional funding is required, the Ship Manager must generate an RMS entry to fund the purchase of replacement spare parts.

**Ship Managers are required to screen SBS before buying any part for the maintenance of an RRF vessel.**

### 4.5 Spare Parts Replenishment

#### 4.5.1 SBS Warehouses

MARAD maintains three region warehouses that contain a large quantity of unused/servicable spare parts and equipment that have been removed from RRF vessels. This inventory of MARAD spare parts is called Shore-based Spares (SBS). SBS is considered the "first source of supply."

#### 4.5.2 Shore-based Spares is a Mandatory Source of RRF Spare Parts

To reduce RRF maintenance costs, Ship Managers are *required* to screen the inventory of all MARAD SBS warehouses before buying *any* part needed for the maintenance of the vessel (emergencies excluded).<sup>10</sup> If the needed part is available from an SBS warehouse, the Ship Manager *must* request the item. Most items will be shipped to RRF vessels at no cost.

#### 4.5.3 Requesting an Item from SBS

All three region warehouses can be screened and requisitioned easily by logging onto MLSS.us. Items can also be requested by contacting the region LMO. The LMO will review the request and then either issue the item from stock, or forward the request to the region warehouse holding the item. SBS items are available on a "first come, first serve" basis, unless they are being held for a specific program (such as OPDS) or vessel.

#### 4.5.4 Required Remarks on All Spare Parts Purchase Requests

All purchase requests for spare parts *must* contain a statement certifying that Shore-Based Spares have been screened.

#### 4.5.5 Use of SBS to Support Federal or MARAD-owned School Ships

It is strongly recommended that school ships screen SBS before purchasing spare parts. As with other RRF vessels, most parts held in the three SBS warehouses will be forwarded to federally owned school ships at no cost.

<sup>9</sup> *Federal Acquisition Regulations (FAR) Subpart 45.508, Physical Inventories.*

<sup>10</sup> CFR 101-26.107

*Maritime Administration Policy Decision Memo 97-5*, dated August, 12, 1997.

*Federal Acquisition Regulations (FAR) Subpart 45.5 Management of Government Property in the Possession of Contractors.*



**4.5.6 Obtaining Items from GSA or the Defense Logistics Agency (DLA)**

In rare cases, items may only be obtained from DLA or GSA sources. This is particularly true of former Coast Guard, Navy or MSC ships. These items can be obtained by contacting the region LMO. When requesting DLA or GSA items, the following information will be required by the LMO to process the request:

- a. Vessel Name and shipping address
- b. Nomenclature of the part
- c. National or Federal Stock Number (NSN/FSN)
- d. Manufacturer
- e. Quantity required
- f. Unit of Issue

The LMO, working with MAR-614, will determine the availability of the item(s), and if funding permits, submit a requisition into the Federal Supply System (FSS). Items requisitioned from FSS are normally delivered to the region warehouse for onward shipment to the requesting vessel.

**4.6 Material Receipt**

**4.6.1 Spare Parts Purchased by the Ship Manager**

The Ship Manager is responsible for the proper inventory, receipt, inspection and handling of all spare parts purchased by the Ship Manager for the Government.<sup>11</sup> This includes the resolution of all shortages and overages as well as the management and proper return of non-conforming material.

**4.6.2 Stowing Spare Parts**

After a newly purchased item has been inspected, the Ship Manager must properly label the part, stow it in a spare parts box or drawer, and update PC-SAL within five (5) working days.<sup>12</sup> The Ship Manager must ensure that the receipt price is entered into PC-SAL.<sup>13</sup>

**4.6.3 Labels**

All MARAD spare parts will be labeled.<sup>14</sup> The label will contain the following information:

- a. The assigned barcode for the item
- b. Item name or description
- c. Part number (as called out by the vessel’s technical manual)
- d. Unit of issue

Additional information, such as manufacturer or storage location is optional.

**4.6.4 “Push” Material**

On many occasions MAR-614 will procure and ship spare parts and other specialized equipment (such as force protection gear) directly to RRF vessels. These items, also called “push” material, must be placed in a spare parts box or drawer, and PC-SAL updated within five (5) working days of receipt of the material.<sup>15</sup>

**4.7 Transferring Items**

**4.7.1 Transferring Items to Other RRF Vessels**

Spare parts and equipment may be transferred between RRF vessels as long as:

- a. Operational consent by the controlling regions involved has been given (See Table 4-1);
- b. The transfer is properly documented on a DD1149. (see Figure 4-1) Do not use a PTN.

	Within the Region	Among Different Regions
Equipment	Supervisory Marine Surveyor or SOMO	SOMO
Parts	Surveyor	Supervisory Marine Surveyor or SOMO

**Table 4-1:** Authority to transfer parts and equipment to other vessels.

<sup>11</sup> *Federal Acquisition Regulations (FAR)*, Subpart 45.502, Discrepancies Incident to Shipment.

<sup>12</sup> *Federal Acquisition Regulations (FAR)*, Subpart 45.506(a), Identification.

<sup>13</sup> *Federal Acquisition Regulations (FAR)*, Subpart 45.505, Records of Pricing Information.

<sup>14</sup> *Federal Acquisition Regulations (FAR)*, Subpart 45.506(a)(1), Identification.

<sup>15</sup> *Federal Acquisition Regulations (FAR)*, Subpart 45.506(a), Identification.



It is the responsibility of the transferring MARAD surveyor to obtain authority to remove spare parts from a vessel. (Note: The transfer of “*excess*” spare parts and equipment from RRF ships to region SBS warehouses is discussed in Chapter 7.)

### 4.7.2 Distribution of the DD1149

The transfer of spare parts and outfitting will be documented as follows:

- a. The donating vessel must prepare a DD1149 to accompany the item being transferred.
- b. Once the item has been received and inventoried, the receiving Ship Manager will sign the DD1149 and return the original copy to the donating ship.
- c. The original signed copy of the DD1149 will be retained by the Ship Manager onboard the donating ship for subsequent audit by the Government.
- d. Both vessels will properly document the transfer in PC-SAL.

## 4.8 Required Files

The Ship Manager must retain the following accountable records:

### 4.8.1 The Vessel’s PC-SAL Database

As an accountable record, PC-SAL must be “backed up” to a removable disk or external hard drive on a regular basis, but not less than once a week. During periods of increased activity, PC-SAL should be backed up more than once a week.

### 4.8.2 Surveys and MA-998As

The Chief Engineer of the vessel will retain a copy of all Surveys (DOT 4410) and MA-998As submitted to the region LMO.

### 4.8.3 Receipt and Shipping Documents File

The Ship Manager will retain a copy of all DD1149s, DD1348s, or other shipping documents **both initiated or received** by each vessel. This includes documents used to transfer or receive items from the DRMO.

### 4.8.4 Purchase Request File

The Chief Engineer will maintain a file of all outstanding Purchase Requests forwarded to the Port Engineer for procurement. Once the items listed on these purchase requests have been received, the completed purchase order will be removed from the Purchase Request File.

SHIPPING CONTAINER TALLY → 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

### REQUISITION AND INVOICE/SHIPPING DOCUMENT

Form Approved  
OMB No. 0704-0047  
Expire Date: 31, 2008

The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to: Paperwork Reduction Project (0704-0047), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display this burden estimate.

**PLEASE DO NOT RETURN YOUR FORM TO THIS ADDRESS. RETURN COMPLETED FORM TO THE ADDRESS IN ITEM 2.**

1. FROM: ISSUING OFFICE MARAD SBS Warehouse, South Atlantic Region 1540 Crossways Blvd., Ste G Chesapeake VA, 23320-2842		2. DEPARTMENT NUMBER 1	3. DEPARTMENT NAME 1
4. TO: SHIP/SHIP'S OFFICE MV CAPE KNOX Poland Ave. Wharf New Orleans, LA		5. DATE MATRIAL REQUESTED (YYYYMMDD) 2002-01-05	6. PROJECT
7. SHIP'S OFFICER Chief Engineer		8. SHIP/SHIP'S OFFICE	9. VOUCHER NUMBER & DATE (YYYYMMDD)
		10. NAME OF SHIPPER D. POWELL	11. DEL. OF LOGS NUMBER
		12. MODE OF SHIPMENT FedEx	13. DEL. OF LOGS NUMBER
		14. APPROVED BY (SIGNATURE OR PRINTED NAME) 2345243865	

ITEM NO.	FEDERAL STOCK NUMBER, DESCRIPTION, AND CODING OF MATERIEL AND/OR SERVICES	UNIT OF ISSUE	QUANTITY REQUESTED	SUPPLY ACTION	TYPE CODE (TABLE 2)	QUANTITY	UNIT PRICE	TOTAL QUANT
1	Bolt, Long Shank, PIN 23456	BK	3				25.67	\$77.01
2	Gear, Worm, PN 34521	EA	1				\$200.00	\$200.00
3								

15. DISTRIBUTION VIA MATS OR MATS CHANGEABLE TO:				17. SPECIAL HANDLING			
BY	TOTAL QUANTITY	TOTAL VALUE	DESCRIPTION	TOTAL QUANTITY	TOTAL VALUE	REMARKS	UNIT PRICE
1			J. Mesa	23.00	3.00	CONTAINERS RECEIVED EXCEPT AS NOTED	\$277.01
2			D. Powell			QUANTITIES RECEIVED EXCEPT AS NOTED	\$277.01
3			R. Young			POSTED	
TOTAL							

DD FORM 1149, JAN 1997 (EG) 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

Issuing Ship's Voucher Number

Shipper, normally the Chief Engineer

Original Purchase Price

Receiving Voucher Number

Fig. 4-1: Preparation of a DD1149

## Chapter 5: Accountable Property

### 5.0 Outfitting Material

In addition to installed equipment and spare parts, each RRF vessel uses a large number of other items necessary for the safe and effective operation of the vessel. These types of material are referred to collectively as "*Outfitting Material*." One of most highly visible categories of outfitting is "Accountable Property." The procedures for managing Accountable Property differ in many respects from those for spare parts, and are therefore addressed separately in this chapter.

### 5.1 Accountable Property

#### 5.1.1 Items to be Managed as Accountable Property

Outfitting items that are formally managed in PC-SAL are referred to as "Accountable Property." The terms "controlled material," "controlled equipment" and "high value items" are no longer used; all of these items are collectively referred to and managed as Accountable Property.

Accountable Property consists of:

- (a) All expendable and non-expendable equipment with an original acquisition price of greater than \$2,500.<sup>1</sup>
- (b) All "Sensitive Items" listed in Table 5-1 with an original acquisition cost of \$100.00 or more.

Note: Some force protection items are valued at less than \$100.00; however, these items are to be managed as a kit, which has a total value in excess of the \$100.00 threshold.

#### 5.1.2 Items Specifically Excluded from Accountable Property Records

The following items are excluded from Accountable Property because they are accounted for by other means, or are uneconomical to track using formal accountability records:

- (a) Consumable items

- (b) Equipment or fixtures bolted, attached or "hard-wired" to the vessel itself
- (c) Hawsers, mooring cables and lines
- (d) Lifeboats and Zodiac watercraft (please note that the Zodiac's outboard engines *are* Accountable Property, see Table 5-1)
- (e) Barges
- (f) Manifested cargo and cargo containers
- (g) Weapons and ammunition
- (h) Any spare part, special tool or outfitting item in the vessel's spare parts inventory and recorded in PC-SAL
- (i) Any item with an original purchase price of LESS than \$100.00.

Even if an item is listed in Table 5-1, no item with an original purchase price of less than \$100.00 will be managed as Accountable Property. *Ship Managers are not to add additional items with a purchase price of less than \$100.00 (such as low cost office equipment) to this accountable register.*

#### 5.1.3 Official Record of Accountable Property

The official record of the vessel's Accountable Property is PC-SAL and the vessel's historical data files contained in MLSS.

### 5.2 Custodial Responsibilities

#### 5.2.1 Property Custodians

The term "Property Custodian" refers to Ship Managers and the Chief Engineers of school ships that possess MARAD property. Property Custodians are responsible for the custody and security of all shipboard Outfitting Material.<sup>2</sup>

#### 5.2.2 Ship Manager Custodial Responsibilities

The Ship Manager Property Custodian will:

- (a) Maintain the Accountable Property database contained in the vessel's PC-SAL.
- (b) Conduct required inventories of Accountable Property on board the vessel.

<sup>1</sup> Department of Transportation Personal Property Bulletin PP 98-01, dated October 15, 1998.

<sup>2</sup> Maritime Administrative Order 630-7, dated 24 June 1996.



- (c) Supervise the receipt, protection, control, accountability, use, and distribution of all outfitting material.
- (d) Submit Surveys (DOT Form 4410) and Reports of Excess (Form MA-998A), as necessary.

### 5.2.3 Maritime Academy Custodial Responsibilities

The Maritime Academy Property Custodians will:

- (a) Maintain the Accountable Property database contained in the vessel's PC-SAL.
- (b) Conduct an annual inventory of all state and federal Accountable Property on board the vessel.
- (c) Supervise the receipt, protection, control, accountability, use, and distribution of all federally owned outfitting materials.
- (d) Submit Surveys (DOT Form 4410) and Reports of Excess (Form MA-998A), as necessary.

### 5.2.4 Maintenance of PC-SAL Accountable Property Database

Except as provided for in 5.2.6 below, the maintenance of the PC-SAL Accountable Property database is the responsibility of the Ship Manager or school ship Property Custodian.

### 5.2.5 New Accountable Property

Accountable Property that has been purchased by the Ship Manager for the Government or transferred from another Government activity will be documented in PC-SAL within two (2) working days of the item's receipt on board the vessel.

### 5.2.6 Removing Accountable Property

Ship Managers and school ship custodians will not delete any item of Accountable Property from the vessel's PC-SAL Accountable Property database. That responsibility is reserved for MARAD region logistics representatives.

**Ship Managers are not to delete any item from the vessel's PC-SAL Accountable Property database.**

### 5.2.7 Labeling of Government Property

An official label will be securely affixed to all Accountable Property<sup>3</sup> in the custody of a Ship Manager or Maritime Academy.<sup>4</sup> To ensure that state and federal property can be clearly distinguished, all state property on board RRF vessels will be marked in accordance with state property regulations.

MARAD Accountable Property labels will contain the following information:

- (a) The assigned barcode for the item
- (b) The phrase "Property of MARAD"

Other information, such as manufacturer, location, and a detailed description are optional.

## 5.3 Required Inventory of Accountable Property

### 5.3.1 Annual Inventory by Ship Managers

An inventory of all Accountable Property will be conducted annually by the Ship Manager within thirty days (30) of the anniversary of the Ship Manager's Notice to Proceed (NTP). This applies to ROS-4, ROS-5, RRF-10, RRF-20 and RRF-30 day vessels.

A signed statement that a physical inventory of Accountable Property was completed *along with a list of discrepancies*<sup>5</sup> must be forwarded to both the region SOMO and the Property Administrator (MAR-614).

During this inventory the Ship Manager will physically locate, sight, and count each item of Accountable Property listed in PC-SAL.

The Region will initiate a follow-up letter to the Ship Manager if certification from the Ship Manager is not received within thirty (30) days of the anniversary of the contract NTP.

<sup>3</sup> Federal Acquisition Regulations (FAR), Subpart 45.506(a)(1), Identification.

<sup>4</sup> Federal Acquisition Regulations (FAR) Subpart 45.506(a), Identification.

<sup>5</sup> Federal Acquisition Regulations (FAR) Subpart 45.508-2, Reporting results of inventories.



### 5.3.2 Return from Activation

The Ship Manager must conduct a physical inventory of all Accountable Property immediately following deactivation of a vessel. This is an additional requirement *beyond the required annual inventory*. A signed statement that a physical inventory of Accountable Property was completed along with a list of discrepancies must be forwarded to the region SOMO and the Property Administrator (MAR-614).<sup>5</sup> The region will initiate a follow-up letter to the Ship Manager if certification is not received within thirty (30) days of the deactivation. This requirement does not apply to school ships.

### 5.3.3 Annual Inventory by Maritime Academies

Maritime Academies will inventory *all state and federal property* held aboard Maritime Administration owned vessels at least once a year. A copy of this inventory will be forwarded to the region SOMO with a copy to the region LMO.

### 5.3.4 Reconciliation of Accountable Property Inventories

Physical inventories of Accountable Property will be compared to the official record in PC-SAL. An attempt will be made to reconcile all inventory differences by re-inventorying the material for which an overage or shortage was identified.

Shortages that cannot be reconciled will be reported on a DOT Survey Form 4410 within five (5) working days from the date the loss was discovered. (Guidelines for the Preparation the DOT Form 4410 are provided in Chapter 7.) *Under no circumstances will an Accountable Property record be deleted or removed from PC-SAL by the Ship Manager.* Overages will be added to PC-SAL with appropriate remarks.

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<sup>5</sup> Federal Acquisition Regulations (FAR) Subpart 45.508-2, Reporting results of inventories.



**Sensitive Items**

Aerial lifts, motorized (*also motorized platforms*)  
Barometers, aneroid and recording  
Binoculars  
Cameras (*all types*)  
Chronometers, Marine (*excludes common wall clocks*)  
Compasses (*including diving compasses*)  
CPUs (*not keyboards or mice*)  
Copy Machines (*all types*)  
Defibrillators, Automatic External  
DVD Players  
Fax Machines  
Forklifts  
Force Protection Gear (*as a complete set*)  
Gauges (*including scuba depth gauges*)  
Global Positioning Systems (*GPS*)  
Guns, line throwing (*only - not weapons*)  
Historical Artifacts (*such as brass navigational instruments*)  
Microscopes  
Monitors, computer and video  
Motors, Outboard  
PDAs (*Personal Digital Assistants*)  
Printers  
Radios, handheld (*Transceivers, handheld*)  
Radiological Survey and Monitoring Equipment  
Recorders, portable (*tape or wire*)  
Regulators (*scuba equipment*)  
Scuba Gear and Sets (*diving equipment, all types*)  
Sweepers, motorized  
Sextants (*all types*)  
Sights (*including night vision and hand-held*)  
Stadimeters  
Telephones, Cellular  
Telescopes (*Boresights*)  
Optical Equipment (*Telescopes, Monoscopes, Range Finders, etc.*)  
Televisions  
Timers, stop and ordnance  
Video Cassette Recorders (*VCRs*)  
Watches, pocket, comparing and navigation  
Watches, wrist (*conventional and underwater*)  
Welding Equipment, portable

**Table 5-1:** List of Sensitive Items

## Chapter 6: Configuration Management

### 6.0 Shipboard Configuration Management

The objective of shipboard configuration management is to maintain the accuracy of a vessel's installed equipment database so that spare parts necessary to support the vessel for 180 days can be obtained.

#### 6.1 Configuration Management Databases

##### 6.1.1 Requirement to Maintain the Vessel's Installed Equipment Databases

The Ship Manager, or Chief Engineer of a school ship, is required to update the installed equipment database contained in PC-SAL within five (5) working days<sup>1</sup> of the removal, modification or installation of shipboard equipment.

##### 6.1.2 Proposed Configuration Changes

To allow MARAD to review the logistic support impact of proposed configuration changes, the Ship Manager will complete a Configuration Change Proposal (MA-986) and forward it to the cognizant surveyor for action. A sample MA-986 is provided as Fig. 6-1.

**Contracts initiated by Ship Managers and MARAD surveyors for new shipboard equipment must include spare parts necessary to meet MARAD's 180-day sustainability requirement.**

##### 6.1.3 Requirement to Recommend Changes to the Spare Parts Support

To support MARAD's stated goal of 180-day sustainability, the Ship Manager will, as necessary, recommend the addition or deletion of spare parts to support equipment installed on the vessel. These recommendations will be forwarded on an Allowance Change Request (MA-984) to the region LMO. A

sample of an Allowance Change Request (ACR) is shown in Fig. 6-2.

##### 6.1.4 Procurement of New Spare Parts in Conjunction with the Installation of New Equipment

Contracts initiated by Ship Managers and MARAD surveyors for new equipment must include the spare parts necessary to meet MARAD's 180-day mission sustainability requirement.<sup>2</sup>

#### 6.2 Management of Shipboard Allowances

Spare parts held in the ship's inventory are based on a MAR-614 approved Ship's Allowance List or SAL<sup>3</sup>, which is the primary database provided in PC-SAL. Changes to these allowances normally result from the following:

- Observations and recommendations by the Chief Engineer.
- Parts usage information gathered from maintenance history.
- Changes in equipment configuration.
- Programmed efforts to standardize shipboard allowances.
- Other adjustments necessary to assure 180-day mission sustainability.

In many cases, the Ship Manager is free to adjust existing spare part allowances while other changes may require MAR-611/614 approval. *In either case, it is essential that all allowance changes be documented on an ACR so that the change can be posted in MLSS.* MAR-611/614 reserves the right to disapprove any ACR that would adversely affect the mission readiness of the vessel.

<sup>1</sup> Federal Acquisition Regulations (FAR) Subpart 45.506, Identification.

<sup>2</sup> Maritime Administration Policy Decision Memo 97-5, dated August 12, 1997.

<sup>3</sup> Maritime Administrative Order 630-7, dated June 24, 1996.



**6.2.1 Increases in Allowances that Do Not Require MARAD Approval**

The following allowance increases do not require prior approval from MAR-614:

- a. Parts with an acquisition cost of less than \$2,500.00, purchased locally with funds held at the region, do not require prior approval by MAR-611/614. *However, an ACR (Form MA-984) is required to document the increase or establish the new allowance in MLSS (see Table 6-1).*
- b. New spare parts purchased or provided as part of the installation of any new equipment automatically establish new allowances without prior approval; however, an ACR must be forwarded to MAR-611/614 to document the change in MLSS.
- c. When PC-SAL automatically adjusts an allowance (via usage) no ACR is required. (See the PC-SAL 4.0 User Guide.

Request	Action
Increase an allowance with a unit price of <\$2,500	Requires no prior approval from MAR-611/614; however, an ACR is required to document the change in MLSS.
Increase and allowance with a unit price of >\$2,500	Requires approval from MAR-611/614. Request this increase on an ACR submitted to the region LMO.
Decrease and allowance	Requires approval from MAR-611/614. Request this increase on an ACR submitted to the region LMO.

**Table 6-1:** Authorization to change allowances



 US Department of Transportation Maritime Administration		<input type="button" value="Clear Form"/> <input type="button" value="Save Form"/> <input type="button" value="Print Form"/>	
<b>Configuration Change Proposal</b>			
From: <input type="text"/> To: <input type="text"/> Via: <input type="text"/>		Ship Name: <input type="text"/>	Date of Request: <input type="text"/>
		Request Type: <input type="checkbox"/> Equipment removal <input type="checkbox"/> Equipment addition <input type="checkbox"/> Equipment changeout <input type="checkbox"/> Configuration change to existing equipment	
Equipment to be REMOVED (Nomenclature, Number, Location, and System Application Code)	Equipment to be ADDED (Nomenclature, Number, Location, and System Application Code)	<b>JUSTIFICATION</b> (Check all that are appropriate)	
<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Correction of error or deficiency <input type="checkbox"/> Parts support problems <input type="checkbox"/> Cost savings <input type="checkbox"/> Work stoppage/schedule problem <input type="checkbox"/> Technology upgrade <input type="checkbox"/> Operational requirements	<input type="checkbox"/> OTHER: <input type="text"/>
Describe (attach additional pages or supporting documentation if necessary): a) Requirements for accomplishing change b) Impact of the change c) Advantages and disadvantages to be realized <input type="text"/> <div style="text-align: right;">_____ Signature and Title</div>			
<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Other (Specify)	Remarks: <input type="text"/> <div style="text-align: right;">_____ Signature and Title</div>		
<small>Form MA-986 (3-92)</small>			

Figure 6-1: Config. Change Proposal (MA-986)





US Department of Transportation  
Maritime Administration

## Allowance Change Request

<b>From:</b> <span style="background-color: yellow; display: inline-block; width: 100%; height: 15px;"></span> <b>To:</b> <span style="background-color: yellow; display: inline-block; width: 100%; height: 15px;"></span> <b>Via:</b> <span style="background-color: yellow; display: inline-block; width: 100%; height: 15px;"></span>	<b>Ship Name:</b> <span style="background-color: yellow; display: inline-block; width: 100%; height: 15px;"></span>	<b>Date of Request:</b> <span style="background-color: yellow; display: inline-block; width: 100%; height: 15px;"></span>				
<b>Request Type:</b> <input type="checkbox"/> Allowance Increase <input type="checkbox"/> Item Addition <input type="checkbox"/> Item Currently On Board <input type="checkbox"/> Allowance Decrease <input type="checkbox"/> Item Deletion <input type="checkbox"/> Item Not Carried On Board						
Equipment Nomenclature and Number	Repair Part(s) Description, Manufacturer, Part Number	Unit of Issue	Unit Price	Present Quantity Allowed	Recommended Quantity	Extended Value of Change
						0.00
<b>Justification (Mandatory):</b> <div style="background-color: yellow; height: 40px; width: 100%;"></div>						
_____ Signature and Title						
<b>MAR-614 Action:</b> <input type="checkbox"/> Approved <input type="checkbox"/> Disapproved <input type="checkbox"/> Other (Specify)	<b>Remarks:</b> <div style="background-color: yellow; height: 30px; width: 100%;"></div>					
_____ Signature and Title						

Form MA-984 (3-92)

Figure 6-2: Allowance Change Request (MA-984)



**6.2.2 Increases in School Ship Allowances**

Spare parts purchased locally with school ship funds, or funds provided to Maritime Academies by MARAD, do not require prior approval by MAR-611/614. Similarly, new allowances are automatically established and approved, when a school ship purchases spare parts as part of the installation of new equipment. *However, in both of these instances an ACR (Form MA-984) must be submitted to document the increase or establishment of a new allowance in MLSS.*

**6.2.3 Increases in Allowances Funded by MAR-614**

Ship Managers or surveyors may request that MAR-614 "provision" a specific piece of equipment (i.e., fund an increase to an existing allowance, or establish a new allowance). If approved, MAR-614 will procure the spare part and have it shipped to the vessel. Procurement of spare parts in support of an ACR is dependent on available funding and the criticality of the system. All ACRs should be forwarded to the region LMO.

**Ship Managers or surveyors may request that MAR-614 provision a specific piece of equipment.**

**6.2.4 Decreases in Allowances**

Requests to decrease an allowance for installed equipment require the approval of MAR-611/614 and will be forwarded to the region LMO on an ACR.

**6.3 Equipment Mission Criticality**

Each system, equipment and component on board an RRF vessel has been assigned a Mission Criticality Code (MCC) to denote its importance to the mission of the vessel. MAR-614 also uses these codes to prioritize the procurement of centrally funded spare parts. MCCs range from 1 (least critical) to 4 (most critical). A complete list of Equipment Mission Criticality Codes is provided in Table 6-2.

Alternatives for Mission Accomplishment			Impact If Alternatives Fail
I	II	III	
3	4	4	Total loss of mobility
2	3	4	Severe Degradation of mobility or a total loss of a primary mission
1	2	3	Severe degradation of a primary mission
1	1	2	Total loss or severe degradation of a secondary mission
1	1	1	Minor mission impact

Notes:

Alternative I: Redundant systems, equipment or components available  
Alternative II: Alternatives (excluding redundancies) available.  
Alternatives III: Neither redundancies nor other alternatives available.

**Table 6-2:** Equipment Criticality Matrix

**6.4 Provisioning**

**6.4.1 Ship Managers are Responsible for Provisioning RRF Vessels**

It is the primary responsibility of the Ship Manager to identify and purchase spare parts to sustain RRF vessels for 180 days. Within the restrictions set forth in **6.2.1**, the Ship Manager will identify spare part allowances that need to be adjusted, enter the appropriate changes in PC-SAL, and request funding to procure the required spare parts.

**It is the primary responsibility of Ship Managers to identify and purchase spare parts to sustain RRF vessels for 180 days.**



### **6.4.2 MAR-614 Provisioning Packages**

To assist the vessel, MARAD may initiate a review of the spare parts support for a specific piece of equipment installed on an RRF vessel. This review, also called "provisioning," normally leads to the establishment of revised spare part allowances and the procurement of additional spare parts by MAR-614. However, before MAR-614 initiates the procurement a "provisioning package" will be prepared and forwarded to the vessel for review.

### **6.4.3 Review of Provisioning Packages**

The Ship Manager must review recommended allowances listed in MARAD provisioning packages.

# Chapter 7: Reporting Shipboard Excess

## 7.0 Management of Shipboard Excess

The following chapter discusses the management and reporting of Accountable Property, equipment and scrap metal no longer required by vessels in the RRF.

### 7.1 Reporting Serviceable Items

Serviceable (still usable) spare parts, outfitting material, and equipment that are no longer required onboard an RRF vessel are considered to be “excess.” To reduce fleet maintenance costs, these items are to be reported to the region LMO on an MA-998A for redistribution to Shore Based Spares, shipment to other RRF vessels, or disposal, as appropriate. An example of an MA-998A is provided as Fig. 7-1. *Please note that excess material is not to be sent to the region SBS warehouse without the prior approval of the region LMO.*

### 7.2 Reporting Unserviceable Items

Unserviceable items are also considered “excess material” and are to be reported to the region LMO for disposal. Where possible and economical, Ship Managers are to make every effort to conserve unserviceable or scrap material for reuse or resale by the General Services Administration (GSA). Table 7-1 provides guidance to assist the user in selecting the correct form to report excess material.

#### 7.2.1 Items Damaged by the Ship’s Crew

Equipment, spare parts, outfitting and Accountable Property that has been damaged or destroyed while in the custody of the Ship Manager or maritime academy must be reported to MARAD within five (5) working days on a Report of Survey DOT Form 4410. *(This requirement does not apply to normal “wear and tear.”)* Damaged or destroyed items will, where possible and safe, be held onsite until the region LMO provides disposition instructions.

Special care will be taken when preparing a Report of Survey. The Ship Manager or maritime academy must:

- a. Submit all survey forms promptly
- b. Ensure DOT Forms 4410 are legible;
- c. Provide a *detailed* description of how the loss or damage to Government property occurred.

A copy of DOT Form 4410 is provided as Fig. 7-2. Basic instructions for the preparation of a DOT Form 4410 are provided in Fig. 7-3. The completed original survey will be forwarded to the ship surveyor. A copy will be mailed to the Property Administrator (MAR-614).

#### 7.2.2 Unserviceable Accountable Property

Accountable Property that has become unserviceable due to “normal wear and tear” must be reported to the region LMO on an MA-998A for disposal.

Item to be Disposed	Form to be Prepared
Serviceable equipment, spare parts or Accountable Property.	Report to region LMO on an MA-998A.
Items that have been lost, damaged or destroyed. <i>(Excludes normal wear and tear)</i>	Report circumstances of loss or damage on DOT Form 4410.1.
Excess or worn Accountable Property	Report to region LMO on an MA-998A.
Recyclable metals or items with commercial resale value.	Report to region LMO on an MA-998A.
Non-recyclable items with no residual or commercial resale value.	None. Dispose of in a safe manner consistent with local, state and federal environmental protection regulations.

**Table 7-1:** Forms for reporting excess material.



### 7.2.3 Scrap Metal

Scrap metal that can be recycled must be accumulated and reported to the region LMO. *Unlike Accountable Property, a pallet is normally considered the minimum reportable quantity for scrap metal.* GSA maintains contracts with local scrap dealers in most geographic areas. These contracts allow the region LMO to request the pick-up of valuable metals directly from the pier. Unless the surveyor has determined that it is not economically feasible, Ship Managers must collect like scrap metal and report these items to the region LMO for disposal on an MA-998A.

The following metals are to be retained and reported as scrap:

- a. Gold
- b. Silver
- c. Aluminum
- d. Tin
- e. Steel
- f. Copper

### 7.2.4 Non-recyclable Items with Commercial Resale Value

Many non-recyclable items still possess commercial value and can be sold by GSA. Examples include unserviceable electronic, computer and xerographic equipment. Excess material that falls into this category will be reported to the region LMO on an MA-998A for disposal.

### 7.2.5 Non-recyclable Items with No Residual Commercial Resale Value

Unserviceable spare parts and equipment that have *no commercial resale or scrap value* do not need to be reported to the region LMO. They must, however, be disposed of in a safe manner consistent with local, state and federal environmental protection regulations.

## 7.3 Reporting Lost Government Property

All Accountable Property, and all spare parts and equipment with a original purchase price of greater than \$100.00, that is lost while in the custody of the Ship

Manager or maritime academy will be reported to MARAD on a DOT Form 4410.<sup>1</sup> The Report of Survey will be forwarded to MARAD within five (5) working days of the discovery of the loss.

## 7.4 Contracts to Include the Removal and Disposal of Obsolete Equipment and Spare Parts

When a subcontractor is replacing RRF equipment, the contract must include the removal and disposal of the obsolete equipment as a part of the contract. If the disposal of the excess equipment is not accomplished concurrent with the installation of the new equipment, then the item(s) must be reported to the region LMO for disposal.

## 7.5 Hazardous Material

The management and disposal of hazardous materials is not within the scope of this manual. When disposing of excess hazardous material please refer to existing MARAD, DOT and EPA hazardous materials management regulations. DO NOT send hazardous material to any MARAD SBS warehouse.

## 7.6 Use of Defense Reutilization and Marketing Office (DRMO)

RRF vessels are authorized to use Government DRMOs. However, Ship Managers are not to forward items to these activities without first obtaining approval from the region LMO. The region LMO and MAR-614 will assemble the required DRMO disposal documentation and forward it to the vessel.

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<sup>1</sup> *Federal Acquisition Regulations (FAR) Subpart 45.505 Records and reports of Government property.*



## 7.7 Sale, Donation or Loan of RRF Property

Except as provided for in **7.4**, the sale, donation, or loan of any piece of RRF property by the ship surveyor or Ship Manager is *not authorized*. The General Services Administration (GSA) is the only activity authorized to sell Government property. All requests to donate RRF property should be forwarded to the region LMO. The written approval of the Maritime Administrator, the Director of the Office of Ship Operations, or the Region Director must be obtained before any RRF property can be *loaned* to any commercial or state activity.<sup>2</sup>

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<sup>2</sup> *Maritime Administrative Order 330-11*, dated January 3, 1992.





## Excess Material Report

**Instructions**

**Part I: For Ship Manager/General Agent:**  
This form is used to report scrap metal, Accountable Property, or other excess items for disposal. Check only one block under "Report Type and Itemized List."

**Part II: Maritime Administration:**  
Surveyor signs and dates to completed form. In cases of loss, stolen, or destroyed items, use form DOT F 4410.1 and submit to region LMO.

---

**Part I: Ship Manager/General Agent**

Vessel Name \_\_\_\_\_ Date \_\_\_\_\_

Ship Manager \_\_\_\_\_ Owning Region  South Atlantic  Central  Western

**Report Type and Itemized List** BELOW SURVEY TYPES REQUIRE FORM DOT F 4410.1 (as per MAO 330-14)

Accountable Property  Scrap Metal

Unserviceable (Unusable) Excess or End of Service Life Items  Serviceable (Usable) Excess

Name	Manufacturer	Model Number	Serial Number	Barcode No.	Cost	Qty

**Details and Circumstances of Report (attach additional pages if necessary)**

\_\_\_\_\_  
Signature of Ship Manager Representative

\_\_\_\_\_  
Date

---

**Part II: Maritime Administration Action Only**

Region Surveyor \_\_\_\_\_  Approved  Disapproved

\_\_\_\_\_  \_\_\_\_\_

\_\_\_\_\_

Form MA-998A (5-02)

Figure 7-1: Report of Excess MA-998A.



 <b>REPORT OF SURVEY FOR LOST, DAMAGED, OR DESTROYED PERSONAL PROPERTY</b> <small>Office of the Secretary of Transportation</small> <i>(Submit a separate report for each category--lost, damaged, or destroyed)</i>		Date Prepared [Redacted]	Survey Case Number [Redacted]
Primary Organization Unit (Dept. Element) [Redacted]		Office or Station Reporting (Org. Symbol) [Redacted]	
		Location [Redacted]	
STOCK NUMBER AND DESCRIPTION		QUANTITY	UNIT PRICE
[Redacted]		[Redacted]	[Redacted]
[Redacted]		[Redacted]	[Redacted]
[Redacted]		[Redacted]	[Redacted]
			GRAND TOTAL \$ [Redacted]
<p>Explain the circumstances causing this report to be filed. Attach additional pages, statements, or exhibits as necessary.</p> <p>[Redacted]</p>			
<p>The information given above is true and correct to the best of my knowledge and belief.</p> <p>_____  <i>Signature of Property Custodian (or person preparing the report.)</i></p> <p>[Redacted]  <i>Typed Name, Title and Date</i></p>			
<p><b>SUPERVISOR'S STATEMENT.</b></p> <p><input type="checkbox"/> I have reviewed the information above and the supporting statement(s) and have nothing further to offer.</p> <p><input type="checkbox"/> I have an additional statement (attached).</p> <p>_____  <i>Signature of Supervisor</i></p> <p>[Redacted]  <i>Typed Name, Title and Date</i></p>			
<p><b>PROPERTY MANAGEMENT OFFICER'S STATEMENT.</b></p> <p>I have reviewed the information in this report; the description and pricing is correct; a survey report case number has been assigned and recorded; and the following actions have been taken to correct the circumstances reported above. (Attach pages as necessary).</p> <p>Referred to Survey Officer/Survey Board on [Redacted] (date).</p> <p>_____  <i>Signature</i></p> <p>[Redacted]  <i>Typed Name, Title and Date</i></p>			
Form DOT F 4410.1 (6-90)		Report of Survey for Lost, Damaged, or Destroyed Personal Property	

Figure 7-2: Report of Survey, DOT Form 4410.



### Basic Preparation of DOT Form 4410

The diagram illustrates the preparation of DOT Form 4410, titled "REPORT OF SURVEY FOR LOST, DAMAGED, OR DESTROYED PERSONAL PROPERTY". The form is annotated with several callout boxes:

- Name of vessel:** Points to the "Name of Vessel" field at the top right.
- Type: "MARAD, Dept. of Transportation.":** Points to the "Primary Organization (Use Only: 'MARAD, Dept. of Transportation.')
- Leave Blank. LMO will complete this block.:** Points to the "Quantity" and "Unit Price" columns in the table.
- Detailed, type written, explanation, describing the facts surrounding the loss, damage or destruction.:** Points to the large text area below the table.
- Original purchase price, not estimated current value.:** Points to the "Total Cost" column in the table.
- Signature of ship manager, normally the vessel's Chief Engineer:** Points to the "Signature of Property Custodian (or person preparing the report)" field.
- Signature of Vessel surveyor:** Points to the "Signature" field at the bottom.
- Signature of Region LMO:** Points to the "Signature" field at the bottom right.

The form includes a table with the following columns: STOCK NUMBER AND DESCRIPTION, QUANTITY, UNIT PRICE, and TOTAL COST. Below the table is a section for "Detailed, type written, explanation, describing the facts surrounding the loss, damage or destruction." and a section for "PROPERTY CUSTODIAN'S STATEMENT" with a signature line.

Figure 7-3: Preparation of the DOT Form 4410.

## Chapter 8: Ship Manager Turnover and Inventory Accuracy

### 8.0 Inventory Standards and Methodology

The inventory of repair parts on board an RRF vessel is a valuable national asset. The accuracy or “validity” of a vessel’s PC-SAL database is an indicator of the quality of that asset. This chapter discusses the inventory accuracy standards to be maintained by the ship manager and the methodology used in determining a vessel’s inventory accuracy.

### 8.1 Acceptance and Termination Inventories

#### 8.1.1 Acceptance Inventory

During the ship manager turnover, and after a formal “Notice to Proceed” (NTP) has been issued by the Maritime Administration, a survey of the vessel’s spare parts inventory and logistics database must be conducted. This survey, called a Logistics Inventory Validation (LIV), will consist of:

- A 100% inventory of the vessel’s Accountable Property;
- A statistically random sampling of ALL of the vessel’s spare parts contained in boxes, cabinets and drawers both sealed and unsealed;
- A statistically random sampling of the vessel’s drawings and technical documentation.

The size of the sample to be obtained will be determined by using Appendix L of this manual, or as determined by the Property Administrator. The results of the LIV will then be documented on an MA-1013A (see Figure 8-1) by the region LMO. The region will forward a copy of the MA-1013A to the Property Administrator.

#### 8.1.2 Termination Inventory

At the conclusion of the Ship Manager’s contract, another LIV will be conducted in accordance with FAR 45.508-1. The results of this LIV will then be documented on an MA-1013A by the region LMO. The region will forward a copy of the MA-1013A to the Property Administrator.

#### 8.1.3 Use of Previous Inventory Samples

Under no circumstances will the results of inventories gathered before the NTP (i.e., during a previous LMR) be

used in place of the contractually required sampling provided for in 8.1.1 and 8.1.2 above.

#### 8.1.4 Waving of Required Acceptance and Termination Inventories by the Property Administrator

In accordance with FAR 45.508-1, the required contract start-up and termination inventories cannot be waived without the approval of the Property Administrator of the Ship Manager’s contract.

### 8.2 Management of Shipboard Allowances

Beginning on the sixty-first day after the NTP, the ship manager must maintain an inventory validity of not less than 95% for spare parts stored in boxes, drawers and cabinets that have NOT BEEN SEALED BY THE GOVERNMENT. This would include storage locations that are currently open, secured with a padlock or sealed with a “temporary” seal applied by the ship manager. This standard applies to all Phase “O,” ROS-4, ROS-5, RRF-10, RRF-20 and RRF-30 vessels.

**The ship manager must maintain an inventory validity of *not less than 95%* for spare parts.**



### 8.3 Inventory Errors

An inventory error occurs when there exists a material difference between the PC-SAL database and the results of the physical inventory of a spare part line item. Material differences include:

- Storage location(s)
- Quantity
- Part number<sup>1</sup>
- Nomenclature or name

Regardless of the number of differences noted, a single line item can produce no more than one (1) error. (For additional examples, see Table 8-1.)

inventory accuracy *unless undocumented items are located during the inventory.*

### 8.4 Computing Inventory Accuracy

Inventory accuracy is calculated by dividing the total number of correct line items by the total number of line items inventoried (i.e., physically inspected) as shown below:

$$\% \text{ Accurate} = \frac{\# \text{ of Line Items Correct}}{\# \text{ of Line Items Counted}}$$

For example:

- One hundred (100) line items are sampled, and three (3) line items are found to have material differences. Therefore, the inventory accuracy of the sample would be 97% (97 divided by 100).
- One line item is inspected and is found to be correct. However, an extra line item is found in the location with the line item inspected. The accuracy rate would be 50% (one correct item divided by two inspected items).

The second example shows how undocumented items can cause errors.

#### 8.4.1 Line Items with a Balance of Zero

Frequently, line items with a zero balance will be assigned locations in PC-SAL. Line items with a zero balance will not be used in calculating a vessel's

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<sup>1</sup>The correct part number of an item is the part number called out by the vessel's technical manual.



Examples of Possible Inventory Errors				
PC-SAL Database		Inspection Findings (Characteristics Data from Label)		Error Count
<b>Nomenclature</b>	Bearing, Ball	<b>Nomenclature</b>	Bearing, Ball	Quantity Error: Counted as 1 Error
<b>Part Number</b>	6306 ZZ	<b>Part Number</b>	6306 ZZ	
<b>Manufacturer</b>	SKF	<b>Manufacturer</b>	SKF	Quantity Error: Counted as 1 Error
<b>Location</b>	EM-33	<b>Location</b>	EM-33	
<b>Quantity</b>	3	<b>Quantity</b>	2 ←	
<b>Nomenclature</b>	Bearing, Ball	<b>Nomenclature</b>	<i>Part Not Found</i>	Quantity/Location Error: Counted as 1 Error
<b>Part Number</b>	6306 ZZ	<b>Part Number</b>		
<b>Manufacturer</b>	SKF	<b>Manufacturer</b>		Quantity/Location Error: Counted as 1 Error
<b>Location</b>	EM-33	<b>Location</b>		
<b>Quantity</b>	3	<b>Quantity</b>	0 ←	
<b>Nomenclature</b>	Bearing, Ball	<b>Nomenclature</b>	Wheel ←	Nomenclature and Quantity Error: Counted as 1 Error
<b>Part Number</b>	6306 ZZ	<b>Part Number</b>	6306 ZZ	
<b>Manufacturer</b>	SKF	<b>Manufacturer</b>	SKF	Nomenclature and Quantity Error: Counted as 1 Error
<b>Location</b>	EM-33	<b>Location</b>	EM-33	
<b>Quantity</b>	3	<b>Quantity</b>	4 ←	
<b>Nomenclature</b>		<b>Nomenclature</b>	Bearing, Ball	Location Error: Counted as 1 Error
<b>Part Number</b>	<i>Item Not Listed in PC-SAL</i>	<b>Part Number</b>	6306 ZZ	
<b>Manufacturer</b>		<b>Manufacturer</b>	SKF	Location Error: Counted as 1 Error
<b>Location</b>		<b>Location</b>	EM-33	
<b>Quantity</b>		<b>Quantity</b>	3 ←	
<b>Nomenclature</b>	Bearing, Ball	<b>Nomenclature</b>	Bearing, Ball	Quantity Error: Counted as 1 Error
<b>Part Number</b>	6306 ZZ	<b>Part Number</b>	6306 ZZ ←	
<b>Manufacturer</b>	SKF	<b>Manufacturer</b>	SKF	Quantity Error: Counted as 1 Error
<b>Location</b>	EM-33	<b>Location</b>	EM-33	
<b>Quantity</b>	3	<b>Quantity</b>	3	

Table 8-1: Examples of possible inventory errors



### Logistics Inventory Validation Report

To be completed within 60 days after notice to proceed

#### Instructions

This form shall be used to document the condition of RRF vessels when custody is transferred. The form will be completed *jointly* by representatives of the Maritime Administration (MARAD) and the Ship Manager who is assuming or transferring custody. All blocks on the form will be completed. If a block is not applicable, enter "N/A" in the block. Enter the date(s) of the validation on each page.

Both the MARAD representative and the Ship Manager's senior representative must sign the form on page 4. When different sections of the validation are conducted by different representatives, the responsible representative will sign his or her name in the "comments" block for the section.

If space for comments is insufficient, continue comments in section VII (Overall acceptance of Logistic Condition of Vessel) on page 4, or attach a separate sheet of paper.

#### Part I: General Information

MARAD Contract Number	Vessel Name	Date
<input type="text"/>	<input type="text"/>	<input type="text"/>
Ship Manager	Owning Region:	
<input type="text"/>	<input type="checkbox"/> South Atlantic <input type="checkbox"/> Central <input type="checkbox"/> Western	
Is a designated PC-SAL computer on board?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Government-Furnished Equipment (GFE) <input type="checkbox"/> Contractor-Furnished Equipment (CFE)
Is the current PC-SAL program installed on board?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Version & Date: <input type="text"/>
Is a copy of the PC-SAL User Guide on board?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Release date: <input type="text"/>
Have technical manuals been inventoried and indexed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date inventoried: <input type="text"/>
Have blueprints and vendor plans been inventoried and indexed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date of Inventory/index: <input type="text"/>
Is the RRF Logistics Management Manual on board?	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date of latest change: <input type="text"/>

#### Part II: Spare Parts Inventory

Number of parts inventoried:	<input type="text"/>	MARAD Comments: <input type="text"/>
Number of quantity discrepancies:	<input type="text"/>	
Inventory Validity (%):	<input type="text"/>	

Ship Manager's Comments:

Figure 8-1: MA-1013A, page 1 of 4



Vessel Name <input type="text"/>		Date <input type="text"/>
<b>Part III: Accountable Property Inventory</b>		
Number of Accountable Property items inventoried: <input type="text"/>	MARAD Comments:	
<input type="checkbox"/> Accountable Property database has been reconciled:		
<input type="checkbox"/> Accountable Property Inventory is attached.		
Ship Manager's Comments:		
Deck department list provided? <input type="checkbox"/> Yes <input type="checkbox"/> No	MARAD Comments:	
Steward department list provided? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Engine department list provided? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Availability of Outfitting: <input type="checkbox"/> <25% <input type="checkbox"/> 25-50% <input type="checkbox"/> 50-75% <input type="checkbox"/> 75-100%		
Ship Manager's Comments:		

Figure 8-1: MA-1013A, page 2 of 4



Vessel Name <input type="text"/>		Date <input type="text"/>	
<b>Part V: Technical Documentation</b>			
<input type="checkbox"/> Technical Manual Sample (%): <input type="text"/>	MARAD Comments: <input type="text"/>		
<input type="checkbox"/> Drawing Sample (%): <input type="text"/>			
Ship Manager's Comments: <input type="text"/>			
<b>Part VI: Security of Government-Furnished Property (GFP)</b>			
All storerooms, cages, spare parts boxes, etc. are locked, sealed, or otherwise secured, except as noted below. Identify any spare part boxes, lockers, or storerooms that cannot be properly secured at the time of vessel turnover.			
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
MARAD Comments: <input type="text"/>			
Ship Manager's Comments: <input type="text"/>			
Form MA-1013A (6-04) <span style="float: right;">Page 3 of 4</span>			

Figure 8-1: MA-1013A, page 3 of 4



Vessel Name		Date	
<b>Part VII: Overall Acceptance of Logistic Condition of Vessel</b>			
MARAD Comments:			
Ship Manager's Comments:			
Personal Property Transferred by <b>MARAD Representative:</b>		Personal Property Accepted by <b>Ship Manager's Representative:</b>	
<hr/>		<hr/>	
Print Name		Print Name	
<hr/>		<hr/>	
Title		Title	
<hr/>		<hr/>	
Signature & Date		Signature & Date	
<hr/>		<hr/>	
Form MA-1013A (6-04)		Page 4 of 4	

Figure 8-1: MA-1013A, page 4 of 4

## Chapter 9: MCDS and OPDS

### 9.0 Specialized Outfitting

The following chapter discusses two types of specialized outfitting managed by the RRF: MCDS, which is used to transfer cargo between ships; and OPDS, which transfers petroleum products to units on the shore. The unique outfitting items that support these systems are managed differently from other RRF property.

#### 9.1 Modular Cargo Delivery System (MCDS)

The purpose of the Modular Cargo Delivery System (MCDS) is to enable RRF vessels to participate in an underway replenishment (UNREP). This replenishment can occur by means of a highline that connects the MCDS vessel with another vessel, or by helicopter (called VERTREP). This section deals with the supply management responsibilities for this specialized equipment, spare parts and outfitting.

The following items make up the MCDS system:

- a. Installed MCDS Equipment
- b. MCDS Spare Parts
- c. Underway Replenishment (UNREP) Locker Outfitting
- d. Helicopter Crash/Rescue Outfitting
- e. CONREP Material Handling Equipment (MHE)/UNREP Ordinance Handling Equipment (OHE).

Currently the following ships are MCDS capable: *CAPE GIBSON*, *CAPE GIRARDEAU*, *CAPE JACOB*, *CAPE JOHNSON*, and *CAPE JUBY*.

##### 9.1.1 MCDS Organizational Support Responsibilities

The supply management responsibilities for MCDS material are shared among the Chief Engineer, the Chief Mate and, to a limited extent, the US Navy (when em-

barked). To allow better management of their assigned equipment, outfitting and spare parts, the Chief Engineer, and the Chief Mate have each been given a separate PC-SAL.<sup>1</sup>

##### 9.1.2 Chief Engineer

The Chief Engineer is responsible for maintaining the configuration of MCDS equipment, and the accountability of MCDS engineering spare parts (i.e., non-outfitting items).

##### 9.1.3 Chief Mate

The Chief Mate is responsible for maintaining the accountability of MCDS outfitting. When a Navy CART Team is deployed with the vessel, the CART Team will be given access to all UNREP, HELO Crash/Rescue, and CONREP outfitting items. Following the exercise the Chief Mate will document in PC-SAL any items that were lost, damaged, destroyed, or consumed by the Navy during the evolution.

##### 9.1.4 Separate Storage

To avoid mixing databases, the two inventories will be stored in separate spare parts boxes or cabinet drawers. Under no circumstances will HM&E spare parts, managed by the Chief Engineer, be stored in the same box or cabinet drawer with MCDS outfitting items managed by the Chief Mate.

### 9.2 Off-Shore Petroleum Discharge System (OPDS)

The Off-Shore Petroleum Discharge System (OPDS) gives the RRF the capability to pump petroleum products and other liquids from an RRF vessel to ground forces on the shore.

The following items make up the OPDS system:

- a. Installed OPDS Equipment
- b. OPDS Spare Parts

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<sup>1</sup> *Maritime Administration Policy Decision Memo 01-1*, dated July 12, 2001.



- c. OPDS Outfitting
- d. OUB Outfitting
- e. OUB Spare Parts

Currently the following RRF ships have OPDS capabilities: *CHESAPEAKE*, *MT. WASHINGTON*, *PETERSBURG* and *POTOMAC*.

### **9.2.1 OPDS Organizational Support Responsibilities**

The day-to-day shipboard supply management responsibilities for OPDS equipment, outfitting and spare parts are shared among the Chief Engineer, the Chief Mate and, when embarked, the US Navy SEABEES (see Appendices M and N). The Chief Engineer and the Chief Mate each have been given a separate PC-SAL to allow them to independently manage their assigned equipment, outfitting material and spare parts.

### **9.2.2 Chief Engineer**

The Chief Engineer is responsible for maintaining the configuration of OPDS equipment, and the accountability of OPDS engineering spare parts (i.e., non-outfitting items).

### **9.2.3 Chief Mate**

The Chief Mate is responsible for maintaining the accountability of OPDS outfitting. During an exercise when a Navy Seabee Detachment is deployed with the vessel, the SEABEES will be given access to all OPDS Outfitting items. Afterwards the Chief Mate will document, in PC-SAL, any items that were lost, damaged, destroyed, or consumed by the Navy.

### **9.2.4 Separate Storage**

To avoid mixing databases, the two inventories will be stored in separate spare parts boxes or cabinet drawers. Under no circumstances will HM&E spare parts, managed by the Chief Engineer, be stored in the same box or cabinet drawer with OPDS outfitting items managed by the Chief Mate.

## Appendix A: Glossary of Logistics Management Terms

**Accountable Property** Personal property with a value of \$2,500 or more and sensitive items listed in Table 6-1. Accountable Property is to be formally tracked in PC-SAL by the ship manager or the school ship. The term “accountable property” replaces the terms high value, control material and controlled equipage.

**Activity Phase** A formal designation applied by MARAD to RRF ships that indicates their current assigned operational status.

**Allowance Item** This term refers to items that appear in an authorized allowance document (i.e. SAL, BAL, or COSAL) with an allowed quantity of 1 or more.

**Artifact** An Item of value with unique or historic characteristics, such as engine order telegraphs, bells, wheels, and selected works of art; other marine related items of value that may be commercially marketable, such as clocks, sextants, and other navigational aids; or items of considerable value such as silver.

**Assembly** A number of parts or subassemblies, or any combination thereof, joined together to perform a specific function and are capable of disassembly. The distinction between an assembly and a subassembly is made by individual applications, i.e., an assembly in one instance may be a subassembly in another when it forms a portion of a higher level assembly.

**Builder's Allowance List (BAL)** The BAL is a document produced by the original builder of a ship that lists the equipment and components installed in the ship to perform its operational mission; the spare parts and special tools required for their operation, overhaul and repair; and allowance quantities. It is used only when a Shipboard Allowance List (SAL) is not available.

**Configuration Management** The management practices and procedures that include Configuration

Identification, Configuration Change Control, Configuration Status Accounting, and provisioning.

**Configuration Record** The official repository of configuration data for the RRF. The term also refers to the individual data record for a configuration item of equipment/equipage.

**Configuration** The functional and physical characteristics of material as described in technical documents and achieved in a product.

**Configuration Identification** The selection of the documents, the documents, the data contained in the documents, supply and catalog identifiers, and the labeling affixed to the item. The documents identify and define the item's functional and physical characteristics in the form of specifications, drawings, associated lists, logic diagrams, flow charts, technical manuals, interface control documents, test and evaluation plans and reports, and documents referenced therein. The baseline, plus approved changes from that baseline, constitutes the current configuration identification.

**Configuration Baseline** A configuration identification document or a set of such documents formally designated by the Government and fixed at a specific time. The configuration baseline, plus approved changes from that baseline, constitutes the current configuration identification.

**Configuration Change** A general term that signifies that the configuration of an item has been or will be changed through the configuration control process. It is the product of an approved change proposal or request for deviation or waiver that affects the configuration of an item.

**Configuration Control** The systematic justification, preparation, submission, coordination, evaluation, approval, or disapproval of a proposed change and the implementation of a configuration change after



formal establishment of an item's configuration identification.

**Controlled Equipage** - see "Accountable Property."

**Consumables** Consumables include those articles, commodities and supplies required in the maintenance and operation of the ship and the living and berthing of passengers, officers and crew, including

- articles and commodities that are consumed in their initial use
- articles and commodities whose term of usage or life is so short that after initial use, such items can not be recovered for re-issue, or are practically valueless for sale or transfer; and
- articles and commodities of general use which after installation, lose their identity and become part of a system or a part of a larger piece of equipment.

**Coordinated Shipboard Allowance List** The COSAL is a document produced by the U.S. Navy that lists the equipment and components installed in a ship to perform its operational mission, the spare parts and special tools required for their operation, overhaul and repair, and allowance quantities. It is used only when a SAL is not available.

**Deficiency** This term, usually used as a plural "deficiencies," refers to items whose on-hand quantity is less than the allowance quantity established for the item. It is usually applied to spare parts but can be used for other items as well.

**Equipage** This term refers to those non-installed and relatively durable items that are located in operating spaces or other designated areas to support recurring operational, maintenance, or administrative functions, or to provide for the health, comfort, or safety of the crew. Equipage does not encompass installed mechanical, electrical, or electronic equipment,

components, or systems. Also see "Accountable Property."

**Equipment** The term "Equipment" refers to any functional unit of hull, mechanical, electrical, or electronic type material that is operated singly or as a component of a system and which appears in the SAL Equipment Index.

**Expendables** Those articles that are portable, semi-portable, and detachable and are used in the normal day-to-day operation and maintenance of the ship. Such items are subject to casual or gradual deterioration and replacement, but are not readily consumed by usage and are not subject to economical repair. Examples include: hawsers, towing and mooring wire cables, hand tools and certain portable power tools, certain inexpensive test equipment, shackles, slings, cargo securing gear, linens, silverware, crockery, draperies and curtains, desks, chairs, etc.

**Form, Fit, and Function** A collective term that describes the configuration comprising the physical and functional characteristics of an item as an entity. The description does not include any characteristics or details of the internal parts making up the item.

*Form* refers to a defined configuration for satisfying mission needs.

*Fit* refers to the ability for an item to interface with or be an integral part of another item.

*Function* refers to the manner in which an item performs its mission, e.g., a vessel that is designed to carry containerized cargo.

**General Agent** Party to a General Agency (Services) Agreement. References to Ship Manager throughout this manual include General Agent.

**High-Value Items** Also see "Accountable Property."

**Insurance Item** Equipment normally stored in Shore-based Spares, that is critical for RRF readiness



and that is not normally or readily available from commercial sources (open market).

**Inventory Accuracy** The number of correct inventory records divided by the total number of line items inventoried expressed as a percentage.

**Non-expendables** Those articles and equipage that are required for the maintenance and operation of the ship but are subject to special controls or to economical repair when no longer serviceable, rather than being disposed of and replaced. Included in this category is Controlled Equipage items such as binoculars, chronometers, sextants, etc. Other examples of nonexpendable outfit items include forklift trucks or other self-propelled Material Handling Equipment (MHE), certain communications equipment, certain highly technical test equipment, etc.

**Not-carried Items** This term refers to items that do not appear in an authorized allowance list (SAL, BAL, or COSAL).

**Not in Stock Items** This term refers to allowance items that have an onboard stock balance of zero.

**Outfitting Material** This term refers to all non-installed equipment and supplies, less the spare parts identified in the SAL. Outfit items include, but are not limited to maintenance and mission essential material and all items required by the U.S. Coast Guard and the American Bureau of Shipping (ABS), and any other regulatory body.

**Projected Supply Effectiveness** The percentage of line items within the total number of line items, which have no deficiencies in quantity.

**Repairables** Components, modules, assemblies, subassemblies or equipment that can be economically restored to perform their required functions by corrective maintenance.

**Ship Manager** Party to a Ship Manager Contract.

**Shipboard Allowance List (SAL)** The SAL is the authoritative document aboard RRF ships that lists the equipment and components installed in a ship to perform its operational mission and the allowed spare parts and special tools required for their operation, overhaul and repair. The SAL has now been automated and included as the primary database of PC-SAL.

**Spares** This term refers to any item or items, including modules and consumable-type materials that have an equipment application and which appear in a Shipboard Allowance List (SAL).

**Spare Parts** This term refers to any item or items, including modules and consumable-type materials that have an equipment application and which appear in a Shipboard Allowance List (SAL). In this manual, the terms "Spares," "Repair Parts," and "Spares and Repair Parts" are used interchangeably.

**Stock** This term refers to spare parts located in shipboard storage (as distinct from parts installed in equipment).

**Validation** The process of determining (or verifying) the physical characteristics of an equipment configuration item for the purpose of configuration identification.

## Appendix B: Acronyms

<b>AAC</b> Activity Address Code	<b>LMO</b> Logistics Management Officer
<b>ABS</b> American Bureau of Shipping	<b>MAO</b> Maritime Administrative Order
<b>ACOTR</b> Assistant Contracting Officer's Technical Representative	<b>MARAD</b> Maritime Administration
<b>ACR</b> Allowance Change Request	<b>MCDS</b> Modular Cargo Delivery Station
<b>AEL</b> Allowance Equipage List	<b>MEI</b> Master Equipment Index
<b>APL</b> Allowance Parts List	<b>MHE</b> Material Handling Equipment
<b>APO</b> Accountable Property Officer	<b>MICN</b> MARAD Item Control Number
<b>BAL</b> Builder's Allowance List	<b>MILSTRIP</b> Military Standard Requisitioning and Issue Procedures
<b>CAGE</b> Commercial and Government Entity	<b>MIS</b> Management Information System
<b>CBD</b> Chemical Biological Defense	<b>MLSS</b> MARAD Logistics Support System
<b>CCP</b> Configuration Change Proposal	<b>MRM</b> MARAD Reutilization Material
<b>CFP</b> Contractor-Furnished Property	<b>MRU</b> Minimum Replacement Unit
<b>CFR</b> Code of Federal Regulations	<b>MSC</b> Military Sealift Command
<b>COSAL</b> Coordinated Shipboard Allowance List	<b>NDRF</b> National Defense Reserve Fleet
<b>COTR</b> Contracting Officer's Technical Representative	<b>NIIN</b> National Item Identification Number
<b>CRASP</b> Centralized Requisitioning and Screening Program	<b>NSN</b> National Stock Number
<b>DAASO</b> Defense Automatic Addressing System Office	<b>OPDS</b> Offshore Petroleum Discharge System
<b>DAMES</b> Defense Automated Message Exchange System	<b>PC-SAL</b> PC Shipboard Allowance List
<b>DLA</b> Defense Logistics Agency	<b>PHS&amp;T</b> Packaging, Handling, Storage, and Transportation
<b>DODAAC</b> Department of Defense Activity Address Code	<b>PTN</b> Property Transfer Notice
<b>DOT</b> Department of Transportation	<b>QA</b> Quality Assurance
<b>ECSMIS</b> Equipment Configuration and Spare Parts Management Information System	<b>RECSMIS</b> Remote ECSMIS
<b>EGC</b> Equipment Group Code	<b>ROS</b> Reduced Operating Status
<b>FAR</b> Federal Acquisition Regulations	<b>RRF</b> Ready Reserve Force
<b>FCC</b> Federal Communications Commission	<b>SAC</b> System Application Code
<b>FEDSTRIP</b> Federal Standard Requisitioning and Issue Procedures	<b>SAL</b> Shipboard Allowance List
<b>FMR</b> Federal Management Regulations	<b>SBS</b> Shore-based Spares System
<b>FSC</b> Federal Supply Classification	<b>SOLAS</b> International Convention for the Safety of Life at Sea
<b>FSCM</b> Federal Supply Code for Manufacturers	<b>SOMO</b> Ship Operations and Maintenance Officer
<b>GFM</b> Government Furnished Material	<b>SOW</b> Statement of Work
<b>GSA</b> General Services Administration	<b>TAR</b> Transportation Acquisition Regulations
<b>HM&amp;E</b> Hull, Mechanical, and Electrical	<b>TD&amp;E</b> Tear Down and Evaluation
<b>IOL</b> Initial Outfitting List	<b>UI</b> Unit of Issue
	<b>USCG</b> United States Coast Guard
	<b>USN</b> United States Navy
	<b>USNS</b> United States Naval Ship

## Appendix C: RRF Logistics Forms

The following forms are used by MARAD to support and maintain the logistics system of vessels in the RRF:\*

<u>Form Number</u>	<u>Name</u>
MA-973 (7-02)	Inventory Transaction Report**
MA-983 (3-92)	Equipment Validation Aid **
MA-986 (3-92)	Configuration Change Proposal
MA-984 (8-02)	Allowance Change Request
MA-997	Inventory Sheet for Controlled Material**
MA-998A (5-02)	Excess Material Report
MA-1013A (6-0	Logistics Inventory Validation Report
DOT Form 4410.1 (6-90)	Report of Survey for Lost Damaged or Destroyed Personal Property
DD Form 1149 (1-97)	Requisition and Invoice/Shipping Document

\*A copy of each of these forms is provided at the back of this manual.

\*\* **Only for use by ships without an active PC-SAL.**

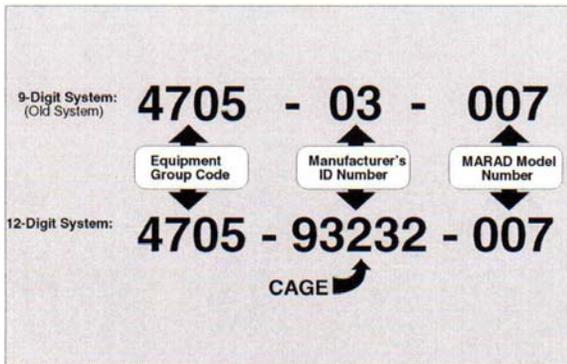
## Appendix D: MARAD Equipment Numbering System

The following material identification system will be used to classify MARAD outfitting, spare parts and equipment.<sup>1</sup> The paragraphs and illustrations that follow provide an overview and ready reference for these systems.

### Equipment Numbering System

Every equipment within the RRF has been assigned either a nine- or twelve-digit equipment number. Twelve-digit numbering reflects a newer system, which is described below. Both nine- and twelve-digit equipment numbers are assigned so as to identify a *specific* equipment within a service application by manufacturer. Figure A-1 illustrates

**Figure D-1: Equipment Numbering System**



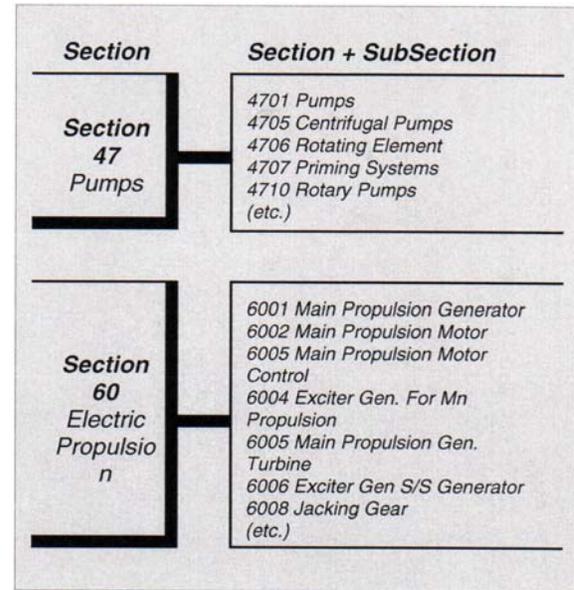
the structure of equipment numbers of both the nine-digit and twelve-digit type.

#### The Equipment Group Code (EGC)

The first four (4) digits of the equipment number identify a *type* of equipment. The first two (2) digits (the *Section*) identify either a major piece of equipment onboard a vessel (i.e., Electric Propulsion), or a general type of equipment such as "Pumps." The second two (2) digits (the *Subsection*) represent a component or subcategory of equipment type within the major item (see: Figure A-2). The *Section* and *Subsection* together are collectively referred to as the *Equipment Group Code* (EGC).

#### Equipment Manufacturer

Two systems have been used for denoting the equipment manufacturer. The twelve-digit system is replacing the nine-digit system throughout the RRF.



**Figure D-2: Equipment Group Code**

#### Nine-Digit System

Under the old nine-digit equipment numbering system, equipment manufacturers are represented by a *two-digit* manufacturer's code occupying the fifth and sixth positions of the equipment number. This two-digit number is sequentially assigned within an equipment subsection. The codes do not uniquely identify a manufacturer within the RRF. In other words, two (2) different equipment with the same manufacturer's code are not necessarily (or even likely to be) manufactured by the same company. MARAD personnel must continue to remain familiar with this system, since a number of RRF vessels have equipment that is marked and documented in this manner.

#### Twelve-Digit System

The new system of equipment numbering replaces the two-digit code with a five-digit Commercial and Government Entity (CAGE) code. The code occupies the fifth through ninth character positions of the equipment number (the CAGE was formerly referred to as the Federal Supply Code for Manufacturers or FSCM). CAGEs are listed in the Cataloging

<sup>1</sup> DOT Order 4420.5 Management of Material Inventories, dated 13 June 1978.



Handbook H4/H8 produced by the Defense Logistics Services Center (DLSC).

Some manufacturers have more than one CAGE assigned. The different CAGEs represent a company's various divisions (i.e., plant locations, etc.). In all cases, the company's primary CAGE will be the only one used. When the manufacturer of an equipment cannot be identified, MAR-614 will assign a five-digit, pseudo-CAGE code consisting of the letter M followed by four digits (i.e., M0001).

### Equipment Model Number

The last three (3) digits of the equipment number represent the equipment *model number* under both numbering systems. The *model number* is an arbitrary, sequentially-assigned number that is used to differentiate between similar (but not identical) items of equipment made by the same manufacturer. For example: If there are two (2) different models of electrical generators manufactured by General Electric aboard RRF vessels, the *model number* 001 would be assigned to one of the generators, and *model number* 002 would be assigned to the other. The *model number* is used to distinguish different models of equipment from each other; it is *not* the manufacturer's actual model number for the equipment.

### Part Numbers

Every manufacturer employs different part numbering scheme for its own products. ECSMIS contains many items with almost identical descriptions. The part number helps to ensure that the correct item will be selected. It is not necessary to understand the logic behind the manufacturer's choice of part number. All that is required is to be able to use the number that *uniquely* identifies a specific part.

When using part numbers to identify material, it is important to pay attention to each number, letter, space and dash which may be present. For example: "A-934" is not the same as "A/934" or "A 934." A mistaken dash or space may result in the incorrect selection of a part. Automated systems (i.e., ECSMIS) will allow the user to select alpha-numeric,

and thereby recognize a number even if it is one character off.

Different manufacturers frequently use the same part numbers. For example: Part number "600-5" might refer to a diode for a manufacturer of electronic equipment, while the same part number could be used by a different manufacturer for a gasket. To be absolutely certain that a part is correctly identified, it is necessary to specify the manufacturer in addition to the part number. The manufacturer is normally identified by its five-digit CAGE code.

### National Stock Numbers

National Stock Numbers (NSN) have a 13-digit (not including dashes) standard numbering system used throughout the Federal Supply System to provide a uniform material identification system (see: Figure A-3). Within the RRF, NSNs provide a secondary means of identifying material. All RRF vessels that were formerly operated by the Navy or the MSC contain National Stock-Numbered items. If required, NSNs can be cross-referenced to part numbers and manufacturers using the Master Cross Reference List (MCRL), which is published on CD-ROM by DLSC.

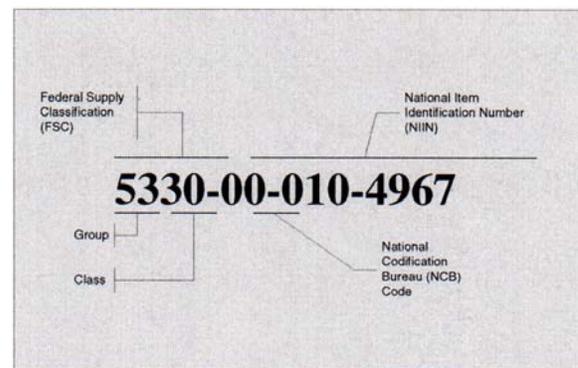


Figure D-3: National Stock Number

An NSN contains *digits only* (i.e., no letters) and is composed of the following elements:

#### Federal Supply Classification (FSC)

The FSC is designed to permit the classification of all items of supply used by the Federal Government. Each item of supply will be classified in one, and only one four-digit FSC. The first two (2) digits



denote the *group*, or major subdivision of commodities; the last two (2) digits denote the *class* or subdivision of commodities within a group (see: Figure A-4). As presently established, the FSC consists of 76 *groups* and approximately 600 *classes*. The number of *classes* within each *group* varies. Each *class* covers a particular area of commodities in accordance with their physical or performance characteristics, or based on the fact that the items in the *class* are usually ordered or issued together.

**National Item Identification Number (NIIN)**

The National Item Identification Number (NIIN) constitutes the remaining nine (9) digits of an NSN. It consists of a two-digit National Codification Bureau (NCB) code (usually "00" or "01"), plus seven (7) additional digits that uniquely identify and differentiate each item in the Federal Supply Catalog. Most catalogs within the Federal Supply System list stock numbers in NIIN rather than NSN sequence.

**Local Stock Numbers**

In order to take advantage of the standard stock-numbering system used for NSNs, many agencies have assigned local stock numbers that follow the 13-digit format of an NSN. Until recently, MARAD used local stock numbers to identify and manage Shore-Based Spares (SBS). Since local stock numbers are not recognized in Federal Supply Catalogs, they are of limited use for identifying and obtaining spare parts.

<b>Group</b>	<b>Group &amp; Class</b>
<b>Group 53</b> Hardware and abrasives; washers	5305 - Screws
	5306 - Bolts
	5307 - Studs
	5310 - Nuts
	5320 - Rivets
<b>Group 48</b> Valves	4810 - Valve, solenoid
	4820 - Valve, angle
<b>Group 40</b> Rope, cable, chain, and fittings	4010 - Wire rope, steel
	4020 - Rope, fibrous
	4030 - Hook, guy

**Figure D-4:** Federal Supply Classification

As a general rule, local stock numbers can be recognized by the presence of one or more letters in the stock number (i.e., 4090-LL-124-9967).



**01 Maintenance and Repair Summary**

07 Tank Cleaning C-3

**07 Dry-docking and Surveys**

45 Lifesaving Equipment

**10 General Technical Information**

**11 Structural**

04 Side Shell

25 Riveted Seams

28 Structural Castings & Forgings

57 Fuel Oil Settlers

**12 Hull Fittings and Outfit**

02 Mooring Bitts & Foundations

06 Chain Stoppers

21 Airports & Fixed Lights

23 Windows

40 Securing Devices

55 Special Fittings & Outfit

59 Wire Reels

61 Docking Plugs

**13 Rudder**

01 Rudder

04 Plugs

10 Pintle & Gudgeon

12 Gudgeon & Bushing

18 Stock

30 Tools

**14 Deck Covering**

30 Deck Treads

**16 Access**

01 Watertight Doors

02 Watertight Manholes

04 W/tight Hatches-non Cargo Hand

05 W/tight Doors Hyd. Actuated

06 Watertight Door Operators

07 Cons Watertight/non-watertight Door

08 Counter Balance Valve

10 Sideports-manually Operated

11 Sideports-elect Operated

12 Sideports Hyd. Operated

15 non-Watertight Doors

19 Expanded Metal Doors

20 Screen Doors

21 Cargo Doors

22 Casing Doors

25 Bulkhead Doors, Ro/Ro

26 Suez Canal Light Access Door

30 Refrigeration Doors

31 Pilot Ladders

35 Accommodation Ladders

65 Access Plates & Covers

68 Ramp, Movable Access

70 Stern Doors

71 Stern Ramp

72 Ramp Covers

75 Tools - Ro/Ro Equipment

**17 Masts and Booms**

07 Gooseneck Assemblies

08 Sea Enhancement System

15 Booms

17 Heavy Lift Booms

19 Utility Davits

**18 Rigging, ABS Certified/installed**

01 Rigging

03 Falls

10 Blocks

11 Cargo Blocks

12 Snatch Blocks

13 Fairleads

25 Slings

31 Cargo Hooks

32 Swivels

55 Boatswain's Stores

56 Rigging Tools



**19 Portable Weight Handling Equipment**

**20 Winches**

- 01 Winches
- 02 Stern Ramp Winches
- 05 Cargo Winches
- 06 Cargo Winch Drives
- 07 Cargo Winch Brakes
- 08 Brake, Magnetic
- 10 Topping Lift Winches
- 11 Topping Lift Winch Drives
- 12 Topping & Vang
- 15 Vang Winches
- 16 Vang Winch Drives
- 17 Vang & Schooner
- 20 Schooner Vang Winches
- 21 Schooner Vang Winch Drives
- 25 Boat Winches
- 26 Boat Winch Drives
- 30 Accom./pilot Ladder Winches
- 31 Accom. Ladder Winch Drives
- 50 Heavy Lift
- 70 Hand Winches

**22 Steering Gear**

- 01 Steering Gear
- 05 Hydraulic System
- 06 Rams & Cylinders
- 07 Cross Head & Cross Head Drive
- 08 Follow-up Mechanism
- 09 Steering Stands & Trick Wheels
- 10 Lubrication
- 15 Pneumatic Control System

**23 Stabilizers**

- 01 Stabilizers
- 05 Retractable Activated Fin Type
- 06 Fins & Fin Shafts
- 07 Outboard Bearings
- 08 Inboard Bearings & Lubrication
- 09 Electro-hydraulic Drive System

- 10 Automatic Servo-control System
- 11 Gyro Sensing Unit
- 12 Tilting Mechanism
- 13 Fin Boxes and Sea Gland
- 14 Bridge Console
- 15 Apparatus Bd & Instrumentation
- 40 List Control System

**24 Hatch Covers**

- 01 Hatch Covers
- 07 Pontoon Fillers
- 20 Folding/hinged Type (Electro Hyd)
- 22 Fold/hinge Type (Hyd Cyl Act)
- 23 Cyl Actuation Hyd Drive
- 29 Vane Motor Actuated Hyd Drive

**25 Elevators, Conveyors & Vehicles**

- 03 Passenger Elevators
- 04 Stores Elevators
- 05 Dumbwaiters
- 10 Cargo Elevators & Equip.
- 13 Elevator Rigging
- 23 Ship's Stores Conveyors
- 30 Cargo Conveyors
- 44 Power Sweepers
- 46 Personnel Carriers
- 50 Conveyors (Non-powered)
- 70 Forklifts/pallet Trucks

**26 Mooring Equipment**

- 01 Mooring Equipment
- 05 Anchor Windlass (Electro-Hyd.)
- 06 Hydraulic System
- 08 Controls
- 10 Anchor Windlass (Electro-mech.)
- 14 Mooring Winches
- 15 Auto. Moor Winches (Electo.-mech.)
- 16 Mechanical Drive Train
- 17 Control Features
- 20 Capstans
- 21 Mechanical Drive Train



- 25 Warring Winch
  - 50 Anchors
  - 55 Anchor Chain
  - 60 Mooring Lines, Sbs
  - 61 Towing Cable, Sbs
  - 65 Anchor Windlass (Steam Driven)
- 27 Cranes**
- 01 Cranes
  - 05 Revolving Cranes
  - 07 Rigging
  - 08 Machinery
  - 09 Hoist Machinery
  - 10 Slew Machinery
  - 11 Luff Machinery
  - 12 Window Wipers/heaters
  - 13 Siren
  - 30 Overdeck Gantry Cranes
  - 33 Gantry
  - 37 Trolley
  - 40 Machinery Trolley/crane Drive
  - 43 Operator Cab
  - 48 Power Transfer Components
  - 60 Underdeck Gantry Cranes
  - 64 Spreader
  - 65 Hoist Machinery
- 29 Lashing Gear**
- 01 Lashing Gear
  - 15 Shackles - Lashing Gear
  - 20 Stackers
  - 30 Lashings
  - 35 Turnbuckles - Lashing Gear
  - 70 Miscellaneous
- 32 Office Equipment (Not C & E Items)**
- 01 Copying Machines
  - 02 Microfilm Reader Printer
- 33 Joinery**
- 01 Joinery
- 05 Storerooms and Lockers
  - 10 Office Spaces
  - 16 Toilet and Shower Spaces
  - 30 Nameplates, Notices & Markings
- 34 Commissary and Laundry**
- 01 Commissary Equip. Misc.
  - 02 Mixers
  - 03 Vegetable & Meat Processing
  - 04 Kettles/egg Blrs & tmrs/fd Wmrs
  - 05 Range, Over, Broiler, Griddle
  - 06 Garbage Disposals/compactor
  - 07 Refrig/ice Cube Mkr/drinkg Wtr
  - 08 Dishwasher
  - 09 Toasters & Coffee Makers
  - 11 Laundry Equipment
  - 12 Washing Machines
  - 13 Dryers
  - 15 Comm. Equip. (other than Comm. Sp.)
  - 16 Dispensers, Beverage/cleansers
  - 20 Filters
  - 21 Laundry Extractors
  - 22 Sanitizer, Sink
  - 38 Ventilation Hoods
- 35 Medical Equipment**
- 01 Sterilizers
- 37 Cargo Hold Dehumidification**
- 01 Cargo Hold Dehumidification
  - 05 Cargocaire (Solid Desic. Type)
  - 06 Control Equipment
  - 07 Instrumentation
  - 15 Kathabar (Liquid Desic. Type)
  - 75 Filter
- 38 Heating, Ventilating & Air Condt.**
- 01 Heating, Vent. and Air Cont.
  - 03 Heaters
  - 04 Steam or Hot Water Heaters



05 Heating, Vent. & Air Condt, Electric Heaters	25 Instrumentation
06 Cargo Coil Hot Water Heater	26 Integral Starting Mechanism
10 Induction Units	27 Governing System
11 Air Mixing Units	28 Air Intake & Exhaust Systems
15 Preheaters	35 Auxiliary Diesel Engines
16 Heating, Vent. & Air Condt., Reheaters	37 Integral F. W. Cooling System
17 Coolers	38 Integral Fuel Oil System
22 Mushrooms	39 Integral Lube Oil System
23 Goosenecks	40 Instrumentation & Controls
25 Accommodation Air Conditioning	41 Integral Starting Mechanism
31 Dampers	42 Tools - Aux. Engine
32 Filters	43 Governing System
40 Thermostatic & Humidity Contl.	60 Air Intake & Exhaust System
41 Pneumatic Temperature Controls	61 Frame
42 Temperature Control System	62 Crankshaft
45 Accommodations AC Units	63 Power Cylinders
50 A/C Water Chillers	64 Cam Shaft, Valve Train
70 Gold Ventilation	66 Cylinder Heads
	67 Flywheels
	68 Filters
	69 Indicator, Ahead & Astern
	70 Cooling Water System Aux. Eng.
	80 Lifeboat Diesel Engines
	85 Lifeboat Gasoline Engines
<b>40 Diesel Engines</b>	
01 Diesel Engines	
05 Main Propulsion Diesel Engine	
06 Main Gear	
07 Governing System	
08 Integral Cooling Sys	
09 Turning Gear	
10 Tools	
11 Integral Fuel System	
12 Integral Lubricating System	
13 Air Intake & Exhaust Systems	
14 Integral Starting System	
15 Charging Air System	
16 Controls	
17 Integral Lubricating System	
18 Integral Fuel System	
19 Integral Starting System	
20 Emerg. Diesel Generator Eng.	
22 Integral F. W. Cool. System	
23 Integral Diesel Oil System	
24 Integral Lube Oil System	
	<b>41 Main Propulsion Turbines</b>
	01 Main Propulsion Turbines
	10 Cross-compounded Turbines
	11 High Pressure Turbine
	12 Inlet Steam Control Mechanism
	13 Low Pressure Turbine
	30 Integral Gland Seal Reg. Sys
	31 Integral Lubrication System
	32 Maneuvering Valves
	33 Governing System
	34 Jacking Gear
	40 Lifting Gear & Special Tools
	<b>42 Main Propulsion Gears</b>
	01 Main Propulsion Gears
	02 Integral Lubrication System



10 Tools

**43 Shafting and Bearings**

- 01 Shafting and Bearings
- 05 Shafting
- 06 Propeller Shaft
- 07 Line Shafting
- 08 Thrust Shaft
- 09 Thrust Bearing
- 10 Prop Shafting & Cplgs & Brgs
- 11 Line Shaft Bearings
- 15 Stern Tube Ass.-Oil Lub. Type
- 16 Stern Tube Assembly-stave Type
- 17 Stern Tube Seals
- 18 Stern Tube and Bearing Assy.
- 19 Stern Tube Bearings
- 30 Tools

**44 Propellers**

- 01 Propellers
- 05 Solid Type
- 10 Controllable Pitch Type
- 20 Propeller Assembly Fittings
- 21 Fairwater Caps
- 22 Rope Guards
- 23 Pilgrim Nut
- 60 Bow/stern Thrusters
- 65 Controllable Pitch Type
- 66 Propeller
- 70 Control Mechanism
- 80 Tools

**45 Gas Turbines**

- 01 Gas Turbines
- 05 Main Propulsion Gas Turbines
- 20 Ship's Serv. Gen. Gas Turbines
- 40 Emergency Gen. Gas Turbines

**46 Vacuum Equipment**

- 01 Vacuum Equipment
- 05 Main Condenser

- 10 Auxiliary Condenser
- 15 Main Air Ejector & Condensers
- 20 Auxiliary Air Ejectors & Cond.
- 21 Ejectors
- 25 Gland Exhaust Condenser
- 30 Main & Aux. Air Ejectors
- 40 Contam Atmospheric Condenser

**47 Pumps**

- 01 Pumps
- 05 Centrifugal Pumps
- 10 Rotary Pumps
- 11 Rotating Element
- 15 Hydraulic Pumps
- 17 Control Mechanism
- 20 Hydraulic Pumps
- 21 Drive Elements
- 30 Reciprocating Pumps
- 31 Drive Assembly
- 32 Pumping Assembly
- 33 Control Mechanism
- 40 Pump & Tank Units
- 50 Hand Pumps

**48 Piping and Fittings**

- 01 Piping and Fittings
- 03 Actuators, Elect./hydra./pneu.
- 05 Piping & Plumbing Supplies
- 06 Expansion Joints
- 15 Pipe Fittings
- 16 Hydraulic Hoses & Fittings
- 17 Cargo Oil Hoses & Fittings
- 18 Steam Hoses
- 19 Miscellaneous Hoses
- 20 Valves
- 21 Stop Valves
- 22 Check Valves
- 23 Stop-check Valves
- 24 Relief Valves
- 25 Regulating Valves
- 26 Thermostatic Valves



- 27 Motor Operated Valves
  - 28 Air Operated Valves
  - 29 Sentinel Valves
  - 30 Safety Valves
  - 33 Manifolds
  - 35 Sys Fittings (Strnr, fltr, traps, etc.)
  - 36 Gauge Glasses & Assemblies
  - 40 Whistle
  - 51 Sea Valves
  - 52 Sea Strainers (In Piping)
  - 60 Eductors
- 49 Compressors**
- 01 Compressors
  - 05 Air Compressors
  - 06 Piston Type
  - 07 Centrifugal Type
  - 10 Auto Air Compressor Controls
  - 16 Piston Type
  - 25 Valve Cylinder Operators
  - 30 Filters/dryers
  - 50 Receivers
  - 70 Coolers
  - 80 Lubricators
- 50 Auxiliary Steam Turb and Gears**
- 01 Aux. Steam Turbine & Gears
  - 05 Ship's Service Generator Turb
  - 08 Reduction Gear Assembly
  - 09 Governing System
  - 15 Pump Turbines
  - 16 Integral Lubrication System
  - 17 Governing System
  - 18 Cargo Oil Pump Reduction Gears
  - 25 Compressor Turbines
  - 27 Governing System
  - 35 Forced Draft Fan Turbine
- 51 Boilers**
- 01 Boilers
  - 05 Boiler Drums and Internals
- 06 Integral Piping
  - 10 Boiler Tubes
  - 11 Waterwalls
  - 12 Superheaters
  - 13 Floors
  - 14 Generating Tubes
  - 15 Tube Cleaning Equipment
  - 20 Economizers
  - 27 Air Heaters
  - 30 Boiler Casing
  - 31 Brickwork and Refractory
  - 35 Ignitors
  - 36 Fuel Oil Burners
  - 37 Air Registers
  - 40 Soot Blowers
  - 41 Stack Vibrators
  - 42 Flow Recorder/viscosity Contrl
  - 43 Boiler Mountings
  - 44 Boiler Valves
  - 45 Safety Valves
  - 46 Feed Water Regulators
  - 47 Draft Gauges
  - 48 Smoke Indicators/uptake Parasopes
  - 49 Boiler Wtr Level Indic/sight GI/transducers
  - 50 Feed Injector
  - 55 Combustion Control
  - 56 Burner Flame Scanning System
  - 57 Pyrometers
  - 60 Boiler Water Testing
  - 61 Flue Gas Analysis
  - 65 Boiler Controls
  - 70 Boiler Tools
  - 75 Pressure Gages
- 52 Mechanical - Miscellaneous**
- 01 Miscellaneous, Consolidated Spares
  - 05 Miscellaneous, O-rings
  - 10 Miscellaneous, V-belts
  - 15 Miscellaneous, Springs
  - 20 Miscellaneous, Packing



**53 Blowers and Fans**

- 01 Blowers and Fans
- 05 Ventilation Fans
- 06 Rotating Elements
- 08 Portable Blowers & Fans
- 10 Forced Draft Blowers
- 11 Rotating Elements
- 15 Gland Exhausters
- 20 Bracket Fans
- 25 Ceiling Fans
- 30 Fan Controls

**54 Unfired Pressure Vessels/non Struct. Tanks**

- 06 Air Receivers
- 07 Freon Receivers
- 08 Water Compression
- 09 Hydraulic Accumulators
- 16 Priming Vacuum Tanks
- 21 Storage Tanks
- 22 Settling Tanks
- 23 Gravity Tanks
- 24 Sump Tanks
- 25 Sludge Tanks
- 26 Mixing Tanks
- 27 Expansion Tanks
- 28 Drain Tanks
- 29 Sanitary Tanks
- 35 Miscellaneous Small Tanks

**55 Heat Exchangers**

- 01 Heat Exchangers
- 05 Heaters
- 06 Coolers
- 09 High Pressure Feed Water Htr
- 10 Low Pressure Feed Water Heater
- 11 De-aerating F.W./Vent Condenser
- 12 Third Stage Feed Water Heater
- 13 Fourth Stage Feed Water Heater
- 15 Boiler Water Sample Cooler
- 20 Main Propulsion L.O. Cooler
- 21 Lube Oil Purifier Heater

- 22 Fuel Oil Purifier Heaters
- 23 Main Feed Pump Lube Oil Coolers
- 24 Main Generator Lube Oil Coolers
- 30 Fuel Oil Heaters
- 40 Cargo Oil Tank Heating Coils
- 48 Refrig Liq Suction Heat Exchange
- 51 Refrig Compartment Air Coolers
- 53 Hot Water Defrosting Heaters
- 54 Chiller System Water Heaters
- 55 A/C Water Coolers
- 65 Tank Cleaning Heater
- 66 Tank Cleaning Drain Cooler
- 67 Tank Heaters & Drain Coolers
- 68 Tank Htr & Drn Cooler Inj Pump
- 70 Hot Fresh Water Stor Type Heat
- 71 Instantaneous Hot Water Heater
- 72 Fresh Water Heater
- 74 Swimming Pool Heater
- 75 Heat Exchanger Tubes
- 80 Contaminated Drain Coolers
- 95 Cleaning Equipment

**57 Purifiers, Dehydrators, Separators, Dehumid.,  
Tank Clean.**

- 01 Lubricating Oil Purifier
- 02 Blending Units
- 05 Diesel Oil Purifier
- 06 Heavy Oil Purifier
- 08 Puriri, dehyd, sepa, humid,tk Cln, Incinerators
- 10 Reduct. Gear Case Dehum/precip
- 15 Chlorinator
- 17 Sterilizer, Fresh Water
- 20 Separators
- 25 Dehydrators/refrigifilters
- 40 Tank Cleaning Machines
- 70 Auto. Shooting & Monitoring
- 90 Filters

**58 Evaporators**

- 01 Evaporators



- 05 Low Pressure Flash Type
- 10 Single Effect
- 11 Evaporator
- 12 Eductor
- 13 Sal Indic-solenoid Dump Val
- 14 Gage Board & Instruments
- 15 Integral Piping & Fittings
- 20 Multiple Effect
- 22 Air Ejector & Condenser
- 24 Gage Board & Instruments
- 25 Integral Piping & Fittings
- 30 Low Press Submerged Tube Type
- 31 Single Effect
- 33 Air Ejector & Condenser
- 34 Sal Indic/solenoid Dump Val
- 36 Integral Piping & Fittings
- 40 Multiple Effect
- 42 Air Ejector & Condenser
- 43 Sal Indic/solenoid Dump Val
- 50 Thin Film Type
- 53 Sal Indic/solenoid Dump Val
- 70 Contaminated Steam Generators
- 75 Special Tools
- 90 Automation

### **59 Refrigeration & AC**

- 01 Refrigeration System
- 02 Cargo Conditioning Plant
- 03 AC System
- 05 Compressors - S/s
- 10 Compressors - Cargo
- 15 Compressors - Air Cond
- 16 Purge Compressor
- 17 Compressor, CO2 Tanks
- 20 System Spares - S/s
- 25 System Spares - Cargo
- 30 System Spares - Air Cond
- 31 System Spares (Consolidated)
- 35 System Elec. Spares - S/S
- 40 System Elect. Spares - Cargo
- 45 System Elect. Spares - Air Cond

- 50 Diffusers/fans - Electrical
- 55 Diffusers/fans - Mechanical
- 60 Sys Sp A/c, Ss Cargo Cons
- 65 Condensers - S/S
- 70 Condensers - Cargo
- 75 Condensers - A/C
- 79 Condensers, CO2 Cooling
- 80 Condensers/Heat Exchangers
- 84 Defrosting System
- 85 Containers
- 86 Barge Refrigeration System
- 90 Receivers
- 95 Evaporators/chillers
- 96 Ozone Systems
- 97 Filter Systems

### **60 Electric Propulsion**

- 01 Main Propulsion Generator
- 02 Main Propulsion Motor
- 03 Main Propulsion Motor Control
- 04 Exciter Gen. For Mn Propulsion
- 05 Main Propulsion Gen. Turbine
- 08 Jacking Gear

### **61 Electric Generators**

- 01 Electric Generators
- 05 Ship's Service Generators
- 06 Ship's Service Generator Excit
- 07 Ship's Svc Generator A/cooler
- 09 Generator Controls
- 15 Emergency Generator
- 16 Emergency Generator Exciter
- 17 Emergency Generator Set
- 20 Coupling Shafting
- 30 Gears/gear Shaft
- 35 Remote Controls (Gen Coupling)

### **62 Electric Power Distribution**

- 01 Electric Power Distribution
- 05 Ship Svc Generator Switchboard
- 06 Instrumentation



- 07 Main/emergency Switchboard
- 08 Indicating Lamps/panels
- 10 Emergency Generator Swbd
- 11 Instrumentation
- 15 Test Panel
- 16 Instrumentation
- 18 Remote Control Main Eng.
- 20 Distribution Panels
- 21 Shore Connection Box
- 25 Voltage Regulators
- 30 Transformers
- 31 Rectifiers
- 34 Fire Screen Door Distribution
- 35 Batteries
- 36 Battery Chargers
- 45 Consolidated Spares

**63 Electric Motors & Brakes**

- 01 Electric Motors
- 02 Motor & Brakes-cons
- 03 Tools
- 05 Pump Motors
- 10 Purifier Motors
- 11 Air Heater Motors
- 12 Jacking Gear Motors
- 13 Combustion Control Motors
- 14 Power Operation Valve Motors
- 15 Soot Blower Motors
- 35 Workshop Equipment Motors
- 36 Lifting Gear Motors
- 39 Diffuser Fan (Refrig, A/c)
- 40 Refrig Compressor/ac Motors
- 41 Air Compressor Motors
- 45 Fan and Blower Motors
- 46 Gland Exhaust & Leak off Motor
- 47 Cargo Hold Dehumidification
- 50 Deck Machinery Motors
- 52 Hoist (Electric)
- 55 Cargo Winch Motors & Brakes
- 56 Topping Winch Motors & Brakes
- 57 Vang Winch Motors & Brakes

- 58 Schooner Vang Winch Mtr./brake
- 59 Boat Winch Motors
- 60 Accom. Ladder Motors & Brakes
- 61 Revolving Crane Motors
- 62 Overdeck Gantry Crane Motors
- 64 Anchor Windlass Motor
- 65 Automatic Mooring Winch Motors
- 66 Capstan Motors
- 67 Warping Winch Motors
- 68 Steering Gear Motors
- 70 Elevator Motors
- 72 Conveyor Motors
- 73 Dumbwaiter Motors
- 74 Bow & Stern Thruster Motors
- 79 Stern Ramp Winch Motors
- 80 Hatch Cover Motors
- 81 Door Motors
- 86 Mooring Winch M-g Sets
- 87 Cargo Winch M-g Sets
- 88 Revolving Crane M-g Sets
- 89 Anchor Windlass M-g Sets
- 90 Mg Sets
- 97 Miscellaneous Small Motors
- 99 Solenoids

**64 Electric Motor Controllers**

- 01 Electric Motor Controllers
- 02 Group Controls
- 05 Pump Motor Controllers
- 09 Separator Controllers
- 10 Purifier Motor Controllers
- 11 Air Heater Motor Controllers
- 12 Jacking Gear Motor Controllers
- 13 Combust Contrl Mtr Controllers
- 14 Pwr Oper Valve Mtr Controllers
- 15 Soot Blower Motor Controllers
- 20 I.C. Mg Set Controller
- 25 Lighting Mg Set Controller
- 35 Workshop Eqpt Mtr Controllers
- 36 Lifting Gear Motor Controllers
- 40 Refrig Compressor Mtr Contrlrs



- 41 Air Compressor Mtr Controllers
- 42 Air Conditioning Mtr Cont.
- 45 Fan & Blower Motor Controllers
- 46 Cold Diffusers (Fans)
- 47 Dehumidification
- 50 Deck Machinery Mtr Controllers
- 54 Electric Brakes (Consolidated)
- 55 Cargo Winch Motor Controllers
- 56 Topping Winch Mtr Controllers
- 57 Vang Winch Motor Controllers
- 58 Schoonr Vang Wnch Mtr Controllers
- 59 Boat Winch Motor Controllers
- 60 Accom Ladder Mtr Controllers
- 61 Revolv Crane Mtr Controllers
- 62 O/dk Gantry Crane Mtr Controllers
- 64 Anchor Windlass Mtr Controllers
- 65 Auto Mooring Winch Mtr Controller
- 66 Capstan Motor Controllers
- 67 Warping Winch Mtr Controllers
- 68 Steering Gr Mtr Controllers
- 69 Stabilizer Mtr Controllers
- 70 Elevator Motor Controllers
- 72 Electric Motor Controllers, Conveyor Motor Controllers
- 73 Dumbwaiter Motor Controllers
- 74 Bow Thruster Motor Controllers
- 75 Stern Thruster
- 80 Hatch Cover Motor Controllers
- 81 Door Motor Controllers
- 86 M-g Set Controllers
- 87 Cargo Winch M-g Set Controllers
- 88 Revolv Crane M-g Set Controllers
- 89 Anchor Windlass M-g Sets
- 90 Electric Motor Controllers, Stores Crane
- 95 System Controls (Individual)
- 96 Misc. Controller Spares
- 97 Misc. Small Motor Controllers
- 98 below Deck Controllers
- 99 above Deck Controllers

**65 Interior Communications**

- 01 Interior Communications
- 02 Mg Sets
- 03 Watch Call System
- 04 Engine Order Telegraph/record
- 05 Sound Powered Telephone System
- 06 Automatic Telephone System
- 07 Public Address & Docking Sys
- 08 Call Bell System
- 09 Dumbwaiter Communications Sys
- 11 Cargo & Portable Communication
- 15 Shore Side Telephone System
- 18 Propeller Order System
- 19 Main Engine Monitoring System
- 20 Interior Communications, Prop Shaft Revolution Ind Sys
- 21 Rudder Angle Indicator System
- 22 Salinity Ind Sys-feb-condens
- 23 Horsepower Meter System
- 25 Refrig Temp Recording Systems
- 26 Dehumidification Recording Sys
- 27 Cargo Oil Temp. Recording Sys.
- 30 Water Tight Door Indicator Panel
- 31 Motor Running Indicator Panel
- 32 Reefer Equip. Indicating Panel
- 40 Oil Ovbd. Discharge Alarm
- 50 Indv Sys Alarms Sys (Excl Spec)
- 51 Engineers Signal & Alarms Sys
- 52 General Alarm System
- 53 Wheelhouse Alarm System
- 54 Burglar Alarm System
- 55 Combustion Control Alarms
- 56 Audible Spares for Alarm Panel
- 57 Generator Alarm Panel
- 58 High & Low Level Alarms
- 59 Reefer Alarms
- 60 Vehicle Exhaust Warning Equip.
- 61 Fire Alarm
- 62 Oil Mist Detectors
- 63 Main Engine Alarm System
- 64 Motor Temp. Alarm Sys.



- 65 Pump Press. Sensors/alarms
- 66 Power Failure Alarms
- 71 Movie Projection System
- 72 Music Entertainment System
- 73 Television System
- 74 Entertainment Radios
- 75 Electric Clock System
- 76 Automatic Timer
- 77 Broadcast Antenna System
- 78 Tank Level Indicators

**66 Exterior Communications**

- 01 Exterior Communications
- 02 Receivers
- 03 Transmitters
- 04 Transceivers
- 05 Radio Telegraph Equipment
- 06 Antenna Spares
- 07 Jack/switching Panels/plug
- 08 Digital Frequency Meter
- 10 Radio Teletype Equipment
- 15 Radiotelephone Equipment
- 20 Lifeboat Portable Radio Equip.
- 22 Modulator
- 23 Freq. Shift Diversity Convert.
- 25 Auto Alarm
- 26 Auto Keyers
- 30 Satellite Communications
- 35 Power Supply
- 40 Amplifier & Filters & Exciters

**67 Navigation Equipment**

- 01 Navigation Equipment
- 04 Hyd. Sys. F/retrac. Radar Mast
- 05 Radars and Associated Antennas
- 06 Scanner
- 07 Rudder Course Board
- 08 Echo Sounder Equip.
- 14 Gyro Pilot System
- 15 Gyro Compass System
- 16 Master Gyro Compass

- 17 Course Recorder
- 18 Gyro Repeaters
- 19 Compass Systems
- 25 Magnetic Compass
- 30 Radio Direction Finder
- 35 LORAN/NAVSAT
- 36 Decca Navigator
- 40 Elec. Steering-gyro Pilot Sys.
- 41 Wheelhouse Control Units
- 42 Steering Gear Rm. Control Units
- 45 Doppler Speed Log
- 46 Pit/Sal Log
- 50 Weather Printer
- 51 Radio Receiver
- 52 Facsimile Recorder
- 55 Whistle Control
- 56 Siren
- 57 Fog Bell & Gong System
- 60 Anemometer System
- 70 Window Wipers/heaters
- 75 Portable Navigation Equipment
- 80 Collision Avoidance System
- 84 Load Calculator/indicator
- 90 Clinometer/inclinometer

**68 Lighting & Lighting Panels**

- 01 Lighting
- 10 Exterior Lighting
- 11 House Lighting
- 12 Signal Lighting
- 13 Navigation Lighting
- 14 Searchlights
- 30 Interior Lighting
- 32 Machinery Space Lighting
- 33 Cargo Space Lighting
- 34 Refrigeration Space Lighting
- 40 Light Dimmers
- 42 Portable Lighting

**69 Cathodic Protection/degaussing**

- 01 Cathodic Protection



**70 General Electrical Spares**

- 01 Elect./electronic Spares

**75 Bearings/couplings & Sleeves**

- 01 Bearings/couplings & Sleeves
- 02 Motor Bearings
- 03 Fan Bearings
- 10 Seals
- 20 Couplings
- 25 Consolidated Brgs. Coups Seals

**81 Fire Fighting Equipment**

- 01 Fire Fighting Equipment
- 02 Fire Doors
- 05 Fire Extinguishers
- 06 Fire Detection
- 15 C02 Room Equipment
- 20 Smoke Detecting Equipment
- 50 Foam Equipment
- 70 Gas Detection System
- 80 Hose, nozzles, applicator., Axes, rakes,
- 90 Inert Gas Systems, System Components

**82 Life Saving Equipment**

- 01 Life Saving Equipment
- 05 Lifeboats
- 06 Lifeboat/raft Davits
- 10 Lifebuoys/rings/jackets
- 11 Breathing Apparatus\*
- 15 Life Rafts, S.b.s.
- 20 Lifeboat Equipment, S.b.s.
- 30 Survival/exposure Suits

**85 Workshop Equipment**

- 01 Workshop Equipment
- 05 Lathes
- 06 Lathe Attachments
- 10 Workshop Equipment, Shapers
- 15 Milling Machines
- 20 Drill Presses
- 25 Grinders

- 30 Welding Equipment

- 35 Lifting Gear

- 40 Saws - Motor Driven

- 45 Power Driven Portable Tools

- 50 Miscellaneous Tools

- 51 Motor Rewinding Machine

- 55 Misc. Measuring Devices/instruments

- 60 Engine Test Stand

- 80 High Pressure Cleaning Equip.

**87 Instrumentation, Meters, Gauges**

- 01 System Instruments

- 02 Main Gage Board

- 05 System Indicating Instruments

- 06 Cons Thermometers/press Gauges

- 10 System Recording Instruments

- 15 Portable Instruments

- 20 Radiological Equip.

- 25 Inert Gas System

**90 Nuclear Reactors**

**95 Automation**

- 01 Automation

- 05 Engine Room Console

- 06 Bridge Console

- 08 Panel, Diesel Eng. Remote Cont

- 10 Information Recorders

- 11 Bell Recorders

- 20 Viscosity Control Equipment

- 60 Auxiliary Machinery Automation

- 62 Controllers, Liquid Level

- 63 Condensate Level Control Sys.

- 65 Power Transfer Panels

- 67 Controller, Water Cooler Temp.

- 70 Remote Control Station, Valves

- 71 Hyd. Power Units for Valve. Sys.

- 75 Control Panels for F.O. System

- 76 Control Panels for Purifiers

- 77 Control Panels for Heaters

- 78 Control Panels for Dumbwaiters



- 79 Controls for Cargo Oil
- 80 Controls- Bilge, Ballast & F.O.
- 85 Control Panel-sewage Treatment
- 87 Controls for Stern Ramps
- 90 Controls for Hydraulic Systems
- 95 Cont. Panels F/winchcs & Hoist

**96 Marine Sanitation Devices**

- 01 Marine Sanitation Devices
- 05 Float Switches

**97 OPDS- Offshore Petrol Disch. Sys.**

- 05 OPDS-SALM
- 10 OPDS-flexible Piping
- 15 OPDS-towing/mooring Systems
- 20 OPDS-warping Tugs
- 25 OPDS-deployment Ancillaries
- 30 OPDS- tools/consumables & Misc.

**98 UNREP-underway Replenishment. Sys.**

- 05 Underway Replenishment System

**99 Miscellaneous**

## Appendix E: System Application Codes

### **ARH00 Air Handling (General)**

- ARH10 Air Systems Combustion
- ARH20 Charge Air/scavenging Air Systems
- ARH30 Ship's Service Compressed Air Systems
- ARH40 Control Air Systems
- ARH50 Starting Air Systems
- ARH60 Vacuum/air Removing Systems
- ARH70 Engine Room Ventilation Systems

### **AUT00 Automation and Remote Control Systems (General)**

- AUT10 Throttle Control Systems
- AUT20 Boiler Combustion Control Systems
- AUT30 Boiler Feed Water/drum Level Control Systems
- AUT40 Remote Temperature Detection and Alarm Systems
- AUT50 Remote Level Detection and Alarm Systems
- AUT60 Remote Valve Operating and Position Systems
- AUT70 Remote Equipment Start-up/shut-down Systems
- AUT80 Ship's Service Generator Synchronization Systems

### **CGO00 Cargo Gear and Handling (General)**

- CGO10 Masts/booms/kingposts/rigging
- CGO20 Winches
- CGO30 Cranes
- CGO40 Cargo Conveyors/elevators
- CGO50 Hatch Covers/sideports/stern Ramps/doors
- CGO60 Cargo Ventilation/dehumidification/refrigeration
- CGO70 Liquid Cargo Handling Systems
- CGO80 Cargo Tank Cleaning/inerting Systems
- CGO90 Cargo Gear Hydraulic Systems

### **COM00 Communications (General)**

- COM10 External Voice Communications
- COM20 External Data Communications
- COM30 Internal Voice Communications
- COM40 Docking Announcing Systems
- COM50 General Alarm Systems
- COM60 Remote Indicator and Repeater Systems
- COM70 Tank Gauging and Level Alarms
- COM80 Watch and Emergency Call Bell Systems

### **DOC00 Ship's Documents (General)**

- DOC10 Watch/quarter/station (Fire Fighting) Plans
- DOC20 Ship/systems Drawings and Plans
- DOC30 Equipment Instruction Books
- DOC40 System Operating Manuals
- DOC50 Spare Parts Inventory
- DOC60 Log Books/deck and Engine Records
- DOC70 Activation Plans/specifications
- DOC80 Retention M&R Specifications
- DOC90 Deactivation Plans/Specifications

### **EGD00 Electrical Generation and Distribution (General)**

- EGD10 Ship's Service Generator Diesels
- EGD20 Ship's Service Generator Turbines
- EGD30 Ship's Service Generator Gears
- EGD40 Ship's Service Generators
- EGD50 Emergency Diesel Generators
- EGD60 Main And Auxiliary Switchboards
- EGD70 Ship's Service Power Distribution Systems
- EGD80 Lighting Distribution Systems
- EGD90 Motor-generator Equipment

### **FLD00 Fluid Handling (General)**

- FLD10 Fuel Oil Systems



FLD20	Lubricating Oil Systems	MRG70	Bits/Chocks/Cleats/Bollards
FLD30	Cylinder/camshaft Lubricating Systems	MRG80	Portable Pilot Ladders
FLD40	Sea Water Cooling Systems	MRG90	Hawsers/Mooring Lines
FLD50	Fresh Water Cooling Systems		
FLD60	Condensate Systems	<b>NAV00</b>	<b>Navigation (General)</b>
FLD70	Feed Water Systems	NAV10	Radars/plotting Aids
FLD80	Bilge/bilge and Ballast/ballast Systems	NAV20	Gyro and Magnetic Compasses
FLD90	Contaminated Drain Collection Systems	NAV30	Electronic Navigation Systems
		NAV40	Gyro Pilot Systems
		NAV50	Fathometer Systems
<b>HAB00</b>	<b>Habitability (General)</b>	NAV60	Course Recording Systems
HAB10	Commissary/galley/laundry/housekeeping	NAV70	Speed Log Systems
HAB20	Ship's Service Refrigeration Systems	NAV80	Rudder Angle Indicator Systems
HAB30	Heating/ventilation/air Conditioning	NAV90	Maps Charts and Publications
HAB40	Dumbwaiters and Personnel Elevators		
HAB50	Ship's Entertainment System	<b>PRP00</b>	<b>Propulsion (General)</b>
HAB60	Hot/cold Potable Water Systems	PRP10	Steam Turbines
HAB70	Sanitary Flushing Systems	PRP20	Diesel Engines
HAB80	Sewage Treatment Systems	PRP30	Gas Turbines
HAB90	Trash Compactors/incineration Systems	PRP40	Reduction Gears
		PRP50	Couplings/clutches
<b>HUL00</b>	<b>Hull and Structure (General)</b>	PRP60	Line Shafting/bearings/seals
HUL10	Integral Piping Systems	PRP70	Stern Tube Lube Oil Systems
HUL20	Sea Chests/sea Valves/hull Openings	PRP80	Tail Shafts/torque Tubes
HUL30	Cathodic Protection Systems		
HUL40	Deck Drain Systems	<b>REG00</b>	<b>Regulatory Body Requirements (General)</b>
HUL50	Structure Opening Sealing Systems	REG10	Admeasurement/load Lines/canal
HUL60	Exterior Coatings/painting	REG20	Hull Gauging/dry-docking
HUL70	Interior Coatings/painting	REG30	Cargo Gear
HUL80	Tank Coatings	REG40	Propulsion Equipment Systems
		REG50	Automation
<b>MRG00</b>	<b>Mooring and Docking (General)</b>	REG60	Fire Fighting/life Saving
MRG10	Anchor Handling Systems	REG70	Navigation/communication Systems
MRG20	Mooring Winch Systems	REG80	Pollution/SOLAS
MRG30	Capstans	REG90	Manning/habitability
MRG40	Accommodation/boarding Systems		
MRG50	Bow/Stern Thrusters		
MRG60	Mooring Hydraulic Systems		



**SAF00 Safety and Security (General)**

- SAF10 Lifeboats/Liferafts
- SAF20 Lifeboat Launching/retrieving Systems
- SAF30 Life Saving Equipment
- SAF40 Fire Fighting Equipment
- SAF50 Fire Main/abc Washdown Systems
- SAF60 Co<sub>2</sub>/halon Fire Extinguishing Systems
- SAF70 Fire/smoke Detection and Alarm Systems
- SAF80 Bilge Level And Flooding Detection Systems
- SAF90 Intrusion Detection and Alarm Systems

**SEF00 Sealift Enhancement (General)**

- SEF10 Offshore Petroleum Discharge Systems
- SEF20 Astern Refueling Systems
- SEF30 Modular Cargo/fuel Delivery Systems
- SEF40 Vertical Underway Replenishment Systems
- SEF50 Lashing Gear and Tie Down Fittings
- SEF60 Forklift Trucks
- SEF70 Battery Charging Systems
- SEF80 Sea Sheds/container Ship Cargo Stowage Adapters
- SEF90 Flatracks/container Adapter Frames

**STG00 Steering and Sea Keeping (General)**

- STG10 Steering Engine
- STG20 Rudder and Pintle
- STG30 Steering Hydraulic Systems
- STG40 Propeller
- STG50 Propeller Hydraulic Systems
- STG60 Flume Tanks/roll Stabilization Systems

**STM00 Steam Generation and Distribution (General)**

- STM10 Boilers/steam Generators
- STM20 Auxiliary/waste Heat Boilers

- STM30 Contaminated Evaporators/fresh Water Distillers
- STM40 Main Steam Systems
- STM50 Auxiliary Bleed Systems
- STM60 Auxiliary Exhaust Systems
- STM70 Contaminated Steam Systems
- STM80 Boiler Feed Water Sampling/treatment Systems
- STM90 Gland Leak-off And Seal Systems

**SUP00 Vessel Support (General)**

- SUP10 Shop Equipment
- SUP20 Portable Electric Tools
- SUP30 Special Tools
- SUP40 Test Equipment
- SUP50 Instrumentation
- SUP60 Office Equipment
- SUP70 Bridge Instruments
- SUP80 Medical Equipment

## Appendix F: Unit of Issue Abbreviations

The following unit of issue abbreviations will be used for requisitioning, issuing, and recording material.

Ampoule.....AM	Ounce.....OZ
Assembly.....AY	Outfit.....OT
Assortment.....AT	Package.....PG
Bag.....BG	Packet.....PZ
Bale.....BE	Pad.....PD
Ball.....BA	Pair.....PR
Bar.....BR	Pint.....PT
Barrel.....BL	Plate.....PM
Board Foot.....BF	Pound.....LB
Bolt.....BO	Quart.....QT
Book.....BK	Ration.....RA
Bottle.....BT	Ream.....RM
Box.....BX	Reel.....RL
Bundle.....BD	Roll.....RO
Cake.....CK	Set.....SE
Can.....CN	Sheet.....SH
Carboy.....CB	Shot.....SO
Cartridge.....CA	Skein.....SK
Coil.....CL	Skid.....SD
Cone.....CE	Spool.....SL
Container.....CO	Square Foot.....SF
Cubic Foot.....CF	Square Yard.....SY
Cubic Yard.....CD	Stick.....SX
Cylinder.....CY	Strip.....SP
Dozen.....DZ	Thousand.....MX
Drum.....DR	Thous. Cubic Ft...MC
Each.....EA	Ton.....TN
Foot.....FT	Troy Ounce.....TO
Gallon.....GL	Tube.....TU
Gross.....GR	Vial.....VI
Group.....GP	Yard.....YD
Hank.....HK	
Hundred.....HD	
Jar.....JR	
Kit.....KT	
Length.....LG	
Liter.....LI	
Meal.....ME	

## Appendix G: Condition Codes

The appropriate disposal condition code from the table below shall be assigned to each item record, report, or listing of excess personal property, in accordance with 41 CFR Part 101-43 [FPMR Amendment H-198].

<b>Condition Code</b>	<b>Description</b>	<b>Definition</b>
<b>1</b>	<b>Excellent</b>	Property which is in new condition or unused condition and can be used immediately without modifications.
<b>4</b>	<b>Usable</b>	Property, which shows some wear, but can be used without significant repair.
<b>7</b>	<b>Repairable</b>	Property which is unusable in its current condition but can be economically repaired.
<b>X</b>	<b>Salvage</b>	Property, which has value in excess of its basic material content but repair or rehabilitation, is impractical and/or uneconomical.
<b>S</b>	<b>Scrap</b>	Property which has no value except for its basic material content.

## Appendix H: Non-Validation Worthy Equipment

The following equipment and components are designated non-validation worthy due to their non-critical nature, low failure rate, commonality, or ease of replacement and repairability. This list is not all-inclusive and recommendations for additions, deletions, or changes may be submitted to MAR-614.

Access closures - manually operated (doors, hatches and scuttles)	Office equipment
Accumulators, receivers, flasks, for air, refrigerant, and other fluids	Panels, with the exception of control and monitoring panels for critical systems such as vessel's whistle, fire fighting systems, main engine controls, boiler controls, salinity indicating systems, and alarm panels
AC/DC power supplies integral to equipment	Plotting boards - other than tactical display
Air conditioning units, stateroom porthole type	Plumbing fixtures
Amplifiers integral to an equipment	Portable galley equipment
Anchors, anchor chain, and lines	Portable equipment, with the exception of materials handling equipment such as forklifts
Battery chargers, unless installed	Radio frequency filters
Batteries, portable	Relay and relay arms - other than reverse current (type CON and CRN)
Bells associated with an alarm system	Shop equipment
Circuit breakers, less than 100 amps	Solenoid, valve
Computers not integral to a system	Sprinkler heads
Connectors	Strainers
Controlled Material items	Stuffing boxes
Cooling coils, air duct type	Switch boxes
Couplings, with the exception of those that are part of the main propulsion shafting, main turbines, generators, and diesel engines	Switches
Cylinders for watertight doors	Tanks, miscellaneous
Dial telephone sets	Tank level indicators
Dimmers/rheostats - controlling status board lights	Terminal boxes
Distribution boxes	Thermometers
Electrical connection boxes	Transformers - other than power distribution and lighting
Exciters, except power generator exciters	Traps
Expansion joints and flexible pipe couplings	Urinals/water closets/lavatories
Fans and brackets, open-bladed, bulkhead mounted, and portable filters	Valves less than four inches, except fuel oil emergency shut-off valves, boiler safety valves, and blow-off valves, and hydraulic/air/electric motor-operated valves
Fuse boxes	Ventilation motors under 3 horsepower, and associated fans, controllers, and heat exchangers; except those installed to ventilate engine rooms, machinery spaces, cargo spaces, flammable storage, battery storage, and charging rooms, and other hazardous spaces.
Gauges and meters	
Header assemblies	
Heaters for habitability spaces	
Household type washers and dryers	
Indicators, sight liquid	
Interconnecting boxes	
Junction boxes	
Lighting, with the exception of navigation, aircraft facility, special cargo installations, and searchlights	
Nozzles, firehose type	

## Appendix J: Stowage of Hazardous And Other Special Materials

### Hazardous Liquids

Certain materials with inherent hazardous or other unique properties require special stowage facilities and handling precautions, as described in the following paragraphs.

#### Acid

Liquid acid will be stowed in an acid locker or other designated storage location. An acid locker is a leak-proof, lead-lined box, chest, or locker especially designed for stowing bottles or carboys of acid. Acid lockers will be kept in the Flammable Liquids storeroom; however, acid lockers that contain only medical acids may be kept in a medical storeroom. Corrosive acids are acute fire hazards and therefore should be stowed separately from oxidizing or flammable materials. Corrosive acids or vapors must not be allowed to come in contact with the skin or eyes. Personnel required to handle such material will wear rubber gloves, rubber aprons, and goggles (as necessary) to protect themselves and their clothing from acid burns.

#### Alcohol

Since most commonly used alcohols have a flash point below 100 degrees Fahrenheit, all alcohol will be stowed in the Flammable Liquids storeroom. Not all alcohol is readily identifiable by name. For example, many lacquer thinners have methanol (wood alcohol), which is extremely poisonous, as the principal ingredient.

#### Oxidizing Material

Many shipboard fires with resultant fatalities have been attributed to improper stowage or handling of oxidizing materials, particularly calcium hypochlorite. Nitric acid, a strong oxidizer, will be stowed in the acid locker (see paragraph 12.6.1). Oxygen and chlorine gases will be stowed in the same manner as calcium hypochlorite (discussed below). All other oxidizers will be stowed in a dry compartment, away from combustible materials. Calcium hypochlorite is a bleaching agent and disinfectant. On board the vessel it is used for the purification of potable water, sewage treatment and biological and chemical agent decontamination. Calcium hypochlorite itself is noncombustible; however, it is a strong oxidizing agent that will

generate heat, liberate chlorine, and cause fire when stowed in contact with paints, oils, greases, detergents, acids, alkalines, antifreeze, fabrics and other organic and combustible materials. Calcium hypochlorite will normally be segregated and stored in a locked bin or locker with appropriate labeling. Bins or lockers should be located at least five (5) feet away from any heat source or surface that may exceed 140 degrees Fahrenheit, and are not subject to condensation or water accumulation. The area shall not be used to store paints, oils, greases, or combustible organic materials. Calcium hypochlorite should never be stored in any machinery space. Spills or contaminated calcium hypochlorite may be disposed of into water, flushed to the drain, or to the bilge. There is no fire hazard from dissolved calcium hypochlorite even in an oily bilge. Sweepings should be dumped immediately into the water (never in a trash can), and the broom or brush rinsed immediately. Sweepings must not be carried dry for disposal because the dust is dangerous in shipboard drafts. Calcium hypochlorite should not be used as laundry bleach. Organic chlorine laundry bleach is available for shipboard use. While less hazardous than calcium hypochlorite, under conditions of high heat and humidity it can emit fumes that could be hazardous to personnel. Store this bleach in a cool, dry place as far away as possible from conditions of high heat and humidity.

#### Compressed Gases

Compressed gases must be stowed on the weather deck, unless the vessel has below deck stowage spaces specifically designed for such material. Compressed gas cylinders will be stowed vertically and securely (with valve protection caps in place), away from other flammable materials (especially grease and oil). When compressed gases are stowed on the weather deck, the cylinders will be protected from direct rays of the sun, or accumulation of snow and ice. When compressed gases are stowed below deck, any leaking fumes must be prevented from entering ventilation air-intakes leading to working or living spaces. Since there is usually some gas remaining in most cylinders considered to be empty, "empty" cylinders will be stowed and handled with the same precautions as full cylinders. Compressed gases, particularly the flammable and explosive gases, must be handled with extreme care. Some



general rules for handling compressed gas cylinders are:

1. Take every precaution to prevent cylinders from being dropped or forcibly struck against hard surfaces (including other cylinders). Do not tamper with the safety devices in cylinder discharge valves; and when cylinders are not in use, be sure that the valve protection caps are always securely attached. (If the valve of a compressed gas cylinder should be snapped off, the released energy would cause the cylinder to behave as a missile. For example: A cylinder that is pressurized to 2,200 pounds [psi] can travel 2,600 feet in free flight; which in a confined space could be disastrous).
2. Prevent cylinders from coming into contact with fire, sparks, or electrical circuits (an exploded steel cylinder would have the same destructive effect as an exploding bomb).
3. Do not drag or slide cylinders that are to be moved. Secure and move them in appropriately designed hand trucks, or if hand trucks are not available, tilt the cylinders and carefully roll them on the bottom edge.
4. Secure cylinders in a cradle, pallet, or rack when they are loaded or off-loaded with a crane or derrick. Never hoist cylinders with electromagnets, hooks, or lines attached to the valve protection cap.
5. Do not alter or deface the numbers, colors, or other markings on the cylinders; do not add markings without approval of the chief engineer; and do not issue cylinders if their contents cannot be identified.

### **Acetylene**

Acetylene is inherently unstable, and may explode when subjected to heat or shock, or upon contact with chlorine, certain metals (i.e., copper, silver, and mercury). Therefore, acetylene must be stowed separately from oxygen or any other materials with which it forms an explosive compound. The gas must never be allowed to escape into an enclosed area and the cylinders must be protected from flames, sparks, lightning, and static electricity. Testing for suspected leaks should be done with soapy water. In moderate concentrations, acetylene may act as an intoxicant. In higher concentrations, it will cause unconsciousness,

and ultimately asphyxiation. Some grades of acetylene also contain many impurities, therefore breathing of acetylene in any concentration for any length of time must be avoided. Acetylene in cylinders is dissolved in acetone, which has a tendency to flow into the valve if the cylinders are stowed horizontally. For this reason, acetylene must only be stowed and used in an upright position, valve end up. When it is known or suspected that acetylene cylinders have been stowed on their sides, they will not be used until they have been in a vertical position for at least two (2) hours.

### **Oxygen and Chlorine**

Oxygen and chlorine are oxidizing gases that, because they can burn without an external air source, strongly support combustion. (Chlorine is also poisonous). Oxygen and chlorine cylinders must be stowed on the weather deck, or in a separate watertight storeroom that has at least one compartment between it and any space that is used for the stowage of combustibles such as flammable liquids or gases, paint, gasoline, and oil.

### **Nonflammable Gases**

Helium, nitrogen, carbon dioxide, and argon are nonflammable gases which, because of their inert characteristics, may be stowed with flammable or oxidizing gases. However, since these non-flammable gases will not support respiration (a sufficient quantity in a closed space will cause asphyxiation), they must be stored on the weather deck, or in other well-ventilated spaces. The same precautions are appropriate for halocarbon liquids because of their high vapor pressure, lack of odor, and tendency to displace air, causing suffocation. Halocarbon liquids are compounds of carbon containing any of the halogen elements (fluorine, chlorine, bromine, iodine, or astatine - i.e., monochlorodifluoro-methane).

### **Aerosol Products**

Aerosol products are liquids, solutions, or powders suspended in a gas propellant and contained in dispensers equipped with release valves. Containers of aerosol are used for the dispensing of paints, enamels, lacquers, insecticides, silicones, rust preventives, etc. The aerosol propellants may be low



boiling-point halogenated hydrocarbons or other hydrocarbons such as liquified propane or isobutane. Aerosol cylinders will burst if exposed to heat sources in excess of 120 degrees Fahrenheit, and are prone to leakage if subjected to impact. Aerosol products, therefore, should be stowed in the Flammable Liquid storeroom, or in cabinets away from oxidizing materials; and mechanical ventilation will be used, when necessary, to remove accumulated vapors.

### Flammable or Combustible Material

Flammable liquids have a flash point of 100 degrees Fahrenheit or below; combustible liquids, greases, and pastes have a flash point of 200 degrees Fahrenheit or below. Items that are flammable and/or combustible include:

- gasoline, oils, kerosene, and other petroleum products
- chemicals
- stencil paints, marking inks, and printer's ink
- solvents, thinners, primers, compounds, varnishes, and lacquers
- alcohol, acetone, ether, and naphtha
- greases and pastes.

Except for drummed petroleum, flammable liquids and other flammable or combustible material will be stowed in the Flammable Liquid storeroom.

The Flammable Liquid storeroom normally will be located at either end of the vessel, below the full load waterline, and will ideally be equipped with an automatic fire alarm and CO<sub>2</sub> system. This storeroom should also have incandescent and explosion proof overhead lights (protected by lamp guards), with the switch outside the compartment; and non-sparking vent fans, with the controllers outside the compartment.

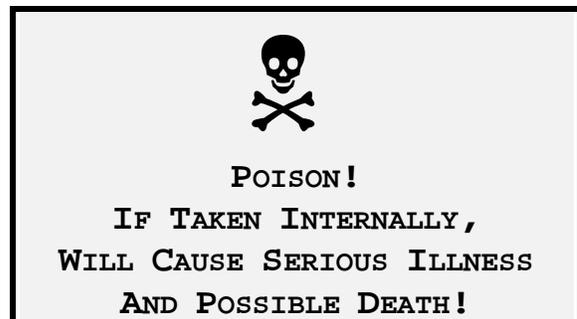
### Radioactive Material

Radioactive instruments, electron tubes, and certain other items are labeled with the conventional United

States Nuclear Regulatory Commission (USNRC) radiation symbol, which must not be removed or obliterated. The radiation levels of radioactive material depend upon the type and concentration of isotopes in each unit, and the number of units stowed together. Any area used for stowage of radioactive material (or each bin if there is no designated area) will be conspicuously posted with the standard radiation symbol and the words "**CAUTION - RADIOACTIVE MATERIAL,**" and as a minimum, will be monitored when initial or replenishment stocks of radioactive items are being stowed. Rubber gloves and extreme caution will be used in handling damaged or broken radioactive instruments (i.e., electron tubes, etc.), to prevent absorption of dangerous radioactive particles through skin abrasions. Any suspected radiation hazard will be promptly reported to the ship master, the cognizant MARAD marine surveyor, and the medical safety representative (as applicable).

### Toxic Substances

A toxic (poisonous) substance may cause discomfort, asphyxiation, and death if ingested/inhaled, or if absorbed through the skin. Therefore, adequate precautions must be taken to prevent such dangers when stowing or issuing toxic materials. Toxic substances will be stowed in a cool, well-ventilated area, separated from acids; and will be protected from fire hazards or impacts which may break seals or damage containers. Each case, carton, and individual container of toxic material must be labeled with a warning as shown below:



It is particularly important to ensure that containers of poisonous liquids (i.e., industrial alcohol) are



clearly identified and labeled to prevent human consumption, which can be fatal.

### Miscellaneous Material

The categories of material in the following paragraphs require special storage and handling precautions:

#### Delicate Instruments

Delicate instruments, which usually are expensive and easily damaged, require especially careful handling and protective stowage. Delicate instruments will be kept in a dry atmosphere, away from magnetron tubes or other magnetic devices; and (when possible), the storeroom temperature should be 70° Fahrenheit or below.

#### Drummed Products

Whether on board drummed products are flammable liquids or non-flammable material, the drums will be stowed on end with the bung end up. An adequate identification of the contents will be legibly indicated on the side of each drum; and if stowed on the weather deck, they will be covered with a tarpaulin (when practicable). Drummed products will be inspected at least weekly to ensure that the bungs are tight and that there are no leaks or corrosion.

#### Electron Tubes

Electron tubes can easily be broken and therefore must be handled carefully and adequately packaged when being stowed or issued. Electron tubes susceptible to damage from moisture are normally packed in moisture-proof barriers, frequently with a desiccant or other dehydrating agent. Humidity indicator cards or plugs are provided for inspecting the effectiveness of the desiccant. Such indicators turn from blue to pink as moisture is absorbed; and when they become pink, the desiccant must be replaced. The cartons, cushioning, and other protective packing and packaging in which electron tubes were received will not be removed in stowage unless it is absolutely necessary because of space limitations. When an electron tube container must be reduced in size, positive identity of the tube and as much of the packaging as possible will be retained. When space is not a factor, the original pack and packaging of an electron tube will be opened only if

it is reasonably certain that the packaged tube is not the one identified by the part number on the container.

1. Radioactive electron tubes. Instructions for the stowage and handling of radioactive material, including radioactive electron tubes, are provided in paragraph 12.6.7.
2. Magnetrons. Magnetrons are diode vacuum tubes in which the flow of electrons is controlled by an externally applied magnetic field. Special precautions will be taken to prevent magnetrons, with permanently attached magnets, from damaging magnetically sensitive instruments (i.e., compasses [electronic or mechanical], and wristwatches - which should not be worn when handling magnetrons).

#### Metals

Bar stock, sheet metal, angle iron, tubing, pipe and other metals will be kept in racks specifically designed for the stowage of such metals. The racks should be installed fore-and-aft to minimize shifting of the stowed material when the vessel is underway. Polished sheet metal and aluminum tubing are easily scratched and dented, and therefore must be carefully handled and secured in the rack. Gloves should always be worn when handling metals to protect the hands from injury, and to protect certain metals with polished surfaces from acid stains, which can be caused by perspiration. When practicable, non-corrosive, grease-proof material will be used to separate dissimilar metals that are required to be stowed together, inasmuch as direct contact between different metals may cause corrosion due to electrolysis.

Since any required re-identification of metals by chemical analysis is usually impractical (or too costly), many metals that lose their identification markings are likely to become unusable. Positive identification of metals to be used in high pressure steam systems (or other critical shipboard systems) is absolutely necessary. Correct part numbers, specification markings, manufacturer's markings, or other identification must be legibly indicated on each piece of metal in stowage, and on each piece of metal removed from stowage for use.



### **Motors and Generators**

Motors and generators will be stowed in their original containers (if available). If the original containers are not available, motors and generators will be protected from dust and humidity by enclosing them in a crate or plastic wrap, which includes an ample amount of desiccant; or (as a minimum), by coating their exposed shafts with grease and then wrapping the shafts with grease-proof paper.

### **Liquid Dielectric Capacitors**

Most liquid dielectric capacitors (especially "pyranol" types) are supplied with a piece of fine bus wire, which is attached for the purpose of grounding the capacitor prior to its use in a de-energized or disconnected circuit. This wire must not become detached in stowage, nor will it be removed by anyone other than the technician (when the capacitor is ready for use).

## Appendix K: Personal Protective Equipment

The following tables are provided to assist the user in determining the correct quantity of PPE that should be carried by RRF vessels. Additional guidance on the storage, installation and use of PPE is provided at the end of this appendix. Any additional questions about PPE should be directed to the ship's surveyor.

### **Table K-1**

The first column of Table K-1 lists ship names alphabetically. Note that changes in the Ship Manager's contract may add or remove individual ships. The second column is called PPE Group. This grouping depends on similar crew requirements and space configurations. The second column is called PPE Group. This grouping depends on similar crew requirements and space configurations.

### **Table K-2**

Table K-2 provides the mandatory allowance of Government Furnished safety equipment that is to be retained on RRF vessels.

If the column labeled ROQ (Reorder Quantity) has a "Y" in the space, it indicates the number of unopened or unused items at which point a restock order shall be made.

Those items having an ROQ of "N" are, generally, non-consumable equipment and indicate the number of items that are to be on board, in good repair, clean, and ready for use.

The numbers are based on ship surveys made of one ship of a particular ship group. For example, the DIAMOND STATE, TACS-7 survey was used as the basis for the EQUALITY STATE, GEM STATE, GRAND CANYON STATE, KEystone STATE and GREEN MOUNTAIN STATE allowance.

### **Table K-3**

Table K-3 lists the Federal Stock Numbers (FSN) for selected PPE.

**TABLE K-1: RRF PPE SHIP GROUPS**

<b><u>Ship Name</u></b>	<b><u>PPE Group</u></b>	<b><u>Ship Type</u></b>
ADM WM M. CALLAGHAN	ADM WM M. CALLAGHAN	RO/RO
ALATNA (T-AOG)	T-1	TANKER
AM OSPREY	OPDS	PRODUCT TANKER
BANNER	GULF	BREAKBULK
BEAVER STATE	T-ACS7	CRANE
CAPE ALAVA	CAPE A	BREAKBULK
CAPE ALEXANDER	CAPE A	BREAKBULK
CAPE ANN	CAPE A	BREAKBULK
CAPE ARCHWAY	CAPE A	BREAKBULK
CAPE AVINOF	CAPE A	BREAKBULK
CAPE BLANCO	CAPE A	BREAKBULK
CAPE BON	CAPE A	BREAKBULK
CAPE BORDA	CAPE A	BREAKBULK
CAPE BOVER	CAPE A	BREAKBULK
CAPE BRETON	CAPE A	BREAKBULK
CAPE CATAWBA	GULF	BREAKBULK
CAPE CHALMERS	CAPE A	BREAKBULK
CAPE COD	CAPE A	BREAKBULK
CAPE DECISION	CAPE D	RO/RO
CAPE DIAMOND	CAPE D	RO/RO
CAPE DOMINGO	CAPE D	RO/RO
CAPE DOUGLASS	CAPE D	RO/RO
CAPE DUCATO	CAPE D	RO/RO
CAPE EDMONT	CAPE E	RO/RO
CAPE FAREWELL	CAPE F	BARGE CARRIER
CAPE FEAR	CAPE F	BARGE CARRIER
CAPE FLATTERY	CAPE F	BARGE CARRIER
CAPE FLORIDA	CAPE F	BARGE CARRIER
CAPE GIBSON	CAPE J	BREAKBULK
CAPE GIRARDEAU	CAPE J	BREAKBULK
CAPE HENRY	CAPE H	RO/RO
CAPE HORN	CAPE H	RO/RO
CAPE HUDSON	CAPE H	RO/RO
CAPE INSCRIPTION	CAPE I	RO/RO
CAPE INTREPID	CAPE I	RO/RO
CAPE ISABEL	CAPE I	RO/RO
CAPE ISLAND	CAPE I	RO/RO
CAPE JACOB	CAPE J	BREAKBULK
CAPE JOHN	CAPE J	BREAKBULK
CAPE JOHNSON	CAPE J	BREAKBULK
CAPE JUBY	CAPE J	BREAKBULK
CAPE KENNEDY	CAPE W	RO/RO
CAPE KNOX	CAPE W	RO/RO
CAPE LAMBERT	CAPE L	RO/RO
CAPE LOBOS	CAPE L	RO/RO
CAPE MAY	CAPE M	HEAVY LIFT

**TABLE K-1: RRF PPE SHIP GROUPS (cont.)**

<b><u>Ship Name</u></b>	<b><u>PPE Group</u></b>	<b><u>Ship Type</u></b>
CAPE MENDOCINO	CAPE M	HEAVY LIFT
CAPE MOHICAN	CAPE M	HEAVY LIFT
CAPE NOME	T-1	BREAKBULK
CAPE ORLANDO	CAPE D	RO/RO
CAPE RACE	CAPE R	RO/RO
CAPE RAY	CAPE R	RO/RO
CAPE RISE	CAPE R	RO/RO
CAPE TAYLOR	CAPE T	RO/RO
CAPE TEXAS	CAPE T	RO/RO
CAPE TRINITY	CAPE T	RO/RO
CAPE VICTORY	CAPE V	RO/RO
CAPE VINCENT	CAPE V	RO/RO
CAPE WASHINGTON	CAPE W	RO/RO
CAPE WRATH	CAPE W	RO/RO
CHATAHOOTCHEE (T-AOG)	T-1	TANKER
CHESAPEAKE	OPDS	PRODUCT TANKER
COMET	CAPE W	RO/RO
CORNHUSKER STATE	T-ACS4	CRANE
COURIER	GULF	BREAKBULK
CURTISS	CAPE A	RO/RO
DIAMOND STATE	T-ACS7	CRANE
EQUALITY STATE	T-ACS7	CRANE
FLICKERTAIL STATE	T-ACS4	CRANE
GEM STATE	T-ACS7	CRANE
GOPHER STATE	T-ACS4	CRANE
GRAND CANYON STATE	T-ACS7	CRANE
GREEN MT STATE	T-ACS7	CRANE
GULF BANKER	GULF	BREAKBULK
GULF TRADER	GULF	BREAKBULK
KEYSTONE STATE	T-ACS7	CRANE
LAKE	GULF	BREAKBULK
METEOR	CAPE W	RO/RO
MN BUENAVENTURA	OPDS	PRODUCT TANKER
MN CAPISTRANO	OPDS	PRODUCT TANKER
MT WASHINGTON	OPDS	PRODUCT TANKER
NODAWAY	T-1	TANKER
NORTHERN LIGHT	GULF	BREAKBULK
PETERSBURG	OPDS	PRODUCT TANKER
PIONEER COMMANDER	CAPE A	BREAKBULK
PIONEER CONTRACTOR	CAPE A	BREAKBULK
POTOMAC	OPDS	PRODUCT TANKER
SCAN	GULF	BREAKBULK
WRIGHT	CAPE A	RO/RO



Appendix K: Personal Protective Equipment

Quantity of Safety Equipment per Ship Class	R O Q	A C D A M L A G H A N	C A P E A	C A P E D	C A P E E	C A P E F	C A P E H	C A P E I	C A P E J	C A P E L	C A P E M
Safety Line, ea.	N	2	2	2	2	2	2	2	2	2	2
Safety Harness, ea.	N	1	1	1	1	1	1	1	1	1	1
Hearing Protectors Soft plug Type (Box of 200)	Y	2	2	2	2	2	2	2	2	2	2
Hearing Protectors Earmuff Type, ea.	Y	4	4	4	4	4	4	4	4	4	4
Respirator cartridges Dust or HEPA (Red) (Box of 10)	Y	1	1	1	1	1	1	1	1	1	1
Respirator Cartridges Acid/Organic vapors (Yellow) (BX 10)	Y	1	1	1	1	1	1	1	1	1	1
Air Purifying Respirator Face Mask (Nose & Mouth), ea.	Y	2	2	2	2	2	2	2	2	2	2
Emergency Breathing Device, ea.	N	2	2	2	2	2	2	2	2	2	2
Respirator Cartridges Organic Vapor (Black) (BX 10)	Y	1	1	1	1	1	2	1	1	1	1
Welding Goggles, ea.	N	2	2	2	2	2	4	2	2	2	2
Welding Helmet, ea.	N	2	2	2	2	2	2	2	2	2	2
Safety Glasses w/ Side shield, ea.	Y	6	6	6	6	6	6	6	6	6	6
Particle Goggles w/ vents, ea.	Y	6	6	6	6	6	2	6	6	6	6
Chipping Goggles, ea.	Y	2	2	2	2	2	4	2	2	2	2
Eye wash Stations -Portable, ea.	N	2	2	2	2	5	3	2	2	2	2
Bacteriostatic Agent For Eyewash Stations, boxes of 4 bottles	Y	1	1	1	1	2	1	1	1	1	1
Face Shield, ea.	N	4	4	4	4	4	4	4	4	4	4
Chemical Splash Goggles w/ Covered vents, ea.	N	2	2	2	2	2	2	2	2	2	2
Rubber Chemical Gloves, each	Y	3	3	3	3	3	3	3	3	3	3
Vinyl and PVC Chemical Gloves, each	Y	4	4	4	4	4	4	4	4	4	4
KEVLAR Diver's Gloves, each	Y	2	2	2	2	2	2	2	2	2	2
Leather Welder's Gloves, each	Y	3	3	3	3	3	3	3	3	3	3
Noise Hazard Area-Hearing Protection Required, Signs ea.	N	5	8	2	1	5	5	6	10	4	3
CAUTION-Eye Protection Required in this Area, Signs ea.	N	2	1	4	5	4	3	4	3	2	3
CAUTION-Hearing Protection Required in this Area, Signs ea.	N	6	6	2	8	4	4	6	3	4	1
Eye Hazard Warning Tape, roll	Y	4	3	4	5	3	5	6	3	4	3
Non-Skid Tape Strips, ea.	N	135	100	42	84	168	110	138	78	118	22

Table K-2: Mandatory PPE Allowances



## Appendix K: Personal Protective Equipment

Quantity of Safety Equipment per Ship Class	R O Q	C A P E  R	C A P E  T	C A P E  V	C A P E  W	T - A C S 7	T - A C S 4	G U L F	O P D S	T - 1
Safety Line, ea.	N	2	2	2	2	2	2	2	2	2
Safety Harness, ea.	N	1	1	1	1	1	1	1	1	1
Hearing Protectors Soft plug Type (BX 200)	Y	2	2	2	2	2	2	2	2	2
Hearing Protectors Earmuff Type, ea.	Y	4	4	4	4	4	4	4	4	4
Respirator cartridges Dust or HEPA (red) (BX 10)	Y	1	1	1	1	1	1	1	1	1
Respirator Cartridges Acid/Organic vapors (Yellow) (BX 10)	Y	1	1	1	1	1	1	1	1	1
Air Purifying Respirator Face Mask (Nose & Mouth), ea.	Y	2	2	2	2	2	2	2	2	2
Emergency Breathing Device, ea.	N	2	2	2	2	2	2	2	4	4
Respirator Cartridges Organic Vapor (Black) (BX 10)	Y	1	1	1	2	1	1	1	1	1
Welding Goggles, ea.	N	2	2	2	2	2	2	2	2	2
Welding Helmet, ea.	N	2	2	2	2	2	2	2	2	2
Safety Glasses w/ Side shield, ea.	Y	6	6	6	6	6	6	6	6	6
Particle Goggles w/ vents, ea.	Y	6	6	6	6	6	6	6	6	6
Chipping Goggles, ea.	Y	2	2	2	2	2	2	2	2	2
Eye wash Stations -Portable, ea.	N	2	2	2	1	2	2	2	3	2
Bacteriostatic Agent For Eyewash Stations, boxes of 4 bottles	Y	1	1	1	1	1	1	1	1	1
Face Shield, ea.	N	4	4	4	4	4	4	4	4	4
Chemical Splash Goggles w/ Covered vents, ea.	N	2	2	2	2	2	2	2	2	2
Rubber Chemical Gloves, each	Y	3	3	3	3	3	3	3	3	3
Vinyl and PVC Chemical Gloves, each	Y	4	4	4	4	4	4	4	4	4
KEVLAR Diver's Gloves, each	Y	2	2	2	2	2	2	2	2	2
Leather Welder's Gloves, each	Y	3	3	3	3	3	3	3	3	3
Noise Hazard Area-Hearing Protection Required, Signs ea.	N	7	6	12	5	11	10	3	23	2
CAUTION-Eye Protection Required in this Area, Signs ea.	N	2	3	2	3	3	3	3	2	3
CAUTION-Hearing Protection Required in this Area, Signs ea.	N	2	2	6	4	3	4	3	6	2
Eye Hazard Warning Tape, roll	Y	2	3	5	5	3	3	3	3	4
Non-Skid Tape Strips, ea.	N	106	82	88	116	154	56	130	120	40

**Table K-2:** Mandatory PPE Allowances (cont.)



## Appendix K: Personal Protective Equipment

Item	NSN	Unit of Issue	
Safety Line	4240-00-022-2518	Each	
Safety Harness	4240-00-022-2522	Each	
Hearing Protectors, Soft Plug Type	6515-00-137-6345	Box of 200	
Hearing Protectors, Ear Muff Type	4242-00-691-5619	Each	
Red Respirator Cartridges	4240-01-230-6894	Box of 10	
Yellow Respirator Cartridges	4240-01-248-8083	Box of 10	
Air Purifying Respirator Face Mask	4240-01-086-7670	Each	
Emergency Escape Breathing Device	4240-01-116-9888 SOS: N35 AAC: D	Each	
Black Respirator Cartridges	4240-01-230-6892 MSA P/N 464031	Box of 10	
Welding Goggles (Shade)	4240-00-203-3804	Each	
Welding Helmet	4240-00-540-0623	Each	
Welding Helmet Lens	4240-01-311-6917	Each	
Welding Helmet Shade	4240-00-276-8939	Each	
Safety Glasses w/shield	4240-00-516-4531	Each	
Particle Goggles w/vents	4240-00-052-3776	Each	
Chipping Goggles	4240-00-269-7912	Each	
Eye Wash Stations, Portable	4240-01-258-1245	Each	
Face Shield	4240-00-202-9473	Each	
Chemical Splash Goggles w/covered vents	4240-00-190-6432	Each	
Rubber Chemical Gloves	Size 9 Size 10 Size 11	8415010129294 8415010137382 8515010137384	Each
Vinyl & PVC Chemical Gloves	Size M Size L	8415009162817 8415009162818	Each
KEVLAR Divers Gloves	Size M Size L	4220013977348 4220013977349	Each
Leather Welders Gloves	Size S Size M Size L	8415002690432 8415002687860 8415002687859	Each
"NOISE HAZARD AREA, HEARING PROTECTION REQUIRED" Signs	9905-01-122-1140	Each	
"EYE PROTECTION" CAUTION Sign	9905-01-100-8204	Each	
"HEARING PROTECTION" CAUTION Sign	9905-01-100-8205	Each	
EYE HAZARD WARNING TAPE	9905-01-342-5934	ROLL	
Non-skid Tape	7220-00-205-0389	Each	
Bacterio-static Agent for Eyewash Stations, Bottles	6840-01-267-4346	Box OF 4	

**Table K-3:** Stock Numbers for PPE



## PPE Location and Installation Guidance

Safety Harness and Safety Line. Stow in deck gear locker for use by personnel going aloft or working over the side.

Hearing Protectors. One box of soft hearing protectors shall be mounted at each entrance to the machinery casing. Two pairs of earmuffs shall be placed in the emergency diesel generator room. The reorder quantity amount shall be stowed in the original packaging so they can be readily used.

Respirators and cartridges. One air purifying respirator and five of each cartridge shall be placed in the electric shop in a locker. One air purifying respirator and five of each cartridge shall be placed in the machine shop in a locker. The reorder quantity amount shall be stowed in the original packaging so they can be readily used.

Emergency Breathing Devices. Two shall be placed in the MSD spaces on all ships and an additional two shall be placed in the pumproom on tankers. They shall be mounted on a permanent structure at about chest height so they are ready for immediate use.

Welding Goggles and Helmets. The welding goggles and helmets shall be stowed in the machine shop in a locker or hung on hooks on the bulkhead.

Safety Glasses w/side shields, Particle goggles w/vents, Chipping Goggles. Three pairs of safety glasses, three pairs of particle goggles and one pair of chipping goggles shall be stowed in the electrical shop. Three pairs of safety glasses, three pairs of particle goggles and one pair of chipping goggles shall be stowed in the machine shop. The reorder quantity amount shall be stowed in the original packaging so they can be readily used.

Portable Eye Wash Station. One eye wash station shall be installed, in accordance with the manufacturer's instructions, in each separate electric shop and machine shop. Bactericide water additive (HYDROSEP ® or equivalent) must be added to

portable eyewash stations to control organic growth in the water.

Face Shield. Two face shields shall be stowed in the electric shop and two shall be stowed in the machine shop.

Chemical Splash Goggles w/Covered Vents. One pair of chemical splash goggles shall be stowed in the paint locker, and one pair at the engine room distiller.

Gloves. The reorder quantity amount shall be stowed in the original packaging so they can be readily used. These gloves are to be used as the work requires.

“NOISE HAZARD AREA” Signs. A NOISE HAZARD warning sign shall be posted, at eye height, outside each entrance to the engine casing, the emergency diesel generator room, and the electric shop.

“HEARING PROTECTION CAUTION” Signs. A HEARING PROTECTION sign shall be located, outside each entrance to the engine casing, the emergency diesel generator room, and the electric shop.

“EYE PROTECTION CAUTION” Signs. An EYE PROTECTION CAUTION sign shall be posted, at eye height, outside each entrance to the electric shop and the machine shop.

“EYE HAZARD AREA Deck Marking Tape” Eye Hazard Area Deck Marking Tape shall be placed on the deck to identify the eye hazard area adjacent to the lathe, drill press, and grinder.

Non-Skid Strips. Non-skid strips shall be installed on clean walking surfaces:

- At the top and bottom of vertical and inclined ladders exposed to the weather,
- At the inside and outside of doors opening to the weather,
- At the bottom of vertical ladders to the mast and king posts,
- In the laundry rooms,
- In the galley,
- Around the emergency diesel generator and inside the entrance to the space,
- In the electrical shop,



- At the operator area of all boom and windlass operating stations,
- At the inside and outside of all entrances to the steering gear room, and
- At the top and bottom of all ladders within the engine casing where the decking is neither diamond tread nor grating.

### Use of PPE

Red Respirator Cartridges: High Efficiency Particulate Arresting (HEPA) cartridges for dust, fume, mist, and asbestos containing dust and mist.

Yellow Respirator Cartridges: Acid gases and Organic vapors.

Black Respirator Cartridges: Organic vapors

Air Purifying Respirator Face Masks: To hold respirator cartridges.

Emergency Escape Breathing Devices: These are portable sources of oxygen that can be worn to make an emergency exit from a contaminated space.

Rubber Chemical Gloves. These provide some abrasion resistance and are typically are used when handling chemicals and corrosives.

Vinyl and PVC Chemical Gloves. These are particularly effective when petroleum products are handled.

Kevlar Diver's Gloves. These are used when working with knives or other sharp implements to prevent cuts and abrasion. They also provide protection against heat and cold.

Leather Welder's Gloves. These resist sparks, moderate heat, chips and rough objects encountered when welding and torch cutting. They provide some cushioning against blows.

Safety Glasses with Eye Shields. Wear these when performing eye hazardous activities that produce dust and for small particle producing operations.

Particle Goggles with Vents. Wear these when performing the eye hazardous activities of drilling, grinding, and milling.

Chipping Goggles. Wear these when performing the eye hazardous activities of chipping paint and rusted areas.

Face Shields. Wear these when performing the eye hazardous activities of sand blasting, or other severe dust and particle producing operations that could impact facial skin.

Chemical Splash Goggles with Covered Vents. Wear these when performing the eye hazardous activities of pouring or handling corrosive liquids and solids.

Welding Goggles. Wear these when performing eye hazardous activity of welding and torch cutting.

Welding Helmets. Wear these when performing the eye hazardous activity of welding.

Eye Protection Caution Signs. These signs are used to identify areas that require protection for the eyes against hazards.

Portable Emergency Eyewash Facilities. These are used to flush out eyes in the event of damaging material entering eyes.

Hearing Protectors Soft Plug Type. These are partially inserted into the ear canal.

Hearing Protectors Ear Muff Type. These are worn over the ears and can be used in conjunction with the soft plug type.

Noise Hazard Area Signs. These signs are used to identify areas that normally have noise levels above regulated levels.

Noise Caution Signs. These signs are used to warn that activities in the locality may be generating noise levels that are above regulated levels. These signs can be carried to the location of activities where high noise levels are expected.

Safety Harnesses. Full Body Harnesses with Shock Absorbers are provided for working aloft, outboard, over the side of the bulwarks/railings, and in other cases where a risk of falling is present. Safety lines (lifelines) are also provided for use with the safety harnesses. These lines shall be dedicated for use with the harness, stored in a cool dry place, and kept in good condition

## Appendix L: Sample Sizes at 95% Confidence Level and 5% Precision

Population Size	Sample Size						
<b>100</b>		<b>4,000</b>		<b>8,000</b>		<b>12,000</b>	
1 - 100	80	4,001 - 4,100	352	8,001 - 8,100	367	12,001 - 12,100	373
101 - 200	132	4,101 - 4,200	353	8,101 - 8,200	367	12,101 - 12,200	373
201 - 300	169	4,201 - 4,300	353	8,201 - 8,300	368	12,201 - 12,300	373
301 - 400	197	4,301 - 4,400	354	8,301 - 8,400	368	12,301 - 12,400	373
401 - 500	218	4,401 - 4,500	355	8,401 - 8,500	368	12,401 - 12,500	373
501 - 600	235	4,501 - 4,600	355	8,501 - 8,600	368	12,501 - 12,600	373
601 - 700	249	4,601 - 4,700	356	8,601 - 8,700	368	12,601 - 12,700	373
701 - 800	260	4,701 - 4,800	356	8,701 - 8,800	369	12,701 - 12,800	373
801 - 900	270	4,801 - 4,900	357	8,801 - 8,900	369	12,801 - 12,900	374
901 - 1,000	278	4,901 - 5,000	357	8,901 - 9,000	369	12,901 - 13,000	374
<b>1,000</b>		<b>5,000</b>		<b>9,000</b>		<b>13,000</b>	
1,001 - 1,100	285	5,001 - 5,100	358	9,001 - 9,100	369	13,001 - 13,100	374
1,101 - 1,200	292	5,101 - 5,200	358	9,101 - 9,200	369	13,101 - 13,200	374
1,201 - 1,300	297	5,201 - 5,300	359	9,201 - 9,300	369	13,201 - 13,300	374
1,301 - 1,400	302	5,301 - 5,400	359	9,301 - 9,400	370	13,301 - 13,400	374
1,401 - 1,500	306	5,401 - 5,500	360	9,401 - 9,500	370	13,401 - 13,500	374
1,501 - 1,600	310	5,501 - 5,600	360	9,501 - 9,600	370	13,501 - 13,600	374
1,601 - 1,700	314	5,601 - 5,700	360	9,601 - 9,700	370	13,601 - 13,700	374
1,701 - 1,800	317	5,701 - 5,800	361	9,701 - 9,800	370	13,701 - 13,800	374
1,801 - 1,900	320	5,801 - 5,900	361	9,801 - 9,900	370	13,801 - 13,900	374
1,901 - 2,000	323	5,901 - 6,000	362	9,901 - 10,000	370	13,901 - 14,000	374
<b>2,000</b>		<b>6,000</b>		<b>10,000</b>		<b>14,000</b>	
2,001 - 2,100	325	6,001 - 6,100	362	10,001 - 10,100	371	14,001 - 14,100	374
2,101 - 2,200	328	6,101 - 6,200	362	10,101 - 10,200	371	14,101 - 14,200	375
2,201 - 2,300	330	6,201 - 6,300	363	10,201 - 10,300	371	14,201 - 14,300	375
2,301 - 2,400	332	6,301 - 6,400	363	10,301 - 10,400	371	14,301 - 14,400	375
2,401 - 2,500	334	6,401 - 6,500	363	10,401 - 10,500	371	14,401 - 14,500	375
2,501 - 2,600	335	6,501 - 6,600	364	10,501 - 10,600	371	14,501 - 14,600	375
2,601 - 2,700	337	6,601 - 6,700	364	10,601 - 10,700	371	14,601 - 14,700	375
2,701 - 2,800	338	6,701 - 6,800	364	10,701 - 10,800	371	14,701 - 14,800	375
2,801 - 2,900	340	6,801 - 6,900	364	10,801 - 10,900	372	14,801 - 14,900	375
2,901 - 3,000	341	6,901 - 7,000	365	10,901 - 11,000	372	14,901 - 15,000	375
<b>3,000</b>		<b>7,000</b>		<b>11,000</b>			
3,001 - 3,100	342	7,001 - 7,100	365	11,001 - 11,100	372		
3,101 - 3,200	344	7,101 - 7,200	365	11,101 - 11,200	372		
3,201 - 3,300	345	7,201 - 7,300	365	11,201 - 11,300	372		
3,301 - 3,400	346	7,301 - 7,400	366	11,301 - 11,400	372		
3,401 - 3,500	347	7,401 - 7,500	366	11,401 - 11,500	372		
3,501 - 3,600	348	7,501 - 7,600	366	11,501 - 11,600	372		
3,601 - 3,700	349	7,601 - 7,700	366	11,601 - 11,700	372		
3,701 - 3,800	349	7,701 - 7,800	367	11,701 - 11,800	373		
3,801 - 3,900	350	7,801 - 7,900	367	11,801 - 11,900	373		
3,901 - 4,000	351	7,901 - 8,000	367	11,901 - 12,000	373		

## Appendix M: PMS325 Letter dated 25 July, 2000



**DEPARTMENT OF THE NAVY**  
PROGRAM EXECUTIVE OFFICE  
EXPEDITIONARY WARFARE  
2531 JEFFERSON DAVIS HIGHWAY  
ARLINGTON VA 22242-5171

IN REPLY REFER TO

4 0 0 0  
Ser 325R32/ 0668  
25 JULY 2000

From: Program Executive Officer, Expeditionary Warfare  
(PMS325)

To: Distribution

Subj: OFFSHORE PETROLEUM DISCHARGE SYSTEM (OPDS)  
CONFIGURATION MANAGEMENT TANKER READINESS GUIDANCE

Ref: (a) CNO ltr Ser N4222D/4U592234 of 14 Jul 94 (NOTAL)  
(b) NAVSEA ltr Ser 38532/229 of 7 Apr 95  
(c) PEO-EXW ltr Ser 38532/1068 of 29 SEP 99

Encl: (1) OPDS Configuration Management Plan (CMP) of Jul  
00  
with APPENDIX A: OPDS MATERIAL ASSESSMENT PLAN  
and APPENDIX B: OPDS OUTFITTING MATERIAL  
MANAGEMENT PLAN (Distributed electronically)  
(2) OPDS Outfitting Allowance Lists for OPDS Tanker  
Material Assessments (Distributed electronically)  
(3) OPDS Outfitting Material Management Plan Custody  
Lists (Distributed electronically)

1. Reference (a) provided guidance to NAVSEA for establishment of OPDS lifecycle management including OPDS Configuration Management. Reference (b) promulgated the OPDS Configuration Management Plan (CMP). The CMP describes the scope of OPDS including the tankers, equipment, organizational responsibilities, and procedures for implementing changes. Reference (b) further stated that the scope of the effort and organizational responsibilities could change over time, and that the document may require revision to reflect mutually agreed upon changes. Numerous upgrades and changes to the OPDS have occurred since July 1995 and have resulted in the requirement to revise the OPDS Configuration Management Plan. Reference (c) was the most recent revision to the CMP and included guidance for conducting configuration audits, establishing of OPDS allowances, and monitoring tanker readiness.

## Appendix M: PMS325 Letter dated 25 July, 2000

Reference (c) did not provide written guidance for performing tanker readiness assessments or procedures for documenting accountability of OPDS equipment, outfitting gear, and tools issued to conduct OPDS operations.

2. Enclosure (1) was provided for review and comment to CNO (N422D), MARAD (MAR611), EWTGPAC (CODE 7), NBG1, NBG2, ACB1, ACB2, UCT1, and UCT2, and revised to incorporate the comments. Accordingly, this revised plan including Appendix A (OPDS MATERIAL ASSESSMENT PLAN) and Appendix B (OPDS OUTFITTING MATERIAL MANAGEMENT PLAN) is effective the date of this letter. It will remain in effect until such time as any of the above organizations provides a

Subj: OFFSHORE PETROLEUM DISCHARGE SYSTEM (OPDS)  
CONFIGURATION MANAGEMENT TANKER READINESS GUIDENCE

written request to NAVSEA (PEO-EXW, PMS325R) to modify or cancel this plan.

3. Enclosure (2) supports Appendix A and enclosure (3) supports Appendix B and are effective the date of this letter. These enclosures shall be updated as changes occur to the OPDS equipment, outfitting gear, and tools. Revisions to these enclosures will be issued without re-issuing the basic CMP or the Appendixes.

4. Since this document with all enclosures exceeds 100 pages, it will be distributed electronically. The hard copy of this cover letter to each addressee is for record purposes.

5. The PEO-EXW point of contact is Mr. Jim Martin, PMS325R32, commercial telephone (703) 602-0920.

M. D. FINK  
By direction

## Appendix M: PMS325 Letter dated 25 July, 2000

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PMS325R, C, Reading File, 3, 32 (2)

**OFFSHORE PETROLEUM DISCHARGE SYSTEM  
(OPDS)**

**CONFIGURATION MANAGEMENT PLAN  
(CMP)**

**RECORD OF CHANGES**

<b>Change Number</b>	<b>Date</b>	<b>Description of Change</b>
<b>1</b>	<b>12 Jul 95</b>	<b>Changed to reflect the shift in organizational responsibilities with the transfer of OPDS training assets</b>
<b>2</b>	<b>29 Sep 99</b>	<b>Changed to reflect upgrades to OPDS since Change 1</b>
<b>3</b>	<b>25 Jul 00</b>	<b>Changed PMS385 to PMS325R, incorporated Appendix A (OPDS Tanker Assessment Plan), and Appendix B (OPDS Outfitting Material Management Plan)</b>

## OFFSHORE PETROLEUM DISCHARGE SYSTEM CONFIGURATION MANAGEMENT PLAN

### 1. GENERAL

1.1 DESCRIPTION The Offshore Petroleum Discharge System (OPDS), developed by the Department of Defense (DOD), Program Executive Office, Expeditionary Warfare (PEO-EXW), Strategic Sealift Group (PMS325R), provides petroleum products to forces ashore where there are no or only limited port facilities. OPDS is carried on and deployed from five modified United States Department of Transportation, Maritime Administration (MARAD) tankers. Each tanker has a Single Anchor Leg Mooring (SALM), OPDS pumps, conduit storage and deployment equipment, Side Loadable Warping Tug (SLWT) outfitting equipment and, in the case of two tankers, OPDS Utility Boats (OUBs). The OPDS is deployed by Navy personnel trained by the Navy's Expeditionary Warfare Training Group, Pacific, (EWTGPAC).

1.2 PURPOSE To establish uniform policies, procedures, and organizational responsibilities for OPDS configuration management. This plan outlines policies and administrative procedures for identifying, developing and implementing equipment improvements for upgrading OPDS capabilities, and for control of the functional and physical characteristics of the OPDS.

1.3 Applicability The OPDS Configuration Management Plan (CMP) is applicable to all OPDS components, OPDS specific equipment, technical documentation and drawings, and training materials.

The OPDS configured tankers are:

- SS POTOMAC (OPDS-1)
- SS AMERICAN OSPREY (OPDS-2) (Reverted to National Defense Reserve Fleet (NDRF))
- SS CHESAPEAKE (OPDS-3) (with OUBs)
- SS PETERSBURG (OPDS-4) (with OUBs)
- SS MOUNT WASHINGTON (OPDS-5)

OPDS major components are:

OPDS equipment installed aboard the OPDS tankers, including Conduit, conduit reels, OPDS pumps, conduit handling equipment, SALM launch and retrieval systems, mooring/towing winches, forward electro-hydraulic crane, boat handling electro-hydraulic crane (SS CHESAPEAKE/SS PETERSBURG), special hoses and mooring hawser.

Single Anchor Leg Moorings (SALMs)

Components for installation on, or use by, the SLWTs, including tools.

OPDS Utility Boats (OUBs) (SS CHESAPEAKE/SS PETERSBURG)

Rigid Inflatable Boats (Rib's/Zodiac Boats)

Spare parts, core and pool outfitting, and OPDS Technical Manuals (including Vendor Manuals)

Also included in this plan are all ship distribution systems that directly interface and support OPDS equipment.

OPDS training facilities include:

Conduit Training Barge (CTB)

Training SALM (T-SALM)

Training OPDS Utility Boats (T-OUBs)

Associated training equipment (Training Set) and components

1.4 OBJECTIVES The intent of OPDS Configuration Management is to provide for the oversight and control of OPDS systems, the development of system modifications and procedures to enhance operation and sustainability of OPDS throughout its lifecycle, to document equipment configuration prior to and subsequent to authorized changes, and to prevent occurrence of unauthorized changes. Other objectives associated with this intent are:

a. To ensure that funding for authorized changes is expended for acquisition of hardware, fabrication, and installation/support services for that change. To reduce total life cycle costs, enhance equipment / system performance, implement schedule development, improve operational efficiency, identify logistics support needs, improve material readiness, and ensure and improve safety of personnel deploying and operating OPDS.

b. To reduce total life cycle costs, enhance equipment/system performance, implement schedule development, improve operational efficiency, identify logistics support needs, improve material readiness, and ensure and improve safety of personnel deploying and operating OPDS.

c. To establish and implement procedures for developing specifications, engineering documentation, and related technical data which support execution by industrial facilities and/or Navy operational personnel.

d. To verify configuration technical documentation is available when needed.

e. To improve equipment standardization and compatibility.

f. To assure the configuration of OPDS equipment is known, and that pertinent physical and functional interfaces are documented and controlled.

g. To develop and maintain equipment technical and operations manuals for

use in safely deploying and operating OPDS.

1.5 Policy The responsibility for OPDS Configuration Management is shared among the following organizations:

- a. PEO-EXW (PMS325R) is the Equipment Acquisition Manager, System Life Cycle Manager and Configuration Manager for OPDS. As Configuration Manager, PMS325R will evaluate proposed configuration changes, develop design documentation, coordinate with relevant organizations for testing and determine funding priorities for their accomplishment.
- b. MARAD, as vessel owner, is Configuration Manager for all tanker ship systems other than OPDS with the exception of mission specific equipment. MARAD is responsible for the training of the ships' crews for OPDS operations, maintenance and material readiness of the ship as a whole, including all installed and stowed OPDS equipment and spares. MARAD will provide the Configuration Manager, PMS325R, with listings of OPDS equipment, outfitting, spares, and technical documentation, including location (OPDS PC-SAL), for each OPDS tanker and for the warehouse spares.
- c. EWTGPAC, as OPDS training command, is responsible for the maintenance and material readiness of the CTB, T-SALM, OUBs, and associated training equipment and components. EWTGPAC also functions as the primary interface with fleet units regarding OPDS equipment concerns, operating procedures, and concerns regarding safeguarding equipment, and personnel safety.
- d. Amphibious Construction Battalion (ACB) and Underwater Construction Team (UCT) fleet units are responsible for providing "Lessons Learned" reports following OPDS training at EWTGPAC and OPDS exercises. During OPDS exercises, fleet units are responsible for maintenance and safe keeping of all issued equipments, outfitting gear, and tools. Records of lost and damaged equipment, gear, and tools shall be maintained and submitted to PMS325R and MARAD following the exercise.
- e. The scope of this effort and the organizational responsibilities could change over time resulting in revisions to this plan. All units are encouraged to provide written recommendations for changes to PMS325R for review and implementation. This plan is effective the date of the forwarding letter, and will remain in effect until such time as either MARAD, EWTGPAC or PEO-EXW (PMS325R) provides written notification to cancel it.

## 1.6 IMPLEMENTATION

- a. DOD Units (Navy, Army, and Marine Corps), MARAD Units, and the civilian ship's force (including MARAD's designated ship manager and MARAD's representatives) who deploy, operate, retrieve, interface with, or provide training for the OPDS may provide recommended changes to equipment and procedures, through their organizations, to the PMS325R Configuration Manager.
- b. PMS325R will provide overall direction and management for development, funding, and implementation of all OPDS authorized changes. PMS325R will solicit comments and recommendations from MARAD and EWTGPAC. PMS325R will determine funding priorities for implementing changes.

c. MARAD, working through the regional surveyors and ship managers, will review proposed OPDS configuration changes regarding the operating OPDS to ensure regulatory compliance, safety considerations, compatibility with ships systems, and the ability of MARAD to maintain the vessels' readiness. Upon completion of a review and acceptance of the new configuration, MARAD will accomplish the configuration change consistent with PMS325R priority, funding, and impact on the OPDS tanker maintenance program. Upon completion of the configuration change, MARAD will report the completion, with applicable support documentation, to the PMS325R Configuration Manager.

d. EWTGPAC will review proposed OPDS configuration changes for the OPDS training facilities/assets to update cost estimates and determine scheduling availability. EWTGPAC will accomplish configuration changes on the OPDS training facilities/assets consistent with PMS325R priority and funding, and report the completion, including submission of applicable documentation, to the PMS325R Configuration Manager.

e. DOD Units will submit recommended changes through EWTGPAC. EWTGPAC will comment on the change request and forward the request to the PMS325R Configuration Manger. Where applicable, recommended alterations and procedural changes will be implemented and evaluated by EWTGPAC prior to fleet implementation.

## 2. OPDS CONFIGURATION BASELINE

2.1 OPDS OPERATIONAL SUPPORT BASELINE The OPDS is a mature system with five operating tankers and training platforms with support equipment. Accordingly, configuration management will be based upon an operational support baseline that reflects the as-built condition of each unit. This is the definitive technical description of the physical configuration of each OPDS unit including systems, subsystems, and equipments. This also includes detailed as-built drawings, detailed specifications, test reports, technical manuals, and other related technical data. In addition, it also includes the technical specifications and drawings for all approved changes accomplished from delivery of the ship through the end of FY 97. PMS325R will establish and maintain the OPDS Operation Support Baseline. PMS325R will provide to MARAD and each OPDS vessel a baseline configuration, engineering documentation, technical manuals (including operational, maintenance, repair, and parts manuals) for all OPDS government furnished equipment purchased by PMS325R prior to and during each vessel's conversion.

2.2 CONFIGURATION AUDITS An audit is the comparison of equipment actual functional and physical characteristics with those specified in the current baseline for that OPDS vessel or unit. PMS325R and MARAD will jointly conduct a validation/verification audit to establish the OPDS configuration baseline for each ship and major component as time and resources permit. An audit will consist of the review of as-built drawings to ensure all known hardware changes have been incorporated. The drawings will then be compared to the actual installation by ship checks. Audits may also be conducted periodically during the life of the OPDS as the situation warrants.

Audits may be required after OPDS deployments, major overhauls, and modifications to assure hardware changes are adequately documented and readiness is maintained.

### 3. CHANGE CONTROL PROCEDURE

3.1 GENERAL The following procedures are established to:

- a. Ensure timely processing of all proposed changes by MARAD, EWTGPAC, and the PMS325R Acquisition and Configuration Manager.
- b. Provide continuous traceability and status of a change from the date of its proposal through its evaluation, approval, and implementation.

### 3.2 PROCEDURES

- a. Proposed changes may be originated from within PMS325R, MARAD (including MARAD personnel, ships' crews and the vessels' designated ship managers) through the MARAD Program Manager, DOD units (Army, Navy, and Marine Corps) through EWTGPAC, or from contractors.
- b. All proposed changes to OPDS equipment and replacement or augmentative components shall be submitted to PMS325R. This shall include recommendations for changes in the number and type of outfitting equipment, spares, suppliers names and addresses, stock and reordering levels by tanker, and equipment/system changes that could impact operational capabilities and procedures.
- c. PMS325R will evaluate the proposed change. If required, additional details will be requested from the originator. If it is determined that the change has merit, PMS325R will provide copies of the proposed change to those organizations concerned with the change inviting their review and comment. Such organizations could include MARAD, EWTGPAC, Amphibious Construction Battalions, Underwater Construction Teams, and Army and Marine Corps fuels units. When input is received a detailed evaluation of the proposed change will be made, to include a cost effectiveness analysis.
- d. If the proposed change is technically desirable and cost effective, PMS325R will prepare technical specifications, if not provided with the proposal, for the change with preliminary cost estimates and forward the proposed change to MARAD or EWTGPAC to review and update cost estimates and determine scheduling availability. When all data is received, a decision will be made to implement or reject the proposed change. The originator of the proposed change will be notified in either case. Where applicable, the proposed change will be implemented and tested by EWTGPAC on the training equipment prior to implementation in the fleet.
- e. Authorized changes will be prepared by PMS325R as OPDS/OUB Alterations. Each alteration will at a minimum contain the following:
  - (1) Reason for change
  - (2) Change description
  - (3) Cost estimate
  - (4) Applicability
  - (5) Supported documentation as required
- f. Specifications for approved/proven changes will be forwarded to MARAD/EWTGPAC for implementation. As appropriate, funding authority will also be

provided. The change will be recorded in the OPDS Configuration Baseline and changes to all applicable OPDS components scheduled.

g. MARAD/EWTGPAC will track the progress of approved configuration changes, and provide status reports to PMS325R, including financial information, (actual costs versus previous estimates) upon completion. The effect of configuration changes on required spare and repair parts will be reflected in inventories and reorder levels, with copies of updated allowances provided to the PMS325R Configuration Manager.

h. PMS325R will change all technical manuals to reflect changes in equipment configuration and operating procedures, as applicable, and provide periodic updates to these manuals.

i. PMS325R will advise CESO, Port Hueneme, CA, of all equipment changes affecting the training of military personnel in OPDS functions, together with proposed procedural changes in operating and maintaining such equipment.

j. MARAD will take actions as required to update crew training materials and instructions for tankers to ensure configuration changes are included in training.

k. MARAD will maintain an accurate and up-to-date computerized inventory by location of all OPDS equipment and core spares, for each of the OPDS tankers, and all pool spares in MARAD warehouses. A separate computerized inventory will be maintained for all OPDS technical documentation retained on the tankers and will be provided to PMS325R as changes occur.

l. EWTGPAC will maintain an accurate and up-to-date computerized inventory of all OPDS training equipment and spare parts. Inventories and changes will be provided to PMS325R as changes occur.

m. With the introduction of OUBs, MARAD and EWTGPAC will maintain accurate and up-to-date records of material condition, major repairs and recommended preventative maintenance above that already recommended and provide this information to PMS325R as changes occur.

# OFFSHORE PETROLEUM DISCHARGE SYSTEM (OPDS)

## CONFIGURATION MANAGEMENT PLAN (CMP)

### APPENDIX A: OPDS MATERIAL ASSESSMENT PLAN

#### 1. GENERAL

1.1 BACKGROUND The Offshore Petroleum Discharge System (OPDS) Configuration Management Plan (CMP) was updated and distributed in September 1999 to reaffirm the organizational responsibilities and related procedures for OPDS Life Cycle Management. The objective of this plan is to identify logistics support requirements, improve equipment and procedures, and improve overall material readiness. The CMP also identifies organizational responsibilities and procedures to enhance tanker material readiness.

1.2 PURPOSE This Appendix is intended to supplement the information provided in paragraph 2.2 of the September 1999 CMP by providing additional procedures and guidance for conduct of OPDS Tanker Configuration Assessments with the aim of assuring the material readiness of the OPDS tankers. Additionally, conduct of these assessments on an annual basis will provide for an accounting of outfitting material by Naval personnel, (ACB, ACU and UCT), and operation of selected OPDS support equipment.

1.3 OBJECTIVES This plan is intended to establish criteria and related procedures to meet the following objectives:

- a. To conduct an annual Operational Assessment of OPDS equipment and outfitting on all Full Operating Status (FOS), Reduced Operating Status (ROS), and Ready Reserve Force (RRF) OPDS tankers. Each tanker will be assessed to confirm the operational condition of selected OPDS support equipment as agreed upon by NAVSEA, MARAD, and Navy personnel prior to the assessment.
- b. To determine the status of logistic support for OPDS equipment, outfitting, and spares onboard the tanker.
- c. To establish specific organizational responsibilities for the conduct of the assessments, and the remedial action, if required, to clear any discrepancies.
- d. In the case of SS CHESAPEAKE and SS PETERSBURG, the assessment shall include the launch, operation, and recovery of OUBs.

#### 2. ORGANIZATIONAL RESPONSIBILITIES FOR OPDS TANKER ASSESSMENTS

2.1 GENERAL NAVSEA, MARAD, and NAVY personnel (EWTGPAC, ACB, ACU, and UCT) shall jointly conduct operational condition assessments of the OPDS tankers. NAVSEA shall act as the lead agency/team leader to coordinate all OPDS tanker assessments.

2.2 RESPONSIBILITIES OPDS tanker condition assessments are joint efforts involving NAVSEA, MARAD and Navy personnel. Agency responsibilities are:

- a. NAVSEA shall:
  - (1) Issue Operational Condition Assessment Plan and advise CNO (N42) of planned ship visits.
  - (2) Act as lead agency to coordinate and schedule the assessments with MARAD and EWTGPAC.
  - (3) Provide knowledgeable personnel to aid in the conduct of the assessments.
  - (4) Prepare Allowance Change lists.
  - (5) Prepare OPDS/OUBALTS.
  - (6) Maintain the OPDS Technical Manuals.
  - (7) Provide current Allowance Lists for each OPDS tanker.
  - (8) Provide check sheets for use in conducting the assessments.
  - (9) Prepare the final OPDS Tanker Assessment Report following receipt of input from all participants.
  
- b. MARAD shall:
  - (1) Identify to NAVSEA available times and locations of the tankers for conducting the assessments.
  - (2) Provide knowledgeable personnel to support the conduct of the assessments.
  - (3) Prepare in advance PC-SAL printouts of the outfitting and spares to reflect current status/shortfalls and ordering/receipt status.
  - (4) Prepare OPDS system components for the assessment, such as air compressors, Beach Termination Units (BTUs), and OUBs where applicable.
  - (5) Provide input to NAVSEA and assist in final review for the Assessment Report.
  - (6) Report disposition of discrepancies identified during the assessment to NAVSEA.
  
- c. EWTGPAC shall:
  - (1) Provide LTIs for OUB light off, operation and shut down.
  - (2) Provide an engineer for OUB operations.
  - (3) Provide a rigger to support OUB operations.
  - (4) Provide input to NAVSEA and assist in final review for the Assessment Report.
  
- d. ACB shall:
  - (1) Provide a Military Officer in Charge (OIC) for the assessment.
  - (2) Provide Coxswains/deck ratings.
  - (3) Provide Engineers/ENs and EMs.
  - (4) Provide input to NAVSEA and assist in final review for the Assessment Report.
  
- e. ACU shall:
  - (1) Provide a Coxswain/deck rating.
  - (2) Provide an Engineer/EN.
  - (3) Provide input to NAVSEA and assist in final review for the Assessment Report.

- f. UCT shall:
  - (1) Provide an Officer or Petty Officer in Charge.
  - (2) Provide sufficient personnel to inventory the SALM and SALM deployment outfitting.
  - (3) Provide knowledgeable personnel for air compressor operation.
  - (4) Provide input to NAVSEA and assist in final review for the Assessment Report.

### 3. PROCEDURES FOR CONDUCTING OPDS TANKER ASSESSMENTS

3.1 GENERAL The annual OPDS tanker operational condition assessments are planned for the four tankers that are in FOS, ROS, and RRF status. The amount of equipment operated/demonstrated is dependent on the tanker's status. Whenever possible OUBs will be operated on tankers so equipped. With proper preparation, five working days are considered sufficient to conduct the assessment. All outfitting material and spares inventoried shall be immediately re-inventoried, stowed, and resealed to the satisfaction of the MARAD representative(s) to insure readiness for the next operation. The assessment shall not be deemed complete until all material has been accounted for and restowed. All assessment participants are responsible for support in this effort. The Assessment Report shall report the condition of the OPDS equipment. The condition criteria for OPDS equipment, outfitting, and spare parts shall be:

- a. Operational – Equipment is within acceptable operating parameters to fulfill the OPDS Mission.
- b. Marginally Operational – Any noted discrepancies are correctable within the timeframe to fulfill the OPDS Mission.
- c. Inoperable – The noted discrepancies cannot be corrected within the timeframe to fulfill the OPDS Mission. In the event that the problem can be worked around and the OPDS mission reasonably completed, then the overall condition may be judged as Marginally Operational.

The overall condition will be based on the assessment of three elements, OPDS equipment, OPDS outfitting, and OPDS spares. Where there are “Inoperable” notation, a judgement call made by NAVSEA, with inputs from MARAD and Navy personnel, may be made based on the possibility of reasonable work arounds to meet the OPDS Mission requirements. In all cases, the discrepancies shall be noted and action initiated to correct the problem. Follow up shall be in accordance with the CMP.

3.2 MATERIAL SUBJECT TO ASSESSMENT The following OPDS material is subject to assessment. Equipment operation will be dealt with on a case by case basis.

- a. Fixed and portable OPDS equipment which may be operated includes: Beach Termination Units (BTUs) (open and inspect), Air Compressors, and OUBs including winches, clamping table, air compressor, air conditioning unit. The Tow Tugs will

lower and raise the maximum anticipated operational loads that is readily available during OUB operations. As a minimum, the 1500 lb anchors will be used.

- b. Outfitting:
  - (1) SLWT Outfitting shall be inventoried, restowed, and sealed.
  - (2) OUB Outfitting shall be inventoried prior to OUB operations, and inventoried following completion of operations, restowed, and sealed.
  - (3) SALM Outfitting shall be inventoried, restowed, and sealed. SALM valves where applicable, shall be cycled to assure operational status.
  - (4) Zodiac boat equipment and spares shall be inventoried, restowed, and sealed.
- c. Critical spare parts, as identified in OPDS operation after action reports, shall be inventoried. All other spare parts shall be checked randomly against the allowance list and the PC-SAL printout.

3.3 GENERIC ASSESSMENT SCHEDULE If possible the OPDS tanker assessments shall be completed in five working days. An inbrief shall be conducted at the start of the first day, and daily meetings shall be scheduled as mutually agreed upon. The following is a day by day generic schedule:

- a. Day 1
  - (1) Inbrief onboard tanker
  - (2) Start and complete OUB Outfitting inventory (on OUB equipped tanker).
  - (3) Conduct preoperation checks of OUBs (on OUB equipped tankers).
  - (4) Start SLWT Outfitting inventory (will complete the first day on SLWT tankers).
- b. Day 2
  - (1) Complete SLWT Outfitting inventory.
  - (2) Cycle SALM valves.
  - (3) Inventory SALM Outfitting on the SALM.
  - (4) Launch OUBs for operations (on OUB equipped tankers).
  - (5) Inspect BTUs and inventory, restow, and seal outfitting.
- c. Day 3
  - (1) Operate OUBs (on OUB equipped tankers).
  - (2) Inventory Zodiac boats.
  - (3) Random check of OUB spare parts.
  - (4) Inventory Air Manifold and Conduit Flooding Buoy (CFB).
  - (5) Test operate the OPDS Air Compressors.
- d. Day 4
  - (1) Operate OUBs (on OUB equipped tankers).
  - (2) Inventory remaining SALM Outfitting, restow, and seal.
  - (3) Check for OPDS/OUBALT completion status.
  - (4) Complete OUB operations and retrieve OUBs.
- e. Day 5
  - (1) Inventory OUB Outfitting, restow, and seal (on OUB equipped tankers).
  - (2) Complete any tasks not completed on previous days.
  - (3) Provide and discuss assessment report inputs.

(4) Conduct an outbrief onboard the tanker.

# OFFSHORE PETROLEUM DISCHARGE SYSTEM (OPDS)

## CONFIGURATION MANAGEMENT PLAN (CMP)

### APPENDIX B: OPDS OUTFITTING MATERIAL MANAGEMENT PLAN

#### 1. GENERAL

1.1 BACKGROUND The Offshore Petroleum Discharge System (OPDS) Configuration Management Plan (CMP) was updated and distributed in September 1999 to reaffirm the organizational responsibilities and related procedures for OPDS Life Cycle Management. The objective of this plan is to identify logistics support requirements, improve equipment and procedures, and improve overall material readiness. The CMP also identifies organizational responsibilities and procedures to enhance tanker material readiness.

1.2 PURPOSE This Appendix is intended to supplement the information provided in paragraphs 1.4 and 1.5 of the September 1999 CMP by providing additional procedures and guidance for management and safe keeping of all issued equipments, outfitting gear, and tools used to conduct OPDS operations, with the aim of assuring the material readiness of the OPDS tankers.

1.3 OBJECTIVES This plan is intended to establish criteria and related procedures to meet the following objectives:

- a. To provide a vehicle for the identification, reporting, and correction of OPDS material deficiencies to ensure OPDS material readiness.
- b. To provide for the orderly turnover of equipment, outfitting gear, and tools between MARAD tanker personnel and Amphibious Construction Battalion (ACB), Assault Craft Unit (ACU), and Underwater Construction Team (UCT) personnel.
- c. To establish specific procedures for the issue and retrieval of equipment, outfitting gear, and tools required for OPDS deployment and retrieval.
- d. To establish specific organizational responsibilities for the conduct of the custody turnover and provide for reporting of lost or damaged equipment, gear, and tools.

#### 2. ORGANIZATIONAL RESPONSIBILITIES FOR OPDS OUTFITTING MATERIAL MANAGEMENT

2.1 GENERAL NAVSEA, MARAD, and NAVY personnel (EWTGPAC, ACB, ACU, and UCT) shall jointly take action to insure accountability for OPDS equipment, outfitting gear, and tools. The proper condition of this material is critical to maintain OPDS deployment readiness. MARAD shall act as the lead agency for the physical issue and return of OPDS equipment, outfitting gear, and tools used for OPDS deployment and retrieval.

2.2 RESPONSIBILITIES OPDS Outfitting Material Management is a joint effort involving NAVSEA, MARAD and Navy personnel. Agency responsibilities are:

- a. NAVSEA shall:
  - (1) Assign knowledgeable personnel to aid in the issue and return of OPDS material.
  - (2) Provide current Allowance Lists for each OPDS tanker.
  - (3) Prepare Allowance Change lists.
  - (4) Provide check-off lists for use in issue, tracking, and return of OPDS material:
    - (a) To EWTGPAC for use in training and to provide to ACB, ACU and UCT personnel.
    - (b) To the applicable OPDS Technical Manuals.
  - (5) Assess post operation and exercise discrepancies and determine any necessary configuration changes to allowances to improve continued readiness.
  
- b. MARAD shall:
  - (1) Coordinate the issue and return of OPDS material.
  - (2) Assign knowledgeable personnel to support the issue and return of OPDS material.
  - (3) Report to NAVSEA the condition of OPDS material following return to include loss or damage of OPDS equipment, outfitting gear, and tools.
  - (4) Review post operation and exercise discrepancies and make recommendations to NAVSEA for improved configuration allowances and operating procedures to enhance future readiness.
  
- c. EWTGPAC shall:
  - (1) Assign knowledgeable personnel to support OPDS operations as requested.
  - (2) Provide check-off lists to Navy personnel for use in the issue, tracking, and return of OPDS equipment, outfitting gear, and tools.
  - (3) Review post operation and exercise discrepancies and make recommendations to NAVSEA for improved configuration allowances and operating procedures to reduce damage and/or loss of material to enhance future readiness.
  
- d. ACB shall:
  - (1) Assign an Officer in Charge (OIC) for the OPDS operation. Liaison with the other ACB to provide an Assistant Officer in Charge (AOIC) for the OPDS operation to conduct 24 hour operations. Both officers shall be graduates of the Expeditionary Warfare Training Group, Pacific (EWTGPAC) Offshore Petroleum Discharge System (OPDS) Officer in Charge course of instruction.
  - (2) Assign key personnel to conduct the following:
    - (a) Responsible for receiving, tracking, and returning OPDS material.
    - (b) Organize the Offload Preparation Party (OPP) and conduct Limited Technical Inspection (LTI) on OPDS Utility Boats (OUBs) onboard OUB outfitted tankers.
    - (c) Verify the inventory and arrange for shipment of lighterage repair collateral gear and air detachment boxes to include as a minimum:
      - ((1)) The ability to conduct hull and mechanical structure repairs and electrical repairs while forward deployed in support of 24 hour operations.
      - ((2)) Ensure an adequate supply of repair parts is provided for the OPDS operation.

- ((3)) Provide the following personnel to staff the lighterage Repair Facility:
            - ((a)) Lighterage Repair OIC – day and night shift.
            - ((b)) Rated Engineman – three per shift.
            - ((c)) Rated Electrician’s Mate – two per shift.
            - ((d)) Rated Boatswain’s Mate – two per shift.
            - ((e)) Communications/RTO – one per shift.
  - (3) Assign a Lighterage Repair OIC who will maintain an accurate record of all OPDS equipment, outfitting gear, tools, and repair parts utilized during OPDS operations, and provide to MARAD and NAVSEA upon completion of OPDS material return.
- e. ACU shall:
  - (1) Assign key personnel responsible for receiving, tracking, and returning OPDS material.
  - (2) Maintain an ongoing record of lost or damaged equipment, outfitting gear, and tools to provide to MARAD and NAVSEA upon completion of OPDS material return.
- f. UCT shall:
  - (1) Assign an Officer or Petty Officer in Charge of SALM, Dive Boat, and dive support equipment.
  - (2) Assign key personnel responsible for receiving, tracking, and returning OPDS SALM outfitting, fly away dive gear, air compressor operations, and permanently installed diving support equipment.
  - (3) Maintain an ongoing record of lost or damaged SALM equipment, SALM outfitting gear, and SALM tools, and Dive Boat gear to provide to MARAD and NAVSEA upon completion of OPDS material return.

### 3. PROCEDURES FOR OPDS OUTFITTING MATERIAL MANAGEMENT

3.1 GENERAL Management of OPDS Outfitting Material is a joint effort between NAVSEA, MARAD, and NAVY personnel (EWTGPAC, ACB, ACU, and UCT). The goal of OPDS Outfitting Material Management is to maintain this material in a ready to issue condition to support OPDS operations. The implementation of OPDS Outfitting issue and return procedures along with the OPDS Material Assessment Plan will ensure attainment of this goal. The procedures will allow for the identification of damaged or lost equipment, outfitting gear, and tools during and at the conclusion of OPDS operations, permitting repair and/or replacement as required. To accomplish this, accurate records of issue, a running inventory and notation of abnormalities, and an accurate return and restow of equipment, outfitting gear, and tools is required. The following procedures are intended to accomplish this end.

3.2 OPDS OUTFITTING MATERIAL ISSUE PROCEDURES The following OPDS Outfitting Material Issue Procedures are for use with an embarked Offload Preparation Party (OPP). The same procedures shall be used with ACB, ACU, and UCT personnel at the operations area should an OPP not embark.

- a. Utilizing the OPDS Material Check-Off Lists, OPP and MARAD designated

personnel shall jointly inventory and transfer custody of the OPDS equipment, outfitting gear, and tools, required to conduct operations, to the OPP designated personnel. The designated senior personnel for the respective parties shall sign-off on the custody transfer documents as being accurate.

- b. OPP personnel shall maintain a running inventory while continuing OPDS deployment preparations in transit to the operations area. Once in the area, the OPP shall transfer custody of the equipment, outfitting gear, and tools to the assigned ACB, ACU, and UCT personnel, who shall be responsible for maintaining a daily inventory and record of damage or lost OPDS equipment, outfitting gear, and tools.
- c. Should additional equipment, outfitting gear, or tools be required as replacements for lost or damaged material, this shall be annotated on the applicable check-off list at custody turnover.

**3.3 OPDS OUTFITTING MATERIAL RETURN PROCEDURES** The following OPDS Outfitting Material Return Procedures are essential elements in providing OPDS Outfitting Material in a ready to issue condition. As with the issue of this material, the return requires a joint effort of assigned MARAD, ACB, ACU, and UCT personnel. Identifying shortfalls and maintenance requirements are required to return the material to a ready for issue status.

- a. Utilizing the OPDS Material Check-Off Lists, the assigned MARAD, ACB, ACU, and UCT personnel shall jointly inventory, restow, temporarily seal, and transfer custody of the returned OPDS equipment, outfitting gear, and tools. Lost or damaged material shall be annotated as such on the check-off lists. The designated senior personnel for the respective parties shall sign-off on the custody transfer documents as being accurate.
- b. Navy personnel prior to transfer back to the OPDS tanker shall accomplish cleaning/reconditioning of outfitting to the maximum extent possible. Material requiring further cleaning/reconditioning, (such as chain hoists and dewatering pumps used on the SALM), shall be inventoried, stowed, and the check-list annotated to that fact to enable the MARAD personnel to locate and refurbish the material to ready to issue status following the return, inventory, and restow of all OPDS equipment, outfitting gear, and tools.
- c. Upon completion of operations and return of all OPDS equipment, outfitting gear, and tools, a listing of lost or damaged material, and those replaced using spares, shall be provided to the operation participants, including NAVSEA and MARAD Headquarters.
- d. A post operation/exercise meeting shall be conducted between NAVSEA, MARAD, and Navy personnel to review losses and damages incurred to the OPDS inventory. All parties are to provide recommendations to minimize losses and damages to OPDS outfitting. NAVSEA shall assess the recommendations and implement changes to the inventory and/or OPDS procedures to maximize operational readiness.

## Appendix N: MARAD OPDS Shore Set

NAME	DESCRIPTION
ACTUATOR	BUTTERFLY VALVE, 8" AND 10", 30:1 RATIO ASSEMBLY, EQ # 9702-OUTFG-04A SALM PIPING SYSTEM
ADAPTER	"A", ALUMINUM, 2 1/2",
ADAPTER	"D", ALUMINUM, 2 1/2"
ADAPTER	"D", ALUMINUM, 6"
ADAPTER	BRASS, 2 1/2" MALE NST X 2 1/2" MALE NPT
ADAPTER	MALE AND FEMALE, WITH PIG CATCHER, ALT P/N C16-203-SP
ADAPTOR	FLANGE, CAMLOCK 6"
ADAPTOR	FLANGE, CAMLOCK, 4"
ADAPTOR	FLANGE, SINGLE GROOVE VICTALLIC 4"
ADAPTOR	FLANGE, SINGLE GROOVE VICTALLIC 6"
AMPLIFIER	LINE TYPE, S/N 1874 DWG NO. JB-WB-224
ANCHOR	1500LBS, LWT/DANFORTH, EQ 9716-OUTFG-02A OUB TOW TUG
ANCHOR	DANFORTH, 75 LB.
ANCHOR	DUCKBILL, EARTH, ALT P/N 152134
ANCHOR	MUSHROOM, 50LBS, ALT MFG SEABOARD
ANCHOR	NAVMOR (100 LB)
ANTI-SEIZE	6 OZ
BAG	AIR, LIFT, PARACHUTE TYPE, 2200 LB CAPACITY, MODEL DLE 1
BAG	TOOL, CANVAS 18" ALT P/N MFR KLEIN 5102-18
BAR	CROW, WRECKING, WEDGE POINT, 1-1/4" X 57", 16 LB, ALT P/N MFR COLLINS AXE PP 18, MCMaster-CARR 5891A
BAR	PINCH-OFF SET, 14", ALT P/N MFR PROTO 2120
BAR	SPREADER, FOR TOWING BRACKET ASSEMBLY, 1 EA AMERICAN OSPREY SALMCAGE
BAR	SPREADER, W/3 SLING, 5 TON, USE WITH 40' HOSE SECTIONS FOR TANKER RAIL HOSES, 4 EA LOC LWRCGOHDPORT
BAR	SS 2" DIA ROUND BAR, EQ # 9700STENEZP SUBMARINE HOSE TOWING ARRANGEMENT
BAR	THREADED, 5/8" X 6' LG, WITH TEN EA 5/8" UNC NUT AND WASHERS ATTACHED
BASKET	STRAINER, EQ# 9700-OUTFG-01A, OPDS CONDUIT FLOODING BUOY
BATTERY	BATTLE LANTERN 6 VOLT (12 EACH PER BOX) ALT P/N MFR EVEREADY EV90
BATTERY	D CELL 1 BOX OF 12 EACH, ALT P/N MFR MCMaster-CARR 71455K55
BATTERY	FOR MAIN BUOY 12 V 115 AH PHOTOVOLTAIC-RECHARGEABLE, ALT P/N MFR AUTOMATIC POWER AA1-1200, APB-1295A
BATTERY	GELTYPE, 6 VOLT, 1.35 VOLYS 1200 AH (FOR NAVLTS) ALT P/N MFR AUTOMATIC POWER AA1-1200,
BELL	BRASS, WITH BRACKET, NOMINAL DIA MOUTH 8",
BLADE BUNDLE	HACKSAW, 12 X 18 TPI, 10 PER BUNDLE, ALT P/M MC MASTER CARR 4050A5
BLADE BUNDLE	HACKSAW, 12 X 24 TPI, 10 PER BUNDLE, ALT P/M MC MASTER CARR 4050A6
BLOCK	1" STAINLESS STEEL HALYARD, W1/4" SS SHACKLE. ALT P/N MFR MCMaster-CARR 3083T21 3583T34 AND ALT P/N
BLOCK	MOUNTING, ALT P/N MFR ENERPAC RB-5
BLOCK	SNATCH, 12 TON, STAR WHEEL, WITH SAFETY SHACKLE, ALT P/M MC KISSICK 107262
BLOCK	SNATCH, 2 TON, STAR WHEEL, WITH SAFETY SHACKLE 1 3/8" STDALT P/N MFR MCMaster-CARR 3257T24
BLOCK	SNATCH, 8 TON, 6" SHEAVE FOR 3/4" DIA WIRE ROPE ALT P/N MFR MCMaster-CARR 3197T23 419A WITH SHACKLE
BOLT	1" X 5" 8 UNC HEAVY HEX, ALT P/N MFR MCMaster-CARR 91571A340

## Appendix N: MARAD OPDS Shore Set

BOLT	2-1/2"-8 UNC X 9" LG, INSTRUMENTED PIN, 1 EA AMERICAN OSPREY LOCATION OPDSDIVELKRDK BOX OUT-05
BOLT	3" X 1-1/2" (USED TO MOUNT CLAMP DEVICE) ALT P/N MFR FASTENAL 13665 ALT P/N F 3007 A
BOLT	3/4"-10 UNC X 4" USED TO ATTACHED FLOODING CHAMBER, OPDS CONDUIT FLOODING BUOY 9700-OUTFG-01A
BOLT	5/8" X 2-1/2"-11 UNC, ALT P/N MFR MCMMASTER-CARR 91571A270, (25 PER BOX)
BOLT	HEX HD, 5/8"-11 UNC X 2" LG, 316 SS, PART OF ASSY P/N 160EL3-5, ALT P/N MFR MCMMASTER-CARR 91571A266
BOLT	STEEL, 3/4" X 2-1/4" LG, WITH NUTS, ALT P/N MFR MCMMASTER-CARR 92655A315, 91849A645, 91571A292
BOUY	BOUY, ROUTE MARKER, WITH LIGHT AND ANCHOR, ALT P/M TIDELAND SIGNAL CORP HOUSTON TX P/N 73-95, SPAR,
BOX	TOOL
BRACKET	HOSE SUPPORT, WITH STUDS AND NUTS 6 EA, DWG 160-PT-3, 1 EA LOCATION OPDSDIVELKR SHELF D
BRIDLE	AUXILIARY SUPPORT, 57.5' OF NO 11 KARAT ROPE, ENDLESS GROMET, WITH MINIMUM BREAKING STRENGTH OF 425
BRIDLE	AUXILIARY, SUPPORT, EXTENSION 30', OF NO. 11 KARAT ROPE ENDLESS GROMMET W/MIN BREAKING STENGTH OF 4
BRIDLE	LEGS, WITH SOFT EYES 1/2" X 8'
BRUSH	WIRE, ALT P/N MFR MCMMASTER-CARR 7188T6
BUOY	ANCHOR, 5" X 24" , ALT P/N MODEL 422
BUOY	CHAIN SUPPORT, LARGE, 3' DIA X 6' 3-1/2", 2 EA LOCATION SALMDK AND FCSLSTBDOVERHEAD
BUOY	HOSE SUPPORT, 1000KG NET BUOYANCY, SAMSOM CB-2 OR EQUAL, 1 EA AMERICAN OSPREY, LOCATION SALMBOW
BUOY	LIFE RING, 24", WITH DISTRESS MARKER LIGHT, WITH 100' LINE, (FOR LIGHT-GUEST MODEL 326-A)ALT P/N JBO
BUOY	PEAR SHAPED INFLATABLE (ORANGE) ALT P/N MFR POLY FOAM A4 200 LB LIFT, EQ # 9700-OUTFG-01A OPDS CONDU
BUOY	PICK UP, SMALL, ORANGE, ALT P/M SAMSON CB-2 OR EQUAL, 6 EA AMERICAN OSPREY FCSLFWDSTBD
BUOY	PUMPKIN, 200 LB LIFT, 60", ALT P/N MFR POLY FOAM/A4
CABLE ASSEMBLY	19 CONDUCTOR, 100 MLG
CABLE ASSEMBLY	4 CONDUCTOR, NEOPRENE, 33MLG REF EQ NO: 9703OUTFG05A
CABLE ASSEMBLY	4 CONDUCTOR, NEOPRENE, X 5MLG REF EQ NO: 9703OUTFG05A ALT MFR OCEAN TECHNICAL SYSTEM
CABLE ASSEMBLY	INTER CONNECT SUB SEA 60' FOR TRANSPONDER, ALT P/N MFR ROYAL ELECTRIC CO. P-122-66
CABLE	EXTENSION, 50 M,
CAN	GERRY 5 GAL (ENGINE OIL) ALT P/N MFR MCMMASTER-CARR 4303T5 ALT P/N CID A-A-59592
CAN	GERRY 5 GAL (HYD OIL 1W MILSPEC 2110 AND 1/W MILSPEC 6083, ALT P/N MFR MCMMASTER-CARR 4303T5, ALT P/N
CAN	GERRY 5 GAL (WATER) ALT P/N MFR MCMMASTER-CARR 4303T5, ALT P/N CID A-A-59592
CAP	3" W/0-25 PSI GAGE, NAVSEA REQUIREMENT 3/99
CAP	3" W/1-1/2" BALL VALVE AND CHICAGO FITTING NAVSEA REQUIREMENT 3/99, ALT P/N MFR MCMMASTER-CARR 4726K1
CAP	DUST, TYPE IV, 4" COUPLING HALF, QUICK DISCONNECT, CAM LOCKING TYPE, ALT P/N MS27028-18 MIL-C-27487
CAP	DUST, TYPE IX, 6" COUPLING HALF, QUICK DISCONNECT, CAM LOCKING TYPE, ALT P/N MS27028-18 MIL-C-27487
CAP	KNOCK-OFF, WITH INFLATION FITTING, ALT MFR WECO 3" FIG 207

## Appendix N: MARAD OPDS Shore Set

CAP	KNOCK-OFF, WITH PRESSURE GUAGE 0-5 PSI, ALT MFR FMC WECO 3" FOG 207, ALT P/M ASHCROFT SIZE 25, TYPE
CAP	PULL PLUG, WITH 2-1/2", BALL VALVE,
CHAIN ASSEMBLY	1 1/8" DIA STUD LINK CHAIN GR 2, 105 COMMON LINKS 39' 4 1/2' OVAL, 2 EA LOCATION SALMCAGE
CHAIN ASSEMBLY	1 1/8" DIA STUD LINK, CHAIN GR2, 105 COMMON LINKS 39' 4 1/2" OVAL,
CHAIN ASSEMBLY	CHAFE 3" (TWO COMMON LINKS WITH ONE ENLARGED LINK AND ONE OPEN LINK AT EACH END) 1 EA AMERICAN OSPRE
CHAIN ASSEMBLY	CHAFE, OCIMF, C, 2 1/8" DIA, FOR 100,000 TON DWT TANKER
CHAIN HOIST	3 TON, HAND PULL, 5' LIFT, ROUSTABOUT LEVER, MODEL LV-6000, ALT P/M BEEBE R3-600 OR EQUAL, ALT P/M J
CHAIN SUPPORT	1" X 4', WITH ALL OPEN LINKS AND 2 EACH 1 3/8" ANCHOR SAFETY SHAKLES, 1 EA AMERICAN OSPREY LOC SALM
CHAIN	1 INCH X 6 FEET FOR ANCHOR BUOY
CHAIN	1" CIRCUMFERENCE X 45' LG FOR USE WITH 75 LBOR 100 LB ANCHORS, ALT P/N MFR MCMMASTER-CARR 3457T23
CHAIN	3/4" STUD LINK ANCHOR GRADE C,3-SHOT, 90 FEET EACH, 68 KIP BREAKING STRENGHT, 480 LB/SHOT, ALT P/N 4
CHAIN	CHAFE, SPECIAL, 2-1/8" X 10', 12 COMMON LINKS WITH ENLARGED LINK, 1 END LINK, 2 EA LOC SALMDK AND FC
CHAIN	HANG-OFF, 5/8" DIA X 15' LG, 20,300 LB SWL WITH HOOK ON EACH END, TYPE GG ALT P/N GG-16-8, 2 EA AMER
CHAIN	LINK STUD, 3 1/2" DIA, 1 COMMON LINK, GRADE ORQ, 1 EA AMERICAN OSPREY, LOC SALMCAGE
CHAIN	LINK STUD, 3 1/2" DIA, 12 COMMON LINKS, GRADE ORQ, 1 EA AMERICAN OSPREY LOC SALMDK
CHAIN	LINK STUD, 3 1/2" DIA, 13 COMMON LINKS, GRADE ORQ, 1 EA AMERICAN OSPREY LOC SALMDK
CHAIN	LINK STUD, 3 1/2" DIA, 2 COMMON LINKS, GRADE ORQ, 1 EA AMERICAN OSPREY LOC SALMDK
CHAIN	LINK STUD, 3 1/2" DIA, 26 COMMON LINKS, GRADE ORQ, 1 EA AMERICAN OSPREY LOC SALMDK
CHAIN	LINK STUD, 3 1/2" DIA, 3 COMMON LINKS, GRADE ORQ, 1 EA AMERICAN OSPREY LOC SALMDK
CHAIN	LINK STUD, 3 1/2" DIA, 5 COMMON LINKS, GRADE ORQ, 1 EA AMERICAN OSPREY LOC SALMDK
CHAIN	LINK STUD, 3 1/2" DIA, 52 COMMON LINKS, GRADE ORQ, 1 EA AMERICAN OSPREY LOC SALMDK
CHAIN	SNUBBING ASSEMBLY, 5/8"DIA X 45' LG, 20,300 LB SWL, WITH 2 ALLOY BERLOCK CHAIN COUPLER, TYPE PNBL-16
CHAMBER	FLOODING, W/BLANK FLANGE, EQ# 9700-OUTFG-01A OPDS CONDUIT FLOODING BUOY
CHARGER	BATTERY UNIT, W/CABLE, ALT MFR OCEAN TECHNICAL SYSTEM
CHEMLIGHT	GREEN 1 BOX OF 10 EACH, ALT P/N MFR MCMMASTER-CARR 5712T43 (SPECIFY GREEN) OMINI GLOW/CYALUME 9-42290
CHISEL SET	COLD, HAND, ALT P/N MFR MCMMASTER-CARR 3575A23
CHUTE	BOW, WITH MAST, S/N F-1204-002
CHUTE	STERN, WITH MAST, S/N F-1204-002
CLAMP	6" HEAVY DUTY BOLT TYPE, ALT P/N MFR MCMMASTER-CARR 5411K88, EQ 9700-OUTFG-01A OPDS CONDUIT FLOODING
CLAMP	BASE, WITH HYDRAULIC CYLINDER AND HOSE, S/N F-1204-002, ALT P/N E-80C-006
CLAMP	BASE, WITH HYDRAULIC CYLINDER AND HOSE, S/N F-1204-002, ALT P/N E-80C-006
CLAMP	MOUNTING, TRANSPONDER
CLEVIS	JACK

## Appendix N: MARAD OPDS Shore Set

CLIP	WIRE 1/4" SS, ALT P/N MFR MCMMASTER-CARR 3465T13, EQ # 9700-OUTFG-01A
CLIP	WIRE ROPE, 1/2", CROSBY G-450 OR EQUAL, ALT P/N MFR MCMMASTER-CARR 3465T17
CLIP	WIRE ROPE, 3/4"
CLIP	WIRE ROPE, 5/8" CROSBY G-450 OR EQUAL, ALT P/N MFR MCMMASTER-CARR 3465T38
CLIP	WIRE ROPE, 9/16", CROSBY G450 OR EQUAL
COLLAR	RESTRAINING, 6", FOR MALE AND FEMALE COUPLING, ALT MFR MANULI, 1 EA AMERICAN OSPREY LOC OPDSDIVELKR
COME ALONG	1 1/2 TON, 5/16" WIRE STRAP, WITH RACHET AND HANDLE, ALT P/N MFR MCMMASTER-CARR 3349T23, ALT P/N 6000
COMPRESSOR	AIR, 175 CFM AT 125 PSI
CONNECTOR	DIXON "BRASS-LOCK" CAM AND GROOVE TYPE F MALE ADAPTER X 1-1/2" MALE NPT, MATERIAL S/S, ALT P/N MFR M
CORD	HEAVING LINE, 100' W/PLASTIC BALL, ALT P/N MFR MANULI RUBBER INDUSTIES
COUPLING	C-L CAMLOCK 6", 300 LB ASA, WITH WRENCH AND O-RING, ALT P/N MFR MMC INTERNATIONAL CO. 6H2274-2R-300S
COUPLING	FEMALE, BLANK FLANGE, WITH TOWING EYE, DWG 16428, ALT MFR MANULI, 2 EA AMERICAN OSPREY LOCATION OPDS
COUPLING	FIELD INSTALLABLE REPAIR, FEMALE 6"
COUPLING	FIELD INSTALLABLE REPAIR, MALE
COUPLING	MALE, TO 300 LB ASA FLANGE, 3 EA AMERICAN OSPREY LOCATION OPDSDIVE LKRPORT SHELF B
COUPLING	MALE, TO 300 LB ASA FLANGE, DWG 16426
COUPLING	REPAIR ASSEMBLY TOOL, ALT P/N MFR MANULI RUBBER INDUSTIES D16636, 3 EA AMERICAN OSPREY LOCATION OPDS
COVER	PROTECTIVE, DUMMY FEMALE, DC-2MP PART OF ASSY P/N 160EL3-2
COVER	PROTECTIVE, DUMMY MALE, DC-2MP PART OF ASSY P/N 160EL3-2
COVER	REPAIR MATERIAL, CONDUIT, ALT P/N MANULI RUBBER INDUSTIES 5181-RS
CYLINDER	15 TON CAPACITY, 2 STROKE, ALT P/N MFR ENERPAC RC 152
CYLINDER	HYDRAULIC, 5 TON 1 1/8" DIA BORE X 9 1/8" STROKE ATTACHED TO HYD PUMP, ALT P/N ENERPAC MODEL P-39
DAY SHAPE	12" DIAMOND, WOODEN
DEPTH	SOUNDER, ALT P/N MODEL 3001, D-3001/000
DISPLAY	LOAD MONITORING UNIT, SN PU 88/5 DWG NO. EE-AR-691 REF EQ NO: 9703OUTFG05A
DUNNAGE	FOR CONDUIT REELS, 4 PCS PER SET, ALT MFG MANULI RUBBER, ALT P/N MFR UNIROYAL 5186F-1
EXTENSION	4" X 3/4" DRIVE
EXTENSION	5-1/2" LG X 1/2" DRIVE, ALT P/N MFR WILLIAMS 9-110P
FENDER	MOORING (18' X 36") (10.5" X 30") ALT P/N MFR PLOYFOAM US G-6
FILE SET	FILE SET, ALT P/N MFR MCMMASTER-CARR 8173A11,
FILE	BASTARD HALF ROUND, 12" ALT P/N MFR NICHOLSON 05094
FIRE EXTINGUISHER (C	15 LB WITH BRACKET, (1) 15 LB & (1) 20 LB
FIRE EXTINGUISHER (P	20 LB WITH BRACKET
FLAG	(ENSIGN) (28" X 54") ALT P/N MFR TAYLOR MADE 8460
FLANGE ASSEMBLY	BLIND, 1 1/2", 300 LB, HALF COUPLING, FOR FLOATING HOSE, WITH 1 1/2" NPT PLUG, DWG 160-PT-3 SHT 1 2
FLANGE INSULATION KI	MICARTA 6" 300 PSI, TYPE FWD-641 KIT CONSIST OF 12 EA. SLEEVES PLASTIC 3/4" ID X 1/16" WALL THICK X
FLANGE	6" 300# W/WELDED NECK, EQ# 9700-OUTFG-01A OPDS CONDUIT FLOODING BUOY
FLANGE	ASSEMBLY BLIND, 300 LB ASA, FOR CAMLOCK FLANGE ASSEMBLY

## Appendix N: MARAD OPDS Shore Set

FLANGE	BLIND, 6", 3000 LB, FOR FLOATING HOSE AND TRANKER RAIL HOSE, DWG 160-PT-3 SHT 1, 4 EA AMERICAN OSPRE
FLANGE	BLIND, 6", EQ# 9702-OUTFG-04A SALM PIPING SYSTEM, 2 EA AMERICAN OSPREY LOCATION FWDCRGOHDAFT BOX OP-
FLANGE	BLIND/PIPE PLUGS FOR MAIN VALVE BONNET (BROOKS VALVE USED FOR BTU HYDROSTATIC TESTING) (COMES IN SET
FLASHLIGHT	(D-CELL W/WAND, ALT P/N MFR RAYOVAC 10695T71, EVEREADY 1259,
FLEXITALLIC	6" 300 ASME, B16.20
FLOAT	HAWSER, 7 POCKET LACE ON TYPE, ASSEMBLED ON HAWSER, P/N 160MH1-1, ALT P/N MFR SAMSON 00600577-4
FLOAT	HAWSER, 9 POCKET LACE ON TYPE, ASSEMBLED ON HAWSER, P/N 160MH1-1, ALT P/N MFR SAMSON 00600577-6
GASKET	1/8" THK, PTFE 300 LBS, 6", FLEXITALIC
GASKET	1/8" THK, PTFE 400 A-P HOSE, ALT P/N MFR STERLING SPIROFLEX 6-300 API-601
GASKET	FLEXITALIC, 300# 6" CHANGE FOR CFB NAVSEA REQUIREMENT 3/99
GASKET	FLEXITALIC, 4", 300 ASME B16.20 , ALT P/M MC MASTER-CARR 44955K179
GLOBAL	POSITIONING SYSTEM, SI-TEX TYPE
GLOVES	LEATHER, WORKING, ALT P/N MFR MEMPHIS 1220D
GOGGLES	INDUSTRIAL, ALT P/N MFR MCMMASTER-CARR 5405T11
GRAPNEL	HOOK (4 LB)
GRIP HOIST	4 TON, WITH 5/8" DIA CABLE AND HANDLE, MODEL TU-32, ALT MFG TRACTEL
GROMMET	WIRE ROPE SWAGED, WITH CRESENT THIMBLE, 3/4" X 18", OPDS ALT 950010
GUN	GREASE, HAND OPERATED, WITH ZERK ADAPTER AND CARTRIDGE
HACKSAW	10" WITH SPARE BLADES FOR C-STEEL, ALT P/N MFR MCMMASTER-CARR 4077A1, DUREX PROCRAFT 7359
HACKSAW	FRAME, ALT P/N MFR MCMMASTER-CARR 4077A1
HALYARD	FOR YARDARM
HAMMER	BALL PEEN, 1 1/2 LB
HAMMER	DOUBLE FACED, ENGINEERS, ALT P/N MFR MCMMASTER-CARR 5882A3, BERYLCO H-322-2132
HAMMER	MACHINIST 40 OZ FLAT FACED NAVSEA REQUIREMENT 3/99
HAMMER	SLEDGE, 16 LB, ALT P/N MFR MCMMASTER-CARR 56-816
HAMMER	SLEDGE, 3 LB, ALT P/N 496A1
HAMMER	SLEDGE, LONG HANDLE, 10 LBS,
HAMMER	WELDERS, CHIPPING
HAWSER	MOORING, 12" CIRCUMFERENCE X 180' LG, 2 IN 1 NYLON, GROMMENT MOORING HAWSER, WITH P/N 160MH1-6 AND 1
HOOK BOAT	( 8' ALUM/WOODEN)
HOOK	PELICAN FOUR INCH OPDSALT 950001
HOOK	QUICK RELEASE, MANUAL RELEASE 50 TO 125 TON W/100 LB PULL TO RELEASE, ALT P/N MFR WASHINGTON CHAIN A
HOOK	SNAP, 1/4", STAINLESS STEEL W LANYARDS, ALT P/M MCMMASTER-CARR 3933T41
HOOK	TRIPPING, LARGE, 15 TON, ALT P/M CROSBY 890307, ALTP/N MFR COOPER TOOLS 392315
HOOK	TRIPPING, SMALL, (HOOK SLIP EYE 3/8")
HOSE	6-5/8" ID X 7-5/8" OD X 10' FOR USE WITH CFB STRAINER BASKET FLOATION WIRE, ALT P/N MFR TITAN MARINE
HOSE	AIR, 1" DIA X 50' LG, 150 PSI, JUMPER HOSE BETWEEN AIR COMPRESSOR
HOSE	BTU HOOK UP, 40'LG WITH BUILT IN FITTINGS, S/N 1089167 AND

## Appendix N: MARAD OPDS Shore Set

HOSE	12292264, ALT MFG UNIROYAL MANULI, 2 EA A DISCHARGE, 6" X 50', LAY FLAT, W/BRASS MALE CAMLOCK AND FEMALE CAMLOCK AT ENDS,
HOSE	DISCHARGE, LAYFLAT, 2 1/2" DIA X 50' LG
HOSE	HYDRAULIC, 1/4" ID X 3' LG, H.P. RUBBER HOSE W/COUPLER END CONNECTIONS, ALT P/N MFR ENERPAC HC-921
HOSE	HYDRAULIC, 25' LG WITH QUICK DISCONNECTS
HOSE	HYDRAULIC, DWG SOFEC 160RI2-23, ALT P/M ENERPAC HC927
HOSE	HYDRAULIC, WITH QUICK DISCONNECT FITTING, 3/8" X 40'
HOSE	SUCTION, 6" X 50', W/BRASS FEMALE CAMLOCK ONE END AND SUCTION STRAINER AND FOOT VALVE AT ONE END, 2
JACK	HYDRAULIC 2-1/2 TON OPDSALT 950002 DATED 25 JAN 95, ALT P/N MFR DAYTON ELECTRIC CO. 3ZC65
JOINT	UNIVERSAL, 1/2" DRIVE, ALT P/N MFR WILLIAMS S-140A ALT P/N 73176 KD 1/2"
JUG	WATER, DRINKING, 5 GALLONS, ALT MFR IGLOO
LADDER	DIVE
LADDER	FIBERGLASS 12', ALT P/N MFR MCMMASTER-CARR 7983T53, GREENBULL INC 609212
LANTERN	BATTLE, COMPLETE WITH BRACKET (BRACKET NSN 6230-00-578-7401 \$2.15)
LANYARD	NYLON COATED SS 12" LG LOOP/EYE EQ # 9700-CAGEN-XXX SUBMARINE HOSE TOWING ARRANGEMENT
LIGHT	MOORING, CLEAR LENS, 200NM, ALT P/N MFR AUTOMATIC POWER FA-231
LIGHT	NAVIGAATION, GREEN LENS, TYPE VI, BARGE LIGHT, WITHOUT BATTERY, ALT MFR AUTOMATIC POWER
LIGHT	NAVIGAATION, RED LENS, TYPE VI BARGE LIGHT WITHOUT BATTERY, ALT MFR AUTOMATIC POWER
LIGHT	NAVIGATION, CLEAR LENS, TYPE VI, BARGE LIGHT, WITHOUT BATTERY ALT MFR AUTOMATIC POWER
LINE	1" DIA X 300' POLY PROPYLENE FOR SUPPORT BUOY
LINE	MESSENGER, 5" DIA X 150'LG, POLYESTER, WITH SOFT EYE 1 END AND THIMBLE, P/N 160MH1-10, ON OTHER END,
LINE	MOORING-LONG, 2" DIA X 1200 FEET, W/4' SOFT EYE WITH CHAFE PROTECTION ON OUTBOARD END WHIPPED TIGHT
LINE	PICK UP, POLYPROPOLINE, 1/2" X 20' WITH 6" SOFT EYE EACH END
LINE	TIE DOWN, NYLON, 1/2" DIA X 600' LG,
LINK	1" SLING, WELDLESS ALT P/N MFR CROSBY GROUP INC 101399, EQ # 9700-CAGEN-XXX SUBMARINE HOSE TOWING AR
LINK	ADAPTER, CHAFING CHAIN, 5" X 6-3/4" X 1'-5" PLATE, 1 EA AMERICAN OSPREY LOCATION FC SLSTBDRACKLSE
LINK	CONNECTING, 3 1/2", WITH EARS WELDED, 1 EA AMERICAN OSPREY LOCATION SALMCAGE
LINK	DETACHABLE CONNECTING CHAIN 3/4" USN 91 KIP BREAKING STRENGHT, USE @ EACH END AND BETWEEN SHOTS, ALT
LINK	LONG 2" USED TO LIFT DIVE BOAT, ALT P/N MFR MCMMASTER-CARR 3570T41
LINK	LONG, 1", ALT P/M CROSBY GROUP INC A-342 (GIVE SIZE)
LINK	MASTER 1", GALV, ALT P/N MFR CROSBY GROUP INC. 101143, EQ# 9700-CAGEN-XXX SUBMARINE TOWING ARRANGEM
LINK	MASTER 3/4 CROSBY A-343, ULIMATE STRENGTH 51.6 KIP, USE BETWEEN BUOY STUD CHAIN AND CONNECTING LINK,
LINK	MASTER, 1 1/8" DIA, ALLOY

## Appendix N: MARAD OPDS Shore Set

LOUD HAILER	(LH 5)
MALE PULL	6", WITH FLOOD PORT, ALT MFR MANULI, ALT MFR HYDRASEARCH CO. INC., 4 EA AMERICAN OSPREY LOCATION OPD
MALLET	RUBBER, 2 1/8" OD HEAD, ALT P/N GGG-H-33
MANIFOLD	AIR, INSTALLED ON THE AIR COMPRESSOR
MANIFOLD	SPIDER AIR ASSY NAVSEA REQUIREMENT 3/99
MARLINSPIKE	
MEDICAL	KIT, 10 MAN, ALT MFR HEALER PRODUCTS
METER	CURRENT, BIDIRECTIONAL AXIAL FLOW, TYPE 174SSM, WITH TETHER, WATERPROOF/ WITH COMPUTER/CASE/CARD, RA
METER	CURRENT, ELECTRONIC READOUT, MODEL 2035 MK III, WITH CABLES, S/N 00665, ALT MFR GENERAL OCEANICS INC
METER	FLOW, LOW VELOCITY DIGITAL, MODEL 2031H2,
MODULE	CONTROL, WITH POWER CABLE, S/N 36, ALT P/M OCEANO INST TT101S1, MODULE, 160-EL4-2
NIPPLE	6" NPT X 2 1/2" NPT, FORGED STEEL
NIPPLE	ALT P/N MFR ENERPAC FZ1617
NIPPLE	PIPE, 1-1/2" NPT, CLOSE NIPPLE PIPE, ALT P/N MFR MCMMASTER-CARR 4568K265, EQ# 9702-OUTFG-11A SALM TIE
NOZZLE	FIRE, 2 1/2" NST, WITH SHUT OFF VALVE
NUT	1"-8UNC, HEAVY HEX, ALT P/N MFR MCMMASTER-CARR 9504A038
NUT	3/4" 10UNC HEAVY HEX SUB HOSE FLANGE, ASTM A194 GR 2H, ALT P/N MFR MCMMASTER-CARR 160PT1-24, (25 PER
NUT	7/8" HEAVY HEX, SC-1 COATED, GOES TO CONNECT HOSE TO SWIVEL, ALT P/N MFR MCMMASTER-CARR, 94811A038,
NUT	HEX 3/4"-10 SS, EQ# 9700-OUTFG-01A OPDS CONDUIT FLOODING BUOY
NUT	HEX, 2-1/2"-8UNC, ASTM A-194 GK-2H PART OF P/N 160MH1-24, 1 EA AMERICAN OSPREY LOCATION OPDSDIVELKRD
NUT	HEX, 3/4" 10 UNC, ASTMA193B7, MANHOLE, BASE REF EQ NO: 9702-OUTFG-02A MANHOLE COVERS
NUT	HEX, 3/4"-16UNF 2A, 316, PART PF AASY P/N 160EL3-1, ALT P/N MFR MCMMASTER-CARR 94804A365
NUT	HEX, 5/8" 11 UNC, USED ON 4" PIPING A194 GR 2H, EQ# 9702-OUTFG-04A SALM PIPING SYSTEM
NUT	JAM, 1"-8 UNC HEAVY HEX, ALT P/N MFR MCMMASTER-CARR 95045A038
O RING	BUNA-N, 7" ID 1/4" OD, ALT P/N MFR MMC INTERNATIONAL 0/R7.3DX.275XS
OPERATOR	REMOTE FOR CONDUIT LEVEL WIND P/S
OPERATOR	REMOTE FOR CONDUIT REELS P/S
O-RING	KIT, CLAMP BASE
PADEYE	DISCONNECT, TYPE-2, 24,000 LB CAPACITY
PADS	ABSORBENT (PACKAGE) W/TRASH BAGS, 38" X 63" 50 COUNT, ALT P/N R-3886340
PAIL	GALVANIZED 2 1/2 GAL, ALT P/N MFR MCMMASTER-CARR 4260T2
PENDANT	1" DIA X 100' LG, IWRC 6 X 37 RRL BRIGHT, WITH THIMBLE ENDS
PENDANT	1/2" X 30' (FOR RESTRAINING COLLAR)
PENDANT	3/4" DIA X 8' LG, IWRC 6 X 37 RRL, BRIGHT SWAGED EYES
PENDANT	5/8" DIA X 8' LG, IWRC 6 X 37 RRL, THIMBLED EYES SWAGED EACH END
PENDANT	TRIPPING, HOLDING, 5/8" X 8' 6 X 19 IWRC, RRHL SWAGED EYE
PENDANT	WIRE ROPE, WITH REGULAR THIMBLE 3/4" DIA X 30" LG IWRC 6 X 37, OPDS ALT 950010
PENDENT	1/2" DIA X 15' LG, IWRC 6 X 37 RRL, THIMBLED EYES SWAGED 7 1/2" FROM EACH END
PETROLEUM	JELLY, NAVSEA REQUIREMENT 3/99 , ALT P/N MFR MCMMASTER-CARR 1215K11

## Appendix N: MARAD OPDS Shore Set

PIGS	SPHERICAL 6-1/4", MEDIUM COAT YELLOW MOLDED
PIN	CLEVIS, 7/8" DIA, WITH P/N E622-3568-160-17
PIN	COTTER, 3/8" X 4" LG, PART OF P/N 160MH1-24, 1 EA AMERICAN OSPREY LOCATION OPDSDIVELKRDK BOX OUT-05
PIN	COTTER, 5/32" DIA, NORMALLT ATTACHED TO P/N E622-3568-160-7, ALT P/N MFR MCMMASTER-CARR 98355A180
PIN	COTTER, BOX ASSORTED, ALT MFR WESTER WIRE PRODUCT FFP-386-D
PIN	STERN 2" X 4'
PLATE	PUSHER, FOR HOSE REPAIR, ALT MFR HYDRA SEARCH, 3 EA AMERICAN OSPREY LOCATION OPDSDIVELKR SHELF D
PLATE	SUBMARINE TOWING BRACKET FOR SUB HOSE, EQ# 9700-CAGEN-XXX SUBMARINE HOSE TOWING ARRANGEMENT
PLATE	TIE
PLATE	TOWING, TYPE MARQUIP, NO1 TOWING PLATE, PULL TEST 300,000 LBS
PLATE	TRIANGULAR, AUXILIARY SUPPORT BRIDLE, SWL 100 TONS, REF DWG 160-RI-2
PLIERS	10" SLIP JOINT NAVSEA REQUIREMENT 3/99, ALT P/N MFR WILDE TOOL B107.23M.TY2
PLIERS	LINEMAN 8" NAVSEA REQUIREMENT 3/99, ALT P/N MFR COOPER TOOLS B107-20M
PLIERS	TONGUE AND GROOVE, 12", ALT P/N MFR MCMMASTER-CARR 5765A2
PLIERS	TONGUE AND GROOVE, 16", ALT P/N MFR MCMMASTER-CARR 5769A1
PLUG	1-1/2" NPT 300# SQ HD PIPE PLUG ASTM A105 ON P/N 160PT1-17
PLUG	DUMMY, DC-2-FS, PART OF ASSY P/N 160EL3-1
PLUG	DUMMY, DC-8-FS, PART OF ASSY P/N 160EL4-4
PLUG	FEMALE PULL, SUBSEA, 6" ALT MFR MANULI, ALT MFR HYDRASEARCH CO. INC. 9 EA AMERICAN OSPREY LOCATION O
PLUG	PULL, BLIND FLANGE, 600 LB, WITH TOW EYE, 1 EA AMERICAN OSPREY LOCATION OPDSDIVELKRPORT SHELF A
PLUNGER	CLEVIS, ALT P/N MFR ENERPAC REP-10
POWER SUPPLY	FOR P/N 160EL4-2, ALT P/M OCEANO INST. PS300B
PROTECTOR	EAR, AURAL, MODEL 1000, ALT P/N MFR MCMMASTER-CARR 53295T56
PUMP	HAND, SINGLE SPEED, 0 TO 10,000 PSI, ALT P/M ENERPAC PC 391
PUMP	HYDRAULIC, SINGLE SPEED HAND PUMP, 0 TO 10,000 PSI, 43 CUBIC INCH RESERVOIR, ALT P/N MFR STEEL GRIP
PUMP	JET, 5" X 6', 1000 GPM AT 1750 RPM AT 100' HEAD, LOC FWDCGOHLDAFT
PUMP	SALM DEWATERING, GPM 225-230, AIR OPERATED 90 PSI, CPM 160, DISCHARGE SIZE 2-1/2" FPT, AIR INLET SIZ
PUNCH SET	PUNCH SET
PUNCH	KNOCKOUT, 5/8" X 15" BERYLLIUM COPPER ALLOY, ALT P/N MFR MCMMASTER-CARR 6052A12, WARREN 179
RADIO	VHF (*ICOM IC-M127 W/UX130K COMBINED,
RAGS	WIPING, ALT P/N MFR MCMMASTER-CARR 7366T15
RATCHET	1/2" DRIVE, 15" HANDLE, ALT P/N MFR WILLAMS 5-53, B107.10
RECEIVER	MODEL AM 121, S/N 377, 296 AND IE6
REDUCER	6" FEMALE CAMLOCK TO 4" MALE CAMLOCK, TYPE XI MFG P/N MS4900-21 MIL-C-27487, ALT P/N MFR MCMMASTER-CA
REMOVAL TOOL	TUBE, ALT MFR HYDRASEARCH CO INC. 1 EA AMERICAN OSPREY LOCATION OPDSDIVELKR SHELF D
ROD	DUCK BILL ANCHOR DRIVE, 1/2" DIA X 3' LG
ROPE	3 STRAND NYLON 1-5/16" X 300' (TOWING MESSINGER W/THIMBLES BOTH ENDS,
ROPE	3 STRAND NYLON 3/8" X 600', FOR ANCHOR BUOY, TO CUT AS NEEDED, ALT P/N MFR MCMMASTER-CARR 3827T34
ROPE	3" X 600' YELLOW POLY-PRO 3 STRAND ALT P/N MIL-R-24049, EQ # OPDS

## Appendix N: MARAD OPDS Shore Set

	CONDUIT FLOODING BUOY
ROPE	5/8" X 600' WHITE NYLON 3 STRAND, ALT P/N MIL-R-17343D
ROPE	AUXILARY TETHER, 1" DIA X 50' LG, NYLON ROPE
ROPE	DBL BRAID NYLON 3" CIRC 1000' W/12" EYES EACH END (ANCHOR LINE)
ROPE	DBL BRAID NYLON 3" CIRC 150' W/12" SPLICED EYE (FOR 75 LB ANCHOR LINE)
ROPE	DBL BRAID NYLON 3" CIRC 48' W/18" SPLICED EYE MOORING LINE
ROPE	DBL BRAID NYLON 3" CIRC 90' W/LARGE SPLICED EYE (FOR RAISING AND LOWERING MAST)
ROPE	DBL BRAID NYLON 3" CIRC X 1400' W/18" HARD EYE ONE END (ANCHOR LINE)
ROPE	DBL BRAID NYLON 3" CIRC X 18' W/18" SPLICED EYE (MOORING LINE)
ROPE	DBL BRAID NYLON 3" CIRC X 20' (FOR FENDER LINE ATTACHED TO FENDER)
ROPE	DBL BRAID NYLON 3" CIRC X 300' W/HARD EYE (ANCHOR LINE FOR 75 LB ANCHOR)
ROPE	DBL BRAID NYLON 3" CIRC X 40' W/HOOK, (HAUL BACK LINE), ALT P/N MFR CROSBY GROUP INC. A-329/1026213
ROPE	DBL BRAID NYLON 3" CIRC X 400' W/18" EYES EACH END (ANCHOR LINE)
ROPE	DBL BRAID NYLON 3" CIRC X 600' W/12" EYES EACH END (ANCHOR LINE)
ROPE	DBL BRAID NYLON 5" CIRC 500' W/BRIDLE TWO 5" X 14' W/12" EYE ONE END AND BOTH OTHER ENDS SPLICED INT
ROPE	MANILLA, 21 THREAD MANILA LINE 5/8" X 600' COIL, ALT P/N CI 1301
ROPE	NYLON 5/8" X 400' FOR MUSHROOM ANCHOR, (NSN UI RL 600' PER ROLL)
ROPE	PICK UP, 10" CIRCUMFERENCE X 300' LG, 8 STRAND POLYPROPYLENE SAMSON OR EQUAL, 1 EA AMERICAN OSPREY LOC
ROPE	POLYPROPYLENE 1/4" DIA X 600'
ROPE	WIRE, 1/2" DIA X 15' LG, 6 X 19 IWRC, NO EYES
ROPE	WIRE, GALV (ASSEMBLY A 3/4" X 40' LG 6 X 37, IWRC W/3/4" THIMBLE EXTRA HEAVY GALV AT BOTH ENDS) EQ 9
ROPE	WIRE, GALV (ASSEMBLY C 3/4" X 90' 6 X 37, IWRC W/3/4" THIMBLE EXTRA HEAVY GALV AT BOTH ENDS, EQ# 9700
ROPE	WIRE, GALV (ASSEMBLY D 3/4" X 10' LG 6 X 37, IWRC W/3/4" THIMBLE EXTRA HEAVY 1 END IT 8 AND 3/4" CLO
ROPE	WIRE, GLAV (ASSEMBLY B 3/4 X 3' LG 6 X 37, IWRC W/3/4" THIMBLE EXTRA HEAVY GALV AT BOTH ENDS IT 18)
SAIL	TWINE
SAW	POWER, SAFETY, DWG 5186G, ALT P/N MFR AEG K66 ALT P/N 4PW31
SCREW	CAP, SOCKET HD, 1/2"-13 UNC- 2 A X 1-1/4" LG, ALT P/N MFR MCMMASTER-CARR 91309A714, ALT P/N 2144-714B
SCREW	HEX HD MACH 8-32 X 3/8" LG SS, ALT P/N MFR MCMMASTER-CARR 91720A192 ALT P/N 316, EQ# 9700-CAGEN-XXX S
SCREWDRIVER SET	ALT P/N MFR STANLEY 64-856, MCMMASTER-CARR 8551A31
SHACKLE	1 3/8" 15.5 TONS, BOW SHACKLE, 2 EA AMERICAN OSPREY LOCATION SALMDK
SHACKLE	3", 110 TON SWL, WITH 3 1/4" PIN, ALT P/M GROSBY G2140, 2 EA AMERICAN OSPREY LOCATION SALMCAGE AND 4
SHACKLE	3", 110 TON SWL, WITH 3 1/4" PIN, ALT P/M GROSBY G2140, 2 EA AMERICAN OSPREY LOCATION SALMCAGE AND 4
SHACKLE	3", 85 TON SWL W/3-1/4" DIA PIN, CROSBYG2130 OR EQUAL, ALT P/N 1019711

## Appendix N: MARAD OPDS Shore Set

SHACKLE	3", ANCHOR FOR INSTRUMENTED PIN, 1 EA AMERICAN OSPREY LOCATION OPDSDIVELKRDK BOX OUT-05
SHACKLE	7/8" 6.5 TON SWL BOW, ALT P/N 1019533
SHACKLE	ANCHOR 1-1/2" BOLT TYPE, GALV, ALT P/N MFR CROSBY GROUP INC. MCMASTER-CARR 3558T58
SHACKLE	ANCHOR BOLT TYPE 1", ALT P/N MFR CROSBY GROUP INC 101931, EQ# 9700-CAGEN-XXX SUBMARINE HOSE TOWING A
SHACKLE	ANCHOR BOLT TYPE, 1-1/8" DIA, W/1-1/4" DIA PIN 9.5 TON, CROSBY G-2130, MOUNTED ON TOWING BRACKET, AL
SHACKLE	ANCHOR SAFETY 1/2" NAVSEA REQUIREMENT, ALT P/N MFR MCMASTER-CARR 8966T51
SHACKLE	ANCHOR SAFETY 1-1/2" G2130, FOR TOW PLATE, ALT P/N MFR MCMASTER-CARR 8966T57, EQ# 9717-OUTFG-01A IMP
SHACKLE	ANCHOR SAFETY 3/4", ALT P/N MFR MCMASTER-CARR 3555T53
SHACKLE	ANCHOR SAFETY 3/4, ALT P/N MFR MCMASTER-CARR 3555T53
SHACKLE	ANCHOR SAFETY, 1 1/8", 9 1/2 TON, ALT MFR MC MASTER-CARR 355T56TYPE:BOLT, MFR.-ID:160RI2-13,
SHACKLE	ANCHOR SAFETY, 1" NAVSEA REQUIREMENT 3/99, ALT P/N MFR MCMASTER-CARR 8966T55
SHACKLE	ANCHOR SAFETY, 1/2", 2 TON W/COTTER PIN, ALT P/N 12GSPA, EQ# 9700-OUTFG-01A OPDS CONDUIT FLOODING BU
SHACKLE	ANCHOR SAFETY, 3/4", 4 3/4 TON, ALT P/M MC MASTER-CARR 3663T44 3/4", DWG SOFEC 160RI1-9, MFR.-ID:G-2
SHACKLE	ANCHOR SAFETY, 5/8", 5 TON
SHACKLE	ANCHOR SAFETY, 7/8", 6 1/2 TON ALT P/N MFR MCMASTER-CARR 3558T53, EQ# 9702-OUTFG-11A SALM TIEDOWN RET
SHACKLE	ANCHOR, BOLT TYPE, 1 1/2", 17 TON, GROSBY G-2130 OR EQUAL, ALT P/M MC MASTER CARR 3558T58
SHACKLE	ANCHOR, BOLT TYPE, 1 3/4", 25 TON, GROSBY G-2130 OR EQUAL, ALT P/M MC MASTER CARR 3558T59
SHACKLE	ANCHOR, BOLT TYPE, 1-1/4" DIA, 12 TON CROSBY G-2130 OR EQUAL, ALT P/N MFR MCMASTER-CARR 3558T56 ALT
SHACKLE	ANCHOR, BOLT TYPE, 1-1/8" DIA W/1-1/4" DIA PIN 9.5 TON ALT P/N MFR MCMASTER-CARR 3558T55
SHACKLE	BOW, 42 TON SWL, 3 EA AMERICAN OSPREY LOCATION FC SLPORTDK AND SALMDK
SHACKLE	CHAIN SAFETY, 1-1/2", ALT P/N MFR MCMASTER-CARR 3556T23
SHACKLE	CHAIN, BOLT TYPE, 1 3/8", 13 1/2 TON, GROSBY G-2130 OR EQUAL
SHACKLE	HEAVY DUTY, 14" TO 15", BLUE, ALT P/N MFR SAMSON 00400684-5
SHACKLE	JOINING, 1 1/8", KENNER, TYPE GR2
SHACKLE	JOINING, 3", TYPE D, 1 EA AMERICAN OSPREY LOCATION SALMMTD ON AUXILIARY BUOY
SHACKLE	KENTER, JOINING, 3-1/2" DIA. GRADE ORQ, 10 EA AMERICAN OSPREY LOCATION SALMCAGE AND FC SLSTBDRACKDK
SHACKLE	SAFETY 1-1/2", ALT P/N MFR MCMASTER-CARR 8966T57
SHACKLE	SAFETY 1/2", ALT P/N MFR MCMASTER-CARR 8966T51
SHACKLE	SAFETY 2", FOR LIFTING BOAT, ALT P/N 6R434
SHACKLE	SAFETY, 1 1/4", 12 TON ANCHOR, WITH 1 3/8" DIA PIN, ALSO USED ON OUB'S
SHACKLE	SAFETY, 1 1/4", ALT P/N MFR MCMASTER-CARR 3558T56
SHACKLE	SAFETY, 3/4", ALT P/N MFR MCMASTER-CARR 3555T53
SHACKLE	SAFETY, 5/8", ALT P/N MFR MCMASTER-CARR 8966T52
SHACKLE	SAFETY, 7/8", ALT P/N MFR MCMASTER-CARR 8966T54
SHACKLE	SCREW PIN 1", ALT P/N MFR MCMASTER-CARR 3663T46

## Appendix N: MARAD OPDS Shore Set

SHACKLE	SCREW PIN, 1 1/2"
SLING	WIRE ROPE, 1/2" DIA X 2' LG, 6 X 19 IWRC GRADE, EYE EACH END.
SLING	WIRE ROPE, 3/4" DIA X 2' LG, IWRC, GR IPS, WITH SPLICED EYE AT EACH END, EQ# 9702-OUTFG-11A SALM TIE
SLING	WIRE ROPE, 3/4" DIA X 34' LG, 6 X 19 IWRC GR IPS, WITH SPLICED EYE IN EACH END, EQ# 9702-OUTFG-11A S
SLING	WIRE ROPE, 5/8" DIA 6' LG, 6 X 19 IWRC, WITH 5" WD X 10" LG SOFT EYE EACH END,
SLING	WIRE ROPE, 5/8" DIA X 10' LG, 6 X 19 IWRC, WITH 5" WD X 10" LG SOFT EYE SLICED IN EACH END
SLING	WIRE ROPE, 5/8" DIA X 40' LG, 2 X 19 IWRC, GRADE IPS WITH EYE IN BOTH ENDS, EQ# 9702-OUTFG-11A SALM
SLING	WIRE ROPE, 5/8" X 5' LG, 6 X 19 IWRC GRIPS, WITH SPLICED EYE AT EACH END
SOCKET SET	3/8" DRIVE, 23 PIECE, ALT P/N MFR MCMMASTER-CARR 5582A11
SOCKET	1-1/4", 1/2" DRIVE, ALT P/N MFR MCMMASTER-CARR 5545A67, WILLIAMS ST-1240
SOCKET	1-1/8", 3/4" DRIVE
SOCKET	15/16", 3/4" DRIVE
SOCKET	1-7/16", 1/2" DRIVE, ALT P/N 7446 ALT P/N MFR MCMMASTER-CARR 5545A273
SOCKET	2", 3/4" DRIVE, THIN WALL, ALT P/N MFR PROTO 5564
SOCKET	2-3/8", 3/4" DRIVE, ALT P/N MFR ARMSTRONG 13176
SOCKET	7/8", 3/4" DRIVE THIN WALL
SOCKET	CLOSED SWAGE 3/4" STEEL, ALT P/N MFR CROSBY GROUP INC. 1039469, EQ# 9700-CAGEN-XXX SUBMARINE HOSE TO
SPOUT	GERRY CAN, ALT P/N MFR STANSPORT IT CN-10
STRAP	3" W X 6' LG CONDUIT HANDING, ALT P/N MFR SUPPLY DEPOT SE83-EE1803T
STRAP	CARGO NYLON, 2" WIDE X 6' LG 9/16" SNAP HOOK EACH END FOR TIE DOWN SUBMARINE HOSE
STRAP	NYLON 3" X 12', ALT P/N MFR SUPPLY DEPOT SE3-EE1803T-12, EE1 X 93EG X12FT
STUD	3/4' X 4-3/4" 10 UNC, FOR SUBHOSE FLANGE, ASTM A193 GR B7
STUD	3/4" X 5-1/2" 10 UNC SUBHOSE FLANGE, ASTM A193 GR B7
STUD	3/4"-10 UNC 5" LG, ALT P/N MFR MCMMASTER-CARR 95412A855
STUD	7/8" X 6", SC-1 COATED, GOSE TO CONNECT HOSE TO SWIVEL, ALT P/N MFR MCMMASTER-CARR 98750A421
SWITCH	LIMIT, MODEL 78-15541-ED, ALT P/N MFR GO SWITCH, LOUISVILLE KY. 713999, GENERAL EQUIPMENT DWG S-70-0
SWIVEL ASSEMBLY	2" CHAIN SWIVEL, WITH 2" END LINK EACH END - GR2, 1 EA AMERICAN OSPREY LOCATION SALMDK
SWIVEL	CLIP LKG PIN W/RING, 1/4" DIA X 1-1/2" GRIP, ALT P/N MFR MCMMASTER-CARR 98305A163
SWIVEL	HYDRAULIC 8-1/2 TON, EYE TO EYE, NAVSEA REQUIREMENT 3/99, ALT P/N MFR MCKISSICK 297459, EQ# 9700-CAG
TAPE	MEASURING 6' FABRIC COATED NAVSEA REQUIREMENT 3/99
TAPE	TEFLON, ALT P/N MFR MCMMASTER-CARR 6802K33
TEE	ALT P/N FZ1612
TETHER	BUOY AUXILARY DEPLOYMENT, 5/8" DIA WITH 85' NYLON ROPE, ALT P/N MIL-R-17343D
THIMBLE	11" 113" GALVANIZED, ASSEMBLE ON HAWSER P/N 160MH1-1, ALT P/N MFR SAMSON 00600542, 2 EA AMERICAN OSP
THIMBLE	EXTRA HEAVY, 3/4" GALV, ALT P/N MFR CROSBY GROUP INC 1037773

## Appendix N: MARAD OPDS Shore Set

THIMBLE	FOR 1" LINE, ALT P/N MFR MCMMASTER-CARR 98970A035
THIMBLE	FOR 3" MESSENGER LINE ON P/N 160MH1-3, 1 EA AMERICAN OSPREY LOCATION FCSLPORTDK
TIE DOWN	BUOY DEPLOYMENT, 9/16" DIA X 12' LG, 6 X 19 IWRC GD IPS WIRE ROPE
TIE DOWN	BUOY DEPLOYMENT, 5/8" DIA X 10' LG, 6 X 19 IWRC GD IPS WIRE ROPE,
TIE DOWN	MAIN BUOY, WIRE ROPE 1" X 34' LG, 6 X 19 IWRC, W/1-1/4" ID 1-1/2" OD HOSE COVER, 2 EA AMERICAN OSPRE
TIP	FIRE NOZZLE, TYPE T-211
TOILET	PORTABLE, PORTA-POTTI
TOWING SWIVEL	CROSBY OR BULLARD GOLDEN GATE HOOK CLOSED SWIVEL, ALT P/N MFR MCKISSICK 1050243
TRANSPONDER TRAY	AR191 TM, S/N 138 AND 07, ALT P/M MOSRT-66S, INTERMEDIATE SUPPORT, S/N F-1204-004 AND 005
TRAY	SUPPORT, S/N F-1204-003 AND 004
TURNBUCKLE	1 1/2" X 12", JAW AND EYE, HOT DIP GALVANIZE, CROSBY HG-277 OR EQUAL
TURNBUCKLE	1 1/4" X 18", JAW/JAW HOT DIP GALVANIZED, CROSBY HG-228 OR EQUAL, ALT P/M MC MASTER-CARR 2999T33
TURNBUCKLE	TIE DOWN, 1 1/4" X 12", JAW AND JAW, HOT DIPPED GALVINIZED
UMBILICAL	AIR, 200' LG X 1-1/2" ID, WITH P/N 160AE1-3B AND 160AE1-3C ON EACH END, LOC 4 EA FWDCARGOHAFTLSE
VALVE	3/4" SHUTOFF, P/M ENERPAC V-8, ATTACHED TO P/N E622-3568-160-8
VALVE	BALL 1/2" W/CHICAGO FITTING EACH END W/PIPE NIPPLE, ALT P/N MFR MCMMASTER-CARR 4726K11, 5344K29
VALVE	BALL, 6" BTU INLET WITH HANDLE, OPDSALT 95001
VALVE	BALL, 6", 300LB, DWG 160-PT-1
VALVE	BALL, FEMALE, 1-1/2", NPT, WITH BRONZE BODY AND 316 SS BALL AND STEM, ALT P/M MC MASTER-CARR 7865K27
VALVE	CHECK AIR ESCAPE ASSEMBLY 1-1/2" W/3 PSI LIFT FOR MALE PULL CAP AND PART OF CFB, EQ# 9700-OUTFG-001
WARPING	NEOPRENE, 1/2" X 4" X 14-1/2", 60 DUROMETER,
	NEOPRENE, 1/2" X 4" X 14-1/2", 60 DUROMETER,
WASHER	1" NOMINAL, FLAT, ALT P/N MFR MCMMASTER-CARR 90108A038
WASHER	3/4", FLAT 8" INTAKE PIPE SUPPORT, ASTM F436
WASHER	5/8" PLAIN, ALT P/N MFR MCMMASTER-CARR 98970A035
WASHER	7/8", TYPE A, SERIES N
WASHER	FLAT, 3/4" SS, ALT P/N T-316 FOR CONDUIT FLOODING BUOY, EQ# 9700-OUTFG-01A
WIRE ROPE	1" X 100' STAINLESS STEEL W/12" SOFT SWAGED EYES 6 X 37 IWRC NAVSEA REQUIREMENT 3/99
WIRE ROPE	1/2" X 100' STAINLESS STEEL W/12" SWAGED SOFT EYES 6 X 37 IWRC, FOR TOWING SALM, NAVSEA REQUIREMENT
WIRE ROPE	1/4" X 150' 6 X 37 FIBER CORE,
WIRE ROPE	5/8" X 10' 6 X 19 IWS IWRC EYES EACH END
WIRE ROPE	5/8" X 6' W/SWAGED EYES EACH END,
WIRE	SEIZING NAVSEA REQUIREMENT 3/99, ALT P/N MFR MCMMASTER-CARR 9666K25
WRENCH SET	SET, COMBINATION 7/16" TO 1-1/8", ALT P/N MFR MCMMASTER-CARR 5304A73
WRENCH	ADJUSTABLE 12", ALT P/N B107.8M
WRENCH	ADJUSTABLE, 10", ALT P/N MFR MCMMASTER-CARR 5385A14
WRENCH	ADJUSTABLE, 6", ALT P/N MFR MCMMASTER-CARR 5406A12

## Appendix N: MARAD OPDS Shore Set

WRENCH	ALLEN SET, ALT P/N MFR MCMASTER-CARR 7156A11
WRENCH	COMBINATION, 1-1/4", ALT P/N MFR WILLIAMS 1173
WRENCH	COMBINATION, 1-1/8",
WRENCH	COMBINATION, 15/16"
WRENCH	CRESCENT ADJUSTABLE 24" ALT P/N B107.8-1991, EQ # 9700-OUTFG-01A OPDS CONDUIT FLOODING BUOY
WRENCH	HAMMER BOX, 1-1/4", ALSO KNOW AS SLUGGING WRENCH, ALT P/N MFR MCMASTER 8341A43 OR 5455A13, WILLIAMS
WRENCH	IMPACT PNEUMATIC 3/4", ALT P/N CAT 2329-99
WRENCH	OPEN END, 1-1/4", ALT P/N MFR BW-8
WRENCH	PIPE, 24"
WRENCH	PIPE, 8", ALT P/N MFR MCMASTER-CARR 5357A122
WRENCH	RATCHET, REVERSIBLE, 3/4" DRIVE, ALT P/N MFR MCMASTER-CARR 5524A11
WRENCH	SET 7 PC, OPEN END 1/4" THUR 1", ALT P/N MFR MCMASTER-CARR 5304A73
WRENCH	SLUGGING, 2-3/8", ALT P/N MFR MCMASTER-CARR 5456A25
WRENCH	SPANNER, 300 ASA BLIND, FOR CAM GUARD RING 6" COUPLING, WITH CAMLOCK COUPLING, 3 EA AMERICAN OSPREY
WRENCH	SPUD 1", ALT P/N MFR PROTO C 904 A, MCMASTER-CARR 5406A23
WRENCH	SPUD 1/2"
WRENCH	SPUD 1-1/4" NAVSEA REQUIREMENT 3/99, ALT P/N MFR MCMASTER- CARR 5405A26 OR 5457A17
WRENCH	SPUD 1-1/8" OPEN END, ALT P/N MFR MCMASTER-CARR 5405A25
WRENCH	SPUD 15/16" NAVSEA REQUIREMENT 3/99, ALT P/N MFR ARMSTRONG 32-530, MCMASTER-CARR 2615
WRENCH	SPUD 3/4" ALT P/N MFR MCMASTER-CARR 5406A17 PROTO C 904 A
WRENCH	SPUD, 2-3/8",
WRENCH	TORQUE, 1/2" DRIVE, 10-150 LBS, ALT P/N MFR MCMASTER-CARR 85555A44, BONNEY TCI-150-FRD
WRENCH	VALVE 4"
WRENCH	VALVE, 2" REG VALVE
WRENCH	VALVE, TEE 6"

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