DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
1333 ISAAC HULL AVE SE
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NAVSEAINST 4790.8C
Ser 04/010
30 NOV 2015

NAVSEA INSTRUCTION 4790.8C CHANGE TRANSMITTAL 1

From: Commander, Naval Sea Systems Command (SEA 04)

Subj: SHIPS' MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

1. Purpose. To revise submarine maintenance requirement codes in the MIP "Other Column" table on page 2-7 in Section I, Chapter 2; update the 3-M Systems Training chapter in Section IV; and issue revised 2-Kilo special purpose codes in Appendices A and B. The revised special purpose codes annotate material deficiencies and are based upon TYCOM direction. These updated codes apply to all submarine force commands (ISICS and submarines) as discussed in COMSUBLANT message: 260032Z APR 13 PSN 252267K24. Minor administrative corrections and updates to references and web sites have also been made.

2. Action. Obtain revised NAVSEAINST 4790.8C Change 1 via the NAVSEA internet website (available from: http://www.navsea.navy.mil/Resources/Instructions.aspx), Navy 311 (http://www.public.navy.mil/spawar/peoeis/navy311/Pages/home.html),or from the Planned Maintenance System (PMS) force revision DVD.

M. R. Whitney

M. R. WHITNEY
By direction

Distribution:

Electronic only, via the NAVSEA Internet Website located at http://www.navsea.navy.mil/Resources/Instructions.aspx

DEPARTMENT OF THE NAVY
NAVAL SEA SYSTEMS COMMAND
1333 ISAAC HULL AVE SE
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Ser 04-402/ 107
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NAVSEA INSTRUCTION 4790.8C

From: Commander, Naval Sea Systems Command

Subj: SHIPS' MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

Ref: (a) OPNAVINST 4790.4
(b) COMFLTFORCOMINST 4790.3

1. Purpose. To issue a revised Ships' Maintenance and Material Management (3-M) Manual which incorporates new and updated maintenance management policy. This instruction is a complete revision and should be reviewed in its entirety.

2. Cancellation. NAVSEAINST 4790.8B

3. Scope. This instruction incorporates the requirements of references (a) and (b) and is applicable to all ships and shore station equipment under the cognizance of Naval Sea Systems Command (NAVSEA). This also includes, but is not limited to equipment of Naval Supply Command (NAVSUP), Space and Naval Warfare Center (SPAWAR), Navy Reserve Forces Command (NRFC), Navy Education and Training Command (NETC) activities, all Navy Expeditionary Combat Command (NECC) activities and Commander Navy Installations Command (CNIC) including Marine Corps Installations Command (MCICOM) activities. Navy Meteorological Equipment, equipment of the Naval Air Traffic Control, Air Navigation and Landing System (NAALS), and Aircraft Launch and Recovery Equipment (ALRE) are also applicable to this instruction.

a. It does not apply to systems and equipment under the cognizance of Naval Nuclear Propulsion Directorate (NAVSEA 08), Director of Strategic Systems Program (DIRSSP) and aeronautical support equipment covered in the Naval Aviation Maintenance Program (NAMP). Ships, service craft and small boats manned by civilian crews are also exempted from this instruction unless approved by the Chief of Naval Operations (CNO) as specified in reference (a).

b. In addition to the change in appearance of this maintenance manual, there are significant changes in content to comply with OPNAV policy concerning shipboard maintenance.

c. Common support equipment used by both ship's force and naval aviation units shall have Planned Maintenance System support in accordance with this instruction.

d. Management of shipboard PMS and corrective maintenance is the responsibility of the Commanding Officer. It is imperative that Commanding Officers maintain a comprehensive program within their command to monitor the health of their maintenance system. To this end, an aggressive 3-M Self-assessment Program is vital to ensure quality maintenance is being performed. The number of spot checks required each week will vary between units and will be determined by the command's 3-M Manager. Periodic 3-M self-assessments/evaluations shall be conducted by each Commanding Officer to determine the exact state of their programs.

e. For the purposes of this instruction, maintenance is defined as: actions taken to ensure that systems, equipments and components perform their intended function when required.

4. Background. 3-M is designed to provide ships and applicable shore stations with a simple and standard means for planning, scheduling, controlling, and performing maintenance on all shipboard systems and equipment. The primary objective of 3-M is to manage shipboard maintenance in a manner which will ensure maximum equipment and system operational readiness. Reference (a) contains OPNAV policy regarding 3-M and assigns responsibilities to NAVSEA Field Activities, Systems Commands (SYSCOMS) and the Naval Medical Command for providing support.

5. Introduction. This manual has been developed in accordance with reference (a) and is designed to provide the user with a ready reference for all aspects concerning the 3-M Program. It is divided into the following five sections:

a. Section I

(1) Chapter 1 Command Organization

(2) Chapter 2 Planned Maintenance System (PMS).

(3) Chapter 3 Initial Maintenance System Installation and Upgrade During Overhaul.

(4) Chapter 4 Organizational Level Maintenance Data System (MDS) Interface.

(5) Chapter 5 Ship Inactivation, Reactivation, Strike, or Transfer to Foreign Navies.

b. Section II

(1) Chapter 1 In-Service Inspections (INSURV) Procedures.

(2) Chapter 2 TYCOM/ISIC Assist Visits and 3-M Inspections.

(3) Chapter 3 Submarine Performance Monitoring Team (PMT) Maintenance and Inspection Procedures.

(4) Chapter 4 Common Assessment Procedure Development for Material Assessment, Inspection, Certification, and Assist Visits of Aircraft Carriers, Submarines and Surface Ships.

(5) Chapter 5 Fleet Maintenance Effectiveness Review (MER) Process Guide.

c. Section III

(1) Chapter 1 Reports and Services Available from NAVSEALOGCEN.

d. Section IV

(1) Chapter 1 3-M Training

e. Section V

(1) Chapter 1 Class Maintenance Plan Requirements for Aircraft Carriers, Submarines and Surface Ships.

f. Appendices:

(1) A. Data Element Descriptions and Validation Specifications

(2) B. Ships' 3-M Form Preparation Instructions

(3) C. 3-M Automated Periodic Maintenance Program

(4) D. List of Acronyms

(5) E. Ships' 3-M Points of Contact

(6) F. SKED 3.1 Preparation of PMS Schedules

(7) G. SKED 3.2 Preparation of PMS Schedules

(8) H. Assignment of Responsibilities for the Planned Maintenance System

(9) I. Alteration Management

(10) J. Reliability-Centered Maintenance Certification Program

6. Records Management. Records created as a result of this instruction, regardless of media and format, shall be managed in accordance with SECNAV Manual 5210.1.

7. Submission of Changes to this Manual. All requests for change to this manual will be submitted per the PMS Feedback Report process outlined in Section I, Chapter 2 and Appendix H of this manual. Chief of Naval Operations (CNO) Code N43 has final approval for all changes, corrections, or deviations made to this instruction (Ships' 3-M Manual). Naval Sea Systems Command (NAVSEA 04RM) is responsible for the management of these changes with Naval Undersea Warfare Center (NUWC) Division Keyport, Naval Sea Logistics Center (NAVSEALOGCEN) Mechanicsburg assisting with the research, coordination, and consolidation of all change recommendations.

K. M. MCCOY

Distribution:

Electronic only, via the NAVSEA Intranet Website located at https://navsea.portal.navy.mil

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14 March 2013

Ships' 3-M Manual

NAVSEA
NAVAL SEA SYSTEMS COMMAND

NAVSEAINST 4790.8C

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

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REFERENCES

REF	INSTRUCTION NO.	SUBJECT
(a)	OPNAVINST 4790.4	SHIPS' MAINTENANCE MATERIAL MANAGEMENT (3-M) SYSTEM POLICY
(b)	COMUSFLTFORCOMINST 4790.3	JOINT FLEET MAINTENANCE MANUAL
(c)	SECNAVINST 5510.36 Manual	DEPARTMENT OF THE NAVY INFORMATION SECURITY PROGRAM MANUAL
(d)	OPNAVINST 5230.24	NAVY AND MARINE CORPS POLICY ON THE USE OF COMPACT DISC TECHNOLOGY
(e)	NAVSUP PUBLICATION 485, Vol I	NAVAL SUPPLY PROCEDURES AFLOAT SUPPLY
(f)	NAVSEA TECHNICAL SPECIFICATION 9090-310	ALTERATIONS TO SHIPS ACCOMPLISHED BY ALTERATION INSTALLATION TEAMS
(g)	OPNAVINST 3120.33	SUBMARINE EXTENDED OPERATION CYCLE (SBOC) PROGRAM
(h)	OPNAVINST 4790.16A	CONDITIONED-BASED MAINTENANCE (CBM) POLICY
(i)	NAVSEAINST 4790.27	RELIABILITY-CENTERED MAINTENANCE (RCM) AND CONDITION-BASED MAINTENANCE (CBM) POLICY FOR SHIPS, SHIP SYSTEMS, AND EQUIPMENT
(j)	OPNAVINST 4700.7	MAINTENANCE POLICY FOR U.S. NAVY SHIPS
(k)	MIL-STD-3034	RELIABILITY-CENTERED MAINTENANCE (RCM) PROCESS
(l)	OPNAVNOTE 4700	NOTIONAL INTERVALS,DURATIONS, AND REPAIR MAN-DAYS FOR DEPOT-LEVEL MAINTENANCE AVAILABILITIES OF U.S. NAVY SHIPS

REF	INSTRUCTION NO.	SUBJECT
(m)	SL720-AA-MAN-030	NAVY MODERNIZATION PROCESS MANAGEMENT AND OPERATIONS MANUAL (NMP-MOM)
(n)	NAVSEAINST 4720.15	MACHINERY ALTERATIONS (MACHALTS) ON HM&E EQUIPMENT AND SYSTEMS
(o)	OPNAVINST 4730.5	TRIALS AND MATERIAL INSPECTIONS (MI) OF SHIPS CONDUCTED BY THE BOARD OF INSPECTION AND SURVEY
(p)	OPNAVINST 3120.32	STANDARD ORGANIZATION AND REGULATIONS OF THE U.S. NAVY
(q)	N/A	SUBMARINE MATERIAL CONTROL LIST
(r)	Volume 1 0910-LP-104-7333 (U) Volume 2 0910-LP-275-1800 (C)	NUCLEAR POWERED SUBMARINE ATMOSPHERE CONTROL TECHNICAL MANUAL
(s)	Virtual SYSCOM Joint Instruction VS-JI-22A	VIRTUAL SYSCOM ENGINEERING AND TECHNICAL AUTHORITY POLICY, of 31 Jan 2007
(t)	NAVSEAINST 9210.4B	CHANGES, REPAIR, AND MAINTENANCE TO NUCLEAR POWERED SHIPS

SECTION I

SECTION 1

CHAPTER 1

COMMAND ORGANIZATION

CHAPTER 1 - COMMAND ORGANIZATION

1-1 PURPOSE

This chapter provides the Command's Maintenance and Material Management (3-M) System organizational policy and presents specific responsibilities of the key personnel in the Shipboard and Shore 3-M Systems organizational structure.

1-2 COMMAND 3-M ORGANIZATION AND RESPONSIBILITIES

1-2.1 Commanding Officer

The Commanding Officer has overall responsibility for ensuring maintenance is accomplished following 3-M System and quality maintenance procedures and that the 3-M System functions effectively within the command. The Commanding Officer shall ensure appropriate personnel receive adequate formal 3-M training, and shall have frequent meetings with the Executive Officer and the 3M System Coordinator to discuss 3-M System matters and to provide necessary guidance and coordination. The Commanding Officer shall conduct periodic checks to ensure that the 3-M System is functioning properly at the command. An effective maintenance program at the command must involve all levels of management, from the Work Center Supervisor up to and including the Commanding Officer. To this effect, the command must have an aggressive and critical 3-M Self-assessment Program to include spot checks and equipment condition assessments. It is mandatory that all levels of the chain of command know the material condition of the equipment at the command and the extent to which planned and corrective maintenance is being accomplished. The Commanding Officer has the responsibility for establishing a climate where PMS accomplishment is a command wide priority and where command leadership is familiar with 3-M program requirements. Commands shall establish effective and sustainable measures to ensure PMS accomplishment is facilitated and supervised by senior personnel. Feedback to the maintainer on his or her performance is critical to correcting any command problems uncovered during 3-M self-assessment evaluations. The Commanding Officer shall ensure that all maintenance documentation, such as CSMP, PMS, and configuration changes, is reviewed and approved as required by this instruction and that 3-M submissions are being made as required.

1-2.2 Executive Officer

The Executive Officer is the command's 3-M System Manager and is responsible to the Commanding Officer for the overall management of the 3-M System program. The Executive Officer shall:

a. Be knowledgeable of current 3-M System policies and directives.

b. Chair periodic 3-M System meetings with Department Heads and the 3M System Coordinator.

c. Monitor the operation of the 3-M System program to ensure compliance with current directives.

d. Brief the Commanding Officer at regular intervals on the status of 3-M.

e. Integrate 3-M System training into the command's training and qualification program. Ensure personnel receive adequate and effective 3-M System training.

f. Act as final review officer for maintenance responsibility shifts between departments.

g. Ensure the effectiveness of the command 3-M self-assessment program.

1-2.3 3M System Coordinator

The 3M System Coordinator is the functional manager of the 3-M System and is responsible to the Executive Officer for the coordination and direct supervision of all administrative facets of the 3-M System program. This position will be assigned in writing as the PRIMARY DUTY of an Officer, Chief Petty Officer or Petty Officer First Class (who has been assigned a secondary Navy Enlisted Classification (NEC) of 9517). As an exception to this policy, commands not having an allowance for a 3M System Coordinator will assign these duties in writing as the most significant collateral duty of an appropriately qualified Officer, Chief Petty Officer or Petty Officer First Class. Office space of sufficient size is to be provided to permit effective performance of duties. Each command is responsible to ensure personnel assigned to the 3M System Coordinator billet

have adequate experience, training, and time to perform the responsibilities of the position effectively. Additionally, the 3M System Coordinator shall be qualified 3-M PQS up through 3-M System Coordinator and a graduate of the 3M System Coordinator course of instruction. The 3M System Coordinator shall:

a. Serve as the key 3-M System assistant to the Executive Officer.

b. Review 3-M documentation submissions for accuracy, completeness, and timeliness. Included in this duty is a requirement to ensure all required 3-M submissions are made, and that 3-M data returned for correction is promptly revised and resubmitted.

c. Ensure the 3-M System program is kept current and any revisions are promptly distributed.

d. Advise, monitor, and assist Department Heads, Division Officers, and Work Center Supervisors in matters concerning the 3-M System.

e. Ensure back-ups of SKED database are produced and maintained according to Type Commander (TYCOM) directives.

f. Manage the functions of the 3-M System office. These functions are:

(1) Maintain a file of 3-M System directives, newsletters, notes, and correspondence containing current 3-M program information.

(2) Ensure distribution to Work Center personnel.

(3) Ensure the command 3-M System training program is adequate to meet the needs of the command.

(4) Shall attend meetings of periodic planning or readiness boards.

(5) Coordinate with Information Technology (IT) support personnel for maintaining 3-M system software.

(6) Screen, serialize, and date all Planned Maintenance System (PMS) Feedback Reports (FBRs) leaving the command.

(7) Ensure all routing review signatures have been applied prior to forwarding 3-M documents to the designated data processing activity within 7 working days of document origination or as operationally feasible.

(8) Supervise the command's 3-M system Self-assessment Program. Provide a weekly status report to the System Manager.

(9) Establish procedures for routing and/or explaining PMS changes to all concerned.

(10) Manage the PMS Master file which contains information relative to PMS requirements for:

(a) Copies of the current Force Revision (FR) NAVY PMS DVD/CD-ROM, List of Effective Pages (LOEP) for every Work Center, changes issued between FRs in their original format, Classified Maintenance Requirement Cards (MRCs).

(b) Current backups of the SKED databases according to TYCOM directives.

(c) Maintain a file of outstanding PMS FBRs and responses.

(d) Maintain a master accountability log of all PMS changes.

(e) Maintain a file of FBRs submitted requesting PMS coverage for equipment not covered by PMS, until such coverage is established.

(f) Maintain a file of the Command's PMS Self-assessment Program.

(11) Ensure the 3-M Maintenance Data System (MDS) is managed properly by:

(a) Conducting 3-M MDS data element validation in accordance with the 3-M validation specifications.

(b) Timely processing of Automated Shore Interface (ASI) configuration and logistic data.

(c) Timely up-line reporting of Current Ship's Maintenance Project (CSMP) maintenance transactions, and command's equipment file corrections.

(d) Maintain current off line backups of the command's Organizational Maintenance Management System (OMMS) database, and any outstanding paper copies of message Work Candidates, and 2-Limas.

1-2.4 Department Head

Each Department Head is responsible to the 3-M System Manager for the effective operation of the 3-M System and execution of maintenance within the department. The Department Head shall be qualified 3-M PQS up to Department Head. The Department Head is responsible for the final approval of the Quarterly Schedule and archiving of the previous Quarterly Schedule. The Department Head will:

a. Review and approve LCPO initialed line-outs on Work Center LOEPs and MIPs.

b. Use SKED's Revision Editor to ensure that all PMS changes have been properly annotated and applied to the schedule prior to review and finalization of each Work Center schedule.

c. Supervise maintenance scheduling within the department and other departmental 3-M functions. Review and approve PMS schedules, greater than Weekly.

d. Review maintenance action annotations and closed out Weekly schedules as directed by TYCOM directives.

e. Ensure departmental personnel are properly trained and motivated in the effective operation of the 3-M System.

f. Conduct periodic meetings with Division Officers and Work Center Supervisors and keep the Executive Officer informed of the status of the 3-M System within the department.

g. Ensure the following action is taken when equipment is added, deleted, or modified:

(1) All equipment changes, adds and removals, regardless of whether the action is performed by command personnel or outside activities, is present or modified in the OMMS database and, if not present, is reported via 4790/CK to the Configuration Data Manager (CDM). A PMS FBR shall be submitted requesting a LOEP change for new adds and for equipment removals.

(2) Coordinate with the Supply Officer to ensure command allowances, including tools, parts, materials, and test equipment needed for PMS are updated.

h. Ensure all material deficiencies are properly and promptly documented.

i. Ensure all required 3-M System documents (e.g. feedback reports, CKs, maintenance actions and status) are submitted to the 3M System Coordinator.

j. Ensure that inactive equipment is annotated with the proper Inactive Equipment Maintenance (IEM) status.

k. Conduct 3-M self-assessment as directed by the Command's policy to ensure required maintenance is being properly performed and documented.

l. While reviewing submitted 3-M documents, ensure that no classified or Navy Nuclear Propulsion Information (NNPI) data is present.

1-2.5 Department Leading Chief Petty Officer (DLCPO)

a. The Department LCPO shall be accountable to the Department Head for the proper operation of the 3-M System in their department. The Department LCPO shall be 3-M PQS qualified up to Department 3-M System Assistant. The Department LCPO will:

b. Provide 3-M System guidance and training to the Division Officers in their department.

c. Meet frequently with Division Leading Chief Petty Officers/Leading Petty Officers to discuss the status of the 3-M System within the department.

d. Individual TYCOMs may assign additional duties.

1-2.6 Department 3-M Assistant

Department Heads may assign an Officer, Chief Petty Officer or Petty Officer First Class to provide help with the coordination and supervision of the department's 3-M program. The Department 3-M Assistant shall complete the 3-M PQS Watchstation Department 3-M Assistant. This assignment will be made in writing. The Department 3-M Assistant will:

a. Provide the Department Head with a weekly status of the department's:

(1) 3-M Self-assessment Program.

(2) Current Ship's Maintenance Project (CSMP).

(3) PMS accomplishment and non-accomplishment.

b. Use SKED's Revision Editor to ensure that all PMS changes have been properly annotated and applied to the schedule prior to the Department Head review and finalization.

c. Review each Work Centers lined out MIPs on the LOEP, MRCs on the MIPs, and all maintenance 3-M documentation supporting PMS and MDS prior to submission to and approval by the Department Head.

d. Ensure all equipment changes, adds and removals, regardless of whether the action is performed by command personnel or outside activities, is present or modified in the OMMS database and if not present is reported via 4790/CK to the CDM and a PMS FBR.

1-2.7 Division Officer

The Division Officer is responsible to the Department Head for the execution of maintenance within the division and will be qualified in the 3-M System. The Division Officer assists in

managing the maintenance required for the equipment within division responsibility. The Division Officer shall be qualified 3-M PQS up to Division Officer. Division Officer responsibilities are:

a. Use SKED's Revision Editor to ensure that all PMS changes have been properly annotated and applied to the schedule prior to the Department Head review and finalization.

b. Ensure 3-M documents generated within the division are complete, accurate, promptly prepared and submitted to the Department Head.

c. Review, approve, and close out weekly schedules.

d. Ensure all Work Center weekly schedules are updated daily.

e. Ensure all equipment changes, adds and removals, regardless of whether the action is performed by command personnel or outside activities, is present or modified in the OMMS database and, if not present, is reported via 4790/CK to the Configuration Data Manager (CDM). A PMS FBR shall be submitted requesting a LOEP change for new adds and for equipment removals.

f. Ensure required 3-M System documents are reviewed and submitted to the Department Head.

g. Conduct 3-M self-assessment as directed by the Command's policy to ensure required maintenance is being properly performed and documented.

h. Incorporate 3-M System training into the Divisional Training Plan.

i. Work in conjunction with the 3M System Coordinator in matters concerning the 3-M program ensuring all equipment has the correct Work Center and PMS assignments.

j. Meet frequently with Divisional Work Center Supervisors informing the Department Head each week of the status of the 3-M System within the division.

1-2.8 Division Leading Chief Petty Officer (LCPO)/Leading Petty Officer (LPO)

The Division LCPO/LPO shall be accountable to the Division Officer for the proper operation of the 3-M System within their division. The Division LCPO/LPO shall be qualified 3-M PQS up to Division Officer. The Division LCPO/LPO will:

a. Ensure that all Work Center Supervisors are properly trained and qualified to perform their functions.

b. Provide the Division Officer a weekly status of the division's:

(1) 3-M Self-assessment Program.

(2) Current Ship's Maintenance Project (CSMP).

(3) PMS accomplishment and non-accomplishment.

c. Use SKED's Revision Editor to ensure that all PMS changes have been properly annotated and applied to the schedule prior to the Division Officer and Department Head review and finalization.

d. Review, and initial the line outs on the Work Center LOEP and MIPs. This applies to R-Check reports as well.

e. Review, approve, and initial non-applicable procedural steps lined out on MRCs. Ensure that they are identified by the words "if applicable" or a "Note" identifying the steps to be omitted is present on the MRC.

f. Ensure all equipment changes, adds and removals, regardless of whether the action is performed by command personnel or outside activities, is present or modified in the OMMS database and, if not present, is reported via 4790/CK to the Configuration Data Manager (CDM). A PMS FBR shall be submitted requesting a LOEP change for new adds and for equipment removals.

g. Review and submit required 3-M System documents to the Division Officer.

1-2.9 Work Center Supervisor

The Work Center Supervisor will be a senior Petty Officer, qualified and designated in writing. The Work Center Supervisor is responsible to the Division Officer via the LCPO/LPO for the effective operation of the 3-M System within their respective Work Center. The Work Center Supervisor shall be 3-M PQS qualified through Work Center Supervisor. Work Center Supervisor responsibilities are:

a. Maintain a detailed working knowledge of all equipment deficiencies within the Work Center. The Work Center Supervisor will use the Current Ship's Maintenance Project (CSMP) as a daily working document for the scheduling of any maintenance actions not included on the PMS schedules.

b. Use SKED's revision editor to ensure that all PMS changes have been properly annotated and applied to the schedule prior to the LCPO/LPO, Division Officer, and Department Head reviews and finalization.

c. Schedule weekly Work Center maintenance and supervise its proper accomplishment.

d. Ensure the status of Work Center planned maintenance is correctly reflected on the PMS schedules.

e. Ensure the Division Officer and Division LCPO/LPO are advised of all 3-M System activity within the Work Center.

f. Maintain an adequate supply of 3-M System materials within the Work Center.

g. Ensure prompt reporting of all material deficiencies and completed maintenance actions as required.

h. Ensure all equipment changes, adds and removals, regardless of whether the action is performed by command personnel or outside activities, is present or modified in the OMMS database and, if not present, is reported via 4790/CK to the Configuration Data Manager (CDM). A PMS FBR shall be submitted requesting a LOEP change for new adds and for equipment removals. This includes all alterations that result

from maintenance actions which modify or change installed equipment as well as planned alterations.

i. Ensure all 3-M System documents submitted from the Work Center are correct, legible, promptly prepared and submitted.

j. Ensure required 3-M system documents are reviewed and submitted to the Division LCPO/LPO.

k. Ensure all Work Center personnel have completed the appropriate 3-M Personnel Qualification Standard (PQS) prior to their performance of maintenance.

l. Ensure 3-M System Work Center files, publications, MRC decks, are complete and current.

m. Review MRCs and promptly submit a PMS FBR whenever maintenance requirements are not fully understood, errors are believed to exist, entries in the Tools, Parts, Materials and Test Equipment block are wrong or inadequate, additional coverage is needed, or performance of the maintenance requirement would cause a hazardous condition to exist.

n. Prepare initial line outs of MIPs on the Work Center LOEP and initial line outs of procedural steps on MRCs, including the R-Check reports for review by the Division LCPO/LPO.

o. Ensure PMS covers all equipment in the Work Center. Maintain an accurate and current LOEP by comparing the documentation with the actual equipment configuration. Submit PMS FBR when changes to the LOEP are required. Submit configuration change requests when appropriate.

p. Ensure programmed Periodic Maintenance Requirements (PMR) scheduled for command personnel accomplishment are completed and reported in strict accordance with the PMR, if applicable.

q. Ensure proper testing and inspection of work done by outside activities prior to job acceptance.

r. Ensure delivery of test and measurement equipment and other portable support equipment to testing and calibration Work Centers as indicated on scheduling reports.

1-2.10 Maintenance Personnel

Maintenance personnel are responsible to the Work Center Supervisor. Maintenance personnel shall be 3-M PQS qualified through Maintenance Person. Their 3-M System duties include, but are not limited to the following:

a. Perform assigned scheduled maintenance requirements using MRCs as indicated by the PMS schedule.

b. When performing PMS, promptly notify the Work Center Supervisor when:

(1) Anything on an MRC is not fully understood, appears to be incorrect or cannot be accomplished as written.

(2) Tools, materials, etc., prescribed by the MRC are not available or are not correct or questions about substitutions arise.

(3) Any doubt exists about capability, training, or experience to properly perform the maintenance requirement as prescribed.

(4) Factors exist which would make performance of the maintenance requirement unwise or dangerous (e.g., disassembly of equipment needed for operations, radiation when prohibited, situations causing safety hazard to exist, etc.).

(5) Equipment deficiencies or casualties are discovered.

(6) Inform the Work Center Supervisor when planned maintenance requirements are completed and use SKED to mark the schedule appropriately and sign 13-week Accountability Report.

SECTION I

CHAPTER 2

THE PLANNED MAINTENANCE SYSTEM (PMS)

CHAPTER 2 - THE PLANNED MAINTENANCE SYSTEM (PMS)

2-1 PURPOSE

This chapter provides the 3-M System policy and guidelines in support of the Planned Maintenance System (PMS). PMS has been developed to provide the Command's Maintenance Team with the tools to plan, schedule, and control planned maintenance effectively. The maintenance procedures developed in accordance with Reliability-Centered Maintenance (RCM) principles for planned maintenance are the minimum required to maintain equipment within specifications. Though standard in concept and procedure, PMS is flexible enough to be adjusted by the organization to be compatible with operational and other schedules.

2-2 SCOPE

PMS supersedes all previous planned or preventive maintenance systems or programs. Where a difference between the requirements and/or procedures of PMS and other technical publications or systems exists, PMS requirements will prevail. Differences shall be reported using PMS feedback reporting procedures.

Equipment not supported by PMS will continue to be maintained per existing procedures of the manufacturers, Systems Commands (SYSCOM) and/or Bureau of Medicine and Surgery's (BUMED) technical manuals, until PMS is developed and installed. The Naval Sea Logistic Center Detachments (NAVSEALOGCEN Det Norfolk/San Diego) function as PMS coordinating activities for the accountability and distribution of PMS documentation.

2-3 OBJECTIVE

The objective of the 3-M PMS is to maintain equipment within specifications through preventive maintenance, identifying and correcting potential problems before the equipment or system becomes inoperable. PMS provides:

a. Comprehensive procedures developed in accordance with RCM principles for planned maintenance of systems and equipment.

b. Minimum requirements for planned maintenance.

c. Scheduling and control of the performance of tasks.

d. Description of the methods, materials, tools, and personnel needed for maintenance.

e. Detection of hidden failures or malfunctions.

f. Test procedures to determine material readiness.

g. Assessment procedures to determine material condition of equipment.

2-4 PMS FUNCTIONAL OPERATIONS

2-4.1 PMS Master File

The PMS Master File contains information relative to PMS requirements for specific equipment for which the command is responsible. The master file contains, but is not limited to:

a. Current PMS Force Revision (FR) DVD/CD-ROM.

b. Maintenance Index Pages (MIPs) and Maintenance Requirement Cards (MRCs) not contained on the current PMS FR DVD/CD-ROM.

c. List of Effective Pages (LOEPs) for all Work Centers. This is now contained on the DVD/CD-ROM.

d. Locater Cards for Classified MRCs.

e. PMS Superseded/New Issue Record of Changes Log documenting received FRs, Advance Change Notices (ACNs), and References.

f. Current backups of SKED databases, updated as directed by Type Commander (TYCOM).

g. Electronic Feedback Reports and responses not incorporated in the current FR.

h. OPNAV 4790/CKs or Work Candidates affecting PMS until resolution.

i. Additional instructions, information, and data provided to assist in implementation and accomplishment of PMS.

2-4.2 Use of the PMS Master File

The PMS Master File is maintained by the 3M System Coordinator and used to provide duplicate issue of missing MIPs and MRCs, changes received between Navy PMS DVD/CD-ROM distributions, and supplementary information provided by NAVSEALOGCEN Det Norfolk/San Diego. The Navy PMS DVD/CD-ROM is used to update command's SKED PMS data. Electronic back-up of the ship's SKED database will be used to restore SKED databases. Any changes received between the distributions of DVD/CD-ROMs must be retained on file until the changes are reflected on an updated DVD/CD-ROM.

2-4.3 Work Center PMS Manual

The Work Center PMS Manual reflects that portion of the PMS Master File that contains only the planned maintenance requirements applicable to a particular Work Center and includes, but is not limited to LOEP, MIPs, MRCs (specifically Quarterly, Monthly, Weekly, and Daily MRCs edited for Review and Omit, and MRCs specifically changed prior to a force revision by FBRs and ACNs), lists of non-calendar periodicities (R and U), Record of Change Log, Electronic Feedback Reports and responses not incorporated in the current FR, current external backup of the Work Center, additional instructions, information, and data provided to assist in implementation and accomplishment of PMS. TYCOM directives may specify additional items to be maintained in the Work Center PMS Manual.

2-4.4 Contents of the Work Center PMS Manual

The Work Center PMS Manual is designed to provide a ready reference of planned maintenance requirements which will be retained in the working area for use by the Work Center Supervisor and maintenance personnel.

a. List of Effective Pages. The LOEP (Report PMS 5), Figure 2-1, provides a listing of the MIPs for systems and equipment assigned to each Work Center, and systems and equipment not requiring PMS or currently being evaluated for PMS. The LOEP contains:

(1) Report Date (Date LOEP produced)

(2) FR Number

(3) TYCOM

(4) Act. Id (Ship's hull number or Shore activity UIC)

(5) Unit Identification Code (UIC)

(6) Work Center

(7) Name of Ship or Shore Activity

(8) Changes (denoted by an A or a C)

(9) MIP Number

(10) Maintenance Requirements Substantiated (MRS) tracking number

(11) No Maintenance Required (NMR) tracking number

(12) Nomenclature (brief description of the system/equipment)

(13) RIC (APL/AEL)

b. MIPs. MIPs (Figure 2 - 2 and Figure 2 - 3) are prepared and issued for each installed system/equipment for which PMS support has been established. MIPs are basic PMS reference documents. Each is an index of a complete set of MRCs applicable to a ship system, subsystem, or equipment. MIPs contain the following information:

(1) SYSCOM MIP Control Number. Three SYSCOM MIP control numbering systems have been developed based on changing PMS philosophy and are currently in use. These are Conventional, Surface Missile System (SMS), and Reliability-Centered Maintenance (RCM).

(a) For Conventional MIP cataloging, a four-segment code is used. The first segment identifies the equipment group

and may contain from one to three characters followed by a dash (-). The second segment identifies a specific subgroup/component number within an equipment group and may contain from one to four characters followed by a slash (/). The third segment identifies a distinct version within that equipment subgroup and may contain from one to three characters followed by a dash (-). The fourth segment contains two characters identifying the month and year the MIP was prepared or revised (in all SYSCOM MIP control numbers, 1 through 9 are used for the months January-September and letters A through C for the months of October-December; the final character is a number indicating the last digit of the year).

MIP CONTROL NUMBER: A-061/701-A8

Conventional MIP SYSCOM Control Number

(b) For SMS MIP cataloging a three-segment code is used. The first segment identifies the equipment group and contains seven alphanumeric characters followed by a slash (/). The second segment identifies the equipment configuration and contains three characters (if first character is "U," this is unscheduled maintenance (UM); otherwise this is scheduled maintenance) followed by a dash (-). The third segment contains two characters that identify the month and year the MIP was prepared or revised.

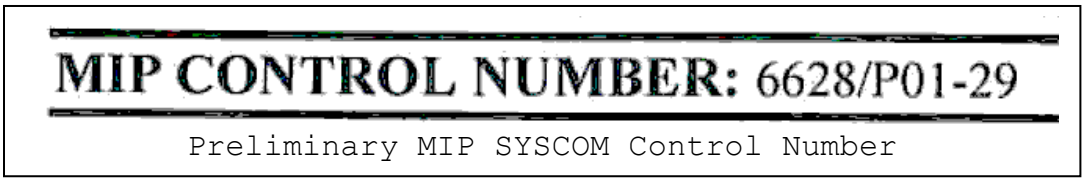
MIP CONTROL NUMBER: 5HEK000/003-78

Surface Missile System (SMS) SYSCOM Control Number

(c) For MIPs developed using the RCM analysis concept a three-segment code is used. The first segment contains four alphanumeric characters followed by a slash. The characters in this segment are based on the Expanded Ship Work Breakdown Structure (ESWBS) number. The second segment identifies the sequence of maintenance requirements development for this functional grouping or system, and contains three characters followed by a dash (-). The third segment contains

two characters which identify the month and year the MIP was prepared or revised.

(d) Preliminary MIPs are identified by a "P" code and number following the slash of the SYSCOM MIP Control Number. The third segment contains two characters that identify the month and year the MIP was prepared.



(2) Date. Preparation date of the MIP by month and year, which is changed with each revision of the MIP or an MRC on the MIP.

(3) Ship System, System, Subsystem, or Equipment. Description of equipment by noun name/AN Nomenclature/Mark, Mod.

(4) Reference Publications. Those publications pertaining to the system, subsystem, or equipment.

(5) Configuration. Applicability of MIP to system/equipment as described.

(6) Scheduling Aids. Located in the Scheduling Aids block they provide amplifying instructions for scheduling of maintenance requirements. For example, "Review MRCs Q-17R and Q-19R. Omit MRCs which do not apply, no feedback report required." Additionally, legends can be provided which designate specific attributes of selected maintenance requirements. For example, an asterisk (*) indicates a Safety of Ship item.

(7) Other column. These codes are assigned for administrative use by the NAVSEALOGCEN Det Norfolk/San Diego and may contain a one or two character code as follows:

Code	Description
H	Denotes a Calibration Maintenance Requirement developed under the cognizance of the NAVSEA Calibration Program.
K	Denotes a Maintenance Requirement and/or inspection developed under the cognizance of PMS 392T, the Hull, Mechanical and Electrical Engineering Division. The "K" MRCs are monitored by the Submarine Performance Monitoring Team (PMT) for Condition Based Maintenance (CBM) analysis and failure identification.
RD	Denotes a maintenance requirement on a Deep Submergence System (DSS) asset or system/equipment that is within the Scope of Certification (SOC) where Re-entry control (REC) documentation is required.
XD	Denotes a maintenance requirement on a Deep Submergence System (DSS) asset or system/equipment that is within the Scope of Certification (SOC) where no Re-Entry Control (REC) documentation is required.
RS	Denotes a submarine maintenance requirement that is within the SUBSAFE boundary where Re-Entry Control (REC) documentation is required.
XS	Denotes a submarine maintenance requirement that is within the SUBSAFE boundary where no Re-Entry Control (REC) documentation is required, or where a note is included to indicate there is a potential for SUBSAFE work to be accomplished.
RF	Denotes a maintenance requirement that is within the Submarine Flight Critical Component (SFCC) boundary where Re-Entry Control (REC) documentation is required.
N	Denotes a maintenance requirement on Moored Training Ship (MTS) systems/equipment that requires Moored Training Ship Support Yard (MTSSY) concurrence and NAVSEA approval.
C	"C" appended to code denotes Confidential classification.
S	"S" appended to code denotes Secret classification.

(8) SYSCOM MRC Control Number. The SYSCOM MRC Control Number is a 7 character alphanumeric code which is assigned to each MRC. It consists of three parts. The first segment contains two characters identifying the month and year the MRC

was prepared and will only change when the MRC is revised (in all SYSCOM MRC Control Numbers, 1 through 9 are used for the months January-September and letters A through C for the months of October-December; the final character is a number indicating the last digit of the year). The second segment is a four character alphanumeric Library Control Number which uniquely identifies each MRC Card. The last character may be a Y (indicating repair parts are required for this MRC), an N (indicating repair parts are not required for this MRC), or a U (indicating this is an unscheduled maintenance MRC and may require parts).

(9) Maintenance Requirement. Brief description of each maintenance requirement.

(10) Periodicity Code. Delineates how frequently the maintenance requirement must be performed (refer to paragraph 2-4.5.d). If the periodicity is followed by the symbols below, a note will be placed on the document explaining the trailing symbol to ensure clarity.

(a) An asterisk (*) following the periodicity code indicates a Safety of Ship item and requires the ship/or user to comply with reference (b).

(b) A single plus (+) following the periodicity code indicates that this procedure is intended to be scheduled and performed by Off-Ship Maintenance Personnel.

(c) A double plus (++) following the periodicity code indicates that this procedure is intended to be scheduled and performed by either Ship’s Force or Off-Ship Maintenance Personnel.

(11) Rate (Skill Level). Identifies the recommended skill level of the person(s) considered capable of performing the maintenance requirements. Qualified personnel other than the rate/rating specified may be assigned. When a Navy Enlisted Classification (NEC) is assigned or DCPO/SPO, substitution of other personnel is not allowed with the exception of civilian personnel whose Position Description (PD) requires the performance of PMS. Civilian personnel, including contractors, must be qualified through the 3-M Personnel Qualification Standard (PQS) and are authorized to perform maintenance actions

associated with their PD. This includes the performance of MRCs that require specific NECs, providing they are qualified for the specific equipment through PQS or a Job Qualification Requirement (JQR).

(12) Man-Hours (M/H). The average time, per equipment, per person, needed to perform the maintenance requirements, not including time for tool preparation and return, tag out, or time needed for removal and/or replacement of interference.

(13) Related Maintenance

(a) Mandatory related maintenance; maintenance requirements that must be accomplished concurrently with another maintenance requirement (e.g., M-3# (# symbol indicates mandatory related)). Mandatory related maintenance from another MIP is indicated as: IC-017/003: M-4W#.

(b) Convenience related maintenance; maintenance requirements that can be accomplished concurrently with another maintenance requirement for saving of time or manpower considerations (e.g., M-3 (# symbol is omitted)). Convenience related maintenance from another MIP is indicated as EL-10/001: M-4.

(c) Conditional related maintenance. All or part of the related MRC is performed when specific conditions are present or not met on the referencing MRC. Conditional related maintenance will appear the same as convenience related maintenance.

(d) No related maintenance; this is indicated as "None."

(14) Inactive Equipment Maintenance (IEM). Reduced maintenance requirements for extended periods of equipment inactivity (refer to paragraph 2-9).

(15) Unscheduled Maintenance (U). Corrective in nature used to return system or equipment to operational condition within predetermined tolerances or limitations.

(16) Class Maintenance Plan (CMP). Tasks that are un-scheduled maintenance, typically assessment procedures(AP), provided to assist maintenance managers with the identification of

deficiencies for the planning and accomplishment of requirements during future availabilities and executed by outside activities with Ship's Force participation. This maintenance is not intended to be accomplished by Ship's Force unless directed by higher authority and are provided for informational purposes only. Maintenace Requirement Cards (MRC) listed in this section need not be placed on the ships schedule nor printed and stored in the shipboard PMS Master File.

2-4.5 Maintenance Requirement Card (MRC)

MRCs (Figure 2 - 4 and Figure 2 - 5) provide detailed procedures for performing maintenance requirements and describes who, what, how, and with what resources a specific maintenance requirement will be accomplished. MRCs contain the following information and instructions:

a. Distribution Statement. This statement identifying who is authorized to hold this document, where to refer requests for the document, and instructions for destroying the document.

b. Date. This block contains the month and year when the MRC was prepared or revised.

c. MIP Series. The MIP series code is the portion of the SYSCOM MIP Control Number (identifying the equipment group) prior to the slash (/) of the SYSCOM MIP Control number containing this MRC. There may be more than one MIP series listed when an MRC applies to more than one group.

d. Periodicity. Identifies interval a maintenance task must be performed. There are three categories of periodicities. These are Calendar, Non-calendar, and Inactive Equipment Maintenance (IEM). The only authorized periodicities are as follows:

(1) Calendar Periodicity Codes

D	Daily		Q	Quarterly
2D	Every 2 days		4M	Every 4 months
3D	Every 3 days		S	Semi-annually
W	Weekly		8M	Every 8 months
2W	Every 2 weeks		9M	Every 9 months
M	Monthly		A	Annually
2M	Every 2 months		xM	Every x months. x = # of months

NOTE: An asterisk (*) following the periodicity code indicates a Safety of Ship item and requires the ship/or user to comply with reference (b).

The SKED program uses days to schedule and keep track of calendar periodicities. MRCs are displayed as out of periodicity when they fall outside the established date ranges in the SKED program. These date ranges are as follows:

Periodicity	Date Range
Daily	None
2D	None
3D	None
Weekly	None
2W	9-19 days
3W	14-28 days
Monthly	21-41 days
2M	41-83 days
Quarterly	61-121 days
4M	83-165 days
Semiannual	121-243 days
8M	165-331 days
9M	+/- 90 days from scheduled date
Annual	+/- 90 days from scheduled date
Multi-month after annual	+/- 90 days from scheduled date

(2) Non-Calendar Periodicity Codes

R	Situational Requirement
U	Unscheduled Maintenance
AP	Assessment Procedure

(3) Inactive Equipment Maintenance (IEM) Codes

LU	Lay-Up
PM	Periodic Maintenance
SU	Start-Up
OT	Operational Test

(4) Periodicity Code Numbering. The periodicity code also includes a number for specific identification. When more than one MRC of the same periodicity exists in the same MRC set, the MRCs in most cases, will be numbered consecutively, e.g., "D-1", "D-2", "D-3", or "M-1", M-2", etc. An existing MRC may be reapplied to a revised MIP even though the periodicity code of the reapplied MRC may not fall within the normally sequential numeric periodicity codes. For example, W-1, W-2, W-3, W-6 may appear on a MIP, where W-6 was an existing MRC that was reapplied to this equipment. Technically valid MRCs will not be reprinted merely to change the periodicity code number. Non-sequential numbers will not affect scheduling or management control.

(5) Pointer MRCs. Pointer MRCs will replace a more frequent periodicity on MRCs that require Dual periodicities. The "Pointer MRC" will reference only one other complete MRC when used in the Scheduled Maintenance area of the MIP, but can reference one or more MRCs when used in the IEM section of the MIP. A Pointer MRC will only be utilized when all of the Procedure (including the MR) is identical. The only portion of the MRC that can change on a pointer MRC is the "Ship System," "System," "Sub System," and/or "Equipment" designations in the heading block. If any other information is different between the original requirement and the requirement to which an MRC is being pointed, a new "sibling" MRC will be generated and tracked in the Planned Maintenance System Management Information System (PMSMIS).

(6) Situational Requirement. A PMS situational requirement is a preventive maintenance task that is to be accomplished only when a specified situation, known event, or set of circumstances occur. A situational requirement defines an event that must occur for an MRC to be scheduled. MRC periodicities of these tasks are identified with an "R." Situational requirements shall have a note describing the situation that invokes the maintenance requirement. This note shall be the first entry in the procedure block. Situational requirements are made of the following events and elements:

(a) Events:

1. State: A state event is a persistent event that can be tracked over duration of time (in days). It is a

toggle that is either "on" or "off" and corresponds to the current state of the ship, equipment, or status. Obvious state event examples are "at sea" and "in port." You are either "at sea" or "in port," you cannot be in both at the same time. In some situations, there will be a periodic maintenance requirement that is scheduled while in a state. An example would be R-1W, where the state may be "while at sea" and the maintenance requirement is then "weekly" while in that state.

2. Trigger: A trigger event is a single occurrence or action that may have a maintenance action tied to it. A trigger could happen more than one time in a single day, or may go weeks or months without it ever happening. Trigger event examples are "getting underway" and "entering port" which would bookend the "at sea" state event.

3. Metered: A metered event is an event that is based on the current value of a measurement in relation to the value at the time of the last accomplishment. The measurement parameters are defined by the metered data Situation Parameter at the MRC level. An example of a metered event would be "every _____ engine run hours." Metered Data: Metered data specifies a numeric trigger that is used to schedule the MRC. A plus and/or minus values may be provided to specify an acceptable range for accomplishing the maintenance (example: Accomplish after 250 +/- 25 arrestments).

(b) Elements:

1. Situational Parameter: A situational parameter is used to further define the specifics of how a generic situational requirement is applied to the specific MRC. This is similar to "filling in the blanks" of the situational requirement.

2. Offset Information: Offset Information is an aid that is used to determine when the MRC is scheduled based on the occurrence of the event (example: Prior to or after getting underway). The offset will generally have a timeframe associated with it such as 96 hours, 48 hours, etc., and would be written as "96 hours prior to getting underway." In this example it should be noted that the 96 hour offset is provided to give the maintainer sufficient time to accomplish the task prior to the event happening. Generally, it is not imperative

that the task be accomplished exactly 96 hours prior to getting underway, just that the task be accomplished prior to the event. If a task must be accomplished as an exact offset timeframe, the task should be implicit in stating so. If an offset parameter is not specified, the MRC is scheduled on the day the event occurs. The Work Center Supervisor must have the flexibility to schedule maintenance requirements around his or her timeframes and workload. Thus, in the example cited above, such a requirement may be accomplished within that 96 hours period prior to getting underway.

3. Periodicity: A Periodicity parameter specifies how often to schedule the MRC while in the Situational Requirement state (example: While at sea (state), perform quarterly (periodicity).

4. Prerequisites: A prerequisite specifies the situation that must exist in order for the maintenance to be accomplished, and has no effect on scheduling. Examples would be "Dry Deck", 360 degree visibility, or "a sea state of 4 or less."

(7) Situational Requirements with Calendar Periodicities. Situational requirement codes may be used with a calendar periodicity code in certain circumstances. These situations apply when both the situation and the calendar periodicity govern the scheduling of the requirement. Examples include:

(a) (M-1R): Monthly or every 600 operating hours, whichever occurs first.

(b) (W-3R): Weekly or after each use, whichever occurs first.

(c) (S-1R): Semiannually or during each upkeep period, whichever occurs first.

(d) (Q-1R): Quarterly or prior to getting underway, whichever occurs first.

(e) (R-1W): When a situation occurs, accomplish weekly.

(f) When the periodicity code includes a situation requirement (e.g., D-1R, R-1W) a note of explanation is required in addition to the basic code. This note shall be the first entry in the procedure block.

(8) Unscheduled Maintenance Requirements.

Unscheduled maintenance requirements are those documented actions required to restore a system/equipment to an operational condition within predetermined tolerances or limitations. Unscheduled maintenance requirements evolve from system/equipment failures or other indications of system/equipment degradation, and include alignment, adjustment, and repair. Unscheduled maintenance procedures are described on unscheduled MRCs (See Figure 2 - 6), and listed on appropriate MIPs.

(9) Assessment Procedures.

Assessment procedures (AP) are developed in accordance with Chapter 4 of this manual. They are provided to assist maintenance managers with the identification of deficiencies for the planning and accomplishment of requirements during future availabilities and executed by outside activities with Ship's Force participation. These MRC's will not be placed on the work center schedule unless accomplished by Ship's Force as the nature of these checks are for Maintenance Planning/Port Engineers to use as direction for detection of required repairs by outside activities and are provided to Ship's Force for informational purposes only. MRCs listed in this section need not be placed on the ship's schedule nor printed and stored in the shipboard PMS Master File.

e. Location. This block contains the specific location, EGL (SKED 3.1), maintenance group (SKED 3.2), or TYCOM authorized check-off list detailing equipment location.

f. Ship System, System, Subsystem, and Equipment. Identification of the ship system (functional group), system, subsystem, or equipment involved.

g. Rates (Skill Level). Identifies the recommended skill level of the person(s) considered capable of performing the maintenance requirement(s) and the number of persons required to perform the maintenance requirement(s), for example, 2ETs. Qualified personnel other than the rate/rating specified may be assigned. When a Navy Enlisted Classification (NEC) is assigned or DCPO/SPO, substitution of other personnel is not allowed with the exception of civilian personnel whose Position Description (PD) requires the performance of PMS. Civilian personnel, including contractors, must be qualified through the 3-M Personnel Qualification Standard (PQS) and are authorized to perform maintenance actions associated with their PD. This includes the performance of MRCs that require specific NECs, providing they are qualified for the specific equipment through PQS or a Job Qualification Requirement (JQR).

h. Man-Hours (M/H). Is the average time, per equipment, with the number of personnel, assigned by rate, in the rate block, to perform the maintenance. M/H is listed in hours and tenths of an hour. Total M/H is the sum of all entries in the M/H block, not including time for tool preparation and return, tag out, or time needed for removal and/or replacement of interference.

i. Maintenance Requirement Description. A brief definition of the PMS action to be done, to be presented as an imperative sentence (e.g., "Change Fuel Oil Filter." or "Measure System Tangential Sensitivity").

j. Safety Precautions. A listing of those warnings, and references which direct attention to possible hazards to personnel which could result in death or injury while doing maintenance. The statement “Forces afloat comply with NAVOSH Program Manual for Forces Afloat, OPNAVINST 5100.19 series.” appears on most MRCs. MRCs intended for shore use cite OPNAVINST 5100.23 series. In instances where ship and shore use the same MRC, the requirement for shore commands is to use the OPNAVINST 5100.23 series, even if this is not explicitly stated on the MRC.

k. Tools, Parts, Materials, Test Equipment. The required test equipment, materials, parts, tools, and miscellaneous items necessary to perform the maintenance action. Items are identified by the applicable Standard PMS Item Name (SPIN) number in brackets.

(1) Standard PMS Item Name (SPIN). A number assigned to Tools, Parts, Material, and Test Equipment. These items can be referenced to the Standard PMS Materials Identification Guide (SPMIG) for stock number identification. The stock numbers for Personal Protective Equipment (PPE) are also listed in the Hazardous Materials User’s Guide (HMUG).

(2) The five basic Tools, Parts, Materials, Test Equipment categories are as follows:

(a) Category I - Test Equipment. Category I is used only for General Purpose Portable Electrical and Electronic Test Equipment (GPETE) listed in the Test, Measurement, and Diagnostic Equipment Index (TMDE-I). Test Equipment required to support a maintenance action should be listed by Sub-category (SCAT) code which identifies the general group under which test

equipment models that have been approved to support a measurement requirement. Those approved models can be found within the SCAT search on the TMDEI. The Ship/Shore Portable Electrical/Electronic Test Equipment Requirements List (SPETERL) establishes allowances for GPETE for ships and shore activities under NAVSEA cognizance. Those allowances are identified by SCAT code. MRC test equipment requirements are synchronized with the SPETERL. For any test equipment item required and not identified by SCAT, contact navsea_gpete_help@navy.mil.

(b) Category II - Materials. Materials include a wide range of administrative and office supplies, and housekeeping items which may not be consumed entirely. Some consumable items (grease, oils, solvents, etc.) are consumed each time the maintenance action is performed, whereas, others (buckets, funnels, ladders, etc.) are not.

(c) Category III - Parts. Parts are defined as any items, which are an integral part of the equipment. For example: gaskets, mechanical seals, packing material, o-rings, filters, etc. The medium for identification of PMS part requirements is the Allowance Equipage List/Allowance Parts List (AEL/APL). Ship unique repair parts are not listed in the SPMIG.

(d) Category IV - Tools. Category IV covers common hand tools of all types except “special tools”.

(e) Category V - Miscellaneous. Category V covers all equipage items as well as any other special tools/materials not otherwise covered under categories I through IV. As a general rule, all items, which are identified and supported through AELs, will be considered Category V. Special tools are equipment-unique tools that are designed for a particular piece of equipment by the manufacturer. Such tools always have a manufacturer’s part number and Commercial and Government Entity (CAGE) code. Per NAVSEA/Naval Supply Systems Command (NAVSUP) policy, special tools will be listed on the APL and are, therefore, classified as repair parts. Equipage items are Category V even though some may be used as a tool; for example, jacking gear.

l. Hazardous Materials Control Statement. Identifies Hazardous Materials Users Guide which provides additional

control measures, precautions, personal protective equipment (PPE), and spill controls for the hazardous material identified in the Tools, Parts, Materials, Test equipment block. Advises maintenance personnel about usage and action of PPE.

m. Procedure. This block details the sequence of steps to be followed in performing the maintenance action. An MRC shall be a complete maintenance document containing all the information required to perform the task. Reference to other approved procedures shall be restricted to an extreme minimum and shall be approved by the PMS Coordinating Activity before inclusion on the MRC. Supporting documentation references are incorporated into the MRC and unless directed by a procedural step, are not required to be utilized in conjunction with performing an MRC. They may be referenced to gain a better understanding of the procedural steps, general safety precautions, or higher level requirements if confusion exists regarding the direction provided. As data may vary between ships, the MRC may contain blanks in which ship's company must supply the data necessary to properly do the work, e.g., pressure settings, temperature settings, brush tension, limiting speed, tolerances, and levels. The necessary data can generally be found in the equipment/system technical manual, ship's information book, ship's and equipment drawings, Naval Ships' Technical Manual, or Operational Sequencing System (OSS). If the data necessary to fill in the blanks is not available to ship's company, a PMS Feedback Report requesting the required data should be submitted.

n. Warnings/Safety Precautions/Notes. These items will be listed prior to applicable steps and/or procedural actions. Specific categories are:

(1) Warning: Warnings are associated with personal safety, e.g., failure to accomplish the step could result in injury. Warning text should be listed in the safety precautions' block in the same order as they appear in the procedure. They will be repeated immediately preceding the procedural step involved. For example:

WARNING:
Death or injury may result if the operating/handling procedures and practices are not correctly followed.

(2) Caution: Cautions are associated with equipment safety, e.g., failure to accomplish the step could result in damage to equipment. Cautions are not listed in safety precautions block but shall precede the procedural step involved. For example:

CAUTION:
Damage to equipment may result if the operating procedures and practices, etc., are not correctly followed.

(3) Note: A procedural advisory. Notes shall not direct any action, except to identify alternative procedural steps to which the technician is to proceed, or identify those steps which should be omitted for a specific situation/configuration. For example:

NOTE:
All notes are sequentially numbered and shall precede the procedural step involved.

o. Disposal Methods for Hazardous Material: Identifies disposal methods for Hazardous Material/Waste identified in the Tools, Parts, Material, and Test Equipment block as listed in OPNAVINST 5100.28 Series.

p. Footers: Information provided at the bottom of the MRC.

(1) OPNAV Form Serial Number: For example: OPNAV 4790/85 (REV. 9-97)

(2) Page Information: Identifying number of pages in the MRC. For example: Page 1 of 10

q. SYSCOM MRC Control Number: The three segment code used in cataloging MRCs as described in paragraph 2-4.4 b.(8) SYSCOM MRC Control Number. The three segment code used in cataloging MRCs is located as a footer on the right side of each page of each MRC card. For example: SYSCOM: 85 6HJB Y

r. When MRCs are classified, an unclassified locator card is provided. The locator card duplicates the information in all of the MRC blocks except the procedures block, and includes one of the following statements:

"Maintenance procedure with the requirement is CONFIDENTIAL. Maintenance Requirement Card is stowed in _____."
or
"Maintenance procedure with the requirement is SECRET. Maintenance Requirement Card is stowed in _____."

The classified MRC is printed on pink stock with the classification indicated at the top and bottom of each page. Classified MRCs will be handled per reference (c). Refer to reference (d) for the handling procedures for classified information on compact discs.

2-4.6 Location and Use of MRCs

Each Work Center will maintain applicable MRCs in accordance with paragraph 2-4.3. Maintenance personnel will use these to perform assigned planned maintenance as follows:

a. Select the MRC scheduled for accomplishment from the Work Center file.

b. Obtain the required tools/parts/materials and calibrated test equipment listed on the MRC. Obtain hazardous material (HAZMAT) in accordance with local instructions.

c. Perform maintenance as stated on the MRC, observing safety precautions and notes as indicated.

d. Notify the Work Center Supervisor immediately whenever one or more of the following conditions exist:

(1) Anything on an MRC is not fully understood, appears to be incorrect, or cannot be accomplished as written.

(2) Tools, materials, etc., prescribed by the MRC are not available, or are not correct, or questions about substitutions arise.

(3) Any doubt exists about capability, training, or experience to properly perform the maintenance requirement as prescribed.

(4) Factors exist which would make performance of the maintenance requirement unwise or dangerous (e.g., disassembly of

equipment needed for operations, radiation when prohibited, situations causing safety hazard to exist, etc.).

(5) Equipment deficiencies or casualties are discovered.

(6) Any provisions or requirements on the MRC cannot be strictly adhered to or accomplished as prescribed.

e. Return the MRC to the Work Center file upon completion of the requirement.

f. Report completed planned maintenance actions to the Work Center Supervisor. Update the PMS Schedule (See Appendix F for SKED 3.1, or Appendix G for SKED 3.2) and annotate and sign the 13-Week Report. If multiple maintenance persons are assigned to a single maintenance action, the most senior person assigned must update the PMS Schedule and annotate and sign the 13-Week Report. Maintenance actions not fully completed will be reported to the Work Center Supervisor. Enter detailed remarks to document the reason for incompletion/non-accomplishment (use “Flip Page” entry in SKED 3.1; use “Note Page or Alert” in SKED 3.2). However, if material deficiencies or casualties which are unrelated to that MR are discovered, the MR can be X’d off (provided the MR was fully completed), but the discrepancy must be reported via the maintenance data system in use (e.g. OMMS-NG, MicroSNAP or equivalent).

g. MRCs under the cognizance or requiring the participation of outside activities are listed on ship's force MIPs and may be indicated by a letter code designation in the "Other" column (refer to paragraph 2-4.4.b.(7) or by other means, e.g., AP periodicities). When these MRs are completed the affected Work Center Supervisor shall schedule and mark accordingly. These MRCs do not have to be printed out and stored in the PMS Master File and in the applicable Work Center file because they are available on the FR DVD/CD-ROM. These MRCs are provided for informational purposes, to facilitate the scheduling of maintenance actions related to ship visits.

2-4.7 Shipboard Changes to MRCs

The only modifications which shipboard personnel may make without submitting a PMS feedback report to change the MRCs are as follows:

a. Tools, Parts, Materials, and Test Equipment Block (TPMTE)

(1) Common hand tools, administrative and office supplies, and basic housekeeping items may be appropriately substituted or added by the Work Center Supervisor. Notes may be added to the MRC by the Work Center Supervisor to indicate this situation. In the case where specific common tools are called out by description, substitutions are not authorized. For example, substitutions such as using a synthetic fiber brushes in place of animal hair brushes or rags and paper towels in place of lint free cloths are not allowed. Common sense shall prevail.

(2) Approved parts, materials and miscellaneous item (see paragraph 2-4.5.k.(2).(e)) substitutes from the supply system, technical manual, or MIL-SPEC, etc., which meet or exceed the requirements may be used.

NOTE: Ensure that substitutions satisfy both the basic maintenance and safety requirements of the MRC. If there is any doubt, a PMS Feedback Report (FBR) should be submitted specifying substitution desired and reason.

(3) Test equipment or certified tools, which meet or exceed the SCAT code requirement, may be used.

(4) When an MRC pertains to multiple configurations of equipment and the TPMTE block contains tools, parts, test equipment and materials for each unique configuration, the TPMTE block may be tailored for the particular configuration by lining out the items that do not pertain to that particular configuration. Common sense shall apply.

(5) For MRCs that contain inspections and then maintenance actions based upon the inspection findings, the Tools, Parts, Materials and Test Equipment needed to perform the follow on maintenance caused by the inspection findings do not

need to be obtained prior to performing the MRC but rather, may be obtained as needed.

(6) Exception to TPMTE block change: If an item listed in the TPMTE block is not called for in the Procedures block, a Technical Feedback Report explaining the circumstances shall be submitted. Conversely, if a tool, test equipment item, part or material is called for in the Procedure block and is not listed in the TPMTE block a TFBR should be submitted.

b. In the "Procedure" block, Work Center Supervisors may line out the non-applicable line items (alternate procedures) that do not pertain to current equipment/configuration when the step includes the words "if applicable" or a note identifying steps to be omitted. These items must be reviewed and approved by the Division LCPO. As these changes are Work Center and maintenance item specific, submission of a FBR is not required. If a step or steps in the procedure block have been lined out and tools, parts, materials and test equipment in the TPMTE block pertain only to that step or steps, then they shall be lined out as well with a reference to the step or steps lined out and be initialed by the Division LCPO.

c. If a change to a maintenance procedure or periodicity for a specific MRC appears necessary or desirable, a FBR suggesting the change is to be forwarded to NAVSEALOGCEN Det Norfolk/San Diego. MRCs affected shall be fully identified by citing the SYSCOM MRC control number, subsystem, equipment, and complete SYSCOM MIP control number. Recommended changes should include all information available. No changes shall be made until a response is received from NAVSEALOGCEN Det Norfolk/San Diego.

d. Each command has the prerogative to increase the frequency of performance of specified planned maintenance actions to meet local conditions.

e. There may be instances where an obvious typographical error has been made on the MRC (example: Turn Switch to ON; however, switch may already be ON and card should read Turn Switch to OFF). This type of error should not prevent the scheduling or performance of maintenance. However, in this situation, the MRC can't be accomplished until the Work Center

Supervisor reviews the error and concurs that it is safe to proceed. A temporary notation including the reason for the

correction shall be made on the MRC, initialed by the Work Center Supervisor and a Technical Feedback Report submitted.

> NOTE: Extreme caution shall be taken when reviewing MRCs for this type of error. Errors must be obvious typographical errors, and a PMS FBR must be submitted immediately when discovered. Do not permanently alter the MRC until authorized by the applicable SYSCOM/ISEA/NAVSEALOGCEN Det Norfolk/San Diego.

2-4.8 PMS Trend Data

If directed by Fleet Commander and subordinate commanders, trend data records will be established and maintained for designated equipment. The purpose of this data is to record readings or other historical data over a continuing period of time (e.g., bearing clearances, resistance test readings, etc.).

2-4.9 Preliminary PMS Documentation

Preliminary documents provide new or changed procedures that have not been given a final engineering validation. This documentation falls into two categories.

a. Preliminary MIPs without MRCs. Preliminary MIPs without MRCs are forwarded by the SYSCOMs via the NAVSEALOGCEN Det Norfolk/San Diego and provide guidance in maintaining equipment not covered by PMS. Their purpose is to aid the ship in identifying and scheduling maintenance. The ship may develop interim MRC procedures based on experience and applicable technical manuals in support of these MIPs until formal documentation are received. Before scheduling preliminary MIP requirements, the Work Center Supervisor and the Department Head shall verify their applicability to installed equipment. Preliminary MIPs are identified by a “P” code and number following the slash of the SYSCOM MIP control number.

b. Preliminary MIPs with MRCs. Preliminary MIPS with MRCs are provided by the SYSCOMs via the NAVSEALOGCEN Det Norfolk/San Diego to provide the ship with advance coverage for use while

the MIPs/MRCs are undergoing final technical review. Preliminary MIPs are identified by a "P" code and number following the slash of the SYSCOM MIP control number. Preliminary MIPs/MRCs are reviewed/approved by the designated technical review activity (defined in paragraph 2-6.2c). The approved MRCs will be provided following approval with a subsequent FR.

2-4.10 Advance Change Notices (ACNs)

PMS Advance Change Notices are authorizations for and a record of changes to an existing MIP or MRC, or the addition of a new MRC. An ACN will refer to specific MIPs and MRCs and the locations of the revisions will be indicated by a vertical change bar on the left side of each page. New or revised document(s) will be provided with each ACN. Each ACN is serialized on every page. The serial number consists of the "ACN" indicator, originating activity code, serial number, MIP number, MRC number (if applicable), and revision date. ACNs forwarded with changes within the MIP and/or MRC are normally done as a result of safety-related revisions, but can also reflect updates to maintenance and/or equipment requirements. All ACNs are sent via encrypted e-mail. A record of ACNs shall be maintained by the Work Center Supervisor in the Work Center PMS Manual and in the PMS Master File. Types of changes indicated on PMS ACNs include:

a. Periodicity of accomplishment.

b. Deletion or modification of an existing MR.

c. Addition or modification of an MRC procedure note and/or figure to clarify the context of description of a procedure step.

d. Procedure step modification to correct maintenance technical data, e.g., frequency, pressures, voltages, current, decibels, resistance values, clearance, test data, etc.

e. Addition or modification to the list of tools, parts, materials, and test equipment.

2-4.10.1 Special Issues

Special Issues are a category of ACNs and are issues of new documentation between Force Revisions. A Special Issue represents a new MIP and at least one new MRC. A Special Issue may reflect newly developed documentation, or may reflect a change in the documentation a Command receives, such as the addition of a MIP and/or MRC(s) to the Work Center LOEP which the Command requires due to the addition of new equipment. Each Special Issue is serialized on every page. The serial number consists of the Special Issue indicator "SI", originating activity code, serial number, MIP number, MRC number (if applicable), and revision date. Special Issues will be forwarded as a response to a locally-generated Technical Feedback Report to the applicable hulls and/or activities. Special Issues will be sent by encrypted e-mail. A record of Special Issues shall be maintained by the Work Center Supervisor in the Work Center PMS Manual and in the PMS Master File.

2-4.10.2 Pen and Ink Changes

Pen & Ink changes are authorized revisions to any aspect of existing PMS documentation and are authorized in TFBR responses. Pen & ink changes included in TFBR responses will provide specific instructions that will refer to specific MIPs and/or MRCs. Pen & Ink changes provide interim measures as a result of minor changes due to updated maintenance /equipment requirements. Significant changes to PMS documentation are sent via Advance Change Notice. All Pen & Ink changes are sent electronically via e-mail as TFBR responses. Subsequently NAVSEALOGCEN Det Norfolk/San Diego will distribute the revised MIP/MRC reflecting the changes indicated by message to all affected MIP holders via Force Revision. A record of Pen & Ink changes shall be maintained by the Work Center Supervisor in the Work Center PMS Manual and in the 3-M Master File.

2-4.11 Control and Tracking of ACNs

Control and tracking of each ACN will be accomplished in the following manner:

a. A PMS ACN will refer to a specific MIP and MRC. A revised MIP and MRC, in PDF format, will be sent to all holders.

b. Each PMS ACN is serialized. The serial number consists of the originating activity code, MIP number, serial number, log number and date.

c. NAVSEALOGCEN Det Norfolk/San Diego will maintain accountability of all outstanding ACNs by MIP/MRC. The revised MIP will incorporate superseded ACNs.

d. The 3M System Coordinator shall record the receipt of each ACN and distribute a copy to the appropriate Work Center files.

2-4.12 13-Week Accountability Report

The Work Center Supervisor shall maintain a 13-Week Accountability Log. It will consist of the current and previous 13-Week Reports. On Mondays, the Work Center Supervisor and Division Officer will initial the 13-Week Report to indicate they have reviewed the scheduled maintenance for that week. On the following Monday, the Work Center Supervisor will review the report to ensure all Scheduled Maintenance and all Situational Requirements that were performed are properly documented, and that SKED was updated to include all Situational Requirements. The Division Officer will review the following for accuracy: the 13-Week Report, SKED, and the detailed reasons for non-accomplishment of maintenance requirements. The Division Officer will sign and date the report once his review is completed. The following information as a minimum will be contained in the 13-Week Accountability Report:

a. The MIP, Component/Maintenance Item name, MRC, Tag out serial number (enter N/A if not applicable), printed name(s), signature(s), date, and review signatures.

b. A listing of the detailed reasons for non-accomplishment of maintenance requirements will be annotated on the Flip Page Report in SKED and included with the 13-Week Accountability Report for review by the chain of command.

2-5 PLANNED MAINTENANCE SCHEDULE ADMINISTRATIVE CHANGES

2-5.1 Shift of Maintenance Responsibility

Individual ships sometimes consider it desirable or necessary to shift maintenance responsibility from one Work Center to another, to combine two or more existing Work Centers, or to split an existing Work Center. These requests for changes of PMS maintenance responsibility require Executive Officer concurrence and may require final approval by the applicable TYCOM. Request for this type of change should not be submitted to accommodate a temporary situation such as short-term assignment of two Work Centers to one supervisor due to the considerable administrative burden.

a. The following factors should be carefully considered before submitting such requests:

(1) Composition of Work Centers by size and ratings.

(2) Scope of maintenance responsibilities.

(3) Work Center workload.

(4) Ease of administration of a Work Center as a cohesive maintenance group.

(5) Importance of Work Center Grouping to equipment maintenance responsibilities, PMS scheduling, Maintenance Data System (MDS) reporting, and CSMP listings.

b. When changes in maintenance responsibility are considered necessary, the following procedures apply:

(1) Submit a PMS FBR (Non-technical). Indicate from which Work Center(s) equipment is to be deleted and to which it is to be transferred.

(2) Work Center or equipment changes will also be reported in the OMMS/SNAP system via a Configuration Change request (4790-CK) through the CSMP up-line reporting process.

(3) All outstanding equipment deficiencies for the equipment, which was moved, will be transferred to the new Work Center.

(4) After the Executive Officer has concurred with the shift of maintenance FBR the 3-M Coordinator shall make an

annotation in the remarks block of the FBR "XO concurs with the shift of maintenance responsibility."

(5) Upon receipt of the FBR approval perform the following actions:

(a) The 3-M Coordinator deletes equipment from the PMS Master File Work Center's LOEP. Add the equipment to the appropriate LOEP of the Work Center receiving the responsibility. Annotate the FBR serial number on the affected line item on the LOEPs. The PMS Master File must contain a record of deleted equipment until the change is reflected in a future FR.

(b) Transfer the affected MIPs and MRCs to the Work Center receiving maintenance responsibility.

(c) In SKED, perform a revision to move the equipment from the original Work Center's current schedule to the Work Center receiving the maintenance responsibility.

2-5.2 Maintenance Schedule Management

To ensure efficient use of Work Center resources:

a. Work Center Supervisors are encouraged to review their schedules on a regular basis for opportunities to perform other PMS when an equipment or system has maintenance actions scheduled. This may include Mandatory Related and Convenience Related PMS Maintenance. Rescheduling of PMS to take advantage of other system maintenance is highly recommended.

b. Review all MIPs looking at related maintenance. If an MRC has a related maintenance action from another MIP, review the related MIP/MRC and determine if it requires assistance from another Work Center. If the related MIP/MRC is not on the lead Work Center LOEP, and does not require assistance from another Work Center then submit a FBR to have it added. If the related MIP/MRC requires assistance from another Work Center, then the related MIP/MRC does not need to be assigned to the lead Work Center's LOEP. Use collaborative scheduling to ensure proper completion of the MRC. Upon completion of the maintenance, the lead Work Center is to mark the primary MRC, circle the related MRCs as not completed and provide reason. The related

maintenance assigned to the assist Work Center is scheduled and marked on their schedule.

c. Review MIPs to determine if any of the MRCs require complete performance by another Work Center. Scheduling of maintenance by one Work Center can avoid excessive system non-availability due to PMS requirements, which may occur if several Work Centers separately schedule the PMS for which they are responsible.

(1) Splitting a MIP. There are instances in which a MIP includes MRCs for more than one Work Center to perform. When this occurs, a decision is required by the command as to whether the MIP will be split or will be scheduled singly by one Work Center. Only the Executive Officer can authorize the splitting of a MIP if an MRC requires another Work Center to completely perform the MRC. If the decision is made not to split the MIP then the MRs will be accomplished through the coordination of Work Center Supervisors. If the MIP is split, the following procedures apply:

(a) Submit a Non-Technical PMS FBR reporting the decision to split the maintenance responsibility, approved by the Executive Officer. Upon receipt of the FBR approval, perform (b) and (c) below.

(b) Distribute the MIPs, MRCs, to the Work Center concerned. Insert the MIPs into the PMS Work Center files, and add the MIPs to the applicable LOEPs. Each Work Center tailors the MIPs by lining out the MRCs for which the Work Center is not responsible.

(c) If the PMS Schedule for each affected Work Center does not reflect the MIP and maintenance items, add them to the schedule. Schedule only the MRCs that pertain to that Work Center.

(2) Removal of a Split MIP Responsibility. If the situation occurs where a Work Center removes a split MIP, the following procedures apply:

(a) Submit a Non-Technical PMS FBR reporting the decision to remove the split maintenance responsibility, approved by the Executive Officer.

(b) Remove the MIPs and MRCs from the Work Center no longer involved and remove the MIPs from the applicable LOEPs. Ensure that the lead Work Center assumes full responsibility for the MIPs and MRCs and annotates their schedules accordingly.

(3) The 3-M Coordinator will develop a split MIP log to manage all split MIPs for the command.

d. Collaborative Maintenance. Collaborative Maintenance events occur when a MR requires another Work Center's resources to perform that maintenance. In these situations, the lead Work Center schedules the maintenance and shall notify the Work Center Supervisor of the assist Work Center(s) that their resources are required. All Work Center Supervisors involved will collaboratively plan the required maintenance and may adjust schedules based upon individual workload. When the maintenance is completed, the lead Work Center Supervisor will mark the MRC as completed.

2-6 PMS FEEDBACK REPORT (FBR)

The PMS FBR is used to notify NAVSEALOGCEN Det Norfolk/San Diego of matters related to PMS, and the FBR may be screened by the Type Commander (TYCOM). Feedback forms are used to report problems and also to request PMS coverage for newly installed systems or equipments. While a request for PMS coverage will provide initial PMS coverage and changes, submission of an OPNAV 4790/CK form is required to initiate the rest of the logistic support change process (See Section I Chapter 4). All SKED users shall submit FBR(s) via SKED. Non-SKED users may submit FBR(s) via the PMSMIS website at ***https://algol.seajax.navy.mil/pmsmis*** by selecting the Feedback tab and Feedback Wizard. Non-SKED users accessing this website for the first time will need to request an account. Click on File Manager and select New User Account Request. This displays options to select a form and readme file, which can be downloaded, filled out, and sent via e-mail as directed in the readme file. An e-mail will be sent to you confirming your account and providing access to the main screen.

2-6.1 Types of PMS Feedback Reports

There are two types of Feedback Reports (FBR): CAT A (Non-technical) and CAT B (Technical).

a. CAT A (Non-Technical) – Figure 2 - 7. This type of FBR is Non-technical in nature and is intended to meet PMS needs which do not require technical review, including changes in Work Center LOEPs. These FBRs are submitted to request classified or other PMS documentation, which cannot be obtained locally.

b. CAT B (Technical) – Figure 2 - 8. This type of FBR is technical in nature, and is used to report technical discrepancies inhibiting PMS performance. An Urgent TFBR should be drafted in SKED to obtain a TFBR serial number that can be included in the Naval message. Once the message has been sent, the date time group of the message can be included in TFBR and the TFBR submitted.

(1) Routine. A TFBR will be considered routine when the reason for submission of a PMS TFBR is it relates to the technical requirements of PMS. It is used to report technical discrepancies and clarification of procedures in PMS documentation.

(2) Urgent TFBR. A TFBR will be considered URGENT when the reason for submission of a PMS TFBR involves safety of personnel, ship, or potential for damage to equipment and relates to the technical requirements of PMS. Urgent TFBRs will be forwarded by Naval message containing a PMS Technical Feedback Serial Number, to both NAVSEALOGCEN Det Norfolk/San Diego, info cognizant SYSCOM/BUMED/NAVSAFECEN/TYCOM. The message shall describe the unsafe procedures or conditions, and shall identify the MIP/MRC involved (Figure 2 - 9). An Urgent TFBR should be generated in SKED to include the date time group of the message and submitted.

2-6.2 FBR Processing/Response

a. 3M System Coordinator shall:

(1) Screen PMS FBRs to ensure they are complete and that resolution is not feasible on board the ship; the request fully describes the action requested; and clear justification is stated for the action requested. Use SKED for this function.

Also, ensure the MIP scheduling aids and notes have been reviewed for information pertaining to the request.

(2) Serialize and forward within seven working days of origination. SKED will automatically serialize feedbacks. The 3MC shall forward feedbacks within seven working days of Department Head approval. The FBR serial number will consist of two parts separated by a dash: a four-digit sequence number and the last two digits of the calendar year. The date will change on 1 January of each year, but the number sequence will continue, i.e., 4241-99, 4242-00. The sequence number will start with 1 and not repeat until 9999 has been reached. SKED performs this function.

(3) Maintain accountability of all PMS FBRs submitted and action taken by the TYCOM, NAVSEALOGCEN Dets, SYSCOMs, etc., until corrected PMS documentation is received. The FBR accountability record may be disposed of upon receipt of a FBR reply rejecting the suggested change. Use the SKED FBR accountability and tracking function to maintain these records.

(4) Ensure the originator of each FBR and all other applicable Work Centers are kept appraised of action taken on the FBR, and that all materials and information received in response are distributed accordingly. Ensure that the originating Work Center and other applicable Work Center Supervisors implement the changes/corrections received.

b. PMS Coordinating Activities (CAs) (NAVSEALOGCEN Det Norfolk/San Diego) actions (See Appendix H for additional information).

(1) CAT A FBRs shall receive expeditious handling by the NAVSEALOGCEN Dets.

(2) CAT B TFBRs, where resolution by NAVSEALOGCEN Det Norfolk/San Diego is possible, will be answered by electronic means.

(3) CAT B TFBRs, where resolution by NAVSEALOGCEN Det Norfolk/San Diego is not possible, shall be processed as follows:

(a) The TFBR will be electronically forwarded to the designated technical review activity for resolution.

(b) NAVSEALOGCEN Det Norfolk/San Diego will maintain the PMS Management Information System (MIS) copy.

(c) An electronic notice will be provided the ship identifying what action is pending and by whom.

(d) All related changes in documentation shall be reflected in a subsequent revision.

c. Technical Review Activities. A technical review activity is an organization with assigned system responsibility designated by the Technical Warrant Holder that reviews and maintains maintenance requirement documentation. The cognizant Technical Review Activity receiving TFBRs for resolution shall analyze, categorize, and process these TFBRs as follows (See Appendix H for additional information):

(1) URGENT TFBRs. (See paragraph 2-6.1.b.(2)) SYSCOM/BUMED/NAVSAFECEN technical review activities shall provide a preliminary response to the originator by message, info applicable TYCOMs, SYSCOM/BUMED, NAVSAFECEN Norfolk, and NAVSEALOGCEN Det Norfolk/San Diego within 1 working day of receipt. TYCOM shall provide copies of Urgent TFBR resolutions to all holders of the affected MIPs/MRCs. Responses to Urgent TFBRs shall not be delayed because a Naval message is not received in a timely manner.

(2) Routine TFBRs. The technical review activity shall provide the resolution to the question asked in the TFBR to NAVSEALOGCEN Det Norfolk/San Diego by direct entry into the PMSMIS or other electronic means. The response may contain corrections to PMS documentation incorporating approved revised procedures, and superseding documentation held by the ship, or an explanation of the reasons for non-concurrence or deferring concurrence with the ship’s recommendation or request. Electronic responses are preferred over paper. NAVSEALOGCEN Det Norfolk/San Diego will provide an electronic response to the originator.

(3) NAVSEA has established a goal of providing the answer to a TFBR in one day. We realize that there are some

TFBRs that will require more extensive research to answer and these TFBRs will not be able to meet this goal. The majority of TFBRs received can be answered in one day and should be answered in one day. Technical review activities are required to answer all TFBRs submitted to them within 21 working days.

(4) When the technical review activity concurs with a PMS TFBR, NAVSEALOGCEN Det Norfolk/San Diego will provide all holders of the affected MIP/MRC with updated PMS in the next FR.

2-7 PMS FORCE REVISION (FR)

After PMS has been installed, it is necessary to ensure that the installed PMS packages are periodically updated to reflect changes in system/equipment and package configuration and to provide PMS documentation (new issues and revisions).

a. FR Package Contents. All PMS Force Revision information and reports are contained on the PMS DVD/CD and includes:

(1) Automated Library Issue Document (ALID) (Figure 2 - 10) that identifies:

(a) Applicable FR

(b) Applicable ship hull number

(c) Superseded MIPs

(d) Superseding MIPs

(e) Applicable Work Center codes

(f) Quantities of Work Centers affected

(g) Added/deleted MIPs

(2) The LOEP, Report PMS 5 (Figure 2 - 1).

(3) PMS Activity to MIP to Work Center File, Report PMS 4A (Figure 2 - 11). This report provides the ship accountability and control of current MIP to Work Center assignments.

(4) Activity to MIP to Work Center File, Report PMS 4.

(5) Technical Feedback Status Report, Report PMS 22 (Figure 2 - 12). This report contains outstanding/completed TFBRs received by NAVSEALOGCEN Det Norfolk/San Diego. Non-Technical FBRs will not be reflected on this report.

(6) Classified MRC to MIP Report, which is only provided for activities whose LOEP lists a MIP that has a classified MRC.

(7) The PMS Service Brief which contains general information about the PMS program and new changes and updates to PMS policy. The PMS Service Brief should be reviewed by the chain of command for information that may affect their schedules.

(8) Reference documents included on the CD/DVD are:

(a) NAVSEAINST 4790.8 (Series), Ships' 3-M Manual

(b) NAVEDTRA 43241-K, 3-M Personnel Qualification Standards (PQS)

(c) NSTM 670 Vol 1 & 2, Afloat HMC & M Guidelines and Hazardous Materials User Guide (HMUG)

(d) SKED 3.1 User's Manual & Administrator's Guide; SKED 3.2 Users Guide

(e) SKED Master for SKED 3.1.

b. FR Procedures. FR procedures are as follows:

Use SKED Revision Editor to apply the following procedures. These procedures apply to all PMS revision types used in SKED.

(1) PMS revision package will be addressed; "Attention: 3M System Coordinator."

(2) The FR number is listed in the upper right-hand corner of the ALID. This number will be the same for all ships and will identify each FR in the calendar year. For example, the first package issued in calendar year 2000 was assigned the number 1-00.

(3) Commands having no additions or changes will receive a copy of the ALID with a statement, "No Ship's Master File changes reflected by this FR."

(4) Ships in overhaul will receive FR packages. Updating procedures for PMS packages during overhaul are contained in Section I Chapter 3.

(5) Shipboard procedures for implementation of FRs are as follows:

FRs are normally effective on the first Monday of the quarter and are mailed prior to the beginning of a quarter to allow adequate preparation prior to the scheduled implementation date. When a FR is not received in time to permit implementation on the first Monday of the quarter, the actual date of implementation will be designated by the Executive Officer. Safety-related PMS updates are required to be implemented within 2 to 5 working days of receipt.

(a) The 3-M Coordinator shall route the Service Brief to the Chain of Command for review.

(b) The 3-M Coordinator shall enter the FR number from the ALID in the PMS Supersedure/New Issue Accountability Log, Figure 2 - 13, update PMS data into SKED (See Appendix F for SKED 3.1 and Appendix G for SKED 3.2) prior to routing the change documentation to Work Centers. Two examples of PMS Change Documentation Routing Memorandum are shown in Figure 2 - 14 and PMS Change Check-off Sheet is shown in Figure 2 - 15. The Change Service Accountability Log is explained further in paragraph 2-7c.

(c) The Work Center Supervisor, upon receipt of the change document from the 3-M Coordinator, shall take the following actions:

1. Upon receipt of the PMS Change Documentation Routing Memorandum the Work Center Supervisor will make the appropriate entry in the Work Center Record of Change Log.

2. Make appropriate LOEP, MIP, MRC, etc. changes to the Work Center PMS Manual.

3. Utilizing SKED Revision Editor, apply changes to the Work Center PMS schedule. (See Appendix F for SKED 3.1 and Appendix G for SKED 3.2)

4. Route the revision changes to Division LCPO for review and concurrence.

(d) Division LCPO Review. It is important that all MIPs/MRCs assigned to a Work Center are carefully reviewed.

1. Utilizing SKED Revision Editor verify that all PMS changes have been properly annotated on the Work Center PMS Manual and applied to the Work Center schedule.

2. Review line outs on LOEPs, MIPs, and MRCs. Initial all such line outs to indicate concurrence.

3. Submit PMS schedule to Division Officer for review and concurrence.

(e) Division Officer Review. It is important that all MIPs/MRCs assigned to a Work Center are carefully reviewed.

1. Utilizing SKED Revision Editor verify that all PMS changes have been properly annotated on the Work Center PMS Manual and applied to the Work Center schedule.

2. Review and concur with the lined out MIPs on the LOEP, MRCs on the MIPs.

3. Submit PMS schedule to Department Head for review and approval.

(f) Department Head Review. It is important that all MIPs/MRCs assigned to a Work Center are carefully reviewed.

1. Utilizing SKED Revision Editor verify that all PMS changes have been properly annotated on the Work Center PMS Manual and applied to the Work Center schedule.

2. Review and approve with the lined out MIPs on the LOEP, MRCs on the MIPs.

3. Review and approve Work Center PMS Schedules and return PMS documents to the Work Center.

(g) Work Center Supervisor makes final entries in the Work Center Record of Change Log, completes the PMS Change Documentation Routing Memorandum and returns it to the 3M Coordinator.

(h) 3M Coordinator updates the Change Service Accountability Log. After receiving all FR PMS Change Documentation Routing Memorandums from the Work Centers notify the XO that the FR has been applied.

c. Change Service Accountability Log. The Change Service Accountability Log (CSAL) (Figure 2 - 13) provides a definitive record of all changes to a command's 3-M program. Whenever a change to a command's 3-M program is directed (be it from Force Revision, Feedback Report, ISIC direction, etc.), the change will be routed to the concerned Work Center Supervisor(s) via a memorandum. Whenever such a memorandum is issued, it shall be recorded in the CSAL. Once the WCS reports the directed change has been completed, the 3MC will file the WCS response and annotate the CSAL that the action is complete.

(1) The CSAL is comprised of the actual log sheet, and a copy of all memos routed to the WCS, and the memo from the WCS to the 3MC indicating completion.

(2) The importance of the CSAL cannot be overstated. In essence, it provides for a day to day, year to year record of changes to a commands preventive maintenance program. It is also a turn-over document at the deployment sites, allowing a current command to quickly identify all changes from a previous command. Finally, it will be inspected during all command 3-M assessments and inspections, providing visibility to how well a command manages 3-M from one inspection to another.

d. Documentation Provided TYCOMs via FRs.

The following PMS documentation is provided by NAVSEALOGCEN Det Norfolk/San Diego to the TYCOMs with each FR:

(1) PMS DVD/CD-ROM.

(2) Various PMS reports as requested. The reports are available on the DVD/CD-ROM.

NOTE: Besides the standard shipboard reports, others are available upon request from NAVSEALOGCEN Det Norfolk/San Diego to assist the TYCOM. An example is the MIP to Hull File, Report PMS 2A which identifies each hull to which a given MIP is applicable within that TYCOM. Contact NAVSEALOGCEN Det Norfolk/San Diego for additional information on reports available.

2-8 PMS SELF-ASSESSMENT

The ability of the activity to perform critical self-assessment is instrumental to the success of all shipboard programs, including PMS. To ensure the command's PMS Self-assessment Program adequately addresses all aspects of PMS, the following program elements shall be utilized:

a. PMS Spot Check. The spot check checklist contained in reference (b), Volume 6, Chapter 19 is the tool that supervisory personnel utilize to determine the accomplishment status of an MRC that has been previously reported as accomplished. Deficiencies noted from the conduct of the spot check and the final grade shall be provided to the Work Center's chain of command for abatement and the Work Center Supervisor shall record the spot check grade into SKED to generate the Accomplishment Confidence Factor (ACF) for the quarterly PMS Performance Report.

b. Monitored MRC. Supervisory personnel shall periodically monitor ongoing PMS to provide feedback and training to the maintenance personnel and to enforce command's maintenance practice standards. These monitored MRCs shall be documented as a monitored evolution and findings shall be provided to the Work Center's chain of command for inclusion into training and deficiency abatement. These monitored evolutions shall not be counted as PMS spot checks and are to be considered training events.

c. Audits. Each Work Center shall receive an audit once per quarter by a supervisory individual, (E-7 or above). Deficiencies noted from this audit shall be reported to the Work Center's chain of command for abatement. 3MC shall report

recurring deficiencies to the Executive Officer for further investigation and corrective action.

d. Deficiency Abatement. The status of discovered deficiencies shall be kept current within the monitoring program. Recurring deficiencies shall be reported to the 3-M Manager for further investigation and corrective action. Deficiencies that have been reported as corrected shall be subject to follow up monitoring to ensure corrective action was effective and results of the follow up monitoring reported to the 3-M Manager.

e. Self-assessment. Each activity shall perform a complete 3-M self-assessment, normally at the mid-point in the 3-M assessment cycle. The 3-M assessment checklists contained in reference (b) shall be utilized and retained within the PMS Self-assessment Program. Utilization of the TYCOM/ATG 3-M Inspection Team members to assist the command is encouraged and should be requested. As the self-assessment senior member, the 3-M Manager shall ensure that personnel performing the audits have adequate knowledge in 3-M to ensure a thorough review. The Commanding Officer shall receive a formal briefing of the findings of the self-assessment and the intended corrective actions.

f. Zone Inspections. An integral part of a self-assessment program is the assessment of the material condition of systems and equipment. Reference (p) requires every command to conduct periodic inspections to ensure proper measures are taken to keep machinery, spaces and equipment clean, operational and in satisfactory state of preservation. As a minimum, each space will be formally inspected at least once per calendar quarter.

(1) The Commanding Officer is responsible for the effective assessment of the material condition of the activity. The Commanding Officer shall assign duties and responsibilities in support of Zone Inspections per TYCOM instruction.

(2) Zone inspections will emphasize safety, preservation, damage control readiness, material condition and cleanliness, as well as specific items of interest, and will be structured to ensure rapid correction of major discrepancies that could cause injury to personnel, damage to equipment or constitute a fire hazard. Special emphasis must be placed on

the elimination of fire hazards, safety hazards and the proper stowage of hazardous materials. Refer to TYCOM instructions for the documentation and abatement requirements Zone Inspection deficiencies.

(3) The designated Zone Inspection program manager should ensure all personnel who are assigned zone inspections are qualified to conduct inspections and that the Commanding Officer is provided routine reports as to the "as found" material condition of the activity.

(4) All material condition deficiencies that require corrective maintenance, regardless of significance, shall be entered into the Maintenance Data System (MDS). The utilization of specific zone inspection management tools does not satisfy this requirement.

2-9 EQUIPMENT NOT COVERED BY PMS

There are items of equipment in the fleet which do not have PMS coverage. Reasons for this are numerous and include:

a. Insufficient funds for development of PMS.

b. Non-delivery of technical documentation for equipment previously delivered and installed.

c. Determination that planned maintenance is not required.

d. Equipment/systems that are planned for disposal, and as such, not economical for PMS development.

2-9.1 Classification of Equipment Not Covered by PMS

The terms listed below have been established for use in PMS to aid in the classification of equipment or system status. SYSCOMs/BUMED, INSURV, and fleet units will be provided a status report of such equipment for use as a reference in determining the scope of PMS coverage and/or deficiencies in coverage.

a. Maintenance Requirement Substantiated (MRS). The classification MRS is given to an equipment which has been analyzed by the designated technical review activity, and the

need for PMS requirements established. A requirement then exists for final development, and the equipment is so identified for technical review activity action and is also listed in the PMS automated LOEP for each ship in which the equipment is installed.

b. No Maintenance Required (NMR). The term NMR can be assigned to equipment only if no maintenance other than normal housekeeping actions is required to keep the equipment in good operating condition. Designated technical review activities shall provide an RCM analysis to justify an NMR determination.

2-9.2 Responsibilities for Providing Coverage

When a ship or TYCOM considers there is a need for PMS equipment coverage, the following steps will be taken:

a. The ship will notify NAVSEALOGCEN Det Norfolk/San Diego by PMS TFBR of the need for PMS coverage.

b. If, through the development process planned maintenance tasks have been identified, NAVSEALOGCEN Det Norfolk/San Diego may forward preliminary MIPs and/or MRCs to the applicable ships for those items coded “MRS” (copy to TYCOM).

c. If preliminary MIPs and/or MRCs are not provided, the command may develop interim MIP and MRC procedures based on applicable technical manuals/documentation and quality maintenance processes. MRC procedures may be locally developed and scheduled. These locally developed procedures shall be submitted to the SYSCOM/BUMED as recommendations for the development of formal PMS.

2-10 INACTIVE EQUIPMENT MAINTENANCE (IEM)

2-10.1 IEM Definitions

The following are provided as definitions and are not meant to drive requirements:

a. Inactive Equipment. The intentional placement of a piece of equipment/system in a hibernated state for a specific duration with the intention of reactivating at the end of that duration. While inactive minimum maintenance is performed in

order to ensure the success of the reactivation. The IEM section of the PMS MIP will cover this maintenance. If no IEM maintenance is provided, the activity will request assistance from the Type Commander (TYCOM) in obtaining direction.

b. Deactivated Equipment. The intentional placement of a piece of equipment/system out-of-service with no intention of reactivating the equipment/system. Permission to deactivate a piece of equipment/system must be obtained from the TYCOM and the Program Office/Ship Platform Manager. TYCOM and the Program Office/Ship Platform Manager will obtain specific direction from the applicable designated technical review activity to place the equipment in an out-of-service state. No maintenance will be performed after it has been deactivated.

This guidance could be as simple as direction to tag out physical and electrical isolations or as complex as a formal configuration change for the physical divorcing of the equipment/system from other equipment/systems.

2-10.2 Implementation and Responsibility

To implement procedures for the accomplishment of PMS for equipment declared in an inactive status, current PMS schedules are modified to annotate the requirements listed in the IEM section of the MIP (Figure 2 - 16). For advance planning and scheduling of maintenance to take place, it is necessary to determine and identify the extent that ship's force personnel will apply PMS during an inactive period. MIPs in each Work Center will be reviewed to determine if equipment has IEM coverage, if the coverage is adequate, and what procedure to follow if there is no IEM coverage on the MIP in question. The Department Head is responsible for determining equipment IEM status.

2-10.3 Definition of Inactive Status

The applicability of IEM procedures is dependent on determination of equipment status using the following definitions:

a. Status I. Equipment that will remain on board, is not scheduled for corrective maintenance or overhaul and will be inactive for seven days or longer.

b. Status II. Equipment that is inactive and directly subject to corrective maintenance, overhaul, or removal for safe storage or is temporarily transferred to another activity for seven days or longer.

2-10.4 Inactive Equipment Maintenance (IEM) Documentation

a. IEM procedures are listed on MIPs and separated from operational PMS by a horizontal line (See Figure 2 - 16). The IEM section is titled "Inactive Equipment Maintenance" and is prefaced by the following statement:

"The following requirements will be scheduled when equipment is inactivated for periods of prolonged idleness."

b. When there are no IEM requirements the words "None required" will appear under the Inactive Equipment Maintenance Section of the MIP. When IEM procedures are inadequate, submit a TFBR. The ship should consider all factors that affect equipment deterioration and take necessary precautionary measures. These factors include environmental conditions, equipment location, susceptibility to damage, or other factors that cannot be anticipated when IEM procedures were originally developed by the cognizant ISEA or design activity.

2-10.4.1 IEM Periodicity Codes

a. IEM periodicity codes (LU, PM, SU, OT) are assigned to all IEM actions available on the MIP supplemented by operational periodicity codes. When there are no IEM requirements for the LU, PM, SU, or OT sections, the word "None" will appear under the appropriate section of the MIP.

b. IEM Periodicity Code Definitions. Maintenance actions for inactivated equipment have the following definitions:

(1) Lay-Up Maintenance (LU). Lay-Up maintenance actions prepare the equipment for periods of prolonged idleness, and are usually performed only once at the beginning of the inactive period (Figure 2 - 16).

(2) Periodic Maintenance (PM). Periodic maintenance actions are accomplished on a recurring basis during the

inactive period to prevent equipment deterioration. These maintenance actions are operational PMS performed at either the same periodicity with a note specifying the MRC to be used (Figure 2 - 16), or at a different periodicity with a note specifying the MRC to be used and the modified periodicity.

(3) Start-Up Maintenance (SU). Start-Up maintenance actions ensure that equipment is in a condition suitable for operation or to reactivate an equipment or system that has been inactivated for a prolonged period. Start-up maintenance consists of performing turn-on procedures and restoring the equipment to its ready-for-service condition (Figure 2 - 17).

(4) Operational Test (OT). Operational test actions are those conducted to determine the operational condition of the equipment, its ability to function as designed, and to be integrated with other equipment to form a system.

c. The following situations may occur in the IEM section:

(1) An MRC is developed and listed on the MIP using LU, PM, SU, or OT as the periodicity designator (Figure 2 - 16).

(2) A scheduling MRC is developed that will list one or more MRC periodicities to be scheduled and performed (Figure 2 - 16

(3) If more than one maintenance requirement appears on the operational MRC, one or more of the requirements will be designated for accomplishment by a note on the MIP (Figure 2 - 16).

d. IEM MRCs. IEM MRCs are assigned SYSCOM MRC control numbers in the same manner as PMS MRCs. When an IEM MRC is utilized to refer to scheduled MRCs, the periodicity indicator will be its IEM requirement. The skill level will reflect the most senior person required on the scheduled MRC(s), and man-hours block will reflect an appropriate amount of time for that person to review the requirements for the task(s) identified (normally 0.1 or 0.2 M/H).

e. IEM Scheduling. SKED provides the capability to perform IEM scheduling. The scheduling of maintenance for inactive equipment utilizes conventional PMS scheduling techniques. At

the conclusion of IEM, routine PMS maintenance shall be scheduled as prescribed in Appendix F for SKED 3.1 and Appendix G for SKED 3.2.

NOTE: Equipment completing an IEM period late in the quarter is not expected to do all occurrences of Daily, Weekly and Monthly MRCs that would have been scheduled during the quarter. All checks greater than Monthly not completed during the IEM period will be scheduled soon after being removed from the IEM Status, unless the equivalent maintenance requirement was performed during IEM. The equivalent maintenance requirement will be documented as part of the schedule close out.

2-10.5 Supply Materials Required Prior To Inactivation

a. Certain advance preparations are necessary to properly prepare for IEM. Reference documents such as CSMPs, Ship Alteration and Repair Package (SARP), LOEPs, MIPs, and MRCs should be reviewed by the shipboard maintenance manager well in advance of planned idle period. A comprehensive list of the needed equipment and materials required may be prepared by reviewing the IEM MRCs for the items called out under "Tools, Parts, Materials, Test Equipment."

b. Meeting IEM requirements in some cases will require that portable equipment such as exhaust blowers, heaters, and dehumidifiers are available. In other situations, special materials for protecting idle ship equipment must be used. Many items required in implementing IEM are normally used or stocked on the ship and are, therefore, readily available. Lubricants, cleaning agents, rags, hand tools, and test equipment are typical among these items.

c. Arrangements for loan and extended use of portable equipment during an overhaul period should be made with a tender or other repair/overhauling activity. In assessing equipment requirements, duplication of effort and equipment redundancy should be avoided. For instance, a particular overhaul action under shipyard responsibility may include provision of equipment, material, or services, otherwise assumed to be part of IEM requirements. In such cases, yard and ship responsibility must be determined.

d. Care must be exercised in the selection of cleaning agents, detergents, solvents, adhesives, cements, and similar materials to avoid the use of materials which, are not authorized. For example, on submarines, refer to the effective edition of the Submarine Material Control List and to the Nuclear Powered Submarine Atmosphere Control Technical Manual Volume 1 (0910-LP-104-7333 (Unclassified)) and Volume 2 (0910-LP-275-1800 (Confidential)).

SECTION I

CHAPTER 3

INITIAL PLANNED MAINTENANCE SYSTEM INSTALLATION AND UPDATE DURING OVERHAUL

Chapter 3 - INITIAL PLANNED MAINTENANCE SYSTEM INSTALLATION AND UPDATE DURING OVERHAUL

3-1 PLANNED MAINTENANCE SYSTEM (PMS) INSTALLATION (SHIPBOARD)

Type Commanders (TYCOMs) are responsible for ensuring the proper installation and operation of PMS within the ships under their command. The importance of the PMS installation cannot be overemphasized.

3-1.1 Preparation of Materials

Prior to the PMS installation, equipment configuration information will be verified by the Configuration Data Manager (CDM). The PMS Maintenance Index Page/Maintenance Requirement Card (MIP/MRC) documentation will be certified by the Naval Sea Logistics Center Detachment Norfolk/San Diego (NAVSEALOGCEN Det Norfolk/San Diego), as appropriate. Following the validation, the applicable NAVSEALOGCEN Det Norfolk/San Diego will assemble the PMS documentation, equipment listings, schedules, and forms required for the installation package. Each PMS installation package is ship tailored. Installation packages consist of:

a. A transmittal letter with an inventory of installation materials.

b. Two copies of the List of Effective Pages (LOEP).

c. One PMS Master File. The PMS Master File contains information relative to PMS requirements for specific equipment for which the command is responsible.

d. One Work Center PMS Manual for each Work Center. The Work Center PMS Manual reflects that portion of the PMS Master File that contains only the planned maintenance requirements applicable to a particular Work Center and includes decks of associated MRCs and PMS Feedback Report (FBR) forms.

e. A PMS delivery/installation reporting card.

3-1.2 PMS Installation

NAVSEALOGCEN Det Norfolk/San Diego has the responsibility for installing PMS aboard ship. The installation of PMS is done in two phases; preliminary and final.

3-1.2.1 Preliminary PMS Installation

A preliminary, time phased PMS package, tailored to the ships manning and compartment acceptance plan will be built and installed as the ship construction continues. Close coordination between the Supervisor of Shipbuilding (SUPSHIP), NAVSEALOGCEN Det Norfolk/San Diego, and the ship, monitored by TYCOM, will continue through final PMS installation. Periodicities of PMS may be altered to accommodate manning phases. The goal is to bridge the gap between acceptance of a space and PMS installation, minimizing damage to equipment/systems during this transition period.

3-1.2.2 Final PMS Installation

A final formal ship-wide PMS installation, which represents the full PMS package installation will correspond with the ships commissioning plan. NAVSEALOGCEN Det Norfolk/San Diego will notify the ship via the telephone giving a proposed final PMS installation date, the names and security clearances of team members, and a brief resume of the procedures. The following provides a general time frame for installations:

a. Submarines and Nuclear Powered Surface Ships. Approximately 2 weeks prior to placing the ship IN SERVICE. (This also applies to other submersible vehicles.)

b. Surface Ships. Approximately 2 weeks prior to commissioning for all non-nuclear-powered ships.

c. A briefing will be conducted by NAVSEALOGCEN Det Norfolk/San Diego during the PMS installation and repeated during the final installation process. A TYCOM representative will be present at these briefings.

3-1.2.3 Installation Briefings

a. The Top Management Level Briefing. The installation team leader will conduct this briefing for the benefit of the Commanding Officer, Executive Officer, 3M System Coordinator, and Department Heads. The purpose of the briefing will be to provide refresher training in the concept and management aspects of PMS. The briefing will be scheduled once the majority of Department Heads are aboard the pre-commissioning unit in accordance with the ship's commissioning plan.

b. Briefing for personnel below Department Head level. The installation team will conduct the Division Officer and Work Center level briefing. This briefing will consist of PMS concepts and detailed procedures directed to the working level. It will be held once the majority of Division Officers and Work Center Supervisors have reported aboard. Additional briefings will be conducted by TYCOM as required during initial preliminary periods.

c. NAVSEALOGCEN Det Norfolk/San Diego will brief the 3M Coordinator during the formal full PMS package installation.

3-1.3 Inventory of PMS Installation Package

3-1.3.1 Inventory of Preliminary PMS Package

NAVSEALOGCEN Det Norfolk/San Diego will provide a copy of the latest PMS package appropriate for the class ship on /CD-ROM/DVD with the ship’s known PMS assigned and available for scheduling. The ship will monitor the pre-commissioning space acceptance progress and inventory equipment associated with spaces to be accepted. The ship will use the PMS package to identify applicable PMS and will coordinate with NAVSEALOGCEN Det Norfolk/San Diego to acquire applicable PMS documentation for those equipment/systems under ship's force control. NAVSEALOGCEN Det Norfolk/San Diego will assist the ship if PMS cannot be identified for a system to be accepted. It is the ship's responsibility to validate the PMS for their hull.

3-1.3.2 Inventory of Final PMS Package

Final PMS Package. The PMS installation team, in conjunction with ship personnel, shall conduct an inventory of the

installation package received from NAVSEALOGCEN Det Norfolk/San Diego. This will be done to ensure the package contains all materials necessary for the PMS installation. The installation team will compile a list of all deficiencies and discrepancies. The installation team will forward this list directly to the NAVSEALOGCEN Det Norfolk/San Diego as appropriate for immediate corrective action.

3-1.3.3 PMS Package Installation Completion Check List

During the preliminary PMS package build, the installing activity will develop a check list to use during the PMS installation. This check list will be used to ensure that:

a. All PMS Work Center Supervisors are instructed in using the Automated Scheduling Program on how to do their PMS schedules and instructed in the preparation of Equipment Guide Lists (EGLs).

b. Supply personnel are familiar with the Standard PMS Item Name (SPIN), Standard PMS Material Identification Guide (SPMIG) and other responsibilities in support of Ship's 3-M Systems.

c. The 3-M Coordinator, Division Officers, CPOs, and LPOs that can access Local Area Network (LAN) and the Internet from their work stations demonstrate the ability to connect to the RAD WEB, CDMD-OA and on-line 3-M Manual as required.

d. An adequate number of the Ships' 3-M Manuals, OPNAV 4790 forms, and TYCOM 3-M Systems instructions are available on board.

3-2 UPDATE OF SHIPBOARD PMS PACKAGE DURING OVERHAUL PERIOD

a. The following procedures establish the general guidelines within which the NAVSEALOGCEN Det Norfolk/San Diego, overhaul activity, TYCOM, and ship will function to ensure that an adequate and accurate PMS update is accomplished prior to completion of a regular overhaul or any lengthy availability.

b. Three months prior to the start of overhaul (SOH) the responsible Regional Maintenance Center (RMC) will initiate a letter of request to NAVSEALOGCEN Det Norfolk/San Diego as appropriate for a PMS update package. (When the

availability/overhaul date is not known 90 days prior to SOH, the request will be made as soon as possible.) Thirty days prior to SOH and after receipt of the RMC request, NAVSEALOGCEN Det Norfolk/San Diego will provide the following:

(1) PMS 4 (MIP to Work Center Lists)

(2) PMS 5 (List of Effective Pages (LOEP))

(3) One set of all updated MIPs and unclassified MRCs.

c. The RMC in conjunction with ship's force shall verify the PMS 4 and 5 listings with on board equipment configuration, and identify adds, changes, and deletes per RMC procedures. The total update package (Annotated PMS 5 (LOEP) and LOEP update list) shall be sent to NAVSEALOGCEN Det Norfolk/San Diego and the ship periodically during overhaul, but definitely by the end of the overhaul. This will allow the ship to begin PMS coverage prior to receipt of the Force Revision (FR). Data submitted will be incorporated into the next FR. Items lacking PMS coverage but needing planned maintenance shall be added to the Maintenance Requirements Substantiated (MRS) listing.

d. When tasked and funded, NAVSEALOGCEN Det Norfolk/San Diego shall coordinate the development of PMS requirements for MRS items.

e. The appropriate NAVSEALOGCEN Det Norfolk/San Diego shall provide the updated PMS documentation directly to the ILO activity, and the ship via the normal FR cycle until the end of overhaul, at which time only the ship will continue to receive PMS documentation via FR updates.

f. The PMS update process cycle for overhaul periods is shown in Figure 3 - 1.

3-3 SCHOOLS/TRAINING COMMANDS

a. Installation teams are not provided to training commands and schools for installing or updating PMS as is provided to fleet units. Sufficient training, however, is available on both the east and west coasts to assist the training activities in readying staff and instructor personnel for the receipt, distribution of materials, and the execution of the PMS program

in the individual commands. These training courses are delineated in Section IV, Chapter 1.

b. The schools/training commands are responsible for the same functions specified for shipboard PMS installation and updates. Following receipt of a PMS package or FR update from NAVSEALOGCEN Det Norfolk/San Diego, implementation of new and updated PMS documentation shall be accomplished using existing procedures for both PMS installation and shipboard updates as described in chapter 2 of this section.

SECTION I

CHAPTER 4

ORGANIZATIONAL LEVEL MAINTENANCE DATA SYSTEM INTERFACE

Chapter 4 - ORGANIZATIONAL LEVEL MAINTENANCE DATA SYSTEM INTERFACE

4-1 PURPOSE

The purpose of this chapter is to provide the 3-M Program's Maintenance Data System (MDS) policy and guidelines in support of organizational (O) level shipboard maintenance and material reporting. MDS provides the maintenance and material managers throughout the Navy with the means to plan, acquire, organize, direct, control, and evaluate manpower and material resources expended or planned for expenditure in support of maintenance. It allows for information collected by maintenance personnel to be recorded only once, and the maintenance database thereafter will provide information to all who have a need for it.

4-2 SCOPE

This chapter specifies and standardizes the requirements for O-level MDS reporting. It requires the reporting of maintenance actions and configuration changes on all categories of equipment. Maintenance data collection or reporting requirements, not specified in this manual, will not be levied on fleet units by the shore establishment without prior approval of the Chief of Naval Operations (N43).

4-3 OBJECTIVE

3-M Organizational Level Maintenance provides a means to effectively manage and control organizational maintenance. It is primarily managed via the Current Ship's Maintenance Project (CSMP). A thorough and accurate CSMP reflects the material condition of the ship. This objective is achieved by:

a. Reporting maintenance actions.

b. Reporting configuration changes.

c. Producing CSMP reports.

d. Producing work requests/work candidate.

e. Producing deficiency documents for use by the Board of Inspection and Survey (INSURV).

f. Providing information necessary to evaluate and improve readiness, reliability, maintainability, and availability of installed systems and equipments.

g. Providing maintenance history information to the 3-M Systems Central Database.

4-4 3-M ORGANIZATIONAL (O) LEVEL MAINTENANCE DATA SYSTEM

O-level maintenance requires the reporting of maintenance actions and configuration changes to achieve the desired objectives. It allows for information collected to be recorded only once by maintenance personnel for inclusion into the ship's CSMP. Maintenance managers use the CSMP to manage and control the accomplishment of deferred maintenance and for the research of financial, industrial, operational, and analytical purposes in support of ships. It is the responsibility of each Work Center Supervisor to ensure that the CSMP accurately describes the material condition of the Work Center. For each maintenance action, it is imperative that:

a. Proper equipment is identified.

b. Correct codes are used.

c. Chain of command reviews each transaction.

d. Proper supply documents are generated to ensure that the correct parts are ordered.

NOTE

The CSMP shall contain Unclassified data, but that data is business sensitive and shall not be made available for public release.

Various automated systems have been developed to reduce the shipboard manual workload associated with maintenance; provide users with a responsive and flexible facility for on-line management of maintenance, and improve the accuracy and timeliness of existing up-line reporting.

4-4.1 Central Shore Databases

The ability to accurately document, track, and maintain the configuration and maintenance history of ships' systems is critical for maintaining proper shipboard logistics support. The Naval Sea Logistics Center (NAVSEALOGCEN) 3-M Systems Central Database is the focal point for receipt and distribution of maintenance and material data. Note that the 3-M Systems Central Database is designated as Unclassified. Each reporting activity must ensure that narrative data sent up-line to this database does not contain any classified or Navy Nuclear Propulsion Information (NNPI). Ships equipped with the Propulsion Organizational Maintenance Management System (P-OMMS) should refer to the Naval Nuclear Material Management Manual NAVSEA S9213-45-MAN-000(U) for P-OMMS operating requirements. The Naval Nuclear Material Management manual will provide additional information to resolve differences between the requirements in this manual and NAVSEA 08 guidance documents. The Configuration Data Managers Database – Open Architecture (CDMD-OA) database serves as the Navy's central repository for Ship Configuration and Logistic Support Information (SCLSI). This information also assists in Battle Damage Assessment (BDA) and repair.

4-4.1.1 Maintenance Data

Reported maintenance action information is used for material history purposes and is the basis for the material and logistics support necessary to maintain equipment. Maintenance and material information in numerous reports and formats are available through the 3-M central database to any command requiring the information. These reports yield information concerning equipment maintainability and reliability, man-hour expenditures, material usage and costs, and material condition. Refer to Section III Chapter 1 of this instruction for information on obtaining 3-M data reports from NAVSEALOGCEN.

4-4.1.2 Configuration and Logistics Data

a. The accuracy of the ship's configuration information affects the quality of the logistics support that the ship receives. Inaccurate data will result in the ship being supplied with incorrect component parts and technical documents

necessary for the operation and maintenance that will hinder battle damage repair efforts.

b. The CDMD-OA database is the source for configuration and logistic support data available to ships and other fleet and shore activities. This will also support appropriate Class Maintenance Plan scheduling and refurbishment requirements and identify all of the items, components, equipment, sub-assemblies, assemblies, sub-systems, and systems requiring integrated logistics support or planned maintenance requirements.

4-4.2 Ship Configuration and Logistics Support Information System (SCLSIS)

a. The Naval Supply Systems Command (SUP N00AL1) manages and directs the SCLSIS process which supports the equipment Configuration Status Accounting (CSA) and logistics delivery processes throughout the Navy. Policy, implementation, operation and maintenance of all aspects of SCLSIS are provided in NAVSEA Technical Specification 9090-700 (Series).

b. The SCLSIS process is used for Navy and Coast Guard automated and non-automated surface ships and submarines. SCLSIS also serves designated shore activities (e.g., Naval Expeditionary Combat Command (NECC) activities, Mobile Inshore Underwater Warfare Units (MIUWU), Moored Training Ships (MTS), Antisubmarine Warfare Operations Center (ASWOC) sites, Naval Training Facilities, and other Navy activities); and equipment system groups such as Aircraft Launch and Recovery Equipment (ALRE), Navigational Aids and Landing Systems (NAALS), and AEGIS systems.

4-4.2.1 Shipboard Benefits of SCLSIS

a. The SCLSIS process allows ships to maintain an on-line source of their SCLSIS information allowing them to locate and determine configuration, logistics, and supply data associated with all installed equipment. This information can then be used to fill in Maintenance Data System Work Candidate (OPNAV 4790/2K) and Configuration Changes (OPNAV 4790/CK) without having to refer to a series of manual or off-line reference books and files. The on-line system also allows the maintenance personnel to identify the repair parts associated with the

equipment/systems that they are maintaining and to order these parts on-line. Since the configuration data in the Organizational Maintenance Management System – Next Generation (OMMS-NG) and SNAP databases is provided, the shipboard and unit personnel need only select the correct equipment and report the information relevant to the actual maintenance of the equipment. Supply and maintenance worthy equipment configuration changes shall be reported and processed by the Configuration Data Manager (CDM).

b. The CDMD-OA database provides information used by Naval Supply Systems Command (NAVSUP) Weapon Systems Support (NAVSUP WSS), Mechanicsburg, for calculation of the allowances for repair parts carried onboard. Updates via ASI data are made available to the ship on a continuous basis and enables the supply department aboard ship to easily maintain its COSAL and order repair parts as an automated process. The CDMD-OA database is also used to identify which technical manuals, Planned Maintenance System (PMS) documents, and test equipment are necessary to support the on-board equipment and systems. Accurate reporting of configuration data is critical to ensure on-board logistics documentation and parts support is available.

4-4.2.2 Ship Responsibility

Automated and non-automated ships maintain a copy of their own configuration and logistics database. This database is the same as the unit's section of the master CDMD-OA database. The two databases are kept in synchronization through the SCLSIS management process.

a. To ensure timely receipt of accurate configuration data, logistics support data and COSAL/supply support data, the ship must:

(1) Promptly report equipment installed, removed, or modified by ship’s force using a Configuration Change OPNAV 4790/CK form.

(2) Review all configuration change maintenance actions, equipment file corrections, and logistics support transactions in a timely manner and transmit them for shore processing.

(3) Process all Automated Shore Interface (ASI) data into their automated system promptly in accordance with the SCLSIS Technical Specification and appropriate Fleet/TYCOM instructions.

b. Ships are responsible for reporting equipment/component changes detected or accomplished by ship's force and Intermediate Maintenance Activities (IMAs). While the Equipment Technical Authority is responsible for reporting Alteration Installation Team (AIT) installations, the ship is ultimately responsible for its own configuration accuracy. Appropriate FLEET/TYCOM directives governing these teams access to ships following RMMCO review must be closely followed prior to allowing changes to occur. If these configuration changes have not been properly reported by the Technical Authority, the ship is responsible for reporting them. Shipboard personnel report the configuration changes to the TYCOM via a completed Configuration Change document (OPNAV 4790/CK).

4-4.2.3 Certification of Shipyard Installed Alterations

A certification of alteration accomplishments is provided by the Navy Supervising Activity (NSA) to the recipient ship and the appropriate CDM when the Shipyard accomplished the installation. This certification includes the Work Center Job Sequence Number (JSN) assigned to the alteration, and the Final Action taken. The certification will be in the format shown in Figure 4 - 3. The ship shall endorse the shipyard’s certification letter and forward to the supporting activity managing the Unit’s Master CSMP. The endorsement provides authorization for information transmitted to be processed as completed deferrals in the Master CSMP. Refer to Figure 4 - 4. This eliminates the need for documenting multiple configuration changes (OPNAV 4790/CK/Work Candidate) to close the CSMP deferral. Configuration changes made by the depot in accomplishing the alterations are reported separately by the NSA to the CDM.

4-4.3 3-M Reporting Requirements

4-4.3.1 Reporting Methods

3-M requires all afloat activities report deferred and completed maintenance actions, configuration changes and configuration file corrections. For information on COSAL feedback reporting,

refer to reference (e). As directed by TYCOM or higher authority, 3-M Work Centers at shore activities are to report corrective maintenance and configuration changes on all installed shipboard-identical equipment and equipment installed in service crafts and boats. One Work Candidate (OPNAV 4790/2K or equivalent) shall be submitted for each job action. Do not bundle multiple equipments on one Work Candidate.

a. Manual. The configuration and maintenance forms used for manual reporting are the Ship's Configuration Change Form OPNAV 4790/CK, the Ships Maintenance Action Form OPNAV 4790/2K, Work Candidate and the Supplemental Form, OPNAV 4790/2L. Appendix B shows examples of how to document corrective and preventive maintenance actions. For nuclear alterations, consult TYCOM directives for CSMP procedures.

b. Automated. MDS automated data reporting is basically the same as in the non-automated 3-M program. The terms "2K", "CK", and “Work Candidate” are perpetuated in supporting software even though the paper forms are not filled out (with the exception of the Supplemental Form, OPNAV 4790/2L). Transactions are entered into the computer and up-line reported by using applicable software. Software instructions are developed and distributed by the 3-M Central Design Activities (CDAs) and supplemented by TYCOM instructions as required. Options are available in the systems to print simulated OPNAV 4790/2K, OPNAV 4790/CK and Work Candidate forms when desired. (Check the applicable system's user manual OR ONLINE HELP for additional information).

c. With an automated information system, the computer will provide on-line access to the data for identifying equipment and ordering parts. When documenting requirements, many of the data elements required for corrective maintenance and configuration change reporting, such as the APL, EIC, Equipment Name, and Location, will be pre-filled and displayed when the applicable equipment is identified.

d. Data Elements. Appendix A provides the data elements and allowed values (if applicable) for each type of reporting.

4-4.4 Work Candidate/Job Sequence Number (JSN) Log

The Work Candidate/JSN logs are used by all non-automated ships. The Work Center (WC) supervisor shall maintain a Work Candidate/JSN Log using the format shown in Figure 4 - 1. The Unit Identification Code (UIC) and WC Code must be entered on each page of the log. A separate JSN for each maintenance action reported from that WC must be assigned. The JSNs shall be in sequential order. The WC supervisor shall ensure that an identical JCN is assigned to the maintenance action and to any material request associated with it. The Division Officer shall check the Work Candidate/JSN log at least weekly.

4-4.5 Deferred Maintenance Action

A deferred maintenance action is a maintenance requirement that meets one or more of the following criteria:

a. Requires assistance from an activity external to the ship to accomplish (for example, IMA, depot, etc.), or is a ships force job requiring assistance from outside the originating WC (for example parts required).

b. Is not expected to be accomplished by ship's force within the time frame prescribed by the TYCOM.

c. Is an uncorrected deficiency reported by INSURV (refer to Section II Chapter 1) or other inspecting activity (CMAT, C5RA, etc.).

d. Is required to correct a condition which has caused, or has the potential to cause injury to personnel and/or damage to material.

e. For non-automated sites, the OPNAV 4790/2K Ship's Maintenance Action Form is used to report a deferred maintenance action. Refer to Appendix B for manually completing the 4790/2K.

f. For automated sites, refer to the applicable system's user manuals and guides.

4-4.6 Completed Maintenance Actions

The ship is responsible for submitting a completed maintenance action to report:

a. Completion of maintenance actions previously deferred. If no further work is required by ship's force, higher authority may allow an outside activity to report its completion. This is referred to as an "automatic close-out".

b. Completion of maintenance actions not previously deferred.

c. Completion of maintenance actions for Selected Level Reporting (SLR) equipment, as defined in paragraph 3-5.

d. Accomplishment of an alteration directive, i.e., Ship Alteration (SA), Ordnance Alteration (OA), Field Change (FC), etc. Policy and implementation are provided in reference (f).

e. Addition of any new equipment or system.

f. Relocation of any equipment.

g. Replacement or exchange of any equipment.

h. Deletion, removal, or turn-in of any installed equipment.

i. Completion of maintenance actions considered significant for material history purposes, such as:

(1) Maintenance actions which alter the design or operating characteristics of an equipment or system.

(2) Other maintenance actions or conditions that are considered significant for future reference purposes.

j. Accomplishment of maintenance that required parts.

k. Submarines and all ships configured with Automated Information Systems (AIS) will report all corrective maintenance actions.

l. For non-automated sites, the OPNAV 4790/2K Ships Maintenance Action Form is used to report a completed maintenance action. Refer to Appendix A for the data elements and allowed values and Appendix B for the instructions for manually completing the OPNAV 4790/2K.

4-4.7 Reporting a Completed Maintenance Action that was Related to an Alteration, or Resulted in a Configuration Change

a. For the purpose of reporting configuration changes, all alteration directives, deletions, turn-ins, modifications, additions, installations, or replacements of equipment are included in the term "maintenance action," whether or not corrective maintenance is actually performed.

b. The responsibility for identifying and reporting configuration changes exists at all levels of the command. Although the ultimate responsibility for reporting configuration changes resides with the ship, installing activities are required to pre-load planning data in CDMD-OA and to submit subsequent completion reports. For emergent requirements (when an ILS requirements waiver has been granted by higher authority, and the installing activity has not pre-loaded the data in CDMD-OA), the installing activity will provide the ship with properly filled out and complete Configuration Change forms (OPNAV 4790/CK) and will promptly report the completion of the installation to the CDM.

c. During depot availability the installing activity shall ensure that configuration changes are promptly and properly reported. Alteration certification letters shall be provided to the ship by the depot-level activity. Reporting is required for the:

(1) Addition, installation, or ownership change of any equipment.

(2) Deletion, removal, or turn-in of any installed equipment

(3) Replacement or exchange of any equipment. Non-serialized exact replacements do not change configuration records or logistics support and do not require a configuration change to be reported unless required by an alteration

directive. Particular emphasis must be placed on “form, fit, function” equipment. Replacements as any changes in manufacturer, model/part number, or Serial number requires configuration change reporting.

d. Modification of any installed or "in use" equipment. A modification occurs when a maintenance action alters the design or operating characteristics of the equipment. Equipment is considered modified and reporting is required when non-standard replacement parts (not identified on the APL or in the technical manual) are used in the accomplishment of the maintenance. Departure from Specification (DFS) is documented by TYCOM instructions.

e. Relocation of any equipment to a different deck, frame, or compartment; or, if it affects ships drawings or other logistic support data. Any other relocation of equipment is considered a maintenance action and requires a completed maintenance action to be reported (for non-automated ships, use the OPNAV 4790/CK Form).

f. Re-designation of any space or compartment.

g. Accomplishment of any alteration directive.

h. For non-automated activities, the OPNAV 4790/CK Ships' Configuration Change Form is used to report the accomplishment of maintenance actions that are related to an alteration, or result in a configuration change. Refer to Appendix A for the data elements and allowed values and Appendix B for the instructions for manually completing the OPNAV 4790/CK.

NOTE: For Reactor Plant Modification Reporting, configuration changes and modifications performed to equipment/components under NAVSEA (SEA 08) cognizance are reported manually. The Reactor Plant Configuration Change Report (RPCCR) is used to report these modifications. TYCOM directives contain detailed procedures for the preparation and submission of these reports.

4-4.8 Documenting a Periodic Maintenance Requirement (PMR)

a. There are certain equipment and components in the fleet that require periodic maintenance such as tests, inspections, repairs, restorations, and replacements. With select automated systems, periodic maintenance tasks and routines are maintained on file with planning information. The record containing both the routine, test, etc., along with the planning information is called a PMR.

b. Use of PMRs provide the management of configuration and scheduling information for each equipment requiring periodic maintenance or calibration. As PMRs are established for an equipment SUBMEPP/CDMD-OA provides configuration and scheduling records and the Master Job Catalog (MJC) addition to each affected Regional Maintenance Automated Information System (RMAIS) site for subsequent Micro Periodic Maintenance Requirement (MPMR) application. Ship's force may also submit the related configuration and scheduling information for automation of PMS Equipment Guide Lists (EGLs) into MPMR.

c. This information is used to establish a MJC routine. The MJC routine will be added to the CSMP when the equipment is due for periodic maintenance as indicated by the scheduling information provided by NAVSEA/TYCOM. MJCs can be scheduled for accomplishment by ship's force or by an intermediate or depot level activity. PMR accomplishment will be reported as directed by the TYCOM. For additional information on PMR refer to Appendix C.

4-4.9 Configuration File Correction

In addition to reporting configuration change as a result of accomplishing a maintenance action, it is necessary to correct deficiencies in the configuration file to obtain support for equipment that is on board but is not identified in the COSAL, or to delete from the COSAL equipment that is not on board but is supported. There are six categories of actions that must be reported. A configuration change record is submitted to:

a. Correct ship controlled data elements in an existing record of the ship's configuration baseline. For additional information concerning the data elements, refer to the SCLSIS Technical Specification 9090-700 series, Part B.

b. Correct erroneous data previously submitted.

c. Obtain support for equipment that is on board, but not identified as such.

d. Identify equipment that is supported but is not on board.

e. Report the turn-in/receipt of Portable Electrical/ Electronic Test Equipment (PEETE).

f. Report the completion of ship’s force equipment configuration validations.

g. For non-automated sites, the OPNAV 4790/CK Ships Maintenance Action Form is used. If using this form refer to Appendix B for form preparation instructions and examples.

h. For automated sites, refer to the applicable system's user manuals/guides for the procedure used to change, add, or delete file information.

4-4.10 Documenting Changes, Additions, Or Deletions To Previously Reported Maintenance Actions

Any information previously reported on a deferred maintenance action, with the exception of the JCN and the deferral date, can be added, deleted, or changed. Care should be taken not to make changes to jobs that have already been reported up-line. This will require additional screening by outside activities. Automated sites may have additional fields that cannot be modified.

CAUTION: Once a JCN deferral has been processed, it remains on each processing activity’s CSMP (i.e., the S/F OMMS, the ISIC/SSSU/RSG MRMS/RMAIS, the TYCOM master CSMP and the Open Architectural Retrieval System (OARS) database) until the COMPLETED DEFERRAL is processed. When 3-M Coordinators or ISIC/RMC MDCO/ARRS ship supervisor personnel “Delete/Purge” the JCN will remain on all other affected CSMPs if the reporting completion/cancellation is not reported up-line.

4-5 SELECTED LEVEL REPORTING (SLR)

SLR is a process that provides the capability for data collection on unique data elements, related to specific equipment, that are in addition to the standard Work Candidate (2-Kilo) submission. Designated SLR equipment may be either new or modified, proven to be unreliable, or require the collection of unique information to determine reliability. The NAVSEA 04RM SLR technical agent, NAVSEALOGCEN Mechanicsburg, performs the development, maintenance and distribution function for SLR. SLR data that is collected is ultimately available in the Ships' 3-M system via the Open Architectural Retrieval System (OARS).

4-5.1 Selected Equipment Indicator (SEI)

a. The Selected Equipment Indicator (SEI) resides in both the CDMD-OA, considered to be the master database, and in the shipboard equipment file as well. The value contained in the SEI controls whether an individual equipment record is regarded as an SLR record. If a given equipment file record contains an appropriate specific SEI value it determines which set of unique additional data elements will be displayed on an SLR template upon entering a Work Candidate (2-Kilo).

b. NAVSEALOGCEN Mechanicsburg, as the NAVSEA 04RM SLR technical agent, maintains the values in SEI via the CDMD-OA. Changes to SEI are accomplished by using unique Unit Identification Code (UIC)/Record Identification Number (RIN) combinations via special workfiles (Item Type = SEI). The SEI is not updateable on the CDMD-OA browse or detail screens. The only acceptable method for modifying SEI is with the applicable CDM processing an "SEI" workfile created by NAVSEALOGCEN Mechanicsburg.

c. Any changes to SEI in CDMD-OA automatically forwards a duplicate change transaction to the applicable activity in order to keep the values of SEI "in sync" between the master database in CDMD-OA, and the onboard equipment file.

4-5.2 Selected Level Reporting Categories

a. The four distinct categories of SLR data are Level 1, Level 2, Level 3, and Level 4. In addition to the basic Work Candidate (2-Kilo) data entry requirements, Level 1 additionally

requires a mandatory data entry for both "Active Maintenance Time" and "Trouble Isolation" during all completion entries. Level 2 requires data entry, as specified below, for the following fixed set of pre-defined unique data elements in addition to the requirement for all Level 1 data entry as well as all basic Work Candidate (2-Kilo) entries:

(1) Start Time (Hours) - mandatory on a deferral and a completion.

(2) Stop Time (Hours) – mandatory on a completion only.

(3) Repaired/Replaced (1 or 2) – mandatory on a completion only.

(4) End of Downtime – optional.

(5) End of Logistics Delay – optional.

(6) End of Outside Assistance – optional.

(7) Mode of Operation – optional.

b. In addition to the above unique data elements the following information is expected as an optional entry in the free-form "Remarks" for Level 2 SLR reporting:

(1) Problem(s) encountered

(2) Reference Designators/Part Serial Numbers

(3) Symptoms of Failure

(4) Logistics Deficiencies

(5) Description of Difficulties

(6) Description of multiple events within a Work Candidate

(7) Any other helpful information regarding the event

NOTE: A "Meter Reading" entry is also desired on all completions of equipment designated as either Level 1 or Level 2, but entry is not mandatory.

c. Level 3 Specialized Reporting requires data entry for various unique data sets as defined by the requestor for each equipment designated as Level 3. Level 3 Specialized Reporting utilizes a unique "template" for collection of the desired information within the applicable onboard operating system whether it be the legacy Shipboard Non-Tactical ADP Program (SNAP) or the OMMS-NG. Examples of currently designated Level 3 SLR equipment include:

EQUIPMENT	SEI
Trident Command & Control Problem Reporting System	C
LM2500 Gas Turbine Engine	L
Aircraft Launch & Recovery Equipment Maintenance Prog.	M

d. Level 4 Specialized Reporting was developed to meet the requirement to provide a more flexible SLR template. Level 4 provides the flexibility for the requestor to define the length of each data element for data collection, and the maximum number of possible elements was expanded by nine. Level 4 also provides the requestor the capability to tailor the template layout as required. It is anticipated that Level 4 will ultimately become the sole SLR template capability as a replacement for all existing Level 1, Level 2, and Level 3 capabilities. Current designated SLR Level 4 includes only the following equipment:

EQUIPMENT	SEI
Commercial Off-The-Shelf(COTS) AN/UYQ-70 Equipment	A

4-5.3 Level 3/Level 4 Specialized Reporting Template

Unique Level 3 and Level 4 Specialized Reporting templates are created by NAVSEALOGCEN Mechanicsburg, the NAVSEA 04RM SLR technical agent, and forwarded to applicable desired activities via a special software application within the CDMD-OA umbrella. The template serves as a data entry vehicle for the collection of information on the specified unique SLR additional elements. SLR templates are forwarded/loaded to applicable activities via the standard Automated Shore Interface (ASI) process.

4-5.4 SLR Nominations/Deletions/Changes

a. Nominations for adding equipment to SLR, recommendations for deleting equipment from SLR, and requests for changing either the Level 3/Level 4 template and/or the SEI settings are normally originated by a TYCOM/SYSCOM (or designated ISEA). If originated by a TYCOM, the nomination/deletion/change request should be submitted via the cognizant SYSCOM (or designated ISEA) exercising technical control over the designated equipment. If the nomination is originated by a SYSCOM (or designated ISEA), the SYSCOM is responsible for obtaining the concurrence of all TYCOM's having reporting units prior to submitting the nomination.

b. The requestor must nominate the equipment that is to be included on SLR, and approval must be received, from NAVSEA 04RM.

c. Nomination requests for an equipment to be added to SLR should include:

(1) Justification of the need for adding the equipment to SLR.

(2) Evidence the fleet has the capability to input the requested unique data.

(3) A statement confirming that necessary resources are available and budgeted to perform in-depth analysis of MDS data on the nominated equipment.

(4) Identification of the appropriate UIC/RIN combinations.

(5) Specification of the desired SLR category (Level 1, 2, 3, or 4).

(6) Level 3/Level 4 Specialized Reporting nominations should also include the identification of desired unique data elements to be incorporated into a template. Level 4 nominations should additionally include the desired length of each requested data element.

d. Equipment nominated for SLR should also have formal TYCOM concurrence:

(1) Nominations may be submitted via the internet either through the NAVSEALOGCEN website (www.nslc.navsea.navy.mil), or directly through the Navy 311 website at: http://www.public.navy.mil/spawar/PEOEIS/NAVY311/Pages/Home.html Select "Submit a Support Request." You may telephone Navy 311 at 1-855-NAVY-311 (1-855-628-9311) to submit an SLR nomination.

(2) Before an equipment will be approved there should be evidence the fleet has the capability to report on the requested unique data, and that the SYSCOM's possess the capability necessary to analyze the collected SLR data.

(3) Upon approval from NAVSEA 04RM the requestor is responsible for providing the NAVSEALOGCEN Mechanicsburg point of contact with the desired data elements for which data is to be collected, and the requestor is also expected to collaborate with the NAVSEALOGCEN Mechanicsburg representative in designing an appropriate unique template.

(4) The nominator is also expected to assist in identifying all applicable UIC/RIN combinations that are to receive an appropriate SEI value in the configuration record in CDMD-OA, and in the applicable onboard equipment file.

4-5.5 SLR Data Analysis

Collected unique SLR data is available for review, analysis, or problem identification through the Ships' 3-M system via the OARS. Separate data tables will be established, on each SLR equipment, for data storage within Ships' 3-M. Current as well as historical data will be available for downloading from each of these SLR tables. The Ships' 3-M application allows for the capability of joining the SLR data table with the other standard tables. If assistance is required in obtaining SLR data from Ships' 3-M contact Navy 311 at 1-855-NAVY-311, and ask to speak with a NAVSEALOGCEN Mechanicsburg SLR representative.

4-5.6 SLR Record Identification in CDMD-OA

CDMD-OA, as the master database, provides activities with the capability to download all records that are considered SLR, for a given specific activity. For assistance contact Navy 311 at 1-855-NAVY-311 and ask to speak with a NAVSEALOGCEN Mechanicsburg SLR point of contact.

4-5.7 Three-year Limitation

As a general rule equipment will automatically be removed from SLR after a period of three years. Every effort will be made to notify the original nominating requestor as the three-year limit is approaching. The nominator will be requested to submit a justification for retention of the equipment on SLR. Equipment can be deleted, upon making a request to the NAVSEALOGCEN Mechanicsburg point of contact, at any time during the three-year period when it has been determined that sufficient information has been collected.

4-5.8 Semiannual Update

SYSCOMs having technical control of the specific equipment are strongly urged to provide applicable TYCOMs/Fleet Commanders with a semiannual update outlining the status of SLR data collection efforts, the status of identified problems (with possible solutions), and a plan of action for resolution of problems. SYSCOMs are responsible for informing applicable TYCOMs/Fleet Commanders if the SLR data is not being received. If data is not being received the SYSCOM should provide both the TYCOM and Fleet Commanders an in-depth analysis of why not, and recommend either the equipment continue as an SLR item or be deleted.

4-6 SCREENING AND SUBMISSION PROCESS

All maintenance actions required to be documented by this instruction will be screened for accuracy and completeness. Any material requests that support a maintenance action shall be assigned the identical JCN of that action and contain complete and accurate information. MDS documents, except supply documents, shall be screened and transmitted off the ship as directed by TYCOM. Figure 4 - 2 is an illustration of a sample letter of transmittal for 3-M documents submitted by non-automated activities to the supporting ADP facility. The timeliness of submission and the accuracy of the maintenance

information reported as required by 3-M are critical to the management of shipboard material deficiencies. The ship must have an up-to-date and useful CSMP showing the material condition of the ship for each Work Center. The CSMP provides the TYCOM with the means of determining urgent repairs for scheduling IMA availability, shipyard overhauls, or restricted availability.

4-6.1 Transaction and Error Report

When information is entered into the computer at the supporting ADP facility a Transaction and Error Identification Report is generated. A letter of transmittal will be generated and sent from the data processing activity to the originator for review and take corrective action as necessary. The 3-M Coordinator is responsible for evaluating and resolving errors in the CSMP.

4-7 CURRENT SHIP'S MAINTENANCE PROJECT (CSMP)

The purpose of the CSMP is to provide shipboard maintenance managers with a consolidated listing of deferred maintenance to identify the material condition of the ship. A complete master CSMP may be held by the ship or other location as directed by TYCOM. The CSMP includes, but is not limited to:

a. The "automated CSMP" which is the computer-produced listing of deferred maintenance and alterations that have been identified through the submission of OPNAV 4790 documents. In addition to the maintenance actions added by ship's force, outside activities may request that they be allowed to add items to the CSMP.

b. The suspense file of OPNAV 4790 documents for maintenance items that have been submitted but are not reflected in the CSMP reports, or have not appeared in the MDS Transaction and Error Identification Report as having been accepted.

c. The Work Candidate/Job Sequence Number (Work candidate/JSN) Log which is the Work Center's list of all material discrepancies to be corrected either by ship's force or an outside activity.

d. Each Work Center Supervisor is responsible for ensuring that the CSMP accurately describes the material condition of the

Work Center. Requirements for maintaining the CSMP are by TYCOM direction.

4-7.1 CSMP Aboard Ship

The CSMP is utilized as follows:

a. The ship's Commanding Officer and Executive Officer use the CSMP reports to:

(1) Determine the effects of deferred maintenance that limit the ship's capability.

(2) Evaluate potential casualty report (CASREP) situations.

(3) Evaluate the material condition of each individual Work Center.

(4) Determine what kind and how much outside assistance is needed to complete the deferred maintenance.

(5) Evaluate weakness or shortages in skill levels and/or resources required to do the deferred maintenance.

(6) Determine what kind of upkeep and cold iron time needed by the ship for maintenance.

b. The Department Head/Division Officer uses the CSMP reports for the same information as the Commanding Officer and Executive Officer, but may be restricted to their applicable department/division rather than the entire ship. CSMP reports can assist them in determining plans of action for accomplishing the deferred maintenance and evaluating the performance of Work Center Supervisors in the management of their Work Centers.

c. The Work Center Supervisor uses the CSMP reports for managing the Work Center maintenance.

4-7.2 CSMP Use by Outside Activities

There are other activities that use CSMP reports for financial, industrial, operational, and analytical purposes in support of ships. The CSMP is used to plan for repair action in support of

individual ships, especially for repair actions requiring a long lead-time. The unit's chain of command uses it to review and provide directions and recommendations concerning a ship's maintenance problems in relation to tender availability, etc. Type commanders use the CSMP to determine force-wide maintenance problems and trends to develop future maintenance budgets and scheduling of availability. SYSCOMs use it to determine fleet-wide maintenance problems and trends in order to initiate corrective actions (redesign, substitutions, increased support, etc.).

4-7.3 Automated CSMP Reports

Current automated systems produce both summary and detail printed CSMP reports. Since software applications may differ, check the applicable system's user manuals and guides for available report formats. CSMP reports are produced in a variety of options, with selected sequences and totals. Summary reports are single-line summaries of the uncompleted deferred maintenance actions in the CSMP and are available by type availability, Work Center, INSURV number, safety-related deficiencies and EIC. Detail reports show the complete record for these actions. CSMP detail reports call for sorts by JCN, EIC, and by SWAB.

4-7.3.1 CSMP Summary Reports

CSMP Report 1 (produced in six options). Each option presents a single line summary of each non-completed deferred maintenance action:

a. "Summary by Type Availability", is provided on an "as requested" basis. This report provides a single-line description of each deferred maintenance action sequenced by ship, Work Center, type availability, and JSN. A Work Center summary line on the CSMP provides the number of man-hours, by IMA, depot, and ship's force. At the end of the report is a summary of estimated man-hours by type availability for each Work Center and Department, and a line for the ship total.

b. "Summary by Work Center", available on an "as requested" basis contains the same information as Option A, but sorted by SHIP, WORK CENTER, and JSN.

c. "Summary by INSURV Number", is provided routinely to the ship as directed by TYCOM after an INSURV inspection. It is restricted to only those items on the CSMP that has been assigned an INSURV number that is sequenced by the ship, INSURV number, Work Center, and JSN. It contains similar information to Option A. Man-hour estimates and summaries are not shown.

d. "Summary by Safety Related Deficiencies", available on an "as requested" basis is restricted to only those actions listed on the CSMP which have been assigned a safety hazard code. Sequenced by ship, Work Center, type availability, and JSN, it contains the same information as Option A for safety-related deferred maintenance actions. No man-hour estimates, summaries, or list of additions and deletions are shown.

e. "Summary by EIC", available on an "as requested" basis is sequenced by ship, EIC, Work Center, JSN and contains the same information as Option A, and includes man-hour estimates summarized in EIC sequence at the system level.

f. "Summary by INSURV Number and Type Availability", available on an "as requested" basis contains the same information as Option C sorted in a ship, INSURV number, type availability sequence.

g. "Summary by SWAB/SWLIN", available on an "as requested" basis contains the same information as option “A” including only those JCNs that have a SWAB/SWLIN assigned. The information is sorted by ship, SWAB/SWLIN, WORK CENTER/JSN.

4-7.3.2 CSMP Detailed Reports

CSMP Report 2 (produced in three options). Each option presents detailed information regarding the ship's deferred maintenance.

a. "Detail Listing by JCN" displays a detailed record of the ship's deferred maintenance by JSN within the Work Center. If a deferred maintenance action has been documented as a safety hazard, the words "SAF HAZ" appear in the "comment" column. If the maintenance action has been assigned an INSURV number, this number will appear in the "comment" column.

b. "Detail Listing by SWAB" displays a detailed record of the ship's deferred maintenance by SWAB. If a deferred

maintenance action has been documented as a safety hazard, the words "SAF HAZ" appear in the "comment" column. If the maintenance action has been assigned an INSURV number, this number will appear in the "comment" column.

c. "Detail Listing by EIC", is sequenced by JSN within a Work Center within an EIC.

4-8 SHIPBOARD ASSESSMENT OF MDS PERFORMANCE

a. The Commanding Officer is responsible for the assessment of MDS performance onboard their command. The Commanding Officer may request assist visits from the type commanders who can recognize problems the command may be having difficulty in effectively identifying, scheduling, performing, and documenting maintenance actions. For problems identified, corrective actions can be recommended by the TYCOM.

b. To effectively manage and control the accomplishment of corrective maintenance, it is essential that the MDS system is accurately used and corrective maintenance correctly reported. The ability of ship's maintenance personnel to initiate complete and accurate MDS documents is the cornerstone of the MDS program. The TYCOM MDS assist visit will focus on the MDS administration and use of the CSMP. MDS assist visit objectives are to:

(1) Ensure that the shipboard SCLSIS file matches installed equipment.

(2) Ensure that Logistics Support Data (LSD) matches installed equipment.

(3) Verify the CSMP provides correct information to allow effective planning and estimating of deferred maintenance actions.

(4) Ensure that Shipboard pre-transmittal review, up-line reporting, and ASI processing (COSAL maintenance processing for non-automated ships) are accomplished in a timely manner.

SECTION I

CHAPTER 5

SHIP INACTIVATIONS, REACTIVATION, STRIKE, OR TRANSFER TO FOREIGN NAVIES

CHAPTER 5 - SHIP INACTIVATIONS, REACTIVATION, STRIKE, OR TRANSFER TO FOREIGN NAVIES

5-1 OBJECTIVE

This chapter provides procedures for the orderly termination of the shipboard maintenance and material management (3-M) system, and the disposition of 3-M system material and software upon the decommissioning for inactivation/strike of ships, or transfer of ships to a foreign navy. It also provides procedures for re-implementation of 3-M systems upon ship reactivation.

5-2 SHIP INACTIVATION OR CONVERSION

5-2.1 Planned Maintenance System (PMS)

a. The Naval Sea Logistics Center Detachments Norfolk/San Diego (NAVSEALOGCEN Det Norfolk/San Diego as applicable) shall maintain a current PMS Master File of the ship scheduled for decommissioning.

b. NAVSEALOGCEN Det Norfolk/San Diego, as applicable, will hold the PMS Master File in suspense until such time as a decision is made to reactivate or strike. A copy of the PMS Master File shall be forwarded to the applicable inactive ship maintenance facility.

c. The ship shall phase out PMS coverage of equipment in concert with the decommissioning plan. PMS actions must continue to be accomplished on firefighting equipment and other personnel safety items/equipment until all ship's force personnel are permanently berthed ashore and/or on their assigned berthing barge (as applicable).

d. Removal and reissue/disposal of related hardware, software, and documentation (computers, printers, CDs, instructions etc.) not specifically addressed within the ship's decommissioning plan shall be accomplished by Type Commander (TYCOM) direction.

e. TYCOMs will specify procedures to be followed for the disposal of classified and/or unclassified PMS material.

5-2.2 Maintenance Data System (MDS)

a. The TYCOM shall ensure a complete Automated Work Request (AWR) package is provided by the ship to the Navy Inactive Ship Maintenance Facility (NISMF) prior to reporting to the applicable NISMF.

b. The ship inactivation crew shall review and correct the Current Ship's Maintenance Project (CSMP). Any additional deferred maintenance shall be documented and processed for inclusion into the CSMP.

c. The ship shall inform the TYCOM when the last activation deferrals and completed inactivation/maintenance actions have been submitted.

d. The ship shall produce and forward the final up-line CSMP with a hard copy given to the applicable NISMF for retention until subsequent reactivation.

NOTE: The material history will be maintained at the Naval Sea Logistics Center (NAVSEALOGCEN) Mechanicsburg.

e. The applicable inactive ship maintenance facility will maintain a ship condition status (local records) for the ship's inactive period.

f. In the event equipment in a deferred maintenance status is transferred to another activity for use, the applicable inactive ship maintenance facility will provide the receiving activity with that part of the CSMP pertinent to the equipment transferred.

5-3 SHIP REACTIVATION

Upon notification that an inactive ship shall be reactivated, the procedures below shall be followed.

5-3.1 PMS

Restoration of PMS coverage for FMS will be at the discretion of the customer via the appropriate ship transfer program office. Upon notification, NAVSEALOGCEN Det Norfolk/San Diego shall retrieve and forward a copy of the applicable PMS Master File from the suspense file to the ship being reactivated. The same PMS installation procedures specified for new construction/ conversion shall be followed.

5-3.2 MDS

The TYCOM shall notify NAVSEALOGCEN Mechanicsburg of the ship's reactivation and administrative command assignment. NAVSEALOGCEN Mechanicsburg will provide the ship's material history from outstanding deferrals in the NAVSEALOGCEN Mechanicsburg data bank and forward it to the automatic data processing (ADP) center serving the appropriate TYCOM. The supporting ADP center will reactivate the ship's material history and provide documentation of all open deferrals which were outstanding at the time of decommissioning.

5-4 SHIP STRIKE

Upon notification that an active ship is to be decommissioned and stricken, the procedure below shall be followed.

5-4.1 PMS

a. The ship shall phase out PMS coverage of equipment in concert with the decommissioning plan. PMS actions must continue to be accomplished on firefighting equipment and other personnel safety items until all ship's force personnel are permanently berthed ashore and/or on their assigned berthing barge (as applicable).

b. Removal and reissue/disposal of related hardware, software, and documentation (computers, printers, CDs, instructions etc.) not specifically addressed within the ship's decommissioning plan shall be accomplished by TYCOM direction.

5-4.2 MDS

The ship shall stop MDS reporting 2 months prior to its decommissioning date.

5-5 TRANSFER TO A FOREIGN NAVY

Upon notification of an operational ("hot ship") transfer to a foreign navy, the following procedures will be followed.

5-5.1 PMS

a. The ship will continue PMS actions as directed by the Transfer Plan. Normally PMS actions will continue until decommissioning for additional use in training the foreign transfer crew.

b. Removal and reissue/disposal of related hardware, software, and documentation (computers, printers, CDs, instructions etc.) not specifically addressed within the ship's decommissioning plan or the Transfer Agent's Transfer Plan shall be accomplished by TYCOM direction.

c. TYCOMs will specify procedures to be followed in the disposal of classified and/or unclassified PMS material and other technical documentation that does not apply to the approved transfer configuration of the ship. Normally the Transfer Agent will assist the ship's force in the identification, removal and destruction of this material.

5-5.2 MDS

a. Two weeks prior to transfer, the ship shall document all outstanding maintenance for inclusion in the CSMP.

b. At the time of transfer, the TYCOM shall provide a CSMP to the designated representative responsible for the transfer. The ship's material history report shall also be provided at the time of transfer to the designated representative, if requested.

SECTION II

SECTION II

CHAPTER 1

INSURV INSPECTION PROCEDURES

CHAPTER 1 - INSURV INSPECTION PROCEDURES

1-1 PURPOSE

This chapter describes the Maintenance and Material Management (3-M) related actions required prior to, during, and following an inspection conducted by the Board of Inspection and Survey (INSURV).

1-2 INSURV MISSION

INSURV was established by Congress as a board to periodically examine naval vessels and make recommendations to the Secretary of the Navy if any should be stricken from the Naval Vessel Register. Per references (o) and (p), INSURV has been tasked with added specific functions including the following:

a. Determining vessels fitness for further service.

b. Identifying material conditions that limit performance, and compiling statistical information.

c. Providing assurance to higher authority that mechanisms to identify document and resolve material deficiencies are adequate and that these systems are being judiciously executed. The examination of naval vessels is conducted as a Material Inspection (MI), which consists of operational tests or demonstrations of major systems and equipment. The formative basis for the MI is a command's own self-awareness to its material condition and readiness. It is therefore incumbent upon each command being inspected to demonstrate a thorough knowledge of its material condition through accurate records and operational demonstrations.

1-3 INSURV DOCUMENTATION PROCEDURES

The INSURV Board prepares material deficiency documents to record conditions found during the inspection using the Fleet Standard Assessment Tool Set per reference (b). These inspection deficiency items will be written on work notifications (OPNAV/2K) to be reviewed and later input into the Maintenance Data System (MDS). Specifically, for those work notifications (OPNAV/2K) being created by INSURV:

a. UIC (Blk 1) will be entered globally.

b. Using the MFOM Model, the following data elements will be entered programmatically via selection of the RIN for the deficient Configuration Item (CI) – one CI per work notification:

(1) Work Center

(2) APL

(3) ID

(4) EIC

(5) Location

(6) Noun name

(7) HSC

(8) RIN

(9) Serial number

(10) PRID

c. The JSN will begin with alpha character "R" followed by a three digit sequence number programmatically generated by MFOM 2.0 Automated Work Notification (AWN) Module.

d. The following default values will be used:

(1) When Discovered – 4 (During Inspection)

(2) Status – Based on EOC or 3 (Reduced Cap)

(3) Deferral Reason – 8 (For SF)

(4) When Discovered Date–INSURV Completion Date - 3

(5) SF MHRS – 1

(6) Defer Date – Creation Date + 1

(7) Deadline Date – Creation Date + 60

(8) Priority – 4 (Desirable)

(9) T/A – 4 (SF)

e. The following data will be entered by the inspector:

(1) Safety Code – enter appropriate code.

(2) SLR – enter when practicable.

(3) Remarks – enter observed symptoms and what is wrong, if known, followed by "XXX Troubleshoot & Repair or Replace."

(4) CSMP Summary – enter summary up to 30 characters.

(5) Contacts – select from approved list.

(6) EOC

(7) Safety – "S"

(8) Inspector Name

(9) INSURV Dept

(10) Root Cause Code

(11) PRI-RES

(12) Reliability/Maint

(13) Corrected

(14) Corrosion

(15) CSMP-worthy

(16) Inspection Status – enter appropriate code

f. If an existing OPNAV/2K exists for a discrepant CI:

(1) INSURV will create a new work notification (OPNAV/2K) for the same CI if the observed symptoms are significantly different than that already reported.

(2) INSURV will add above data to a valid OPNAV/2K.

g. Per reference (b), ship's force should review the preparation guidelines available at INSURV's homepage http://www.public.navy.mil/fltfor/insurv/. The ship being inspected will prepare material deficiency documents as directed within reference (b).

1-4 PROCEDURES BEFORE INSURV INSPECTION

1-4.1 Ship Responsibilities

The specific actions of the Commanding Officer and ship's force are noted in reference (b). The INSURV inspection provides an opportunity for the ship to demonstrate a high material self-awareness as reflected in accurate documentation of its deficient conditions (CSMP, CASREPs). The ship's 3-M Coordinator along with Work Center Supervisors should routinely be reviewing work candidates that are old, appear duplicated or have repairs completed to ensure they are appropriately removed from the CSMP. Additionally, standard equipment operating procedures are expected to be current and easily executed when called upon by board members.

1-4.2 Immediate Superior in Command (ISIC)

Specific actions are denoted within reference (b). The ISIC shall pay particular attention to ensuring that the mechanisms to identify, document and correct material deficiencies identified by ship's force or others are accurately reflected within the CSMP. Additionally, the ISIC should ensure that deficiencies are being continuously prosecuted and adjudicated with the appropriate priority and assignment.

1-4.3 Deficiencies to be Reported

Per reference (b), the CSMP is "the sole source of work to be accomplished by industrial activities, FMAs, and organizational level activities" and therefore should reflect the deficient

material items requiring maintenance action. Reference (b) outlines expected items to be noted within the CSMP.

1-5 PROCEDURES DURING INSURV INSPECTION

Documentation of INSURV inspection deficiencies will be accomplished per reference (b).

1-6 INSURV NUMBERING PROCEDURES

INSURV will assign numbers to applicable deficiencies identified during inspection. The following paragraphs describe the input to the appropriate BLOCK NUMBERS of the work notification (OPNAV 4790/2K) numbering system.

1-6.1 INSURV Assigned Numbers (Blocks 19-24)

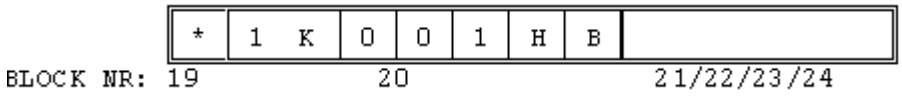
The INSURV number is assigned to each deficiency identified during an inspection or trial to:

a. Uniquely identify a deficiency.

b. Indicate the relative importance of a deficiency.

c. Identify special classes of deficiencies.

d. Specify required time of correction by "starring" deficiencies (Acceptance Trials only).



1-6.2 Starred Cards (Block 19)

Asterisks (stars) designate a completion requirement and are used on Acceptance Trials (AT),Final Contract Trials (FCT), Integrated Trials (IT), Combined Trials (CT), and Guarantee Material Inspections (GMI).

a. Single Starred Deficiencies: (*)

(1) A deficiency which, in INSURV's judgment, requires resolution or waiver by the CNO before the ship is delivered to the Navy and which:

(a) Significantly degrades a ship's ability to perform an assigned primary or secondary Mission Essential Task (MET).

(b) Prevents the crew from safely operating or maintaining ship systems.

(c) Prevents the crew from safely living or messing on board.

(d) Precludes safe navigation, effective damage control or firefighting operations, or adequate physical security.

(e) Prevents the ship from complying with environmental or NAVOSH regulations.

b. Double Starred Deficiencies: (**)

A deficiency applicable only to ships constructed, converted, or modernized with a separate fitting-out period assigned away from the building site, and represent a deficiency which, in INSURV's judgment, requires resolution or waiver by the CNO prior to the ship's departure from the building yard.

1-6.3 INSURV Identification Number (BLOCK 20).

The seven spaces of this block are filled in as follows:

1	K	0	0	1	H	B
1	2	3	4	5	6	7

a. Importance (Space One)

A numeral located in Space One indicates the relative importance of the deficiency. This is called the "PART" number and the number can be either PART 1, 2, or 3.

(1) PART 1. PART 1 deficiencies are those that in INSURV's judgment are likely to:

(a) Cause the ship to be unseaworthy.

(b) Substantially reduce the effectiveness of personnel or essential material.

(c) Reduce the ability of the ship to carry out its assigned mission or to perform in a primary mission area.

(d) Cause injury to personnel or damage to vital material. This includes significant deficiencies to the ship's safety equipment and devices.

(2) PART 2. PART 2 deficiencies are those that in INSURV's judgment are less important and do not meet the criteria for a PART 1 deficiency, but should be corrected to restore the ship to required specifications.

(3) PART 3. PART 3 deficiencies are those that in INSURV's judgment will require either a major alteration to correct (design related) or modifications that are too costly to effect during the life cycle of the ship (i.e., passageway too narrow, overhead too low, insufficient equipment). These are documented to identify design changes required on future ships. These deficiencies are generally coded "9 (in BLOCK 45 (TYCOM SCREENING) and passed to machinery history files. The deficiency will appear on the INSURV deficiency list. PART 3 deficiencies may include:

(a) Items beyond current technical authority but which should be corrected in future ship designs.

(b) Items not in compliance with current technical authority but may be impractical and/or too costly to correct on the ship inspected.

(c) A recommended alteration or addition that would be beneficial but for which there is no written requirement or reference. Such a deficiency will also be designated "A" for "alteration" in space 2 as explained in the next section.

(d) Information used by INSURV for statistical analysis or documentation purposes.

b. Responsibility (Space Two)

The single capital letter "K", "G," or "A" is used to indicate responsibility for corrective action. This space should normally be left blank for trials. The following definitions apply to “A”, “K” and “G” designations:

(1) "K" indicates that, in the reviewer's opinion, correction of the deficiency is the responsibility of the contractor because he or his subcontractors or vendors failed to meet the requirements of the contract.

(2) "G" indicates that in the reviewer’s opinion correction of the deficiency is the responsibility of the government.

(3) "A" designates an "Alteration Card" which requires a design action or configuration change not authorized or not yet accomplished on the ship inspected. This may include applicable SHIPALTs, ORDALTs, MACHALTs, Field Changes, or other configuration changes that are not complete or not scheduled for this hull, recommended alterations not previously documented, and/or changes which require design action by NAVSEA. Alteration Cards should include recommendations for how correction can be accomplished either by referencing a previously engineered alteration or by detailing possible corrective action in the remarks section. A PART 3 Alteration Card (“3A”) indicates a change that might contribute to the ship, but because of the ship’s age or other consideration is unlikely to be accomplished or is low priority. A PART 3 Alteration Card (“3A”) could indicate an area where an older ship does not comply with current specification, standards or instructions, but that the effort to engineer and install the required changes are unlikely due to cost or other factors. INSURV expects that a “3A” deficiency will be passed to history without action on the ship being inspected.

c. Sequential Number (Space 3, 4, and 5)

This is a sequential number or alphanumeric assigned to each deficiency by INSURV which, along with the department code, uniquely identifies each deficiency.

d. Department (Space 6 and 7)

A combination of two capital letters is used to identify the INSURV department having primary cognizance as follows:

Department	Symbol	Department	Symbol
ASW	AS	MINE COUNTERMEASURES	MN
AVIATION	AV	MAIN PROPULSION	MP
AUXILIARIES	AX	NAVIGATION	NV
COM, COMMAND & CONTROL	CC	OCCUPATIONAL SAFETY	OH
DAMAGE CONTROL	DC	OPERATIONS	OP
DECK	DK	PRESERVATION	PR
DIVING	DV	REPAIR	RP
ELECTRICAL	EL	REACTORS	RX
ENVIRONMENTAL PROTECTION	EP	SUPPLY	SP
HABITABILITY	HB	VENTILATION	VT
INFORMATION SYSTEMS	IS	WEAPONS	WP
MEDICAL/DENTAL	MD		

1-6.4 SUFFIX (BLOCK 21) – No longer used

1-6.5 MISSION DEGRADE (BLOCK 22) No longer used

1-6.6 SAFETY (BLOCK 23)

The suffix "S" is added to indicate that this deficiency is identified as a safety hazard.

1-6.7 RELIABILITY/MAINTAINABILITY (BLOCK 24)

The suffixes "R" and "M" are added by INSURV to indicate:

a. "R" is assigned to deficiencies related to an equipment or component that displays low reliability requiring frequent corrective maintenance or replacement.

b. "M" is assigned to indicate that the equipment or component requires excessive maintenance, that the deficiency is related to the Planned Maintenance System (PMS), or that the deficiency represents a problem with Integrated Logistics Support (ILS).

1-7 PROCEDURES AFTER INSURV INSPECTION

a. Post INSURV action items are outlined in reference (b). Due to its importance, note the action to appropriately CASREP applicable "PART 1" deficiencies.

b. INSURV deficiencies will be provided to the ship and processed per reference (b) and/or specific TYCOM directives.

SECTION II

CHAPTER 2

TYCOM/ISIC ASSIST VISITS AND 3-M INSPECTIONS

CHAPTER 2 - TYCOM/ISIC ASSIST VISITS AND 3-M INSPECTIONS

2-1 INTRODUCTION

a. The Ships' 3-M System enhances force readiness and helps identify material problems. Type Commanders (TYCOMs) and shore commands performing TYCOM functions (i.e., Commander Navy Installations Command (CNIC), Marine Corps Installations East (MCI-E), Marine Corps Installations West (MCI-W), Marine Corps Bases Pacific (MARCORBASES PAC), etc.) are responsible for ensuring that each command under their cognizance effectively uses the 3-M system. When the 3-M system is effectively used, a higher degree of equipment readiness will be achieved. Through inspections of the 3-M system and assist visits, TYCOMs or ISICs under TYCOM direction can recognize problems the command may be having in effectively identifying, scheduling, performing, and documenting maintenance actions. For problems identified, corrective action can then be initiated.

b. Each TYCOM or ISIC under TYCOM direction will establish, train, and maintain a team consisting of qualified 3-M System Coordinator/Representatives responsible for monitoring PMS installations, providing assistance when requested, and performing 3-M inspections.

2-2 ASSIST VISITS

a. The TYCOM shall schedule assist visits to each ship or shore activity as requested. The purpose of an assist visit is to aid managers by determining how efficiently the command's 3-M program is operating, and help identify areas with potential problems. The assist team will take the appropriate measures to identify the areas that need attention and the type of assistance desired. An assist visit is instructional and provides training and assistance to the requesting activities.

b. Assistance in the form of briefings or group discussions shall be provided to clarify any problems that become apparent during an assist visit. Each assist visit shall include a debriefing period with the Commanding Officer prior to concluding the visit. These assist visits will include advice concerning management of Planned Maintenance System (PMS) and Maintenance Data System (MDS), as well as advice regarding other significant 3 M system problems.

2-3 TYCOM/ISIC INSPECTION

a. The purpose of an inspection is to determine the effectiveness of the command's 3-M program in managing the accomplishment of maintenance. A TYCOM or ISIC under TYCOM direction inspection is a comprehensive audit of the Ships' 3-M Program. Emphasis is to be given to the effectiveness of maintenance management and maintenance accomplishment. Included in the inspection will be the adequacy of the PMS installation and the effectiveness of the shipboard training program.

b. The TYCOM or ISIC under TYCOM direction shall conduct a complete inspection of each command under their cognizance, not to exceed 24 months, to determine the effectiveness of the 3-M program within that command.

c. To ensure standardization of the measurement of 3-M program performance, and to enhance communications at all levels of command, the procedures and criteria in the Joint Fleet Maintenance Manual (COMFLTFORCOMINST 4790.3 (Series)) Volume 6, Chapter 19 shall be used. Additional guidance may be provided in TYCOM instructions.

2-3.1 PMS Inspection

Proper PMS performance is critical to maintaining acceptable equipment performance levels required in today's tactical environment. Additionally, personnel and environmental safety is paramount in conducting routine preventive maintenance aboard ships. It is the Commanding Officer's responsibility to ensure the following PMS objectives are met in accordance with Fleet and TYCOM directives. The criteria for PMS Inspections is contained in the Joint Fleet Maintenance Manual Volume 6, Chapter 19, Appendix A.

2-3.1.1 PMS Inspection Objectives

a. Ensure the PMS performed matches the installed equipment.

b. Ensure PMS completed was done correctly in accordance with the MRC. "Correctly" includes but is not limited to:

(1) Safety precautions were observed.

(2) Proper tools and materials were used.

(3) Tag out procedures were correct when applicable.

(4) If hazardous material (HAZMAT) was used, personal protective equipment used was applicable for the HAZMAT involved and in good material condition. HAZMAT disposal conducted correctly.

c. Analyze the recorded reasons for non-accomplishment of PMS to determine ship-wide and departmental trends, and actions taken to improve PMS.

2-3.2 MDS Inspection

Documentation and validation of MDS Data is the cornerstone of configuration management resulting in improved logistics and repair support aboard ship. MDS spot checks, similar to PMS spot checks, shall be conducted. Refer to the Joint Fleet Maintenance Manual Volume 6, Chapter 19, Appendix A for Fleet inspection requirements, evaluation criteria and calculations for both PMS and MDS.

2-3.2.1 MDS Inspection Objectives

MDS Objectives include:

a. Shipboard Ships Configuration and Logistics Support Information System (SCLSIS) file matches installed equipment.

b. Logistics Support Data (LSD) matches installed equipment.

c. CSMP provides correct information to allow effective planning and estimating of deferred maintenance actions.

d. Shipboard pre-transmittal review, up-line reporting and Automated Shore Interface (ASI) processing are accomplished in a timely manner.

SECTION II

CHAPTER 3

SUBMARINE PERFORMANCE MONITORING TEAM (PMT) MAINTENANCE AND INSPECTION PROCEDURES

CHAPTER 3 - SUBMARINE PERFORMANCE MONITORING TEAM (PMT) MAINTENANCE AND INSPECTION PROCEDURES

3-1 PURPOSE

This chapter describes the Maintenance and Material Management (3-M) related actions required prior to, during, and following an inspection and other maintenance monitoring conducted by the Submarine Performance Monitoring Teams (PMT).

3-2 PMT MISSION

The Submarine PMT Program was established by the Chief of Naval Operations, per reference (g), as a method of collecting objective engineering evidence of ship system performance. This data was then used to allow the extension of shipyard overhauls to extend the operational cycle and useful life of the vessels, and align major maintenance. While this mission is still applicable today with the PMT's ensuring safe and reliable Extension of Operating Cycles (EOC's), the maintenance has also evolved into using Conditioned Based Maintenance (CBM) techniques to assess the performance of many critical submarine systems, primarily the submarine Hull, Mechanical, and Electrical (HM&E) Systems. The inspections conducted by PMT aid in improving the submarine fleet's material condition and operational readiness. They do this by aiding in early identification of system deficiencies and/or predicting failures before they occur and avoid more critical mission-limiting failures. The PMT's are an integral part of NAVSEA's Performance Monitoring Program (PMP) that assists SEA05U7T/PMS392T in identifying and resolving fleet material issues, improving system reliability, reducing Total Ownership Cost (TOC), and assessing system health across the fleet. Other products of the program include major shipyard availability inputs for work package definition, special inspection programs defined in reference (b) like the Vibration Analysis Program, and other fleet assistance. SEA 05U7T/PMS392T provides the technical oversight, technical documentation, requirements, and analysis for the PMT Program.

3-3 MAINTENANCE RESPONSIBILITY AND SCHEDULING

The maintenance requirements and inspections that are monitored by PMT are fully integrated in the ship's PMS system. These

Maintenance Requirement Cards (MRC's) are coded with a "K" in the "Other" column on the MIP. The scheduling and performance of this maintenance is the responsibility of the ship. PMT, using an advanced engineering data collection and analysis information system, will aid in the scheduling of this maintenance. It is recommended that the ship frequently bring a copy of the PMS cycle for the applicable Work Centers to the PMT to update their system. When an inspection is required, contact the local PMT site to schedule.

3-4 PMT DOCUMENTATION AND REPORTING

3-4.1 PMT CBM Deficiency Reports

The deficiencies and recommendations that result from a PMT inspection and monitored maintenance are published in an engineering memorandum called an On Site Analysis Report (OSAR). This material deficiency report is passed to the ship for corrective action and maintenance planning where applicable. In some cases, no repair action is required if a condition exists which is starting to degrade, yet does not meet repair conditions, so the OSAR is provided for information or other action like increased monitoring frequency. These OSAR's are also uploaded to NAVSEA's Submarine Maintenance Monitoring Information System (SMMIS) for advanced analysis and to aid in overall system health determination.

3-4.2 End of Monitoring Period (EMP) Reporting

Periodically, PMT will provide a summary report of the monitored maintenance for a summary closeout of the services and deficiencies provided and to aid in the planning of the next monitoring period. The ship's "monitoring period" is a finite period of time usually corresponding to a patrol period for SSBN's or aligned with maintenance availabilities taking the IDTC into account for the SSN's. This monitoring period mirrors the ship's PMS cycle.

3-5 DATA COLLECTED AND TRENDED

The data collected per the Supplemental Report Forms (SRF) attached to the "K" MRCs, as well as the deficiency reports is entered into the Performance Monitoring Program's (PMP's) engineering analysis system and uploaded in real-time to the

Submarine Maintenance Monitoring Information System (SMMIS). Over 10 years of data exists for the data that is collected. The website provides the ability to retrieve the data and export to excel spreadsheets as well as on line graphing of data that behaves in a predictable fashion. Ship's Force and other organizations may request historical data through the local PMT site.

SECTION II

CHAPTER 4

COMMON ASSESSMENT PROCEDURE DEVELOPMENT FOR MATERIAL CONDITION ASSESSMENT, INSPECTION, CERTIFICATION, AND ASSIST VISITS OF AIRCRAFT CARRIERS, SUBMARINES AND SURFACE SHIPS

CHAPTER 4 COMMON ASSESSMENT PROCEDURE DEVELOPMENT FOR MATERIAL CONDITION ASSESSMENT, INSPECTION, CERTIFICATION, AND ASSIST VISITS OF AIRCRAFT CARRIERS, SUBMARINES AND SURFACE SHIPS

4-1 PURPOSE

This chapter defines and documents the Reliability-Centered Maintenance (RCM) based Technical Standards for development of Common Assessment Procedures that are used to evaluate the material condition of Navy ships, systems, and equipment in support of Condition-Based Maintenance for work determination, inspections, certifications, and assist visits (CBM/ICAV).

a. Common Assessment Procedures are designed to be utilized to the maximum extent possible across common platforms and serve as standardized procedures for all uses of assessments, inspections, certifications, and assist visits.

b. Common Assessment Procedures are RCM applicable and effective maintenance measures. When properly and consistently executed, they deliver accurate status and measurement of material condition, determine and document discrepancies to material condition, and specify repairs required to restore satisfactory material condition.

c. Common Assessment Procedures satisfy the needs of work determination, inspections, certifications, and assist visits in a standardized documentation used across carriers, submarines, and surface ships and by all other activities. The two types of commonality invoked are:

(1) common across functional use;

(2) and across common platforms with similar systems and equipment.

4-2 SCOPE AND OVERVIEW

a. These standards apply to all assessment procedures developed to satisfy the needs of work determination, inspections, certifications, and assist visits in a common document used both across ship classes and by all other activities. This standard is not required for development of public or private shipyard new construction, modernization, or

post-repair test procedures unless invoked by contract or specification.

b. Reference (h) institutes Condition-Based Maintenance (CBM) as the CNO strategy for maintaining ship, aircraft, and infrastructure material designed to optimize maintenance program costs throughout the life cycle. The CBM methodology performs maintenance based on objective evidence of need. As required by reference (h), Reliability-Centered Maintenance provides both the maintenance engineering principles used to determine objective evidence of need and the methodology for determining and continuously improving applicable and effective maintenance requirements and associated maintenance assessment procedures and tools. References (j) and (h) require use of reference (i) RCM process for developing maintenance requirements for ships, ship systems, and equipment. These material condition assessment procedures form the basis for Condition-Based Maintenance execution. Under most circumstances common assessment procedures can be used for inspection, certification and assist visit functions. This chapter establishes requirements for development of common assessment procedures in order to effectively evaluate material condition, ensure conformity to RCM standards, ensure procedures are useful for all their intended purposes, support commonality of purpose and use, and to maximize commonality across ship classes to the extent system and equipment similarity allows.

4-3 POLICY

Development of Common Assessment Procedures shall adhere to the following technical standards:

4-3.1 Use of Reliability Centered Maintenance (RCM) methodology.

a. Common assessment procedures shall be developed and periodically reviewed using RCM. Application of RCM will result in development of the applicable and effective engineered requirements for Condition Based Maintenance, inspection and certifications for execution by trained shipboard or off ship personnel.

b. All new or modified maintenance requirements and procedures for use by government or contractor personnel aboard

carriers, submarines, and surface ships shall be developed or modified in accordance with reference (i). Use of the reference (i) process has been automated by the NAVSEA eRCM application.

c. RCM analysis shall be conducted and approved only by NAVSEA certified practitioners per Appendix J (RCM Certification Program) of this instruction. RCM analysis results and resultant assessment tasks and procedures shall be reviewed and approved by the technical authority for the subject system or equipment, typically the In-Service Engineer designated by the system or equipment's Technical Warrant Holder.

d. Results of RCM analysis and technically approved assessment procedures shall be recorded by the Planned Maintenance System (PMS) Coordinating Activity (NAVSEALOGCEN Det Norfolk or San Diego) per reference (i) for inclusion in the PMS database. Associated Intermediate or Depot-level tasks that call out use of the Common Assessment Procedure shall be included in the appropriate Class Maintenance Plans (CMPs) by the appropriate Program Executive Office (PEO) or NAVSEA Class Maintenance Plan Coordinating Activities (Carrier Planning Activity, SUBMEPP, and SURFMEPP).

4-3.2 Common Assessment Procedure Format

a. Common Assessment Procedures shall be developed, maintained and implemented per this instruction.

b. New or modified Common Assessment Procedures shall be developed as Maintenance Requirements Cards (MRCs) per reference (i). For equipment and systems for which an adequate assessment MRC has yet to be developed, the technical authority or the Technical Warrant Holder for the subject system or equipment may approve the use of other test formats. These formats can include but are not limited to technical manual procedures, system operation and verification test procedures (SOVTs), shipyard test procedures or approved shipboard procedures. Shipboard procedures could include the use of Combat Systems Operational Sequencing System (CSOSS) or Engineering Operational Sequencing System (EOSS). In all cases, formats other than MRC procedures should be considered temporary as it is more ideal for Common Assessment Procedures to be developed as MRCs to the maximum extent possible. MRCs are integral to the resourced 3-M Program of Record and are always available on the platform via

Force Revisions. Common Assessment Procedures are used primarily but not exclusively by off ship subject matter experts, but also may be used by ship's force personnel, with technical authority oversight, as a key element of distance support. Other formats that may be approved for certain Common Assessment Procedures include shipyard test procedures and technical manual procedures. Common Assessment Procedures shall include all data fields required by reference (i) for MRCs. Common Assessment Procedures shall clearly identify and explain all requirements needed to satisfy Inspection Points and Certification Statements. MRC Common Assessment Procedures shall be prepared using the NAVSEA New PMS Editor application.

c. Approved Common Assessment Procedures shall be issued and managed in accordance with this instruction as part of the Navy's Planned Maintenance System Management Information System (PMSMIS) requirements database or other management systems appropriate for the format of non-MRC Common Assessment Procedures. Class Maintenance Plan tasks shall be used to call out use of the Common Assessment Procedure included in the appropriate CMPs. Discrepancies associated with and requests for modifications to procedures or associated CMP tasks shall be reported via 3-M Technical Feedback Report (TFBR) System.

d. Common Assessment Procedures shall be self-contained to the maximum extent practicable. The goal is to require minimum reference to other documents except for general references (e.g. NSTM 300 reference to electrical safety requirements) or to Engineering Operational Sequencing System (EOSS) or Combat Systems Operational Sequencing System (CSOSS) procedures if required for changes in system or equipment operating state.

e. Each Common Assessment Procedure shall state qualification requirements, specific skill and/or non-typical labor required to perform the associated procedure. Examples include NAVSEA-designated assessors and ship's force rates and ratings. Personnel with the qualification standards listed on the common assessment procedure and with associated typical skill and knowledge levels must be able to safely and efficiently execute the procedure.

f. Common Assessment Procedures shall be thoroughly shipboard tested prior to implementation. Satisfactory

completion of this testing shall be recorded in PMSMIS along with RCM analysis documentation.

g. Procedural steps and situational triggers shall be presented in language that is free of vague and ambiguous terms and uses simple words and phrases to convey the intended meaning. Appendices C and F of reference (k) provide writing and word choice guidelines.

h. Procedures shall clearly define all failure modes and effects the procedure is designed to predict, identify, prevent and or correct. Specific criteria shall be provided to evaluate satisfactory, marginal, and unsatisfactory conditions associated with these failure modes. In certain cases such as extensive assessments of large or complex systems, it may be appropriate to define functional failures (e.g., low level alarm fails to sound) vice functional failure (relay K-12 shorted to ground). In such cases, the completion 4790/2K should lead to a troubleshooting and repair action.

i. Procedures shall include failure threshold values for criteria or parameters required to satisfy inspection and/or certification requirements. Implications of failure modes associated with being above/below threshold, including specific economic, safety or mission impacting concerns and or operational limitations shall be included in the procedure. Examples might include increased cost to repair if rust is allowed to exceed some percent of exposed surface; significantly increased probability of line shaft bearing failure that would require decoupling of the shaft and subsequent reduction in top speed if bearing clearance is allowed to exceed some value; eventual deterioration of electrical insulation leading to risk of electrical shock and death if resistance value is allowed to decrease below a critical value; decertification of flight deck and restriction to emergency flight deck only operations if certain equipment is inoperable.

j. Common assessment procedures shall explicitly address generation of completion 4790/2K forms when required for recording of data required by the procedure for material condition history, inspection, or certification purposes or to document the need for corrective action.

k. Common assessment procedures shall explicitly specify where and when measurements are to be taken, and how data is to be recorded. Appropriate qualitative or quantitative standards shall be included to determine satisfactory or unsatisfactory results, allowable tolerances or out-of-specification ranges, and adjustment set-points and tolerances as required. Required data may be qualitative (e.g. record the visual appearance of the paint system) and/or quantitative (e.g. output temperature recorded in degrees Fahrenheit recorded to the nearest half degree) as required based on results of RCM analysis or where required to support interval age exploration.

l. Common Assessment Procedures shall explicitly address any specific criteria needed for documentation of "as found material condition" score or data on completion 2Ks when required by the system or equipment Life Cycle Manager. (See paragraph C-8.5,3 of Appendix C.)

m. Developed MRCs shall clearly identify the need to document discrepancies found during planning for or execution of the procedure.

4-4 RESPONSIBILITIES

4-4.1 Commander, Naval Sea Systems Command (COMNAVSEA).

As the lead systems commander for ship in service support, COMNAVSEA shall:

a. Oversee the core processes for Class Maintenance Plans in acquisition program and in-service ships, including development of Common Assessment Procedures.

b. Select in-service systems or equipment for development of Common Assessment Procedures based on such factors as troubled system analysis, repair costs, mission criticality, as found condition reports, and Fleet feedback.

c. Recommend new construction systems and equipment that would benefit from PEO development of Common Assessment Procedures in initial PMS and CMP development.

d. Exercise technical authority over the development and approval of material condition assessment tasks and procedures.

e. Ensure all maintenance requirements are developed in accordance with RCM processes by appropriately qualified and certified RCM practitioners and approved by the appropriate technical authority.

f. Ensure approved assessment tasks are incorporated in the Class Maintenance Plans by the appropriate Class Maintenance Plan coordinating activities and that approved Common Assessment Procedures are incorporated in the PMS database by the PMS Coordinating Activity.

4-4.2 Program Executive Offices and Ship Program Managers (PEOs and SPMs)

a. Develop Common Assessment Procedures for selected systems and equipment in accordance with this Chapter.

b. Coordinate efforts with NAVSEA development and implementation of Common Assessment Procedures for in-service ships.

SECTION II

CHAPTER 5

FLEET MAINTENANCE EFFECTIVENESS REVIEW (MER) PROCESS GUIDE

CHAPTER 5 FLEET MAINTENANCE EFFECTIVENESS REVIEW (MER) PROCESS GUIDE

5-1 OVERVIEW

Fleet Maintenance Effectiveness Reviews (FLEETMERs). The FLEETMER process applies "Backfit" Reliability-Centered Maintenance (RCM) methodology in a broad-based MER to examine maintenance requirements for systems or equipment that are exhibiting negative maintenance and reliability trends in execution, such as extra cost through the introduction of unnecessary maintenance overtime or the discovery of low reliability due to ineffective maintenance.

a. Backfit RCM follows a MIL-STD-3034 compliant process and combines both the analytical work done in developing the original maintenance requirements and the operating experience gained since maintenance program inception to validate the quality of planned maintenance tasks. Top Management Attention (TMA), time-since-last-reviewed, and MP-EA trends are factored into the selection of systems for FLEETMER review.

b. FLEETMER identifies and recommends changes to maintenance requirements that will either improve the reliability of the system or remove unnecessary and ineffective requirements, thus improving operational availability and saving maintenance man-hours and dollars.

c. The recommended maintenance requirement changes from FLEETMER are documented as Technical Feedback Reports (TFBRs) and assigned as either Planned Maintenance System (PMS) or Class Maintenance Plan (CMP) actions.

(1) PMS actions are acted upon by NAVSEALOGCEN Detachments (NSLC Dets) using the PMS process control described in this manual.

(2) CMP maintenance changes are acted upon by the appropriate Maintenance Support Activities (Carrier Planning Activity, SUBMEPP, SURFMEPP) using their documented procedures (TFBR or Maintenance Planning Data Change Request (MPDCR)) in coordination with the applicable NAVSEA Technical Warrant Holder (TWH).

d. FLEETMER also reviews assessment procedures with the objective of establishing Common Assessment Procedures (CAPs) where appropriate. Recommended CAPs are documented by TFBR and assigned by NSLC Dets to the respective Technical Warrant Holder for review and approval.

5-2 FLEETMER PROCESS

a. This guide describes how to execute the FLEETMER process. FLEETMER is a Lean process using the concepts of Reliability Centered Maintenance (RCM) to efficiently analyze and update the entire maintenance plan for selected systems and equipment in a collaborative environment of maintenance stakeholders. RCM provides a structured approach to the design and review of the maintenance program and ensures every maintenance task meets basic criteria. The basic criteria can be summarized as follows:

(1) Only maintenance that preserves required functionality, including redundant functions needed to achieve survivability requirements, should be performed. Actions that preserve functions other than those that are required are wasteful and should be eliminated.

(2) Tasks should be designed to address well defined and understood problems. A poor understanding of the problem results in tasks that are poorly focused, fail to prevent the problem of concern and waste resources.

(3) Tasks that are developed must address the failure by maintaining or restoring required reliability as related to the failure, or be used to assess or identify failures for subsequent corrective action (applicable).

(4) The benefits of performing the task must outweigh the cost of not performing the task (effective). The concept of effectiveness includes risk evaluation and management for safety, regulatory and environmental, operational, and economic impacts/benefits.

b. The FLEETMER process identifies gaps in maintenance requirements, modifies tasks to make them applicable and effective and meet the principles of Reliability-Centered Maintenance (RCM). In addition, the FLEETMER process modifies

procedures to make them accurate and incorporate best practices, where appropriate, and purges ineffective tasks. HAZMAT, tag-out and consumable requirements are also examined to reduce high cost/risk actions and eliminate cumbersome work practices. The FLEETMER Process is designed to:

(1) Review Organizational, Intermediate, and Depot levels of Navy maintenance for submarines, carriers, and surface ships.

(2) Incorporate maintenance data reviews as part of the pre-FLEETMER effort.

(3) Use matrices of maintenance requirements for selected systems as a tool to assist the technical warranted or delegated technical authority ISEA during pre-FLEETMER preparations and during the FLEETMER RCM backfit process.

c. This guide does not document the RCM backfit analysis process. Refer to MIL-STD-3034 (NAVY) and NAVSEA S9081-AB-GIB-010/MAINT for a description of the NAVSEA RCM analysis process.

5-3 ROLES AND RESPONSIBILITIES

5-3.1 Naval Sea Systems Command (NAVSEA)

a. Responsible for coordinating and executing MERs per approved processes/procedures and to ensure those resources available for reviewing and improving maintenance are efficiently utilized.

b. Ensures the properly approved Technical Warrant Holders (TWH) as defined in reference (s) participate in MERs and approve all maintenance requirements changes.

c. Ensures the proper technical experts and technical organizations for systems under review are identified and invited to MERs. Technical experts and organizations are not limited to SYSCOM and SYSCOM field personnel and activities, but can include other organizations (such as original equipment manufacturers, the Navy Safety Center, or inspecting and certifying organizations, and organizational, intermediate and depot maintenance organizations).

d. Establishes qualification and certification requirements and training for personnel participating in MERs and RCM Workshops.

e. Coordinates efforts to identify and prioritize systems for MER analysis using the MP-EA process and issues an annual coordinated MER schedule.

f. Coordinates development and/or modification of processes and procedures related to MERs.

g. Coordinates with other SYSCOMs as required to ensure proper participation in MER events.

h. Manages MER results/changes to ensure all changes are properly implemented.

i. Ensures all changes affecting Nuclear Propulsion Plant Systems, per reference (t), are forwarded to NAVSEA 08 for concurrence.

j. Assigns appropriate personnel to the key roles of FLEETMER Project Coordinator, System Analyst, and Facilitator as described in 1.2.2, 1.2.3, and 1.2.4 below.

k. Requests that Regional Maintenance Centers/Ship Yards participate in the Community of Practice and attend the FLEET MER. Regional Maintenance Centers/Ship Yards provide technical expertise for fleet maintenance issues including failure mode identification and validation, Navy repair processes and best practices.

5-3.2 FLEETMER Project Coordinator

Coordinates the FLEETMER process and supervises system analysts and facilitators. The coordinator serves as the POC between the maintenance community and internal stakeholders.

5-3.3 FLEETMER System Analyst

The System Analyst is responsible for the complete analysis and data capture for the assigned systems, including the RCM review as directed by the system project plan.

5-3.4 FLEETMER Facilitator

During the FLEETMER, the Facilitator assists system subject matter experts, including the TWH/ISEA, in the RCM analysis and performs quality assurance checks.

5-3.5 Common Maintenance Planning Working Group

The Common Maintenance Planning Working Group (CMPWG) is Commander, Naval Sea Systems Command's lead organization tasked with continuously improving Class Maintenance Plans (CMPs) across ship enterprises. The CMPWG will determine which systems need to be reviewed using MP-EA analysis and forwards its recommendation to NAVSEA.

5-3.6 Technical Warrant Holder

The technical expert warranted to approve/disapprove changes to system maintenance requirements. The Technical Warrant Holder (or designated In-Service Engineering Agent) assists in the development of the system project plan, specifically in relation to the scope of the review and participates in the Community of Practice.

5-3.7 Commodity Specialist (NAVSEALOGCEN Dets)

a. Provide system/equipment expertise to system analysts prior to FLEETMER to assist upfront analysis and scope determination.

b. Provide logistical support for all changes resulting from the MER and their implementation into the PMS system.

c. Process and forward TFBRs resulting from the analysis to the appropriate technical authority.

d. Participate in the Community of Practice.

5-3.8 Class Maintenance Plan Engineer/System Specialists

a. Provide technical expertise prior to the FLEETMER in the area of off-ship maintenance requirements.

b. Provide logistical support for all changes resulting from the MER and their implementation into the CMP.

c. Participate in the Community of Practice.

5-3.9 Hull Planning Yard Representatives

a. Provide technical input and assist the system analyst.

b. Participate in the Community of Practice.

5-3.10 INSURV Subject Matter Expert

a. Provide technical expertise for Fleet maintenance discrepancies and best practices.

b. Attend FLEETMER and participate in the Community of Practice.

5-3.11 FLEET/TYCOM

Provide ship board experts for the system and equipment reviewed, attend FLEETMER and participate in the Community of Practice.

5-3.12 Port Engineers

Provide technical expertise for fleet maintenance issues including Navy repair processes and best practices.

5-4 PROCEDURE

Figure 5 - 1 is the flowchart for preparing and executing the FLEETMER process.

5-4.1 Identifying Systems For Analysis

a. Systems will be selected based on the following criteria:

(1) System and component cost to maintain,

(2) Number of ships and ship classes where the system is installed,

(3) Operational impact,

(4) Amount of planned and corrective maintenance,

(5) Time since last analyzed,

(6) Input from Fleet, TYCOMs and other maintenance commands on current maintenance issues.

b. Top Management Attention (TMA), MP-EA trends and Naval Enterprise input are factored into the selection of systems for FLEETMER review.

c. The MP-EA process:

(1) Identifies cross-enterprise High Maintenance Burden systems and components and ranks them through analysis of 3-M, CASREP, Material Condition Assessment (MCA), cost, safety, Fleet/TYCOM recommendations, and mission criticality data.

(2) Identifies selected system for which an "Enhanced MER" to detail Common Assessment Procedures (CAP) is required.

5-4.2 Scheduling

a. Systems selected for analysis will be scheduled for review at FLEETMERs with consideration given to (but not limited to):

(1) Geographical location of major stakeholders so as to minimize travel.

(2) Availability of meeting facilities.

(3) Grouping of common systems where possible.

(4) Location and availability of fleet representatives for reviewed systems.

b. The preparation and completion of a specific FLEETMER will follow a project plan developed by the FLEETMER project coordinator designed to allow sufficient time for planning, preparation, performance and follow-up. A baseline project plan

for a FLEETMER will generally be aligned with the following notional timeline:

(1) Preparation: to begin 3 to 6 months prior to date of performance.

(2) Performance: 1 week.

(3) Follow-up:

(a) Post event analysis and evaluation, 2 months.

(b) Full implementation of results completed within 6 months to correspond with the PMS Force Revision.

5-4.3 Preparations

Preparations for the FLEETMER consist of both a logistical and a technical component.

a. Logistical Preparations

(1) Announcement Message. NAVSEA will release a message announcing the upcoming FLEETMER to all stakeholders. At a minimum the message will contain:

(a) Date and location.

(b) List of systems to be reviewed and the associated list of ship classes or hulls on which the equipment is found.

(c) Request for TWH/ISE, Fleet, and Sailor participation.

(d) Points of Contact.

(2) Meeting Location Logistics. The FLEETMER project coordinator will make arrangements for the necessary conference facilities and coordinates the logistics for the meeting location.

b. Technical preparations

(1) System preparation. The FLEETMER project coordinator will assign a lead analyst to each system schedule for review. The baseline project plan in Table 1, located at the end of this chapter, will be used as a starting point and the lead analyst with the assistance and guidance of the project coordinator and the Community of Practice, especially the TWH/ISE, will develop a system level project plan for each system scheduled for review. The project plan at the end of this chapter details the steps necessary for the Common Assessment Procedure (CAP) development required during an "Enhanced MER." Since "Enhanced MER" review may require significant increases in the level of effort, the Community of Practice may delete steps specific to CAP development, where appropriate, for systems not specified for "Enhanced MER." Major items that may be addressed by the project plan include (but are not limited to):

(2) Community of Practice. The Community of Practice consists of shipboard and shore maintenance experts, the PMS commodity specialist, and the NAVSEA Technical Community who provides technical assistance in MER preparation, MER analysis, and post-MER evaluation of changes. The community of practice should include the CMP engineer responsible for equipment requirements, Naval and/or commercial shipyard and RMC experts, maintenance team members, planning yard system engineers, and other relevant personnel. These personnel are identified early in the process and are expected to participate in preparation for the MER event (when appropriate), and any post event work such as, procedure development or ship-checks of changed requirements and/or procedures. Community of Practice members should be selected from commands with the appropriate equipment and expertise. They should be identified by name and command and should correspond as required prior to the FLEETMER.

(3) Common Functional Block Diagram (CFBD)

(a) The lead system analyst and the Community of Practice will procure or construct a common functional block diagram (CFBD) of the system. The CFBD is not designed to be a schematic but, instead should be a high level functional representation of the system scheduled for review. Where possible the block diagram shall be created for all "common" systems, (i.e., a single block diagram applies across all system/ship classes which have a similar function). Where a

single common diagram is not possible differences should either be noted on the single diagram or separate diagrams should be produced.

(b) The creation of a CFBD enables the Community of Practice to analyze and make decisions related to the structure of the maintenance program for the system/systems being reviewed. Some of the questions that can be addressed by the CFBD include:

1. Do the boundaries, defined by the CFBD, contain all maintenance items expected to be reviewed during the FLEETMER process?

2. Are all the failure modes of concern for this system contained with the boundaries?

3. Do all participants agree on the limits of the expected maintenance review?

4. Are the various system types and implementation across classes similar enough that a common maintenance approach can be used on all simplifying the development, upkeep and performance of the maintenance program?

5. Where differences exist, what variations in the maintenance program need to be made to account for those differences?

(c) The technical warranted or delegated technical authority (ISE) will approve the CFBD.

c. Configuration/MFOM data. The lead system analyst and Community of Practice will retrieve and compile available Maintenance Figure of Merit (MFOM) structures and configuration data for all ship classes that contain the system. The MFOM/Configuration data will be compared to the CFBD to ensure all major configuration items are contained within the analysis boundary defined by the CFBD. The MFOM/Configuration data together with the CFBD are helpful in determining when common procedures can be implemented or when configuration differences require procedure variation.

d. Technical Documentation.

(1) The Community of Practice will identify and compile any required technical data to include (but not limited to):

(a) CMP and PMS maintenance requirements and procedures.

(b) Relevant shipyard pre and post repair test procedures.

(c) INSURV, TYCOM, or other Naval activity checklists.

(d) Inspection criterion and procedures.

(e) Certification criterion and procedures.

(f) Assessment and troubleshooting guides.

(g) Incident or safety reports and recommendations.

(h) Operating procedures.

(i) Temporary operations or maintenance guidance.

(j) Equipment technical manuals.

(k) NSTMs.

(l) Outstanding technical feedback reports (TFBRs).

(2) The Community of Practice should compile and review Operating Procedures to ensure alignment with PMS and CMP requirements, MFOM and configuration data. The review of operational procedures should specifically look for where maintenance requirements or procedures are duplicated by operational requirements or procedures. The Community of Practice should flag all areas where there are duplicative requirements and develop initial recommendations as to how duplicative requirements should be resolved.

e. Maintenance History. The Community of Practice should compile and review maintenance history information including 3-M and CASREP data. Most of this data should have already been

compiled and analyzed as part of the MP-EA process. Additional efforts may involve coordinating a data call with NSWC Corona for the collection and analysis of data for C4I and combat systems. Raw data is reviewed to identify high maintenance drivers and to determine failure modes. The failure modes identified for each component are compared against existing maintenance to assist in the identification of gaps in PMS requirements. Failure history can also be used to identify the need for changes to existing maintenance requirements to reduce the number/frequency of failures.

f. Commercial Best Practices. Where appropriate the Community of Practice should compile and review non-Navy (e.g. USCG, ABS, Commercial, other DoD) applications of the system to determine if any industry best practices should be adopted.

g. Maintenance Matrix. A matrix containing all maintenance tasks (PMS, CMP, assessments, inspections, certifications, etc.) currently associated with the system will be constructed. The matrix sorts similar tasks based on similarity of action with a sub sort by periodicity and ship class applicability. The matrix is a tool to be used to generate a broader understanding of the maintenance program associated with a particular system. Where appropriate non-Navy maintenance tasks may also be shown in the matrix for comparison and evaluation purposes. Use of the matrix can help the analysts identify:

(1) Failure modes and effects and how they map to specific maintenance tasks.

(2) Inconsistencies in maintenance plans for similar equipment across different ship classes or similar systems on the same class. This may indicate possible need for maintenance additions, subtractions, or realignments for certain ship classes or systems.

(3) Duplication of effort between various PMS, CMP, assessment or other tasks where better alignment of resources may be possible.

(4) Potential gaps in maintenance as evidenced by failure modes identified by INSURV results or other maintenance history where the generation of new applicable and effective maintenance tasks can improve reliability and availability.

(5) Best practices that may exist in a particular system, ship class, or industry that can be adopted for similar systems to improve system reliability, or availability, or improve accomplishment methodology.

An example maintenance matrix is provided in Figure 5 - 2

h. FLEETMER Database

(1) The most up-to-date information relating to all tasks currently associated with the system including task descriptions, periodicity/frequency, and man-hours, are collected and entered into a FLEETMER database.

(2) The database will generate forms for review and detailed documentation of RCM Backfit analysis and justification of any modification to tasks and procedures.

(3) During or immediately following the FLEETMER analysis event, the data collected on the documentation forms is entered into the database for use as outlined in the post-FLEETMER topic (see paragraph 2.5). Following the completion of the FLEETMER, the data from the FLEETMER database is retained as a historical record within the Planned Maintenance System Management Information System (PMSMIS).

i. Material Organization

(1) All materials generated by the Community of Practice during the preparation phase (including the maintenance matrix and any technical documentation), barring any classification or other distribution limitations, will be made available as soon as possible via a secure internet portal.

(2) All materials required for review of the selected maintenance tasks at the FLEETMER event (e.g., MIPs, MRCs, CMP Tasks, documentation forms, technical materials, etc.) will be assembled and delivered to the FLEETMER location.

5-5 FLEETMER PERFORMANCE (ANALYSIS EVENT)

The FLEETMER event is one week in duration and includes one day of NAVSEA RCM Level I (Backfit) certification training. RCM

Certification training is followed by facilitated review of the scheduled systems maintenance program.

5-5.1 RCM Level One (Backfit) Certification Training

a. RCM level I (Backfit) certification is required by Appendix J of this manual for all ISEs, Commodity Specialists and others who develop, review, or approve changes to current maintenance tasks.

b. A one-day course of instruction and examination for certification in RCM Level I (Backfit) is conducted at the start of the FLEETMER by NAVSEA certified RCM instructors. This training provides the historical context and theory behind Classic and Backfit RCM. The FLEETMER participants are trained in Backfit RCM theory and methodology including:

(1) How to classify a maintenance task (e.g., time directed, condition directed, failure finding, servicing, or lubrication).

(2) How to evaluate a maintenance task for applicability and effectiveness.

(3) How to modify a maintenance task as required that meets the criteria for applicability and effectiveness.

(4) The course of instructions includes representative examples of maintenance tasks taken from recent Force Revisions with classroom discuss of the analysis process.

c. Following the course of instruction, participants are given the RCM Level One (Backfit) Certification exam. Those who pass (score 75% or greater) will receive NAVSEA Level One Certification for a three-year period. After participants have successfully completed training, they are ready to perform a review of maintenance in support of the FLEETMER. Since all RCM analysis at a FLEETMER is performed with the assistance of a NAVSEA RCM facilitator, participants who do not pass the certification exam may still be able to assist in the group review of maintenance, but will receive individual remediation from instructors and facilitators and may elect to take a second certification exam (different version) later in the week.

d. Personnel who have a current RCM level one certification are not required to attend the RCM training class, but may attend for refresher training or to gain proficiency. A future goal of the FLEETMER Process is to identify and train all participants prior to the FLEETMER event. NAVSEA 04RM regularly offers RCM training and certification outside of the FLEETMER process.

5-5.2 Analysis

a. The participants review their respective maintenance requirements using the Backfit RCM methodology. Certified trainers/facilitators assist the participants in the FLEETMER analyses. Each facilitator has significant experience with Navy maintenance, PMS, and CMPs. Facilitators are available to answer questions about the FLEETMER process and assist ISEAs and other participants in arriving at appropriate RCM-based decisions. The technical warranted or delegated technical authority (ISE) must approve and sign all maintenance (modification or deletion) changes. After the technical warranted or delegated technical authority (ISE) completes the review of respective maintenance requirements, the facilitators perform a quality assurance check. When the facilitator validates that the analysis and data collection is complete, the technical warranted or delegated technical authority (ISE) and the other participants are finished with the FLEETMER analysis. Facilitators will remain with the technical warranted or delegated technical authority (ISE) until all maintenance requirements scheduled for review are complete. Sufficient analysis should be performed prior to the FLEETMER event to ensure a meaningful review and discussion during the FLEETMER.

b. The following actions can be completed during a FLEETMER per the tailored system project plan:

(1) Perform Backfit RCM Analysis on all requirements.

(a) Tasks are validated as applicable and effective and may be modified to incorporate best practices. Tasks that are not applicable and effective are either deleted or modified to make the task applicable and effective. RCM validation includes clearly defining all dominant failure modes and effects including any specific economic, safety, or mission-impacting concerns and/or operational limitations.

(b) The Backfit RCM form is used to complete the RCM analysis on all existing or draft requirements addressed on the spreadsheet, and any new tasks identified from the subsequent steps.

(2) Evaluate maintenance matrix including all certification and inspection requirements for the following:

(a) Determine degree of commonality. If items are common, the tasks/requirements should also be common or there should be legitimate rationale for the differences. This rationale should be listed on the RCM Form for the applicable maintenance requirement. If sufficient information cannot be obtained to resolve the issue, submit TFBR against the task requesting resolution.

(b) Determine duplicative requirements (same procedure invoked under different periodicities or criterion). Review the spreadsheet developed for requirements/tasks that address the same failure modes under different tasks or requirements. The duplicative requirement is to be resolved by the technical warranted or delegated technical authority (ISE) at the FLEETMER, and rationale documented on associated RCM form(s). If unable to resolve, a TFBR shall be submitted addressing the issue.

(c) Task to requirement alignment. Using the Maintenance Matrix, ensure all maintenance, inspection, and certification tasks are aligned to an applicable and effective maintenance requirement in the Maintenance Plan. If no applicable maintenance requirement exists, go to the next step.

(d) Determine missing, misaligned, or ineffective tasks. If the data or information provided identifies the need for additional tasks/requirements, outline the requirements and complete the Backfit RCM analysis to validate the task.

(e) Operating procedures will be reviewed to ensure they align with the maintenance requirements. A new maintenance procedure could be developed during the MER and/or a TFBR will be submitted to track completion of the development of the new requirement/task/ procedure, or for recommended changes to the operating procedure(s).

(3) Create a list for Common Assessment Procedure development. All tasks identified by certification requirements should be addressed by an applicable and effective maintenance task. If none exists or is insufficient, then a CAP should be outlined. The CAP may be used to consolidate existing assessments in the maintenance plan by referencing the appropriate MRC(s). The CAP should ensure that all inspection, audit and certification requirements are addressed and standardized. Where possible the outline will utilize existing procedures noting required modifications, additions, and deletions.

(4) All analysis and results will be documented. Documentation includes RCM analysis results and decisions including failure modes, applicability, and effectiveness (including justification for benefits i.e. safety, environmental/regulatory, operational, or economic) and any proposed changes to procedure, schedule, level of performance, scope, etc. All results will be entered into the FLEETMER database during the FLEETMER or during the post-MER period to enable tracking of results implementation and to provide a ready historical archive for future FLEETMER planning and performance and for long term evaluation of changes to the maintenance program.

(5) All recommended changes out of the FLEETMER will be approved by signature of the technical warranted or delegated technical authority in attendance. Requirements that need additional action such as further research and/or development, or require review and concurrence from parties not at the FLEETMER event, such as NAVSEA 08 cognizant items, per reference (t), will be submitted as TFBRs to document required actions and track accomplishment.

5-5.3 Feedback

At the conclusion of the FLEETMER event, feedback will be solicited from all participants. Feedback pertaining to RCM training curriculum will be forwarded to the NAVSEA RCM training team for action. Feedback pertaining to the FLEETMER process will be reviewed and evaluated for process improvement during the post-FLEETMER lessons learned session described in paragraph 2.5.6

5-6 POST-FLEETMER

All modifications, including any additions or deletions, made to the respective systems during the FLEETMER event will be documented and tracked for implementation in the following manner:

a. Changes approved by the technical warranted or delegated technical authority at the FLEETMER will be forwarded to NAVSEA Logistics Center Dets (NSLC Dets), SURFMEPP, SUBMEPP, and PMS 312C for implementation into the PMS Force Revision and/or Class Maintenance Plan.

b. For any proposed changes that require further research and/or development, and therefore cannot be completed at the FLEETMER, a TFBR shall be entered and forwarded to the appropriate ISEA via NSLC for tracking to completion. The assigned TFBR tracking number will be entered into the FLEETMER database. The FLEETMER database will be updated with the final disposition of assigned TFBRs.

c. If the recommended change is beyond the scope of authority of the technical warranted or delegated technical authority, such as those affecting nuclear propulsion plants, a TFBR will be generated to document the need for additional review and track accomplishment. The assigned TFBR tracking number will be entered in the FLEETMER database.

5-6.1 Metrics

a. Completion Metrics will address the following:

(1) The numbers of tasks reviewed,

(2) The number of tasks modified,

(3) The number of HAZMAT changes,

(4) The number of TFBRs addressed,

(5) The number of Parameter specifications corrected,

(6) Man-hour changes (adds, reductions and net change).

b. Return On Investment (ROI) metrics will address the cost impact and benefits of the FLEETMER per reference (d). This includes soft savings based on man-hour reductions and estimated cost avoidance when quantifiable. Cost avoidance can be quantified in cases where a maintenance change (additions and modification) reduce failures based on existing failure data. When cost avoidance is not quantifiable, no cost impact is provided.

5-6.2 Results

NAVSEA 04RM reports overall FLEETMER results by letter. This letter includes:

a. Completion and ROI metrics as noted in paragraph 2.5.1 above.

b. A narrative summary of any significant findings by system and a description of the rational for recommended CAP development.

c. A list of any design change recommendations and appropriate RCM justification.

d. A detailed technical change summary containing the following:

(1) A list of maintenance changes made and approved by the TWH or designated technical authority during the FLEETMER.

(2) A list of recommended maintenance changes documented by TFBR that require further review and approval by the TWH chain of command or require concurrent approvals from other organizations such as NAVSEA 08.

(3) A list of maintenance changes as documented by TFBR that require further development (e.g., new MRCs).

5-6.3 Implementation of Changes

a. The review folders containing the completed Backfit RCM forms, change documentation forms, and database are forwarded to the NAVSEALOGCEN Dets for implementation. Changes requiring further review or development, as documented by TFBR, will be

forwarded to the appropriate stakeholders for action using the standard TFBR processes.

b. MER changes to MRCs are entered into the PMSMIS and then issued in conjunction with the release of the PMS Force Revision. MER changes to the CMPs are completed by the respective CMP management activities (SURFMEPP, SUBMEPP, and PMS312C)

5-6.4 Lessons Learned

a. A Lessons Learned meeting will be coordinated following each FLEETMER to identify strengths and weaknesses of the process. This is intended to guide and improve future FLEETMERs in order to:

(1) Avoid repeating errors.

(2) Improve process steps

(3) Reduce unnecessary or wasteful actions

b. Recommendations and feedback will be solicited from all FLEETMER participants and stakeholders including (but not limited to):

(1) ISEAs

(2) Fleet Representatives

(3) Facilitators

(4) NAVSEALOGCEN Commodity Specialists

(5) Cognizant NAVSEA Deputy Commanders at the conclusion of the FLEETMER analysis event and during the post-FLEETMER process.

c. Recommendations and proposed changes will be reviewed by FLEETMER stakeholders at a formal Lessons Learned meeting held annually. Required participants will include, as a minimum:

(1) NAVSEA 04RM

(2) CMPWG members

(3) FLEETMER project personnel

(4) Other FLEETMER participants and stakeholders (on an invitational bases)

d. As necessary, incorporation of lessons learned will be promulgated as changes to this instruction.

Table 1

Generic System Analysis Project Plan

TASK	**Completion Date**
Maintenance Data for System (Forwarded from MP-EA Review)	
- Rationale / Cause for MER review documented (What problem are we trying to solve?)	
- Data from 3-M/OARS and Assemble in Raw form	
- TMA/TMI Input	
- MRDB/TSP (Combat Systems)	
- Solicit Class Advisories or other Material Related notifications	
- TYCOM Input	
- Other Data from MP-EA	
- Data not considered during MP-EA (identified post MP-EA)	
- Post data on FLEETMER Portal for COMMUNITY OF PRACTICE Access	
Develop Community of Practice	
- Identify Potential COMMUNITY OF PRACTICE Members	
- Contact all COMMUNITY OF PRACTICE Members	
- Provide names for access to FLEETMER Portal	
- RMC SMEs review current assessment procedures and provide feedback	
- Shipboard Maintenance personnel review maintenance and operating procedures and provide feedback	
- Feedback posted on FLEETMER Portal for sharing and analyst review	
Functional Block Diagram (CFBD) - Scope of Analysis Verification	
- Develop Initial CFBD to define scope/boundary of analysis	
- Develop Preliminary CFBD	
- Identify all Functionally Significant Items	
- ISEA Approval of CFBD - (Scope of Analysis)	
- Forward CFBD to ISEA and COMMUNITY OF PRACTICE for comment	

- MFOM Data	
- Retrieve System MFOM Data	
- Download CDMD-OA data for Configuration Status	
- Develop Configuration Summary List/System Inventory Table	
- Final Scope Verification	
- Compare CFBD, MFOM and Configuration Summary for alignment	
Preliminary Matrix analysis of all CMP, ICMP, PMS and Operational procedures for System	
- Build Preliminary Matrix	
- Obtain all PMS and CMP Scheduled Maintenance requirements	
- Obtain all unscheduled repair (Q) tasks in PMS and CMP	
- Obtain Maintenance Requirements outside system MIP (e.g. Vibration, Thermal Imaging, Motors and Controllers, Valves, Flex Hoses)	
- Obtain EOSS From JCALS	
- Obtain/review CVN Steam Plant Procedures for Alignment with Maintenance Procedures	
- Obtain/review SUB Steam Plant Procedures for Alignment with Maintenance Procedures	
- COMMUNITY OF PRACTICE Provide information on existence of Local Operating procedures	
- COMMUNITY OF PRACTICE Provide information on existence of Local Maintenance procedures	
- Develop Matrix	
- Review All other Operation Procedures for Alignment with Maintenance Procedures	
Align Maintenance Requirements and Operating Procedures with MFOM/CONFIG/CFBD Data	
Conduct preliminary review of Maintenance Matrix and findings (Preliminary Recommendations)	
- Identify potential gaps, overlaps, inconsistencies across all ship classes	

- Forward to COMMUNITY OF PRACTICE for review and feedback	
Assessment/Inspection/Certification Matrix Analysis	
- Gather and compile Assessment/Inspection/Cert Information	
- NAVSAFECEN	
- JFMM	
- INSURV	
- GSO	
- Assessment MRCs	
- Shipyard Test procedures (POET)	
- Other Certification Requirements	
- NSTM	
- Develop Matrix of Assessment/Inspections/Certifications	
- Analyze gaps and overlaps of Assessments/Inspections/Certifications	
- Identify gaps in maintenance plan for potential CAP Development	
- Preliminary recommendations on Assessment/Inspections/Certifications	
- Assemble preliminary recommendations on Assessments/Inspections/Certifications	
- Forward to COMMUNITY OF PRACTICE for review and comment	
Related technical documentation	
- Identify Component and System Technical Manuals	
- Obtain Technical Manuals	
- Review Documentation for Potential issues and forward to COMMUNITY OF PRACTICE	
Develop Final Matrix/System Organization	
- Obtain updated FR and CMP Information for matrix	
- Develop Final MIP List and Submit for Printing	
Conduct review and analysis of outstanding TFBRs	
Determine Flow of Group Review at MER	
- Identify maintenance tasks for group discussion review, based on matrix analysis	
Database Import/Organization	
Assemble System Review Materials	
- Folder System RCM Documentation	
- RCM Database Review sheets	
- Assemble MRCs and CMP Tasks	

- Compile Materials in Binder for System CAP Development	
- CFBD	
- Assessment/Inspections/Certification Matrix	
- Potential CAP Development Issues	
- Maintenance Data Summaries	
- Configuration Summaries	
- Maintenance Matrix and Preliminary Findings	
- Unscheduled Repair task Listing	
- List of Technical Documentation Available for review electronically	
CONDUCT MER in accordance with Agenda	
- System MER Agenda and Materials	
- Group Examples for RCM Refresher	
- Group Review of Materials complied for MER	
- CFBD	
- Assessment/Inspections/Certification Matrix	
- Potential CAP Development Issues	
- Maintenance Data Summaries	
- Configuration Summaries	
- Maintenance Matrix and Preliminary Findings	
- Unscheduled Repair task Listing	
- RCM Review	
- Identify Changes to PMS/CMP (Missing, Duplicative, Redundant, Misaligned or Ineffective tasks)	
- Develop and complete TFBR write-ups (ISEA review and approve)	
- Resolve outstanding TFBRs	
POST MER SYSTEM PROCESSING	
- Complete Data Entry	
- Submit TFBRs	
- Evaluate cost and resources for TFBRs	
- Identify Funding Sources for TFBRs	
- Metrics	
- Evaluate Cost / Benefit of Significant Changes (Adds or Increases)	
- Establish Specific Post Implementation Run Time Metrics	
- Calculate man-hour increases and decreases	
- Action Items	
- Identify action items outside Scope of MER Data (e.g., Material Analysis, Alterative	

Maint, Training, Operating Procedures, Tech Manuals, Post Implementation INSURV Process Audit etc.)	
- Inputs for MER Results Report	
- CAP Development	
- Develop Project Plan for Post MER development of Common Assessment Procedure(s), if required	

SECTION III

SECTION III

CHAPTER 1

REPORTS AND SERVICES AVAILABLE FROM THE NAVAL SEA LOGISTICS CENTER (NAVSEALOGCEN)

Chapter 1 - REPORTS AND SERVICES AVAILABLE FROM THE NAVAL SEA LOGISTICS CENTER (NAVSEALOGCEN)

1-1 3-M SYSTEM DATABASE

Ship's maintenance information is reported by fleet personnel to the Naval Sea Logistics Center (NAVSEALOGCEN), Mechanicsburg, PA, for processing into the Ships' Maintenance and Material Management (3-M) System Database. This database provides a single source of 3-M data available to NAVSEA Program and Equipment Managers, In-Service Engineering Activities, Type Commanders (TYCOMS), Ships, NAVSUP and government sponsored contractors.

1-2 DATA COLLECTED

Maintenance data reported and retained in the 3-M system database includes:

a. Completed maintenance

b. Deferred maintenance

c. Planning and estimating information for shipboard and Intermediate Maintenance Activity (IMA)

d. Repair parts

e. Configuration data

f. IMA data from:

(1) Tenders

(2) Repair shops

(3) TYCOM Support Units

(4) Shore Intermediate Maintenance Activities (SIMAs)

g. Reactivated ships Current Ship's Maintenance Project (CSMPs)

It must be recognized that the integrity of the database is relevant only to the accuracy of the data reported.

1-3 USES OF THE DATA

a. Information available from the 3-M Maintenance Data System can be of value in:

b. Scoping and quantifying data for engineering and logistics analyses.

c. Providing management resource information to higher authority to support the decision making process.

d. Planning and allocating resources for logistics support.

e. Analyzing maintenance/reliability problems.

f. Determining adequacy of equipment specifications.

g. Analyzing life cycle and other costs.

h. Determining equipment effectiveness.

i. Preparing and/or updating technical manuals/directives.

j. Providing Work Center equipment maintenance history.

k. Providing data assist provisioning.

l. Overhaul planning.

m. Analyzing repair parts usage.

n. Updating allowance lists and the Coordinated Shipboard Allowance List (COSAL).

o. Providing data for ship design.

p. Shipboard management including determination of problem equipment and providing data for availability and overhaul.

q. Analyzing part failures.

r. Displaying labor hours, parts cost, maintenance action count and the calculated ownership cost value for ships and equipment.

1-4 DATA ELEMENTS AVAILABLE IN THE 3-M SYSTEM

The MDS data elements, which are stored in the database are listed and defined in the Ships' 3-M Database Reference Manual, which can be downloaded from the NAVSEALOGCEN home page https://nslcweb37.nslc.navy.mil/pls/apex/f?p=oars:3. The OPNAV 4790/2K, OPNAV 4790/CK, OPNAV 4790/2P, DD 1348, NAVSUP 1250-1 Forms, and 3-M ADP programs are used to report these data elements.

1-5 SHIPS' 3-M ON-LINE SYSTEM

The Ships' 3-M On-line database is a historical repository of corrective maintenance actions spanning 1995 through current date. It contains maintenance, supply and IMA data and allows the user to select, sort, and/or process data as well as create reports. It provides the means to plan, acquire, organize, direct, control and evaluate manpower and material resources in support of maintenance. The Ships' 3-M On-line database is used to predict failure rates of components, determine areas that need improvement and track equipment performance. Access to 3-M data allows the user to research equipment history, perform trend analysis and provide a tool to the fleet that can provide information concerning fleet maintenance and maintenance support experience to organizations responsible for logistics support to the fleet. On-line access is available through NAVSEALOGCEN.

1-6 THE OPEN ARCHITECTURAL RETRIEVAL SYSTEM (OARS)

a. All members of the NAVSEA community, the Fleet, and others with access to the internet and have CITRIX downloaded to their computers, Can access the database from their desktop computers by using OARS, a CITRIX tool developed by the Naval Sea Logistics Center. OARS, an intuitive, flexible tool that operates in a Windows environment was designed to make retrieving maintenance and material management information quick and easy.

b. OARS generates most standard 3-M reports, such as Parts Issued For Maintenance Detailed Report and the S4790.5019 Ships'

3-M History Report. Also, available are many standard reports, such as: 4790.L0103, 4790.L0104, 4790.L0105 Ownership Cost Reports. The application can produce Ad Hoc reports, as well as import text, and download data. One can run reports in immediate or batch mode and save reports in various file formats, such as: Excel, text, dBase, etc.

c. To find out more about this tool, or to become an OARS user, visit the NSLC Links web site at:
http://www.oars.navsea.navy.mil or
http://www.nslc.navsea.navy.mil/htm/reference/nslc_links.htm.

1-7 ON-LINE SYSTEMS TRAINING COURSE

The Ships' 3-M/OARS Basic Training Course is a two-day course designed to introduce and train individuals on the basic usage of Ships' 3-M data as well as the OARS Retrieval Tool. This course is essentially broken into two main topic areas, Introduction and Overview of Ships' 3-M, and Introduction of the OARS Retrieval Tool. This training places an emphasis on hands-on computer lab time. Upon completion, students should have obtained a knowledge level, which will enable them to retrieve the data necessary for the specific functions desired. The course is conducted by NAVSEALOGCEN.

1-8 REPORT PRODUCTS

The Ships' 3-M Standard Reports Manual, available from NAVSEALOGCEN, displays samples and descriptions of the Ships' 3-M reports available through OARS. Potential users of ships' maintenance data should contact NAVSEALOGCEN for assistance if a desired product format is not listed in the Ships' 3-M Standard Reports Manual. If you have specific needs, which are not met within the standard reports, OARS provides the capability of developing customized ADHOC reports.

1-9 OTHER PRODUCTS

There are various products, which are available through the NAVSEALOGCEN Homepage, which provide valuable tools to the customer. These include:

a. Ships' 3-M Manual – Reference (a) and this manual.

An on-line version of the reference (a) and this manual establishes CNO's policy, requirements, and responsibilities for the Ships' 3-M System. Directions and guidance contained in this manual supersede any other directives, which may be in conflict.

b. Ships' 3-M Reference

An on-line means to access reference information. This site offers users ability to access forty 3-M reference code tables. Each code table provides the definition and code translation for each entry in the table. The user has the ability to search each table by code, definition, or keyword. Additionally the user may use the "list" option to display the entire list of codes for a particular table. Where appropriate a hierarchical breakdown of the code is available.

c. The Maintenance Modernization Business Unit (MMBU) Standard Codes Forum

Standard Codes Forum contains a mirror image of all code tables implemented within the current releases of the Organization Maintenance Management System - Next Generation (OMMS-NG) and the Maintenance Resource Management System (MRMS), and the Regional Maintenance Automated Information System (RMAIS). It also serves as a communications link within the Naval Community where recommended changes, modifications and deletions are submitted, discussed and approved/disapproved prior to release version implementation.

d. Ships' 3-M Data Record Layout

Describes the format of all data records processed through the legacy Shipboard Non-Tactical ADP Program (SNAP) systems, which are found within Ships' 3-M.

e. Ships' 3-M Data Record Layout - 120 Card Format

Specifies the card format for all data records found within Ships' 3-M.

Additionally, for those customers not having accessibility to the Internet, a Ships' 3-M Reference CD-ROM/DVD, which contains some of the more significant reference tables, is available.

The reference information available via the CD-ROM/DVD includes; Equipment Identification Codes (EIC), Allowance Parts List (APL) population, Activity Status File/Steaming Hours, and Expanded Ship Work Breakdown Structure (ESWBS).

1-10 REQUESTING 3-M SYSTEM DATA

a. Data requests may be submitted by contacting Navy 311 (formerly Global Distance Support Center) at 1-855-NAVY-311 (1-855-628-9311, DSN 510-NAVY-311) or e-mail Navy311@navy.mil requesting Ships' 3-M assistance from NAVSEALOGCEN in Mechanicsburg. Information concerning Ships' 3-M as well as access to various Ships' 3-M products can be obtained through the NAVSEALOGCEN Homepage at www.nslc.navsea.navy.mil. Any written correspondence to the NAVSEALOGCEN Mechanicsburg may be forwarded to:

NAVAL SEA LOGISTICS CENTER
ATTN SHIPS 3-M FUNCTIONAL ANALYST
5450 CARLISLE PIKE
PO BOX 2060
MECHANICSBURG PA 17055-0795

SECTION IV

SECTION IV

CHAPTER 1

3-M SYSTEMS TRAINING

CHAPTER 1 - 3-M SYSTEMS TRAINING

1-1 INTRODUCTION

a. The ships' 3-M System consists of the Planned Maintenance System (PMS) and Maintenance Data System (MDS) and is the nucleus for managing maintenance aboard all ships and shore stations of the Navy. Personnel must have a clear understanding of: (1) how to effectively manage maintenance, configuration and logistics support appropriate to their position; (2) how PMS is essential to sustaining material readiness; and (3) how and why managers at the systems command level are dependent upon the 3-M System for information to identify and correct Fleet material problems. The Naval Education Training Command (NETC) is responsible for maintaining a 3-M System training plan designed to meet the needs of the Fleet.

b. TYCOMs must ensure adequate 3-M Program training for all personnel within the command associated with maintenance, configuration and logistics support management. The TYCOMs are required to monitor and take corrective action to ensure ship compliance with 3-M policy and procedures, including a continuing quality review of 3-M data submitted by each ship. Shipboard on-the-job training represents the cornerstone of Fleet operational readiness and provides the optimum method of acquiring hands-on training. On-the-job training will be relied upon to sustain that level of knowledge and awareness received during formal training. Training should be continuous as new methods, procedures or features are introduced.

1-2 3-M SYSTEM AND 3-M SYSTEM SUPPORT ASHORE TRAINING

The Center for Service Support (CSS) is the program manager for fleet-wide 3-M training. Feedback or requests for information should be sent to:

COMMANDING OFFICER
CENTER FOR SERVICE SUPPORT
NAVAL STATION NEWPORT
1183 CUSHING ROAD
NEWPORT RI 02841-1522

Commercial (401) 841-1051 DSN: 841

a. 3-M System training is additionally provided in the curricula of Class "A" schools, United States Naval Academy (USNA), Officer Candidate School (OCS), and Naval Reserve Officer Training Candidate (NROTC) courses to introduce students to 3-M system concepts, operation applications and benefits.

b. Other training is available upon request. Information on available courses, course descriptions, quota controls, and school locations can be obtained from the Catalog of Naval Training Courses (CANTRAC). The following are 3-M courses currently available and reflect the course number, course name, number and target audience:

(1) NAVY TACTICAL COMMAND SUPPORT SYSTEM (NTCSS) II MANAGER A-531-0021

To train personnel in common software services that provide interface between client/server application programs and the operational environment.

(2) 3M COORDINATOR/INSPECTOR J-500-0029

This course trains TYCOM-GROUP-SQUADRON personnel and Ships 3-M Coordinators in the responsibilities associated with verification, update and inspection of the ships 3-M Systems. Personnel applying for this training must be billeted to either a 3-M Coordinator or 3-M Inspector Billet. Personnel attending J-500-0029 must be previously qualified PQS 305 via NAVETRA 43241 prior to class convening. Personnel attending should have completed one tour as a supervisor of a work group that utilized the Navy 3-M system.

(3) UNIT LEVEL RSUPPLY A-551-0026

Relational Supply Unit Technical Specialist.

(4) STOCK CONTROL SUPERVISOR/RSUPPLY FORCE LEVEL A-551-0027

Provides leading Logistics Specialists assigned to RSupply (Force) equipped ships with the required knowledge and skills to perform duties.

(5) RELATIONAL SUPPLY (UNIT) STOCK CONTROL SUPERVISOR A-551-0028

To provide leading Logistics Specialists assigned to RSupply (Unit)-equipped ships with the required knowledge and skills to perform duties.

(6) RSUPPLY (FORCE LEVEL) OPERATIONS TECHNICIAN A-551-0029

To provide knowledge and skills training for Logistics Specialists assigned to or in transit to RSupply (Force Level) - equipped ships. Petty Officers will be assigned access within one or more functional systems and with specific responsibilities within a particular functional area. These individuals will be able to perform add/change/delete records, suspend transaction processing, queries, issues, requisition and receipt processing. Submit batch jobs for generation of management reports, and process Defense Finance and Accounting Service (DFAS) financial feedback reconciliations.

c. Navy Knowledge On-line (NKO)

The NKO web site ***https://www.nko.navy.mil/*** also contains 3-M computer-based training lessons developed by the Center for Service Support under the e-learning section. Refer questions to 3M Training Manager at (401) 841-1044 or DSN: 841-1044.

1-3 OTHER 3-M SYSTEM TRAINING

Available from NAVSEALOGCEN is the Ships' 3-M On-line. System Training Course. The course sponsored and conducted by NAVSEALOGCEN is a 2-day program designed to introduce and train individuals on the usage of OARS and the 3-M database. This course essentially encompasses two major areas, Introduction and Overview of Ships' 3-M, and Introduction to the OARS Retrieval Tool. It provides both instruction and hands-on lab time. Upon completion of this course, individuals should possess enough knowledge to enable them to retrieve data necessary for their specific functions. Target audience includes military and civilian, equipment life cycle managers, system managers and engineers with a need to work with Ships' 3-M data. Requests for information and course dates can be obtained from the OARS Website at ***http://www.oars.navsea.navy.mil***. Click on Training on the left side and then following the Training, Instructions on the right lower area of the screen. Or contact Navy 311 (formerly Global Distance Support Center) at 1-855-628-9311, DSN 510-NAVY-311, or e-mail at Navy311@navy.mil.

1-4 SHIPBOARD TRAINING

The commanding officer establishes and maintains a viable 3-M system training program to sustain that level of knowledge and awareness received during formal training.

1-4.1 3-M System Team Assist Visits

Periodic assistance is provided upon request.

1-4.2 Training Sources/Aides Available

a. The following 3-M System training courses and aids are available to assist in shipboard training:

(1) 3-M PQS (NAVEDTRA 43241K), and provides the 3-M knowledge and fundamentals required for workstations with both PMS and automated MDS requirements.

SECTION V

SECTION V

CHAPTER 1

CLASS MAINTENANCE PLAN REQUIREMENTS AND EXECUTION FOR AIRCRAFT CARRIERS, SUBMARINES AND SURFACE SHIPS

CHAPTER 1 - CLASS MAINTENANCE PLAN REQUIREMENTS AND EXECUTION FOR AIRCRAFT CARRIERS, SUBMARINES AND SURFACE SHIPS

1-1 PURPOSE

This chapter provides an overview for the development, management and content of the Class Maintenance Plan (CMP) developed and maintained for each ship of the class. Each CMP is developed to provide the maintenance task requirements information needed to plan, schedule, and control Intermediate and Depot-level planned maintenance effectively. By reference or inclusion, all newly developed CMPs shall incorporate Organizational-level planned maintenance.

1-2 SCOPE AND OVERVIEW

As required by reference (j), each ship of a class shall have a tailored NAVSEA approved CMP. The CMP contains the plan overview, all detailed maintenance technical requirements for organizational, intermediate and depot maintenance and notional maintenance cycles as tasked and funded by the PEOs. The organizational-level requirements of the CMP are managed by NSLC for SEA 04. The cognizant life cycle activity (Carrier Planning Activity, SUBMEPP, and SURFMEPP) manage the Depot (D-Level) and selected Intermediate (I-Level) maintenance requirements. The remaining I-Level maintenance requirements are managed by NSLC for SEA 04. All maintenance requirements are directed by the technical authority as covered within the Virtual SYSCOM construct, reference (s). Throughout this document, the term “ship” refers to all surface ships, aircraft carriers, and submarines.

a. The Class Maintenance Plan required by reference (j) describes the basic parameters of the Condition-Based Maintenance (CBM) policy as contained in reference (h) for that ship class, including organizational-level repair capabilities needed; intermediate- and depot-level requirements (e.g., number, type, duration, interval between, and man-day size of availabilities); such required support features as facilities requirements, specific turnaround programs, insurance material programs, special diagnostic systems, and husbandry agents (e.g., Port Engineers). All maintenance requirements are documented in the Class Maintenance Plan.

b. The CMP describes all preventive maintenance actions and maintenance support requirements, including material condition assessment requirements, approved modernization, and shipyard routines. The CMP may also include standard repairs required based on commonly expected assessment results.

1-3 CLASS MAINTENANCE PLAN

The CMP shall encompass all essential maintenance elements required to economically sustain ship classes at a high state of material condition. Each CMP shall be CBM developed with all maintenance requirements based on Reliability-Centered Maintenance (RCM) principles per reference (h). Sections of a CMP are:

a. Plan Overview.

b. Maintenance Requirements - all required preventive, corrective and alterative maintenance actions.

c. Notional class maintenance schedule.

1-3.1 CMP Content

1-3.1.1 Plan Overview Section

The plan overview shall provide a narrative description of the Class Maintenance Plan, including major issues, solutions chosen and justification for the approaches taken in the CMP. This section describes the strategic plan and the role of maintenance in sustaining current and future readiness and material condition to ensure ships remain relevant and reach their expected service life. This includes outlining a detailed approach to managing a cost effective maintenance program, linking requirements to resource needs, addressing high cost maintenance drivers and system maturation. This section shall also concentrate on maintenance and management processes for slow-to-degrade and distributed systems. Operational profiles as well as intermediate and depot maintenance periods are also addressed in relation to maintaining overall ship performance. The description shall cover:

a. Design overview of the class to include capabilities, missions and design features used to achieve them;

b. Unique characteristics of the class;

c. Strategies required to maintain hull stability margins, environmental controls, power requirements, ventilation requirements, payload upgrades, etc.;

d. Specific Navy organizations delegated responsibilities for administering and supporting the ship's CMP (e.g., Regional Maintenance Centers, Program Executive Offices (PEOs), Carrier Planning Activity, Submarine Maintenance Engineering, Planning and Procurement (SUBMEPP) Activity, Surface Maintenance Engineering Planning Program (SURFMEPP) Activity and husbandry agents such as Port Engineers or Maintenance Managers, etc.).

1-3.1.2 Maintenance Requirements Section

a. All maintenance requirements shall be documented in the Class Maintenance Plan and shall be tailored for each ship of the class. The program will, at a minimum, specify availability notional size, intervals and durations, required preventive and other planned maintenance actions and periodicities, and any special maintenance, maintenance support, or infrastructure requirements. The maintenance requirements section shall list and describe all maintenance expected to be performed on ship systems and equipment so that all maintenance and availability routine tasks can be effectively planned and executed. Organizational-level (O-level) preventive maintenance requirements and procedures are part of the CMP and shall be managed by the Planned Maintenance System (PMS) per Section I, Chapter 2 of this instruction. Intermediate (I-level) and Depot (D-level) maintenance tasks shall be located in the CMP, with some associated assessment procedures stored in the PMS database in Maintenance Requirement Card (MRC) format.

b. There are two categories of CMP maintenance tasks, scheduled tasks, and unscheduled tasks.

(1) Scheduled tasks. Scheduled tasks are developed, reviewed, and justified as applicable and effective through RCM analysis according to reference (k) and have been included in the CMP by the cognizant technical authority as beneficial and cost effective when performed at fixed time intervals. Scheduled tasks may include: qualified repairs and life renewal

restoration tasks; material condition assessment or inspection tasks; or approved ship changes (formerly called alterations).

(2) Unscheduled tasks. Unscheduled tasks are performed by a non-time-based event or objective evidence of need. Unscheduled tasks are developed, reviewed, and justified as applicable and effective through RCM analysis according to reference (k) and have been included in the CMP by the cognizant technical authority and CMP Development Activity as beneficial and cost effective when performed as required or by an event trigger. Unscheduled tasks may include the following:

a. Material condition assessment tasks available for troubleshooting or pinpointing degraded or failed components when unsatisfactory performance occurs or is suspected;

b. Corrective maintenance tasks where the scope of work is determined by obvious failure, observable degradation, or detected by either an on-line Condition-Based Maintenance (CBM) diagnostic system or the accomplishment of a material condition assessment task; or

c. Concurrent maintenance tasks of a limited nature, which can be economically performed in conjunction with the accomplishment of scheduled or other unscheduled tasks.

1-3.1.3 Notional Class Maintenance Schedule

This section shall summarize the projected intermediate and depot-level workload for each major availability in the notional operating cycle of a ship of the class from reference (l). This may require more than a single set of availability types in order to reflect such maintenance program differences as CONUS home ported ships, forward deployed ships, and multi-crewed ships.

1-4 RESPONSIBILITIES

1-4.1 Commander, Naval Sea Systems Command (COMNAVSEA)

As the lead systems commander for ship in service support, COMNAVSEA shall:

a. Oversee the core processes for CMPs in acquisition program and in-service ships;

b. Support PEO Carriers, Team Ships (PEO Ships, SEA 21), and Team Subs (PEO Subs and SEA 07) for the development and management of Maintenance Plans for each ship class (active and reserve) to ensure that U.S. Navy ships are cost effectively maintained in the highest possible state of material condition;

c. Ensure Maintenance Plans are continuously improved and updated as changes occur;

d. Establish hull, mechanical, and electrical (HM&E) and combat systems technical requirements and provide the technical support necessary to safely maintain the material condition of all ships;

e. Ensure all maintenance requirements are developed in accordance with RCM processes per reference (k);

f. Establish policy for ensuring maintenance requirements are properly linked to ship configuration;

g. Ensure CMP requirement changes are made by appropriately qualified and certified RCM practitioners;

h. Establish policy for and oversee execution of periodic RCM review of all CMP maintenance requirements;

i. Coordinate PEO CMP efforts to ensure use of common, standard, best-practice maintenance requirements for like equipment across all ships;

j. Oversee and manage standardization of maintenance and modernization processes and products in support of the Navy's drive toward "one way of doing business" for ship maintenance;

k. Review and approve CMPs, including those developed by PEOs, ensuring that they satisfy the requirements of reference (j), are technically correct, and are best suited to individual ship classes; and

l. Recommend changes to existing maintenance programs and CMPs that support Navy's continued drive toward integration,

standardization, and fleet self-sufficiency; are based on RCM experience; and are cost effective.

1-4.2 PEO Carriers, Team Ships (PEO Ships, SEA 21), Team Subs (PEO Subs, SEA 07) and Ship Program Managers (SPM):

a. Develop, issue and continuously maintain a tailored Class Maintenance Plan for NAVSEA approval that is best suited to an individual ship class that supports fleet mission and material readiness needs, and is cost effective. The CMP shall be issued by delivery of the first ship of the class.

(1) Develop and update maintenance requirements per NAVSEA-approved RCM processes conducted by qualified and NAVSEA-certified RCM practitioners.

(2) Analyze in-service operational data and maintenance feedback through 3-M maintenance data, casualty reports, repair activity discrepancy reports, guarantee and warranty deficiencies and other reporting sources to refine maintenance requirements.

(3) Maintain the integrity of and accessibility to CMP data as well as the structure of the CMP. To facilitate control of change management, require all modifications to data in the database to be made by the PEO's authorized CMP development activity personnel with cognizant technical authority approval.

b. Coordinate with Fleet and TYCOM to ensure that unscheduled and scheduled CMP maintenance requirements are executed properly and properly recorded when executed and that scheduled maintenance requirements are executed within the periodicity required or are appropriately reviewed by cognizant technical authorities and Ship Program Managers if deferred beyond required date.

c. Coordinate with NAVSEA and other cognizant PEOs and SPMs to ensure that common, standard, best-practice maintenance requirements are implemented in their respective programs.

APPENDICES

APPENDIX A

DATA ELEMENT DESCRIPTIONS AND VALIDATION SPECIFICATIONS

APPENDIX A - DATA ELEMENT DESCRIPTIONS AND VALIDATION SPECIFICATIONS

A-1 PURPOSE

This appendix identifies the data elements used for 3-M documentation and reporting, and provides a complete listing of the data elements and their descriptions. This appendix also includes the data element specifications used for 3-M reporting. Only the core 3-M data elements have been included; however, the use of additional data elements may be allowed if they support specific TYCOM, Program Manager, or OPNAV requirements.

A-2 OBJECTIVE

The objective of this appendix is to ensure that 3-M data requirements are explicitly understood and followed. Divided into two sections, the validation specification portion can be used to:

a. Provide a means for organizational and intermediate level personnel to document information that is correct and complete.

b. Establish data element requirements for all 3-M ADP systems, including systems that interface with 3-M.

c. Provide a means for personnel conducting 3-M validations to ensure that 3-M data specifications are being followed.

d. Establish requirements for reporting 3-M maintenance data.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Action Taken	F968	2K	2	E	1. Mandatory 2. Must be left-justified. 3. For 4790/2K, first character must be 0, 1, 2, 3, 4, 6, 7, 8, or 9. For action taken codes 1, 2, and 3, the second character codes A, B, C, M, or T can be used. For action taken code 7, the second character codes A, B, C, D, or E can be used. For action taken code 9, the second character codes A, B, C, D, E, F, G, H, I, or J can be used. 4. For action taken code 6, the second character codes A, B, C, D, E, F, G, H, I, J, K or L can be used.
Action Taken	F968	CK	2	E	1. Mandatory. 2. Must be left-justified. 3. For 4790/CK, must be 1, 2, 3 with or without the second character A, B, C, M, or T.4. For Alteration CK, must be 5A, 5B, 5C, or 5D.
Active Maintenance Time	F943	2K/CK	3	N	1. Optional. 2. Mandatory for SEL reporting
Allowance Parts List/Allowance Equipage List (APL/AEL)	D008G	2K/CK	11	E	1. Mandatory. 2. Must not be blank, not all zeros, and no imbedded blanks. 3. Must be the APL/AEL Number, "NOTLISTED", or "NA".

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Alterations (Configuration Changes)	E319	2K/CK	14	E	1. Optional. 2. For SHIPALT, pos. 1 & 2 must be SA. Pos. 3-6 is ship type. Pos. 7-13 is alteration number. Pos. 14 is title code. 3. For all other alteration types, pos. 1, 2, & 3 must be AR, EC, ECO, ECP, ESR, FC, HI, LSA, PSA, SCD, SI, SP, TD, TDC, TEC, TMA, TR, or TRI. Pos. 3 may be blank. Pos. 4-14 is alteration number.
Assist Repair Work Center	E902A	2K/2P	4	E	1. Optional.
Assist Repair Work Center Estimated Man-Hours (Asst. Est. MHRS)	E902A	2K/2P	4	E	1. Optional.
Automated Integrated Language System Identification Number (AILSIN)	E129	2K/CK	12	E	1. Optional.
Available on Board(Yes/No)	---	2K	1	A	1. Mandatory only if the "Blueprints, Technical Manuals, etc." data element is filled. 2. Must be an "X".

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Availability Category	---	2K	1	A	1. Optional. Used for Deferral and IMA AWR Maintenance Actions. 2. Must be A-Z and 1-8.
Blueprints, Technical Manuals, etc.	---	2K	32	E	1. Optional.
Cause	F964C	2K	1	N	1. Mandatory. 2. Must be 1, 2, 3, 4, 5, 6, 7, 8 or 0.
Completion Date	---	2K/CK	*	N	1. Mandatory. 2. Must be greater than deferral date.* Length is determined by the date format.
Component Action	F968C	CK	1	A	1. Mandatory. 2. If reporting a configuration maintenance action, must be R, I, or M. 3. If reporting a configuration file correction, must be A, D, or C.
Component Identification	F940B	CK	15	E	1. Optional.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Component Noun Name	---	CK	26	E	1. Mandatory. 2. For HM&E equipment, enter the noun name. 3. For electronics equipment, enter the AN type designator or commercial model number. 4. For ordnance equipment, enter the system/equipment nomenclature, followed by the Mark and Mod numbers.
Component Serial Number	---	CK	15	E	1. Mandatory. 2. For equipment without a serial number, enter "NONE".
CSMP Summary	F905D	2K	30	E	1. Mandatory
Date Completed	---	2K	*	N	*. Length is determined by the date format
Date of Estimate	---	2K	*	N	*. Length is determined by the date format
Deadline Date	F964F	2K	*	N	1. Optional. 2. Length is determined by the date format.
Deferral Date	F964E	2K	*	N	1. Mandatory. 2. Length is determined by the date format.
Deferral Reason	F964D	2K	1	N	1. Mandatory. 2. Must be 1, 2, 3, 4, 5, 6, 7, 8, 9, or 0.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Departure Test Required	---	2P	1	A	1. Optional. 2. If used, must be an "X".
Dry Dock Required	---	2P	1	A	1. Optional. 2. If used, must be an "X".
Engineering Operational Sequencing System (EOSS)	---	CK	15	E	1. Optional. 2. Not required for Electronics or Ordnance configuration change actions.
Equipment Identification Code	D008D	2K/CK	7	E	1. Mandatory.
Equipment Noun Name	F940	2K/CK	16	E	1. Mandatory. 2. If the maintenance action is a SHIPALT, enter the equipment noun name from the SHIPALT record. Otherwise, enter the equipment nomenclature/description of the equipment or system on which the maintenance was performed. 3. For HM&E equipment, enter the noun name. 4. For electronics equipment, enter the AN type designator or commercial model number. 5. For ordnance equipment, enter the system/equipment nomenclature, followed by the Mark and Mod numbers.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Estimated Man-Days	---	2K/2P	5	N	1. If the estimate is less than one, enter "1".
Estimated Man-Days Cost	---	2K/2P	7	N	1. If no estimate, enter "0".
Estimated Man-Hours	G902A	2K/2P	4	N	1. If no estimate, enter "0".
Estimated Material Costs	G902M	2K/2P	6	N	1. If no estimate, enter "0".
Estimated Total Cost	---	2K/2P	7	N	1. If no estimate, enter "0".
Final Action (IMA only)	---	2K	2	E	1. Mandatory. 2. Must be left-justified. 3. First character must be 0, 1, 2, 3, 4, or 7. For action taken codes 1, 2, and 3, the second character codes A, B, C, M, or T can be used. For action taken code 7, the second character codes A, B, C, D, or E can be used. 4. For alteration reporting, must be 5A, 5B, 5C, or 5D. 5. For rejected work request, must be 6A-6I.
First Contact	F804	2K	18	E	1. Mandatory.
Hull Number	---	2K/CK/2P	11	E	1. Optional.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Identification/ Equipment Serial Number	---	2K	15	E	1. Mandatory.
INSURV Number	D912	2K	7	E	1. Optional.
Integrated Priority	F802	2K	5	N	1. Optional.
IUC Screening	F949	2K	2	E	1. Optional. 2. If used, must be 1, 2, 3 with or without the second character A, S, or M; 4; 5, 5A-5F; 6, 6A-6E; or 8.
IUC/Repair Activity/TYCOM Remarks	---	2P	180	E	1. Optional.
Job Control Number (JCN)	E349	2K/CK/2P	13	E	1. Mandatory. 2. This data element is made up of the UIC (A002), Work Center (E128), and JSN (E349C).
Job Description/ Remarks	---	CK	120	E	1. Mandatory.
Job Order Number	G679	2K	10	E	
Job Sequence Number (JSN)	E349C	2K/CK/2P	4	N	1. Mandatory.
Key Event	F934	2P	4	E	1. Optional.
Key Operation	F939	2P	2	N	1. Optional.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Lead Planning &Estimating Code	---	2K	4	E	1. Optional.
Lead Repair Work Center (LWC)	E902D	2K/2P	4	E	1. Mandatory.
Location	E900A	2K/CK	20	E	1. Mandatory.
Maintenance Index Page Number (MIP)	E130	CK	15	E	1. Optional.
Man-Hours Expended	---	2K	4	N	1. Mandatory. 2. Cannot be blank.
Meter Reading	---	2K	5	N	1. Optional.
Meter Reading Indicator	D916G	CK	1	A	1. Optional. 2. If used, must be "X".
Nameplate Data	F940C	CK	120	E	1. Mandatory for installation, and addition. 2. Optional for removal, modification, change, and deletion.
Next Higher Assembly	F940D	CK	21	E	1. Optional.
Normally Done By	---	2P	1	A	1. Optional.
Periodic Maintenance Requirement	---	2P	12	E	1. Optional.
Periodicity	---	2P	3	E	1. Optional.
Post-Overhaul Test Required	---	2P	1	A	1. Optional. 2. If used, must be an "X".

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Pre Arrival/Arrival Conference Action/Remarks	---	2K	56	E	1. Optional.
Pre-Overhaul Test Required	---	2P	1	A	1. Optional. 2. If used, must be an "X".
Priority	C904A	2K	1	N	1. Mandatory. 2. Must be 1, 2, 3, or 4.
Quality Assurance Requirements	---	2P	12	A	1. Optional.
Quantity	---	CK	3	N	1. Mandatory.
R/M (Maintenance Indicator)	D912E	2K	1	A	1. Optional. 2. If used, must be "M" or "R".
Rate	F804A	2K	4	E	Mandatory.
Record Identification Number (RIN)	E221	CK	5	E	1. Mandatory for deletion, removal, and modification. 2. Optional for installation and addition.
Remarks/ Description	F905	2K/CK	1200	E	1. Mandatory.
Repair Activity UIC	A002P	2K	5	E	1. Optional.
Repair Work Center	E902A	2K	4	E	1. Optional.
S (Safety Identifier)	D912B	2K	1	A	1. Optional. 2. If used, must be "S".

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Safety Hazard	C921A	2K	1	E	1. Optional. 2. Must be 1, 2, 3, 4, 5, 0. Code 6 thru 9 may be locally assigned by TYCOMs for additional safety codes required.
Scheduled Completion Date	---	2K/2P	*	N	1. Optional. *. Length is determined by the date format.
Scheduled Start Date	---	2K/2P	*	N	1. Optional. *. Length is determined by the date format.
Second Contact/ Supervisor	F804B	2K	18	E	1. Optional.
Service Application Code	E010A	CK	10	E	1. Optional.
Ship's Force Man-Hours (S/F MHRS)	F808B	2K	4	N	1. Mandatory.
Ship's Force Man-Hours Expended (S/F MHRS EXP)	F808	2K/CK	4	N	1. Mandatory.
Ship's Force Man-Hours Remaining (S/F MHRS REM)	F808A		4	N(*)	1. Optional. *. If TYCOM allows an automatic close out of the deferral by the IMA, enter "AUTO".
Special Interest	---	2P	1	A	1. Optional. 2. If used, must be an "X".
Special Purpose A	F801	2K	2	E	1. Optional. 2. If used, enter the Key Event code.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Special Purpose B	F801	2K	2	A	1. Optional. 2. If used, enter SS for SUBSAFE. Surface Ships may enter S1 for "PARTS ON HAND/PARTS NOT REQD," S2 for "PARTS ON ORDER-DEF DEL DT," S3 for "CONT PROCURE PARTS," S4 for "WORK COMPL PREVIOUSLY.
Special Purpose C	F801	2K	2	E	1. Optional. 2. If used, must be L1.
Special Purpose D	F801	2K	2	N	1. Optional. 2. If used, must be 08.
Special Purpose E	F801	2K	2	A	1. Optional. 2. If used, must be RC
Special Purpose F	F801	2K	2	A	1. Optional. 2. If used, must be DD.
Special Purpose G	F801	2K	2	A	1. Optional. 2. If used, must be NC or NP.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Special Purpose H	F801	2K	2	E	1. Optional. 2. The following codes are used in MFOM VSB for work screening: GC (Contract), IC (Indefinite Delivery, Indefinite Quantity), CC (Commercial Industrial Services), RC (Regional Maintenance Center Contracting Officer), TC (Type Commander Contracting), BC (Blanket Purchase Agreement/Basic Ordering Agreement), TV (Tanks & Voids), CS (Crane Services), NS (NAVSEA), DV (Diver Services), or AC (AVCERT).
Special Purpose I	F801	2K	2	E	1. Reserved for future use.
Special Purpose J	F801	2K	2	E	1. Reserved for future use.
Special Purpose K	F801	2K	2	E	1. Optional. 2. If used, enter enter FB (Fly By Wire Certification Boundary) SF (Submarine Flight Critical Component), or DS (Deep Submergence System-Scope of Certification).
Special Purpose L	F801	2K	2	E	1. Optional. 2. If used, enter the code assigned to the visiting activity.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Special Requirements	---	2P	*	E	1. Optional. 2. If used, refer to Key Event, Special Interest, Dry Dock Required, Pre-Overhaul Test Required, Post-Overhaul Test Required, or Departure Test Required Codes for allowable codes and values. *. Length is determined by the codes entered.
Status	F964B	2K	1	N	1. Mandatory. 2. Must be 1, 2, 3, or 0.
Suffix	D912D	2K	2	E	1. Optional.
Task	---	2P	12	E	1. Optional.
Technical Documentation	---	2P	28	E	1. Optional.
Technical Manual Number	---	CK	32	E	1. Optional.
Trouble Isolation	F980	2K	1	N	1. Optional.
TYCOM Screening	F949A	2K	2	E	1. Optional. 2. If used, must be 1, 2, 3, with or without the second character A, S, or M; 4; 5A-5F; 6, 6A-6E; 8; or 9.
Type Availability	F927	2K	1	N	1. Mandatory. 2. Must be 1, 2, 3, or 4.
U (Mission Degrading)	D912C	2K	1	A	1. Optional. 2. If used, must be "U".

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Unit Identification Code (UIC)	A002	2K/CK/2P	5	E	1. Mandatory. 2. No imbedded blanks.
When Discovered Code	F964	2K	1	N	1. Mandatory. 2. Must be 1, 2, 3, 4, 5, 6, 7, 8, 9 or 0.
When Discovered Date	F964A	2K	*	N	Mandatory. *. Length is determined by the date format.
Work Center	E128	2K/CK/2P	4	E	Mandatory for installation or addition. Optional for removal, modification, deletion, or change.
Work Center Responsible for Equipment (WCRE)	E128	CK	4	E	1. Mandatory for installation or addition. 2. Optional for removal, modification, deletion, or change.
Work Request Routine	---	2K	5	E	1. Optional. 2. If used, must be either the Expanded Ship Work Breakdown Structure, Ship Work Breakdown Structure, Ship Work Authorization Boundary, or Ship Work Line Item Number as directed by the TYCOM.
YYMM Issued	---	2P	4	N	1. Optional.

A-3 DATA ELEMENT DESCRIPTIONS

Following the validation specification section is an alphabetical listing of the authorized 3-M data elements. This listing provides a short definition of each data element along with allowable codes and values where applicable.

A-3.1 Data Elements

ACCEPTED BY (entered on 2K)

The signature/name and rank/rate of the person authorized by the tended ship to verify the acceptability of work performed. This entry is mandatory when reporting completion of a previously deferred maintenance action. The Work Center Supervisor must approve all maintenance actions not requiring assistance from an outside Work Center; the Work Center Supervisor's approval will be recorded when the maintenance action is documented.

ACTION TAKEN (ACT. TKN.) (ENTERED ON 2K AND CK)

A code to describe the maintenance action taken. Select the code which best describes the action taken to complete the maintenance. When recording these codes, start in the left-justified position of the field. The first character is to be chosen from the list below; the second character is free-form and is to be recorded as specified by the TYCOM.

MAINTENANCE ACTION: For maintenance action reporting, the following action codes can be used:

Code	Description
1	Maintenance Action Completed; Parts Drawn from Supply
2	Maintenance Action Completed; Required Parts Not Drawn from Supply (local manufacture, pre-expended bins, etc.)
3	Maintenance Action Completed; No Parts Required

NOTE: The following second character codes can be used with the above Action Taken codes 1, 2, or 3 as directed by the TYCOM:

A	Maintenance Requirement Could Have Been Deferred

B Maintenance Requirement Was Necessary
C Maintenance Requirement Should Have Been Done Sooner
M High Cost Repairs
T The Equipment Being Reported Had a Time Meter

Code	Description
4	Canceled (When this code is used, the deferral will be removed from the CSMP. This code is not to be used with INSURV, safety, or priority 1 or 2 deferrals screened for accomplishment by the TYCOM or IUC.)
6	Rejected Work Request (see Final Action Code). This code is only to be used by Intermediate Maintenance Activities in the Final Action Block for rejected work. This code is not allowed for ship board use.
7	Maintenance Action Completed; 2-M (Miniature/Microminiature Electronic Modules) Capability Utilized.

NOTE: The following second character codes can be used with Action Taken Code 7 to better describe the action taken:

A Parts Drawn from Supply Utilized
B Parts Not Drawn from Supply Utilized
C Automatic Test Equipment (ATE) Utilized
D ATE and Parts Drawn from Supply Utilized
E ATE and Parts Not Drawn from Supply Utilized

Code	Description
8	Periodic Time Meter/Cycle Counter reporting. (This code is not applicable to the "FINAL ACTION" code reported by the repair activity.)
9	Maintenance Action Completed; 3-M Fiber Optic Repair

NOTE: The following second character codes can be used with Action Taken Code 9 to better describe the action taken:

A	FOTE, multimode ST MQJs utilized
B	FOTE, multimode heavy duty MQJs utilized
C	FOTE, multimode rotary mechanical splice MQJs utilized
D	FOTE, single mode ST MQJs utilized
E	FOTE, single mode heavy duty MQJs utilized
F	FOTE, multimode specialty MQJs utilized
G	FOTE, single mode specialty MQJs utilized
H	FOTE, not available
I	Standard MQJs not available
J	Specialty MQJs not available

Code	Description
0	None of the Above

Code "0" is not recommended for ship board use.

CONFIGURATION CHANGE: For configuration change reporting, the following action codes can be used:

Code	Description
1	Maintenance Action Completed; Parts Drawn from Supply
2	Maintenance Action Completed; Required Parts Not Drawn from Supply (local manufacture, pre-expended bins, etc.)
3	Maintenance Action Completed; No Parts Required

NOTE: The following second character codes can be used with the above Action Taken codes 1, 2, or 3 as directed by the TYCOM:

A	Maintenance Requirement Could Have Been Deferred
B	Maintenance Requirement Was Necessary
C	Maintenance Requirement Should Have Been Done Sooner
M	High Cost Repairs
T	The Equipment Being Reported Had a Time Meter
5A	Partially Completed Alteration
5B	Fully Completed Alteration
5C	Fully Completed Equivalent to Alteration
5D	Alteration Directive Not Applicable

NOTE: If there is an entry in the Alterations field of a deferred maintenance action (2K), a code "5",

including the applicable suffix ("A-D"), must be entered in the "FINAL ACTION" field.

ACTIVE MAINTENANCE TIME (ENTERED ON 2K AND CK)

The total clock hours, to the nearest whole hour, during which ship's force maintenance was performed. This should show actual time for troubleshooting, but not include delays.

ACTUAL MAN-DAYS

The total actual amount to accomplish the job for all involved repair Work Centers.

ACTUAL MAN-DAY COST

The total cost required by the Repair Activity to accomplish the job.

ACTUAL MATERIAL COST

The total amount of cost for all the material used by the Repair Activity to complete the job.

ACTUAL TOTAL COST

The total amount for both the Actual Man Day Cost and the Actual Material cost required by the Repair Activity.

ADJUSTED COMPLETION DATE

The completion date after a Deferral MA or IMA AWR original completion date has been changed.

AILSIN

(See data element) “AUTOMATED INTEGRATED LANGUAGE SYSTEM IDENTIFICATION NUMBER (AILSIN)”

ALLOWANCE PARTS LIST/ALLOWANCE EQUIPAGE LIST (APL/AEL) (ENTERED ON 2K AND CK)

The APL/AEL relates to a set of characteristics which identify a particular system, equipment, or component. The Master Index of APLs/AELs (MIAPL) lists what APLs/AELs are available and cross references various equipment identification numbers to an

existing APL/AEL (e.g., "992179236" for an APL, and "2-260034096" for an AEL).

For manual reporting, on equipment not listed in the Coordinated Shipboard Allowance List (COSAL), enter "NOT LISTED" in the APL/AEL field. For maintenance actions that are not equipment related (e.g., requests for cruise box manufacture, printing services, etc.), enter "NA" in this field.

ALTERATION IDENTIFICATION (CONFIGURATION CHANGES) (ENTERED ON 2K AND CK)

An alteration is a change in design, material, number, location, or relationship of an assembly's component parts. Some alteration categories are:

a. SHIPALT. Enter the alteration identification exactly as it appears on the Ship Alteration (SHIPALT) Record (i.e., SA, ship type, and SHIPALT number). The alteration prefix code "SA" is entered in the first two positions, followed by the ship type, with the alteration number beginning in the 7th position. Enter the title code shown in the authorizing directive in the right-justified position of the field.

b. FIELD CHANGE. Enter "FC" in the two left-justified positions. Leave position 3 blank; place the numeric characters listed in the FC Bulletin in positions 4 and 5.

c. ALTERATION REQUEST. May be originated by a ship to request an alteration design. Enter and left-justify "AR", then a blank space, then any number the ship assigns for its own control.

d. SHIP CHANGE DOCUMENT. Enter “SCD” in the first three positions followed by the SCD number. This type of alteration is replacing all other alteration types. Alterations of other types in the system continue to carry superseded types but all new alterations will be of type SCD.

e. OTHER ALTERATIONS. Enter the appropriate alteration prefix from the following list in the three left-justified positions, leave position three blank if code is only two

position, and identify the alteration directive in the remaining positions:

EC	=	ENGINEERING CHANGE
ECO	=	ENGINEERING CHANGE ORDER
ECP	=	ENGINEERING CHANGE PROPOSAL
ESR	=	ENGINEERING SERVICES REQUEST
HI	=	HABITABILITY
LSA	=	LOGISTICS SUPPORT ANALYSIS
PSA	=	POST SHAKEDOWN AVAILABILITY
SI	=	SYSCOM COMMAND INSTRUCTION
SP	=	SPECIAL PROJECTS
TD	=	TECHNICAL DIRECTIVE
TDC	=	TYCOM DISCRETIONARY CHANGE
TEC	=	TEMPORARY ENGINEERING CHANGE
TMA	=	TRIPPER MACHINERY OPERATION
TR	=	TRIDENT ALTERATION
TRI	=	TRIDENT SHIP ALTERATION

ASSIST REPAIR WORK CENTER (ASST. REPAIR W/C) (ENTERED ON 2K AND 2P)

The 3- or 4-character code of the first Work Center assigned to assist the lead Work Center on the job being planned. The code is always left justified in the field. On the 2K, if more than one assist Work Center is required, fill in another 2K. Only two assist Work Centers (two supplemental 2K continuation sheets) can be accommodated when a 2K is used as a planning document by an IMA.

ASSIST REPAIR WORK CENTER ESTIMATED MAN-HOURS (ASST EST MHRS) (ENTERED ON 2K)

The total number of estimated man-hours required by the assist Work Center of the repair activity to complete its portion of the job.

AUTOMATED INTEGRATED LANGUAGE SYSTEM IDENTIFICATION NUMBER (AILSIN)

(ENTERED ON CK) - The number used to identify the functional/hierarchical relationship of the ship, system, and equipment configuration records. Current numbering schemes are

AILSIN, Configuration Identification Number (CIN) and Functional Group Code (FGC).

AVAILABILITY CATEGORY (ENTERED ON 2K)

A code that specifies the type of availability scheduled for an activity. Applicable to only Deferral MA or IMA AWR Data.

Code	Descriptions
A	Alongside Scheduled Continuous Maintenance
B	Docking Selected Restricted Availability (DSRA)
C	Selected Restricted Availability (SRA)
D	Complex Overhaul
E	Extended Incremental Selected Restricted
F	Extended Docking Selected Restricted Avail (EDSRA)
G	Extended Selected Restricted Availability (ESRA)
H	Docking Incremental Selected Restricted Avail (DISRA)
I	Intermediate Maintenance Availability
J	Incremental Selected Restricted Availability
K	Interim/Emergent Dry Dock
L	Docking Phased Maintenance Availability
M	Phased Planned Maintenance Availability
N	Inactivation Availability (INAC)
O	Post Delivery Availability
P	Continuous Availability (Year Long CM)
Q	Post Shakedown Availability
R	Regular Overhaul
S	Self Availability/Ship to Shop Availability
T	Restricted Availability
U	Unfunded
V	Phased Incremental Availability (PIA)
W	Depot Modernization Period
X	Technical Availability/Assessment
Y	Docking Phased Incremental Avail (DPIA)
Z	Voyage Repairs (PER title X) /BFIMA
1	Docking Phased Incremental Avail (DPIA1)
2	Docking Phased Incremental Avail (DPIA2)
3	Docking Phased Incremental Avail (DPIA3)
4	Phased Incremental Availability (PIA1)
5	Phased Incremental Availability (PIA2)
6	Phased Incremental Availability (PIA3)
7	Refueling Complex Overhaul (RCOH)

8 Extended Docking Planned Maintenance Avail (EDPMA)
? Invalid

AVAILABILITY NUMBER

Identifies the number in which the component PMR was last accomplished.

AVAILABILITY PROPOSED START DATE

AVAILABILITY PROPOSED END DATE

AVAILABILITY ACTUAL START DATE

AVAILABILITY ACTUAL END DATE

BLUEPRINTS, TECHNICAL MANUALS, ETC. (ENTERED ON 2K)

Used to list technical material (blueprints, technical manuals, plans, etc.), that might be of assistance to the repair activity providing assistance.

CASREP DATE TIME GROUP

CAUSE (CAS) (ENTERED ON 2K)

The code best describing the cause of the failure or malfunction when need for maintenance was first discovered. When more than one cause contributed to the failure or malfunction, select the primary or overriding one (this field provides valuable data to the equipment manager; without it, only the fact that the equipment failed is known). Maintenance personnel must use their best judgment in determining the cause of failure.

Code	Descriptions
1	ABNORMAL ENVIRONMENT. Exposure to conditions more extreme than those reasonably expected in the normal shipboard environment (e.g., electrical equipment sprayed by salt water, or compartment flooded).
2	MANUFACTURER/INSTALLATION DEFECTS. Material not assembled or manufactured per specifications, or installed improperly by IMA or Depot (e.g., motor with open circuit armature).

Code	Descriptions
3	LACK OF KNOWLEDGE OR SKILL. Failure or malfunction of the equipment due to insufficient training, experience, or physical coordination of the operator, maintainer, or other personnel (e.g., not knowing equipment limitations such as the danger of a low speed wheel on a high speed grinder).
4	COMMUNICATIONS PROBLEM. A breakdown in the passing, receiving, or understanding of information (e.g., failure to hear or receive a complete message due to noise or mechanical or electrical interference).
5	INADEQUATE INSTRUCTION/PROCEDURE. The instruction or procedures guide has omissions, errors, ambiguities, or other deficiencies (e.g., technical manual omits lubricant type).
6	INADEQUATE DESIGN. Material manufactured and installed per specifications failed prematurely during normal usage under normal environmental conditions (e.g., steam piping orientation precludes adequate draining during warm-up).
7	NORMAL WEAR AND TEAR. Material requires replacement after long service and/or as a result of PMS (e.g., pump wear rings replaced during PMS).
8	CORROSION CONDITION.
0	OTHER OR NO MALFUNCTION. Needs to be explained in the "Remarks" field. Examples: 1) Fatigue or physical stress brought on by prolonged work periods or excessive heat, humidity, or noise. 2) Desire to save time and effort by taking shortcut and jury-rigging equipment. 3) Malfunction occurred when installing a field change to improve equipment effectiveness, or when the cause resulted from a personnel oriented deficiency affecting safety due to fatigue, etc.

COMMANDING OFFICER'S SIGNATURE (ENTERED ON 2K)

Shows approval by the commanding officer or authorized representative. Required on all deferrals for outside assistance.

COMPLETED BY (ENTERED ON 2K)

The signature and rate of the senior person actively engaged in the job at the lead Work Center. The senior person on the job

will be identified for all maintenance actions not requiring assistance from an outside Work Center.

COMPLETED DEFERRAL (COMP DEFL) (ENTERED ON CK)

Indicates the completion of a previously deferred job.

COMPLETED MAINTENANCE ACTION, NO DEFERRAL (COMP M/A NO DEFL) (ENTERED ON CK)

Indicates a completed maintenance action with no prior deferral.

COMPLETION DATE (ENTERED ON 2K AND CK)

The Julian date the maintenance action was completed.

COMPONENT ACTION (CA) (ENTERED ON CK)

Indicates if the identified component was removed (R), installed (I), or modified (M). Use the codes R, I, or M as appropriate. If reporting a configuration record change, use the code "A" for addition, "D" for deletion, and "C" for correction.

COMPONENT APL/AEL (ENTERED ON CK)

The APL/AEL of the component or equipment identified. If unsure of the correct APL/AEL for the equipment, entry may be left blank, and assistance requested by the supply department.

COMPONENT IDENTIFICATION (ENTERED ON CK)

The local numbering system used to identify equipment, (e.g., Station Number: "1A BOILER" or Valve Mark: "ASW 25"). A description of the component may be entered.

For electronic and combat systems equipment, the entry is optional if the component serial number field has an entry.

COMPONENT NOUN NAME (ENTERED ON CK)

Identifies the component. If the action being reported is the accomplishment of an equipment alteration (Field Change, Engineering Change, etc.), the component is defined as the equipment level addressed in the alteration directive, usually the major equipment or system level; otherwise, the component is defined as the lowest unit, type designator, or assembly that has its own configuration identity. This component may or may not have its own APL. Example of an equipment and related components:

System or	AN/WRT-2 Equipment:
Component:	PP-2222/WRT-2
Component:	C-2764/WRT-2

If several components are removed and installed in a single maintenance action (identified by one JCN), continuation pages may be used to report the component changes. If necessary, overflow data from the component noun name can be placed in the nameplate data field.

COMPONENT SERIAL NUMBER/IDENTIFICATION/EQUIPMENT SERIAL NUMBER (ENTERED ON CK)

Serial number of the component. If a serial number is entered, the QUANTITY field must be one ("1"). For equipment without a serial number, enter "NONE".

CONFIGURATION FILE CORRECTION (CONF FILE CORR) (ENTERED ON CK)

A data element field that indicates that the report is being submitted to correct erroneous configuration records (no equipment maintenance action involved).

CONTINUATION FOR (ENTERED ON 2L)

Identifies the maintenance action to which the supplemental information pertains.

CONTINUATION SHEET (ENTERED ON 2K)

Indicates remarks are continued on a second, third, or fourth form (2K). For manual reporting enter an "X".

CSMP SUMMARY (ENTERED ON 2K)

A condensed description of the problem. This entry is limited to 30 characters. The CSMP summary conveys to management the significance of the JCN (maintenance action). The CSMP summary is displayed on management reports, as opposed to the entire narrative of the "REMARKS" field which is not. If continuation sheets are used, the summary line will appear on the first page.

DATE (ENTERED ON 2L)

The Julian date the document is prepared.

DATE COMPLETED (ENTERED ON 2K)

The Julian date the work request is completed and signed off by the requesting ship.

DATE OF ESTIMATE (ENTERED ON 2K)

The Julian date the assisting activity completed the planning of the maintenance action.

DEADLINE DATE (ENTERED ON 2K)

The latest possible Julian date that outside assistance and ship's force work must be completed as determined by the originator. This entry may be used to indicate a completion date required to meet an operational commitment, or to allow another job to start. This is an optional entry.

DEFERRAL DATE (DEFER. DATE) (ENTERED ON 2K)

The Julian date of when the maintenance action was deferred. An example of a deferral action on 22 April 1994 would be: "4112".

DEFERRAL REASON (DFR) (ENTERED ON 2K)

A code which best describes the reason maintenance could not be performed at the time of deferral. Acceptable codes are:

Code	Deferral Reason
1	DUE TO SHIP'S FORCE WORK BACKLOG/OPERATIONAL PRIORITY. Within capability of ship's force to accomplish, but unable to do so because of ship's overall workload or operations.
2	LACK OF MATERIAL. Within capability of ship's force, but unable to accomplish due to lack of parts, tools, test equipment, etc., that are specified for use in repair work by the technical manual or drawing. NOTE: List the unavailable parts, tools, or test equipment and the technical manual and/or equipment drawing in Remarks.
3	NO FORMAL TRAINING ON THIS EQUIPMENT. Should be within capability of ship's force, but personnel responsible have no formal training in the maintenance of the equipment.
4	FORMAL TRAINING INADEQUATE FOR THIS EQUIPMENT. Should be within capability of ship's force, and personnel responsible have received formal training, but the training is considered inadequate.
5	INADEQUATE SCHOOL PRACTICAL TRAINING. Should be within capability of ship's force, and personnel responsible have received formal training, but practical maintenance aspects of training are considered inadequate.
6	LACK OF FACILITIES/CAPABILITIES. The ship is not allowed shop equipment or other facilities to accomplish; work is otherwise beyond expected capability of ship's force to accomplish.
7	NOT AUTHORIZED FOR SHIP'S FORCE ACCOMPLISHMENT. Directives of higher authority specify that the job will be done by other than ship's force.
8	FOR SHIP'S FORCE OVERHAUL OR AVAILABILITY WORK LIST. For jobs to be done by ship's force during forthcoming overhaul or availability.
9	LACK OF TECHNICAL DOCUMENTATION. Should be within capability of ship to accomplish but unable to do so because technical manuals, blueprints, drawings, etc., are not available.

Code	Deferral Reason
0	OTHER - OR NOT APPLICABLE. Explain in Remarks.

DEPARTMENT INITIALS (ENTERED ON 2K)

The initials of the department head indicating the document was screened.

DIVISION INITIALS (ENTERED ON 2K)

The initials of the division officer indicating the document was screened.

ENGINEERING OPERATIONAL SEQUENCING SYSTEM (EOSS) (ENTERED ON CK)

The Document Code and Control Number of the primary EOSS procedure that is affected by the configuration change.

EQUIPMENT IDENTIFICATION CODE (EIC) (ENTERED ON 2K AND CK)

A 7-character code that identifies the equipment. The first position identifies the system; the first and second characters together identify the subsystem; the third and fourth together identify the equipment category in that system. The remaining three digits provide greater definition of the applicable equipment part and are useful to the engineer. Where the EIC is known to more than four digits, it should be recorded at that level. EICs are listed in the SCLSIS Index Report or Ships' 3-M Reference CD-ROM/DVD.

If an equipment is not listed in the SCLSIS Index Report or the Ships' 3-M Reference CD-ROM/DVD, but it can be identified to the subsystem, use the subsystem identification, followed by two zeros. Example: An equipment identified as TRANSCEIVERS-COMMUNICATIONS, but not in the SCLSIS Index Report or the Ships' 3-M Reference CD-ROM/DVD, would be reported as "QD". If the equipment is identified only to the system, use the system identification, followed by three zeros.

EQUIPMENT NOUN NAME (ENTERED ON 2K AND CK)

The nomenclature/description of the equipment. This is the same nomenclature assigned to the equipment EIC. Standard abbreviations may be used. When recording the accomplishment of a SHIPALT, use the noun name from the record. If the maintenance action affects several components or systems, enter the name/designator of the highest assembly affected.

a. For HM&E, use the noun name (e.g., "MOTOR GENERATOR").

b. For electronics equipment, use the Army/Navy (AN) designation, or commercial model number (e.g., "AN/SPS-40D", "CY-4727/SPA-25", and "403-B").

c. For combat systems equipment, enter the nomenclature followed by the Mark (MK) and Modification (MOD), separated by "/" (e.g., "LAUNCH SYSTEM 36/1").

ESTIMATED MAN-DAYS (ENTERED ON 2K AND 2P)

Used by the repair activity, the total man-day estimate for all involved Work Centers to complete the job (if estimate is less than 1, enter "1").

ESTIMATED MAN-DAYS COST (ENTERED ON 2K AND 2P)

Used by the repair activity, the total man-day cost estimate for all involved Work Centers to complete the job (Estimated Man-Day entry x man-hour rate x 8 (working hours per day)).

ESTIMATED MAN-HOURS (EST. MHRS.) (ENTERED ON 2K AND 2P)

The man-hours estimated by the lead Work Center of the repair activity to complete the job.

ESTIMATED MATERIAL COSTS (ENTERED ON 2K AND 2P)

Used by the repair activity, the total material costs estimated to complete the job.

ESTIMATED TOTAL COST (ENTERED ON 2K AND 2P)

Used by the repair activity, the total cost estimated to complete the job (Estimated Man-Day Cost + Estimated Material Costs = Estimated Total Cost).

ESWBS EXPANDED SHIP WORK BREAKDOWN STRUCTURE

A 5 digit code reported by RUIC/LWC/AWC as applicable by the AWR. ESWBS identifies a 2k equipment being repaired for 'tended' UIC.

EXTERNAL WORK CANDIDATE IDENTIFIER

EXTERNAL WORK CANDIDATE IDENTIFIER UIC

EXTERNAL WORK CANDIDATE IDENTIFIER SYSTEM

EXTERNAL WORK CANDIDATE IDENTIFIER DATE

EXTERNAL WORK CANDIDATE IDENTIFIER SEQUENCE NUMBER

FINAL ACTION (ENTERED ON 2K)

A code that describes the final action taken by the repair activity to complete the job. Refer to the data element "ACTION TAKEN" used for maintenance action reporting for a complete list of codes. Action Taken code "8" is not applicable. In addition, the following codes can be used:

Code	Descriptions
5A	Partially Completed Alteration
5B	Fully Completed Alteration
5C	Fully Completed Equivalent to Alteration
5D	Alteration Directive Not Applicable
6	Rejected Work Request (add suffix below for reason)
A	Ship's Force/Standard Stock Item
B	Excessive Shop Workload/Insufficient Availability
C	Lack of Skills
D	Lack of Facilities
E	Lack of Test or Calibration Equipment
F	Lack of Parts/Material

Code	Descriptions
G	Lack of Documentation
H	Lack of Funds
I	Other (record the explanation in "Remarks")
J	Rescheduled Work Request Lack of Capabilities
K	Rescheduled Work Request Lack of Capacity
L	Rescheduled Work Request lack of Material

FIGURE OF MERIT (MFOM) V1

MFOM1 is computed off the maintenance factors of job, such as, priority code, status code, etc. The higher MFOM is, the more maintenance worth.

FIGURE OF MERIT (MFOM) V2

MFOM2 comes from Corona to RMAIS to 3-M. The lower MFOM is, the more maintenance worthy.

FIRST CONTACT/MAINTENANCE (MAN) (ENTERED ON 2K AND 2L)

The name of the senior person engaged in the maintenance action.

FUNDING ACTIVITY CODE

Funding Activity Sequence	Funding Activity Sequence	Funding Activity Code	Funding Activity Obs Flag	Funding Activity Text
28	28	AA	0	TYCOM CM Non-Nuclear
29	29	AB	0	TYCOM EM Non-Nuclear
30	30	AC	0	TYCOM Diving Services
31	31	AD	0	TYCOM Fleet Alteration Non-Nuclear
32	32	AE	0	TYCOM Funded Semat (ETC) Ships Force Assistance
33	33	AF	0	TYCOM Nuclear Maintenance/Repairs
34	34	AG	0	TYCOM Nuclear Alterations
35	35	AH	0	TYCOM Funded CNO Scheduled Availability Maintenance
36	36	BA	0	NAVSEA Nuclear Alteration
37	37	BB	0	NAVSEA Ordnance

Funding Activity Sequence	Funding Activity Sequence	Funding Activity Code	Funding Activity Obs Flag	Funding Activity Text
				Alteration (ORDALTS)
38	38	BC	0	NAVSEA Non-Nuclear Program Alteration
39	39	BD	0	NAVSEA-Unique-Non-Nuclear (includes ALT Development, Tech Support
40	40	BE	0	NAVSEA-Unique-Nuclear and/or Refueling
41	41	BF	0	Naval Shipyard Mission Funded
42	42	BG	0	SRF Mission Funded
43	43	CA	0	IMA Funded Maintenance
44	44	DA	0	Administrative Support Non Nuclear (pro-ratable) Including DSA Funded
45	45	DB	0	Administrative Support Nuclear (pro-ratable)
46	46	EA	0	Ship’s Force Maintenance/Repair
47	47	EB	0	Ship’s Force Self Help Habitability
48	48	FA	0	Technical Support: SPAWAR SSC, RMC (mission funded)
49	49	FB	0	Technical Support: SPAWAR (separate Funding only)
50	50	GA	0	VRT-N VRT-M, ALRE
51	51	HA	0	NAVAIR (CAFSU, NAWC, FAA, ASIR)
52	52	HB	0	NAEC Lakehurst NJ
53	53	HC	0	NAWC China Lake
54	54	HD	0	NAWC PT Mugu
55	55	HE	0	NAWC PAX River
56	56	HF	0	NAWCAD ST Indigoes MD
57	57	IA	0	NSWCCD/David Taylor
58	58	IB	0	NSWCCD/SESS
59	59	IC	0	NSWCCD/PHD
60	60	ID	0	NSWC Crane
61	61	IE	0	NSWC Panama City
62	62	IF	0	NSWC Newport
63	63	IG	0	NSWC Keyport
64	64	IH	0	NSWC Louisville
65	65	JA	0	SPAWAR (AIT)

Funding Activity Sequence	Funding Activity Sequence	Funding Activity Code	Funding Activity Obs Flag	Funding Activity Text
66	66	KA	0	ESU
67	67	0	0	OTHER – Explain In Remarks
68	68	VV	0	Visiting Ship Support Foreign Navy
999999	999999	?	0	Invalid

HSC HIERARCHICAL STRUCTURE CODE

Automatically filled in by system from equipment configuration files on 2K. If unknown leave blank on a CK."

HULL NUMBER (ENTERED ON 2K, CK, 2P AND 2L)

The ship type and hull number of the activity originating the maintenance action. Not required by activities other than ships.

ICMP LAST ACCOMPLISH DATE

IDENTIFICATION/EQUIPMENT SERIAL NUMBER (ENTERED ON 2K)

The identification or serial number (up to 12 characters) of the equipment or system on which maintenance is being deferred.

a. For electronics and combat systems equipment, use the Serial number from the equipment nameplate (e.g., for AN/SPS-10C Radar with serial number 48, use "48").

b. For HM&E, enter the ship's numbering system (e.g., for number 1A boiler, use "1A").

c. Where no specific identification or equipment serial number is given, or for photographic services, plaques, printing, cruise boxes, etc., enter "NA" (Not Applicable).

d. On items such as phones and fans, etc., list more than one item of the same type on a maintenance action; enter "VARIOUS".

e. If the serial number exceeds 12 characters, enter the words "SERIAL NUMBER" in the narrative, followed by the applicable number.

IMA REPAIR WORK CENTER

The lead Work Center at the IMA involved in the accomplishment of the maintenance. A 3- or 4-character code is used to uniquely identify the lead Work Center. Following is a list of the authorized IMA Work Center codes:

Repair W/C Code	Name	Abbreviated Name	Supply ID Code
01A	MDCO	MDCO	6D
01B	ARRS	ARRS	6D
01E	SRA OIC	SRA OIC	Z0
02A	Crane Services	Crane Services	2S
03A	OSH Office	OSH Office	3H
03T	Tender Repair Team	Tender Repair Team	
06A	Tool Room	Tool Room	6A
06B	Portable Tools	Portable Tools	6B
06M	Preventive Maintenance Group	Preventive Maint	6H
06N	Nuclear Temp Services	Nuclear Temp Serv	2T
08A	Floating Dry Dock	Floating Dry Dock	DA
10A	Repair Office/ARRS/MCO	Repair Office	6D
10B	Weapons Repair Office	Weapon Rep Office	AR
10C	Non-Nuclear Planning	Non-Nuclear Planning	6E
10D	Nuclear Planning	Nuclear Planning	6F
10E	Technical Library	Technical Library	6G
10J	RO Non-IMA GT30	RO Non-IMA GT30	6D
10K	WR Non-IMA GT30	WR Non-IMA GT30	AR
10L	ROVSS	ROVSS	6D
10N	Nuclear Tech Library	AW	
10S	Submarine Monitoring Maintenance and Support (SMMS) Performance Monitoring Team (PMT)	SMMS (NAVSEA)	6J
11A	Shipfitter	Shipfitter	7A
17A	Sheetmetal	Sheetmetal	7B

Repair W/C Code	Name	Abbreviated Name	Supply ID Code
25A	Gas Manufacturing	Gas Manufacturing	5A
25C	CO2 Recharge and Repair	CO2 Recharge/Repr	5C
25D	General Engineering Service	General Engnrg Svc	5D
26A	Welding Shop	Welding	7E
26B	Nuclear Welding	Nuclear Welding	7F
30A	Contracted Planning & Estimating	P&E	3D
31A	Inside Machine	Inside Machine	2A
31B	Engraving	Engraving	2B
31C	Governor Injector	Governor Injector	2C
31D	Valve Repair and Test Valve	2D	
31E	Internal Combustion Engine Repair	Intrnl Cmbstn Eng	2E
31F	Hydraulics Repair	Hydraulics	2F
31G	Pump Repair	Pump	2R
31H	ACFT L & R	ACFT L & R	AX
31M	Machinery R & R	Machinery R & R	AY
31T	Gas Turbine	Gas Turbine	2Q
31Z	Metal Build-up	Metal Build-up	2H
35A	Optical Repair and Overhaul	Optical	5E
35D	Watch and Clock Shop	Watch & Clock	5H
35E	Typewriter Shop	Typewriter	5J
37A	Print Shop	Print	31
38A	Outside Machine Shop	Outside Machine	2G
38B	Ordnance Repair, Test, and Align	Ordnance	5K
38C	P-250 Pump Shop	P-250 Pump Shop	1G
38D	Valve Barge	Valve Barge	1H
38N	Nuclear Repair	Nuclear Repair	2J
39A	Photographic Shop	Photographic	32
41A	Boiler Inspection and Repair	Boiler	2K
41B	Boiler-Outside Repair	Boiler-Outside Rpr	2L
51A	Electrical Repair	Electrical Repair	33
51B	Outside Electrical	Outside Electrical	34
51C	Meter Calibration	Meter Calibration	35

Repair W/C Code	Name	Abbreviated Name	Supply ID Code
51E	Battery Shop	Battery	36
51F	Gyro Inspection and Repair	Gyro	37
51G	Interior Communication Test and Repair	IC Interior Commun	38
51H	Cable Shop	Cable	39
51N	Nuclear Instruments	Nuclear Instruments	AU
56A	Pipe Shop	Pipe	7H
56B	Refrigeration and Air Conditioning Repair and Test	Refrig & Air Cond	2M
56C	Flexible Hose Test and Repair	Flexible Hose	7J
56N	Nuclear Piping	Nuclear Piping	7X
57A	Lagging and Pipe Covering Inspection and Repair	Lagging/Pipe Cover	7K
57B	Rubber and Plastic Forming Shop	Rubber and Plastic	7L
64A	Woodworking and Pattern Making Shop	Woodworking & Pattern	7M
64D	Drafting Shop	Drafting	7Q
64E	Key and Lock Shop	Key and Lock	5M
67A	Electronics Test, Repair, and Alignment	Electronics	41
67B	Electronics Calibration Lab	Electronic Cal Lab	42
67C	Crypto Repair and Test	Crypto Repair	43
67D	Teletype Repair	Teletype Repair	44
67E	Fire Control Test and Repair	Fire Control	AD
67F	Radiac Calibration and Repair	Radiac Calibration	5N
67G	Sonar Test, Repair, and Alignment	Sonar	5P
67H	Antenna Test, Repair, and Install	Antenna	45
67I	MSRA	MSRA	Z0
67J	Digi Inert Nav Aid Test and Repair	Digi Inert Nav Aid	AQ

Repair W/C Code	Name	Abbreviated Name	Supply ID Code
67K	Weapons Test Equipment, Repair and Calibrate	Weapons Test Equip	AP
67L	ADP/PC Repair	ADP/PC Repair	46
67M	PCB Repair	PCB Repair	47
67W	SLQ Repair	SLQ Repair	48
68A	Boat Repair	Boat Repair	7R
68B	Small Craft Support	Small Craft	7W
68C	Life Boat Repair (Inflatable)	Life Boat Repair	9N
71A	Paint and Sandblast	Paint and Sandblst	66
71B	Corrosion Control	Corrosion Control	7Y
71T	Tile & Plate Setter	Tile & Plate Setter	6M
72A	Riggers Support Activity	Riggers	7S
72B	Divers Support Activity	Divers	7T
72C	General Deck Service	General Deck Service	7U
72D	Weight Testing	Weight Testing	5Q
72E	Transportation	Transportation	6L
74A	Sail Loft and Canvas Shop	Sail Loft & Canvas	5R
81A	Foundry Operations	Foundry	2P
82A	Missile and Guidance Storage and Checkout	Missile/Guidnc Chk	AB
83A	Weapons Handling Inspection and Repair	Wpn Hndlg Insp & Rep	AJ
83B	Weapons Handling	Weapons Handling	AT
84A	Module Test and Repair Shop	Module Test & Repair	AC
84B	Ballistic FC Repair and Calibration	FC Ballistic Repr	AK
85A	Re-entry Body Receipt, Storage, and Maintenance (REB)	Re-entry Body (REB)	AL
91B	ASROC Overhaul, Test, Repair, and Stow	ASROC & ASTOR	AF
91C	Torpedo Mk 44, Mk 46, Mk 48, Test, Repair, and Stow	Torpedo	AA

Repair W/C Code	Name	Abbreviated Name	Supply ID Code
91D	SUBROC/TOMAHAWK Land Attack Missile System Nuclear	SUBROC Mk-14	AG
91E	Mk 48 Torpedo/Cruise Missile	Mk 48	AH
91Q	Weapons Quality Assurance	Wpns Quality Assur	AM
92A	Sound Analysis Service	Sound Analysis	5S
93A	Non-Destructive Testing	Non-Destructive, QA	62
93B	Quality Assurance Service	Qlty Assur Svc	63
94A	Nucleonics and Radcon Service	Nucleonics, Radcon	5T
95A	Water Chemical Lab	Water Chemical Lab	5V
95B	Spectrometer Lab Service	Test/Spectromtr Lab	5W
96A	Mechanical Standard	Mechanical Standards	5Y
97B	Aircraft Launch & Recovery (for SIMA Portsmouth use only)	ACFT L&R	1B
97C	Non-Skid Service Shop	Non-Skid Shop	1C
97D	Ground Support Equipment	Support Eqpt	1D
97E	Aviation Ordnance Shop	Aviation Ordnance	1E
97F	Aviation Fuels Shop	Aviation Fuels	1F
97J	Manlifts	Manlifts	4B
97M	Contractor Support	Yellow Gear	3D
97R	Helo Landing Syst Recovery Assist, Secure, Traverse	HLST/RAST	1R
97W	Weapons Elevator Support Unit	WESU	1W
970	Public Works	Public Works	Z0
973	Comm Elec Safety	Comm Elec Safety	Z0
974	Eng Elec Safety	Eng Elec Safety	Z0
981	Tiger Team	Tiger Team	Z0
982	Depot Tiger Team	Depot Tiger Team	Z0
983	DIRSSP	DIRSSP	Z0
990	Other Department	Other Dept	ZZ
991	Ship's Force (S/F)	Ships Force (S/F)	Z0
993	Commercial Industrial Services (CIS)	CIS	Z0

Repair W/C Code	Name	Abbreviated Name	Supply ID Code
999	Other (Non-IMA)	Other (Non-IMA)	ZZ
99B	Paint Locker	Paint Locker	6K
FCA	Field Calibration Facility (Gauge/Meters)	FCA	Z0
RD00	Repair Department (10A)	R00	DJ
RD01	Hull Systems Repair & Services	R01	DK
RD02	Mechanical Systems Repair Division	R02	DL
RD03	Electrical Systems Repair Division	R03	DM
RD04	Electronic Systems Repair Division	R04	DN
RD05	Combat Systems Repair Division	R05	DP
RD06	Nuclear Service and Reoaur Division	R06	DQ
WI05	ARMORY	ARMORY	DR
WR00	Weapons Repair Administration	W00	DC
WR01	Torpedo Repair	W01	DD
WR02	Fire Control Repair	W02	DE
WR03	Special Weapon Repair Ord Services at NSSF	W03	DF
WR04	Missile and Launcher Repair	W04	DG
WR05	Navigation Repair	W05	DH
WR06	Weapons Quality Assurance	W06	DI

IN PROGRESS (ENTERED ON SITE-SPECIFIC DETAIL WORK SHEET)

Coded information that indicates the progress of the job at different stages of accomplishment. Standard job progress reporting and monitoring is performed by each Work Center at the outside repair activity involved in the repair. Reported information includes "in-progress" information, which is coded as follows:

Code	Description
A	AWAITING PARTS/SUPPLIES/TOOLS
B	AWAITING TRANSPORTATION
C	AWAITING QA INSPECTOR
D	AWAITING NDT
E	AWAITING FIREWATCH
F	AWAITING ACCESS TO SHIP (QUARTER-DECK CLEARANCE)
G	AWAITING RIGGERS/CRANE SERVICES/SCAFFOLDING BARGE
H	MAKING SPECIAL TOOL/PART
I	AWAITING AWC/OTHER CRAFT
J	AWAITING TAG OUT
K	AWAITING ADDITIONAL REFERENCE MATERIAL

Code	Description
L	AWAITING SHIPS FORCE
M	SHIP'S DRILLS
N	SHOP EQUIPMENT INOPERATIVE
O	CHANGE IN WEATHER

Rework. Unplanned delay caused by the need to repeat previously accomplished work due to poor workmanship or the omission of work steps:

Code	Description
P1	FAILED TEST
P2	RE-LAP-RE-GRIND
P3	WRONG MATERIAL
P4	WRONG MEASURE
P5	MISCELLANEOUS

Change of Normal Method/Tools Not Used. Unplanned delay caused by the need to correct a deficiency that the normal shop method of repair could not or did not correct:

Code	Description
Q1	NEW SET-UP
Q2	PARTS FROZEN
Q3	DEPARTURE FROM SPECIFICATIONS
Q4	PART BUILD-UP

Code	Description
Q5	MISCELLANEOUS
R	OTHER THAN THE ABOVE

INSURV NUMBER (ENTERED ON 2K)

Number assigned by INSURV to the applicable deficiencies identified during the INSURV inspection. (Refer to Chapter 9)

INTEGRATED PRIORITY (ENTERED ON 2K)

A sequential number to indicate its priority relative to other deferred work for an availability.

INTERNAL WORK CANDIDATE IDENTIFIER

INTERNAL WORK CANDIDATE IDENTIFIER UIC

INTERNAL WORK CANDIDATE IDENTIFIER SYSTEM

INTERNAL WORK CANDIDATE IDENTIFIER DATE

INTERNAL WORK CANDIDATE IDENTIFIER SEQUENCE NUMBER

ISEA RECORD IDENTIFICATION NUMBER (RIN) (entered on 2K, CK)

2K BLK 28 Record Identification Number (RIN) identifies the component from the Coordinated Shipboard Allowance List (COSAL).

IUC/REPAIR ACTIVITY/TYCOM REMARKS (ENTERED ON 2P)

Remarks relating to the repair job by the IUC, the repair activity, or the TYCOM.

IUC SCREENING (ENTERED ON 2K)

Recommendation by the IUC or designated representative indicating the action to be taken using one of the screening codes listed under the data element "SCREENING (TYCOM)".

IUC SIGNATURE (ENTERED ON 2P)

The initials of the IUC indicating the document was screened and is recommended for accomplishment.

JOB CONTROL NUMBER (JCN) (ENTERED ON 2K, CK, 2P AND 2L)

The Job Control Number (JCN) is the key identifier for maintenance actions and related supply documents. The JCN is used to identify the maintenance action and to relate all of the parts used when a ship reports a maintenance action and it links all associated reporting of a maintenance action. The JCN is comprised of three blocks. Block 1 is the ship's Unit Identification Number (UIC) (5 numeric characters), Block 2 is the Work Center (WC) (see Work Center entry), and Block 3 is the Job Sequence Number (JSN) (see Job Sequence Number entry). It is also the link for associating up-line reporting of a maintenance action when more than one activity is involved. It is important that all activities involved continue to use the same JCN on all maintenance and supply documents that apply to that particular maintenance action.

JOB DESCRIPTION/REMARKS (ENTERED ON CK)

Any remarks relating to the accomplishment of the maintenance action being reported. In some cases, the alteration directive will specify that certain information be documented.

JOB ORDER NUMBER (ENTERED ON 2K)

The job order number assigned by the activity performing work.

JOB SEQUENCE NUMBER (JSN) (ENTERED ON 2K, CK, 2P, AND 2L)

A 4-character number assigned by the Work Center to the maintenance action, or assigned by the outside activity performing the work. This is a number assigned sequentially from the Ship's Work Candidate/Job Sequence Number (JSN) Log. The first position of the JSN is used to identify the tool or organization that created the 2K. In the case of activities other than the ship creating jobs for the ship, this first character will be an "Alpha" character. The Job Originator Table in the Maintenance and Modernization Business Unit (MMBU) available through the Naval Sea Logistics Center website under MMBU look up tables provides information on the "owner" of each "Alpha" character. The specific value contained within the first position of the JSN provides enhanced data mining capabilities and facilitates data aggregation and analysis.

References to “National” values indicate that, in accordance with SHIPMAIN direction, an Information Technology application has been identified as the only authorized tool that will create 2Ks continuing the respective Job Originator Code.

JULIAN DATE (ENTERED ON 2K, CK, 2P, AND 2L)

A 4-character entry composed of the last digit of the calendar year followed by the numerical day of the year (e.g., 1 January 1994 is "41" and 31 December 1993 is "3365").

KEY EVENT (ENTERED ON 2P)

An occurrence during a tended unit's availability which affects or is affected by the repair activity's productive effort; e.g., docking, undocking, boiler light-off, weapons handling, fuel/defuel, etc. Key events are to be identified by assigning a 2-digit numeric code to each event and assigning an abbreviation of 15 characters maximum to that code. When more than 99 key events are required, the code can be assigned using alphanumeric combinations. The Key Event code and definition is assigned and managed by TYCOM instruction. Repair activities must ensure continuity of schedules by using codes mutually agreed to by TYCOM representatives. Note: some automated systems allow for a four-digit code to be entered (refer to the TYCOM instruction).

KEY OPERATION (KEY OP) (ENTERED ON 2P)

Assigned numbers indicating the logical sequence of the task identified. For example:

Key Operation (K/O)	Task
01	Disconnect & Deliver
02	Disassemble
03	Replace Bearings
Etc.	Etc.

LEAD PLANNING & ESTIMATING CODE (ENTERED ON 2K)

The code assigned to the lead planning and estimating organization.

LEAD REPAIR WORK CENTER (LWC) (ENTERED ON 2K AND 2P)

The code of the lead repair Work Center assigned to the job. The first character of the code is left-justified.

The following codes indicate the IMA department to which the action Work Center is assigned; they are used to process IMA Performance Summaries at both IMA and TYCOM levels:

Department Key

A	=	Dry Dock
B	=	Other Departments
F	=	Special
K	=	Temporary IMA
L	=	Reservist
P	=	Civilians
R	=	Repair Department
Z	=	Other Activities

NOTE: Variable department names may be assigned as directed by the TYCOM using the letters "G", "H", and "J".

Refer to data element "IMA Repair Work Center" for a list of authorized IMA repair Work Center codes.

LOCATION (ENTERED ON 2K AND CK)

The location of the equipment on which maintenance is required or was performed.

COMPARTMENT. Enter the compartment number identified on the compartment check-off list.

DECK-FRAME-SIDE. Enter the deck, frame, and side that best describes the location of the equipment.

If neither the compartment nor the deck-frame-side is appropriate, enter the name of the location (e.g., "FANTAIL", "FLIGHT DECK").

For submarines use standard abbreviation for locations (e.g., "OPSUL").

For shipboard locations, see General Specification for Ships of the U.S. Navy (NAVSEA PUB-AA-SPN 010/GEN SPEC) (NOTAL).

MAINTENANCE INDEX PAGE NUMBER (MIP) (ENTERED ON CK)

The MIP number covering the affected equipment. For like equipment installations, i.e., exchanges, enter the MIP covering the deleted equipment. For new installations, enter the MIP number when available; if not available, enter "NA".

MAN-HOURS EXPENDED (ENTERED ON 2K)

The man-hours expended on the last day the repair Work Center is involved in the work request (NOT the total man-hours of the work request).

MASTER JOB CATALOG NUMBER (MJC)

MJC are 14-position SF/IMA routines for repetitive tasks.

METER READING (M/R) (ENTERED ON CK)

Used to indicate if the equipment or any of the equipment components/subunits of the equipment being reported have time meters installed.

METER READING (M/R) (ENTERED ON 2K)

(An expected entry for Selected Level Reporting (SLR) Level 1/Level 2 equipment.) The meter reading (to the nearest whole hour) at the time of failure. If the equipment has more than one meter, designate the meter being recorded in "REMARKS" using the letters "METRED" followed by the meter designator. An asterisk (*) must precede and follow meter designation as shown in the example below. The required meter is that associated with the functional major unit that failed.

Example: *METRED-1A2M1*

MRS SEVERITY CODE

NAMEPLATE DATA (ENTERED ON CK)

Data that helps identify the equipment. Enter information available from the following list:

Contract Number or Procurement Document Number.

Part Number/Model Number/Drawing Number.

Commercial and Government Entity (CAGE) code, or if not available, the name and address of the manufacturer.

Any additional information, such as physical characteristics and manufacturer's identification that is readily available and provides a description of the use or operation of the component.

NEXT HIGHER ASSEMBLY (ENTERED ON CK)

The nomenclature and serial number (SN) of the Next Higher Assembly (NHA) in which the equipment/component identified is a part of. If the SN is unavailable, use the locally assigned NHA number. The NHA is usually identified in the technical manual and the COSAL.

NORMALLY DONE BY (ENTERED ON 2P)

Indicates where this particular type maintenance is normally performed (S/F, IMA, Depot), which allows the collection of data for evaluation of IMA costs relative to other maintenance activities.

OMMS NG SOFTWARE RELEASE NUMBER

Identifies the Release Number of the software.

PERIODICITY (ENTERED ON 2P)

Identifies the number of months between which periodic maintenance requirements are to be performed.

PERIODIC MAINTENANCE REQUIREMENT (ENTERED ON 2P)

The code of a specific periodic maintenance requirement (e.g., "MRC-G40 A1"), a Planning and Engineering for Repairs and Alterations (PERA) code, or a Metrology Automated System for the Uniform Recall and Reporting (MEASURE) code identifying a periodic maintenance requirement.

PRE ARRIVAL/ARRIVAL CONFERENCE ACTION/REMARKS (ENTERED ON 2K)

Remarks provided by the repair activity determined necessary to facilitate repairs or that would require attention of the originating activity.

PRIORITY (PRI) (ENTERED ON 2K)

Identifies the priority of the deferred maintenance action:

Code	Description
1	MANDATORY. Critical safety or damage control item. Required for performance of ship's mission. Required to sustain bare minimum acceptable level of human needs and sanitation.
2	ESSENTIAL. Extremely important safety or damage control item. Required for sustained performance of ship's mission. Required to sustain normal level of basic human needs and sanitation. Required to maintain overall integrity of ship or a system essential to ship's mission. Will contribute so markedly to efficient and economical operation and maintenance of a vital ship system that the pay-off in the next year will overshadow the cost to accomplish. Required for minimum acceptable level of preservation and protection.
3	HIGHLY DESIRABLE. Important safety or damage control item. Required for efficient performance of ship's mission. Required for normal level of human comfort. Required for overall integrity of equipment or systems

Code	Description
	that are not essential, but are required as backups in case of primary system failure. Will contribute so markedly to efficient and economical operation and/or maintenance of a vital ship system that the payoff in the next year will at least equal the cost to accomplish. Will effect major reduction in future ship maintenance in an area or system that presently cannot be maintained close to acceptable standards. Required to achieve minimum acceptable level of appearance.
4	DESIRABLE. Some contribution to efficient performance. Some contribution of normal level of human comfort and welfare. Required for overall integrity of other than an essential system or its backup system. Will contribute to appearance in an important area. Will significantly reduce future maintenance.

PRIORITY FLOW CHART

See Figure A - 1

Unit Commanders must be aware that alerting seniors to the operational limitations of their units, brought about by equipment casualties or degradation is as important as expediting receipt of replacement parts and obtaining technical assistance. Both of these functions of maintenance and casualty reporting serve extremely beneficial purposes. They provide necessary information, not only in the realm of command and control of US Navy forces, but also maintaining the unit in a truly combat ready status. Unit commanders will not delay or withhold reports in order to artificially maintain the units readiness rating at a higher than actual level. Support from every level, including intermediate and group commanders, is essential in order to maintain the highest level of combat readiness throughout the Navy. Casualty reports will be made as required based on the command material condition. Priority for the work candidate will be set based upon the material condition and current situation of the command vice casualty reporting requirements. All priority changes or any updates to the work candidates will be documented in the block 35 recommended solution block of the work candidate. Every work candidate starts with a priority of four (4). To raise the priority

answer the questions, follow the flow chart. Every priority level increases will be explained in the block 35 recommended solutions block of the work candidate.

DOES THIS WORK CANDIDATE HAVE A DIRECT EFFECT ON ANY OF THE SHIPS' MISSIONS, MISSION SUPPORT AND BACK UP SYSTEMS OR HAVE AN IMPACT ON THE TRAINING?

DOES THE COMMAND REQUIRE THIS?

Does this have a direct effect a system that as described in OPNAVINST 3502 series as part of the ships missions?

Does this directly affect the ships ability to support assigned missions?

Does this directly affect the ability of the ship to receive and/or conduct training?

As set by the Maintenance team, Type Command and/or unit Commanding Officer this is required?

Yes answer to any of the questions, THIS IS PRIORITY 1 MANDATORY, explain in the block 35 recommended solutions block of the work candidate.

FOLLOW GUIDANCE IN NWP 1-03.3, 1-03.1 AND NTTP 1-03.3A IF OPERATIONAL REPORTING IS REQUIRED, CASREP INFORMATION WILL BE DOCUMENTED IN THE WORK CANDIDATE

IS THIS AN IMPORTANT, EXTRMELY IMPORTANT OR CRITICAL SAFETY /DAMAGE CONTROL ITEM?

DOES THE DEPARTMENT REQUIRE THIS?

IAW OPNAVINST 5100 series does this qualify as important, extremely important or critical safety item?
Is this an important, extremely important or critical damage control item?

Yes answers to any of the questions, THIS IS PRIORITY 1 MANDATORY explain in the block 35 recommended solutions block of the work candidate.

FOLLOW GUIDANCE IN NWP 1-03.3, 1-03.1 AND NTTP 1-03.3A IF OPERATIONAL REPORTING IS REQUIRED, CASREP INFORMATION WILL BE DOCUMENTED IN THE WORK CANDIDATE

IS THIS REQUIRED FOR A BARE MINIMUM OR NORMAL LEVEL OF HUMAN NEEDS AND SANITATION AND/OR COMFORT? THE MAINTENANCE TEAM HAS DETERMINED A VERY HIGH NEED?

IAW OPNAVINST 5100 series does this qualify as a bare minimum or normal level of human needs and sanitation and/or comfort? The Maintenance team, Type Command and/or unit Commanding Officer or Department Head and explained in the block 35 recommended solutions block of the work candidate?

Yes answers to any of the questions, THIS IS PRIORITY 2 ESSENTIAL explain in the block 35 recommended solutions block of the work candidate.

FOLLOW GUIDANCE IN NWP 1-03.3, 1-03.1 AND NTTP 1-03.3A IF OPERATIONAL REPORTING IS REQUIRED, CASREP INFORMATION WILL BE DOCUMENTED IN THE WORK CANDIDATE

WILL THIS PROVIDE FOR A MAJOR REDUCTION IN FUTURE SHIPS' MAINTENANCE AND/OR ECONOMICAL OPERATION OF THE SHIP **OR** IS A PLANNED & APPROVED MODERNIZATION OR ALTERATION JOB?

IS THIS REQUIRED FOR MINIMUM ACCEPTABLE LEVEL OF PRESERVATION?

As a determination of Maintenance team, Type Command and/or unit Commanding Officer and explained in the block 35 recommended solutions block of the work candidate?

Planned and approved modernization by TYCOM for Fleet Alts or PEO Ships for Programmed Alterations?

Yes answers to any of the questions, THIS IS PRIORITY 2 ESSENTIAL explain in the block 35 recommended solutions block of the work candidate.

FOLLOW GUIDANCE IN NWP 1-03.3, 1-03.1 AND NTTP 1-03.3A IF OPERATIONAL REPORTING IS REQUIRED, CASREP INFORMATION WILL BE DOCUMENTED IN THE WORK CANDIDATE

IS THIS REQUIRED FOR MINIMUM LEVEL OF APPEARANCE **OR** PART OF ASSESSMENT TASKING?

DOES THE DIVISION REQUIRE THIS?

recommended solutions block of the work candidate?

Yes answers to the questions, THIS IS PRIORITY 3 HIGHLY DESIRABLE.

FOLLOW GUIDANCE IN NWP 1-03.3, 1-03.1 AND NTTP 1-03.3A IF OPERATIONAL REPORTING IS REQUIRED, CASREP INFORMATION WILL BE DOCUMENTED IN THE WORK CANDIDATE:

PRIORITY 4 IS THE LEVEL ALL WORK CANDIDATES START WITH, during the review and approval process the DIVISION OFFICER or Divisional LCPO may raise the priority to a 3 “HIGHLY DESIRABLE” but no higher. The reason for the priority increase will be explained in the block 35 recommended solutions block.

The next level of review and approval is the DEPARTMENT HEAD who may raise the priority to 2 ESSENTIAL. The reason for the increase will be explained in the block 35 recommended solutions block.

PRIORITY 1 MANDATORY is assignable by the 3M coordinator upon direction of the Maintenance Team and/or the unit COMMANDING OFFICER.

QUALITY ASSURANCE REQUIREMENTS (ENTERED ON 2P)

Identifies the specific planning actions, work controls, and auditable records in support of individual TYCOM management needs. These special requirements are indicated by an "X" placed in the appropriate reporting field.

QUANTITY (ENTERED ON CK)

The number of like equipment identified in the Work Center that was removed, installed, or modified to accomplish the maintenance action. If the Component Serial Number field has an entry, the quantity entered must be "1". Only one piece of equipment can be uniquely identified by a single serial number.

RATE (ENTERED ON 2K)

The rank/rate of the first contact/maintenance person. The following examples apply:

Rank/Rate Code	Entry
Officers	OFF
ET1	ET1
Civilian	CIV
GMG2	GMG2
FTGSN	FTGN
EMFN	EMFN
FN	FN

RECORD IDENTIFICATION NUMBER (RIN) (ENTERED ON CK)

Identifies a specific equipment record within the SNAP, WSF, and SCLSIS databases. For deletions, removals, and modifications, enter the RIN for the component as listed in Part I, Section C of the COSAL. For installations and additions, leave applicable fields blank.

REMARKS/DESCRIPTION (ENTERED ON 2K AND CK)

a. FOR A MAINTENANCE ACTION (2K). Provide information that describes the problem and what caused the failure (if known); followed by what needs to be done to correct the problem. Separate the problem description and corrective action entries with three X's (i.e., "WHAT IS WRONGXXXWHAT MUST BE DONE"). If reporting the completion of a maintenance action, the field should describe the trouble and the corrective action. If necessary, this field is used to record safety related data and for expected SLR Level 2 data.

b. For SLR Level 2 reporting the following narrative information is expected:

(1) Any problems encountered which hindered or delayed completion of the maintenance action.

(2) Reference Designators/ Part Serial Numbers - Reference Designators and/or Serial Numbers of removed and installed parts.

(3) Symptoms of the failure.

(4) Logistics Deficiencies - part number(s) of parts replaced or causing logistic delays (if the part was obtained by cannibalization identify source).

(5) Description of difficulties with or deficiencies of fault isolation procedures, maintenance documentation, or test equipment.

(6) Full description of multiple events within a maintenance action.

(7) Any other helpful information concerning the event.

c. For SLR Level 3 Specialized Reporting the data will be in a structured-narrative format as designed in a unique template.

d. FOR A CONFIGURATION CHANGE (CK). Enter information that describes the accomplishment of the action. Occasionally, alterations specify that certain information be documented. If an "X" is entered in the M/R field, identify each equipment and enter "M/R" followed by the time meter reading.

REMARKS/SKETCHES (ENTERED ON 2L)

Required amplifying information related to a maintenance action. Include drawings and sketches, or multiple item serial numbers and locations for which identical maintenance requirements exist from an outside activity.

REPAIR ACTIVITY ACTION TAKEN

A code describing action taken to complete a MA at SF or IMA level. Some code values are applicable to both SF & IMA; & some, unique to SF only or IMA only.

REPAIR ACTIVITY COMPLETION DATE

The date when the IMA's completed all maintenance work.

REPAIR ACTIVITY UIC (ENTERED ON 2K)

The UIC of the activity performing work for the originating ship.

REPAIR WORK CENTER (RWC) (ENTERED ON 2K)

Used by the repair activity for internal planning and scheduling, a 3 or 4-character code identifying the lead Work Center assigned to the job.

R/M (Maintenance Indicator) (ENTERED ON 2K)

Either an "R" or "M", used by INSURV, which identifies equipment that shows low reliability or unusual maintenance. "R" indicates low reliability, requiring frequent corrective maintenance; "M" indicates poor maintainability, requiring unusual maintenance efforts due to installation or design.

S (Safety Identifier) (ENTERED ON 2K)

The code "S", used by INSURV to identify those discrepancies which might cause injury to personnel or material damage.

SAFETY HAZARD (ENTERED ON 2K)

A code number selected from the Risk Assessment Codes (RAC) that describes a problem or condition which has caused, or has the potential to cause injury to personnel and/or damage to material, enter the applicable RAC described in codes "1" through "5". If the documented maintenance action is not safety

related, leave blank. If a "0" is entered, an explanation in block 35 is not required and the maintenance action should not be routed to the Safety Officer. All other entries in this block require an explanation in block 35.

Code	Risk Assessment Description
1	CRITICAL SAFETY OR HEALTH DEFICIENCY-CORRECT IMMEDIATELY. This category identifies deficiencies which present a critical safety hazard to personnel or machinery, or a health hazard to personnel, and which must be corrected immediately. This code is used for items such as electric shock hazards, inoperative interlocks or safety devices, missing or damaged lifelines, inoperable escape scuttles, refrigerants (air conditioning or refrigeration) leaking into confined spaces, leaking components containing PCBs, and the like. All efforts must be exerted to correct these items prior to any other maintenance deficiencies. Suspension of use of the equipment/system/space is mandatory.
2	SERIOUS SAFETY OR HEALTH DEFICIENCY-SUSPENSION OF EQUIPMENT/SYSTEM/SPACE USE IS REQUIRED. This category deals with serious safety hazards to personnel or machinery, or health hazards which must be corrected prior to resuming use of the equipment/system/space.
3	MODERATE SAFETY OR HEALTH DEFICIENCY-WAIVER OF EQUIPMENT/SYSTEM/SPACE USE IS GRANTED PENDING CORRECTION OF THE ITEM. This category is used in cases where the equipment/system/space can be operated or utilized in a satisfactory manner without greatly risking physical injury, serious damage to the equipment/system/space, or greatly risking the health of personnel.
4	MINOR SAFETY OR HEALTH DEFICIENCY. This is a category of safety or health deficiencies which must be corrected when resources become available.
5	NEGLIGIBLE SAFETY OR HEALTH DEFICIENCY. This category identifies deficiencies which are noted for record purposes and may be corrected when other work is accomplished on the equipment/system/space.
X	SAFETY RELATED INDICATOR
0	MAINTENANCE ACTION IS NOT SAFETY RELATED.

NOTE: Codes "6" through "9" may be locally assigned by TYCOMs for additional safety codes required.

A brief explanation must be included in the Remarks/ Description field. For example: "RE-INSPECTION OF SEPARATOR FOR PRESENCE OF OIL AFTER RINSE. MRC A-27 EVIDENTLY NOT DONE. PRESENCE OF OIL RESULTED IN FIRE IN HP AIR SYSTEMS WHEN COMPRESSOR OPERATED UNDER LOAD. FIRE BADLY BURNED VALVE AHP-287, REQUIRING REPLACEMENT." The ship's 3M System Coordinator will forward a copy of all OPNAV 4790/2K documentation having an entry in this field to the safety officer for review.

SCHEDULED COMPLETION DATE (ENTERED ON 2K AND 2P)

The Julian date on which all work on the job is scheduled to be completed by the activity assisting the originating ship.

SCHEDULED START DATE (ENTERED ON 2K AND 2P)

Used by the repair activity, the Julian date on which work on the job is to begin.

SCREENING ACTION (ENTERED ON 2P)

Appropriate action to be taken to accomplish the maintenance as directed by the TYCOM. The field may also be used by the IUC, but the TYCOM representative's decision has precedence. The IUC/TYCOM representative must indicate the level at which the maintenance, if approved, is to be done.

SCREENING (IUC) (ENTERED ON 2K)

The intermediate unit commander (IUC) or designated representative recommended action to be taken using one of the codes listed below under SCREENING (TYCOM). The IUC is that officer in the chain of command between the ship and the TYCOM.

SCREENING (TYCOM) (ENTERED ON 2K)

The action to be taken as determined by the type commander (TYCOM) or designated representative. Acceptable screening codes are:

Code	Description
1	Depot (shipyard or ship repair facility) Accomplish
1A	Depot Assisted by Ship's Force
1S	Ship to Shop
1M	Accomplish with Modification
2	Intermediate Maintenance Activity (IMA) (tender/repair ship, etc.) Accomplish
2A	IMA Assisted by Ship's Force
2S	Ship to Shop
2M	Accomplish with Modification
3	TYCOM Support Unit (TSU) (floating dry dock, etc.) Accomplish or Technical Assistance from NAVUNDERSEAWARFARCENDET/Regional Maintenance Centers/Contractor Representative
3A	TSU Assisted by Ship's Force
3S	Ship to Shop
3M	Accomplish with Modification
4	Ship's Force Accomplish
5	Deferred
5A	Insufficient Time in the Availability to Complete the Task
5B	Lack of Shipyard Capability
5C	Lack of Material
5D	Lack of Funds
5E	Not Required During this Availability
5F	General
6	Not Authorized
6A	Not Technically Justified
6B	Covered by an Existing Ship Alteration
6C	Duplicate of Another Job Control Number (JCN)
6D	Not Cost Effective
6E	General
8*	Disapproved
9**	Remove from Current Ship's Maintenance Project (CSMP). Pass to history (to be assigned by TYCOM only)

* This screening code disapproves the accomplishment of a work item by an outside activity. It does not prevent entry of the deferral into the CSMP, which is the decision of the commanding officer.

** This screening code is restricted to the removal of INSURV items from the CSMP for which, in the opinion of the ship's IUC and TYCOM, the ship has no responsibility for accomplishment.

SECAS OFFICE USE (ENTERED ON CK)

No longer in use.

SECOND CONTACT/SUPERVISOR (ENTERED ON 2K AND 2L)

The supervisor of the first contact/maintenance person indicating he screened the maintenance action entry for completeness and accuracy.

SELECTED EQUIPMENT LIST (ENTERED ON 2K)

Selected equipment under an intensive management program requiring additional usage data to be collected. See data element "REMARKS/DESCRIPTION" for reporting requirements.

SERVICE APPLICATION CODE (SAC) (ENTERED ON CK)

A code used to group equipment, components, assemblies, etc., according to a particular system or service application on-board ship. This code is similar to the HSC in purpose, but does not provide a hierarchical structure. The SAC is a code assigned by the supply department.

SHIP'S FORCE MAN-HOURS (S/F MHRS) (ENTERED ON 2K)

The total man-hours (to the nearest whole hour) that ship's force used doing the maintenance after submitting the deferral. It includes witnessing of tests, and those man-hours expended in reinstallation, test, documentation, etc. Documentation time cannot exceed "1" hour.

SHIP'S FORCE MAN-HOURS EXPENDED (S/F MHRS. EXP.) (ENTERED ON 2K AND CK)

a. FOR A MAINTENANCE ACTION (2K). The total man-hours (to the nearest whole hour) used by all Work Centers in the maintenance action up to the deferral time; include documentation time (should not exceed 1 hour).

b. FOR A CONFIGURATION CHANGE (CK). The total number of man-hours expended by ship's force (and not previously reported) in completing and documenting the maintenance action (documentation time should not exceed 1 hour). Man-hours expended by other than ships force are to be documented separately.

SHIP'S FORCE MAN-HOURS REMAINING (S/F MHRS. REM.) (ENTERED ON 2K)

The ship's force man-hour estimate (to the nearest whole hour) remaining to complete the maintenance action. If TYCOM allows an automatic close out of the deferral by the IMA, enter "AUTO"; this is a request to the IMA to complete the maintenance action with no further documentation from the shop after the job has been accepted by the originator (authorized signature). If the originating ship does not receive CSMP support from the IMA doing the work, do not use the AUTO close out feature.

SHIP'S NAME (ENTERED ON 2K, CK, 2P, AND 2L)

The name of the activity originating the maintenance action.

SHIP’S RECORD IDENTIFICATION NUMBER (RIN) (entered on 2K, CK)

2K BLK 28 Record Identification Number (RIN) identifies the component from the Coordinated Shipboard Allowance List (COSAL)

SHIP'S UNIT IDENTIFICATION CODE (UIC) (ENTERED ON 2K, CK, 2P, AND 2L)

The 5-digit UIC of the activity initiating the maintenance action. The Navy Unit Identification Code Listing is available from: http://doni.daps.dla.mil/sndl.aspx. For service craft or boats without a UIC use the UIC of the parent activity.

FOR OTHER THAN U.S. NAVY SHIPS - The UIC for other than U.S. Navy ships will have an "A" as the first character followed by a sequential number related to the number of foreign units in availability.

SPECIAL DATA (ENTERED ON 2P)

Data element currently not assigned for use. Available for future expansion.

SPECIAL PURPOSE (ENTERED ON 2K)

A code used to indicate quality control and quality assurance standards are required. Refer to TYCOM instructions for additional information relative to these entries.

Enter the code in the designated field "A" through "L" as follows:

Field A The department head will enter the KEY EVENT code from the ISIC provided Key Event Schedule.

Field B Submarines enter code "SS" if the job requires work within the SUBSAFE boundaries or involves SUBSAFE materials (Refer to CSL/CSP INST 4790.16 and JFMM Vol V Part 1 para. 8.2.5e). Surface Ships may enter S1 for "PARTS ON HAND/PARTS NOT REQD," S2 for "PARTS ON ORDER-DEF DEL DT," S3 for "CONT PROCURE PARTS," S4 for "WORK COMPL PREVIOUSLY."

Field C Enter the code "L1" if the job requires work within Level I boundaries or involves Level I material. (Refer to CSL/CSP INST 4790.16 and JFMM Vol V Part 1 para. 6.3.1.3 & 6.3.1.4).

Field D Enter the code "08" if the job is associated with nuclear equipment. (Refer to NAVSEAINST 9210.4A (NOTAL).)

Field E Enter the code "RC" if the job requires radiological controls (RADCON). (Refer to NAVSEA Technical Publication S9213-33-MMA-000/(V).)

Field F Enter the code "DD" if the job requires dry docking to accomplish.

Field G Enter the code "NC" for critical noise deficiencies or "NP" for potential radiated noise deficiencies.

Field H The following codes are used in MFOM VSB for work screening: GC (Contract), IC (Indefinite Delivery,indefinite Quantity), CC (Commercial Industrial Services), RC (Regional Maintenance Center Contracting Officer), TC (Type Commander Contracting), BC (Blanket Purchase Agreement/Basic Ordering Agreement), TV (Tanks & Voids), CS (Crane Services), NS (NAVSEA), DV (Diver Services), or AC (AVCERT).

Field I Reserved for future use.

Field J Reserved for future use.

Field K Enter the appropriate code: FB for Fly By Wire Certification Boundary (FBW Certification Blue Boundary), SF for Submarine Flight Critical Component (SFCC Red Boundary), or DS for Deep Submergence System-Scope of Certification (DSS-SOC).

Field L Enter the code assigned to the visiting activity. This will identify the visiting activity as the originator of the deferral. Information reported as directed by the cognizant TYCOM.

SPECIAL REQUIREMENTS (ENTERED ON 2P)

a. KEY EVENT. 2-digit number identifying an event which influences a job or is influenced by the completion of a job, (e.g., job requiring completion before undocking). Blank indicates that the job is not associated with a key event.

b. SPECIAL INTEREST. A field used to indicate the job has been selected for job management reports, and identifying the job as having significant management interest. An "X" is the common entry for this field.

c. DRY DOCK REQUIRED. A field used to show that the requested maintenance requires the ship to be dry docked. An "X" is the common entry for this field.

d. PRE-OVERHAUL TEST REQUIRED. A field used to identify a specific test required prior to an equipment or ship overhaul. An "X" is the common entry for this field.

e. POST-OVERHAUL TEST REQUIRED. A field used to identify that a test must be completed after equipment or ship overhaul. An "X" is the common entry for this field.

f. DEPARTURE REQUIRED. A field used to indicate that if the maintenance is not accomplished to specifications, notice of the departure must be sent to the TYCOM. An "X" is the common entry for this field.

STATUS (STA) (ENTERED ON 2K)

A code that describes the effect of failure or malfunction on the operational capability of the equipment or system when the need for maintenance was first discovered:

Code	Description
1	Operational
2	Non-Operational
3	Reduced Capability
0	Not Applicable (use if reporting printing services, etc.)

SUFFIX (ENTERED ON 2K)

Used by INSURV to insert additional required numbers between sequential numbers.

TASK (ENTERED ON 2P)

The description(s) of the task(s) for which the "LEAD" and "ASSIST" repair Work Center(s) identified are responsible.

TECHNICAL DOCUMENTATION (ENTERED ON 2P)

Blueprints, technical manuals, etc., which may be useful to the IMA in providing required assistance. Indicate with an "X" if the publications are held by the tended unit or the IMA.

TECHNICAL MANUAL (TM) NUMBER (ENTERED ON CK)

The TM number covering the component. For removals and modifications enter the appropriate TM number for the equipment.

For like equipment installations (i.e., exchanges), enter the TM number of the deleted equipment. For new installations, enter the TM number covering the component. If unavailable, enter "NA".

TROUBLE ISOLATION (TI) (ENTERED ON 2K)

A single numeral (1-9) to indicate, to the nearest 10 percent, the percentage of active maintenance expended in troubleshooting. If no troubleshooting is involved, enter "f". Examples: "2" = 20%, "3" = 30%, "7" = 70%, etc.

TYCOM AUTHORIZATION (ENTERED ON 2K)

Signature/entry of the TYCOM representative screening deferrals.

TYCOM (SCREENING) (ENTERED ON 2K)

Refer to data element SCREENING (TYCOM).

TYCOM SIGNATURE (ENTERED ON 2P)

Signature of the IUC and/or TYCOM representative indicating the maintenance request has been screened.

TYPE OF AVAILABILITY (T/A) (ENTERED ON 2K)

Type of availability recommended for performance of a deferral.

Code	Description
1	Depot (shipyard or ship repair facility) OMMS-NG displays “Depot”.
2	Intermediate Maintenance Activity (tender, repair ship, etc.) OMMS-NG displays either “Fleet Repair Center” or “Regional Repair Center”.
3	Fleet Technical Support. TYCOM Support Unit (floating dry dock, etc., or technical assistance from NAVUNDERSEAWARCEN DETACHMENT, Regional Maintenance Centers, or contractor representative) OMMS-NG displays “Fleet Technical Support”.
4A	Ship's Force Originating Work Center. OMMS-NG displays “Originating Work Center”
4B	Ship's Force Organizational Level. OMMS-NG displays “Organizational Level”.

U (Mission Degrading) (ENTERED ON 2K)

Used by INSURV, field identifies certain deficiencies which are considered as preventing the ship from carrying out some part of its mission.

UNIT IDENTIFICATION CODE (UIC) (ENTERED ON 2K, CK, 2P, AND 2L)

Identifies the Unit Identification Code of the activity originating the maintenance action. For service craft or other boats without their own UIC, use the UIC of the parent activity.

WHEN DISCOVERED (WND) (ENTERED ON 2K)

Identifies when the need for maintenance was discovered.

Code	Description
1	Lighting Off or Starting
2	Normal Operation
3	During Operability Tests
4	During Inspection
5	Shifting Operational Modes
6	During PMS
7	Securing
8	During AEC (Assessment of Equipment) Program
9	No Failure, PMS Accomplishment Only
0	Not Applicable (use when reporting printing services, etc.)

WHEN DISCOVERED DATE (ENTERED ON 2K)

The Julian Date when the equipment of the system failure was discovered.

WORK CENTER (WC) (ENTERED ON 2K, CK, 2P, AND 2L)

Two basic types of Work Center codes exist. Their definition and application are as follows:

a. SHIPS. Ships use a 4-position Work Center code. The first two positions identify the Department and Division. The last two positions identify the Division Work Center.

b. REPAIR DEPARTMENTS OF TENDERS, RMCs, AND OTHER IMAs. These organizations use a 3-position Work Center code to identify the repair shops (e.g., "10A", "67A", "91A", etc.).

See data element "IMA Repair Work Center" for a list of authorized IMA repair Work Center codes.

WORK REQUEST ROUTINE (ENTERED ON 2K)

The appropriate Expanded Ship Work Breakdown Structure (ESWBS), Ship Work Breakdown Structure (SWBS), Ship Work Authorization Boundary (SWAB), or Ship Work Line Item Number (SWLIN), as directed by the TYCOM. This entry is made to integrate the deferral into applicable work packages.

YYMM ISSUED (ENTERED ON 2P)

Four numbers used to identify the year and month during which the periodic maintenance requirement entered was issued. The first two digits identify the year and the last two digits identify the month.

APPENDIX B

SHIP’S 3-M FORM PREPARATION INSTRUCTIONS

APPENDIX B - SHIP'S 3-M FORM PREPARATION INSTRUCTIONS

B-1 CONFIGURATION CHANGE FORM (OPNAV 4790/CK)

a. The OPNAV 4790/CK Form is used to report completion (or partial completion) of alterations, maintenance actions that resulted in a configuration change, and to correct discrepancies and errors in the configuration files.

b. Three blocks at the top of the form are used to specify what type of action is being reported (a configuration file correction "CONFIG FILE CORR" a completed maintenance action that had no prior deferral "COMP M/A NO DEFL"). The rest of the form is separated in to four sections.

B-1.1 Section I – Job Identification

This section identifies the system or equipment involved in the configuration action. If a component/sub-unit are being reported, the Job Identification in this section must be that of the highest assembly. Components/sub-units are reported in Section III.

B-1.2 Section II – Job Description/Remarks

This section contains remarks relating to the accomplishment of the action. In some cases, an alteration directive will specify that certain information be documented.

B-1.3 Section III – Component Configuration Change Identification

This section contains information on the component(s) affected by the maintenance (configuration change) action. The Job Identification Level (section I) will be completed to the highest assembly directly affected by the change. The sub-units (components) are reported to the individual Allowance Parts List (APL) level in SECTION III. An OPNAV 4790/CK allows only one component (sub-unit) to be reported per form. When multiple sub-units need to be reported, "CONTINUATION SHEET (S)" OPNAV 4790/CK(C), THAT CAN REPORT UP TO FOUR COMPONENTS PER Form can be attached. The same Job Control Number (JCN) as assigned to

the higher level assembly maintenance action recorded in SECTION I is to be continued on each component reported.

B-1.4 Section IV – Special Purpose.

This section is filled in onboard, with the exception of Block 30 (is no longer applicable).

> NOTE: Examples of completed OPNAV 4790/CK forms for various reporting situations can be found in the FIGURES section.

B-2 PROCEDURES FOR REPORTING CONFIGURATION CHANGE (OPNAV 4790/CK FORM)

Place an "X" in the appropriate block at top of form to indicate the type of action being reported, "COMP M/A NO DEFL" or "COMP DEFL".

B-2.1 Section I – Job Identification

Block A – Enter SHIP'S NAME

Block B – Enter SHIP'S HULL NUMBER

B-2.2 Job Control Number (Blocks 1 – 3):

Block 1 – SHIP'S UIC: Enter the Unit Identification Code (UIC) of the activity receiving the maintenance action.

Block 2 – WORK CENTER: Enter the code of the shipboard Work Center responsible for the equipment.

Block 3 – JOB SEQ. NO. (JSN): Enter the four character JSN assigned by the Work Center supervisor. This is an entry assigned sequentially from the SFWL/JSN Log.

NOTE (Blocks 1, 2, 3): If the configuration change being reported is not an alteration and closes a job previously deferred and on the Current Ship's Maintenance Project (CSMP), enter the JCN of the opening deferral. If the maintenance action is the accomplishment of an alteration, enter the JCN from the alteration record (EXSA2134, OXTY1016, WXSP1124).

Block 4 – ALTERATIONS (Ship Alterations (SHIPALTs), Field Changes (FCs), Etc.): If applicable, enter the alteration number from the authorizing directive.

a. For SHIPALTs, enter the alteration identification exactly as it appears on the SHIPALT Record. Record the alteration type "SA" in the first two positions, ship type starting in position three, and the alteration number starting in the 7th position of the block (i.e., SASSBNf342130). Enter the title code from the alteration record in the last right-hand position of the block.

For all other alteration types, enter the alteration type character code in the first two positions of the block. Enter the alteration number starting in position four (i.e., OA f96999, FC 29, TY 0132).

If an alteration identification number is not provided with the alteration record, leave blank. Following are the authorized alteration prefix codes:

SA	SHIP ALTERATION
OA	ORDNANCE ALTERATION
BA	BOAT ALTERATION
FC	FIELD CHANGE
MA	MACHINERY ALTERATION
SI	SYSCOM COMMAND INSTRUCTION
EC	ENGINEERING CHANGE

HI	HABITABILITY
TY	TYCOM DIRECTION
TD	TECHNICAL DIRECTIVE
SP	STRATEGIC SYSTEMS PROJECT OFFICE ALTERATION
SC	SERVICE CHANGE
TR	TRIDENT ALTERATION
EP	ENGINEERING CHANGE PROPOSAL
MO	CRYPTO EQUIPMENT MODIFICATION
AR	ALTERATION REQUEST. May be originated by a ship to request an alteration design. Enter and left justify the authorized prefix "AR" followed by a blank space, any number the ship assigns for its own control.

Block 5 - EIC: Enter the EIC for the equipment identified in the Equipment Noun Name field (Block 7). EICs are listed in the Ship Configuration Logistic Support Information System (SCLSIS) Index Report or Ship's 3-M Reference Compact Disk/DVD (CD).

NOTE: When documenting 3-M requests for Fleet/Depot assistance, a special EIC of "ZOZZ" for NAVSEA 08 and "ZOYY" for DIRSSP shall be used and the remaining data must be unclassified.

Block 6 - ACT. TKN: Enter the appropriate Action Taken code from the lower section of the OPNAV 4790/CK form or from the following list:

Code	Descriptions
5A	Partially Completed Alteration. The IMA must describe in the Job Description/Remarks section what was done and the O-level what remains to be done.
5B	Fully Completed Alteration
5C	Fully completed Equivalent to Alteration
5D	Alteration Directive Not Applicable

NOTE: Use of a number 5( ) code requires an entry in Block 4 "Alteration Identification

1	Maintenance Action Completed; Parts Drawn from Supply
2	Maintenance Action Completed; Required Parts Not Drawn from Supply (local manufacture, pre-expended bins, etc.)
3	Maintenance Action Completed; No Parts Required

NOTE: The following second character codes can be used with the above Action Taken codes 1, 2, or 3 as directed by the TYCOM:

A	Maintenance Requirement Could Have Been Deferred
B	Maintenance Requirement Was Necessary
C	Maintenance Requirement Should Have Been Done Sooner
M	High Cost Repairs
T	The Equipment Being Reported Had a Time Meter

Block 7 - EQUIPMENT NOUN NAME: If the maintenance action is the accomplishment of a SHIPALT, enter the equipment Noun Name from the SHIPALT record. Otherwise, enter the equipment nomenclature/description of the equipment or system on which the maintenance was performed. If the maintenance action affects several components, enter the name/designator of the highest assembly. For HM&E equipment, enter the noun name. For electronics equipment, enter the Army-Navy (AN) type designator or commercial model number. For ordnance equipment, enter the system/equipment nomenclature, followed by the Mark and Mod numbers, e.g., Launch System 36/1.

Block 8 - S/F MHRS. EXP.: Enter the total number of man-hours expended by ship's force (and not previously reported) in completing and documenting the maintenance action. Man-hours expended by others tasked to perform equipment maintenance are to be documented separately.

Block 9 - ACT. MAINT. TIME: Used for Selected Equipment List (SEL) equipment only. Enter the total number of clock hours expended to complete the maintenance.

Block 10 - COMP. DATE: Enter the Julian date the maintenance action was completed.

Block 11 - M/R (Meter Reading): Enter a "X" if the equipment or any of the equipment components/sub-units to be identified in Section III have time meters installed.

B-2.3 Section II - Job Description/Remarks

Block 12 - JOB DESCRIPTION/REMARKS: Enter any information/remarks relating to the accomplishment of the action. In some cases, an alteration directive will specify that certain information be documented.
If an "X" is entered in Block 11, identify in Block 12 each equipment name followed by "M/R" and the time meter reading.

B-2.4 Section III - Component Configuration Change Identification

Block 13 - COMPONENT NOUN NAME: Enter the noun name of the component removed, installed or modified. For HM&E equipment, enter the noun name. For electronics equipment, enter the “AN” type designator or commercial model number. For ordnance equipment, enter the system/equipment nomenclature, followed by the Mark and Mod numbers, e.g., Launch System 36/1.

Block 14 - QUANTITY: Enter the number of like components/sub-units identified in Block 13 that were, removed, installed or modified. The quantity must be "001" if a component identification number is entered in Block 16, or a serial number is entered in Block 17 (see Step 17).

Block 15 - CA (Component Action): Enter the code identifying whether the equipment in Block 13 was, removed (R), installed (I), or modified (M). When reporting a configuration file action vice a maintenance action enter for an Add (A), Delete (D), or Correction (C).

Block 16 - COMPONENT IDENTIFICATION: Enter the local identification number(s) such as station number or valve mark of the equipment identified in Block 13. This information must be consistent with the quantity entered in Block 14. For electronic (ELEX) equipment, enter the model number, and if available, enter the serial number in Block 17.

Block 17 - COMPONENT SERIAL NUMBER: Enter the manufacturer's serial number of the equipment identified in Block 13. If the serial number is not available enter "NONE".

Block 18 - COMPONENT APL/AEL: Enter the Component Allowance Parts List/Allowance Equipage List (APL/AEL) of the component identified in Block 13. If not available, the unit's supply department should assign a temporary APL.

Block 19 - LOCATION (DECK/FRAME/SIDE): Enter the location (compartment number, deck, frame, or side notation), that best describes the location of the equipment identified in Block 13. If none of the above mentioned location identifications are appropriate, enter a descriptive term of the onboard location (e.g., FANTAIL, FLIGHT DECK, etc.).

Block 20 - EIC: Enter the EIC that best describes the component identified in Block 13.

Block 21 - NEXT HIGHER ASSEMBLY: Enter the nomenclature and serial number of the next higher assembly. No entry is required when the component identified in Block 13 is the highest assembly.

Block 22 - SAC: Enter the Service Application Code (SAC) of the component identified in Block 13. SAC codes can be obtained from the supply department.

Block 23 - WORK CENTER: Enter the code (Work Center Responsible for Equipment (WCRE)) of the Work Center having primary maintenance responsibility for the component identified in Block 13.

Block 24 - NAMEPLATE DATA: Enter the Contract Number or Procurement Document Number, Part Number/Model Number or Drawing Number, and if available, the Commercial and Government Entity

(CAGE) (formerly called Federal Supply Code for Manufacturers (FSCM)). Additional information, if available, such as physical characteristics and manufacturer's identification is useful. No entry is required for modifications and deletions if an APL is listed in Block 13.

Block 25 - MIP: Enter the Maintenance Index Page (MIP) covering the component identified in Block 13 for removals, modifications, changes and deletions. If not available, enter "NA".

Block 26 - EOSS: Entry not required when reporting Electronic or Ordnance Configuration Change actions. For HM&E equipment, enter the Engineering Operation Space Sequence (EOSS) Document Code and Control Number of the primary EOSS procedure affected. If more than a component level document is affected, enter only the EOSS component procedure.

Block 27 - TM: For removal and modifications, enter the Technical Manual (TM) covering the affected component. For like equipment installations, enter the TM covering the equipment. For new installations, enter the TM when available; if not available, enter NA.

B.2.5 Section IV - Special Purpose

Block 28 - RIN: Enter the Record Identification Number (RIN) as listed in Part I, Section C of the COSAL, for deletions, removals, and modifications. For installations and additions, leave blank.

Block 29 - AILSIN: Enter the Automated Integrated Language System Identification Number (AILSIN) assigned by the Configuration Data Manager (CDM), Platform Manager, or Item Manager. For Electronic equipment, no entry is required unless directed by TYCOM.

Block 30 - SECAS OFFICE USE: (Ship's Equipment Configuration Accounting System (SECAS)). Block no longer used.

B-2.6 Procedures for Using CK Continuation Pages

The JCN entry must be the same as on page 1. Up to four components can be reported on the same continuation form, with each separate component block considered a separate continuation page with its own page number. Page number consecutively. If applicable, check the block at the top of each component identification section to indicate that all data to be entered is the same as SECTION III, page 1, except for that data actually entered in the component identification section. An arrow pointing up (-) should be placed in the first block of each blank field to indicate that it is the same as page 1. For each component reported, the required entries on the continuation pages are the JCN, page number, equipment alteration number (if applicable), and those component identification data elements which differ from SECTION III, page 1 (original CK).

B-2.7 Procedures for Reporting Configuration File Corrections, and Updating the Coordinated Shipboard Allowance List (COSAL).

Correct errors in a previous submission.

Print in large letters the word "Correction" at the top of the form. Check the block "CONFIG FILE CORR" at the top right portion of the CK form. Enter the exact JCN (Blocks 1, 2, and 3) and page number of the CK which was submitted in error. Enter action code "C", which indicates "correction" in Block 15. If the entire configuration data submitted on the previous CK is in error, fill in ALL the blocks with the corrected data and circle the entire form. Otherwise, fill in only the applicable blocks with the correct data and draw a circle around that block.

B-2.8 Correct A Data Element Error in the Ship's COSAL or COSAL Indexes, or Other Such Documents

Check the block (CONFIG FILE CORR) at the top right portion of the CK form. In SECTION I, enter a new JCN in Blocks 1, 2, and 3. In SECTION I, enter a new JCN in Blocks 1, 2, and 3. In SECTION II, Block 12 for "JOB DESCRIPTION" insert the words "CORRECTION OF COSAL", or a description of the type of correction. If the APL is to be corrected, enter the words "CHANGE APL FROM _____" and enter the incorrect APL number. In

SECTION III, enter in Block 13 the component noun name from the SCLSIS Index report, COSAL, etc…. Enter in Block 15 code "C" for "correction". Enter the EIC of the component in Block 20. If the correction is for HM&E equipment, also enter the APL in Block 18. Enter the applicable RIN in Block 28. These are the only required data elements that need to be reported along with the corrected information. Next, fill in any other applicable blocks with data. Draw a circle around all blocks with changed information.

B-2.9 Report an Equipment Record Addition/Deletion

Complete the CK as described for "CORRECTING A DATA ELEMENT IN THE SHIP'S COSAL" in the above paragraph, with the following exceptions: In SECTION II, Block 13 enter the words "ON BOARD - NOT COSAL SUPPORTED" or "NOT ON BOARD - COSAL SUPPORTED", as appropriate. In SECTION III Block 15, enter action code "A" for equipment on board but not COSAL supported, or action code "D" for equipment that is not on board but is COSAL supported. For an equipment "ADD", also provide as much additional information as possible (e.g., Serial Number, Next Higher Assembly, if applicable, Location, Work Center, EIC, Nameplate Data, MIP, TMs, etc.). For equipment DELETE, provide the RIN in Block 28 if applicable.

B-2.10 Report the Turn-In/Receipt of Portable Electrical/ Electronic Test Equipment (PEETE)

Check the CK Block for "CONFIG FILE CORR" and then follow standard procedures described for "CORRECTING A DATA ELEMENT IN THE SHIP'S COSAL" in the above paragraph.

B-2.11 Handling Procedures

An original and three copies each of the basic CK and related continuation pages are required for documentation. The completed forms are submitted to the Work Center Supervisor and then to the Division Officer, each of whom reviews the forms for completeness and accuracy and initials in the appropriate blocks at the bottom of each form.

The division officer then forwards all copies of the forms to the supply department. Supply department personnel verify/enter

data such as APL/AEL, SAC, and RIN and will resolve any discrepancies noted with the maintenance Work Center Supervisor prior to further routing. Supply department personnel will initial the appropriate block at the bottom of the forms and fill in the sequence number first digit is the last digit of the current calendar year. The remaining four digits indicate the chronological sequence of CK forms being submitted by the ship/activity for the year and retain the second copy. Supply department personnel will ensure the Work Center entered in Block 23 as the correct Work Center having primary maintenance responsibility for the equipment (not the supply department Work Center). The Supply Department should then forward the original, and first and third copies to the 3M System Coordinator. After reviewing for completeness, initialing and dating in the appropriate block, the 3M System Coordinator submits the original CK to the 3-M ADP facility serving the activity. The third copy is to be maintained in the Work Center as a suspense copy.

The following figures are provided:

Figure B - 1 Ship’s Configuration Change Form for Component Removal Maintenance Action

Figure B - 2 Ship’s Configuration Change Form for Component Install

Figure B - 3 Ship’s Configuration Change Form Resulting from an Alteration

Figure B - 4 Ship’s Configuration Change Form for an Alteration Install (continuation)

Figure B - 5 Ship’s Configuration Change Form for a Correction to a Previously Submitted Change

Figure B - 6 Ship’s Configuration Change Form for Location Correction

Figure B - 7 Ship’s Configuration Change Form for COSAL Add

Figure B - 8 Ship’s Configuration Change Form for COSAL Delete

B-3 SHIP'S MAINTENANCE ACTION FORM (OPNAV 4790/2K)

The OPNAV 4790/2K Form is used for reporting deferred maintenance actions, and the completion of those maintenance actions that do not result in a configuration change. To report completion of a configuration change, refer to the instructions for using the OPNAV 4790/CK Form.

An original and three copies of the OPNAV 4790/2K Form are required for deferring a maintenance action. The originals and third copy are forwarded to the automated data processing facility serving the activity. The first and third copy is retained by the issuing activity. The first copy is submitted when reporting the completion of the maintenance action. The second copy is retained until completion of the maintenance action is reflected in the CSMP and then may be destroyed.

Two blocks at the top of the form are used to specify what type of maintenance action is being reported, a deferral "DEFL", or a completion "COMP". The rest of the form is separated into six sections. (A partially completed maintenance action which results in configuration changes, and complete, or partial accomplishment of an alteration should be reported on the OPNAV 4790/CK Form). There are six sections:

B-3.1 Section I - Identification.

This section is used to identify the equipment or system on which maintenance actions are being reported.

B-3.2 Section II - Deferral Action.

This section, filled in when reporting a deferral of a maintenance action, indicates ship's force man-hours expended up to the time of deferral, the date of deferral, ship's force man-hours remaining, and required completion date (if necessary).

B-3.3 Section III - Completed Action.

This section is filled in when reporting the completion of a maintenance action, and special reporting blocks used when reporting maintenance actions on selected equipment.

B-3.4 Section IV - Remarks/Description.

This section is filled in when reporting the deferral of a maintenance action. The type of information recorded includes remarks that describe what is wrong. What caused the failure or malfunction, maintenance to be performed, the names of personnel involved in the maintenance action, a priority and availability assignment and Signatures by management personnel who screened the maintenance action.

B-3.5 Section V - Supplementary Information.

This section issued by the reporting activity to provide necessary information pertaining to maintenance actions that are required or onboard (e.g., technical manuals, blueprints, etc.). This section is also used by the repair activity in planning, scheduling, and controlling the repair activity work.

B-3.6 Section VI - Repair Activity Planning/Action.

This section is used by the repair activity for planning, estimating and scheduling purposes, and can be used to report work accomplishment by an internal department Work Center or by an external activity not under an ADP system.

NOTE: Examples of completed OPNAV 4790/2K forms for various reporting situations can be found in the FIGURES section.

B-3.7 Procedures for Documenting A Deferred Maintenance Action

Place an "X" in the block titled "DEFL" at top of form.

B-3.7.1 Section I – Identification

Block A - Enter SHIP'S NAME
Block B - Enter SHIP'S HULL NUMBER

a. JOB CONTROL NUMBER (Blocks 1 - 3):

Block 1 - SHIP'S UIC: Enter the UIC of the activity initiating the maintenance action.

Block 2 - WORK CENTER: Enter the Work Center code of the Work Center initiating the maintenance action. For ships, a four-position Work Center code will be entered. For repair departments of tenders, SIMAs, RMCs, and other IMAs, a three-digit code has been assigned. The three -digit codes are entered left-to-right leaving the right most position blank.

Block 3 - JOB SEQ. NO.: Enter the character job sequence number assigned by the Work Center Supervisor. This is an entry assigned sequentially from the SFWL/JSN Log.

Block 4 - APL/AEL (Allowance Parts List/Allowance Equipment List): Enter the APL/AEL of the equipment being reported. These numbers are found in the COSAL or SCLSIS Index Report. An example of an APL would be "882170236" and an AEL would be "2-260034096."

Block 5 - EQUIPMENT NOUN NAME: Enter the equipment nomenclature/description on which maintenance is being reported. The equipment nomenclature/description should be the same as that identified by the EIC and is limited to 16 positions. Standard abbreviations can be used if clarity is retained. For electronic equipments having an Army-Navy (AN) designation, it will be substituted for the equipment nomenclature.

Block 6 - WHEN DISCOVERED (WND): Enter the code that best identifies when the need for maintenance was discovered.

Code	Description
1	Lighting Off or Starting
2	Normal Operation
3	During Operability Test
4	During Inspection
5	Shifting Operational Modes

6	During PMS
7	Securing
8	During AEC (Assessment of Equipment) Program
9	No Failure, PMS Accomplishment Only
0	Not Applicable (use when reporting printing services, etc.)

Block 7 - STATUS (STA): Enter the code that most accurately describes the effect of the failure or malfunction on the operational performance capability of the equipment when the need for maintenance was first discovered.

Code	Description
1	Operational
2	Non-Operational
3	Reduced Capability
0	Not Applicable (use if reporting printing services, etc.)

Block 8 - CAUSE (CAS): Enter the code that best describes the cause of the failure or malfunction when the need for maintenance was first discovered. (Refer to Appendix A, data element "CAUSE" for an expanded definition of the allowable codes/values).

Code	Description
1	Abnormal Environment
2	Manufacturer/Installation Defects
3	Lack of Knowledge or Skill

4	Communications Problem
5	Inadequate Instruction/Procedure
6	Inadequate Design
7	Normal Wear and Tear
0	Other or No Malfunction

Block 9 - DEFERRAL REASON (DFR): Enter the deferral reason code which best describes the reason the maintenance cannot be done at the time of deferral. (Refer to Appendix A, data element "DEFERRAL REASON" for an expanded definition of the allowable codes/values).

Code	Deferral Reason
1	Due to Ship's Force Work Backlog/Operational Priority
2	Lack of Material
3	No Formal Training on this equipment
4	Formal Training Inadequate for this Equipment
5	Inadequate School Practical Training
6	Lack of Facilities/Capabilities
7	Not Authorized for Ship's Force Accomplishment
8	For Ship's Force Overhaul of Availability Work List
9	Lack of Technical Documentation
0	Other – or Not Applicable

Block 10 - This Block is reserved for TYCOM directed applications. Refer to TYCOM instruction for use.

Block 11 - This Block is reserved for TYCOM directed applications. Refer to TYCOM instruction for use.

Block 12 - This Block is reserved for TYCOM directed applications. Refer to TYCOM instruction for use.

Block 13 - IDENT./EQUIPMENT SERIAL NUMBER: Enter the identification or serial number of the equipment or system on which maintenance is being deferred. For HM&E equipment, enter the Valve Mark/Electric Symbol Number (ESN) or Primary Identification Number. For electronic equipment, enter the manufacturer's serial number of the equipment or system on which maintenance is being deferred.

Block 14 - EIC: Enter the EIC of the component, equipment, subsystem, or system for which the maintenance is being reported.

Block 15 - SAFETY HAZARD: Enter an "X" or applicable safety code if the maintenance action describes a problem or condition which has caused, or has the potential to cause serious injury to personnel or material. A brief explanation must be included in the Remarks/Description field (Block 35). For example: "RE-INSPECTION OF SEPARATOR FOR PRESENCE OF OIL AFTER RINSE. MRC A-27 EVIDENTLY NOT DONE. PRESENCE OF OIL RESULTED IN FIRE IN HP AIR SYSTEM WHEN COMPRESSOR OPERATED UNDER LOAD. FIRE BADLY BURNED VALVE AHP-287, REQUIRING REPLACEMENT."

The ship's 3M System Coordinator will forward a copy of all OPNAV 4790/2K documentation having an entry in this field to the safety officer for review.

(Refer to Appendix A, data element "SAFETY HAZARD" for an expanded definition of the allowable codes/values).

Code	Description
1	Critical Safety or Health Deficiency-Correct Immediately
2	Serious Safety or Health Deficiency-Suspension of Equipment/System/Space Use is Required
3	Moderate Safety or Health Deficiency-Waiver of Equipment/System/Space Use is granted Pending Correction of the Item
4	Minor Safety or Health Deficiency
5	Negligible Safety or Health Deficiency
0	Maintenance Action is Not Safety Related

NOTE: Codes "6" through "9" may be locally assigned by TYCOMs for additional safety codes required.

Block 16 - LOCATION: Enter the location (compartment number, deck, frame, or side notation), that best describes the location of the equipment requiring maintenance as identified in Block 13. If none of the above mentioned location identifications are appropriate, enter description of the location (e.g., FANTAIL, FLIGHT DECK, etc.).

Block 17 - WHEN DISCOVERED DATE: Enter the Julian date when the equipment or system failure or malfunction was discovered.

Block 18 - ALTERATIONS (SHIPALT, ORDALT, Fld. Chg., etc.): If reporting the deferral of an alteration:

SHIPALT. Enter the alteration identification exactly as it appears on the SHIPALT Record. Record the alteration type "SA" in the first two positions, ship type starting in position three, and the alteration number starting in the 7th position of the block (i.e., SASSBNf342130). Enter the title code from the alteration record in the last right-hand position of the block.

OTHER Alteration Types. Enter the alteration type character code in the first two positions of the block. Leave the third

position blank and enter the alteration number starting in position four (i.e., OA f96999, FC 29, TY 0132).

If an alteration identification number is not provided with the alteration record, leave blank. Following are the authorized alteration prefix codes:

SA	SHIP ALTERATION
OA	ORDNANCE ALTERATION
BA	BOAT ALTERATION
FC	FIELD CHANGE
MA	MACHINERY ALTERATION

SI	SYSCOM COMMAND INSTRUCTION
EC	ENGINEERING CHANGE
HI	HABITABILITY
TY	TYCOM DIRECTION
TD	TECHNICAL DIRECTIVE
SP	SYTRATEGIC SYSTEMS PROJECT OFFICE ALTERATION
SC	SERVICE CHANGE
TR	TRIDENT ALTERATION
EP	ENGINEERING CHANGE PROPOSAL
MO	CRYPTO EQUIPMENT MODIFICATION
AR	ALTERATION REQUEST. May be originated by a ship to request an alteration design. Enter and left-justify the authorized prefix “AR” followed by a blank space any number the ship assigns for its own control.

Blocks 19 through 24 - FOR INSURV USE - no entries required. See Section 2 of the Manual for specifications.

B-3.7.2 Section II - Deferral Action

Block 25 - SHIP'S FORCE MAN-HOURS EXPENDED (S/F MHRS. EXP.): Enter the total man-hours (to the nearest whole hour) expended by personnel of all Work Centers involved in the maintenance action up to the time of deferral (include documentation time which should not exceed 1 hour).

Block 26 - DEFER. DATE: Enter the Julian date when the maintenance action was deferred. An example of a deferral on 11 January 1994 would be: "4f11".

Block 27 - SHIP'S FORCE MAN-HOURS REMAINING (S/F MHRS. REM.): Enter the estimated number of ship's force man-hours remaining to complete the maintenance action. Round off to the nearest whole hour. If the TYCOM allows an automated close out of the deferral by the IMA, the letters "AUTO" will be entered. This is a request to the IMA to complete the maintenance action with no further documentation from the shop after the job has been accepted by the originator (authorized signature). If the originating ship does not receive CSMP support from the IMA doing the work, do not use the "AUTO" close out feature.
Block 28 - DEADLINE DATE: This is an optional entry. The originator of the deferred action may enter the latest possible Julian date that outside assistance and ship's force work must be completed.

B-3.7.3 Section III - Completed Action

Blocks 29 through 33 - USED FOR REPORTING THE COMPLETION OF A MAINTENANCE ACTION

Block 34 - METER READING: If the equipment has a time meter and is on the Selected Equipment List (SEL), the reading (to the nearest whole hour) at the time of failure is entered in this block. If the equipment has more than one meter, designate the meter being recorded in Block 35 "REMARKS" using the letters "METRED" followed by the meter designator. An asterisk (*) must precede and follow the meter designation. Example: *METRED-1A2M1*.

B-3.7.4 Section IV - Remarks/Description

Block 35 - REMARKS/DESCRIPTION: Enter remarks relating to the maintenance action. These remarks should be brief, but complete and meaningful. Remarks should state what is wrong, and what caused the failure (if known); and what must be done to correct the problem. Separate the two statements with "XXX". For example, "HIGH PITCHED SQUEAL OF PUMP SHAFT, GAUGE READING ABOVE RED LINE ON #2 PUMP, SSG CASING IS EXTREMELY HOTXXXINVESTIGATE AND REPAIR AS NECESSARY." If more space is needed, check Block 36 "CONT. SHEET" and continue the remarks on a second form using the same JCN. Include the statement "2L USED" if the supplemental OPNAV/2L form is used for drawings or other supplemental information.

> NOTE: The remarks should not include statements explaining what has been coded in another place of the form; i.e., "DEFERRAL REASON 2 = LACK OF MATERIAL".

Block 36 - CONT. SHEET: Enter an "X" in this block if the "REMARKS" are continued on additional 2K forms. No more than three additional OPNAV 4790/2K forms can be used.

B-4 PROCEDURES FOR USING OPNAV 4790/2K CONTINUATION PAGES

On each additional 2K form used for the continuation of "REMARKS" (no more than three additional OPNAV 4790/2K forms can be used), enter the JCN of the first form and continue with the remarks in Section IV. In the top margin of each continuation page, insert the words "Page 2", "Page 3", etc.

Block 37 - CSMP SUMMARY: Enter a condensed description of the problem. The Work Center Supervisor is to ensure the summary succinctly captures the meaning of the REMARKS/DESCRIPTION (Block 35) narrative. The CSMP summary conveys to management the significance of the JCN (maintenance action). The CSMP summary is displayed on management reports, as opposed to the entire narrative of the REMARKS block.

Block 38 - FIRST CONTACT/MAINT. MAN: Printed name of the senior person knowledgeable in the specifics of the JCN (maintenance action).

Block 39 - RATE: Enter the rate of the first contact/maintenance person. Examples are:

Rank/Rate Code	Entry
Officers	OFF
ET1	ET1
Civilian	CIV
GMG2	GMG2
FTGSN	FTGN
FN	FN

Block 40 - SECOND CONTACT/SUPERVISOR: Initialed by the supervisor of the first contact/maintenance person after screening the maintenance action for completeness and accuracy.
Block 41 - PRI: Enter the appropriate priority code. Refer to Appendix A for an expanded definition of the allowable codes/values.)

Code	Description
1	Mandatory
2	Essential
3	Highly Desirable
4	Desirable

Block 42 - T/A: Enter the type availability (T/A) code for the type availability recommended for performance of the deferral.

Code	Description
1	Depot (shipyard or ship repair facility
2	Intermediate Maintenance Activity (tender, repair ship, etc.)
3	Fleet Technical Support. TYCOM Support Unit (floating dry dock, etc., or technical assistance from NAVSEACOMBATSYSENGSTA or Regional Maintenance Centers or contractor representative)
4	Ship's Force (Orig. Work Center, Organizational Level)

Block 43 - INTEGRATED PRIORITY: If the maintenance is to be done by an outside activity, the ship's engineer may rank departmental deferrals by integrated priority. A sequential number may be placed in this block to indicate its priority relative to other deferred work for a given availability.

Block C - DIV. INIT: Initialed by the division officer after screening the document.

Block D - DEPT. INIT: Initialed by the department head after screening the document.

Block E - COMMANDING OFFICER'S SIGNATURE: Required on all deferrals for outside assistance, the commanding officer or authorized representative must sign the deferral.

Block F - TYCOM AUTHORIZATION: This block is reserved for the signature of the TYCOM representative screening the deferral. This is usually applicable when direct routing from ship to TYCOM for deport emergent work is employed.

Blocks 44 through 46 are not completed at the time of deferral. Entries are made by the next level of management after leaving the ship IUC and TYCOM during the screening process).

B-4.1 Section V - Supplementary Information

Block 47 - BLUEPRINTS, TECH. MANUALS, PLANS, ETC.: Enter any TMs, blueprints, etc., which might be of use to a repair activity providing assistance. Indicate with an "X" in the

"AVAILABLE ON BOARD" – "YES/NO" block if the TM is onboard or not.

B-4.2 Procedures for Documenting Internal Work Requests

When it is necessary to obtain assistance from other departments within the organizational level of the ship, the OPNAV 4790/2K Form can be used as an internal work request. If more than a single assisting Work Center is required, multiple copies will be prepared using the same JCN on each request.

The requesting Work Center prepares the number of copies required for internal control. The words "INTERNAL WORK REQUEST" is written at the top of each copy to be sent to the assisting Work Center(s). The following blocks are used:

B-4.2.1 Section I – Identification

Document all of this section. See "PROCEDURES FOR DOCUMENTING A DEFERRED MAINTENANCE ACTION"

B-4.2.2 Section IV - Remarks/Description

Block 35 - REMARKS/DESCRIPTION: Describe the tasks required of the Assisting Work Center (AWC).

B-4.2.3 Section VI - Repair Activity Planning/Action

Block 49 - REPAIR WORK CENTER (W/C): Enter the AWC's code.

Block 55 - REPAIR ACTIVITY UIC: Enter the organization unit's UIC. This will be the same as Block 1 except when the ship is being assisted by a non-reporting outside activity, and the outside activity's UIC will be entered.

Block 56 - WORK REQ. ROUTINE: Enter the appropriate Expanded Ship Work Breakdown Structure (ESWBS), Ship Work Authorization Boundary (SWAB), Ship Work Line Item Number (SWLIN), etc., as directed by the TYCOM.

B-4.3 Procedures for Documenting Screening Information On Deferred Maintenance Actions

Used by other activities, such as, IUCs, TYCOM representatives, and IMAs for screening, planning, and scheduling.

B-4.3.1 Section IV - Remarks/Description

Block F - TYCOM AUTHORIZATION: This block is reserved for the signature of the TYCOM representative screening the deferral.

Block 44 – IUC: The IUC or designated representative screening the deferral enters the recommendation as to the action to be taken. See the allowable codes following Block 45 (TYCOM) below.

Block 45 - TYCOM: The TYCOM or designated representative screening the deferral will enter the action to be taken.

Code	Description
1	Depot (shipyard or ship repair facility) Accomplish
1A	Depot Assisted by Ship’s Force
1S	Ship to Shop
1M	Accomplish with Modification
2	Intermediate Maintenance Activity (IMA) (tender/repair ship, etc.) Accomplish
2A	IMA Assisted by Ship’s Force
2S	Ship to Shop
2M	Accomplish with Modification
3	TYCOM Support Unit (TSU) (floating dry dock, etc.) Accomplish or Technical Assistance from NAVUNDERSEAWARCENDET/Regional Maintenance Center/Contractor Representative
3A	TSU Assisted by Ship’s Force
3S	Ship to Shop
3M	Accomplish with Modification
4	Ship’s Force Accomplish

5	Deferred
5A	Insufficient Time in the Availability to Complete the Task
5B	Lack of Shipyard Capability
5C	Lack of Material
5D	Lack of Funds
5E	Not Required During this Availability
5F	General
6	Not Authorized
6A	Not Technically Justified
6B	Covered by an Existing Ship Alteration
6C	Duplicate of Another Job Control Number (JCN)
6D	Not Cost Effective
6E	General
8*	Disapproved
9**	Remove from Current Ship’s Maintenance Project (CSMP). Pass to history (to be assigned by TYCOM only).

NOTE: * This screening code disapproves the accomplishment of a work item by an outside activity. It does not prevent entry of the deferral into the CSMP, which is the decision of the commanding officer.

NOTE: ** This screening code is restricted to the removal of INSURV items from the CSMP for which, in the opinion of the ship's IUC and TYCOM, the ship has no responsibility for accomplishment.

NOTE: The first character of the IUC and/or TYCOM screening code should be entered in the appropriate field. The second character, when used, should be entered in the space just below it.

Block 46 (A-L) - SPECIAL PURPOSE: Use of these codes indicates the quality control and quality assurance standards are required. Refer to TYCOM instructions for additional information relative to these blocks
Enter the code in the designated block 46A through 46L to show quality control and/or quality assurance requirements.

Block 46A - The department head will enter the KEY EVENT code from the ISIC provided Key Event Schedule. (Refer to Maintenance Manual Volume III Section 7.)

Block 46B - Submarines enter code "SS" if the job requires work within SUBSAFE boundaries or involves SUBSAFE materials (Refer to CSL/CSP INST 4790.16 and JFMM Vol V Part 1 para. 8.2.5e). Surface Ships may enter S1 for "PARTS ON HAND/PARTS NOT REQD," S2 for "PARTS ON ORDER-DEF DEL DT," S3 for "CONT PROCURE PARTS," S4 for "WORK COMPL PREVIOUSLY."

Block 46C - Enter the code "L1" if the job requires work within Level I boundaries or involves Level I material. (Refer to CSL/CSP INST 4790.16 and JFMM Vol V Part 1 para. 6.3.1.3 & 6.3.1.4).

Block 46D - Enter the code "08" if the job is associated with nuclear equipment. Refer to NAVSEAINST 9210.4A (NOTAL)).

Block 46E - Enter the code "RC" if the job requires radiological controls (RADCON). (Refer to NAVSEA Technical Publication S9213-33-MMA-000/(V)).

Block 46F - Enter the code "DD" if the job requires dry docking to accomplish.

Block 46G - Enter the code "NC" for critical noise deficiencies or "NP" for potential radiated noise deficiencies.

Block 46H – The following codes are used in MFOM VSB for work screening: GC (Contract), IC (Indefinite Delivery, indefinite Quantity), CC (Commercial Industrial Services), RC (Regional Maintenance Center Contracting Officer), TC (Type Commander Contracting), BC (Blanket Purchase Agreement/Basic Ordering Agreement), TV (Tanks & Voids), CS (Crane Services), NS (NAVSEA), DV (Diver Services), or AC (AVCERT).

Block 46I - Reserved for future use.

Block 46J - Reserved for future use.

Block 46K - Enter the appropriate code: FB for Fly By Wire Certification Boundary (FBW Certification Blue Boundary), SF for Submarine Flight Critical Component (SFCC Red Boundary), or DS for Deep Submergence System-Scope of Certification (DSS-SOC).

Block 46L - Enter the code assigned to the visiting activity. This will identify the visiting activity as the originator of the deferral.

B-4.3.2 Section V - Supplementary Information

Block 47 - BLUEPRINTS, TECHNICAL MANUALS, PLANS, ETC: The repair activity can use this block during the work request planning in much the same manner as the originator. Information that might be of use in the accomplishment of the maintenance can be entered (e.g., TMs, blueprints, etc.).

Block 48 - PREARRIVAL/ARRIVAL CONFERENCE ACTION/REMARKS: The repair activity may enter any remarks considered necessary to facilitate repairs.

B-4.3.3 Section VI - Repair Activity Planning/Action

Block 49 - REPAIR W/C: Enter the character code of the lead Work Center assigned to the job. Refer to Appendix A data element "IMA REPAIR WORK CENTER" for a listing of IMA Work Center codes.

Block 50 - EST. MHRS.: Enter the total number of estimated man-hours required by the lead Work Center to complete the job.

Block 51 - ASST. REPAIR W/C: Enter the three or four character code of the first Work Center assigned to assist the lead Work Center on the job being planned. If more than one assist Work Center is required, check Block 36 to indicate a continuation page is being used. On the continuation page (new 2K form), fill in Blocks 1, 2, 3 with the same JCN of the original 2K. In Block 51, enter the second assist repair Work Center's code. No

more than two assist Work Centers (two supplemental 2K forms) can be submitted.

Block 52 - ASST. EST. MHRS: Enter the total number of estimated man-hours required by the assist Work Center to complete its portion of the job.

Block 53 - SCHED. START DATE: Enter the Julian date that the work on the job is to begin.

Block 54 - SCHED. COMP. DATE: Enter the Julian date that all work on the job is scheduled to be completed by the repair activity.

Block 55 - REPAIR ACTIVITY UIC: Enter the unit identification code of the repair activity performing the work for the originating ship.

Block 56 - WORK REQ. ROUTINE: Enter the appropriate Expanded Ship Work Breakdown Structure (ESWBS), Ship Work Authorization Boundary (SWAB), Ship Work Line Item Number (SWLIN), etc., as directed by the TYCOM.

Blocks 57 through 63 - Used to identify depot estimates on individual CSMP items from the Master Job Catalog. These blocks may also be used as directed by TYCOM instruction.

Block 57 - EST. MAN-DAYS: Enter an estimate of the total number of man-days required to complete the job. If the estimate is less than one, enter 1.

Block 58 - EST. MAN-DAY COSTS: Enter an estimate of the total man-day costs required to complete the job.

Block 59 - EST. MATERIAL COSTS: Enter an estimate of the total material costs required to complete the job.

Block 60 - EST. TOTAL COST: Enter an estimate of the total cost required to complete the job. (Add Blocks 58 and 59.)

Block 61 - JOB ORDER NUMBER: Enter Job order number assigned by the activity performing the work.

Block 62 - LEAD P&E CODE: Enter the code assigned to the lead planning and scheduling organization.

Block 63 - DATE OF EST.: Enter the date that the repair activity's planning action was completed.

B-4.4 Procedures for Documenting A Completed Maintenance Action Previously Deferred

Blocks A, B, and applicable Blocks 1 through 47 have previously been filled.

The maintenance person shall report completion of a previously deferred maintenance action by using the copy of the OPNAV 4790/2K retained onboard when the maintenance action was deferred. If there is no record (paper) copy of the original 2K, and the maintenance action is on the CSMP, enter the JCN on a blank 2K form, and without providing all the deferred maintenance information, enter the completion data in Section III. If the word "AUTO" has been entered in Block 27 as directed by the TYCOM, submission of a completed maintenance action by the originating ship may not be necessary.

B-4.4.1 Section III - Completed Action

Block 29 - ACT. TKN: Enter the code that best describes the action taken to complete the maintenance.

Code	Description
1	Maintenance Action Completed; Parts Drawn from Supply
2	Maintenance Action Completed; Required Parts Not Drawn from Supply (local manufacture, pre-expended bins, etc.)
3	Maintenance Action Completed; No Parts Required

NOTE: The following second character codes can be used with the above Action Taken codes 1, 2, or 3 as directed by the TYCOM:

A	Maintenance Requirement Could Have Been Deferred
B	Maintenance Requirement Was Necessary
C	Maintenance Requirement Should Have Been Done Sooner
M	High Cost Repairs
T	The Equipment Being Reported Had a Time Meter

Code	Description
4	Canceled (When this code is used, the deferral will be removed from the CSMP. This code is not to be used with INSURV, safety, or priority 1 or 2 deferrals screened for accomplishment by the TYCOM or IUC.)
7	Maintenance Action Completed; 2-M (Miniature/Microminiature Electronic Modules) Capability Utilized.

NOTE: The following second character codes can be used with Action Taken Code 7 to better describe the action taken:

A	Parts Drawn from Supply Utilized
B	Parts Not Drawn from Supply Utilized
C	Automatic Test Equipment (ATE) Utilized
D	ATE and Parts Drawn from Supply Utilized
E	ATE and Parts Not Drawn from Supply Utilized

Code	Description
8	Periodic Time Meter/Cycle Counter reporting. (This code is not applicable to the "FINAL TION" code reported by the repair activity.)
9	Maintenance Action Completed; 3-M Fiber Optic Repair

NOTE: The following second character codes can be used with Action Taken Code 9 to better describe the action taken:

A	FOTE, multimode ST MQJs utilized
	FOTE, multimode heavy duty MQJs utilized
C	FOTE, multimode rotary mechanical splice MQJs utilized
D	FOTE, single mode ST MQJs utilized
E	FOTE, single mode heavy duty MQJs utilized
F	FOTE, multimode specialty MQJs utilized
G	FOTE, single mode specialty MQJs utilized
H	FOTE, not available
I	Standard MQJs not available
J	Specialty MQJs not available

Code	Description
0	None of the Above

Block 30 - S/F MHRS: Enter the total man-hours (to the nearest whole hour) that ship's force expended doing the maintenance after submitting the deferral. This includes witnessing of tests, and those man-hours expended in reinstallation, test, documentation (not to exceed 1 hour), etc.

Block 31 - COMPLETION DATE: Enter the Julian date the maintenance action was completed.

Block 32 - ACT. MAINT. TIME: Enter the total clock hours (to the nearest whole hour) during which ship force maintenance was actually performed. This should include time for troubleshooting, but not delays.

Block 33 - TI: Enter a single numeral (1 through 9) to indicate, to the nearest 10%, the percentage of active maintenance expended in troubleshooting. For example, if no

troubleshooting is involved, enter "f", "2" for 20%, "3" for 30%, "7" for 70%, etc.

Block 34 - METER READING: There is no entry required on the completed deferral action. (Refer to Block 34 instructions for DOCUMENTING A DEFERRED MAINTENANCE ACTION above.)

Block 35 - REMARKS/DESCRIPTION: When the "what must be done" statement on the original deferral accurately describes the work which was done, no further entries are required. If remarks in addition to the original remarks entered are needed to describe the work done, draw a line through all the previous remarks and starting on the next line, describe what was done, and any additional information considered significant. If additional space is needed for the completed action description, use up to three continuation pages.

B-4.4.2 Section IV - Remarks/Description

(Used by the Repair Activity when Reporting a Completed Maintenance Action). This type of completed work request is to be provided to the ship for 3-M processing.

Block 64 - FINAL ACT.: Enter the code that best describes the final action taken to complete the maintenance. (Refer to Block 29 above for "ACTION TAKEN" allowable codes/values). In addition, the following codes can be used:

5A	Partially Completed Alteration
5B	Fully Completed Alteration
5C	Fully Completed Equivalent to Alteration
5D	Alteration Directive Not Applicable
6	Rejected Work Request (add suffix below for reason) A – Ship's Force/Standard Stock Item B – Excessive Ship Workload/Insufficient Availability C – Lack of Skills D – Lack of Facilities E – Lack of Test or Calibration Equipment F – Lack of Parts/Material G – Lack of Documentation H – Lack of Funds I – Other (record the explanation in "Remarks")

Block 65 - MHRS. EXPENDED: Enter the man-hours expended on the last day the repair Work Center is involved in the Work Request (NOT the total man-hours of the work request).

Block 66 - DATE COMPLETED: Enter the Julian date the work request is completed and signed off by the requesting ship.

Block G - COMPLETED BY: The signature and rank/rate of the individual authorized by the tended ship to verify the acceptability of work performed is entered in this block.

Block H - ACCEPTED BY: The signature and rank or rate of the individual authorized by the tended ship to verify the acceptability of work performed. Completion of this block is mandatory when a 2K is used to report completion of a previously deferred maintenance action.

B-4.5 Procedures for Documenting A Completed Maintenance Action without prior deferral

Place an "X" in the block titled "COMP" at top of form.

B-4.5.1 Section I – Identification

Block A - Enter SHIP'S NAME

Block B - Enter SHIP'S HULL NUMBER

JOB CONTROL NUMBER (Blocks 1 - 3):

Block 1 - SHIP'S UIC: Enter the UIC of the activity initiating the maintenance action.

Block 2 - WORK CENTER: Enter the Work Center code of the work center initiating the maintenance action. For Ship's, a four position Work Center code will be entered. For repair departments of tenders, SIMAs, RMCs, and other IMAs, a digit code has been assigned. The digit code is entered left-to-right leaving the right most position blank.

Block 3 - JOB SEQ. NO.: Enter the character job sequence number assigned by the Work Center Supervisor. This is an entry assigned sequentially from the SFWL/JSN Log.
Block 4 - APL/AEL (Allowance Parts List/Allowance Equipment List): Enter the APL/AEL of the equipment being reported. These numbers are found in the COSAL or SCLSIS Index Report. An example of an APL would be "882170236" and an AEL would be "2-260034096."

Block 5 - EQUIPMENT NOUN NAME: Enter the equipment nomenclature/description on which maintenance is being reported. The equipment nomenclature/description should be the same as that identified by the EIC and is limited to 16 positions. Standard abbreviations can be used if clarity is retained. For electronic equipment having an Army-Navy (AN) designation, it will be substituted for the equipment nomenclature.

Block 6 - WHEN DISCOVERED (WND): Enter the code that best identifies when the need for maintenance was discovered.

Code	Description
1	Lighting Off or Starting
2	Normal Operation
3	During Operability Tests
4	During Inspection
5	Shifting Operational Modes
6	During PMS
7	Securing
8	During AEC (Assessment of Equipment Condition)
9	No Failure, PMS Accomplishment Only
0	Not Applicable (use when reporting printing services, etc.)

Block 7 - STATUS (STA): Enter the code that most accurately describes the effect of the failure or malfunction on the operational performance capability of the equipment when the need for maintenance was first discovered.

Code	Description
1	Operational
2	Non-Operational
3	Reduced Capability
0	Not Applicable (use if reporting printing services, etc.)

Block 8 - CAUSE (CAS): Enter the code that best describes the cause of the failure or malfunction when the need for maintenance was first discovered. (Refer to Appendix A, data element "CAUSE" for an expanded definition of the allowable codes/values).

Code	Description
1	Abnormal Environment
2	Manufacturer/Installation Defects
3	Lack of Knowledge or Skill
4	Communications Problem
5	Inadequate Instruction/Procedure
6	Inadequate Design
7	Normal Wear and Tear
0	Other or No Malfunction

Block 9 - DEFERRAL REASON (DFR): Leave blank.

Block 10 - Block is reserved for TYCOM directed applications. Refer to TYCOM instruction for use.

Block 11 - Block is reserved for TYCOM directed applications. Refer to TYCOM instruction for use.

Block 12 - Block is reserved for TYCOM directed applications. Refer to TYCOM instruction for use.

Block 13 - IDENT./EQUIPMENT SERIAL NUMBER: Enter the identification or serial number of the equipment or system on which maintenance is being deferred. For Hull, Mechanical & Electrical (HM&E) equipment, enter the Valve Mark/Electric Symbol Number (ESN) or Primary Identification Number. For electronic equipment, enter the manufacturer's serial number of the equipment or system on which maintenance is being deferred.

Block 14 - EIC: Enter the Equipment Identification Code of the component, equipment, subsystem, or system for which the maintenance is being reported.

Block 15 - SAFETY HAZARD: Enter an "X" or applicable safety code if the maintenance action describes a problem or condition which has caused, or has the potential to cause serious injury to personnel or material. A brief explanation must be included in the Remarks/Description field (Block 35). For example: "RE-INSPECTION OF SEPARATOR FOR PRESENCE OF OIL AFTER RINSE. MRC A-

27 EVIDENTLY NOT DONE. PRESENCE OF OIL RESULTED IN FIRE IN HP AIR SYSTEM WHEN COMPRESSOR OPERATED UNDER LOAD. FIRE BADLY BURNED VALVE AHP-287, REQUIRING REPLACEMENT."

NOTE: The ship's 3M System Coordinator will forward a copy of all OPNAV 4790/2K documentation having an entry in this field to the safety officer for review. (Refer to Appendix A, data element "SAFETY HAZARD" for an expanded definition of the allowable codes/values).

Code	Description
1	Critical Safety or Health Deficiency Correct Immediately
2	Serious Safety or Health Deficiency Suspension of Equipment/System/Space Use is granted Pending Correction of the Item
3	Moderate Safety OR Health Deficiency Waiver of Equipment/System/Space Use is granted Pending Correction of the Item
4	Minor Safety or Health Deficiency
5	Negligible Safety or Health Deficiency
0	Maintenance Action is Not Safety Related

NOTE: Codes "6" through "9" may be locally assigned by TYCOMs for additional safety codes required.

Block 16 - LOCATION: Enter the location (compartment number, deck, frame, or side notation), that best describes the location of the equipment requiring maintenance as identified in Block 13. If none of the above mentioned location identifications are appropriate, enter description of the location (e.g., FANTAIL, FLIGHT DECK, etc.).

Block 17 - WHEN DISCOVERED DATE: Enter the Julian date when the equipment or system failure or malfunction was discovered.

Block 18 - ALTERATIONS: Leave blank. If the completed maintenance action resulted in a configuration change or

alteration, refer to the instructions for submitting an OPNAV 4790/CK form.

Blocks 19 through 24 - FOR INSURV USE - no entries required. See Section 2 for details.

B-4.5.2 Section II - Deferral Action (Block 25 - 28) - Leave blank.

B-4.5.3 Section III - Completed Action

Block 29 - ACT. TKN.: Enter the code that best describes the action taken to complete the maintenance.

Code	Description
1	Maintenance Action Completed; Parts Drawn from Supply
2	Maintenance Action Completed; Required Parts Not Drawn from Supply (local manufacture, pre-expended bins, etc.)
3	Maintenance Action Completed; No Parts Required

NOTE: The following second character codes can be used with the above Action Taken codes 1, 2, or 3 as directed by the TYCOM:

A	Maintenance Requirement Could Have Been Deferred
B	Maintenance Requirement Was Necessary
C	Maintenance Requirement Should Have Been Done Sooner
M	High Cost Repairs
T	The Equipment Being Reported Had a Time Meter

Code	Description
4	Canceled (When this code is used, the deferral will be removed from the CSMP. This code is not to be used with INSURV, safety, or priority 1 or 2 deferrals screened for accomplishment by the TYCOM or IUC.)
7	Maintenance Action Completed; 2-M (Miniature/Microminiature Electronic Modules) Capability Utilized.

NOTE: The following second character codes can be used with Action Taken Code 7 to better describe the action taken:

A	Parts Drawn from Supply Utilized
B	Parts Not Drawn from Supply Utilized
C	Automatic Test Equipment (ATE) Utilized
D	ATE and Parts Drawn from Supply Utilized
E	ATE and Parts not Drawn from Supply Utilized

Code	Description
8	Periodic Time Meter/Cycle Counter reporting. (This code is not applicable to the "FINAL ACTION code reported by the repair activity.)
9	Maintenance Action Completed; 3-M Fiber Optic Repair

NOTE: The following second character codes can be used with Action Taken Code 9 to better describe the action taken:

A	FOTE, multimode ST MQJs utilized
B	FOTE, multimode heavy duty MQJs utilized
C	FOTE, multimode rotary mechanical splice MQJs utilized
D	FOTE, single mode ST MQJs utilized
E	FOTE, single mode heavy duty MQJs utilized
F	FOTE, multimode specialty MQJs utilized
G	FOTE, single mode specialty MQJs utilized
H	FOTE, not available
I	Standard MQJs not available
J	Specialty MQJs not available

Code	Description
0	None of the Above

Block 30 - S/F MHRS: Enter the total man-hours (to the nearest whole hour) that ship's force expended completing the maintenance. This includes time witnessing tests, man-hours expended in reinstallation, test, and documentation (not to exceed 1 hour), etc.

NOTE: Blocks 32, 33, and 34 are only to be reported, if the equipment has been SEL designated.

Block 31 - COMPLETION DATE: Enter the Julian date the maintenance action was completed.

Block 32 - ACT. MAINT. TIME: Enter the total clock hours (to the nearest whole hour) during which ship's force maintenance was actually performed. This should include time for troubleshooting, but not delays.

Block 33 – TI: Enter a single numeral (1 through 9) to indicate, to the nearest 10 percent, the percentage of active maintenance expended in troubleshooting. For example, if no troubleshooting is involved, enter "", "2" for 20%, "3" for 30%, "7" for 70%, etc.

Block 34 - METER READING: Enter the time meter reading (to the nearest whole hour) at the time of failure. If the equipment has more than one meter, designate the meter being recorded in

Block 35 "REMARKS" using the letters "METRED" followed by the meter designator. An asterisk (*) must precede and follow the meter designation. Example: *METRED-1A2M1*.

Block 35 - REMARKS/DESCRIPTION: Enter remarks relating to the maintenance action. These remarks should be brief, but complete and meaningful. Remarks should state what was wrong, what caused the failure (if known) and what was done to correct the problem. If "SAFETY HAZARD" (Block 15) is checked, a description of the condition creating the hazard should be inserted in "REMARKS". If more space is needed, check Block 36 "CONT. SHEET" and continue the remarks on a second form using the same JCN.

B-4.6 Procedures for Documenting Changes, Additions, and Deletions to Previously Submitted Maintenance Actions

Print in large letters the word "Correction" at the top of the form. Enter the exact JCN (Blocks 1, 2, and 3) of the original 2K previously processed. Enter only the information to be added, deleted, or changed in the applicable blocks. Circle these blocks. If the selected data elements are to be deleted, without deleting the entire document, enter dashes (one dash per tic mark) within the data block to be deleted. When changing Block 35-REMARKS/DESCRIPTION, the entire narrative must be entered so that the correct information is included. It is not possible to change just a word or two.

B-4.7 Procedures to Add-On Remarks to the CSMP

To add to the remarks as originally submitted, print the words "ADD-ON REMARKS" at the top of a new 2K Form. Place an "X" in the "DEFL" block at the top right of the form, and enter in Block 1, 2, and 3 the JCN or the original 2K. In Block 35 "REMARKS/DESCRIPTION", print the initials of the activity adding on to the remarks followed by a dash (-). For example, CINCPACFLT would be entered as "CPF-". Following the dash (-) enter the additional information. If it is necessary to

rewrite, or change the narrative as originally submitted, use the procedures for "DOCUMENTING CHANGES, ADDITIONS, AND DELETIONS."

B-4.8 Handling Procedures

The OPNAV 4790/2K Form is printed on paper that does not require carbon to make multiple copies. The original and three (3) copies of the 2K are required for documenting the maintenance action. The original and third copy shall be forwarded to the automated data processing facility serving the ship or activity. The first copy is submitted when reporting the completion of that maintenance action. The second copy is retained until completion of the maintenance action results in its removal from the CSMP; it may be destroyed.

The following figures are provided:

Figure B - 9 Ship's Maintenance Action Form for a Deferred Maintenance Action

Figure B - 10 Ship's Maintenance Action Form for a Completed Maintenance Action Without Prior Deferral

Figure B - 11 Ship's Maintenance Action Form Change to a Previously Submitted Deferred Maintenance Action

Figure B - 12 Ship's Maintenance Action Form Add-on Remarks to a Previously Submitted Deferred Maintenance Action

B-5 SUPPLEMENTAL FORM (OPNAV 4790/2L)

a. This form is used to provide amplifying information (such as drawings and listings) related to a maintenance action, reported on a OPNAV 4790/2K Form. The 2L may be used to list multiple item serial numbers and locations for which identical maintenance requirements exist from an outside activity; or to provide a list of drawings and sketches that would be helpful in the accomplishment of the maintenance.

b. The 2L form is retained onboard ship with the suspense copy of the corresponding 2K form that deferred the maintenance action. The 2L is never submitted to the ADP facility servicing

the activity, as the data on the 2L will never be entered into the computer. However, the 2L can be attached to the original 2K or computer produced (simulated) 2K when submitted to an assisting activity.

B-5.1 Special Application

a. If a Master Job Catalog (MJC) routine has been added to the CSMP for service routines or for IMA sheet metal hose manufacturing, multiple OPNAV 4790/2Ls may be used for the same JCN. Each 2L would result in an additional task being added to the JCN, thus accounting for man-hour expenditure for each task. Similarly, the 2L could be used to request critical hose manufacturing by referencing the MJC number and using the ship's own JCN, thus precluding the necessity to submit multiple complete OPNAV 4790/2Ks.

b. The form is separated into three sections: SECTION I "IDENTIFICATION", SECTION II "REMARKS/SKETCHES", and SECTION III "AUTHENTICATION". When using the 2L, all sections of the form are to be filled out. On the OPNAV 4790/2K Form, be sure to enter the notation "2L USED" in the "REMARKS/DESCRIPTION" section, Block 35.

NOTE: An example of a completed OPNAV 4790/2L form can be found in the FIGURES section.

B-5.2 Procedures for Providing Additional Information Using the 2L

B-5.2.1 Section I – Identification

Block A – Enter the SHIP'S NAME

Block B – Enter the SHIP'S HULL NUMBER

JOB CONTROL NUMBER: Enter the same JCN (Ship's UIC, Work Center, and Job Sequence Number) assigned to the original maintenance action in Blocks C, D, and E.

Block F – CONTINUATION FOR: Enter an "X" in one of the blocks to indicate that this 2L is a continuation of either an OPNAV 4790/2K, 4790/2L, or a 4790/2P Form.

B-5.2.2 Section II – Remarks/Sketches

Block G – Enter the information you wish to provide; such as, a list of serial numbers and locations for which identical maintenance requirements exist; or sketches or drawings that may be useful in the accomplishment of the maintenance action.

B-5.2.3 Section III – Authentication

Block H – FIRST CONTACT/MAINTENANCE MAN: The maintenance person preparing the form prints his/her name in this Block.

Block I – DATE (YR/DAY): Enter the Julian date the document is prepared.

Block J – SECOND CONTACT/SUPERVISOR: The Work Center Supervisor prints his name following his review of the document in the block.

Block K – DATE: The Work Center Supervisor enters the Julian date the document was reviewed.

Figure B - 13 SUPPLEMENTAL FORM Containing an Equipment Listing

Figure B - 14 SUPPLEMENTAL FORM Containing a Sketch/Drawing

B-6 MAINTENANCE PLANNING AND ESTIMATING FORM (OPNAV 4790/2P)

This form is used along with an OPNAV 4790/2K Form deferring maintenance to be done by an IMA. Attached to the original 2K at the intermediate maintenance activity, it is used by the IMA to screen and plan the job in detail. This planning information will include information pertinent to the lead Work Center (LWC), assist Work Center(s), material requirements, technical documentation, and cost estimates required to complete the maintenance action. (Upon approval of the TYCOM, planning, estimating and scheduling information may be entered in the appropriate sections of the OPNAV 4790/2K Form).

NOTE: An example of a completed OPNAV 4790/2P form can be found in the FIGURES section.

B-6.1 Procedures For Documenting Planning & Estimating Data

B-6.1.1 Section I – Planning

Block A – Enter the SHIP'S NAME originating the request for assistance (from the 2K)

Block B – Enter the SHIP'S HULL number originating the request for assistance (from the 2K)

JOB CONTROL NUMBER: Enter the same JCN (Ship's UIC, Work Center, and Job Sequence Number) assigned to the original maintenance action. It must be identical to the JCN of the attached 2K in Blocks 1, 2, and 3.

Block 8 – SCREENING ACTION: The appropriate action to be taken must be indicated in this block. It may be used by the IUC, however, the TYCOM Representative's decision has precedence. The IUC/TYCOM REP must indicate the level at which the maintenance is to be done, or if the job is disapproved. There must be an entry in either "a", "b", or "c" if screened by the IUC; and "h", "I", or "j" when screened by the TYCOM REP. Blocks "d" through "m" may be used to identify qualifying actions. If "accomplished with modifications" is checked, the IUC/TYCOM will provide amplifying remarks in Section IV, Block 49. If the work is disapproved ("g" or "n"), amplifying remarks should be made in Section IV, Block 49.

Block C/D – IUC/TYCOM SIGNATURE: The signature of the IUC and/or TYCOM REP must be entered in these blocks following the screening process.

THE FOLLOWING BLOCKS, AS APPLICABLE, ARE FILLED-IN BY THE PLANNING AND SCHEDULING SECTION AFTER THE IUC AND/OR TYCOM REP HAS SCREENED THE JOB FOR ACCEPTANCE (Block 8).

NOTE: Blocks 4 through 7 are for Master Job Catalog (MJC) development.

Block 4 – PERIODIC MAINTENANCE REQUIREMENT: Enter the code that identifies the specific periodic maintenance requirement. This code may be a PMS maintenance requirement code, a code identifying a periodic requirement of a PERA (Planning and

Engineering for Repair and Alterations), or a calibration requirement of MEASURE (Metrology Automated System for Uniform Recall and Reporting), etc.

Block 5 – PERIODICITY: Enter the number of months between which the periodic maintenance requirement is to be done.

Block 6 – YYMM ISSUED: Enter the four numbers used to identify the year and month during which the periodic maintenance requirement entered in Block 4 was issued. The first two digits identify the year and the last two digits the month; e.g., "9402" represents February 1994.

Block 7 – SPECIAL DATA: Reserved for future use.

Block 8 – See Block "8" above.

Block 9 – QUALITY ASSURANCE REQUIREMENTS: Enter an "X" in the applicable Blocks "a" through "l" to indicate the specific planning actions, work controls, and auditable records in support of individual TYCOM management needs.

Block 10 – SPECIAL REQUIREMENTS:

KEY EVENT	A two-digit number identifies a key event that influences a job, or is influenced by the completion of a job. A blank in this block indicates that the job is not associated with a key event. The Key Event code with a definition is assigned and managed by TYCOM instructions.
SPECIAL INTEREST	An "X" entered in this block indicates that this job has significant management interest, and keys the job to be selected for job management reports.
DRY DOCK REQUIRED	An "X" in this block shows the requested maintenance requires the ship to be dry-docked.
PRE OVERHAUL TEST REQUIRED	An "X" entered in this block identifies a specific test prior to an equipment or ship overhaul.
POST OVERHAUL TEST REQUIRED	An "X" entered in this block identifies a specific test that must be completed after equipment or ship overhaul.
DEPARTURE REQUIRED	An "X" entered in this block shows that if the maintenance requested is not done by the required specifications, notice of this departure is to be sent to the TYCOM.

Block 11 - See Block 11 below under "BLOCKS FILLED-IN BY THE REPAIR OFFICER"

B-6.1.2 Section II – Scheduling

Block 12 - LEAD WORK CENTER: Enter the code (left to right) of the "lead" repair Work Center assigned to the job. (Refer to Appendix A data element "IMA REPAIR WORK CENTER" for standard IMA Work Center codes.)

Blocks 13, 19, 25, 31, 37, an 43:

SCHED START DATE: Enter the Julian date that work is to be started by each repair Work Center. During the planning process when the availability date is unknown, these blocks may be left blank.

Blocks 14, 20, 26, 32, 38, 44:
SCHED COMP DATE: Enter the Julian date that the work of the individual repair Work Center must be completed.

Block 15, 21, 27, 33, 39, and 45:

EST MHRS: Enter an estimate of the total number of man-hours necessary for each repair Work Center to complete its assigned work.

Blocks 16, 22, 28, 34, 40, and 46:

KEY OP: Number the logical sequence, e.g., 001, 002, 003, etc., of the tasks identified in Blocks 17, 23, 29, 35, 41, and 47.

Blocks 17, 23, 29, 35, 41, and 47:

TASK: Enter the description(s) of the task(s) for which the repair Work Center(s) assigned are responsible.

Blocks 18, 24, 30, 36, and 42:

ASST WORK CENTER: Enter the code (left to right) of the repair Work Center(s) assisting the lead repair Work Center. (Refer to Appendix A, data element "IMA REPAIR WORK CENTER" for standard IMA Work Center codes.)

B-6.1.3 Section III - Technical Documentation

Block 48 - TECHNICAL DOCUMENTATION: Enter any blueprints, technical manuals, etc., which might be of use in the accomplishment of the maintenance. Indicate by an "X" whether the publications held by the IMA or the tended unit.

B-6.1.4 Section IV - IUC/Repair Activity/TYCOM Remarks

Block 49 - REMARKS: Used by the screening and repair managers to enter any remarks that amplify the scope or limitations applicable to the accomplishment of the maintenance.

B-6.1.5 Section V - Supplemental Planning

THE FOLLOWING BLOCKS ARE FILLED-IN WHEN REQUIRED BY THE TYCOM AND ONLY WHEN ESTIMATING THE COST OF DEPOT LEVEL WORK

NOTE: Other uses of these blocks can be defined by TYCOM directive.

Block 50 - EST MAN-DAYS: Enter the total number of estimated man-days (for all involved repair Work Centers) required to accomplish the JCN. If the estimated man-day is less than one, enter "1".

Block 51 - EST MAN-DAYS COST $: Enter an estimate of the total man-day costs required to accomplish the JCN.

Block 52 - EST MATERIAL COST: Enter an estimate of the total material cost.

Block 53 - EST TOTAL COST $: Enter an estimate of the total cost to complete the job (add blocks 51 and 52).

B-6.2 Repair Officer Actions

THE FOLLOWING BLOCKS ARE FILLED-IN BY THE REPAIR OFFICER:

Block 11 - NORMALLY DONE BY: Entered by the Repair Officer, an "X" entered into the appropriate block (S/F, IMA, DEPOT) allows

the collection of data for evaluation of the costs of the IMA relative to other maintenance activities.

B-6.3 Procedures for Documenting Changes, Additions, and Deletions

Any block, with the exception of the JCN, that has had the planning and estimating information entered into the supporting ADP system can be added, deleted, or changed. Refer to the instructions described for submitting a correction to an OPNAV 4790/2K Form.

When modifying information in Section II - SCHEDULING, the modification must contain the appropriate lead or assist WCs. When modifying information in Section III - TECHNICAL DOCUMENTATION and Section IV - IUC/REPAIR ACTIVITY/TYCOM REMARKS, the entire section must be revised so that correct information and change information is included. Do not change a word or two in these sections without resubmitting the entire section.

> NOTE: In the event the original lead Work Center (LWC) must be changed and a new LWC assigned, the planning section should submit the applicable documentation to change the LWC. Planning and estimating will submit a new planning sheet showing the new LWC and assist WC(s).

See Figure B - 15 Completed OPNAV 4790/2P

APPENDIX C

3-M AUTOMATED PERIODIC MAINTENANCE PROGRAM

(MASTER JOB CATALOG AND PERIODIC MAINTENANCE REQUIREMENTS)

APPENDIX C - 3-M AUTOMATED PERIODIC MAINTENANCE PROGRAM (MASTER JOB CATALOG AND PERIODIC MAINTENANCE REQUIREMENTS)

C-1 PURPOSE

This appendix is to describe the automated Periodic Maintenance Program (PMP) capabilities, provide guidelines for its use, and standardize the requirements in support of fleet and depot maintenance and material 3-M reporting. This program was established to assist maintenance and material managers in executing Class Maintenance Plans (CMP) and Life Cycle Manager (LCM) requirements to sustain the operability of weapons systems.

C-2 SCOPE

Intermediate Maintenance Activities (IMAs) require the capability to generate work requests for periodic maintenance. Periodic Maintenance Requirements (PMRs) provides that capability. PMR also provides the capability to schedule, maintain, issue and report work accomplished for PMR items. The data elements for PMR conform to 3-M standards.

PMR requires the reporting of maintenance actions and configuration changes on all categories of equipment.

C-3 OBJECTIVE

The automated PMP can provide a means to effectively manage and control all PMRs beyond the scope of the organizational level Planned Maintenance System (PMS). It is managed by integrating the SYSCOM Life Cycle Requirements (LCRs), Configuration Data Managers' Database, periodicities invoked by system and equipment engineers with the 3-M Master Job Catalog (MJC) and PMR modules of the intermediate maintenance management automated systems. This integration provides an automated pre-planned deferral to be added to the Current Ship's Maintenance Project (CSMP) and procurement of repair parts specified by technical repair standards or other controlled work procedures. The system:

a. Provides continuous evaluation and adjustment of the CMP to reflect the specification of the Systems Command (SYSCOM)

Platform Managers and the capabilities and capacities of fleet maintenance activities.

b. Adjusts the Ship Configuration and Logistics Support Information System (SCLSIS) specifications and the Configuration Data Manager (CDM) databases to reflect all levels of equipments and components for existing and emerging PMRs.

c. Develops, evaluates and implements an MJC deferral for each PMR added to the CMP.

d. Distributes a Unit Identification Code (UIC) unique configuration and scheduling record for each CMP periodic requirement to each activity maintaining the ship class.

e. Maintains the MJC and PMR database at the central facility (regional hub, port facility, Readiness Support Group (RSG) or Parent Squadron/IMA) supporting the ship classes.

f. Plans and executes the ship's scheduled availabilities and planned work packages by retrieval of all scheduled PMRs, alterations, Type Commander (TYCOM)-directed and local support routines from the MJC/PMR module and all screened deficiencies from the tended ship's CSMP into the Master CSMP of the central facility.

g. Manages the execution of all authorized work, ensuring the progress, status change, delay and completion of each task is reported into 3-M as detailed in the applicable program user manuals.

h. Produces and distributes PMR, CSMP and production information (Availability Summaries, Key Event Schedules and Progress, AWRs, Calibration Summaries, CSMP Summaries, etc.) as specified by TYCOM directives.

i. Distributes Maintenance Data System (MDS) information from NAVSEALOGCEN to the applicable program managers and SYSCOM/fleet support activities for analysis and upgrade of CMPs, technical specifications, mandatory parts replacement requirements, affirmation/adjustments of Lead Work Center/Assistant Work Center (LWC/AWC) and task/keyop man-hour averages and standards for recycling MJC and PMR improvements.

j. Manages the distribution of information between central activities and the organizational calibration and scheduling systems to support accomplishment of shipboard PMRs (e.g., Submarine Operational Unrestricted Operations (URO) requirements and gage calibration by certified Field Calibration Activity (FCA) personnel.)

k. Adds all Test and Monitoring System (TAMS) installed equipment records into the SCLSIS of the Class CDM so that cyclic requirements are tailored to the operating platform and the PMR scheduling record updated.

l. Adds all portable TAMS to the SCLSIS for control by SPAWAR/NAVSEA Item Managers supported by Naval Weapons Assessment Division and Metrology Calibration (METCAL) organizations. This process:

(1) Increases the management of portable TAMS inventory control between the METCAL CDM and the fleet's central activity PMR Configuration.

(2) Increases the management of alterations for portable TAMS applying business rules to justify upgrade. Controls TAMS alterations in the same manner as Ship Alterations (SHIPALTs) and TYCOM Alterations (ALTs).

Provides information necessary to evaluate and improve reliability, maintainability, and availability of installed systems and equipment while eliminating periodic requirements whose Material Condition Assessment (MCA) indicates little risk of equipment failure.

C-4 MASTER JOB CATALOG (MJC)

The MJC is a collection of recurring jobs applicable to multiple supported units.

a. These jobs typically consist of PMRs from the CMP; PMRs for inspection, test, calibration, and repair of various equipments; alterations; recurring Board of Inspection and Survey (INSURV) deficiencies; routines for IMA services; and depot routines for interfacing the CSMP with the Ship Alteration and Repair Package (SARP)/Overhaul Work Package (OWP).

b. There are many advantages of using jobs from the MJC. Use of the MJC reduces the documentation burden for ship's force in preparing deferrals for recurring maintenance actions. MJC preplanned jobs reduce the planning effort required by the IMA Planning & Estimating (P&E). Planning information is usually recorded for the MJC jobs. In addition, it reduces the variability in job accomplishment. This is contributed to the consistency of job requirements for each repetitive use of the MJC job. MJC jobs provide a ready vehicle for recording lessons learned as the job is accomplished time after time.

C-4.1 Use of the MJC

The MJC is structured as a CSMP deferral and planning record. The MJC describes mandatory maintenance requirements, CMP periodic requirements, IMA support routines, alterations, Hazardous Material (HAZMAT) procedures, calibration routines and other SYSCOM and TYCOM directed maintenance requirements applicable to one or more ship classes. The TYCOMs provide some MJC jobs, while individual IMAs prepare others.
In addition, each central maintenance activity may establish additional service routines to account for production-oriented work not otherwise covered by TYCOM direction. These periodic or repetitive requirements are retrieved from the MJC and added to an individual ship's Master CSMP for assignment to IMA and depot work packages.

Application of the MJC prior to and during a ship's availability relieves ship's force from documenting other than its own discovered deficiencies. The onboard automated CSMP need contain only these deficiencies, while the MJC retrieved requirements (and the ship's reported deficiencies) are maintained on a Master CSMP by the RSG, squadron or other central fleet activity.

C-4.2 Control of MJC

TYCOMS will establish joint instructions to identify common MJC requirements and standard procedures for its distribution and maintenance. The intermediate maintenance management automated systems user manuals describe methods to retrieve periodic

requirements from the MJC to the individual availability work packages.

A TYCOM designated activity (Submarine Maintenance, Engineering, Planning, and Procurement (SUBMEPP), Carrier Planning Activity (CPA) and/or Surface Ship Maintenance, Engineering, Planning Program (SURFMEPP)) may be assigned to maintain and distribute the MJC files to applicable fleet sites, and to provide analysis and improved planning and estimating, and material requirements for each documented MJC requirement.

All periodic requirements established by the SYSCOMs for a ship class should include the repair parts required and the forecast to the NAVSUP WSS Mechanicsburg to build an effective load list over the projected life cycle of the ship class. The SUBMEPP/planning activity should provide quarterly files to sustain the conjunctive Automated Material Requisitioning (AMR) for CMP projections.

C-5 3-M PERIODIC MAINTENANCE REQUIREMENTS

There are certain equipment and components in the fleet that require periodic maintenance such as tests, inspections, repairs, restorations, and replacements. With select automated systems, periodic maintenance tasks and routines are maintained on file with planning information. The record containing both the routine, test, etc., along with the scheduling and planning information is called a PMR.

C-5.1 Use of PMRs

Use of PMRs provide for the management of configuration and scheduling information for each equipment requiring periodic maintenance. As PMRs are established for equipment, ship's force submits the related configuration and scheduling information. This information is used to establish a MJC routine. The MJC routine will be added to the CSMP when the equipment is due for periodic maintenance as indicated by the scheduling information. MJCs can be scheduled for accomplishment by ship's force or by an intermediate or depot-level activity.

C-5.1.1 Configuration and Scheduling PMR Data

Both configuration and scheduling data files may be provided and downloaded from the CDM, SUBMEPP/planning activity, NSWC METCAL TAMS or from other SYSCOM or contractor sources supporting fleet maintenance. Ship's force may be required to initially document items for addition to the PMR database as directed by TYCOMs when the items require periodic testing, calibration or inspection by an intermediate level shop or fleet support team, electrical safety inspections, cyclic zone inspections by Damage Control teams vice sustaining a PMS Equipment Guide List (EGL) and requiring the ship to submit IMA work requests). Detailed operating procedures for MJC and PMR are contained in Shipboard Non-Tactical ADP Program (SNAP) Central Design Activity (CDA) User Manuals and guides; these procedures are not repeated in this manual.

C-5.1.2 Modified OPNAV 4790/CK Form for PMR

The OPNAV 4790/CK (PMR) (Figure C - 1), commonly referred to as a PMR CK is used to manually document an addition, change or deletion to a PMR Configuration and/or Scheduling Record. The PMR CK form must be locally reproduced. The manually prepared PMR CK is used when direct access to the automated system is not available for on-line entry. The original 3-M data elements for configuration reporting (Blocks 1 through 30) of the OPNAV 4790/CK form are retained. Additional data elements (fields) have been added to the form and in the automated systems for scheduling information required to link this data with the appropriate configuration record.

C-6 PMR REPORTING

PMR records and related equipment/component information can be maintained in the PMR/MJC system. Configuration file entries can be made on-line if the capability is there, or can be entered manually on a modified OPNAV 4790/CK. The modified CK, referred to as the PMR CK, is used to document configuration file entries to add, change or delete equipment to the PMR inventory. Standard 3-M data elements (Blocks 1 through 30 or the OPNAV 4790/CK) are used for PMR configuration reporting. For additional information/data element definitions and approved

values refer to the data element by name in Appendix A of this instruction.

> NOTE: For the following data elements, if a data element has been officially assigned a Data Element Number (DEN), the DEN will be listed.

A single block at the top of the form is used to specify that a configuration file correction "CONFIG FILE CORR" is being documented.

C-6.1 Section I - Job Identification

This section is pre-filled except for the ship's UIC. The PMR "Work Center" can be tailored for different management programs by using a different suffix for each program LCM Code. The Job Control Number and Job Sequence Number ("JCN JSN") remains "0001" until the page count (number of adds) exceeds 9999, at which time the JSN will be changed to "0002" for the next 9999 page numbers. For example, NAVSEA Mechanical TAMS components use LCM code "HM" while SPAWAR Electronic TAMS uses "ET". A ship's PMR installation could use PMHM0001 and PMET0001 for up to 9999 components for each LCM. The total JCN for an initial "ADD" PMR item is then converted to reflect the PMR assigned line item number (LIN) as part of the Work Center (WC/JSN) (e.g., PM001454 - where 001454 is the LIN) to become the permanent JCN for the life of the component on the UIC.

Block A - SHIP'S NAME

Block B - SHIP'S HULL NUMBER

JOB CONTROL NUMBER (Blocks 1 - 3):

Block 1 - SHIP'S UIC (DEN A002): UIC of the customer unit/ship of installed equipment.

Block 2 - WORK CENTER (DEN E128): The PMR LCM code designated by the TYCOM.

Block 3 - JOB SEQ. NR. (DEN E349D): The JSN is pre-filled with "0001" until the number of "adds" (pages) exceeds 9999. The JSN is then changed to "0002" for the next 9999 "adds".

Block 4 - ALTERATION IDENTIFICATION (SHIPALT, FLD. CHG., ETC.): Masked out in the automated system. Leave blank for PMR.

Block 5 - EIC: EIC for the equipment identified. This EIC may be the general service code (U series) if the PMR is for support service of multiple systems. (These Service EICs may be used in combination with the primary IMA Work Center e.g., U60067B, U60096A, U60067F, etc.).

Block 6 - ACT. TKN: Action taken is masked out or pre-filled as specified by TYCOM instruction.

Block 7 - EQUIPMENT NOUN NAME: Pre-filled as specified by TYCOM instructions to describe the general category of the PMR management program.

Block 8 - S/F MHRS. EXP.: Ships' Force Man-hours Expended. Field is masked out in the automated system. Leave block blank if using the form.

Block 9 - ACT. MAINT. TIME: Actual Maintenance Time. Field is masked out in the automated system. Leave block blank if using the form.

Block 10 - COMP. DATE: Completion Date. Field is masked out in the automated system. Leave block blank if using the form.

Block 11 - M/R (Meter Reading): Masked out.

C-6.2 Section II - Job Description/Remarks

This section describes the appropriate management program being documented with PMR.

Block 12 - JOB DESCRIPTION/REMARKS: Information/remark identifying the PMR management program as directed by TYCOM instructions.

C-6.3 Section III - Component Configuration Information

This section records the PMR related equipment configuration/identifying information specific to the component.

Note that PMR is not limited to supply worthy components but is used to also manage all cyclic maintenance worthy items (e.g., pad eyes, slings, hoists requiring weight tests can be added to PMR to ensure inventory and scheduling control as can damage control lockers and fire hose valve stations).

Block 13 - COMPONENT NOUN NAME (DEN E224). For Hull, Mechanical, and Electrical Equipment (HM&E), the component name entered along with a descriptive nomenclature (e.g., Valve, Ball 3.5" MSW; Gauge, 0-50psi Lube Oil Pump). For electronic components and test equipment, the AN nomenclature Joint Electronic Type Designation System (JETDS) or commercial model number is entered. Prefix the model number with the Commercial and Government Entity (CAGE) and a dash. For ordnance components, enter the system/equipment nomenclature, followed by the Mark and Mod.

Block 14 - QUANTITY (DEN DO1l) (CK limits 001-999, pre-filled with 000). This quantity will usually be 001, but if multiple items are to be tested or calibrated as a batch job, enter the contained quantity. For example: 100 Radiation Detection, Indication, and Computation (RADIAC) for a ship may be contained in four boxes of 25 each, resulting in four separate line items - each with a 025 in block 14. For IMA Electrical Safety, all receptacles in a single shop may be counted as one line item and the total quantity shown in Block 14. This would necessitate testing all of them at one time.

Block 15 - COMPONENT ACTION (DEN E033). If the item is not in the PMR INVENTORY, enter an "A" (add). Otherwise enter "C" (correct the record), or a "D" (delete the inventory line item).

Block 16 - COMPONENT IDENTIFICATION (DEN E093). Enter the Valve Mark/Electric Symbol Number (VM/ESN) or other identification. For inventory items controlled by an LCM, this identification would be retained as originally assigned. For Director Strategic Systems Project Office (DIRSSPO) controlled weapons handling gear, the identification number must be a "PMMP~~ (Pink Ticket) number. Once assigned, this element cannot be changed or corrected. For weight handling gear, include the safe working load in pounds prefixed by SWL (e.g., TP16SY SWL 6800). SCLSIS defines this element as " Positional Reference Identification -PRID .II

NOTE: The two data elements of the OPNAV 4790/CK Blocks 16 (Component Identification) and Block 17 (Component Serial Number) becomes a single data element in Block 13 (Identification Equipment Serial Number) of the OPNAV 4790/2K used for reporting corrective maintenance. The PMR program selects the Component Identification from the configuration change (Block 16) and pre-fills this number in the Identification Equipment Serial Number field.

Block 17 - COMPONENT SERIAL NUMBER (DEN D032). If the nameplate serial number is not available, a number assigned by the owning ship will be entered. The ship's UIC (Block 1) and owning Work Center (Block 23) are separately shown on the PMR reports and in the system; there is no requirement to repeat the hull number and Work Center as part of the serial number. Weight handling equipment must be marked or tagged with the hull number (equal to the UIC) and the serial number of the component. The combination of blocks 1, 16, and 17 must not be duplicated in the PMR configuration file. If there are multiple PMRs for the same item, the additional requirements must be identified by separate MJC numbers.

NOTE: For SUBMEPP/CDM. When a commercial serial number is not assigned, record the unique functional group code (FGC) in this field and in the ship equipment file (SEF).

Block 18 - COMPONENT APL/AEL (DEN DO08). Enter the Component Allowance Parts List/Component Identification Number/Repairable Identification Number (APL/CID/RIC). If there is no APL/AEL (Allowance Equipage List), enter NOT LISTED. For SUBMEPP inventory, when NOT LISTED is entered, the tenth and eleventh position must contain a number from 01-99 for interface with the Automated Material Requisitions (AMR) program. This is required to allow different components with the same MJC/PMR to be provided with separate "Bills of Material" for automatic call out.

Block 19 - LOCATION (DEN E052). (Preliminary Equipment Index Location). Enter the location of the item. For inventories being converted by LCMs, if the location is not available, enter the customer's (ship's) Work Center and a question mark (e.g., "EEO1?").

Block 20 - EIC (DEN DO08D). Enter the components EIC. The EIC entered in Block 5 may be a General Support Code (U series EIC) or a System/Sub-System Code. The component EIC, when identified in the 3-M EIC Manual, should identify to the component being added to the configuration file.

Block 21 - NEXT HIGHER ASSEMBLY. Enter the Equipment/System Designator (ESD) (DEN T058) or other identity of the system/sub-system.

Block 22 - SAC (DEN EO1OA). Enter the Service Application Code (SAC) from the Coordinated Shipboard Allowance List (COSAL)/SCLSIS source if available. Note that it is a five character element on the OPNAV 4790/CK form but 10 characters in the automated system. LCMs should interface with NAVSUP WSS Mechanicsburg to obtain the ten character element.

Block 23 - WORK CENTER (DEN E128). This is the 3-M code of the customer maintenance Work Center required to maintain the component. If a Work Center Responsible for Compartment (WCRC) (DEN 127) code is also available in the LCM inventory, enter it. SUBMEPP use MJC WC with last two characters of 01 (e.g., EACC=EA01).

Block 24 - NAME PLATE DATA. Use to describe any other characteristics not covered by other elements. This data will not display on reports but will be accessible in the program. For SUBMEPP it will be the CSMP Summary from the individual MJCS assigned to the PMRS.

Block 25 - PMS MAINT INDEX PAGE (MIP). Enter the PMS MIP if available.

Block 26 - EOSS . If applicable, enter the Engineering Operational Sequencing System (EOSS).

Block 27 - TECHNICAL MANUAL NUMBER. If available, enter the TM number, otherwise enter NA.

Block 28 - RIN (DEN E221). If the component is listed in the COSAL or the SCLSIS, enter the Record Identification Number (RIN). If not available, the program will assign a temporary RIN as a permanent data element until changed by the SCLSIS CDM external interface. For automated ships, first review the SEF for the component's RIN.

Block 29 - AILSIN/FUNCTIONAL GROUP CODE (DEN T063). If the Automated Integrated Language System Identification Number (AILSIN) is not available, enter the Ship Work Authorization Boundary (SWAB) or Ship Work List Item Number (SWLIN), if known. TRIDENT applications will contain the Functional Group Code (FGC) in lieu of AILSIN. Other class submarines use SWAB, other type ships use Expanded Ship Work Breakdown Structure (ESWBS).

Block 30 - SPECIAL PURPOSE. These requirements are TYCOM directed and are provided by the TYCOM supporting activity (SUBMEPP/PERA).

The following are PMR requirements for SUBMEPP LCM. These requirements, if applicable, are provided by SUBMEPP. If the local site determines that changes are required, additions may be made. Deletions must first be coordinated with SUBMEPP.

Block 30A SS. - Use an "X" if the component is Submarine Safe (SUBSAFE).

Block 30B - Use an "X" if the component is LEVEL 1.

Block 30C NL1 - Use an "X" if the component is NUCLEAR LEVEL 1.

Block 30D NDT. - Use an "X" if the component requires NON-DESTRUCTIVE TEST.

Block 30E NWP. - Use an "X" if the component requires NUCLEAR WORK PROCEDURES.

Block 30F SAED. - Use an "X" if the component requires SUB ANTENNA ENGINEERING DIVISION.

Block 30G SAED. - Use an "X" if the component requires SUB ANTENNA ENGINEERING DIVISION.

Block 30H ST. - Use an "X" if the component requires SPECIAL TESTING.

Block 30I - Use an “X” if the component requires SPECIAL IDENTIFICATION.

Block 30J NC. - Use an “X” if the component is NOISE CRITICAL.

Block 30K RAD. - Use an “X” if the component requires RADIOLOGICAL CONTROL.

Block 30L OC. - Use an "X" if the component requires OTHER CONTROLS.

Block 30M D/D. - Use an "X" if the component requires DRYDOCKING.

Block 32 - LINE ITEM NUMBER. This element is assigned by the program when items/components are added to the system. The LIN is unique to the configuration file for each customer UIC and is retained until the record is deleted from the ship’s inventory.

NOTE: This line item number preceded by PM becomes the permanent 3-M Work Center and JSN. Subsequent changes made to the record are reported up-line as a corrected CK using this permanent JCN. In addition, changes to the scheduling record and to the Calibration Laboratory (Cal Lab) production record are reported up-line with the same permanent JCN to support the MEASURE integration into 3-M. Note that the LIN plays the same role as the RIN for "non-supply worthy" items.

Block 33 - ON SITE. If the component being calibrated/tested cannot be delivered to the Testing Work Center (TWC) because of location, size, etc., enter a "Y" to show the TWC must calibrate on-site. Otherwise leave this field blank. Leave blank for Submarine Extended Operating Cycle (SEOC) PMRs relating to installed HM&E.

Block 34 - PERIODICITY. Enter the number of months between calibration/testing or other PMR cycles. If the requirement is situational, see Block 45.

Block 35 - DATE LAST DONE. Enter the date (DDMMMYY) the PMR was last accomplished (e.g., 05FEB00). For EPP, if the PMR has never been done because the periodicity has not exceeded the months since commissioning, construction, overhaul; enter this event date if the PMR authorizes. If the PMR is for test equipment/slings/portable tools that have not previously been calibrated/inspected, the PMR must be accomplished prior to first use. Block 35 will be entered by the TWC.

Block 36 - NEXT DUE DATE. Enter the date (DDMMMYY) the PMR is next due for accomplishment (e.g., 27JUL00). This data element is calculated and reported up-line by the automated program when the PMR is reported completed by the TWC.

Block 37 - STND/ETV Man-Hours - TENTHS. If the component PMR has a standard, engineered time value, or historically based man-hour estimate, it should be provided by the LCM/NAVSEA for the initial download or subsequent Automated Shore Interface (ASI) process. This element is not for expended man-hours reported when the PMR is accomplished.

Block 38 - APPROVED PROCEDURE. Enter the procedure, periodic maintenance requirement, technical repair standard or other directive used during the required action on the component. SUBMEPP should not repeat the Integrated Maintenance and Modernization NUMBER in this block as it is planning record.

NOTE: This entry is displayed in the last Program (IMMP) P~ included in the MJC column of the PMR report. This information may be used as an update record to show such information as the name of the person conducting the test/calibration, or the measurement of the gear. Once entered, it will display on subsequent reports until changed when next tested.

Block 39 - CAGE (DEN C035). Enter the Commercial and Government Entity (CAGE), if applicable.

Block 40 - NATIONAL STOCK NUMBER (NSN). Enter the NSN, if applicable, or the LCM assigned number used for procurement/replacement/supply action.

Block 41 - PLANT ACCOUNT NUMBER. Enter the plant account number if applicable. This usually applies only to shore activity permanent/fixed equipment.

Block 42 - CALIBRATION STANDARD. Enter a "Y" if the component is used as a measurement standard for calibrating or testing other test equipment, otherwise leave blank.

Block 43 - CLASS STANDARD. To identify the source/type of man-hours/tenths for Block 37. A = Engineered, B = Historical, C = Estimated.

Block 44 – EQUIPMENT TYPE. Enter the functional category of the equipment. 1 = Electronic; 2 = Coaxial/ Microwave; 3 = Optical/Dimensional; 4 = Physical/ Mechanical; 5 = Electrical; 6 = Special Support. These are for LCM Measurement Equipment. Additional codes and other categories will be established by other LCMS.

Block 45 – PHASE LEVEL. For measurement equipment (SUBMEPP or CMP events) if applicable, enter an asterisk plus the four digit KEY EVENT code describing the situational requirement.

Block 46 – ACTION REQUIRED. Primarily calibration codes are entered. For PERA and weight handling components, use Code 06 TEST/INSP.

Block 47 – OVERFLOW INDICATOR. For measurement (TAMS), the IMA lab may use a two character code to identify a specific shore facility. A similar code may be used for SUBMEPP to identify components requiring off site assistance teams.

Block 48 – SCAT CODE. For Ships Portable Electrical/Electronic Equipment Requirements List (SPETERL) TAMS. The LCM should provide the subcategory code. Not applicable to other equipment.

Block 49 – SUPPRESS LANTFLT 4790/6 (if applicable). A custody receipt is provided to the customer when test equipment or other

portable components are delivered to the Cal Labs. This form is not required for other categories of equipment. Enter a "Y" to prevent printing of the custody receipt. Enter an "N" for all test equipment having to be delivered to the Cal Lab. This causes the printing of a four-part custody receipt when the component is due for calibration. When the PMR is run at the beginning of each month, the computer will generate the PMR DUE/OVERDUE/INVENTORY REPORT for the customer ship and the Cal Lab. After generating the Cal Lab reports, the system will print the LANTFLT 4790/6 for each DUE component.

NOTE: These LANTFLT 4790/6s must be delivered to the Cal Lab and not to the customer ship with the recall reports.

Block 50 – MEC-VITALITY CODE. Mission Essential Code V = Vital. For SUBMEPP use codes reflected in EOC IMMP/URO/LID. Use only if required and furnished by LCM. IMA Work Center. Enter the 3-M Intermediate Maintenance Activity Repair WC code of the Cal Lab or Testing WC. This is obtained from the MJC planning record.

Block 51 – MAINTENANCE LEVEL. From the CMP, used to identify where PMR will be performed: Organizational (0), Intermediate (I) or Depot (D). Additional data elements used in PMR as part of the Configuration/Equipment Record, and for generating from one to multiple scheduling records for each equipment record file, are detailed in the NAVSEA Technical Specification Manual. Each scheduling record must be identified to a unique MJC JCN general requirement for multi-tasking.

The following are data elements used in creating scheduling records for MJC supported equipment. These elements are used with the automated processing of PMRs and do not have a correlating block entry requirement on the PMR CK form. For additional information refer to TYCOM instructions and systems user manuals.

DATA ELEMENT	Description/Entry Criteria
ALMAD	Identifies the ALMAD of the PMR component for calculation the Next Due Date. This is for SEOC IMMP/URO programs which adjusts the LMA

	date to the end of the availability.
EOSS	Assigned by the CDM if applicable to the PMR accomplishment.
FREQUENCY (DAILY, WEEKLY, MONTHLY, ETC.)	The periodicity frequency of the PMR. Used by SUBMEPP to identify SEOC events from the CMP. It should cross reference to scheduling of situational PMRs.
IMA WORK CENTER (DEN E902A)	The 3-M IMA Repair WC code of the Cal Lab or Testing WC. This is obtained from the MJC planning record. "FCA" is used for shipboard gage calibration.
INITIALIZATION NEXT DUE DATE	The CDM assigned date to identify when new requirements are to be scheduled for accomplishment. This date is required for implementing PMR on newly commissioned ships or when PMR components receive additional scheduling requirements. Format is YYMMDD.
LAST ACTION TAKEN	The Final Action Taken (FAT) code from the Completed automated work request. Date is retained on record. LAST ASSIGNED AVAILABILITY NUMBER (ANNN) Identifies the Availability Category and number in which the component PMR was last accomplished.
LAST ASSIGNED REPAIR ACTIVITY UNIT IDENTIFICATION CODE (RAUIC)	This RAUIC identifies the IMA last accomplishing the component PMR.
LAST JCN REFERENCE	The WC and JSN of the last reported JCN that accomplished the PMR. The intermediate maintenance management automated systems include retention of the last JCN and Availability Number in the PMR Scheduling file for determining the Adjusted Last Maintenance Action Date (ALMAD).
LIFE CYCLE MANAGER CODE (DEN E137)	The LCM code assigned to the MJC planning record and as shown in the modified OPNAV 4790/CK (PMR CK). Note that the one character code from COSAL Maintenance Manual is expanded to two (with an optional suffix). This allows identification of multiple functions within the SYSCOMS.
LIFE CYCLE	TYCOM will assign.

MANAGER CODE SUFFIX (OPTIONAL)	

MAINTENANCE ACTION CODE LITERAL	The four character literal to describe the required PMR. Calibrate = CAL, Special Calibration = SCAL, User Calibrate = UCAL, Test or Inspection = TEST, No Cal Required = NCR, Inactive = INAC.
MASTER JOB CATALOG NUMBER	Enter the MJC number from the bottom of the modified OPNAV 4790/CK (PMR CK) or from the TYCOM MJC Index.
PERIODIC MAINTENANCE REQUIREMENT (PMR) NUMBER	The PMR number as recorded on the MJC planning record (OPNAV 4790/2P) and as identified in the CMP.
RAUIC FINAL ACTION TAKEN (FAT) CODE	Identifies the FAT reported by the RAUIC for the component PMR.
SCHEDULED SHOP CODE	Identifies the IMA Cal Lab or other primary LWC to accomplish the PMR. For TAMS, use 51C, 67B, 67F, 96A, and FCA.
SCHEDULED RAUIC	Identifies the planned RAUIC for accomplishing PMR calibrations and other actions.
SELECTED EQUIPMENT LIST INDICATOR (SEL)	An “X” is used if CDM has indicated Meter Readings or Specialized Reporting.
SITUATIONAL REQUIREMENT KEY EVENT CODES	For scheduling PMRs to be done during non-cyclic situational events (e.g., calibrate tank level indicators whenever tanks are opened). These event codes are assigned by the CDM or supporting activity for CMP requirements.
SPECIAL HANDLING REQUIREMENTS	A series of codes and definitions to be assigned as agreed between the TYCOM, Platform Manager and designated CDM for TAMS and other PMR components. A total of eight codes may be defined for each ship type. Four codes are reserved for the following: A = POTENTIALLY RADIOACTIVE CONTAMINATED

	B = REACTOR PLANT CLEAN REQUIREMENT C = STEAM PLANT CLEAN REQUIREMENT D = OXYGEN CLEAN REQUIREMENT

SYSTEMS CALIBRATION (SISCAL) CALIBRATION REQUIREMENTS LIST (CRL) INDICATOR	Reserved for use as an interface to indicate PMR is to be performed by NAVSEA Team.
VERSION ISSUE DATE (DEN D917A)	The Julian Date (YDDD) of the original MJC JCN deferral.

C-7 MASTER JOB CATALOG (MJC) INTERFACE WITH PMR

The MJC and PMR integration provides management of many other maintenance applications including all Class Maintenance Plan requirements, electrical safety and weight handling safety requirements, PMS requirements calling for IMA support, periodic inspections of reduced instruction set computing (RISC) and flexible hoses, IMA testing of system relief valves, IMMP/URO submarine requirements, tracking of multi-phase alterations and corrosion control management.

The decision to manage these cyclic requirements as single or multi-task requirements is usually determined by the scope of the task, and if a single Work Center can accomplish the task or whether multiple Work Centers will be required.

C-7.1 TAMS Calibration

PMR provides the TAMS community with inventory management, calibration scheduling management and calibration results reporting capabilities. TAMS categorizes equipment requiring calibration and weight testing periodic maintenance. The MJC supports TAMS equipments and the special IMA Routines required to support calibration and weight test periodic maintenance requirements that are to be accomplished during scheduled availabilities. The lab assigned responsibility for calibration

and repair along with the Work Centers responsible for accomplishment are provided in the MJC.

a. PMR tracks all due and overdue TAMS of each MJC category. For each periodic requirement that needs to be accomplished, PMR creates a single deferral for each scheduling record. This assists the Cal Labs in identifying all items requirement periodic test, monitoring/calibration to be identified to the customer ship and the IMA lab.

b. When the items are delivered to the lab, PMR will track delivery, progression, status, completion and pick-up of each piece of test equipment. The Master CSMP will display within the single deferral all of the due/overdue items by line item, model, serial and nomenclature.

c. As each task (TAMS item) is completed, the expended man-hours are accumulated against the production AWR and the detailed reporting of hours, delays, parts usage, out-of-tolerance readings and standards being used are recorded and up-line reported. This information is also retained in the PMR so that the Cal Labs have an on-line history of each ship's TAMS.

d. When the availability is completed (or optionally the Automated Work Request (AWR) can be created each month or quarter and be closed at the end of the period), the AWR is signed off for processing. A special record is automatically created for each item calibrated against the single CSMP JCN.

e. If any unscheduled TAMS items are delivered by the ship, the Lab (or TYCOM designated support activity) need only to access the PMR record and add it to the outstanding AWR.

f. The Cal Lab can call out a standard REPAIR routine for the specific lab and PMR item. For example, if Lab 67B cannot calibrate one of the 150 items, the unique MJC JCN with the item data from PMR is retrieved against the repairable item. This REPAIR routine assigns 67A (Electronics Repair) as the Assist Work Center and 67B inputs the defective item to 67A.

C-7.2 Standard MJC Routines for TAMS Calibration and Weight Testing

The "PMR WC" entry of the MJC standard routines identify the specific Logistic Manager Code for each category of TAMS. ET = SPAWAR Electronics, JR = NAVSEA RADIAC, etc. A "2" causes multiple task (line items) per single AWR, and the "MC" is the special suffix assigned to the Master CSMP deferral from the MJC.

From the MJC routine record, a PMR WC entry adjacent to the REPAIR MJC will create one item per AWR. This item will have a unique WC suffix - "CR" for Cal Repair. This allows retrieval of all TAMS repair history from NAVSEALOGCEN by keying on the JCN WC suffix or by MJC JCN which is contained in Block 18 of each MJC-originated CSMP deferral. The LCM code is included on each PMR detailed record reported to NAVSEALOGCEN via 3-M.

Lab	MJC for Cal	PMR WC	MJC for Repair	PMR WC
51C	N0000EXCAB702	HE2MC	N0000EXCAE702	HE CR
67B	N0000OXCAB701	ET2MC	N0000OXCAE701	ET CR
67F	N0000EXCAB703	JR2MC	N0000EXCAE703	JR CR
72D	N0000WXCNC719	HW2MC	N0000WXCNE719	HW CR
96A	N0000EXCAB704	HW2MC	N0000EXCAE704	HM CR
FCA	N0000EXCAB706	HM2MC	N0000EXCAE706	HM CR

C-7.3 Other Automated System in Support of PMR

Other automated systems and system programs interface with the MJC and PMR programs. Refer to TYCOM instructions and system user manuals for particular system capabilities and requirements.

C-8 USING MJC JCN STRUCTURE TO MANAGE PROGRAMS

The MJC File is created and managed the same as the CSMP file. Each "deferral" is a requirement or special work request (for service, scheduling of alterations or specialized CMP requirements, etc.) which is copied to a CSMP or work package. The method by which many different programs can be added to a

single MJC is by control of the MJC JCN. In documenting an MJC, there are exceptions to the standard documenting procedures for a CSMP deferral (OPNAV 4790/2K) as described in other chapters.

C-8.1 Fleet/TYCOM/Local Site MJC Control

a. BLOCK 1 UIC. The first character defines the MJC Manager Code and identifies the activity responsible for the MJC item. It is assigned by the TYCOM. This same code is used as a prefix to the MJC JSN log. The following restrictions apply to the use of MJC Manager Code.

A – Not Used. Reserved for foreign ship UIC identity.
I – Not used. To avoid confusion with numeral 1.
O – Not used. To avoid confusion with numeral 0
Q – Not used. To avoid confusion with numeral 0.
N – Used for MJC items issued and controlled by TYCOMS
M – Used for MJC items issued and controlled by the Fleet CINC.

b. When MJC items are added to a ship's CSMP, the program adds the original MJC JCN (with an "M"-MJC-prefix) to the "ALTERATION (Block 18)" data field. This allows the 3-M history at NAVSEALOGCEN to be queried relative to man-hour and material cost expenditures. A single calibration routine can provide (by individual ship, RAUIC, type of ship, etc) total cost per TYCOM for each and all electronic calibration labs for specific periods of time. In addition, the associated Repair routine will identify each unique piece of TAMS repaired during the same period.

C-8.2 Applicability UIC Control

BLOCK 1 - UIC. The remaining four characters of the MJC UIC identify MJC categories and the type of ships to which they apply.

0000	All Ships	0001	All Surface Ships
0002	All SSNs	0003	All SSBNs
0006	SSN/SSBN	0007	AEGIS CRUISERS
0100	ALTS AS/AD	0210	ALTS SSBN
0230	ALTS SSN	4020	SSN OVERHAUL ROUTINES
5000	TRIDENT UNIQUE	5100	SEA WOLF UNIQUE

For each MJC UIC, there must be a corresponding UIC control record added to the master file.

C-8.3 MJC WC Designations

a. BLOCK 2 - WC. The left two letters identify the shipboard department and division to which the item normally applies. If a specific division is not applicable, use "X". When the MJC item is for multiple departments, use "E" for Engineering.

b. The third and fourth letters identify the maintenance category and its source.

(1) When the third letter is a "C" (a corrective maintenance directive or periodic service routine item), the fourth letter will identify its source as follows:

Code	Source of Directive
A	PLANNED MAINTENANCE SYSTEM (PMS)
F	NAVSEA
H	SPAWAR
M	CINCLANTFLT/CINCPACFLT
I,O,Q	NOT USED
OTHER	RESERVED FOR TYCOM USE

(2) Other combinations of the third and fourth letter may be used to identify other categories as directed by TYCOMs.

c. When the MJC item is an alteration controlled through a TYCOM alteration management system or the Fleet Modernization Program Management Information System (FMPMIS), the first letter will identify the shipboard department, the second letter will be "X" and the third and fourth letter will identify the type of alteration (SA, TY, etc).

(1) The combination WC and JSN will be assigned by the alteration issuing authority and is displayed along with the structured alteration number on the alteration issuing directive.

(2) The structured alteration number must be recorded in Block 18 of the MJC deferral exactly as described in the AMS chapter. This provides for an error free Alteration Record being added to the ship's CSMP and provides for the necessary 3-M to FMPMIS completion status feedback. Because Block 18 is prefilled, the MJC JCN will not be copied into that field in the CSMP. However, the AMS WC/JSN will be assigned as the ship's WC/JSN. This same combination must be reported on the completed OPNAV 4790/CK Configuration Change Record rather than a shipboard assigned WC/JSN.

(3) An additional restrictive WC/JSN combination is for tracking the standard depot overhaul routines which have an MJC WC of "EXSY" and are identified in OWP so that depot estimates

and return costs can be reported to the SWLIN/ESWBS level and individual Work Center deferrals from the CSMP can be grouped and cost under the EXSY "bucket jobs". These standard EXSY routines retain the MJC WC/JSN when added to the CSMP and allows the ship's engineer and overhaul coordinator to track the overhaul progress by use of the CSMP. NAVSEA (SEA 07) directed these procedures be followed by SUPSHIP and Shipyards when costing Departure Reports and to provide for depot 3-M reporting.

C-8.4 MJC JSN Prefix for Work Category

BLOCK 3 - JSN. This entry is the sequence number of the item unique to the MJC "Work Center" code. It is usually all numeric, but there may be conjunctive or associated actions following an MJC inspection, test or calibration. If so, the total set should reflect a different alphabetic code as the first character of the JSN.

C-8.5 Documenting the MJC Deferral

The amount of detail within an individual MJC item is dependent on whether the action required is to provide IMA routines such as "Printing Services", specific non-scheduled refurbishment or repair for a recurring failure of a specific Allowance Parts List (APL), standard procedure for docking/undocking ships, corrosion control inspections of piping, or PMR scheduling of individual components. Details will be provided by TYCOM directives.

C-8.5.1 Evaluating Requirement for Single or Multi-Task

a. When the MJC item is being created for general service routines, and is not to interface with PMR configuration and scheduling, follow the standard deferral documentation procedures and describe in the Remarks data field (Block 35 of the 2K) the actions required for the routine. An example entry may read "IMA provide sheet metal service. Limit to 1/8" thick metal. S/F provide sketch on OPNAV 2L. Maximum 100 man-hours".

b. When the MJC item is written to interface with the PMR, the detail of the equipment or component is a function of the PMR configuration and scheduling records. When a single requirement requires a single JCN, data element fields for

"Alterations" (Block 4), "Component Noun Name" (Block 13), and "Component Identification" (Block 16) of the MJC will contain an asterisk. The data will be pre-filled from PMR when retrieved into the CSMP. An individual work request (JCN) per component is appropriate when multiple Work Centers are to be involved in the requirement or when there is a requirement for controlled work procedures required by TYCOM Quality Assurance Procedures. For example:

(1) If there were 100 sea valves due for a 72-month refurbishment, 100 separate JCNs would be added to the CSMP.

(2) If there were a second requirement to visually check all sea valves for external corrosion every 24 months, an additional MJC item would be created and another PMR scheduling record would be added to each sea valve configuration record. In this situation, the MJC would be coded as multi-tasked and one JCN would be created with 100 tasks (1 task per valve). The above MJC calibration routines are all coded as multi-tasked.

C-8.5.2 Standard Narrative (Block 35)

Narrative should include a statement of the requirement and include notices to the tended unit and LWC on ship to shop or special controls. The deferral narrative is limited to 1200 characters. However, when the AWR is completed, an additional 1200 characters may be used by the LWC to provide feedback information (free-form) to the SYSCOM directing the requirement.

C-8.5.3 Structured Narrative (Block 35)

There are two types of structured narrative provided by MJC:

a. Certain inspection or test criteria are specified by the requirement in which the LWC/AWC is to feedback the material condition assessment by "yes/no" responses to conditional questions printed on the CSMP AWR. In these cases, the narrative will begin with a general statement of the requirement, followed by specific inspection conditions and a response space for "Y" or "N". For example: "Was there evidence of external leakage? ( ); corrosion? ( )."

b. Certain equipment is designated for specialized reporting by the LCM or item manager and the organization. Automated ships'/systems must flag the SEF to display the structured narrative specified and funded by the LCM. This requires the shipboard technician to enter "as found" readings and symptoms which are up-line reported for SYSCOM analysis. If an extension of these specialized reporting requirements to the off-ship IMA technician is required, the PMR screen could display a similar format (refer to Appendix A, data element "REMARKS/DESCRIPTION" for Selected Equipment List (SEL) reporting requirements).

C-8.6 Documenting the MJC P&E

The OPNAV 4790/2P is used for MJC P&E with entries made as described in Appendix C except for the following:

C-8.6.1 Section I – Planning

Block A - SHIP'S NAME. Enter the "MJC ITEM".

Block B - HULL NUMBER. Leave Blank

Blocks 1-3 - JOB CONTROL NUMBER: Enter the same JCN as assigned to the attached MJC 2K.

Block 4 - PERIODIC MAINTENANCE REQUIREMENT NUMBER. If the MJC is for a PMR, enter the appropriate number from the CMP or other directive.

Block 5 - PERIODICITY. If applicable, enter the periodicity of the requirement.

Block 6 - YEAR AND MONTH ISSUED. Enter the date (YYMM) the PMR was established.

Block 7 - SPECIAL DATA. The first two positions are to identify the LCM code controlling the PMR. These codes are listed in the lower right section of the OPNAV 4790/CK (PMR CK). The third position is for entering whether the MJC is to control single (1) or multi-component (2) JCNs. Leave blank if the MJC is for non-PMR service routines. The fourth and fifth position is to record a special program WC suffix to the output CSMP JCN (e.g., Submarine IMMP/URO/LID SEOC program is assigned "JC" as a

suffix). If no entry is made, the output JCN will be assigned a WC suffix of "MC". Only alphabetic codes should be assigned to separate MJC retrieved deferrals from shipboard created deficiency deferrals.

Block 8 - SCREENING ACTION: When authorized by TYCOM instructions, the MJC may be designated as preapproved. Entry of the screening code will cause the MJC retrieval to by-pass normal screening action and the JCN will be sent directly for release to the IMA for accomplishment.

Block 9 - QUALITY ASSURANCE REQUIREMENTS (QA): Assign the QA requirements applicable to the MJC. The PMR scheduling record for individual components will take precedence during call-down.

C-8.6.2 Section II – Scheduling

Block 12 - LEAD WORK CENTER (LWC): Enter the code of the LWC assigned to control the coordination and completion of the total JCN. When the MJC is for multi-component inspection/ calibration/testing, the primary WC is assigned. When an associated "Repair" MJC is to be created, assign the same primary WC as LWC and other required WCS as assisting (AWC). To ensure standardization for IMA capabilities and continuity when transferring work packages, the TYCOM controlled MJC assigned LWC must not be changed unless approved by TYCOM instruction.

Blocks 13, 19, 25, 31, 37, and 43 as required:

SCHED START DATE: Enter a numeric value for the start day relative to the start of the availability. When the MJC is subsequently retrieved and added to the CSMP, the relative day will be added to the availability start date and output as a Julian date that each task is to be started by the LWC and any AWCs. Note that multi-component MJCs will not include AWC entries.

C-8.7 Establish Bill of Materials Interface

When the MJC is for refurbishment of APL identified components, the repair part requirements (both mandatory and conditional) are provided on electronic media by the LCM or TYCOM assigned activity (SUBMEPP/SURFMEPP/CPA).

When the MJC is retrieved for each component, an automated material requisition is produced for mandatory parts and a list of contingency items provided with the work request. The same format record can be added by local sites if local MJC items are developed.

C-8.8 MJC Alteration Documentation Differences

Alterations added to the MJC will be limited to those managed by the AMS. These are identified by the assignment of the AMS WC/JSN and structured alteration number as described in the Joint Fleet Maintenance Manual (JFFM).

Block 1 - SHIP'S UIC: Enter the MJC UIC established by the TYCOM

Blocks 2-3 - WC AND JSN: Enter the WC/JSN assigned by the alteration issuing authority.

Block 18 - ALTERATIONS: Enter in position 1 and 2 the alteration type identified in Appendix C. This entry must match the WC suffix in the WC field (Block 2).

Block 27 - S/F MHRS REM: Entry must be numeric. The use of "AUTO" (auto-close) is not appropriate for MJC alterations. Completion of deferrals for alterations must be by OPNAV 4790/CK.

C-8.9 MJC Index and Statistics

The MJC Index (Figure C - 2is produced as required by TYCOM instructions. A number of selection parameters are provided during call-down to limit the volume of the Index to particular applications. MJC JCNs required by tended ships may be recorded on the OPNAV 4790/2L and provided to the TYCOM-designated support activity during the availability arrival conference. Selected MJC JCNs may be called down as directed by the TYCOM prior to the availability or by quarter year (e.g., calibration routines) and may be assigned to other than the scheduled availability. This allows the Production Management Assistant (PMA) and other managers to focus on correction of deficiencies with weekly status reports of service routines progression. Also available is the MJC Call-Down Frequency Report. A number of selection parameters are provided to limit the volume of the

report to particular applications. Available is a report on the number of times the MJC JCN was retrieved and the last retrieval date. This report allows monitoring of mandated JCN call-downs and also provides for culling out of locally created MJC routines which are seldom used. (Refer to the applicable system's user manual for additional reports that may be generated.)

C-8.10 Analysis of MJC/PMR Originated Production History

Each JCN called down from the MJC as a deferral into the Master CSMP is assigned a CSMP JCN different than the MJC JCN. Each specialized project may be assigned a unique WC suffix so that the Program Manager may retrieve selective history from the NAVSEALOGCEN 3-M database on the MJC Call Down Frequency Report (Figure C - 3).

Some special program WC suffix codes currently being used are:

_XSA	SHIPALTS
_XTY	TYCOM ALTS
EXSY	Depot-level (SY=Shipyard) availability routines. These routines assign standard 3-M data to each.
ESWBS/SWLIN	For Depot Return Cost Departure Reports as approved by NAVSEA (SEA 07)
_XCR	Jobs for repair of components that failed calibration or weight testing. Each failed component will be assigned a unique JCN.
_JC	IMMP/RO/LID and other scheduled CMP PMRs

When a special program code is not assigned, the program will assign a WC suffix of "MC".

If allowed by TYCOM instructions, the ship may assign its own WC/JSN to the MJC routine. With the exception of MJC Alterations, each retrieved MJC deferral will have its MJC JCN prefixed with an "M" and be written to the

Configuration/Alteration Number field (block 18) of the CSMP deferral.

When the MJC is designated as multi-level, the MJC call-down is linked to the PMR scheduling file and retrieves all due and overdue components as tasks within the one CSMP deferral JCN. This will result in a family of data records being created to capture the METCAL required data when the lab reports completion of each component.

Each Program Manager is able to retrieve and analyze all transactions unique to the MJC JCN and WC suffices assigned to a special program.

C-8.11 Modification of On-Site MJC

Implementation, distribution and maintenance of the MJC will be as described in this instruction and supplemented by Fleet/TYCOM instructions. It is essential that existing MJC files, which have common application, be adapted by those commands not yet implemented. This will speed the integration of the Regional Maintenance Hubs and provide continuity to the existing 3-M database for Program Manager requirements.

The Fleet Maintenance Management System will provide connectivity to the initiatives of the SYSCOMs for data storage and distribution.

The FLTCINCs/TYCOMs will provide instructions for management of the MJC to include centralized and on-site control.

The existing method of confirming updates to the MJC by the IMAs is by including a "completed AWR record" in the update files sent from the originator. The originator subsequently monitors the MDS data.

APPENDIX D

LIST OF ACRONYMS

APPENDIX D - LIST OF ACRONYMS

A

A&I	Alteration and Improvement
ACF	Accomplishment Confidence Factor
ACN	Advance Change Notice
ACU	Assault Craft Unit
ADP	Automated Data Processing
ADPE	Automated Data Processing Equipment
AEC	Assessment of Equipment Condition
AEL	Allowance Equipage List
AER	Alteration Equivalent to Repair
AILSIN	Automated Integrated Language System Identification Number
AIS	Automated Information Systems
AIMD	Aircraft Intermediate Maintenance Department
AIT	Alteration Installation Team
ALID	Automated Library Issue Document
ALRE	Aviation Launch and Recovery Equipment
AMS	Alteration Management System
AMT	Amalgamated Military/Technical Improvement Plans
APL	Allowance Parts List
AR	Alteration Request
ASG	Afloat Shipping Guide
ASI	Automated Shore Interface
ATG	Afloat Training Group
ATO	Afloat Training Organization
AWR	Automated Work Request

B

BACD	Basic Alteration Class Drawings
BOATALT	Boat Alteration
BOC	Base Operating Contract
BUIC	Benefiting Unit Identification Code
BUMED	Bureau of Medicine and Surgery

C

CA	Coordinating Activity
CAGE	Commercial and Government Entity
CANTRAC	Catalog of Naval Training Courses
CASREP	Casualty Report
CCF	Configuration Change Form
CD-ROM	Compact Disk - Read Only Memory
CDA	Central Design Activity
CDM	Configuration Data Manager
CFFC	Commander Fleet Forces Command
CID	Component Identification Number
CINC	Commander in Chief
CIS	Commercial Industry Service
CM	Corrective Maintenance
CMP	Class Maintenance Plan
CMPWG	Common Maintenance Planning Working Group
CNIC	Commander Navy Installations Command
CNO	Chief of Naval Operations
COMNAVSEA	Commander Naval Sea Systems Command
COMSPAWARSYSCOM	Commander Space and Naval Warfare Systems Command
COSAL	Coordinated Shipboard Allowance List
CSA	Navy's Central Configuration Status Accounting System
CSMP	Current Ship's Maintenance Project

D

DBI	Demand Based Items
DCA	Damage Control Assistant
DCPO	Damage Control Petty Officer
DEN	Data Element Number
DFS	Departure from Specification
DIRSSPO	Director Strategic Systems Project Office
DLR	Depot Level Repairable
DOD	Department of Defense
DPMA	Docking Phased Maintenance Availability
DSRV	Deep Submergence Recovery Vehicles
DSS	Deep Submergence System
DT	Downtime

E

EC	Engineering Change
ECP	Engineering Change Proposal
EGL	Equipment Guide List
EIC	Equipment Identification Code
ELEX	Electronics Equipment

EOSS	Engineering Operational Sequencing System
ESWBS	Expanded Ship Work Breakdown Structure

F

FBR	Feedback Report
FC	Field Change
FGC	Functional Group Code
FLETRACEN	Fleet Training Center
FLETRAGRU	Fleet Training Group
FLR	Field Level Repairable
FLTC	Fleet Commander
FMP	Fleet Modernization Program
FMPMIS	Fleet Modernization Program Management Information System (See NDE)
FMSO	Fleet Material Support Office
FOTE	Fiber Optic Test Equipment
FPR	Failed Part Reporting
FR	Force Revision
FSCM	Federal Supply Code for Manufacturers
FTC	Fleet Training Command

H

HAZMAT	Hazardous Material
HM&E	Hull, Mechanical, and Electrical Equipment
HMUG	Hazardous Material User's Guide
HT	Hull Technician

I

IEM	Inactive Equipment Maintenance
ILO	Integrated Logistics Overhaul
ILS	Integrated Logistics Support
ILSMT	Integrated Logistics Support Maintenance Team
IM	Intermediate Maintenance
IMA	Intermediate Maintenance Activity
IMAV	I-Level Maintenance Availability
INSURV	Board of Inspection and Survey
ISE	In-Service Engineer
ISEA	In-Service Engineering Activity
ISIC	Immediate Superior in Command
IUC	Intermediate Unit Commander

J

JCN	Job Control Number
JETDS	Joint Electronic Type Designation System
JSN	Job Sequence Number

L

LATD	Lacks Adequate Technical Description
LCM	Life Cycle Manager
LID	Library Issue Document
LOEC	List of Effective Cards
LOEP	List of Effective Pages
LSD	Logistic Support Data
LU	Lay-Up Maintenance
LWC	Lead Work Center

M

MA	Maintenance Action
MACHALT	Machine Alteration
MACN	Manual Advance Change Notice
MARCORBASES PAC	Marine Corps Bases Pacific
MCB	Maintenance Control Board
MCC	Material Control Code
MCI-E	Marine Corps Installations East
MCI-W	Marine Corps Installations West
MDCO	Maintenance Document Control Office
MDS	Maintenance Data System
MDSTEIR	Maintenance Data System Transaction Error Identification Report
MEASURE	Metrology Automated System for Uniform Recall and Reporting
MFOM	Maintenance Figure of Merit
MH	Man-hour
MHR	Material History Report
MIAPL	Master Index of APLs/AELs
MILSTRIP	Military Standard Requisitioning and Issue Procedures
MIP	Maintenance Index Page
MIS	Management Information System
MJC	Master Job Catalog
MP-EA	Maintenance Planning – Engineering Analysis
MQJ	Measurement Quality Jumpers
MR	Maintenance Requirement
MRC	Maintenance Requirement Card
MRS	Maintenance Requirement Substantiated
MSC	Maintenance Support Center
MTR	Mandatory Turn-In Repairable

MTS	Moored Training Ship
MTSSY	Moored Training Ship Support Yard

N

NALCOMIS	Naval Aviation Logistics Management Information System
NAALS	Naval Air Navigation and Landing Systems
NAVMEDLOGCOM	Naval Medical Logistics Command
NAVSEA	Naval Sea Systems Command
NAVSEALOGCEN	Naval Sea Logistics Center
NAVSUP	Naval Supply Systems Command
NC	Not Carried
NDE	Navy Data Environment
NEC	Navy Enlisted Classification
NECC	Navy Expeditionary Combat Command
NHA	Next Higher Assembly
NICN	Navy Item Control Number
NIR	No Individual Requirement
NISMF	Navy Inactive Ship Maintenance Facility
NMR	No Maintenance Required
NROTC	Naval Reserve Officers Training Corps
NSDSA	Naval Sea Data Support Activity
NSN	National Stock Number
NSWCCD SSES	Naval Surface Warfare Center, Carderock Division Ship Systems Engineering Station
NTCSS	Navy Tactical Command Support System

O

OA	Ordnance Alteration (See ORDALT)
OCS	Officer Candidate School
O&MN	Operation and Maintenance Navy
OM	Organizational Maintenance
OMMS-NG	Organizational Maintenance Management System-Next Generation
OPNAV	Naval Operations (CNO staff)
ORD	Ordnance Equipment
ORDALT	Ordnance Alteration
OT	Operational Test
OWP	Overhaul Work Package (Submarines)

P

PD	Priority Designator
PEB	Propulsion Examining Board
PEETE	Portable Electrical/Electronic Test Equipment
PEO	Program Executive Office
PM	Periodic Maintenance

PMDO	Planned Maintenance During Overhaul
PMR	Periodic Maintenance Requirement
PMS	Planned Maintenance System
PMT	Performance Monitoring Team
POM	Program Objective Management
PPE	Personal Protective Equipment
PPR	PMS Performance Rate
PQS	Personnel Qualification Standard
PREINSURV	Pre-Inspection and Survey
PSA	Post-Shakedown Availability

Q

QA	Quality Assurance

R

RAUIC	Repair Activity Unit Identification Code
RAR	Recorded Accomplishment Rate
RAV	Restricted Availability
RCM	Reliability-Centered Maintenance
REC	Re-entry Control
RIC	Repairable Identification Code
RIN	Record Identification Number
RM&A	Reliability, Maintainability, and Availability
RMC	Regional Maintenance Center
RMMCO	Regional Maintenance and Modernization Coordination Office
ROH	Regular Overhaul
ROV	Repair of Other Vessels
RWC	Repair Work Center
RSG/MCC	Readiness Support Group/Maintenance Coordinating Center

S

SAC	Service Application Code
SAR	Ship Alteration Record
SARP	Ship Alteration and Repair Package
SCAT	Sub-Category Code
SCLSC	Ship Configuration Logistic Support Control
SCLSIS	Ship Configuration Logistic Support Information System
SEAS	Supply Edit Audit and SIM System
SECAS	Ship’s Equipment Configuration Accounting System
SEF	Ship Equipment File
SEL	Selected Equipment List
SFWL	Ships Force Work List
SHAPM	Ship Acquisition Program Manager

SHIPALT	Ship Alteration
SHIPMER	Ship Maintenance Effectiveness Review
SIMA	Shore Intermediate Maintenance Activity
SKED	Automated Planned Maintenance System Scheduling Tool
SLCC	Ship's Logistics Component Configuration
SLEC	Ship's Logistics Equipment Configuration
SLM	Ship Logistics Manager
SMIC	Special Material Identification Code
SMIP	Ships' 3-M Systems Improvement Program
SMMSO	Submarine Maintenance Monitoring Support Office
SMS	Surface Missile System
SNAP	Shipboard Non-Tactical ADP Program
SOC	Scope of Certification
SPALT	Special Projects Alteration
SPAWARSYSCOM	Space and Naval Warfare Systems Command
SPETERL	Ship's Portable Electrical/Electronics Test Equipment Requirements List
SPIN	Standard PMS Item Name
SPMIG	Standard PMS Material Identification Guide
SPM	Ship Program Manager
SPO	Safety Petty Officer
SRD	Selected Record Date/Drawing
SSC	Supply Support Center
STEP	Shipboard Training Enhancement Program
SU	Start-Up Maintenance
SUBMEPP	Submarine Maintenance, Engineering, Planning, and Procurement
SUPSHIP	Supervisor of Shipbuilding, Conversion, and Repair, USN
SURFMEPP	Surface Ship Maintenance Engineering Planning Program
SURFMER	Surface Ship Maintenance Effectiveness Review
SWAB	Ship Work Authorization Boundary
SWBS	Ship Work Breakdown Structure
SWLIN	Ship Work Line Item Number
SYSCOM	Systems Command

T

T/A	Type Availability
TAV	Technical Availability
TEI	Test Equipment Index
TFBR	Technical Feedback Report
TGL	Tag Guide List
TM	Technical Manual
TMDER	Technical Manual Deficiency/Evaluation Report
TRF	Trident Refit Facility
TSU	TYCOM Support Unit
TYCOM	Type Commander

TYCOM REP	Type Commander Representative

U

UIC	Unit Identification Code
UND	Urgency of Need Designator
UM	Unscheduled Maintenance
USNA	U.S. Naval Academy

W

WC	Work Center
WDC	Work Definition Conference
WPNSTA	Weapons Station
WSF	Weapon Systems File

MISCELLANEOUS

2-M	Miniature/Microminiature Repair (Electronic Modules)
2P	Planning and Estimating Record
3-M	Maintenance and Material Management System
3MC	3M Coordinator
CK	Configuration Change Record

APPENDIX E

SHIP'S 3-M POINTS OF CONTACT

APPENDIX E - SHIPS' 3-M POINTS OF CONTACT

TELEPHONE NUMBERS ACTIVITY/CODE	**DSN**	**AREA CODE**	**COMM**	**EXT**
***CNO (N431K) CHIEF OF NAVAL OPERATIONS N431H WASHINGTON DC 20350-2000	329	703	601-1678	
***COMUSFLTFORCOM (N434A) COMMANDER U S FLEET FORCES N434A 1562 MITSCHER AVE SUITE 250 NORFOLK VA 23551-2487	836	757	836-3743	
***COMPACFLT (Code 4314C) COMMANDER U S PACIFIC FLEET CODE 4314C PEARL HARBOR HI 96860-7000	474	808	474-6353	
***COMNAVAIRLANT (N436) COMMANDER NAVAL AIR FORCES ATLANTIC CODE (N436) NAVAL AIR STATION BLDG V88 1279 FRANKLIN STREET NORFOLK VA 23511-2494	564	757	445-7536/ 4737	
***COMNAVAIRPAC (N436) COMMANDER NAVAL AIR FORCES PACIFIC CODE N436 NAVAL AIR STATION BLDG 11 P O BOX 357051 SAN DIEGO CA 92135-7051	735	619	545-4356/ 8957	
***COMNECC (N435) COMMANDER NAVY EXPEDITIONARY COMBAT COMMAND N435 1575 GATOR BLVD SUITE 237 NORFOLK VA 23521-3024	253	757	462-4316	111

TELEPHONE NUMBERS ACTIVITY/CODE	DSN	AREA CODE	COMM	EXT
***COMNAVSURFLANT (N432) COMMANDER NAVAL SURFACE FORCE U S ATLANTIC FLEET N432A64/N432A65 1430 MITSCHER AVENUE NORFOLK VA 23551-2494	836	757	836-3367	
***COMNAVSURFPAC (N41) (3-M Officer) COMMANDER NAVAL SURFACE FORCE U S PACIFIC FLEET N41 2841 RENDOVA ROAD SAN DIEGO CA 92155-5490	577	619	437-3513	
***COMNAVSURFPAC (N41) (ATG) (Afloat Training Group Pacific) COMMANDER AFLOAT TRAINING GROUP PACIFIC N41 3455 STURTEVANT ST STE 1 SAN DIEGO CA 92136-5069	526	619	556-1792	
***COMSUBLANT (N4071A) COMMANDER SUBMARINE FORCE U S ATLANTIC FLEET N4071A 7958 BLANDY BLVD NORFOLK VA 23551-2492	836	757	836-1278	
***COMSUBPAC (N4721) COMMANDER SUBMARINE FORCE U S PACIFIC FLEET N43322 1430 MORTON STREET BLDG 665 PEARL HARBOR HI 96860-6543		808	473-4839	
***COMNAVRESFOR (Code N4) COMMANDER NAVAL RESERVE FORCES CODE N4 4400 DAUPHINE STREET NEW ORLEANS LA 70146-5100	678	504	678-5715	

TELEPHONE NUMBERS ACTIVITY/CODE	DSN	AREA CODE	COMM	EXT
***COMMINEWARCOM (N841) COMMANDER MINE WARFARE COMMAND N841 325 FIFTH STREET S.E. CORPUS CHRISTI TX 78419-5032	861	361	961-4852	
***COMNAVSEASYSCOM (SEA 04RM1) Ships' 3-M (SEA 04RM11)) COMMANDER NAVAL SEA SYSTEMS COMMAND SEA 04RM11 1333 ISAAC HULL AVE SE STOP 1210 WASHINGTON NAVY YARD DC 20376-1210	326	202	781- 3374/3386	
***COMNAVSUPSYSCOM (N00AL1) (Fleet Logistics Support – Configuration Management (SCLSIS)) COMMANDER NAVAL SUPPLY SYSTEMS COMMAND SUP N00AL1 1333 ISAAC HULL AVE SE STOP 4066 WASHINGTON NAVY YARD DC 20376-4066	326	202	781- 2099/3263	
***COMNAVSEASYSCOM (SEA 04RM) (Maintenance Engineering Division) COMMANDER NAVAL SEA SYSTEMS COMMAND SEA 04RM 1333 ISAAC HULL AVE SE STOP 1210 WASHINGTON NAVY YARD DC 20376-4111	326	202	781-3284	
***COMNAVAIRSYSCOM (AIR 3.6) (AVIATION 3-M) COMMANDER NAVAL AIR SYSTEMS COMMAND AIR 3.6 LOGISTICS SUPPORT DEPARTMENT 47060 MCLEOD ROAD UNIT 8 PATUXENT RIVER MD 20670-1625	757	301	757-8790	

TELEPHONE NUMBERS ACTIVITY/CODE	DSN	AREA CODE	COMM	EXT
***COMSPAWARSYSCOM (04L) COMMANDER SPACE AND NAVAL WARFARE SYSTEMS COMMAND 04L 4301 PACIFIC HIGHWAY SAN DIEGO CA 92110-3127	524	858	537-0521	
***COMNAVSUPSYSCOM (SUP 412) COMMANDER NAVAL SUPPLY SYSTEMS COMMAND SUP 412 5450 CARLISLE PIKE P O BOX 2050 MECHANICSBURG PA 17055-0791	430	717	605-7254	
***FIRSTNCD (N432) FIRST NAVAL CONSTRUCTION DIVISION 1310 8TH STREET, SUITE 100 NORFOLK VA 23521-2435	253	757	462-3926	
***TRASUPCEN NORFOLK DET COMMANDING OFFICER TRAINING SUPPORT CENTER NORFOLK DET 9545 BAINBRIDGE AVENUE NORFOLK VA 23511-2794	565	757	445-7353	1098
***NAVSEALOGCEN DET NORFOLK (62111) COMMANDING OFFICER NAVAL SEA LOGISTICS CENTER DET NORFOLK CODE 62111 NORFOLK NAVAL SHIPYARD BLDG 13 PORTSMOUTH VA 23709-5000	646	757	967-3401	

TELEPHONE NUMBERS ACTIVITY/CODE	DSN	AREA CODE	COMM	EXT
***NAVSEALOGCEN DET SAN DIEGO (Code 62112) COMMANDING OFFICER NAVAL SEA LOGISTICS CENTER DET SAN DIEGO CODE 62112 4755 RAILROAD WAY SAN DIEGO CA 92136-5503	526	619	556-0246	
***NSWC CD SSES (Code 946) (Hull, Mechanical and Electrical PMS) COMMANDING OFFICER NSWC CD SSES PHILADELPHIA CODE 946 5001 SOUTH BROAD STREET PHILADELPHIA PA 19112-1403	443	215	897-1737	
***INSURV PRESIDENT PRESIDENT BOARD OF INSPECTION AND SURVEY 2600 TARAWA COURT SUITE 250 Virginia Beach VA 23459	253	757	462-7006	
***CENTER FOR SERVICE SUPPORT COMMANDING OFFICER CENTER FOR SERVICE SUPPORT NAVAL STATION NEWPORT 1183 CUSHING ROAD NEWPORT RI 02871-1522		401	841-1566	
***SPAWARSYSCEN NORFOLK COMMANDING OFFICER SPACE AND NAVAL WARFARE SYSTEMS CENTER NORFOLK 1837 MORRIS STREET SUITE 3311 NORFOLK VA 23511-3432 *24 HOUR TROUBLE DESK	646 588	757 800	443-0400 836-1816* 5665	

TELEPHONE NUMBERS ACTIVITY/CODE	DSN	AREA CODE	COMM	EXT
***SPAWARSYSCEN NORFOLK (Code 60) DET SAN DIEGO, CA OFFICER IN CHARGE SPAWARSYSCEN CHESAPEAKE DETPAC CODE 60 P O BOX 217 NAVAL STATION SAN DIEGO CA 92136-5217 *24 HOUR TROUBLE DESK	526 526	619 619	556-7671 556-7648*	
***NAVSEALOGCEN COMMANDING OFFICER NAVAL SEA LOGISTICS CENTER P O BOX 2060 5450 CARLISLE PIKE MECHANICSBURG PA 17055-0795	430	717	605-7133	
***NSDSA (Code 0310) COMMANDER NAVAL SURFACE WARFARE CENTER, PORT HUENEME DIV NAVAL SEA DATA SUPPORT ACTIVITY CODE 0310 4363 MISSILE WAY PORT HUENEME CA 93043-4307	982	805	228-0777	
***MCI-EAST COMMANDING GENERAL MARINE CORPS INSTALLATIONS EAST ATTN G3 O&T APP ATC TRAINING AND READINESS OFFICER PSC 20005 MCB CAMP LEJEUNE NC 28542-0005	751	910	451-7064	
***MCI-WEST COMMANDING GENERAL MARINE CORPS INSTALLATIONS WEST ATTN G3 ATC TRAINING AND READINESS OFFICER MCB CAMP PENDLETON CA 92055-5200	361	760	763-6403	
***CNIC (N3) COMMANDER NAVAL INSTALLATIONS COMMAND 716 SICARD STREET SE SUITE 1000 WASHINGTON NAVY YARD DC 20374-5140	342	301	342-1020	

APPENDIX F

HOW TO CREATE AND MAINTAIN PLANNED MAINTENANCE SYSTEM (PMS) SCHEDULES USING SKED 3.1

APPENDIX F - HOW TO CREATE AND MAINTAIN PLANNED MAINTENANCE SYSTEM (PMS) SCHEDULES USING SKED 3.1

F-1 PURPOSE

This appendix provides instruction on how to create and maintain Planned Maintenance System (PMS) schedules for commands using SKED 3.1. Commands using SKED 3.2 refer to Appendix G.

F-2 PMS SCHEDULES

The use of SKED Version 3.1 or higher for PMS Scheduling constitutes full compliance with all administrative provisions of this manual. Guidance for use of SKED is provided in the Help menus, Wizards associated with SKED, and the SKED Master Computer Based Training (CBT). PMS Schedules are categorized as cycle, quarterly, and weekly schedules.

F-3 CYCLE PMS SCHEDULE

The Cycle PMS Schedule (Figure F - 1) displays the planned Maintenance Requirements (MRs) to be performed over long periods of time in the maintenance life cycle of the ship. The PMS Cycle will be determined at the discretion of the Type Commander (TYCOM) but will not exceed 24 Quarters. A shore command's PMS Cycle shall be 20 quarters. The Cycle PMS Schedule shall also be reset as determined by the TYCOM. Multi-month requirements shall be scheduled relative to the first quarter after a PMS Cycle reset. Multiple month MRs will have the quarter indicated in parentheses, 30M-1(4, 14), for the periodicity. Any multiple month checks that have not been accomplished in this PMS Cycle period will be scheduled during the first quarter of the new Cycle Schedule. The Department Head shall approve Cycle Schedule in SKED.

F-4 CONTENT OF CYCLE PMS SCHEDULE

The following information is included in the block/column indicated:

a. Work Center. This block contains the applicable Work Center designator.

b. Schedule Quarter after Overhaul as Indicated. This block contains annual, semiannual, and multiple-month (greater than Quarterly) MRs. Mandatory related maintenance checks, which are to be completed during the quarter, are indicated by the pound sign symbol "#". The # sign, placed next to a primary check, indicates that there is mandatory related maintenance associated with that MR. The Maintenance Index Page (MIP) scheduling aids must be consulted when developing the Cycle Schedule to determine what mandatory checks apply and need to be scheduled.

NOTE: A printed Cycle schedule with Department Head's signature and date is not required when using SKED. The Department Head finalizing the schedule constitutes the approval signature.

c. MIP. This block contains a listing of the MIP codes for the PMS requirements to be scheduled on the Cycle schedule.

d. Component. This block identifies the related system, subsystems, or equipment of the scheduled PMS requirements.

e. Each Quarter. This block contains MRs with periodicities of 2W, 3W, M, 2M, Q MRs and all Non-Calendar Periodicities requirements. Only the presence of mandatory related maintenance will be indicated by the "#" symbol with the parent MR.

F-5 CONTENT OF QUARTERLY PMS SCHEDULE

a. Work Center. This block contains the applicable Work Center designator.

b. Quarter after Overhaul. Three possible quarter views.

c. MIP. This block contains a listing of the MIP codes for the PMS requirements to be scheduled on the Quarter including the Birthdate codes.

NOTE: A printed Quarterly schedule with Division Officer's signature and date is not required when using SKED. The Division Officer finalizing the schedule constitutes the approval signature.

d. Thirteen Week columns: One column for each week of the quarter listing scheduled MRs.

e. Underway Markings: Black Markings at the top of each Thirteen week column to indicate underway periods.

f. Reschedule Column: Semi-Annual, Annual, and Multi-Month (greater than 4M) MRs that require rescheduling to the next quarter.

F-6 USE OF THE QUARTERLY PMS SCHEDULE

The Quarterly PMS Schedule (Figure F - 2) displays the Work Center's PMS requirements to be performed during a specific 3-month period. This schedule, updated weekly, provides a ready reference to the current status of PMS for each Work Center. SKED performs this update based upon the Weekly Schedule. This schedule represents a divisional directive and, once approved, may be changed only with Division Officer approval.

a. Each Day the current week's column of the Quarterly PMS Schedule shall have all scheduled and non-calendar MRs that were performed annotated by use of the following symbols:

X = Fully Accomplished. The symbol "X" is the mark used to indicate completion of a MR. Fully accomplished Maintenance Requirement Cards (MRCs) will be X'd off separately on the quarterly schedule. Ensure that situation requirements which were accomplished are added and X'd off separately.
O = Not Fully Accomplished. A circled requirement indicates a requirement that was not accomplished or only partially accomplished following the applicable MRC.
O-with-arrow = Indicates rescheduled MRs.

¢ = Satisfied by Higher Level Maintenance. Upon successful completion of the system (higher) level test, an "X" is marked over the system level test requirement listed on the quarterly schedule. The symbol is used to mark those scheduled equipments or lower level MRC requirements which have been satisfied by the successful completion of the parent system test. A brief explanation of the parent system test (including the MIP, higher level MRC, who performed the maintenance, and when) is required on the Flip Page Report. (The MRCs that are so satisfied are identified on the applicable system level test MIP.) When PMS maintenance has been conducted using other means (e.g. test procedures other than PMS, equipment overhaul, contracted maintenance, etc.) that satisfies the intent of the PMS or when PMS was performed by an outside agency. The symbol is used to mark those scheduled equipment MRC requirements which have been satisfied by successful completion or by other means. A brief explanation of the other means process and/or procedures (including the MRC used, Memorandum of Agreement (MOA), SWLIN, name of agency, who performed the maintenance, and when) is required on the Flip Page Report. When PMS or its equivalent is performed by an outside agency, received documentation of the accomplishment shall be retained by the Work Center until the next accomplishment.

b. The Work Center Supervisor is responsible for circling MRCs as not accomplished or not fully accomplished and annotating the reason on the Flip Page Report listing the MIP and periodicity code, followed by a brief reason for non/partial accomplishment. For example:

4400/3-C1 M-1 Unable to accomplish step 1.j. "Test operate transmitter" due to antenna casualty.

c. The Work Center Supervisor is responsible for rescheduling MRs that are still within periodicity.

d. Unaccomplished Semi-Annual, Annual, or Multi-month (4M or greater) periodicity requirements will be added to the "Reschedule" column for accomplishment in the next quarter only

if still within their assigned periodicities. The Division Officer must ensure that priority is given to completing MRs rescheduled into the next quarter.

e. At the end of the quarter, the Department Head will review, sign, and date the quarterly schedule just completed. This is accomplished by the Department Head generating the next quarter placing the quarter just completed into archive. Generating the next quarter should only occur after end of quarter reports have been reviewed for accuracy by the chain of command.

Quarterly PMS Schedule

F-7 WEEKLY PMS SCHEDULE

The Weekly PMS Schedule (Figure F - 3) displays the planned maintenance scheduled for accomplishment in a given Work Center during a specific week. The Weekly PMS Schedule provides the Work Center Supervisor a management tool for planning MRs.

F-8 CONTENT OF WEEKLY PMS SCHEDULE

a. Work Center code. This block contains the applicable Work Center designator.

b. Date of current week. The view available for all weeks within the quarter.

c. MIP number minus the date code.

d. A list of applicable components.

e. Maintenance responsibilities assigned by name.

f. The periodicity codes of MRs to be performed each day. Applicable PMS checks due in next four weeks.

F-9 USE OF THE WEEKLY PMS SCHEDULE

The Weekly PMS Schedule created by SKED, shall be used by the Work Center Supervisor to assign and monitor the accomplishment of required PMS tasks by Work Center personnel. The Weekly PMS

Schedule will also be used to document MRs of Daily and Weekly periodicities.

The creation of the Weekly PMS Schedule produces a 13-Week Accountability log. When using SKED, there is no requirement to print the PMS Weekly Schedule.

F-10 PREPARATION OF CYCLE PMS SCHEDULE USING SKED 3.1

Cycle PMS Schedules are used to plan and schedule MRs to be conducted during each calendar quarter. The Chain of Command should devote considerable attention to the preparation of the Cycle schedule since these efforts will directly affect long-range PMS scheduling.

a. Materials required for preparation:

(1) The Work Center's portion of the PMS Master File (List of Effective Pages (LOEP)) (Report No. PMS 5).

(2) Current Force Revision (FR) data for applicable hull class and/or shore command.

(3) Copies of the applicable MIPs and MRCs for your Work Center.

b. Procedures for preparation:

(1) Review copies of all MIPs, including the Scheduling Aids to determine which MRCs apply to the installed equipment in the Work Center. Line-out MRCs that do not apply to your equipment configuration if authorized by a Scheduling Aid. If not authorized by a scheduling aid, submit a PMS Feedback Report identifying the reason for non-applicability. No change shall be made to the MIP until authorized; however, performance of affected MRs will be discontinued. Document the non-accomplishment of the MR on the quarterly close out.

(2) Verify that the PMS FR data in SKED 3.1 identically matches the FR version listed on your LOEP.

(3) Use the New Work Center Wizard (Figure F - 4).

(a) New Work Center Wizard

1. This function will lead the user through the process of assigning MIPs and Component Rows to the Work Center. The Component Row naming schemes can be edited once you are in the Data Entry Editor (Figure F - 5).

2. Upon completion of the above process the Work Center will be in Data Entry Mode. In Data Entry mode, the user has access to the Data Entry Editor which populates the cycle schedule by enabling the user to accept and reject PMS documents that apply to their Work Center. It also provides a hierarchical break down of the Work Center. All of the MIPs, Component Rows, and MRCs contained in the Work Center are listed in the editor. At this point the Work Center Supervisor should also plan for the use of Equipment Guide Lists (EGLs). If multiple EGLs will be required for an equipment item, then the Work Center Supervisor will be required to create additional Component Rows to which the EGLs will be assigned. Guidance on creating EGLs is provided later in paragraph F-15 of this Appendix.

(b) Data Entry Editor

1. The above function will permit the Work Center Supervisor to plan the amount of maintenance that will be performed each quarter and allow them to balance the maintenance workload during this cycle of the ship's operations. The starting period block will default to "1" for Q and below periodicities, including R, U and IEM maintenance checks. To determine allowable starting periods for S, A, and multi-month periodicities, divide the number of months reflected in the periodicity by the number "3". Additionally, this function will allow the binding of both Mandatory and Convenience related maintenance from the "Related Maintenance" column on the MIP.

(4) Finalizing the Cycle Schedule

(a) The Work Center Supervisor will inform their Chain of Command that the Cycle Schedule is ready for review and finalization.

(b) The Chain of Command will review the Cycle Schedule, taking into consideration the ship's future operating schedule, for accuracy and completeness by comparing the data in

SKED 3.1, line for line, to the PMS documentation in the Work Center PMS Manual.

(c) The Department Head must finalize the Cycle Schedule before proceeding to the Quarterly Schedule.

F-11 REVIEW QUARTERLY PMS SCHEDULE

a. Once the Cycle Schedule has been finalized, SKED 3.1 automatically generates the first three quarters of maintenance for the Work Center. These Quarterly Schedules are in Revise Mode, which allows the Work Center Supervisor to determine the maintenance schedule for that particular quarter, based on the current ship's schedule and personnel availability.

b. The Work Center Supervisor will review the first Quarter's MRs and make adjustments to ensure all scheduled maintenance is accomplished within the prescribed periodicities as listed below:

(1) Monthly: Will be scheduled within the interval between 21 and 42 days following the last accomplishment. A monthly PMS MR must be scheduled three times in a quarter.

Note: If a monthly maintenance check is circled and rescheduled, it may be necessary to move all subsequent checks to meet allowed intervals.

(2) Multi-Month, less than annual.

(a) 2M: Every two months within the interval between 42 and 82 days from the last accomplishment.

(b) Quarterly: Will be scheduled once each quarter within the interval 61 and 121 days following the last accomplishment.

(c) 4M: Every four months within the interval between 83 and 165 days from the last accomplishment.

(d) Semiannual: Within the interval between 122 and 242 days following the last accomplishment.

(e) 8M: Every eight months within the interval between 165 and 331 days from the last accomplishment.

(f) 9M: Every nine months within the interval between 180 and 360 days from the last accomplishment.

(3) Annual and above:

(a) Annual: Within the interval between 270 and 450 days following the last accomplishment.

(b) Multi-months greater than annual: MRs performed less frequently than once a year within the interval plus/minus 90 days from the scheduled date for accomplishment.

NOTE: To determine if maintenance actions should be performed in port or at sea, refer to MIPs and MRCs for a brief description of the maintenance actions.

c. The Chain of Command will review the proposed Quarterly Schedule and forward to the Department Head for approval. Once the schedule has been finalized (approved), SKED will place it in the Maintenance Mode and the Work Center Supervisor is authorized to begin performing and documenting MRs.

F-12 WEEKLY PMS SCHEDULE

Once the Quarterly PMS Schedule has been finalized, SKED will automatically generate Weekly PMS Schedules for every week of the quarter. The Work Center Supervisor shall assign Maintenance Personnel to the Component Row for scheduled MRCs and print a 13-Week Accountability report. This report will be presented to the Division Officer for their review and initialing. This constitutes approval for scheduled maintenance to be performed for the week.

F-13 EQUIPMENT ASSOCIATION

All installations of SKED 3.1 Server Mode include an interface with Organization Maintenance Management System – Next Generation (OMMS-NG). This interface allows SKED to retrieve equipment configuration information from the OMMS-NG database. This information can then be used to link equipment and MRCs identified on the PMS schedule to the OMMS-NG Equipment record.

Additionally, this function will allow creation of the EGL as well. Once an MRC is documented as completed, SKED will automatically generate a completed work candidate reporting, in the Remarks Block, the equipment that the MRC was completed on and the man-hours expended.

a. Equipment Association is performed using the Modify Equipment Association Wizard (Figure F - 6). This can be activated by using the Schedules menu and then selecting the Modify Equipment Associations option.

b. To begin the equipment association procedure, select the Add/Remove Equipment button. Once you have selected the equipment for the component row, you will then be brought back to this screen in order to associate the MRC to the equipment items.

F-14 PREPARATION OF EQUIPMENT GUIDE LIST (EGL)

a. EGL (Figure F - 7) is used with a controlling MRC when the MRC applies to a number of identical items (i.e., motors, controllers, life rafts, valves, test equipment, small arms, etc.). Each listed item will have a unique identifier assigned. Each Work Center prepares its own EGLs.

b. The amount of time it takes to perform maintenance on each item should be considered to determine the number of items to include on an EGL. Each EGL should contain no more than a single day’s work. If more than 1 day is required to complete the maintenance, additional EGLs will be prepared and numbered consecutively.

c. In some instances it may be unnecessary or impractical to list equipment on EGLs. For instance, if the equipment is listed on a TYCOM directed check-off list, a Calibration Recall Program, or Periodic Maintenance Requirement (PMR) is in effect, a notation of the applicable instruction in the location block of the MRC is all that is required.

d. EGLs can be created using the New EGL Report Wizard (Figure F - 8). For commands that are using the Server Mode of SKED 3.1, EGLs are created automatically when performing Equipment Associations to items in the Ships Equipment List that are then associated to MRCs. Equipment not listed in the Ships

Equipment List can be manually added and associated to MRCs in the Equipment Association Wizard.

F-15 PMS Feedback Report (FBR)

a. The PMS FBR is used to notify NAVSEALOGCEN Det Norfolk/San Diego of matters related to PMS. FBRs are generated using the Feedback Report Wizard (Figure F - 9).

Feedback Report Wizard

b. There are two types of Feedback Reports: Non-Technical and Technical.

(1) Non-Technical – This type of FBR is non-technical in nature and is intended to meet PMS needs which do not require technical review, including changes in Work Center LOEPs. These FBRs are submitted to request classified or other PMS documentation, which cannot be obtained locally.

(2) Technical - This type of FBR is technical in nature, and is used to report technical discrepancies inhibiting PMS performance. There are two designations that can be assigned to a Technical Feedback (TFBR).

(a) Routine - A TFBR will be considered routine when the reason for submission of a PMS TFBR is it relates to the technical requirements of PMS. It is used to report technical discrepancies and clarification of procedures in PMS documentation.

(b) Urgent TFBR – A TFBR will be considered URGENT when the reason for submission of a PMS TFBR involves safety of personnel, ship, or potential for damage to equipment and relates to the technical requirements of PMS. Urgent TFBRs will be forwarded by Naval message containing a PMS Technical Feedback Serial Number, to both NAVSEALOGCEN Det Norfolk/San Diego, info cognizant SYSCOM/BUMED/NAVSAFECEN/TYCOM. The message shall describe the unsafe procedures or conditions, and shall identify the MIP/MRC involved. An Urgent TFBR should be generated in SKED to include the date time group of the message and submitted.

(c) Once a FBR has been created, it is electronically routed up the Chain of Command for approval through the use of the FBR Manager function (Figure F - 10).

(d) During this process, the Chain of Command should review the FBR for accuracy and make any required changes.

F-16 PMS Force Revision (FR)

It is necessary to ensure that installed PMS packages are periodically updated to reflect changes in systems and/or equipment and to provide PMS documentation (new issues and revisions).

a. The Work Center Supervisor will receive the following material from the 3-M Coordinator:

(1) The Work Center's portion of the PMS Master File (List of Effective Pages (LOEP)) (Report No. PMS 5).

(2) Situational Maintenance Requirements Report (R-Check report).

(3) PMS Service Brief.

b. FR Verification:

(1) Once the FR NAVY PMS CD ROM data has been updated in SKED, the Work Center Supervisor will receive the following pop-up box the first time they access their Work Center. (Figure F - 11)

NOTE: If this dialog box does not automatically display, it can be accessed from the Tools/PMS Changes Notification menu.

(2) This dialog box will display any changes to MIPs/MRCs that have occurred since the last FR. By utilizing the legend the Work Center Supervisor can automatically determine what the changes are and will have the ability to generate this report in a printed form for future reference.

(3) The Work Center Supervisor shall review the new and/or changed MIPs/MRCs and if they apply to the Work Center, print these documents for inclusion into the Work Center PMS Manual.

NOTE: The changes identified are not applied to the Work Center automatically. The Work Center Supervisor must use the Revision Wizard and apply the FR to the Work Center.

c. Applying the FR.

(1) The Work Center Supervisor will apply the FR by using the Revision Wizard (Figure F - 12).

(2) When applying the FR, ensure that the Revision Method selected in Step 1 is "Revision from Centralized Data Source". If that option is not the default selected by the program, then contact the 3M Coordinator before proceeding any further.

NOTE: Step 4 requires the selection of the revision date. Work Center Supervisors will receive guidance from the 3M Coordinator on the date to select. This date determines when changes will be applied to the PMS Schedules.

(3) Upon completion of the above process the Revision Editor dialog box will appear. Utilizing the new LOEP and any new or revised MIPs/MRCs, the Work Center Supervisor shall apply the FR changes to their Work Center by accepting and/or rejecting the applicable PMS documents.

(4) The Work Center Supervisor will inform their Chain of Command that the FR is ready for review and finalization.

(5) The Chain of Command will review the FR changes for accuracy and completeness by comparing the data in SKED 3.1, line for line, to the PMS documentation in the Work Center PMS Manual.

(6) The Department Head must finalize the FR.

F-17 INACTIVE EQUIPMENT MAINTENANCE (IEM) SCHEDULING

To schedule inactive equipment maintenance, the Work Center Supervisor shall determine the status of the equipment as described in paragraph b and prepare schedules as follows:

a. The cycle schedule will remain the same.

b. The quarterly schedule:

(1) Locate the assigned component row for the equipment.

(2) Determine start date and enable the desired IEM status. This function will display a vertical line, indicating the start date and a mark (I, II) to indicate the IEM status code. For equipment placed in Status II, SKED will prompt for an explanation of this choice.

(3) SKED will automatically mark all previously scheduled operational PMS requirements within the inactive period to signify cancellation.

(4) From the IEM section of the MIP, schedule all lay-up and periodic maintenance requirements.

(5) When the inactive period continues into the following quarter, operational PMS maintenance is not required to be scheduled until after the inactive period. Instead, IEM requirements will be scheduled. When equipment remains in Status I or II through the beginning of a new quarter, indicate the status code in the first week on the appropriate line. Schedule operational PMS requirements for those items of equipment not declared for inactive maintenance.

(6) Schedule the start-up requirements and, if required, operational tests toward the end of the inactive period.

(7) At the end of the inactive period, disable the IEM and schedule operational PMS. To avoid redundant scheduling when making the transition to operational PMS, do not reschedule those requirements already accomplished as part of the IEM actions.

c. At the conclusion of IEM, routine PMS MRs shall be scheduled.

NOTE: Ships completing overhaul late in the quarter are not expected to do all planned maintenance scheduled during that quarter, but should do a certain amount based on the time remaining in the quarter.

F-18 List View

The List View (Figure F - 13) displays the planned Maintenance Requirements (MRs) to be performed over the Quarter After Overhaul selected in the tool bar. The list view is a combination of the Quarter and Weekly Schedules MR requirements. Each row corresponds to a check on the Quarterly and Weekly Boards for the Quarter Selected. Any functions that can be performed to the Quarterly and Weekly Schedule can also be accomplished to the List View.

a. Check Marking. Used to assign and display MR completion marking.

b. Spot Check Indicator. Used to update spot check results, and display their pass or failure status.

c. Partial Check Indicator. Used to indicate that not all of the procedural steps of the MRC were accomplished.

d. Split Check Indicator. Indicates that not all of the Equipment Items list on the originally scheduled MRC and EGL. The Split marking allows for Equipment Items that the MR was completed in its entirety to be marked as complete. Equipment Items that were not marked as complete will be rescheduled. The Split Check Indicator will be displayed for the Component rows with the completed EGL items, and the rescheduled Component row listing the EGL items that did not have the MR performed. The Component row with the EGL items that had the MR performed will have the Completion marking indicated.

e. OMMS-NG Indicator. Indicates that the MRC for that Component row has PMS Repair Parts, with SPIN number assigned, listed in the Parts section of the Tool, Parts, Materials, Test Equipment block.

f. Date. Components are sorted by date, with the selected week highlighted.

g. MIP. Lists the MIP SYSCOM number.

h. Component. Lists the Component Row information that is listed on the Cycle and Weekly schedule.

i. MRC. Lists the MRC Periodicity.

j. Man-Hours. Displays the Total Man-Hours listed on the MRC. For MRCs that have EGLs the Man-Hours are adjusted to show the total if all Equipment Items listed are completed. The adjusted Man-Hours will be displayed as; 0.4 (0.2x2):

(1) 0.2 is the Total Man-hours listed on the scheduled MRC.

(2) The multiplier, 2, is the number of equipment items listed on the EGL for that MRC and Component for that day.

(3) 0.4 is the Total Man-Hours that will be expended performing the MRC and EGL.

k. Crew. Displays which crew member is assigned to perform the check.

F-19 Events

Events are repetitive operations that affect the whole ship as a group, or locally to the individual Work Center and require the scheduling of multiple MIPs and MRCs when preparing for, during, or at the conclusion of the operation. The Event Editor, and Event Manager is where the 3M Coordinator or Work Center Supervisor can add, modify, and delete R-check events. After a Global Event has been triggered, the next time the Work Center Supervisor opens the work center, the Event Notification dialog box displays. This informs him that a Global Event has been triggered. Local events that are triggered by the Work Center Supervisor are scheduled immediately on the day prescribed.

a. Event Editor. Used by both the 3MC and Work Center supervisor to establish the event title and define the Event.

3M Coordinators add, modify and delete Global events, while Work Center Supervisors work with Local events.

b. Event Manager.

(1) This is where you select the MIPs and MRCs that are required to be performed for the selected Event.

(2) Each MRC that is associated to the Event is set to be scheduled on the date indicated by the 3MC or Work Center Supervisor, or is assigned an offset of days prior to or after the event has occurred and scheduled based on the number of days offset.

F-20 Accomplishment Ratings

SKED 3.1 uses the following formulas when determining metrics for PMS accomplishment:

a. Recorded Accomplishment Rate (RAR). RAR is calculated by dividing the number of fully accomplished maintenance requirements by the number of maintenance requirements scheduled during the time period for which the RAR is being calculated.

(completed checks/scheduled checks) = RAR

Completed Checks = Count of the total number MRCs (multiple-weekly, monthly, multiple-month, quarterly, semi-annual, annual) "X'd" off as being fully accomplished.

Scheduled Checks = Count of the total number of maintenance requirements scheduled for accomplishment (multiple-weekly, monthly, multiple-month, quarterly, semi-annual, annual)

b. Accomplishment Confidence Factor (ACF). ACF is a figure of merit that is based upon evaluating completed maintenance requirements as determined by the Quarterly schedule and determining whether or not these maintenance requirements have indeed been accomplished. ACF is calculated by dividing the number of maintenance requirements evaluated minus the number of maintenance requirements evaluated as not accomplished divided by the number of maintenance requirements evaluated.

(maintenance requirements evaluated – non accomplished maintenance requirements)/(maintenance requirements evaluated)= ACF

c. PMS Performance Rate (PPR). PPR is calculated by multiplying RAR by ACF.

PPR = RAR x ACF

d. Each Type Commander shall determine satisfactory scores for RAR, ACF and PPR.

APPENDIX G

HOW TO CREATE AND MAINTAIN PLANNED MAINTENANCE SYSTEM (PMS) SCHEDULES USING SKED 3.2

APPENDIX G - HOW TO CREATE AND MAINTAIN PLANNED MAINTENANCE SYSTEM (PMS) SCHEDULES USING SKED 3.2

G-1 PURPOSE

This appendix provides instruction on how to create and maintain Planned Maintenance System (PMS) schedules for commands using SKED 3.2. Commands using SKED 3.1 should refer to Appendix F.

G-2 SCOPE

The use of SKED Version 3.2 or higher for PMS Scheduling constitutes full compliance with all administrative provisions of this manual. This appendix highlights the major changes in policy dictated by the use of SKED 3.2, such as the elimination of weekly, quarterly, and cycle schedules.

G-2.1 Guidance

Guidance for use of SKED 3.2 is provided in the SKED 3.2 User Guide, Help menus, Wizards, instructor-led activation training, and embedded computer-based training.

G-2.2 SKED 3.2 User Roles

a. The 3M Coordinator will assign the default permissions and viewable content for each user account. Permissions are based upon a user's role and/or position in the chain of command. Users may determine their role and permissions from the MY TASKS view of SKED 3.2.

b. SKED 3.2 contains default user roles that support the Command 3-M Organization and Responsibilities described in Chapter 1. It is mandatory that all levels of the chain of command know the material condition of the equipment at the command and the extent to which planned and corrective maintenance is being accomplished. The Type Commander (TYCOM) may change default roles for customized management of the 3-M System program. Default roles include the following:

(1) 3-M System Coordinator

(2) Department Head

(3) Division Officer

(4) Leading Chief Petty Officer (LCPO)

(5) Work Center Supervisor

(6) Maintenance Personnel (designated as Crew Members in SKED fields)

(7) Administrator

(8) Read-Only (for inspectors and observers)

G-2.3 SKED 3.2 User Interface

a. SKED 3.2 consists of functional areas whereby data is presented within a modular layout of grids, tables, and outlines. Each functional area or "view" consists of a custom menu, sorting features, toolbar(s), Help tool, status bar, and icon legend. Most views have secondary views that further define functionality. Each view is independent of other views.

b. Users will log on to the system with a username and password. User activity such as acknowledging, signing, or generating information becomes part of the automated PMS workflows that are built into the system. Through these automated workflows, the chain of command may track some actions for accountability purposes.

G-2.4 Major Differences from SKED 3.1

a. SKED 3.1 is based on a component-row system; SKED 3.2 has equipment-based schedules (refer to Section G-3).

b. SKED 3.1 uses Equipment Guide Lists (EGLs); SKED 3.2 organizes equipment using Maintenance Items and Maintenance Groups (refer to Section G-3).

c. SKED 3.1 schedules maintenance at the same interval; SKED 3.2 maintains an appropriate periodicity on the PMS schedule (refer to Section G-3).

d. In SKED 3.1, maintenance tasks that are not performed within periodicity are deferred and counted against

accomplishment ratings once. In SKED 3.2, maintenance can no longer be deferred. Rather, when a maintenance task goes out of periodicity, a PMS alert will be generated when a weekly closeout is performed. In addition to an initial PMS alert, a new alert will be generated for every week that the maintenance remains out of periodicity. Each alert is counted against accomplishment ratings (refer to Sections G-3, G-6, G 8, and G-22).

e. In SKED 3.1, quarters are numbered sequentially; in SKED 3.2 quarters have a different designation to avoid confusion with overhaul maintenance (refer to Section G-7).

f. The weekly and quarterly schedules of SKED 3.1 have been replaced with the Schedule display in SKED 3.2 (refer to G-7).

g. The cycle schedule of SKED 3.1 has been replaced with the Review display in SKED 3.2 (refer to Section G-8).

h. SKED 3.1 does not indicate how long a maintenance task should normally take to accomplish. SKED 3.2 has a Forecast display for supervisors to forecast man-hours, tools, parts, and test equipment (refer to Section G-9).

i. Situational events are created manually in SKED 3.1 each time the Navy PMS DVD/CD is loaded into the system. SKED 3.2 automatically builds the event list and automatically adjusts the schedule to correspond with situational events (refer to Section G-10).

j. In SKED 3.1, MIP and MRC line-outs must be done manually. SKED 3.2 uses electronic procedure line-outs instead (refer to Sections G-4 and G-13).

k. Revisions in SKED 3.2 have an automated workflow that begins with a Wizard and becomes effective once approved by the Department Head (refer to Section G-14).

l. SKED 3.2 enables the 3M Coordinator to schedule spot checks (refer to Section G-18).

m. SKED 3.2 includes a List of Effective Pages (LOEP) functional area (refer to Section G-19).

n. Accomplishment ratings have been changed, which assists the command in its requirement for establishing effective and sustainable measures to ensure proper PMS accomplishment (refer to Section G-22).

o. SKED 3.2 communicates with third party applications such as Organizational Maintenance Management System-Next Generation (OMMS-NG), Micro-Shipboard Non-tactical Automated Data Processing System (Micro-SNAP), Automated Work Notification (AWN), and Mission Readiness Assessment System (MRAS).

G-3 EQUIPMENT-BASED PMS SCHEDULES

PMS schedules are dynamic, meaning they automatically change according to ship evolutions, equipment status, situational events, and other maintenance requirements. PMS schedules are equipment-based and centered on the use and organization of Maintenance Items and Maintenance Groups.

a. Maintenance Items. Maintenance Items are defined as any piece of equipment, sub-equipment, system, or subsystem requiring maintenance. Therefore, all PMS-worthy equipment must be identified as Maintenance Items. Each Maintenance Item has unique MRC relationships, which show how many MRC procedures are appropriate and required for each item. The schedule provides data pertaining to each Maintenance Item such as title, serial number, location, nomenclature, maintenance procedures, and note block.

b. Maintenance Groups. Maintenance Groups organize Maintenance Items under like categories. Supervisors will create and use groups as an organizational tool for managing maintenance; however, Maintenance Groups do not directly affect the PMS schedule.

c. SKED 3.2 uses a calculated scheduling interval by periodicity from the last scheduled instance of an MRC. This true interval scheduling maintains proper periodicity between scheduled maintenance tasks.

(1) Scheduling rules revolve around a specific number of days. Weekly checks are performed every 7 days; monthly checks every 31 days; quarterly checks every 91 days; and so on. The same time intervals are maintained and future maintenance is

automatically rescheduled based on the interval when a maintenance task is not performed when originally scheduled.

(2) When Supervisors add or reschedule PMS, future occurrences of the check will adjust accordingly to maintain proper periodicity.

(3) Supervisors are not allowed to manually reschedule checks that are out of periodicity. If maintenance is not performed, the check is moved to the next week on the schedule when the Work Center is closed out for the week. If a maintenance task goes out of periodicity, a PMS alert will be generated when a weekly closeout is performed. An automated workflow sends the PMS alert to the chain of command. At this time, the Work Center Supervisor shall provide a reason why maintenance was not performed on time.

d. Equipment-based schedules enable Work Center Supervisors to forecast man-hours, tools, parts, and test equipment.

e. Individual ships sometimes consider it desirable or necessary to shift maintenance responsibility from one Work Center to another. Transferring ownership of Work Center equipment will be performed electronically utilizing SKED 3.2, which allows the maintenance history to be maintained in the Work Center acquiring responsibility. In addition to the responsibilities outlined in Chapter 2.5, Work Center Supervisors will conduct the following:

(1) Utilizing SKED 3.2, perform a revision to move the equipment from the original Work Center’s current schedule to the Work Center receiving the maintenance responsibility.

(a) Export the data.

(b) Save data to a disk.

(c) Upload data into receiving Work Center.

G-4 PREPARATION OF PMS SCHEDULES

The Navy PMS DVD/CDs are the primary source data for the maintenance scheduling software. The DVD/CDs contain the List of Effective Pages (LOEP), which is a list of MIPs identified in

the shore distribution database for the Work Centers. For every Force Revision (FR), the Navy PMS DVD/CD is loaded into SKED, ensuring the software has the most current data available for preparing PMS schedules. (See G-14 for specific Force Revision information.)

G-4.1 Overview

A PMS schedule is built from a collection of Maintenance Items. When building a new Work Center, Work Center Supervisors must identify Maintenance Items when first preparing a Work Center's PMS schedule. Proper identification of Maintenance Items will result in accurate scheduling and optimal SKED functionality. However, Work Center schedules will be updated automatically each quarter when PMS documents are directly imported into a Work Center as part of the FR process.

G-4.2 PMS Organization

Most organizational outlines in SKED 3.2 are as follows: Maintenance Index pages (MIPs), Maintenance Groups, Maintenance Items, and Maintenance Requirement Cards (MRCs).

a. MIPs. MIPs are the broadest unit of organization of PMS documents. MIPs derive from the LOEP. Each MIP represents coverage for a system, subsystem, component, or a category of components. The LOEP with MIPs and the Navy PMS DVD/CD containing electronic PMS documents are both imported into SKED. To prepare PMS schedules, Work Center Supervisors will use this data to perform the following:

(1) Accept the MIP if it applies to the Work Center and add to the schedule.

(2) If the MIP does not apply to a Maintenance Item in the Work Center, provide a Feedback Report to ensure the MIP is removed from the LOEP during the next update process.

b. Maintenance Items. When building a PMS schedule, the Work Center Supervisor shall first define and organize Maintenance Items into like items. (Maintenance Items must be created first because they directly affect the schedule; Maintenance Groups do not affect the schedule despite being placed higher in the organizational outline.) Maintenance Items

will be identified by their relation to a MIP from the OMMS Ship's equipment configuration list. If a Maintenance Item is not listed on the configuration list, Work Center Supervisors may create unique Maintenance Items based on title, serial number, and location. After ensuring the Maintenance Items are organized correctly, Supervisors will add them to the schedule.

c. MRCs. When adding Maintenance Items to the schedule, Work Center Supervisors shall review MRCs to know how the MRC is used in relation to the development of Maintenance Items and Maintenance Groups under the MIP. Supervisors shall determine whether the MRC procedure refers to performing maintenance on one item, and repeated in its entirety on multiple, identical items, such as "Inspect Battle Lantern," or whether the MRC procedure refers to performing maintenance on a system, subsystem, equipment, or sub-equipment, such as "Isolate the fire main to the compartment." Supervisors shall also conduct the following:

(1) Perform a "review and omit" process on the procedure steps to eliminate the risk of execution errors. With SKED, this process is automated through electronic procedure line-outs, which are then approved by the Division Leading Chief Petty Officer (LCPO). The procedure will then be customized for the Maintenance Item. Any discrepancies in the procedure steps may result in a TFBR.

(2) Review the MIPs for active procedures to determine if Related Maintenance must also be performed. Related Maintenance is indicated by a # symbol on the MIP. The related MRC must be linked to the parent MRC on the schedule. Mandatory-Related Maintenance procedures will be automatically scheduled together for the life of the Work Center.

d. Maintenance Groups. After identifying Maintenance Items and reviewing MRCs, the Work Center Supervisor will organize Maintenance Items into like Maintenance Groups. Create a single Maintenance Group at a time. The groups will serve only as a management tool to better organize schedules and displays – they do not affect the schedule.

e. Assign Maintenance Personnel. Crew members are assigned to Work Centers to produce a talent pool from which the Work Center Supervisor can assign PMS tasks. Supervisors may add or

remove crew members as needed utilizing any display in the WORK CENTER view.

G-5 MY TASKS

Maintenance personnel shall check the MY TASKS view (Figure G - 1) upon each use of SKED, which is customized to user role and place in the chain of command. Personnel are responsible for performing maintenance tasks that are assigned to them and can determine assignments from MY TASKS. The function provides specific, user-oriented instructions regarding maintenance tasks awaiting action, the Unit PMS Message set by the 3-M Coordinator, notices of sub-standard metrics, and notices of triggered global events affecting a Work Center. It also identifies Work Centers with FRs past due.

G-6 WORK CENTERS

The initial display of the WORK CENTER view (Figure G - 2) lists all of the command's Work Centers. The chain of command shall review maintenance activity being performed in the Work Centers under their direction to determine current maintenance status. Refer to the SKED 3.2 User Guide for specific procedures.

a. Work Center Supervisors shall use the WORK CENTER view of SKED 3.2 to manage their Work Centers. This view consists of functional displays for scheduling, forecasting, planning around situational events, looking up PMS history, checking on inactive equipment, performing review and omit line-outs, etc.

b. Weekly Closeouts. After weekly maintenance tasks have been completed, the Work Center Supervisors shall perform the function known as "weekly closeout" utilizing SKED 3.2. The weekly closeout facilitates computation of PMS accomplishment data and generation of reports relative to maintenance status. The closeouts become part of the ship's PMS data; they will be date/time stamped and electronic signatures will be recorded. If a maintenance task goes out of periodicity, a PMS alert will be generated when a weekly closeout is performed. The Supervisor must enter the reason why maintenance was not performed on time. The reason will be reviewed and approved/disapproved by the Division officer.

c. Transferring Maintenance Items Between Units. Utilizing a Wizard tool, Work Center Supervisors may import/export data, such as Maintenance Items and maintenance history records between units (ship, submarine, or shore facility) using the SKED equipment file.

d. Transferring Maintenance Items between Work Centers. Utilizing a Wizard tool, Work Center Supervisors may import/export Maintenance Item data from one Work Center to another Work Center within the same unit (ship, submarine, or shore facility).

G-7 SCHEDULE DISPLAY

The Schedule display of SKED 3.2 (Figure G - 3) lists the maintenance tasks for a selected Work Center. This display provides the type of maintenance that must be performed, on which equipment the maintenance must be performed, personnel assigned to perform the maintenance, and the date the work is due to be accomplished.

a. The PMS schedule is made up of a yearlong maintenance period that is divided into four quarters: one past quarter, one current quarter, and two future quarters. Globally, the 3M Coordinator will archive previous quarters and create new quarters as the year progresses.

b. SKED 3.2 automatically displays data for the current quarter; however, other quarterly schedules may be viewed using a drop down menu. Quarters on the schedule are labeled in the same way that Force Revision (FR) quarters are labeled. For instance, 2-11 represents the second quarter of 2011. Every ship and Work Center uses the same quarterly identifier.

c. The maintenance quarter starts on the first Monday of the quarter (first Monday of January, first Monday of April, first Monday of July, and first Monday of December). Quarters on the schedule include the following months:

1st quarter – January to March
2nd quarter – April to June
3rd quarter – July to September
4th quarter – October to December

d. When a more detailed view is required, the PMS schedules may be viewed in different ways: by Week, by Maintenance Group, or by Crew.

e. Content of Schedule display. The Schedule display enables Work Center Supervisors and the chain of command to view comprehensive data for managing planned maintenance. The Schedule display consists of the following information: status of maintenance tasks, quantity of equipment requiring maintenance, mandatory related items, status of spot checks, safety tagouts required by MRCs, repair parts needed, maintenance that affects the safety of the ship, hazardous materials that are maintained, line-outs, classified maintenance, RINs associated, date that maintenance is due, the periodicity of the maintenance task, the names of Maintenance Items, the names of maintenance personnel (crew members) assigned to complete a task, the MRCs required to complete the maintenance, the estimated number of man-hours required to complete maintenance, the elapsed time, the number of crew members required to complete the task, serial number of Maintenance items, location of Maintenance items, the Allowance Parts List, MIP documents, MRC documents, and the MRC Code.

f. Use of Schedule display. The Work Center Supervisor is responsible for performing the following tasks (as needed) utilizing the Schedule display:

(1) Add a maintenance task to the schedule.

(2) Delete a manually added maintenance task.

(3) Reschedule a maintenance task.

(4) View details of a maintenance task, such as quantity, MRC, MIP, periodicity, procedure steps, spot checks associated, SPMIG information associated, related maintenance (MRCs that are related to the MRC that the check is scheduled for), etc., and special status indicators, such as hazardous materials and safety of ship.

(5) Assign crew members to a maintenance task or to an MRC. When assigning crew members to an MRC that involves consolidated Maintenance Items, the Work Center Supervisor should consider the number of man-hours required to perform the

maintenance. Normally, more than one day's work should not be assigned to one Maintenance Group of consolidated Maintenance Items.

(6) Mark a maintenance task upon accomplishment by utilizing the "Mark Complete" function. This in turn will update the schedule.

(7) Submit a Feedback Report for both MIP and MRC changes. The Feedback Report should define the scope and parameters of the change and provide a recommendation and justification for the change.

(8) Submit a work candidate when PMS requires repair parts so that parts and materials will be pre-positioned. The work candidate should define the scope and parameters of the maintenance.

(9) Schedule a spot check utilizing a Wizard tool to check performance of planned maintenance procedures.

(10) Review and/or edit a check note to identify why a maintenance task is marked Lost, Not Applicable, or System.

G-8 REVIEW DISPLAY

The Review display of SKED 3.2 (Figure G - 4) provides PMS history for all Maintenance Items in a Work Center and provides the next schedule date in which maintenance should be performed again. This display also shows maintenance tasks that are out of periodicity, i.e., maintenance not performed per the schedule. Supervisors shall check the Review display to ensure maintenance is being performed as scheduled within the window of periodicity.

a. Content of Review display. The Review display enables Work Center Supervisors and the chain of command to view equipment information under four categories: MIP, Maintenance Group, Maintenance Item, and MRCs associated.

b. Use of Review display. The Work Center Supervisor is responsible for performing the following tasks (as needed) utilizing the Review display:

(1) Viewing MRC history. To plan and manage PMS schedules, Work Center Supervisors shall use data provided in the MRC history, which includes the date maintenance is due, the allowable range, the weeks in which maintenance may be performed within periodicity, PMS alert dates, the originator of an alert, and the person who acknowledged an alert.

(2) Acknowledgement of PMS alerts. The Work Center Supervisor will acknowledge PMS alerts in the Review display. If an MRC goes out of periodicity, a PMS alert will be created when a weekly closeout is performed. At this time, the Work Center Supervisor must provide a reason why maintenance was not performed on time. The alert has an automated workflow which will require the Division Officer or Department Head to acknowledge the alert and/or agree with the reason provided by the Supervisor. (This workflow task will be visible in the MY TASKS view of SKED 3.2.) In addition to the initial alert, a new PMS alert will be created for every week that the MRC remains out of periodicity.

G-9 FORECAST DISPLAY

The Forecast display of SKED 3.2 (Figure G - 5) enables Work Center Supervisors to determine the maintenance workload of their systems and maintenance personnel for a given week or quarter. As a result, Supervisors shall plan their maintenance accordingly.

a. Content of Forecast display. The Forecast display provides a weekly and overall total of PMS tasks, man-hours, and elapsed time scheduled for the quarter selected by equipment or crew member. When viewing information by equipment, MIPS are displayed in numerical order. When viewing information by crew member, personnel names are listed in alphabetical order. Forecasting may be performed in the current quarter or in the two future quarters. Past forecasting data may be viewed for the most recent past quarter.

b. Use of Forecast display. The Work Center Supervisor is responsible for performing the following tasks (as needed) utilizing the Forecast display:

(1) Forecast checks. A "Totals" column will provide the total number of checks required for each row of equipment listed.

(2) Forecast man-hours. A "Totals" column will provide the total number of man-hours required to perform maintenance for each row of equipment listed.

(3) Forecast elapsed time. A "Totals" column will provide the time needed to perform maintenance on equipment listed.

G-10 SITUATIONAL MAINTENANCE

SKED 3.2 has two functional areas that shall be used when managing situational maintenance: Global Events Manager (EVENTS view) and the Situational display (secondary display in the WORK CENTER view).

G-10.1 Global Events Manager

The 3-M Coordinator shall use the Global Events Manager (EVENTS view) to view and update the ship's schedule. The EVENTS view (Figure G - 6) is similar to the Situational display, but only events that affect the whole ship are displayed. (The Situational display must be used to manage local events that affect individual Work Centers.)

a. Content of the EVENTS View. This view is comprised of a full-screen calendar that spans one year: one past quarter, the current quarter, and two future quarters. All events, both states and triggers, are shown on this calendar.

(1) Types of States: The most commonly used global states are "At Sea" and "In Port." Additional global states may occur simultaneously with one of the two common states or with one or more additional states. Examples include "CNO Availability," "Operating with Aircraft," and "Environment Condition."

(2) Color-coded States. All states on the calendar are color coded. Blue signifies "At Sea." Gray signifies "In Port." Yellow signifies any other type of state.

b. Use of the EVENTS View. The 3M Coordinator shall establish the event title, define the event, assign offsets, and perform the following actions:

(1) Update a global state.

(2) Remove a global state.

(3) Add a global trigger.

(4) Remove a global trigger.

G-10.2 Situational Display

PMS schedules include standardized situational checks. Some examples include: Custody Transfer, Deployed, Fleet Exercise, Getting Underway, Flight Operations, and Shock Trials. The Work Center Supervisors shall refer to the Situational display to analyze maintenance data that affects their Work Center as a result of situational checks. Local events that are entered by the Work Center Supervisor are scheduled immediately on the day prescribed.

a. Reports (R-Checks). Review situational reports that are customized for each Work Center by utilizing the Reports button of this display (Figure G - 7). Supervisors must know what equipment in their Work Center is affected by a given state or trigger. Note: The MRCs listed in a situational report are based only on the MRCs that are active on the schedule and not every MRC that appears in the Work Center LOEP.

b. Events (States and Triggers). View and modify local events and triggers utilizing the Events button of this display. To ensure maintenance is performed correctly, Supervisors must consider situational events.

(1) States. The two categories of states are global and local. Global states affect the whole ship; local states affect a Maintenance Item that can be tracked over time. Only local states may be updated in the Situational display.

(2) Triggers. The two categories of triggers are global and local. Global triggers affect the whole ship; local triggers affect a specific Maintenance Item. Both global and

local triggers are a single occurrence or action, but may occur more than once per day or may not occur for weeks or months. Both require an offset. Only local triggers may be added in the Situational display.

c. Metered Events. Update a meter or schedule MRCs utilizing the Metered button of this display. Supervisors shall be aware of meters that have reached a certain value, which would initiate a scheduled check for the associated MRCs. Supervisors shall use this tool to find nomenclature, location, serial number, MIP, MRC, periodicity, scheduling notes, date last accomplished, current value, and current range.

G-11 INACTIVE EQUIPMENT MAINTENANCE (IEM)

The Work Center Supervisor shall determine the status of all equipment in the Work Center. Inoperable equipment will be designated for Inactive Equipment Maintenance (IEM) as either Category 1 Lay Up or Category 2 Lay Up.

a. Adding inactive equipment to the schedule. The Work Center Supervisor will add equipment to the IEM list as follows:

(1) Utilizing the IEM display (Figure G - 8), locate the unavailable equipment.

(2) Select Category 1 or Category 2 depending on the status of equipment. If Lay Up (LU) is selected, SKED will automatically schedule applicable LU maintenance tasks associated with the Maintenance Item.

(3) Determine the start date and provide a status explanation in the notation field.

(4) The MIP, Maintenance Group, and Maintenance Item icons in the organizational outline will automatically change their identifying color status to red. SKED 3.2 will also automatically mark all previously scheduled operational PMS requirements within the inactive period to signify cancellation.

(5) If an inactive period continues into the following quarter on the schedule, operational planned maintenance may be scheduled after the inactive period. IEM requirements will be scheduled instead. Planned maintenance must be manually

scheduled by the Work Center Supervisor. The Supervisor shall determine PM tasks by reviewing MIP and MRC procedures.

b. Updating inactive equipment. The Work Center Supervisor will at times be required to update the status of equipment on the IEM list. For example, during the inactive status, an additional problem may be found. Alternatively, a re-evaluation of equipment may result in a change in category. Further, while the equipment is being repaired, the initial diagnosis may prove to be wrong. The Supervisor will update the IEM list as follows:

(1) Utilizing the IEM display, locate the unavailable equipment in need of updating.

(2) Select the editing function, which allows for changing categories and providing explanations in the notation field.

(3) Determine the start date and provide a status explanation in the notation field. Save the changes.

(4) SKED 3.2 will automatically update the schedule if the IEM update affects it in any way.

c. Ending inactive equipment from the schedule. Once the inactive equipment is repaired, the Work Center Supervisor will end the IEM status by utilizing the End tool in the IEM display. Applicable Start Up (SU) maintenance and Operational Tests (OT) will be automatically added to the schedule. However, Planned Maintenance (PM) must be manually scheduled. The Supervisor will determine PM tasks by reviewing MIP and MRC procedures. The procedures for ending inactive equipment are as follows:

(1) Utilizing the IEM display, locate the equipment that has been repaired.

(2) Select the end date on the calendar.

(3) The MIP, Maintenance Group, and Maintenance Item will automatically update its identifying color status to yellow.

(4) SKED automatically updates the PMS schedule. Perform scheduled maintenance that is due.

G-12 JOURNAL DISPLAY

The Journal display of SKED 3.2 (Figure G - 9) provides a running history of maintenance activity performed in any given Work Center.

a. Content of the Journal display. Depending on the purpose for utilizing the Journal display, users will organize their Journal display accordingly. Content may be organized and viewed by category or by date. Both types include the author, the title of the activity, and pertinent notes.

(1) List by Category. Users should select this list to view categories of events. Categories vary according to each Work Center's activity, but typical categories include the following: date/time stamps created; equipment transferred; Feedback Reports generated; Force Revisions created; Force Revisions finalized; line-outs approved; notes added; revisions approved; revisions started; SKED 3.1 conversion; weekly closeouts completed; Work Centers created; Work Centers backed up; and Work Centers restored from backup.

(2) List by Date. Users should select this list to view one year's worth of events. The list begins with the oldest event and ends with the most current event.

b. Auditing tool. The chain of command shall use the Journal as an auditing and accountability tool for checking the maintenance activity of any Work Center. Per Chapter 2-8, PMS self-assessment, each Work Center shall receive an audit once per quarter by a supervisory individual (E-7 or above). A Supervisor may use the Journal display to audit revisions, line-outs, weekly closeouts, Feedback Reports, and other details, and report any deficiencies noted for abatement.

G-13 PMS DOCUMENTS

SKED 3.2 has two locations in which to view and manage PMS documents: the PMS Viewer and PMS Documents display (secondary display in the WORK CENTER view). The PMS Viewer includes ship-

wide PMS documents, while the PMS Documents display is specific to a Work Center and its Maintenance Items.

G-13.1 PMS Viewer

The first PMS documents tool is the PMS Viewer (Figure G - 10) which allows users to search, view, and print ship-wide MIPs and MRCs that are distributed on the Navy PMS DVD/CD. The display is organized in the same manner as the ship's LOEP.

a. Search Function. Utilizing the search tool in the PMS Viewer, locate MIP or MRC documents by SYSCOM Control Number or by the nomenclature tied to the document.

b. Show All UICs. By default, only the command in which the user is logged on is displayed; use the Show All UICs option to view documents from another command.

G-13.2 PMS Documents Display

Work Center Supervisors shall use this display for a tailored view of PMS documents (Figure G - 11) that are currently active on the schedule. They may customize Work Centers, check MIP line-outs for unscheduled or not applicable MRC documents, find location information, and print MIPs and MRCs in their Work Center. All MRCs shall be printed from this display to ensure the most accurate version of the MRC is used for maintenance.

a. MRC Customization. Work Center Supervisors may customize their MRCs in this display by making procedure line-outs (Figure G - 12) and adding SPMIG notes. The location block (for single items) or the Location Guide List (for multiple items) is automatically filled in by SKED 3.2. Custom MRCs can be saved and printed (including batch printed).

b. Line-out Approval. MRC line-outs shall be approved by the Division LCPO/LPO before being printed and used. The Work Center Supervisors shall first validate line-outs by comparing changes from one Force Revision to another to determine what changed in the maintenance process. Once approved, the line-outs will remain in effect until the next Force Revision.

c. Copy Changes. If a Maintenance Group has several Maintenance Items using the same MRC, Supervisors may use the

copy changes function when creating identical changes for the same MRCs. This function allows the Supervisor to select all the MRCs for which they want a line-out (review and omit) applied.

d. Copy Archived Line-Outs. After a Force Revision, a unit may have new MIPs and MRCs. If previous MRCs had line-outs, the line-outs will be archived. When maintenance procedures remain the same, the old line-outs may be copied to a new card. After a Force Revision, Supervisors shall compare old and new copies of the MRCs at the same time, as well as the archived line-outs.

G-14 REVISIONS

Performing correct revisions of PMS schedules is a critical step in the 3-M System. An error may result in severe scheduling consequences; therefore, particular attention shall be given to every revision created in SKED. The Revision Editor (Figure G - 13) provides the framework for an accurate schedule. By utilizing the Revision Editor, Work Center Supervisors may change the PMS requirements for their Work Center, such as inconsistencies between maintenance requirements and the quantity of Maintenance Items needed for each task. Supervisors may also change their Work Center's structure, including MIP, Maintenance Group, Maintenance Item, or MRC relationships.

a. Types of Revisions. The Work Center Supervisor will be able to make the following revisions utilizing SKED:

(1) Advance Change Notice (ACN). ACN revisions permit rapid responses to technical difficulties encountered in the fleet's use of a MIP or MRC. ACNs will change the PMS schedule.

(2) Document/Information Transmittal (DIT). DIT revisions forward new or superseded PMS documentation between Force Revisions. DITs also provide PMS information and narrative replies to non-technical PMS reports. They are addressed to 3-M Coordinators to ensure accountability and disposition of PMS information.

(3) Feedback Report (FBR). FBR revisions result when the UIC receives a response to an FBR that requires Work Center changes.

(4) Force Revision (FR). Force Revisions are maintenance revisions based on a revised LOEP. FRs are distributed on the Navy PMS DVD/CD and applied to SKED to keep data accurate. SKED will compare the current reference data from the Navy PMS DVD/CD against a given Work Center schedule. (Refer to Section G-15.)

(5) Administrative (Admin). Admin revisions correct administrative inconsistencies with the Work Center PMS schedule that are not covered by the other four types of revisions.

b. Starting a Revision. Work Center Supervisors will start a revision utilizing a Wizard. When a revision is started, the SKED application makes a copy of the Work Center structure for editing purposes. This copy allows the revision to be abandoned and restarted if mistakes are inadvertently made. The revision naming convention will vary based on the revision type and the command. A serial number structure is not enforced in SKED.

c. Revision Process. The Revision Editor lists the old value and the new value for items that are selected in the revision Wizard. The values compare what is currently on a schedule and what has changed during a revision. Items changed during a revision are highlighted yellow to assist in identifying changes to maintenance. Revision data is generated in the following manner:

(1) SKED will copy existing, active PMS schedule information to the revision data.

(2) Previously rejected MRC data will be added back into the revision data in a rejected state.

(3) For Force Revisions only, SKED will compare the current reference data from the Navy PMS DVD/CD against a given Work Center schedule.

(4) New MIPs and/or MRCs will be added to the Work Center data.

(5) MRC birthday codes, man-hours, and periodicities will be updated.

(6) Deleted MIPs and/or MRCs will be highlighted.

d. Completing a Revision. After completing the revision, the Work Center Supervisor shall select the "Mark Complete" button on the toolbar. This action places the revision in the Ready for Approval status, which in turn will inform the LCPO, Division Officer, Department Head, and 3-M Coordinator that the revision is ready for their review and approval.

e. Approving a Revision. After a Work Center Supervisor submits a revision, it shall be reviewed and approved via electronic signature. User role and permissions dictate this action. The "Approve" button on the toolbar will be enabled for those who have approval authority by OPNAV, NAVSEA, and TYCOM 3-M instructions. Once approved, the PMS schedule is updated and the revision structure is cleared. Revisions take effect immediately after approval; revision cannot be made effective on a future date.

G-15 PMS FORCE REVISION (FR)

Installed PMS packages must be periodically updated to reflect changes in systems and/or equipment and to provide PMS documentation regarding new issues and revisions.

a. The Work Center Supervisor will receive the Work Center's portion of the PMS Master File LOEP (Report PMS 5) from the 3M Coordinator.

b. Once the Navy PMS DVD/CD data has been updated in SKED, the Work Center Supervisor will be informed by the 3M Coordinator that the updated MIP and MRC data is available in SKED.

c. When verifying the FR, the Work Center Supervisor shall then compare the new LOEP with the existing LOEP in the Work Center Manual to identify any additions, changes, or deletions of MIPs for the Work Center. This can be identified by reviewing the new LOEP and looking in the "Add Chg" column.

d. When applying the FR, the following steps shall be used:

(1) The Work Center Supervisor will apply the FR by using the Revision Wizard in SKED. Ensure that the type of

Revision selected is "Force Revision" and that the revision name reflects the FR serial number provided on the LOEP.

(2) Upon completion of the above process the Revision Editor dialog box will appear. Utilizing the new LOEP, the Work Center Supervisor will review any MIPs and associated MRCs that are identified as added or changed. Review all MRCs identified as changed to determine their applicability to the available Maintenance Item(s). (An icon legend for the Revision Editor is available by pressing the F12 key.)

(3) The Work Center Supervisor will apply the FR changes to their Work Center by placing MRCs in an active or inactive status.

(4) The Work Center Supervisor will select the "Mark Complete" button and inform his/her chain of command that the FR is ready for review and finalization.

(5) The LCPO and Division Officer will review the FR changes for accuracy and completeness by comparing the data in SKED 3.2, line for line, to the PMS documentation in the Work Center PMS Manual.

(6) The Department Head will finalize the FR.

G-16 FEEDBACK REPORT MANAGER

Feedback Reports are used to communicate maintenance issues with NAVSEA Logistics Centers. SKED 3.2 users should use the Feedback Report Manager (FBR view)(Figure G - 14) to perform FBR management functions.

a. Types of Feedback Reports (FBRs):

(1) Non-technical is intended to meet PMS needs that do not require technical review, including changes in Work Center LOEPs.

(2) Technical is used to report technical discrepancies inhibiting PMS performance. TFBRs include routine and urgent.

b. Content of FBR Manager. FBR data may be organized in four different ways. Each list contains the same information, but is organized differently to suit user needs and preferences.

(1) List by Quarter. Use this list to organize Feedback Reports by quarter in the yearlong maintenance cycle. The list is also organized by Date In, with the oldest available report listed first. Use the drop down menu to find reports from the past week, the past month, or the past year.

(2) List by Work Center. Use this list to organize Feedback Reports by Work Center, beginning with the first alphanumeric designation of the systems in that Work Center. For example: CA01, CA02, CC02, CE01, and so on. The list is also organized by Date In, with the oldest available report listed first.

(3) List by Originator. Use this list to organize Feedback Reports by the rank and name of the maintenance personnel who initiated the report. Unlike the Quarter and Work Center lists, this list is organized by Date In, with the most recent report listed first (reverse chronology).

(4) List by Status. Use this list to organize Feedback Reports into any of these five categories: approved, exported, action taken, response received, and under review.

c. Use of the FBR Manager. Depending on user role and permissions, personnel will perform the following key tasks:

(1) View FBR details. Details include equipment data (serial number, nomenclature, RIN, APL); toolbar functions to sign, clear signatures, delete, make urgent or print; text box to view remarks, responses, and actions taken; Edit function to change text box contents; and a signature block.

(2) Create FBRs. Utilizing the FBR Wizard, create a new FBR when a maintenance discrepancy is found. Identify if the FBR is non-technical or technical. If technical, indicate whether it is routine or urgent. Once an FBR is created, it is electronically routed through the chain of command for signature approval.

(3) Approve FBRs. The View Details button has a signature block for the 3-M Coordinator, Department Head, Division Officer, and LCPO. Feedback Reports are approved after the 3-M Coordinator signs it. Once the Feedback Report is signed and approved, a serial number is attached and it is eligible to send off the unit (ship, submarine, or shore facility).

(4) Export approved FBRs. The 3M Coordinator may export an FBR to an FBR subfolder or to a particular destination, such as the TYCOM, through the RADWeb (Revised Alternative Data Flow Web) or via e-mail. SKED will create a text file for the export process.

G-17 SPMIG VIEWER

The Standard PMS Material Identification Guide Viewer (SPMIG view) (Figure G - 15) enables users to access and search multiple databases for tools, parts, and materials indicated on an MRC as required for performing scheduled maintenance.

a. Content of SPMIG. The SPMIG Viewer organizes Work Center data. Supervisors can obtain SPIN, Suffix, Nomenclature, Modifier, Category, APL, Part Number, Sub-Category Code (SCAT), National Item Identification Number (NIIN), Cage, Remarks, and Unit of Issue (UI).

b. Use of SPMIG Viewer. Work Center Supervisors shall use the SPMIG Viewer as part of their forecasting responsibilities. This will help ensure that tools, parts, and materials are on-hand for upcoming maintenance. In addition, Supervisors shall use this tab to perform the following:

(1) Search for tools, parts, and equipment. Utilize the search tool to locate item(s) required to complete maintenance tasks. For quick searches, results will be displayed in numerical SPIN order. For advanced searches, enter as much criteria as needed (SPIN, Nomenclature, APL, NIIN, Category, and/or SCAT code).

(2) Order tools, parts, and equipment. After searching the databases, Supervisors may find that an item is out of stock. Order the item through the applicable supply center.

Order in advance to ensure the item arrives in time to perform the scheduled maintenance.

G-18 SPOT CHECKS

The SPOT CHECKS view (Figure G - 16) functions in support of PMS self-assessment instructions in Chapter 2-8. The ability of an activity to perform PMS self-assessment is instrumental to the success of planned maintenance. The chain of command shall perform spot checks of various Maintenance Items in a Work Center.

a. Spot Checks. This type of check assesses the accomplishment of previously performed maintenance. Supervisory personnel shall provide a spot check grade to the Work Center Supervisor and record the grade into SKED to generate the Spot Check Accomplishment Rating (SCAR).

b. Self-Monitored Assessment (also known as Monitored MRC). This type of check assesses real-time maintenance. Supervisory personnel shall periodically monitor ongoing PMS to provide feedback and training to maintenance personnel. This assessment must be performed on the date it is scheduled. Although findings are entered into SKED, this assessment does not earn a recorded score because it is considered a training event.

c. Use of SPOT CHECKS View. Only certain roles in the chain of command may schedule a spot check. (Refer to the Joint Fleet Maintenance Manual for more information.) Supervisory personnel will be able to schedule, edit, and delete spot checks. Work Center Supervisors shall periodically review details of their Work Center’s spot checks. The View Details button allows users to view details of a given spot check as well as details for SPMIG, MIP documents, and MRC documents.

G-19 LOEP MANAGER

The List of Effective Pages (LOEP) Manager (Figure G - 17) is a tool for the chain of command to see what maintenance requirements are currently active on equipment. The LOEP Manager indicates the current Work Centers, MIPs, and MRCs being implemented in SKED 3.2. It also provides the number of Maintenance Items that use a specified MIP or MRC.

a. LOEP Status Indicators. The LOEP Manager has three status indicators signified by different icons in SKED. Indicators include:

(1) Normal. This status means that the Maintenance Item is on the LOEP and implemented in SKED. This is the expected condition.

(2) On Work Center, Not in LOEP. This status means the Maintenance Item is on the PMS schedule in SKED, but not referenced in the LOEP in this context.

(3) On LOEP, Not in Work Center. This status means the Maintenance Item is on the LOEP, but not being implemented on the PMS schedule in SKED.

b. Content of the LOEP Manager. LOEP data may be displayed in two ways to accommodate user needs: by Work Center List or by MIP List.

(1) Work Center List. Utilize this method of displaying LOEP data to review the traditional LOEP organization of the Command, Work Center, and MIP implementation. Determine which Work Centers have been changed, added, or removed during a Force Revision by utilizing the Work Center List. In addition, the chain of command shall use this list to view the status of any Work Center.

(2) MIP List. Utilize this method of displaying LOEP data to view a detailed list of all MIPs that are on at least one LOEP for the command. This list indicates which MIPs are not being covered, and which unlisted MIPs are being used. Both instances require investigation that may result in a Feedback Report. In addition, use the MIP List to see which MRCs are being used on a PMS schedule.

c. Use of the LOEP Manager. The Work Center Supervisor or other personnel in the chain of command shall utilize this view to examine the LOEP status; determine which MIPs on any LOEP for the command are being used and which are not; and view and print the LOEP implementation list.

G-20 REPORTING TOOLS

SKED 3.2 includes reporting tools to assist the chain of command. Tools are located in the REPORTS view and in the ADMIN view.

G-20.1 REPORTS View

Work Center Supervisors shall use the REPORTS view (Figure G - 18) to help maintain PMS schedules. Standard reports are updated through the Navy PMS DVD/CD during a Force Revision. Reports in this view may be used by all ship personnel. Examples of reports include: assigned PMS, customized MRCs, FBRs, forecasting, situational events, and training.

G-20.2 ADMIN View

Additional reporting tools are available in the ADMIN view (Figure G - 19); however, this view has limited access. Only users with permissions may use the reporting tools in this functional area of SKED 3.2.

a. Weekly Closeout Status. Utilize this tool to view the status of weekly closeouts. If a week has been closed by a Work Center Supervisor, the dates will be highlighted blue in SKED.

b. Training Manager. Utilize this tool to view the list of available training lessons embedded in SKED 3.2, who has been assigned training, and who has completed training (Figure G - 20). Users with permission may assign training by utilizing a Wizard.

c. Transaction Log. Utilize this tool to view the Admin Log and the SKED Agent Log. The 3M Coordinator may choose the preference for listing transactions in the Admin Log. By default, the "List All" preference will first display, but 3-M Coordinators may prefer to change the display to either the "List by Action," which lists the action performed in date/time stamped sequence or the "List by Month" which lists the action performed per month, beginning with the first month of the current quarter. The SKED Agent Log displays ID, Source, Description, Start Date, End Date, and Status. The 3-M Coordinator may not choose a preference for viewing these transactions.

G-21 MANAGEMENT TOOLS

The 3-M Coordinator shall use the SKED Administration functions as maintenance management tools. The tools are provided in secondary displays of the ADMIN view in SKED.

a. User Management. Utilize this tool to view a list of all users in any Work Center. The list provides last name, first name, signature, rate, e-mail address, phone number, role, group, status, type, last login, and last logout.

(1) Different permissions for user roles may be set up in this display. Users inherit default permissions based on role, but a 3M Coordinator may change default settings, reset permissions, and customize crew member roles.

(2) Each user role has certain viewable content and allowable actions that can be perform in SKED. For example, Department Heads are allowed to approve FBRs and conduct spot checks as part of their user role. All personnel should check their MY TASKS view to determine their user role.

b. Chain of Command. Utilize this tool to view a list of every user in the chain of command as well as some user information (role, rate, and signature). The 3M Coordinator shall edit the chain of command structure utilizing this display. Edits may be made at the UIC level, Department level, and Division level. The information a user sees is filtered based on his/her place in the chain of command. For example, Engineering Division Officers are allowed to view and perform actions only in EA Work Centers.

c. SKED Preferences. 3M Coordinators will use this tool to view both Global and UIC preferences. The Global Preference identifies paths, Navy PMS DVD/CD information, OMMS information, training path root, distance support paths, etc. The UIC Preference drives alerts and identifies limits (in days) for training, weekly closeouts, FBR approval, Periodic Accomplishment Rating (PAR) pass/fail threshold, serial number index, MY TASKS forecast days, etc.

G-22 ACCOMPLISHMENT RATINGS

Accomplishment ratings in SKED 3.2 differ significantly from SKED 3.1. Three metrics are automatically calculated in SKED:

a. Periodic Accomplishment Rating (PAR) measures the percentage of checks performed within periodicity. PAR factors the number of completed checks, total scheduled checks, lost checks, and PMS alerts for a given time. A check with a periodicity of less than weekly may be marked as lost. Checks scheduled to meet situational requirements may also be marked as lost or not applicable (NA). A PMS alert is generated each time a Work Center is closed out with a check that is out of periodicity. The PAR formula is:

Completed Checks/(Total Checks + Lost Checks + PMS Alerts)
Example: 25/(28+1+2) = 80% PAR

b. Situational Accomplishment Rating (SAR) identifies global situations and tracks and calculates the accomplishment of maintenance. The SAR factors completed situational checks (R-Checks marked complete) and total non-NA situational checks (R-Checks not marked NA, including unmarked checks). The SAR formula is:

Completed Situational Checks/Total Non-NA Situational Checks
Example: 20/20 = 100% SAR

c. Spot Check Accomplishment Rating (SCAR) provides administrators and inspectors a confidence rating that reflects how well the command is performing maintenance. The SCAR factors the number of satisfactory checks and the total number of spot checks scheduled for a given time. The rating for a satisfactory check is defined by the TYCOM; however, the default in SKED is a rating of 80 percent or higher. The SCAR formula is:

Total Passed Spot Checks/Total Spot Checks
Example: 15/16 = 94% SCAR

APPENDIX H

ASSIGNMENT OF RESPONSIBILITIES FOR THE PLANNED MAINTENANCE SYSTEM (PMS) OF THE SHIPS' MAINTENANCE AND MATERIAL MANAGEMENT (3-M) SYSTEM

APPENDIX H - ASSIGNMENT OF RESPONSIBILITIES FOR THE PLANNED MAINTENANCE SYSTEM (PMS) OF THE SHIPS' MAINTENANCE AND MATERIAL MANAGEMENT (3-M) SYSTEM

H-1 PLANNED MAINTENANCE SYSTEM (PMS) POLICY.

a. All maintenance requirements shall be developed using Reliability-Centered Maintenance (RCM) methodology as directed by reference (j). Preventive maintenance actions are required by reference (j) to be developed per reference (k) including preservation and maintenance requirements for equipment in an inactive status and calibration requirements relating to the Shipboard Gage Calibration Program. PMS requirements shall be developed concurrently with ship construction or conversion and new shipboard systems or equipment procurements including research and development items. In addition, PMS requirements shall be developed or revised to cover PMS changes which result when Ship Alterations (SHIPALTs), Ordnance Alterations (ORDALTs), Machine Alterations (MACHALTs), Field Changes, and other engineering changes are authorized. Development and distribution of other preventive maintenance procedures for ships' use is prohibited.

b. The PMS Coordinating Activities (CA), who are NAVSEA 04RM designated activities for the oversight of PMS, shall distribute all PMS documentation to ships. No other activities are authorized to distribute PMS documentation to ships.

c. PMS products resulting from other SYSCOM development activities shall be integrated with NAVSEA PMS products into a single complete shipboard PMS package which is distributed by the PMS CAs.

d. PMS documentation shall be reviewed to ensure technical accuracy, incorporation of configuration changes, technical manual changes, changes initiated by Technical Feedback Reports (TFBRs), and improved maintenance procedures. All documentation will be validated prior to distribution to the fleet. Validation will consist of checking the accuracy of the documentation by performing the procedures aboard ship, where practical.

e. PMS procedures should not include the following actions or items:

(1) Watch routines.

(2) As a general rule, corrective maintenance actions shall not be part of PMS. There are special circumstances that may allow corrective maintenance procedures to be included in PMS. These situations will be dealt with on a case by case basis relying on the judgment of the PMS CAs.

(3) Major overhaul of equipment including tear down inspections or repair actions required to be done during an overhaul period. Scheduling of overhaul items may be included.

(4) Facilities or housekeeping maintenance items.

(5) Requirements that are documented by other means, such as underway check off lists, boiler light off procedures, rounds fired logs, and any Operational Sequencing System (OSS) procedures.

(6) Inventory checks such as repair locker check lists.

f. Each Maintenance Index Page (MIP) and Maintenance Requirement Card (MRC) shall be a complete maintenance document containing all the information required to perform the task. Reference to other approved procedures shall be restricted to an extreme minimum and shall be approved by the PMS CA before inclusion on the MIP or MRC.

H-2 RELIABILITY-CENTERED MAINTENANCE (RCM) WAIVER POLICY

a. Maintenance requirements for shipboard equipment and systems shall be developed using the RCM methodology detailed in reference (k). Waivers from developing requirements per reference (k) may be requested in the following circumstances:

(1) A new maintenance requirement (e.g., MRC) is added to an existing MIP/MRC for a system already in PMS.

(2) The new system or equipment maintenance requirement results from a modification or upgrade to a system or equipment that is already included in the 3-M System with valid and current PMS requirements.

(3) The new maintenance requirement applies to a unique system or equipment that is being used on a temporary basis (i.e., being installed on a single hull vice on a ship class).

b. Waiver requests associated with the addition of a new maintenance requirement should include the following information:

(1) Requirement description.

(2) Failure mode (i.e., material condition after failure) the maintenance requirement is intended to prevent.

(3) Description of origination for this new maintenance requirement. This description could include results of INSURV Material Inspection, Navy Safety Center Surface Ship Safety Survey findings, details of a preventable equipment casualty or performance of routine maintenance. If a reference exists (e.g., TFBR DDG 51 Ser 0051-02, INSURV message 031530Z OCT 02, etc), identify the reference.

(4) Explanation of how the periodicity of the requirement was determined (e.g., OEM recommendation, MTBF data).

(5) Details of actual failures occurring in the Fleet which this maintenance requirement will prevent, and frequency of those failures.

(6) MIP and MRC information for any current and valid MRC or task that is similar to the proposed requirement.

(7) Additional technical information that might support adjudication of the waiver request. In addition, a Backfit RCM analysis, similar to that conducted at FLEETMER, should be submitted for each proposed maintenance requirement for which a waiver is being requested. Each Backfit RCM analysis should include a detailed rationale and justification addressing how this proposed task satisfies the Applicability and Effectiveness criteria for the proposed maintenance requirement.

c. Equipment or system modification or upgrade-related waiver requests should include an explanation of the

modification or upgrade being implemented and how it will impact the following specific equipment characteristics:

(1) Function

(2) Equipment/system operating parameters

(3) Operating environment

(4) Duty cycle

(5) Materials

(6) Protective devices

(7) Safety features Equipment or system modification or upgrade-related waiver requests should also include a Backfit RCM analysis for each proposed maintenance requirement for which a waiver is being requested. Each Backfit RCM analysis should include a detailed rationale and justification addressing how this proposed task satisfies the Applicability and Effectiveness criteria for the equipment as modified or upgraded.

d. Temporary installation waiver requests should include the following equipment and/or system details:

(1) Ship or location of installation

(2) Period of installation

(3) Function

(4) Equipment/system operating parameters

(5) Operating environment

(6) Duty cycle

(7) Materials

(8) Protective devices

(9) Safety features

H-3 PMS RESPONSIBILITIES AND PROCEDURES

a. The Maintenance Engineering Policy Division (NAVSEA 04RM) is responsible for NAVSEA's efforts in managing the development, implementation and maintenance of the Ship's Maintenance and Material Management (3-M) System. Specifically, relative to the PMS responsibility, NAVSEA 04RM will:

(1) Manage, coordinate, and monitor the PMS actions within the NAVSEA to ensure compliance with the requirements specified in OPNAVINST 4790.4E and this instruction.

(2) Plan, develop, and implement PMS improvement programs.

(3) Manage the PMS efforts assigned to the PMS CAs.

b. The PMS CAs, when tasked and funded shall:

(1) Conduct technical reviews, standardize and validate MIPs and MRCs to ensure compliance with references (a) and (b).

(2) Deliver and install PMS packages to ships, craft, and other designated commands.

(3) Conduct maintenance liaison with fleet and type commands in implementing, supporting, and adapting NAVSEA PMS programs to meet fleet requirements.

(4) Provide input to Integrated Logistics Support Planning and ship manning document evaluations as requested by NAVSEA 04RM.

(5) Initiate development for update of PMS for overhauled ships.

(6) Maintain the PMS database and the identity of library PMS documents.

(7) Maintain the PMS Management Information System (PMSMIS).

(8) Provide guidance to maintenance requirement developers to ensure compliance with references (a) and (b).

(9) Maintain records to support audits of response performance for feedback reports.

(10) Forward Technical Feedback Reports (TFBRs) to appropriate Design Activities and/or In-service Engineering Activities (ISEAs) by electronic means.

(11) Perform other PMS support functions as tasked by NAVSEA 04RM.

c. Activities developing maintenance requirements shall ensure that all PMS requirements are included in all provisioning allowance and fitting out procedures and specifications.

d. NAVSEA technical codes and ISEAs (as defined in reference (s)), when tasked and funded, shall perform the following for systems and equipment under their cognizance:

(1) Develop, review or revise, as applicable, maintenance requirements to ensure their technical accuracy for systems and equipment under their cognizance.

(2) Review and resolve PMS TFBRs. Ensure that the procedures of paragraph H-11.2 are followed when responding to PMS TFBRs.

e. Other SYSCOMs with responsibility for shipboard equipment included in PMS, are requested to:

(1) Coordinate PMS requirements with NAVSEA 04RM and provide completed PMS documentation to the PMS CAs to ensure completion of the technical review, entry into the PMS data bank and issue to applicable ships per reference (j).

(2) Provide timely response and resolution to TFBRs for systems and equipment under their cognizance using the procedures of paragraph H-11.2.

H-4 PMS FOR NEW CONSTRUCTION OR CONVERSION SHIPS

a. The Ship Program Manager (SPM) shall:

(1) Ensure development and review of maintenance requirements is completed per reference (i) using one or more of the following options:

(a) Require in shipbuilding contracts that PMS documentation be developed and provided by the shipbuilder. Task and fund system and equipment acquisition managers to develop PMS for systems and equipment under their responsibility.

(b) Task and fund the PMS CAs to develop PMS documentation for NAVSEA equipment and systems.

(2) Task and fund the PMS CAs through NAVSEA 04RM to provide technical review, standardization, validation, printing, delivery and installation of a complete PMS package in the ship.

(3) Ensure that approved technical manuals, logistic support analysis, plans for maintenance, and drawings needed to develop PMS requirements are identified and provided to the developing activity 9 months prior to the scheduled PMS installation date to ensure availability of PMS documentation at installation date.

(4) If PMS CAs are not tasked to develop the PMS documentation, the SPM shall ensure that developing activities submit the PMS requirement development to the PMS CAs no later than 6 months prior to scheduled installation date for technical review, standardization, validation and printing to ensure availability of PMS documentation at installation date.

(5) Provide PMS CAs copies of Schedule A lists (government furnished equipment), preliminary equipment component indexes, and other configuration lists to ensure availability of PMS at scheduled installation date. Where feasible, the configuration data shall be provided in final form no later than 10 months prior to the PMS installation date.

b. NAVSEA 04RM and the PMS CAs shall be responsible, as tasked and funded by the SPM, for the following:

(1) Develop PMS requirements for NAVSEA cognizant systems and equipment.

(2) Coordinate technical reviews, validate, standardize, and print all PMS documentation developed.

(3) Verify, deliver, and install a complete PMS package in ships.

(4) Provide the SPM the development status of PMS for all ships' systems and equipment.

c. Acquisition managers tasked by the SPM to provide PMS requirements development documentation shall provide the following to the PMS CAs:

(1) A copy of contract or task requiring PMS development.

(2) The identification and nomenclature of ships' systems and equipment and related technical manual numbers.

(3) A list of designated ships on which systems and equipment will be installed.

(4) The date by which PMS documentation is required.

H-5 PMS FOR OVERHAULED SHIPS

a. SPMs shall:

(1) Ensure development and review of PMS requirement development documentation is completed per one or more of the following options:

(a) Require in overhaul contracts that PMS documentation be developed and provided by the shipbuilder. Task and fund system and equipment acquisition managers to develop PMS for systems and equipment under their responsibility.

(b) Task and fund PMS CAs to develop PMS documentation for NAVSEA systems and equipment. The PMS CAs shall deliver updated PMS documentation to the ships.

H-6 PMS FOR NEW SYSTEMS AND EQUIPMENT BEING PROCURED BY NAVSEA AND OTHER ACTIVITIES

a. Acquisition managers responsible for systems and equipment requiring scheduled preventive maintenance shall task and fund for development of initial PMS requirements per reference (k) concurrent with system and equipment delivery. Criteria for waiving requirements of reference (k) for new PMS documentation associated with development, modification or addition to existing PMS is addressed in paragraph H-2. This requirement includes equipment purchased by TYCOMs, ship purchases, and other Commercial Off-The-Shelf (COTS) equipment.

b. Acquisition managers will fund PMS CAs for initial printing and distribution of PMS documentation for new systems. The only activity authorized to distribute PMS documentation to ships are the PMS CAs.

H-7 PMS FOR EXISTING SYSTEMS AND EQUIPMENT IN THE FLEET

NAVSEA 04RM will task and fund the PMS CAs to:

a. Maintain, standardize and distribute the PMS documentation.

b. Provide processing for non-Technical feedback reports and for researching and resolving TFBRs.

c. Maintain the Planned Maintenance System Management Information System (PMSMIS).

H-8 PMS CHANGES AS A RESULT OF AN ALTERATION

The alteration or change sponsor (SPM, TYCOM, etc.) shall task and fund Life Cycle Managers (LCMs) for systems and equipment to develop new maintenance requirements per reference (k). If an RCM waiver is approved, they should task and fund revision to PMS documentation to reflect changes in systems and equipment resulting from alterations or changes. The PMS requirements

documentation shall be provided to the PMS CAs at least 4 months prior to required PMS documentation delivery date.

H-9 PMS FOR FOREIGN NAVIES (FORMER U. S. NAVY SHIPS)

PMS documentation requests from foreign navies for former U. S. Navy (USN) Ships shall be processed as follows:

a. Requests for PMS coverage for foreign navies on former USN Ships shall be directed to the NAVSEA Office of International Programs (PMS 326).

b. Upon receipt of a request from a foreign navy for PMS coverage for a former USN ship, PMS 326 will request from the appropriate PMS CA the cost and availability of providing a one-time updated PMS package and whether a List of Effective Pages (LOEP) is available for the ship. If the ship's LOEP is not available, then the PMS CA should advise PMS 326 whether another ship's LOEP can be used as a verification document.

c. After receipt of a signed acceptance of the offer, PMS 326 will issue a funding document to the appropriate PMS CA. The PMS CA will provide PMS 326 with a LOEP and instruction for its use within 60 days.

d. PMS 326 is to complete and return the updated verified LOEP package to the appropriate PMS CA.

e. The appropriate PMS CA will deliver a one-time updated PMS package based upon the verified LOEPs within three months after receipt. This updated package will include only data available in the data bank. No new PMS development will be undertaken for equipment not having PMS coverage. Continuing PMS support will be provided if funded by PMS 326.

H-10 PMS FOR FOREIGN NAVIES (NEW CONSTRUCTION, MODERNIZATION, OVERHAUL, AND CONVERSION)

The USN Program Manager (PMs or SPMs) responsible for the specific foreign navy effort will provide funding to initiate new, or modify existing PMS documentation per the procedures described herein for USN ships. The Program Manager shall be the sole authority for PMS requirements on cognizant foreign ships.

H-11 PMS TECHNICAL FEEDBACK REPORTS

TFBRs are to be used for reporting technical deficiencies or errors in PMS documents. Technical PMS discrepancies that could have a detrimental effect on personal safety, safety of ship, or could result in significant equipment damage, are classified as "Urgent." All other TFBRs are classified as "Routine."

a. The central control points for processing TFBRs are the PMS CAs. Depending on the type and level of technical authority necessary to answer the TFBR, PMS CAs will either respond to the originator with a resolution, or forward the TFBR to the appropriate technical review activity for their action. The PMS CAs will enter all TFBR information in the PMSMIS for tracking and control purposes.

b. Naval Sea Systems Command Activities. Design Activities, ISEAs, or other activities under the direction of the Naval Sea Systems Command holding technical authority for systems and equipment shall take appropriate action on all TFBRs under their cognizance, forwarding responses to the PMS CAs. Responses will be electronically transmitted to the appropriate PMS CA. The PMS CAs will record the TFBR result in the PMSMIS and provide the final response to the originator.

c. Other Systems Command Activities. Design Activities, ISEAs, or other activities under the direction of other Systems Commands (SYSCOMs) holding technical authority for systems and equipment are requested to take appropriate action on all TFBRs under their cognizance forwarding responses to the PMS CAs. Responses will be electronically transmitted to the appropriate PMS CA. The PMS CAs will record TFBR results in the PMSMIS and provide the final response to the originator.

H-11.1 TFBR Procedures

a. Urgent TFBRs

(1) Urgent TFBRs are those feedbacks reporting technical discrepancies that can result in personnel injury, risk to the safety of the ship or significant equipment damage.

(2) PMS CAs shall provide a message response, or electronic response if a message is not received, to all Urgent TFBRs informing the originator of specific actions and required changes that will result from TFBR evaluation or forward the TFBR to the appropriate technical review activity or ISEA within 1 working day of receipt. This message response or electronic response shall be addressed to the originator and distributed to TYCOMs. TYCOMs will forward this message to all commands that could be affected by PMS change. The Urgent TFBR response message or electronic response may recommend pen and ink changes to the affected PMS requirement.

(3) If the PMS CAs forward the TFBR to a technical review activity or ISEA for resolution, then the technical review activity or ISEA shall provide a message response, or electronic response if a message is not received, to all Urgent TFBRs informing the originator of the specific actions and required changes that will result from the TFBR evaluation within 1 working day of receipt. This message response or electronic response shall be addressed to the originator and distributed to TYCOMs and PMS CAs. TYCOMs will forward this message or electronic response to all commands that could be affected by the PMS change. The Urgent TFBR response message may recommend pen and ink changes to the affected PMS requirement.

(4) PMS CAs shall distribute revised PMS documentation to affected users within 30 calendar days of receipt via Special Issue or Advance Change Notice (ACN).

b. Routine TFBRs

PMS CAs shall ensure completion of the technical review, research and provide a response to routine TFBRs where resolution does not require technical authority action. TFBRs that PMS CAs cannot resolve will be sent to the cognizant technical review activity or ISEA. The cognizant technical review activity or ISEA will provide the response to the appropriate PMS CA. The response shall describe the action taken and may recommend pen and ink changes to the affected PMS requirement. The PMS CAs will provide the response to the originator by electronic means. Distribution of the revised MRC to the originator and other affected users will be accomplished via ACN or Special Issue between Force Revisions (FRs). NAVSEA

has established a goal of providing answers to all TFBRS in one day. We realize that there are some TFBRs that will require more extensive research to answer and these TFBRs will not be able to meet this goal. The majority of TFBRs received can be answered in one day and should be answered in one day. Technical Review Activities and ISEAs shall provide responses in less than 21 working days from time of receipt.

c. Special Issues

Special Issues are a category of ACNs and are issues of new documentation between Force Revisions. A Special Issue represents a new MIP and at least one new MRC. A Special Issue may reflect newly developed documentation, or may reflect a change in the documentation a Command receives, such as the addition of a MIP and/or MRC(s) to the Work Center LOEP which the Command requires due to the addition of new equipment. Each Special Issue is serialized on every page. The serial number consists of the Special Issue indicator "SI", originating activity code, serial number, MIP number, MRC number (if applicable), and revision date. Special Issues will be forwarded as a response to a locally-generated Technical Feedback Report to the applicable hulls and/or activities.

d. Changes to RCM-based MRCs require the technical review activity or ISEA to:

(1) Modify the original RCM Corporate History data to reflect the justification for the MRC change.

(2) Provide technical justification for changes to the PMS CA as part of the response to the Feedback Report. The Feedback Report response with the change and justification/rationale will then become part of the RCM Corporate History.

H-11.2 PMS TFBR Instructions

All PMS TFBRs shall be answered using the guidelines in this paragraph.

a. For concurrence response:

(1) If PMS documentation must be changed, the revision information shall be provided to the appropriate PMS CA by electronic means. NAVSEA 04RM approved software may be used to make revisions to PMS documentation, but the use of this software should not delay the response to the appropriate PMS CA.

(2) If no revision to PMS documentation is required provide pertinent comments in the response to the appropriate PMS CA.

b. For non-concurrence responses. When not concurring with the feedback report, the rationale for non-concurrence must be given.

c. The response shall be electronically provided to the appropriate PMS CA with any applicable corporate history changes and revised documentation.

d. Critical Review Questions for PMS TFBR Review

The following questions shall be considered in the response to all TFBRs:

(1) What is the Sailor's question or problem?

(2) Is the MRC necessary?

(3) What failure mode(s) does the MRC prevent or detect?

(4) Is the MRC clear and easy to follow?

(5) Is the MRC safe for the Sailor to accomplish? Check to see that the Sailor is protected from falls, chemicals, asbestos, sewage, high voltage, rotating machinery, pressurized fluids or gases, poisonous gases, and that two-man protection is specified when necessary. If required, is the use of protective clothing, safety glasses or hearing protection specified?

(6) Is the equipment being maintained within the boundaries of the applicable guidelines for selection and use of lubricants and hydraulic fluids for use in Shipboard Systems?

(7) Have you specified the correct number of Sailors, skill level, and man-hours required to accomplish this task?

(8) Is the periodicity such that it represents the absolute minimum necessary to achieve the inherent level of reliability?

(9) What would be the effect on the equipment if the MRC was accomplished less frequently? Not accomplished at all?

(10) For test maintenance actions, what is proven by this test?

(11) Does this action lead towards standardization of MRCs for similar equipment?

(12) Did you answer the Sailor's question?

H-11.3 PMS Advance Change Notice Guidance

A PMS Advance Change Notice (ACN) is authorization for changing a MRC or addition of a new MRC. An ACN is also a record of change to a MRC or addition of a new MRC. An ACN is issued in the format of a MRC suitable for attachment to the MRC to which it applies. An ACN can be issued to advise ships to annotate MIPs.

a. PMS documentation changes typically promulgated by ACNs include:

(1) Increase or decrease periodicity to change the interval between maintenance actions.

(2) Delete or modify an existing maintenance requirement.

(3) Addition or modification of an MRC procedure note to clarify the context or description of a procedure step.

(4) Change a procedure step to correct maintenance technical data, e.g., frequency, pressure, voltages, current, decibels, resistance values, clearance, test data, etc.

(5) Addition, deletion or modification of existing procedure steps which significantly improve the technical accuracy of the MRC.

(6) Addition or change of tools, parts, materials and/or test equipment that significantly improves PMS performance.

b. Distribution and Control of ACNs

(1) A PMS ACN shall refer to a specific MIP and MRC. A new MRC page shall be provided for each MRC page affected by the ACN.

(2) Each PMS ACN shall be serialized. The serial number will consist of the originating activity code, log number (if appropriate), MIP number, MRC control number, and date.

(3) The PMS CAs shall maintain accountability of all outstanding ACNs by MIP/MRC. When revising and distributing affected MIP, the revision shall include annotation of applicable ACNs.

H-12 PMS Workload Increase and Waiver Policy

a. Any revision to PMS requirements resulting in an increase in workload, or denial of a request to change periodicity that would reduce workload, requires the technical review activity or ISEA to obtain NAVSEA 04RM approval. Upon concurrence, NAVSEA 04RM will forward the response to the cognizant PMS CA. PMS Workload Increase Waivers shall be requested in the following circumstances:

(1) A change is made that increases the performance frequency of a current and valid MRC (e.g., changing a Quarterly maintenance action to a Monthly maintenance action). A valid MRC is one generated using reference (k) or evaluated and approved by Backfit-RCM methodology.

(2) The Procedures on a current and valid MRC is either modified or task steps are added that results in additional workload.

(3) A current and valid MRC is added to a MIP that does not currently contain that MRC.

b. PMS Workload Increase Waivers are not required when:

(1) New equipment, with current and valid PMS, is installed in a ship when that equipment and its corresponding maintenance are identical to that installed on other ships or stations.

(2) The MRC workload information is updated to more accurately reflect actual time required to perform the MRC.

c. PMS workload waiver requests shall include an explanation of the change being implemented and the following information:

(1) MRC or task description.

(2) Failure mode (material condition after failure) the MRC or task is intended to prevent.

(3) Description of origination for this new maintenance requirement. This description could include results of INSURV Material Inspection, Navy Safety Center Surface Ship Safety Survey findings, details of a preventable equipment casualty or performance of routine maintenance. If reference exists, (e.g., TFBR DDG 51 Ser 0051-02, INSURV message 031530Z OCT 02, ISEA PMS review, etc) identify the reference.

(4) How the new requirement (i.e., revised periodicity, new procedural step, new maintenance requirement) was determined.

(5) Details of actual failures occurring in the Fleet which this revision to the current maintenance requirement will prevent, and frequency of those failures.

(6) Provide MIP and MRC information for any current and valid MRC or task similar to the proposed, modified, MRC or task.

(7) Any additional technical information that might support adjudication of the waiver request.

In addition, for waiver requests associated with increases in maintenance periodicity or changes to existing MRC procedures (paragraph a.(1) and a.(2) above), a Backfit RCM analysis, similar to that conducted at a MER, should be submitted for each proposed maintenance requirement. Each Backfit RCM analysis should include a detailed rationale and justification addressing how this proposed task satisfies the Applicability and Effectiveness criteria for the proposed maintenance requirement.

d. eWaiver process and workflow: The preferred method for submitting RCM or man hour waiver requests is via the eWaiver application found on the NAVSEA ePMS Gateway. The eWaiver process has stringent review and approval requirements. eWaivers are processed via a rule-based workflow with specified roles. A waiver must be acknowledged by the Commodity Specialist, In-Service Engineer and Team Lead to ensure that the waiver is correctly defined and that the correct people have been identified for the review. Once the waiver has been acknowledged, it is returned to the Initiator to complete the analysis. The completed waiver then proceeds from the Initiator through the Commodity Specialist, the In-Service Engineer (optional) the Team Lead, the RCM Team and the NAVSEA Approver. Any individual in the workflow process can only have one role. For example, the Initiator cannot be the same person as the In-Service Engineer. The In-Service Engineer must review and approve a waiver from the Initiator before it can proceed through the approval process. Any of the review roles in the process may return the waiver to the Initiator for rework if necessary. The final decision on approval of an RCM or man hour waiver resides with NAVSEA 04RM.

APPENDIX I

ALTERATION MANAGEMENT

APPENDIX I - ALTERATION MANAGEMENT

I-1 PURPOSE

This Appendix describes how planned alterations are incorporated into the 3-M system. It is intended as a guide for understanding the process and assist in annotating the required Maintenance Data System (MDS) documents resulting from an alteration to a vessel, its systems, and/or equipment as described in other sections in this manual.

a. The Fleet Modernization Program (FMP) provides the policy and procedures used to manage alterations for individual hulls based on scheduled ship availabilities. The FMP is supported by the Navy Data Environment – Navy Modernization (NDE-NM) database. Reference (m) is the FMP policy and procedures document. The process has been modified over the last several years and represents a sweeping change in the modernization Navy ships. It significantly modifies the FMP by reducing over 40 change types into two basic categories of Ship Changes (SCs), Fleet (Type Commander (TYCOM)) changes and Program (System Command or Program Executive Office (PEO)) changes. The primary difference between Fleet and Program SCs concerns the source of the funding tied to the change. The Navy Modernization Process Management and Operations Manual (NMP-MOM) streamlines and consolidates a number of existing modernization practices, processes, meetings and supporting documents to provide a single, hierarchical decision making process. Submarine forces will implement procedures defined in Section 9 of reference (m). Both references (m) and (b) detail all processes along with participant's responsibilities in supporting the automated system (NDE-NM).

b. The TYCOM directs the accomplishment of D, F, Alteration Equivalent to Repair (AER) or Fleet alterations after the NAVSEA Ship Program Manager (SPM) has approved the alteration, assigns priorities, monitors and controls the alteration progress while Fleet Units must provide accomplishment feedback through the Organization Maintenance Management System – Next Generation (OMMS-NG)/Shipboard Non-Tactical ADP Program (SNAP) process. The CNO and NAVSEA perform these functions for K, KP or Program alterations. It is the responsibility of the SPM, TYCOM and/or Accomplishing Activity to maintain the installation schedule and completions in the NDE-NM database.

I-2 DEFINITIONS

a. Applicability - A technical review and examination was conducted and the alteration was made applicable to a specific ship or ships. This does not mean that the alteration will be programmed on the ship. The Ship Alteration Record (SAR), Ship Change Document(SCD), AER and Equipment Alteration shall provide applicability information that shall also be reflected in NDE-NM.

b. Alteration - Any change in the hull, machinery, equipment, or fittings which involves a change in design, materials, number, location, or relationship of an assembly's component parts whether the change is separate from, incidental to, or in conjunction with repairs.

c. Alteration-Equivalent-To-Repair (AER) – An Alteration-Equivalent-To-Repair (formerly known as a Letter AER for Surface Ships, an Alteration and Improvement (A&I) for Submarines, and an Alteration Request for Aircraft Carriers) is a permanent alteration formally approved by the SPM, typically via letter, which has one or more of the attributes described in TYCOM Alterations (see paragraph I-2 o.).

(1) AERs must satisfy all of the following criteria:

(a) It does not impact Battle Force Interoperability (BFI).

(b) It does not impact the ship's stability records (weight and moment).

(c) It does not impact or alter the 3-dimensional footprint of the equipment it is replacing.

(d) It does not impact shipboard distributive systems (i.e., water, ventilation, electrical, power), their Ship's Selected Record (SSR) or interfacing equipment or systems; compartmental arrangement records; or Damage Control records.

(e) It does not impact Manpower and Personnel.

(2) All AERs require the SPM to obtain approval from the technical authority. Non-military improvements may be approved and authorized for accomplishment by the cognizant SPM.

(3) The following procedures will be followed if the SPM's internal review determines that the proposed AER should be accomplished as a Ship Alteration (SHIPALT) (Title "F", "D", "KP", or "K") or is already under development as a SHIPALT:

(a) An AER can be a prerequisite to a SHIPALT such as Title "F" and "D" SHIPALTs. In this case, information relating to the development of the SHIPALT will be included in the body of the AER recommendation letter. Additionally, it should be stated that Integrated Logistics Support (ILS) products affected will be covered during the SHIPALT development and execution.

(b) AERs can be accomplished in place of SHIPALTs where an emergent requirement of limited applicability dictates. In this case, the body of the recommendation letter shall state that the Planning Yard (PY) shall prepare the AER installation procedures.

(c) If a proposed AER is required until the accomplishment of a SHIPALT, the AER recommendation will identify the SHIPALT and its estimated completion date. All detailed procedures, material requirements and ILS requirements will be excluded from the letter.

d. Authorization – Empowers a command to direct a specified alteration to be accomplished.

e. Approval - An action of the cognizant SPM signifying the accomplishment of an alteration is technically feasible. Evidence of "Approval" is the signature of the SPM on the SAR, AER or Temporary Alteration (TEMPALT).

f. Equipment Alteration – Any alteration, other than a SHIPALT, in the configuration of an equipment or system (including embedded equipment, computer programs and expendable ordnance) after establishment of the product baseline. An Equipment Alteration involves a change in design, type of material, quantity, installed location, logistics, supportability, or the relationship of the component parts of an

assembly within the ship. Equipment Alterations include the addition, deletion, rework, or replacement of parts, assemblies or equipment; or changes in assembly procedures. Alterations to associated computer programs include the incorporation of different computer program versions and approved modification or corrections to both operational test and maintenance programs. Equipment Alterations are initiated by approved Class I Engineering Change Proposals (ECPs). Equipment Alterations apply equally to changes installed in delivered systems and equipment, and changes installed in systems and equipment in production to identify differences from an established product baseline. Equipment Alterations may be initiated to correct a design defect, to change equipment operational capability, to eliminate safety hazards, to update obsolete components, or for any combination of these reasons. There are four types of Equipment Alteration (Engineering Change (EC), Field Change (FC), Machinery Alteration (MACHALT) and Ordnance Alteration (ORDALT)) that are defined below:

(1) Engineering Change (EC) – A modification, usually to Under-Sea Warfare (USW) equipment or systems, or other equipment groups as designated by the cognizant Systems Command, Program Manager (PM),Participating Acquisition Resource Manager (PARM), and Configuration Control Boards (CCBs).

(2) Field Change (FC) – A mechanical, electronic or electrical change, modification or alteration made to electronic equipment after delivery to the government or installation on board ship, including software changes, which does not impact interfaces to other equipment within the ship, change the footprint, form or fit, change power, weight, or air conditioning requirements. If power, weight or air conditioning requirements are modified, the modification must be discussed with the appropriate SPM, who will decide whether to proceed with the modification as a FC or SHIPALT. FCs are initiated and approved by the cognizant Headquarters Systems Command and are implemented by Field Change Bulletin (FCB). Alteration Installation Teams (AITs) or Ship’s Force can accomplish FCs. For these specific types of alterations, the cognizant SPM shall be notified of the approved changes affecting their respective platforms, shall be periodically advised of installation status and shall be notified of any logistics upgrades, which have been completed as a result of the alteration.

(3) Machinery Alteration (MACHALT) - A planned change, modification or alteration of any Hull, Mechanical or Electrical (HM&E) equipment in service (shipboard or shore activities) when it has been determined by the MACHALT CCB that the alteration or modification meets all of the following conditions:

(a) Can be accomplished without changing an interface external to the equipment or system.

(b) Are modifications made within the equipment boundary or is a direct replacement of the original equipment system.

(c) Can be accomplished without the ship being in an industrial activity.

(d) Can be accomplished individually, not conjunctively with a SHIPALT or other MACHALT. If power, weight or air conditioning requirements are modified, the modification must be discussed with the appropriate SPM, who will decide whether to proceed with the modification as a MACHALT or SHIPALT.

(4) Ordnance Alterations (ORDALTs) - Changes made to ordnance equipment or their computer programs by the addition, deletion, rework, or replacement of parts, assemblies or equipment, or by a change in assembly procedures.

g. Fleet Modernization Program (FMP) – The FMP provides a structure for the orderly identification, approval, design, planning, programming, budgeting, installation, life cycle support and configuration control of military, technical, and survivability improvements to all ships of the active and reserve fleets. An “improvement” is an enhancement to a ship that increases its capability or reliability to perform its assigned mission.

h. Forces Afloat Accomplishment - The SHIPALT shall be accomplished by ship's force and/or Intermediate Maintenance Activity (IMA) for shipboard installation.

i. Industrial Activity - Any activity that has the capability to perform all aspects of work on ships. These activities generally include Naval Bases, Naval Ship Repair

Facilities (NSFRs), Intermediate Maintenance Facilities, Trident Refit Facilities (TRFs), public (Naval) shipyards and private shipyards that hold Agreements for Boat Repair (ABR) or Master Ship Repair (MSR) Agreements per the NAVSEA Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP) USN Operations Manual.

j. Levels of Maintenance

(1) Organizational (Shipboard) Level Maintenance - maintenance that is the responsibility of ship's force for accomplishment.

(2) Intermediate Level Maintenance – ship's maintenance that is normally performed by Navy personnel on board tenders, repair ships, Shore Intermediate Maintenance Activities (SIMAs), aircraft carriers, and fleet support bases.

(3) Depot (Shipyard) Level Maintenance – ship's maintenance that is performed by industrial activities. Depot-level maintenance requires major overhaul or a complete rebuilding of parts, assemblies, subassemblies, and end items, including the manufacturing of parts, modifications, testing, and reclamation.

k. Modernization – Modernization consists of all efforts and costs that lead to changes of an In-Service Surface Ship or Carrier. These changes include upgrades or replacement of existing systems by new systems satisfying new requirements. All product development, procurement and installation costs are included as well as costs that are not specific to particular alterations, but are required to execute the Modernization Program. Product development costs are generally paid for within RDTEN 6.3 and 6.4 funding. Procurement and installation costs may be paid for with OPN, WPN, APN, SCN or O&MN funds. The domain includes RDTEN and procurement required for developing and upgrading systems. Any nuclear propulsion changes will be excluded from the Ship Maintenance (SHIPMAIN) process.

l. Package SHIPALT - (P) is assigned to those SHIPALTs being prepared under the Package SHIPALT Program. SHIPALTs under this program must meet the following basic criteria:

(1) The material, plans, installation instructions, spare parts, technical data, etc., are pre-packaged by an industrial facility for specific ships suitable for installation by forces afloat or AIT. As part of the package, only nominal technical assistance will be provided at the time of installation.

(2) All funds to support preparation of Package SHIPALTs, including technical assistance (except for Special Program Material), are FMP funded.

m. Ship Alteration (SHIPALT) – An approved permanent change to the configuration of a ship that is documented as a SHIPALT Record (SAR) and implemented through the FMP Process. SHIPALTs are classified by title/type and comprise any change in hull, machinery, equipment, or fittings that involves changes in design, material, quantity, location, or relationship of the component parts of an assembly.

Note: Other alterations which modify shipboard systems such as ordnance alterations, electronic field changes, air alterations, and special project alterations are not considered SHIPALTs, but may require conjunctive SHIPALTs where systems interface changes are involved.

n. Ship Change Document (SCD) – The change input vehicle for the single authoritative web-enabled database, NDE-NM. A SCD is defined as any new idea, spanning the complexity of a new 21st century Gun Weapons System to the replacement of a manually operated valve with a more reliable alternative. All SCDs will address the need for safety of personnel and equipment and/or provide increased reliability, maintainability and efficiency of installed equipment. There are two types of SCDs:

(1) Fleet Changes – Fleet SCDs are programmed for installation by the Fleet (Type Commander), as well as funded for accomplishment by the Fleet or other organizations as agreed upon.

(2) Program Changes – Program SCDs are programmed for installation by SYSCOMs or PEOs, as well as funded for

accomplishment by the SYSCOMS, PEOs or other organizations as agreed upon.

o. SHIPALT Title – The title assigned to a SHIPALT identifying the approving authority and responsibility for funding. SHIPALT titles are:

(1) Title "D" – A permanent alteration that does not affect the military characteristics of a ship. It is formally approved by the SPM in the form of a Justification/Cost Form (JCF) and a SAR. It may require Centrally Provided Material (CPM) but does not require Headquarters CPM (HCPM). A Title "D" SHIPALT may specify whether it should be accomplished only by a depot-level maintenance facility. They generally include more efficient, cost effective designs that improve ship maintainability, and meets one or more of the TYCOM Alteration attributes described in paragraph I-2 p. TYCOM Alterations.

(2) Title "F" – A permanent alteration that is formally approved by the SPM in the form of a JCF and a SAR. It does not require Centrally Provided Material (CPM) or Headquarters CPM and is within the ship's force capabilities for accomplishment; however, it may be accomplished by a Fleet Maintenance Activity (FMA). It must also meet one or more of the TYCOM Alteration attributes described in I-2 p. TYCOM Alterations.

(3) Title "K" – A permanent alteration to provide a military characteristic, upgrade existing systems or provide additional capability not previously held by a ship, which affects configuration controlled areas or systems of a ship or which otherwise requires the installation of Headquarters Centrally Provided Material (HCPM). These SHIPALTs are approved for development and authorized for accomplishment by the CNO (military improvements) or the Hardware Systems Command (HSC) (non-military improvements). The technical approval for Title "K" SHIPALTs is provided by NAVSEA.

(4) Title "K-P" – A Title "K" SHIPALT which is within forces afloat or Alterations Installation Team (AIT) capability for accomplishment, and for which required special program and centrally provided materials are provided as a package by the cognizant HSC.

p. Temporary Alteration (TEMPALT) – Any alteration that provides given capabilities on a temporary basis (not to exceed one year or one operational deployment in duration) in support of Research, Development, Test and Evaluation (RDT&E) or exercise or mission requirements. TEMPALTS are technically reviewed by the ship design manager and interfacing and impacted TWHs, and approved for installation by the Ship Program Manager. The SPM review considers safety, technical adequacy, impact on ship stability, operational characteristics including warfare capability, damage control, ship structure, ship services, ships interfaces, and habitability. Alterations intended to be installed for a period in excess of one year or one operational deployment shall be considered a permanent change to a ship's configuration and shall be accomplished as a SHIPALT accordingly. After completion of testing requirements, mission or exercise support requirements or one year, whichever comes first, TEMPALTs must be removed and the ship restored to its previous configuration. The activity sponsoring the accomplishment of the TEMPALT shall be responsible for funding the removal of the TEMPALT and the restoration of the ship.

q. TYCOM Alterations – TYCOM Alterations are approved by the SPM for accomplishment as a Title "D" or "F" SHIPALT or AER depending upon the scope and effects of the change after review by the appropriate technical authority (e.g. TWH, Engineering Agent etc). TYCOM Alterations are programmed for installation by the TYCOM, as well as funded for accomplishment by the TYCOM or other organization as agreed upon. TYCOM Alterations are maintenance alterations normally accomplished to improve reliability or maintainability. A TYCOM Alteration is a technical alteration that has one or more of the following attributes:

(1) The use of different materials that have been approved for similar use and such materials are available from standard stock.

(2) The replacement of obsolete, worn-out or damaged parts, assemblies or components requiring renewal by those of later and more efficient design which has been previously approved by the SPM and such replacement does not cause a change to the systems or equipment normally associated with the military characteristics of the ship.

(3) The strengthening of parts that require repair or replacement in order to improve reliability of the parts and of the unit, provided no other change in design is involved.

(4) Minor modifications involving no significant changes in design or functioning of equipment but considered essential to prevent recurrence of unsatisfactory conditions.

(5) The replacement of parts, assemblies or equipment with like items of later or more efficient design where it can be demonstrated that the cost of the installation and maintenance of the new parts, assemblies or components is less than the cost of maintaining the installed parts, assemblies or components, and such replacement does not cause a change to the existing system design or affect any interfacing system design and does not affect a change to the systems or equipment normally associated with the military or technical characteristics of the ship.

(6) The proposed alteration is an inspection or documentation change requiring no equipment modification, but requires a vehicle to monitor accomplishment.

I-3 ORGANIZATIONAL RESPONSIBILITY

Responsibility for alteration management is required at various levels of command. Command responsibilities include:

I-3.1 Naval Sea Systems Command (NAVSEA)

As the managing agent for the FMP program, NAVSEA provides a major input into the NDE-NM database from MDS reports. The NDE-NM records and tracks authorized configuration change requirements and status. Specific alteration management responsibilities for the managing agent are:

a. Maintain and update the NDE-NM database, requesting reports from fleet commands per reference (m) when the 3-M database cannot supply the required information.

b. Ensure NDE-NM transactions and supporting information is available to applicable TYCOMs. Data should include:

(1) OPNAV Form 4790/2K information concerning all alterations. This excludes NAVSEA-08 alterations.

(2) Programmed status for all alterations.

(3) Plans, material, and package availability status for all SHIPALTs and AERs.

(4) Priorities for planned Amalgamated Military/Technical Improvement Plans (AMTs).

(5) Estimated man-days to complete.

(6) Estimated material costs (latest).

(7) Estimated total cost to complete.

(8) Fiscal year planned.

(9) Returned total cost this alteration.

(10) Plans availability code.

I-3.2 Type Commanders (TYCOMs)

The TYCOMs are responsible for alteration management within their force. Responsibilities include:

a. Assign priorities to alterations:

(1) For Title "K" alterations or Program Changes, review the NDE-NM and recommend changes of priorities to CNO.

(2) For Title "D", "F" or Fleet Change alterations and for TYCOM Alterations, assign the priorities of precedence for installation.

b. For the TYCOM Mandatory Priority List, identify for CNO the planned installation year and assigned priority for Title "F" SHIPALTs. This information is subsequently displayed in the NDE-NM database.

c. Check the NDE-NM Alteration Management data by verifying that:

(1) The information recorded is supported by corresponding SARs or SCDs.

(2) Applicabilities are assigned and correct.

(3) Programmed status is assigned.

d. Document the following information (if desired) for local processing and control:

(1) Material, plans, and Package SHIPALT availability.

(2) Alteration cost estimates.

(3) Priorities for accomplishment.

e. For TYCOM Alterations maintain the following information in NDE-NM:

(1) Type Availability (T/A), and TYCOM Screening Code.

(2) Priority, if desired.

(3) Designated planning activity, if desired.

(4) Designation to add to applicable ship CSMP file.

(5) Planned installation year, if desired.

f. Monitor alteration management reports to ensure accuracy, including monitoring of the transaction and error reports.

g. Provide direction to the supporting data processing activity concerning the production and distribution of alteration management reports.

h. Take appropriate action when transferring alteration management files and reports to another command. This requires that both TYCOMs maintain the same alteration management master records.

i. Issue instructions to:

(1) Provide for advanced planning for alterations.

(2) Assign planning activities.

(3) Report return cost of alterations.

(4) Assign parent IMAs, if applicable.

(5) Transfer files from one command to another.

(6) Provide for the routine correction of alteration files.

j. Provide information on problems, and solutions in alteration completions reported by an IMA to all other concerned activities.

I-3.3 Fleet Units

The Commanding Officer is responsible for the expeditious completion of all alterations authorized for the ship. Ship alteration management responsibilities are:

a. Audit for accuracy alteration management reports and MDS Transaction and Error Identification Reports containing alteration information. Report required corrections to the TYCOM.

b. Ensure that the applicable SAR, SCD or similar document is provided to the ship for all alterations programmed in the execution year.

c. Submit OPNAV Form 4790/CK, or electronic version following installation of alterations. See Section I, Chapter 4 of this manual for detailed instructions and Appendix B for details of specific blocks.

d. When reporting alteration status changes:

(1) Ensure the remarks section (Block 12) of the OPNAV Form 4790/CK expressly states the work that remains to be completed on partially completed alterations.

(2) Ensure that all of the configuration data required by Section I, Chapter 4 is reported on the OPNAV Form 4790/CK.

(3) Ensure that OPNAV Form 4790/2K for partial alterations is completed.

I-4 ALTERATION PROCESS

The alteration process begins when the SYSCOMs forward alteration documents and data, which interface with MDS, to the TYCOMs. These documents authorize the accomplishment of alteration requirements and configuration changes to components or systems installed on ships or installed at shore activities. The TYCOMs review and modify the data as necessary before forwarding the alteration data on to the appropriate units, or designated activity that will process the data into the Ships' 3-M System. Specific procedures for processing alteration data from the NDE-NM into 3-M are contained in references (b), (c) and TYCOM instructions with a summary provided in the following sections.

a. All alterations scheduled for accomplishment must be in the ship's CSMP. This is the entry point for the alteration data into the 3-M System. Some of these alterations require extensive logistic support while others may be limited to, for example, a wiring change in a circuit. For each type/category of alteration a unique alteration prefix has been assigned as an identifier. Authorized alteration categories and associated prefixes are:

Prefix	Alteration Category
AR	Alteration Request
HI	Habitability
SA	Ship Alteration
SI	SYSCOM Command Instruction
SP	Special Projects
TD	Technical Directive
TR	Trident Alteration
ECO	Engineering Change Order
ECP	Engineering Change Proposal
TRI	Trident Ship Alteration

Prefix	Alteration Category
EC	Engineering Change
FC	Field Change
SCD	Ship Change Document
TEC	Temporary Engineering Change
TDC	TYCOM Discretionary Change
ESR	Engineering Service Request
LSA	Logistic Support Analysis
TMA	Tripper Machinery Operation
PSA	Post Shakedown Availability

b. In addition to configuration changes made during corrective maintenance and reported as required by Section I, Chapter 4, preplanned equipment modernization must be authorized prior to the exchange by the responsible SYSCOM. When a component supported by the COSAL is replaced by a component with different repair part requirements, but meets the same equipment design specifications, the appropriate SYSCOM must authorize the exchange. The SYSCOM must also authorize exchanges of components replaced by non-supportive components.

I-4.1 Alteration Management 3-M Reporting Requirements

a. For FMP managed alterations requiring logistic support, the 3-M documentation provided by the SYSCOM will have the Work Center, Job Sequence Number (JSN), and structured Alteration Number pre-assigned. These identifiers are used for tracking the life cycle of the alteration. This information is reported through the 3-M system as a configuration change. Refer to Section I, Chapter 4 for additional information on configuration reporting.

b. If the issuing authority does not provide the formatted 3-M WC/JSN and Alteration number, the ship will assign the JCN. The structure of the alteration number is left to the reporting activity, except for the first two or three positions that must have an authorized alteration category prefix. Note that reference (n) contains additional types of configuration changes that are not applicable to 3-M reporting.

I-4.2 Ship's Force Requests for Configuration Changes

Ship's Force requests for Configuration Changes not covered by applicable alterations shall be submitted as TYCOM directed (refer to the TYCOM instruction). The request should be in the ship's CSMP prefixed by the authorized alteration category "AR".

I-4.3 Departure From Specification

When a component supported by the COSAL is replaced by a component with different repair part requirements but meeting the same specifications, the appropriate SYSCOM must authorize the exchange. Written communication is usually by Departure From Specifications (DFS) or Liaison Action Request (LAR) and subsequently documented by a completed Configuration Change Request (CCR).

I-4.4 Certification of Shipyard Installed Alterations

The Naval Supervising Activity (NSA) provides a certification of alteration installations to the recipient ship when the alterations are accomplished by the shipyard. This certification includes the Work Center, JSN assigned to the alteration, and the Final Action Taken. The certification will be in the format shown in Figure I - 1 Alteration Certification Letter. The ship shall endorse the shipyard's certification letter and forward to the supporting activity managing the unit's Master CSMP. The endorsement provides authorization for information transmitted to be processed as completed deferrals in the Master CSMP. Refer to Figure I - 2 First Endorsement on Alt. Certification Letter. This eliminates the need for documenting multiple configuration changes (OPNAV Form 4790/CK) to close the CSMP deferral. Configuration changes made by the depot in accomplishing the alterations are reported separately from 3-M.

I-4.5 Automated Data Process Between 3-M and Ship’s CSMP

a. Configuration and Logistics Support Information System (SCLSIS)Ships' 3-M automated programs are designed to accept applicable data for file, sort, and display. The alteration information is automatically passed from the SCLSIS CDMD-OA to automated ships via the Automated Shore Interface process. For additional information on SCLSIS CDMD-OA and the ASI process

refer to reference (m). Similarly, the MDS information may be transferred to a ship's CSMP via the Master Job Catalog (MJC) when authorized for accomplishment.

b. The communication link and interface procedures for processing 3-M and NDE-NM files, and CSMP file processing are contained in reference (m) and TYCOM instructions.

c. The procedures for adding alteration records to the MJC, and distributing these changes to the TYCOM operating sites are contained in Appendix C and TYCOM instructions.

APPENDIX J

RELIABILITY-CENTERED MAINTENANCE CERTIFICATION PROGRAM

APPENDIX J - RELIABILITY-CENTERED MAINTENANCE CERTIFICATION PROGRAM

J-1 PURPOSE

To institutionalize Reliability Centered Maintenance (RCM) methodology for Navy maintenance managers and engineers tasked with development, revision and approval of maintenance requirements. This Appendix is directed at technical activities, contractors and engineers involved in the development, revision and approval of maintenance requirements and documentation for all levels of maintenance.

J-2 CERTIFICATION LEVELS

RCM Certification is aligned along three levels to meet the distinctly different maintenance responsibilities that exist. Individual certification levels include:

J-2.1 Level I Certification

Level I Certification addresses responsibilities of individuals tasked to develop, review, or approve changes to currently published maintenance tasks.

J-2.2 Level II Certification

Level II Certification applies only to those individuals responsible to develop, review, or approve maintenance requirements on new systems or equipment, or existing systems or equipment being used in a different application or arrangement.

J-2.3 Level III Certification

Level III Certification is designed for a very select group of senior In-Service Engineers (ISEs) selected by their commands to teach Level I RCM Certification courses at their In-Service Engineering Agencies (ISEAs) and to serve as local RCM subject matter experts.

J-3 ORGANIZATIONAL RESPONSIBILITY

Responsibility for RCM Certification is as follows:

J-3.1 Naval Sea Systems Command (NAVSEA)

As RCM Certification Program managing agent, NAVSEA is responsible for all aspects of the certification program. Specific responsibilities include:

a. Maintaining certification records as part of the ePMS Gateway;

b. Establishing RCM Certification curriculum;

c. Administering Level I, II and III courses as required, including recertification;

d. Certifying course instructors in writing after ascertaining appropriate RCM subject matter and instructional expertise have been achieved;

e. Monitoring maintenance engineering tasks to ensure only certified individuals are assigned responsibility to develop, review or approve scheduled maintenance requirements; and

f. Administering testing requirements including maintaining test question and answer data bases for all RCM Certification levels.

J-3.2 ISEAs, Naval Sea Logistics Center Detachments (NAVSEALOGCEN Dets), and maintenance planning activities

ISEAs, NAVSEALOGCEN Dets, and maintenance planning activities are responsible for:

a. Maintaining sufficient Level I certified personnel to develop, review, or approve changes to current scheduled maintenance tasks;

b. Maintaining sufficient Level II certified personnel to develop review and approve new PMS task requirements;

c. Nominating and assigning sufficient Level III certified personnel to conduct Level I RCM Certification courses as required; and

d. Ensuring all contractors who develop or modify maintenance requirements are certified at NAVSEA RCM Level I and/or Level II as appropriate.

J-4 RCM CERTIFICATION PROCESS

RCM Certification training comprises three elements:

a. Formal Instruction to develop a fundamental understanding of RCM methodology;

b. Application of principles to enrich the fundamental understanding of RCM principles and to demonstrate practical application; and

c. Testing to assess student knowledge and ensure an adequate level of qualification prior to certification.

J-4.1 Level I "Navy Backfit RCM for Practitioners" Course

a. Required attendees include ISEs and NAVSEALOGCEN Det Commodity Specialists who develop, review, or approve changes to current maintenance tasks.

b. Location: Washington DC metropolitan area or at ISEA sites.

c. Periodicity: As required to satisfy certification and recertification requirements at ISEA sites and quarterly in the Washington DC metropolitan area.

d. Purpose: Tailored to systems and equipment of the host ISEA, each 2-day Level I course focuses on fundamentals necessary to apply the Navy Backfit RCM process to current maintenance tasks. Level I certification is dependent upon successful completion of a written examination. In order to remain proficient, recertification is required every 3 years.

e. Recertification may be accomplished in one of two ways:

(1) Successful completion of a Navy Backfit RCM for Practitioners exam following formal training, or via the Internet at the ePMS Gateway; or

(2) Successful participation in a FLEETMER session.

J-4.2 Level II "RCM for PMS Developers" Course

a. Required attendees include ISEs tasked with development of, review or approval authority for new maintenance requirements. Contractors with similar responsibilities will also be required by language in acquisition contracts to attend.

b. Location: As designated by NAVSEA 04RM.

c. Periodicity: Monthly or as required.

d. Purpose: Each 5-day RCM for Maintenance Requirement Developers course focuses on application of Classic RCM as defined in MIL-STD-3034. Fundamentals taught during this course are necessary to apply RCM principles to the development of maintenance requirements for new systems and equipment. Final Level II certification is dependent upon successful completion of a written practical examination. Recertification is required every 3 years.

e. Recertification is accomplished by successful completion of an RCM for Maintenance Requirement Developer's certification exam following formal training or via the Internet at the ePMS Gateway.

J-4.3 Level III "Navy Backfit RCM for Trainers" Program.

a. Required attendees include senior ISEs.

b. Location: As designated by NAVSEA 04RM.

c. Periodicity: As required.

d. Prerequisites: Successful completion of Level I and Level II certification requirements, and recommendation of parent command with NAVSEA 04RM concurrence.

e. Purpose: The 10-day Navy Backfit RCM for Trainers course serves two functions:

(1) To increase the Level III students' foundation and understanding of RCM theory and methodology; and

(2) To train senior ISEs in the techniques needed to effectively teach RCM principles and methodology.

f. Level III certified ISEs are authorized to provide Level I certification training to personnel at their parent commands and other ISEAs that do not have Level III certified individuals. Successful completion of the Level III course is dependent upon passing a written exam in RCM theory and practical exercises. Certification is dependent upon successful completion of the Level III course and successful completion of a NAVSEA 04RM monitored practice teaching session typically 2 to 3 months after completion of the Level III course.

g. Recertification is required annually and may be accomplished in one of three ways:

(1) Successful completion of a NAVSEA monitored practice teaching session; or

(2) Successful completion of the Backfit RCM for Trainers examination.

(3) Successful teaching of at least two Level I classes held at the instructor's Command/Activity or participation in a Level III workshop conducted by NAVSEA.

J-5 ADDITIONAL INFORMATION

Additional information concerning the RCM Certification Program, or help in registering for available courses may be obtained on the ePMS Gateway at https://altair.seajax.navy.mil/epmsgateway or by contacting the NAVSEA 04RM SMIP Helpdesk at 877-422-3316 or e-mailing smiphelp@caci.com.

FIGURES

Date: 11/08/08 Planned Maintenance System Page: 1
Time: 12:39:01 List of Effective Pages (PMS-5) FR: 1-09

NAVAL SURFACE FORCE US ATLANTIC FLEET (DK-6)

Act ID: CG 0060 UIC: V21449 Work Center: CSE1 USS NORMANDY

Add Chg	MIP	Nomenclature	RICs
	1501/001-C4	Superstructure And Fittings	
C	3000/001-A8	Misc Shipboard Elect Equip	
C	4121/002-88	MK-162 Mod 0	
	4151/009-48	AN/URC-107(V)7	
C	4400/001-A8	Exterior Communications Equipment	
	4402/001-57	OK-454(),455()/WSC	
C	4402/003-98	AN/SSR-1,1A	
	4403/001-B7	Frequency Distribution System	
	4414/010-96	R-2368, 2368A,B/URR, R-2368A(V)1/URR	
C	4415/004-A8	Portable Communications	
	4415/017-B7	AN/SRC-53	
	4415/032-48	AN/WSC-3(V) LOS Versions	
A	4415/045-A8	AN/SRC-55(V) Hydra	
	4415/050-78	AN/URC-139(V) Radio Set	
C	4415/063-98	AN/GRC-211 Radio Set	
	4416/002-66	SA-2112A(V) Remote Communication Devices	
	4417/011-78	AN/USQ-145(V) Multiple Access Communication Sys	
C	4417/201-A8	AN/USC-38(V)1-13, AN/USC-38B(V)1,2 EHF SATCOM	
	4417/203-68	AN/WSC-3,3(V)1,2,3,9,13,15,16,17,19,AN/WSC-3A	
	4417/208-68	INMARSAT A/B/M/ Systems	
C	4417/211-98	Global Broadcast System	
C	4417/213-A8	AN/WSC-6,A(V)7 SHF SATCOM Sys	
	4417/218-96	AN/FCC-100(V)( ) Multiplexer	
C	4418/017-A8	RD-674A,B,C/UNH Recorder-Reproducer	
C	4419/004-A8	AN/SYQ-26(V) NAVMACS II/SMS	
C	4419/R02-A8	AN/SYQ-7(V)1,2,3,5,5A	
C	4461/001-A8	Security Equipment	
	4461/002-46	Network Encryption System (NES)	
	4461/021-17	KG-250 Cryptographic Device	
	4461/R04-A6	SA-2112(V)3,4,5,6,8/STQ	
C	4661/001-88	AN/SRQ-4	
	5000/005-78	Valves And Valve Operators	
	5513/017-78	L.P. Air Control Panel	
A	6300/001-58	Preservation And Coverings	
A	6341/001-A8	Deck Covering	

--- NMR - No Maintenance Required, Do Not Schedule
NMR-4451/030-84 AN/URA-17F,G CV-3510B/UG
NMR-6611/010-B9 Duplicators/COPIERS

--- MRS - The need for Maintenance Requirements is Substantiated
MRS-4461/003-35 TSEC/KY-68

Figure 2 - 1 List of Effective Pages (LOEP) (PMS 5)

Maintenance Effectiveness Review (MER) Analyzed 07/1/1998

DISTRIBUTION STATEMENT A:

Approved for public release; distribution is unlimited. Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

MIP CONTROL NUMBER: 5833/202-78 **Date:** July 2008

SHIP SYSTEM, SYSTEM, SUBSYSTEM, OR EQUIPMENT

Small Boat (Steering Systems)

5833

REFERENCE PUBLICATIONS

NAVSEA 0905-LP-501-2010
NAVSHIPS 0922-019-6010

CONFIGURATION

SCHEDULING AIDS

1. Review Maintenance Requirements. Omit MRC(s) which do not apply; no feedback report required.
2. MRCs R-1, R-2 and A-3 contain blanks to be filled in by ship's force before implementation. Until these fill-in data elements are applied, the MR cannot be effectively accomplished. Advise via PMS feedback report if the required fill-in data is not available to ship's force.

** For scheduling purposes only; no MRC is provided.

Mandatory scheduling required.

OTHER	MRC NO.	MAINTENANCE REQUIREMENT DESCRIPTION	PERIO-DICITY CODE	RATES	MAN HRS	RELATED MAINT
	78 3BMH N	1. Lubricate Steering Gear.	S-1	EN3	0.2	None
	78 8JEX N	1. Lubricate (Push-Pull Type) Steering Cable on Outboard Engine Equipped Boats.	S-2	2BM3	0.4	None
	78 8EYS N	1. Lubricate Grease-Packed Type Steering Gearbox.	A-1	EN3	0.3	None
	78 9JLT N	1. Inspect Mechanical Steering System.	A-2	MM3	1.0	None
	78 4HHG N	1. Change Oil in Steering Gear Pump Gearbox.	A-3	EN3	1.0	None
	78 8EMK N	1. Change Lube Oil in Steering Gearbox.	A-4	EN3	0.3	None
		1. Inspect steering pump for leaks. If leaks are found replace seals and inspect vane conditions (Power assisted hydraulic systems only).	24M-1 **			None
		1. Request repair activity to test hydraulic steering system relief valve (Power assisted hydraulic systems only).	30M-1 **			None
		1. Inspect hydraulic rams for signs of leaking. If leaks are found replace seals and inspect internal parts (Power assisted hydraulic systems only).	48M-1 **			None
	78 9JLR N	1. Inspect Manual Hydraulic Steering System.	R-1	MM3	0.3	None
		NOTE: Accomplish this maintenance requirement when any of the following periodicities or situations occur. a. Prior to operation.				
	78 9JLS N	1. Inspect Power Assisted Hydraulic Steering System.	R-2	MM3	0.5	None
		NOTE: Accomplish this maintenance requirement when any of the following				

Figure 2 - 2 Maintenance Index Page (MIP) (Page 1)

OTHER	MRC NO.	MAINTENANCE REQUIREMENT DESCRIPTION	PERIO-DICITY CODE	RATES	MAN HRS	RELATED MAINT
		periodicities or situations occur. a. Prior to operation.				
	78 9JLU N	1. Change Hydraulic Fluid.	R-3	EN3 FN	1.0 1.0	R-4#
		NOTE: Accomplish this maintenance requirement when any of the following periodicities or situations occur. a. Every 500 ± 50 hours of operation.				
	78 6PWG Y	1. Replace Steering Hydraulic System Filter.	R-4	EN3	0.2	None
		NOTE: Accomplish this maintenance requirement when any of the following periodicities or situations occur. a. Every 300 ± 30 hours of operation.				
		UNSCHEDULED MAINTENANCE				
	78 6JWN U	1. Clean and Lubricate Small Boat Steering System.	U-1	EN2 ENFN	0.5 0.5	None
		NOTE: Accomplish upon unsatisfactory result of steering system inspection.				
		INACTIVE EQUIPMENT MAINTENANCE				
		The following requirements will be scheduled when equipment is inactivated for periods of prolonged idleness.				
		None required				

Figure 2 - 3 Maintenance Index Page (MIP) (Page 2)

Maintenance Requirement Card (MRC) Page 1 of 2 SYSCOM: A8 9SPY N
OPNAV 4790/85 (REV. 9-97)

DISTRIBUTION STATEMENT A:

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Date: October 2008 **MIP Series:** 5833 **MRC:** A8 9SPY N **Periodicity:** Q-3

Location:

Ship System: Auxiliary Systems 500
System: Boat Handling and Stowage System 583
SubSystem: Small Boats 5833
Equipment: Small Boats, Propulsion System 5833P

Rates	Man-Hours	Rates	Man-Hours	Rates	Man-Hours
EM3	0.3	EN3	0.4		
Total Man-Hours:	0.7	**Elapsed Time:**	0.4		

MAINTENANCE REQUIREMENT DESCRIPTION

1. Test Propulsion Engine Neutral Safety Switch.

SAFETY PRECAUTIONS

1. Forces afloat comply with NAVOSH Program Manual for Forces Afloat, OPNAVINST 5100.19 series; shore activities comply with NAVOSH Program Manual, OPNAVINST 5100.23 series.
2. Exercise extreme caution when working around moving machinery.
3. Ensure all objects are clear of engine and propeller or water jet when operating engine.
4. Neutral safety switch shall not be by-passed/disconnected or removed from any control head, transmission, or engine. Failure to comply could result in damage to the boat or injury/death to the personnel.
5. Neutral safety switch failure may cause the boat to move with force if engine RPM is placed above idle, this force can cause damage to boat, dock, and injury/death to personnel. Do not engage control levers in any position that will produce engine RPM above **IDLE** at any time while conducting this maintenance requirement.

TOOLS, PARTS, MATERIALS, TEST EQUIPMENT

TOOLS

1. [02271] Flashlight, Type 3, style 1, explosive proof

MISCELLANEOUS

1. [00090] Protector, hearing
2. [00758] Life preserver, vest, w/o accessories

NOTE: Numbers in brackets can be referenced to Standard PMS Materials Identification Guide (SPMIG) for identification.

PROCEDURE

Preliminary

NOTE 1 : This maintenance requirement must be conducted while the boat is waterborne only.

CAUTION: Failure to properly secure boat may result in damage to equipment or injury/death to crew.

a. Double mooring lines to ensure boat is securely moored.

CAUTION: Failure to follow recommended start up or securing procedures in accordance with current operating instructions may result in damage or failure of equipment.

CAUTION: Failure to provide cooling water to engine while in operation will cause overheating and damage to engine.

CAUTION: Engine oil pressure must be indicated within 15 seconds after the engine is started. If oil pressure does not register within 15 seconds secure engine to avoid possible damage. Confirm correct oil level is indicated on lube oil sump dipstick. Report low lube oil pressure to Work Center Supervisor, correct as directed.

WARNING: Exercise extreme caution when working around moving machinery.

Figure 2 - 4 Example MRC (page 1)

WARNING: Ensure all objects are clear of engine and propeller or water jet when operating engine.

b. Put on hearing protection.

NOTE 2 : If engine Revolutions Per Minute (RPM) is controlled by separate lever ensure throttle control lever is set into a position that will not increase engine RPM above **IDLE** .

c. Start engine, inspect for oil pressure within proper operating range as indicated on oil pressure gage.
d. Allow engine to operate at idle until engine is at normal operating temperature.
e. Stop engine.

1. Test Propulsion Engine Neutral Safety Switch.

NOTE 3 : Engine should only start when the control head is placed in the **NEUTRAL/IDLE** position. If the engine starts while the control head is in **FORWARD** or **REVERSE** position, the neutral safety switch has failed.

WARNING: Neutral safety switch shall not be by-passed/disconnected or removed from any control head, transmission, or engine. Failure to comply could result in damage to the boat or injury/death to the personnel.

WARNING: Neutral safety switch failure may cause the boat to move with force if engine RPM is placed above idle, this force can cause damage to boat, dock, and injury/death to personnel. Do not engage control levers in any position that will produce engine RPM above **IDLE** at any time while conducting this maintenance requirement.

a. Place engine control head in **IDLE/NEUTRAL** position.
b. Start engine, inspect for oil pressure within proper operating range as indicated on oil pressure gage on engine control console or boat operators control console.
c. Confirm the propulsion system is in neutral by inspecting the following, as applicable:
   (1) Propeller is not rotating, indicated by lack of water flow from propeller.
   (2) Water jet impeller is not rotating, indicated by lack of water flow from water jet.
d. Move the control head lever out of the detent position and place in **FORWARD** . Ensure that engine RPM is set to **IDLE** .
e. Stop engine.
f. Attempt to start the engine:
   (1) If the engine starts the neutral safety switch has failed, immediately move the control head lever to the **NEUTRAL** position and stop the engine.
   (2) If the engine does not start move the control head to the **NEUTRAL** position.
g. Start the engine. Move the control lever out of the detent position and place in **REVERSE** . Ensure that the engine RPM is set to **IDLE** .
h. Stop engine.
i. Attempt to start the engine:
   (1) If the engine starts the neutral safety switch has failed, immediately move the control head lever to **NEUTRAL** position and stop the engine.
   (2) If the engine does not start move the control head to **NEUTRAL** position.
j. Repeat steps 1.a through 1.i.(2) for remaining engines.
k. Remove hearing protection.
l. Report discrepancies to Work Center Supervisor, correct as directed.
m. Return equipment to readiness condition.

Figure 2 - 5 Example MRC (page 2)

DISTRIBUTION STATEMENT A:

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Date: August 2008	**MIP Series:** 5833	**MRC:** 88 9YDS U	**Periodicity:** U-3

Location:

Ship System:	Auxiliary Systems 500
System:	Boat Handling and Stowage 583
SubSystem:	Small Boats 5833
Equipment:	Small Boats, Hoisting Pads and Shackles (Permanently Attached) 5833

Rates	Man-Hours	Rates	Man-Hours	Rates	Man-Hours
P02	0.5				
Total Man-Hours:	0.5	**Elapsed Time:**	0.5		

MAINTENANCE REQUIREMENT DESCRIPTION

1. Schedule Repair Activity to Perform a Test of Permanently Attached Hoisting Hardware Pads and Shackles at 1 and 1/2 Times Working Load.

SAFETY PRECAUTIONS

1. Forces afloat comply with NAVOSH Program Manual for Forces Afloat, OPNAVINST 5100.19 series.

TOOLS, PARTS, MATERIALS, TEST EQUIPMENT

None

PROCEDURE

NOTE 1 : Schedule when extensive work (sandblasting, high pressure cleaning, or welding) has been performed on the boat.

1. Schedule Repair Activity to Perform a Test of Permanently Attached Hoisting Hardware Pads and Shackles at 1 and 1/2 Times Working Load.

a. Schedule repair activity to perform a test of permanently attached hoisting hardware pads and shackles at 1 and 1/2 times working load.

Figure 2 - 6 Unscheduled Maintenance Requirement Card (MRC)

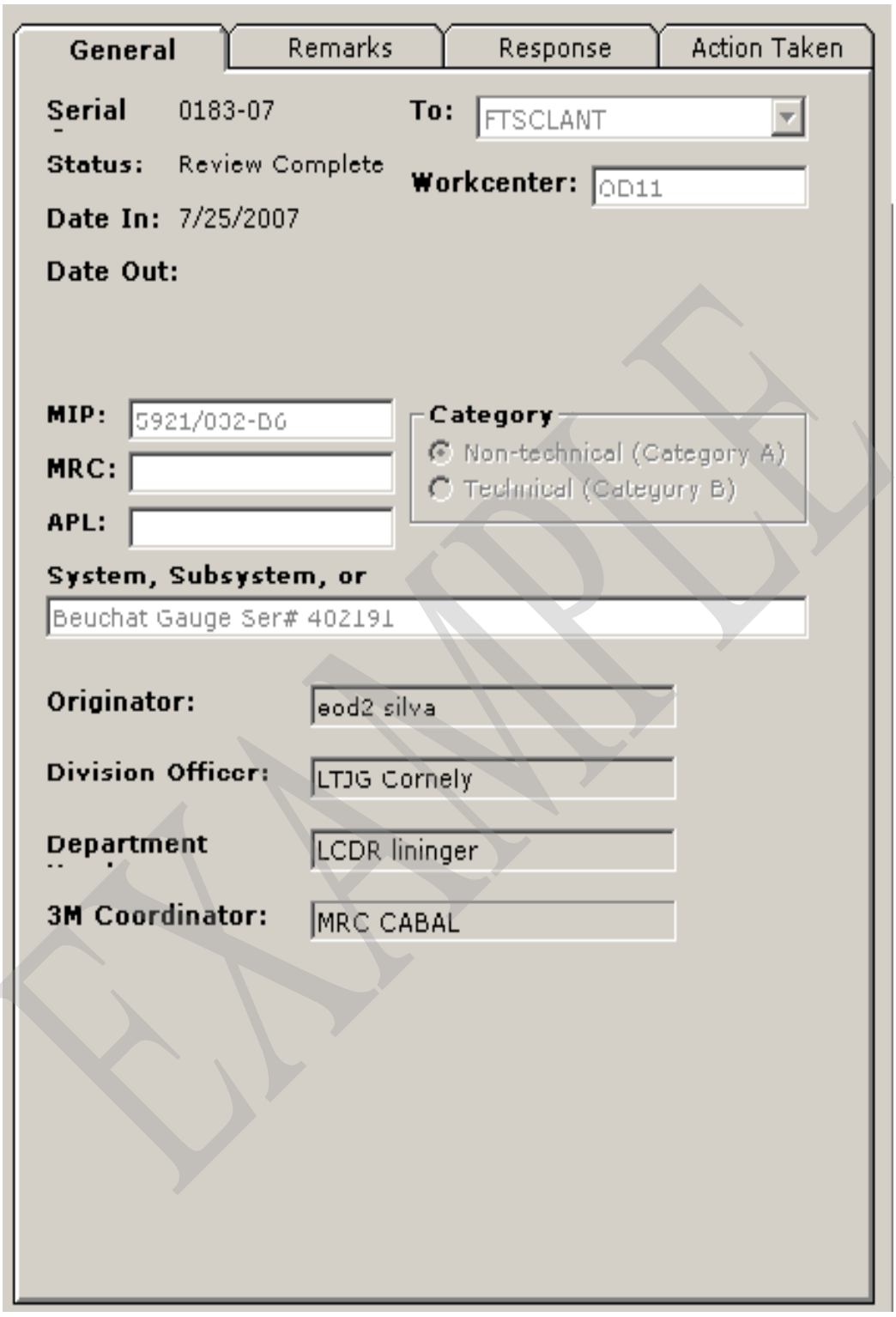


Figure 2 - 7 CAT A Feedback Report (Non-technical)

Figure 2 - 8 CAT B Feedback Report (Technical)

```
UNCLASSIFIED//

PATUZYUW RHOVBXR2185 0911300-UUUU--RHMFIUU.
ZNR UUUUU ZUI RHHMMCA7762 0912006
P 011300Z APR 09 PSN 134277H24
FM USS BOXER
TO RHMFIUU/NAVSEALOGCEN MECHANICSBURG PA//6211/62111/62112//
INFO RHMFIUU/COMNAVSEASYSCOM WASHINGTON DC
RULSSEA/COMNAVSEASYSCOM WASHINGTON DC//04RM//
RHMFIUU/COMNAVSAFECEN NORFOLK VA
RHMFIUU/BUMED WASHINGTON DC
RHMFIUU/NAVAVNFCSTCEN NORFOLK VA//00/10/30/40/60/90//
RHHMHAA/COMPACFLT PEARL HARBOR HI
RUHEQUE/COMTHIRDFLT RHOVMTZ/COMTHIRDFLT
RHVRJZB/COMEXSTRIKGRU THREE
RHOYSHP/COMPHIBRON FIVE RHOYBXR/USS BOXER BT
UNCLAS  //N04790// MSGID/GENADMIN/USS BOXER//
SUBJ/URGENT PMS FBR SERIAL 1123-09//
RMKS/1. SYSCOM MIP CONTROL NR 5420/012-C8.
2. MRC CODE 5420 R-32W.
3. SYSCOM MRC CONTROL NR 97B6DZN.
4. RECOMMEND THAT MRC SYSCOM: 97 B60Z N R-32W MIP 5420/012
PAGE 02 RHOVBXR2185 UNCLAS
   PROCEDURE STEP 2 BE CHANGED TO READ THE FOLLOWING:
5. 2.L. REMOVE SAFETY TAGS.
6. 2.M. ENSURE QUALIFIED PERSONNEL FLUSH AND RECIRCULATE
   REFUELING SYSTEM TO REMOVE ANY PARTICULATE CONTAMINANTS.
7. 2.N. RETURN EQUIPMENT TO READINESS CONDITION.
8. NOTE 3: FLUSHING OF REFUELING SYSTEM WHILE IN PORT
   REQUIRES PRIOR AUTHORIZATION.//
BT
#2185
NNNN
```


Figure 2 - 9 Urgent Feedback Report (Message)

Date: 08/09/08 Planned Maintenance System Page: 5
Time: 11:29:45 Automated Library Issue Document (ALID) FR: 4-08

NAVAL SURFACE FORCE US ATLANTIC FLEET (DK-6)

Act ID: CG 0061 UIC: V21460 USS MONTEREY

S U P E R S E D U R E S

Superseded MIP	Superseding MIP	Applicable Work Centers	Qty
8443/503-38	8443/503-78	CF03	1
58TOM29/001-18	58TOM29/001-78	CM01	1
58TOM34/001-18	58TOM34/001-68	CM01	1
58TOM36/001-38	58TOM36/001-68	CM01	1
5ORD001/001-48	5ORD001/001-58	CG03	1
5WTOM09/001-38	5WTOM09/001-68	CM01	1

A D D S

Added MIP	Applicable Work Centers	Qty
1701/001-78	CE03 CG03	2
4911/5U2-27	CF03	1
4957/010-48	CSE1	1
5000/014-C7	ER04	1
5551/001-78	ER04	1
5736/001-97	CG03	1
6111/002-68	CA01 CG03	2
6646/049-68	ER09	1
7121/009-78	EE02	1

D E L E T E S

Deleted MIP	Applicable Work Centers
4121/099-57	CSE1
4911/5U2-27	CF02
5519/005-A7	ER04
5519/014-A5	ER04
5551/001-38	ER09

Figure 2 - 10 Automated Library Issue Document (ALID)

Date: 08/09/08 Planned Maintenance System Page: 1
Time: 11:29:48 Activity to MIP to W/C by Dept (PMS-4A) FR: 4-08

NAVAL SURFACE FORCE US ATLANTIC FLEET (DK-6)

Act ID: CG 0061 UIC: V21450 USS MONTEREY
Department: COMMUNICATIONS

MIP	Nomenclature	Work Center Distribution
1651/006-78	Sonar Dome	CA01
1701/001-78	Masts And Kingposts	CE03 CG03
3000/001-88	Misc Shipboard Elect Equip	CA01 CC01 CC02 CE01 CE03 CF01 CF02 CF03 CG02 CG04 CM01 CM02
3000/100-27	Shorting Probe	CG01
3140/500-78	Power And Conversion 60/400 Hz (MK 84 Mod 1)	CF03
3140/U50-A7	Power And Conversion 60/400 Hz	CF03
3202/047-78	Switchgear And Panels	CF03
4071/021-78	Intermodulation Interference (IMI)	CC01
4102/001-78	Command And Decision System Mk 1, Mk 2	CF02
4111/003-A7	OJ-451(V)6,8,9,10; COMPUTER DISPLAY CONSOLE	CF02
4111/005-77	OJ-471(V)1,2,3; DISPLAY CONTROL CONSOLE	CF02
4111/008-B7	OL-191(V)3, 4, 5, 6; SIGNAL DATA PROC-CONV GP	CF02
4111/010-77	OL-318(V)1,2	CF02
4111/012-77	ON-201(V)1, INTERCOMMUNICATIONS INTERCONNECTING	CF02
4111/016-77	OL-498	CF02
4111/017-67	OL-499	CF02
4111/022-77	PT-563/UYQ, COLOR PROJECTION PLOTTING UNIT	CF02
4121/005-38	RD-358A(V)/UYK	CF02 CG02
4121/012-97	AN/UYK-44(V), OF-174/UYK-44(V)	CF03 CM02
4121/041-18	AN/UYK-43C(V)	CF02
4121/058-48	AN/UYQ-86(V)1-6 Common Data Link Mgmt Sys	CF02
4121/099-57	AN/UYH-16 Recorder Disk System 4121	CF02
4121/R15-B7	AN/UYK-7(V)	CG02
4121/R28-57	AN/UYK-20(V), 20X(V), 20A(V), 20AX(V)	CF02
4121/R34-68	AN/USH-26(V)	CF03 CM02
4231/019-78	AN/URN-25 Navigation Set, TACAN	CE03
4231/026-C3	AN/PSN-11 Satellite Signals Navigation Set	CE03
4231/034-18	AN/WRN-6(V)1 Navigation Set, Satellite Signals	CE03
4232/012-78	AN/URN-31 Automatic Identification System (AIS)	CE03
4241/002-68	AN/UQN-4,4A	CA01
4262/003-78	Electrical Navigation System	CE01
4271/011-78	AN/WSN-7(V)1, 2, 3 Ring Laser Gyro Navigator	CE01
4311/002-77	Interior Communications Switchboards	CE01
4320/001-A7	Integrated Voice Communication System	CE01
4321/012-18	Sound-Powered Telephones and Amplifiers	CE01
4331/002-78	Announcing Systems	CE01
4361/001-78	Alarm, Safety, And Warning Systems	CE01 CG03
4361/002-78	Alarm, Safety, And Warning Systems	CE01
4361/005-66	Alarm, Safety, And Warning Systems	CE01
4361/028-78	Parasense Model 3304/3308 FSV-N Refrigerant Leak	CE01
4361/046-18	Alarm Switches, Detectors, and	CE01
4361/571-78	VAPOR TRACER2 HAND-HELD EXPLOSIVES DETECTOR	CG03
4373/007-A7	Wind Indicating Systems	CE01
4391/654-68	AN/UXQ-18	CE01
4400/001-78	Exterior Communications Equipment	CC01
4402/001-57	OK-454(),455()/WSC	CC01

Figure 2 - 11 MIP to Work Center File (PMS 4A)

Date: 02/02/09 Planned Maintenance System Page: 1
Time: 06:51:21 TFBR Status by Hull (PMS-22) FH: 2-09

COMNAVSURFLANT N412C TYCOM-53825 (DK-011)

Outstanding TFBR's for SERMC MAYPORT 232 (00040027) Naval Surface Force US Atlantic Fleet

Serial #	Date Received	TFBRIL / XMTL Serial #	Date Sent	ISEA Responsible	ISEA Due Date	Revised Doc Due Date	Days Del
*0008-04	10/29/08	401AX/E1878-08	10/30/08	NAVSURFWARCEN PHDIV A65		02/10/09	65
2923-09	01/30/09						0

Total Outstanding TFBR's: 2

Completed TFBR's for SERMC MAYPORT 232 (00040027) Naval Surface Force US Atlantic Fleet

Serial #	Date Received	TFBRIL / XMTL Serial #	Date Sent	ISEA Responsible	Resolution Letter	Response Date
*0013-09	08/06/08	4132G/E0200-08	10/28/08	NAVSURFWARCEN CD PHIL 946	NA	12/31/08
*0015-08	11/24/08		11/25/08			
2921-09	01/21/09	4131K/E1394-09	01/22/09	NAVSURFWARCENDIV CRANE WXQR	ELEXRESP	01/26/09
2922-09	01/21/09	4131K/E1395-09	01/22/09	NAVSURFWARCENDIV CRANE WXQR	ELEXRESP	01/26/09

Total Completed TFBR's: 4

* - Annotates TFBR resulted in documentation revision

FOR OFFICIAL USE ONLY

Figure 2 - 12 Technical Feedback Status Report

CHANGE SERVICE ACCOUNTABILITY LOG _____

FR/Change Number or Authority	Date Rcvd	Cognizant Dept or W/C	Date Cover Sheet Issued	Date Cover Sheet Returned	Date Master File Updated/ Item Closed	Summary of Change

Figure 2 - 13 Change Service Accountability Log

4790

Date

MEMORANDUM

From: 3M System Coordinator
To: _____ Division Officer
Via: _____ Department 3-M System Assistant

Subj: _____ FEEDBACK REPORT REPLY
_____ FORCE REVISION PACKAGE
_____ SPECIAL ISSUE
_____ NEW ITEMS
_____ 490/2L REPLY

1. The following material has been received from Naval Sea Logistics Center:

a. Response Ltr Serial No. _____ Date
F.B. replies Serials No.
Nomenclature

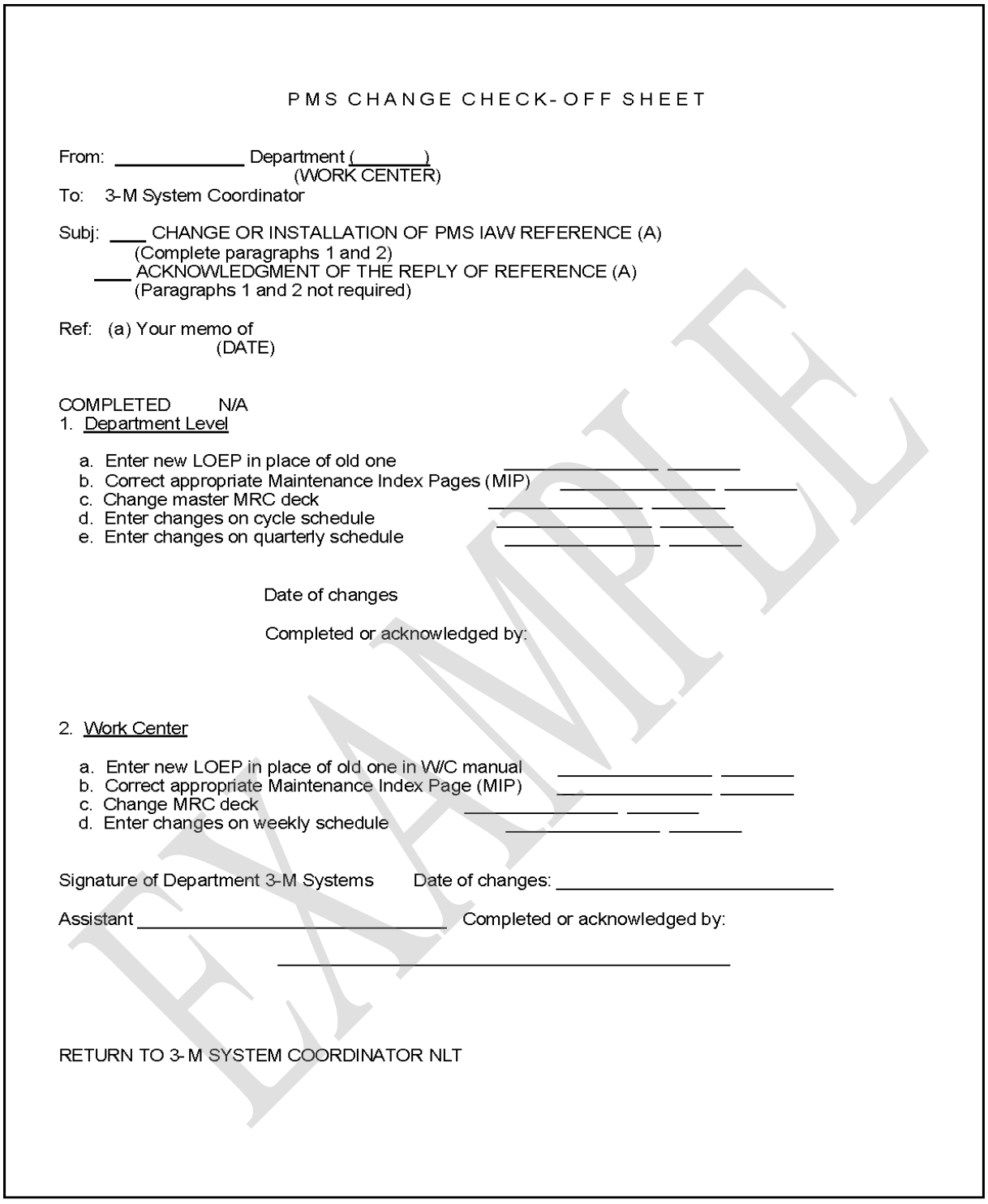
b. Action taken:

2. Corrections, including those to MIP, LOEP, and MRC should be made immediately. Complete page 2 and return via the department 3-M Systems Assistant as soon as all changes have been entered.

3. Action is/is not required by Work Center(s).

//s//

Figure 2 - 14 PMS Change PG Memorandum (Sample 1)



PMS CHANGE CHECK-OFF SHEET

From: _____ Department (_____)
(WORK CENTER)
To: 3-M System Coordinator

Subj: ___ CHANGE OR INSTALLATION OF PMS IAW REFERENCE (A)
(Complete paragraphs 1 and 2)
___ ACKNOWLEDGMENT OF THE REPLY OF REFERENCE (A)
(Paragraphs 1 and 2 not required)

Ref: (a) Your memo of
(DATE)

COMPLETED N/A
1. Department Level

a. Enter new LOEP in place of old one _____ _____
b. Correct appropriate Maintenance Index Pages (MIP) _____ _____
c. Change master MRC deck _____ _____
d. Enter changes on cycle schedule _____ _____
e. Enter changes on quarterly schedule _____ _____

Date of changes

Completed or acknowledged by:

2. Work Center

a. Enter new LOEP in place of old one in W/C manual _____ _____
b. Correct appropriate Maintenance Index Page (MIP) _____ _____
c. Change MRC deck _____ _____
d. Enter changes on weekly schedule _____ _____

Signature of Department 3-M Systems Date of changes: _____

Assistant _____ Completed or acknowledged by:

_____

RETURN TO 3-M SYSTEM COORDINATOR NLT

Figure 2 - 15 PMS Change Check-off Sheet

OTHER MRC NO.	MAINTENANCE REQUIREMENT DESCRIPTION	PERIO-DICITY CODE	RATES	MAN HRS	RELATED MAINT
78 HJ30 N	1. Test Operate AN/URN-25. 2. Test Operate OE-273/URN Antenna Group. **NOTE:** Accomplish this maintenance requirement when any of the following periodicities or situations occur. a. 24 hours prior to getting underway.	R-1	ET3 OSSN	1.1 0.6	None
	UNSCHEDULED EQUIPMENT MAINTENANCE				
45 HJ26 U	1. Inspect and Lubricate AN/URN-25 Drawer Slides and Locks.	U-1	ETSN	1.0	None
	INACTIVE EQUIPMENT MAINTENANCE				
	The following requirements will be scheduled when equipment is inactivated for periods of prolonged idleness.				
	Lay-Up Maintenance				
45 HJ34 N	1. Install Protective Covering. **NOTE:** Accomplish if industrial work is to be performed in vicinity of equipment.	LU-1	ETSN	0.5	None
	Periodic Maintenance				
	None				
	Start-Up Maintenance				
45 HJ39 N	1. Remove Protective Covering. **NOTE:** Omit requirement if equipment was not covered during Lay-Up.	SU-1	ETSN	0.5	None
78 NG76 N	1. Perform Start-Up Maintenance (SU) Tasks. **NOTE:** This is a scheduling card. Schedule and perform after the completion of MRC SU-1.	SU-2			S-1#
	Operational Test				
78 NG77 N	1. Perform Operational Test (OT) Tasks. **NOTE:** This is a scheduling card.	OT-1			R-1#

Figure 2 - 16 Inactive Equipment Maintenance (IEM)

Maintenance Effectiveness Review (MER) Analyzed 07/1/1998

DISTRIBUTION STATEMENT D:

Distribution authorized to DOD components and DOD contractors only; Critical Technology; January 2006. Other requests for this document shall be referred to Naval Sea Systems Command (SEA 04RM). Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

Date: January 2006 **MIP Series:** 4926 **Periodicity:** SU-1

Location:

Ship System:	Special Purpose Systems 490
System:	Flight Control and Instrument Landing Sys 492
SubSystem:	Stab Glide Slope Ind (SGSI) Mk 1 Mod 0/1 4926
Equipment:	SGSI 4926XX

Rates	Man-Hours	Rates	Man-Hours	Rates	Man-Hours
Total Man-Hours:		**Elapsed Time:**			

MAINTENANCE REQUIREMENT DESCRIPTION

1. Perform Start-Up Maintenance.

SAFETY PRECAUTIONS

1. Forces afloat comply with NAVOSH Program Manual for Forces Afloat, OPNAVINST 5100.19 series.

TOOLS, PARTS, MATERIALS, TEST EQUIPMENT

None

PROCEDURE

NOTE 1 : This is a scheduling card. Schedule and perform listed MRCs for start-up maintenance.

1. Perform Start-Up Maintenance.

NOTE 2 : System power is not required to perform MRCs in steps 1.a., 1.c., 1.d., and 1.f.

a. Remove protective covering from SGSI system assemblies; test, lubricate, and install glide slope indicator. SU-2 and S-3.
b. Flush and fill hydraulic system; install servo valves. SU-3.
c. Clean, inspect, and lubricate Stabilized Platform F600 subassemblies. S-2.
d. Clean and inspect SGSI system subassemblies. 18M-1.
e. Clean and inspect electronics enclosure; perform system alignment. U-2.
f. Clean and inspect interior of wave-off or wave-off/cut light system subassemblies. 18M-2.

Figure 2 - 17 Start-up (SU) MRC

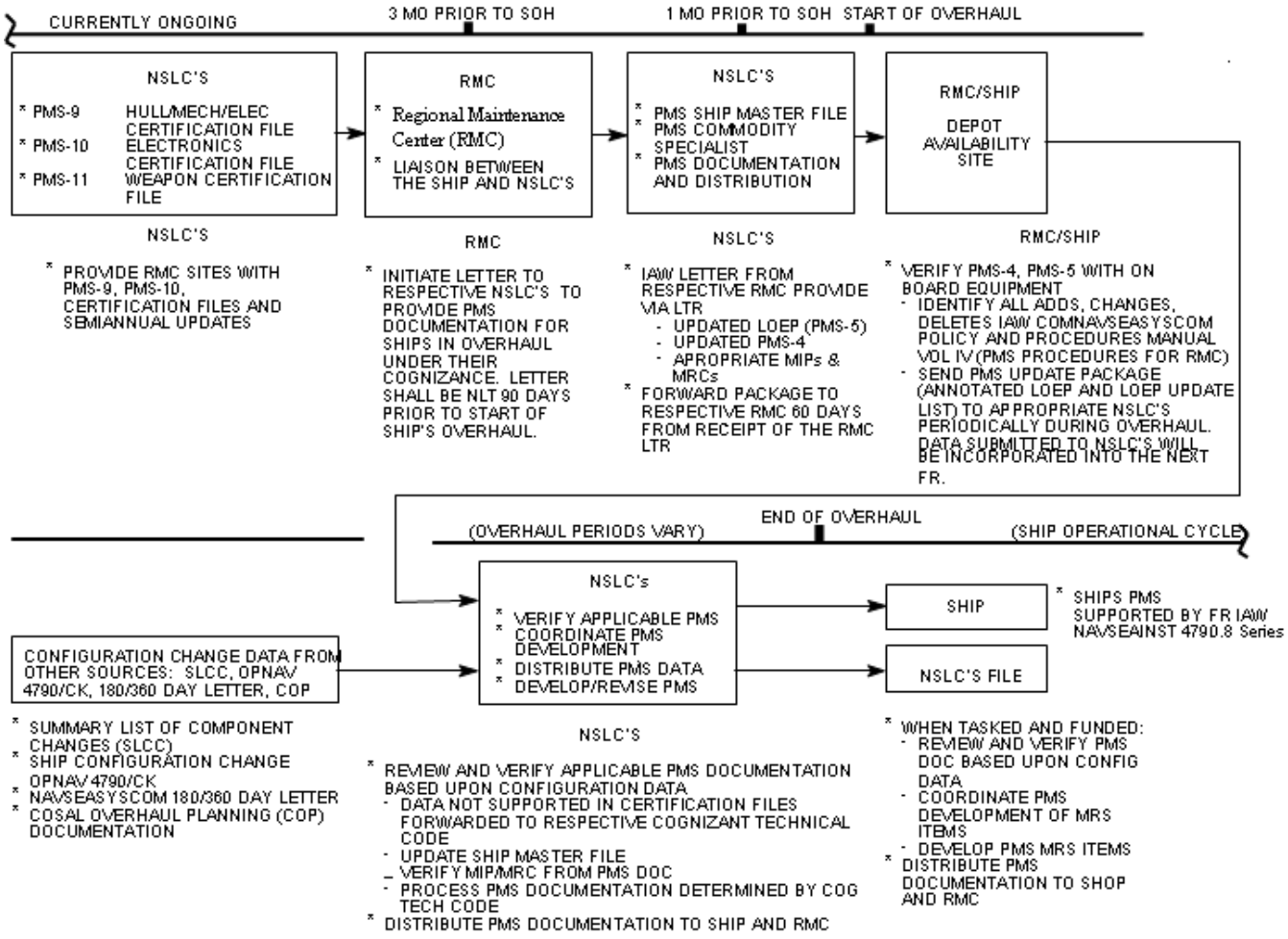


Figure 3 - 1 PMS Document Support

DEFICIENCY IDENTIFICATION	TYPE AVAIL	PRI	DEFICIENCY	REVIEW	STATUS OF REPAIR	SUPPLY	3-M ACTION	COMPLETION
DATE SYS/CMPNT JSN ENTERED BY	1 2 3 4	1 2 3 4	2-LIMA Y N TAG-OUT Y N	LPO DIV OFF		REQN#	DEFER YES NO INIT. COMPL YES NA INIT.	DATE CLEARED BY (SIGN)
DATE SYS/CMPNT JSN ENTERED BY	1 2 3 4	1 2 3 4	2-LIMA Y N TAG-OUT Y N	LPO DIV OFF		REQN#	DEFER YES NO INIT. COMPL YES NA INIT.	DATE CLEARED BY (SIGN)
DATE SYS/CMPNT JSN ENTERED BY	1 2 3 4	1 2 3 4	2-LIMA Y N TAG-OUT Y N	LPO DIV OFF		REQN#	DEFER YES NO INIT. COMPL YES NA INIT.	DATE CLEARED BY (SIGN)
DATE SYS/CMPNT JSN ENTERED BY	1 2 3 4	1 2 3 4	2-LIMA Y N TAG-OUT Y N	LPO DIV OFF		REQN#	DEFER YES NO INIT. COMPL YES NA INIT.	DATE CLEARED BY (SIGN)
DATE SYS/CMPNT JSN ENTERED BY	1 2 3 4	1 2 3 4	2-LIMA Y N TAG-OUT Y N	LPO DIV OFF		REQN#	DEFER YES NO INIT. COMPL YES NA INIT.	DATE CLEARED BY (SIGN)
DATE SYS/CMPNT JSN ENTERED BY	1 2 3 4	1 2 3 4	2-LIMA Y N TAG-OUT Y N	LPO DIV OFF		REQN#	DEFER YES NO INIT. COMPL YES NA INIT.	DATE CLEARED BY (SIGN)

WORK CENTER

Figure 4 - 1 Work Candidate/Job Sequence Number (JSN) Log

4790
Ser/Org Code
Date

From: (Requesting Activity)
To: Commander, Naval Sea Systems Command (SEA 04M1)

Subj: NOMINATION FOR ADDITION TO (OR DELETION FROM) THE SELECTED EQUIPMENT LIST (SEL)

Ref: (a) NAVSEAINST 4790.8(Series)

1. It is requested that the following equipment be added to (or deleted from) the SEL as directed by reference (a). (Include a justification statement). The following identifying information is provided:

a. EIC:

b. APL:

c. EIC Nomenclature:

d. Manufacturer/Designator/Model: (If APL does not identify)

2. Reporting requirements (for ADDs only):

a. Meters to be Read;

b. Reporting Level: (1, 2, or Specialized)

(Include for Specialized reporting):

(1) List of ships/units to report data:

(2) Destination of 30M data for analysis:

(3) List of data elements with validation criteria:

3. Statement indicating resources to perform in-depth analysis of the 3-M data is certified.

4. Statement indicating formal acceptance has been received from TYCOMs with units chosen for SEL data.

//Signature block//

Copy to:
(Cognizant TYCOMs)
(Cognizant NSLC)

Figure 4 - 2 Add/Remove from Selected Equipment List (SEL)

4790
Ser/Org Code
Date

From: (Submitting Activity)
To: Commanding Officer, (Applicable Data Processing Facility)
Via: Applicable TYCOM (optional by TYCOM direction)

Subj: SUBMISSION OF 3-M DOCUMENTS

Ref: (a) NAVSEAINST 4790.8(Series)

Encl: (1) MDS Documents

1. Per reference (a), enclosure (1) is forwarded for processing. The following information is provided:

a. Unit Identification Code:

b. Number of Deferred Maintenance Actions:

c. Number of Completed Maintenance Actions (2Ks):

d. Number of Completed Maintenance Actions (CKs):

e. Number of Correction Documents:

f. Total number of documents submitted:

//Signature//
By direction

Figure 4 - 3 MDS Non-Automated Commands

4720
Ser/Org Code
Date

From: (Originating Activity)
To: Commanding Officer, USS (Ship's Name and hull number)

Subj: CERTIFICATION OF ALTERATION INSTALLATION DURING AVAILABILITY (include data range of availability)

Ref: (a) NAVSEAINST 4790.8(Series)

1. The following alterations are certified installed. The listed alterations meet the requirements of the issuing agency as instructed, and include all required Logistics Support documentation.

3-M WC/JSN	ALTERATION NO.	DESCRIPTION	A/T
(For example only):			
DXSA 0054	SADDG 0045 K	MISSLE LAUNCH INSTL	5B
EXSA 3994	SADDG 01003 K	SSTG INSTL	5B
EXSA 4007	SADDG 01675 K	HPAC RPLCMNT 5B	

//Signature//
By direction

Copy to:
(Cognizant TYCOM)
NAVSEA (cognizant Code)

Figure 4 - 4 Alteration Certification Letter

4720
Ser/Org Code
Date

FIRST ENDORSEMENT on NSY ltr 4720 Ser/Orig Code of (Date of ltr)

From: Commanding Officer, USS (Ship's Name and hull number)
To: (Supporting Activity, e.g., IUC, RSG, etc.)

Subj: CERTIFICATION OF ALTERATION INSTALLATION DURING AVAILABILITY (include data range of availability)

Ref: (a) NAVSEAINST 4790.8(Series)

1. Request the alterations reported completed by basic correspondence be processed as completed deferrals in the Master CMSP.

//Signature//
By direction

Copy to:
(Cognizant TYCOM)
NAVSEA (Cognizant Code)

Figure 4 - 5 First Endorsement on Alt. Certification Letter

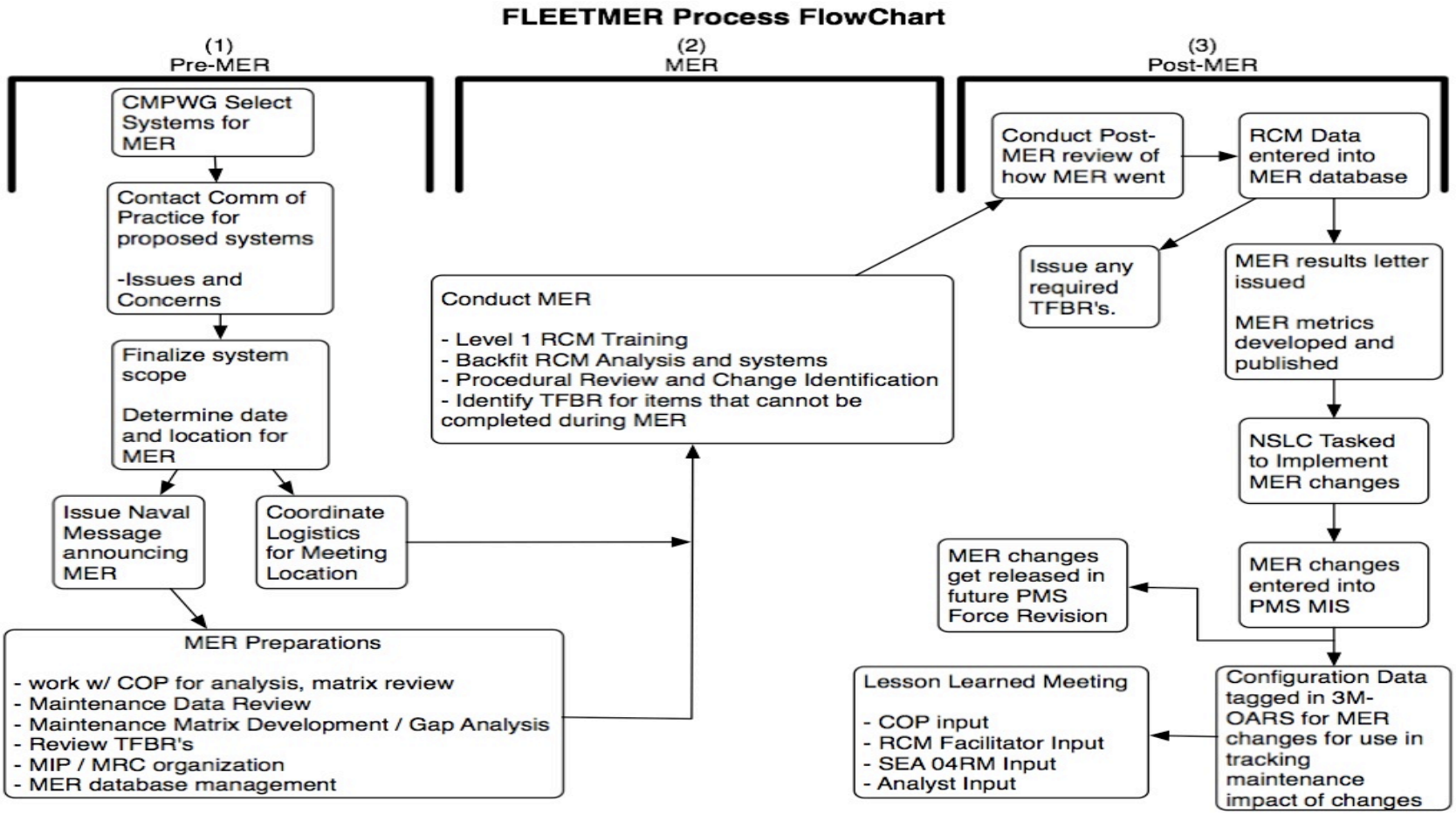


Figure 5 - 1 FLEETMER Process Flowchart

MIP	System Name	MRC	Periodicity	Equipment	Specific Component	Task Type	Sort #	MRD Text	AS	LHA	LHD	LPD-4	LCC	CVN-68	CVN-65	SSN-21	SSN-688	SSN-774	SSBN / SSGN
E - 004/214-97	Main Condenser and Air Ejectors	No MRC	60M-2	Condenser - Main	Shell	Test - UT, Repair Activity	C21	Submit Work Request to Repair Activity for Ultrasonic Test of Condenser Shell. Area of Suspected Thinning Determined by Ship's Force Inspection Should Be Spot Checked. Ship's Force to Prepare Surfaces for Testing. Acceptable Minimum Condenser Wall Thickness Is One-Third of the Original Wall Thickness.				X							
2540/071-78	Condensers and Air Ejectors	No MRC	R-4	Condenser - Main	Steam Side	Clean	C22	Clean Steam Side of Main Condensers.						X					
2540/071-78	Condensers and Air Ejectors	No MRC	R-6	Condenser - TG	Steam Side	Clean	C22	Clean Steam Side of Turbogenerator Condensers.						X					
2540/071-78	Condensers and Air Ejectors	A1WM	24M-1	Condenser - Main	Steam Side	Inspect	C23	Inspect Steam Side of Main Condensers.						X					
2540/071-78	Condensers and Air Ejectors	K49L	24M-3	Condenser - Gland Exhaust	Steam Side	Inspect	C23	Inspect Steam Side of Auxiliary Gland Exhaust Condenser.						X					
2540/004-77	Condensers And Air Ejectors	B2JT	24M-6	Condenser - Main	Steam Side	Inspect	C23	Inspect Steam Side of Condenser.			X								
2540/071-78	Condensers and Air Ejectors	A1WJ	24M-8	Condenser - TG	Steam Side	Inspect	C23	Inspect Steam Side of Turbogenerator Condensers.						X					
2540/071-78	Condensers and Air Ejectors	K48J	96M-4	Condenser - TG	Steam Side	Inspect	C23	Inspect Turbogenerator Air Ejector After Condenser and Gland Condenser.						X					
E - 004/066-A6	Main Condenser and Air Ejectors	S42W	R-13	Condenser - Main	Steam Side	Inspect	C23	Inspect Steam Side of Main Condenser.							X				
E - 004/179-46	Main Condenser And Air Ejectors	S42W	R-13	Condenser - Main	Steam Side	Inspect	C23	Inspect Steam Side of Main Condenser.	X				X						
E - 004/214-97	Main Condenser and Air Ejectors	S42W	R-13	Condenser - Main	Steam Side	Inspect	C23	Inspect Steam Side of Main Condenser.				X							

Figure 5 - 2 Example Maintenance Matrix

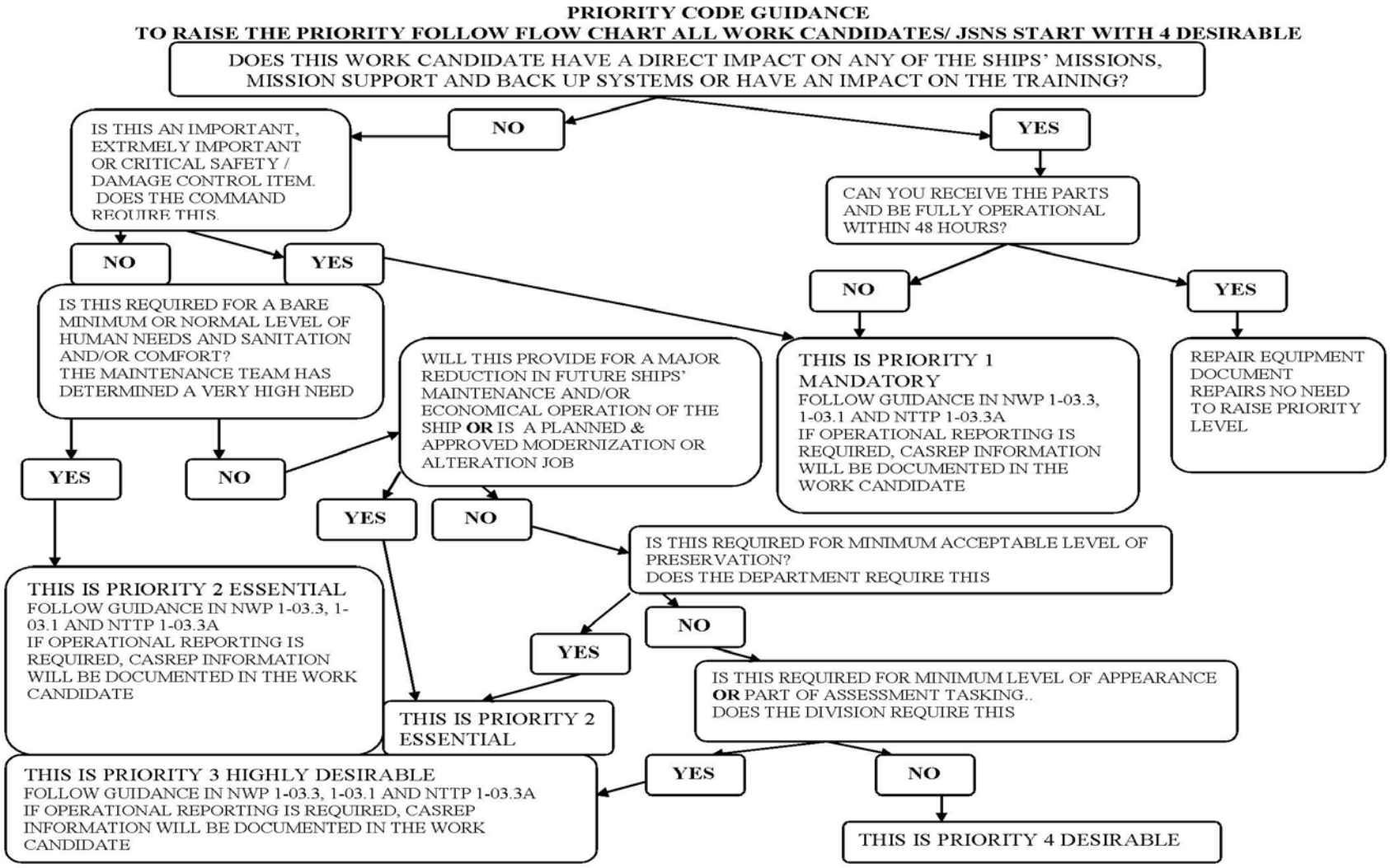
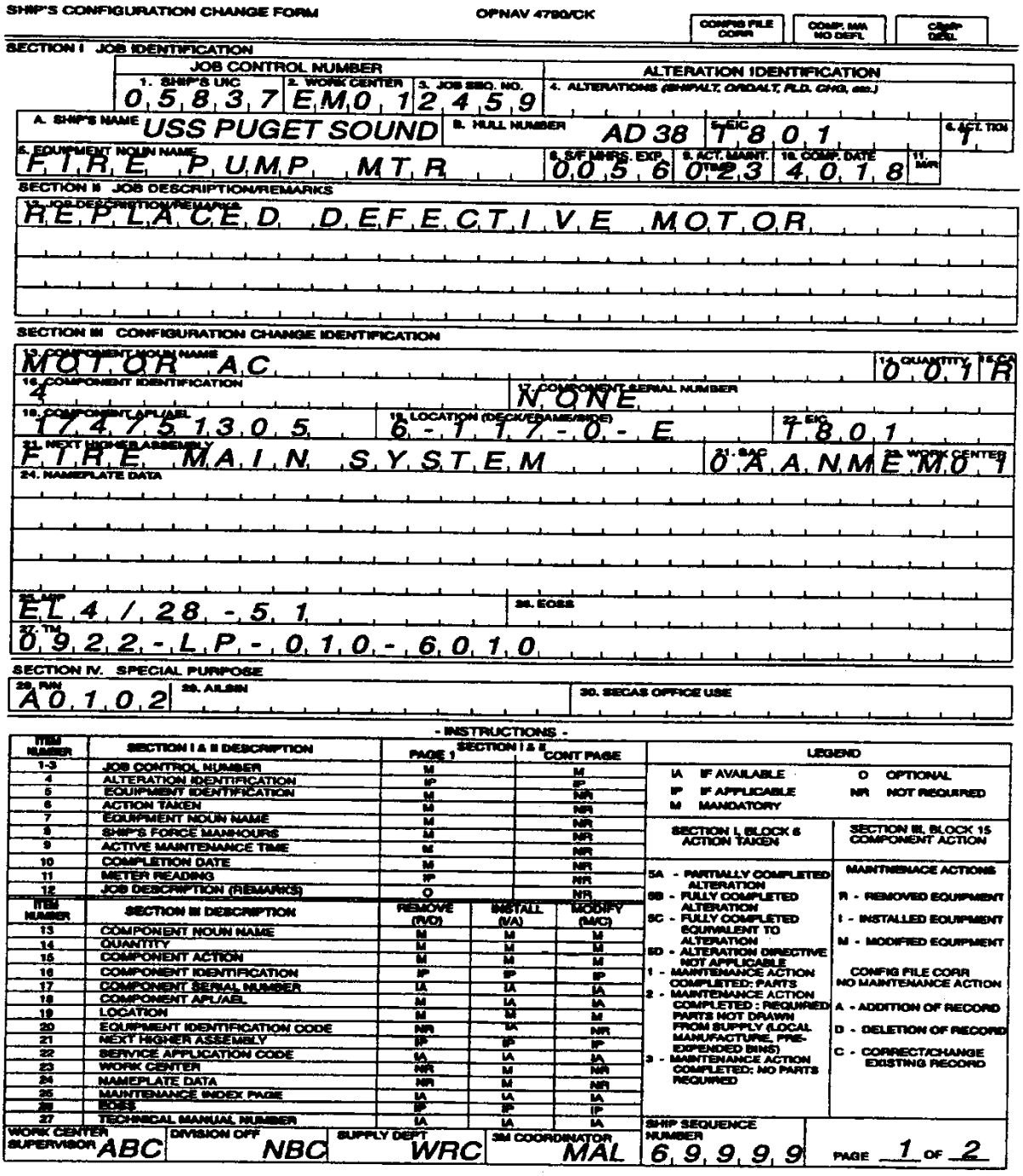


Figure A - 1 Priority Code Guidance



SHIP'S CONFIGURATION CHANGE FORM — OPNAV 4790/CK

CONFIG FILE CORR | COMP. MA NO DEFL | CHIEF DEFL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION
1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. ALTERATIONS (SHIPALT, ORDALT, FLD. CHG, etc.)
05837	EM01	24599	

A. SHIP'S NAME	B. HULL NUMBER	C. EIC	6. ACT. TKN
USS PUGET SOUND	AD 38	T801	1

5. EQUIPMENT NOUN NAME	8. S/F MHRS. EXP.	9. ACT. MAINT.	10. COMP. DATE	11. MR
FIRE PUMP MTR	0056	023	4018	

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS
REPLACED DEFECTIVE MOTOR

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME		14. QUANTITY	15. CA
MOTOR AC		001	R
16. COMPONENT IDENTIFICATION	17. COMPONENT SERIAL NUMBER		
4	NONE		
18. COMPONENT APL/ABL	19. LOCATION (DECK/FRAME/SIDE)	20. EIC	
174751305	6-117-0-E	T801	
21. NEXT HIGHER ASSEMBLY	21. SAC	23. WORK CENTER	
FIRE MAIN SYSTEM	0A	ANME01	

24. NAMEPLATE DATA

25. MIP	26. EOSS
EL 4/28-51	
27. TM	
0922-LP-010-6010	

SECTION IV. SPECIAL PURPOSE

29. FVN	29. AILSIN	30. SECAS OFFICE USE
A0102		

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/ABL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECHNICAL MANUAL NUMBER	IA	IA	IA

LEGEND

IA IF AVAILABLE — O OPTIONAL
IP IF APPLICABLE — NR NOT REQUIRED
M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN

5A - PARTIALLY COMPLETED ALTERATION
5B - FULLY COMPLETED ALTERATION
5C - FULLY COMPLETED EQUIVALENT TO ALTERATION
5D - ALTERATION DIRECTIVE NOT APPLICABLE
1 - MAINTENANCE ACTION COMPLETED; PARTS
2 - MAINTENANCE ACTION COMPLETED : REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)
3 - MAINTENANCE ACTION COMPLETED; NO PARTS REQUIRED

SECTION III, BLOCK 15 COMPONENT ACTION

MAINTENANCE ACTIONS
R - REMOVED EQUIPMENT
I - INSTALLED EQUIPMENT
M - MODIFIED EQUIPMENT

CONFIG FILE CORR NO MAINTENANCE ACTION
A - ADDITION OF RECORD
D - DELETION OF RECORD
C - CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR	DIVISION OFF	SUPPLY DEPT	3M COORDINATOR	SHIP SEQUENCE NUMBER	
ABC	NBC	WRC	MAL	69999	PAGE 1 OF 2

Figure B - 1 Ship's Configuration Change Form for Component Removal Maintenance Action

SHIP'S CONFIGURATION CHANGE FORM CONTINUATION PAGE
(REV 5-84) S/N 0107-LF-047-9010

OPNAV 4790/CK(C)

JOB CONTROL NUMBER
1. SHIP'S UIC: 0 5 8 3 7
2. WORK CENTER: E M 0 1
3. JOB SEQ NR: 2 4 5 9
4. ALTERATIONS (SHIPALT, FLD. CHG., ETC)
SAME AS P1.3 EXCEPT
PAGE 2 OF 2

13. COMPONENT NOUN NAME
14. QUANTITY: 0 0 1
15. CA: 1

16. COMPONENT IDENTIFICATION
17. COMPONENT SERIAL NUMBER

18. COMPONENT APLIABL: NL
19. LOCATION (DECK/FRAME/SIDE)
20. EIC

21. NEXT HIGHER ASSEMBLY
22. S. A. C.
23. WORK CENTER

24. NAMEPLATE DATA
GENERAL DYNAMICS ELECTRO DYNAM
ICS DIV AVENEL 125 HP 148 AMP
3530 RPM 60 HZ CONTINUOUS DUTY
440 V MFR ID E22 74-4Z

25. MIP
26. EOSS

27. TM

28. RIN
29. AILSIN
30. SECAS OFFICE USE

JOB CONTROL NUMBER
1. SHIP'S UIC
2. WORK CENTER
3. JOB SEQ NR
ALTERATION IDENTIFICATION
4. ALTERATIONS (SHIPALT, FLD. CHG., ETC)
SAME AS P1.3 EXCEPT
PAGE _____ OF _____

13. COMPONENT NOUN NAME
14. QUANTITY
15. CA

16. COMPONENT IDENTIFICATION
17. COMPONENT SERIAL NUMBER

18. COMPONENT APLIABL
19. LOCATION (DECK/FRAME/SIDE)
20. EIC

21. NEXT HIGHER ASSEMBLY
22. S. A. C.
23. WORK CENTER

24. NAMEPLATE DATA

25. MIP
26. EOSS

27. TM

28. RIN
29. AILSIN
30. SECAS OFFICE USE

JOB CONTROL NUMBER
1. SHIP'S UIC
2. WORK CENTER
3. JOB SEQ NR
ALTERATION IDENTIFICATION
4. ALTERATIONS (SHIPALT, FLD. CHG., ETC)
SAME AS P1.3 EXCEPT
PAGE _____ OF _____

13. COMPONENT NOUN NAME
14. QUANTITY
15. CA

16. COMPONENT IDENTIFICATION
17. COMPONENT SERIAL NUMBER

18. COMPONENT APLIABL
19. LOCATION (DECK/FRAME/SIDE)
20. EIC

21. NEXT HIGHER ASSEMBLY
22. S. A. C.
23. WORK CENTER

24. NAMEPLATE DATA

25. MIP
26. EOSS

27. TM

28. RIN
29. AILSIN
30. SECAS OFFICE USE

Figure B - 2 Ship's Configuration Change Form for Component Install

SHIP'S CONFIGURATION CHANGE FORM — OPNAV 4790/CK

CONFIG FILE CORR | COMP. M/A NO DWFL | COMP DWFL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION
1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. ALTERATIONS (SHIPALT, ORDALT, FLD. CHG, etc.)
2 0 0 1 2	E X S A	B 6 8 9	S A L S D 2 8 7 5 8 D

A. SHIP'S NAME	B. HULL NUMBER	C. SWLIN	D. ACT. TYP
USS PORTLAND	LSD 37	T F 0 3	5 B

E. EQUIPMENT NOUN NAME	F. S/F MHRS. EXP.	G. ACT. MAINT.	H. COMP. DATE	I. MWR
L P A I R C O M P R E S S R	0 0 4 0	0 TIME 1 0	4 0 3 0	

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS

R E M O V E D L P A I R C O M P R E S S O R P E R
S H I P A L T D I R E C T I V E

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME		14. QUANTITY	15. CA
L P A I R C O M P R E S S O R		0 0 2	R
15. COMPONENT IDENTIFICATION	17. COMPONENT SERIAL NUMBER		
1 A N D 2	N O N E		
18. COMPONENT APL/AEL	19. LOCATION (DECK/FRAME/SIDE)	20. EIC	
0 6 1 9 0 0 5 1 1	3 - 1 1 0 - 0	T F 0 3	
21. NEXT HIGHER ASSEMBLY	21. SAC	23. WORK CENTER	
C O M P R E S S E D A I R S Y S T E M 0 B A C B		E M 0 1	

24. NAMEPLATE DATA

25. MIP	26. EOSS
A - 0 0 4 / 0 0 3 - A 2	L P A C / 0 0 0
27. TM	
9 2 4 1 - A B - M M O - 0 1 0	

SECTION IV. SPECIAL PURPOSE

28. PIN	29. AILSIN	30. SECAS OFFICE USE
B 0 5 1 0	5 5 1 5 3	

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/AEL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECHNICAL MANUAL NUMBER	IA	IA	IA

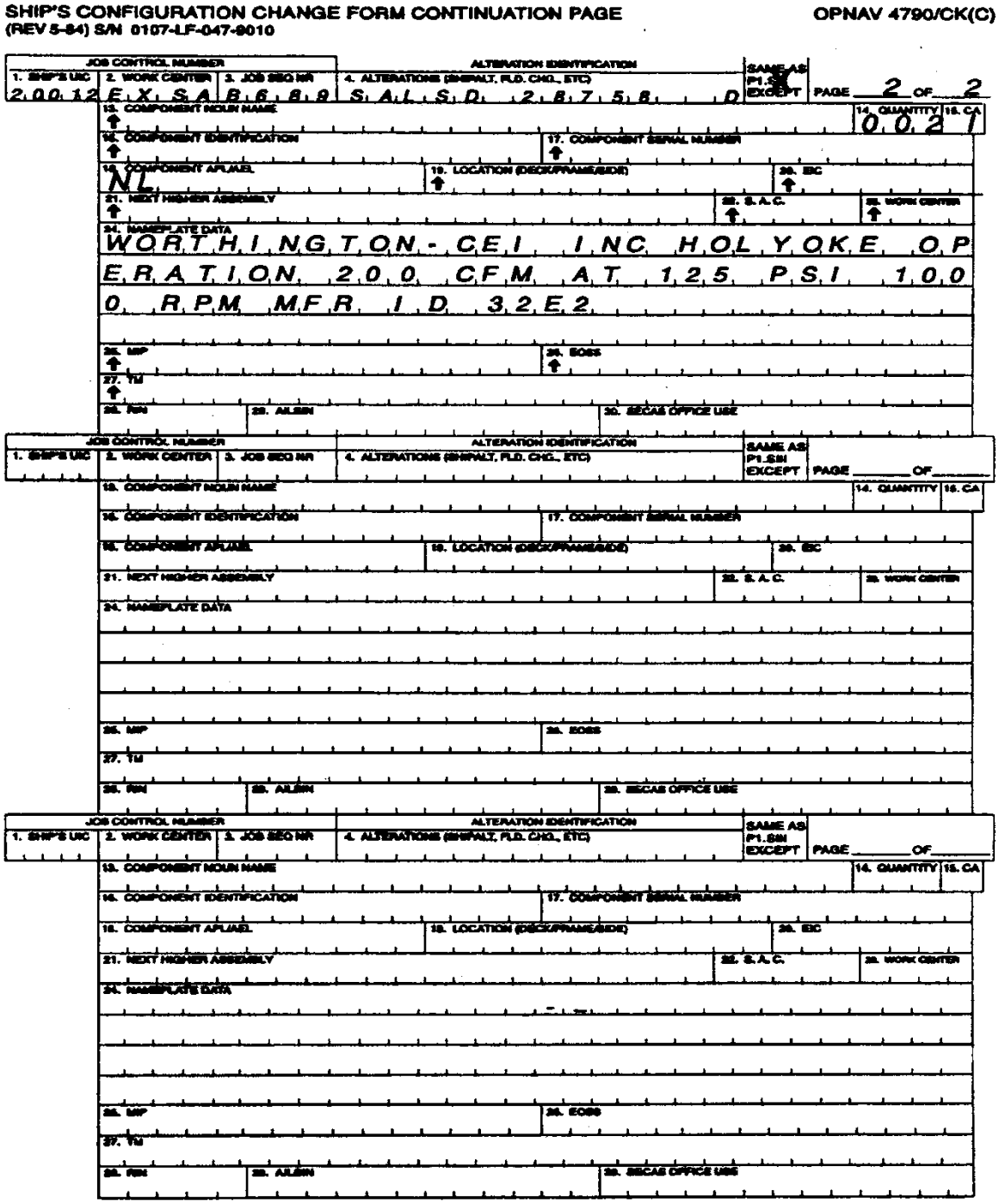
LEGEND

IA IF AVAILABLE — O OPTIONAL
IP IF APPLICABLE — NR NOT REQUIRED
M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN	SECTION III, BLOCK 15 COMPONENT ACTION
5A - PARTIALLY COMPLETED ALTERATION	MAINTENANCE ACTIONS
5B - FULLY COMPLETED ALTERATION	R - REMOVED EQUIPMENT
5C - FULLY COMPLETED EQUIVALENT TO ALTERATION	I - INSTALLED EQUIPMENT
5D - ALTERATION DIRECTIVE NOT APPLICABLE	M - MODIFIED EQUIPMENT
1 - MAINTENANCE ACTION COMPLETED; PARTS	CONFIG FILE CORR NO MAINTENANCE ACTION
2 - MAINTENANCE ACTION COMPLETED; REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)	A - ADDITION OF RECORD
3 - MAINTENANCE ACTION COMPLETED; NO PARTS REQUIRED	D - DELETION OF RECORD
	C - CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR	DIVISION OFF	SUPPLY DEPT	3M COORDINATOR	SHIP SEQUENCE NUMBER	
MJL	FTS	TJP	BFD	6 9 9 9 9	PAGE 1 OF 2

Figure B - 3 Ship's Configuration Change Form Resulting from an Alteration



SHIP'S CONFIGURATION CHANGE FORM CONTINUATION PAGE
(REV 5-84) S/N 0107-LF-047-9010

OPNAV 4790/CK(C)

JOB CONTROL NUMBER | ALTERATION IDENTIFICATION | SAME AS P1.SIN EXCEPT | PAGE 2 OF 2

1. SHIP'S UIC: 2.00.12
2. WORK CENTER: EXSA
3. JOB SEQ NR: B689
4. ALTERATIONS (SHIPALT, FLD. CHG., ETC): SALSD 28758 D
13. COMPONENT NOUN NAME
14. QUANTITY: 0021
15. CA
16. COMPONENT IDENTIFICATION
17. COMPONENT SERIAL NUMBER
18. COMPONENT APLIABL: NL
19. LOCATION (DECK/FRAME/SIDE)
20. SIC
21. NEXT HIGHER ASSEMBLY
22. S. A. C.
23. WORK CENTER
24. NAMEPLATE DATA: WORTHINGTON-CEI INC HOLYOKE OPERATION 200 CFM AT 125 PSI 1000 RPM MFR ID 32E2
25. MIP
26. EOSS
27. TM
28. RIN
29. AILSIN
30. SEACAS OFFICE USE

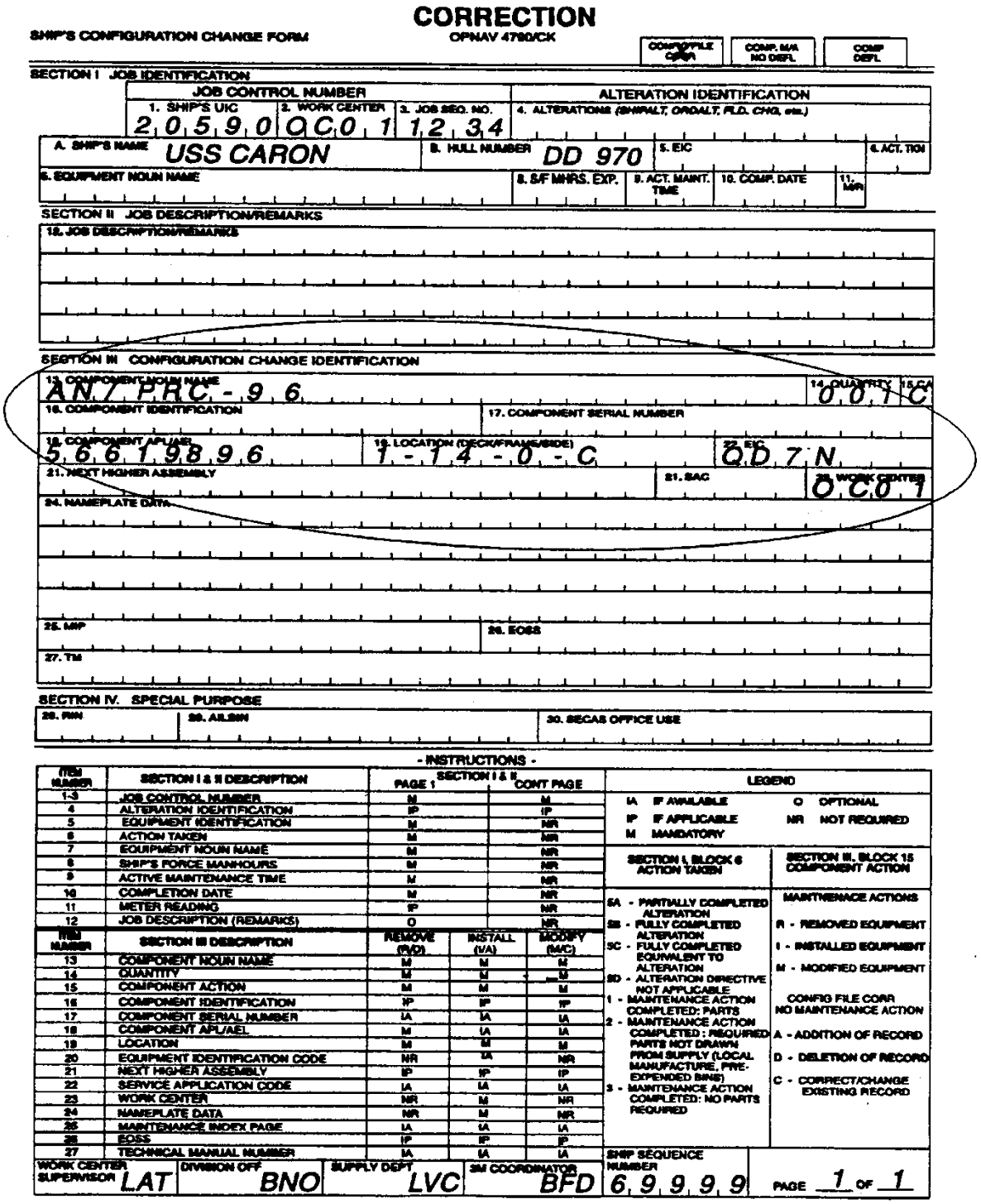
JOB CONTROL NUMBER | ALTERATION IDENTIFICATION | SAME AS P1.SIN EXCEPT | PAGE _____ OF _____

1. SHIP'S UIC
2. WORK CENTER
3. JOB SEQ NR
4. ALTERATIONS (SHIPALT, FLD. CHG., ETC)
13. COMPONENT NOUN NAME
14. QUANTITY
15. CA
16. COMPONENT IDENTIFICATION
17. COMPONENT SERIAL NUMBER
18. COMPONENT APLIABL
19. LOCATION (DECK/FRAME/SIDE)
20. SIC
21. NEXT HIGHER ASSEMBLY
22. S. A. C.
23. WORK CENTER
24. NAMEPLATE DATA
25. MIP
26. EOSS
27. TM
28. RIN
29. AILSIN
30. SEACAS OFFICE USE

JOB CONTROL NUMBER | ALTERATION IDENTIFICATION | SAME AS P1.SIN EXCEPT | PAGE _____ OF _____

1. SHIP'S UIC
2. WORK CENTER
3. JOB SEQ NR
4. ALTERATIONS (SHIPALT, FLD. CHG., ETC)
13. COMPONENT NOUN NAME
14. QUANTITY
15. CA
16. COMPONENT IDENTIFICATION
17. COMPONENT SERIAL NUMBER
18. COMPONENT APLIABL
19. LOCATION (DECK/FRAME/SIDE)
20. SIC
21. NEXT HIGHER ASSEMBLY
22. S. A. C.
23. WORK CENTER
24. NAMEPLATE DATA
25. MIP
26. EOSS
27. TM
28. RIN
29. AILSIN
30. SEACAS OFFICE USE

Figure B - 4 Ship's Configuration Change Form for an Alteration Installation



CORRECTION

SHIP'S CONFIGURATION CHANGE FORM — OPNAV 4790/CK

CONFIG FILE CORR | COMP. MA NO DEFL | COMP DEFL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION
1. SHIP'S UIC: 2 0 5 9 0	2. WORK CENTER: Q C 0 1	3. JOB SEQ. NO.: 1 2 3 4	4. ALTERATIONS (SHIPALT, ORDALT, FLD. CHG, etc.)

A. SHIP'S NAME	B. HULL NUMBER	5. EIC	6. ACT. TION
USS CARON	DD 970		

6. EQUIPMENT NOUN NAME	8. S/F MHRS. EXP.	9. ACT. MAINT. TIME	10. COMP. DATE	11. MR

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME	14. QUANTITY	15. CA
AN/PRC-96	0 0 1	C

16. COMPONENT IDENTIFICATION	17. COMPONENT SERIAL NUMBER

18. COMPONENT APL/AEL	19. LOCATION (DECK/FRAME/SIDE)	22. EIC
5 6 6 1 9 8 9 6	1-14-0-C	Q D 7 N

21. NEXT HIGHER ASSEMBLY	21. SAC	23. WORK CENTER
		O C 0 1

24. NAMEPLATE DATA

25. MIP	26. EOSS

27. TM

SECTION IV. SPECIAL PURPOSE

28. RIN	29. AILSIN	30. SECAS OFFICE USE

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/AEL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECHNICAL MANUAL NUMBER	IA	IA	IA

LEGEND

IA IF AVAILABLE — O OPTIONAL
IP IF APPLICABLE — NR NOT REQUIRED
M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN

5A - PARTIALLY COMPLETED ALTERATION
5B - FULLY COMPLETED ALTERATION
5C - FULLY COMPLETED EQUIVALENT TO ALTERATION
5D - ALTERATION DIRECTIVE NOT APPLICABLE
1 - MAINTENANCE ACTION COMPLETED: PARTS
2 - MAINTENANCE ACTION COMPLETED: REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)
3 - MAINTENANCE ACTION COMPLETED: NO PARTS REQUIRED

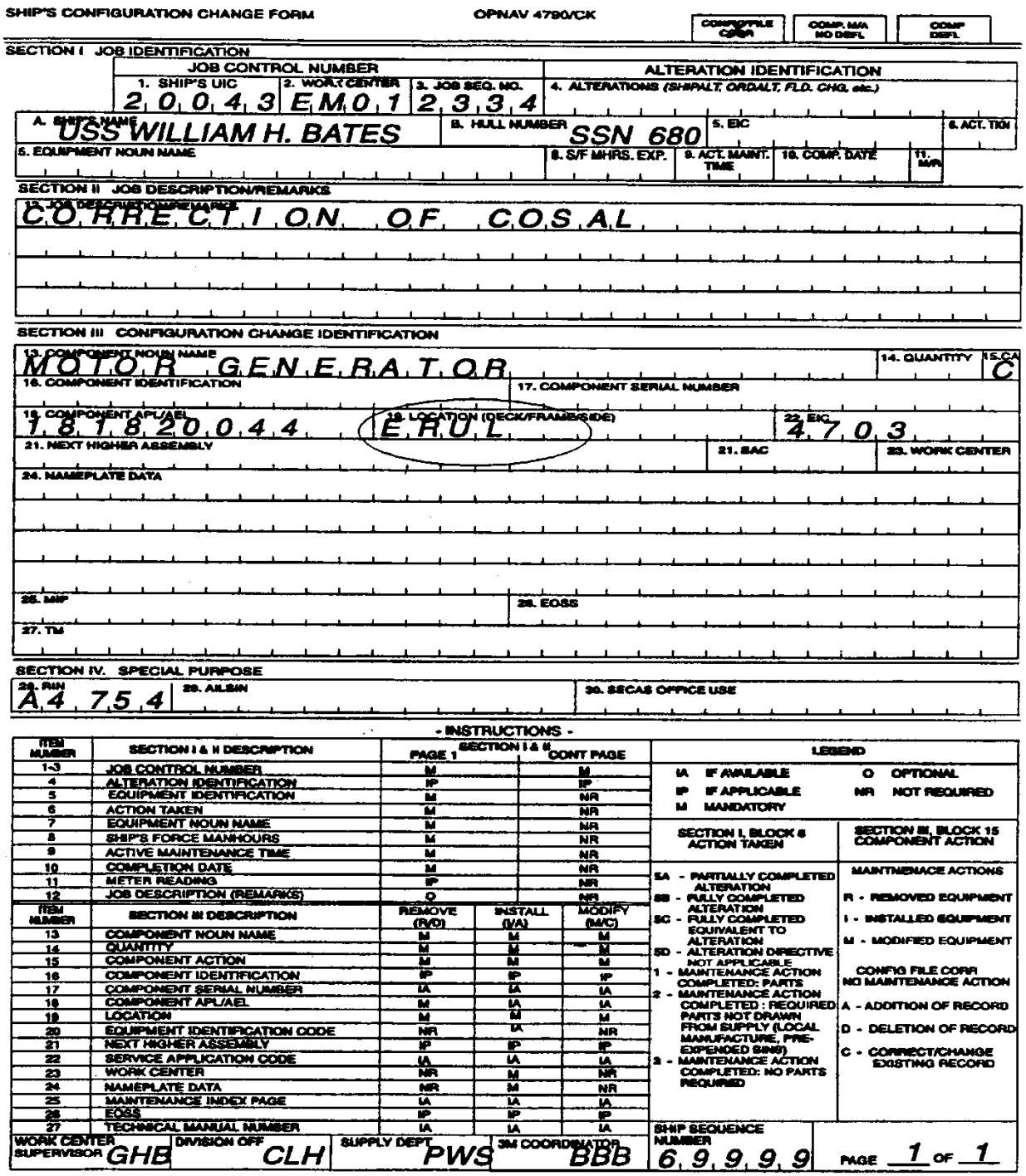
SECTION III, BLOCK 15 COMPONENT ACTION

MAINTENANCE ACTIONS
R - REMOVED EQUIPMENT
I - INSTALLED EQUIPMENT
M - MODIFIED EQUIPMENT

CONFIG FILE CORR NO MAINTENANCE ACTION
A - ADDITION OF RECORD
D - DELETION OF RECORD
C - CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR	DIVISION OFF	SUPPLY DEPT	SM COORDINATOR	SHIP SEQUENCE NUMBER	PAGE
LAT	BNO	LVC	BFD	6 9 9 9 9	1 OF 1

Figure B - 5 Ship's Configuration Change Form for a Correction to a Previously Submitted Change



SHIP'S CONFIGURATION CHANGE FORM — OPNAV 4790/CK

COMP/TYPE CODE | COMP. M/A NO DISTL | COMP DISTL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION
1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. ALTERATIONS (SHIPALT, ORDALT, FLD. CHG, etc.)
2 0 0 4 3	E M 0 1	2 3 3 4	

A. SHIP'S NAME	B. HULL NUMBER	5. EIC	6. ACT. TKN
USS WILLIAM H. BATES	SSN 680		

5. EQUIPMENT NOUN NAME	8. S/F MHRS. EXP.	9. ACT. MAINT. TIME	10. COMP. DATE	11. M/A

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS: C O R R E C T I O N O F C O S A L

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME: M O T O R G E N E R A T O R — 14. QUANTITY: — 15. CA: C

16. COMPONENT IDENTIFICATION — 17. COMPONENT SERIAL NUMBER

18. COMPONENT APL/AEL: 1 8 1 8 2 0 0 4 4 — 19. LOCATION (DECK/FRAME/SIDE): E R U L — 22. EIC: 4 7 0 3

21. NEXT HIGHER ASSEMBLY — 21. SAC — 23. WORK CENTER

24. NAMEPLATE DATA

25. MIP — 26. EOSS

27. TM

SECTION IV. SPECIAL PURPOSE

28. RIN: A 4 7 5 4 — 29. AILSIN — 30. SECAS OFFICE USE

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/AEL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECHNICAL MANUAL NUMBER	IA	IA	IA

LEGEND

IA IF AVAILABLE — O OPTIONAL
IP IF APPLICABLE — NR NOT REQUIRED
M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN

5A - PARTIALLY COMPLETED ALTERATION
5B - FULLY COMPLETED ALTERATION
5C - FULLY COMPLETED EQUIVALENT TO ALTERATION
5D - ALTERATION DIRECTIVE NOT APPLICABLE
1 - MAINTENANCE ACTION COMPLETED: PARTS
2 - MAINTENANCE ACTION COMPLETED : REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED SHIP)
3 - MAINTENANCE ACTION COMPLETED: NO PARTS REQUIRED

SECTION III, BLOCK 15 COMPONENT ACTION

MAINTENANCE ACTIONS
R - REMOVED EQUIPMENT
I - INSTALLED EQUIPMENT
M - MODIFIED EQUIPMENT

CONFIG FILE CORR NO MAINTENANCE ACTION
A - ADDITION OF RECORD
D - DELETION OF RECORD
C - CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR: GHB — DIVISION OFF: CLH — SUPPLY DEPT: PWS — 3M COORDINATOR: BBB — SHIP SEQUENCE NUMBER: 6 9 9 9 9 — PAGE 1 OF 1

Figure B - 6 Ship's Configuration Change Form for Location Correction

SHIP'S CONFIGURATION CHANGE FORM — OPNAV 4790/CK

CONFIG FILE CORR | COMP. MA NO DEFL | COMP DEFL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION
1. SHIP'S UIC: 20838	2. WORK CENTER: EA08	3. JOB SEQ. NO.: 3238	4. ALTERATIONS (SHIPALT, ORDALT, FLD. CHG, etc.)

A. SHIP'S NAME	B. HULL NUMBER	5. EIC	6. ACT. TION
USS FIFE	DD 991		

5. EQUIPMENT NOUN NAME	8. S/F MHRS. EXP.	9. ACT. MAINT. TIME	10. COMP. DATE	11. MR

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS: ON BOARD - NOT COSAL SUPPORTED

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME	14. QUANTITY	15.CA
SWITCH ELEMENT	0 0 1	A

16. COMPONENT IDENTIFICATION	17. COMPONENT SERIAL NUMBER
	NONE

18. COMPONENT APL/AEL	19. LOCATION (DECK/FRAME/SIDE)	22. EIC
	02-139-2-C	410F

20. NEXT HIGHER ASSEMBLY	21. SAC	23. WORK CENTER
FAN VNXL		EA08

24. NAMEPLATE DATA: SWITCH/ELEMENT PUSH CUTLER HAMMER 6549755P VENTILATION SYSTEM

25. MIP	26. EOSS
EL-004/028-99	

27. TM: 0963-LP-026-2010

SECTION IV. SPECIAL PURPOSE

28. RIN	29. AILSIN	30. SECAS OFFICE USE

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/AEL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECHNICAL MANUAL NUMBER	IA	IA	IA

LEGEND

IA IF AVAILABLE — O OPTIONAL
IP IF APPLICABLE — NR NOT REQUIRED
M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN

5A - PARTIALLY COMPLETED ALTERATION
5B - FULLY COMPLETED ALTERATION
5C - FULLY COMPLETED EQUIVALENT TO ALTERATION
5D - ALTERATION DIRECTIVE NOT APPLICABLE
1 - MAINTENANCE ACTION COMPLETED: PARTS
2 - MAINTENANCE ACTION COMPLETED : REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)
3 - MAINTENANCE ACTION COMPLETED: NO PARTS REQUIRED

SECTION III, BLOCK 15 COMPONENT ACTION

MAINTENANCE ACTIONS
R - REMOVED EQUIPMENT
I - INSTALLED EQUIPMENT
M - MODIFIED EQUIPMENT

CONFIG FILE CORR NO MAINTENANCE ACTION
A - ADDITION OF RECORD
D - DELETION OF RECORD
C - CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR	DIVISION OFF	SUPPLY DEPT	3M COORDINATOR	SHIP SEQUENCE NUMBER	PAGE
CEH	JAC	CWR	WCF	69999	1 OF 1

Figure B - 7 Ship's Configuration Change Form for COSAL Add

SHIP'S CONFIGURATION CHANGE FORM — OPNAV 4790/CK

CONFIG/FILE CORR | COMP. M/A NO DEFL | COMP DEFL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION
1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. ALTERATIONS (SHIPALT, ORDALT, FLD. CNG, etc.)
20590	EM01	2345	

A. SHIP'S NAME	B. HULL NUMBER	5. EIC	6. ACT. TIDN
USS CARON	DD 970		

7. EQUIPMENT NOUN NAME	8. S/F MHRS. EXP.	9. ACT. MAINT. TIME	10. COMP. DATE	11. MPN

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS: NOT ON BOARD - COSAL SUPPORTED

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME		14. QUANTITY	15.CA
HEATER AIR CIRCULATOR		001	D

16. COMPONENT IDENTIFICATION	17. COMPONENT SERIAL NUMBER	

18. COMPONENT APL/AEL	19. LOCATION (DECK/FRAME/SIDE)	20. EIC
070970028		T107

21. NEXT HIGHER ASSEMBLY	21. SAC	23. WORK CENTER

24. NAMEPLATE DATA: 440V

25. MIP	26. EOSS
EL-022/14-99	

27. TM: 0938-LP-050-2010

SECTION IV. SPECIAL PURPOSE

28. NIIN	29. AILSIN	30. SECAS OFFICE USE
43277		

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/AEL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECHNICAL MANUAL NUMBER	IA	IA	IA

LEGEND

IA IF AVAILABLE — O OPTIONAL
IP IF APPLICABLE — NR NOT REQUIRED
M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN	SECTION III, BLOCK 15 COMPONENT ACTION
5A - PARTIALLY COMPLETED ALTERATION	MAINTENANCE ACTIONS
5B - FULLY COMPLETED ALTERATION	R - REMOVED EQUIPMENT
5C - FULLY COMPLETED EQUIVALENT TO ALTERATION	I - INSTALLED EQUIPMENT
5D - ALTERATION DIRECTIVE NOT APPLICABLE	M - MODIFIED EQUIPMENT
1 - MAINTENANCE ACTION COMPLETED: PARTS	CONFIG FILE CORR NO MAINTENANCE ACTION
2 - MAINTENANCE ACTION COMPLETED: REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)	A - ADDITION OF RECORD
3 - MAINTENANCE ACTION COMPLETED: NO PARTS REQUIRED	D - DELETION OF RECORD
	C - CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR	DIVISION OFF	SUPPLY DEPT	3M COORDINATOR	SHIP SEQUENCE NUMBER	PAGE
DEL	PSF	LEH	SAD	6999	1 OF 1

Figure B - 8 Ship's Configuration Change Form for COSAL Delete

OPNAV 4790/2K (Rev. 6-79) S/N 0107-LP-047-0811

SHIP'S MAINTENANCE ACTION FORM (2-KILO)

COMP | DEFL

SECTION I. IDENTIFICATION

JOB CONTROL NUMBER

1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. APL/AEL
21685	EB01	0111	021200166

A. SHIP'S NAME: USS STOUT
5. EQUIPMENT NOUN NAME: BOILER, RH
6. WHO | 7. STA | 8. CAS | 9. DFR | 10. | 11. | 12.
B. HULL NUMBER: DDG-55
13. IDENT./EQUIPMENT SERIAL NUMBER: 1A
14. EIC: F101 — 1276
15. SAFETY HAZARD: X
16. LOCATION (Compartment, Deck, Frame, Side): B1-5-61-0
17. WHEN DISCOVERED DATE: YR 4, DAY 071

CONFIGURATION CHANGE | FOR INSURV USE

18. ALTERATIONS (SHIPALT, ORDALT, Fld Chg, etc.) | 19. "I" | 20. INSURV NUMBER | 21. SUFFIX | 22. U | 23. S | 24. P/F

SECTION II. DEFERRAL ACTION

25. S/F MHRS. EXP.	26. DEFER. DATE (YR / DAY)	27. S/F MHRS. REM.	28. DEADLINE DATE (YR / DAY)
0020	4 / 071	0017	4 / 041

SECTION III. COMPLETED ACTION

FOR SELECTED EQUIPMENTS ONLY

29. ACT. TKN | 30. S/F MHRS. | 31. COMPLETION DATE (YR / DAY) | 32. ACT. MAINT. TIME | 33. TI | 34. METER READING

SECTION IV. REMARKS/DESCRIPTION

35. REMARKS/DESCRIPTION

SAFETY VLV B OPERATING ERRATIC
INDICATING A BENT VLV SPINDLE.
XXX REMOVE SAFETY VLV DELIVER
TO IMA DISASSEMBLE AND IN-
SPECT. REPAIR VLV AND TEST. SHIP
PICKUP VLV RE-INSTALL AND TEST
INOPERABLE SAFETY VLV BOILER
MAY BE OVER PRESSURIZED.

36. CONT. SHEET

37. COMP SUMMARY: SAFETY VLV B SPINDLE BENT

38. FIRST CONTACT/MAINT. MAN (Print): J. LINGO
39. RATE: BTC
40. SECOND CONTACT/SUPERVISOR (Print): D. HAMMOND
41. 1 | 42. 2 | 43. INTEGRATED PRIORITY | SCREENING
C. DIV. INIT.: D.M.
D. DEPT. INIT.: L.R.
E. COMMANDING OFFICER'S SIGNATURE: C.E. PARKER, CDR, USN
F. TYCOM AUTHORIZATION | 44. IUC | 45. TYCOM
46. SPECIAL PURPOSE: A. | B. | C. | D. | E. | F. | G. | H. | I. | J. | K. | L.

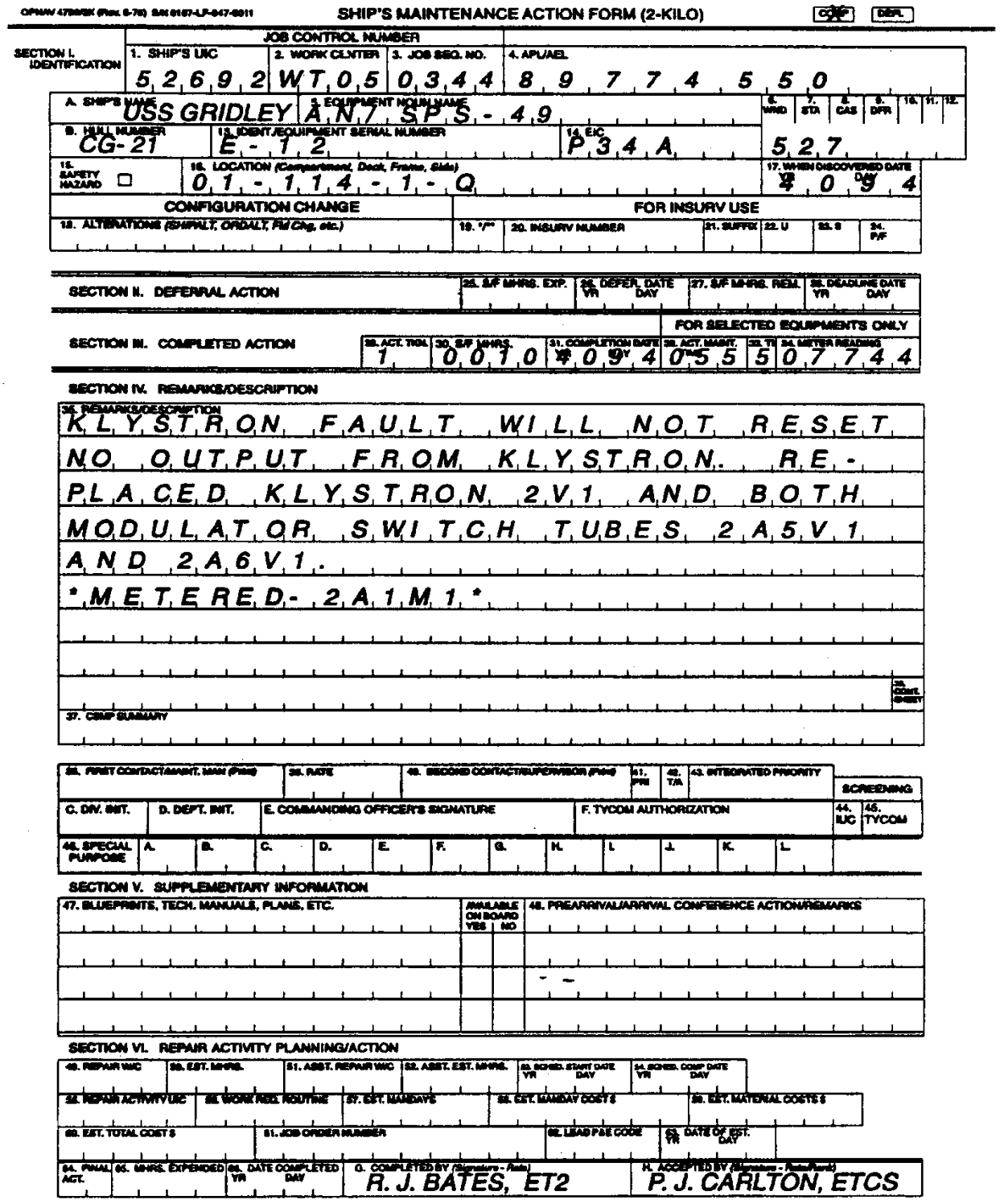
SECTION V. SUPPLEMENTARY INFORMATION

47. BLUEPRINTS, TECH. MANUALS, PLANS, ETC.: NS-351-0664 — X
48. PREARRIVAL/ARRIVAL CONFERENCE ACTION/REMARKS

SECTION VI. REPAIR ACTIVITY PLANNING/ACTION

49. REPAIR UIC | 50. EST. MHRS. | 51. ASST. REPAIR UIC | 52. ASST. EST. MHRS. | 53. SCHED. START DATE (YR / DAY) | 54. SCHED. COMP DATE (YR / DAY)
55. REPAIR ACTIVITY UIC | 56. WORK REQ. ROUTINE | 57. EST. MANDAYS | 58. EST. MANDAY COST $ | 59. EST. MATERIAL COSTS $
60. EST. TOTAL COST $ | 61. JOB ORDER NUMBER | 62. LEAD P&E CODE | 63. DATE OF EST. (YR / DAY)
64. FINAL ACT. | 65. MHRS. EXPENDED | 66. DATE COMPLETED (YR / DAY) | G. COMPLETED BY (Signature - Rate) | H. ACCEPTED BY (Signature - Rate/Rank)

Figure B - 9 Ship's Maintenance Action Form for A Deferred Maintenance Action



SHIP'S MAINTENANCE ACTION FORM (2-KILO)

COMP DEPT

SECTION I. IDENTIFICATION

JOB CONTROL NUMBER

1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. APL/AEL
52692	WT05	0344	897745500

A. SHIP'S NAME: USS GRIDLEY

5. EQUIPMENT NOUN NAME: AN/SPS-49

6. WMD	7. STA	8. CAS	9. DFR	10.	11.	12.

B. HULL NUMBER: CG-21

13. IDENT./EQUIPMENT SERIAL NUMBER: E-12

14. EIC: P34A

5.27

15. SAFETY HAZARD ☐

16. LOCATION (Compartment, Deck, Frame, Side): 01-114-1-Q

17. WHEN DISCOVERED DATE: YR 04 DAY 9

CONFIGURATION CHANGE

18. ALTERATIONS (SHIPALT, ORDALT, Fld Chg, etc.)

FOR INSURV USE

19. "/"	20. INSURV NUMBER	21. SUFFIX	22. U	23. S	24. P/F

SECTION II. DEFERRAL ACTION

25. S/F MHRS. EXP.	26. DEFER. DATE YR	DAY	27. S/F MHRS. REM.	28. DEADLINE DATE YR	DAY

SECTION III. COMPLETED ACTION

FOR SELECTED EQUIPMENT'S ONLY

29. ACT. TKDL	30. S/F MHRS.	31. COMPLETION DATE YR	DAY	32. ACT. MAINT.	33. TY	34. METER READING
1	0010	09	4	0555	5	07744

SECTION IV. REMARKS/DESCRIPTION

36. REMARKS/DESCRIPTION

KLYSTRON FAULT WILL NOT RESET NO OUTPUT FROM KLYSTRON. RE-PLACED KLYSTRON 2V1 AND BOTH MODULATOR SWITCH TUBES 2A5V1 AND 2A6V1.

METERED-2A1M1

38. CONT. SHEET

37. CSMP SUMMARY

39. FIRST CONTACT/MAINT. MAN (Print)	39. RATE	40. SECOND CONTACT/SUPERVISOR (Print)	41. PRI	42. TA	43. INTEGRATED PRIORITY SCREENING

C. DIV. INIT.	D. DEPT. INIT.	E. COMMANDING OFFICER'S SIGNATURE	F. TYCOM AUTHORIZATION	44. IUC	45. TYCOM

46. SPECIAL PURPOSE	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.

SECTION V. SUPPLEMENTARY INFORMATION

47. BLUEPRINTS, TECH. MANUALS, PLANS, ETC.	AVAILABLE ON BOARD YES	NO	48. PREARRIVAL/ARRIVAL CONFERENCE ACTION/REMARKS

SECTION VI. REPAIR ACTIVITY PLANNING/ACTION

49. REPAIR WC	50. EST. MHRS.	51. ASST. REPAIR WC	52. ASST. EST. MHRS.	53. SCHED. START DATE YR	DAY	54. SCHED. COMP DATE YR	DAY

55. REPAIR ACTIVITY UIC	56. WORK REQ. ROUTINE	57. EST. MANDAYS	58. EST. MANDAY COST $	59. EST. MATERIAL COSTS $

60. EST. TOTAL COST $	61. JOB ORDER NUMBER	62. LEAD P&E CODE	63. DATE OF EST. YR	DAY

64. FINAL ACT.	65. MHRS. EXPENDED	66. DATE COMPLETED YR	DAY	G. COMPLETED BY (Signature - Rate)	H. ACCEPTED BY (Signature - Rate)
				R. J. BATES, ET2	P. J. CARLTON, ETCS

Figure B - 10 Ship's Maintenance Action Form for a Completed Maintenance Action Without Prior Deferral

CORRECTION

OPNAV 4790/2K (Rev. 6-78) S/N 0107-LF-047-6011 **SHIP'S MAINTENANCE ACTION FORM (2-KILO)** COMP [X] DISC

SECTION I. IDENTIFICATION — JOB CONTROL NUMBER

1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. APL/AEL
2 0 5 7 4	O E 0 1	A 2 9 9	

5. WNO	7. STA	8. CAS	9. DPR	10.	11.	12.

A. SHIP'S NAME | B. EQUIPMENT NOUN NAME

B. HULL NUMBER | 13. IDENT./EQUIPMENT SERIAL NUMBER | 14. EIC

15. SAFETY HAZARD ☐ | 16. LOCATION (Compartment, Deck, Frame, Side) | 17. WHEN DISCOVERED DATE YR DAY

CONFIGURATION CHANGE | FOR INSURV USE

18. ALTERATIONS (SHIPALT, ORDALT, Fld Chg, etc.) | 19. "/" | 20. INSURV NUMBER | 21. SUFFIX | 22. U | 23. S | 24. P/F

SECTION II. DEFERRAL ACTION — 25. S/F MHRS. EXP. | 26. DEFER. DATE YR DAY | 27. S/F MHRS. REM. 0 0 3 0 | 28. DEADLINE DATE YR DAY

SECTION III. COMPLETED ACTION — FOR SELECTED EQUIPMENTS ONLY

29. ACT. TASK | 30. S/F MHRS. | 31. COMPLETION DATE YR DAY | 32. ACT. MAINT. TIME | 33. TR | 34. METER READING

SECTION IV. REMARKS/DESCRIPTION

35. REMARKS/DESCRIPTION

36. CONT. SHEET

37. CMP SUMMARY

38. FIRST CONTACT/MAINT. MAN (Print) | 39. RATE | 40. SECOND CONTACT/SUPERVISOR (Print) | 41. PRI | 42. T/A | 43. INTEGRATED PRIORITY SCREENING

C. DIV. INIT. | D. DEPT. INIT. | E. COMMANDING OFFICER'S SIGNATURE | F. TYCOM AUTHORIZATION | 44. IUC | 45. TYCOM

46. SPECIAL PURPOSE	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.

SECTION V. SUPPLEMENTARY INFORMATION

47. BLUEPRINTS, TECH. MANUALS, PLANS, ETC.	AVAILABLE ON BOARD YES	NO	48. PREARRIVAL/ARRIVAL CONFERENCE ACTION/REMARKS

SECTION VI. REPAIR ACTIVITY PLANNING/ACTION

49. REPAIR UIC	50. EST. MHRS.	51. ASST. REPAIR UIC	52. ASST. EST. MHRS.	53. SCHED. START DATE YR DAY	54. SCHED. COMP DATE YR DAY

55. REPAIR ACTIVITY UIC	56. WORK REQ. ROUTINE	57. EST. MANDAYS	58. EST. MANDAY COST $	59. EST. MATERIAL COSTS $

60. EST. TOTAL COST $	61. JOB ORDER NUMBER	62. LEAD P&E CODE	63. DATE OF EST. YR DAY

64. FINAL ACT.	65. MHRS. EXPENDED	66. DATE COMPLETED YR DAY	G. COMPLETED BY (Signature - Rate)	H. ACCEPTED BY (Signature - Rate/Rank)

Figure B - 11 Ship's Maintenance Action Form Change to a Previously Submitted Deferred Maintenance Action

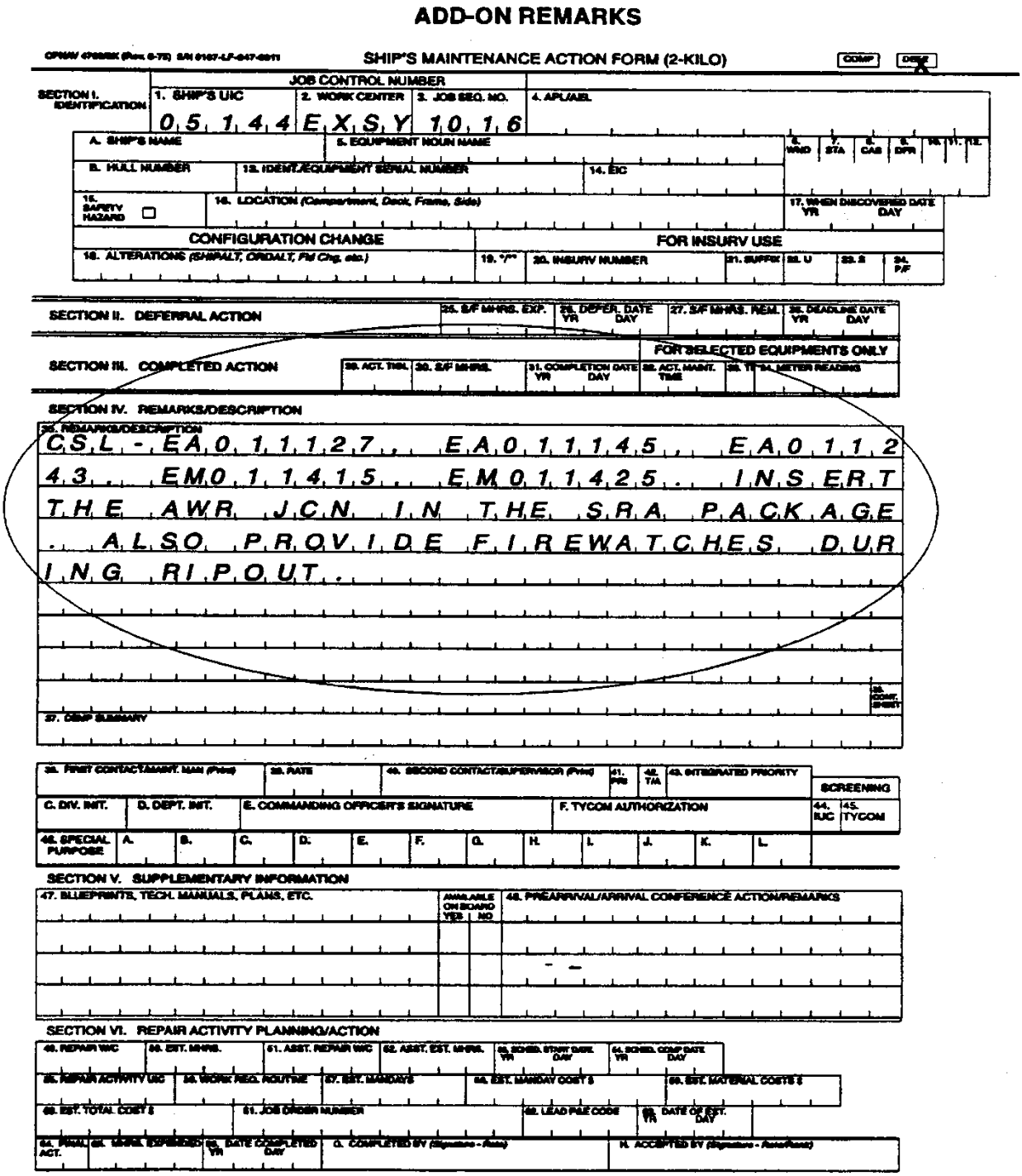


Figure B - 12 Ship's Maintenance Action Form Add-on Remarks to a Previously Submitted Deferred Maintenance Action

OPNAV 4790/2L (Rev. 6-73) S/N 0107-LF-770-3060 SUPPLEMENTAL FORM (2-LIMA)

SECTION I. IDENTIFICATION

A. SHIP'S NAME	B. HULL NUMBER	JOB CONTROL NUMBER		
		C. SHIP'S UIC	D. WORK CENTER	E. JOB SEQ. NO.
USS CHANDLER	DDG-996	2 0 5 7 5	WM 0 1	0 1 7 3

F. CONTINUATION FOR ☒ 2K ☐ 2L ☐ 2P

SECTION II. REMARKS/SKETCHES

G.

BINOCULARS 7 X 50 FOLLOWING SERIALS TO BE COLLIMATED

17865

17866

17867

20189

20195

21754

21755

SECTION III. AUTHENTICATION

H. FIRST CONTACT/MAINTENANCE MAN (Print)	I. DATE YR DAY	J. SECOND CONTACT/SUPERVISOR (Print)	K. DATE YR DAY
MULLINS, QM2	4 1 9 7	BROWN, QMC	4 1 9 7

* U.S. Government Printing Office: 1975-603-627/5225 2-1

Figure B - 13 SUPPLEMENT FORM Containing an Equipment Listing

OPNAV 4790/2L (Rev. 6-73) S/N 0107-LF-770-3060 SUPPLEMENTAL FORM (2-LIMA)

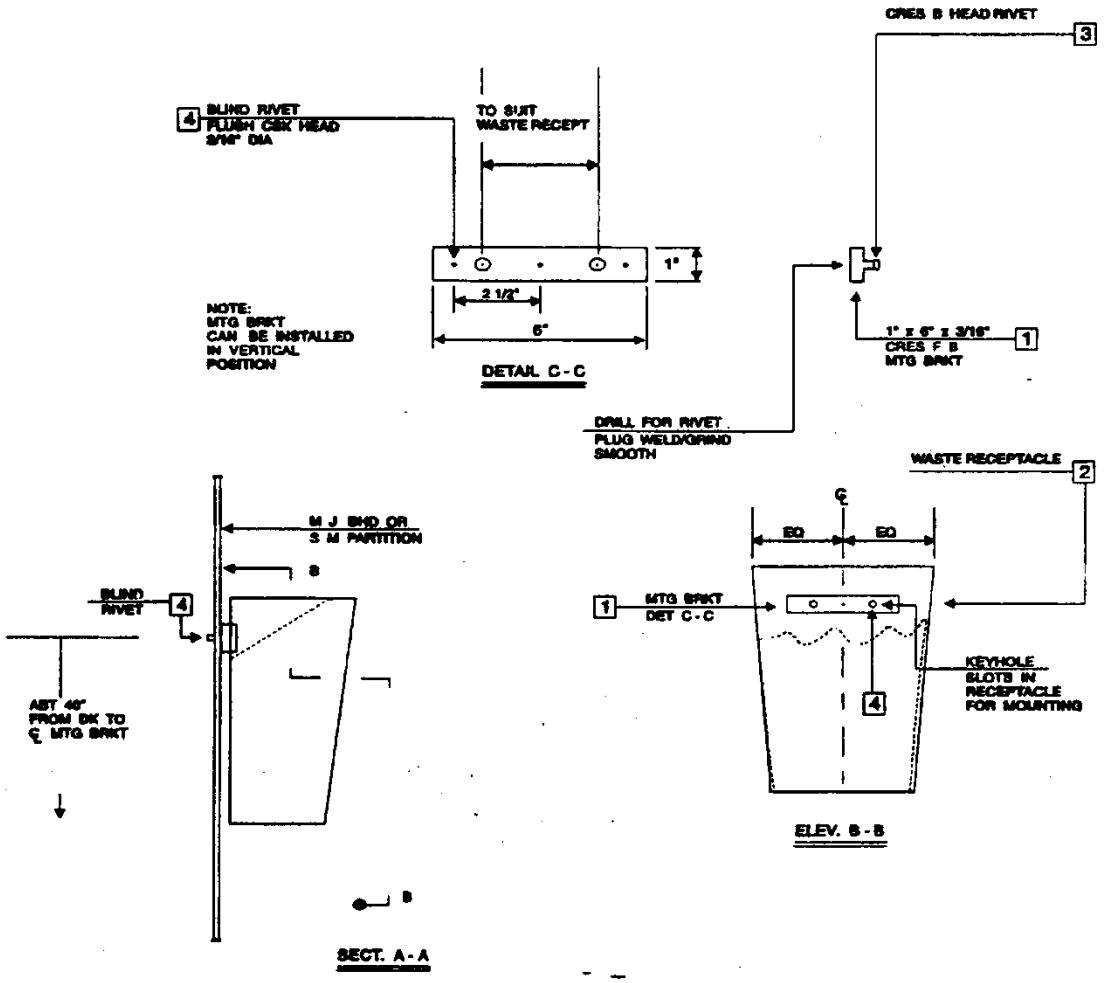
SECTION I. IDENTIFICATION

A. SHIP'S NAME	B. HULL NUMBER	JOB CONTROL NUMBER		
		C. SHIP'S UIC	D. WORK CENTER	E. JOB SEQ. NO.
USS CHANDLER	DDG-996	21439	WD01	0195

F. CONTINUATION FOR ☒ 2K ☐ 2L ☐ 2P

SECTION II. REMARKS/SKETCHES

G.



INSTALLATION & MOUNTING DETAILS OF WASTE RECEPTACLE MOUNTED ON M J BULKHEADS & S M PARTITIONS

SECTION III. AUTHENTICATION

H. FIRST CONTACT/MAINTENANCE MAN (Print)	I. DATE YR DAY	J. SECOND CONTACT/SUPERVISOR (Print)	K. DATE YR DAY
A. J. SWENEY, SN	32,07	B. J. WALTERS, BMI	32,07

* U.S. Government Printing Office: 1975-603-037/5225 2-1

Figure B - 14 SUPPLEMENT FORM Containing a Sketch/Drawing

OPNAV 470/2P (6-94) **MAINTENANCE PLANNING & ESTIMATING FORM (P & E)**

SECTION I. PLANNING

A. SHIP'S NAME	B. HULL NUMBER	JOB CONTROL NUMBER: 1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ NO
USS UNDERWAY	AS-48	20888	EA05	2858

4. PERIODIC MAINTENANCE REQUIREMENT	5. PERIODICITY	6. YYMM ISSUED	7. SPECIAL DATA

8. SCREENING ACTION (IUC / TYCOM)

IUC	TYCOM	Action
a [ ]	h [ ]	DEPOT ACCOMPLISH
b [X]	i [ ]	IMA ACCOMPLISH
c [ ]	j [ ]	TRI/NAVSEC/NOSBO/ETC.
d [ ]	k [ ]	SHIP'S FORCE (IMA) (DEPOT) ASSIST
e [ ]	l [ ]	SHIP TO SHOP
f [ ]	m [ ]	ACCOMPLISH WITH MODIFICATIONS
g [ ]	n [ ]	DISAPPROVE

9. QUALITY ASSURANCE REQUIREMENT

a [ ]	SUBSAFE	g [X]	SPECIAL CLEANING
b [ ]	LEVEL 1	h [X]	SPECIAL TESTING
c [ ]	NUCLEAR LEVEL 1	i [ ]	SPECIAL IDENTIFICATION
d [ ]	NON-DESTRUCTIVE TEST	j [ ]	NOISE CRITICAL
e [ ]	NUCLEAR WORK PROCEDURES	k [ ]	RADIOLOGICAL CONTROL
f [ ]	SUBMARINE ANTENNA ENGINEERING DIVISION	l [X]	OTHER CONTROLS

HAZMAT

10. SPECIAL REQUIREMENTS

a [ ]	KEY EVENT
b [ ]	SPECIAL INTEREST
c [ ]	DRY DOCK REQUIRED
d [ ]	PRE OVERHAUL TEST REQUIRED
e [X]	POST OVERHAUL TEST REQUIRED
f [ ]	DEPARTURE TEST REQUIRED

C. IUC SIGNATURE: WZENOF

D. TYCOM SIGNATURE:

11. NORMALLY DONE BY: a [ ] S/F b [X] IMA c [ ] DEPOT

SECTION II. SCHEDULING

LEAD/ASST WORK CENTER	SCHED START DATE (YR DA)	SCHED COMP DATE (YR DA)	EST MHRS	KEY OP	TASK
12: 25A	13: 4053	14: 4068	15: 0083	16: 02	17: EVAC & RECHG
18: 03T	19: 4054	20: 4067	21: 0004	22: 03	23: UNSHIP & CLAD
24: 03A	25: 4051	26: 4069	27: 0049	28: 01	29: MONITOR FREON
30: 26A	31: 4056	32: 4057	33: 0006	34: 04	35: BRAZE/WELD
36: 51A	37: 4053	38: 4058	39: 0021	40: 05	41: REWIND & BAKE
42:	43:	44:	45:	46:	47:

SECTION III. TECHNICAL DOCUMENTATION

48	ON BOARD YES	NO
NAVSHIPS TECH MAN 351-0665	X	

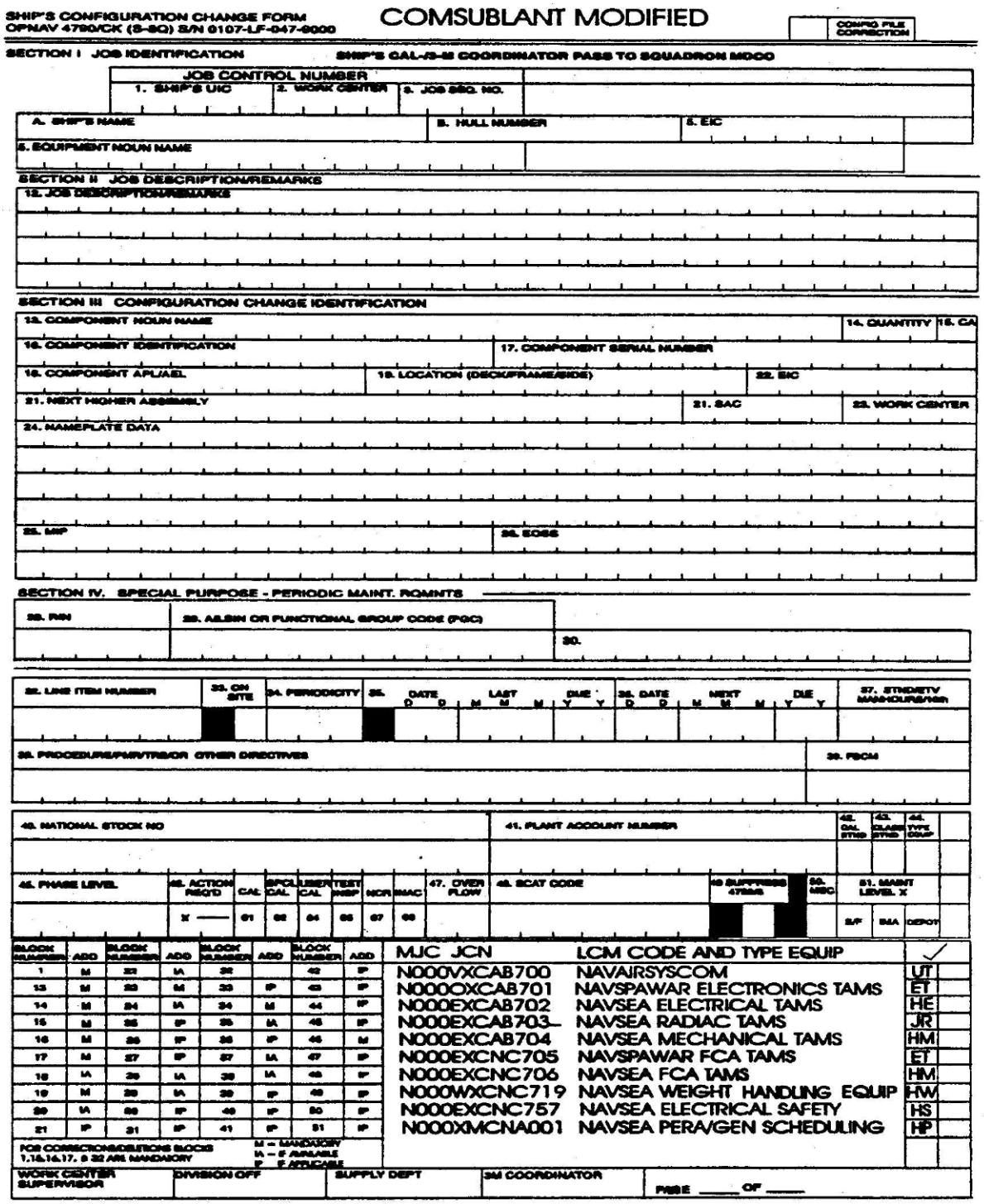
SECTION IV. IUC/REPAIR ACTIVITY/TYCOM REMARKS

49 COMPRESSOR MOTOR SHORTS

SECTION V. SUPPLEMENTAL PLANNING

50 EST MANDAYS	51 EST MANDAYS COST $	52 EST MATERIAL COST $	53 EST TOTAL COST $	54

Figure B - 15 Completed OPNAV 4790/2P



SHIP'S CONFIGURATION CHANGE FORM
OPNAV 4790/CK (8-80) S/N 0107-LF-047-9000

COMSUBLANT MODIFIED

CONFIG FILE CORRECTION

SECTION I JOB IDENTIFICATION — SHIP'S CAL-/3-M COORDINATOR PASS TO SQUADRON MDCO

JOB CONTROL NUMBER
1. SHIP'S UIC | 2. WORK CENTER | 3. JOB SEQ. NO.

A. SHIP'S NAME | B. HULL NUMBER | 4. EIC
5. EQUIPMENT NOUN NAME

SECTION II JOB DESCRIPTION/REMARKS
12. JOB DESCRIPTION/REMARKS

SECTION III CONFIGURATION CHANGE IDENTIFICATION
13. COMPONENT NOUN NAME | 14. QUANTITY | 15. CA
16. COMPONENT IDENTIFICATION | 17. COMPONENT SERIAL NUMBER
18. COMPONENT APL/ASEL | 19. LOCATION (DECK/FRAME/SIDE) | 22. EIC
21. NEXT HIGHER ASSEMBLY | 21. SAC | 23. WORK CENTER
24. NAMEPLATE DATA
25. MIP | 26. EOSS

SECTION IV. SPECIAL PURPOSE - PERIODIC MAINT. RQMNTS
28. PIN | 29. ALSIN OR FUNCTIONAL GROUP CODE (FGC) | 30.

32. LINE ITEM NUMBER | 33. ON SITE | 34. PERIODICITY | 35. DATE LAST DONE | 36. DATE NEXT DUE | 37. STD/MDTV MAN-HOURS/HSR
38. PROCEDURE/PMR/TRSOR OTHER DIRECTIVES | 39. FSCM

40. NATIONAL STOCK NO | 41. PLANT ACCOUNT NUMBER | 42. CAL STND | 43. CLASS STND | 44. TYPE EQUIP

45. PHASE LEVEL | 46. ACTION REQ'D | CAL | SPCL CAL | USER CAL | TEST INSP | NCR | RMAC | 47. OVER FLOW | 48. SCAT CODE | 49 SUFFIXES 4790/9 | 50. MISC | 51. MAINT LEVEL X (S/F, I/MA, DEPOT)

BLOCK NUMBER	ADD	BLOCK NUMBER	ADD	BLOCK NUMBER	ADD	BLOCK NUMBER	ADD
1	M	22	IA	32		42	IP
13	M	23	M	33	IP	43	IP
14	M	24	IA	34	M	44	IP
15	M	25	IP	35	IA	45	IP
16	M	26	IP	36	IP	46	M
17	M	27	IP	37	IA	47	IP
18	IA	28	IA	38	IA	48	IP
19	M	29	IA	39	IP	49	IP
20	IA	30	IP	40	IP	50	IP
21	IP	31	IP	41	IP	51	IP

FOR CORRECTIONS/DELETIONS BLOCKS 1,13,14,17, & 22 ARE MANDATORY
M = MANDATORY
IA = IF AVAILABLE
IP = IF APPLICABLE

MJC JCN	LCM CODE AND TYPE EQUIP	✓
N000VXCAB700	NAVAIRSYSCOM	UT
N000OXCAB701	NAVSPAWAR ELECTRONICS TAMS	ET
N000EXCAB702	NAVSEA ELECTRICAL TAMS	HE
N000EXCAB703	NAVSEA RADIAC TAMS	JR
N000EXCAB704	NAVSEA MECHANICAL TAMS	HM
N000EXCNC705	NAVSPAWAR FCA TAMS	ET
N000EXCNC706	NAVSEA FCA TAMS	HM
N000WXCNC719	NAVSEA WEIGHT HANDLING EQUIP	HW
N000EXCNC757	NAVSEA ELECTRICAL SAFETY	HS
N000XMCNA001	NAVSEA PERA/GEN SCHEDULING	HP

WORK CENTER SUPERVISOR | DIVISION OFF | SUPPLY DEPT | 3M COORDINATOR | PAGE ____ OF ____

Figure C - 1 Modified NAVSEA 4790/CK Form

94(94090) MASTER JOB CATALOG INDEX 31 MAR

ACTIVITY: LAND EMORY S. (USS) AS 39 SEQUENCED BY: MJCN UIC PAGE 2
UIC: 20635

SWAB/ SWLIN	JOB CATALOG NUMBER/TYPE	PLANNED ACTION (CSMP SUMMARY)	NOUN NAME EQUIP/SERVICE	LWC	IMA/DEP M/H	SHIP M/H	IUC/TY SCREEN	T A	KEY EVENT	START DAY	*FURNISH APL-IDENT
N0000	DXCN D701	ESM ALIGNMENT	ESM EQUIPMENT	67a		75 AUTO	2	2		1	*
N0000	EACF 0013	ACCOMPLISH IMMP 513-0023-01	SEPARATOR FLASK	10C		170 AUTO	2	2		1	*
N0000	EACF 0014	ACCOMPLISH IMMP MR 513-0089-01	SEPARATOR FLASK	10C		2 AUTO	2	2		1	*
N0000	EMCN 0001	SEAWATER SYSTEM METALS CONTROL	GENERIC MATERIAL	93A		20 AUTO	2	2		3	*
N0000	EMCN 0002	RPFW FLUSHING RIG	RPFW FLUSH	38N		1 AUTO	2	2		1	*
N0000	EMCN 0003	RADCON SERVICES	RADCON	94A		400 AUTO	2	2		1	*
N0000	EMCN 0004	PROBOLOG PREP	MN CONDENSOR	38A		50 AUTO	2	2		1	*
N0000	EMCN 0005	PRESSURIZER UT	PRESSURIZER	93A		17 AUTO	2	2		1	*
N0000	EMCN 0006	WELDER QUALIFICATION	WELDER QUAL	26B		40 AUTO	2	2		1	*
N0000	EMCN 0007	SHFT/BRG/PROP INSPECTION	SHFT/BRG/PROP	38A		48 AUTO	2	2		1	*
N0000	EMCN 0008	RADIAC CALIBRATION	RADIAC CALIBRATE	10C		1 AUTO	2	2		1	*
N0000	EMCN 0009	HYDROBLAST CLEANER	HYDROBLASTER	25D		16 AUTO	2	2		1	*
N0000	EMCN 0010	UT HP STEAM DRAINS	HP STEAM DRN UT	93A		46 AUTO	2	2		1	*
N0000	EMCN 0011	INSPECT MAIN PROPELLER	MN PROPELLER			0 AUTO	2	2		0	*
N0000	EMCN 0012	SEAWATER SYSTEM METALS CONTROL	GENERIC MATERIAL	93A		26 AUTO	2	2		3	*
N0000	EXCA B702	CALIBRATE ELECTRICAL INSTRMNTS	CALIBRATION SVCS	51C		40 AUTO	2	2		1	*
N0000	EXCA B703	CALIBRATE RADIAC EQUIPMENT	RADIAC EQUIPMENT	67F		20 AUTO	2	2		1	*
N0000	EXCA B704	CAL MECHANICAL INSTRUMENTS	CALIBRATION SVCS	96a		75 AUTO	2	2		1	*

Figure C - 2 Master Job Catalog Index Page

MJC CALL DOWN FREQUENCY REPORT

31 MAR 94(94090)
PAGE 2

ACTIVITY; LAND EMORY S. (USS) AS 39 SEQUENCED BY; MJCN

CATALOG NUMBER	PLANNED ACTION (CSMP SUMMARY)	EST MAN-HOURS SHIP	IMA/DEF	T A	IUC/TY SCREEN	KEY EVENT	CALL-DOWN DATE	CALL-DOWN FREQUENCY	NOUN NAME EQUIPMENT/SERVICE
N0000 OXCA B701	CALIBRATE ELECTRIC EQUIPMENT	0	0	2	2	2	12/03/93	994	CALIBRATION SVCS
N0000 OXCA B705	FCA CALIBRATE ELECTRONIC TAMS	0	0	2	2		07/28/93	1	FCA ELECTRONICS
N0000 OXCA B701	REPAIR ELECTRONIC TEST EQUIP	0	0	2	2		08/13/93	810	ELECTRONIC TMDS
N0000 OXCA H702	TTY EQUIPMENT MAINTENANCE	0	0	2	2		04/05/93	69	TTY EQUIP MAINT
N0000 OXCM 001	TEST,REPAIR 2M PRINTED BOARDS	0	0	2	2		04/06/93	70	2M CIRCUITBOARDS
N0000 OXCN A702	PROVIDE MICROFILM SERVICE	0	0	2	2		09/12/91	38	MICROFILM SVC
N0000 OXCN E705	REPAIR TIME PIECES	0	0	2	2		04/05/93	436	TIME PIECE
N0000 OXCN E706	PORTABLE RADIO REPAIR	0	0	2	2		11/17/92	14	RADIO EQIPMENT
N0000 OXCN E707	OPTICAL INSTRUMENT REPAIR	0	0	2	2		06/07/93	152	OPTICAL INSTRUM
N0000 OXCN E708	CRAT FOR RADIO GROOMING	0	0	2	2		04/09/93	25	RADIO GROOMING
N0000 OXCN H703	CRYPTO REPAIR	0	0	2	2		04/06/93	23	CRYPTO REPAIR

Figure C - 3 MJC Call Down Frequency Report

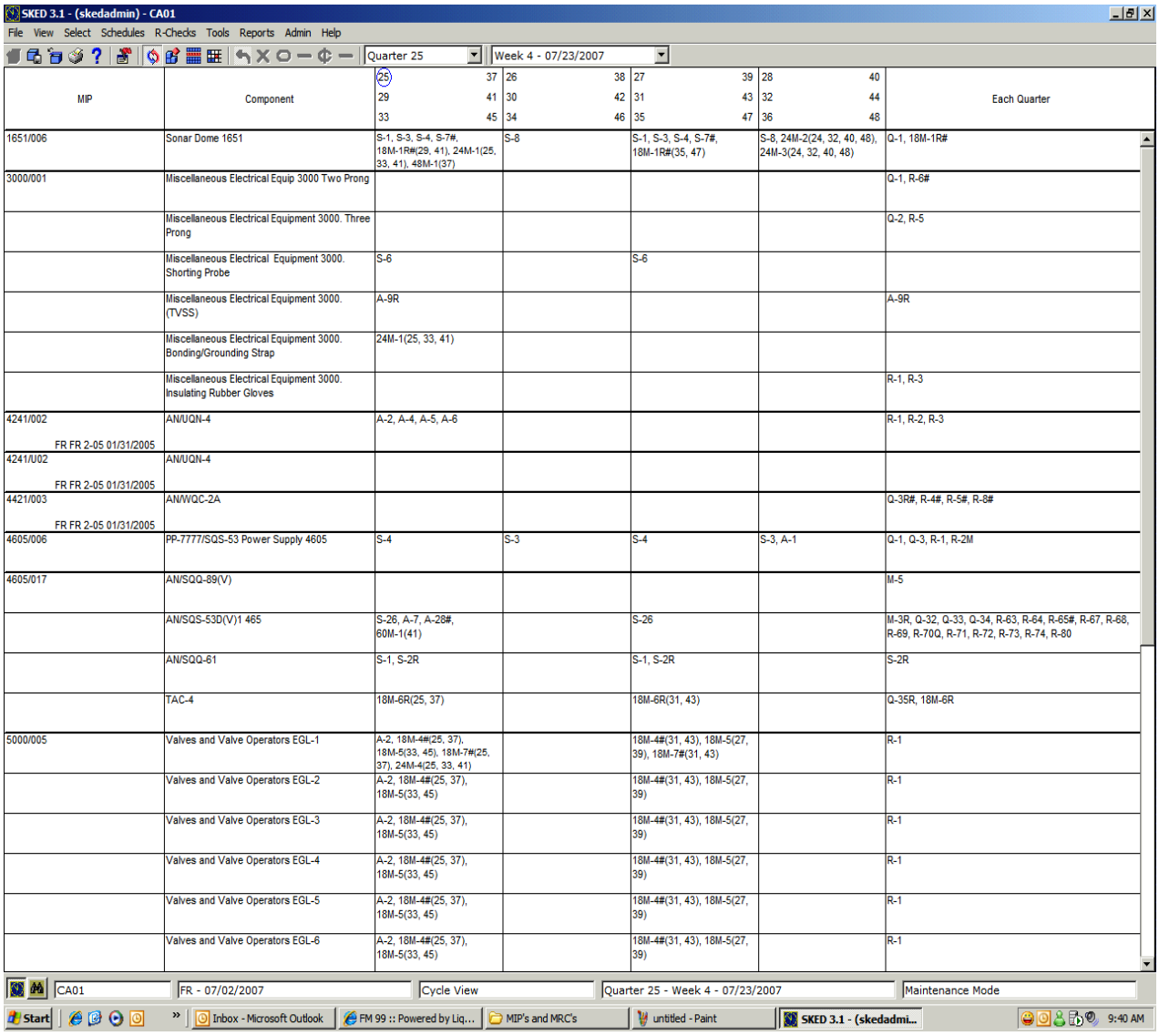


Figure F - 1 The Cycle PMS Schedule

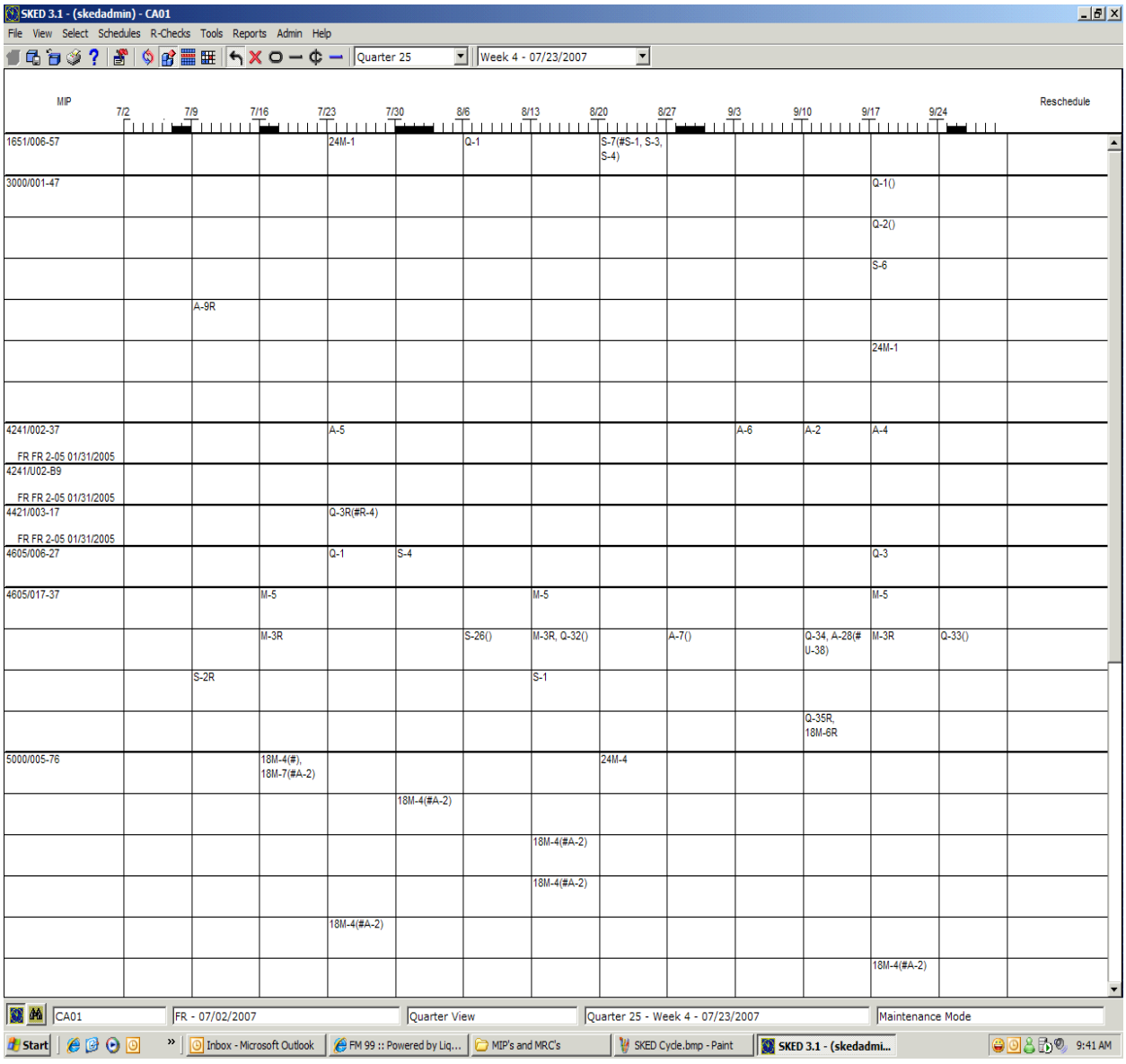


Figure F - 2 The Quarterly PMS Schedule

Figure F - 3 The Weekly PMS Schedule

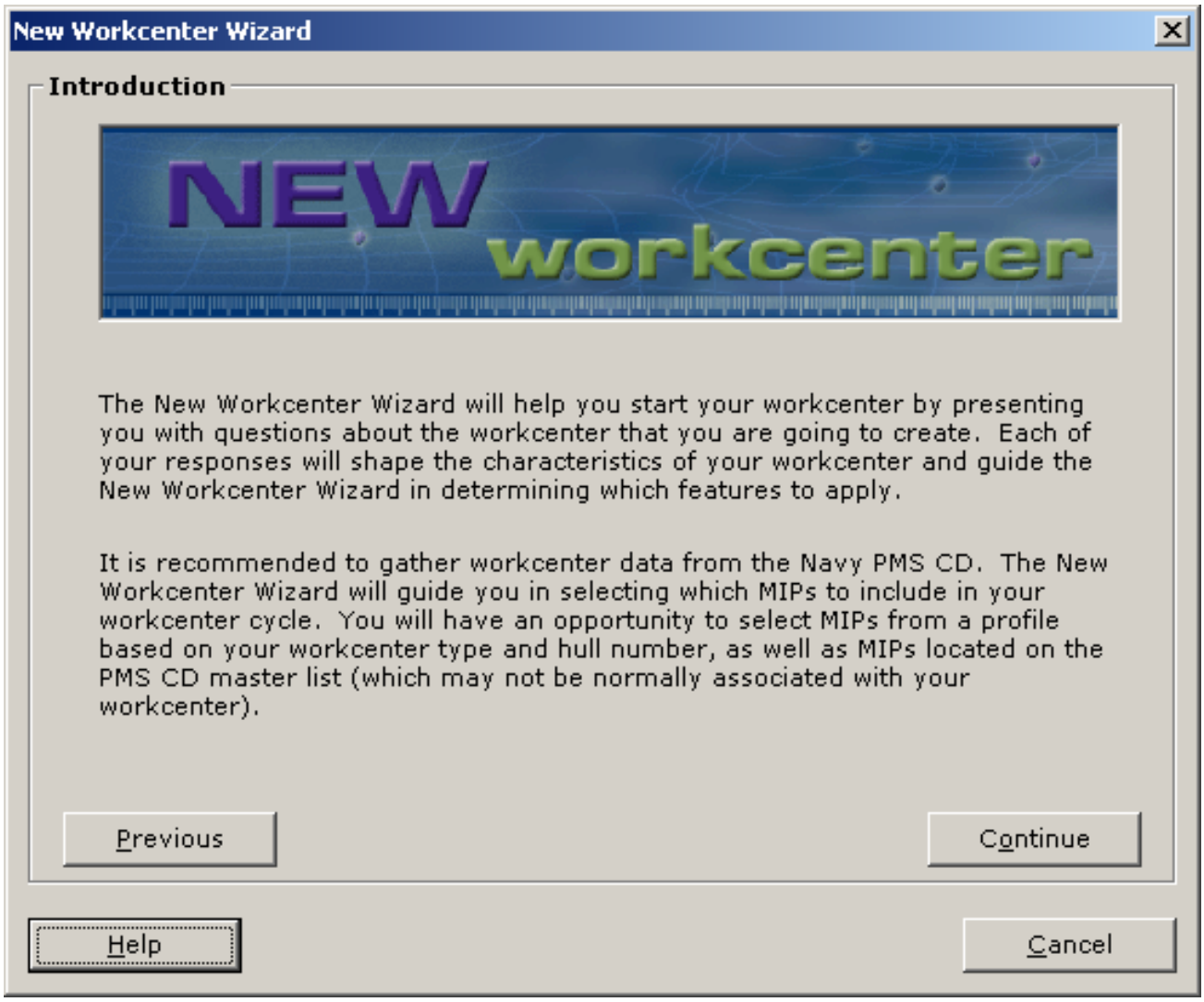


Figure F - 4 New Workcenter Wizard

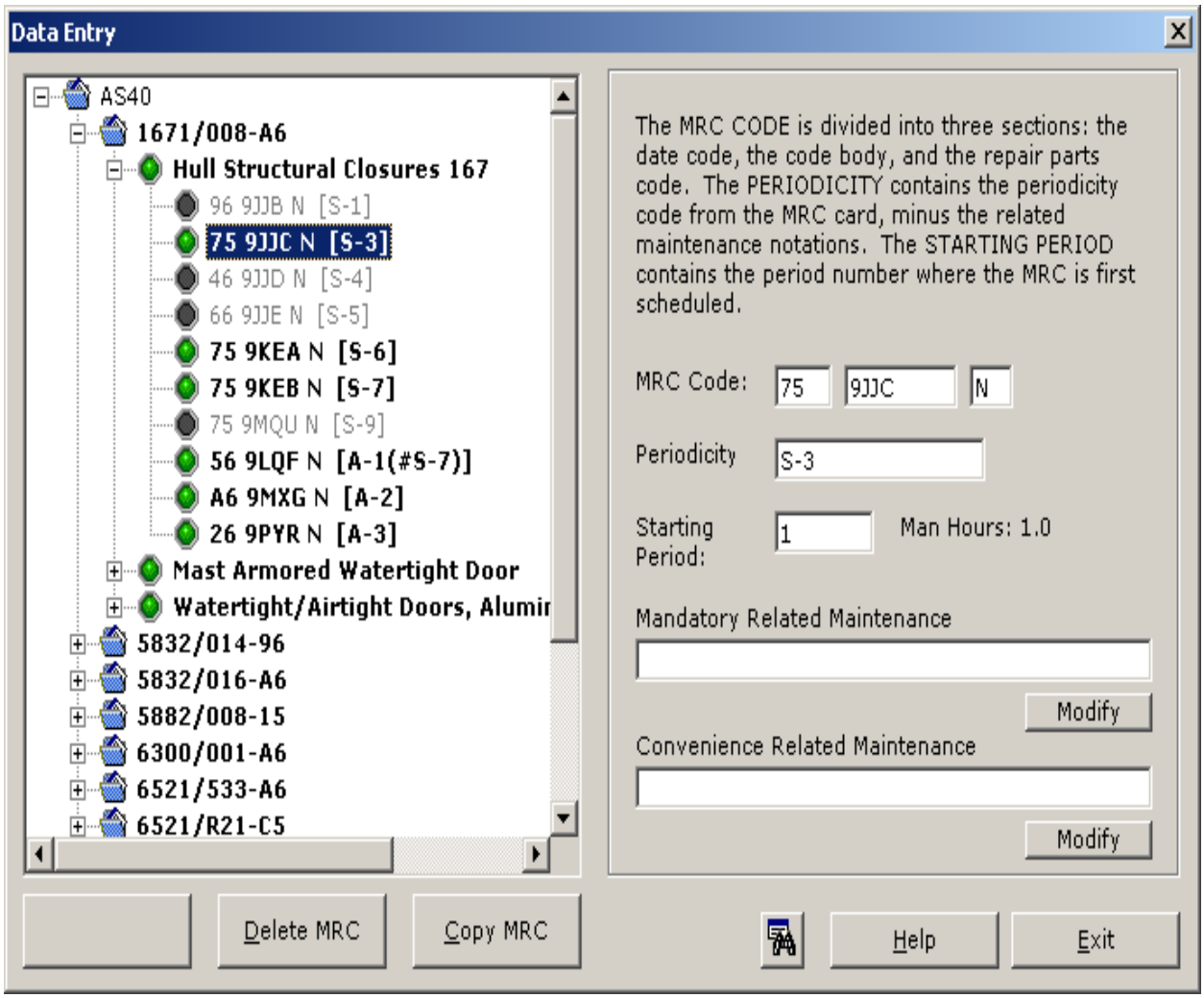


Figure F - 5 Data Entry Editor

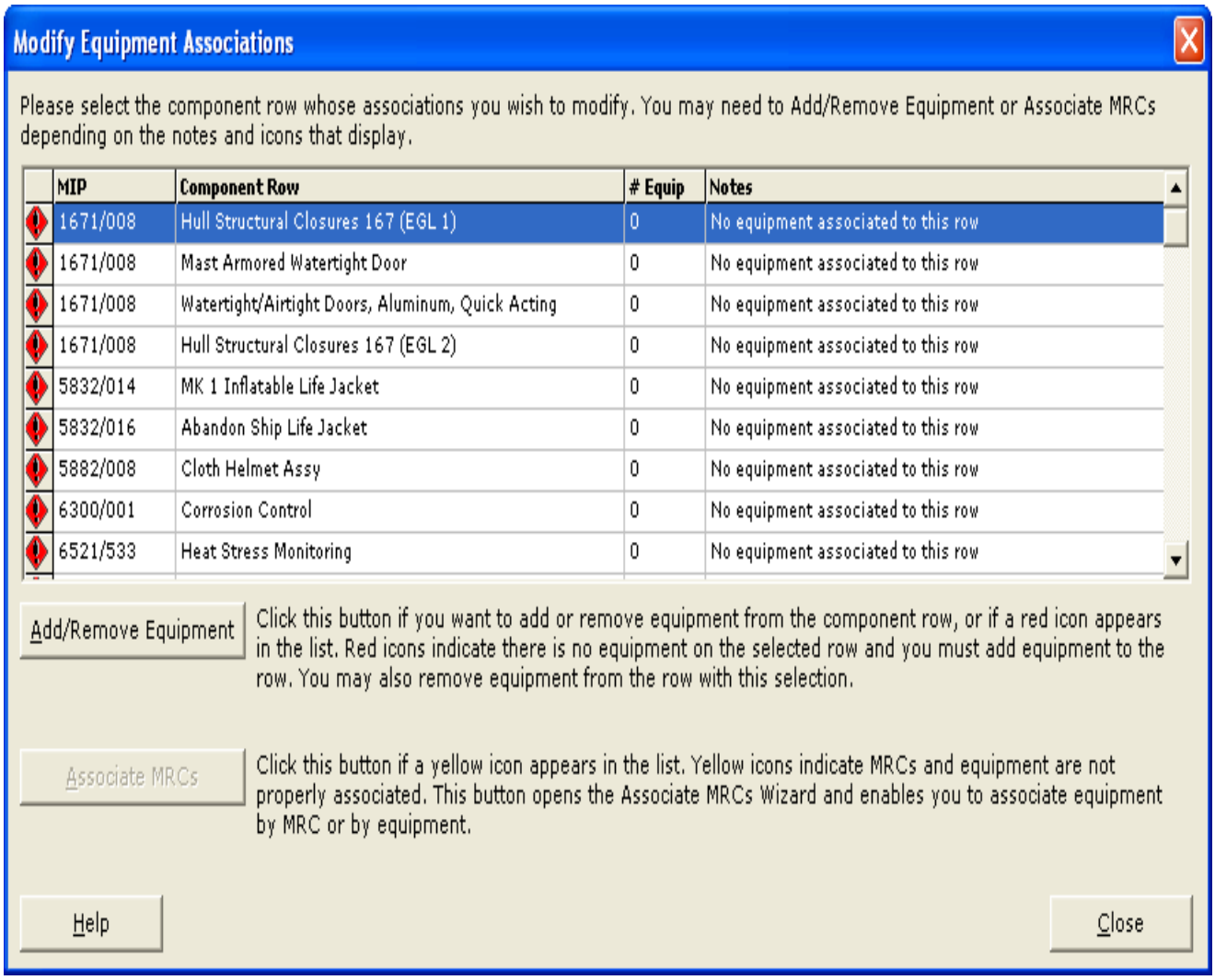


Figure F - 6 Modify Equipment Association Wizard

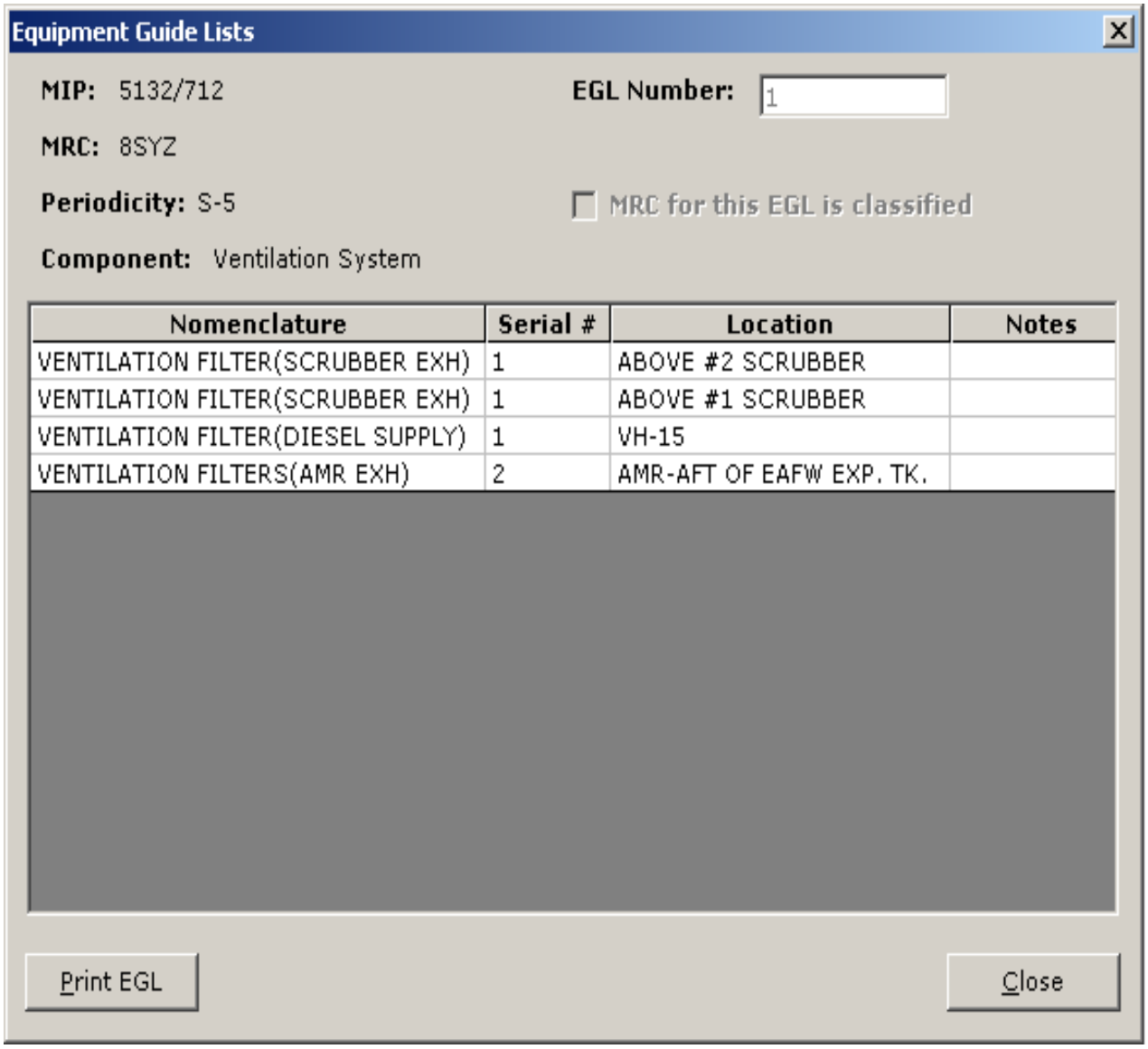


Figure F - 7 Equipment Guide List (EGL)

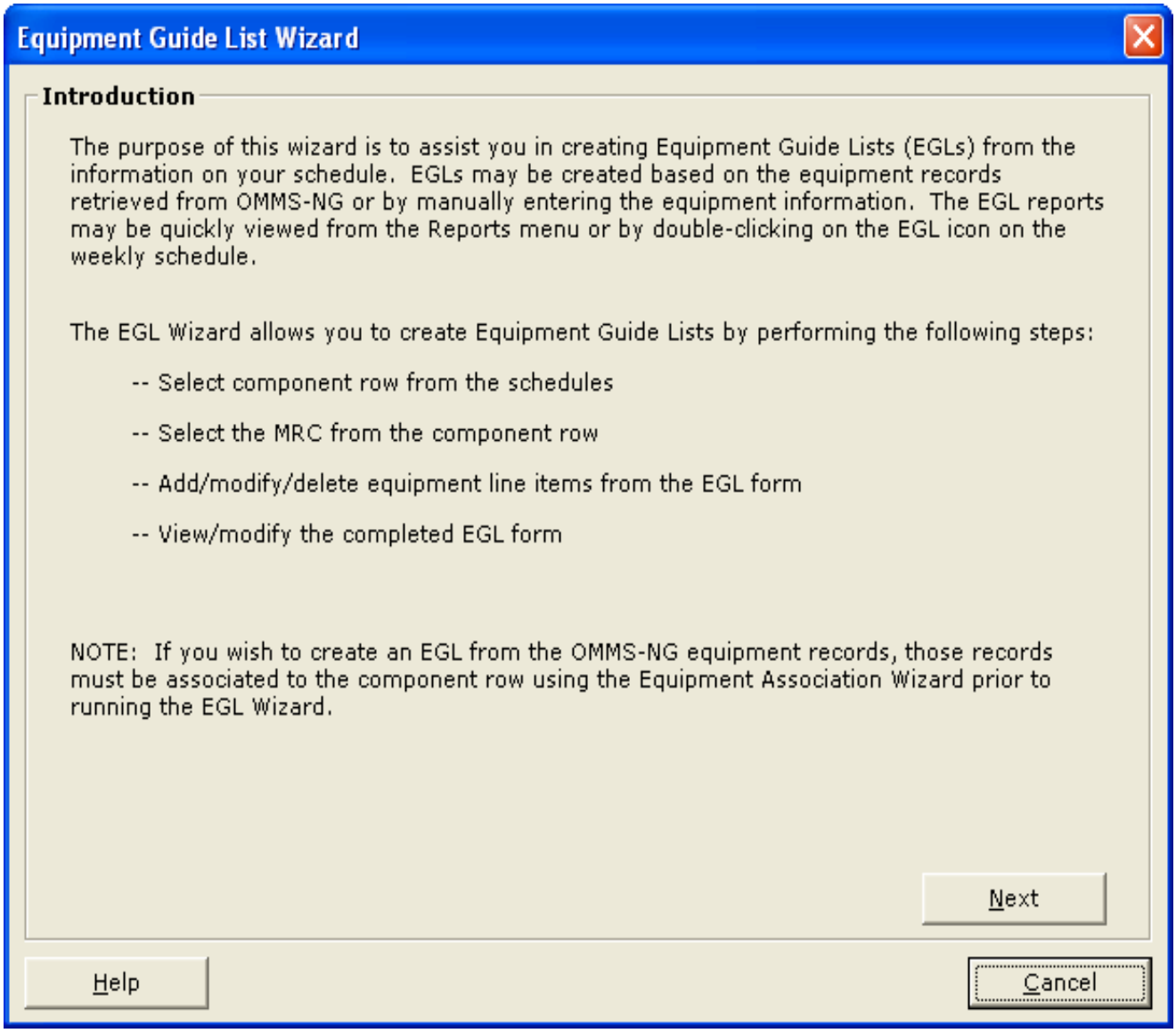


Figure F - 8 New EGL Report Wizard

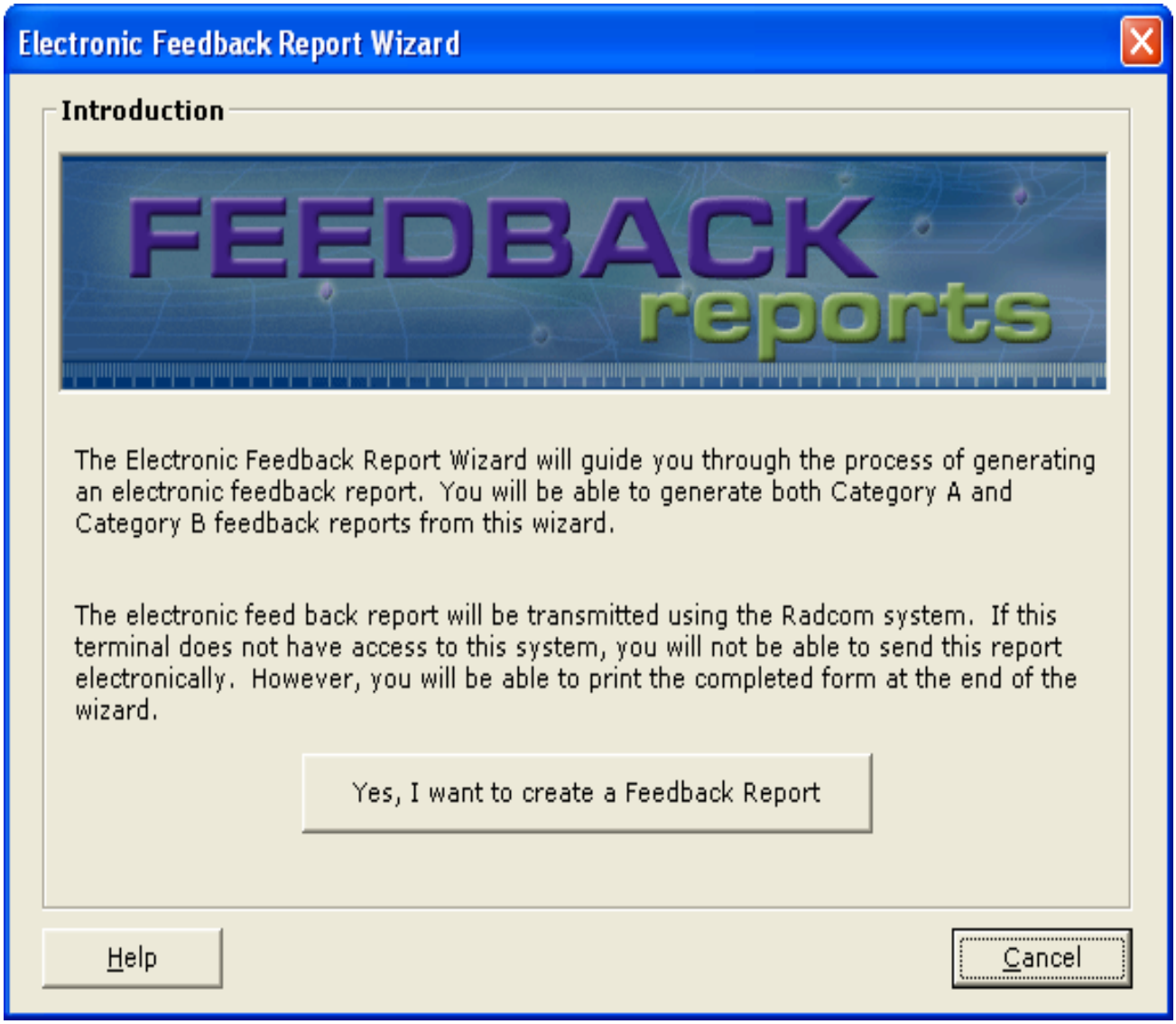


Figure F - 9 Feedback Report Wizard

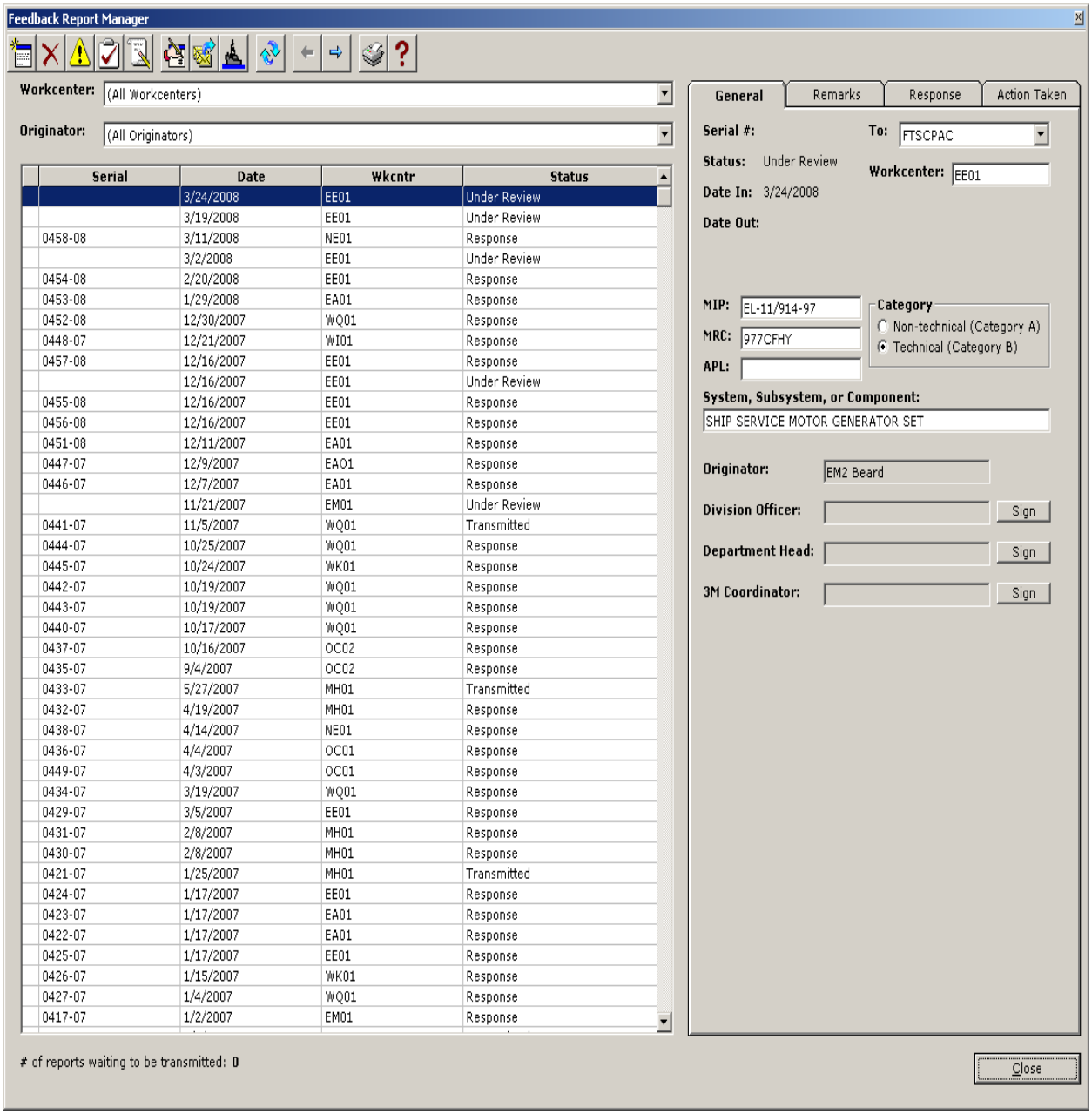


Figure F - 10 FBR Manager

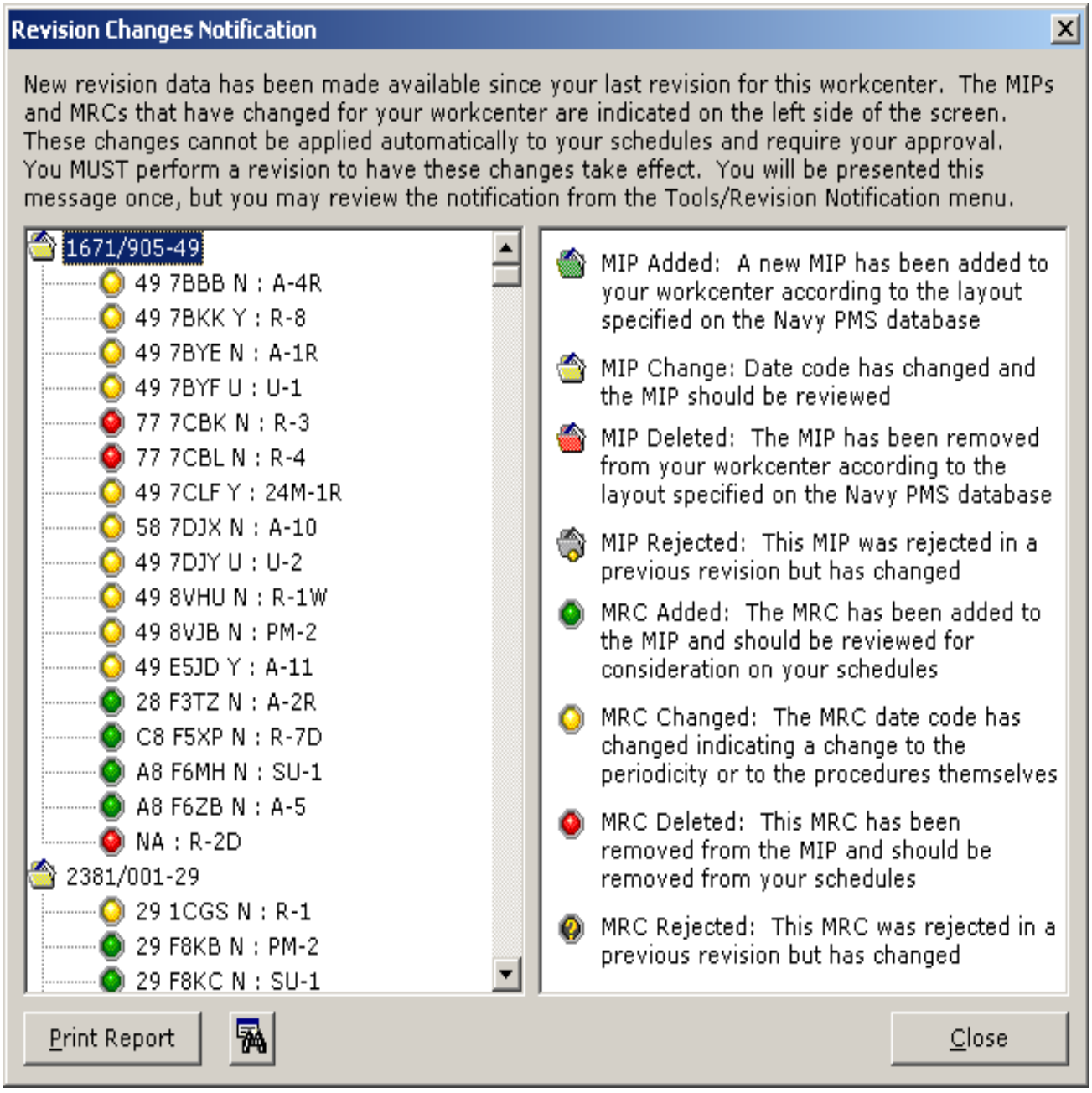


Figure F - 11 Force Revision First-time Popup

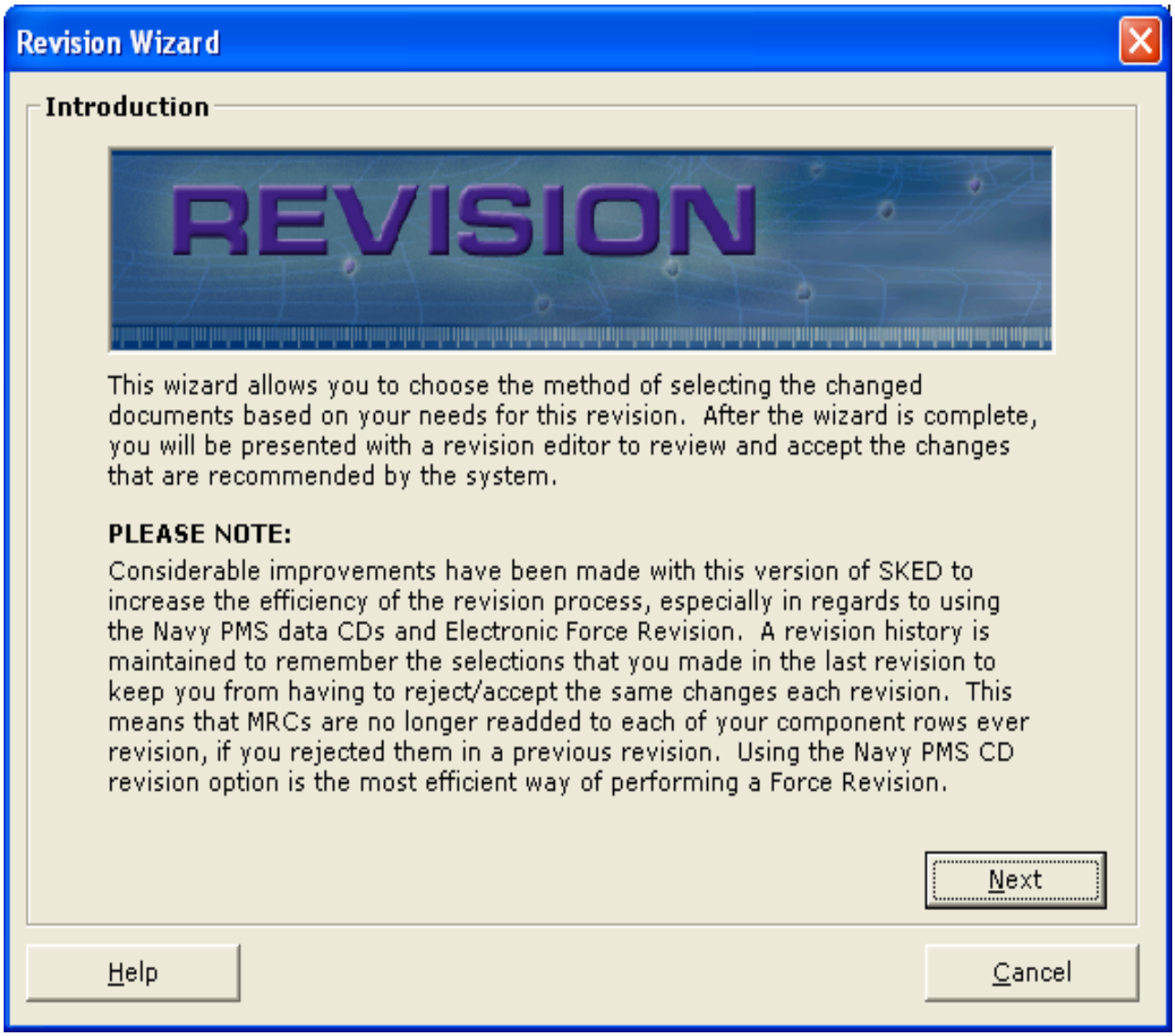
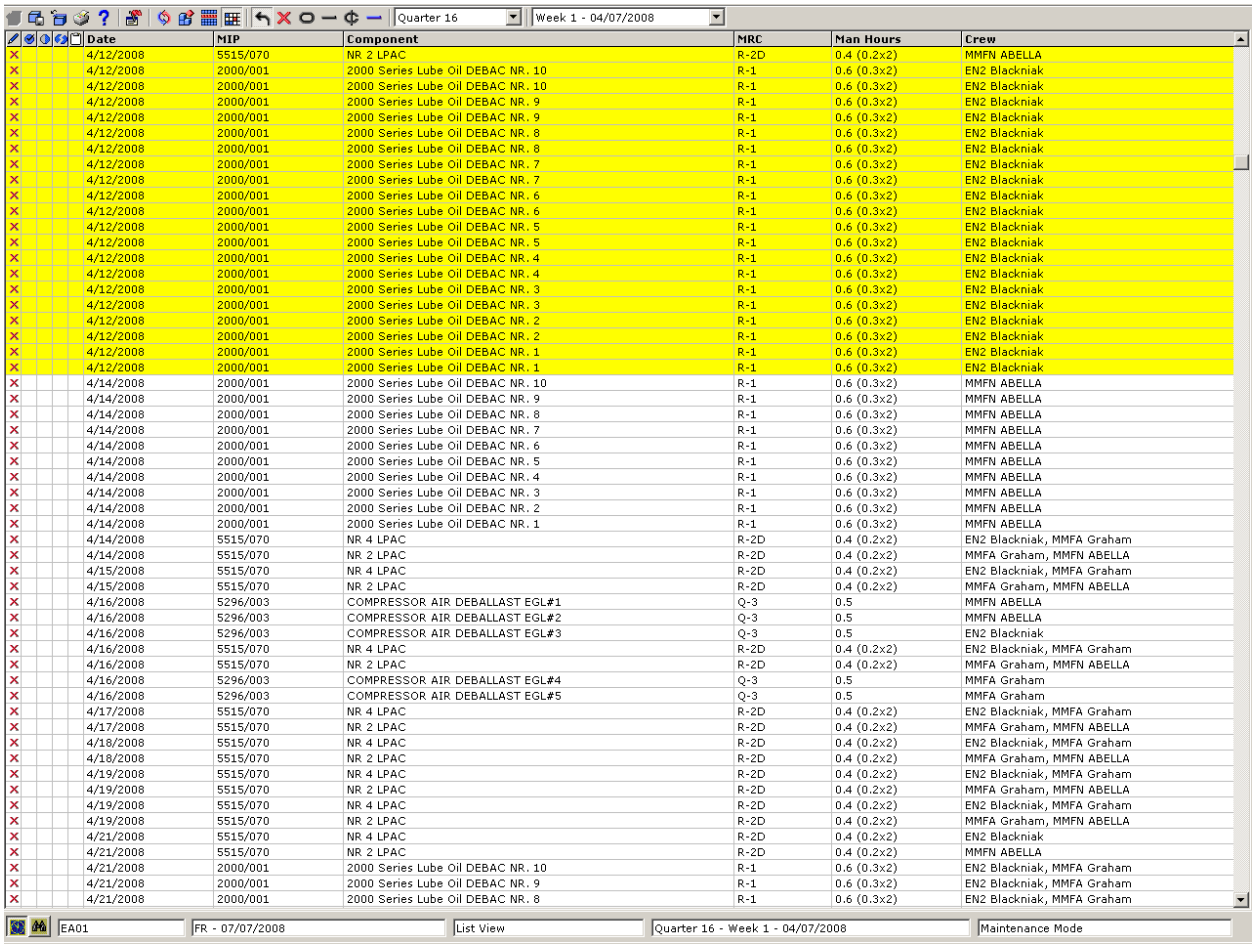


Figure F - 12 Revision Wizard



Date	MIP	Component	MRC	Man Hours	Crew
4/12/2008	5515/070	NR 2 LPAC	R-2D	0.4 (0.2x2)	MMFN ABELLA
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 10	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 10	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 9	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 9	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 8	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 8	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 7	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 7	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 6	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 6	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 5	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 5	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 4	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 4	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 3	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 3	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 2	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 2	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 1	R-1	0.6 (0.3x2)	EN2 Blackniak
4/12/2008	2000/001	2000 Series Lube Oil DEBAC NR. 1	R-1	0.6 (0.3x2)	EN2 Blackniak
4/14/2008	2000/001	2000 Series Lube Oil DEBAC NR. 10	R-1	0.6 (0.3x2)	MMFN ABELLA
4/14/2008	2000/001	2000 Series Lube Oil DEBAC NR. 9	R-1	0.6 (0.3x2)	MMFN ABELLA
4/14/2008	2000/001	2000 Series Lube Oil DEBAC NR. 8	R-1	0.6 (0.3x2)	MMFN ABELLA
4/14/2008	2000/001	2000 Series Lube Oil DEBAC NR. 7	R-1	0.6 (0.3x2)	MMFN ABELLA
4/14/2008	2000/001	2000 Series Lube Oil DEBAC NR. 6	R-1	0.6 (0.3x2)	MMFN ABELLA
4/14/2008	2000/001	2000 Series Lube Oil DEBAC NR. 5	R-1	0.6 (0.3x2)	MMFN ABELLA
4/14/2008	2000/001	2000 Series Lube Oil DEBAC NR. 4	R-1	0.6 (0.3x2)	MMFN ABELLA
4/14/2008	2000/001	2000 Series Lube Oil DEBAC NR. 3	R-1	0.6 (0.3x2)	MMFN ABELLA
4/14/2008	2000/001	2000 Series Lube Oil DEBAC NR. 2	R-1	0.6 (0.3x2)	MMFN ABELLA
4/14/2008	2000/001	2000 Series Lube Oil DEBAC NR. 1	R-1	0.6 (0.3x2)	MMFN ABELLA
4/14/2008	5515/070	NR 4 LPAC	R-2D	0.4 (0.2x2)	EN2 Blackniak, MMFA Graham
4/14/2008	5515/070	NR 2 LPAC	R-2D	0.4 (0.2x2)	MMFA Graham, MMFN ABELLA
4/15/2008	5515/070	NR 4 LPAC	R-2D	0.4 (0.2x2)	EN2 Blackniak, MMFA Graham
4/15/2008	5515/070	NR 2 LPAC	R-2D	0.4 (0.2x2)	MMFA Graham, MMFN ABELLA
4/16/2008	5296/003	COMPRESSOR AIR DEBALLAST EGL#1	Q-3	0.5	MMFN ABELLA
4/16/2008	5296/003	COMPRESSOR AIR DEBALLAST EGL#2	Q-3	0.5	MMFN ABELLA
4/16/2008	5296/003	COMPRESSOR AIR DEBALLAST EGL#3	Q-3	0.5	EN2 Blackniak
4/16/2008	5515/070	NR 4 LPAC	R-2D	0.4 (0.2x2)	EN2 Blackniak, MMFA Graham
4/16/2008	5515/070	NR 2 LPAC	R-2D	0.4 (0.2x2)	MMFA Graham, MMFN ABELLA
4/16/2008	5296/003	COMPRESSOR AIR DEBALLAST EGL#4	Q-3	0.5	MMFA Graham
4/16/2008	5296/003	COMPRESSOR AIR DEBALLAST EGL#5	Q-3	0.5	MMFA Graham
4/17/2008	5515/070	NR 4 LPAC	R-2D	0.4 (0.2x2)	EN2 Blackniak, MMFA Graham
4/17/2008	5515/070	NR 2 LPAC	R-2D	0.4 (0.2x2)	MMFA Graham, MMFN ABELLA
4/18/2008	5515/070	NR 4 LPAC	R-2D	0.4 (0.2x2)	EN2 Blackniak, MMFA Graham
4/18/2008	5515/070	NR 2 LPAC	R-2D	0.4 (0.2x2)	MMFA Graham, MMFN ABELLA
4/19/2008	5515/070	NR 4 LPAC	R-2D	0.4 (0.2x2)	EN2 Blackniak, MMFA Graham
4/19/2008	5515/070	NR 2 LPAC	R-2D	0.4 (0.2x2)	MMFA Graham, MMFN ABELLA
4/19/2008	5515/070	NR 4 LPAC	R-2D	0.4 (0.2x2)	EN2 Blackniak, MMFA Graham
4/19/2008	5515/070	NR 2 LPAC	R-2D	0.4 (0.2x2)	MMFA Graham, MMFN ABELLA
4/21/2008	5515/070	NR 4 LPAC	R-2D	0.4 (0.2x2)	EN2 Blackniak
4/21/2008	5515/070	NR 2 LPAC	R-2D	0.4 (0.2x2)	MMFN ABELLA
4/21/2008	2000/001	2000 Series Lube Oil DEBAC NR. 10	R-1	0.6 (0.3x2)	EN2 Blackniak, MMFA Graham
4/21/2008	2000/001	2000 Series Lube Oil DEBAC NR. 9	R-1	0.6 (0.3x2)	EN2 Blackniak, MMFA Graham
4/21/2008	2000/001	2000 Series Lube Oil DEBAC NR. 8	R-1	0.6 (0.3x2)	EN2 Blackniak, MMFA Graham

Figure F - 13 List View

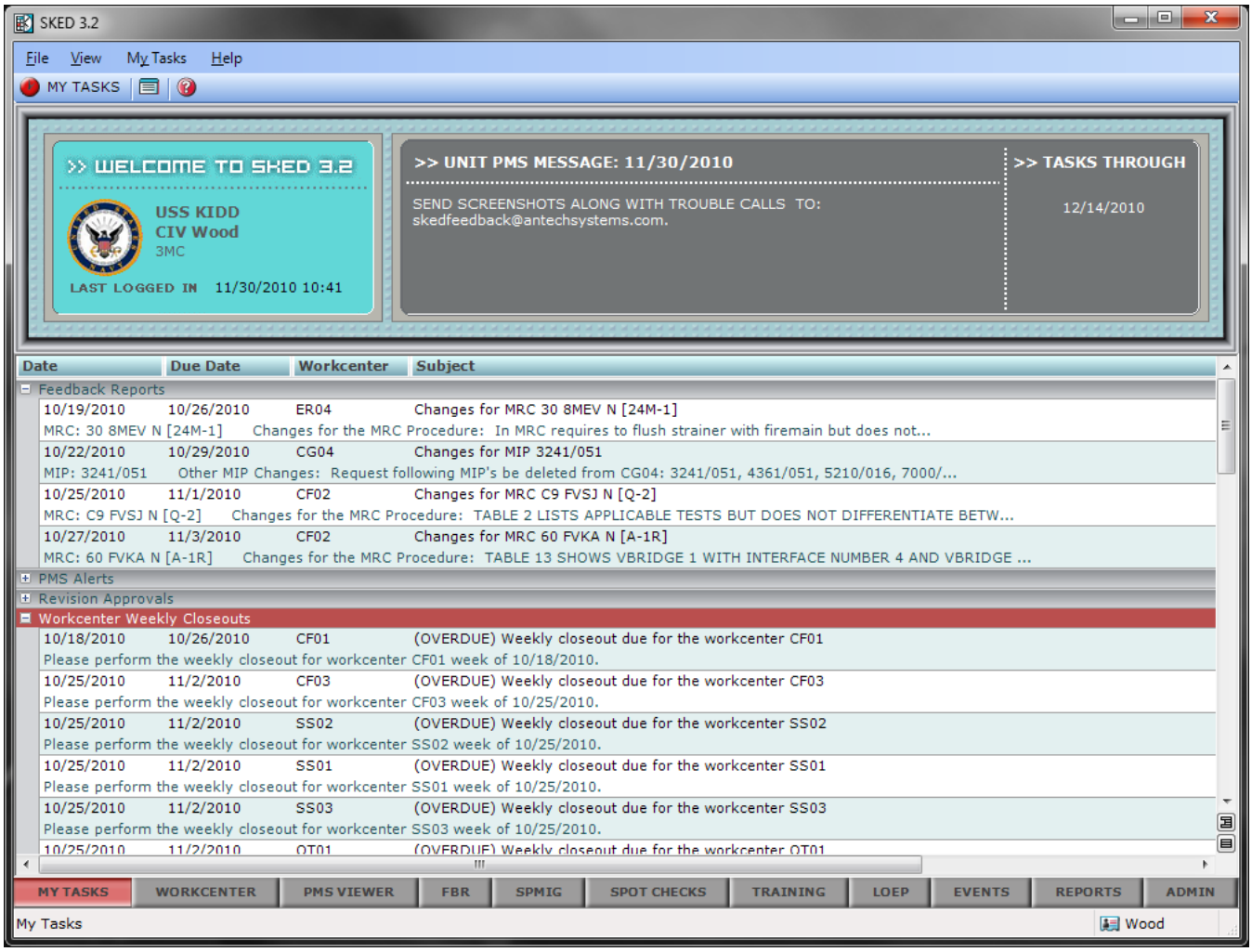
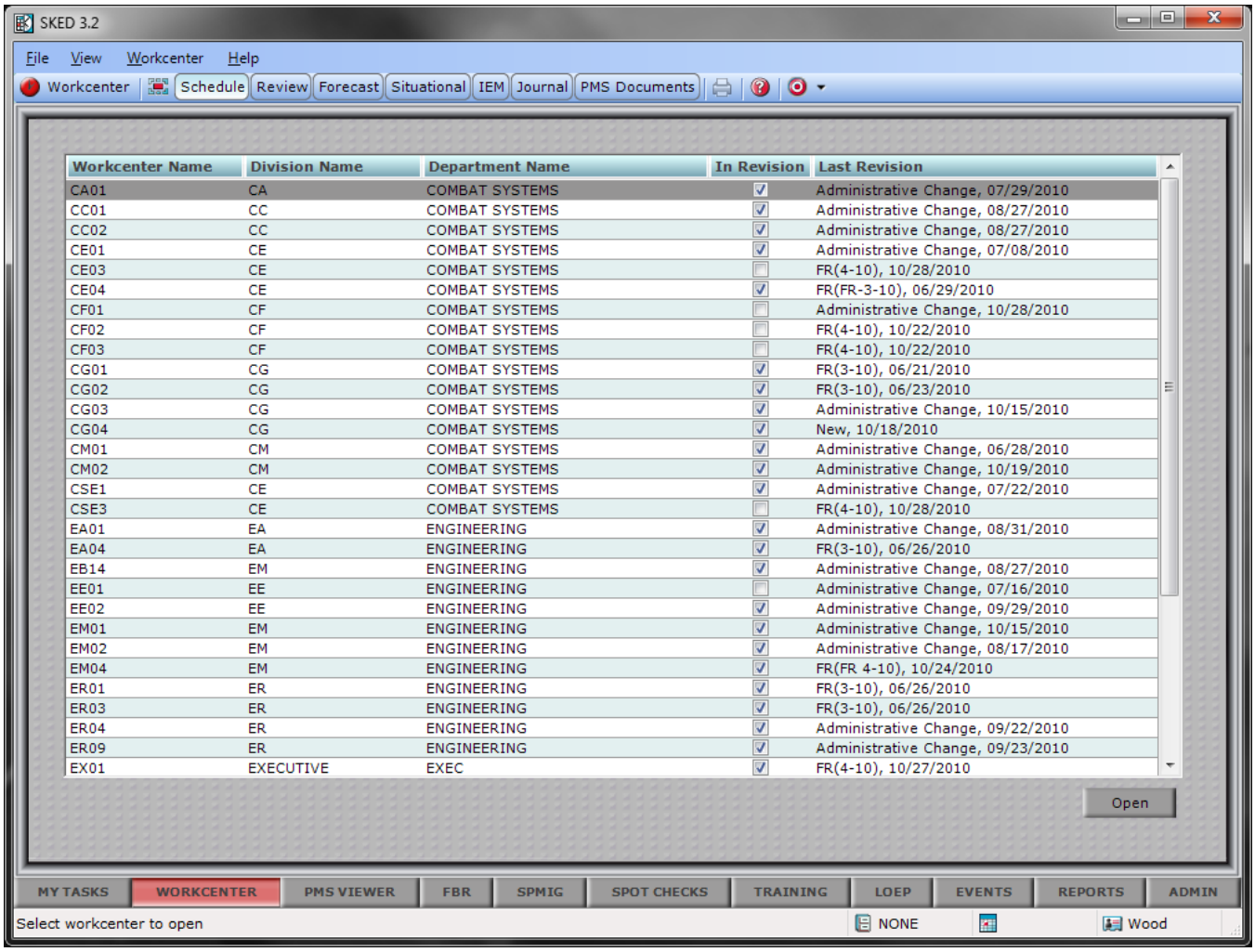


Figure G - 1 MY TASKS View



Workcenter Name	Division Name	Department Name	In Revision	Last Revision
CA01	CA	COMBAT SYSTEMS	☑	Administrative Change, 07/29/2010
CC01	CC	COMBAT SYSTEMS	☑	Administrative Change, 08/27/2010
CC02	CC	COMBAT SYSTEMS	☑	Administrative Change, 08/27/2010
CE01	CE	COMBAT SYSTEMS	☑	Administrative Change, 07/08/2010
CE03	CE	COMBAT SYSTEMS	☐	FR(4-10), 10/28/2010
CE04	CE	COMBAT SYSTEMS	☑	FR(FR-3-10), 06/29/2010
CF01	CF	COMBAT SYSTEMS	☐	Administrative Change, 10/28/2010
CF02	CF	COMBAT SYSTEMS	☐	FR(4-10), 10/22/2010
CF03	CF	COMBAT SYSTEMS	☐	FR(4-10), 10/22/2010
CG01	CG	COMBAT SYSTEMS	☑	FR(3-10), 06/21/2010
CG02	CG	COMBAT SYSTEMS	☑	FR(3-10), 06/23/2010
CG03	CG	COMBAT SYSTEMS	☑	Administrative Change, 10/15/2010
CG04	CG	COMBAT SYSTEMS	☑	New, 10/18/2010
CM01	CM	COMBAT SYSTEMS	☑	Administrative Change, 06/28/2010
CM02	CM	COMBAT SYSTEMS	☑	Administrative Change, 10/19/2010
CSE1	CE	COMBAT SYSTEMS	☑	Administrative Change, 07/22/2010
CSE3	CE	COMBAT SYSTEMS	☐	FR(4-10), 10/28/2010
EA01	EA	ENGINEERING	☑	Administrative Change, 08/31/2010
EA04	EA	ENGINEERING	☑	FR(3-10), 06/26/2010
EB14	EM	ENGINEERING	☑	Administrative Change, 08/27/2010
EE01	EE	ENGINEERING	☐	Administrative Change, 07/16/2010
EE02	EE	ENGINEERING	☑	Administrative Change, 09/29/2010
EM01	EM	ENGINEERING	☑	Administrative Change, 10/15/2010
EM02	EM	ENGINEERING	☑	Administrative Change, 08/17/2010
EM04	EM	ENGINEERING	☑	FR(FR 4-10), 10/24/2010
ER01	ER	ENGINEERING	☑	FR(3-10), 06/26/2010
ER03	ER	ENGINEERING	☑	FR(3-10), 06/26/2010
ER04	ER	ENGINEERING	☑	Administrative Change, 09/22/2010
ER09	ER	ENGINEERING	☑	Administrative Change, 09/23/2010
EX01	EXECUTIVE	EXEC	☑	FR(4-10), 10/27/2010

Figure G - 2 WORK CENTER View

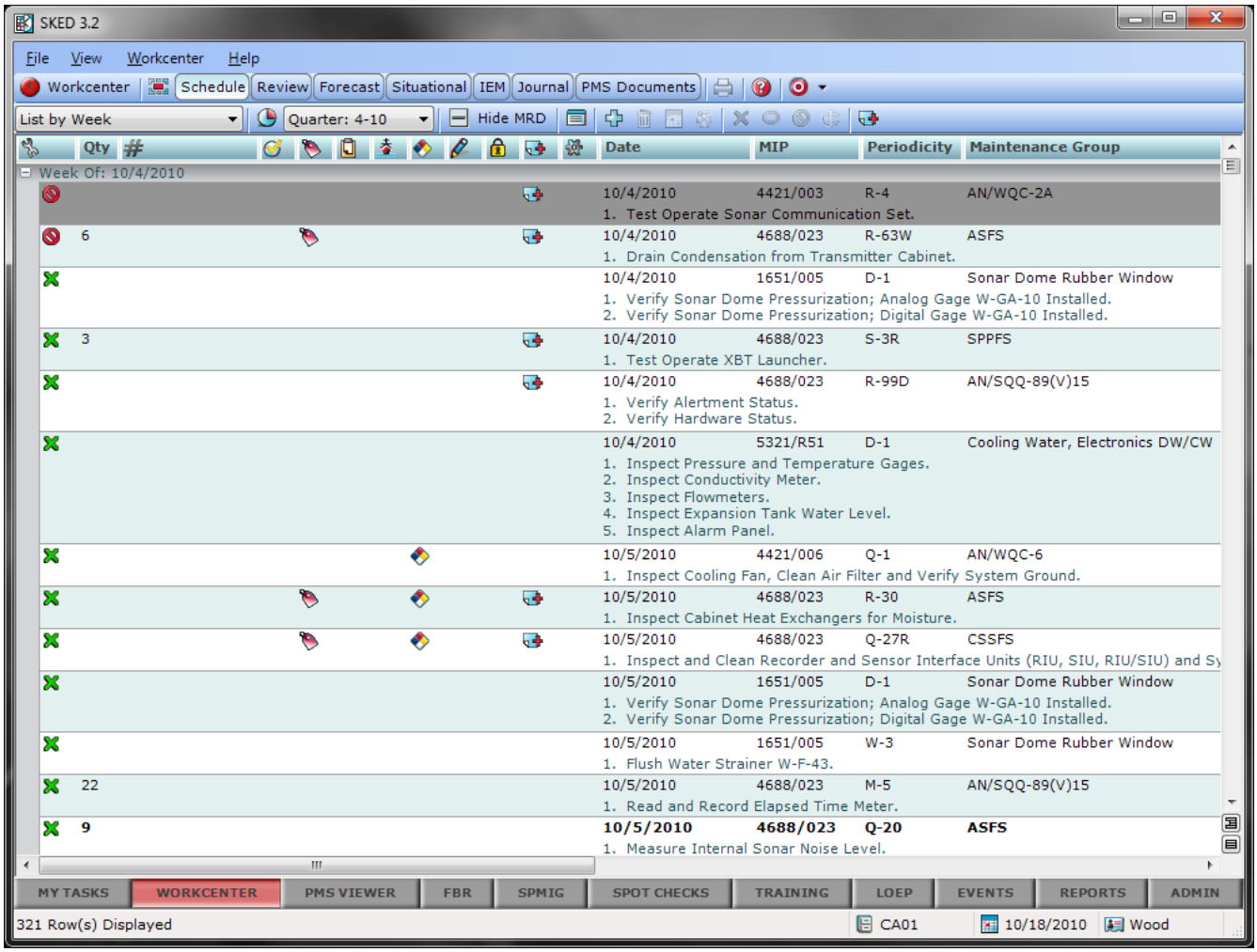


Figure G - 3 Schedule Display

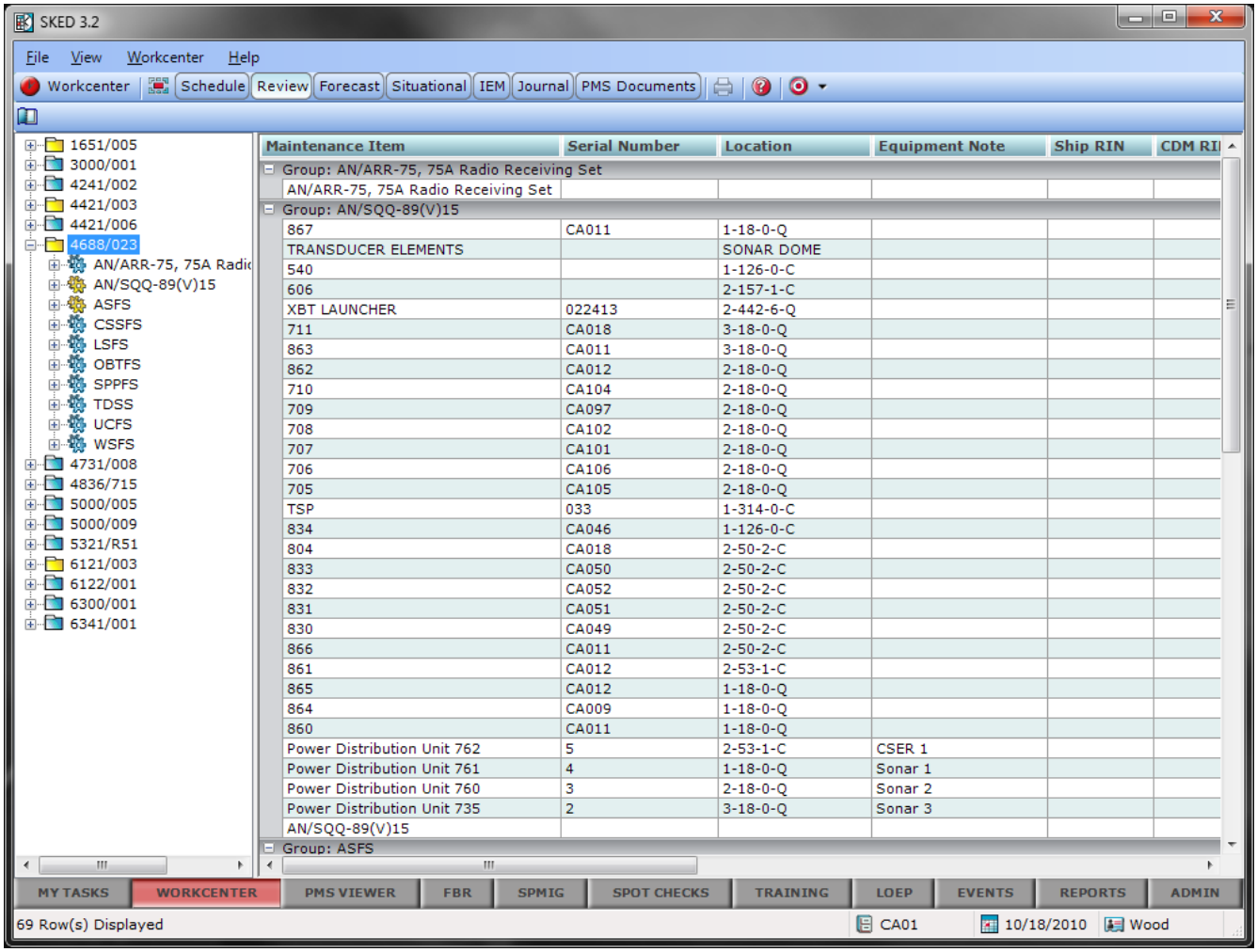
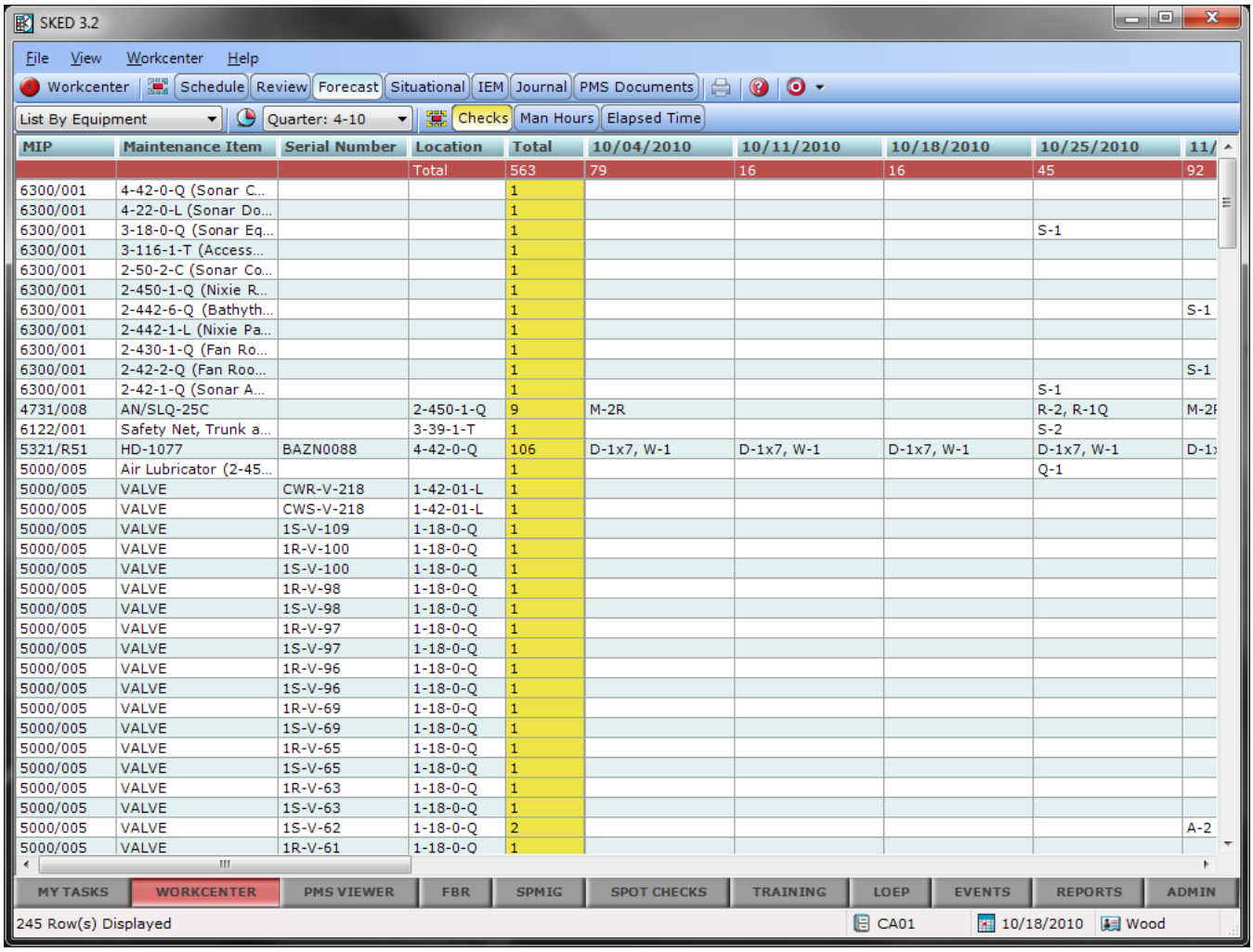


Figure G - 4 Review Display



MIP	Maintenance Item	Serial Number	Location	Total	10/04/2010	10/11/2010	10/18/2010	10/25/2010	11/
			Total	563	79	16	16	45	92
6300/001	4-42-0-Q (Sonar C...			1					
6300/001	4-22-0-L (Sonar Do...			1					
6300/001	3-18-0-Q (Sonar Eq...			1				S-1	
6300/001	3-116-1-T (Access...			1					
6300/001	2-50-2-C (Sonar Co...			1					
6300/001	2-450-1-Q (Nixie R...			1					
6300/001	2-442-6-Q (Bathyth...			1					S-1
6300/001	2-442-1-L (Nixie Pa...			1					
6300/001	2-430-1-Q (Fan Ro...			1					
6300/001	2-42-2-Q (Fan Roo...			1					S-1
6300/001	2-42-1-Q (Sonar A...			1				S-1	
4731/008	AN/SLQ-25C		2-450-1-Q	9	M-2R			R-2, R-1Q	M-2
6122/001	Safety Net, Trunk a...		3-39-1-T	1				S-2	
5321/R51	HD-1077	BAZN0088	4-42-0-Q	106	D-1x7, W-1	D-1x7, W-1	D-1x7, W-1	D-1x7, W-1	D-1
5000/005	Air Lubricator (2-45...			1				Q-1	
5000/005	VALVE	CWR-V-218	1-42-01-L	1					
5000/005	VALVE	CWS-V-218	1-42-01-L	1					
5000/005	VALVE	1S-V-109	1-18-0-Q	1					
5000/005	VALVE	1R-V-100	1-18-0-Q	1					
5000/005	VALVE	1S-V-100	1-18-0-Q	1					
5000/005	VALVE	1R-V-98	1-18-0-Q	1					
5000/005	VALVE	1S-V-98	1-18-0-Q	1					
5000/005	VALVE	1R-V-97	1-18-0-Q	1					
5000/005	VALVE	1S-V-97	1-18-0-Q	1					
5000/005	VALVE	1R-V-96	1-18-0-Q	1					
5000/005	VALVE	1S-V-96	1-18-0-Q	1					
5000/005	VALVE	1R-V-69	1-18-0-Q	1					
5000/005	VALVE	1S-V-69	1-18-0-Q	1					
5000/005	VALVE	1R-V-65	1-18-0-Q	1					
5000/005	VALVE	1S-V-65	1-18-0-Q	1					
5000/005	VALVE	1R-V-63	1-18-0-Q	1					
5000/005	VALVE	1S-V-63	1-18-0-Q	1					
5000/005	VALVE	1S-V-62	1-18-0-Q	2					A-2
5000/005	VALVE	1R-V-61	1-18-0-Q	1					

Figure G - 5 Forecast Display

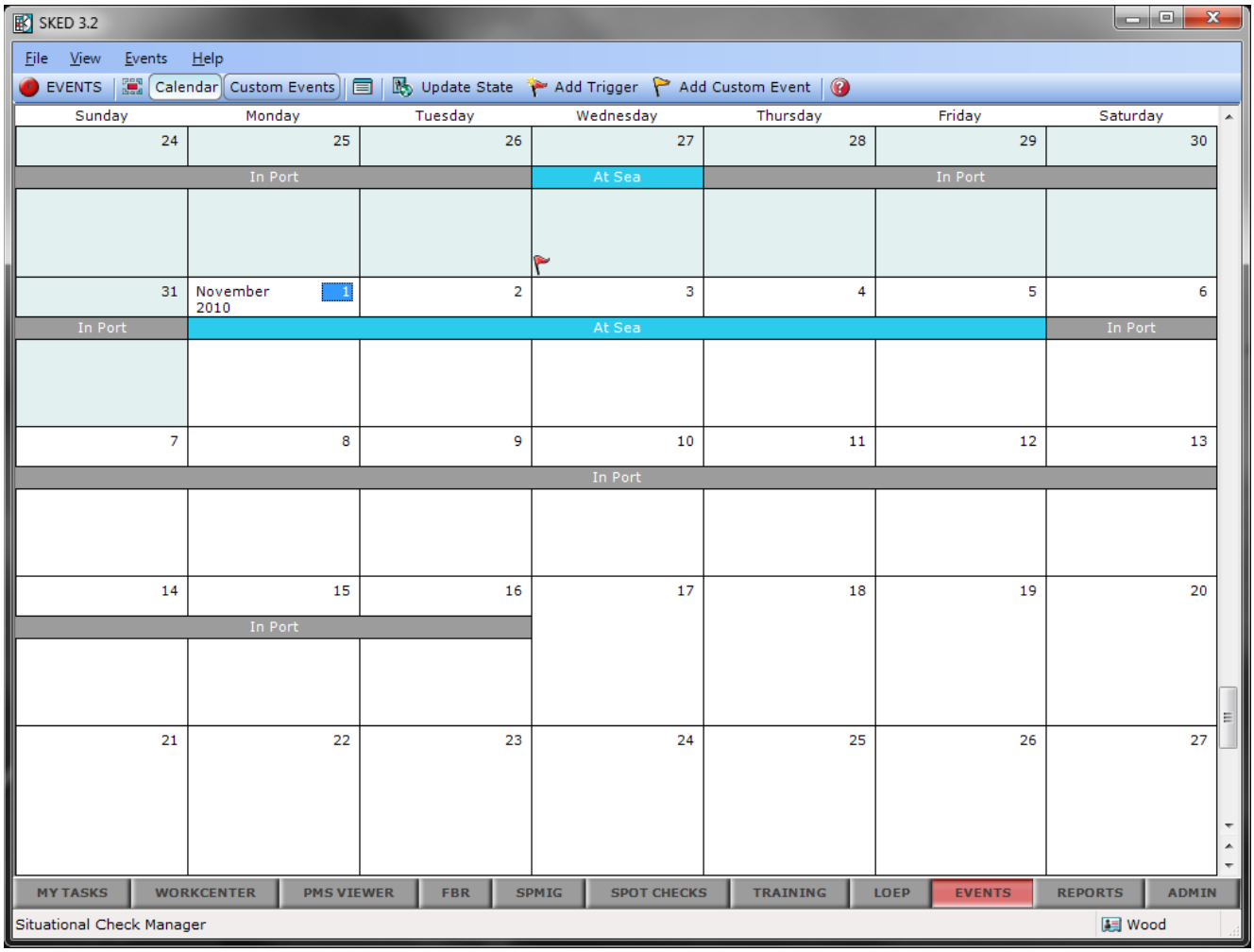


Figure G - 6 EVENTS View

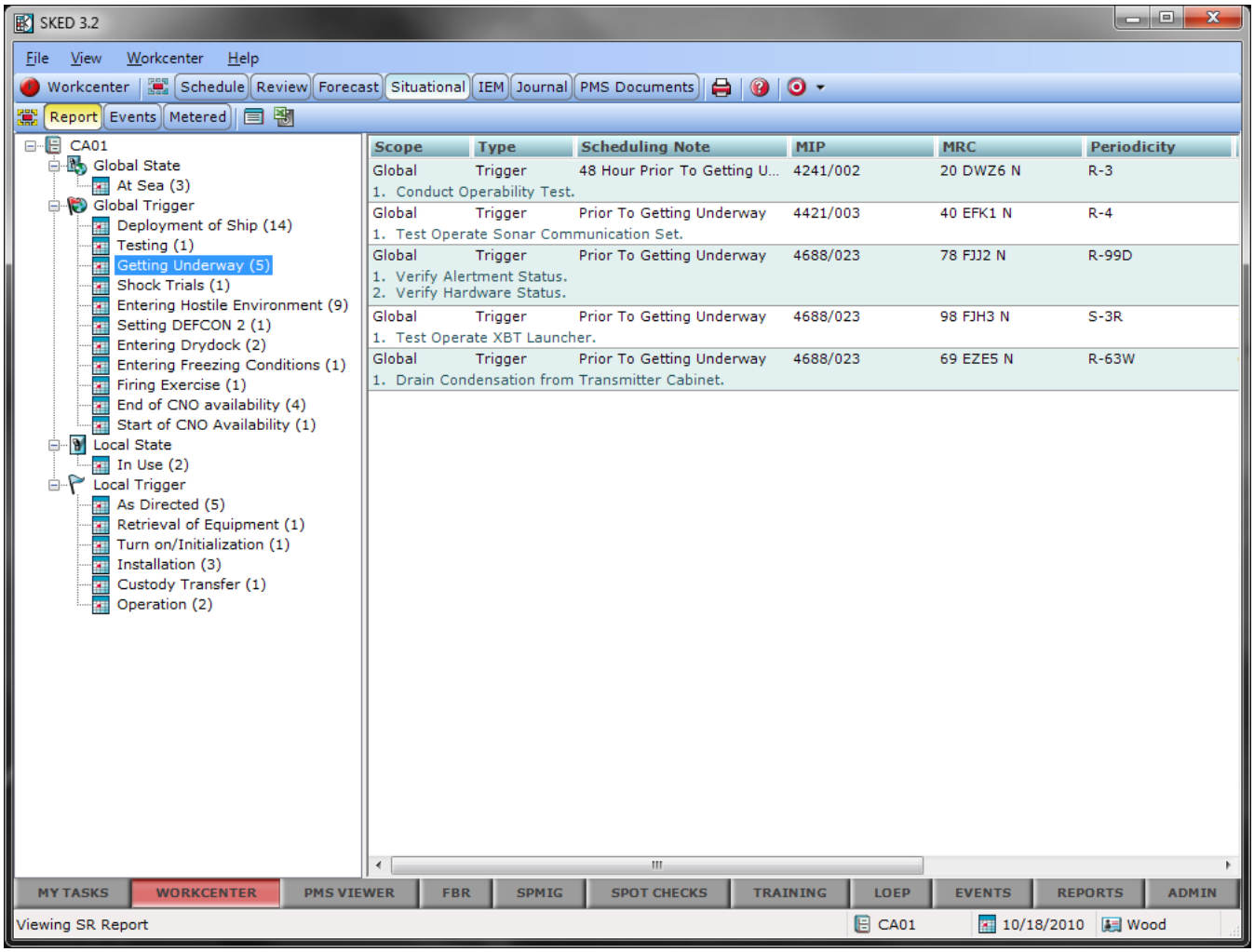


Figure G - 7 Situational Display (R-Check)

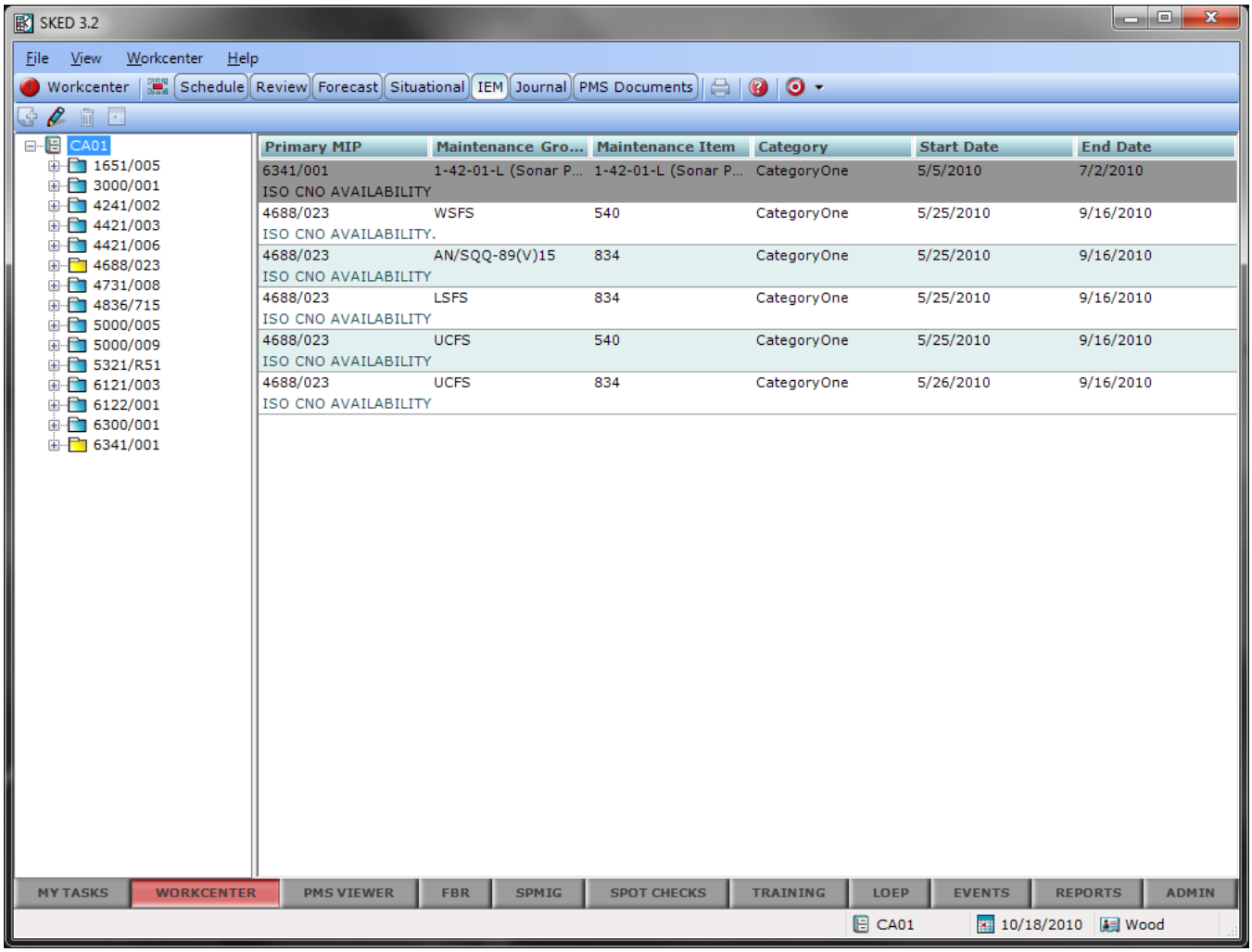


Figure G - 8 IEM Display

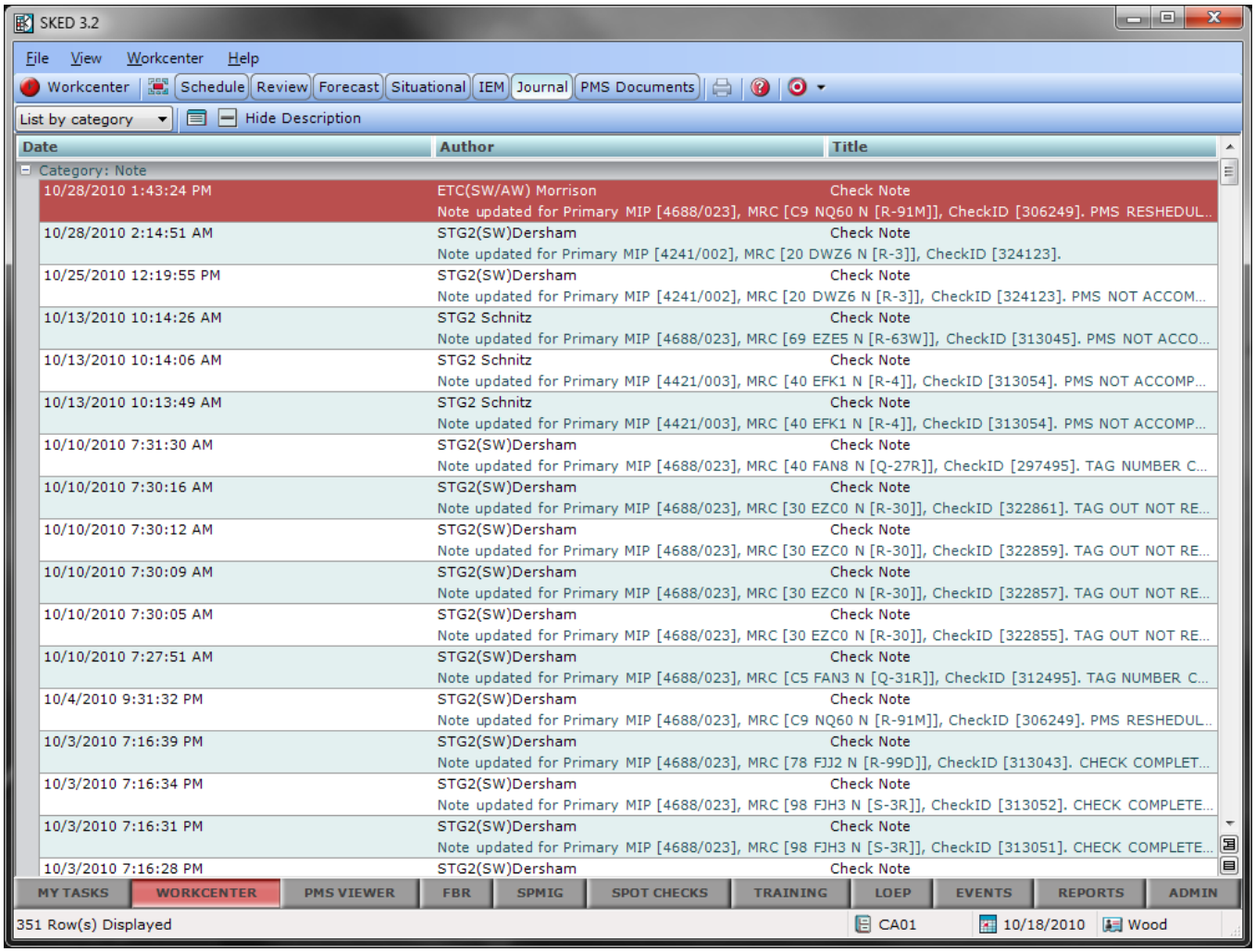


Figure G - 9 Journal Display

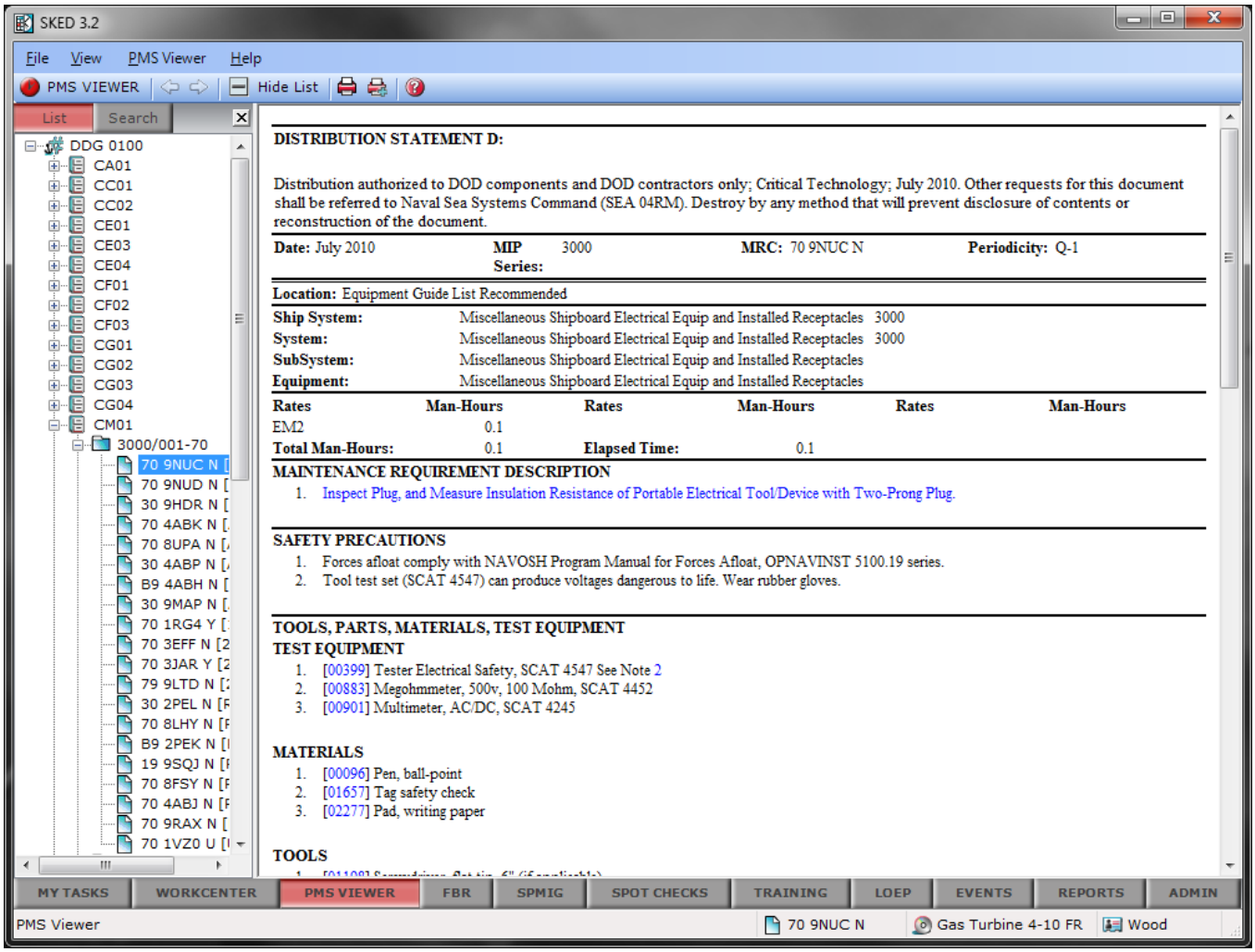


Figure G - 10 PMS VIEWER

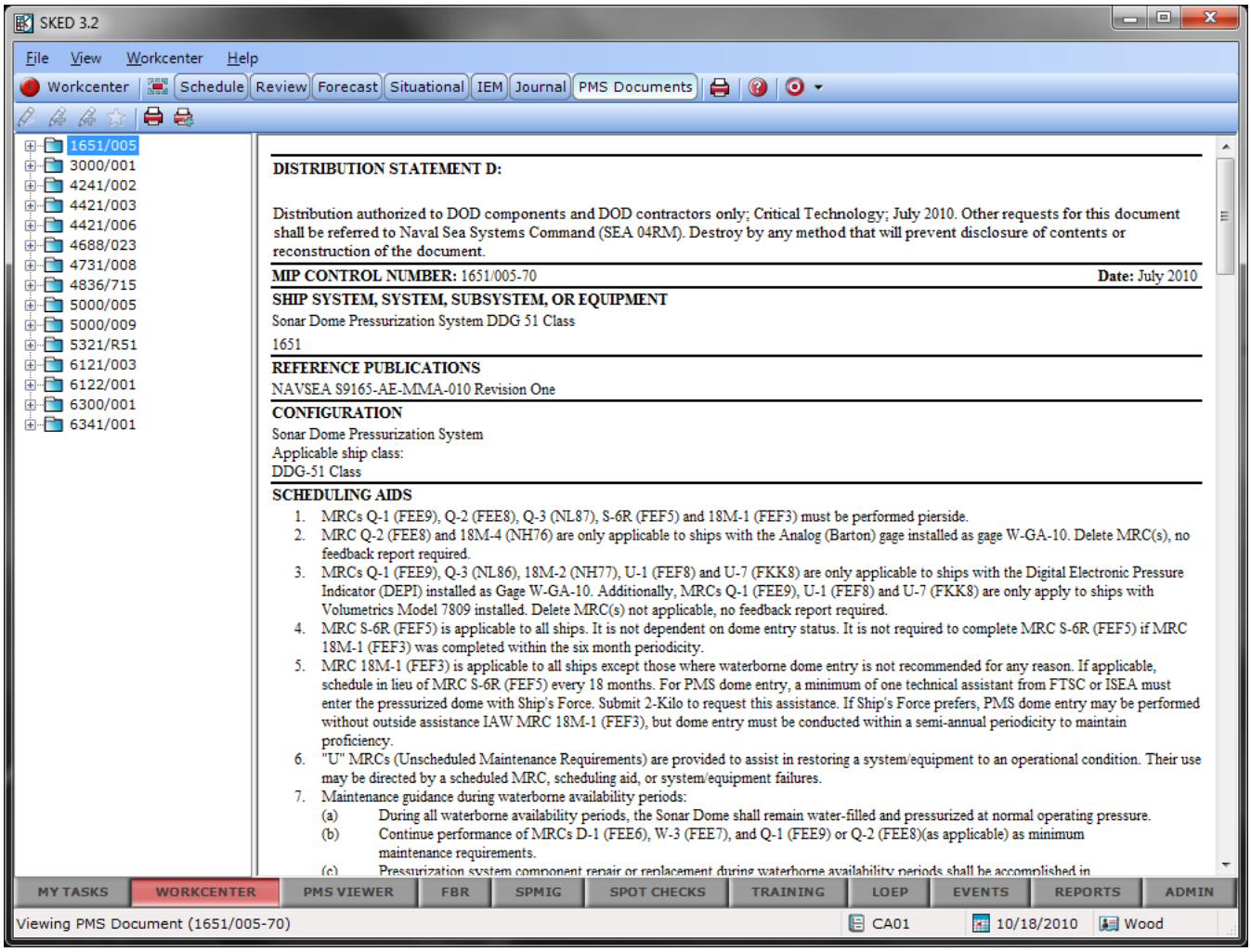
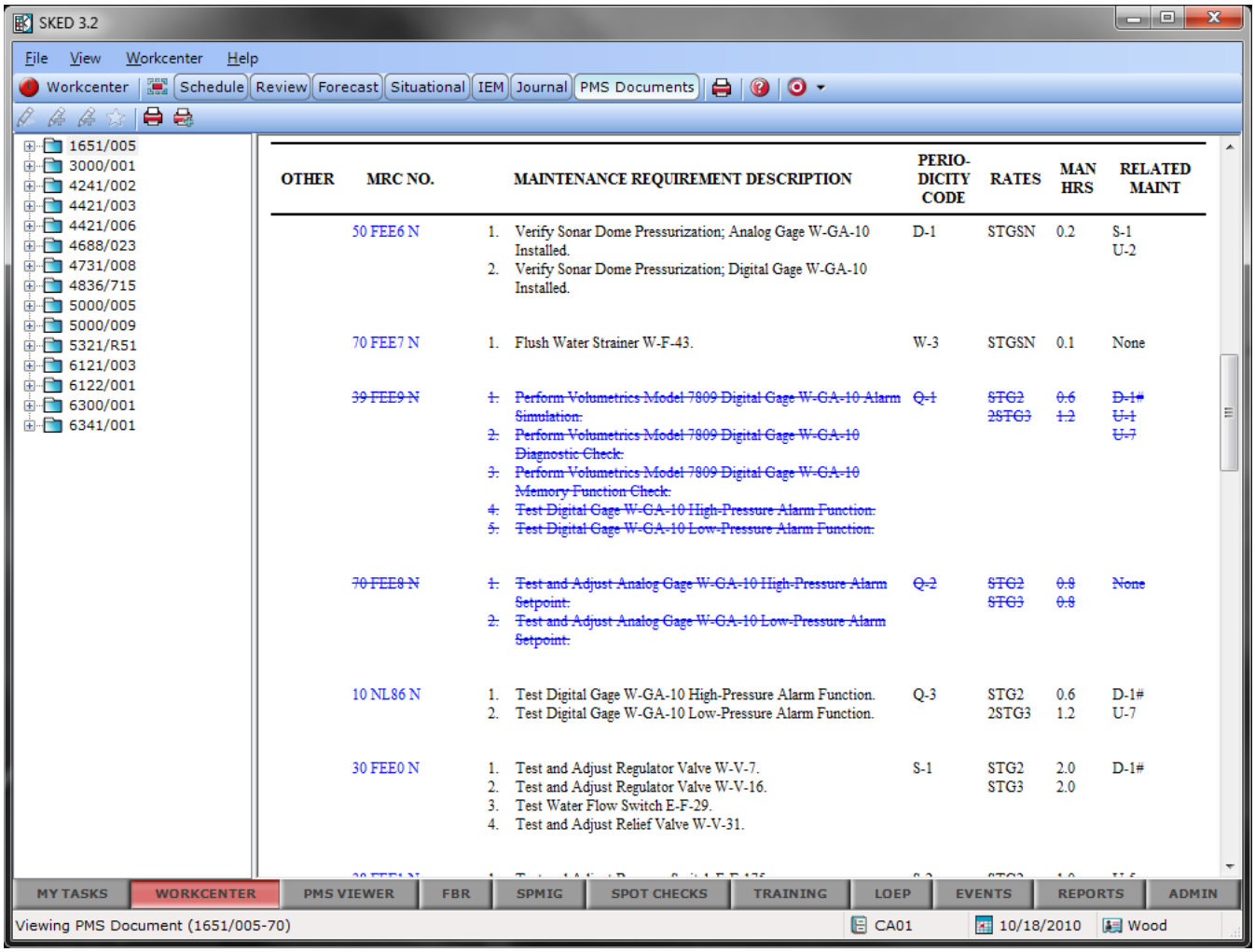


Figure G - 11 PMS Documents Display



OTHER	MRC NO.	MAINTENANCE REQUIREMENT DESCRIPTION	PERIO-DICITY CODE	RATES	MAN HRS	RELATED MAINT
	50 FEE6 N	1. Verify Sonar Dome Pressurization; Analog Gage W-GA-10 Installed. 2. Verify Sonar Dome Pressurization; Digital Gage W-GA-10 Installed.	D-1	STGSN	0.2	S-1 U-2
	70 FEE7 N	1. Flush Water Strainer W-F-43.	W-3	STGSN	0.1	None
	~~39 FEE9 N~~	~~1. Perform Volumetrics Model 7809 Digital Gage W-GA-10 Alarm Simulation.~~ ~~2. Perform Volumetrics Model 7809 Digital Gage W-GA-10 Diagnostic Check.~~ ~~3. Perform Volumetrics Model 7809 Digital Gage W-GA-10 Memory Function Check.~~ ~~4. Test Digital Gage W-GA-10 High-Pressure Alarm Function.~~ ~~5. Test Digital Gage W-GA-10 Low-Pressure Alarm Function.~~	~~Q-1~~	~~STG2 2STG3~~	~~0.6 1.2~~	~~D-1# U-1 U-7~~
	~~70 FEE8 N~~	~~1. Test and Adjust Analog Gage W-GA-10 High-Pressure Alarm Setpoint.~~ ~~2. Test and Adjust Analog Gage W-GA-10 Low-Pressure Alarm Setpoint.~~	~~Q-2~~	~~STG2 STG3~~	~~0.8 0.8~~	~~None~~
	10 NL86 N	1. Test Digital Gage W-GA-10 High-Pressure Alarm Function. 2. Test Digital Gage W-GA-10 Low-Pressure Alarm Function.	Q-3	STG2 2STG3	0.6 1.2	D-1# U-7
	30 FEE0 N	1. Test and Adjust Regulator Valve W-V-7. 2. Test and Adjust Regulator Valve W-V-16. 3. Test Water Flow Switch E-F-29. 4. Test and Adjust Relief Valve W-V-31.	S-1	STG2 STG3	2.0 2.0	D-1#

Figure G - 12 MRC Line-Outs

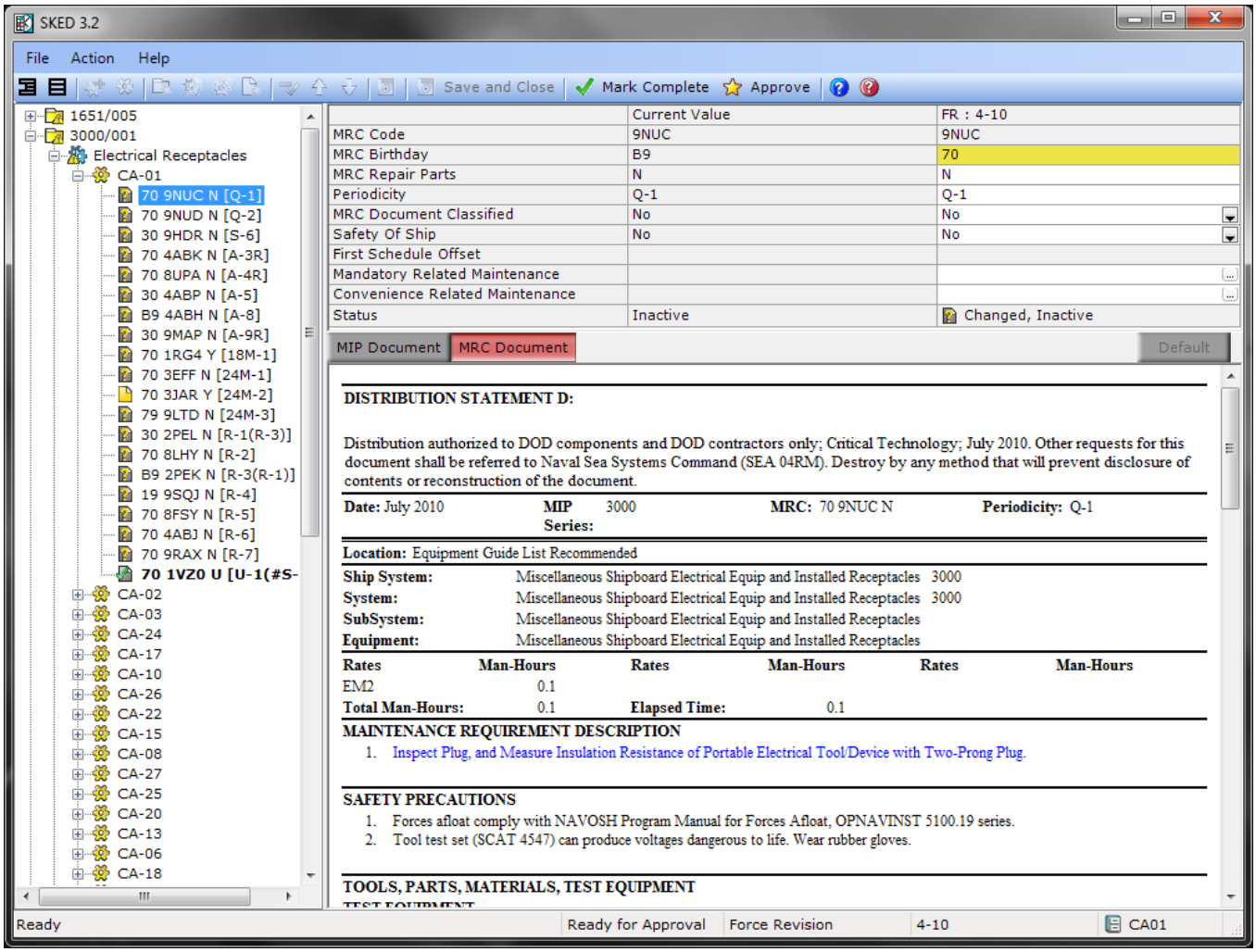


Figure G - 13 Revision Editor

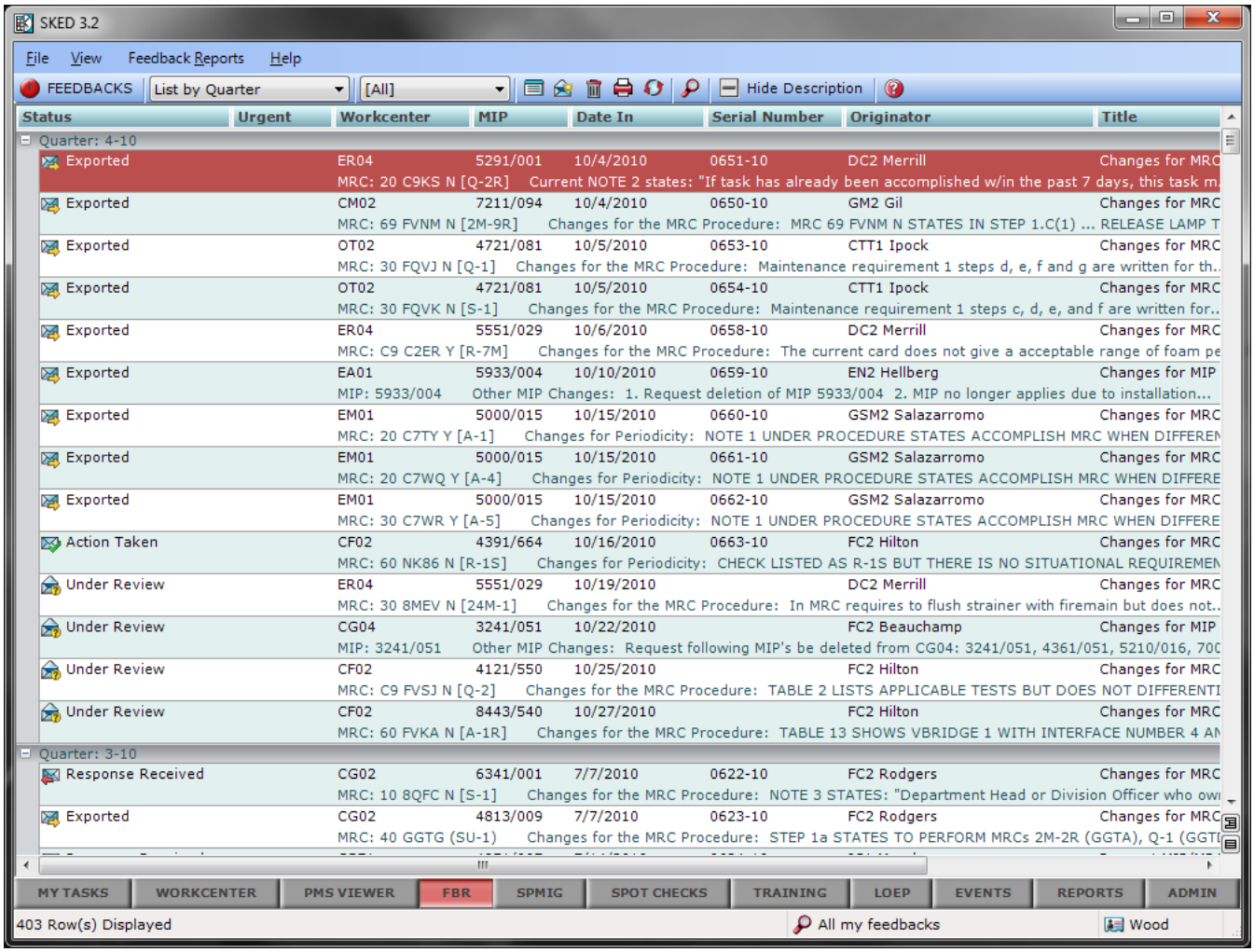
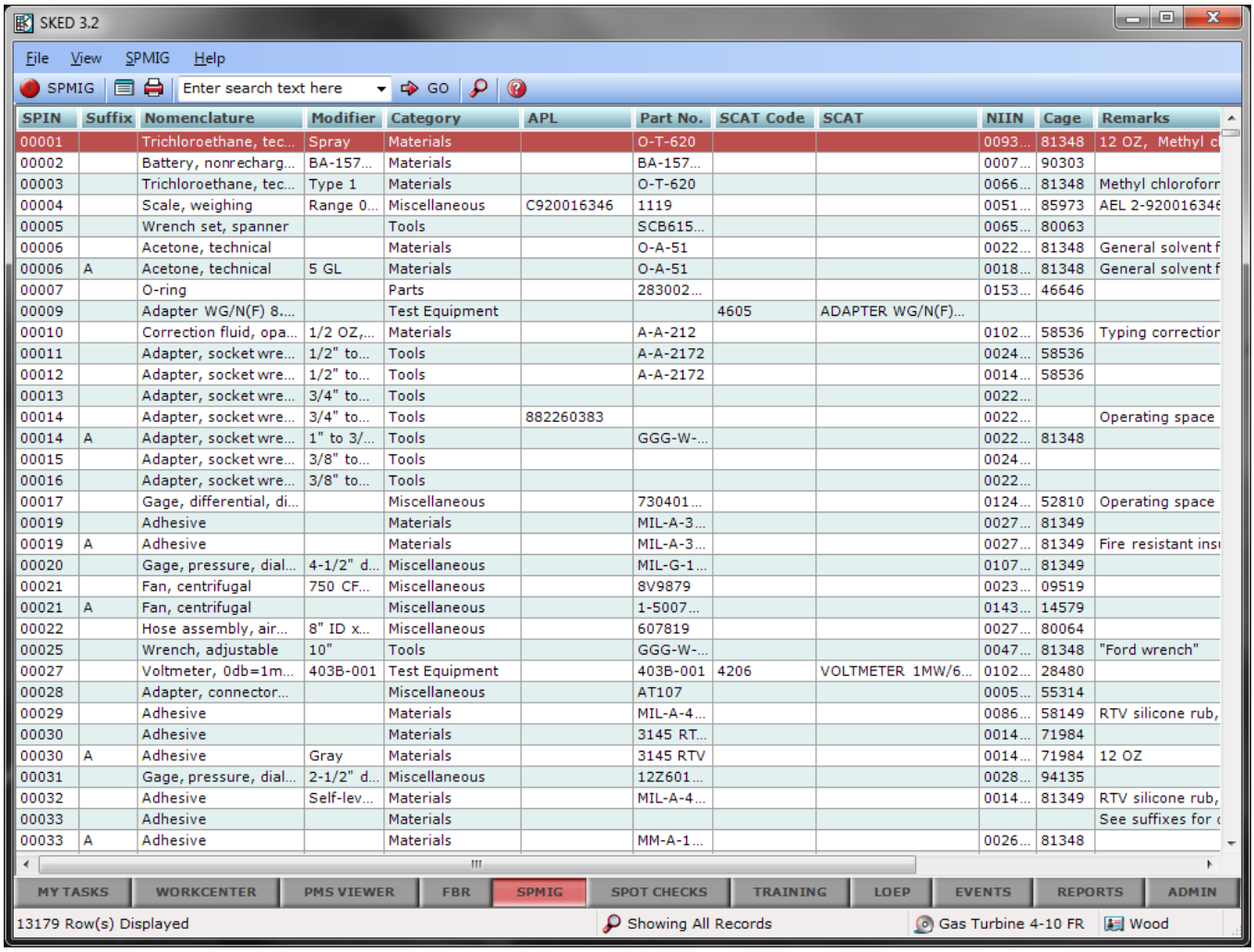


Figure G - 14 FBR View



SPIN	Suffix	Nomenclature	Modifier	Category	APL	Part No.	SCAT Code	SCAT	NIIN	Cage	Remarks
00001		Trichloroethane, tec...	Spray	Materials		O-T-620			0093...	81348	12 OZ, Methyl c
00002		Battery, nonrecharg...	BA-157...	Materials		BA-157...			0007...	90303	
00003		Trichloroethane, tec...	Type 1	Materials		O-T-620			0066...	81348	Methyl chloroforr
00004		Scale, weighing	Range 0...	Miscellaneous	C920016346	1119			0051...	85973	AEL 2-920016346
00005		Wrench set, spanner		Tools		SCB615...			0065...	80063	
00006		Acetone, technical		Materials		O-A-51			0022...	81348	General solvent f
00006	A	Acetone, technical	5 GL	Materials		O-A-51			0018...	81348	General solvent f
00007		O-ring		Parts		283002...			0153...	46646	
00009		Adapter WG/N(F) 8....		Test Equipment			4605	ADAPTER WG/N(F)...			
00010		Correction fluid, opa...	1/2 OZ,...	Materials		A-A-212			0102...	58536	Typing correctior
00011		Adapter, socket wre...	1/2" to...	Tools		A-A-2172			0024...	58536	
00012		Adapter, socket wre...	1/2" to...	Tools		A-A-2172			0014...	58536	
00013		Adapter, socket wre...	3/4" to...	Tools					0022...		
00014		Adapter, socket wre...	3/4" to...	Tools	882260383				0022...		Operating space
00014	A	Adapter, socket wre...	1" to 3/...	Tools		GGG-W-...			0022...	81348	
00015		Adapter, socket wre...	3/8" to...	Tools					0024...		
00016		Adapter, socket wre...	3/8" to...	Tools					0022...		
00017		Gage, differential, di...		Miscellaneous		730401...			0124...	52810	Operating space
00019		Adhesive		Materials		MIL-A-3...			0027...	81349	
00019	A	Adhesive		Materials		MIL-A-3...			0027...	81349	Fire resistant ins
00020		Gage, pressure, dial...	4-1/2" d...	Miscellaneous		MIL-G-1...			0107...	81349	
00021		Fan, centrifugal	750 CF...	Miscellaneous		8V9879			0023...	09519	
00021	A	Fan, centrifugal		Miscellaneous		1-5007...			0143...	14579	
00022		Hose assembly, air...	8" ID x...	Miscellaneous		607819			0027...	80064	
00025		Wrench, adjustable	10"	Tools		GGG-W-...			0047...	81348	"Ford wrench"
00027		Voltmeter, 0db=1m...	403B-001	Test Equipment		403B-001	4206	VOLTMETER 1MW/6...	0102...	28480	
00028		Adapter, connector...		Miscellaneous		AT107			0005...	55314	
00029		Adhesive		Materials		MIL-A-4...			0086...	58149	RTV silicone rub,
00030		Adhesive		Materials		3145 RT...			0014...	71984	
00030	A	Adhesive	Gray	Materials		3145 RTV			0014...	71984	12 OZ
00031		Gage, pressure, dial...	2-1/2" d...	Miscellaneous		12Z601...			0028...	94135	
00032		Adhesive	Self-lev...	Materials		MIL-A-4...			0014...	81349	RTV silicone rub,
00033		Adhesive		Materials							See suffixes for
00033	A	Adhesive		Materials		MM-A-1...			0026...	81348	

Figure G - 15 SPMIG Viewer

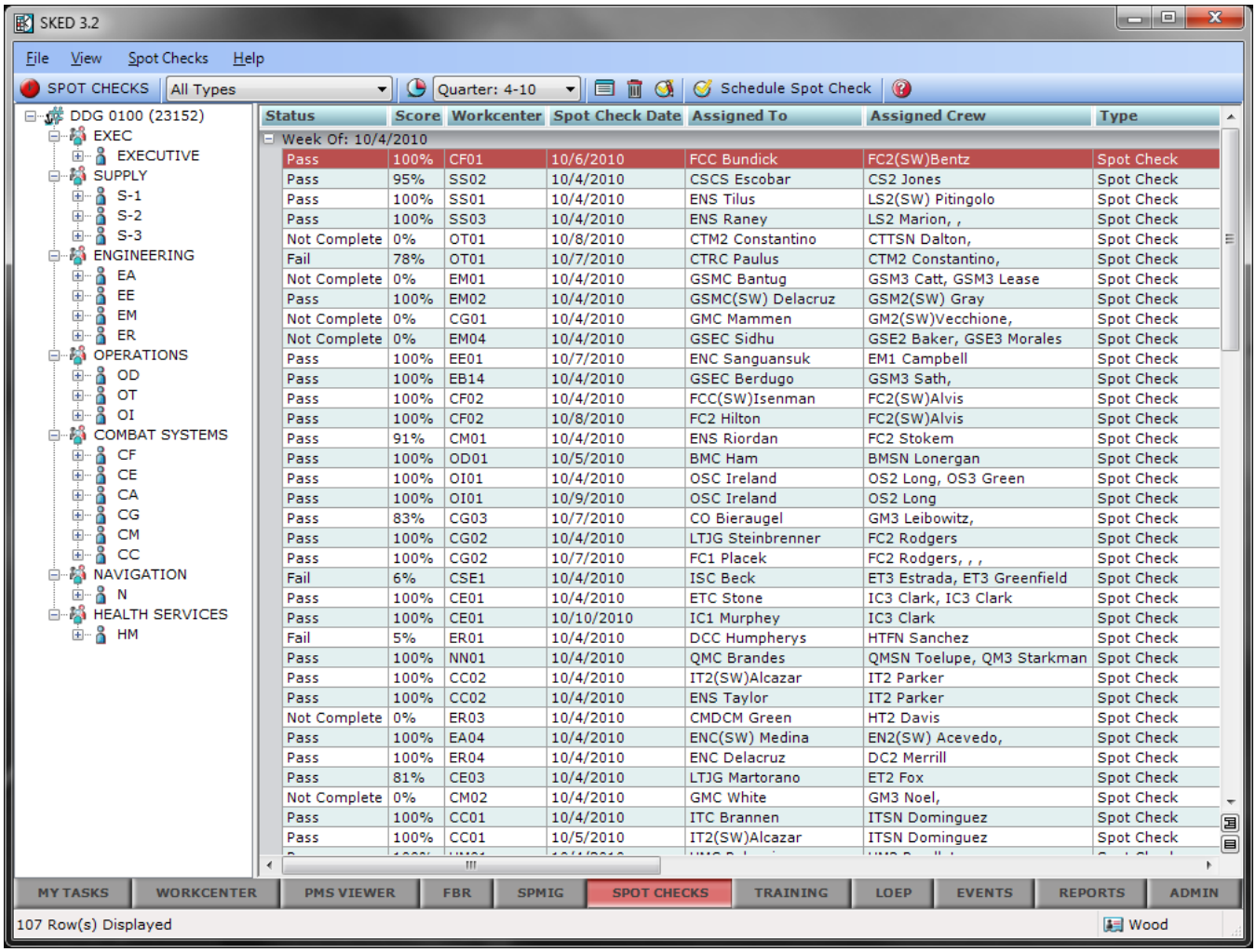


Figure G - 16 SPOT CHECKS View

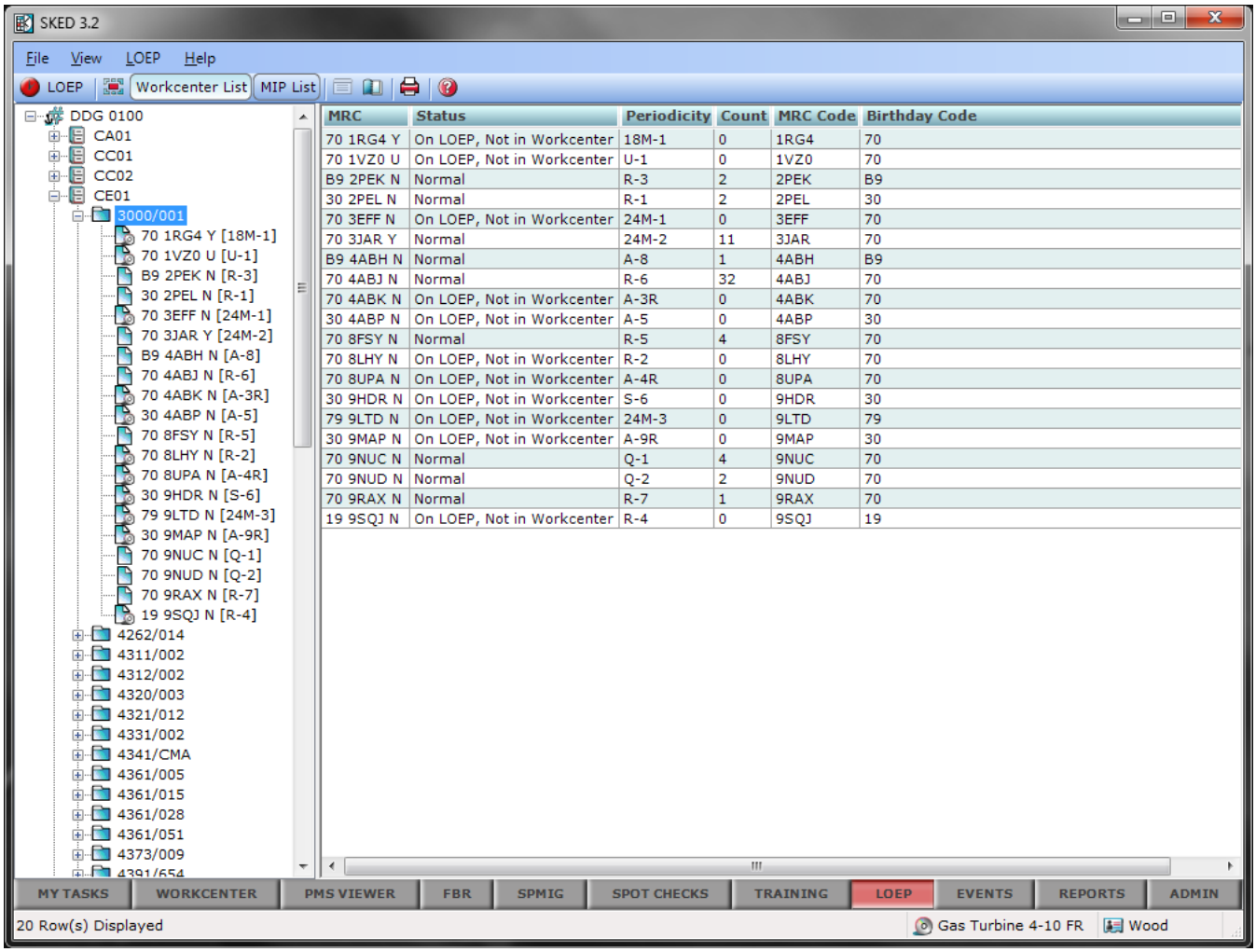


Figure G - 17 LOEP View

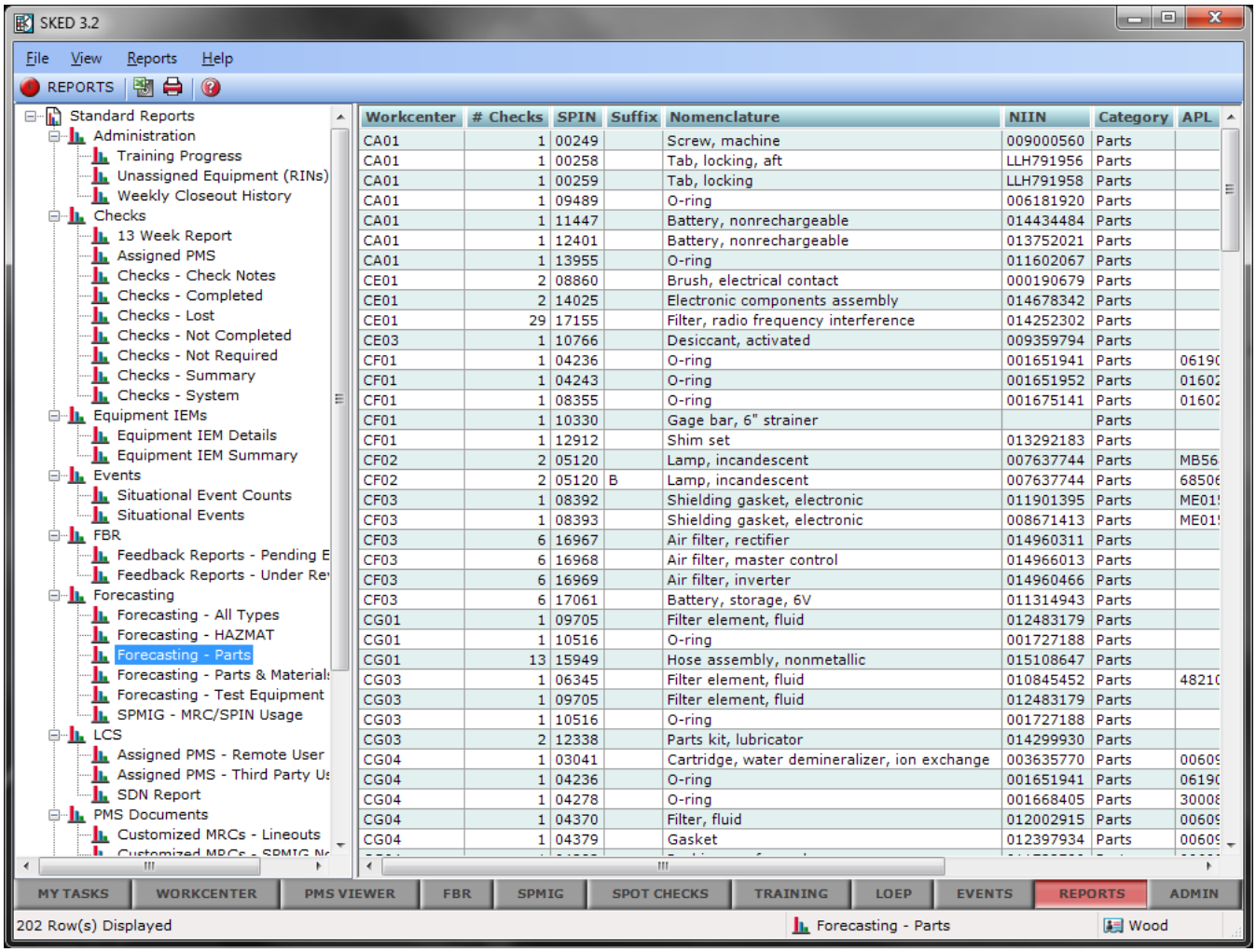
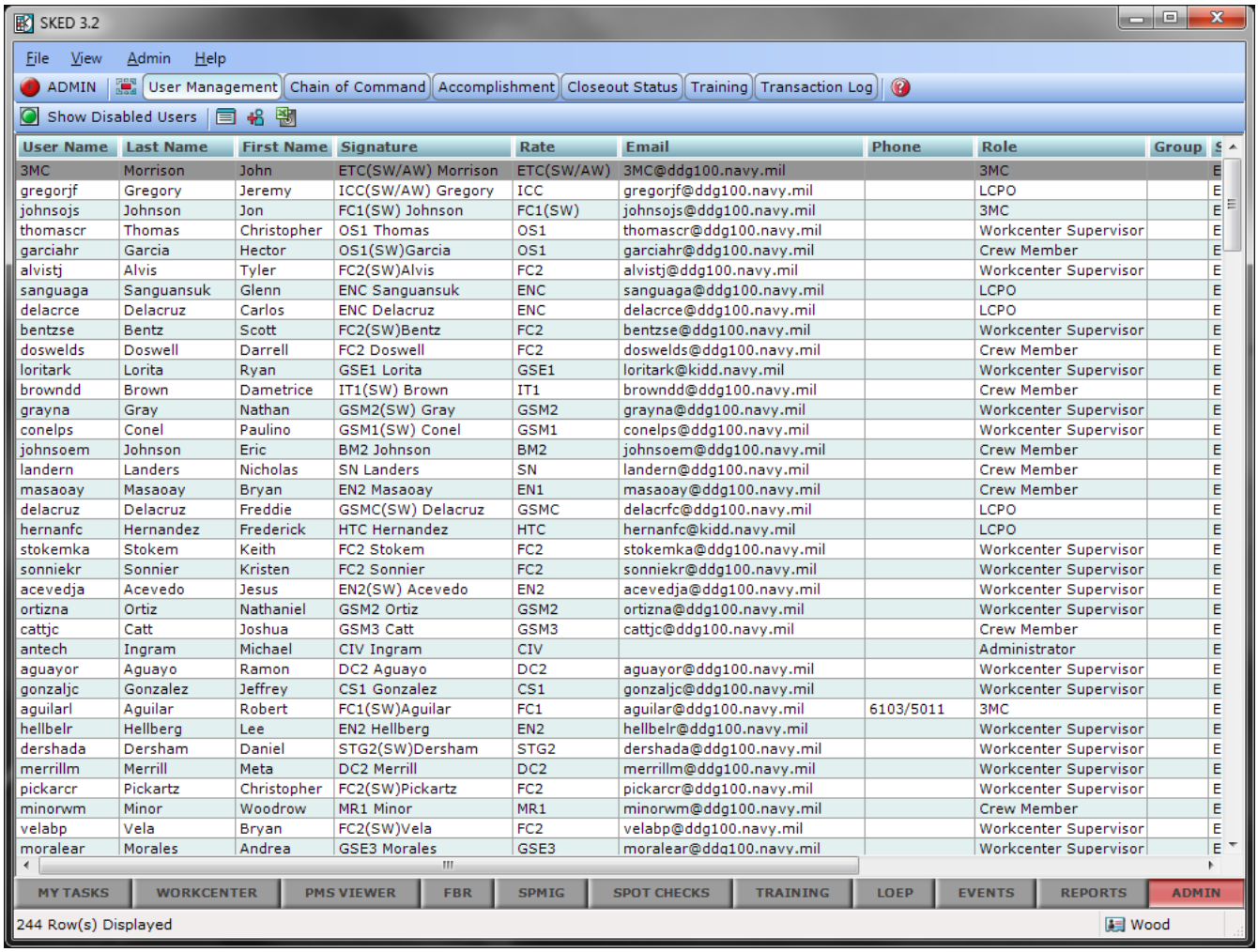


Figure G - 18 REPORTS View



User Name	Last Name	First Name	Signature	Rate	Email	Phone	Role	Group
3MC	Morrison	John	ETC(SW/AW) Morrison	ETC(SW/AW)	3MC@ddg100.navy.mil		3MC	
gregorjf	Gregory	Jeremy	ICC(SW/AW) Gregory	ICC	gregorjf@ddg100.navy.mil		LCPO	
johnsojs	Johnson	Jon	FC1(SW) Johnson	FC1(SW)	johnsojs@ddg100.navy.mil		3MC	
thomascr	Thomas	Christopher	OS1 Thomas	OS1	thomascr@ddg100.navy.mil		Workcenter Supervisor	
garciahr	Garcia	Hector	OS1(SW)Garcia	OS1	garciahr@ddg100.navy.mil		Crew Member	
alvistj	Alvis	Tyler	FC2(SW)Alvis	FC2	alvistj@ddg100.navy.mil		Workcenter Supervisor	
sanguaga	Sanguansuk	Glenn	ENC Sanguansuk	ENC	sanguaga@ddg100.navy.mil		LCPO	
delacrce	Delacruz	Carlos	ENC Delacruz	ENC	delacrce@ddg100.navy.mil		LCPO	
bentzse	Bentz	Scott	FC2(SW)Bentz	FC2	bentzse@ddg100.navy.mil		Workcenter Supervisor	
doswelds	Doswell	Darrell	FC2 Doswell	FC2	doswelds@ddg100.navy.mil		Crew Member	
loritark	Lorita	Ryan	GSE1 Lorita	GSE1	loritark@kidd.navy.mil		Workcenter Supervisor	
browndd	Brown	Dametrice	IT1(SW) Brown	IT1	browndd@ddg100.navy.mil		Crew Member	
grayna	Gray	Nathan	GSM2(SW) Gray	GSM2	grayna@ddg100.navy.mil		Workcenter Supervisor	
conelps	Conel	Paulino	GSM1(SW) Conel	GSM1	conelps@ddg100.navy.mil		Workcenter Supervisor	
johnsoem	Johnson	Eric	BM2 Johnson	BM2	johnsoem@ddg100.navy.mil		Crew Member	
landern	Landers	Nicholas	SN Landers	SN	landern@ddg100.navy.mil		Crew Member	
masaoay	Masaoay	Bryan	EN2 Masaoay	EN1	masaoay@ddg100.navy.mil		Crew Member	
delacruz	Delacruz	Freddie	GSMC(SW) Delacruz	GSMC	delacrfc@ddg100.navy.mil		LCPO	
hernanfc	Hernandez	Frederick	HTC Hernandez	HTC	hernanfc@kidd.navy.mil		LCPO	
stokemka	Stokem	Keith	FC2 Stokem	FC2	stokemka@ddg100.navy.mil		Workcenter Supervisor	
sonniekr	Sonnier	Kristen	FC2 Sonnier	FC2	sonniekr@ddg100.navy.mil		Workcenter Supervisor	
acevedja	Acevedo	Jesus	EN2(SW) Acevedo	EN2	acevedja@ddg100.navy.mil		Workcenter Supervisor	
ortizna	Ortiz	Nathaniel	GSM2 Ortiz	GSM2	ortizna@ddg100.navy.mil		Workcenter Supervisor	
cattjc	Catt	Joshua	GSM3 Catt	GSM3	cattjc@ddg100.navy.mil		Crew Member	
antech	Ingram	Michael	CIV Ingram	CIV			Administrator	
aguayor	Aguayo	Ramon	DC2 Aguayo	DC2	aguayor@ddg100.navy.mil		Workcenter Supervisor	
gonzaljc	Gonzalez	Jeffrey	CS1 Gonzalez	CS1	gonzaljc@ddg100.navy.mil		Workcenter Supervisor	
aguilarl	Aguilar	Robert	FC1(SW)Aguilar	FC1	aguilar@ddg100.navy.mil	6103/5011	3MC	
hellbelr	Hellberg	Lee	EN2 Hellberg	EN2	hellbelr@ddg100.navy.mil		Workcenter Supervisor	
dershada	Dersham	Daniel	STG2(SW)Dersham	STG2	dershada@ddg100.navy.mil		Workcenter Supervisor	
merrillm	Merrill	Meta	DC2 Merrill	DC2	merrillm@ddg100.navy.mil		Workcenter Supervisor	
pickarcr	Pickartz	Christopher	FC2(SW)Pickartz	FC2	pickarcr@ddg100.navy.mil		Workcenter Supervisor	
minorwm	Minor	Woodrow	MR1 Minor	MR1	minorwm@ddg100.navy.mil		Crew Member	
velabp	Vela	Bryan	FC2(SW)Vela	FC2	velabp@ddg100.navy.mil		Workcenter Supervisor	
moralear	Morales	Andrea	GSE3 Morales	GSE3	moralear@ddg100.navy.mil		Workcenter Supervisor	

Figure G - 19 ADMIN View

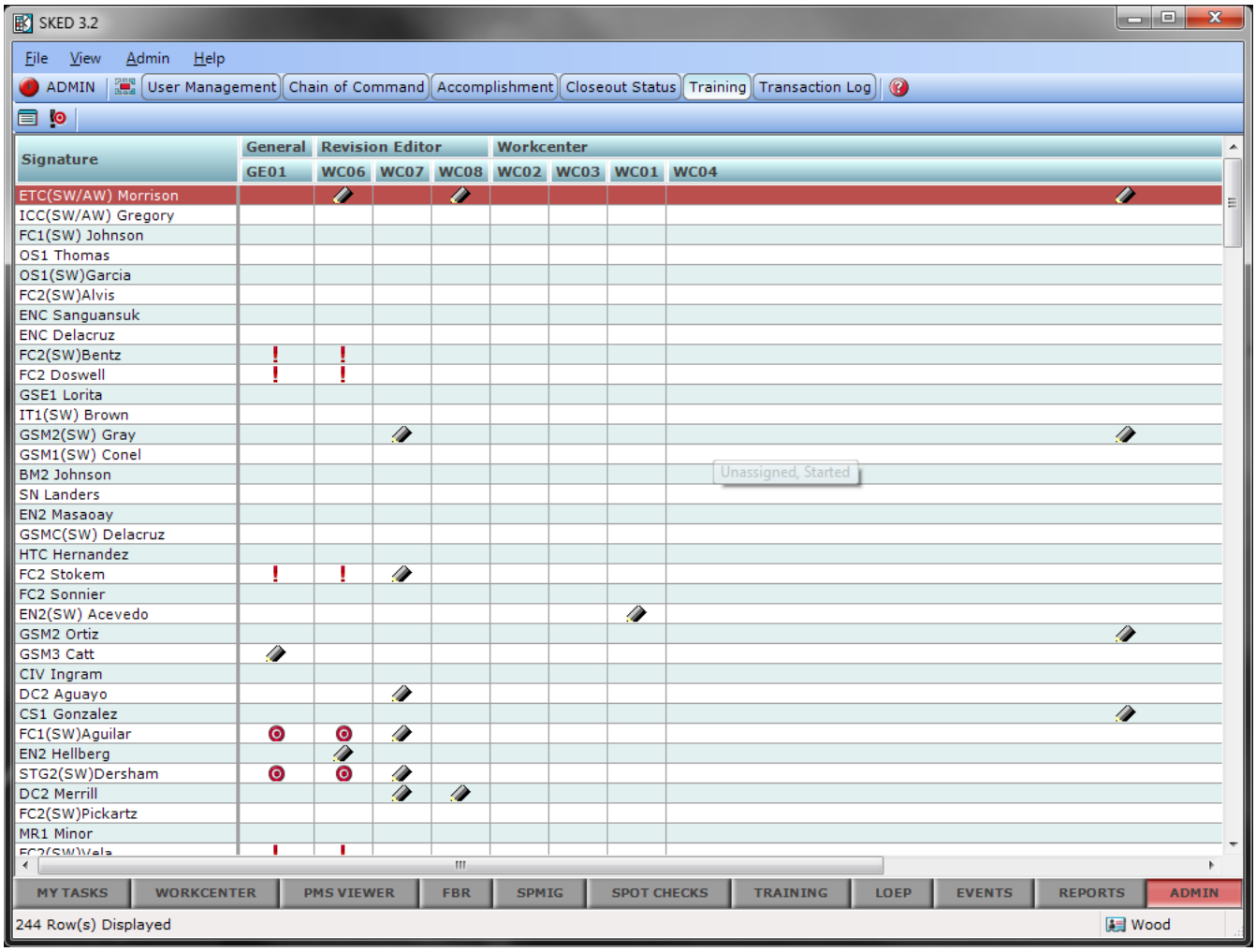


Figure G - 20 TRAINING View

4720
Ser/Org Code
Date

From: (Originating Activity)
To: Commanding Officer, USS (Ship's Name and hull number)

Subj: CERTIFICATION OF ALTERATION INSTALLATION DURING AVAILABILITY (include data range of availability)

Ref: (a) NAVSEAINST 4790.8(Series)

1. The following alterations are certified installed. The listed alterations meet the requirements of the issuing agency as instructed, and include all required Logistics Support documentation.

3-M WC/JSN	ALTERATION NO.	DESCRIPTION	A/T
(For example only):			
DXSA 0054	SADDG 0045 K	MISSLE LAUNCH INSTL	5B
EXSA 3994	SADDG 01003 K	SSTG INSTL	5B
EXSA 4007	SADDG 01675 K	HPAC RPLCMNT 5B	

//Signature//
By direction

Copy to:
(Cognizant TYCOM)
NAVSEA (cognizant Code)

Figure I - 1 Alteration Certification Letter

4720
Ser/Org Code
Date

FIRST ENDORSEMENT on NSY ltr 4720 Ser/Orig Code of (Date of ltr)

From: Commanding Officer, USS (Ship's Name and hull number)
To: (Supporting Activity, e.g., IUC, RSG, etc.)

Subj: CERTIFICATION OF ALTERATION INSTALLATION DURING AVAILABILITY (include data range of availability)

Ref: (a) NAVSEAINST 4790.8(Series)

1. Request the alterations reported completed by basic correspondence be processed as completed deferrals in the Master CMSP.

//Signature//
By direction

Copy to:
(Cognizant TYCOM)
NAVSEA (Cognizant Code)

Figure I - 2 First Endorsement on Alt. Certification Letter