

CHAPTER 7

MAINTENANCE PLANNING AND ADMINISTRATION

As the work center or branch supervisor, you are directly responsible for the maintenance effort of your work center. The planning, scheduling, control, and parts ordering are essential to accomplishing that maintenance. The factors that you must consider in maintenance planning are equipment status, operational requirements, the workload, and the personnel assets available to perform the job.

LEARNING OBJECTIVES

When you have completed this chapter, you will be able to do the following:

1. State the responsibility for managing Planned Maintenance System (PMS) programs for equipment aboard ship.
2. Identify three considerations used to determine PMS procedures.
3. Describe the types of information displayed on PMS schedules.
4. State the purpose of each PMS schedule.
5. State the purpose of the Maintenance Data System (MDS).
6. Describe the types of maintenance actions on the following Operational Navy (OPNAV) forms; 4790/2K, 4790/CK, 4790/2P.
7. Recognize the different types of stock and control numbers.
8. State the purpose of cognizance symbols.
9. Recognize sources of identifying material when a stock number is not available.
10. Recognize the uses of different supply publications.
11. Describe the use and maintenance of various logs and reports used to record details of catapult and arresting gear operations and maintenance.

PLANNED MAINTENANCE SYSTEM

The Planned Maintenance System (PMS) is a simplified, yet thorough, means of accomplishing preventive maintenance aboard ship. It identifies maintenance requirements and schedules maintenance actions to make the best use of resources. It increases economy and simplifies records. It improves management, workload planning, equipment reliability, and on-the-job training of shipboard personnel. As a system, however, it is neither self-starting nor self-sustaining, and it requires careful supervision at all levels.

PMS procedures and the frequency with which to perform the actions are developed for each piece of equipment based on good engineering practices, practical experience, and technical standards. These step-by-step procedures are published on maintenance requirement cards (MRCs). The cards contain detailed information on each maintenance requirement, such as who (specific rate) should perform the maintenance, when, how, and with what resources. Some MRCs have equipment guide lists (EGLs) and a tag guide list (TGL) to identify the locations and power panels of various pieces of the same type of equipment—such as motors, controllers, valves, life rafts, deck fittings, and hatches—that are serviced at the same time.

Keep in mind that PMS actions, as preventive maintenance actions, are the minimum maintenance actions required to maintain the equipment in a fully operable condition. If PMS actions are performed according to schedule, they allow equipment operators and maintenance personnel to identify

possible problems before equipment failure. Properly performed PMS actions will help prevent failures that could result in repeated corrective maintenance actions.

PMS procedures are developed by the activities and offices of the systems commands responsible for the development and procurement of the systems and equipment they control. PMS maintenance index pages (MIPs) and MRCs are developed as part of the Integrated Logistics Support effort for all new procurements, alterations, and modifications of systems and equipment. Management tools provided by PMS for each ship, department, and supervisor include the following:

1. Comprehensive procedures for planned maintenance of systems and equipment
2. Minimum requirements for planned maintenance
3. Scheduling and control of maintenance
4. Description of the methods, materials, tools, and personnel needed to perform maintenance
5. Prevention or detection of hidden failures or malfunctions
6. Test procedures to determine material readiness

PMS, though standard in concept and procedures, is flexible enough for the ship to adjust to be compatible with operational and other types of schedules.

DEPARTMENTAL MASTER PMS MANUAL

Each department maintains a Departmental Master PMS Manual for use in planning, scheduling, and supervising required maintenance. The information contained in this manual pertains only to equipment for which the department is responsible. The Departmental Master PMS Manual contains the following:

Supplementary Information

Additional instructions, information, and data provided to assist in implementation and accomplishment of PMS are found in supplementary information.

List of Effective Pages (LOEP)

The Departmental LOEP (*Figure 7-1*) provides a listing of the maintenance index page (MIP) assigned to each department, divided by work centers, and contains the following information:

1. Report date
2. Force Revision (FR)
3. Type Commander (TYCOM)
4. Ship's hull number and unit identification code (UIC)
5. Work center
6. MIP number
7. Nomenclature (brief description of the system/equipment)
8. Equipment status code

Date: 08/23/00
Time: 14:37:51

Planned Maintenance System
List of Effective Pages (PMS 5)

Page: 1
FR: 2-94

Unit: DDG 0053 UIC: R21313 Work Center: EA01 USS JOHN PAUL JONES

Adds/ Changes	MIP	Nomenclature
-	1631/004-A2	SEA CHESTS
	2560/006-24	CRCLT AND COOLING SW SYS
	4431/002-63	VISUAL/AUDIO COMM SYSTEMS
	5000/005-A2	VALVES & VALVE OPERATORS
	5000/007-82	ENG REPAIR PROCEDURES
	5140/011-C3	AIR CONDTN SYSTEM (R-114)
-	5161/001-C3	REFRD, SHIP SERVICE (R-12)

Figure 7-1 — Departmental LOEP.

Maintenance Index Pages (MIP)

MIPs are prepared and issued for each installed system or piece of equipment for which PMS support has been established. MIPs are basic PMS reference documents. Each MIP is an index of a complete set of MRCs applicable to a ship system, subsystem, and equipment. A sample of MIP to work center file is shown in *Figure 7-3*. MIPs (*Figure 7-2*) contain the following information:

1. Ship system, subsystem, or equipment description
2. Reference publications
3. Preparation date
4. Test and System Command (SYSCOM)
5. Maintenance requirement.
6. Periodicity code
7. Rate (skill level)
8. Man-hours (MH)
9. Related maintenance
10. Scheduling aids
11. SYSCOM MIP control number.
12. Inactive equipment maintenance (IEM)

SHIP SYSTEM, SYSTEM, SUBSYSTEM, OR EQUIPMENT			REFERENCE PUBLICATIONS			DATE		
Fire Extinguishing System, Fog, Foam, and AFFF 5551			NAVSEA S8225-GY-MMA-010 NAVSEA S9555-AN-MMO-010			May 2000		
TEST	OTHER	SYSCOM MRC CONTROL NO	MAINTENANCE REQUIREMENT DESCRIPTION		PERIODICITY CODE	RATES	MAN HOURS	RELATED MAINTENANCE
4	4	46 6UMU N 42 8UNR N 42 8UNQ N B4 6UMV N 80 6DAA N 16 6DAD N 88 8DRU N 44 6UMW N 54 C1TH N 97 8GMG N 44 6UMY N 38 8HQR N 39 6UMZ N 44 6UNA N 10 8NPR N	<p>A scheduling aid; Review maintenance requirements. Omit MRC(s) which do not apply; no feedback report required.</p> <p># Mandatory scheduling required.</p> <p>1. Inspect high-capacity AFFF injection station.</p> <p>1. Inspect proportioner station FP-180.</p> <p>1. Turn AFFF proportioner shaft by hand. 2. Inspect oil level in AFFF proportioner.</p> <p>1. Inspect high capacity AFFF injection station operation. 2. Test AFFF concentrate for seawater contamination.</p> <p>1. Test operate, inspect, and clean 1000 gpm AFFF proportioner station.</p> <p>1. Test AFFF concentrate for seawater contamination at FP-180 station.</p> <p>1. Clean and inspect hose reel stations.</p> <p>1. Lubricate AFFF injection pump bearings.</p> <p>1. Test operate, inspect, and clean AFFF FP-180 station. 2. Lubricate FP-180 proportioner.</p> <p>NOTE: Accomplish quarterly or after each use, whichever occurs first.</p> <p>1. Accomplish liquid foam quantitative analysis at FP-180 stations.</p> <p>1. Change oil in AFFF injection station reducer.</p> <p>1. Inspect AFFF bilge sprinkling system nozzles.</p> <p>1. Accomplish AFFF concentration analysis</p> <p>1. Lubricate high-capacity AFFF injection station flexible couplings.</p> <p>1. Inspect and hydrostatically test AFFF station hose(s)..</p>		D-1 D-2 W-1 Q-1 Q-2 Q-3 Q-4 Q-5 Q-6R S-2 S-3 S-4 A-1 A-2 A-3	HT2 HT2 HT/DC3 HT3 HT/DC3 HT3 HT/DC3 HT3 HT/DC3 DCA HT3 HG3 HT3 HT/DC HTFN/ DCFN HG/DC2 HT3 HT/DC2 2FN	0.2 0.2 0.4 2.0 2.0 2.0 0.5 0.3 0.3 2.0 0.5 1.0 1.0 0.7 0.4 0.4 0.8 0.3 0.6	None None None None None None None Q-1 None None None None None D-2# Q-3# Q-4# or R-1#

DISTRIBUTION STATEMENT D

Distribution authorized to DOD components and DOD contractors only; critical technology; May 1994. Other requests for this document shall be referred to Naval Sea Systems Command (SEA 04TD). Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

Figure 7-2 — MIP.

NOTE

OPNAV forms shown in this chapter such as MRC, MIP, LOEP, EGL, TGL, and Feedback Reports (FBR) are not current and are **SAMPLES** only. These forms should **NOT** be used as actual maintenance reference. Current Catapult and Arresting Gear MRC(s), MIP(s) and LOEP(s) are available through the departmental 3M maintenance coordinator onboard the ship.

Date: 08/23/00
Time: 14:29:20

Planned Maintenance System
MIP to Work Center by Dept (PMS 4A)

Page: 1
FR: 2-94

Unit: DDG 0053 UIC: R21313
Department: ENGINEERING

USS JOHN PAUL JONES

MIP	Nomenclature	Work Center Distribution
1230/001-54	TANKS, VOIDS, AND TRUNKS	EM04
1501/001-32	SUPERSTRUCTURE & FITTINGS	ER01
1631/004-A2	SEA CHESTS	EA01
1671/003-33	ARMORED DOORS & HATCHES	EM01
1671/005-B1	WTRTT, DR, TORPEDO MAGAZINE	EM02
1672/001-32	ARMORED DOORS & HATCHES	ER09
1681/002-32	DECKHOUSE STRUCT CLOSURES	ER09
1921/001-A9	COMPARTMENT TESTING	ER09
2000/001-A2	MACHINERY LUBRICATING OIL	ER01
2340/004-44	MAIN PROPULSION GAS TURBIN	EM02
2400/013/-44	XMSN & PROPULSOR SYSTEMS	EM02
2411/015-44	PRPLN REDUCTION GEARS	EM02
2421/002-C2	PROPULSION CLUTCH COUPLING	EM02
2451/006-33	PROPELLERS AND PROPULSORS	EM02
2513/007-34	COMBUSTION AIR SYSTEM	EM02

Figure 7-3 — MIP to work center file.

WORKCENTER PMS MANUAL

The Work center PMS Manual contains only the planned maintenance requirements applicable to a particular work center. It is designed to provide a ready reference of planned maintenance requirements for the work center supervisor and should be retained in the working area, near the Weekly PMS Schedule, in the holder provided.

Maintenance Requirement Cards (MRCs)

Maintenance Requirement Cards (MRCs) (*Figure 7-4*) provide the detailed procedures used to perform a maintenance action and state who is to perform the maintenance and what is to be done, and when, how, and with what resources a specific requirement is to be accomplished. MRCs contain the following information and instructions:

Ship System, System, Sub-system and, Equipment

These blocks contain the identification of the ship system (functional group), subsystem, or equipment involved.

SHIP SYSTEM Miscellaneous Shipboard Electrical Equip and Installed Receptacles 3000	SUBSYSTEM Miscellaneous Shipboard Electrical Equip and Installed Receptacles 3000	MRC CODE 3000 M-4/ Q-2R		
SYSTEM Miscellaneous Shipboard Electrical Equip and Installed Receptacles 3000	EQUIPMENT Miscellaneous Shipboard Electrical Equip and Installed Receptacles 3000XY	RATES EM2 0.1 EMFN 0.1		
MAINTENANCE REQUIREMENT DESCRIPTION		TOTAL M/H 0.2 ELAPSED TIME 0.1		
SAFETY PRECAUTIONS				
<p>1. Forces afloat comply with Navy Safety Precautions for Forces Afloat, OPNAVINST 5100 series.</p> <p>2. Ensure all tag-out procedures are in accordance with current shipboard instructions.</p> <p>3. Tool test set (SCAT 4547) can produce voltages dangerous to life. Wear rubber gloves.</p>				
TOOLS, PARTS, MATERIALS, TEST EQUIPMENT				
TEST EQUIPMENT	MISCELLANEOUS			
<p>1. [0399] Electrical tool testers, SCAT-4547, 07239-235000</p> <p>2. [0883] Megger, 500V, 100MOhm, SCAT-4452</p> <p>3. [0901] Multimeter, AC/DC, SCAT-4245</p>	<p>1. [0526] Gloves, electrical workers, 7500 volt maximum safeuse, size 9, rubber</p>			
MATERIALS				
<p>1. [0096] Pen, ball-point</p> <p>2. [1144] Tag, safety</p> <p>3. [1657] Tag, safety check</p> <p>4. [2277] Pad, writing paper</p>				
<p>NOTE: Numbers in brackets can be referenced to Standard PMS Materials Identification Guide (SPMIC) for stock number identification.</p>				
PROCEDURE				
<p>NOTE 1: For equipment issued on permanent or semi-permanent loan to work centers, accomplish monthly, all other accomplish quarterly or before each issue. For repair locker equipment, accomplish quarterly or after each use, whichever occurs first.</p>				
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LOCATION Equipment Guide List Recommended	DATE February 2000	N		

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4ABG

Figure 7-4 — MRC.

Rate

The rate is the recommended skill level of the person who should be qualified to do the work, identified by rate or NEC (Navy Enlisted Classification). Qualified personnel other than those specified may be assigned. When more than one person in the same rate is required, the appropriate number of persons precedes the rate. When more than one person in the same rate is required and time requirements are not equal, each person is listed separately.

MRC Code

The MRC code consists of two parts. The first part of the MRC code is the MIP series code. For MRCs applicable to more than one MIP series enter each MIP series in this block. If more than four MIP series apply, make reference to a note in the Procedure block. The second part is the maintenance requirement periodicity code. The only authorized periodicities are listed in *Figure 7-5*.

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; for example, D-1, D-2, D-3, or M-1, M-2, M-3. 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, and W-6 may appear on an MIP, since 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.

PERIODICITY CODES	
D - Daily	S - Semiannually
2D - Every 2nd day	8M- - Every 8th month
3D - Every 3rd day	A - Annually
W - Weekly	18M - Every 18 months
2W - Every 2nd week	24M - Every 24 months
3W - Every 3rd week	30M - Every 30 months
M - Monthly	36M - Every 36 months
2M - Every 2d month	48M - Every 48 months
Q - Quarterly	54M - Every 54 months
4M - Every 4th month	60M - Every 60 months
NON-CALENDAR PERIODICITY	
R - Situation requirement	
U - Unscheduled maintenance	
INACTIVE EQUIPMENT MAINTENANCE (IEM)	
LU - Lay-up	
PM - Periodic maintenance	
SU - Start-up	
OT - Operational test	

Figure 7-5 — Periodicity codes.

Dual periodicity codes are used when permanent configurations or utility differences exist between installations of the same system/equipment. A dual periodicity may be assigned if no other aspect of the MRC requires modification to fit both periodicities. For example, equipment installed in an SSN or in a surface unit may see daily use, while the same equipment installed in an SSBN may be idle for long periods of time because of the nature of the ship's mission. This long period of idleness may result in less frequently performed maintenance requirements. In this case a dual periodicity, such as M-1/Q-1 or Q-1/S-2, may be assigned. When dual periodicities are assigned, a note on the MIP and the MRC will specify the frequency of maintenance, for example, "NOTE: SSBN, schedule quarterly; all others schedule monthly." Delete the unrequired periodicity by drawing a line through it.

Use situation requirement codes with a calendar periodicity code in certain circumstances. These situations fall into two general categories:

1. When the situation governs the scheduling of the requirement
2. When the calendar periodicity governs the scheduling of the requirement

For example, consider the occasion of weekly measurement of values when a certain system is in operation. The measurement of these values will not be required when the equipment is not being operated, regardless of how prolonged the idle period may be. There are cases in which requirements must be scheduled with regard to the situation rather than the calendar timing. The periodicity code will state the R for situation first, and after the hyphen and a unique number, a letter will recognize the calendar contingency. An example of a situation-calendar periodicity code is that an R-IW requires you to schedule equipment lubrication weekly when at sea. That means that the R-IW is entered into a daily column of the weekly schedule only when the ship is at sea. During in-port times the R-IW will remain in the outstanding repairs and preventive maintenance checks due in next 4 weeks column.

When the periodicity code is of the calendar situation combination, the calendar controls the scheduling and is only occasionally overtaken by the situation. The calendar periodicity is referred to first in the code, for example, 18M-2R. In the example, the 18M indicates that the longest time between accomplishment is every 18 months, and the 2R indicates that a situation could arise which would require it to be done more often. An explanation of such situations will appear on the MRC. When the situation no longer exists, scheduling reverts to the 18-month period. Some examples of the combined calendar and situation requirements are as follows:

- M-1R: Monthly or every 600 hours, whichever occurs first
- W-3R: Weekly or after each use, whichever occurs first
- S-1R: Semiannually or during each upkeep period, whichever occurs first
- Q1-1R: Quarterly or prior to getting underway, whichever occurs first

When the periodicity code includes a situation requirement (such as R-1 or Q-1R), a note of explanation is required in addition to the basic code. This note is the first entry in the Procedure block.

Maintenance Requirement Description

The maintenance requirement description is a brief definition of the PMS action to be performed.

Man Hours (M/H)

Man-hours is the average amount of time required of each rate listed in the Rates block to perform the maintenance on each piece of identical equipment, listed in hours and tenths of an hour. When more than one person in the same rate is required and time requirements are equal, man-hours listed are the sum of their requirements. When more than one person in the same rate is required and time requirements are not equal, man-hours are listed for each person separately. Total man-hours is the

sum of all entries in the M/H block. It does not include make ready and put away time, including removal and/or replacement of anything that interferes with the maintenance (covers, other equipment, and so on).

Safety Precautions

This section of the MRC provides a listing of precautions and publications that direct attention to possible hazards to personnel or equipment during maintenance. The word “NOTE” will precede procedural advisories. Specific categories of direction are as follows:

- **Warning:** Explains operating procedures, practices, and so forth that, if not followed correctly, may lead to injury or death. Warnings are listed in the Safety Precautions block and are repeated preceding the procedure involved.
- **Caution:** Explains operating procedures, practices, and so forth that, if not correctly followed, may lead to damage to equipment. Cautions are not listed in the Safety Precautions block; however, they do precede the instructions for the procedure involved.

Tools, Parts, Materials and Test Equipment.

This section lists the test equipment, materials, parts, tools, and miscellaneous requirements necessary to perform the maintenance action. Each of the above categories may include both Standard PMS Item Name (SPIN) and non-SPIN items. Entries in this block can be cross-referenced to the Standard PMS Materials Identification Guide (SPMIG) for stock number identification.

Equipment Guide List (EGL)

The EGL, OPNAV Form 4790/8 (*Figure 7-6*) is a 5x8-inch card that is used with a controlling MRC when the MRC applies to a number of identical items, such as motors, controllers, life rafts, valves, test equipment, and small arms. Each supervisor prepares his/her own EGLs.

EQUIPMENT GUIDE LIST OPNAV 4790/81 (2-76) S/N 0107-LF-047-9405		PAGE	OF					
MIIP NO. (Less last 2 characters) _____		MRC PERIODICITY _____						
EQUIPMENT NAME NOMENCLATURE	SERIAL NO. QUANTITY	LOCATION	APPLICABLE DATA AS REQUIRED BY MRC					

Figure 7-6 — Equipment guide list.

The number of items included on an EGL is directly related to the time required to do the maintenance on each item. Each EGL normally contains no more than a single day's work. If more than 1 day is required, prepare separate EGL pages for each day and number them consecutively.

In some instances it may be unnecessary or impractical to list the equipment on EGLs. For instance, if the equipment is listed on a TYCOM-directed checklist or if an Automated Calibration Recall Program is in effect, a notation of the applicable instruction in the Location block of the MRC is all that is required.

Tag Guide List (TGL)

The TGL, OPNAV Form 4790/107 (*Figure 7-7*) contains the information necessary for the equipment tag-out required during PMS actions. The TGL contains the number of tags required, locations of the tags, position of each tagged item (open, shut, off, on, and so on) and permission or notification requirements. Each supervisor also prepares his/her own TGLs.

TAG GUIDE LIST OPNAV 4790/107 (10-80) S/N 0107-LF-047-9545				NUMBER OF TAGS PER EQUIP		
				NOTIFICATION DATA		
MIP & MRC NO. _____ EQUIPMENT _____				COLD IRON	INPORT STEAMING	UNDERWAY
EQUIPMENT SERIAL NO.	SERIAL NO. SWITCH / VALVE	LOCATION OF SWITCH / VALVE	POSITION OF TAGGED ITEM	AMPLIFICATION DATA		
VERIFICATION / APPROVAL SIGNATURES						
WCS	DIV OFF		DEPT HEAD	CO		

Figure 7-7 — Tag guide list.

Location of MRCs, EGLs, and TGLs

A master MRC deck is maintained at the departmental level. Each departmental master deck contains only one copy of applicable MRCs filed by SYSCOM control number. Applicable master EGLs and TGLs are attached to related master MRCs. In addition, a complete working deck of applicable MRCs, EGLs, and TGLs is located in MRC holders in each work center. Maintenance personnel use these to perform assigned planned maintenance.

FEEDBACK REPORT (FBR)

The PMS Feedback Report, OPNAV 4790/2B (FBR) is a form maintenance personnel use to notify NAVSEACEN, NAVAIRENGCEN, and TYCOM, as applicable, of technical and nontechnical matters

related to PMS. The FBR is a five-part form composed of an original and four copies. It also has two categories, category A and category B.

Category A FBR

This category (*Figure 7-8*) is nontechnical and is intended to meet PMS needs that do not require technical review. Category A FBRs are submitted to request classified or other PMS documentation that cannot be obtained locally. With the ship's master PMS requirements on compact disk, replacement copies will be generated with the print-on-demand capability.

SEE INSTRUCTIONS ON BACK OF GREEN PAGE		REPORT SYMBOL OPNAV 4790-4	
FROM (SHIP NAME AND HULL NUMBER) USS NEVERWAS FFG 999		SERIAL # 1074-94	
		DATE 09 MAR 94	
TO <input checked="" type="checkbox"/> NAVAL SEA SUPPORT CENTER PACIFIC (Category A)			
<input type="checkbox"/> TYPE COMMANDER (Category B)			
SUBJECT: PLANNED MAINTENANCE SYSTEM FEEDBACK REPORT			
SYSTEM, SUB-SYSTEM, OR COMPONENT SONAR RECEIVING SET	APL/CID/AN NO./MK. MOD AN/SQR-18A (V) 1		
SYS.COM MIP CONTROL NUMBER 4621/23-23	SYS.COM MRC CONTROL NUMBER VARIOUS		
DESCRIPTION OF PROBLEM			
CATEGORY A	CATEGORY B		
<input checked="" type="checkbox"/> MIP/MRC REPLACEMENT	<input type="checkbox"/> TECHNICAL <input type="checkbox"/> TYCOM ASSISTANCE <input type="checkbox"/> OTHER (Specify)		
REMARKS			
REQUEST TWO COPIES EACH OF FOLLOWING CLASSIFIED MRCs:			
72 EZV9 N			
12 EZV0 N			
20 EZW5 N			
TOTAL OF 6 MRCs REQUESTED. ADEQUATE SECURE STORAGE PER OPNAVINST 5110.1H IS AVAILABLE.			
ORIGINATOR & WORK CENTER CODE ET (SW) Boat EE01	DIV. OFFICER LT Jay Gee		
DEPT. HEAD I. M. Daboss, CDR, USN	3-M COORDINATOR GMC (SW) Jack Frost		
Originator do not write below. For TYCOM use only.			
TYCOM <input type="checkbox"/> CONCUR	<input type="checkbox"/> DO NOT CONCUR	<input type="checkbox"/> TAKES ACTION	<input type="checkbox"/> PASSES FOR ACTION
TYCOM REP SIGNATURE		DATE	
OPNAV 4790/7B (Rev. 9-89) S/N 0107-LF-007-8000		ACTION COPY PAGE <u>1</u> OF <u>1</u>	
EDITION OF 3-84 MAY BE USED UNTIL EXHAUSTED			

Figure 7-8 — Category A FBR.

Category B FBR

This category (*Figure 7-9*) is technical. These FBRs are submitted by the ship's maintenance and material management (3-M) coordinator to the applicable TYCOM and pertain to the following:

1. Technical discrepancies that inhibit PMS performance. These discrepancies can exist in documentation, equipment design, maintainability, reliability, or safety procedures as well as operational deficiencies in PMS support (parts, tools, and test equipment).

SEE INSTRUCTIONS ON BACK OF GREEN PAGE		REPORT SYMBOL OPNAV 4790-4		
FROM (SHIP NAME AND HULL NUMBER) USS NEVERWAS FFG 999		SERIAL # 1074-94		
		DATE 04 MAR 94		
TO <input type="checkbox"/> NAVAL SEA SUPPORT CENTER _____ (Category A) <input checked="" type="checkbox"/> TYPE COMMANDER (Category B)				
SUBJECT: PLANNED MAINTENANCE SYSTEM FEEDBACK REPORT				
SYSTEM, SUB-SYSTEM, OR COMPONENT Auto Ballast Comp Sys	APL/CID/AN NO./MK. MOD			
SYSCOM MIP CONTROL NUMBER F-37/2-67	SYSCOM MRC CONTROL NUMBER T 44 E12F N			
DESCRIPTION OF PROBLEM				
CATEGORY A	CATEGORY B			
<input type="checkbox"/> MIP/MRC REPLACEMENT	<input checked="" type="checkbox"/> TECHNICAL <input type="checkbox"/> TYCOM ASSISTANCE <input type="checkbox"/> OTHER (Specify)			
REMARKS				
<p>Before testing setting on relief valve, we need calibration steps for Leslie-Matic controller. This step is not contained on the present MRC. This ship does not have any pub or tech manual showing the steps that should be taken in checking the Leslie-Matic controller for accuracy.</p>				
ORIGINATOR & WORK CENTER CODE ET (SW) Boat EE01	DIV. OFFICER Lt Jay Gee			
DEPT. HEAD I.M. Daboss, CDR, USN	3-M COORDINATOR GMC (SW) Jack Frost			
Originator do not write below. For TYCOM use only.				
TYCOM	<input type="checkbox"/> CONCUR	<input type="checkbox"/> DO NOT CONCUR	<input type="checkbox"/> TAKES ACTION	<input type="checkbox"/> PASSES FOR ACTION
TYCOM REP SIGNATURE		DATE		
OPNAV 4790/7B (Rev. 9-89) S/N 0107-LF-007-8000		ACTION COPY EDITION OF 3-84 MAY BE USED UNTIL EXHAUSTED		PAGE <u>1</u> OF <u>1</u>

Figure 7-9 — Category B FBR.
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2. Shift of maintenance responsibilities. Individual ships sometimes need to shift maintenance responsibility from one work center to another. Such changes can only be made with the approval of TYCOM. When changes are necessary, ship's personnel submit a FBR (category B) via the applicable TYCOM, indicating from which work center(s) equipment is to be deleted and to which work center(s) it is to be transferred.

CYCLE PMS SCHEDULE

PMS schedules are categorized as Cycle, Quarterly, and Weekly Schedules.

The Cycle PMS Schedule (*Figure 7-10*) displays the planned maintenance requirements to be performed during the period between major overhauls of the ship; that is, from the first quarter after overhaul to the next first quarter after a ship's overhaul. For ships in phased maintenance or similar incremental overhaul programs and other short industrial availability programs, the first quarter after overhaul is the quarter immediately following completion of the docking availability. Cycle and multi-month requirements need to be scheduled during this time period. Any checks that have not been accommodated in this cycle period are front loaded into the new cycle schedule period.

CYCLE PMS SCHEDULE (CONVENTIONAL)
OPNAV FORM 4790/13 S/N 0107-LF-3220

SHIP USS ROOSEVELT CVN-71	WORK CENTER EA07 (pg 1 of 1)	SCHEDULE QUARTER AFTER OVERHAUL AS INDICATED							APPROVAL SIGNATURE B. A. Olson LCDR, USN	
		13 <input checked="" type="checkbox"/>	14 <input checked="" type="checkbox"/>	15 <input checked="" type="checkbox"/>	16 <input checked="" type="checkbox"/>					
MIP	COMPONENT	9	21	10	22	11	23	12	24	EACH QUARTER
2000/001	MACHINERY LUB OIL NO. 1 AMR			18M-1 (6) (18)				18M-1 (12) (24)		2M-6, R-1
3000/001	MISC SHIPBOARD ELECT EQUIPMENT			S-4R				S-4R		S-4R M-1, M-2, M-4R, R-2
	RECEPTACLES EGL-1			A-2						2W-1, 3W-2
	RUBBER GLOVES EGL-1			S-3R				S-3R		S-3R, R-1
5210/009	FIREMAIN & FLUSHING	S-2			S-2					Q-1, Q-5R#
5510/018	COMPRESSED AIR SYSTEM EA07-001	A-11			A-5R#					A-5R# M-1, M-2, R-1, R-5W
5530/001	O2N2 SYSTEM FWD 1-30-6	S-1#			S-1#		A-14#			<i>BAO</i> M-1, M-2, Q-2#
	PUMP 27345			A-1						Q-3, R-16D, R-17W
	VALVES EGL-1	A-13R								A-13R, R-11M, D-1R, W-1R
	VALVES EGL-2			A-13R						D-1R, W-1R, A-13R, R-11M

Figure 7-10 — Cycle PMS schedule.

Content of the Cycle PMS Schedule

1. Ship's name and hull number
2. Work center designator
3. Schedules as indicated –the annual, semiannual, multiple month (4M and greater) maintenance requirements, and any related maintenance checks
4. Approval signature/date –the department head's signature and the approval date
5. Maintenance that is performed every 2 weeks, monthly, every 2 months, quarterly maintenance requirements, and any related maintenance checks

Preparation of the Cycle PMS Schedule

Cycle PMS schedules are used to plan and schedule maintenance requirements to be conducted during each calendar quarter. Department heads devote considerable attention to the preparation of the cycle schedule since these efforts directly affect long range PMS scheduling. The materials required and the procedures followed in schedule preparation are detailed in the paragraphs that follow.

The materials required are:

1. Blank cycle schedules (OPNAV 4790/13). Use of automated forms generated from PMS scheduling programs that have been approved by Chief of Naval Operations (CNO) and the TYCOM are authorized for use in lieu of paper forms.
2. Work center PMS Manuals or list of effective pages (LOEP).
3. Applicable MRCs.

The following are basic instructions for filling out the cycle schedule (*Figure 7-10*):

1. Neatly enter initial entries, either typed or in black ink, on the cycle schedules. Make changes in ink and have them initialed by the department head.
2. From the LOEP, list each item of equipment in MIP sequence. The cycle schedule does not need to match the LOEP line for line.
3. From the applicable MIP, list the periodicity codes in the schedule quarter after overhaul as indicated and each quarter column as described in the sections that follow. From the related maintenance column of the MIP schedule, all mandatory related maintenance requirements to be completed during the quarter are indicated by the pound sign "#". The pound sign placed next to a primary check indicates mandatory related maintenance associated with that maintenance requirement (e.g. S-1#).
 - a. List each semiannual (S) maintenance requirement in one of the four columns, and then list it again 6 months later. For example, an S-1 requirement scheduled to occur in the 1st, 5th, and 9th quarters is also scheduled in the 3d, 7th, and 11th quarters.
 - b. List each annual (A) maintenance requirement in one of the four columns.
 - c. List each multiple month periodicities MR (18M, 24M, 30M, 36M, and so on). The quarter after overhaul must be indicated in parentheses. (For example, 18M-1(6) indicates an "every 18 months" periodicity MR scheduled for the sixth quarter after overhaul). *Figure 7-11* serves as an example for determining the quarter after overhaul. To use the table, first determine in which quarter after overhaul the MR will be first scheduled. Go to this quarter in the first row of the table. Then schedule the MR for the quarters in that column as applicable. For example, if an 18M-1 is scheduled for the 4th

quarter after overhaul, it must also be scheduled for the 10th, 16th, and 22d, as applicable.

- d. Ships with overhaul cycles of less than 24 quarters must schedule cycle requirements within this operational time frame. Ships delayed beyond 24 quarters must extend their cycle PMS schedule by adding quarter numbers in the schedule quarter after overhaul as indicated column. (Multiple month requirements needed before entering overhaul must be reviewed and rescheduled as necessary.)

In the each quarter column, list every 2 weeks, monthly, every 2 months, and quarterly maintenance requirements (2W-1, M-1, 2M-1, Q-1, and so on), and situation requirements (M-IR, Q-IR, S-IR, A-IR, 18M-IR, R-1, and so on). Daily, every 2d day, every 3d day, and weekly maintenance requirements are not listed here.

4. Have the completed cycle PMS Schedule reviewed, signed, and dated by the department head.
5. After completing the cycle schedule do not move maintenance requirements listed from one quarter to another. If rescheduling becomes necessary, reflect it on the quarterly PMS Schedules.
6. Retain all superseded cycle schedules for 12 months.

(NUMBERS INDICATE QUARTER AFTER OVERHAUL)											
18M Scheduling Table											
First Scheduling	1	2	3	4	5	6					
Second Scheduling	7	8	9	10	11	12					
Third Scheduling	13	14	15	16	17	18					
Fourth Scheduling	19	20	21	22	23	24					
24M Scheduling Table											
First Scheduling	1	2	3	4	5	6	7	8			
Second Scheduling	9	10	11	12	13	14	15	16			
Third Scheduling	17	18	19	20	21	22	23	24			
30M Scheduling Table											
First Scheduling	1	2	3	4	5	6	7	8	9	10	
Second Scheduling	11	12	13	14	15	16	17	18	19	20	
Third Scheduling	21	22	23	24	25	26	27	28	29	30	
36M Scheduling Table											
First Scheduling	1	2	3	4	5	6	7	8	9	10	11
Second Scheduling	13	14	15	16	17	18	19	20	21	22	23
48M Scheduling											
First scheduling in first 16 quarters and second scheduling 16 quarters later.											
60M Scheduling											
First scheduling in first 20 quarters and second scheduling 20 quarters later.											

Figure 7-11 —Multiple month periodicity scheduling table.

NOTE

Prior to scheduling 30M, 36M, 48M, or 60M, review the MRC to see if a specific quarter after overhaul is indicated.

QUARTERLY PMS SCHEDULE

The Quarterly PMS schedule, (*Figure 7-12*) displays the PMS requirements each work center is required to perform during a specific 3-month period. This schedule, when updated weekly, provides a ready reference to the current status of PMS for each work center. This schedule represents a departmental directive and, once completed, may be changed only at the department head's discretion. Responsibility for changes is sometimes delegated to division officers on carriers and cruisers.

QUARTERLY PMS SCHEDULE (CONVENTIONAL)
OPNAV FORM 4790/14 (REV 6-73) SN 0107-LF-3241

MIP	WORK CENTER EA07	YEAR 94	QUARTER AFTER OVERHAUL			APPROVAL SIGNATURE M. M. Rodent	DATE 30MAR94	RESCHEDULE			
			APRIL		MONTH MAY						
			MONTH 4	11 18 25	2	9 16 23	30	6 13 20	27		
2000/001-A2							18M-1			2M-6	
3000/001-73					M-1	M-2 M-4R			M-1	M-2 M-4R	
					3W-2 2W-1	A-2	2W-1	3W-2	2W-1	3W-2 2W-1	2W-1
						S-3R					
5210/009-C1					Q-5R(Q1)				S-2		
5510/018-82			M-1(M-2)		M-2		M-1M-2		M-1M-2		
5530/001-13					M-1			M-1			
					Q-3						
			RPN								
					A-1R						
5530/001-13					Q-2(M-1) S-1(R-1)			M-1			
					Q-3						
			RPN		A-13R						
4924/RHD-82					M-1M-2R			M-1M-2R			
					M-4		A-2	M-4			
					M-4			S-1	M-4		

Figure 7-12 — Quarterly PMS schedule.

Contents of the Quarterly PMS Schedule

- Space is provided for entering the work center, year, quarter after overhaul, department head's signature, date prepared, and months covered.

2. Thirteen columns, one for each week in the quarter, are available to permit scheduling of maintenance requirements on a weekly basis throughout the quarter. Additional columns provide space to enter the complete MIP codes and any PMS requirements that may need to be rescheduled into the next quarter. Take care to ensure that rescheduling changes conform to the periodicity specified for the requirement.

Preparation of the Quarterly PMS Schedule

1. Enter the work center code.
2. Enter the calendar year of the current quarter.
3. Enter the number of the quarter after overhaul as reflected on the cycle PMS schedule.
4. Enter the calendar months of the quarter as follows: JAN/FEB/MAR as first quarter, APR/MAY/JUN as second quarter, JUL/AUG/SEP as third quarter, and OCT/NOV/DEC as fourth quarter.
5. A ship ending a major overhaul, conversion, or construction in August would use the months of July, August, and September as the first quarter after overhaul. If the ship finished a major overhaul, conversion, or construction during the last 2 weeks in September, the first quarterly PMS Schedule prepared would include the months of October, November, and December as the first quarter.
6. 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. In this instance, the maintenance done and the effective dates are recorded on the back of the quarterly PMS Schedule, and the schedule is marked to show that it is only a partial quarterly PMS record.
7. Each column represents a week and is divided into 7 days by tick marks across the top. The first tick marked space within a column represents Monday. Place Monday's date for each week in the quarter on the pedestal between each column.
8. Lightly shade in across the tick marks the days that the ship expects to be underway.
9. Using both the LOEP and the cycle PMS schedule, enter the MIP number including the date code in the MIP column in a space on line with the subject equipment on the cycle schedule.
10. From the cycle PMS schedule, select the Schedule Quarter After Overhaul as Indicated column corresponding to the quarter being scheduled. Each of the maintenance requirements listed in this column and the each quarter column will be transcribed to an appropriate weekly column of the quarterly PMS schedule. If possible, do not schedule in the last 2 weeks of the quarter. These 2 weeks may then be used for rescheduled maintenance requirements.
11. Refer to the MIPs and the departmental master deck of MRCs for a brief description of the maintenance actions represented by the periodicity codes on the cycle PMS schedule to determine if the actions should be performed in port or at sea. Schedule the requirements on the quarterly PMS Schedule in the week most appropriate. With the exception of related daily and weekly PMS requirements, ensure that all mandatory related maintenance is scheduled within parentheses on the same line and during the same week as the primary maintenance requirement.
12. From the cycle PMS Schedule column titled Each Quarter, schedule monthly, quarterly, and applicable situation requirements into the appropriate weeks of the quarterly PMS schedule. All calendar situation requirements (24M-2R, A-2R, S-IR, Q-3R, M-IR) must be accomplished at least once during the periodicity specified and also each additional time the situation arises.

Schedule 2M () periodicity as indicated by a number in parentheses. For example, 2M (2) occurs twice in the quarter (7 to 10 weeks apart).

13. From the cycle PMS schedule column, titled Schedule Quarter After Overhaul as Indicated, schedule the annual, semiannual, and multiple month requirements. Schedule the cycle requirements for which the number in parentheses matches the quarter after overhaul being scheduled.
14. Be sure that any PMS requirement listed in the reschedule column of the previous quarterly PMS schedule is brought forward to the quarterly PMS schedule you are preparing.
15. The department head reviews the complete quarterly PMS schedule and then signs and dates it in the appropriate block. If the ship's operating schedule changes significantly, PMS requirements scheduled in the affected periods may need to be reviewed and rescheduled as necessary to coincide with the new operating schedule.

Use of Quarterly PMS Schedule

The Quarterly PMS Schedule serves as a directive to work center supervisors for scheduling weekly maintenance. Quarterly PMS Schedules are used as follows:

1. Each Monday, the division officer updates the previous week's column of the Quarterly PMS Schedule, using the following symbols:

X – Completed maintenance. The symbol X indicates completion of a maintenance requirement. Address and cross mark fully accomplished MRs on the quarterly schedule. Be sure to add and cross mark off each accomplished situation requirement separately.

0 – Maintenance not completed. A circled requirement indicates a requirement that was not accomplished according to the applicable MRC.

¢ – Satisfied by higher authority test. This symbol is used to mark scheduled equipment maintenance or lower level MRC requirements that have been satisfied by the completion of the parent system test. A brief explanation of the parent system test (including the MIP, who performed the maintenance, and when) is required on the reverse side of the quarterly schedule. An X marked over the higher level test symbol indicates that the lower level test requirement annotated with the ¢ has been satisfied. (MRCs that are so satisfied are identified on the applicable system level test MIP.)
2. The division officer is responsible for rescheduling circled requirements still within periodicity and for determining the reason for non-accomplishment.
3. From the Quarterly PMS Schedule, the work center supervisor schedules the requirements for the following week on the Weekly PMS Schedule and updates the information in the Outstanding Repairs and PMS Requirements Due in the Next 4 Weeks column.
4. Any requirement that was not completed in strict accordance with the applicable MRC within its periodicity during the quarter must (in addition to being circled on the front of the quarterly PMS schedule) be identified on the back of the schedule by the complete MIP number and MRC code, followed by a brief reason for non-completion. Example: "C-2/1 - 11 M-1 unable to accomplish step I.J., "Test operate transmitter," due to antenna casualty." (This is an indication of a partial completion.) Another example: "G-58/3-72 Q-1 Heavy seas preclude accomplishment as scheduled." Add unaccomplished semi-annual, annual, or multiple-month periodicity requirements to the reschedule column for accomplishment in the next quarter if they are within their assigned periodicities. At the end of the quarter the department head should indicate awareness of the maintenance actions which were not accomplished by reviewing, signing, and dating the back of the schedule for the quarter just completed. The department head should also take positive steps to ensure that priority is given to completing

maintenance requirements rescheduled from the previous quarter and those not accomplished within their assigned periodicities.

5. Remove the completed quarterly PMS schedule from the holder after the close of each quarter and retain it as a planned maintenance record. Retain the four previously completed quarterly schedules.
6. Do not recopy quarterly schedules to facilitate legibility without the division officer's written approval.

WEEKLY PMS SCHEDULE

The Weekly PMS schedule (*Figure 7-13*) displays the planned maintenance scheduled for a given work center during a specific week. A Weekly PMS schedule is posted in each work center, and the work center supervisor uses it to assign and monitor the accomplishment of required PMS tasks by work center personnel.

Content of the Weekly PMS Schedule

The Weekly PMS Schedule contains the following information:

1. Work center code.
2. Date of current week.
3. Division officer's approval signature.
4. MIP number (minus the date code).
5. A list of applicable components/equipment.
6. Maintenance responsibilities assigned, by name, to each line item of equipment.
7. The periodicity codes of maintenance requirements, listed by columns for each day.
8. Outstanding major repairs, applicable PMS requirements, and all situation requirements.

Preparation of Weekly PMS Schedule

1. Using OPNAV Form 4790/15 or approved automated form, type in or neatly enter in ink the following basic (permanent) information from the cycle PMS schedule, the LOEP, and applicable MIPs: work center identification, MIP codes and component nomenclature, daily and weekly PMS requirements as indicated in the MIPs for each work center. List all weekly requirements in the Monday column and daily requirements once in each Day of the Week column and twice in the Sat.-Sun. column. Schedule 2D periodicity on Monday, Wednesday, Friday, and once in the Sat.-Sun. period; list all situation requirements in the next four weeks column, and schedule them, as the situation requires. Also list the 2W periodicity requirements in the next four weeks column.
2. Using the quarterly PMS schedule, the work center supervisor transposes all PMS requirements from the column for the week being scheduled to the weekly PMS schedule.
3. Using information from the Quarterly PMS Schedule, the work center supervisor lists in the next four weeks column of the Weekly PMS Schedule all PMS requirements due in the next 4 weeks.
4. The work center supervisor assigns personnel, by name, to specific line entries.
5. The division officer signs and dates the weekly PMS schedule prior to its posting in the holder in the work center.

WEEKLY PMS SCHEDULE (CONVENTIONAL)

OPNAV FORM 4790/15 (3-71)
S/N 0107-LF-770-3260

#5 GPO 1962-106-676

WORK CENTER EA07			PMS SCHEDULE FOR WEEK OF 2-9 MAY					APPROVAL SIGNATURE W.M. Smith	
MIP	COMPONENT	Maintenance Responsibility	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SAT - SUN	OUTSTANDING REPAIRS & PM CHECKS DUE IN 4 WKS
2000/001	MACH LUB OIL NO.1 AMR								R-1
3000/001	MISC SHIPBOARD ELECT EQUIPMENT								M-1 M-4R, R-2, S-4R
	RECEPTACLES EGL-1	OVERTURF		2W-2	3W-1				2W-1, 3W-2
	RUBBER GLOVES EGL-1								S-3R, R-1
5210/009	FIREMAIN & FLUSHING	STERLING							Q-5R#, Q-1
5510/018	COMPRESSED AIR SYSTEM EA07-001	HOYLE	D-1	D-1	D-1	D-1	D-1/D-1		M-1, M-2 A-5R, R-1, R-5W
5530/001	O2N2 SYSTEM FWD 1-30-6								Q-1(M-1)
	PUMP 27345	PADGETT	Q-3						R-16D, R-17W
	VALVES EGL-1	GALLE	W-1R D-1R	A-13R D-1R	D-1R	D-1R	D-1R D-1R		A-13R, R-11M, D-1R, W-1R
	VALVES EGL-2	HOOFA	W-1R D-1R	D-1R	D-1R	D-1R	D-1R D-1R		D-1R, W-1R
5530/001	O2N2 SYSTEM AFT 1-240-7								M-1
	PUMP 26439	RUHNKE	Q-3						R-16D, R-17W
	VALVES EGL-1								A-13R, R-11M
	VALVES EGL-2	MCCLURE	W-1R						D-1R, W-1R
4924/RHD	LSD HUD MR3 MOO0	JACK	W-1						M-2R, R-1R
	#1 HUD								R-1, M-4
	#2 HUD								R-2, M-4
6641/005	VENT DUCTS EGL-1								S-11R#
	FILTERS								M-9
	VENT DUCTS EGL-2								S-41R#

Figure 7-13 — Weekly PMS schedule.

Use of the Weekly PMS Schedule

The work center uses the Weekly PMS Schedule as follows:

1. Maintenance personnel obtain PMS assignments from the weekly PMS schedule and report completed and uncompleted maintenance actions to the work center supervisor.
2. When satisfied that the work has been properly completed, the work center supervisor crosses off, with an X, the maintenance requirement. If the maintenance is not completed, the maintenance requirement is circled and rescheduled. However, if material deficiencies or casualties that are unrelated to the maintenance requirement are discovered, the maintenance requirement can be crossed-off, but the discrepancy must be reported to the work center supervisor. PMS requirements (other than daily checks) accomplished during the prescribed week but not on the day specified are considered completed on schedule and crossed off.
3. Each Monday morning, the division officer compares the preceding week's weekly PMS schedule with the quarterly schedule and ensures that the quarterly schedule is properly updated as follows:
Crossed out (X) – maintenance completed
Circled – maintenance not completed
Circled and crossed out – maintenance done ahead of schedule
4. Each Monday morning, the division officer reviews the current week's weekly PMS schedule, ensures that it is properly made out according to the quarterly schedule, and signs and dates the Weekly Schedule in the appropriate block.

MAINTENANCE DATA SYSTEM

The Maintenance Data System is used to record information considered necessary for workload planning and coordination and to provide a data base for evaluating and improving equipment installed in the fleet. Much of the data collected by MDS returns to the ship in the form of a material history known as the Current Ship's Maintenance Project (CSMP).

Nearly all the reporting of maintenance actions other than normal PMS actions is done on a single multipurpose form, the Ship's Maintenance Action Form, OPNAV 4790/2K. Personnel completing a maintenance action fill out the appropriate sections of the form and send it via the ship's data collection center to an automatic data processing (ADP) facility to be processed. The 4790/2K contains information about the reporter's ship, work center, equipment worked on, and initial symptoms observed. In other sections, space is provided to record completion information, deferral of the work for various reasons, remarks, and special information for work requests. A space also exists for recording time meter and counter readings where required.

Normally, the following types of maintenance actions will be reported on the 4790/2K: system or equipment repairs or improvements, maintenance actions that require the use of parts or materials specifically requisitioned for the job, actions that cannot be completed in the usual amount of time due to the ship's operations, requirements for outside assistance, or unavailability of parts or material, assistance received from non-reporting activities, such as ships repair activity (SRA) or technical representatives, major work associated with corrosion control and preservation of the ship, and certain PMS actions listed in the *3-M Manual*, OPNAV 4790.4.

To prevent the loss of significant data when it is recorded on several forms, each maintenance action must be assigned a unique identifier. Under MDS, this identifier is known as the job control number (JCN). It consists of a five-character unit identification code (UIC), a four-character work center code, and a four-character serial number called the job sequence number (JSN). *Figure 7-14* shows an example of a JCN log used to record the JSNs. This system gives a work center at least 9,999 JCNs. If additional JCNs are desired, letters can be substituted for the first numeral. In any event, be sure not to assign the same JCN to two different jobs.

SHIP'S FORCE WORK LIST (SFWL) & JOB SEQUENCE NUMBER (JSN) LOG

UIC:		WORK CENTER:		DESCRIPTION	STATUS OF REPAIR	SUPPLY 1250-1 (OR. 1348) SEQN. NUMBERS		REMARKS		
DEFICIENCY IDENTIFICATION						TYPE AVAILABILITY				
JSN	EQUIPMENT ROOM NAME		PRIORITY 1 2 3 4						LSO INIT	DEFERRED ACTION DEFER DATE (26)
DATE	ENTERED BY	TAG-OUT REQUIRED	YES NO	1 2 3 4	2 LINE USED	YES NO	DIV OFF INIT	COMPLETION DATE (10) - (31) - (66) -	CLEARED BY	

DEFICIENCY IDENTIFICATION				DESCRIPTION	STATUS OF REPAIR	SUPPLY 1250-1 (OR. 1348) SEQN. NUMBERS		REMARKS
JSN	EQUIPMENT ROOM NAME		PRIORITY 1 2 3 4			TYPE AVAILABILITY		
DATE	ENTERED BY	TAG-OUT REQUIRED	YES NO	1 2 3 4	2 LINE USED	YES NO	DIV OFF INIT	COMPLETION DATE (10) - (31) - (66) -

Figure 7-14 — Job control number log.

Ships Maintenance Action form (OPNAV 4790/2K)

The ship's maintenance action form, OPNAV 4790/2k (*Figure 7-15*), printed on a single sheet of "no-carbon-required" paper, is the basic MDS document. If multiple copies are needed, fasten the necessary number of forms together and fill them in at one time.

This form contains six sections that require entries to describe the type of maintenance action being reported. Print entries in capital letters. All entries must be legible and inserted within the tic marks. If you make an error, line it out using a single line, and enter the correct information.

Use the OPNAV 4790/2K to report all deferred maintenance actions and the completion of maintenance actions that do not result in configuration changes. Report partially completed maintenance actions that will result in configuration changes and complete or partial accomplishment of alterations on OPNAV 4790/CK. A description of the OPNAV 4790/2K information sections is presented in the following paragraphs.

Section I-Identification

This section identifies the equipment or system on which maintenance actions are being performed.

Section II-Deferral Action

Fill in this section to report the deferral of a maintenance action. Indicates ship's force man-hours expended up to the time of deferral, the date of the deferral, ship's force man-hours remaining, and if the work must be completed by a certain date.

Section III-Completed Action

Fill in this section in to report the completion of a maintenance action.

Section IV-Remarks/Description

This section must be filled in when the deferral of a maintenance action is reported. Fill it in when the completion of a maintenance action is reported, only when such remarks are considered important to the maintenance action. This section must also be filled in to report maintenance actions on selected equipment requiring second level reporting, and to describe safety related situations are.

Section V-Supplementary Information

This section contains helpful information about deferred maintenance actions, such as what technical manuals and blueprints are available and whether or not they are retained on board the requesting ship.

SHIP'S MAINTENANCE ACTION FORM (2-KILO)

COMP DPL

SECTION I. IDENTIFICATION	JOB CONTROL NUMBER												
	1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. APL/AEL									
2 1 6 8 5 E B 0 1 0 1 1 1 0 2 1 2 0 0 1 6 6													
A. SHIP'S NAME USS STOUT BOILER RH	5. EQUIPMENT ITEM NAME DDG-55 1 A			6. WND 7. STA 8. CAS 9. DFR 10. 11. 12.									
B. HULL NUMBER DDG-55	13. IDENT/EQUIPMENT SERIAL NUMBER B 1 - 5 - 6 1 - 0	14. EIC F 1 0 1	17. WHEN DISCOVERED DATE YR 4 0 DAY 0 7 1										
15. SAFETY HAZARD <input checked="" type="checkbox"/>	16. LOCATION (Compartment, Deck, Frame, Side) B 1 - 5 - 6 1 - 0			FOR INSURV USE									
18. ALTERATIONS (SHIPALT, ORDALE, 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	27. S/F MHRS. REM.	28. DEADLINE DATE						
				0 0 2 0	YR 4 0 DAY 1	1 0 0 1 7	YR 4 0 DAY 1						
SECTION III. COMPLETED ACTION				29. ACT. TKN.	30. S/F MHRS.	31. COMPLETION DATE	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 IMAR 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. P1	42. T2	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 - 3 5 1 - 0 6 6 4				AVAILABLE ON BOARD NO. YES <input checked="" type="checkbox"/>	48. PREARRIVAL/ARRIVAL CONFERENCE ACTION/REMARKS								
SECTION VI. REPAIR ACTIVITY PLANNING/ACTION													
49. REPAIR W/C	50. EST. MHRS.	51. ASST. REPAIR W/C	52. ASST. EST. MHRS.	53. SCHED. START DATE	54. SCHED. COMP DATE								
YR	DAY	YR	DAY	YR	DAY								
55. REPAIR ACTIVITY UIC	56. WORK REQ. ROUTINE	57. EST. MANIDAYS	58. EST. MANIDAY COST \$	59. EST. MATERIAL COSTS \$									
60. EST. TOTAL COST \$		61. JOB ORDER NUMBER	62. LEAD P/M CODE	63. DATE OF EST.									
ACT.	YR	DAY		YR	DAY								
64. FINAL ACT.	65. MHRS. EXPENDED	66. DATE COMPLETED	G. COMPLETED BY (Signature - Rate/Rank)			H. ACCEPTED BY (Signature - Rate/Rank)							
	YR	DAY											

Figure 7-15 — MDS form (OPNAV 4790/2K).

Section VI-Repair Activity Planning Action

The repair activity may use this section for internal planning and scheduling of the workload.

Block G, Completed Block

This block contains the signature and rate/rank of the senior person actively engaged on the job in the lead work center. For maintenance actions not requiring assistance from an outside work center, the senior person working on the job signs this block and indicates his or her rate.

Block H, Accepted Block

This block contains the signature and rate/rank of the individual authorized by the tended ship to verify the acceptability of the work performed. Completion of this block is mandatory when an OPNAV 4790/2K is used to report completion of a previously deferred maintenance action. For maintenance actions not requiring assistance from an outside work center, the work center supervisor will sign this block and indicate his or her rate/rank.

The commanding officer or his/her authorized representative, places his/her signature on all original deferrals in block E. Two copies are held in a deferral suspense file in the work center until the JCN appears on the automated CSMP report, at which time the copies are transferred to the active suspense file held in the work center.

Maintenance Planning and Estimating form (OPNAV 4790/2P)

The maintenance planning and estimating form, OPNAV 4790/2P (*Figure 7-16*) is used along with the OPNAV 4790/2K form for deferring maintenance to be done by an intermediate maintenance activity (IMA). Attached to the original 2K at the intermediate maintenance activity, the IMA uses it to screen and plan the job in detail.

MAINTENANCE PLANNING & ESTIMATING FORM (P & E)**SECTION I. PLANNING**

A. SHIP'S NAME USS UNDERWAY		B. HULL NUMBER AS-48		JOB CONTROL NUMBER 1. SHIP'S IUC 20888 2. WORK CENTER EA05 3. JOB SEQ NO 2858			
4. PERIODIC MAINTENANCE REQUIREMENT		5. PERIODICITY		6. YMMM ISSUED	7. SPECIAL DATA		
8. SCREENING ACTION IUC TYCOM a <input type="checkbox"/> h <input type="checkbox"/> DEPO ACCOMPLISH b <input checked="" type="checkbox"/> i <input type="checkbox"/> IMA ACCOMPLISH c <input type="checkbox"/> j <input type="checkbox"/> TSU/NAVSEC/NOSSO/ETC. d <input type="checkbox"/> k <input type="checkbox"/> SHIP'S FORCE (MA) (DEPO) ASSET e <input type="checkbox"/> l <input type="checkbox"/> SHIP TO SHOP f <input type="checkbox"/> m <input type="checkbox"/> ACCOMPLISH WITH MODIFICATIONS g <input type="checkbox"/> n <input type="checkbox"/> DISAPPROVE		9. QUALITY ASSURANCE REQUIREMENT a <input type="checkbox"/> SUBSAFE b <input type="checkbox"/> LEVEL 1 c <input type="checkbox"/> NUCLEAR LEVEL 1 d <input type="checkbox"/> NON-DESTRUCTIVE TEST e <input type="checkbox"/> NUCLEAR WORK PROCEDURES f <input type="checkbox"/> SUBMARINE ANTENNA, ENGINEERING DIVISION		10. SPECIAL REQUIREMENTS g <input type="checkbox"/> SPECIAL CLEANING h <input checked="" type="checkbox"/> SPECIAL TESTING i <input type="checkbox"/> SPECIAL IDENTIFICATION j <input type="checkbox"/> NOSE CRITICAL k <input type="checkbox"/> RADIOLOGICAL CONTROL l <input type="checkbox"/> OTHER CONTROLS			
				HAZMAT			
C IUC SIGNATURE <i>WZEMNOSF</i>		D TYCOM SIGNATURE		E normally done by			
				a <input type="checkbox"/> S/F b <input checked="" type="checkbox"/> IMA c <input type="checkbox"/> DEPO			

SECTION II. SCHEDULING

12 LEAD WORK CENTER	13 SCHED START DATE YR DA	14 SCHED COMP DATE YR DA	15 EST MHRS	16 KEY OP	17 TASK
25A	4053	4068	0083	02	EVAC & RECHG
18 ASST WORK CENTER	19 SCHED START DATE YR DA	20 SCHED COMP DATE YR DA	21 EST MHRS	22 KEY OP	23 TASK
03T	4054	4067	0004	03	UNSHIP & CLAD
24 ASST WORK CENTER	25 SCHED START DATE YR DA	26 SCHED COMP DATE YR DA	27 EST MHRS	28 KEY OP	29 TASK
03A	4051	4069	0049	01	MONITOR FREON
30 ASST WORK CENTER	31 SCHED START DATE YR DA	32 SCHED COMP DATE YR DA	33 EST MHRS	34 KEY OP	35 TASK
26A	4056	4057	0006	04	BRAZE/WELD
36 ASST WORK CENTER	37 SCHED START DATE YR DA	38 SCHED COMP DATE YR DA	39 EST MHRS	40 KEY OP	41 TASK
51A	4053	4058	0021	05	REWIND & BAKE
42 ASST WORK CENTER	43 SCHED START DATE YR DA	44 SCHED COMP DATE YR DA	45 EST MHRS	46 KEY OP	47 TASK

SECTION III. TECHNICAL DOCUMENTATION

*NAVSHPIS TECH MAN 351-0665	ON BOARD YES NO

SECTION IV. IUC/REPAIR ACTIVITY/TYCOM REMARKS

*COMPRESSOR MOTOR SHORTS

SECTION V. SUPPLEMENTAL PLANNING

50 EST MANDAYS	51 EST MANDAYS COST \$	52 EST MATERIAL COST \$	53 EST TOTAL COST \$	54
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Figure 7-16 — Maintenance planning and estimating form (OPNAV 4790/2P).

Supplemental Form (OPNAV 4790/2L)

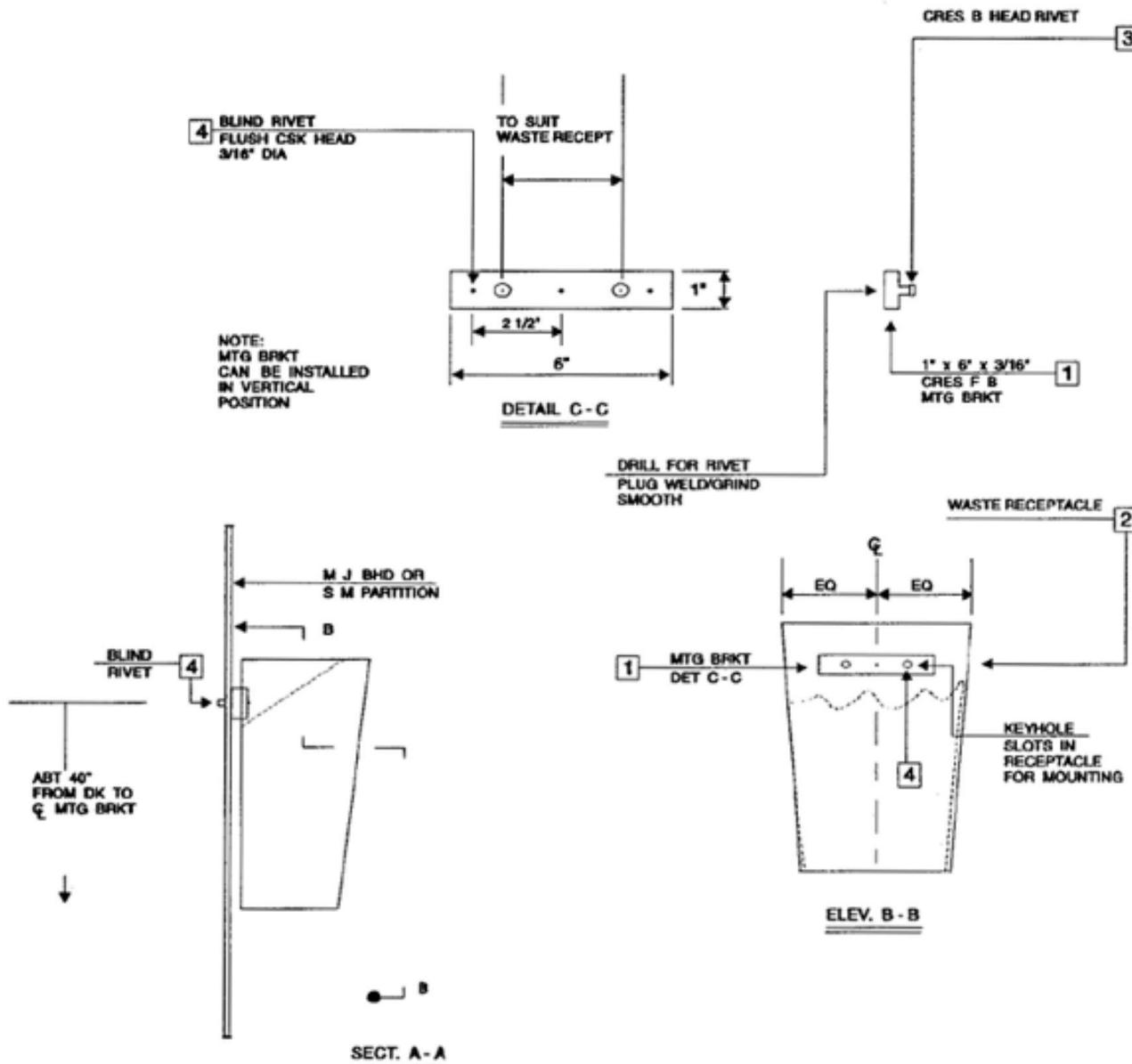
The supplemental form, OPNAV 4790/2L (*Figure 7-17*) is used by maintenance personnel to provide amplifying information (such as drawings and listings) related to a maintenance action reported on an OPNAV 4790/2K. Never enter the information on this form into the computer.

SECTION I. IDENTIFICATION

A. SHIP'S NAME USS CHANDLER	B. HULL NUMBER DDG-996	JOB CONTROL NUMBER		
		C. SHIP'S UIC	D. WORK CENTER	E. JOB SEQ. NO.
		2 1 4 3 9	WD 0 1	0 1 9 5
		F. CONTINUATION FOR		<input checked="" type="checkbox"/> 2K <input type="checkbox"/> 2L <input type="checkbox"/> 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) A. J. SWEENEY, SN	I. DATE YR DAY 3 2 0 7	J. SECOND CONTACT/SUPERVISOR (Print) B. J. WALTERS, BMI	K. DATE YR DAY 3 2 0 7
----------------------------------------------------------------------	---------------------------------------	-------------------------------------------------------------------	---------------------------------------

* U.S. Government Printing Office: 1975-603-627/5225 2-1

Figure 7-17 — Supplemental form (OPNAV4790/2L).

Reporting Changes to Equipment Configuration

One of the major objectives of the MDS is to provide the capability for reporting configuration changes. The importance of configuration change reporting cannot be overemphasized. Whenever any system, equipment, component, or unit within the ship is installed, removed, modified, or relocated, the change must be reported. This action will ensure proper documentation of changes, and will improve PMS coverage such as technical manuals, PMS coverage. The Configuration Change form, OPNAV 4790/CK (*Figure 7-18*) is used to provide this service.

The accomplishing activity completes the OPNAV 4790/CK form to the maximum extent possible and provides it to the ship or activity 3-M coordinator.

The 3-M coordinator then reviews the forms for legibility (all copies) and completeness and provides the forms to the applicable work center supervisor, who ensures that the proper documentation is completed and processed when a configuration change is accomplished, including required signatures to indicate verification of all reported configuration changes.

The ship is also responsible for reporting and monitoring all changes accomplished by ship's force during any type of availability and for providing the Configuration Change Form to the overhauling activity. The ship is not responsible for reporting configuration changes accomplished by an overhauling activity during availabilities.

A configuration change is either (1) the accomplishment of any action prescribed by an alteration directive or (2) the installation, removal, or modification of any system, equipment, component, or unit. The replacement of repair parts (such as nuts, bolts, wires, O-rings, gaskets, resistors, and capacitors) with the same parts does not constitute a configuration change.

The OPNAV 4790/CK form is used to report a configuration change or to report the completion of a previous deferral that resulted in a configuration change. Deferred maintenance actions and completed maintenance actions that do not result in configuration changes are reported on OPNAV 4790/2K. The OPNAV 4790/2K form will never be used to report accomplishment of any maintenance action that results in configuration changes.

A configuration change occurs whenever the accomplishment of a maintenance action results in:

1. Addition or installation of any new equipment.
2. Deletion, removal, or turn-in of any installed equipment.
3. Replacement or exchange of any equipment. A replacement or exchange is reported as the removal of an installed item of equipment and the installation of a new item of equipment.
4. Modification of any installed or in-use equipment. A modification occurs when a maintenance action alters the design or operating characteristics of the equipment or when nonstandard replacement parts (not identified on the APL or in the technical manual) are used.
5. Relocation of any equipment to a new deck, new frame, or new compartment.
6. Accomplishment of any alteration, such as a field change or ship alteration (SHIPALT).

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION			
1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. ALTERATIONS (SHIPALT, OROALT, FLD. CHG, etc.)			
2 0 0 1 2	EX S A	B 6 8 9	S A L S D	2 8 7 5 8	D	
A. SHIP'S NAME		B. HULL NUMBER		S EIC	6. ACT. TAKEN	
USS PORTLAND		LSD 37		TF 03	5 B	
5. EQUIPMENT NOUN NAME		8. S/F MHRS. EXP.		9. ACT. MAINT.	10. COMP. DATE	11. MPH
LP AIR COMPRESSOR		0040		010	4030	

SECTION II JOB DESCRIPTION/REMARKS

REMOVED LP AIR COMPRESSOR PER
SHIPALT DIRECTIVE

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME	14. QUANTITY		15. GA
LP AIR COMPRESSOR	002		R
16. COMPONENT IDENTIFICATION	17. COMPONENT SERIAL NUMBER		
1 AND 2	NONE		
18. COMPONENT APL/AEL	19. LOCATION (DECK/FRAME/SIDE)		22. EIC
06 1900 511	3 - 110 - 0		TF03
21. NEXT HIGHER ASSEMBLY	22. SAC		23. WORK CENTER
COMPRESSED AIR SYSTEM	MO BAC BE MO 1		
24. NAMEPLATE DATA			
25. MIP	26. FOSS		
A - 004 / 003 - A2	LPAC / 000		
27. TM	9241 - AB - MMO - 010		

SECTION IV. SPECIAL PURPOSE

28. RIN	29. AILS/N	30. SECAS OFFICE USE
B0 5 10	5 5 15 3	

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II		LEGEND		
ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)	SECTION I, BLOCK 6 ACTION TAKEN	SECTION III, BLOCK 15 COMPONENT ACTION
1-3	JOB CONTROL NUMBER	M	M	M	IA IF AVAILABLE	O OPTIONAL
4	ALTERATION IDENTIFICATION	IP	IP	IP	IP IF APPLICABLE	NR NOT REQUIRED
5	EQUIPMENT IDENTIFICATION	M	M	M	M MANDATORY	
6	ACTION TAKEN	M	M	M		
7	EQUIPMENT NOUN NAME	M	M	M		
8	SHIP'S FORCE MANHOURS	M	M	M		
9	ACTIVE MAINTENANCE TIME	M	M	M		
10	COMPLETION DATE	M	M	M	SA - PARTIALLY COMPLETED ALTERATION	MAINTENANCE ACTIONS
11	METER READING	IP	IP	IP	SB - FULLY COMPLETED ALTERATION	R - REMOVED EQUIPMENT
12	JOB DESCRIPTION (REMARKS)	O	O	NR	SC - FULLY COMPLETED EQUIVALENT TO ALTERATION	I - INSTALLED EQUIPMENT
13	COMPONENT NOUN NAME	M	M	M	SD - ALTERATION DIRECTIVE NOT APPLICABLE	M - MODIFIED EQUIPMENT
14	QUANTITY	M	M	M	1 - MAINTENANCE ACTION COMPLETED: PARTS	CONFIG FILE CORR
15	COMPONENT ACTION	M	M	M	2 - MAINTENANCE ACTION COMPLETED: REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)	NO MAINTENANCE ACTION
16	COMPONENT IDENTIFICATION	IP	IP	IP	3 - MAINTENANCE ACTION COMPLETED: NO PARTS REQUIRED	A - ADDITION OF RECORD
17	COMPONENT SERIAL NUMBER	IA	IA	IA		D - DELETION OF RECORD
18	COMPONENT APL/AEL	M	IA	IA		C - CORRECT/CHANGE EXISTING RECORD
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		
WORK CENTER SUPERVISOR	DIVISION OFF	SUPPLY DEPT	3M COORDINATOR	SHIP SEQUENCE NUMBER	PAGE	
MJL	FTS	TJP	BFD	6. 9. 9. 9. 9	1 OF	2

Figure 7-18 — Configuration change form (OPNAV4790/CK).

Caution on Errors

Since the data entered on the MDS forms is used by data processing equipment to provide information to a ship in the form of the CSMP report, it is essential that each form be filled in completely and accurately. A computer cannot recognize anything that it is told does not exist. It will reject incorrect and incomplete entries and the data will not be available for use. To prevent this from happening, it is important that the completed forms be reviewed at all levels. Some of the common errors that work center supervisors, division officers, department heads, and 3-M coordinators should be alert for are the following:

1. Omission of slash marks on zero(s)
2. Incorrect equipment identification code (EIC)
3. Use of improper codes for alterations and field changes
4. Too many or not enough spaces between words in the remarks section
5. Incorrect dates
6. Incorrect entries

These are only a few of the many errors detected each day by a typical TYCOM 3-M staff section.

Some areas on the 4790/2K require special mention. Alterations and field changes are identified in block 18 by a two-letter code in the first two spaces, followed by the identification number of the change. A title code, such as A, D, F, or K may be shown in the authorizing directive of SHIPALTs. This title code, if assigned, must be entered in the extreme right hand position of the block.

In block 18, the first two letters identify SHIPALT (SA), ORDALT (OA), field change (FC), or any other appropriate instruction. Electronic equipment is always identified by serial number, and only one piece of equipment may be reported under a given JCN. If several pieces of the same type of equipment are altered by field changes, there must be one document for each piece of equipment.

Example:

A new aircraft carrier ship has four C-13 Mod 2 catapults, and field change 17 is to be installed in all of them. Each catapult will be changed, and the changes will be reported on separate documents showing a specific JSN and equipment serial number. This will enable the computers to identify which items of equipment have been changed and which have not. It also will be reflected on the readouts returned to the ship as part of its material history.

Another problem is the use of the noun name in block 5. For electronic equipment the "AN" designation is the best entry for the noun name. If there is no "AN" designation, use the name from the nameplate. You may enter up to 16 characters of a name.

In block 35, a space follows each word, and words that cannot be completed on a line are continued on the next line with no spaces or hyphens inserted. On deferred actions, do not separate the XXX's used to separate the trouble from the desired corrective action. If they cannot be fitted in on one line, leave extra spaces blank on that line and put the XXX's in the first spaces of the next line.

SUPPLY

One of the duties of an Aviation Boatswain Mate Equipment (ABE) is to identify and requisition material. This section provides basic information to help you develop the knowledge you need to perform these duties. Proper material identification is essential to the requisitioning and receipt of the correct item. You must understand the terminology used in material identification.

Material is managed according to category (Federal Supply Classification) and its intended use. An inventory manager is assigned for each category of material with overall responsibility for all items

within the category. All items in the supply system have an assigned two-position cognizance symbol code. This code identifies the inventory manager and the stores account in which the material is carried. The items assigned to bureau, office, or systems command for inventory management includes the following material:

1. Material in the research and development stage
2. Material that requires continuing logistics, engineering, or fiscal administration and control at the department level
3. Material recognized as a onetime installation that was bought and issued for a specific use

Naval Supply System Command (NAVSUP) Inventory Control Point (ICP) items are those for which bureau, office, or systems command management is not essential. The NAVSUP ICP provides stocks of these items to its segment of the supply system. This group of items includes equipment, repair parts, and consumables. It also includes those items for which stocking determination, quality control, funding, and issue control can be accomplished by the ICP if required; the ICP ensures that these items are available from commercial sources and other government agencies. NAVSUP selects the items assigned to ICP for inventory management with the advice of the appropriate bureau, office, or systems command.

The Navy Retail Office items are items for which joint military supply management responsibility is vested to the Defense Logistics Agency (DLA). These items include components, repair parts, consumables, and other material. The requirement determination and procurement of these items can be accomplished by the defense supply center on a combined basis for all military services.

MATERIAL CATALOGING and CLASSIFICATION

Material cataloging and classification will help you understand the information used in material identification. There are more than 4 million supply items in the Department of Defense (DOD) supply system. The Navy supply system alone stocks more than 1 million items. Each item must be identified to make buying, stocking, and issuing easier. To accomplish this, each item must be listed in different groups or categories.

Federal Catalog System

The Federal Catalog System encompasses the naming, description, and numbering of all items carried under centralized inventory control by the Department of Defense (DOD) and civil agencies of the Federal Government as well as the publication of related identification data. Only one identification may be used for each item in all supply functions from purchase to final disposal. The North Atlantic Treaty Organization (NATO) countries also use the Federal Catalog System. The Defense Logistics Agency (DLA) administers the Federal Cataloging System under the direction of the Assistant Secretary of Defense (Installation and Logistics).

Federal Supply Classification System

The Federal Supply Classification (FSC) System was designed to permit the classification of all items of supply used by the Federal Government. Each item of supply is classified in only one four-digit Federal Supply Classification class. The first two digits denote the group or major division of commodities within the group. Currently, there are 76 groups assigned.

Group numbers start from 10 and end at 99. *Figure 7-19* is an example list of federal supply groups and titles.

GROUP	TITLE
17	Aircraft launching, landing, and ground handling equipment
48	Valves
53	Hardware and abrasives

Figure 7-19 — Example list of federal supply groups and titles.

The number of classes within each group varies. Each class covers a particular area of commodities according to physical or performance characteristics. The items in the class are usually requisitioned or issued together. This classification system is used as a basis for including items in the same area of commodities. Examples of how classes are used to divide types of material within a stock group are shown in *Figure 7-20*. The stock group and class together make the Federal Supply Classification (FSC).

The Navy uses groups 01 through 09 for forms and publications that are not included in the Federal Catalog System. The forms and publications are numbered according to the following system:

- 01 Navy Department forms.
- 02-08 Publications.
- 09 District and fleet forms.

GROUPS	CLASSES	
Group 17	1710	Arresting gear and barricade equipment
Aircraft launching, landing, and ground handling equipment	1720	Catapult launching equipment
Group 48	4810	Valve solenoid
Valves	4820	Valve angle
Group 53	5305	Screws
Hardware and abrasives	5306	Bolts
	5307	Studs
	5310	Nuts and washers
	5320	Rivets

Figure 7-20 — Examples of supply classes in groups.

NATIONAL STOCK NUMBER (NSN)

All items of supply that are centrally managed or bought for system stock are required to have a National Stock Number (NSN) assigned to them. National Stock Numbers are used in all supply management functions and publications that mention the items. The NSN is a 13-digit number assigned by the Defense Logistics Information Service (DLIS) to identify an item in the supply distribution system. The following paragraph discusses the breakdown of an NSN. *Figure 7-21* is an example of an NSN.

1710	00	1234567
Federal Supply Classification Code Number	National Codification Bureau Code	National Item Identification Number

Figure 7-21 — Examples of National stock number.

National Codification Bureau (NCB) Code

The National Codification Bureau (NCB) code is a two-digit code that occupies the fifth and sixth position of a North Atlantic Treaty Organization (NATO) stock number. This code identifies the NATO country that originally cataloged the item of supply. The NCB codes currently assigned are listed in *Afloat Supply Procedures Manual P-485*. The NSN assigned by United States uses NCB codes “00” and “01.”

National Item Identification Number (NIIN)

The National Item Identification Number (NIIN) consists of a two digit National Codification Bureau (NCB) code and seven digits which, in conjunction with the NCB code, uniquely identify each NSN item in the federal supply distribution system. Although part of the NSN, NIINs are used independently for material identification. Except for identification list, most federal supply catalogs are arranged in NIIN order.

Cognizant (COG) Symbol

The cognizant (COG) symbol consists of a two-character code that identifies the stores account and cognizant inventory manager of an item. The cognizant symbols are listed in *Figure 7-22*.

COG SYMBOL	COGNIZANT INVENTORY MANAGER	STORES ACCOUNT	TECHNICAL RESPONSIBILITY	DEFINITION
0I	Naval Publication and Forms Directorate	None	Navy Publication and Printing Service	Publications
1I	Naval Publication and Forms Directorate	NSA	Navy Publication and Printing Service	Forms
1R	Naval Inventory Control Point Philadelphia (NAVICP PHIL)	NSA	Naval Air System Command	Aeronautical, photographic, and meteorological 1 material (consumable or expense type material).
4R	Naval Inventory Control Point Philadelphia (NAVICP PHIL)	APA	Naval Air System Command	Catapult and arresting gear material (repairable or investment type material).
4V	Naval Air System Command	APA	Naval Air System Command	Aircraft engines.
4Z	Naval Inventory Control Point Philadelphia (NAVICP PHIL)	APA	Naval Air System Command	Airborne armament.
5R	Naval Inventory Control Point Philadelphia (NAVICP PHIL)	NSA	Naval Air System Command	Catapult and arresting gear material (consumable or expense type material).
6R	Naval Inventory Control Point Philadelphia (NAVICP PHIL)	APA	Naval Air System Command	Aviation ground support equipment (repairable or investment type material).
6V	Naval Air System Command	APA	Naval Air System Command	Technical directive change kits.
7R	Naval Inventory Control Point Philadelphia (NAVICP PHIL)	NSA	Naval Air System Command	Depot-level repairable aviation material.

Figure 7-22 — Cognizant symbol.

To understand cognizant symbols, you must understand the following terms:

Stores Account

This is an account reflecting the value of material, supplies, and similar property on hand. The stores accounts are made of two different accounts ,the Appropriation Stores Account (APA) and the Navy Stock Account (NSA).

Appropriations Purchase Account (APA)

This account is for all stock material paid for out of appropriations. This material is not charged to the user's operating funds. If the material was bought for a purpose other than its original appropriation, the material is chargeable to the user's fund.

Navy Stock Account (NSA)

The NSA consists of all material paid for from the Defense Business Operating Fund (DBOF). NSA material is always charged to the user's allotment, operating budget, or operating target funds.

Inventory manager

The inventory manager is an organizational unit or activity within the Department of Defense that has the primary responsibility for controlling the functions of cataloging, identification, determination of requirements, procurement, inspection, storage, and distribution of categories of material.

Technical responsibility

The technical responsibility is the systems command or office that determines the technical characteristics of equipment. For example, the electronics equipment characteristics include items such as circuitry and the types and arrangement of components.

Expense type item

This term identifies stock items that are financed by the Defense Business Operating Fund; those items are the same as NSA items.

Consumable

Consumable material is material that is consumed in normal use. Some of the examples of these materials are paints, cleaning supplies, office supplies, and common tools.

Cognizance Symbols

Cognizance symbols are two-character, alphanumeric codes prefixed to national stock numbers. Cognizance symbols are listed in *Figure 7-22*. The first character of the cognizance symbol identifies the stores account. The following information refers to the first character of the cognizance symbol:

- Cognizance symbols 0 (zero), 2A and 8A is not carried in the stores account and is issued without charge to the requisitioned.
- Even numbers 2, 4, 6, and 8 are carried in the Appropriation Stores Account (APA).
- Odd numbers 1, 3, 5, and 7 are carried in the Navy Stock Account (NSA).
- Number 9 is Navy-owned material carried in NSA and managed-by the Naval Inventory Control Point Mechanicsburg.

The second position of the cognizance symbol identifies the item manager. The item manager exercises supply management over specified categories of material.

Material Control Codes

A Material Control Code (MCC) is a single alphabetic character assigned by the inventory manager. It is used to segregate items into manageable groupings (fast, medium, or slow movers) or to relate to field activities' special reporting and control requirements. *Figure 7-23* contains a list of MCCs commonly encountered.

NAVY ITEM CONTROL NUMBER (NICN)

As discussed in a previous paragraph, NSNs are required for all items centrally managed or bought for supply system stock. With changes of equipment and products, the Navy buys new items from the suppliers. New items entering the Navy supply system are identified in time to permit assignment of NSNs before shipment. In numerous instances, the Navy Item Control Number (NICN) is used to identify the items before an NSN can be assigned. Some items are permanently identified by the NICN because of the nature of the items. The 13-digit NICN designation includes the following:

1. Inventory Control Point ICP control numbers
2. Kit numbers
3. Publications and forms ordering numbers
4. Local Navy Activity Control (NAC) numbers
5. Other locally assigned numbers
6. Federal Supply Classification (FSC) code (numbers that occupy the first four digits of the NICN)
7. Navy Item Control Number (NICN) code (letters that occupy the 5th and 6th position)
8. Serial number (alphanumeric and occupies the 7th through the 13th position)

The NIC numbers with which you must be familiar are listed in *Figure 7-24*. These codes differentiate the types of NICN.

Permanent LL Coded NICNs

NICNs with "LL" in the 5th and 6th positions and a "C" in the 7th position mean that the ICPs or other Navy item managers (including field activities) assigned them. The purpose of this type of NICN is to identify and monitor non-stocked items that are not expected to have enough demand to qualify for NSN assignment. The NICNs are assigned to permit the maintenance of a complete and uniform inventory control point weapons system file. It is also used to ensure that selected items are considered for inclusion in future allowance lists. Stock points must purchase items identified by this type of NICN. Stock points currently do not have the capability to translate permanent LL coded

CODE	DEFINITION
D	Field level repairable.
E	(1) Depot-level repairables. (2) Material (expendable ordnance) requiring lot and serial number control, but is reported by serial number only.
H	Depot-level repairables.
L	Items of local stock or items pending NSN assignment.
M	Medium demand velocity items (consumables).
S	Slow demand velocity items.
T	Terminal items.
W	Ground support equipment.
X	Special program repairables.
Z	Special program consumables.

Figure 7-23 — Material control codes.

NIC NUMBER CODES	USED TO DESIGNATE
LD	Directive ordering number (COG 0I). Example:1234-LD-123-4567
LF	Form ordering number (COG 1I). Example:1234-LF-123-4567
LK	Aircraft change kit number. Example:1234-LK-123-4567
LP	Publication ordering number (COG 0I and 0P). Example:1234-LP-123-4567
LX	Control number assigned by NAVICO PHIL field activities to certain items under their inventory control. Example:1234-LX-123-4567

Figure 7-24 — Navy item control codes.

NICNs to applicable part numbers. The items are requisitioned by using the DD 1348-6 format (part number requisition).

Temporary LL Coded NICNs

NICNs with “LL” in the 5th and 6th positions and any letter except “C” in the 7th position are assigned by ICPs or other Navy inventory managers for temporary identification. These NICNs enable the item manager to establish and maintain automated file records, to ease procurement action, and to maximize automated processing of requisitions. When a requisition identifies an item by a temporary NICN that has been converted to an NSN, the status card will include the new NSN. The Defense Logistics Information Service (DLIS) publishes a NICN to NIIN cross-reference monthly.

Local Item Control Number (LICN)

The LICN (*Figure. 7-25*) is an identification number assigned by an activity for its own use. However, LICNs are not authorized in supply transaction documents. LICNs are for local use only and may be assigned to shipboard stocked consumable items that are not identified by an NSN or another type of NICN. A LICN consists of 13 characters. The first four will be numbers corresponding to the federal supply classification (FSC) of similar NSN items, the fifth and sixth will be LL and the remaining seven alphanumeric.

SOURCES OF MATERIAL IDENTIFICATION

This chapter presents different sources of information needed to perform technical research. Material identification does not end with the assignment of the NSN. Some means of identifying other particular needs by the stock number must be provided to the customers. This identification includes the means of determining the correct quantities of these items to carry in stock. Identification of needs may be determined by using the lists described in the following paragraphs.

1710	LL	0000123
Appropriate Federal Supply Classification Code Number	Designation for locally assigned identification number	Serially assigned identification number

Figure 7-25 — Example of an LICN.

Federal Logistics (FED LOG)

The FED LOG on compact disc read-only memory (CD-ROM) (*Figure 7-26*) provides access to DOD logistics data. The FED LOG includes the basic management data for preparing requisitions and includes an integrated historical record of deleted and superseded NIINs with appropriate codes to indicate disposition action.

Federal Logistics Data on Compact Disc (FED LOG) Management Data Response for NSN 2810-00-118-8356													
User's ID: Item Name: TUBE * Today's Date: 01 JUN 97										JUN 97 1 of 9 tagged NAVY			
S/A PC	SOS Phrase	AAC Statement	QUP	UI	Unit Price	SLC	CIIC UI	RC Conv Factor	MGMT	CTL	PMI	ADP OOU	DML JTC
DF	FPZ	Y	5	EA	6.41	0	7				3	J	
DF	FPZ	Y	5	EA	6.41	0	7	N	MDIPD	V	3	J	
N DISPOSAL													

HELP	NEW SEARCH	SELECT VIEWS		PREV VIEW	NEXT VIEW	PRINT	PREV NIIN	NEXT NIIN		EXIT SYSTEM
------	---------------	-----------------	--	--------------	--------------	-------	--------------	--------------	--	----------------

Figure 7-26 — Example of FED-LOG.

Commercial and Government Entity (CAGE)

The Commercial and Government Entity (CAGE) code (*Figure 7-27*) is a five-digit, numeric identification code assigned to manufacturers who have previously produced or are currently producing items used by the Federal Government. The CAGE is used in conjunction with part number, item number, symbol, or trade name assigned by the manufacturer to a product. The CAGE catalog handbook is published on Defense Logistics Information Service (DLIS) on the FED LOG CD-ROM.

Federal Logistics Data on Compact Disc (FED LOG) Supplier Data Response for NSN 2810-00-118-8356																			
User s ID: Item Name: TUBE * Today s Date: 01 JUN 97	JUN 97 1 of 9 tagged NAVY																		
 Company Name: PRATT AND WHITNEY CANADA INC Address: 1000 MARIE-VICTORIN BLVD LONGUEUIL QUE CAN J4G 1A1 Zip Code: Telephone: 514-662-8333 CAGE Code: 00198 Status: A Type: U.S./CANADIAN MANUFACTURER																			
 Use PAGE UP/DOWN to view additional records for the current NIIN. <table border="1"><tr><td>HELP</td><td>NEW</td><td>SELECT</td><td></td><td>PREV</td><td>NEXT</td><td>PREV</td><td>NEXT</td><td>EXIT</td></tr><tr><td></td><td>SEARCH</td><td>VIEWS</td><td></td><td>VIEW</td><td>VIEW</td><td>NIIN</td><td>NIIN</td><td>SYSTEM</td></tr></table>		HELP	NEW	SELECT		PREV	NEXT	PREV	NEXT	EXIT		SEARCH	VIEWS		VIEW	VIEW	NIIN	NIIN	SYSTEM
HELP	NEW	SELECT		PREV	NEXT	PREV	NEXT	EXIT											
	SEARCH	VIEWS		VIEW	VIEW	NIIN	NIIN	SYSTEM											

Figure 7-27 — Example of CAGE from FED-LOG.

Management List Consolidated (ML-C)

The Management List Consolidated (ML-C) is a consolidated, cumulative listing of National Stock Numbers for all branches of the armed services. Each NSN is listed one time only. The integrated material manager and service or agency are listed separately. The ML-C is a tool used for determining management data applicable to items used or managed by other military activities.

Master Cross Reference List (MCRL)

The Master Cross-Reference List (MCRL) (*Figure 7-28*) Part I, provides a cross-reference from a reference number (manufacturer's part number, drawing number, design control number, etc.) to its assigned National Stock Numbers (NSN). The MCRL, Part II, provides a cross-reference from an NSN to a reference number. The MCRL is published on the FED LOG CD-ROM.

Federal Logistics Data on Compact Disc (FED LOG) Reference Number Data Response for NSN 2810-00-118-8356						
User s ID: Item Name: TUBE * Today s Date: 01 JUN 97	JUN 97 1 of 9 tagged NAVY					
Reference Number	CAGE	ISC	RNVC	RNCC	SADC	DA
AS12345	12776	6	2	3		
12345	00198	6	2	3		
12345	77445	6	9	5		

HELP | NEW | SELECT | PREV | NEXT | PREV | NEXT | EXIT
SEARCH | VIEWS | VIEW | VIEW | PRINT | NIIN | NIIN | SYSTEM

Figure 7-28 — MCRL from FED-LOG.

Master Repairable Item List (MRIL)

The Master Repairable Item List (MRIL) (*Figure 7-29*) is a catalog of selected Navy-managed items which, when unserviceable and not locally repairable, are required to be turned in to a Designated Overhaul Point (DOP) for repair and return to system stock. The MRIL is part of the FED LOG that is distributed in compact disc format.

Hazardous Material Information System (HMIS)

The DOD Hazardous Material Information System (HMIS) provides information concerning the use, procurement, receipt, storage, and expenditure of hazardous material. The NAVSUPSYSCOM maintains and distributes the HMIS hazardous item list. This list includes information concerning hazardous ingredients, use of hazardous material, protective clothing, and emergency treatment.

Federal Logistics Data on Compact Disc (FED LOG)
MRIL Response for NSN/NICN 6610-00-000-0089

User's ID:
Item Name: CIRCUIT CARD ASSEMBLY
Today's Date: 01 JUN 97

JUN 97
1 of 2 tagged
NAVY

LSI	SRC	COG	MCC	MODEL NUMBER	SMIC	SSC	RMC	RC	CIIC	MPD	RIP
7R		H			CS		G	D	U	13	

SHIPPING DATA

NOTES	SHIPPING CODE
MAILABLE CAND	C20481
CTNR002609562	999991

HELP	NEW SEARCH	SELECT VIEWS	SHIP DATA	PREV VIEW	NEXT VIEW	PRINT	PREV NIIN	NEXT NIIN		EXIT SYSTEM
------	------------	--------------	-----------	-----------	-----------	-------	-----------	-----------	--	-------------

Figure 7-29 — MRIL from FED-LOG.

Illustrated Parts Breakdown (IPB)

An illustrated Parts Breakdown (IPB) is prepared by the manufacturer for each model aircraft, engine, accessory, electronic equipment, support equipment, or other equipment considered advisable by Naval Air (NAVAIR). The IPB is printed and issued by the authority of NAVAIR. It is used as reference for identifying and ordering replacement items.

Group Assembly Parts List (GAPL)

The GAPL is the main text of the publication. It consists of a series of illustrations and a parts list in aircraft or equipment parts are shown in assembly breakdown order. The items in the illustration pages are identified by index numbers. These index numbers match the numbers listed in the parts list of the assembly breakdown. The parts list is arranged in numerical sequence by index number to make it easier to use. The information in the parts list includes index number; part number; description; units per assembly; Usable On code; and the Source, Maintenance, and Recoverability (SM&R) code. Each major assembly in the parts list is followed immediately by its component parts or subassemblies. Component parts listed in the description column may be prefixed with a dot or indented to show their relationship. Use this information to identify and obtain the required material in accordance with the SM&R code. The numerical index of the IPB lists all parts in reference/part number sequence. Each reference/part number is cross-referenced to the figure and index number or the work package where the item is listed in the text.

Afloat Shopping Guide

The Afloat Shopping Guide (ASG) (*Figure 7-30*) is designed to assist the fleet personnel in identifying the NSNs for items that are frequently requested by ships. It includes a detailed description of each item, and (when applicable) the stock number for substitute items. The ASG is distributed in CD-ROM format and printed form.

General Services Administration

The General Services Administration (GSA) supply list is approximately 20,000 line items that are stocked in GSA supply distribution facilities. The items listed in this catalog are assigned cognizance 9Q. The GSA supply catalog series serves as the major merchandising instrument of the Federal Supply Service (FSS) Stock Program. Since GSA is prepared for civilian agencies, the FED LOG must be referred to for supply management data.

The GSA supply catalog guide contains consolidated alphabetical and NSN indexes to all stock items. These are items divided into four commodity catalogs and other items available through the FSS program.

GSA Supply Catalog, Tools contains listings of common and special-use tools. It includes alphabetical and numerical indexes and a price list.

GSA Supply Catalog, Office Products lists a wide variety of items for office use, including paper supplies, standard and optional forms, and many items of equipment. It includes alphabetical and numerical indexes and a price list.

GSA Supply Catalog, Industrial Products contains descriptive listings of a broad range of items, such as hardware, paints, adhesives, and cleaning equipment and supplies. It includes alphabetical and numerical indexes and a price list.

GSA Supply Catalog, Furniture provides a single source of information for all furniture items stocked by the FSS.

Source, Maintenance and Recoverability Codes (SMR)

The SM&R code consists of a two-position source code, two single-position maintenance codes, a single-position recoverability code, and if applicable, a single-position service option code. *Figure 7-31* breaks down the SM&R code by position and defines the source, maintenance level, and reparability level of the component.

Source Code is a two-character code that occupies the first two positions of the SM&R code format. This code shows the manner of getting the material needed for maintenance, repair, or rework of items.

Maintenance Code is indicated in the third and fourth positions of the SM&R code. It indicates levels of maintenance authorized to replace and repair an assembly or part. The code shown in the third position provides the lowest level of maintenance authorized to remove or replace the assembly or part. The fourth position indicates whether the item is to be repaired and identifies the lowest maintenance level authorized to perform the repair.

Recoverability Code is indicated in the fifth position; this code defines the approved disposition of unserviceable items.

**GROUP 48
VALVES
CLASS 4820
VALVES, NONPOWERED**

BIBB TYPE

**BOOT DUST AND MOISTURE
SEAL**

Silicone Rubber Body, thru-hole style.
Compression type mtg. 1.469 in. O/A H. .080
in. thk., 2.000 in. body OD, 2.875 in. base
OD, 1.875 in. base ID, and .875 opening ID.
Used on Valves, Pressure Regulating. Leslie
Co Navy Sales Ref No. 37740.

00-615-6762

Threaded male pipe inlet. Brass body. Angle
type with level handle. Spec MIL-C-1203,
150 PSI steam service.



125 PSI

00-826-2190	1/8-27NPT	MS35785-1
00-272-3340	1/8-27NPT	
00-197-4984	1/4-18NPT	MS35785-2
00-554-8391*	1/2-14NPT	MS35785-4

*Disc or stem flow control device.

COCK, DRAIN

00-272-3332	1/8-27NPTF	MS35787-1
00-272-3333	1/4-18NPT	
00-272-3335	1/2-14NPT	MS35787-4

COCK, PLUG

Threaded male pipe inlet. Brass body, T
handle w/hose bib that accommodates 3/8 in.
ID hose. Has 150 PSI liquid/gas rating.

FEMALE ENDS



Threaded female pipe inlet. Brass body, 360
deg, plug turn. Furnished with square head
wrench. For use in fluid piping systems. Spec
MIL-C-1203.



00-845-1096 1/4-18NPTF MS35783-2



PET TYPE

Threaded male pipe inlet. Brass body, F
use in liquid or gas systems up to pressure
as indicated below. Spec MIL-C-1203.



00-274-3565 3/4-14NPT



FEMALE to MALE

Threaded female and male pipe ends. Brass
body. For use with fluid or gas to 125 PSI
pressure.

00-684-0880	1/8-27NPTF	MS35782-1
00-720-4488	1/4-18NPTF	MS35782-2
00-174-0339	3/8-18NPTF	MS35782-3

Straight External Seat

00-752-9040	1/8-27NPTF	MS35782-4	50 PSI
00-849-1220	1/4-18NPTF	MS35782-5	

Cross External Seat

00-276-9041	3/8-18NPT	MS35782-6	00-555-9761 1/8-27NPTF MS35784-1
			00-287-4268 1/4-18NPTF MS35784-2
			00-272-3346 3/8-18NPTF MS35784-3
			00-272-3347 1/2-14NPTF MS35784-4

CONTINUED ON FOLLOWING PAGE

Figure 7-30 — Example of Afloat shopping guide.

SOURCE		MAINTENANCE				RECOVERABILITY/ PROGRESSIVE REPAIR		OPTIONAL SUPPLEMENTAL CODES	
		USE		REPAIR					
1ST POSITION	2ND POSITION	3RD POSITION		4TH POSITION		5TH POSITION		6TH POSITION	
P PROCEDURE	A REPLENISH	O ORG	Z	NO REPAIR (CONSUMABLE)		Z	LEVEL INDICATED IN 3RD POSITION (CONSUMABLE)		1 THREE-DEGREE GAS TURBINE ENGINE REPAIR
	B INSURANCE								2 PROGRAM ITEM WITH FIRST DEGREE IMA LEVEL (I)
	C CURE-DATED		O			O			3 HAVING THE MOST CAPABILITY AND THIRD-DEGREE IMA (J) HAVING THE LEAST
	D INITIAL (EXCLUDING SE)			ORG			ORG (FLR)		
	E END ITEM SE STOCKED FOR INITIAL ISSUE	F	IMA AFLOAT	F	IMA AFLOAT	F	IMA AFLOAT (FLR)	6 "PA" ITEM WITH ORGANIC CAPABILITY FOR STOP GAP REQUIREMENTS	
	F SE NOT STOCKED	H	IMA ASHORE	H	IMA ASHORE	H	IMA ASHORE (FLR)	E END TO END TEST REQUIRED BY IMA PRIOR TO BCM ACTION	
	G LIFE OR TYPE	G	IMA AFLOAT OR ASHORE	G	IMA AFLOAT OR ASHORE	G	IMA AFLOAT OR ASHORE (FLR)	N "XB" ITEM TO BE PROCURED LOCALLY	
K	REPAIR KIT COMPONENT	F FIELD (ORG IMA) D DEPOT B BOTH	L	SPECIALIZED IMA	L	SPECIALIZED IMA	L	SPECIALIZED IMA (FLR) (CONNOTES PRIME IMA CONCEPT- SEE APPENDIX D ENCL (2) NOTE IN INSTRUCTION)	P PROGRESSIVE MAINTENANCE
M	MANUFACTURE	O ORG F IMA AFLOAT H IMA ASHORE G IMA AFLOAT OR ASHORE D DEPOT	D	DEPOT	D	DEPOT	D	DEPOT (DLR) (ORGANIC OR COMMERCIAL)	T "PD" TRAINING DEVICE ITEM
A	ASSEMBLE								J ALL INTER-SERVICE DLR ITEMS WHICH NAVY AS SICA CONSIDERS FLR-IF ITEM IS UNDER THREE-DEGREE GAS TURBINE ENGINE REPAIR PROGRAM, APPLIES TO FIRST- DEGREE IMA LEVEL ONLY
X	MISC.	A REQUEST NHA B OBTAIN FROM SALVAGE OR ONE TIME BUY C DIAGRAMS SCHEMATICS INSTALLATION DRAWINGS	Z	NOT AUTHORIZED AT ANY LEVEL- USED ONLY WHEN REQUIRED FOR REFERENCE PURPOSES	B	NOT AUTHORIZED (RECONDITION AT USER LEVEL)	A	SPECIAL HANDLING FOR DISPOSAL (CONSUMABLE)	8 SAME AS "J" EXCEPT APPLICABLE ONLY TO SECOND DEGREE IMA LEVEL
									9 SAME AS "J" EXCEPT APPLICABLE ONLY TO THIRD-DEGREE IMA LEVEL

Figure 7-31 — SMR code.

CASUALTY REPORTING (CASREP)

The casualty report (CASREP) is designed to support the Chief of Naval Operations (CNO) and fleet commanders in the management of assigned forces. The effective use and support of Navy forces requires an up-to-date, accurate operational status for each unit. An important part of operational status is casualty information. The CASREP system contains three types of reports: initial, update, and correct. These reports are described in general in the following paragraphs.

Initial Casualty Report (Initial)

An Initial CASREP identifies the status of the casualty and any parts or assistance needed. Operational and staff authorities use this information to set priorities for the use of resources.

Update Casualty Report (Update)

An Update CASREP is used to submit changes to previously submitted information.

Correction Casualty Report (Correct)

A Correct CASREP is submitted when equipment that has been the subject of casualty reporting is repaired and is back in operational condition.

CATAPULT AND ARRESTING GEAR ADMINISTRATION

Record keeping in relation to launch and recovery equipment is as important as the operation of the machinery or maintenance procedures. Because of the many 3-M maintenance requirements and required periodic reports, the importance of accurate logs, reports, and records must be emphasized.

Catapult Work Center Maintenance Log

The work center maintenance log is the most important record kept on the catapult systems. Each catapult work center supervisor shall maintain a separate maintenance log for each catapult. The supervisor must make daily entries listing all maintenance performed during a 24-hour period. When a logbook is filled, the supervisor transfers historical or permanent data into a new maintenance log and retains the completed log for a minimum of two years. At the back of the front cover of work center maintenance log is the launch valve clock timers (*Figure 7-32*), which are permanently

1. Data which may be required periodically or could affect equipment over long periods of time should be entered in the front section of the maintenance log and transferred to new logs as necessary. Listed below are some examples:
 - a. At shot number 75,982 the launch valve and its associated CSV were replaced by overhauled launch valve SN 88006 and CSV, SN EMP-S-124. Valve characteristics at certification are as follows:
 - (1) Cold launch valve cycle times:

CSV	CLOCK TIMES (SEC)		FULL OPEN TIME (SEC)	CLOSE
	1	2		
050	0.81	9.22	20.11	
100	0.56	3.78	7.87	
150	0.42	2.24	4.54	0.55
200	0.34	1.55	3.08	
250	0.28	1.16	2.31	
300	0.23	0.92	1.80	
300	0.23	0.92	1.80	
250	0.27	1.16	2.30	
200	0.33	1.54	3.10	0.55
150	0.42	2.23	4.52	
100	0.55	3.78	7.87	
050	0.80	9.24	20.13	

- (2) Cold low-pressure actuations, CSV 300:

OPENING				
TENSIONER REQ PRESS (PSI)	OPENING PRESSURE	FINAL OPENING PRESSURE	OPENING TIME	
95	25	95	01:12	
95	25	95	01:05	
Average 95	25	95	01:08	

CLOSING				
95	20	95	01:19	
95	20	95	01:17	
Average 95	20	95	01:18	

Figure 7-32 — Launch valve clock timers.

attached. The data from these clock timers is very important and required periodically every time preventive and corrective maintenance is performed on the launch valve. The clock timer data serves as a guide, and if launch valve opens up outside these clocks, immediate attention is required.

Catapult Steam Log

The catapult steam log, also known as shot log (*Figure 7-33*), is maintained during all catapult operations by a catapult recorder stationed at the central charging panel (CCP) or main control console (MCC).

STEAM CATAPULT LOG												MONTH JUNE 19 96								
U.S.S. KITTY HAWK CV 63																				
CATAPULT TYPE C-13 CATAPULT NO 2																				
STEAM RECEIVER LAUNCHING PRESSURE 520 psi (FOR CONSTANT RECEIVER PRESSURE SYSTEM)																				
												NAVAIR MANUAL 51-15AAA-1 SI-15ABD-1, SI-15ABC-1, SI-15ABD-1								
SHOT NO.	DATE AND TIME	AIRCRAFT DATA			CYLINDER ELONGATION (INCHES)		LAUNCHING STEAM PRESS. (PSI) ON CAPACITY SELECTOR VALVE SETTING			STEAM RECEIVER DATA			LAUNCH VALVE TIME		END SPEED	BRIDGE ARRESTOR DATA		REMARKS		
		TYPE	WEIGHT (LBRS)	SIDE NO.	WIND OVER DECK	LEFT	RIGHT	PRESS AFTER	STEAM TEMP °F	WATER TEMP °F	WATER LEVEL (INCHES)	CLOCK 1	CLOCK 2	PRE PRES		DECK RUMOUT				
085470	20:00	F/A 18	33.0	301	24	7.8	7.8	164	490	480	480	48	.36	2.96	126					
085471	20:03	F/A 18	34.0	315	25	7.8	7.8	170	490	480	480	48	.35	2.03	127					
085472	20:06	F/A 18	33.0	323	26	7.8	7.8	164	480	480	480	48	.36	2.15	127					
085473	21:30	S-3A	40.0	704	15	7.6	7.3	134	500	480	480	48	.46	2.80	109					
085474	21:32	S-3A	38.0	743	20	7.5	7.3	114	505	480	480	48	.50	3.30	101					
085475	21:35	A-6E	39.0	500	25	7.5	7.3	124	490	480	480	48	.48	3.14	105					
SIGNATURE (Catapult Officer)								DATE								PROVIDED FEE FREE BY THE U.S. GOVERNMENT				
REF ID: A25517												REF ID: A25518								

Figure 7-33 — Steam catapult log.

Arresting Gear Work Center Maintenance Log.

The work center maintenance log is similar to catapult work center maintenance log and is the most important record kept on the arresting gear system. The arresting gear supervisor shall maintain a separate maintenance log for each arresting engine. Sufficient pages in the front of the log are reserved for entering historical or permanent data nature. Make daily entries listing all maintenance performed during a 24-hour period. When a log is filled, transfer the historical or permanent data into a new maintenance log and retain the completed.

Arresting Gear Recovery Log

The Recovery Log (*Figure 7-34*) is maintained during all aircraft recovery operations by the primary fly (pri-fly) control pane operator to provide a uniform system of recording pertinent arresting gear data.

RECOVERY LOG (FOR USE IN PRI-FLY) NAVAIR FORM 13810/4 (8-75)												
FROM U.S.S. KITTY HAWK							SHIP IDENTIFICATION NO. CV-63			DATE 01/10/96		
TO (ORIGINAL ONLY) (MONTHLY)												
COMMANDING OFFICER, NAVAL AIR WARFARE CENTER (CODE 4.8.10.4) LAKEHURST, NEW JERSEY 08733-5090												
RECOVERY NO.	PENDANT NO.	TIME	TYPE	SIDE NO.	WEIGHT	APP SPEED	WIND OVER DECK	(1) DISTANCE OFF CENTER	(2) LANDING TYPE	(3) ENGINE WEIGHT SETTING	(4) RAM TRAVEL	(5) REMARKS
300608	P3	10:00	F1A18	300	36.0		22	0	R1	36.0	180	15.7 50
300609	P3	10:01	F1A18	310	36.0		23	2P	R1	36.0	181	15.7 50
300610	P2	10:02	F-14	203	54.0		25	0	R1	54.0	182	19.7 50
300611	P4	10:03	F-14	111	54.0		27	3S	R1	54.0	180	19.7 50
300612	P3	10:05	S-3	706	41.0		27	0	R1	41.0	180	14.5 50
300613	P1	10:06	EA-6B	621	46.0		30	0	R1	46.0	180	18.8 50
300614	P3	10:07	F-14	103	54.0		29	0	R1	54.0	178	19.7 50
300615	P3	11:17	F1A18	353	36.0		25	0	R1	36.0	180	15.7 50 #3 COP CHANGE BW
												

(1) IF ON CENTER, WRITE "0"; IF OFF CENTER, INDICATE NUMBER OF FEET AND WHETHER TO PORT OR STARBOARD, I.E., "12S" (12 FEET TO STARBOARD)

(2) WRITE "FF" (FREE FLIGHT) OR "RF" (ROLL-IN)

(3) OBTAIN FROM ENGINE COMPARTMENT

(4) FRESNEL LENS SETTING/BASIC ANGLE: MAKE ALL ENTRIES IN DECIMAL FOR

(5) ENTER ALL UNUSUAL EVENTS, INCLUDING: 2-WIRE ENGAGEMENT, CABLE DAMAGE TO AIRCRAFT, PENDANT CHANGE AND REASON

Figure 7-34 — Recovery log sheet (NAVAIR form 13810/4).

Recovery Wire Rope History Chart

The recovery wire rope history chart (*Figure 7-35*) provides a uniform system for recording arresting gear wire rope data. Engine operators shall maintain this for each specific engine, with the last recovery number being obtained from pri-fly. A new sheet shall be used at the beginning of each month.

RECOVERY WIRE ROPE HISTORY
NAVAIR FORM 13819/5 (REV. 6-75)

FROM:	SHIP IDENT. NO.	ENGINE IDENT NO.	PENDANT NO.	MK 7 MOD	MONTH & YEAR	NOTE: ALL DATA (EXCEPT PENDANT REPLACED) APPLIES TO PURCHASE CABLE
USS KITTY HAWK (CV-63)	03363	357	ONE	3	FEB 95	

TO: (ORIGINAL) (MONTHLY)

COMMANDING OFFICER, NAVAL AVIATION WARFARE CENTER A/C DIVISION (CODE 4.8.10.4) LAKEHURST, N.J. 08733

ENGINE ENGAGEMENT NUMBER	DATE	LAST RECOVERY NUMBER	NO. OF HITS ON PURCHASE CABLE	'Q' FACTOR		BROKEN WIRES	TERMINAL REPLACEMENT	PURCHASE CABLE REPLACEMENT	NEW CABLE DATA			PENDANT REPLACEMENT AND REASON	REMARKS
				VALUE (2)	LOC (3)				REEL NUMBER	CONTRACT NUMBER	MANUFACTURER		
2566	07 FEB	300331	486	11 7/16	8P								M-2R PCI
				11 7/16	20P								
				11 7/16	8S								
				11 1/4	20S								
2564	09 FEB	300935	511									"BW"	76 HITS
2601	09 FEB	300943	519									"MAX H"	98 HITS
2619	11 FEB	301575	537									"MAX H"	96 HITS

LEGEND: (1) OBTAIN FROM PRI-FLY. (2) DISTANCE (FT) FROM DECK TERMINAL. (3) SPECIFY WHETHER PORT OR STBD ACTIONS. (4) FOR TERMINAL REPLACED, INDICATE DUE TO "S" (STRETCH), "R" (RECESION OF WIRES), OR "Z" (ZINC). (5) REASON FOR REPLACEMENT OF "MAX H" (MAXHITS), "Q" (MIN. Q FACTOR) "BW" (BROKEN WIRES), "K" (KINK), "COR" (CORROSION). AMPLIFY UNDER REMARKS IF REQUIRED.

Figure 7-35 — Recovery wire rope history chart (NAVAIR form 13819/5).

Flight Deck Operation (NAVAIR Form 13810/1 and Form 138/1A)

The flight deck operation report *Figure 7-36* and *Figure 7-37* is a two part form compiled from information contained in the catapult shot logs and the arresting gear recovery logs.

FLIGHT DECK OPERATIONS (PART I - LAUNCHING) NAVAIR FORM 13810/01 (Rev. 8-79) S/N 0102-LF-613-8101

FROM		TO	
COMMANDING OFFICER USS KITTY HAWK (CV 63) FPO AP 96634-2770		COMMANDING OFFICER NAVAL AIR WARFARE CENTER (CODE 48J400) LAKEHURST, N.J. 08733-5092	
CALENDAR YEAR		QUARTER	
1995		JAN/FEB/MAR	
AIRCRAFT SERIES AND MODEL NO.	DAY OR NIGHT	BOW	WAIST
		NO. 1 NO. 2	NO. 3 NO. 4
A-6	D	39	66
	N	24	21
C-2	D	22	2
	N	2	0
EA-6B	D	52	62
	N	38	29
E-2C	D	67	2
	N	32	0
F-14	D	112	6
	N	56	0
F/A-18	D	162	35
	N	101	18
S-3	D	144	11
	N	70	6
SUB-TOTAL		921	655
NO LOADS		76	14
DEAD LOADS		0	0
TOTAL CATAPULT LAUNCHES THIS REPORT	TOTAL CATAPULT LAUNCHES TO DATE		TOTAL HELO TAKE-OFFS THIS REPORT
1576	327, 375		TOTAL HELO TAKE-OFFS TO DATE
N/A			

LAUNCHING INCIDENTS List date and summary of all launching incidents, include message DTG, if applicable; note circumstances of runaway shots or launching incident due to material failure or malfunction of equipment including launching accessories; note any significant downtime and reason. Include other pertinent remarks. (continue on reverse if necessary)

Figure 7-36 — Flight deck operation report, part 1.

FLIGHT DECK OPERATIONS (PART II - LANDING)
NAVAIR FORM 13810/1A (REV.8-79) S/N 0102-LF-613-8106

REPORT SYMBOL NAVAIR 13810-1

FROM
COMMANDING OFFICER
USS KITTY HAWK (CV-63)
FPO AP 96634-2770

TO
COMMANDING OFFICER
NAVAL AIR WARFARE CENTER (CODE 4.8.10)
LAKEHURST, NJ 08733-5092

CALENDAR YEAR

1997

QUARTER

JAN/FEB/MAR

AIRCRAFT SERIES AND MODEL NO.	DAY OR NIGHT	ARRESTED LANDINGS	BOLTER (CAUSE)		TOUCH AND GO OR HELO LANDING	PENDANT NO.	LANDING PER PENDANT POSITION	NO. HITS EACH PENDANT CHANGED
			MW	MLA				
			0	0	0	P1		94
EA-6B	D	120	0	0	0	P2	152	98, 78, 88, 90, 63, 93, 80, 90
	N	40	0	0	0		998	
F-14A	D	970	0	0	0	P3		93, 98, 96, 97, 99, 65, 100, 95, 98, 100,
	N	124	0	0	0		2114	99, 82, 100
F/A-18	D	1120	0	0	0	P4		96, 83, 90
	N	190	0	0	0		152	
E-2C	D	115	0	0	0	P5		
	N	36	0	0	0		0	
US-3A	D	80						
	N	0						TOTAL ARRESTED LANDINGS THIS REPORT
								3895
S-3B	D	860						TOTAL ARRESTED LANDINGS TO DATE
	N	240						283259
								TOTAL HELO LANDINGS THIS REPORT
								TOTAL HELO LANDINGS TO DATE

LANDING INCIDENTS: List date and summary of all landing incidents, include message DTG if applicable, note circumstances of all barricade engagements, failure of landing gear arresting hooks, cable, etc., or arresting gear malfunction and significant downtime. Give cause of purchase cable replacement and number of arrests. Include other pertinent remarks. (Continue on reverse if necessary.)

1. Replaced purchase cables on P3 after maximum traps (reduced by heavies) of 1500.
2. Replaced purchase cables on P4 after 1467 traps due to exceeding "Q" factor limits.

SIGNATURE (Commanding Officer)

DATE

COPY TO TYPE COMMANDER

Figure 7-37 — Flight deck operation, part 2.

Aircraft Launch and Recovery Equipment (ALRE) Log Program

The Auto shot and recovery log program provides a computerized program for the collection and dissemination of launch and recovery log data. The automated program has been developed to record the Shot Log, Recovery Log, and Wire Rope History Report on computer disc. These discs are then sent to NAWC Lakehurst instead of the paper forms.

SUMMARY

In this chapter, you learned that the Planned Maintenance System is a means for accomplishing preventive maintenance aboard ship. You also learned that PMS procedures for a specific piece of equipment are based on good engineering practices, practical experience, and technical standards. You studied the role of the Maintenance Data System in planning workloads and providing a database for evaluating and improving equipment installed in the fleet. The supply information in this chapter is not intended to make you an expert in supply matters. Rather, this section was developed to give you a basic understanding and provide you with some of the information needed for ordering supplies. You also studied the maintenance logs and reports for recording the details of catapult and arresting gear operations and maintenance.

End of Chapter 7

Maintenance Planning and Administration

Review Questions

- 7-1. What PMS manual contains planned maintenance requirements and provides a ready reference for the supervisor?
- A. Maintenance index page
 - B. Work center
 - C. Division
 - D. MRC
- 7-2. What provides a listing of MIPs assigned to each department, divided by work center and contains force revision, unit, and work center?
- A. LOEP
 - B. EGL
 - C. TGL
 - D. MRC
- 7-3. What is used to perform detailed maintenance action and contains ships system, rates, and maintenance requirement description?
- A. MIP
 - B. LOEP
 - C. MRC
 - D. FBR
- 7-4. What is used along with the controlling MRC to assist in identifying identical equipment or items?
- A. MIP
 - B. SYSCOM
 - C. TGL
 - D. EGL
- 7-5. What PMS schedule displays maintenance requirements to be performed during the period of major overhauls?
- A. Weekly
 - B. Monthly
 - C. Cycle
 - D. Annually

- 7-6. What symbol is used in the maintenance column of a MIP to identify all mandatory related maintenance?
- A. Asterisk
 - B. Pound
 - C. Circle
 - D. Hyphen
- 7-7. Who is authorized to change the Quarterly schedule once its completed and finalized?
- A. Work center supervisor
 - B. Division officer
 - C. Department head
 - D. Commanding officer
- 7-8. What symbol indicates completion of maintenance requirements on a quarterly schedule?
- A. X
 - B. O
 - C. #
 - D. {}
- 7-9. What schedule displays the planned maintenance schedule for accomplishment in a seven day work week?
- A. Annual
 - B. Quarterly
 - C. Monthly
 - D. Weekly
- 7-10. What is used to record necessary information for workload planning and coordination and provides data for evaluating and improving equipment?
- A. CSMP
 - B. MDS
 - C. FBR
 - D. PMS
- 7-11. What OPNAVINST is the 3M manual?
- A. 4790.3
 - B. 4790.4
 - C. 4790.5
 - D. 4790.6
- 7-12. What form is used to report all deferred maintenance actions?
- A. OPNAV 4790/2K
 - B. OPNAV 4790/2P
 - C. OPNAV 4790/CK
 - D. OPNAV 4790/2L

- 7-13. What form is used to report partially completed maintenance actions and partial accomplishment of alterations?
- A. OPNAV 4790/2L
 - B. OPNAV 4790/CK
 - C. OPNAV 4790/2K
 - D. OPNAV 4790 2P
- 7-14. What section/block of OPNAV 4790/2K contains the signature and rate/rank of individual accepting the work?
- A. Section I
 - B. Section II
 - C. Block G
 - D. Block H
- 7-15. What section/block of OPNAV 4790/2K identifies the equipment or system on which maintenance is being performed?
- A. Section I
 - B. Section II
 - C. Block G
 - D. Block H
- 7-16. What is used by maintenance personnel to provide amplifying information such as drawing and listings related to a maintenance action on OPNAV 4790/2K?
- A. Maintenance planning form
 - B. Deferred action form
 - C. Supplemental form
 - D. Repair action form
- 7-17. How many digits are assigned on national stock number?
- A. 10
 - B. 11
 - C. 12
 - D. 13

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Pensacola, FL 32508

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