

DATA ITEM DESCRIPTION

Form Approved
OMB No 0704-0188

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1 TITLE		2 IDENTIFICATION NUMBER	
PLANNED MAINTENANCE SYSTEM (PMS) MAINTENANCE REQUIREMENT CARD (MRC)		DI-MNTY-80991	
3 DESCRIPTION/PURPOSE			
3.1 The Planned Maintenance System (PMS) Maintenance Requirement Card (MRC) describes specific maintenance actions, scheduled and unscheduled for performing the action as well as changes to available MRCs.			
4 APPROVAL DATE (YYMMDD)	5. OFFICE OF PRIMARY RESPONSIBILITY (OPR)	6a. DTIC APPLICABLE	6b. GIDEP APPLICABLE
900517	N/CEL-TD		

7 APPLICATION/INTERRELATIONSHIP			
7.1 This Data Item Description (DID) contains the format and content preparation instructions for the PMS Requirement Card resulting from the work task described by 3.11 of MIL-P-24534 (Navy).			
7.2 This DID is related to DI-MNTY-80994, Planned Maintenance System Functional Block Diagram; DI-MNTY-80979, Planned Maintenance System			
(Continued on Page 2)			

8 APPROVAL LIMITATION	9a APPLICABLE FORMS	9b AMSC NUMBER
		N4945

10 PREPARATION INSTRUCTIONS			
10.1 <u>Reference documents.</u> The applicable issue of the documents cited herein, including their approval dates and dates of any applicable amendments, notices, and revisions, shall be as specified in the contract.			
10.2 <u>Format.</u> The PMS Maintenance Requirement Card shall be documented using contractor format.			
10.3 <u>Content.</u> The MRC's shall be completed containing the following:			
10.3.1 <u>Ship system.</u> Enter the Expanded Ship Work Breakdown Structure (ESWBS) level 2 nomenclature and number for the functional group containing the item to which the MRC is applicable.			
10.3.2 <u>System.</u> Enter the ESWBS level 3 nomenclature and number for the system containing the item to which the MRC is applicable.			
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DISTRIBUTION STATEMENT

Distribution Statement A: Approved for public release; distribution is unlimited.

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7. Application/Interrelationship (Continued)

Master System and Subsystem Index; DI-MNTY-80980, Planned Maintenance System Failure Modes and Effects Analysis; DI-MNTY-80981, Planned Maintenance System Functional Failure Analysis; DI-MNTY-80982, Planned Maintenance System Functionally Significant Items Index; DI-MNTY-80983, Planned Maintenance System Additional Functionally Significant Item Index Selection Report; DI-MNTY-80984, Planned Maintenance System Logic Tree Analysis With Supporting Rationale and Justification; DI-MNTY-80985, Planned Maintenance System Servicing and Lubrication Analysis; DI-MNTY-80986, Planned Maintenance System Requirement Index; DI-MNTY-80987, Planned Maintenance System Procedure Evaluation Sheet; DI-MNTY-80988, Planned Maintenance System Task Definition; DI-MNTY-80989, Planned Maintenance System Inactive Equipment Maintenance Requirement Analysis; DI-MNTY-80990, Planned Maintenance System Reliability Centered Maintenance Documentation Control Sheet; DI-MNTY-80992, Planned Maintenance System Maintenance Index Page; DI-MNTY-80993, Planned Maintenance System Quality Assurance Check Sheet.

7.3 Application for copies of NAVPERS publication 18068; NAVSEA publications ST000-AA-IDX-010/PEETE, SW394-AC-MMA-020/LS10, and S9510-AB-ATM-010; and NAVSUP publication 4400 should be addressed to the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099.

10. Preparation Instructions (Continued)

10.3.3 Subsystem. Enter the ESWBS level 4 nomenclature and number for the subsystem containing the item to which the MRC is applicable.

10.3.4 Equipment. Enter the ESWBS level 5 nomenclature, the number of the equipment or component to which the MRC is applicable and the CDC. If the MRC is applicable to the entire subsystem or system, enter ESWBS level 4, or level 3 nomenclature and number as appropriate.

10.3.5 MRC code. Enter a two-segment code; for example, 416 Q-2, 7211 Q-1, or A-100 Q-1. The first segment is the Maintenance Index Page (MIP) series code which will be provided by the applicable Planned Maintenance System (PMS) coordinating activity. MRCs applicable to more than one MIP series will have each MIP series entered in this area. If more than four MIP series are applicable, reference shall be made to a note in the procedure area. The second segment is the maintenance requirement periodicity code. The following are the only authorized periodicities and codes:

10.3.5.1 Calendar Periodicity.

D - daily	A - annually
2D - every 2 days	18M - each 18 months
3D - every 3 days	24M - each 24 months
W - weekly	30M - each 30 months
2W - every 2 weeks	36M - each 36 months
M - monthly	48M - each 48 months
2M - every 2 months	54M - each 54 months
Q - quarterly	60M - each 60 months
S - semiannually	

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10. Preparation Instructions (Continued)

Calendar periodicities may be extended in 6-month increments; for example 66M, 72M, 78M, and so forth, up to the scheduled modernization for applicable ship classes in the extended operability cycle program.

10.3.5.2 Noncalendar periodicity.

R - situation requirement
U - unscheduled maintenance

10.3.5.3 Inactive equipment maintenance.

LU - layup maintenance
PM - periodic maintenance
SU - start up maintenance
OT - operational test

10.3.6 Rates. This area shall be left blank when preparing an inactive equipment maintenance scheduling MRC. For all other MRCs, identify and enter, by rate and rating, the number of persons required to perform the MR. Entries in this block shall be made as follows:

10.3.6.1 The Navy Enlisted Classification (NEC) shall be entered if special skills are required. Appropriate special skill codes shall be as specified in section II of NAVPERS Publication 18068.

10.3.6.2 When both NEC and rates are important to the task, both shall be included; for example, GM2, with the NEC 0876 listed beneath the RATE.

10.3.6.3 A commissioned officer or warrant officer may be required to be present or available for a specific task indicated in a maintenance procedure. Titles for officers shall be the first entry in this area when applicable; for example, DCA, EMO, Eng Off.

10.3.6.4 In cases where more than one rating is required, ratings shall be listed after the officers descending by rate within each rating category; for example, Eng. Off., BT1, BT2, DS2, MM1, MM2.

10.3.6.5 When more than one person is required for a particular rate, the appropriate number shall precede the rate; for example, 2MR1, 2ST1, 3ET2. When two or more persons of the same rate are required and their time requirements are not equal, each person shall be listed separately. When additional personnel are required because of safety regulations, the rate and number of such personnel shall also be included.

10.3.6.6 In cases where either of two similar rates can be assigned the work on an MRC, both rates shall be listed, separated by a slash; for example, BT/BR1, DS/ET1, GMF/FTG2, MM/BR2, ST/ET2.

10.3.6.7 MRCs with a calendar periodicity or "R" periodicity shall include the necessary rates to perform the maintenance. MRCs with a "U" periodicity shall include rates when so directed by the PMS coordinating activity.

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10. Preparation Instructions (Continued)

10.3.6.8 In cases where more than five rate entries are required to perform the MRC, the rates area will direct the reader to a note.

10.3.7 Man-hours (M/H). This area shall be left blank when preparing an inactive equipment maintenance scheduling MRC. For all other MRCs:

- a. M/H (converted to hours and tenths of hours) shall be entered immediately to the right of each rate in the rates area. When the M/H figure is less than one hour, a zero shall appear before the tenths of an hour portion; for example, 0.1, 0.4. When a commissioned officer or warrant officer is required, no M/H shall be assigned for that person.
- b. The time entered shall indicate the M/H required for each listing in the rates area as if they were performing their tasks independently. When two or more of the same rate are required and their time requirements are equal, the M/H shall be the sum of their requirements. When two or more persons of the same rate are required and their time requirements are not equal, each person shall be listed separately.
- c. Equipment warmup time of 30 minutes or less shall be included in the assigned M/H. Warmup time in excess of 30 minutes shall not be included unless the maintainer is required for constant observance.
- d. "Make ready" or "put away" time shall not be included in this area.
- e. When another MRC or procedure is referred to in the procedure area and only a portion of that MRC or procedure is to be accomplished, time required to do that portion shall be included in the M/H of the person accomplishing the task of the subject MRC. However, if the referenced procedure includes the entire scheduled related MRC, the M/H of that MRC shall not be included.

10.3.8 Total M/H. Total M/H shall be the sum of each entry in M/H (10.3.7).

10.3.9 Elapsed time. This area shall be left blank when preparing an inactive maintenance scheduling MRC. For all other MRCs the entry in this area shall indicate the elapsed time, in clock hours and tenths of an hour, from start to finish of the maintenance procedure. The time involved for preparation to accomplish the task and cleanup time upon completion shall not be included. The elapsed time entry does not always duplicate the longest entry in M/H area. It may be longer when some personnel must wait for others to accomplish certain procedural steps.

10.3.10 Maintenance requirement description. Enter and number the MR description. The first letter of the first word in the MR description shall be capitalized with all other words in lower case. When

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10. Preparation Instructions (Continued)

authorized abbreviations or proper nouns are included in the description, they shall be completely capitalized or initially capitalized as appropriate. The MR description shall be a complete sentence (second person imperative) and shall begin with an active verb; for example, inspect, test, calibrate, adjust, lubricate, clean, or replace. The description shall be as brief as possible and shall reflect precisely the task required. The description shall be as brief as possible and shall reflect precisely the task required. The description shall identify what is to be performed, leaving descriptions of performance in the procedure area. After the maintenance requirement description, the maintenance requirement description area shall be subdivided into the following areas, if applicable: SAFETY PRECAUTIONS, TOOLS, PARTS, MATERIALS, TEST EQUIPMENT; PROCEDURE.

10.3.10.1 Safety precautions. When all required safety precautions are explicitly included in technical documentation available to the maintainer, the first entry in this area shall identify that documentation by publication number and volume, for example: Observe standard safety precautions in accordance with Safety Summary in NAVSEA technical manual SW394-AC-MMA-010/LS10. When such assurance is not available, the first entry shall be: Forces afloat comply with Navy Safety Precautions for Forces Afloat, OPNAVINST 5100 series; Shore Activities comply with Safety Precautions for Shore Activities, NAVMAT P-5100 series. When the documentation relates to a system or equipment which has no utility ashore, only the first sentence shall be entered. When utility will be ashore only, the first sentence shall be omitted. When an inactive equipment maintenance scheduling MRC is being prepared, the standard entry in this area shall be "Observe safety precautions as specified on scheduled MRCs".

10.3.11.1 Additional warnings. Additional or more specific warnings shall follow when applicable and shall be listed in the order in which they appear in the procedure area.

10.3.11.2 Additional warnings requiring the use of additional personnel. For those actions which require additional personnel because of safety regulations, the phrase "Do not work alone" shall be added to the applicable safety precaution. For example: Voltages dangerous to life are present when interlock switch is bypassed. Do not work alone.

10.3.11.3 Capitalization required. The first letter of the first word in each safety precaution shall be capitalized, with all other words in lower case, unless capital letters are required for another reason.

10.3.11.4 Submarine applications. In submarine application when subsafe boundaries are violated, comply with current reentry control requirements. The statement, "Ensure compliance with SubSafe Reentry Control," shall appear in this area.

10.3.11.5 Cleaning solvent. The following standard safety precaution is to be used whenever cleaning solvents are involved: Avoid prolonged contact with, or inhalation of, cleaning solvents. Avoid use near heat or open flame and provide adequate ventilation.

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10. Preparation Instructions (Continued)

10.3.12 Tools, parts, materials, test equipment. Enter the word "NONE" when preparing an inactive equipment maintenance scheduling MRC. For all other MRCs enter and number the required test equipment, materials, parts, tools, and miscellaneous requirements, in that order. Each applicable category shall have a heading. Items within the category shall be numbered and identified by the applicable Standard PMS Item Name (SPIN) number in brackets. When space allows, a two-column listing shall be used. Entries in this area shall be selected from the SPIN and may be cross-referenced to the Standard PMS Materials Identification Guide (SPMIG) when applicable. These items are sorted into five basic categories which are defined as follows:

10.3.12.1 Category 1 - Portable Electrical and Electronic Test Equipment (PEETE). Category 1 is used only for PEETE as specified in NAVSEA technical manual ST000-AA-IDX-010/PEETE. This equipment includes most general purpose PEETE that have potential PMS application. All items are assigned a subcategory code (SCAT) which groups test equipment models having the same test capability into one code. Aboard ship, the Ships Portable Electrical/Electronics Test Equipment Requirements List (SPETERL) established allowances for PEETE within each SCAT code. MRC test equipment requirements must be synchronized with the SPETERL.

10.3.12.2 Category 2 - Consumables. Consumables constitute a majority of materials required to support PMS. Category 2 includes a wide range of administrative and housekeeping items which may or may not in fact be consumed in use. Some consumable items (grease, oils and solvents) are consumed each time the maintenance action is performed, whereas others (buckets, funnels and ladders) are not. Tools are not included in category 2 even though some tools may fit the general description of a consumable item. Examples of consumable items include ropes, rags, oil, cleaning solvents, brushes, corrosion protection agents, sealants, and protective coatings. Bulk gasket and packing materials are considered repair parts (category 3) since these are Allowance Parts Lists (APL) worthy items and must be listed on APLs. By definition, any item appearing on an APL is considered a repair part.

10.3.12.3 Category 3 - Repair parts. For purposes of MRC development, repair parts are defined as any item which is an integral part of the equipment; for example, gaskets, mechanical seals, packing material, O-rings and filters. In general, any item listed in a technical manual or drawing parts list is considered a repair part. An official definition of a repair part is any item appearing on an APL. Although in some cases repair parts will not appear on the APL, this does not necessarily mean the item is not a repair part. In fact, it is a good indication the APL may be technically deficient in that it does not list all maintenance significant repair parts. Although repair parts constitute a relatively small percentage of the total PMS MRs of a ship, they are probably the most critical of all requirements. A maintenance action requiring parts cannot be effectively completed unless those parts are readily available from an onboard supply department stock. In many cases, the nonavailability of a specific consumable, tool, equipage, or even test equipment may not jeopardize the successful completion of a maintenance action because use of alternative materials is often possible, although certainly not

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10. Preparation Instructions (Continued)

desirable. With respect to most repair parts, however, a specific item must be used; there are no real alternatives. The medium for identification of PMS repair part requirements to the Navy Supply System is the APL.

10.3.12.4 Category 4 - Tools. Category 4 covers hand tools of all types except "special tools." Special tools are by definition equipment-unique tools that are designed for a particular piece of equipment by the manufacturer. Such tools always have a manufacturers' part number and Commercial and Government Entity (CAGE) Code. Special tools will be listed on an APL and are, therefore, classified as repair parts. Category 4 includes common hand tools typically found in any work center tool box as well as other less commonly used tools; for example: precision measuring devices, dial indicators, micrometer, torque wrenches, and gages. Equipage items are a category 5 even though some may be used as tools; for example, jacking gear.

10.3.12.5 Category 5 - Equipage and special materials. Category 5 covers all equipage items as well as any other special materials not otherwise covered under categories 1 through 4. As a general rule, all items which are identified and supported through Allowance Equipage Lists (AEL) will be considered category 5. Not all category 5 items are AEL applicable. Typical examples of category 5 materials are as follows:

- a. Test equipments not listed in the TEI which , therefore, do not qualify as category 1.
- b. Radiac equipment or dosimeters.
- c. Sound powered phones, binoculars, telescopes, boresights, and portable equipage items of all types; for example, fans, pumps or blowers.
- d. Boiler feedwater testing equipment. Feedwater chemicals are category 2.
- e. Lube or fuel oil sampling kits, centrifuges, and testing apparatus.
- f. All items designated as controlled equipage.
- g. Safety harness, lanyards, and other safety equipment.
- h. Special clothing items including rubber gloves, and other items designated to protect users from chemical or toxic agents.
- i. Vacuum cleaners of all types.
- j. Chain falls, jacking gear devices, and other handling equipment except common hydraulic jacks which are considered category 4.
- k. Special test tapes, diagnostic tapes, or alignment tapes.

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10. Preparation Instructions (Continued)

1. Special connecting and adapting devices necessary to rig test equipment to prime equipment if such items are not supplied with the test equipment.
- m. Special software and support documents including supplemental MRCs, equipment technical manuals, handbooks, guides, and Naval Ships' Technical Manuals (NSTMs).

10.3.12.5.1 Non-SPMIG tools, parts, materials, test equipment.

Entries in the tools, parts, materials, test equipment area not covered by the SPIN or SPMIG, shall be determined and listed as follows:

- a. Electronic and electrical test equipment shall be selected from MIL-STD-1364. Test equipment will be identified by noun, name, nomenclature, and SCAT code according to NAVSEA technical manual ST000-AA-IDX-010/PEETE. When SCAT codes are not established, identify by noun name, manufacturer, model number, and AEL number.
- b. Materials include lubricants, greases, solvents, cleaning agents, and other consumables, such as tape, safety tags, or pencils. Lubricants, greases, solvents, and cleaning agents will be identified by Military, Federal or Navy specification military symbol and the item name; for example: oil, MIL-L-22851; silicone compound, VV-D-1078. The Planned Maintenance System Lubricants, Compounds, and Cleaning Agents - Cross Reference Guide shall be the source of these nomenclatures. Other consumables shall be identified in accordance with the nomenclature specified in the alphabetic index of NAVSUP Publication 4400.
- c. Parts include all repair parts such as gaskets or O-rings. Repair parts will be identified by generic name, manufacturer's part number, and the CAGE. The illustrated parts breakdown, manufacturers' pamphlets, supply catalogs, APLs, and AELs are sources for these nomenclatures.
- d. Special tools such as gage pieces or thrust bars shall be identified by name, manufacturer's part number, and CAGE.
- e. Common tools shall be identified using the nomenclature format as listed in the alphabetic index of NAVSUP Publication 4400.
- f. Miscellaneous requirements such as MRCs, technical manuals, or forms shall be identified by standard nomenclature or generic name.
- g. When the MRC procedure refers to another MRC or technical manual for a step-by-step procedure, that MRC or technical manual shall be listed.

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10. Preparation Instructions (Continued)

- h. Quantities in excess of one and units of measure shall be enclosed in parentheses following the nomenclature and complete description of the item; for example: wrench, adjustable 8" (2); baking soda (2 lbs).
- i. Symbols of ", ', °, and % shall be entered for inch, foot, degree, and percent. Fractions shall be typed with the numerator and denominator separated by a slash; for example, 1/2, 1/4, 1/6.
- j. The term "or equivalent" shall not be used with any item listed in this area. Equivalent items, if authorized, shall be specified as a note in the procedure area.
- k. A zero shall be placed before the decimal point when another figure does not precede the decimal. This shall occur even if there is a zero after the decimal point; for example: wire, nonelectrical, 0.051.
- l. A national stock number (NSN) shall not be included. National stock numbers, when authorized, shall be specified as a note in the procedure area.
- m. The solvents used aboard nuclear submarines shall be in accordance with NAVSEA technical manual S9510-AB-ATM-010. MRCs for nuclear submarine applications shall use the phrase, "approved safety cleaning solvent." For other ship applications, specific cleaners shall be identified. For documentation which will be used in both nuclear submarines and other ships, a double statement will be used; for example, nuclear submarines: approved safety cleaning solvent; other ships: solvent, P-D-680, type II.
- n. When subsafe boundaries are to be violated in submarine applications, current reentry control requirements shall be complied with and the SubSafe Reentry Control shall be included.
- o. When fabrication of a unique tool is required, specifications for fabrication shall be included in the MRC.
- p. Only portable and noninstalled equipment required to perform the maintenance procedures shall be listed in the tools, parts, materials, and test equipment area. Installed equipment required to support the maintenance procedures shall not be listed. This equipment shall be specified in the appropriate procedural step.
- q. Each entry shall consist of one item only; for example: if an oiler with MIL-L-6086 oil is required, the oiler will be listed under the tool heading, and the oil will be listed under the material heading. If more than one oil is required, the procedural step shall specify which oil is required for that step.

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10. Preparation Instructions (Continued)

- r. In the event that entries in this area must be continued to the second page, the heading information, Tools, Parts, Materials, Test Equipment, shall be printed on the second page.
- s. In the event that entries are to be provided by another activity; for example, Shipbuilding Material Management systems (SMMS) Site Team, the entry will be followed by the phrase, in parentheses and an explanation provided in the note in the procedure area.

10.3.13 Procedure. This area shall contain the step-by-step procedures to accomplish the MR. For an inactive equipment maintenance scheduling MRC, the first entry shall be a note; for example, NOTE: This is a scheduling card. Schedule and perform listed MRCs for LU, PM, SU, or OT, as appropriate. The entry following the note shall be the MR description. Each step following the MR description shall be a statement of what is to be accomplished, followed by reference to the appropriate MRC or document containing the procedures. Notes may be used to provide such information as sequencing, special personnel, and services requirements.

10.3.14 Notes. Notes shall be used to supply needed information that is not an action step. Excessive verbiage shall be avoided and the note shall be limited to necessary specifics. Notes shall be sequentially numbered if there are more than one. Tolerances and clearances shall not be given as notes but shall be included in the procedural step in which they are observed.

10.3.14.1 Maintenance requirement cards having R periodicity code. Maintenance Requirement Cards having an R included in the periodicity code shall have notes. This note shall be the first item in the procedure area and also appear following the requirement on the MIP.

10.3.14.2 Maintenance requirement card procedural exceptions. When an area of an MRC is too small to enclose all required entries, insert in parentheses the phrase, (see note 1). In that note, list the entries normally made in the area. For this purpose, rates and M/H shall be considered as one area, and the total M/H and elapsed time entered in their assigned space.