

DATA ITEM DESCRIPTION

Title: PLANNED MAINTENANCE SYSTEM (PMS) MAINTENANCE REQUIREMENT CARD (MRC)

Number: DI-SESS-80991A

AMSC Number: N9173

DTIC Applicable: N/A

Office of Primary Responsibility: SH/SEA 04RM

Applicable Forms: N/A

Approval Date: 20100923

Limitation: N/A

GIDEP Applicable: N/A

Use/Relationship:

This Data Item Description (DID) contains the format, content, preparation instructions and intended use for the data deliverable resulting from processes and work described in paragraph 5.1.12 of MIL-STD-3034.

This DID supersedes DI-MNTY-80991.

This DID is related to DI-SESS-80985A, Reliability-Centered Maintenance (RCM) Servicing and Lubrication Analysis (SLA) Report; DI-SESS-81829, Reliability-Centered Maintenance (RCM) Corrective Maintenance (CM) Development Report; DI-SESS-80989A, Reliability-Centered Maintenance (RCM) Inactive Equipment Maintenance (IEM) Requirement Analysis Report; DI-SESS-80986A, Reliability-Centered Maintenance (RCM) Maintenance Requirement Index (MRI); DI-SESS-80987A, Reliability-Centered Maintenance (RCM) Procedure Validation.

Requirements:

1. Reference documents. The applicable issue of documents cited herein, including approval dates of any applicable amendments, notices, and revisions, shall be as cited in the contract.
2. Format. This report shall be in Contractor's format and shall be presented in a format similar to that of Figure 1.
3. Content. The MRCs shall be completed containing the following data:
 - 3.1 Ship system. Enter the Expanded Ship Work Breakdown Structure (ESWBS) group level 2 nomenclature and number for the functional group containing the item to which the MRC is applicable.

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3.2 System. Enter the ESWBS level 3 nomenclature and number for the system containing the item to which the MRC is applicable.

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

3.4 Equipment. Enter the ESWBS level 5 nomenclature, the number of the equipment or component to which the MRC is applicable. If the MRC is applicable to more than 1 sub-grouping of equipment, the entire subsystem or system, enter ESWBS level 4, or level 3 nomenclature and number as appropriate.

3.5 MRC Periodicity Code. Enter the assigned a periodicity for the maintenance task. The periodicity delineates how frequently the maintenance requirement must be performed. Reference MIL-STD-3034 Section 5.1.5.7 for periodicity codes.

3.6 Rates. Identify and enter, by rate and rating, the number of persons required to perform the MR. Entries in this area shall be made as follows (note IEM exceptions below):

a. The Navy enlisted classification (NEC) shall be entered if special skills are required.

b. 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.

c. 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 the block when applicable; for example, Damage Control Assistant (DCA), Electronic Material Officer (EMO), Engineering Officer (Eng. Off.)

d. 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., Electrician's Mate First Class (EM1), and Machinist's Mate Second Class (MM2).

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e. When more than one person is required for a particular rate, the appropriate number shall precede the rate; for example 2 Operations Specialists First Class (OS1), 2 Sonar Technicians Surface First Class (STG1), and 3 Electronics Technicians Second Class (ET2). 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.

f. 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, Fire Control Technician (FC)/Electronics Technician First Class (ET1), Gunner's Mate (GM)/Gunner's Mate Missiles Second Class (GM2).

g. IEM reference "pointer" MRCs that do not contain any procedural steps, but only reference other MRC(s), shall include just the highest rate being used to perform all of the referenced MRCs. IEM MRCs that contain any procedural steps, even if they also include reference to other MRCs, shall include only the ratings required to perform the procedural steps.

3.7 Manhours (M/H). Manhours (converted to hours and tenths of an hour) 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 and 0.4. When a commissioned officer or warrant officer is required, no M/H shall be entered for that person.

3.7.1 The time entered shall indicate the M/H required for each rate 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 will be the sum of their time requirements. When two or more persons of the same rate are required and their requirements are not equal, each person must be listed separately.

3.7.2 Equipment warm-up time of 30 minutes or less shall be included in the assigned M/H. Warm-up time in excess of 30 minutes or periods not requiring maintenance technician intervention (i.e., charge batteries for 24 hours) shall not be included unless the maintainer is required for constant observance.

3.7.3 "Make ready" or "put away" time shall not be included in this area.

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3.7.4 When another MRC or MRCs are the only items enter 0.1 man-hours only. If the MRC includes referencing an MRC along with procedural steps, the man-hours of performing the written procedural steps only shall be entered.

3.8 Total M/H. Enter the sum of each entry in manhours from Section 3.7 of this DID.

3.9 Elapsed Time. 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 the M/H area.

3.10 Maintenance Requirement Description. The MR description shall be numbered when entered. The first letter of the first word in the MR description shall be capitalized with all other words in lower case. When 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 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, and PROCEDURE. IEM reference "Pointer" MRC's shall reference a complete MRC. If only 1 MRC is referenced, the Maintenance Requirement (MR) will duplicate the MR on the MRC being referenced. If the "Pointer MRC" references a complete MRC with one or more MRs, the MIP entry shall be a generic MR that encompasses all of the MRC tasks. If the "Pointer MRC" references multiple MRC's, the MIP entry shall be a generic MR that encompasses all of the MRC's tasks.

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3.11 Safety precautions. All required safety precautions shall be included in this block. The first entry in this area shall identify general safety requirement documentation by publication number and volume; for example: "Observe standard safety precautions in accordance with Navy Safety Precautions for Forces Afloat, OPNAVINST 5100.19 (Series)." or "Forces afloat comply with Navy Safety Precautions for Forces Afloat, OPNAVINST 5100.19 (Series); Shore Safety activities comply with Safety Precautions for shore Activities." 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. IEM MRC Pointer cards without any written procedure, do not require any additional safety precautions.

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. These warnings shall also immediately precede the applicable step.

3.11.2 Additional Personnel Warning. 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: "Voltage dangerous to life are present when interlock switch is bypassed. Do not work alone." Appropriate personnel and man-hours shall be added when this statement is used.

3.11.3 Submarine Applications. When Submarine Safety (SUBSAFE) boundaries are to be violated, the statement "Ensure compliance with SUBSAFE Re-entry Control Procedures of NAVSEA 0924-062-0010 or COMFLTFORCOMINST 4790.3, Volume V, as applicable." shall appear in this area. When scope of certification items are impacted, the statement, "Ensure compliance with DSS-SOC Re-entry Control Procedures of NAVSEA SS800-AG-MAN-010/P-9290 (with the appropriate DSS-SOC Notebook)" shall appear in this area.

3.11.4 Cleaning Solvents. Safety precautions shall be listed when cleaning solvents have been or will be involved as specified in MIL-STD-3034 Section 5.1.10.2.m.(5).

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3.12 Tools, Parts, Materials, Test Equipment. The required test equipment, materials, parts, tools, and miscellaneous requirements, in this order shall be numbered and entered. Each applicable category shall have a heading. Items within the category shall be numbered and identified by the applicable Standard PMS Materials Identification Guide (SPMIG) number when available. IEM MRC Pointer cards without any written procedure, do not require any items to be identified in the Tools, Parts, Materials, Test Equipment (TMPTE) block. Any item that cannot be substituted by a like item shall state "DO NOT SUBSTITUTE" after the item name. When identifying items in the TPME block, standardization requirements shall specify:

a. Quantities in excess of one and units of one unit 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).

b. 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.

c. The term "equivalent" shall not be used with an item listed in this area. Equivalent items, if authorized, shall be specified as a note in the procedure area.

d. 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, non-electrical, 0.041.

e. A national stock number (NSN) shall not be included in (TPME) block. National stock numbers, when authorized, shall be specified as a note in the procedure area.

f. 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 for both nuclear submarine and other ships, a double statement will be used; for example, nuclear submarines: approved safety cleaning solvent.

g. When Submarine Safety (SUBSAFE) boundaries are to be violated, ensure compliance with SUBSAFE Re-entry Control Procedures of NAVSEA 0924-062-0010 or COMFLTFORCOMINST 4790.3, Volume V, as applicable. When scope of certification items is impacted, ensure compliance with DSS-SOC Re-entry Control

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Procedures of NAVSEA SS800-AG-MAN-010/P-9290 (with the appropriate DSS-SOC Notebook).

h. Only portable and non installed 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.

i. Each entry shall consist of one item only; for example, if an oiler with MIL-PRF-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.

j. 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.

k. In the event that entries are to be provided by another activity, the entry will be followed by the phrase, in parentheses, and an explanation provided in the note in the procedure area.

3.12.1 The TPMTE block shall be grouped into five categories:

a. Category 1 - Portable Electrical and Electronic Test Equipment (PEETE). This list also includes General Purpose Electronic Test Equipment (GPETE). Test equipment shall be entered in accordance with MIL-STD-3034 Section 5.1.10.2.r.(12) (a).

b. Category 2 - Consumables. Consumables constitute a majority of materials required to support maintenance. Category 2 includes a wide range of administrative and housekeeping items which may or may not be consumed in use. Consumable items shall be entered in accordance with MIL-STD-3034 Section 5.1.10.2.r.(12) (b).

c. Category 3 - Parts. For purposes of MRC development, repair parts are defined as any item which is an integral part of the equipment. Parts shall be entered in accordance with MIL-STD-3034 Section 5.1.10.2.r.(12) (c).

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d. Category 4 - Tools. Category 4 covers hand tools of all types except "special tools". Tools shall be entered in accordance with MIL-STD-3034 Section 5.1.10.2.r.(12) (d) .

e. Category 5 - Miscellaneous. Category 5 covers all equipage items as well as any other special materials not otherwise covered under categories 1 through 4. Miscellaneous items shall be entered in accordance with MIL-STD-3034 Section 5.1.10.2.r.(12) (e) .

3.12.2 Non-SPMIG tools, parts, materials, test equipment. Entries in the tools parts, materials, test equipment block determined not covered by the SPMIG , shall be listed as follows:

a. Electronic and electrical test equipments shall be selected from NAVSEA ST000-AG-IDX-010. Test equipment shall be identified by noun name, nomenclature, and SCAT code according to NAVSEA technical manual ST000-AG-IDX-010. When SCAT codes are not established, identify by noun name, manufacturer, model number, and AEL number, as applicable.

b. Materials include lubricants, greases, solvents, cleaning agents and other consumables, such as tape, safety tags, or pencils. Lubricants, greases, solvents, and cleaning agents shall be identified by Military, Federal, or Navy specification military symbol and the item name.

c. Parts include all repair parts such as gaskets or O-rings. Repair parts shall be identified by generic name, manufacturer's part number, and the CAGE. The illustrated parts breakdown, manufacturer's pamphlets, supply catalogs, APLs, and AELs are sources for these nomenclatures.

d. Special tools and 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 (Afloat Shopping Guide).

f. Miscellaneous requirements such as MRCs, technical manuals, or forms shall be identified by standard nomenclature or generic name, and company or government identification number.

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g. When the MRC procedure refers to another MRC for a step-by-step procedure, that MRC shall be listed.

h. When previously published complex system/sub-system startup or shutdown procedures are required prior to or following maintenance, these procedures may be referenced in lieu of including them in the Procedure block of the MRC.

i. When fabrication of a unique tool was required, specifications for fabrications shall be identified in the MRC.

3.13 Procedure. This area shall contain step-by-step instructions to accomplish the MR, or when used as a reference "pointer" MRC in the IEM section, identify what MRC's are referenced. Illustrations and figures shall be added here to enhance understanding of the text. Technical writing format considerations for developing Navy PMS procedures shall be as follows:

a. The language used shall be free of vague and ambiguous terms and shall use the simplest words and phrases that will convey the intended meaning.

b. Sentence structure shall be short and concise to facilitate understanding and retention of thought. Steps shall be straightforward and simple. Steps with compound clauses shall be converted into sub-steps.

c. Consistency in choice of words and terminology and organization of material is mandatory.

d. Steps written shall be in accordance with the technical level qualifications of the rating required to do the task.

e. Steps written shall be clear enough so that no interpretation of how to perform a procedural step is needed.

f. Inspection and measurement steps shall clearly specify limits so that a condition can be easily determined to be acceptable or unacceptable.

g. When extensive punctuation is necessary for clarity, the step(s) shall be rewritten to eliminate that need.

h. Procedural steps directing removal of voltage or pressure shall be explicit as to which switches or valves are

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intended to be open or closed, and shall include tag-out action in the same step in accordance with MIL-STD-3034 Section 5.1.10.2.(s)(8).

i. All abbreviations and/or acronyms shall be spelled out when used for the first time.

j. Names of equipment parts, shall be identified exactly as imprinted on the equipment (switches, handles, and so forth), and the name shall be capitalized in the procedural step.

k. Reference to technical manual procedures shall be avoided, however when approved by MCA, technical manual references shall be identified.

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.

3.15 Maintenance requirement cards having R periodicity code. MRCs having an R included in the periodicity code shall have notes. The note shall be the first item in the procedure area and also appear following the requirement on the Maintenance Index Page (MIP). The note shall describe the condition event for which the R code is associated.

3.16 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 X). In that note, list the entries normally made in the area, and the total M/H and elapsed time entered in their assigned space.

4. End of DI-SESS-80991A.

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