

## DATA ITEM DESCRIPTION

**Title:** RELIABILITY-CENTERED MAINTENANCE (RCM) FUNCTIONAL FAILURE ANALYSIS (FFA) REPORT

**Number:** DI-PSSS-80981B

**AMSC Number:** N9692

**DTIC Applicable:** N/A

**Preparing Activity:** SH

**Applicable Forms:** N/A

**Approval Date:** 20160815

**Limitation:** N/A

**GIDEP Applicable:** N/A

**Project Number:** PSSS-2016-024

### Use/Relationship:

The Reliability-Centered Maintenance (RCM) Functional Failure Analysis (FFA) provides a functional description of the system and subsystem as applicable, including protective features, monitoring and testing devices, redundancy and interfaces with other systems. The FFA defines the specific functions and functional failures of the system.

This Data Item Description (DID) contains the format, content, preparation instructions and intended use information for the data deliverable resulting from the work task described in 5.1.2 of MIL-STD-3034A.

This DID is related to DI-PSSS-80979B, RCM Master Systems and Subsystems Index (MSSI); DI-PSSS-80994B, RCM Functional Block Diagram (FBD); DI-PSSS-80983B, RCM Additional Functionally Significant Item (AFSI) Selection Report; DI-PSSS-80982B, RCM Functionally Significant Items (FSI) Index; DI-PSSS-80980B, RCM Failure Modes and Effects Analysis (FMEA) Report; DI-PSSS-80984B, RCM Decision Logic Tree Analysis (LTA) with Supporting Rationale and Justification Report; DI-PSSS-80985B, RCM Servicing and Lubrication Analysis (SLA) Report; DI-PSSS-80989B, RCM Inactive Equipment Maintenance (IEM) Requirement Analysis Report; DI-PSSS-81829A, RCM Corrective Maintenance (CM) Development Report; DI-PSSS-80986B, RCM Maintenance Requirements Index (MRI); DI-PSSS-80988B, RCM Task Definition Report; DI-PSSS-80987B, RCM Procedure Validation Report; DI-PSSS-80990A, RCM Documentation Control Sheet.

This DID supersedes DI-SESS-80981A.

### Requirements:

1. Reference Documents. 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.
2. Format. The FFA report shall be in a format similar to that of the sample form of Figure 1 of this DID.
3. Content. The FFA report shall contain all of the information specified in the sample form of Figure 1 of this DID and as specified in MIL-STD-3034A, paragraph 5.1.2.2.5.

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3.1 Block 1. ESWBS Number. Enter the Expanded Ship Work Breakdown Structure (ESWBS) entry for each sub-system assigned from the Master Systems and Subsystems Index (MSSI) Form, block 8.

3.2 Block 2. Nomenclature. Enter the nomenclature used on the MSSI form, block 9, for the selected system and subsystem, as applicable.

3.3 Block 3. Ship Class. Enter the entries on the MSSI form, block 3.

3.4 Block 4. Prepared By. Enter the analyst's name and the date.

3.5 Block 5. Reviewed By. Enter the first level reviewer's name and the date.

3.6 Block 6. Approved By. Reserved for the Maintenance Coordinating Activity (MCA) approval signature and the date.

3.7 Block 7. Revision. Identify the revision level of the FFA report and enter e.g. "ORIGINAL", "A", "B", "C", etc., sequentially as applicable and the date.

3.8 Block 8. Sources of Information. Enter the drawing, manual, document, and report numbers. Enter titles of reference material used in this analysis.

3.9 Block 9. Description. Referring to the Functional Block Diagram (FBD) prepared in Phase 1, enter a brief physical and functional description of the subdivision.

3.9.1 The report shall also include identification of the hardware and how it functions with the perspective of preventive maintenance needs.

3.9.2 The report shall identify all redundancies. If no redundancy exists, enter "NONE".

3.9.3 The identity of protective devices and the circumstances under which they operate; e.g., "circuit breaker - 30 amp", "casing relief valve - lifts at 150 pounds per square inch (PSI), reseats at 135 PSI" shall be included.

3.9.4 The report shall include special safety features, e.g. interlocks and shall also identify any fail safe features.

3.9.5 The report shall identify condition indicators and shall include the following for each indicator:

(1) Type. Enter gage, thermometer, meter, indicator light, audible and visual alarm, as applicable.

(2) Indicates. Identify what the indicator tells about the system.

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(3) To whom. Identify the watch station and the title of the operator who is observing the indicator.

(4) Identify under what circumstances that station is to be manned.

3.9.6 The report shall identify the environment to which the system is exposed as applicable:

- (1) exposed to weather
- (2) exposed to high humidity
- (3) exposed to high heat, etc.

3.9.7 The report shall identify normal operational practices and estimated operational time per year for the duty cycle as specified in paragraph 5.1.2.2.5 of MIL-STD-3034A.

3.9.8 The report shall identify all use restrictions and shall be entered in capital letters for any special restrictions on the operation of the system, e.g. "CANNOT BE SAFELY ACTIVATED IN PORT."

3.9.10 The report shall identify special maintenance features and any special provisions for maintenance installed, such as Built In Test Equipment (BITE); e.g., "System is equipped with external test connections enabling full diagnostics while on line."

3.9.11 The report shall identify any regulations, e.g. EPA, OSHA, etc., requiring the performance of maintenance and any regulations which may be violated if a failure occurs. If no regulations are impacted, enter "NONE".

3.10 Block 10. Functions and Out Interfaces. Enter a description of the system functions. Include safety, regulatory, and protective features, out interfaces and all co-functions. Also, identify operational parameters and performance standards of the function, as applicable. Number functions sequentially; e.g., "1.0", "2.0", and "3.0."

3.11 Block 11. System In - Interfaces. Enter sources of input, critical values and specify the level 4 ESWBS number for each source.

3.12 Block 12. Functional Failures. Enter the definition of what constitutes a failure for each function and output interface listed in paragraph 3.10 above. All functional failures shall be identified. Number each functional failure e.g., 1.1, 1.2, 1.3, 2.1, 2.2, and 2.3 to correspond to the function number in paragraph 3.10 above.

3.13 Block 13. Serial Numbers. Enter a four-segment serial number as follows:

a. Segment 1 - Enter the developing organization abbreviation followed by a slant (/).

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b. Segment 2 – For developers, enter the development authorization number followed by a slant (/); for other development activities, assign a development number followed by a slant (/).

c. Segment 3 - Enter the number 116 to indicate the FFA form, followed by a slant (/).

d. Segment 4 - Enter the ESWBS indenture level for this analysis as identified in paragraph 3.1 above.

End of DI-PSSS-80981B

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1.ESWBS NUMBER	2.NOMENCLATURE		3.SHIP CLASS	SH OF
4.PREPARED BY	5.REVIEWED BY	6.APPROVED BY	7. REVISION	
DATE:	DATE:	DATE:	DATE:	
8.SOURCES OF INFORMATION				
9. DESCRIPTION (Add additional sheet, if necessary)				
10.FUNCTIONS AND OUT INTERFACES				
11.SYSTEM IN - INTERFACES				
12.FUNCTIONAL FAILURES				
				13.SERIAL NUMBER

SAMPLE FORM - FIGURE 1 - FUNCTIONAL FAILURE ANALYSIS (FFA)