INTERNET VERSION – MASTER ON THE DEFENCE INTRANET

Ministry of Defence

JSP 886
DEFENCE LOGISTIC SUPPORT CHAIN MANUAL

VOLUME 7
INTEGRATED LOGISTICS SUPPORT

PART 8.04
RELIABILITY AND MAINTAINABILITY

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1.0	12/03/10	Initial publication
1.1	05/07/10	Reference to DRACAS added to paragraph 12
2.0	01/07/11	Updated Contact Information
2.1	15/03/12	New Chapter 2: DRACAS added.
2.2	20/08/12	Additional process guidance added (Pages 4 & 7 -Sidelined)

Contents

CHAPTER 1: INTRODUCTION TO RELIABILITY AND MAINTAINABILITY

CONTEXT

1. This part provides key points of policy and guidance for the specification, development and management of Reliability and Maintainability (R&M) for Through Life Support (TLS).

2. R&M also encompasses the discipline of Reliability Centred Maintenance (RCM), which is closely related and forms an integral part of Supportability Engineering. Both R&M and RCM can have a profound effect on Availability, especially on operations and during peacetime training. Failure to follow MOD policy in either of these important areas will jeopardise Capability, inflate Through Life Costs (TLC) and undermine Safety and Morale.

3. R&M is a generic term which embraces the qualities of:

a. Availability.

b. Reliability.

c. Maintainability.

d. Durability.

e. Reliability Centred Maintenance (RCM).

f. Testability.

POLICY

4. It is MOD policy that the following process and procedure are applied to all MOD projects.

a. R&M shall be afforded full consideration, along with equipment performance, cost and project timescale, through the life of the equipment.

b. R&M shall be addressed in Initial Gate and Main Gate Business Cases, to the satisfaction of the Investment Appraisal Board.

c. Robust and measurable R&M requirements shall be included in procurement and support contracts.

d. RCM shall be included in procurement contracts, to derive preventive maintenance programmes for new capabilities.

e. Progressive Assurance shall be used to demonstrate that contractual R&M requirements have been met during Demonstration, Manufacture and In-service.

f. RCM shall be used to review and revise preventive maintenance programmes at regular intervals during the In-service phase.

g. Project Team (PT) Leaders shall appoint competent Focal Points (FPs) to manage routine R&M activities through the life of the equipment. FPs should complete specific FP training available through the Defence Academy.

h. All equipment users shall be able to report faults, failures and serious incidents to the PT supporting the equipment via an effective Equipment Failure Reporting (EFR) process. The PT shall analyse these reports, initiate corrective action where required and provide feedback to the originator. In order to reduce cost and simplify Logistic IS systems, preference is for the use of standard systems rather than bespoke systems, standard systems are listed at Chapter 2.

5. In recognition of the diversity of platforms, equipment and other support strategies an element of tailoring of the best practice, techniques and methodologies may be required to optimise and achieve these goals.

PRECEDENCE AND AUTHORITY

6. Ownership of Logistics policy in support of the Logistics Process falls to the Assistant Chief of Defence Staff Logistics Operations (ACDS Log Ops) as Chief of Defence Materiel (CDM) Process Architect[1]. This role is exercised through the Defence Logistics Working Group (DLWG) and the Defence Logistics Steering Group (DLSG) reporting up to the Defence Logistics Board (DLB). It is against this governance framework that sponsorship[2] for R&M policy is delegated to Hd JSC SCM. PTs are required to assess and show compliance with key policies and governance as signposted by the SSE.

PROCESS

7. Process, procedure and guidance are provided in the DEFSTAN 00-40 series.

8. Best practice guidance is published by the Safety and Reliability Society (SaRS). Specifically recommended are:

a. Interactive process maps showing which Reliability related activity should be done at specific stages of the CADMID cycle Ministry of Defence PT Reliability & Maintainability Processes.

b. Detailed guidance on these activities is published in GR-77: Applied R&M Manual for Defence Systems.

KEY PRINCIPLES

9. The principles of Progressive Assurance (DEFSTAN 00-42: R&M, Assurance Activity) and the R&M Case have been adopted as a means by which the R&M qualities of products are managed through their life cycle, in recognition that different products and technologies require particular or unique engineering activities. This is achieved by satisfying the following objectives:

a. The Purchaser shall determine the R&M requirements and demonstrate that the requirements and their implications are understood by the Purchaser and the Supplier; (DEFSTAN 00-40: Reliability & Maintainability).

b. A programme of activities shall be planned and implemented to satisfy the Purchaser's R&M requirements.

[1] JSP899: Logistics Process – Roles and Responsibilities.

[2] Sponsor - The person responsible for the content, currency and publication of a JSP (as per letter of delegation). Responsibility established through Letters of Delegation (LoD), issued through the DLWG chair and exercised through Terms of Reference.

c. The Purchaser shall be provided with assurance that the R&M requirements have been satisfied. The R&M case and supporting evidence will be found in the project Through Life Management Plan (TLMP).

10. The Supplier is free to propose the activities required to fulfil the second objective. The third objective is to be satisfied by the provision of progressive assurance, accumulated during the design, the development and the early production processes. This assurance will be provided to the Purchaser by means of R&M Case Reports, supported by the appropriate closed loop reliability related issues management system (i.e. Data Recording and Corrective Action System (DRACAS)), specified within the R&M Case Evidence Framework. DEFSTAN 00.42 Part 3 is the main reference, supported by the R&M processes on the Acquisition Operating Framework (AOF).

11. R&M data forms an essential building block of any Integrated Logistics Support (ILS) programme. To maximise the benefits and minimise costs it is imperative that ILS and R&M activities are co-ordinated from the outset.

ASSOCIATED STANDARDS AND GUIDANCE

12. The following documents provide associated Standards and Guidance:

a. JSP 471: Defence Nuclear Accident Response.

b. JSP 482 MOD Explosives Regulations.

c. JSP 886 Volume 5 Part 2: Land Equipment Support.

d. BR1313 Maintenance Management in Surface Ships.

e. MAP-01: Manual of Maintenance and Airworthiness Processes.

f. R&M Handbook: An Introduction for MOD Staff.

g. DEFSTAN 00-40: Reliability & Maintainability.

h. DEFSTAN 00-42: R&M Assurance Activity.

i. DEFSTAN 00-44: R&M Data Collection & Classification.

j. DEFSTAN 00-45: Using RCM to Manage Engineering Failures.

k. DEFSTAN 00-49: Guide to R&M Terminology Used In Requirements.

l. Ministry of Defence PT Reliability & Maintainability Processes.

m. GR-77: Applied R&M Manual for Defence Systems.

OWNERSHIP

13. The policy for R&M is sponsored by the DES JSC SCM-EngTLS-Reliability.

a. Sponsor details:

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CHAPTER 2: DATA RECORDING, ANALYSIS AND CORRECTIVE ACTION SYSTEM (DRACAS) AND EQUIPMENT FAILURE REPORTING (EFR)

CONTEXT

1. Many approaches to Data Recording, Analysis and Corrective Action System (DRACAS) end with the entry to service, benefit can be delivered by continuing into the in-service phase as the discipline of DRACAS will allow in-service "events" to be collected, analysed, corrected, and tracked within a closed loop. This will allow the product to be improved overtime resulting in lower whole life costs, better understood and reduced safety and operational risks.

2. The system should be easy to use and provide feedback to the user. The information gained by the Project Team (PT) allows the identification and prioritisation of remedial work on the design, operation or maintenance of the equipment.

PROCESS

3. The established MOD Equipment Failure Reporting (EFR) systems to allow users to report faults, failures and serious incidents for incorporation into the DRACAS are:

a. **Maritime Environment:** RN Form S2022: Report of Shortcoming in Material, Design, Support or Documentation. BR1313 Maintenance Management in Surface Ships, Chapter 5: Form S2022 or S2022A.

b. **Land Environment:** AF G8267A / B: Equipment Failure Report (Army). Guidance in JSP 886 Volume 5 Part 2: Land Equipment Support. Chapter 3: Equipment Fault Reporting.

c. **Military Air Environment:** MOD Form 760: Narrative Fault Reporting (Air). Guidance in MAP-01: Manual of Maintenance and Airworthiness Processes. Chapter 7.5: Fault Reporting.

d. **Munitions:** MOD Form 1671: Munitions Accident / Near Miss Report. Guidance in JSP 482 MOD Explosives Regulations. Chapter 25: Munitions Incidents Reporting and Investigation.

e. **Nuclear:** JSP 471: Defence Nuclear Accident Response.

4. These systems should be used in preference to bespoke systems for front-line reporting and feedback, it is the PT's responsibility to ensure that these standard MOD systems feed into the project DRACAS and that appropriate resource is available to action reports in a timely fashion, ensure appropriate feedback to the user.