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Ministry
of Defence

JSP 886
DEFENCE LOGISTICS SUPPORT CHAIN MANUAL

VOLUME 7
SUPPORT ENGINEERING

PART 8.03A
MAINTENANCE PLANNING

VERSION RECORD		
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1.3	12 Feb 13	Chapter 1: New Paragraphs 6 and 7: About Support Maturity Levels. New Chapter 2 Added: Maintenance Management Maturity Levels.
1.4	21 Aug 13	Chapter 1, para 4 : New Final Sentence.
1.5	21 Feb 14	Changes to Chapter 1, Introduction and Maintenance Planning .

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CHAPTER 1: INTRODUCTION TO MAINTENANCE PLANNING

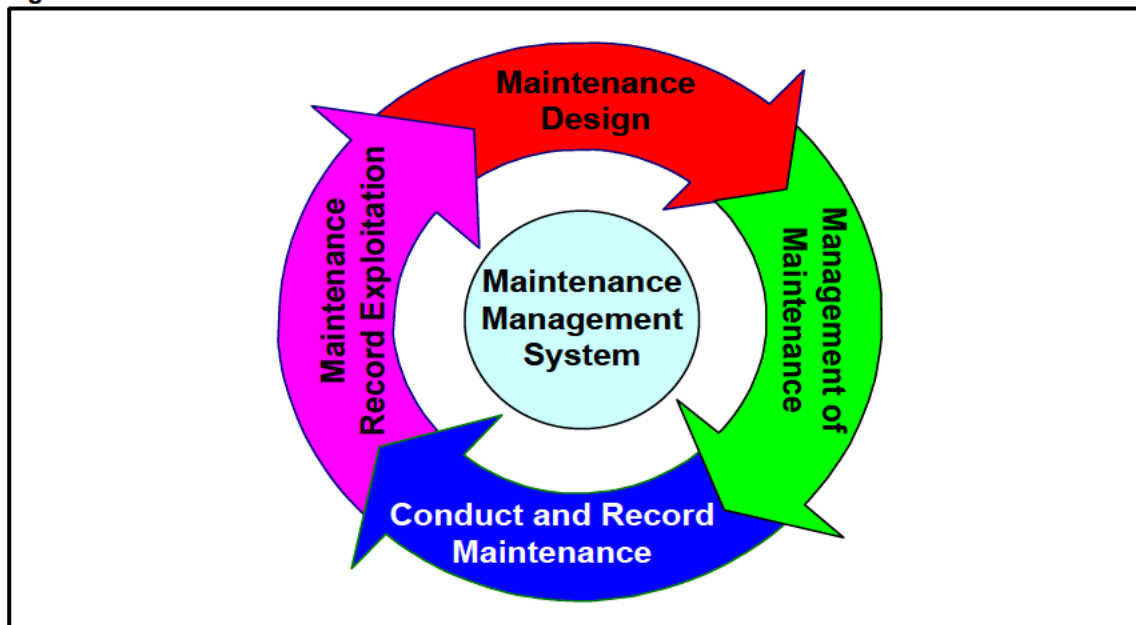
INTRODUCTION

1. Maintenance is all actions taken to retain equipment in or to restore it to specified conditions until the end of its use, including inspection, testing, servicing, modification(s), classification as to serviceability, repair, recovery, rebuilding, reclamation, salvage and cannibalization¹. In order to ensure that appropriate maintenance is established there is a need to undertake the following:

- a. **Maintenance Planning.** Identify the means to fully support a product.
- b. **Maintenance Design.** Identify what maintenance is required.
- c. **Manage Maintenance.** Decide on when and where actual maintenance will be done.
- d. **Conduct and Record Maintenance.** Undertake the maintenance and keep appropriate records.
- e. **Exploit Maintenance Records.** Learn from experience to improve current maintenance or to improve maintenance of future products

2. For most products it is advantageous to use a maintenance management system to record maintenance activities, this is shown schematically in Figure 1, below:

Figure 1: Maintenance Process



MAINTENANCE PLANNING

3. The successful development and undertaking of appropriate maintenance of an equipment depends on the early identification of the Maintenance Strategy and Maintenance Plan.

¹ Allied Administrative Publication-06 (AAP-06): NATO Glossary of Terms and Definitions.

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a. **Maintenance Strategy.** The Maintenance Strategy contributes to the optimisation of support. Support Optimisation for an equipment is determined using the guidance in JSP 886 Volume 1 Part 4: Support Options Matrix.

b. **Maintenance Plan.** The Maintenance Plan is created during the Development and Manufacture phases using ILS techniques. The plan is then developed during the In Service and Disposal phases.

(1) **Plan Creation.** The Maintenance Strategy is used to develop the Maintenance Plan which are both input to the Supportability Analysis. This analysis will inform the content of the Initial Support Package (Technical Documentation, Initial Spares List, Special Tools and Test Equipment (STTE)), Operating / Maintenance Training Requirements, Facilities and other Resources.

(2) **Plan Development.** The plan evolves throughout the life of the equipment as the support strategy matures.

4. The maintenance strategy (Corrective, Preventive, etc.) chosen for maintaining the equipment must be recorded along with reasons for selection. This will allow identification of appropriate technical support and provide reference for development of the maintenance plan. Reasons for changes to the strategy and plan shall also be recorded.

5. Maintenance Planning² comprises the identification of hardware, software, materiel, facilities, infrastructure, personnel, processes and data needed to enable maintenance services to be competently provided for the product and its support during use and in storage. The process develops and establishes maintenance concepts and requirements, resulting in a detailed maintenance plan. Items identified as critical in the safety case shall be linked and identified in the same manner within the maintenance plan. This involves the following business processes:

a. **Define Maintenance Schedule.** (identifies tasks that have to be undertaken at specified intervals)

b. **Define Repair Policy.** (identifying the skills, the type of repair and the locations where a repair action can be undertaken)

c. **Determine probable repair tasks.** (identifying all tasks where a repair action is appropriate)

d. **Identify spares, tools, facilities, review periods, documentation, techniques and staff required for undertaking reviews and repair tasks.**

e. **Maintenance verification, validation and review, data movement and trend analysis, as required.**

5. The development and review of the Maintenance Plan is discussed under the following headings:

a. Maintenance Design.

b. Management of Maintenance.

² JSP 886 Volume 7 Part 1: ILS Policy.

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- c. Conduct and Record Maintenance.
- d. [Maintenance Record Exploitation.](#)

Support Maturity Levels

6. The maturity of the maintenance plan can be assessed during the lifecycle of the product using the Support Maturity Levels (SMLs) which are defined, along with suggested project milestones and by which time these should be achieved, in JSP 886 Volume 7 Part 2 Chapter 2.

7. To enable the project to assess maturity of support using SMLs, measures of effectiveness for each SML are given in Chapter 2, Figure 2 below. Project specific measures of effectiveness are to be agreed with the contractor and to be included in the development and / or support contract. Corresponding project risks are also identified in this figure.

PRECEDENCE AND AUTHORITY

8. 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 Architect³. This role is exercised through the Defence Logistics Policy Working Group (DLPWG) and the Defence Logistics Steering Group (DLSG) reporting up to the Defence Logistics Board (DLB). It is against this governance framework that sponsorship⁴ 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.

ASSOCIATED STANDARDS AND GUIDANCE

9. Reference and, if practical, link to the relevant publications involved.

- a. [JSP 886: Defence Logistics Support Chain Manual:](#)
 - (1) Volume 7 Part 1: ILS Policy.
 - (2) Volume 7 Part 5: Management of Support Information.
 - (3) Volume 7 Part 8.03B: Maintenance Design.
 - (4) Volume 7 Part 8.03C: Management of Maintenance.
 - (5) Volume 7 Part 8.03D: Conduct and Record Maintenance.
 - (6) Volume 7 Part 8.03E: Maintenance Record Exploitation.
 - (7) Volume 7 Part 8.04: Reliability & Maintainability.
- b. [BR 1313: Maintenance Management in Surface Ships.](#)
- c. [AESP 0200-A-090-013: Land Equipment Engineering Standards.](#)

³ JSP899: Logistics Process – Roles and Responsibilities.

⁴ 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 DLPWG chair and exercised through Terms of Reference

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- d. [MAP-01: Military Aviation Authority \(MAA\) Manual of Maintenance and Airworthiness Processes.](#)
- e. [DEFSTAN 00-600: Integrated Logistic Support. Requirements for MOD Projects.](#)

OWNERSHIP AND POINTS OF CONTACT

- 10. The policy for Maintenance Planning is sponsored by DES IMOC SCM-EngTLS.
 - a. Sponsor details:
[DES IMOC SCM-TLS-RelA](#)
Tel: Mil: 9679 Ext 35208, Civ: 030 679 37755.
 - b. Document Editor:
[ACDS \(Log Ops\) Def Log Pol Editorial Team](#)
Tel: Mil: 9679 Ext 80953, Civ: 030 679 80953.

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CHAPTER 2: MAINTENANCE MANAGEMENT MATURITY LEVELS

1. The maturity of the product maintenance management can be assessed during the life cycle of a project using the 9, Support Maturity Levels (SML), which are defined along with suggested milestones, in JSP 886 Volume 7 Part 2 Chapter 2.

ULTIMATE SUCCESS CRITERIA

2. Ultimate Success Criteria

- a. All items that need to be maintained (Maintenance Significant Items) are identified for all elements of the system (prime system, support equipment, rigs, training devices etc).
- b. There is a clear process for identification of maintenance drivers.
- c. There is a clear process for identification of critical items, e.g. for security, reliability, etc.
- d. There is a clear understanding of the dependencies in the maintenance schedule.
- e. The schedule of preventative maintenance tasks (the Maintenance Schedule) is available, identifying tasks which are mandatory in support of the safety case and those which are recommended. The schedule identifies the relevant periodicities and scope for each task.
- f. The maintenance policy for each maintained item is identified and justified through a relevant modelling process.
- g. The support resources required to carry out the maintenance activities are understood.
- h. The contribution the maintenance activity makes in the context of the overall capability is understood.
- i. The cost of delivering the maintenance policy is understood and action has been taken to optimise it.
- j. There is an agreed joint process for endorsing item Maintenance Policy.

ASSESSMENT OF PROJECT MATURITY

3. To enable the project to assess maturity against the success criteria, the measure of effectiveness for each SML detailed in Figure 2 below, is to be agreed with the Contractor and included in the development or support contract.

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Figure 2: Maintenance Management Support Maturity Levels

Support Maturity Level	Measure of Effectiveness	Risk if Not in Place
1	The requirements for a Maintenance Plan and the associated Maintenance Planning activities are clearly defined in the SOW	The Contractor may not address the Maintenance Requirements that are identified in the URD / SR.
2	The ISP includes a process for the identification of MSI and the development of the Maintenance Policy. A Maintenance Plan should be available either as a stand alone document or as an Annex to the ISP that details compliance with SOW. Maintenance Requirements are flowed into the design.	The contractor may not adequately identify the MSI of the capability. The lack of a plan reduces the confidence that the Maintenance Planning will be adequate.
3	A preliminary list of the Maintenance Significant Items A preliminary Maintenance Policy. Identification of significant maintenance Drivers. Initial Modelling has been completed Maintenance Plan updated.	The Maintenance Policy and drivers may not be understood which would impact the Support Solution.
4	The Maintenance Plan has been updated A Final MSI list has been provided Preventative Maintenance Tasks have been identified. A Maintenance Schedule has been produced. Maintenance requirements for all MSI have been documented and evidence of associated modelling is available. Cost Drivers have been identified.	Lack of confidence that a Maintenance Policy has been defined and the analysis is mature enough. Costly support Solution.
5	Preventative Maintenance Tasks have been documented and associated resources identified. A Maintenance Schedule has been produced. Maintenance requirements for all MSI have been documented and evidence of associated modelling is available. All associated Support resources have been identified. The Maintenance Policy has been promulgated and endorsed.	Lack of confidence that a Maintenance Policy has been defined and the analysis is mature enough.
6	All maintenance Tasks have been identified and documented (IETP) along with associated support resources. A detailed schedule for the delivery of all Maintenance related Support Resources is available to meet the performance requirements. A Logistic Demonstration has been successfully completed.	The contractor may not be capable of delivering the Support Solution. The delivery schedule will be impacted.
7	All resources to support the Maintenance Policy are in place. A process for addressing changes to the Maintenance Policy is documented (ECP).	The ISD will not be met.
8	Maintenance tasks reviewed to ensure continued applicability and effectiveness.	Unnecessary or unsafe maintenance may be performed.
9	The disposal Plan has been updated to address the process for the disposal of the system. Run down of repair activity is identified.	Maintenance activities may not reflect the product number rundown.