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Ministry  
of Defence

**JSP 886**  
**DEFENCE LOGISTICS SUPPORT CHAIN MANUAL**

**VOLUME 7**  
**SUPPORTABILITY ENGINEERING**

**PART 8.03C**  
**MANAGEMENT OF MAINTENANCE**

<b>VERSION RECORD</b>		
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## CHAPTER 1: INTRODUCTION TO MANAGEMENT OF MAINTENANCE

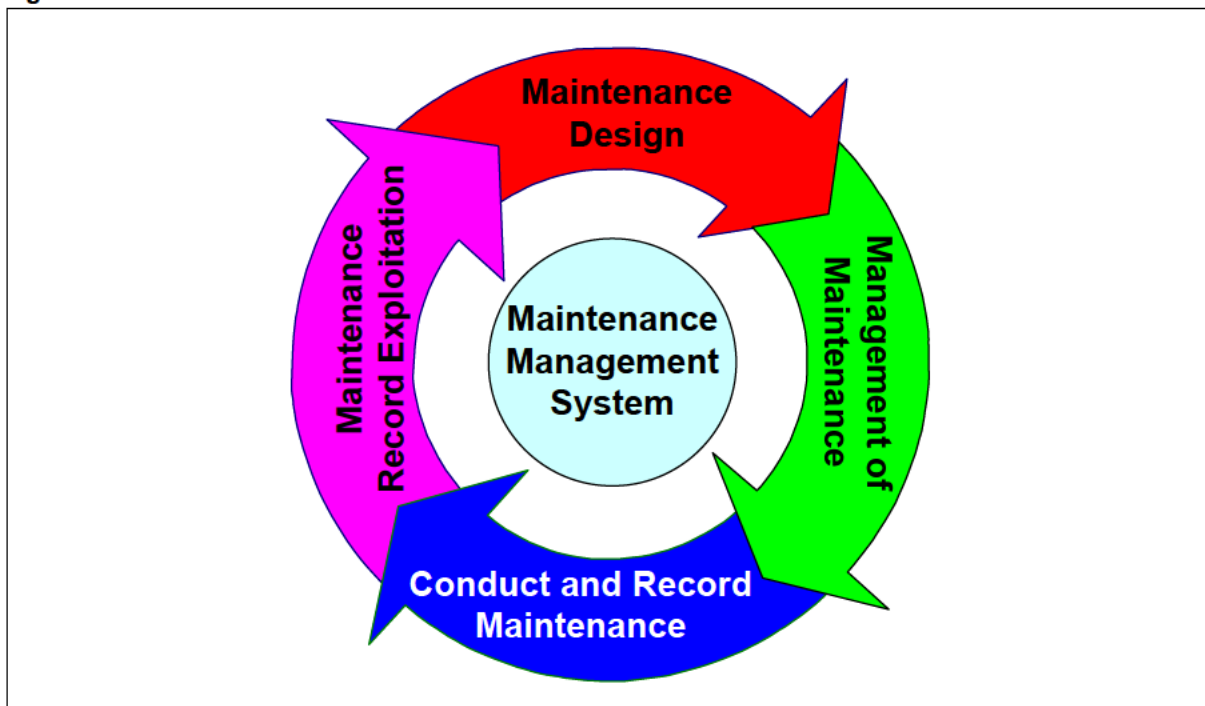
### INTRODUCTION

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 cannibalization<sup>1</sup>. 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.

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

Figure 1: Maintenance Process



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

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## **CONTEXT**

2. This part provides key points of policy and guidance on how maintenance shall be managed.
3. Maintenance may be required in order to ensure that items are available when required. This activity has to be managed to ensure that the maintenance is undertaken to the appropriate standard and that the workload on facilities and resources is balanced against the needs of the item user.

## **POLICY**

4. The Project Team (PT) / fleet maintenance manager and subsequent chain of command will monitor the needs for maintenance ensuring that resources and facilities are appropriate to the maintenance needs of the item(s). The maintenance manager will decide when and where an item undergoes maintenance. Specific guidance to aid decisions on Levels of Maintenance is contained within Chapter 2.

## **PRECEDENCE AND AUTHORITY**

5. 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)'s Process Architect<sup>2</sup>. This role is exercised through the Defence Logistics Steering Group (DLSG) reporting up to the Defence Logistics Board (DLB). It is against this governance framework that responsibility<sup>3</sup> for developing and promulgating current R&M policy is delegated to Hd IMOC SCM. Project Teams (PTs) are required to assess and show compliance with key policies and governance as directed by this JSP and signposted by the SSE.

## **KEY PRINCIPLES**

6. There shall be a coherent maintenance organisation with a maintenance manager at its head who is responsible for:
  - a. The effective management of all aspects of maintenance.
  - b. Accountable for the effective delivery of available items.
  - c. Minimisation of failures.
7. There shall be clear reporting lines of responsibilities to this central role from supporting activities such as:
  - a. Management of **forward** maintenance.
  - b. Management of depth or overhaul.
  - c. Management of maintenance in storage and data analysis, even where these roles cross organisational boundaries.

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<sup>2</sup> JSP899: Logistics Process – Roles and Responsibilities.

<sup>3</sup> Responsibility - 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.

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8. The maintenance manager, and supporting hierarchy, is accountable to the technical authority, and/or regulatory authorities, for ensuring the material state of items under their control is maintained in accordance with approved procedures to a level necessary to assure safe operations, that has the delegated authority to make technical decisions, or which decisions should be referred for endorsement, on their behalf shall be clearly defined, including where this authority may be temporarily exceeded for operational or safety reasons.

9. A risk based approach based firstly on the relevant item safety cases and then on operational loss of performance and financial costs shall be used to inform maintenance priorities. Feedback from monitoring item state and significant events shall be fed back to operating or design authorities as necessary.

10. The maintenance organisation shall:

- a. Schedule, resource and direct maintenance and repair activities on the basis of achieved levels of reliability.
- b. Task maintenance personnel to meet operational demand.
- c. Check & verify the effectiveness and quality of maintenance, inspections and record keeping.
- d. Deliver decisions on maintenance needs as delegated.
- e. [Align maintenance work with the maintenance schedule / plan.](#)

11. The maintenance organisation shall use clear measures of performance to monitor the completion of maintenance and the level of backlog to:

- a. Direct resources to optimise overall item availability.
- b. Minimise the increased risk to safe operations arising from the backlog.
- c. Monitor the maintenance contribution to overall item availability for effective support optimisation.
- d. Inform short-term operational logistic and long-term strategic decision making.

## **ASSOCIATED STANDARDS AND GUIDANCE**

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

- a. JSP 886: Defence Logistics Support Chain Manual:
  - (1) Volume 7 Part 3: Supportability Analysis.
  - (2) Volume 7 Part 5: Management of Support Information.
  - (3) Volume 7 Part 8.02: Packaging, Handling, Storage & Transportability.
  - (4) Volume 7 Part 8.03A: Maintenance Planning.
  - (5) Volume 7 Part 8.03B: Maintenance Design.

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- (6) Volume 7 Part 8.03D: Conduct and Record Maintenance.
- (7) Volume 7 Part 8.03E: Maintenance Record Exploitation.
- (8) 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.](#)
- d. [MAP 01: Military Aviation Authority \(MAA\) Manual of Maintenance and Airworthiness Processes \(MAP\).](#)
- e. [DEFSTAN 00-600: Integrated Logistic Support Requirements for MOD Projects.](#)

**POINTS OF CONTACT**

- 13. The policy for Management of Maintenance is sponsored by DES JSC SCM-EngTLS.
  - a. Sponsor details:  
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  - b. Document Editor:  
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## **CHAPTER 2: LEVELS OF MAINTENANCE**

1. By law, every employer must make sure that work equipment is maintained in an efficient state, in efficient working order and in good repair.
2. The MOD has a diverse selection of equipment used across a range of environments. The equipment needs to operate as expected in these environments to ensure mission success. Undertaking appropriate maintenance ensures that equipment is both available and capable. Maintenance support can be broken into two categories:
  - a. Those tasks that can be undertaken optimally in the operating environment (Forward Support<sup>4</sup>).
  - b. Those that cannot (Depth Support<sup>5</sup>).
3. There are many ways of determining and identifying how, where and by whom maintenance should be carried out. All need to be undertaken during procurement phases or prior to the start of a mission to ensure the capability is available when needed. Considerations include but are not limited to the availability of:
  - a. Suitable staff.
  - b. Suitable equipment.
  - c. The availability of parts.
  - d. Suitability of the work environment.
  - e. The safety equipment required.

### **PROCESS**

4. Project Teams (PTs) are responsible for identifying and defining for all equipment; what can be repaired, by whom and where; these decisions must be recorded and justified in such a way as to allow validation through audit.
5. When considering where maintenance activity is to be undertaken, PTs or responsible person(s) with responsibility for the equipment, must act in the best way they consider, in good faith, to be most likely to achieve success and have regard (amongst other things) to:
  - a. The effect of their decisions.
  - b. The environments in which the equipment is likely to work.
  - c. The safety of those who maintain and operate or could be affected by the equipment.

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<sup>4</sup> Forward encompasses all logistic processes and functions required to provide immediate support to the operating environment, including those capabilities linked to deployable Force Elements at Readiness (FE@R); previously all 1st line and some 2nd line capabilities. Forward will be managed by HQ AC with an emphasis on operational effectiveness.

<sup>5</sup> Depth will encompass those logistic processes and functions that are not in Forward, including some deployable capabilities that will reside in the Depth domain during peacetime, but which may be required to deploy with FE@R. Depth will be managed by the DE&S, possibly in partnership with industry, with emphasis on sustainability, efficiency and cost.

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- d. Where optimal maintenance can take place whilst ensuring mission success.
  - e. Who undertakes the maintenance.
  - f. The environment where maintenance can take place.
  - g. Tooling and parts required for maintenance operations.
  - h. Support available from outside of MOD.
  - i. The disposal or return of parts.
  - j. The update of maintenance records.
  - k. The update of maintenance schedules as information or technology advances allow.
  - l. The packaging, handling, storage, and transportation (PHS&T) requirements.
6. **Location.** When deciding on the location for the conduct of maintenance of equipment, consideration should be given with respect to how far “forward” maintenance activity can reasonably and effectively be optimised to maximise availability. More detailed maintenance activity may be better provided in “depth”, where for example, access to specific specialised and /or limited resource may be required.
7. **Level.** It follows that when establishing an optimal location for any maintenance activity, the level of maintenance that can be effectively conducted therein should be considered in tandem. Typically, levels of maintenance activity can be described as follows:
- a. **Level 1.** Servicing and day to day preparation. It may include such operations as functional testing, replenishment, servicing, re-arming, role changing, minor modification, fault diagnosis and corrective maintenance by replacement, adjustment or minor repair.
  - b. **Level 2.** Corrective maintenance by replacement, adjustment or minor repair including fault diagnosis and minor authorized modifications, within specified times using generally provisioned resources.
  - c. **Level 3.** Corrective maintenance in greater depth than Level 2. It may include such operations as repair, partial reconditioning and modification requiring special skills, special equipment or a relatively infrequently used capability which is not economic to provide generally; but which is short of complete strip, reconditioning and re-assembly.
  - d. **Level 4.** That maintenance which is full reconditioning, major conversions, or major repairs.
8. Although location and level are considered separately above, the two are intrinsically linked, the importance being that the any maintenance activity is optimised appropriately in terms of where and by whom it is conducted; whether that be as far forward as possible or at depth.



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9. Additionally, cognisance should be taken in respect of whether support from outside of the MOD might be available and consideration needs to be afforded to this, in particular, where support might involve the use of civilian personnel in theatre. Also, if support can be sourced from outside of the MOD, whether this support can be made available at the point where it is required.

10. Further policy guidance to aid in the planning of maintenance activity, when considering the effect of decisions on the overarching support solution, can be found in JSP 886 Volume 7 Part 3: Supportability Analysis (SA), with specific guidance on Level of Repair Analysis (LORA) found within Task 302.7 of that publication.