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**Ministry
of Defence**

**JSP 886
DEFENCE LOGISTICS SUPPORT CHAIN MANUAL**

**VOLUME 7
SUPPORTABILITY ENGINEERING**

**PART 8.07
SUPPORT EQUIPMENT**

VERSION RECORD		
Version Number	Version Date	Version Description
1.0	26/10/12	Published version.
1.1	02/11/12	Pg. 4: Sub para I: Product is defined as an equipment, service, system or system of systems. Deleted.
1.2	25/02/13	Chapter 2: Support Maturity Levels added.
1.3	15/11/13	Additional information regarding Mechanical Handling Equipment (MHE) .

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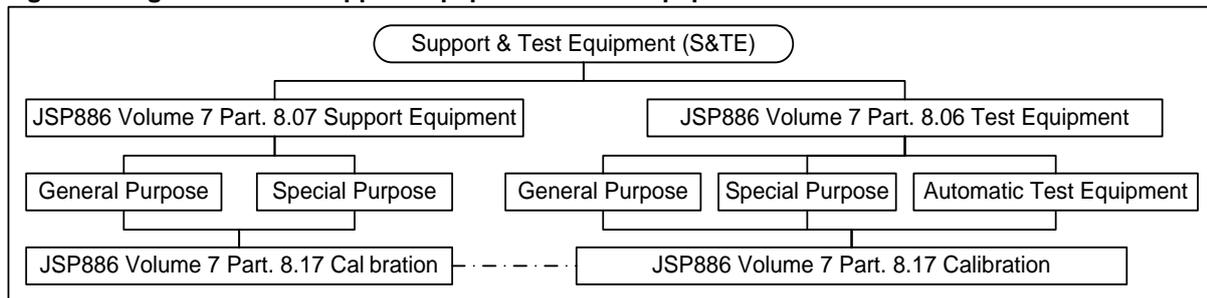
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CHAPTER 1: SUPPORT EQUIPMENT

CONTEXT

1. This part provides key points of policy and guidance, in respect of Support Equipment (SE) required for the effective Through Life Support (TLS) of equipment, in accordance with MOD Integrated Logistic Support (ILS) policy.
2. Within JSP 886 Volume 7, the policy requirements for Support and Test Equipment (S&TE) are covered in two parts, this part which relates to SE and Part 8.06 which relates to Test Equipment (TE) including Automatic Test Systems (ATS).

Figure 1: Organisation of Support Equipment & Test Equipment and Calibration



3. S&TE as defined in DEFSTAN 00-600 is all equipment (mobile or fixed) required to support the operation and maintenance of a product. SE is a part of the ILS element of S&TE and can be classed as:
 - a. **Project Specific.** Provided to support a specific product.
 - b. **Non-Project Specific.** Provided to support a number of product types.
 - c. It can also be classed as:
 - (1) **General.** Identical items used to support many product types.
 - (2) **Special.** An item used to support a specific product type.
4. It is MOD Policy to use General SE over Special SE where possible to provide a “Value for Money” solution and to fully utilise the inventory.
5. SE covers a vast range of items from simple tools to complex ISO containerised workshops. SE includes, but is not limited to:
 - a. Hand Tools, including Tool Kits and Tool Sets.
 - b. Support Equipment for on-equipment maintenance and off-equipment maintenance.
 - c. Ground Support Equipment.
 - d. Aircraft Arrestor Systems.
 - e. Gaseous and Cryogenic Systems.
 - f. Workshop Tools and Equipment.

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- g. Warehouse Equipment.
- h. Special inspection equipment and depot maintenance plant equipment.
- i. Mechanical Handling Equipment (MHE).
- j. Air Conditioners, Environmental Control Units, General Purpose Generators.
- k. Deployable Technical Support Solutions (DTSS).
- l. Hypobaric and Hyperbaric Chambers.
- m. Working at Height Equipment.
- n. Lifting Equipment.

MECHANICAL HANDLING EQUIPMENT (MHE) AND HANDLING AIDS

6. The use of MHE and Handling Aids is to be encouraged to allow the efficiency and effective use of resources.

MHE

7. All Defence units that need to create or amend a requirement for MHE, including temporary requirements are to contact relevant section of the DES LE GSG Operational Support Vehicles Programmes (OSVP). If approved the contract provides the equipment, not including operator, suitable in form for the function required and fit for role.

8. **Training & Licensing.** JSP 800 Volume 5: Road Transport - The Management and Operation of Road Transport in the Ministry of Defence covers the operation, training, supervision and licensing of MHE in the MOD.

Handling Aids

9. Guidance on the provision of Handling Aids, such as pallets, pallet handlers, trolleys, steps, access platforms and scissor tables, and Storage Media can be obtained from the DES LE OSP Operational Infrastructure Programme (OIP).

10. **Inspection.** Under the Provision and Use of Work Equipment Regulations (PUWER) Handling Aids are to be inspected before use by the operator and annually by a competent person. Proof load testing and periodic inspection of hand pallet trucks and similar equipment is to be carried out in accordance with relevant regulations. The equipment is to be marked with the date of the next inspection. All inspections are to be recorded.

Hand Tools

11. Hand Tools are categorised as either General or Special. There are approximately 25,000 General Hand Tools, Toolkits and Tool Sets, these are supported centrally by DE&S Military Equipment Tool Solutions DESLEGSG-DI-METS-OutputMgr@mod.uk.

Workshop Tools and Equipment

12. Workshop Tools and Equipment is divided into the following categories:

- a. **Fabrication.** Welding, soldering, carpentry and metalworking.

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- b. **Workshop.** Cleaning, component cleaning and fluid collection.
- c. **Garage.** Lifting equipment, lubrication, MoT testing, servicing equipment, vehicle lifts and jacks.
- d. **Warehousing.** Shackles, chains and tie-down kits.
- e. **Tools.** Pneumatic, electric and dehydrators.

These are all supported centrally by DE&S Workshop Tools & Equipment DESLEGSG-DI-WTE-OutputMgr@mod.uk.

POLICY

13. It is MOD Policy that ILS will be applied to all product acquisition in accordance with JSP 886 Volume 7. SE is an integral part of ILS and this document details how Project Teams (PT)s shall identify and develop their SE solutions¹.

14. PTs are mandated to avoid the proliferation of SE in the inventory by minimizing the development of new SE and giving more attention to the use of existing government or commercial SE².

PRECEDENCE AND AUTHORITY

15. 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. 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).

16. PTs must assess compliance of developing support solutions Through Life, with key policies signposted by the SSE, underpinning the development of effective and coherent support solutions for all Category A-D Projects and Urgent Operational Requirements (UORs).

MANDATED REQUIREMENTS

17. Project/ILS Managers within PTs procuring SE are to ensure that all regulatory requirements are met, that the equipment fulfils the safety "duty of care", and all environmental issues are addressed. These mandatory requirements include, but are not limited by, the following:

- a. Any SE bought after 1993 must be European Conformity CE Marked to conform to CE Directive 93/EEC.
- b. The SE meets all Statutory European and UK Health and Safety legislation for the intended environments in which they are to be used or operated.

¹ SE Policy is closely linked and complementary to Test Equipment Policy which is covered in JSP 886 Volume 7 Part 8.06.

² PTs will adopt a centralised procurement and re-provisioning strategy to enable maximum use and interoperability of SE within the MOD, thus providing the most cost effective and efficient solution to meet Platform, Project or Equipment requirement.

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- c. SE meets the requirements of all relevant Functional Safety Boards through compliance with the appropriate guidance (JSPs 375, 430, 454, 520, 553 and others).
- d. Where SE is of a nature, or is used in an environment that could compromise the commercial safety certifications, a Safety Case compliant with DEFSTAN 00-56 is required.
- e. For SE containing fluids at a pressure of more than 1.5 bar, the SE is to comply with the Pressure Equipment Directive (PED)³.
- f. For Lifting Equipment⁴, all Lifting Operation and Lifting Equipment Regulations and all other internal regulations⁵ are to be addressed within the equipment maintenance regime.
- g. SE must be assessed for environmental impact and approved for use in accordance with JSP 418.

KEY PRINCIPLES

- 18. PTs will ensure that a S&TE Plan⁶ is produced that is regularly reviewed, updated and continues to comply with MOD policy. The S&TE Plan is to be included in the Through Life Management Plan.
- 19. PTs procuring systems that require Special SE are responsible for the acquisition, funding and Through Life Support of that SE.
- 20. When developing their S&TE plan PTs shall:
 - a. In the first instance will seek assistance in developing / acquiring SE and show evidence of engagement with the appropriate gatekeeper - see JSP 886 Volume 7 Part 8.15: Gatekeeper Role in Utilisation of Common Defence Materiel (ILS Standardisation Process).
 - b. Ensure SE is optimised and meets customer requirements on equipment availability.
 - c. Ensure that SE contracts include, as appropriate, calibration information, manuals, drawings, specifications and certification requirements.
 - d. Show evidence that the use and performance of SE complies with all relevant regulations relating to hazardous environment, fitness for purpose, safety under test etc.

³ Pressure Equipment Directive (97/23/EC) was adopted by the European Parliament and the European Council in May 1997.

⁴ The generic term 'Lifting Equipment' is defined in The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER 1998) as "Work equipment for lifting and lowering loads and includes its attachments used for anchoring, fixing or supporting it". This definition embraces both lifting appliances and lifting gear.

⁵ , JSP 375: MOD Health & Safety Handbook and AESP 2590-E-100-013: Management of Lifting and Recovery Equipment in the Land Environment, AP 119K-0001-2: Lifting Equipment and Accessories for Lifting, Royal Air Force Support Authority, General Orders, Special Instructions and Service Modifications.

⁶ S&TE Plan is provided by the contractor/ Original Engineering Manufacturer (OEM) which identifies the support equipment required, once they have carried out either an "economical Level of Repair Analysis (LORA)" or carried out a Maintenance Task Analysis (MTA) to derive tools and test equipment requirements.

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e. Avoid the proliferation of SE in the inventory by minimizing the development of new SE and giving more attention to the use of existing government or commercial SE. This could be by:

- (1) Identifying existing SE.
- (2) Extending the application of existing SE.
- (3) Modifying an existing item of SE.

ASSOCIATED STANDARDS AND GUIDANCE

21. The following documents are associated with SE:

- a. [JSP 375: MOD Health & Safety Handbook.](#)
- b. [JSP 418: MOD Corporate Environmental Protection Manual.](#)
- c. [JSP 509: The Management of Test Equipment.](#)
- d. [JSP 886 Volume 7: Part 08.06: Test Equipment \(TE\).](#)
- e. [JSP 886 Volume 7 Part 8.15: Gatekeeper Role in Utilisation of Common Defence Materiel \(ILS Standardisation Process\).](#)
- f. [JSP 886 Volume 7 Part 08.17: Calibration.](#)
- g. [DEFSTAN 00-56 Safety Management Requirements for Defence Systems.](#)
- h. [DEFSTAN 00-600 Integrated Logistic Support Requirements.](#)
- i. [AESP 2590-E-100-013: Management of Lifting and Recovery Equipment in the Land Environment.](#)
- j. [AP 119K-0001-2: Lifting Equipment and Accessories for Lifting, Royal Air Force Support Authority, General Orders, Special Instructions and Service Modifications.](#)

OWNERSHIP AND POINTS OF CONTACT (POC)

22. The owner of this Part is Director Joint Support Chain (D JSC). Head of Supply Chain Management (Hd SCM) is responsible for the management of JSC policy on behalf of D JSC. The policy sponsor for this document is DES JSC SCM-TLS-TL.

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CHAPTER 2: SUPPORT EQUIPMENT MATURITY LEVELS

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

ULTIMATE SUCCESS CRITERIA

2. Ultimate Success Criteria:

a. All support equipment required to achieve the maintenance tasks in the Maintenance Plan are identified and clearly linked to the task requirements (this includes maintenance tooling, test equipment, calibration and/or diagnostic aids etc).

a. For each type of support equipment the appropriate test methodology is identified or defined including approaches and tools, test equipment, handling equipment and diagnostic aids.

b. Where appropriate, the standard or existing range of Support Equipment, (SE) has been optimised as part of the solution.

c. The SE has been optimised for the contracted support environment and assumptions (hard to prove....).

d. Support resources required to achieve the maintenance of all support equipment, rigs, training devices etc are identified and presented as part of the Maintenance Plan and datasets

e. All special to type equipment has been designed and procured.

f. The contribution the SE makes in the context of the overall capability is understood.

g. The cost of providing the SE is understood and actions have been taken to minimise it.

h. The SE technical data pack is up to date and an integral part of the capability.

i. There is a clear and agreed plan for the implementation, certification and integration of the SE as an element of the support capability.

j. The required Technical Information for the use, calibration, maintenance, storage of SE etc is included as part of the Technical Documentation suite.

2. To enable the project to assess maturity against the success criteria, the measure of effectiveness for each SML detailed in table 1 is to be agreed with the Contractor and included in the development or support contract.

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Table 1: Assessment of Project Maturity

Support Maturity Level	Measure Of Effectiveness	Risk if not in place
1	Review of the URD and Use Study to identify SE related requirements and constraints.	SE will not be identified. No requirement set at this stage may result in failure to implement T&M policy. SE is not included in Supportability case.
2	Where requested by Customer, a draft Support Equipment Plan (SEP) may be produced at this stage. Otherwise, SE activities will be briefly described in the draft ISP. S&TE requirements should have been flown provided to Suppliers.	SE will not be identified or included in support contract. Through life costs will not consider cost of maintaining SE.
3	Depending on the nature of the programme, either a dedicated SEP may be produced or SE activities may be fully described in ISP. In-Service (existing) SE information should have been passed by MOD PT to Contractor. Initial SE data may be collected from Suppliers. Any special to type SE requirements, design concept and risks (likely impact on Training Solution, Maintenance Planning, Support Solution) should be jointly agreed at PDR.	Design will not be influenced to minimise special to type SE. WLC will increase. SE will not be procured or supported.
4	Depending on the nature of the programme, updated SEP or SE section in ISP to reflect any changes in the ILS programme or the overall programme. The SEP (or S&TE section in ISP) is in a mature state for the D&M phase and only minor amendments are expected. SE data from Suppliers and that from the initial Supportability Analysis may be available. Any special to type SE designed for the programme should have been incorporated into PDR.	Design not influenced to minimise special to type SE. Policy not adhered to. Bespoke solutions procured WLC will increase. Unable to support or maintenance of product

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Support Maturity Level	Measure Of Effectiveness	Risk if not in place
5	<p>Depending on the nature of the programme, updated SEP or S&TE section in ISP should reflect any changes in the ILS programme or the overall programme.</p> <p>The SEP (or S&TE section in ISP) is in a mature state for the D&M phase and only minor amendments are expected.</p> <p>All SE should have been identified. Provisioning data on SE should have been collected.</p> <p>Rationale for use of special to type SE should have been agreed with Customer.</p> <p>A scaled SE Recommended List should be available from/to Customer.</p> <p>A Demo (feasibility study/trial procedure) may have occurred to validate the S&TE Recommended List.</p> <p>Any special to type SE designed for the programme should have reached CDR and a representative prototype should be available for validation.</p>	<p>SE not identified for product support or maintenance.</p> <p>Support solution incomplete if SE is not yet identified.</p>
6	<p>Sufficient range & scale of S&TE should be available to the Customer for equipment support.</p>	<p>The product will be not be supportable.</p> <p>WLC will increase.</p> <p>May result in proliferation of bespoke SE.</p>
7	<p>Depending on the nature of the programme, updated SEP or S&TE section in ISP reflects the Support Solution.</p> <p>The SE will be maintained in line with the Support Solution.</p>	<p>The product will be unsupported.</p> <p>The SE will not be available when required.</p>
8	<p>The SEP (or S&TE section in ISP) has been updated to reflect the reviewed Support Solution.</p> <p>The SE will be maintained in line with the reviewed Support Solution</p>	<p>Product will become unsupported if SE is not considered when changes are made to the product.</p> <p>SE may need to be replaced or modified.</p>
9	<p>Establishing which SE should be disposed of as detailed in Disposal Plan (managed by the ISP) and which S&TE should be retained in-service.</p>	<p>The SE will not be disposed of in a cost effective manner.</p>