Ministry of Defence

JSP 520
Safety and Environmental Management of Ordnance, Munitions and Explosives over the Equipment Acquisition Cycle

Part 1: Directive

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Foreword

The Secretary of State for Defence (SofS) through his Health Safety & Environmental Protection (HS&EP) Policy Statement requires Top Level Budget Holders and Trading Fund Chief Executives to conduct defence activities with high standards of HS&EP. They are expected to achieve this by implementing robust, comprehensive Health Safety & Environmental Management Systems.

As Director of the Defence Safety Authority (DSA), I am responsible for providing MOD regulatory regimes for HS&EP in the Land, Maritime, Nuclear and OME domains. The OME regulations set out in JSP 520 are mandatory and take precedence where Ordnance, Munitions or Explosives are involved. Full compliance is required, except as set out in JSP815 Defence Health and Safety and Environmental Protection. It is the responsibility of commanders and line managers at all levels to ensure that personnel, including contractors, involved in the management, supervision and conduct of defence activities are fully aware of their responsibilities.

DSA regulators are empowered to enforce these regulations.

JCS Baker

Depty Director Defence Safety Authority

Defence Authority for Health Safety and Environmental Protection

Preface

How to use this JSP

1. This JSP explains the requirements needed to demonstrate that the inherent risks from Ordnance, Munitions and Explosives (OME) are either Broadly Acceptable or Tolerable and As Low as Reasonably Practicable (ALARP) for the MOD, third parties and the environment.

2. It applies to all OME:

   a. Ordnance e.g., weapons including directed energy, small arms, delivery platforms including barrels, launchers, fire systems.

   b. Munitions e.g., missile, shell, mine, demolition store, pyrotechnics, mines, bullets, explosive charges, mortars, air launched weapons, free fall weapons.

   c. Explosives e.g., propellants, energetic material, igniter, primer, initiatory and pyrotechnics irrespective of whether they evolve gases (e.g. illuminants, smoke, delay, decoy, flare and incendiary compositions).

3. It is designed to be used by personnel who are responsible for OME employed by or contracted to the MOD.

4. It contains the policy and direction about the processes involved and the techniques to be applied throughout the acquisition cycle or Manufacture to Target or Disposal Sequence (MTDS).

5. The JSP is structured in two parts:

   a. Part 1 – Directive which provides the regulations that must be followed in accordance with Statute, or Policy mandated by Defence or on Defence by Central Government.

   b. Part 2 - Guidance, which provides the guidance and best practice that will assist the user to comply with the regulations detailed in Part 1.

Related JSPs	Title
JSP375	MOD Health and Safety Handbook.
JSP418	MOD Corporate Environmental Protection Manual.
JSP430	Management of Ship Safety and Environmental Protection.
JSP454	Land Systems Safety and Environmental Protection.
JSP815	Defence Health and Safety and Environmental Protection.
JSP482	MOD Explosives Regulations.
JSP762	Weapons and Munitions Through Life Capability
JSP815	Defence Health and Safety and Environmental Protection.
MAA/RA	Military Aviation Authority Regulatory Publications (MRP)

Coherence with other Defence Authority Policy and Guidance.

6. Where applicable, this document contains links to other relevant JSPs, some of which may be published by different Defence Authorities. Where particular dependencies exist, these other Defence Authorities have been consulted in the formulation of the policy and guidance detailed in this publication.

Training

7. This JSP has been developed for use by Suitably Qualified and Experienced Personnel (SQEP) involved with Ordnance, Munitions and Explosives. Simply following this JSP will not fulfil obligations arising from other legislation.

Further Advice and Feedback- Contacts

8. The owner of this JSP is DSA-DOSR-PRG-ATL. For further information on any aspect of this guide, or questions not answered within the subsequent sections, or to provide feedback on the content, contact:

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Authority

9. This issue of JSP 520 Part 1 supersedes all previous Part 1.

Status

11. All hard copies of JSP520 Part 1 or 2 are uncontrolled. The JSP will be updated whenever additional or improved guidance becomes available and will be reviewed at least annually.

12. Readers are encouraged to assist in the continued update of this document by informing the DSA-DOSR-PRG-4. of any required changes particularly those resulting from their experiences in the development of OME safety regimes.

13. To check the latest amendment status reference should be made to JSPs within the Library section of the Defence Intranet.

Cautionary note on references

14. The responsibility for the use of correct and relevant standards, procedures and working practices remains with the Project Team Leader (PTL). No assurance is given that the documents referenced within JSP520 Part 1 and 2 are up to date or that the list is comprehensive. It will be necessary to check applicability for the intended use and where relevant confirm documents accuracy and suitability to the intended use.

Amendment Record

Issue 4.2 changes highlighted in YELLOW					
No.	**Section**	**Par**	**Amendment Summary**	**Agreed**	**Date**
4.2	Preface	1	Remove practical handbook	PRG-4	16/06/15
4.2	Preface	2	Added direct energy and examples	PRG-4	16/06/15
4.2	Preface	3	Removed Land, Sea, Air	PRG-4	16/06/15
4.2	Preface	5	Added MTDS	PRG-4	16/06/15
4.2	Preface	6	JSP added	PRG-4	16/06/15
4.2	Preface	7	Sentence Removed	PRG-4	16/06/15
4.2	Preface	9	Organisational DSA changes	PRG-4	16/06/15
4.2	Preface	11	Reworded	PRG-4	16/06/15
4.2	Preface	12	Organisational DSA changes	PRG-4	16/06/15
4.2	1	2a	Organisational DSA changes	PRG-4	16/06/15
4.2	2	1	Organisational DSA changes	PRG-4	16/06/15
4.2	2	3	Organisational DSA changes	PRG-4	16/06/15
4.2	2	7	Organisational DSA changes	PRG-4	16/06/15
4.2	2	8	Organisational DSA changes	PRG-4	16/06/15
4.2	2	9	Organisational DSA changes	PRG-4	16/06/15
4.2	3	1a	Definition adapted from AOP 38	PRG-4	16/06/15
4.2	3	1b	Definition in line with AOP 38	PRG-4	16/06/15
4.2	3	1c	Definition in line with AOP 38	PRG-4	16/06/15
4.2	3	4	Added “formally”	PRG-4	16/06/15
4.2	4	11	Organisational DSA changes	PRG-4	16/06/15
4.2	4	12	Broadly Acceptable or Tolerable and ALARP	PRG-4	16/06/15
4.2	5	1g	Organisational DSA changes	PRG-4	16/06/15
4.2	5	3	Organisational DSA changes	PRG-4	16/06/15
4.2	5	19	Organisational DSA changes	PRG-4	16/06/15
4.2	5	21c/d	Organisational DSA changes	PRG-4	16/06/15
4.2	6	1-14	Organisational DSA changes	PRG-4	16/06/15
4.2	7	27	OSRP Assurance Statement	PRG-4	16/06/15
4.2	7	29	OSRP Assurance Statement	PRG-4	16/06/15
4.2	7	55	Organisational DSA changes	PRG-4	16/06/15
4.2	7	63	OSRP Assurance Statement	PRG-4	16/06/15
4.2	7	64	OSRP Assurance Statement	PRG-4	16/06/15
4.2	7	65	Rewording	PRG-4	16/06/15
4.2	9	17 e	OSRP Assurance Statement	PRG-4	16/06/15
4.2	9	20	OSRP Assurance Statement	PRG-4	16/06/15
4.2	9	21	OSRP Assurance Statement	PRG-4	16/06/15
4.2	9	29	Organisational DSA changes	PRG-4	16/06/15
4.2	9	30	Organisational DSA changes	PRG-4	16/06/15

Issue 4.1 changes					
No.	**Section**	**Par**	**Amendment Summary**	**Agreed**	**Date**
4.1	Preface	6	Regulations	Du-Policy	31/07/14
4.1	Preface	10	Update to 4.1	Du-Policy	31/07/14
4.1	2	2	Directive not Regulation	Du-Policy	31/07/14
4.1	2	3	Guidance not Regulation Guidance	Du-Policy	31/07/14
4.1	2	3	Vol 10 not C5	Du-Policy	31/07/14
4.1	2	9	Vol 1	Du-Policy	31/07/14
4.1	2	12	Guidance Vol 1 not Regulation Guidance A0	Du-Policy	31/07/14
4.1	3	13d	Vol 2 not A1	Du-Policy	31/07/14
4.1	3	16	Vol 2 not A1	Du-Policy	31/07/14
4.1	4	10	Vol7 not C2	Du-Policy	31/07/14
4.1	5	2b	Vol 8 not C3	Du-Policy	31/07/14
4.1	5	10	Vol 7 not C2	Du-Policy	31/07/14
4.1	6	9	Vol 4 not B2	Du-Policy	31/07/14
4.1	6	11	Vol 4 not B2	Du-Policy	31/07/14
4.1	6	17	Vol 5 not B3	Du-Policy	31/07/14

4.1	7	6	Vol 3 not B1	Du-Policy	31/07/14
4.1	7	8	Vol 9 not C4	Du-Policy	31/07/14
4.1	7	19	Vol 3 not B1	Du-Policy	31/07/14
4.1	7	22	Vol 6 not C1	Du-Policy	31/07/14
4.1	7	37	Vol 2 not A1	Du-Policy	31/07/14
4.1	7	41	Vol 8 not C3	Du-Policy	31/07/14
4.1	7	45	Vol 9 not C4	Du-Policy	31/07/14
4.1	7	54	Vol 8 not C3	Du-Policy	31/07/14
4.1	7	57	Vol 9 and Vol 13 not C4 and E1	Du-Policy	31/07/14
4.1	7	64	Vol 13 not E1	Du-Policy	31/07/14
4.1	7	66	Vol 4 not B2 and Vol 5 not B3	Du-Policy	31/07/14
4.1	7	68	Vol 3 and Vol 9 not B1 and C4	Du-Policy	31/07/14
4.1	8	3	Vol 14 not E2 and Vol 3 not B1	Du-Policy	31/07/14
4.1	8	12	Vol 12 not D1	Du-Policy	31/07/14
4.1	9	7	Vol 13 not E1	Du-Policy	31/07/14
4.1	9	14	Vol 14 not E2	Du-Policy	31/07/14

Contents JSP520 Pt 1 Directive

1 Overview

Document Structure

1. JSP520 consists of two parts:

2. **Part 1 – Directive.** This provides the regulatory framework, which applies throughout the whole acquisition cycle. It mandates a series of regulations requirements, processes, inputs, outputs and independent reviews that collectively support claims of inherent Ordnance, Munitions and Explosives (OME) safety. The assessment of inherent OME safety shall cover those hazards that result from the initiation of OME systems, whether intentional or unintentional, and across all stages of the Manufacture to Target or Disposal Sequence (MTDS) (Section 7). These requirements and scope of safety responsibilities apply equally to OME systems operated by Ministry Of Defence (MOD) personnel and to systems being operated at the direction of the MOD by third parties and / or its contractors. Responsibilities for safety issues that fall outside the definition of inherent OME safety shall be managed in accordance with policy requirements in the overarching domain-specific safety regulations and associated publications even if they remain the responsibility of the OME Equipment PTL. Part 1 is owned and sponsored by the Defence OME Safety Regulator (DOSR).

NOTES

a. Mandatory DSA Regulations have been identified within this JSP in blue, bold, and italic text.

b. References to Guidance e.g. Part 2 and MOD Codes of Practice have been identified within this JSP in boxed italic text.

3. **Part 2 –Guidance**. This expands the regulations contained in Part 1 – Directive, describing in more detail the roles, responsibilities, procedures and techniques to be employed to implement the regulations. Sections of the Part 2 have been marked as “Codes Of Practice” (COPs). If these COPs are not used by the OME PT justification shall be documented in the OME’s Safety and Environmental Case Report and / or the Safety and Environmental Management Plan. Compliance with Part 2 and associated safety policies will meet the requirements of Part 1 and provide robust evidence that the levels of risk presented to personnel, third parties, materiel and the environment have been assessed to be either Broadly Acceptable or Tolerable and As Low As Reasonably Practicable (ALARP). Part 2 is owned and sponsored by DOSR and written by Subject Matter Experts (SME).

Guidance on the Generation, Publication and Maintenance of JSP520 is provided within JSP520 Part 2.

2 Introduction

Overview

1. The overarching Secretary of State (SofS) Policy Statement, laid down in Joint Service Publication (JSP) 815 [1] is promulgated by each functional safety domain regulator in the form of a domain specific regulations. For OME the DSA-DOSR sponsors a number of JSPs and associated publications that collectively form the OME Safety and Environmental Management Requirements as detailed within this document. The aim of these regulations is to ensure that the levels of inherent risk presented by all OME acquired for use by, and at the direction of, the MOD can be demonstrated to be either Broadly Acceptable, or Tolerable and ALARP. The assessment of inherent OME safety risks presented to MOD personnel, third parties, materiel and the environment from the acquisition of equipment applies across the whole acquisition cycle and at any stage in a MTDS (Section 7).

2. The MOD must fulfil its statutory obligations and its common-law duty of care whilst maintaining Defence capability. Equipment Project Team Leaders (PTLs), have been delegated the responsibility to establish an Acquisition Safety and Environmental Management System (SEMS) and to generate an Equipment Safety and Environmental Safety Case to support the Duty Holders Safety Case. These are published in domain-specific publications for Land (JSP454 [2]), Sea (JSP430 [3]) and Air (MRP [4]), and their interfaces are discussed in more detail within Section 3 of this document. However, due to the specialist nature and inherent hazards associated with the acquisition of OME, JSP520 provides additional requirements with specific procedures, assessments and technical requirements.

3. The MOD has adopted best-practice by implementing a goal-setting SEMS and the development of a body of evidence collated in a set of documents termed a Safety and Environmental Case, as detailed within the Acquisition Safety and Environmental Management System [5] (ASEMS). ASEMS is made up of the Project Oriented Safety Management System [6] (POSMS) and Project Oriented Environmental Management System [7] (POEMS). POSMS and POEMS contain manuals and processes to enable implementation of safety and environmental management systems that comply with corporate policy in a consistent manner. This risk-based approach permits efficiency savings and the proportionate prioritisation of resources according to the significance of the risks. Inputs to the Equipment Safety and Environmental Case can draw upon modern and traditional safety and environmental management procedures, the application of good engineering practice and prescriptive standards where appropriate. Additionally the MOD is able to draw upon its considerable in-service experience with a wide range of OME systems. Outputs from an Equipment Safety and Environmental Case, together with clearances and certificates provide the degree of safety and environmental assurance required by the DSA.

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[1] JSP815 Defence Health and Safety and Environmental Protection.
[2] JSP454 Land Systems Safety and Environmental Protection.
[3] JSP430 Management of Ship Safety and Environmental Protection.
[4] MAA 01 Military Aviation Authority Regulatory Policy.
[5] See Acquisition System Guidance (ASG).
[6] See Acquisition System Guidance (ASG).
[7] See Acquisition System Guidance (ASG).

Guidance on clearance and certificates is provided within JSP520 Part 2, Vol 10: Clearances and Certificates.

4. The development of a robust Equipment Safety and Environmental Safety Case by the OME Equipment PTL will ensure that the Duty Holders are:

a. Supported and supplied with equipment and services where risks have been assessed to be either Broadly Acceptable or Tolerable and ALARP.

b. Provided with suitable and sufficient information to enable the equipment and services provided to be used appropriately.

5. The Duty Holder will have responsibility for the safety of all personnel engaged in the activity with the equipment. e.g., Storage, Transport, Use and Disposal.

6. Compliance with the requirements of JSP520 will bring about through-life savings by consideration of equipment hazards, reducing the frequency of incidents (including accidents and near misses) and mitigating their consequences. In turn, sound safety management principles help to generate increased confidence in equipment, resulting in improved morale and operational capabilities. Importantly, in the event of an incident, assurance authorities will be looking for evidence, which demonstrates that Duty Holders have fulfilled their safety obligations via compliance with relevant standards and policies. The audit trail that the JSP520 processes generate will provide evidence of best practice in the management of Inherent OME safety for the Equipment Acquisition Cycle.

7. The requirements of this policy, which is sponsored by the DSA, align and are compatible with the requirements for an MOD Safety and Environmental regime, as defined in JSP815 [8].

8. Where there is an urgent need to update regulations and / or guidance within JSP520, the DSA-OME Design and Use Policy office can raise a DSA Notice.

9. ***All Project Teams (PTs) shall meet the requirements of all DSA Notices issued by DSA-DOSR.***

Guidance on DSA Notices is provided within JSP520 Part 2, Vol 1: Introduction.

Terminology

10. The term 'incident' is used throughout this document to describe an incident, accident or near miss.

11. The term 'safety' is used throughout this document and refers to system safety and its impact on people and the environment. A distinction will be made where a variation to this approach is required.

12. To ensure consistent use of terms and phrases relating to safety within JSP520, a glossary of terms and their definitions, including a list of abbreviations, is presented in Part 2 Guidance Vol 1: Introduction, Definitions, Acronyms and References.

[8] JSP815 Defence Health and Safety and Environmental Protection.

3 Scope

Definition of OME

1. ***The scope of JSP 520 covers the Acquisition of all equipment and systems that satisfy the definition of OME below, which has been adapted from the agreed North Atlantic Treaty Organisation (NATO) definitions of OME, as stated within Allied Ordnance Publication (AOP) 38[9]. JSP 520 shall be applied to assess the inherent OME safety of any equipment or system that satisfies the definitions of OME:***

a. **Ordnance:** A weapon system with any associated munitions and auxillary material needed to use it.

Examples: weapons including directed energy, small arms, delivery platforms including barrels, launchers, fire systems.

b. **Munitions:** An item which, in order to perform its function, requires to contain energetic materials.

A complete device, charged with explosives, propellants, pyrotechnics, initiating compositions or nuclear, biological or chemical material, for use in military operations

Note1: In logistic configuration, the logistic packaging of the munition is included.
Note2: In NATO documents, the term ammunition is synonymous with munition.
Note 3: Munitions (plural) is used as overarching term for military weapons, munition and equipment.
Note 4: for use in connection with offence, or defence, or training, or non-operational purposes, including those parts of weapon systems containing explosives.

Examples: missile, shell, mine, demolition store, pyrotechnics, mines, bullets, explosive charges, mortars, air launched weapons, free fall weapons.

c. **Explosive:** is a substance (or a mixture of substances), which is capable by chemical reaction of producing gas at such a temperature and pressure as to cause damage to the surroundings. A substance manufactured with a view to producing a practical effect by explosion or pyrotechnic effect.

Note 1: The term explosive material includes solid and liquid high explosives, propellants and pyrotechnics.
Note 2: It also includes pyrotechnic substances even when they do not evolve gases.
Note 3: The term “explosive” is often used in short for “explosive material”.
Note 4: An explosive atmosphere of gas, vapour or dust is not considered to be an explosive.
Note 5: For the purposes of the OME Safety Management Policy, the definition of Explosives extends to novel materials designed to create an explosive effect.

[9] AOP38 Glossary of Terms and Definitions on Ammunition Safety.

Examples: propellants, energetic material, igniter, primer, initiatory and pyrotechnics irrespective of whether they evolve gases (e.g. illuminants, smoke, delay, decoy, flare and incendiary compositions).

Applicability

2. ***JSP520 applies to OME operated by and at the direction of the MOD (including contracted services), and shall be applied at every stage of the Acquisition Cycle and for the complete MTDS as described in Section 7 of this document. The regulations and procedures that JSP520 promulgates assess risks to MOD personnel, third parties, materiel or the environment, and specify how levels of inherent OME safety risk for systems and their constituent components shall be established and demonstrated.***

3. Inherent OME Safety is defined as the reduction of risks resulting from, and having an effect upon, the safety of the explosive component(s) of Munitions or higher level Ordnance systems. Inherent OME hazards can be classified into four groups, namely:

a. **Intrinsic hazards.** Those hazards presented by the explosive material in its quiescent state, such as toxicity, composition breakdown, gas / heat generation, material incompatibility etc.

b. **External and internal hazards.** Which could initiate the explosive component or have an adverse effect on the firing chain, such as spurious fire commands, EMC / E^3 (Electro Magnetic Compatibility / Environmental Electromagnetic Effects) emissions, temperature / drop / shock / vibration, firing chain failure, aerodynamic heating, fragment and bullet attack etc.

c. **Hazardous consequences of initiation.** Including partial initiation (whether intentional or unintentional) of the explosive component, such as blast, fragment, noise, toxic efflux, heat etc.

d. **Post launch and dynamic safety hazards.** Such as loss of guidance control, unintended launch, ricochet, early burst, etc.

4. ***The application of JSP520 is therefore not limited to weapon systems, and applies irrespective of the intended purpose of the system. It is the responsibility of the OME PT to assess the inherent safety of all such OME when it is owned and / or operated by or at the direction of the MOD (including contracted services). The OME PT shall also ensure that the assessment identifies those operating environments and stimuli with the potential to jeopardise the safety of the OME, formally passing that information on to Duty Holders that are responsible and accountable for the control of activities that are so hazardous that they could give rise to Risk to Life (RtL).***

5. Whilst the processes and requirements mandated within JSP520 are sufficiently generic to apply to the majority of OME systems, there may be instances where initial Risk Assessments infer that some of the JSP520 requirements may not be appropriate. This is particularly relevant to systems reliant on novel technologies and compositions, where the OME PT shall justify those requirements that are not appropriate in their OME Safety Submission to the OME Safety Review Panel (OSRP) (Section 7).

Exclusions

6. The JSP is not intended to:

a. Address Occupational Health and Safety and the implementation and management of 'Safe Systems of Work', that are necessary within the armed services that use OME equipment / systems, these are managed in accordance with JSP375 [10] and Top Level Budget holder (TLB) procedures.

b. Be used for contracting purposes. Contracting for safety is in accordance with Defence Standard 00-56 [11].

Interfaces

7. ***JSP520-compliant processes shall complement the overarching safety activities described in Section 7, conducted to establish the resultant risks presented by the equipment.***

8. Where there is no higher-level (system / platform) Safety and Environmental Case produced in accordance with one of the domain-specific safety publications, additional safety management activities (in addition to the inherent OME hazards) will be required in support of the overall safety claims.

9. In general, the safety of ordnance cannot be assessed independently of its munitions or explosive component. ***Where safety assessments are performed at the system level, hazards and risks identified in lower-level OME components shall be integrated into this system-level assessment.***

10. ***Whilst the OME PTL is responsible for all safety issues associated with the equipment, those hazards that fall outside the aforementioned definition of inherent OME safety shall be managed in accordance with the overarching domain-specific safety regulations applicable to the particular service operating environment(s). Hazards that might be further mitigated at a higher system or platform level shall be clearly identified and, where appropriate, addressed at that level.***

11. Where ordnance systems comprise a number of equipments and sub-systems that are the responsibility of more than one OME PT, Senior Managers are authorised to appoint a single Duty Holder with overarching responsibility for co-ordinating and resolving pan-equipment safety issues.

12. ***Wherever a Safety and Environmental Case covers entire weapon systems, wider combat systems or platforms, the interfaces shall be assessed for requirements and risks that impact on the OME.***

13. The interrelationships with JSP520 and JSP454 [12] / JSP430 [13] / MRP [14] / JSP482 [15] are summarised below:

[10] JSP375 MOD Health and Safety Handbook.
[11] DefStan 00-56 Safety Management Requirements for Defence Systems.
[12] JSP454 Land Systems Safety and Environmental Protection.
[13] JSP430 Management of Ship Safety and Environmental Protection.
[14] MAA 01 Military Aviation Authority Regulatory Policy.
[15] JSP482 MOD Explosive Regulations.

a. **JSP454.** Defines the safety management requirements for all systems and equipment used in the Land operating environment, through-life. For OME used on, or fitted to land platforms the inherent OME safety shall be assessed against JSP520 as part of progressive System Acceptance. The Land Systems PTL is ultimately responsible for the integration of the Safety and Environmental Cases of all equipment fitted to their vehicle / land-based system / weapon, including all OME fitted or carried as stores.

b. **JSP430.** Defines the safety management requirements for ship platforms, systems and all equipment in the maritime operating environment, through-life. The inherent OME safety shall be assessed against JSP520 for all OME embarked on platforms governed by JSP430. The Maritime Platform Duty Holder is ultimately responsible for the integration of the Safety and Environmental Cases of all equipment fitted to their vessels, including all OME. The outputs from the OME management process will support subsequent Naval Authority (Explosives) activities, which assess and certify the integration of OME into a specific Platform operating environment.

c. **Military Airworthiness Authority Regulatory Procedures (MRP).** Defines the safety management requirements for all Platforms, systems and equipment used in the Air Operating environment, through life. The carriage, launch and jettison of Air Launched Weapons (ALW) from aircraft present risks additional to those from the aircraft to users, the public and military personnel. The platform PTL is wholly responsible for the safety of his complete weapons system, so the purpose of an Air Launched Weapons Release Certificate (ALWRC),is to assist him to discharge this responsibility. For OME fitted to aircraft, the inherent OME safety shall be assessed against JSP520. The ALWRC, as detailed within the MRP shall be the certification by the Wpn PTL that the ALW has been assessed for carriage, release and jettison on the nominated platform(s) within the nominated environments and performance envelopes and that any associated risks, limitations and mitigations have been identified.

d. **JSP482.** The JSP482 regulations are produced for the guidance and instruction of all personnel, both Service personnel and MOD employed civilians (including supporting contracted staff), who are concerned with the management, storage, maintenance, inspection, processing, handling and disposal of explosives and explosives storage facilities within the MOD. It covers Explosives Legislation, Classification, Storage, Planning, Siting, Buildings, Traverses, Safety Standards, Licensing, Safeguarding, Control, Storage, Handling, Packaging, Marking, Sealing, Processing, Inspection, Bans and Constraints, Radio Frequency Hazards etc.

Guidance on interrelationships is provided within JSP520 Part 2, Vol 2: Process Interface.

14. ***The MOD also shall demonstrate that it has an appropriate Management System in place to manage environmental impacts through-life.***

15. JSP418 [16] provides the MOD policy for environmental management, and the POEMS Manual [17] adopted in Defence Equipment and Support (DE&S) provides

[16] JSP418 MOD Corporate Environmental Protection Manual.
[17] See Acquisition System Guidance (ASG).

good practice on procedures to be followed. These documents shall be referred to for guidance in these areas and are not replicated in this JSP.

16. ***OME System's Stakeholder interfaces shall be defined, agreed, recorded and controlled, as part of the Through Life Management of the OME.***

Guidance on defining and managing interfaces is provided within JSP520 Part 2,Vol 2: Process Interface.

4 Policy

Legal Requirement

1. The MOD has legal and moral responsibilities to its employees and to other people who could be affected by its activities, with the SofS for Defence having overall responsibility for Health, Safety, Environmental Protection and Sustainable Development in the MOD. As such, the MOD shall comply with all applicable legislation and statutory provisions, covering safety as well as those that apply to environmental protection and sustainable development.

2. However, the policy statement states that where there are exemptions, or derogations from either domestic or international law, MOD shall introduce standards and management arrangements that are, as far as is reasonably practicable, at least as good as those required by legislation. The statement notes that the SofS will only disapply legislation on the grounds of national security, when such action is essential to maintain operational capability or in accordance with applicable laws.

3. The SofS Policy Statement is published in JSP815 [18]. In summary, the policy states that the MOD will:

a. Within the United Kingdom, comply with all legislation which applies tp MOD (including legislation giving effect to the UK's international obligations).

b. Overseas, apply UK standards where reasonably practicable, and in addition comply with relevant host nations' standards.

c. Set targets and ensure that safety and environmental protection performance is measured, monitored and reported so as to promote continual improvement in our systems and performance.

Legislation

4. All Regulations made under The Health and Safety at Work etc Act 1974 (HSWA) shall apply to the MOD, including the Armed Forces (unless stipulated otherwise). The MOD discharges its duty under this act through the SofS Policy Statement, as contained within JSP815.

5. The following sections of HSWA are of particular relevance to the instructions contained within this JSP:

a. Section 2 - which imposes general duties on every employer to ensure, so far as is reasonably practicable, the health, safety and welfare at work of its employees, this duty extends to include the provision and maintenance of 'plant' (which includes any machinery, equipment or appliance) that is, so far as is reasonably practicable, safe and without risks to health. Note: the Health and Safety Executive (HSE) consider the two terms 'so far as is reasonably practicable (SFAIRP)' and 'as low as reasonably practicable (ALARP)' to mean essentially the same thing, and at their core is the concept of 'reasonably practicable.

[18] JSP815 Defence Health and Safety and Environmental Protection.

b. Section 3 - which imposes a duty on every employer to conduct its undertaking in such a way as to ensure, so far as is reasonably practicable, that persons not in its employment who may be affected are not thereby exposed to risks to their health or safety.

c. Section 5 – This has been replaced by The Environmental Protection Act (EPA) 1990 [19].

d. Section 6 - which imposes a duty on any person who designs, manufactures, imports or supplies any 'article for use at work' to ensure, so far as is reasonably practicable, that the article is designed and so constructed that it will be safe and without risks to health when it is being set, used, cleaned or maintained by a person at work.

e. Section 7 - which imposes a duty on every employee to take reasonable care for the safety of themselves and of other persons who may be affected by their acts or omissions at work. Also, as regards any duty imposed on their employer, they must cooperate with the employer to enable that duty to be performed or complied with.

6. This JSP has adopted, wherever possible, the principles of the Management of Health & Safety at Work Regulations [20] .

7. The EPA is the centrepiece of current UK legislation on environmental protection. There are three environmental issues that place statutory duties on employers and are directly related to the health and safety function, these are: air pollution, water pollution and waste disposal. These statutory duties are contained in the EPA.

8. The Corporate Manslaughter and Corporate Homicide Act 2007 [21] introduced a new offence, that allows companies and other organisations where there had been a gross failing, throughout the organisation, in the management of health and safety with fatal consequences to be prosecuted. The Act itself does not give rise to personal liability. The MOD has a duty of care (in respect of this Act) when operating under normal conditions. Although the duty of care is to be maintained wherever practicable, the MOD has exemptions (in respect of this act) because of its unique role in the following areas:

a. Operations, including peacekeeping operations and operations for dealing with terrorism, civil unrest or serious public disorder, where members of the armed forces come under attack or face the threat of attack or violent resistance.

b. Activities carried out in preparation for, or directly in support of, such operations.

c. Training of a hazardous nature, or training carried out in a hazardous way, which is considered to be necessary in order to improve or maintain the effectiveness of the armed forces with respect to such operations.

d. Any duty of care owed by the MOD in respect of activities carried out by members of Special Forces. Special Forces are those units of the armed forces the maintenance of whose capabilities is the responsibility of the Director of

[19] Environmental Protection Act (EPA) 1990.
[20] Management for Health and Safety (HSG65).
[21] Corporate Manslaughter and Corporate Homicide Act 2007.

Special Forces or are for the time being subject to the operational command of that Director.

9. The Defence exemption for training relates only to that of a hazardous nature. Basic and trade training for example is not covered. The MOD has a duty of care to ensure that its employees are trained to carry out the tasks required of them. Where those tasks are of a hazardous nature (operations etc) then the training will, of necessity, also be hazardous. To lessen that training would mean that the MOD would be failing in its duty of care. The MOD could then be accused of not providing its employees with sufficient means to carry out the task required, hence the exemption for those circumstances. That does not mean, however, that the risks of that training should not be assessed and that all reasonable care should not be taken.

10. ***It is the role of the PT and the supplier of the OME system to ensure that all relevant legislation is identified and managed accordingly. A compliance assessment against all applicable legislation shall be undertaken for the OME system.***

Guidance on legislation compliance is provided within JSP520 Part 2, Vol 7: Legislation Compliance.

11. In cases where the compliance assessment has identified non-compliance(s) with legislation and exemption(s) or permissive exemption(s) is(are) available, and these non-compliance(s) is(are) considered to be essential for the maintenance of operational capability, an exemption case requesting approval to invoke the exemption(s) or derogations(s) shall be submitted to the delegated Authority. Further guidance on the delegated Authority is available through DSA and JSP375[22] .

Safe Operation

12. Duty Holders are legally accountable for the safe operation of systems in their Area of Responsibility (AoR) and for ensuring that Risk to Life (RtL) are reduced to either Broadly Acceptable or Tolerable and ALARP. In the execution of their specific responsibilities, Duty Holders are accountable and answerable to the SofS via their superior Duty Holder chain.

13. It is accepted that it is impossible to mitigate all wartime hazards and Duty Holder judgements will have to be made in the scenarios examined (related to the military role and capability requirement) and the application of the ALARP principle.

14. In Operations and Wartime it must be recognised that operation of weapons outside the stated Conditions and Mandatory Instructions introduces additional risk. In most cases such risks cannot be quantified as they lie outside the boundary of the trials or assessments undertaken on the weapon or munition during design, development and integration. The risk may include risk to personnel, the environment, own platform and / or third parties.

15. An Operational Dispensation Process may be required to support the Duty Holder in making a robust and documented risk assessment specifically when there

[22] JSP375 MOD Health and Safety Handbook.

is a need to operate a system outside of its documented safe parameters, particularly if there is a need for prolonged use in that configuration.

16. Where operational imperatives demand urgent employment of OME in a manner that is likely to increase the Risk to Life (RtL) beyond that which would be deemed either Broadly Acceptable or Tolerable and ALARP for routine activities and prior consultation with the relevant DH, or his senior representative, is impractical, an operational commander retains the freedom and authority to employ the allocated OME in a manner of his choosing conscious that they may be held accountable.

5 MOD Relevance

MOD Application

1. Each OME Equipment PT shall comply with the following objectives:

   a. ***To manage the OME Acquisition SEMS integrally with other safety and environmental management processes as part of a system of systems.***

   b. ***To manage OME inherent safety through all stages of the equipment or system lifecycle, in conjunction with identified Duty Holders.***

   c. ***To define the roles and responsibilities of authorities and personnel, whether the MOD or acting at the direction of the MOD, involved in the management of OME inherent safety.***

   d. ***To define how their evidence of OME inherent safety will be documented in the Safety and Environmental Case and its validity maintained.***

   e. ***To identify interfaces with associated authorities and policies.***

   f. ***To comply with the requirements of these Regulations.***

   g. ***To comply with DSA objectives specified through DSA Notices, prior to the issue of formal updates to this policy.***

2. The legal objectives of the OME Acquisition SEMS are:

   a. To ensure, so far as is reasonably practicable that the OME is designed and constructed to be tolerably safe, and without risks to health.

   b. To reduce risks to either Broadly Acceptable or Tolerable and ALARP. This means that the degree of risk in a particular activity or operating environment, through-life can be balanced against the time, trouble, cost and physical difficulty in taking measures to avoid the risk. The greater the risk, then the more likely it is that it is reasonable to go to very substantial expense, trouble and invention to reduce it, but if the consequences and the extent of a risk are small, insistence on grossly disproportionate expense would not be considered reasonable. It is important to remember that the judgement is a subjective one and the size or financial position of the employer is immaterial.

Guidance is provided within JSP520 Part 2, Vol 8: Risk Management.

   c. To cross-reference safety and legal reviews for compliance with International Law, including Protocols additional to the Geneva Conventions.

3. The HSE provides guidance and objectives for tolerability criteria [23] based on the risk of death of an individual and societal risk at the workplace or a specific site. DSA require the Duty Holder with responsibility for the activity to meet that criterion or a MOD-derived target. In order to fulfil this function, the Duty Holder relies on the provision of safety information from OME equipment Duty Holders, presented in a

[23] JSP520 Pt 2 Vol 8: Risk Management.

format, which allows the safety performance of that equipment to be established for a specific environment.

4. For OME systems the OME PTL is the Duty Holder responsible for the inherent safety of the OME and has a duty of care to deliver safe equipment that has been assessed over its MTDS. Each phase of the MTDS can be considered a site / platform, with its own Duty Holder responsible for meeting the safety requirements at that site / platform.

5. Each site Duty Holder shall ensure they have control over the normal operating environment at that site and responsibility for any excursions from that operating environment, or communicate any excursions back to the Principal Duty Holder. The OME PTL shall have responsibility for ensuring the munition remains safe in the normal operating environments and predicting the response of the munition in abnormal operating environments and advising appropriate Duty Holders including Heads of Establishments.

6. Whilst the MOD has no general exemptions from the HSWA and much of the associated regulation; it is exempt from the Explosives Acts of 1875 and 1923, but not successor Manufacture and Storage of Explosives Regulations (MSER) [24]. Further explanation is provided in JSP482 [25]. The MOD has specific exemptions, disapplications or derogation from certain UK or EU legislation, international treaties or protocols. However, the SofS has directed the MOD to maintain standards and arrangements which will be, so far as is reasonably practicable, "*at least as good as those required by UK legislation*" or other NATO partner nations where that sets a higher standard. Where there is no relevant legislation, internal standards are to be used to optimise the balance between risks and the benefit to capability, the wider MOD, employees and third parties. Compliance with the requirements of JSP520 Part 1 is the Department's response to ensure:

a. Compliance with applicable legislation and where applicable to be "as good as" comparable arrangements in the civil sector [26].

b. Conformance with principles for assurance of higher hazards [27].

c. Compliance with NATO AOP15 [28].

d. Compliance with the Management of Health & Safety at Work Regulations [29]. The SEMS has adopted, wherever possible, the principles, definitions and terminology used in other MOD SEMS and Management of Health & Safety at Work Regulations.

e. The SofS's requirement to clearly separate responsibilities for those who "Implement safety" and those who "Assure safety", enshrined in primary statute and the duties of a Ministry of State [30].

[24] Manufacture and Storage of Explosives Regulations (MSER) Regulations 2005.
[25] JSP482 MOD Explosive Regulations.
[26] Health and Safety Commission policy statement "Our approach to permissioning regimes".
[27] Regulating Higher Hazards: Exploring the issues 2001.
[28] AOP15 Guidance On The Assessment Of The Safety And Suitability For Service Of Non-Nuclear Munitions For NATO Armed Forces.
[29] Management of Health & Safety (HSG65).
[30] STANAG 4439 NATO Policy for Introduction and Assessment of Insensitive Munitions (IM).

f. Those Duty Holders are aware of their duty of care for safety, when activities are for and on behalf of the MOD, a liability that cannot be transferred[31].

g. That whenever a task is directed by the MOD, that the Duty Holder retains sufficient oversight of the Corporate Risks. This is since tasks associated with OME safety may be delegated, but responsibility is retained, irrespective of contractual arrangement, or premises ownership, scope of task capture in the Systems Requirement Document (SRD) or who holds design authority [32] .

Safety Standards

7. To comply with SofS's policy, the MOD requires evidence within the Safety and Environmental Case that the management and technical standards adopted by the Duty Holder are consistent with best civil and international best-practice as a minimum. To achieve maximum harmonisation it is current MOD policy to utilise civil standards where appropriate and an agreed order of preference is as follows:

a. European standards [33].

b. International standards.

c. UK civil standards.

d. Commercial standards widely recognised by industry.

e. International Military Alliance standards.

f. UK MOD Defence standards.

g. UK MOD Departmental standards and specifications.

h. Other Nation's military standards.

i. Recognised industry / partnership / consortium standards.

8. Safety standards shall be selected according to their effectiveness in mitigating risks and their appropriateness to the system and through-life operating environment under analysis.

9. Occasionally civil standards do not meet the specified safety requirements, sufficiently mitigate risk, or undermine capability. Duty Holders are then to follow an appropriate military standard selected from the next level of the standards hierarchy.

10. All requirements shall include a survey, verification and validation regime, to ensure continued compliance with the selected standards, proportionate to the risk.

Guidance is provided within *JSP520 Part 2, Vol 7: Legislation Compliance*.

[31] STANAG 4439 NATO Policy for Introduction and Assessment of Insensitive Munitions (IM).
[32] STANAG 4439 NATO Policy for Introduction and Assessment of Insensitive Munitions (IM).
[33] The selection of standards is discussed within the "Selection of Standards for use In Defence Acquisition" paper, dated 5th June 2008 and is available on the DStan website. This paper explains the order of preference in the selection of standards.

Insensitive Munitions

11. It is the MOD's policy to reduce equipment safety risks to levels that are either Broadly Acceptable or Tolerable and ALARP. Insensitive Munitions (IM) contribute to the ALARP principle through fulfilling their performance, readiness and operational requirements on demand, whilst minimising the probability of inadvertent initiation and severity of subsequent collateral damage to weapon platforms, logistic systems and personnel when subject to unplanned stimuli. NATO nations have agreed a policy for introduction, assessment and testing for IM. These are prescribed in NATO Standardization Agreement STANAG 4439 [34] which the UK has ratified. To achieve this any User Requirement for the procurement of OME by the Ministry of Defence must include a Key User Requirement to meet the UK MOD IM Policy below.

12. The MOD Policy Statement is:

a. ***"The vulnerability of the munitions in the MOD inventory shall be reduced over time to meet the requirements of STANAG 4439.***

b. ***All new munitions requirements shall stipulate compliance with the IM criteria. Agreement from relevant FLC/ODH is required for any non-compliance, either in the requirement definition or in the procurement solution, in addition to justification within the Risk Assessment.***

c. ***All in-service munitions shall be kept under review to identify opportunities to achieve IM compliance and thereby reduce risk. Prior to replenishing stock (e.g. mid-life updates, repeat buys, etc), the procurement authority, normally the DE&S OME PT, shall investigate all options for improving IM compliance. Where improving the IM signature is technically achievable but for performance cost or time reasons, and the OME PTL proposes not to pursue improvements, agreement from relevant FLC/ODH is required.***

13. A risk assessment is to be be conducted by the OME PT to populate a hazard log. This together with an IMAP assessment, will support the required IM signature of the OME as well as their full safety assessment. Results may influence the energetic qualification and classification processes, system architecture, packaging and methods of transportation and use. Risks generated by this risk assessment process shall be evaluated and reduced or accepted as appropriate. Agreement by the relevant FLC/ODH signifies acceptance of any areas of non-compliance from the IM policy and does not remove the duty to mitigate risk to either Broadly Acceptable or Tolerable and ALARP, nor of the possibility that highly sensitive munitions may not be widely deployable on every platform and could thus have restricted capability.

Guidance on IM policy and its implementation can be found within JSP520 Part 2, JSP520 Part 2, Vol 11: Insensitive Munitions.

14. For application of this policy to Nuclear Weapons, refer to JSP538 [35] .

[34] STANAG 4439 Policy for Introduction and Assessment of Insensitive Munitions (IM)
[35] JSP538 Regulation of the Nuclear Weapon Programme.

Failure to Comply

Notices and Censures

15. The HSE uses Crown Improvement Notices or Crown Prohibition Notices where they are considered necessary following an inspection of the MOD premises (including processes, practices and controls). Failure to comply with the requirements of a Crown Notice can lead to a Crown Censure. Crown Censure is an administrative procedure, whereby HSE may summon a Crown employer to be censured for a breach of the HSWA Act or a subordinate regulation which, but for Crown Immunity, would have led to prosecution with a realistic prospect of conviction. JSP815 [36] provides full details of the official agreements between the MOD and the HSE.

16. The Environmental Agency (EA) has a Memorandum of Understanding with the MOD to deal with issues of environmental protection. JSP418 [37] provides full details of the EA enforcement and prosecution policy.

Civil Proceedings

17. Irrespective of whether the MOD is censured or an employee is prosecuted, civil claims may be brought against both. However, it is most unlikely that individual employees will be sued where the act / omission that allegedly gave rise to the damage in respect of which the claim is brought occurred whilst the employee was acting appropriately in the course of their employment.

Disciplinary Action

18. In any event the MOD employees could face disciplinary action if they have been reckless or negligent, or failed to carry out the duties imposed upon them by Law and / or the MOD.

DSA Notices and Censures

19. DSA and the Military Aviation Authority (MAA) undertake internal regulation of TLBs. DSA and the MAA will conduct their business so as to provide the SofS with the assurance that those activities are safe and compliant. To do this, both authorities will use Internal Enforcement Notices as required.

Regulatory Audits

20. Audits will be conducted to assess organisations compliance with this JSP and provide assurance to SofS that OME risks are being managed in accordance with his policy statement.

21. On completion of each audit a report will be produced and issued. Where an organisation has not met the requirements of this JSP the short fall will result in

a. An observation in the report to highlight a minor shortfall against this JSP

[36] JSP815 Defence Health and Safety and Environmental Protection.
[37] JSP418 MOD Corporate Environmental Protection Manual.

b. A non conformance that will be monitored and will require an action plan from the organisation to show how the non conformance will be addresses and corrected

c. Issuing an improvement notice. This will also require an action plan and will additionally be reported to D DSA due to the severity of the short fall. Progress will be monitored to assure that the required improvements are made in accordance with the action plan.

d. A prohibition notice that will result in a defined activity being ceased. A prohibition notice will require an action plan to be put in place by the organisation being reported on and will be reported to D DSA due to the severity of the shortfall. Progress will be monitored to assure that the required improvements are made in accordance with the action plan and on completion of the action plan the activity may recommence.

6 Organisation and Arrangements

Organisation

1. The Secretary of State (SofS) Policy Statement (as contained within Joint Service Publication (JSP) 81538 declares that safety is the responsibility of both line management and individuals. In the Ministry of Defence (MOD) these are supplied in the format of a formal Letter of Delegation. Such delegations can only be made to those staff that are Suitably Qualified and Experienced Personnel (SQEP) and have the resources to undertake those duties.

2. By the Charter for the DSA, the Secretary of State for Defence empowers the DSA for its roles as Regulator, Investigator and Defence Authority, granting its independence (from financial, political and operational pressures) and authority as well as outlining its responsibilities. The DSA regulates all areas of defence where we have exemptions from legislation.

3. **Secretary of State (SofS)**. SofS issue policy statement on Health Safety and Environmental Protection (HS&EP) in Defence.

4. **Permanent Under Secretary (PUS).** PUS is appointed as the senior official responsible for putting the policy statement into practice and ensuring compliance HS&EP.

5. **TLB holders and Trading Fund Agency chief executives** are senior duty holders and are responsible for choosing the duty holders in their organisation who manage activities which could be a risk to life. PUS holds TLB holders to account for their performance in terms of health and safety within the Defence performance Framework (DPF).

6. **Defence Safety Committee (DSC)**. The DSC is chaired by the DG DSA and is part of the MOD corporate governance structure as set out in the SofS's Policy Statement. It supports PUS in carrying out the responsibilities as Process Owner for safety and EP. These include providing strategic direction, setting objectives, assessing and prioritising the Department's safety and EP risks, considering the safety and EP risks arising from Planning Round options and providing advice to the Defence Board, monitoring and reviewing the implementation of the Department's safety and EP strategy, and providing assurance to the PUS and the SofS that the management of safety and EP is effective and complies with SofS's policy. Senior representatives of Top Level Budget (TLB) holders, Trading Fund Agencies (TFA), and D DSA are members of the DSC.

Defence Safety Authority (DSA)

7. The Defence Safety Authority (DSA) is responsible for the regulation of Defence Health, Safety and Environmental Protection. It provides independent advice to the Secretary of State on Health, Safety and Environmental Protection (HS&EP) policy in Defence and evidence-based assurance that the policy is being promoted and implemented in the conduct of Defence activities. It owns and directs the activities of Defence's independent accident investigation teams

[38] JSP418 MOD Corporate Environmental Protection Manual.

Introduction

8. The DSA brings together the Defence Safety and Environment Authority (DSEA), the Military Aviation Authority (MAA) and the newly established Defence Fire Safety Regulator (DFSR) to form an independent authority that provides Defence with a single, independent, focus for safety and environmental protection. The DSA regulates all areas of Defence where we have exemptions from legislation. These exemptions exist because of the particular needs of Defence and cover areas such as nuclear, aviation, maritime, explosives and ordnance, and fuels and gases.

9. The Secretary of State's Health, Safety and Environmental Protection Policy Statement requires that MOD complies with the law where we are subject to it, and that where we have exemptions we should produce internal regulations that produce outcomes that are, so far as reasonably practical, at least as good as those required by legislation; in addition to regulation, the DSA is responsible for overarching safety and environmental protection policy and will carry out high level assurance to establish whether Top Level Budget (TLB) organisations and Trading Fund Agencies (TFA) are complying with the requirements of legislation, as well as internal regulation, in accordance with the policy statement.

10. The DSA is made up of nine teams:

a. **Defence Fire Safety Regulator (DFSR).** The DFSR is manned by Fire Safety Inspector (FSI) officers of the Defence Fire Rescue Service who enforce fire safety legislation within Defence.

b. **Defence Land Safety Regulator (DLSR).** The DLSR covers land systems, fuels and gases, movement and transport, vehicle policy and serious equipment failure investigation.

c. **Defence Maritime Regulator (DMR).** The DMR covers regulation of ship safety, diving safety policy, assurance and compliance of MOD Shipping policy.

d. **Defence Nuclear Safety Regulator (DNSR).** The DNSR covers regulation of the nuclear and radiological safety of the Defence Nuclear Programmes.

e. **Defence Ordnance Munitions and Explosives (OME) Safety Regulator (DOSR).** The DOSR covers OME, land ranges safety policy and major accidents control regulations.

f. **Military Aviation Authority (MAA).** The MAA covers regulation all aspects of air safety across Defence.

g. **Land Accident Prevention and Investigation Team (LAIT).** The LAIT covers investigation and reporting of all accidents and incidents in the land environment or where Land Forces sponsored equipment is involved.

h. **Military Air Accident Investigation Branch (MilAAIB).** The MilAAIB covers air accident investigation expertise to Service Inquiries so that the technical, operational and organisational causes are identified and understood.

i. **Corporate Policy & Assurance (CPA)**. The CPA covers corporate safety and environmental protection policy, governance and high-level assurance.

Defence OME Safety Regulator (DOSR)

11. The DOSR is an independent regulator within Defence and holds a personal letter of delegation from the Director General of the DSA which defines his authority and responsibilities. This directs the DOSR to regulate OME safety across Defence activities in accordance with the Secretary of State's policy statement and to maintain a regulatory regime.

12. The Defence OME Safety Regulator (DOSR) is required to develop, promulgate and enforce the MOD regulatory regime for OME Safety and Environmental Protection (S&EP) across Defence. The DOSR has specific responsibilities for the regulation of:

a. Explosives Safety

b. Major Accident Control Regulations.

c. OME Through life Safety.

d. Military Laser Safety.

e. Defence Ranges Safety.

13. In developing the regulatory regime, DOSR are supported by the following committees, working groups and Competent Authorities (CA) that report direct to the DOSR TL:

a. **Defence OME Acquisition Safety Committee (DOMEASC).** The committee is responsible for the review of JSP520 and change proposals submitted by users.

b. **Defence Explosives Safety Committee (DExpSC).** The committee is responsible for the review of MOD Explosive Regulations JSP482[39] and change proposals by users.

c. **Defence Major Accident Control Safety Committee (DMACSC).** The committee oversees the implementation and review of JSP498[40] throughout the MOD. JSP498 provides equivalent standards to those required by the Control of Major Accident Hazards Regulations 1999 (COMAH). UK legislation, which derives from a European Directive – Seveso II, does not apply to MOD. JSP498 requires establishments with holdings of hazardous substances over set threshold limits to produce documentation to demonstrate the establishment control measures for the prevention of Major Accidents and the mitigation of consequences to human health and the environment of any that do occur.

d. **Defence Ranges Safety Committee (DRSC).** The committee DRSC is the MOD focus for the safety of ranges, provide direction on the management and maintenance of the safety of ranges and provide assurance of safety through monitoring of the range inspection and audit system.

The DRSC sponsors and oversees the production of JSP403[41], forms and other documents that provide the necessary instructions and guidance for all concerned with the safety of MOD ranges and of other ranges at home and abroad used by MOD personnel.

[39] JSP482 MOD Explosive Regulations.
[40] JSP498 Major Accident Control Regulations.
[41] JSP403 Handbook of Defence Land Ranges Safety.

e. **Defence LASER Safety Committee (DLSC).** The DLSC committee provides assurance on all aspects of military laser safety within the MOD. The DLSC roles and responsibilities include management of JSP390[42], custodianship of STANAG 3606[43], along with providing input into other defence standards and laser safety training for stakeholders and contractors. The Defence Laser Safety Review Panel (DLSRP) issue certificates on behalf of the DLSC.

Further detail of the role and responsibility of Committees is provided within JSP520 Part 2, Vol 4: Roles and Responsibilities.

Roles and Responsibilities

14. The SofS Policy Statement declares that safety is both a line management and individual responsibility. A series of delegations are in place to ensure that responsibility and accountability for safety are clearly defined. In the MOD these are issued in the form of a formal 'Letter of Delegation'.

15. ***Where this policy applies, all personnel have a responsibility to ensure that:***

a. ***Safety and environmental policies are understood and complied with.***

b. ***They exercise a duty of care to themselves and other persons affected by their acts or omissions.***

c. ***They understand their organisation's safety management arrangements and the interfaces with other safety management arrangements.***

Further details are provided within JSP520 Part 2, Vol 4: Roles and Responsibilities.

Competence

16. Health and Safety legislation requires certain duties to be carried out by Suitably Qualified and Experienced Persons (SQEP). In the Managing for Health and Safety [44] a competent person is defined as "*a person who has sufficient training and experience or knowledge as to enable them to assist in securing compliance, on the part of the employee, with the necessary safety legislation and maintenance procedures*".

17. ***Personnel shall operate within the limits of their own competence.***

18. Managers are responsible for ensuring that personnel with delegated safety responsibility and authority are suitably qualified, experienced, and possess current knowledge to carry out their duties to meet the statutory, MOD regulatory and technical requirements of their role or post.

[42] JSP390 Military laser Safety.
[43] STANAG 3606 Laser Safety Evaluation for Outdoor Military Environments.
[44] Management of Health & Safety (HSG65).

19. ***The relevant functional competencies for key personnel shall be identified and the necessary training provided to develop and maintain competence levels, and to supervise / oversee where individuals require further development.***

20. ***Safety competencies shall include an understanding of risk-based safety management methods needed to tailor them to meet specific OME or weapon equipment requirements.***

21. ***All individuals with significant OME safety management responsibilities and / or those claiming to be suitably qualified and experienced (e.g. safety managers / focal points, OME Safety Advisors, Independent Safety Auditor (ISAs), SMEs and contracted staff), shall be assessed against the appropriate National Occupational Standards (NOS) for Explosives Substances and Articles (ESA).***

Guidance is provided within *JSP520 Part 2, Vol 5: Competence.*

Safety Culture

22. A 'Safety Culture' is defined by the Health and Safety Commission (HSC) as "the product of the individual and group values, attitudes, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's health and safety programmes[45]". Organisations with a positive safety culture are characterised by communications founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventative measures.

23. There are a number of issues that all personnel should strive to achieve within the organisation. ***Here are three key measurable considerations in establishing this safety culture that shall be adhered to:***

a. ***A 'Just' Culture. Safety Culture requires an atmosphere in which individuals are not unduly punished or blamed for their mistakes. Although the MOD strives to achieve this, the organisation is also subject to rules and legal regulation. As such a 'Just' culture shall be implemented to encourage a free flow of safety information across the organisation. The 'Just' culture is one in which individuals are not free of blame if they are culpably negligent, and where the MOD gives due regard to honesty. Errors and mistakes are inevitable, and safety management can only be improved if the organisation can learn from its mistakes.***

b. ***Incident Reporting and Investigation. A key part of Safety Management is measuring performance to know how safe the MOD operations are, and to identify problem areas for improvement. Information on real incidents, whether or not they actually caused damage, shall be used to learn about actual problems and to improve the management of safety.***

c. ***Continuous Improvement. The safety achievement of a system is not static and will usually tend to degrade over time as people become***

[45] Advisory committee on the Safety of Nuclear Installations 1993.

complacent and less vigilant. Monitoring and feedback shall be used to maintain and improve the safety performance. Continuous Improvement can be achieved in several ways through Auditing and Performance Review activities. Safety management should not be viewed as a one-off exercise and personnel shall continuously strive to improve safety performance.

7 Planning and Implementation

Overview

1. Planning and Implementation activities are those with a direct affect on the safety of the OME equipment or system, involving the specification, procurement, use, ownership, management and disposal of the subject OME. As a general principle, authorities responsible for Planning and Implementation cannot subsequently provide assurance of that activity. The authority primarily responsible for satisfying OME Safety Planning and Implementation requirements for equipment acquisition is the OME PTL.

2. ***The primary Planning and Implementation activities conducted by the OME PT shall include:***

a. ***Establishing Requirements.***

b. ***Generation of the Safety and Environmental Management System.***

c. ***Allocation of OME Review Category.***

d. ***Munitions Life Assessment.***

e. ***Conducting Trials.***

f. ***Safety and Environmental Case Development.***

g. ***Risk Management.***

h. ***OME Safety Submission.***

i. ***Appointment of an OME Safety Advisor.***

j. ***Management of Safety Information.***

Application of JSP520 through the MOD Acquisition Cycle

3. ***Safety management activities shall be initiated at the earliest possible stage in the MOD acquisition cycle. Where procurement follows the traditional MOD acquisition cycle, requirements shall be identified for each successive stage, including the specific Implementation and Assurance activities mandated by JSP520.***

4. ***At the early stages of a project the OME PT shall produce an OME SEMS, setting safety goals and initiating processes in an auditable trail of evidence that demonstrates compliance with individual goals and processes.***

5. ***This evolving body of Safety and Environmental Case evidence shall be used as the basis of successive reviews conducted by both the OME PT and the OSRP at key project milestones throughout the acquisition cycle.***

6. ***The processes defined by the OME PT shall follow the principles within JSP520 Part 2 [46] and shall incorporate sufficient flexibility to cope with projects following both a conventional acquisition cycle and alternate acquisition***

[46] JSP520 Part 2, Vol 3: Safety and Environmental Management System.

models, for example Off-The-Shelf procurement or Urgent Operational Requirement (UOR).

Guidance is provided within JSP520 Part 2, Vol 3: Safety and Environmental Management System.

OME Safety through the Manafacture to Target or Disposal Sequence (MTDS)

7. ***All OME shall be assessed against their MTDS. The MOD safety responsibilities extend across the entire MTDS, necessitating PTs to establish a safety management approach that addresses specific safety issues particular to each stage. The Safety Assessment shall also consider the integration of all elements necessary to deliver the defence capability, taking account of associated equipment and platforms, personnel training, maintenance facilities, tactics and procedures.***

8. The OME PTL retains responsibility for ensuring performance against the safety requirements is maintained and where practicable is improved within agreed boundaries. This shall include identifying the Duty Holders and seeking necessary assurance of continuing satisfactory arrangements across the MTDS as well as suitable and sufficient procedures for the modification, upgrade, concessions / production permits and rectification of faults and defects.

Guidance on OME safety through the MTDS is provided within JSP520 Part 2, Vol 9: Safety and Environmental Case Development.

Establishing Safety Requirements

9. ***Each OME PT shall identify and record safety requirements, in consultation with their Capability Sponsor (CS). Safety assessments shall be initiated at the earliest possible stages of the acquisition cycle, addressing the different issues that arise as the Project matures, or requirements alter, throughout the acquisition cycle.***

10. ***Initial safety requirements shall be developed according to sound design practice or standards such as DefStan 07-85 [47], with particular emphasis on specifying those safety requirements arising from safety legislation, regulations, standards and the MOD policy. Where production of the Safety and Environmental Case is contracted out, recognition of contractual requirements shall also be given, in accordance with DefStan 00-56 [48] and JSP418 [49].***

11. ***For areas of design that are not regulated, appropriate Subject Matter Experts shall be consulted for advice on best-practice and the availability of standards and procedures appropriate to the requirements selected. Adoption of alternative standards to those usually selected shall be justified within the Safety and Environmental Case.***

[47] DefStan 07-85 Design Requirements for Weapons and Associated Systems.
[48] DefStan 00-56 Safety Management Requirements for Defence Systems.
[49] JSP418 MOD Corporate Environmental Protection Manual.

12. ***Requirements shall cover the entire system, throughout its acquisition cycle and across the entire MTDS, with due regard for military effectiveness and the system's Safety and Suitability for Service (S3) [50].***

13. The safety requirements set for complex equipment and components, including electronic elements should be progressively refined to a level of detail that is sufficient to specify and perform verification and validation [51] of both software and hardware, and energetic components, proportionate to the risks.

14. ***All requirements shall be periodically reviewed to consider the effects of emerging capabilities from new equipment, or the application of new / current military thinking, tactics, techniques and procedures on previous assumptions.***

Further guidance on establishing and managing requirements is detailed within the "Requirements and Acceptance" part of the Acquisition System Guidance (ASG)

Generation of the Safety and Environmental Management System

15. ***The OME PT's OME SEMS shall be established at the initiation of a Project, and shall be managed, maintained, reviewed and updated through-life.***

16. ***The OME PT shall establish a Safety and Environmental Panel (SEP) to manage its SEMS through-life.***

17. Where a OME PT has a number of OME systems under its Duty of Care then a Safety Environmental Management Committee (SEMC) may be established.

18. ***All PTs shall satisfy the requirements of the domain-specific safety regulations (e.g. JSP430 [52], JSP454 [53], or MRP [54]) relevant to the operating environments for that OME by working within a robust integrated SEMS. For JSP520-applied systems, the SEMS shall also provide a description of the PT's system for managing inherent OME safety and complying with the requirements of JSP520. This may be in the form of a stand-alone PT OME SEMS or as an Annex to the main document.***

19. The content of the PT OME SEMS assumes the existence of an overarching PT SEMS that has been produced to the requirements of an alternative functional safety policy. ***Where no such document exists, the PT shall develop a comprehensive SEMS to meet the requirements of one, or more, of the domain safety policies.***

Guidance on SEMS, SEMP and SEMC is provided within JSP520 Part 2, Vol 3: Safety and Environmental Management System.

[50] AOP15 Guidance On The Assessment Of The Safety And Suitability For Service Of Non-Nuclear Munitions For NATO Armed Forces.
[51] See Acquisition System Guidance (ASG).
[52] JSP430 Management of Ship Safety and Environmental Protection.
[53] JSP454 Land Systems Safety and Environmental Protection.
[54] MAA 01 Military Aviation Authority Regulatory Policy.

Allocation of OME Review Category

20. ***The level of effort and resources applied to the management of OME safety should be proportional to the complexity of the system and level of risk involved. This shall be determined by the OME PT identifying and assigning an OME Review Category to all OME.***

21. ***The OME Review Category shall be initially assigned at the earliest possible stage in the acquisition cycle and prior to OSRP assessment, but may change as the project develops and further information becomes available.***

22. ***The OME Review Category shall also determine the level of review to be undertaken by the OSRP.*** Systems reviews will be proportional to the risk; therefore Low Risk systems will have a lower level of review than that undertaken for High / Medium Risk systems.

Guidance is provided within *JSP520 Part 2, Vol 6: OME Review Category.*

Munitions Life Assessment

23. Munitions Life Assessment (MLA) aims to promote more effective through-life management of munitions and, as a consequence, the optimisation of munitions' lives. This should lead to capability improvements, a reduction in the quantities of munitions that are demilitarised and in the size of the stockpile. To prevent the disproportionate waste of munitions, by applying the precautionary principle [55] it is critical that the actual conditions munitions experience during their service lives and the degradation caused to their energetic and other components by temperature, humidity, shock, vibration and pressure are better understood.

24. JSP762 [56] requires that appropriate techniques for gathering data on the operating environment and safety through-life are justified in the Safety and Environmental Case, with identified risks reduced by protecting munitions from potentially harmful effects of those operating environments.

25. ***The tools and techniques of MLA shall be applied to all stages of the MOD acquisition cycle and the MLA principles for Initial Service Life Trials, Service Life Amelioration Methods and In-Service Surveillance (ISS) implemented. The SEMS shall also take due cognisance of the management structures for implementing the MOD MLA policy across the MOD.***

Conducting Trials

26. Conducting trials are necessary to generate evidence to support the Safety and Environmental Case arguments.

27. ***Where trials are performed at the direction of the MOD, whether on contractor's premises, UK or foreign ranges or in the service operating environment, the OME PTL (or nominated Duty Holder, including the sponsor)***

[55] See Acquisition System Guidance (ASG).
[56] JSP762 Weapons and Munitions Through Life Capability.

shall have a responsibility for ensuring the inherent OME safety of their equipment under trial, within the boundaries of the operating envelope. Duty Holders are to jointly risk assess any operation outside that envelope. Such trials shall require an OSRP Assurance Statement via an OME Safety Submission to the OSRP.

28. ***The risk assessments for trials shall be proportional to the risk, taking cognisance of the known operating envelope, the likely controls and safeguards that will be in place and the likely time at risk.*** Where this evidence cannot be obtained from alternative sources, and with due regard to the proportionality of the risk, trials and assessments may need to be conducted. These should be combined into cost-effective safety trials and assessment programmes and form part of the Integrated Trials, Evaluation and Assessment Programme (ITEAP).

29. Specific requirements relating to land ranges are published in JSP403 [57]. Trials involving air-carried munitions shall satisfy the requirements of MRP [58] and JSP800[59]. OME systems shall satisfy the requirements of JSP430 [60] where they are embarked on platforms governed by JSP430. A pre-requisite will be the issue of a OSRP Assurance Statement based on OSRP review of the OME safety submission.

Safety and Environmental Case Development

30. DefStan00-56 [61] defines a Safety Case as "*A structured argument, supported by a body of evidence that provides a compelling, comprehensible and valid case that a system is safe for a given application in a given operating environment*." POEMS [62] defines a Environmental Case as "*A body of evidence that is compiled and maintained throughout the lifetime of a project on its environmental aspects and impacts*". In recent years Safety Cases and Environment Cases have been combined together, into a Safety and Environmental Case.

31. The MOD policy stipulates that a robust body of safety and environmental evidence termed a Safety and Environmental Case shall support all equipment operated by or at the direction of the MOD. The detailed content of the MOD Safety and Environmental Cases is dependent on the domain in which the equipment will operate and defined in the relevant domain-specific safety publication, Land (JSP454, [63]), Sea (JSP430 [64]) and Air (MRP [65]). Whilst these publications are optimised for their particular domain, they share a common structure and approach.

32. The safety requirements for OME, Ship, Land and Aviation are similar in that each stipulates the need for a single comprehensive, credible and robust Safety and Environmental Case for each system or sub-system. However each will vary to reflect the different hazards presented within their respective domains. In the majority of instances, there will be a hierarchy of Safety and Environmental Cases, and each authority is required to manage the interface between their own

[57] JSP403 Handbook of Defence Land Ranges Safety.
[58] MAA 01 Military Aviation Authority Regulatory Policy.
[59] JSP800 Defence Movements and Transport Regulations.
[60] JSP430 Management of Ship Safety and Environmental Protection.
[61] DefStan 00-56 Safety Management Requirements for Defence Systems.
[62] See Acquisition System Guidance (ASG).
[63] JSP454 Land Systems Safety and Environmental Protection.
[64] JSP430 Management of Ship Safety and Environmental Protection.
[65] MAA 01 Military Aviation Authority Regulatory Policy.

responsibilities and those of other related systems through a proportionate, risk-based approach to safety management.

33. ***The overall safety of weapon systems shall follow the hierarchical approach by assessing the interaction of all systems with the potential to influence the inherent OME safety, including safe operation and suitability for use.*** The assessment of safety relies upon a system-based hierarchical approach, with safety established at successively higher levels from component to equipment, subsystem and system. For example, the safety assessment will be conducted at a system level, integrating the results of prior assessments carried out on lower-level components (including munitions) to establish the overall level of system safety. Consequently, in the majority of cases, a system-level assessment can only be conducted after the safety of the lower-level explosive components has been established.

34. ***The OME PT shall prepare a Safety and Environmental Case for their system or equipment that complements the higher-level systems or platform Safety and Environmental Cases.***

35. The aim is to have a seamless flow of safety information between Safety and Environmental Cases at successive levels, be it equipment, system or platform.

36. ***The Safety and Environmental Case shall define the system, its boundaries and its operating environment, with all interfaces clearly identified and effectively managed.***

37. To ensure all interfaces are clearly identified and effectively managed, interfaces shall be clearly established and the requirements of the different safety policy documents understood.

Guidance is provided within *JSP520 Part 2, Vol 2: Process Interface.*

38. ***OME Safety and Environmental Case Reports (SECRs) shall be produced periodically and at Key Project mileston (Section 7) in the MOD acquisition cycle from Initial Gate onwards.***

39. Periodicity of producing regular SECRs arising from Safety and Environmental Case reviews, for the in-service phase (as distinct from introduction to service), should be proportional to the risks associated with the system and should align with the business approvals process. The periodicity of producing SECRs shall be recorded within the SEMP. SECRs provide a status report on the OME safety and environmental activities undertaken to that point and are the functional output from the body of evidence contained in the Safety and Environmental Case. It shall demonstrate OME system performance against the OME Safety and Environmental requirements specified for that system and those specified by this policy.

40. ***As the Project matures, subsequent SECRs shall summarise the results of the formal safety and environmental assessment activities conducted by the OME PT.*** It shall provide compelling evidence that the OME system complies with relevant legislation and that appropriate OME safety risks are either Broadly Acceptable or Tolerable and ALARP, throughout the MTDS when operated within agreed boundaries.

41. ***The SEMS shall articulate those posts that have the authority to sign off residual risks, whether it's the Platform Duty Holder and / or the weapon OME PT, as appropriate.*** Such approval shall indicate their satisfaction with the progress of the Safety and Environmental Case and their acceptance of the risks and environmental impacts associated with the project.

Guidance is provided within *JSP520 Part 2, Vol 8: Risk Management.*

42. ***Existing OME Safety and Environmental Cases shall be reviewed when changes occur to the modification state; operating environment; or the role of the subject equipment, and the existing arguments justifying the safety claims reassessed.***

43. Additional factors to consider when reviewing the periodicity are presented in JSP520 Part 2 [66].

44. A generic template providing guidance for constructing the OME SECR is available within JSP520 Part 2 [67] and provides the level of evidence that shall be contained within an SECR at various stages throughout the Acquisition Cycle, to satisfy the OME Submission to the OSRP.

45. The OME SECR shall include references to relevant clearances and certificates, as applicable, which support introduction into service including:

a. ESTC Hazard Classification.

b. Explosives qualification.

c. Range safety assessments.

d. Laser safety certification.

e. IM assessment.

f. Air carriage clearance.

g. Aircraft Weapons Air Carriage and Release (Aircraft Self Damage [ASD], Thermal Effects on Airborne Conventional Armament Stores and Equipment [TEACASE] and Aircraft Weapons Ballistic Committee [AWBC]).

h. Logistic Parachute Delivery Clearance, commonly known as Air Drop Code.

i. Defence Munitions Approval to Process (ATP) and Approval to Store and Handle Explosives (ASHE).

Detailed guidance is provided within *JSP520 Part 2, Vol 9: Safety and Environmental Case Development.*

46. Where an OME Safety Advisor and / or ISA is appointed by the OME PT, all relevant conclusions drawn from advice and / or audit reports shall be included in the OME SECR to provide support to safety arguments and declarations.

[66] JSP520 Part 2, Vol 3: Safety and Environmental Management Systems
[67] JSP520 Part 2, Vol 9: Safety and Environmental Case Development

Risk Management

47. The three domains in which the MOD equipment is used pose a wide range of threats, and consequently the policy published for each functional safety domain describe domain specific requirements. Underlying these, in common with this JSP, is a risk-based approach based on the Safety and Environmental Case encompassing:

a. Safety and Environmental Management System.

b. Safety and Environmental Management Plan.

c. Safety and Environmental Requirements.

d. Safety and Environmental Case Reports.

48. ***OME PTs shall adopt a risk-based safety management approach to system design and through-life management. They shall demonstrate in their Safety and Environmental Case and SEMS details of their system, its manner of operation, and the operating environments to which it will be subjected. They shall begin implementation of processes that shall identify hazards and provide an assessment of that OME's response to a wide range of credible stimuli at the earliest possible stages of the project. In turn, they shall assess levels of risk presented by the OME and consider reduction of those risks using suitable methods to control consequence and / or probability, and seeking appropriate advice from OME Safety Advisors and Subject Matter Experts. They shall consider the balance between operational benefits and options for mitigation, by avoiding the imposition of inappropriate controls and justify their decisions accordingly.***

49. All OME PTs are permitted to assess the use of novel approaches which previous practice may not have allowed. The justification for the use of novel approaches shall be documented in the OME's Safety and Environmental Case Report and / or the Safety and Environmental Management Plan. A risk-based approach does not preclude the use of approved deterministic design standards, but reliance on such standards shall be justified as best practice and the tolerability of resultant risk through compliance established or reduced to either Broadly Acceptable or Tolerable and ALARP.

50. The MOD's preferred standard for contracting for safety management is DefStan 00-56 [68] which provides requirements and guidance on the core elements, activities and outputs of the safety management process to comply with this policy. It is important to recognise that DefStan 00-56 is not prescriptive, and that the processes and procedures that it describes set a framework for compliance with this policy. Similarly, the DE&S's preferred standards for PTs meeting the requirements of this policy are the POSMS [69] and the POEMS [70].

51. Irrespective of the standard selected each Duty Holder shall adopt a risk-based approach, with suitable emphasis placed by the PT on the level of scrutiny that is appropriate and in proportion to the level of risk presented by the equipment, system

[68] DefStan 00-56 Safety Management Requirements for Defence Systems.
[69] See Acquisition System Guidance (ASG).
[70] See Acquisition System Guidance (ASG).

or platform. They are also to take into account any existing safety pedigree that can be ascertained from historical in-service data (defects, faults and incidents), previous best-practice or read across by a competent person or body from similar equipment or systems, by applying the principles of proportionality.

52. The OME PT shall demonstrate a structured, systematic approach to safety management, starting with the setting of high level safety goals, the identification of hazards, followed by the estimation of risk levels and finally the reduction of risk to levels either Broadly Acceptable or Tolerable and ALARP.

53. The evidence generated by the safety management process shall be the backbone of the Safety and Environmental Case, and, wherever practicable, the Duty Holder should select common processes regardless of the domain in which the equipment will operate.

54. The authority necessary to accept a risk depends on the risk level. The SEMS should articulate which roles have the authority to sign off Class A to Class D risks, whether it is the Platform PT or the Weapon Commodity PT, as appropriate.

Guidance is provided within JSP520 Part 2, Vol 8: Risk Management.

OME Safety Submission

55. ***DSA requires that all OME systems are assured for compliance against these regulations. Assurance of inherent OME safety shall be through the independent review of documentary evidence undertaken by an OSRP.***

56. The documentary evidence collectively forms the OME Safety Submission. By presenting an OME Safety Submission to the OSRP, the OME PTL is requesting independent validation that the safety and environmental management processes being implemented by the PT demonstrably satisfy the requirements of JSP520.

57. ***The OME PTL shall present OME Safety Submissions for OSRP review at key project milestones throughout the MOD acquisition cycle. These shall include:***

a. ***Initial Gate.***

b. ***Main Gate.***

c. ***Entry to Service.***

d. ***In-Service changes.***

e. ***Withdrawal from Service.***

Approved diversions from these key project milestones are identified within JSP520 Part 2 Vol 9 and Vol 13.

58. ***In addition to these main milestones, the OSRP Secretariat shall be notified at any stage of the MOD acquisition cycle where changes affect assumptions about the inherent safety of the system.***

59. ***Where OME is brought into service under UOR arrangements and then retained in service once the UOR has lapsed, then the full requirements of***

JSP520 shall be completed, within a reasonable timescales as agreed by the OSRP. This assessment shall include the submission of a full SECR and associated documents, that form an OME Safety Submission, to an OSRP for independent review and endorsement in accordance with JSP520 Part 1. Irrespective of this, the PT should be continuing to gather evidence to demonstrate the full requirements of JSP520, whilst the OME system is still classified as an UOR.

60. OME Safety Submissions are presented under a covering letter, signed by the OME PTL, or by an authorised representative, to acknowledge ownership.

61. ***The OME SECR shall provide sufficient detail to satisfy the OSRP that relevant legislation and standards are complied with, that residual risks are either Broadly Acceptable or Tolerable and ALARP statements are comprehensive, credible, robust and proportionate.***

62. ***Where an OME Safety Advisor and / or ISA is appointed by the PT, all relevant conclusions drawn from advice and / or audit reports shall be included in the OME SECR to provide support to safety arguments and declarations.***

63. The OSRP will issue a OSRP Assurance Statement, if it is satisfied that the OME Safety Submission fulfils the requirements of JSP520. If the OSRP is not satisfied with the OME Safety Submission, the OME PTL will be formally informed of the panel's decision and reasons for rejection in writing.

64. ***The issue status of all OSRP Assurance Statement shall be recorded and monitored for currency.***

Further guidance of the OSRP process is provided within JSP520 Part 2, Vol 13: OME Safety Review Panel Process.

Appointment of an OME Safety Advisor

65. ***Unless the OME PTL can demonstrate that sufficient OME safety competence exists within their PT to fully discharge the responsibilities defined in this JSP, they shall obtain external specilist advice from a source that can be demonstrated as independent.***

66. Such advice may be obtained from any demonstrably competent body, but is available from the DOSG Weapon Systems (WS) team.

Guidance on the Role and Responsibilities of an OME Safety Advisor is detailed within JSP520 Part 2, Vol 4: Roles and Responsibilities. *Guidance on competence is detailed within JSP520 Part 2, Vol 5: Competence*.

Management of Safety Information

67. As the Safety and Environmental Case includes a 'body of evidence', identifying, obtaining and managing the evidence is of the utmost importance. ***The OME PT shall put arrangements in place to manage the identification, obtaining, updating, configuration control and review of safety related documents and information; ensuring that urgent safety related information is made visible to all relevant Duty Holders / Users without delay.***

68. MOD policy for retaining safety and environmental related information is to comply fully with the requirements of civil statute. Specific legal requirements for keeping records are defined in JSP815 [71] with further guidance in POSMS [72]. Attention is drawn to the requirement that where there is no statute stipulating information retention times for specific hazards, the MOD Legal Adviser advises that safety related documentation (e.g. Safety and Environmental Cases and safety certification) shall be kept for ten years after equipment disposal. When equipment is sold, all such pertinent documentation shall be handed to the new Delegated Authority.

Guidance on the management of safety related information is detailed within JSP520 Part 2, Vol 3: Safety and Environmental Management System.

Guidance on configuration management is detailed within JSP520 Part 2, Vol 9: Safety and Environmental Case Development.

Transferring the Safety and Environmental Case

69. ***Where an OME system is to be transferred to another management authority, it shall be the joint responsibility of the existing acquisition and operating authorities to ensure that the Safety and Environmental Case is complete and up to date. The handover and acceptance criteria shall be systematic and documented.***

70. A review and update of the through life SEMS shall be undertaken and any incomplete or outstanding risk management activities identified. The resources required to implement any incomplete or outstanding actions shall also be identified and agreed with the receiving management authority.

[71] JSP815 Defence Health and Safety and Environmental Protection.
[72] ASG Procedures Safety Management Procedure (SMP) 12.

8 Measuring Performance

Introduction

1. Measuring performance is essential to maintain and improve safety performance. Information on performance shall be gathered by each OME PT in two ways: Active systems and Reactive systems

2. OME PTs need to measure what they are doing to implement their SEMS, to assess how efficiently they are controlling risks, and how well they are developing a positive safety culture. OME PTL shall be responsible for planning and monitoring safety performance against SEMS and applicable safety and environmental legislation, policy and standards.

SEMS - Active Monitoring

3. ***Active monitoring in the form of audit and review activities shall be used to verify that a SEMS is complying with planned arrangements, and whether these arrangements are implemented effectively and are suitable to achieve its aims and objectives.***

Guidance on Audit is provided within JSP520 Part 2, Vol 14: Audit. *Guidance on the review activities of the PT's safety committee is detailed within JSP520 Part 2, Vol 3: Safety and Environmental Management System.*

SEMS - Reactive Monitoring (Incident)

4. Timely and accurate reporting of incidents is an essential element of any SEMS.

NOTE
The term 'incident' is used throughout this document to describe an incident, accident or near miss.

5. ***An incident reporting system shall exist which shall:***

   a. ***Ensure that all incidents are reported.***

   b. ***Ensure trends are identified and corrective action taken to prevent reoccurrence.***

   c. ***Ensure that the organisation learns from experience.***

   d. ***Put in place control measures to prevent the recurrence of any serious incident.***

   e. ***Include a closed loop feedback mechanism.***

6. Incidents must be investigated by suitably qualified and experienced people with the aim of finding out the root causes of the incident, rather than attributing blame.

7. Where this JSP520 policy applies all personnel are responsible for the reporting of OME related incidents to the relevant PT, Advising Authorities, Duty Holders and

Munitions Incident Database Cell (MID Cell) at the earliest opportunity, even when considered trivial or attributable to the equipment in the form of defects or failures.

8. There are a number of mechanisms within the MOD to report and record incident information that are principally in accordance with JSP482 [73].

9. ***Monitoring of incident reports shall be a continuous process, with the arrangements recorded within the SEMS.***

10. ***Review and subsequent decisions about action required shall be monitored through the PT's SEP / SEMC.***

11. ***Regular reviews of fault, defect and deficiency reports shall also be carried out and reported to the PT's SEP / SEMC, to ensure that defects or possible trends in equipment failures do not compromise safety performance.***

12. ***Any incident reports, investigations into defects, or results from other activities which may alter any assumptions within a Safety and Environmental case shall be brought to the attention of relevant PTs, Duty Holders and assurance bodies with which those findings may affect.***

Guidance on Incident Monitoring is provided within JSP520 Part 2, Vol 12: Safety Performance Reporting and Feedback.

[73] JSP482 MOD Explosive Regulations.

9 Auditing and Performance Review

Introduction

1. Auditing and performance review are the final steps in the safety management control cycle. They constitute the feedback that enables an organisation to reinforce, maintain and develop its ability to reduce risks to either Broadly Acceptable or Tolerable and ALARP, and to ensure the continued effectiveness of the SEMS. Auditing and reviewing performance can be defined as:

   a. Auditing performance is the structured process of collecting independent information on the efficiency, effectiveness and reliability of the total SEMS and drawing up plans for corrective action.

   b. Reviewing performance is the process of making judgements about the adequacy of performance and taking decisions about the nature and timing of the actions necessary to remedy deficiencies.

2. The management of OME Safety and Environmental Assurance activities, encompassing auditing and performance review, comprises two major elements:

   a. Independent review of the inherent explosive elements of OME Safety Submissions by the OSRP.

   b. Audit against the requirements of JSP520.

OSRP

3. ***The OSRP acts on behalf of the DE&S Wpns Eng Hd, to provide assurance of compliance with JSP520. The OSRP shall provide project independent assurance of inherent OME safety as a component of the MOD's assurance regime, through review of the OME Safety Submissions produced by PTs at key stages in the project lifecycle.***

4. If the submission is deemed acceptable the OSRP will:

   a. Endorse the OME Review Category claimed.

   b. Undertake a proportionate review of the evidence underpinning the arguments.

   c. Provide assurance [74] that the arguments contained within the OME Safety Submission meets the requirements of JSP520, subject to any caveats, provisos and limitations.

   d. Provide constructive feedback to the PT about the suitability of the OME Safety Submission.

   e. Issue a OSRP Assurance Statement,supporting the arguments presented within the OME Safety Submission, as part of the assurance process. It should be noted that the OSRP Assurance Statement,becomes valid when the conditions of any provisos are met.

[74] Adequate confidence and evidence, through due process, that safety requirements have been met.

5. If the OSRP is not satisfied with the submission, the OME PTL will be formally informed of the panel's decision and reasons for rejection in writing.

6. A OSRP Assurance Statement,review date shall be set by the OSRP panel; and will be commensurate to the OME's Review Category and any identified limitations.

7. A OSRP Assurance Statement,will automatically lapse upon its review date. Continued certification shall require the PTL, prior to the OSRP Assurance Statement,review date, to submit an OME Safety Submission to the OSRP. The OSRP shall seek to review the continued validity of certification at the defined review dates. Failure to renew the OSRP Assurance Statement,shall result in OSRP being unable to provide continued assurance of the OME Inherent safety. Therefore, the OSRP Secretariat shall notify the PTL and report it to DE&S Wpns Eng TL.

Guidance on Incident Monitoring is provided within JSP520 Part 2, Vol 13: OME Safety Reporting Process.

Audits

8. The purpose of an audit is to ensure that OME systems comply with MOD regulations, statutory requirements and internal processes for safety and environmental management. It provides a systematic and independent examination of an OME's SEMS to determine its effectiveness.

9. ***OME PTs shall make sure that their safety and environmental management systems are regularly audited to give assurance that:***

   a. ***They are operating effectively, in a way consistent with good management practice.***

   b. ***The regulations, statutory requirements and internal processes are being complied with.***

10. Periodic audits validate the effectiveness of an OME SEMS, and enables any deficiencies to be addressed by appropriate and timely action. Periodicity is dependent on the level of risk perceived or assessed, the value that could be added by the audit process, or as required by management.

11. Internal auditors should be independent of the area being audited, but may be part of the same organisation.

12. Arrangements shall be in place for completion of corrective actions arising from audits, recording who is responsible for those actions and when they will be completed.

13. Where appropriate (e.g. projects containing complex systems or significant safety risk) it is recommended that an ISA be appointed to undertake an independent review to confirm that the safety regime has been implemented in accordance with the policy.

14. The Defence OME Regulator and other Domain Regulators may also require audit of safety management systems or environmental management systems. Wherever practical, auditing authorities shall co-ordinate audits to avoid duplication of effort.

Guidance on Audits is provided within JSP520 Part 2, Vol 14: Audit.

Defence OME Safety Regulator Stakeholder Committee (DOSR SC)

15. SofS requires DSA to establish stakeholder committees on a domain basis. The DOSR SC fulfils this remit for the HS&EP regulation of OME. The purpose of the DOSR SC is to provide a consultative forum where senior stakeholders can consider high-level OME S&EP performance matters, express their views on the regulatory regime, comment on proposed policy changes and be informed about emerging legislation / regulations and the outcome of regulatory activities.

16. The evidence acquired from reviews / audits / inspections underpins the TLB safety assurance report to the DOSRC