Defence
Safety Authority

DSA 03.OME Part 1 (Formerly JSP 520) - Defence Code of Practice (DCOP) for OME Acquisition

Defence OME Safety Regulator

DOSR

DSA VISION

Protecting Defence personnel and operational capability through effective and independent HS&EP regulation, assurance, enforcement and investigation.

PREFACE

AUTHORITY

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2. This document:

   a. Is uncontrolled when printed.

   b. Will be updated as part of a continuous improvement programme but at least 12-monthly from the period of document issue date.

REQUESTS FOR CHANGE

3. Proposed changes, recommendations or amendments to DOSR Regulations and Guidance publications can be submitted by anyone using the DOME Request for Change Function (RFC) available for every Dome publication in the DOME library located **here** or by completing the Word version of the Change Proposal Form available from the DOME Library, see figure 1 below for the location.

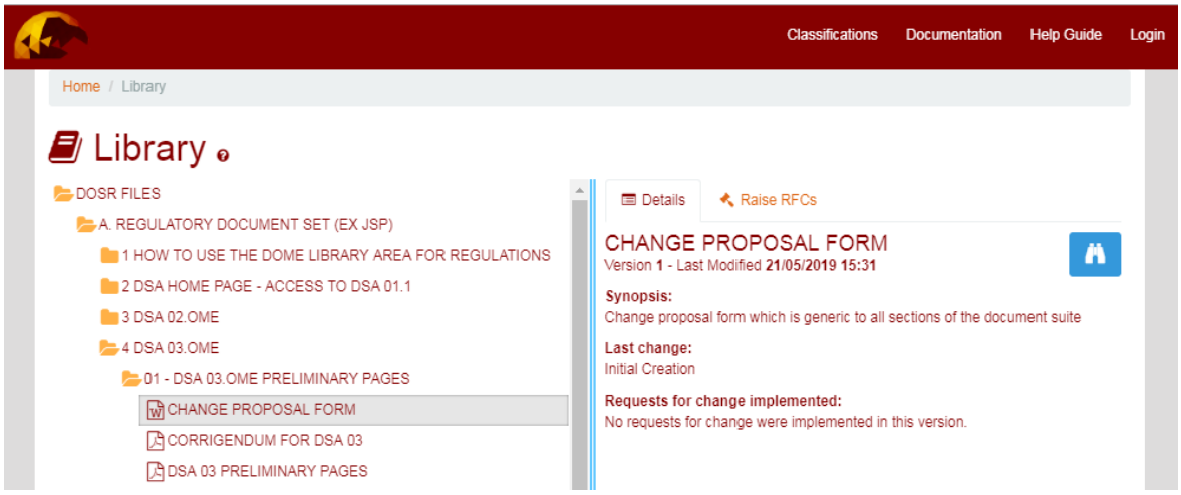

Figure 1. Change Proposal Form (Word version) Location

4. Any post and grammar change proposals can be approved or rejected by the DOSR PRG Authors without involvement of the associated Working Group.

5. Technical change proposals will need to be submitted to the associated Working Group for review and approval or rejection.

6. When incorporating changes care is to be taken to maintain coherence across regulations.

7. Changes effecting Risk to Life will be published immediately.

8. Other changes will be incorporated as part of routine reviews.

REVIEW PROCESS

9. The DOSR PRG team will ensure these OME Regulations remain fit for purpose by conducting reviews through the DOSR Governance Committees, involving all Stakeholders.

FURTHER ADVICE AND FEEDBACK

10. The document owner is the DOSR. For further information about any aspect of this document, or questions not answered within the subsequent sections, or to provide feedback on the content, contact:

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AMENDMENT RECORD

Version 2.1					
No	**Section**	**Para**	**Amendment Summary**	**Agreed**	**Date**
CP VARIOUS	VAR	VAR	A number of minor changes to the Chapter to update Organisation and document structure which have no material difference to the chapter	OME WG	30/03/21
-	ALL	ALL	Formatting - Paragraph numbering updated throughout to match chapters 2-14	OME WG	30/03/21
CP 162	ALL	ALL	Version 2.1 – this version removes all reference to “shall” in DSA03.OME Part 1. This accords with DSA02 Regulations and DSA regulatory requirements.	DOSR REGS ATL	23/07/21

Chapter 1: Introduction to DSA 03.OME Part 1

Contents

1 Introduction

Overview

1. The MOD must fulfil its statutory obligations and its common-law duty of care whilst maintaining Defence capability. Equipment Project / Delivery Team Leaders (PT / DTLs), have been delegated the responsibility to establish an Acquisition Safety and Environmental Management System (SEMS) and to generate an Equipment Safety Case and an Equipment Environmental Case to support the Duty Holders Safety Case. These are published in domain-specific publications for Land (DSA03.DLSR.LSSR[1]), Sea (JSP430 [2]) and Air (MRP [3]) and their interfaces are discussed in more detail within this document. However, due to the specialist nature and inherent hazards associated with the acquisition of OME, DSA 03.OME provides additional requirements with specific procedures, assessments and technical requirements.

2. 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 [4] (ASEMS). ASEMS is made up of the Project Oriented Safety Management System [5] (POSMS) and Project Oriented Environmental Management System [6] (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 if appropriate. Additionally, the MOD can 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.

3. The development of a robust Equipment Safety and Environmental Safety Case by the OME Equipment PT / DTL 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.

[1] DSA03.DLSR.LSSR Land Systems Safety and Environmental Protection.
[2] JSP430 Management of Ship Safety and Environmental Protection.
[3] MAA 01 Military Aviation Authority Regulatory Policy.
[4] See Acquisition System Guidance (ASG).
[5] See Acquisition System Guidance (ASG).
[6] See Acquisition System Guidance (ASG).

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

5. Compliance with the requirements of DSA02.OME 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 Regulations, standards and policies. The audit trail that DSA 03.OME processes generate will provide evidence of best practice in the management of Inherent OME safety for the Equipment Acquisition Cycle.

6. The requirements of this policy, which is sponsored by the DSA, align and are compatible with the requirements for a MOD Safety and Environmental regime, as defined in DSA01.1. All Project / Delivery Teams (PT / DTs) are to meet the requirements of all DSA Notices issued by DSA-DOSR.

Terminology

7. The term ‘incident’ is used throughout this document to describe an incident, accident or near miss.

8. 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.

9. To ensure consistent use of terms and phrases relating to safety within DSA 03.OME, a glossary of terms and their definitions, including a list of abbreviations, is presented in DSA 03.OME Preliminary Pages.

2 Scope

Applicability

1. This section of DSA 03.OME applies to OME operated by and at the direction of the MOD (including contracted services) and are to be applied at every stage of the Acquisition Cycle and for the complete MTDS as described in this document. The regulations and procedures that DSA 02/03.OME Part 1 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 are established and demonstrated.

2. Inherent OME Safety is defined as the reduction of risks resulting from, and influencing, the safety of the explosive component(s) of Munitions or higher-level OME 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.

3. The application of DSA 03.OME is therefore not limited to OME systems and applies irrespective of the intended purpose of the system. It is the responsibility of the OME PT / DT 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 / DT is to 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).

4. Whilst the processes and requirements mandated within DSA 02/03.OME are sufficiently generic to apply to the majority of OME systems, there may be instances where initial Risk Assessments infer that some of the DSA02.OME requirements may not be appropriate; this is particularly relevant to systems reliant on novel technologies and compositions. In such cases the OME PT / DT are required to justify those requirements that are not appropriate in their OME Safety Submission to the OME Safety Review Panel (OSRP).

Exclusions

5. The document 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 [7] and Top-Level Budget holder (TLB) procedures.

b. Be used for contracting purposes. Contracting for safety is in accordance with Defence Standard 00-056 [8].

Interfaces

6. DSA 02.OME-compliant processes complement the overarching safety activities described, which are conducted to establish the resultant risks presented by the equipment.

7. 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.

8. Generally, 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 need to be integrated into this system-level assessment.

9. Whilst the OME PT / DTL is responsible for all safety issues associated with the equipment, those hazards that are not included in the aforementioned definition of inherent OME safety is to be managed in accordance with the overarching domain-specific safety regulations applicable to the particular service operating environment(s). Hazards that may be further mitigated at a higher system or platform level need to be clearly identified and, where appropriate, addressed at that level.

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

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

12. The interrelationships with DSA 03.OME and DSA03.DLSR.LSSR[9] / MRP [10] are summarised below:

[7] JSP375 MOD Health and Safety Handbook.
[8] DefStan 00-056 Safety Management Requirements for Defence Systems.
[9] DSA03.DLSR.LSSR Land Systems Safety and Environmental Protection.

a. **DSA03.DLSR.LSSR.** 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 is to be assessed against DSA 03.OME as part of progressive System Acceptance. The Land Systems PT / DTL 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. **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 launches and jettisons of Air Launched Weapons (ALW) from aircraft present risks additional to those from the aircraft to users, the public and military personnel. The platform PT / DTL is wholly responsible for the safety of the complete weapons system; so, the purpose of an Air Launched Weapons Release Certificate (ALWRC) is to assist him / her to discharge this responsibility. For OME fitted to aircraft, the inherent OME safety is to be assessed against DSA 03.OME. The ALWRC, as detailed within the MRP is to be the certification by the OME PT / DTL 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.

13. The MOD is to demonstrate that it has an appropriate Management System in place to manage environmental impacts through-life. JSP418 [11] provides the MOD policy for environmental management, and the POEMS Manual [12] adopted in Defence Equipment and Support (DE&S) provides good practice on procedures to be followed. These documents are to be referred to for guidance in these areas.

14. An OME System's Stakeholder interfaces is to be defined, agreed, recorded and controlled, as part of the Through Life Management of the OME.

[10] MAA 01 Military Aviation Authority Regulatory Policy.
[11] JSP418 MOD Corporate Environmental Protection Manual.
[12] See Acquisition System Guidance (ASG).

3 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 is to 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 is to 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 [13]. 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 to help promote continual improvement in the MOD's systems and performance.

Legislation

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

5. The following sections of HSWA are particularly relevant to the instructions contained within this document:

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

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

essentially the same thing, and at their core is the concept of 'reasonably practicable.

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 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.

d. 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, regarding any duty imposed on their employer, they must co-operate with the employer to enable that duty to be performed or complied with.

6. This document has adopted, wherever possible, the principles of the Management of Health & Safety at Work Regulations [14].

7. The EPA is the centrepiece of current UK legislation regarding 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 [15] 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.

[14] Management for Health and Safety (HSG65).
[15] Corporate Manslaughter and Corporate Homicide Act 2007.

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 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 / DT 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 is to be undertaken for the OME system.

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) are to be submitted to the delegated Authority. Further guidance on the delegated Authority is available through DSA.

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. During Operations 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

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.

4 MOD Relevance

MOD Application

1. Each OME Equipment PT / DT is to 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 DSA02.OME.

   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 caused by an 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.

   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[16] 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. To fulfil this function, the Duty Holder relies on the provision of safety information from OME equipment Duty Holders, presented in a format which allows the safety performance of that equipment to be established for a specific environment.

[16] DSA 03.OME Part 1, Chapter 8: Risk Management

4. For OME systems the OME PT / DTL 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 is to ensure they have control over the normal operating environment at that site and responsibility for any excursions from that operating environment and communicate any excursions back to the Principal Duty Holder. The OME PT / DTL has responsibility for ensuring the OME remains safe in the normal operating environments and predicting the response of the OME in abnormal operating environments and advising appropriate Duty Holders including Heads of Establishments.

6. 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 DSA02.OME is the MOD's response to ensure:

a. Compliance with applicable legislation and where applicable to be "as good as" comparable arrangements in the civil sector [17].

b. Conformance with principles for assurance of higher hazards [18].

c. Compliance with NATO AOP15 [19].

d. Compliance with the Management of Health & Safety at Work Regulations [20]. 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 [21].

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[22].

g. That whenever a task is directed by the MOD, that the Duty Holder retains sufficient oversight of the Corporate Risks. This is because tasks associated with OME safety may be delegated, but responsibility is retained, irrespective of

[17] Health and Safety Commission policy statement "Our approach to permissioning regimes".
[18] Regulating Higher Hazards: Exploring the issues 2001.
[19] AOP15 Guidance On The Assessment Of The Safety And Suitability For Service Of Non-Nuclear Munitions For NATO Armed Forces.
[20] Management of Health & Safety (HSG65).
[21] STANAG 4439 NATO Policy for Introduction and Assessment of Insensitive Munitions (IM).
[22] STANAG 4439 NATO Policy for Introduction and Assessment of Insensitive Munitions (IM).

contractual arrangement, or premises ownership, scope of task capture in the Systems Requirement Document (SRD) or who holds design authority [23] .

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 [24].

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 are to 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 include a survey, verification and validation regime, to ensure continued compliance with the selected standards, proportionate to the risk.

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 [25] which the UK has ratified and

[23] STANAG 4439 NATO Policy for Introduction and Assessment of Insensitive Munitions (IM).
[24] 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.
[25] STANAG 4439 Policy for Introduction and Assessment of Insensitive Munitions (IM)

implemented. 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 is to be reduced over time to meet the requirements of STANAG 4439.

b. All new munitions requirements are to 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 are 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 / DT, is to 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 / DT 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 are to 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.

14. For application of this policy to Nuclear Weapons, refer to JSP538 [26] .

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 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

[26] JSP538 Regulation of the Nuclear Weapon Programme.

conviction. JSP815 [27] 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 [28] 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 during 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. The DSA undertakes internal regulation of TLBs and conducts its business so as to provide the SofS with the assurance that those activities are safe and compliant. To do this the DSA uses Internal Enforcement Notices as required.

Regulatory Audits

20. Audits will be conducted to assess organisations compliance with this document 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 document the short fall will result in:

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

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 DG 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.

[27] JSP815 Defence Health and Safety and Environmental Protection.
[28] JSP418 MOD Corporate Environmental Protection Manual.

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 DG 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.

5 Organisation and Arrangements

Organisation

1. The Secretary of State (SofS) Policy Statement (as contained within Joint Service Publication (JSP) 815[29] 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. **PermanentSecretary (PS).** 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.** 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 DG 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

[29] JSP418 MOD Corporate Environmental Protection Manual.

promoted and implemented in the conduct of Defence activities. It owns and directs the activities of Defence's independent accident investigation teams.

Introduction

8. The DSA regulates all areas of Defence the MOD has 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 SofS'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.

Defence OME Safety Regulator (DOSR)

10. DOSR is an independent regulator within Defence and holds a personal letter of delegation from the DG DSA, which defines his / her authority and responsibilities. This directs the DOSR to regulate OME safety across Defence activities in accordance with the SofS's policy statement and to maintain a regulatory regime.

11. 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 and DEW Safety.
e. Defence Ranges Safety.

Roles and Responsibilities

12. The SofS's 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'.

13. 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.

Competence

14. 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 [30] 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*".

15. Personnel are to operate within the limits of their own competence.

16. 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.

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

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

19. 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), are to be assessed against the appropriate National Occupational Standards (NOS) for Explosives Substances and Articles (ESA).

Safety Culture

20. 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[31]". 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.

21. There are numerous issues that all personnel should strive to achieve within the organisation. Three key measurable considerations in establishing this safety culture that are to be adhered to are:

[30] Management of Health & Safety (HSG65).
[31] Advisory committee on the Safety of Nuclear Installations 1993.

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 is 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 about real incidents, whether they caused damage or not, are to 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 complacent and less vigilant. Monitoring and feedback is 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 single exercise and personnel are to continuously strive to improve safety performance.

6 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 PT / DTL.

2. The primary Planning and Implementation activities conducted by the OME PT / DT include:

a. Establishing Requirements.

b. Generating the Safety and Environmental Management System.

c. Allocating an OME Review Category.

d. Conducting a Munitions Life Assessment.

e. Conducting Trials.

f. Developing the Safety and Environmental Case.

g. Managing Risk.

h. Producing an OME Safety Submission.

i. Appointment of an OME Safety Advisor.

j. Managing Safety Information.

Application of DSA 03.OME through the MOD Acquisition Cycle

3. Safety management activities are to be initiated at the earliest possible stage in the MOD acquisition cycle. Where procurement follows the traditional MOD acquisition cycle, requirements are to be identified for each successive stage, including the specific Implementation and Assurance activities mandated by DSA02.OME.

4. At the early stages of a project the OME PT / DT are to 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 is to be used as the basis of successive reviews conducted by both the OME PT / DT and the OSRP at key project milestones throughout the acquisition cycle.

6. The processes defined by the OME PT / DT is to follow the principles within DSA02.OME and incorporate sufficient flexibility to cope with projects following both a conventional acquisition cycle and alternate acquisition models, for example Off-The-Shelf procurement or Urgent Operational Requirement (UOR).

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

7. All OME is to be assessed against their MTDS. The MOD safety responsibilities extend across the entire MTDS, necessitating PT / DTs to establish a safety management approach that addresses specific safety issues specific to each stage. The Safety Assessment is to 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 PT / DTL retains responsibility for ensuring performance against the safety requirements are maintained and where practicable, is improved within agreed boundaries. This includes 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.

Establishing Safety Requirements

9. Each OME PT / DT is to identify and record safety requirements, in consultation with their Capability Sponsor (CS). Safety assessments are to 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 are developed according to sound design practice or standards such as DefStan 07-085 [32] with 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 is to be given, in accordance with DefStan 00-056 [33] and JSP418 [34].

11. For areas of design that are not regulated, appropriate Subject Matter Experts are to 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 need to be justified within the Safety and Environmental Case.

12. Requirements are to 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) [35].

13. The safety requirements set for complex equipment and components, including electronic elements should be progressively refined to a level of detail that is

[32] DefStan 07-085 Design Requirements for Weapons and Associated Systems.
[33] DefStan 00-056 Safety Management Requirements for Defence Systems.
[34] JSP418 MOD Corporate Environmental Protection Manual.
[35] AOP15 Guidance On The Assessment Of The Safety And Suitability For Service Of Non-Nuclear Munitions For NATO Armed Forces.

sufficient to specify and perform verification and validation [36] of both software and hardware, and energetic components, proportionate to the risks.

14. All requirements are to 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/ DT's OME SEMS are to be established at the initiation of a Project, and managed, maintained, reviewed and updated through-life.

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

17. Where an OME PT / DT is responsible for a number of OME systems a Safety Environmental Management Committee (SEMC) may be established.

18. All PT / DT s are to satisfy the requirements of the domain-specific safety regulations (e.g. JSP430 [37], DSA03.DLSR.LSSR[38], or MRP [39]) relevant to the operating environments for that OME by working within a robust integrated SEMS. For DSA 03.OME-applied systems, the SEMS are to also provide a description of the PT / DT's system for managing inherent OME safety and complying with the requirements of DSA 03.OME. This may be in the form of a stand-alone PT / DT OME SEMS or as an Annex to the main document.

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

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 is to be determined by the OME PT / DT identifying and assigning an OME Review Category to all OME.

21. The OME Review Category is to 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 also determines the level of review to be undertaken by the OSRP. Systems reviews will be proportional to the risk; therefore,

[36] See Acquisition System Guidance (ASG).
[37] JSP430 Management of Ship Safety and Environmental Protection.
[38] DSA03.DLSR.LSSR Land Systems Safety and Environmental Protection.
[39] MAA 01 Military Aviation Authority Regulatory Policy.

Low Risk systems will have a lower level of review than that undertaken for High or Medium Risk systems.

Munitions Life Assessment

23. Munitions Life Assessment (MLA) aims to promote more effective through-life management of munitions and, consequently, 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 [40] 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 [41] requires that appropriate techniques for gathering data about 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 are to 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 are to take due cognisance of the management structures for implementing the MOD MLA policy across the MOD.

Conducting Trials

26. 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 PT / DTL (or nominated Duty Holder, including the sponsor) is to have a responsibility for ensuring the inherent OME safety of their equipment under trial, within the boundaries of its operating limitations. Duty Holders are to jointly risk assess any operation outside that envelope. Such trials require an OSRP Assurance Statement, which must be obtained, via an OME Safety Submission to the OSRP, before the trial commences.

28. The risk assessments for trials are to be proportional to the risk, taking cognisance of the known operating limitations, 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).

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

29. Specific requirements relating to land ranges are published within DSA 03.OME Trials involving air-carried munitions are to satisfy the requirements of MRP [42] and DSA03 DLSR Movement and Transport Safety Regulations, Dangerous Goods Manual (MTSR DG Manual)[43]. A pre-requisite will be the issue of a OSRP Assurance Statement based on an OSRP review of the OME Safety Submission.

Safety and Environmental Case Development

30. DefStan 00-056 [44] 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 [45] defines an 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 supports 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 (DSA03.DLSR. LSSR [46]), Sea (JSP430 [47]) and Air (MRP [48]). 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 responsibilities and those of other related systems through a proportionate, risk-based approach to safety management.

33. The overall safety of OME systems is to 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, sub-system 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

[42] MAA 01 Military Aviation Authority Regulatory Policy.
[43] DSA03 DLSR Movement and Transport Safety Regulations, Dangerous Goods Manual (MTSR DG Manual).
[44] DefStan 00-056 Safety Management Requirements for Defence Systems.
[45] See Acquisition System Guidance (ASG).
[46] DSA03.DLSR.LSSR Land Systems Safety and Environmental Protection.
[47] JSP430 Management of Ship Safety and Environmental Protection.
[48] MAA 01 Military Aviation Authority Regulatory Policy.

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 / DT is to 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 defines 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 are to be established, and the requirements of the different safety policy documents understood.

38. OME Safety and Environmental Case Reports (SECRs) are to be produced periodically and at Key Project mileston 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 is to be recorded within the SEMP. SECRs provide a status report about 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. The SECR demonstrates 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 summarise the results of the formal safety and environmental assessment activities conducted by the OME PT / DT. It provides 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 articulate those posts that have the authority to authorise residual risks, whether it's the Platform Duty Holder and / or the weapon OME PT / DT, as appropriate. Such approval indicates their satisfaction with the progress of the Safety and Environmental Case and their acceptance of the risks and environmental impacts associated with the project.

42. Existing OME Safety and Environmental Cases is to 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. A generic template providing guidance for constructing the OME SECR is available within this document and provides the level of evidence that is to be

contained within an SECR at various stages throughout the Acquisition Cycle, to satisfy the OME Submission to the OSRP.

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

a. Hazard classification.

b. Explosives qualification.

c. Range safety assessments.

d. Laser and DEW 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).

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

Risk Management

46. 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 document, 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.

47. OME PT / DTs are to adopt a risk-based safety management approach to system design and through-life management. They are to 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 are to begin implementation of processes that 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 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 are to consider the balance between operational benefits and options for mitigation, by avoiding the imposition of inappropriate controls and justify their decisions accordingly.

48. All OME PT / DTs are permitted to assess the use of novel approaches which previous practice may not have allowed. The justification for the use of novel approaches is to 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 is to be justified as best practice and the tolerability of resultant risk through compliance established or reduced to either Broadly Acceptable or Tolerable and ALARP.

49. The MOD's preferred standard for contracting for safety management is DefStan 00-056 [49] 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 00-056 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 PT / DTs meeting the requirements of this policy are the POSMS [50] and the POEMS [51].

50. Irrespective of the standard selected each Duty Holder is to adopt a risk-based approach, with suitable emphasis placed by the PT / DT on the level of scrutiny that is appropriate and in proportion to the level of risk presented by the equipment, system or platform. They should 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.

51. The OME PT / DT are to 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.

52. The evidence generated by the safety management process is 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.

53. The authority necessary to accept a risk depends on the risk level. The SEMS should articulate which personnel have the authority to accept Class A to Class D risks, whether it is the Platform PT / DT or the OME PT / DT, as appropriate.

[49] DefStan 00-056 Safety Management Requirements for Defence Systems.
[50] See Acquisition System Guidance (ASG).
[51] See Acquisition System Guidance (ASG).

OME Safety Submission

54. DSA requires that all OME systems are assured for compliance against DSA02.OME. Assurance of inherent OME safety is through the independent review of documentary evidence undertaken by an OSRP.

55. The documentary evidence collectively forms the OME Safety Submission. By presenting an OME Safety Submission to the OSRP, the OME PT / DTL is requesting independent validation that the safety and environmental management processes being implemented by the PT / DT demonstrably satisfy the requirements of DSA 02.OME.

56. The OME PT / DTL are to present OME Safety Submissions for OSRP review at key project milestones throughout the MOD acquisition cycle. These include:

a. Initial Gate.

b. Main Gate.

c. Entry to Service.

d. In-Service changes.

e. Withdrawal from Service.

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

58. Where OME is brought into service under UOR arrangements and then retained in service once the UOR has lapsed, then the full requirements of DSA 02.OME is to be completed, within a reasonable timescale as agreed by the OSRP. This assessment includes 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 DSA 02.OME. Irrespective of this, the PT / DT should be continuing to gather evidence to demonstrate the full requirements of DSA 02.OME, whilst the OME system is still classified as an UOR.

59. OME Safety Submissions are presented under a covering letter, signed by the OME PT / DTL, or by an authorised representative, to acknowledge ownership.

60. The OME SECR is to 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.

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

62. The OSRP will issue an OSRP Assurance Statement, if it is satisfied that the OME Safety Submission fulfils the requirements of DSA02.OME. If the OSRP is not

satisfied with the OME Safety Submission, the OME PT / DTL will be formally informed of the panel's decision and reasons for rejection in writing.

63. The issue status of all OSRP Assurance Statements is to be recorded and monitored for currency.

Appointment of an OME Safety Advisor

64. Unless the OME PT / DTL can demonstrate that sufficient OME safety competence exists within their PT / DT to fully discharge the responsibilities defined in this document, they are to obtain external specilist advice from a source that can be demonstrated as independent.

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

Management of Safety Information

66. 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 / DT is to 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.

67. 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 [52] with further guidance in POSMS [53]. 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) is to be kept for ten years after equipment disposal. When equipment is sold, all such pertinent documentation is to be handed to the new Delegated Authority and copies retained.

Transferring the Safety and Environmental Case

68. Where an OME system is to be transferred to another management authority, it is 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 is to systematic and documented.

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

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

7 Measuring Performance

Introduction

1. Measuring performance is essential to maintain and improve safety performance. Information regarding performance is to be gathered by each OME PT / DT by using Active and Reactive systems

2. OME PT / DTs 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 PT / DTLs are responsible for planning and monitoring safety performance against the SEMS and applicable safety and environmental legislation, policy and standards.

SEMS - Active Monitoring

3. Active monitoring in the form of audit and review activities is to 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.

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 is to:

   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 document’s policy applies all personnel are responsible for the reporting of OME related incidents to the relevant PT / DT, 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 many mechanisms within the MOD to report and record incident information that are principally in accordance with this document.

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

10. Review and subsequent decisions about action required are to be monitored through the PT / DT's SEP / SEMC.

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

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

8 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 about 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 this document.

OSRP

3. The OSRP acts on behalf of the DE&S Wpns Eng Hd, to provide assurance of compliance with DSA 02.OME. The OSRP is to 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 PT / DTs 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 [54] that the arguments contained within the OME Safety Submission meets the requirements of DSA 02.OME, subject to any caveats, provisos and limitations.

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

e. Issue an OSRP Assurance Statement, supporting the arguments presented within the OME Safety Submission, as part of the assurance

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

process. It should be noted that the OSRP Assurance Statement, becomes valid only when the conditions of any provisos are met.

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

6. An OSRP Assurance Statement review date is to be set by the OSRP panel and it will be commensurate to the OME's Review Category and any identified limitations.

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

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 PT / DTs are to 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 are to 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 are to co-ordinate audits to avoid duplication of effort.