0 SHOWING CONFORMANCE

0.1 Options

0.1.1 There are four options to demonstrate conformance when applying this system procedure:

a. Follow the defined system procedure using the recommended guidance and tools, including allowed variations and options.

b. Use an equivalent process and tool set generated elsewhere and document evidence of procedural equivalence.

c. Use a bespoke process and tool set for the project and document how the bespoke procedure achieves the objectives defined for this system procedure.

d. Where the procedure is considered to be not relevant, document the basis for this decision.

1 INTRODUCTION

1.1.1 A **Safety Management System** is defined in Def Stan 00-56 Issue 4 as:

"The organisational structure, processes, procedures and methodologies that enable the direction and control of the activities necessary to meet safety requirements and safety policy objectives."

1.1.2 This procedure is concerned with ensuring that the in-service arrangements for sustaining the Safety performance of equipment introduced to service, are recognised, put in place and operated. They must also be recorded in the Safety Case to demonstrate in an auditable way that this is being achieved.

1.1.3 Several aspects of the In-service SMS will fall under the heading of "Lines of Development" (LoDs). Aspects such as personnel, training, sustainability, infrastructure and facilities must be considered in an integrated way, to ensure that the potential new military capability can be provided from the In Service Date with acceptable levels of Safety.

1.1.4 Other aspects of the In-service SMS will relate to applying Risk Management as the system changes (eg due to obsolescence, enhancement or new usage) and maintaining the Safety assurance so that it reflects the current system design and usage.

1.1.5 The In-service SMS will also deal with Safety performance monitoring and audits/inspections to ensure that levels of Risk being achieved do not increase because of slack practices or ignorance. Safety performance monitoring is covered separately in Audit & Assurance Procedure AAP02 – Monitoring and Measurement.

2 PROCEDURE OBJECTIVES

2.1.1 This procedure is concerned with ensuring that the in-service arrangements for sustaining the Safety performance of equipment introduced to service are recognised, put in place and operated. They must also be recorded in the Safety Case to demonstrate in an auditable way that this is being achieved.

3 RESPONSIBILITIES

3.1 Accountability

3.1.1 The IPTL is accountable for the completion of this procedure.

3.1.2 For military aviation the responsibilities for developing an in-service SMS as defined in this procedure, rests with the Release To Service Authority (RTSA) rather than the IPTL.

3.2 Procedure Management

3.2.1 The IPTL may delegate the management of this procedure to a member (Safety Manager) or members of the IPT.

3.2.2 It is the responsibility of the IPT to ensure that the in-service arrangements for sustaining the Safety performance of equipment introduced to service, are recognised, put in place and operated.

3.2.3 Whilst IPT Leaders responsible for Acquisition do not have the direct control to put in place all aspects of the In-service SMS, they have the key role in co-ordinating all the authorities involved and ensuring that arrangements are in place before the equipment comes into service.

3.3 Procedure Completion

3.3.1 The Project Safety Manager will be responsible for the completion of the procedure. However, in most cases a large part of the work will be carried out by others. In all cases, PSC members and other stakeholders should be involved in providing input and completing actions.

4 WHEN

4.1 Identification of SMS Requirements

4.1.1 From the earliest stages of a Project, the Safety Management Plan should identify the in-service arrangements required to sustain the Safety performance of the system. These requirements can only be identified through dialogue with stakeholders, particularly the Equipment User.

4.1.2 The RACI chart which is part of the Project SMP will cover involvement with in the In-service SMS, defining the authorities and their involvement with each activity.

4.1.3 The Integrated Test, Evaluation and Acceptance Plan (ITEAP) will cover all the aspects required to be in place to accept the Military Capability into service.

4.2 Refinement of SMS Requirements

4.2.1 As the Project proceeds through its life cycle and more information is available on the design solution, the requirements for its In-service SMS can be refined in greater detail. This will usually be recorded in the Project SMP, which is reviewed and agreed by the Project Safety Panel.

4.2.2 As the design is finalised, the in-service SMS will also be fully defined and recorded in the Safety Case. This may be through a standalone project SMS document or as part of the SP or the Safety Case Report.

4.3 Confirmation that Arrangements are in Place

4.3.1 Before the equipment is accepted into service, the PSC must review the arrangements that exist, or that are being put in place, to ensure that measures to manage and control risks are ready and adequate.

4.4 Maintenance of SMS Documentation

4.4.1 The SMS defined in the Safety Case must be reviewed and updated so that it correctly reflects the arrangements in place through the In-service period.

5 REQUIRED INPUTS

5.1.1 This procedure for the Safety Case and Safety Case Report requires inputs from:

a. Outputs from Procedure SMP01 – Safety Initiation;

b. Outputs from Procedure SMP02 – Safety Committee;

c. Outputs from Procedure SMP03 – Safety Planning;

d. Outputs from Procedure SMP04 – Preliminary Hazard Identification and Analysis;

e. Outputs from Procedure SMP05 –Hazard Identification and Analysis;

f. Outputs from Procedure SMP06 –Risk Estimation;

g. Outputs from Procedure SMP07 –Risk and ALARP Evaluation;

h. Outputs from Procedure SMP08 –Risk Reduction;

i. Outputs from Procedure SMP09 –Risk Acceptance;

j. Outputs from Procedure SMP10 –Safety Requirements and Contracts;

k. Outputs from Procedure SMP11 –Hazard Log;

l. Outputs from Procedure SMP12 –Safety Case and Safety Case Report.

5.1.2 This procedure will draw on information in the following documents, and it may also define changes that must be made to their content:

a. TLMP;

b. ITEAP;

c. Project SMP including RACI;

d. SMS Manuals of stakeholders (eg IPT, IPTs providing sub-systems, Users, authorities responsible for safe storage, transportation, disposal, inspection, audit, incident investigation etc);

e. Customer/Supplier Agreements (or similar) defining interfaces and responsibilities for certain Safety Management activities.

6 REQUIRED OUTPUTS

6.1 SMS Documentation

6.1.1 The In-service SMS arrangements will be recorded in various places because of the many authorities involved. For instance, the SMS manuals of different IPTs, user authorities, contractors and support authorities may contain relevant information as well as other documents recording arrangements for Incident and Accident reporting and investigation.

6.1.2 The principal means of bringing together this information is through the SMP and its RACI, defining the involvement of the different authorities.

6.1.3 The Project Safety Case will contain a description of the in-service SMS in operation to ensure that the Safety performance of the equipment is achieved and sustained through life.

7 DESCRIPTION

7.1.1 The in-service arrangements for sustaining the Safety performance of equipment introduced to service must be recognised, put in place and operated. The different aspects of the SMS can be considered under the following headings:

a. **Implementation of Safety Controls:**

i. Operation (including compliance with Safety limitations on use);

ii. Emergency preparedness;

iii. Maintenance;

iv. Training;

v. Storage;

vi. Transportation;

vii. Disposal (eg: consumables, damaged items, LRUs at end of their life).

b. **Safety Information Management:**

i. Incident and Accident data;
ii. Suggested Safety improvements;
iii. Maintenance of Hazard Log;
iv. Maintenance of Safety Case;
v. Maintenance of SMP (including Disposal Plan);
vi. Monitoring changes to Safety legislation;
vii. Provision of Safety information to other stakeholders;
viii. Receipt of Safety information from other stakeholders;
ix. Archiving of Safety information.

c. **Safety Performance Reviews and Continuous Improvement:**

i. Reactive (incident reporting, investigation and corrective action);
ii. Planned (audit and inspection);
iii. Safety Performance monitoring;
iv. Review for changes in system usage which might affect Safety;
v. Comparison of achievement with expectations;
vi. Continuous Improvement;
vii. Audit of the in-service SMS (self/peer/independent as required).

d. **Configuration Management:**

i. System build standard (hardware and software) – Safety consideration as an integral part of configuration control;
ii. Obsolescence management;
iii. Documentation (Safety consideration as part of documentation configuration control – eg Operator and Maintainer Manuals, Training syllabus).

e. **Risk Management (eg for modifications and enhancements):**

i. Hazard Analysis;
ii. Risk Estimation;
iii. Risk and ALARP Evaluation;
iv. Risk Acceptance.

f. **Lines of Development:**

i. Personnel (eg manpower numbers);
ii. Training (eg. individual and collective);
iii. Facilities and Estates (eg infrastructure and training facilities required to support the system in service through to disposal);
iv. Sustainability (eg resources, spares and support to sustain safe operation);
v. Concepts & Doctrine (eg military tactics, techniques and procedures and their interaction with the safe use of the equipment);
vi. Equipment & Technology (eg integration into systems of systems,

including interface and interoperability issues to consider for Safe operation).

7.1.2 The Risk Management of the system during development will result in several control measures which will determine requirements on the in-service SMS. The Safety Case will also identify SMS prerequisites on which the achievement of tolerable Safety depends. The Safety Case must show that these have been put in place and are effective.

7.1.3 The SMS description must identify the responsibilities and interfaces for all aspects of the defined in-service SMS, particularly because many different authorities are likely to be involved.

8 RECORDS AND PROJECT DOCUMENTATION

8.1 General

8.1.1 Where relevant, the outputs from this procedure should feed into the following:

a. SRD (System Requirements Document) – for any specific Safety requirements;

b. CSA (Customer Supplier Agreement) – to document agreements on Safety information to be delivered by the IPT;

c. TLMP (Through Life Management Plan);

d. Safety elements of Initial Gate and Main Gate submissions.

8.2 SMS Documentation

8.2.1 The In-service SMS arrangements will be recorded in various places because of the many authorities involved. For instance, the SMS manuals of different IPTs, user authorities, contractors and support authorities may contain relevant information as well as other documents recording arrangements for Incident and Accident reporting and investigation.

8.2.2 The principal means of bringing together this information is through the SMP and its RACI, defining the involvement of the different authorities.

8.2.3 The Project Safety Case will contain a description of the in-service SMS in operation to ensure that the Safety performance of the equipment is achieved and sustained through life.

9 RECOMMENDED TOOLS AND FORMS

9.1.1 Not applicable.

10 GUIDANCE

10.1 General Guidance

10.1.1 Before a system enters service, any residual risks and their proposed, or actual mitigations, should be examined and a case made that all necessary controls are in place. These are likely to include:

a. Arrangements for training – do the courses match the training requirements set out in the Safety Case, are courses available, are the first users and maintainers trained?

b. User and maintainer documentation – has it been approved and issued?

c. Support Arrangements, Maintenance Policy, ILS etc. – have they been implemented?

d. Limitations or restrictions on operation – where they are needed, have they been published?

e. Emergency and Contingency arrangements – are these in place and do they meet the requirements?

10.1.2 The adequacy of the existing in-service SMS should be reviewed when:

a. Modifications to the equipment are introduced;

b. There is a change in use;

c. There are changes in legislation requiring retrospective action to ensure compliance;

d. On disposal.

10.1.3 In addition, the adequacy and effectiveness of the In-Service SMS can be examined as part of a detailed Safety Audit or Inspection or during a periodic major review of the Safety Case.

10.2 Domain-Specific Guidance and References

10.2.1 Additional guidance on the in-service SMS is contained in the following references:

a. Land Systems: JSP 454 Issue 4 Part 2:

i. Part 3 Safety Case Section 6.5 .

b. Ship Safety Management: (JSP 430 Issue 3):

i. Section 8 Safety Case Implementation (8.3.1)

c. Airworthiness: (JSP 553 1st Edition):

i. For military aviation the responsibilities for an in-service SMS as defined in this procedure rests with the Release To Service Authority (RTSA) rather than the IPT Leader.

ii. Chapter 5 In-Service Safety Management System (5.3 and 5.4)

d. Ordnance, Munitions & Explosives (OME): (JSP 520 Issue 2.0):

i. Chapter 2 In Service OME Management 0229 to 0232.

e. Nuclear Propulsion (JSP 518 Issue 1.2):

i. Annex A In Service (A109, A110 and A111)

10.2.2 The DASMS as set by the DASB on behalf of the Defence Environment and Safety Board (DESB) is an overarching Safety Management System (SMS) which sets out Defence Aviation safety management policy, organization and the function of the Defence Aviation Safety Centre (DASC). Guidance on the key elements of Defence Aviation organizations SMSs, which in turn may require further detailed SMS at lower levels, is also provided.

10.3 Warnings and Potential Project Risks

10.3.1 If the requirements for the in-service SMS are not identified at an early stage of the project, then suitable arrangements may not be put in place. This could result in delays in bringing the system into service or in an inability to sustain the necessary level of Safety performance in-service.

10.3.2 If the stakeholders do not agree the responsibilities and interfaces for the in-service SMS, then there may be gaps and it may not be adequate to sustain the necessary level of Safety performance.

10.3.3 If the status of the arrangements for in-service SMS are not confirmed as adequate before the equipment is brought into service, then it is possible that the necessary level of Safety performance will not be achieved or sustained.

10.3.4 If the in-service SMS is not documented (eg in the Safety Case, TLMP or SMP), then there will not be documentary evidence to demonstrate that it is complete and adequate. If there were to be a Safety incident, it would be difficult to argue that the arrangements were effective and complete.

10.3.5 If the effectiveness of the in-service SMS is not monitored or not stimulated through audit and inspection, then it is likely that it will decay over time through sloppy practice or ignorance.

10.3.6 If the in-service SMS is not developed over time, then it may become inappropriate and less effective as changes happen to the system, its support, usage or the organisational structures of authorities involved in the SMS.