



**DRAFT**

# Advisory Circular

**AC 139-16(1)**

**DECEMBER 2012**

## **SAFETY MANAGEMENT SYSTEMS FOR AERODROMES**

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### **REFERENCES**

- Civil Aviation Act 1988
- Part 139 of the Civil Aviation Safety Regulations 1998 (CASR 1998)
- Part 139 Manual of Standards (MOS) - Aerodromes
- AS/NZS ISO 31000:2009 – Risk Management Principles and Guidelines
- ICAO Annex 14 - Aerodromes Volume I
- ICAO Doc 9859 – Safety Management Manual, 2nd Edition dated 2009.
- ICAO Doc 9774 – Manual on Certification of Aerodromes, First Edition 2001
- CAAP SMS-1(0) – Safety Management Systems for Regular Public Transport Operations

*Advisory Circulars (ACs) are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the Regulations, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.*

*Where an AC is referred to in a 'Note' below the regulation, the AC remains as guidance material.*

*ACs should always be read in conjunction with the referenced regulations.*

*This AC has been approved for release by the Executive Manager, Standards Division.*

## 2. PURPOSE

**2.1** This amended version will provide updated and contemporary information for certificate holders of certified aerodromes.

## 3. STATUS OF THIS ADVISORY CIRCULAR

**3.1** This is the first amendment/revision of this AC and replaces AC 139-16(0) dated March 2005. The main objective of the revised AC is to incorporate a four component and 15 element Safety Management System Framework intended to guide development and implementation of a Safety Management System (SMS) at certified aerodromes. The 15 element framework is based on the ICAO Safety Management System Framework (ICAO Doc 9859) with an additional 3 elements included by CASA. .

## 4. ACRONYMS

<b>AC</b>	Advisory Circular
<b>AEP</b>	Aerodrome Emergency Planning
<b>AM</b>	Aerodrome Manual
<b>AOC</b>	Airline Operator Committee
<b>AS/NZS</b>	Australian/New Zealand Standard
<b>CASA</b>	Civil Aviation Safety Authority
<b>CASR</b>	Civil Aviation Safety Regulations 1998
<b>CEO</b>	Chief Executive Officer
<b>ICAO</b>	International Civil Aviation Organization
<b>IRS</b>	Internal Reporting System
<b>MOS</b>	Manual of Standards
<b>MOWP</b>	Method of Working Plan
<b>NOTAM</b>	Notice to Airman
<b>OHS</b>	Occupational Health and Safety
<b>QMS</b>	Quality Management System
<b>SM</b>	Safety Manager
<b>SMM</b>	Safety Management System Manual
<b>SMS</b>	Safety Management System
<b>TLW</b>	Time Limited Works
<b>TNA</b>	Training Needs Analysis

## 5. DEFINITIONS

**Accident:** An occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with intention of flight until such time as all such persons have disembarked in which:

- a) a person is fatally or seriously injured as a result of:
- being in the aircraft; or
  - direct contact with any part of the aircraft, including parts which have become detached from the aircraft; or
  - direct exposure to jet blast,

except when the injuries are from natural causes, self-inflicted, or caused by other persons, or when injuries are to stowaways hiding outside the areas normally available to the passengers and crew, or

- b) the aircraft sustains damage or structural failure which;
- adversely affects the structural strength, performance or flight characteristics of the aircraft; and
  - would normally require major repair or replacement of the affected component,

except for engine failure or damage, when the damage is limited to the engine, its cowlings or accessories; or for damage limited to propellers, wing tips, antennas, tyres, brakes, fairings, small dents or puncture holes in the aircraft skin; or

- c) the aircraft is missing or is completely inaccessible.

**Notes:**

1. *For statistical uniformity only, an injury resulting in death within thirty days of the date of the accident is classified as a fatal injury by ICAO.*
2. *An aircraft is considered to be missing when the official search has been terminated and wreckage has not been located.*

**As Low As Reasonably Practical (ALARP):** means a risk is low enough that attempting to make it lower, or the cost of assessing the improvement gained in an attempted risk reduction, would actually be more costly than any cost likely to come from the risk itself.

**Assessment:** In the context of competency based training is the process of observing, recording, and interpreting individual knowledge and performance against a specified standard.

**Change Management:** A systematic approach to controlling changes to any aspect of processes, procedures, products or services, both from the perspective of an organisation and individuals. Its objective is to ensure that safety risks resulting from change are assessed and appropriate risk mitigation factors implemented to ensure that safety risks resulting from change are reduced to as low as reasonably practicable.

**Accountable Manager:** A single term referencing the most senior person who holds the operational authority of the certificate. For the purposes of this AC, each organisation should substitute their own title for the person who holds such authority.

**Competency:** A combination of skills, knowledge and behaviour required to perform a task to the prescribed standard.

**Competency standards:** Defined and expressed outcomes associated with the performance of a task.

**Competency-based training:** Training designed to develop the skills, knowledge and behaviour required to meet competency standards

**Consequence:** Outcome or impact of an event.

**Notes:**

1. *There can be more than one consequence from one event.*
2. *Consequences can range from positive to negative.*
3. *Consequences can be expressed qualitatively or quantitatively.*
4. *Consequences are considered in relation to the achievement of objectives.*

**Hazard:** A source of potential harm.

**Human Factors:** The minimisation of human error and its consequences by optimising the relationships within systems between people, activities and equipment.

**Incident:** An occurrence, other than an accident, associated with the operation or maintenance of an aircraft, which affects or could affect the safety of operation.

**Likelihood:** Used as a general description of probability or frequency.

**Note:** *Can be expressed qualitatively or quantitatively.*

**Management:** Management comprises planning, organising, resourcing, leading or directing, and controlling an organisation (a group of one or more people or entities) or effort for the purpose of accomplishing a goal.

**Operational safety-critical personnel:** Persons performing or responsible for safety-related work, including those employees performing roles that have direct contact with the physical operation and maintenance of the aircraft or with those who have operational contact with personnel who operate the aircraft.

**Reporting Culture:** An organisational philosophy and practice that considers the context, in which, errors occur. It is characterised by the clear definition of acceptable and unacceptable behaviours, the free-flow of information, the correction of systemic issues and the reserved but appropriate application of sanctions on individuals where unacceptable behaviour persists

**Risk:** The chance of something happening that will have an impact on objectives.

**Notes:**

1. *A risk is often specified in terms of an event or circumstance and the consequence that may flow from it.*
2. *Risk is measured in terms of a combination of the consequences of an event and its likelihood.*
3. *Risk may have a positive or negative impact.*

**Risk Assessment:** The overall process of risk identification, risk analysis and risk evaluation.

**Risk Identification:** The process of determining what, where, when, why and how something could happen.

**Risk Management:** The identification, assessment, and prioritisation of risks through coordinated and economical application of resources to minimise, monitor, and control the probability and/or, impact of undesired events or to maximise the realisation of opportunities.

**Safety Case:** A documented body of evidence that provides a demonstrated and valid argument that a system is adequately safe for a given application and environment over its lifetime.

**Safety Culture:** An enduring set of beliefs, norms, attitudes, and practices within an organisation concerned with safety. A positive safety culture is characterised by a shared concern for, commitment to, and accountability for safety.

**Safety Management:** May be described as managing the identification and reduction of hazards and the mitigation of risks associated with those hazards until they reach the ALARP criteria.

**Safety Manager (SM):** A person responsible for managing all aspects of the operation of the operator's SMS.

**Safety Management System (SMS):** The organisational structure, procedures, processes and resources needed to implement safety management throughout all activities and processes conducted by the organisation.

**Stakeholders:** Those people and organisations who may affect, be affected by, or perceive themselves to be affected by a decision, activity or risk.

**Training:** The process of bringing a person to an agreed standard of proficiency by practice and instruction.

**Training Needs Analysis (TNA):** The identification of training needs at employee, departmental, or organisational level, in order for the organisation to perform effectively.

## **6. APPLICABILITY**

**6.1** This AC applies to operators of certified aerodromes. Operators of registered aerodromes are also encouraged to introduce a SMS at their aerodrome. Further guidance on the implementation of a SMS is provided in CAAP SMS-1(0).

**6.2** Sub regulation 139.250 (2) of CASR 1998 requires the operator of a certified aerodrome to have an aerodrome SMS that complies with the Part 139 Manual of Standards (MOS) – Aerodromes.

**6.3** This AC addresses aviation safety related processes and activities of the operator, rather than occupational health and safety, environmental protection, or security systems. The operator is responsible for the safety of services and/or products contracted to or purchased from other organisations.

## **7. BACKGROUND**

**7.1** This AC describes the safety outcomes and the key elements of an SMS. The AC content has been formatted to align within the framework of the ICAO SMS recommendations as described in Annex 14 Volume I Appendix 7, “Framework for Safety Management Systems”.

**7.2** For the purpose of this AC, the SMS manual will be known as the Safety Management Manual (SMM). ICAO Document (Doc 9859) has been prepared to provide guidelines associated with the SMM.

**7.3** Depending on the complexity of the aerodrome, the operator may have developed a “stand alone” Safety Management System Manual containing the SMS material that would otherwise be contained within the Aerodrome Manual. The inclusion of the SMS within the AM would be consistent with the format as described in ICAO Doc 9774 – Manual on Certification of Aerodromes.

## **8. INTRODUCTION**

**8.1** History has shown that the effectiveness of the SMS is directly proportional to the degree of investment and participation of senior management, the effort put into hazard identification, the quality of outcomes of internal and external reporting and, and the appropriateness of risk management controls.

**8.2** Section 10.1 of the Part 139 MOS – Aerodromes briefly defines that a safety culture and ongoing senior management commitment are two underpinning elements of an effective SMS. These elements support, the processes of ongoing hazard identification, reporting, training, auditing, risk management, change management, document control and safety assurance.

**8.3** The objective of risk management is to eliminate risk where practical or reduce the risk (likelihood/consequence) to acceptable levels (ALARP), and to manage the remaining risk to avoid or mitigate any possible undesirable outcome of the particular activity. Risk reduction is therefore an integral component to the development and application of an effective SMS.

**8.4** An SMS should be considered as an integral part of aerodrome management. Since the introduction of Part 139 of CASR 1998 in 2003, SMS has been considered a major component of aerodrome certification and should be managed by the aerodrome operator to ensure continuous benefit to both safety and business aspects of aerodrome operations.

**8.5** Most, if not all, aerodrome operators that will use this AC will already have an SMS in place. This AC has introduced additional SMS elements to be considered and therefore organisations should take the opportunity to review their existing SMS in line with continual improvement and with the view of improving the outcomes of an effective SMS. Depending on the complexity of the aerodrome and the management of third parties, organisations may need to consider a “gap analysis” assessment procedure to review the system as a result of changes.

**8.6** Gap analysis procedures will permit a formal review to determine which components and elements of the SMS are currently in place, and which components or elements should be added or modified to meet SMS improvements as well as regulatory requirements.

## **9. THE SAFETY MANAGEMENT SYSTEM (SMS)**

**9.1** Within the context of this AC, ‘Operator’ means an aerodrome operator certified under the *Civil Aviation Act* and Part 139 of CASR 1998.

**9.2** An SMS should consist of well documented, easy to comprehend procedures that are continuously managed to support the aerodrome operator’s obligations with respect to the AM and CASR 139 certification.

**9.3** The SMS should be developed and maintained by the aerodrome operator and/or Safety Manager and be designed to manage the safety requirements based on the complexity of the aerodrome.

**9.4** An SMS supports the aerodrome operator in:

- tracking of minor events to determine trends and to trigger action plans; and well accumulated evidence can be used to support safety cases and direct resources.
- identifying areas of non-compliance with regulations and appropriate manner to rectify the non-compliance.
- detecting hazards through accumulation of evidence. An example is where recording events of aircraft parking congestion can identify a hazard and support the aerodrome operator to increase the size of the apron area.
- prioritising risk to allow development of an action plan in the event of adverse audit findings
- continual assessment and updating of appropriate parts of the aerodrome emergency response plan.
- identifying responsible personnel to be accountable for managing identified hazards.
- assessing the ongoing risks associated with works area safety management and determining appropriate responses for contingencies.

**9.5** CASA policy is for an SMS to consist of a four component, fifteen element framework based on the addition of three elements to the twelve found in the ICAO Annex 14 Volume I Appendix 7, framework. The four components and fifteen elements considered as part of a modern SMS framework are:

- Safety policy and objectives and planning:
  - Management commitment and responsibility;
  - Safety accountabilities;
  - Appointment of key safety personnel;
  - SMS implementation plan;
  - Third party interface;

- Coordination of emergency response planning;
- Documentation;
- Safety risk management:
  - Hazard identification process;
  - Safety risk assessment and mitigation process;
- Safety assurance:
  - Safety performance monitoring and measurement;
  - Internal safety investigation;
  - The management of change; and
  - Continuous improvement of the SMS;
- Safety promotion:
  - Training and education; and
  - Safety communication.

*Note: CASA anticipates that ICAO Annex 14 Volume I Appendix 7 will shortly be replaced with Annex 19 following the transfer of the provisions on safety management responsibilities and processes from existing Annexes for consolidation in new Annex 19 — Safety Management.*

**9.6** This AC outlines that each SMS should be consistent in identifying each of the four components and fifteen elements however, the degree to which each element is addressed will be dependent on the level of complexity of the aerodrome. The SMS provides a framework within which the AM and other Manuals can be incorporated thereby embedding safety as an integral part of all aerodrome procedures and management processes. As an example, all hazard identification and management procedures required in the AM could be incorporated within the hazard identification and safety risk assessment and mitigation elements of the SMS. Organising the AM and SMS in this way ensures consideration of these safety related activities in an integrated manner and ensures parallel and redundant processes are avoided.

## **10. EXISTING SYSTEMS**

### *Integrating existing systems into an SMS*

**10.1** An SMS is associated with sound and safe management practice and therefore may benefit from the use of established systems. Business systems involving document control, personnel management, reporting systems, assurance, change management, senior management accountability and continuous improvement can be used to enhance the operation of an SMS.

**10.2** Within an organisation, there may be various business systems or processes already in existence with common processes to an SMS that include:

- Document control processes;
- Change management processes;
- Enterprise or Project Risk Management Systems;
- Contractor management processes;
- Quality Management System (QMS);
- Environmental Management System;

- Occupational Health and Safety Management System; and
- Security Management System.

Depending on the maturity, size and expertise of the operator, there may be the potential for the aerodrome SMS to utilise existing procedures and structures.

**10.3** Because SMS and QMS share many common resources, there may be a tendency to assume that an operator that has established and operates a QMS does not need, or already has, an SMS. This assumption is incorrect. There are many similarities between SMS and QMS, but there are also some important differences. Quality management focuses on assuring product/service quality, and the means to achieve it, whereas safety management focuses on the identification of hazards and the mitigation of risks associated with those hazards until they reach predetermined risk levels – known as ALARP (As Low as Reasonably Practicable). To achieve this, SMS utilises and integrates quality management techniques, risk management and human factor principles into the processes and procedures of the operator to ensure safety objectives are realised.

**10.4** The SMS and the QMS are separate systems with different functions. They do however share many features, elements and capabilities. For example, the reporting systems, communications, training are similar and could be shared. Depending on the size of the operator, some roles might also be shared between systems; including the Quality and Safety Manager roles. Integration has its benefits, such as consistency and resource maximisation. Effective integration can even expose relationships between hazards which are not obvious when the systems are operated in isolation.

However, integration if not managed carefully can create problems and even induce risks into the operation. The operator should therefore assure itself that there are no obvious misalignments or gaps between the integrated SMS and the QMS capabilities.

**10.5** The SMS should be considered the overarching system, which can contain sub-systems. The SMS therefore must provide an organisational overview and confirmation that the aerodrome operational safety issues are the most important operational issues.

## **11. GENERAL REQUIREMENTS**

**11.1** The SMS Manual should describe a set of procedures that must be followed and ensure that each element is addressed according to the aerodrome operator's specific system. As listed in paragraph 9.5 of this AC, the following example of SMS documentation has been prepared in accordance with the ICAO Framework for Safety Management System elements.

## **12. SAFETY POLICY AND OBJECTIVES AND PLANNING**

### ***Management commitment and responsibility***

**12.1** The accountable manager's commitment to, and responsibility for, safety should be formally expressed in a statement of the aerodrome operator's safety policy. This should reflect the operator's philosophy of safety management and become the foundation on which the operator's SMS is built.

**12.2** The aerodrome operator's safety policy should be clear, concise and emphasise top level support, be signed by the accountable manager, and include a commitment to:

- implementing a SMS based on the safety policy;
- provide management guidance for setting, reviewing and achieving safety objectives and safety targets through the management of safety risks;
- provision of the resources necessary for effective safety management and ensuring staff are sufficiently trained and aware of their safety responsibilities and accountability for safety at all levels of the organisation;
- management's explicit support of a 'reporting culture', as part of the overall safety culture of the organisation, i.e. encouragement of a culture that is against acts of reprisal against, employees that report safety issues;
- to complying with all applicable legal/legislative requirements, standards and best practice;
- communication with all employees and parties;
- establishing and maintaining standards for acceptable safety behaviour;
- active encouragement of safety reporting;
- integrating safety management with other critical management systems within the organisation;
- promotion and demonstration of their commitment to the Safety Policy through active and visible participation in the SMS; and
- periodic review of the safety policy to ensure it remains relevant and appropriate to the organisation.

**12.3** The accountable manager is best characterised by their authorities and responsibilities which include:

- Full authority for human resources issues;
- Authority for major financial issues;
- Direct responsibility for the conduct of the organisation's affairs;
- Final authority over airside operations under the aerodrome certificate; and
- Final responsibility for all safety issues.

**12.4** Safety objectives and standards for safety performance are set by the accountable manager for the entire organisation. They consist of statements of intended safety outcomes. At more complex aerodromes, individual safety objectives are accompanied by documented plans of action.

**12.5** To assist in their development, safety objectives should be Specific, Measurable, Achievable, Realistic and Timely (S.M.A.R.T). Examples of such safety objectives may include but are not limited to:

- A 10% reduction in airside driving incidents over the next 12 months;
- A reduction in apron fuel spill incidents to a maximum of two per quarter;
- All incident assessment and corrective action outcomes to be implemented within recommended timeframes;
- A 10% reduction (month-to-month) in bird and animal strikes over the next six months (subject to similar environmental conditions being experienced);

- Completion of SMS induction training by all new employees, stakeholders and contractors within two months of starting work/operations; and
- Nil significant aviation incidents impact, attributable to the aerodrome operator, or any runway incursions over the next five (5) years.

**12.6** Those responsible for the provision of a safe and compliant facility must hold the authority to enable their safety responsibilities to be demonstrated. An SMS cannot function if someone is assigned safety responsibilities but does not have the authority to expend resources to meet those responsibilities.

**12.7** It is important that the management structure and accountabilities are clear and where required, who will represent accountable management at either the Safety Committee meetings or other stakeholder meeting opportunities that have been accepted by the aerodrome operator as relevant to supporting the SMS. Safety Action Groups are an accepted alternative title to stakeholder groups.

**12.8** The aerodrome operator must ensure that management understands the responsibilities and that the resources are provided to satisfy compliance. Adequate resources consideration should include an assessment of staff to fulfil all responsibilities effectively.

**12.9** An effective safety policy should clearly detail the operator's attitude toward acceptable and unacceptable behaviour. The organisation needs a "Reporting Culture" philosophy. A reporting culture promotes confidence within an organisation enabling the reporting of genuine errors without fear of consequences to the individual. It is not a "no-blame" approach, rather it is characterised by the clear definition of acceptable and unacceptable behaviours, the free-flow of information, the correction of systemic issues and the reserved but appropriate application of sanctions on individuals where deliberate contravention or persistent unsafe actions without appropriate reason occur.

**12.10** The safety policy should clearly define the boundaries of what is considered to be unacceptable behaviour. It should also broadly outline the reporting systems in place and staff responsibilities with respect to these systems. It should recognise the objective of this approach as being the improvement of systemic problems and the prevention of future incidents – not the laying of blame and retribution.

**12.11** The endorsement, promotion and acceptance of the safety policy is as important as its development. Without widespread awareness of safety policy, personnel cannot be expected to behave in a manner consistent with the safety policy. The safety policy should not only be contained within the SMM but also widely publicised and distributed. As such, it should also be subject to document control procedures.

### ***Safety accountabilities***

**12.12** The accountable manager requires an organisational structure that has the responsibility, authority and accountability assigned to it to ensure that the SMS will function as planned. This includes an organisation chart that depicts the organisation structure inclusive of the SMS that establishes a clear line of communication from the SM directly to the accountable manager as nominated by the aerodrome operator.

**12.13** The accountable manager should determine an organisational structure to ensure reporting and assessment responsibilities are assigned according to the level of risk associated with an event, incident or accident.

**12.14** The accountable manager should ensure that the management structure is consistent with risk responsibility of managers.

### *Appointment of key safety personnel*

**12.15** Key safety personnel are those personnel who hold positions of responsibility and/or authority within the organisation that have a direct effect on the safety of the aerodrome.

**12.16** The SMM must nominate and record the SM and ensure that the nomination is supported by the accountable manager or other senior management depending on the organisational structure. The accountable manager or his delegate is accountable for the application and effectiveness of the SMS.

**12.17** Depending on the size of the organisation, the SM should possess operational management experience and an adequate technical background to understand the systems that support aerodrome operations.

**12.18** While the accountable manager is accountable for safety, safety is the responsibility of all members of the operator's organisation. Specific safety activities and functional or operational safety performance outcomes are the responsibility of the relevant managers.

**12.19** While the accountable manager is ultimately responsible for the overall safety performance of the organisation, the SM is accountable for the satisfactory administration and facilitation of the SMS itself and should monitor all cross-functional or departmental SMS activities to ensure relevant integration and reporting between sections.

**12.20** The Safety Manager, irrespective of other duties, will have responsibilities and authority for, but not limited to:

- ensuring that processes needed for the SMS are established, implemented and maintained;
- reporting to the accountable manager on the performance of the SMS and the areas where improvement is required;
- ensuring the promotion of awareness of safety requirements throughout the operator's organisation;
- develop and mature the SMS over time, through engagement with the organisations senior management at all levels, and operational employees;
- drafting the Safety Management Manual;
- implementing, maintaining, reviewing and revision of the SMS;
- regular evaluation, reviews and fine tuning of the safety program;
- providing safety advice to management and staff;
- providing timely advice and assistance on safety matters to managers, employees and contractors at all levels;
- communicating with Heads of Departments on safety related issues;
- promoting safety awareness and a positive safety culture;
- liaison with CASA, Australian Transport Safety Bureau (ATSB) and other stakeholders on safety-related issues;
- exchange of valuable lessons learned with other operators and aerodrome users and stakeholders;
- researching and sharing safety related information with other key safety personnel in the organisation;
- if delegated by the accountable manager, chairing the safety committee(s);

- incident and accident investigation coordination (unless an obvious conflict of interest is involved and/or when independence cannot be assured);
- managing immunity-based reporting systems (confidential reports);
- monitoring the progress of safety reports and ensuring that hazards are addressed in a timely manner;
- maintaining an appropriate reporting system to identify hazards, which includes the overseeing the reduction of risks to ensure that they are ALARP;
- maintaining safety documentation;
- ensuring SMS induction and recurrent training are conducted in accordance with the SMM Manual;
- identifying ongoing safety training requirements to support the SMS programme objectives;
- overseeing the internal and external SMS audit programmes; and
- emergency response planning; and maintaining the Aerodrome Emergency Plan.

**12.21** Where possible, the Safety Manager should be assisted by safety representatives from each department or functional area.

**12.22** The accountable manager should ensure that those assigned safety responsibilities hold the authority to meet their safety responsibilities and therefore have the necessary authority to expend resources to meet those responsibilities.

**12.23** The management team must be trained and competent to fulfil their responsibilities within the SMS.

**12.24** Where the complexity of the aerodrome requires a separate Safety Committee, the SM should determine those representatives from the aerodrome operator and relevant stakeholders who should participate as members.

**12.25** A Safety Committee would normally be necessary for functional or senior management involvement on policy, overall system implementation and safety performance review purposes. Membership and level of participation in the Safety Committee would depend on the size and structure of the organisation:

- **Small Organisation** — a small organisation will have limited staff and the appointment of a dedicated SM may not be an option. For small organisations, the functions of a SM could be included as part of the duties of another position within the organisation or undertaken by a contractor. The importance of the safety management function cannot be emphasised enough and the implications of adding additional roles and responsibility to the SM should be considered carefully.
- **Medium Organisation** — a medium sized organisation may have a separate SM, possibly with a small number of staff. There would be an opportunity for one of the ‘Safety Representatives’ to be appointed as required. The Safety Committee may consist of external stakeholders.
- **Large Organisation** — a large organisation may have a dedicated Safety Department, led by a Head of Safety Management. There would be scope within the department to appoint a dedicated SM, and additional support personnel as required. The Safety Committee may be internal representation supported by external operational groups.

**12.26** The objective of the Safety Committee is to provide a forum to discuss safety issues and manage the overall effectiveness of the SMS. Terms of reference for the Safety Committee are documented in the SMM. Responsibilities of the safety committee may include:

- Making recommendations or decisions concerning safety incidents and objectives;
- Identification of the hazards of the business and their effects upon those activities critical to the safety of flight
- Defining safety performance indicators and setting performance targets;
- The use of active monitoring and audit processes to validate that the necessary controls identified through the risk mitigation process are in place and are being maintained.
- Review safety directions and outcomes;
- Monitor the performance of the SMS to ensure ongoing effectiveness and active commitment to safety;
- Ensure all nominated procedures are addressed as per the SMM;
- Ensuring an ongoing, systematic approach to the management of how interfaces between the organisation and its suppliers, subcontractors and business partners impact on aviation safety.
- Assess the quality and integrity of SMS audit reports and internal reviews; and
- Review CASA and annual Aerodrome Technical Inspection reports.

### ***SMS Implementation Plan***

**12.27** If an operator does not already have an SMS, the SMS implementation plan should be endorsed by the accountable manager and be implemented within a suitable timeframe.

**12.28** The SMS implementation plan should detail all aspects of the development and implementation of the SMS. It is expected that the SMS program will mature over time through a process of continuous improvement.

**12.29** The implementation plan should address all the areas covered in the SMM with particular attention being given to safety strategy, safety objectives, safety management processes and activities, resource implications, training, safety promotion and time lines.

**12.30** The planning (or establishment) group may be able to build upon existing strengths by reviewing the organisations current capabilities for safety management (including experience, knowledge, processes, procedures, resources etc.). An operator's shortcomings in safety management experience should be recognised and resources to assist in development and implementation of the SMS identified. Many aerodrome operators may already have internal procedures in place for the investigation of incidents, hazard identification, safety monitoring etc. These should be reviewed and perhaps modified for integration in the SMS as required. It is important that the operator reuse as many existing procedures as practicable, to improve integration, acceptance and utilise proven procedures and processes. Familiarity of staff with processes extant prior to the implementation of the SMS reduces the risk inherent with the change process.

**12.31** Building on the operator's existing capabilities and experience enables the operator to fast-track the SMS implementation; lessening the disruption to the delivery of products and/or services, and allowing the operator to reap the safety and efficiency benefits sooner. During this review process, the operator SMS planning group is advised to also examine best industry practices for safety management by consulting with other operators of similar size and complexity.

### *Implementation Timing*

**12.32** 9.13.1 Many operators employ a phased approach (e.g. over 12 months). A suggested approach is provided below.

#### *Phase 1 — Planning and Reactive Safety Management*

**12.33** Planning should provide a blueprint describing how the SMS requirements will be met and integrated into the operator's work activities, and an accountability framework for the implementation of the SMS:

- Identify the Accountable Manager and the safety responsibilities of managers;
- Identify the person (or planning group) within the organisation responsible for implementing the SMS;
- Describe the system;
- Conduct a gap analysis of the operator's existing resources compared with SMS establishing requirements;
- Develop an SMS implementation plan that explains how the organisation will implement the SMS in accordance with this AC and international Standards and Recommended Practices, the system description and the results of the gap analysis together with the timelines of implementation;
- Develop and apply a structured change management process;
- Develop documentation relevant to safety policy and objectives;
- Develop and establish means for safety communication; and
- Develop and apply an SMS continuous improvement program.

**12.34** As part of phase one, the operator should also implement those elements of the SMS implementation plan that refer to the safety risk management reactive processes:

- hazard identification and safety risk management using reactive processes;
- training relevant to:
  - SMS implementation plan components; and
  - safety risk management (reactive processes);
- documentation relevant to:
  - SMS implementation plan components; and
  - safety risk management (reactive processes).

#### *Phase 2 — Proactive Safety Management and Assurance*

**12.35** Proactive safety management should put into practice those elements of the SMS implementation plan that refer to safety risk management based on proactive and predictive processes:

- hazard identification and safety risk management using proactive processes;
- training relevant to:
  - SMS implementation plan components; and
  - safety risk management (proactive and predictive processes);

- documentation relevant to:
  - SMS implementation plan components; and
  - safety risk management (proactive and predictive processes).

**12.36** To fully satisfy the requirements of phase 2 the operator should also put into practice operational safety assurance:

- development of effective SPIs and safety performance targets;
- training relevant to operational safety assurance;
- documentation and instigation of processes relevant to safety assurance, including internal audit; and
- develop and maintain formal means for safety communication.

*Note: 12 months is a suggested timeline. Other timelines may be more suitable.*

### **Gap Analysis and Project Plan**

**12.37** A gap analysis is conducted in three steps:

- clearly identify the required SMS elements, capabilities, resources and organisational structures;
- analyse the elements, capabilities, resources and structures already existing within the organisation; and
- identify the gaps between the requirements and what already exists with the organisation necessary for the SMS to function.

**12.38** The gap analysis is a vital step in the process because many of the elements, capabilities, resources and organisational structures necessary to develop the SMS will - in most cases - already exist within the organisation.

**12.39** Once the gap analysis is complete and fully documented, any elements, capabilities, resources or organisational structures which have been identified as missing or deficient will need to be created or modified – as the case may be. These, together with elements, capabilities, resources and organisational structures which already exist, form the basis of the SMS Implementation Plan. Operators may format their SMS implementation plan to suit their individual needs. Suggested structures and content can be found at Appendix 2 (Guidance on the development of an SMS GAP analysis for service providers) to Chapter 7 of ICAO Document 9859 provides GAP Analysis guidance.

**12.40** A table may be used to account for each component and their respective sub-elements. The table can provide:

- 'Yes' and 'No' response, in terms of the compliance of the existing system, to the SMS requirements;
- remarks for partial compliance or deviations;
- actions required and timelines to achieve the criteria; and
- existing organisation documentation where the requirement is addressed.

**12.41** It is important that the implementation plan provide indications of funds and human resources required to enact the changes. It is not enough that the gaps have been identified and a plan established to implement the missing components; the organisation should demonstrate through its implementation plan that it has the resources and desire to build its system in accordance with the plan.

**12.42** The gap analysis and the implementation plan must be reviewed and approved by the operator's accountable manager. Once approved, management should be assured that:

- a documented procedure is established and maintained for managing the implementation; and
- development of the SMS is progressing satisfactorily and in accordance with the implementation plan.

### *Third Party Interfaces — Contracted Activities*

**12.43** Whether a large corporate contractor or small business, the contracting authority (e.g. an operator) holds overall responsibility for the safety of services provided by the contractor. The contract or service level agreement should specify the safety standards to be met. The contracting authority then has the responsibility for ensuring that the contractor complies with the safety standards prescribed in the contract.

**12.44** An SMS should ensure that the level of safety of an operation is not eroded by the inputs, services and supplies provided by external organisations.

**12.45** The operator should consider the third parties previous safety record and any audit findings. In addition, the operator should ensure that the third party understands the operator's SMS and their responsibilities relating to it. These factors should be given equal weight with other considerations like price, quality and timely delivery.

**12.46** As a general guideline, a third party contract should include the following as a minimum standard:

- Any agreement for the provision of services should be supported by a written contract prior to services commencing;
- All third party providers should hold the appropriate qualifications/credentials or approvals for the work being outsourced;
- All third parties should understand the operator's SMS, and their own responsibilities within the SMS program. The operator must have a demonstrated process to assure themselves that the third party is aware of, and meeting these requirements;
- All contracted organisations should be able to demonstrate their ability to provide trained and competent staff.
- All written service level agreements should contain a schedule of oversight to monitor the third party's performance on a regular basis;
- All agreements should contain details on how any noted safety hazards and deficiencies will be addressed and the time frame for these actions (risk management process as outlined in this AC);
- Where a service being provided is conducted under a licence or certificate approved by CASA, the written agreement should contain a statement requiring the third party to advise the contracting organisation of any regulatory action undertaken by CASA that may impact on the third parties ability to provide the required services;
- A documented procedure is established and maintained for managing third party interfaces;
- The contract or service level agreement specifies the safety standards to be met; and
- The operator has the final responsibility and safety oversight capability and is accountable for ensuring that the contractor complies with safety standards prescribed in the contract.

### ***Coordination of the Emergency Response Plan***

**12.47** Coordination of emergency response planning should be referenced and clearly defined in the aerodrome manual. Guidance is provided in AC 139-7(0) Aerodrome Emergency Planning.

### ***Documentation***

**12.48** The decision to prepare a separate Safety Management Manual (SMM) should be determined by the complexity of the aerodrome facility and aerodrome stakeholder participation. The specific design, integration and implementation of the SMS will be influenced by, and be dependent on, the requirements of the individual operator while considering existing processes, policies and safety practices. If an operator chooses to incorporate the SMS components within an existing AM these components must be sufficiently identifiable to allow assessment of the effectiveness of the SMS. The dynamics of an SMS will be dependent on the complexity of the aerodrome as mentioned above.

**12.49** Where a separate document has been produced as a SMM, ensure that the officer responsible for document control, including amendments and distribution is clearly defined.

**12.50** Documentation management should include appropriate preparation of agendas and references to minutes of meetings. The SMS information should include a procedure for preparation, distribution and document control of these items.

**12.51** SMS documentation should provide detail that states and references a document review period and a distribution list of other document holders.

## **13. SAFETY RISK MANAGEMENT**

**13.1** The process of risk management involves establishing an appropriate infrastructure and culture to apply a simple systematic method to assess risk levels associated with potential hazards and events. Elements to be considered include context, identification, evaluation, mitigation controls, monitoring and communicating risks associated with any activity, function or process that will enable organisations to maintain safety compliance and maximise financial gains.

**13.2** The objective of risk management is to eliminate risk where practical or reduce the risk (likelihood/consequence) to acceptable levels (ALARP), and to manage the remaining risk so as to avoid or mitigate any possible undesirable outcome of the particular activity. Risk reduction is therefore an integral component to the development and application of an effective SMS.

### ***Hazard identification***

**13.3** Risk management is supported by a hazard identification process that is compiled within a register. The risk register is the documented outcome of reported aerodrome hazards derived from assessing events and other environments of safety concerns. The resulting risk level is evaluated from the combination of likelihood and consequence.

**13.4** Hazard identification should be a product of internal and external reports, serviceability inspections and outcomes from meetings. Depending on the complexity of the aerodrome, opportunities to report safety concerns can be generated from, but not limited to:

- Ramp Safety Committee;
- Ramp Operation Committee;
- Aerodrome Emergency Planning (AEP) Committees;
- Operational staff inspections;

- CASA Reports;
- Aerodrome Technical Inspections Reports;
- Airline Operator Committees
- Safety Action Groups
- Air Traffic Control meetings, (if applicable);
- Public Awareness Groups;
- Accident reports;
- Electronic Safety Incident Reports;
- Pilot reports;
- Fixed based operator reports; and
- Project contractor progress meetings.

**13.5** The aerodrome operator should develop and promote to all stakeholders, a formal process to report hazards and safety issues. In conjunction with the reporting and serviceability sections of the AM, introduce and manage a process for reporting unserviceability and non-compliance with the Part 139 MOS. The reporting system can be electronic, a paper trail or both.

**13.6** Hazard identification should be considered for all aerodrome activities that have the potential to create an incident. Pre-project assessment such as Job Hazard Analysis is a good example of assessing risk prior to the commencement of major works.

**13.7** Hazard reporting can be a function of a number of communication systems. An Internal Reporting System (IRS) is an alternative tool for recording reports and distributing the information to operator representatives who are responsible to ensure outcomes are addressed. An IRS should encompass the following elements:

- Procedures for reporting hazards or safety concerns;
- Methods for collating, storage and distribution of data;
- Procedures for determining the risk level;
- Documentation of corrective action; and
- Continuous monitoring of the system and Safety Performance Indicators.

**13.8** The IRS should be user friendly and accessible to all personnel who are responsible for safety management at the aerodrome. The aerodrome operator may limit some stakeholders to the hazard identification and reporting element only.

#### ***Safety risk assessment and mitigation***

**13.9** The risk framework should be a formal process agreed by all members of senior management. The framework will need to demonstrate a reporting and assessment relationship between all levels of management and reporting opportunities within the organisation.

**13.10** The framework should provide opportunities for continual review of the SMS. Depending on the complexity of the aerodrome, the framework should establish procedures for monitoring and review.

**13.11** The SMS should consider a corporate risk management framework that includes appropriate statements of likelihood and consequences. A matrix designed by incorporating both likelihood and consequences may be required to determine risk level.

**13.12** The risk level is not a quantified outcome determined by a legislative process. The aerodrome operator determines the levels of acceptable risk, suitable for their particular circumstances and aerodrome environment. Australian Standards can be used as guidelines to prepare risk management frameworks. The process of determining levels of acceptable risk should take into consideration input from other stakeholders such as aircraft operators that use the aerodrome.

### ***Hazard Identification***

**13.13** Hazards can combine in unforeseeable ways, so that even apparently trivial hazards can result in undesirable outcomes which may have catastrophic results.

**13.14** Consequently the starting point for the whole safety risk management process should be the establishment of the context and hazard identification. A systematic and comprehensive hazard identification process is critical, because hazards not identified at this stage may be excluded from further risk analysis and treatment.

**13.15** Hazards can be identified from a range of sources including, but not limited to:

- brain-storming using experienced operational personnel;
- development of risk scenarios;
- trend analysis;
- feedback from training;
- safety surveys and oversight safety audits;
- monitoring of normal operations;
- state investigation of the contribution of operational activities to accidents and serious incidents; and
- information exchange systems (similar operators, regulators etc.).

**13.16** Over time, the ‘database’ of reported hazards enables the operator to:

- identify ‘hot spots’ that need particular attention; and
- conduct trend analysis which can provide the basis for improvement of hazard identification.

### ***Risk criteria and the concept of ‘ALARP’***

**13.17** There is general acceptance that not all risk can be eliminated from aerodrome operations. There are practical limits to which the aviation industry is able to go and the extent to which the industry and the community will pay to reduce risk. The aim of risk management, therefore, is to reduce risks to a level which is As Low As Reasonably Practicable - ALARP.

**13.18** The principle of managing risk to a level that is ALARP is as follows:

- There is an upper level of risk that is deemed to be intolerable. If a risk is found to be intolerable, risk reduction measures are essential, regardless of cost;
- There is a lower level of risk that is deemed to be broadly acceptable. At this risk level (and below), maintain current systems and monitor and review the risk. Further risk reduction may be made, but only if the cost is insignificant; and
- The ALARP region lies between the upper and lower levels of risk. If risk falls into this region, it should be reduced to a level which is reasonably practicable.

**13.19** In the ALARP region, risk reduction measures should be identified and evaluated in terms of cost and possible risk benefit. Any risk falling within the ALARP range should be assessed and reduced unless the cost of reducing the risk is grossly disproportionate to the benefit gained. The assessment of the cost vs benefits based is often based on qualitative arguments. The position will be far more convincing and defensible if the assessment is quantitative - based on sound data.

**13.20** The risk can only be said to be ALARP when it can be demonstrated that all justifiable risk reduction and control measures have been considered and any additional mitigation strategies cannot be justified.

**13.21** The ALARP principle operates in an environment of continuous improvement. Both the risks and the controls change and evolve over time. Consequently, both require continual reassessment to which risk and controls are reasonable to sustain and which are not.

**13.22** To promote the level of risk associated with potential hazards or reported incident occurrence, it is important that a risk register is developed and supported by management. The risk register should be reviewed either annually in conjunction with the SMM review or as required when an event has occurred or a new hazard has been identified.

**13.23** Risk treatments may be an option to reduce levels of risk. The Safety Committee should assume the responsibility to analyse the assessment information and appropriately implement risk treatments and controls.

**13.24** The SMS should state a level of management responsibility associated with corrective action and approval to implement controls. Where the corrective action is generated from normal AM procedures, there may be no requirement to report the concerns further up the chain of command as per the organisation chart.

**13.25** Within this section of the SMM, an important notation should clearly define what level of management/manager would be responsible for the level of risk after the assessment process has been completed. Generally, the risk register will highlight the level of residual risk.

**13.26** Management involvement may be determined by an escalating list of increasing consequence severity and be categorised as determined by:

- *Low* Managed by routine manual procedures;
- *Moderate* Management responsibility must be specified;
- *High* Senior management attention; and
- *Extreme* Immediate action required.

**13.27** If an incident occurs, the risk level may change due to the definition of likelihood and potential frequency of re-occurrence. For example, likelihood could be expressed as a diminishing list of possible likelihoods:

- *Almost certain* – Event is common or frequent occurrence;
- *Likely* – Event is likely to occur and is known to have occurred at the aerodrome;
- *Unlikely* – Event may occur but has not occurred at our aerodrome but has occurred within the industry; and
- *Rare* – Not occurred in our company, but has occurred infrequently within the industry.

**13.28** Consequence values and definitions will be different for each aerodrome. The operator should clearly define their boundaries of risk associated with the financial, personnel, environment, legal and community impact. The scales of consequence will be determined by the complexity of the aerodrome and the potential effects on business continuity and personal safety.

**13.29** The size of the organisation and the variation in stakeholder participation will determine the importance of the scale of consequence.

**13.30** It is important that all reported outcomes assessed by either the SM or the Safety Committee as requiring further action, are assigned to a responsible officer. The SMS process should permit effective tracking of the progress and where delays have occurred, the accountable manager should take responsibility to ensure appropriate outcomes are implemented within a timely manner.

**13.31** SMS practices require that any changes to a system that will affect aerodrome safety and be subject to a potential non-compliance to a standard shall be supported by a safety case. The safety case should involve a risk assessment and mitigation processes and documented in a Safety Case Report.

**13.32** Subsection 2.1.3 of the Part 139 MOS invites applications for exemption to the standards to be supported in writing by “cogent reasons”. A well-documented safety case will be required to support all exemption applications. CASA’s AC 172-02(0) “Guidelines for Preparing Safety Cases Covering CASR Part 172 Services” provides evidence of acceptable CASA practices for the preparation of a safety case.

**13.33** The United Kingdom Civil Aviation Authority (CAA) publication CAP 760 is well documented and provides further evidence and examples on how to prepare a safety case for aerodrome operators.

**13.34** In summary, a safety case report is a supporting document that demonstrates that a system is safe. It is a document that can be audited and assessed to ensure that the aerodrome operator has considered all associated safety issues. In the case of an exemption application, a safety case report should confirm that all non-compliances have been assessed and that the aerodrome operator is satisfied that aerodrome safety is not compromised.

## **14. SAFETY ASSURANCE**

### ***Safety performance monitoring and measurement***

**14.1** Safety outcomes resulting from incident assessments, changes to the movement area, amendment to reporting procedures, emergency planning and other operational events must be effectively reported to relevant stakeholders. The SMM must clearly define the process to provide notification of all changes.

**14.2** The SM should develop a process with programmed events or meetings to assess the performance of the SMS. Through appropriate protocol, determine if the system is effective and provides adequate reporting and assessment techniques to satisfy the corporate framework risk management requirements.

**14.3** In the event that there may have been no incidents reported within a prescribed period of review as nominated in the SMM and no external audit report observations, the minutes of the SMS meeting should include a simple statement that is accepted by the Accountable Manager or their delegate, that the review has been conducted and there were “nil” amendments.

**14.4** Safety assurance should be supported by the Safety Committee and the SM reviewing CASA and Aerodrome Technical Inspection reports. Safety assurance should also be assessed by reviewing information taken from Safety Action Group minutes and other supporting committee meetings previously identified in 13.4 of this AC.

**14.5** At more complex aerodromes, both Ramp Safety meetings, AOC meetings and AEP meetings are effective sources to monitor assurance.

**14.6** Formal management reviews of the SMS should occur on a regular basis. The frequency of the review process should reflect the size and complexity of the aerodrome and the organisation. Normally the review process should ensure that:

- The SMS continues to meet core safety objectives;
- Safety performance is monitored against objectives; and
- Identified hazards are addressed in a timely and appropriate manner.

**14.7** Following the formal management review, there should be a periodic review process at the SM and Safety Committee level to include:

- Monitoring and reporting on safety management activities;
- Measuring and reporting on SMS performance;
- Reporting on change management issues; and
- Reporting on training requirements.

**14.8** For smaller certified aerodromes the stakeholder participation may be limited and only considered as a combined representation of the aerodrome operator and the airline representatives. Fixed based operators have the opportunity to assist with hazard identification and reporting.

**14.9** Larger aerodrome operators will have a number of options to consider and may include regular meetings or invitation to access IRS for incident and hazard reporting.

**14.10** Ramp Safety Committees and Aerodrome Emergency Committee meetings provide alternative opportunities for stakeholder participation. Other potential stakeholder groups can include Airline Operator Committees and Airside Operations Toolbox meetings.

**14.11** It is important to consider Safety Action Groups associated with pre-delivery project assessment groups.

**14.12** The aerodrome operator might consider participation by a member of local government authority groups that may have a safety implication for the aerodrome.

### ***Internal Safety Investigation***

**14.13** For every accident or serious incident, there will likely be hundreds of minor events or near-misses, many of which would have had the potential to become an accident but for the lack of conspiring circumstance at the time or by active mitigation techniques by the system or human. It is important that all reported events/hazards be reviewed and a decision taken on which ones should be investigated, and how thoroughly.

**14.14** The Organisational Safety Policy/SMS Protocols should state that the purpose of internal investigations is to find systemic causes and implement corrective actions, NOT to apportion blame to individuals. Where a 'Reporting Culture' policy is in place, the policy and protocols for internal investigations should clearly reference such policy.

### ***Investigation Management***

**14.15** Where the ATSB conducts an investigation into an organisation event, the Safety Manager, or their delegate, should be the operator's point of contact/coordinator for the investigation. This way the Safety Manager will be kept informed as the investigation progresses.

**14.16** Resources are normally limited, so effort expended should be allocated to investigations with the greatest perceived benefit in terms of potential for identifying systemic hazards and risks to the safety of flight.

**14.17** The accountability for the management of internal safety investigations should be documented in the organisations SMS specifically to determine:

- the scope of the investigation;
- the composition of the investigation team including specialist assistance if required;
- that the investigation outcomes are recorded for follow-up trend analysis; and
- that there is a timeframe for completion.

**14.18** The accountable person in charge of the investigation should have the authority to:

- interview any manager or staff member; and
- access any company information source.

### *Scope of Safety Investigations*

**14.19** The extent of the investigation will depend on the actual and potential consequences of the event or hazard. This can be determined through an initial risk assessment. Reports that demonstrate a high risk potential should be investigated in greater depth than those with low risk potential.

**14.20** The investigative process should be comprehensive and should attempt to address the factors that contributed to the event, rather than simply focusing on the event itself or the active failures that took place immediately prior to the event. Active failures take place immediately prior to an event and have a direct impact on the safety of the system because of the immediacy of their adverse effects. However, they are usually not the root causes of the event. Applying corrective actions to these issues may not address the real cause of the problem. A more detailed analysis is required to establish the organisational factors that contributed to the event.

**14.21** It is essential that the contribution of HF is properly investigated when incidents and accidents occur. This is done so that the organisation can learn from incidents and near misses in order to protect itself against the consequences of failing to accommodate human limitations in the design and operation of aviation systems.

**14.22** The HF component of investigation should be based on a model or framework for systemic investigations considering human error, both at the individual and organisational levels. A number of human error models and frameworks (such as Reason's model) have been developed over the last two decades to aid in understanding how humans err and how accidents/incidents occur in the larger context of the systems in which these accidents/incidents take place.

**14.23** Investigators should be trained in basic HF concepts, and procedures should be designed to examine the detail of human performance factors that may have contributed to the event. These include the systemic sources of the failure (e.g. component failures, design deficiencies of equipment and/or infrastructure, inadequate procedures and lack of training).

### *The management of change*

**14.24** Where changes have occurred, or are about to occur, the SMS process should assess the safety impact and address each concern appropriately through the system. Changes to the facility or management structure can be affected by;

- Amendments to legislation;
- Replacement of aerodrome management personnel; and
- Increase or decrease to the movement area capabilities.

**14.25** Changes need to be managed. A systematic approach to assess the outcome of change needs to be well documented and endorsed by management to ensure safety compliance is not compromised and business continuity is maintained.

**14.26** Change management procedures should minimise the effect of changes and after adequate assessment, reduce the resulting risk impact to an acceptable level.

**14.27** Movement area changes may occur during airside works. Documentation supporting Time Limited Works (TLW) that require a Notice to Airmen (NOTAM) and the preparation of a Method of Working Plan (MOWP) that is a requirement of the Part 139 MOS should identify changes. The preparation of supporting documentation should be the result of a robust safety assessment identifying potential hazards and conflicting safety events that could occur during works.

**14.28** Airside projects not requiring a MOWP should still be considered and potential safety issues identified. Where potential hazards and increased risk have been confirmed, the SMS process should ensure mitigation treatments and controls are implemented and managed in accordance with the appropriate compliance procedures.

**14.29** The SMS document control process should follow the assigned outcomes until project completion and ensure that all stakeholders are advised accordingly.

**14.30** Change management processes should be considered and used as supporting criteria by the aerodrome operator to determine if potential Aerodrome Managers and Reporting Officers applicants are suitable to assume aerodrome positions of responsibility.

### ***Continuous improvement of the SMS***

**14.31** It is the responsibility of the accountable manager to ensure that the SMS is reviewed. The accountable manager should clearly define opportunities to conduct reviews either through internal and/or external audits and stakeholder meetings. Continual review and auditing is an important part of the SMS risk management framework.

**14.32** The SMM needs to provide statements within each element to monitor success of the system and highlight processes to ensure continuous improvement and effective control of potential risk concerns.

**14.33** The SMM should clearly define who would assume responsibility to assess the effectiveness of the manual. These responsibilities should be associated with:

- If the SMS information is contained within the aerodrome manual, how will the SM communicate with the Aerodrome Manual Controller, if they are not the same nominated person?
- Who will assess the severity of reported incidents and investigate the root cause?
- Who will assess CASA and Aerodrome Technical Inspection reports that have identified areas of safety concern and have observed non-compliances?
- Who will ensure that all report outcomes requiring corrective action are assigned to a responsible officer? The “system” should track the progress of assigned corrective action and where delays have occurred, the accountable manager should assume responsibility to ensure appropriate outcomes are achieved in a timely manner.

**14.34** As a minimum, an annual SMS report should be prepared by the SM and presented to the Accountable Manager and the Safety Committee (if applicable). The SM should assess the negative and positive aspects of the SMM procedures and through consultation with appropriate stakeholders, amend the section to improve safety outcomes and minimise hazardous opportunities.

**14.35** Annual reviews and a commitment to review as circumstances dictate, should be incorporated in the SMM to assist and promote improvements.

## **15. SAFETY PROMOTION**

**15.1** Safety promotion provides a mechanism through which lessons learned from safety event investigations and other safety-related activities are made available to all affected staff. It also provides a means of encouraging the development of a positive safety culture and ensuring that, once established, the safety culture is maintained.

**15.2** While it is important that personnel are kept well informed, they should see evidence of the commitment of management to safety. The attitudes and actions of management will therefore be a significant factor in the promotion of safe work practices and the development of a positive safety culture.

**15.3** In addition to formal meetings and electronic communication options, safety promotion activities are the primary alternative means by which safety issues are communicated within the organisation. These issues may be addressed through staff training programs or less formal mechanisms.

### ***Training and education***

**15.4** The key function of safety management training is to create an awareness of the objectives of an SMS and the importance to develop a safety culture that continually recognises training requirements to endorse competency of aerodrome officers and stakeholders.

**15.5** Depending on the nature of the task, the complexity of safety management training required will vary from:

- initial and recurrent safety management awareness training for all staff;
- training aimed at management's safety responsibilities;
- specific training for operational staff (such as in human factors etc.);
- detailed training for safety specialists — such as the SM, Safety Representatives, Reporting Officers, and
- Safety Data Analysts (as required).

### ***Training Documentation***

**15.6** Documentation should be developed to support the SMS training plan, which includes:

- a listing of the personnel (staff and third party personnel) who require SMS training;
- a means of determining when each staff member is due to undergo a specific safety training course;
- a method of determining the training provided to each member of staff;
- safety induction course/s for staff who have not previously been exposed to an SMS;

- recurrent safety course/s for all operational safety critical personnel; and
- a means of determining the effectiveness of the safety training provided e.g. feedback, questionnaire, course evaluations and competency assessments.

**15.7** An SMS training register which incorporates individual training records should be established and maintained. This may be incorporated in a centralised training record system.

**15.8** The SM needs to be competent. Potential competency training may include:

- Understanding the role of human performance in accident causation and prevention;
- Integration of Human Factors into the SMS;
- Accident and incident investigation;
- Aerodrome Reporting Officer Competency;
- Understanding of aviation operations;
- Understanding of the Part 139 MOS compliance;
- Familiarisation with the topography and geography of the aerodrome;
- Computer skills and word processing;
- SMS document management training;
- Risk management and risk assessment evaluation;
- Development, maintenance and operation of the SMS;
- Safety Counselling; and
- Occupational Health and Safety (OHS).

**15.9** Aerodrome Management and Reporting Officer competency development may include additional training with respect to:

- Bird and Animal species identification;
- Airside driver awareness;
- Handling of hazardous material;
- Bureau of Meteorology observer.
- Airside equipment proficiency;
- Firearm training;
- Incident and accident reporting; and
- OHS.

### ***Safety communication***

**15.10** Communication of safety is an important responsibility of the accountable manager. The SMM should describe the minimum safety promotion applications acceptable to the operator.

**15.11** The operator's safety promotion program should be based on several different communication methods for reasons of flexibility and cost. As previously discussed, the complexity of the operator's organisation will determine appropriate methods available to promote the SMS. These methods could include:

- Presentation by an experienced person potentially supported by visual presentation e.g PowerPoint;
- Published articles or internal documentation;

- Videos while offering advantages of dynamic imagery and sound to reinforce particular safety messages efficiently; and
- Electronic media provides improvement in the promotion of safety, as even small companies can establish and maintain a website to disseminate safety information.

**15.12** The complexity of the operator's organisation and facility will determine what types of safety communication are required.

## **16. SUMMARY**

**16.1** Safety should be actively managed from the very top of an organisation and filter down to all personnel to ensure that the organisation as a whole, actively participates in the safety system. This promotes a strong safety culture throughout the organisation.

**16.2** A robust SMS should be seen as an integral function of normal business management, recognising the high priority attached by the operator to aerodrome safety.

**16.3** An organisation's commitment to safety management is typically demonstrated by the following::

- Evidence confirming the accountable manager commitment and involvement in an effective formal SMS;
- Evidence of safety contributions by staff is encouraged and safety outcomes are reported back through the safety promotion processes;
- Hazard identification is efficiently and swiftly managed and incorporated in the operators operating systems;
- Evidence of the effectiveness of the reporting system;
- Organisations continually reviewing and improving existing procedures and practices;
- SMS is a formalised and organisation-wide system. The SMS is accepted at the senior management level and distributed into the individual aerodrome officers and stakeholder's environments; and
- Where safety functions including but not limited to, aerodrome works, handling of hazardous materials and ground handling are outsourced, contractual agreements identify the need for either an equivalent SMS or involvement in the aerodrome operator SMS as a stakeholder.

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Executive Manager  
Standards Division

December 2012

## APPENDIX A

## SAFETY MANAGEMENT SYSTEM REVIEW CHECKLIST

A SMS checklist has been prepared as guidance materials only to assist aerodrome Safety Managers while conducting a review of the SMS documentation and preparation of review reports.

This checklist is generic. A checklist questionnaire should be relevant to each specific aerodrome situation and therefore the Safety Manager may need to add additional questions to the checklist.

**Safety Policy and Objectives**

- Does the SMS documentation include a policy statement endorsed by the accountable manager?
- Does the policy include the aim of achieving improved hazard identification and more effective risk management of associated risks?
- Does the SMS manual contain a list of safety objectives?
- Are the objectives measurable using the aerodromes stated safety assurance methods?
- Has a Safety Manager been appointed?
- Are the Safety Manager's roles and responsibilities clearly defined?
- Is there a Safety Committee?
- Is there an organisational chart that clearly defines the chain of command and a reporting structure up to the accountable manager?
- How does the administration section identify the roles and responsibility of senior management participation with SMS?
- Does the policy endorse and confirm the frequency of senior management participation at SMS meetings or other events stated in the SMS documentation?
- Does the documentation identify the stakeholder association and roles and responsibilities of third parties to participate in hazard identification?
- Is there a genuine statement to achieve the highest level of safety compliance accepting due care and diligence?
- Does the documentation identify the importance to continually review the "systems" and is there a formal audit process?
- Is the SMS documentation only addressing OHS?

### **Safety Risk Management**

- Has a Corporate Risk Management Framework been implemented?
- Is the likelihood and consequence definitions in the aerodrome SMS consistent with the corporate framework?
- Is there a risk matrix or other valid risk analysis tool used?
- If used, is the risk matrix consistent with other internal matrix and project assessment guidelines?
- Are the SMS documentation tools for operations consistent with financial assessment risk management tools?
- Is risk management supported by a risk register?
- Is there a hazard register to record events that have actually occurred?
- Does someone with human factors training assess incidents and events to determine human factors hazards and associated risks?
- Does the audit process check the hazard register against the Risk Register?
- Has the Risk Register been reviewed and risk levels changed due to the occurrence of an incident?
- Have all projects been assessed prior to commencement to identify potential risk?
- Is the project assessment system clearly documented to support potential change management issues?
- Do the system document procedures assess all reporting capabilities?
- Does the Safety Manager communicate with Aerodrome Reporting Officers and assess serviceability issues?
- Does the SMS clearly define who will be responsible for certain outcomes depending on risk levels?
- Are all personnel responsible for SMS reporting and assessment competent?
- Do the responsible personnel have a sound knowledge of aerodrome operations?

### **Safety Assurance**

- How is the SMS audited?
- Does the aerodrome operator only rely on CASA and Aerodrome Technical Reports to determine safety outcomes?
- What committees are involved to monitor safety assurance?
- Are the stakeholder committees well represented by the aerodrome operator?
- Who is responsible to monitor safety outcomes identified by committees?
- What internal reviews are documented?
- Who is responsible to assess internal reporting?
- Has the system worked effectively since the last audit?
- Were incidents appropriately assessed as per the SMS?
- Was there a satisfactory SMS audit report prepared by the SM and accepted by the accountable manager?

- What changes have occurred since the SMS review?
- Is there a formal process to identify changes within the organisation?
- Has the documentation identified a flow chart of stakeholder interaction?
- If any aerodrome services or safety function has been contracted to a third party, does the aerodrome's safety assurance program also measure the third party's safety performance?

### **Safety Promotion**

- Have the training requirements been assessed?
- Is there a nominated training officer?
- Is training restricted to OHS?
- Does training compliment the requirements of the Part 139 MOS?
- How is the SMS promoted to new staff?
- How is the SMS maintained to ensure changes are implemented?
- Does all staff participate in the SMS reporting and assessment and understand responsibilities?