



Australian Government
Civil Aviation Safety Authority

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Guide to Sample Safety Management System Manual (SMSM)

For Parts 119 and 138 of CASR and Micro-Operator Safety Management System Manual

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Acknowledgement of Country

The Civil Aviation Safety Authority (CASA) respectfully acknowledges the Traditional Custodians of the lands on which our offices are located and the places to which we travel for work. We also acknowledge the Traditional Custodians' continuing connection to land, water and community. We pay our respects to Elders, past and present.

Artwork: James Baban.

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This document contains guidance material intended to assist aviation industry, CASA officers and delegates in understanding the operation of the aviation legislation. However, you should not rely on this document as a legal reference. Refer to the civil aviation legislation including the Civil Aviation Act 1988 (Cth), its related regulations and any other legislative instruments—to ascertain the requirements of, and the obligations imposed by or under, the law.

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Preface

Overview

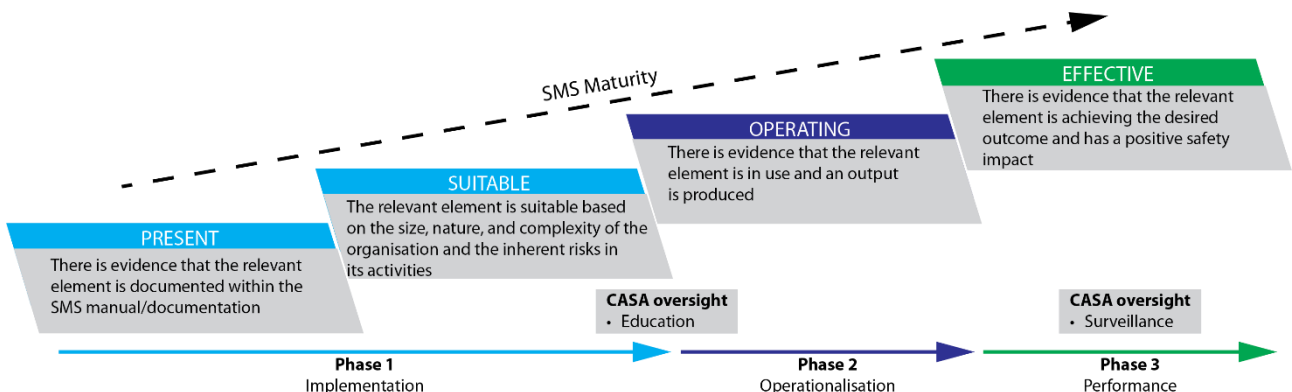
CASA has published two sample Safety Management System Manual (SMSM) documents. Both versions of the SMSM describe the policies and procedures to implement, manage and operate a safety management system (SMS) to meet the requirements of Regulation 119.190 and 138.140 (where relevant) of the CASR. This document is a guide to assist organisations that utilise the sample SMSM to implement their SMS in accordance with the four-components and twelve elements of the SMS framework. It explains how to integrate the SMS requirements whilst leveraging existing organisational practices to manage safety and compliance. An important starting point is the clear understanding that an SMS manual alone does not constitute the implementation of a *safety management system*. SMS is an organisational system involving people and processes that is underpinned by senior management’s commitment to identify hazards, actively assess risk, and readily adopt lessons learned from hazards and incidents. Otherwise known as a learning and informed culture.

The flight operations regulations (FOR) related to SMS are a form of outcome-based legislation that prescribe a required outcome but does not generally describe the means for achieving the outcome. The SMSM contains policies and procedures that meet the basic compliance framework requirements of the SMS regulations. Because aviation organisations vary in complexity, each organisation that is using the SMSM to implement their SMS should adopt policies, processes and methods to manage and operate their SMS as needed for their organisation. Therefore, it is expected that any policy or process described in the SMSM that is not manageable or suitable for your organisation must be modified by you to ensure they are appropriate for the size, nature and complexity of your organisation. This concept is broadly referred to as scalability. Although your organisation is free to adjust and modify your SMS policies and procedures to achieve compliance with the SMS requirements, scalability does not permit any of the SMS framework requirements to be excluded or not addressed in your SMS.

CASA evaluates the implementation, operation and overall effectiveness of an organisation's SMS to both compliance and performance perspectives. This is achieved by evaluating each of the four-components and twelve-elements of the SMS framework to the extent to which each component and element is *Present, Suitable, Operating* and *Effective* (PSOE). At the implementation phase of your organisation's SMS, you must ensure all components and elements of the SMS framework are *present* (they are documented in your SMS manual) and *suitable* (they are appropriate for the size, nature and complexity of your organisation). This is the compliance phase of SMS implementation, to ensure the foundation is set for future SMS effectiveness. As your management team and personnel become familiar with the SMS and it becomes more functional, your goal is to achieve the *operating* and *effective* evaluation classifications of the PSOE principles. This is the performance phase of SMS implementation and is generally evaluated during scheduled surveillance by CASA.

When implementing your SMS, an important principle to remember is that an SMS framework component or element cannot be considered *operating* or *effective* if it is not *present*, and it cannot be considered as *present* if it is not documented in the SMS manual. Figure 1 describes the PSOE evaluation principles and three phases of SMS implementation for transition to the flight operations regulations.

Figure 1: PSOE SMS evaluation principles and implementation phases



Scope of the Safety Management System Manual

The Safety Management System Manual (SMSM) describes policies and procedures utilised by your organisation to manage safety. The SMSM is the primary reference document and addresses each of the four components and twelve elements of the SMS framework to enable a consistent approach to safety management.

Table 1 outlines the four components and twelve elements of the SMS framework described by the SMSM that must be addressed by your organisation's safety management system.

Table 1: SMS Structure – 4-components and 12-elements

Components	Elements	SMSM section
1. Safety Policy and Objectives	1.1 Management commitment to, and responsibility for safety	1.1
	1.2 Safety accountabilities of managers (including key personnel)	1.2
	1.3 Appointment of safety management personnel	1.3
	1.4 Coordination of an emergency response plan	1.4
	1.5 Safety management system documentation	1.5
2. Safety Risk Management	2.1 Hazard identification processes	2.1
	2.2 Safety risk assessment and mitigation processes	2.2
3. Safety Assurance	3.1 Safety performance monitoring and measurement	3.1
	3.2 Management of change	3.2
	3.3 Continuous improvement of the safety management system	3.3
4. Safety Training and Promotion	4.1 Safety management system training and education	4.1
	4.2 Safety management system communication	4.2

Revision history

Amendments to this manual are recorded below in order of most recent first.

Table 2: Revision history

Version number	Date	Parts and sections	Details
1.0	April 2026	All	Initial issue

Glossary

Definitions and acronyms

Table 3: Definitions

Term	Definition
Competent authority	A Court of law or administrative tribunal, aviation regulatory authority, accident investigation agency, State or Federal Police, a government department or administrative body ¹ , the Safety Manager ² . ¹ Where disclosure or use of safety information is sought in accordance with relevant laws. ² Where disclosure or use of safety information is sought within the organisation.
Corrective action	An action taken to address safety-related shortcomings or deficiencies relating to compliance or competency standards. Corrective actions may involve suspension to perform an activity until compliance or competency with standards can be demonstrated.
Error	An action or inaction by an individual that leads to deviations from the organisation's, or the individual's intentions or expectations.
Hazard	A condition or an object with the potential to cause or contribute to an aircraft incident or accident.
Lagging safety performance indicator	Lagging SPI measure events that have already occurred (e.g., an unwanted safety occurrence)
Leading safety performance indicator	Leading SPI measure processes and outputs that are implemented to improve or maintain safety (e.g., percentage of personnel attendance at safety meetings, completion of SMS training)
Micro-operator	In accordance with the definition in Part 1 of CASA EX68/24 and CASA EX72/24
Non-operational safety critical personnel	Personnel that do not carry out or are responsible for safety-related work with indirect, minimal or no contact with operational safety critical personnel. Note: may include contracted non-operational safety critical personnel.
Operational safety-critical personnel	In accordance with the definition in the CASR Dictionary. Note: may include contracted operational safety critical personnel.
Organisation	The aviation authorisation holder that utilises this safety management system manual as part of its exposition.

Term	Definition
Personnel	All personnel within the organisation, including contracted personnel designated as operational safety critical personnel or personnel engaged in safety sensitive aviation activities.
Preventive action	An action taken to prevent the occurrence or recurrence of an event or hazard that poses an unacceptable risk to aviation safety. Preventive actions may involve immediate removal or suspension to perform an activity.
Reasonably practicable	In accordance with the definition in the Work Health and Safety Act (2011).
Relevant aerial work operator	A Part 138 aerial work certificate holder required to have an SMS in accordance with regulation 138.140 of the CASR.
Remedial action	An action taken to address the underlying causes of safety-related shortcomings or deficiencies relating to compliance or competency standards. Remedial actions may involve retraining, counselling, mentoring.
Risk control	A preventive action or measure taken as protection against a hazard materialising to an unacceptable level of aviation safety.
Risk mitigation	The process of incorporating defences, preventive controls or recovery measures to lower the severity and/or likelihood of a hazard's projected consequence.
Safety	The state in which risks associated with the organisation's aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.
Safety data	A defined set of facts or values collected for reference, processing or analysis which could be used to maintain or improve safety.
Safety information	Safety data processed, organised or analysed in a given context to support safety management and the development of safety intelligence.
Safety intelligence	An outcome of the process of analysing safety data and safety information to support decision-making.
Safety objective	A statement of a desired safety outcome.
Safety performance	An aviation organisation's measurable effect on safety achievement.
Safety performance indicator	A metric used to measure and monitor an aviation organisation's safety performance, including progress towards achieving a safety objective.
Safety performance target	The aviation organisation's planned or intended target for a safety performance indicator over a given period.
Safety risk	The predicted probability and severity of the consequences or outcomes of a hazard.

Table 4: Acronyms

Acronym	Description
ATC	Air traffic control
ATSB	Australian Transport Safety Bureau

Acronym	Description
CASR	Civil Aviation Safety Regulations
CEO	Chief executive officer
ERP	Emergency response plan
HAAMC	Head of aircraft airworthiness and maintenance control
HOFO	Head of flying operations
HOO	Head of operations
HOTC	Head of training and checking
IRM	Immediately reportable matter
OEM	Original equipment manufacturer
OSCP	Operational safety critical personnel
RPA	Remotely piloted aircraft
RRM	Routine reportable matter
SM	Safety manager
SME	Subject matter expert
SMS	Safety management system
SMSM	Safety management system manual
SPI	Safety performance indicator
SRT	Safety review team
TSI	Transport safety investigations

Reference Material

Table 5: SMS related reference material used to develop SMSM and User Guide

Document	Publisher
AC 119-01 Safety management systems for air transport operations (v2.3)	CASA
AC 120-92D Safety Management Systems for Aviation Service Providers (21/05/24)	FAA
Annex 19 – Safety Management (3 rd Edition)	ICAO
Change Management at the State Level (November 2022)	¹ SM ICG

¹ Safety Management International Collaboration Group

Document	Publisher
Doc. 10159 Safety Intelligence Manual (1 st Edition)	ICAO
Doc. 9859 Safety Management Manual (SMM) (4 th Edition)	ICAO
EHEST Safety Management Toolkit (2 nd Edition)	² EHEST
Measuring safety performance guidelines for service providers (16/07/2023)	SM ICG
OPS.08 Safety management systems assessment (v2.0, 03/2024)	CASA
Safety Management Systems - AVIA5015 (v2.1, 02/2025)	³ UNSW
Safety manager's role in safety management systems (November 2022)	SM ICG
SMS for small organisations (March 2015)	SM ICG
SMS Resource Kit (3 rd Edition)	CASA
Understanding adverse events: Human Factors (1995)	James Reason
Guidance on how to consider human performance in an SMS (October 2025)	SM ICG

² European Helicopter Safety Team

³ University of New South Wales - School of Aviation (SMS course AVIA5015)

Use of the CASA SMS manual guide

This guide is not intended to be read from beginning to end, but as a reference as you develop each component and element of your SMS.

There are two versions of the CASA safety management system manual (SMSM). The title of both versions of the SMSM are described below, including the term used in this user guide to identify each version.

1. Safety Management System Manual (SMSM) for Part 119 and 138 of CASR - referred to as the 'Part 119/138-SMSM' in this user guide.
2. Micro-operator Safety Management System Manual (SMSM) for Part 119 and Part 138 of CASR (Micro-operators Only) - referred to as the 'Micro-SMSM' in this user guide.
3. Where information contained in this user guide is common to both the Part 119/138-SMSM and micro-SMSM - both are referred to universally as the 'SMSM'.

The SMSM are structured around the four-components and twelve-elements of the SMS framework required by Subpart 119.F and Division 138.B.6 of the CASR. This guide is developed around the SMS framework contained in the SMSM. Where appropriate, the following information is provided in this guide to describe each SMS component and element in the SMSM and guidance on how to implement the requirements.

Relevant references

CASR	Reference to the regulation relevant to the SMS framework element
AC	Reference to relevant section in a CASA Advisory Circular
AMC/GM	Reference to relevant acceptable means of compliance and guidance material
OPS.08 PPW	Reference to the relevant evaluation criteria CASA utilises to review and assess safety management systems using the OPS.08 Safety management systems assessment principle document
SMS resource kit	Link to the relevant CASA SMS Resource Kit booklet

Human performance (HP) integration into SMS: A list of actions and behaviours to help integrate HP considerations into your SMS. The HP considerations are relevant to each SMS framework element.

Overview: A description of the purpose and aim of each SMS framework element contained in the SMSM, and any differences between the Part 119/138-SMSM and micro-SMSM.

Implementation strategy: An explanation, where applicable, of possible methods organisations of different sizes can consider to satisfy SMS framework requirements that could be scaled to the size, nature and complexity of the organisation. SMS is intended to be adaptable to the operational characteristics of each organisation. For example, it is possible for an organisation to be very small but highly complex in terms of activities and risks, or a large organisation of low complexity. Complexity is based on the nature of each organisation's aviation activities, structure and inherent risks.

Note: Implementation strategy information is for guidance only and do not impose requirements relating to compliance or allocation of resources to implement your SMS. Your organisation should implement policies and procedures that are relevant and appropriate for your organisational structure, and that can leverage practices already in place to manage safety and compliance.

Scalability considerations: Where appropriate, additional guidance and recommendations for small to medium-sized organisations to assist with SMS implementation.

Forms related to this SMSM process (Refer to Table 8 for a list of SMSM forms)

Form	Description and purpose
Lists a form directly related to the SMSM process	Describes the purpose of the form
Related forms	
Lists a form indirectly related to the SMSM process	Describes the purpose of the form and how it relates to the process

Meaning of scalability

The SMSM user guide frequently uses the term '*It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation*'. This means ensuring sufficient resources are allocated to the SMS and that SMS processes include the right level of detail to support your organisation and its day-to-day operations. For example, how frequently SMS processes are actioned (4 vs 2 safety meetings per year) or the complexity of systems to support the SMS (use of a commercial cloud-based reporting platform vs an A4 paper form and reporting box).

SMS scalability does not mean an organisation can selectively include or exclude specific elements of an SMS that are perceived as being relevant (or irrelevant) to the organisation. Scalability is about adapting each of the 4-components and 12-elements of the SMS framework (refer Table 1) to the operational context of the organisation and existing processes to manage safety.

Scalability should consider the **size** and **nature** of the organisation, including **complexity** of the organisation's activities, and hazards and risks associated with those activities. Some examples of scalability considerations may include:

Size and nature

- Number of employees
- Management and ownership structure
- Number of bases and sites
- Type and variety of operations and aviation activities
- Aircraft types and number of aircraft in fleet.

When considering complexity, it is multi-dimensional, including associated hazards and risks, and may include:

Enterprise complexity

- Number of passengers carried per flight (and annually)
- Volume of flights/hours flown annually
- Number and complexity of organisational changes annually
- Safety manager position occupied by another key personnel position holder (role conflict of interest risk)
- Extent of contracted activities (maintenance, flight crew, training, checking) - e.g., external interfaces
- Regulatory compliance requirements with multiple foreign aviation authorities
- Cashflow and revenue (e.g., complex income structure)
- High personnel turnover, low experience operational personnel

Operational complexity

- Mixed fleet (fixed wing, rotary wing, turbine and piston powered)
- Ageing aircraft fleet vs modern fleet
- Cross hired fleet (multiple owners) vs leased/owned fleet
- Mountainous and high terrain operations
- Operations in freezing conditions
- Offshore operations (platforms and ships)
- Remote area operations, remote island operations
- Operations in active volcano areas
- Operations near conflict zones
- The number and types of activities requiring approvals and exemptions
- Operations in controlled vs non-controlled airspace and aerodromes

- On-demand, short notice flights, often to unfamiliar locations
- Operations to airports with no services or safety infrastructure
- Flight crew in direct contact and exposure to influences of client pressure.

Example:

Organisation A comprises of the CEO, HOFO, HOTC/Safety Manager and three permanent pilots. The organisation operates a 48-year-old turboprop and a 10-seat jet from two far-northern Australia bases. The flights are on-demand, short notice air transport flights throughout northern Australia, to and from remote islands, Indonesia and Papua New Guinea. Except for the two base airports, most airports have no maintenance support, services or safety infrastructure.

Organisation B comprises of the CEO/Safety Manager, HOFO/HOTC and three permanent pilots. The organisation operates two single-engine helicopters from a single southern Australian base. The flights are frequent, short scenic flights along fixed routes to a popular tourist location conducted at daytime in visual flight rules conditions.

In both examples, each organisation is small and falls into the definition of ‘micro-operator’, however the complexity and nature of associated hazards and risks are quite different, therefore the SMS would need to reflect these differences and how they are managed. Table 6 provides an example of differences each operator could consider in relation to scaling their SMS processes within the SMS framework.

Table 6: Example of SMS scalability differences

SMS Components	Organisation A	Organisation B
1. Safety Policy and Objectives	Safety objectives may need to be more comprehensive and reviewed more frequently due to potential exposure to greater number of foreseeable and unforeseeable hazards in the organisation’s activities.	Safety objectives may be simple and generic due to simplicity of the operations and familiarity with hazards in the organisation’s activities.
	Consideration given on how responsibilities for both HOTC and SM roles will be completely and comprehensively discharged by the same person, including how SM responsibilities performed over the two bases.	CEO may need to consider how role conflict of interest risks are managed for the SM role, including how responsibilities for both CEO and SM roles will be completely and comprehensively discharged by the same person.
	Emergency response plan would need to consider complexities of managing emergencies in remote locations and foreign countries. Specific emergency response information would be required for both operating bases.	Emergency response plan would only need to consider management of an emergency in the local area.
2. Safety Risk Management	The voluntary reporting system would need to be accessible remotely (e.g., online and alert the CEO or safety manager when a report is submitted)	A simple paper-based reporting form would be sufficient.
	Comprehensive hazard register that considers the wide range of hazards organisation exposed to.	Hazard register relatively simple detailing localised and generic hazards.

SMS Components	Organisation A	Organisation B
	More detailed risk tolerability actions and decision-making processes due to operations in remote locations and foreign countries.	Simple risk tolerability actions and decision making due to local key personnel and operations.
3. Safety Assurance	Wider range of safety performance indicators implemented that measure both operational and process performance.	Relatively simple safety performance indicators that primarily measure process performance.
	More frequent management review activities to monitor risk controls and safety performance. SMS internal audit would need to include SMS processes for each base.	One management review activity per year may be considered sufficient. SMS internal audit only considers SMS processes at single base.
	More detailed external SMS interface management processes due to the use of a greater number of external contractors and agencies to support the organisations activities locally and remotely.	Simple external SMS interface management due to localised operations and small number of suppliers.
4. Safety Training and Promotion	SMS training would be similar for both organisations. The training would include safety management responsibilities for personnel at each base, including information specific to the emergency response plan, the organisation’s safety risks across its operations and how those risks are controlled.	SMS training simply covers safety management responsibilities of personnel, use of the SMS, emergency response plan activation, the organisations top safety risks and how they are controlled.
	Safety communications would need to consider how safety critical information is relayed to personnel at both bases and whilst operating remotely. Periodical safety education activities would need to be conducted for personnel at each base.	The processes for safety communications, relaying safety critical information, and periodical safety education would be straightforward to achieve and may simply involve hangar ‘safety talks’ or a similar format.

Important: Table 6 is only intended to provide a high-level scalability example for each of the four components of the SMS framework. Each of the 12-elements of the SMS framework must be addressed by your SMS.

Meaning of SMS outputs

The SMSM contain actionable processes that are required to be performed during the management and operation of an SMS. These processes are identified as 'SMS outputs' throughout the CASA SMSM (refer Figure 2). The purpose of including SMS outputs throughout the SMSM are to highlight SMS processes that require specific actions to be performed by the safety manager and/or the CEO. The actions that each SMS output identify are important processes required to be performed during the operational and performance phases of SMS implementation, and the information collected from these processes (SMS outputs) assists your organisation to evaluate if your SMS processes are *operating* and *effective* (e.g., achieving SMS safety performance outcomes).

Figure 2: SMS output example

SMS output - Each safety review team meeting held is a reviewable SMS output

Table 7 lists each SMS review output contained throughout the SMSM. Each paragraph of the SMSM that contains an SMS review output describes the SMS process and the frequency (weeks or months) that the process activity should be executed. The activity frequencies contained in the SMSM are suggested baselines for initial implementation of the SMS. Each individual organisation should modify the frequency of the suggested SMS process activity (increase or decrease) to suit your operations. You should consider that the frequency your organisation elects to use for each process becomes a compliance requirement of your exposition or operations manual as required by regulations 119.210 or 138.157 of the CASR. Each SMS process associated with an SMS output are areas that CASA may include during surveillance activities.

Table 7: SMS review outputs

SMS review output	Part 119/138-SMSM Frequency (suggested minimum)	Micro-SMSM Frequency (suggested minimum)
Safety review team meetings (Section 1 of SMSM)	Every 3 months	Every 6 months
Periodical testing or review of the emergency response plan (Section 1 of SMSM)	Every 12 months	Every 12 months
Use of internal reporting system?	Monitor only	Monitor only
Review of external sources of safety information (subsection 2.1 of SMSM)	Every 6 months	Every 12 months
Management review activities (subsection 3.1 of SMSM)	Every 12 months	Every 12 months
Internal audit of SMS (subsection 3.1 of SMSM)	Every 12 months	Every 24 months
Initial or recurrent SMS training (subsection 4.1 of SMSM)	Each training event	Each training event
Safety communication (personnel safety meetings) - (subsection 4.2 of SMSM)	Every 3 months	Every 6 months

Forms

The SMSM utilise sixteen forms which are designed to document the actions performed for processes contained in the SMSM and provide records relating to the operation and performance of the SMS for future review. Each form is a Microsoft Excel template (.xltx). Each time a form is to be used for an SMS process, the original template (.xltx) document should be saved as new Excel workbook (.xlsx) document. Each form is designed to support data collection that can be used by your organisation for future SMS performance monitoring purposes.

Each SMSM form can be accessed in the *associated documents* link for the safety management system sample manual (SMSM) - for Part 119 and 138 of CASR on the [Set up your SMS webpage](#) of the CASA website.

Table 8: SMSM Forms

Form
SMS-MR - Management Review
SMS-CSR - Confidential Safety Report Form
SMS-BSI - Basic Safety Investigation Form
SMS-RAP - Risk Assessment Process
SMS-HRR - Hazard and Risk Register
SMS-SPI - SPI and SPT Register
SMS-IA - Internal Audit
SMS-IR - Interface Register
SMS-MOC - Management of Change Implementation Plan
SMS-MOR - Management of Change Register
SMS-CIS - Continuous Improvement Suggestion
SMS-CIR - Continuous Improvement Register
SMS-TR - SMS Training Register
SMS-TCE - Training Course Evaluation
SMS-SA - Safety Alert
SMS-PSM - Personnel Safety Meeting Agenda

1. Safety Policy and Objectives

Component 1 of the SMS aims support the operation of an effective SMS to achieve an appropriate level of safety performance. This is achieved by policy that describes the accountabilities and responsibilities of key personnel, including management's commitment to safety, compliance, resourcing and operation of the SMS.

1.1 Management commitment to, and responsibility for safety

Relevant references

CASR	119.190(2)(a)(i), CASR 138.145(a)(i)
AC	AC 119-01 Section 5.1
AMC/GM	AMC/GM Part 119 Section 7, AMC/GM Part 138 Subsection 3.6
OPS.08 PPW	Element 2.2.1 principle document
SMS resource kit	Booklet 2 - Safety Policy and Objectives

Human performance (HP) integration into SMS:

- The safety policy identifies and promotes positive safety behaviours.
- Management and leadership consistently demonstrate a commitment to safety and the SMS.
- Senior management are seen to act in practice according to their written commitment to safety.
- Personnel are adequately trained for their roles and responsibilities for safety including use of the SMS.
- Senior management consistently endorse and emphasise the importance of reporting.

Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.

Safety policy

Overview: Subpart 119.F and Division 138.B.6 of CASR requires operators to document their safety policy. The aim of the safety policy is a concise promotional statement from the CEO communicated to all personnel, that conveys the organisation's overarching commitment to safety and compliance. The safety policy provides the basis for a more detailed description of your organisation's safety objectives, hazard reporting, and safety behaviour expectations.

Implementation strategy: The safety policy must be signed by the CEO and communicated to personnel throughout the organisation. Regardless of how the safety policy is communicated, the CEO is responsible for ensuring all personnel engaged in the organisation's aviation activities are aware of the safety policy.

Scalability considerations: The safety policy statement is not expected to vary considerably between organisations.

For small organisations, the owner/CEO may personally perform all tasks associated with the safety policy. As smaller organisations typically operate with small numbers of employees, the safety policy may be prominently displayed in high use work areas or included in briefings and periodical training.

More complex organisations may consider additional members of senior management to sign the safety policy. Consideration may also be required to include additional information in the safety policy to reflect specific aviation activities, locations or customer and contractual requirements. More complex organisations may elect to communicate the safety policy using numerous methods such as during induction or recurrent training briefings, intranets, websites, email, or through other electronic documentation and communications.

Safety objectives

Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.

Overview: Subpart 119.F and Division 138.B.6 of CASR requires operators to document their safety objectives. Safety objectives are brief, high-level statements of desired safety outcomes to be accomplished by the organisation. The most effective safety objectives set specific safety goals reflecting your organisation's safety vision and management commitment to safety.

The safety objectives in the SMSM are designed for the initial SMS implementation phase (the compliance phase). Once the actions under each objective have been completed and your SMS is generating documented outputs (the performance phase), the objectives should be reviewed and updated as necessary to align with your operational context.

Implementation strategy: As your organisation develops experience in operating your SMS, you should review your safety objectives using the management review process contained at subsection 3.1 of the SMSM.

Safety objectives should be measurable and not simply inspirational statements, such as "Safety is our highest priority", or "We will maintain a zero-accident rate", etc. Each safety objective is linked to a safety performance indicator (SPI) located in subsection 3.1 of the SMSM. Each SPI is associated with an SMS process or activity that is performed periodically and is used as a measure to check if the organisation is achieving its safety objectives.

Safety objectives fall into two broad categories:

- **Process-oriented:** stated in terms of safety behaviours expected from personnel or the performance of actions implemented by the organisation to manage safety risk (e.g., increase reporting levels); or
- **Outcome-oriented:** stated in terms of actions and trends regarding containment of hazardous events (e.g., reduction of error or incident rates).

After initial implementation and during the performance phase of your SMS, your organisation's safety objectives should include a mix of both process-oriented and outcome-oriented objectives. This is usually considered as a result of the organisation's actions to manage a hazardous situation that has occurred during operations, or management is taking proactive measures to prevent an occurrence from happening, e.g., to ensure runway safety events are prevented through training and education. As your organisation gains experience with the SMS and collects safety data (through reporting or identifying hazards) the management review process at subsection 3.1 of the SMSM should be used to consider incorporating outcome-orientated safety objectives. Doing so will better support your organisation in managing existing and emerging safety risks.

To ensure progress towards achieving your safety objectives is measurable, safety objectives need to be developed according to the SMART performance measures:

Specific: should establish a specific objective and consideration given how to achieve the objective.

Measurable: consideration is given how to measure achievement of the objective.

Achievable: the objective and how it is measured is achievable considering available resources.

Relevant: the objective is realistic and encourages achievement of the safety objectives.

Timely: timeframes are set to measure for achievement of the objectives.

When reviewing or developing new safety objectives, consideration should be given to resources such as financial, personnel and time, so focus can be made on safety objectives that will have the greatest safety benefit for your organisation. This may be achieved by focusing safety objectives on the safety issues that concern you the most.

Scalability considerations: For all organisations, safety objectives should consider your organisation's top safety risks.

For small organisations, the safety objectives contained in the SMSM consider each of the four primary components of the SMS framework and are intended to drive behaviours and actions to support the use and effective operation of your SMS.

More complex organisations should include outcome-oriented safety objectives, and objectives that consider hazards specific to your operations (e.g., complexity of aircraft types, operational locations, or types of

aviation activities). As your organisation collects more data relating to hazard trends or occurrences, safety objectives should be included to assist your organisation manage the risk of those hazards to an acceptable level.

Management reviews

Refer to subsection 3.1 of the SMSM for the scope relating to the management review process.

Overview: The management review process described in the SMSM is intended to assist your organisation conduct an internal review of SMS processes and other procedures within your organisation. The management review is an internal oversight tool that is intended to provide the CEO with an objective and evidence-based snapshot of the performance of the organisation’s safety and compliance processes, and the SMS.

Implementation strategy: Performing management reviews at planned time intervals assists your organisation evaluate if your SMS processes and procedures are achieving your organisation’s safety objectives and the safety management expectations of the safety policy and CEO.

Scalability considerations: The scope, content and frequency of management reviews should be based on the size, nature and complexity of your organisation.

Subsection 3.1 of the SMSM suggests a management review must be performed **{once within every 12-month period}**. You can change the frequency of how often you perform the management review to suit the circumstances of your organisation (e.g., personnel availability, workload etc.). There is also flexibility how you can perform the management review, for example, there are up to ten areas of the SMS that the SMSM recommends are reviewed. One method could be spreading the review items over a period of months or completing the review items sequentially over a period of time during scheduled safety review team meetings.

Forms related to this SMSM process

Form	Description and purpose
Form SMS-MR - Management Review	Use to record the results of each management review activity and endorsement by the CEO

Just culture and protection of safety data and safety information policy

Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.

Overview: There are three important aspects to the policy: just culture, confidentiality, and the protection of safety data and safety information in your SMS.

Just culture

The just culture policy is an essential part of supporting the hazard identification and reporting process, as it establishes the organisation’s standards and expectations of behaviour and provides assurance to personnel of fair treatment whilst balancing safety and accountability.

If personnel fear that by disclosing or speaking up about safety issues may result in retributive actions taken against them, they may be reluctant to report important safety information within your organisation, which may prevent the identification of hazards, errors or other safety deficiencies. Management should strive to create an environment where personnel are confident and trust that reporting safety issues and disclosure of errors will only be used for the purposes of maintaining and improving safety. This is often referred to as a 'just culture' and is formalised through your organisation's just culture policy.

The aim of the just culture policy is to communicate to personnel they can be confident that their disclosure of safety information (including their errors) will not result in disciplinary actions taken against them, provided the reported issue was not caused through gross negligence, wilful misconduct, reckless behaviour or criminal activity. The just culture policy should also clearly communicate to personnel that in instances where a safety occurrence may have been caused from deficiencies in an individual’s aviation-related skills, knowledge, ability or competence, that any reasonable corrective, remedial, or preventive actions when taken by your organisation, are not regarded as punitive or disciplinary, but necessary to maintain or improve safety.

To support the just culture policy, the just culture decision framework guide (subsection 1.1 of Part 119/138-SMSM and *Appendix A* of this guide) assists with achieving transparency and objectiveness during the decision-making process to differentiate between unintentional human error and intolerable behaviours and acts, and to define the meaning of preventive, corrective and remedial actions in the context to the objectives of the SMS.

The just culture decision framework is intended to assist the organisation make fair and objective decisions for matters that require procedural fairness (e.g., counselling, discipline or dismissal). Your organisation should ensure these procedures follow any relevant employment and privacy legislation (e.g., Fair Work Act, and privacy legislation for each State or Territory).

Confidentiality

Confidential reporting is an important element to encourage a reporting culture in all organisations and should not be confused with anonymous reporting. Anonymous reporting under most circumstances is impractical and may prevent the organisation from seeking additional information to a reported matter and may reduce the effectiveness of safety risk management when follow-up with the reporter is necessary.

Personnel must be confident that their identity and reported information are protected. The SMSM just culture policy includes a confidentiality statement assuring that safety information when reported through the internal reporting system is not used for any purpose other than maintaining and improving safety, and that all reasonable steps are taken to protect the identity of persons who report or could be identified in any reported matters.

The organisation must ensure appropriate safeguards are in place to prevent unauthorised access or disclosure of safety information to the public or media. Personnel must also be informed that, when required by law, the release of safety information may be required when formally requested by a competent authority (refer to definitions).

Principles of protection (and exception)

The SMSM just culture policy is intended to provide assurance that safety data, safety information and the identity of its sources will be protected against misuse and will not be released externally for disciplinary actions, legal purposes, disclosure to the public, or for any purpose other than maintaining or improving safety, unless a principle of exception applies.

The circumstances that would permit safety data, and safety information to be released are very specific and should only be permitted if requested by a competent authority such as a court of law, Police, or CASA, and are formally requested in writing through an order or direction, and the release of the safety data or information is necessary for:

- *The administration of justice*: in circumstances where an occurrence is caused by an act or omission, in accordance with law, constitutes gross negligence, wilful misconduct or criminal activity (e.g., would include involvement by Police and/or a court of law); or
- *To maintain and improve safety*: in circumstances where an occurrence is caused by an act or omission that is repetitive conduct or behaviour by an individual over a period of time (e.g., may involve CASA compliance or enforcement related actions).

Implementation strategy: Your organisation's just culture policy must be communicated to all personnel and should be included in SMS initial and recurrent training (refer section 4.1 of the SMSM), and reinforced through forums such as personnel training meetings (refer section 4.2 of the SMSM).

The CEO and senior management team's goal should be to transform the just culture policy into the organisations everyday culture, so that reporting becomes a normalised behaviour with all personnel. Management must be seen to be endorsing and practising just culture principles. Any behaviour contrary to this will rapidly erode trust and confidence in the how genuine management is regarding the policy and the importance of voluntary reporting. In addition to fear of blame and retribution, embarrassment—particularly following errors—can also deter reporting. Confidentiality can assist overcome this barrier.

To ensure the confidentiality of reported information, only persons authorised by the CEO should have access to safety reports, and those persons should generally be the CEO and the Safety Manager. The system or database that contains safety information should have adequate protection in place (e.g., password protected database or stored in lockable cabinet). It is also important to communicate to personnel that although confidentiality is assured, complete de-identification may not be practical because of awareness of the matter throughout the organisation and with work colleagues. This is especially true for smaller organisations.

For organisations that conduct operations outside of Australia, or employ personnel from multi-cultural backgrounds, an important consideration is that your just culture policy may not be universally accepted in some countries, legal jurisdictions or by personnel from certain national cultural backgrounds. Under these circumstances some personnel may not be confident to report errors, or trust that they will not be punished if involved in a safety occurrence.

Scalability considerations: The principles of just culture are generally universal, as are the barriers that will prevent personnel from reporting (e.g., blame, retribution, embarrassment). The just culture policy and principles are not expected to vary considerably between organisations.

Organisations with large numbers of personnel, or with an organised labour/represented workforce may need to consider consultation and involvement of personnel in your organisation's just culture policy to facilitate buy-in, trust and willingness to report safety information.

1.2 Safety accountabilities of managers

This section of the SMSM describes the accountabilities and responsibilities for the implementation, management and operation of the safety management system. The accountabilities, responsibilities and duties contained in the section are additional to those described in the exposition or operations manual.

Note for micro-SMSM users: Section 1.2 of the manual incorporates both the safety accountabilities and responsibility for safety, and appointment of safety management personnel SMS elements into one sub-section titled: Safety management personnel - appointment and accountabilities.

Relevant references

CASR	119.190(2)(a)(ii), CASR 138.145(a)(ii)
AC	AC 119-01 Sub-section 5.2
AMC/GM	AMC/GM Part 119 Section 7, AMC/GM Part 138 Subsection 3.6
OPS.08 PPW	Element 2.2.2 principle document
SMS resource kit	Booklet 2 - Safety Policy and Objectives

Human performance (HP) integration into SMS:

- The organisational structure, reporting lines, and personnel safety responsibilities and accountabilities are clearly documented, communicated and understood.
- Personnel are provided the time, resources and an environment to perform their duties safely and efficiently.

Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.

The SMSM includes a description of the accountability and responsibility structure for the governance of the SMS, including a suggested SMS reporting and governance structure diagram. *Note:* the micro-operator SMSM does not contain this information. The SMS accountability and governance structure should not be confused with the organisation structure that may be contained in the exposition or operations manual. The SMS governance structure relates to the management, reporting lines and responsibilities directly related to the management and operation of the SMS. Consideration can be made to incorporate this structure into other organisation manuals if necessary.

Overview: There are two aspects of "accountability" to be considered. The safety accountabilities of management personnel and the SMS, and the regulated accountabilities of the CEO (refer to subsection 1.2 of micro-SMSM and 1.3 of Part 119/138-SMSM). "Accountabilities" in terms of the SMSM refer to active participation in the SMS by management (including all key personnel). Each role with safety accountability should be identifiable in the SMS accountability and responsibility structure defined at subsection 1.2 of the SMSM. The organisation demonstrates safety accountability by ensuring all personnel responsibilities and duties within the SMS are documented. The aim of documenting SMS responsibilities and duties for all personnel is to assist those persons in actively participating in and accomplishing their SMS-related roles.

Implementation strategy: The numbers, reporting lines, and relationships of personnel will be unique to each organisation. The CEO and Safety Manager each have regulated responsibilities and accountabilities within the SMS; therefore, both positions must actively participate in the implementation and management of the system. Other key personnel may not have regulated responsibilities directly related to the

implementation and management of the SMS, however they each have regulated responsibilities for the safe conduct of the organisation’s operations and compliance with civil aviation legislation. These personnel therefore have safety leadership duties to actively participate in and promote the use of the SMS. The responsibilities and duties for each management personnel role relevant to your organisation should be described in the appointment of safety management personnel section of the SMSM.

To ensure your organisation’s personnel understand their responsibilities and safety duties within the SMS, this information should be included in personnel induction training, and during SMS initial and recurrent training described in section 4.1 of the SMSM. Consideration may also be given to including SMS related responsibilities and duties in employee position descriptions, employment contracts, or during annual employee performance review discussions.

Scalability considerations: The roles of CEO and Safety Manager are regulated key personnel positions required by all air transport operators and relevant aerial work operators.

Note for micro-SMSM users: Parts 1 and 3 of CASA EX68/24, and Parts 1 and 2 of CASA EX72/24 (for relevant aerial work operators) permits the CEO or HOFO (or HOO) to be the safety manager position holder for operators defined as ‘eligible micro-operators’ with ten or less operational safety critical personnel.

1.3 Appointment of safety management personnel

Section 1.3 of the Part 119/138-SMSM (section 1.2 of the micro-SMSM) describe the regulated responsibilities of the CEO and Safety Manager for the implementation and management of the SMS. The section also includes descriptive duties within the SMS for the CEO and Safety Manager to assist those persons perform the necessary actions to be able to effectively discharge their regulated responsibilities.

The section also describes the safety duties within the SMS for other key personnel, managers and all other organisational personnel.

Note for micro-SMSM users: Section 1.2 of the micro-operator SMSM contains two blocks of sample text that describe the specific responsibilities for the two possible exempted circumstances in relation to key personnel being position holders for multiple positions. The exempted circumstances are: the CEO is also the safety manager position holder, or the HOFO, (or HOO) is also the safety manager position holder. Micro-SMSM users are responsible for modifying the sample text to suit their exempted circumstances.

Relevant references

CASR	119.190(2)(a)(iii), CASR 138.145(a)(iii)
AC	AC 119-01 Section 5.3
AMC/GM	AMC/GM Part 119 Sections 5, 7, AMC/GM Part 138 Subsections 3.4, 3.6
OPS.08 PPW	Element 2.2.3 principle document
SMS resource kit	Booklet 2 - Safety Policy and Objectives

Human performance (HP) integration into SMS:

- To prevent risky workplace adaptations from occurring, senior management ensures that sufficient personnel are in place (no understaffing) to manage safety and the SMS.
- All personnel receive training and education to be able to effectively discharge the safety responsibilities and duties relevant to their role completely and comprehensively.

Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.

Overview: The CEO holds the ultimate responsibility for safety management within the organisation and is accountable to both CASA and the organisation for the effective discharge of those responsibilities. The CEO is responsible for ensuring the proper implementation, management and operation of the SMS. This includes maintaining open lines of communication with personnel with designated safety responsibilities, providing sufficient resources for the SMS to be managed effectively, and being actively involved in the system.

The CEO holds the overarching authority for risk tolerability and acceptance therefore must maintain a clearly defined line of communications with the safety manager and other key personnel to ensure identified hazards and safety issues are effectively communicated throughout the organisation. The CEO must be

actively involved in safety assurance processes of the SMS including the regular review and endorsement of the organisation's safety policy and objectives, safety performance, resourcing, and continuous improvement processes. The management review process described at Section 3.1 of the SMSM assists the CEO fulfil these responsibilities.

Safety manager

The safety manager is responsible for managing and operating the SMS as opposed to being responsible for the safety of the organisation's operations. The safety manager is to facilitate and support SMS processes, including assisting other key personnel meeting their responsibilities within the SMS, and reporting to the CEO on safety matters and the organisation's safety performance. The safety manager does not necessarily need to be considered as a subject matter expert in all areas of the organisation, but in a role to assist other managers and personnel with hazard identification and risk analysis, communicating safety information, and assist in the implementation and monitoring of safety risk controls.

The safety manager should be in a position within the organisation with sufficient independence to report directly to the CEO on safety management matters. It is a regulated responsibility of the CEO to ensure the safety manager can perform their responsibilities independently and without undue operational or financial influence. As there is an exception to this requirement for eligible micro-operators, refer to the implementation strategy section below for guidance on role conflict of interest and workload management risks for key personnel holding multiple role responsibilities.

Key personnel and other managers

All key personnel and other managers have duties for the safe conduct of the organisation's operations and compliance with civil aviation legislation. Each of these persons are responsible to actively participate in and promote the use of the SMS. All management personnel have responsibilities for identifying hazards in their areas of responsibility and assisting with risk assessments and if necessary, the development and implementation of risk controls in those areas. They are also responsible for monitoring the effectiveness of risk controls and reporting to the safety manager or CEO if controls become ineffective.

All personnel

All personnel include operational safety-critical personnel and non-operational safety-critical personnel, including contractors. All persons must actively participate in the operation of the SMS and the organisation's safety efforts. All personnel should be aware of the organisation's safety policy and objectives, as well as their own safety duties within the SMS. All personnel must understand the just culture policy, and how to use the internal reporting system. Personnel at every level of the organisation have a responsibility to report hazards, issues related to aviation safety, as well as propose solutions and safety improvements.

Implementation strategy: Subpart 119.D and Division 138.B.4 of the CASR impose a requirement that the CEO is responsible for ensuring that there are sufficient, suitably experienced, qualified and competent personnel to manage and operate the SMS, and that all personnel are appropriately trained to use and perform their responsibilities and duties within the system. A competent safety manager is central to this requirement. The method of meeting this requirement may vary between organisations due to existing management structure, individuals filling multiple key person roles, and the availability of other appropriate personnel to fill the role of safety manager.

When appointing a person to be the safety manager, the organisation may decide to utilise an existing key person or manager, operational personnel (e.g., a line pilot), non-operational personnel (e.g., a business manager) or use of a contracted person. In each of these alternatives, there are important considerations the CEO should make in regard to maintaining the independence of the safety manager role, management of role conflict of interest risks, and workload management if the safety manager position holder also holds another key personnel role. Consideration should also be made on ensuring the role is filled on an enduring basis.

Important

Role independence of the safety manager is fundamental to the SMS concept to ensure safety advice and decisions can be made independently and free from undue productivity and operational influences or pressures. In circumstances where an existing key person position holder also fills the safety manager position, the principle of role independence must be preserved for all safety matters, and the regulated responsibilities of the safety manager role are completely and comprehensively discharged.

Safety manager is position holder for another key personnel position

The flight operations regulations do not permit the CEO, HOFO or HOO to be the safety manager except for an unforeseen circumstance or by issue of a specific approval. The exceptions to this requirement are the Head of Training and Checking (HOTC) also being the safety manager position holder, or if the operator is an eligible micro-operator accessing Parts 1 and 3 of CASA EX68/24 or Parts 1 and 2 of EX72/24 (for relevant aerial work operators). In the circumstances where the HOTC is the safety manager, or for a micro-operator where either CEO or HOFO/HOO is the safety manager, the single individual's organisational duties may change numerous times throughout any single day. The single individual could be considered as 'changing hats' as their role responsibilities change for each role they hold. To ensure the individual can effectively discharge their responsibilities for each role, consideration should be given for role conflict of interest risk and workload management.

- Role conflict of interest risk management: As a result of the individual having organisational duties in different areas, there are likely to be conflicting priorities, for example an individual holding the CEO and SM role may have conflicting priorities in areas of financial resourcing and allocation of personnel versus safety management. An individual holding the HOFO/HOO and SM role may have conflicting priorities in areas of operational decision making versus safety management. Some suggested controls to manage these risks may involve arranging for an independent individual (internal or external) to review SMS processes, including:
 - » Risk assessment - to review risk assessments and risk decision making.
 - » Management of change - to review change implementation planning and associated risk assessments.
 - » Safety investigations - to conduct or assist with investigations to safety related matters, or incidents and accidents.
 - » SMS auditing - to conduct the internal audits of the SMS.

Note for micro-SMSM users: In section 1.2 of the micro-operator SMSM, the CEO responsibilities and accountabilities include the appropriate management of role conflict of interest risks.

- Workload management: The individual holding multiple key personnel roles must ensure they allocate an appropriate amount of time to each role to be able to effectively discharge the responsibilities for each role completely and comprehensively, including the management and operation of the SMS. Some suggested controls to manage workload risks are:
 - » Including expected hours of engagement (weekly/fortnightly) for the individual to manage SMS in the organisation's personnel roster.
 - » Formalising the expected hours of engagement for the individual to manage the SMS in company documentation or policy, e.g., employment contract, position description, in the exposition or safety management system manual.

Safety manager holds another role in the organisation

The safety manager role is a prescribed key person for air transport operations, and a required key person if the organisation's aerial work operations require the implementation of an SMS. Therefore, it is an important consideration that the safety manager position is an enduring position as it is a condition of an air operator certificate or an aerial work certificate, the position must be filled. If there are circumstances where the primary key person - safety manager position holder cannot carry out their responsibilities, or vacates the position, and there is no other person approved to carry out the responsibilities of the position (an alternate safety manager), the organisation may experience business interruption risks due to the possibility of having to suspend operations. To ensure the enduring responsibilities of the position, considerations when utilising persons in other roles (or a casual employee) should include:

- Personnel turnover: some personnel positions may turnover frequently as a result of career progression, or seasonal work cycles (e.g., flight crew).
- Casual employees: It is unlikely that small organisations will have the resources for a permanently employed safety manager. A person with the appropriate knowledge and competency to manage the SMS may be employed on a casual basis, however it should be considered that the individual could vacate the position at short notice. Some suggested controls to manage these issues are:
 - » Including mutually agreed notice periods in an employment contract that is an appropriate period for the organisation to source, train and nominate a new position holder for CASA approval.

- » Have in place another person approved and authorised to carry out the responsibilities of the safety manager (an alternate safety manager) should the position become vacant, or the primary position holder cannot carry out their responsibilities⁴.

Ensuring the individual nominated as your organisation's safety manager occupies the position on a stable and enduring basis is important for the ongoing effectiveness of your SMS and for personnel to engage with a familiar and trusted individual for safety related matters. Consideration should also be made that frequent turnover of the safety manager will attract increased recruitment, induction, training and regulatory approval costs.

Use of a contracted safety manager

Small organisations may consider the utilisation of a person contracted as the safety manager. This should not be confused as 'contracting out' or 'outsourcing' SMS functions, as the regulations do not permit those types of arrangements.

The contracted individual must be nominated to CASA to be considered suitable for the appointment of the key person role and named in the exposition or operations manual. All induction and key personnel familiarisation training must be completed, including training in responsibilities and use of the SMS.

A primary consideration the CEO should make when engaging a contracted safety manager, is that the individual may hold the role for multiple organisations. This may impact their ability to effectively discharge their role responsibilities completely and comprehensively to manage and operate your SMS. The benefits and risks the CEO should consider if utilising a contracted safety manager include:

Benefits:

- The introduction of safety management expertise your organisation may not have or be able to invest in.
- The benefit of learning from the sharing and exchange of safety information outside the organisation (e.g., the individual in regular communication with other industry operators, industry associations, safety practitioners, CASA)
- The management of role conflict of interest risks, and the ability to facilitate an independent review of organisational and SMS processes, including risk assessments and management of change.

Possible risks:

- Ineffective operation and management of the SMS as a result of inappropriate allocation of time and workload management for the contracted person to discharge their regulated role responsibilities.
- As a result of being 'off-site', barriers to gaining insights into the organisation's operations, its safety culture, and the safety behaviours of personnel.
- Barriers to personnel engaging and communicating effectively on safety related matters.
- Unavailability of the contracted person due to higher than usual workload demands from other customers (e.g., if another customer is involved in an accident, seasonal or cyclic business demands, audits).

The CEO is responsible for ensuring appropriate workload and timeshare risk controls are in place so the contracted safety manager can manage and operate the SMS effectively. One such risk control may be the use of a formal engagement contract, and service level agreement that describes your organisation's engagement expectations.

Scalability considerations: The CEO and safety manager are fundamental to the management and operation of the SMS, therefore the appointment of a person within the organisation that can make safety related decisions independently of operational areas is important to ensure the effectiveness of SMS processes, particularly in safety risk management. This person must have a clear and open line of communications to the CEO.

Eligible micro-operators may consider the CEO, HOF0 (or HOO) to be appointed as safety manager. Each key person must consider how they can effectively discharge the regulated responsibilities completely and comprehensively for each role they are position holder for. Eligible micro-operators may also consider appointing other personnel as the safety manager.

⁴ Ensure the application for approval of significant change requirements of Subpart 119.C and Division 138.B.3 of CASR are reviewed.

Appendix B - Safety Manager Role Actions Within SMS Framework contains guidance on actions the safety manager position holder can take to assist with the effective management and operation of the SMS.

Safety review team (SRT)

Overview: The function of the safety review team (SRT) is to monitor, review and manage the organisation's safety performance and operation of the SMS. The SRT achieves this by reviewing the outcomes of policies and processes described in the SMSM as a result of operating the SMS. The SMSM suggests the personnel that should be included in the SRT. Membership or participation in SRT meetings and activities should include any personnel that your organisation considers are important for contributing to the safety of the organisation's operations. The SMSM describe specific functions of the SRT, however the SRT can also be assembled to assist with risk scenarios, proposed organisation changes, or any safety related matters.

Implementation strategy: The SRT should comprise of several permanent members of the organisation's key personnel. Because the CEO is responsible for ensuring the SMS is implemented, managed, and performing effectively, the CEO should be the permanent chairperson of the SRT. The safety manager should facilitate and support SRT meetings and activities. Consideration for other SRT membership may include operational personnel (HOFO, HOTC, a line pilot representative, HAAMC, maintenance manager).

The SMSM recommends how frequently SRT meetings should be held over a 12-month period. It is expected your organisation should consider SRT meeting frequency that is appropriate for the organisation's operations, taking into account: size, nature and complexity of the organisation, number of bases and personnel, periods of organisational change, workload, and seasonal work cycles. Consideration can also be made to scheduling SRT meetings with other management team meetings that are routinely held throughout the year.

Scalability considerations: Minimum permanent SRT membership should comprise of the CEO, safety manager and HOFO (or HOO).

Note for micro-SMSM users: The CEO remains as a permanent member of the SRT and is therefore responsible for ensuring the SRT functions described in the SMSM are performed or delegated to another member of the SRT.

Each safety review team meeting is to be documented, including the date of each meeting, attendance, topics and actions discussed. The actions and outcomes of each SRT meeting are to be endorsed by the CEO.

SMS output - each SRT meeting held is a reviewable SMS output

Forms related to this SMSM process

Form	Description and purpose
Form SMS-MR - Management Review	Use to record the results of each management review activity. The form is to be used during safety review team (SRT) meetings.

1.4 Coordination of emergency response plan

Note for micro-SMSM users: Section 1.3 of the micro-SMSM describes policy related to the ERP.

The SMS framework required by the regulations requires organisations to develop an Emergency Response Plan (ERP). The SMSM are supported by an Emergency Response Plan (ERP) Template for Part 119 and Part 138 SMSM.

The ERP template document is provided to assist with the development of your Emergency Response Plan. When using the template you should complete the relevant fields with the company's details, ensure internal policies and procedures are tailored to the organisation's activities, and ensure all relevant emergency scenarios and response procedures are considered and appropriately documented.

Throughout the ERP template, example text and placeholder content are displayed in *{red text placeholders}*. You must include the information required by each placeholder (e.g., emergency contact phone numbers relevant to your operations) and modify other placeholder text where necessary.

Relevant references

CASR	119.190(2)(a)(iv), CASR 138.145(a)(iv)
AC	AC 119-01 Section 5.4
AMC/GM	AMC/GM Part 119 Section 7, AMC/GM Part 138 Subsection 3.6
OPS.08 PPW	Element 2.2.4 principle document
SMS resource kit	Booklet 2 - Safety Policy and Objectives

Human performance (HP) integration into SMS:

- Personnel receive training in the purpose and actions contained in the ERP so that personnel don't need to improvise or adopt sub-optimal solutions when responding to an emergency or crisis.

Overview: An emergency is a sudden or unplanned situation or event requiring immediate action to prevent potential, or further harm or loss. Emergencies may elicit psychological impacts on first response personnel that impair decision making during a crisis. Emergency response planning supports crisis decision making by ensuring that structured tasks and activities required during an emergency are documented in advance. This enables the plan to be implemented quickly and effectively during an unplanned operational or emergency situation.

The ERP template describes the initial actions to be taken by the organisation's personnel in response to an emergency. It provides procedures for management decision making and emergency response actions, including procedures to be followed when an emergency involves a key person who normally makes crucial organisational decisions. The ERP assists to ensure that appropriate emergency response actions can be made, and risk decision making can continue when key personnel are not available to perform their responsibilities, including whilst on vacation or other absences. The organisation should ensure that alternate key personnel position holders receive training and are competent to perform any additional duties relating to the SMS, risk acceptance, and the ERP.

Implementation strategy: The ERP template contains suggested ERP roles and responsibilities for key persons and other personnel. Each organisation should modify these ERP roles and responsibilities to suit the structure and roles of your organisation. When doing this is it important to consider whether ERP roles, responsibilities and actions can be executed if one of the organisation's management personnel themselves are involved in the emergency or are absent.

The SMSM contain SMS outputs related to the ERP. Both versions suggest the ERP document is reviewed annually to ensure emergency contact names and phone numbers are current, the latest revision of the ERP document is accessible at relevant locations, and that ERP processes remain appropriate. The Part 119/138-SMSM suggests the ERP is tested once every 12 months via a desktop exercise that is based on an emergency scenario. The aim of the periodical test is to provide assurance that ERP actions are suitable and will achieve their intended outcomes.

Scalability considerations: Micro-SMS users may consider simplifying the ERP template. This may involve only including the key persons in your organisation and a simple checklist of steps outlining who to call and what information to communicate to agencies or persons assisting or involved in an emergency response. However, consideration should be given to training other persons in the use of the ERP, in case key persons with ERP responsibilities are unavailable.

If you are a very small organisation (e.g., 1-5 persons), you may consider providing a copy of your ERP to external entities that could activate the ERP upon receiving information of a possible emergency involving your organisation. This may be considered where key personnel such as CEO/HOFO (or HOO) also perform operational flying duties. Some examples of external entities to consider include: an airport operator, a fuel supplier, a maintenance provider, or another operator. The external entity would need to complete training in the activation and use of the ERP.

SMS output - ERP periodical testing is a reviewable SMS output

Note for micro-SMSM users: The annual review of the ERP document is the only defined SMS output described in the micro-operator SMS manual relating to the ERP.

Forms related to this SMSM process

Form	Description and purpose
Form SMS-MR - Management Review	Use Part E to record ERP annual review and periodical testing outcomes.

1.5 Safety management system documentation

Note for micro-SMSM users: Section 1.4 of the micro-operator SMSM describes policy related to SMS documentation.

SMS documentation comprises of the safety management system manual and all documents and operational records that support the ongoing management and operation of the SMS. Operational records are outputs of the SMS processes described in the SMSM such as safety risk management, safety assurance, and safety promotion activities. The safety management documentation section of the SMSM provides a description of the policy and processes relating to SMSM distribution, continuous improvement, confidentiality of SMS documentation and retention periods.

Relevant references

CASR	119.190(2)(a)(v), CASR 138.145(a)(v)
AC	AC 119-01 Section 5.5
AMC/GM	AMC/GM Part 119 Section 7, AMC/GM Part 138 Subsection 3.6
OPS.08 PPW	Element 2.2.5 principle document
SMS resource kit	Booklet 2 - Safety Policy and Objectives

Human performance (HP) integration into SMS:

- The organisation recognises that accurate and complete SMS records can be an enabler for personnel to action SMS processes such as hazard identification, risk management and safety education, and that poorly managed SMS documentation can be a barrier to those processes and detrimental to hazard identification and the SMS.
- The organisation strives to foster an informed culture through accurate and complete SMS documentation.

Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.

Overview: Documents and records associated with the actions and outputs of SMS processes should be retained. The SMSM contain suggested retention periods for each SMS document and record. Subpart 119.J of the CASR requires records of training and education in the organisation’s SMS to be retained for up to 5 years after cessation of employment for certain members of operational safety critical personnel. Division 138.B.9 of CASR requires records of training activities relating to the organisation’s aerial work operations to be retained for up to 5 years after cessation of employment for certain members of the organisation’s personnel. While there is no regulatory retention period for the other documents and records listed in the SMSM, it is good practice to retain all SMS documentation so SMS outputs and previous work completed (e.g., risk assessments, management of change, risk control actions, investigations) can be reviewed for future safety management activities. This also assists with preventing duplicated work.

Hazard identification and risk assessment documentation (including risk assessments for managing change) are useful for monitoring risk tolerability and the effectiveness of risk controls. These records serve as evidence that the organisation is using the SMS and reviewing hazards and risks within the organisation’s risk acceptance and tolerability criteria, and that actions and outcomes are endorsed by the CEO.

Safety assurance records (e.g., internal SMS audits, continuous improvement, management reviews) are useful for recording and reviewing the effectiveness of SMS processes and tracking the effectiveness of improvements and corrective actions.

Records of safety communications and hazard information can be included in the attendance roster for personnel safety meetings, SMS training records and other safety communications activities held by the organisation. If emails are the primary method for safety communications to personnel, copies of each email

should be archived. Safety communications that are distributed electronically should include a method to record receipt acknowledgement for each recipient.

It is recommended that SMS initial and recurrent training records are retained in the organisation's training and checking system records for operational safety-critical personnel, or employee file for other personnel.

Implementation strategy: The forms that support the SMSM (refer Table 8) are designed to be used as records for the operation and management of your SMS, including recording the endorsement of the CEO and safety manager for numerous SMS actions. Each organisation can adapt or create SMS forms to suit the processes and structure of your organisation. The safety manager is responsible for maintaining SMS records, including controlling access to records and protecting the confidentiality of individuals contained in the records.

Scalability considerations: Micro-SMS users may consider simplifying SMS records. Records of SMS outputs such as hazards and risk assessments could be contained in spreadsheets, and safety communications records may be simple handwritten or typed notes of periodically held 'hangar or lunchroom safety talks'. These can be retained electronically or in paper format, and kept on a computer, in filing cabinets or binders. The CEO of a micro-operator may be responsible for maintaining, control and confidentiality of SMS records.

2. Safety Risk Management

Section 2 of the SMSM describes policies and procedures to manage aviation safety risk and exposure to both foreseeable and unforeseeable hazards. The safety risk management (SRM) process comprises of three primary elements:

1. Hazard identification—the identification of hazards that exist within the organisation’s operational environment and aviation activities.
2. Safety risk assessment—the processes utilised to analyse and assess the safety risks with identified hazards.
3. Safety risk mitigation—the actions taken and implementation of appropriate risk controls to manage risks to an acceptable and tolerable level.

The safety risk management process is also triggered by aviation-related changes to the organisation or systems, or when ineffective risk controls are identified by SMS processes.

2.1 Hazard identification processes

Hazards can be identified through the collection, review and analysis of safety data and information from internal and external sources. This assists the organisation learn from safety occurrences, errors or safety deficiencies that have occurred internally, and from occurrences involving other aviation system stakeholders.

Relevant references

CASR	119.190(2)(b)(i), CASR 138.145(b)(i)
AC	AC 119-01 Sections 6, 6.2
AMC/GM	AMC/GM Part 119 Section 7, AMC/GM Part 138 Subsection 3.6
OPS.08 PPW	Element 2.3.1 principle document
SMS resource kit	Booklet 3 - Safety Risk Management

Human performance (HP) integration into SMS:

- Senior management ensure personnel feel safe and confident to report hazards, including their errors and omissions and other safety information.
- The safety reporting process is in a format that prompts individuals to include human performance considerations in their reports.
- Reported safety information and individuals who report the information are treated in accordance with the organisation’s just culture and protection of safety data and information policy.
- Senior management approach safety occurrences and investigations from a learning perspective.
- Investigations focus on finding causes, hazards, conditions and circumstances present at the time of a safety occurrence rather than what the individual should have done or did not do.
- Investigations seek to identify causes at the individual, system, process and organisational level.
- Human performance issues identified through SMS processes are integrated into the organisation’s HF/NTS program and training and checking system.

Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.

Overview: The regulations require the SMS to include a process to identify hazards. A basic principle of hazard identification in a system or process is the question “What could go wrong with the process or system under normal and abnormal operational conditions that could cause an accident or incident?”

Hazards can be obvious, well-known and managed by controls that the aviation system has had in place for many years, and your organisation is most likely familiar with these. Some examples include thunderstorms, turbulence, airframe ice, fatigue, high terrain in vicinity of an aerodrome, or wildlife at or in the vicinity of an

airport. It is also important to recognise, that although these types of hazards are well known and their controls have existed for many years, accidents because of exposure to these types of hazards still occur.

SMS hazard identification processes can assist organisations detect and manage the ‘precursor’ conditions that may lead to adverse outcomes (e.g., accidents or incidents). Some hazards, such as deficiencies in systems, processes or organisational decisions, may not be immediately obvious. Examples include ineffective procedures, personnel not receiving required training, inadequate monitoring of new procedures, undocumented workarounds or adaptations, and unreasonable commercial pressures.

The identification of every conceivable hazard is unlikely; however, the SMSM hazard identification processes assist organisations to exercise due diligence in identifying hazards from multiple sources within the organisation and externally.

Implementation strategy: There is no appreciable difference between the expected outcomes of hazard identification processes for small or large organisations. However, the way each organisation collects, reviews stores and communicates hazard information will vary based on the size, nature and complexity of each organisation. For example, hazard identification processes may be accomplished by using online (or paper-based) reporting methods, use of external expertise to conduct safety investigations or training personnel for the purpose, storing and reviewing hazard information using a spreadsheet or with a third-party software program.

Scalability considerations: Some smaller organisations’ flying activities and low personnel numbers may not provide a high volume of hazard identification opportunities through the use of the internal reporting system. Therefore, accessing and reviewing external sources of safety information may assist small organisations learn about hazards that may be relevant to their operations through the lessons learned from other industry stakeholders, or even networking with industry colleagues or industry associations.

The management of SMS hazard identification processes may be performed by a single person in a small organisation, for example the CEO or HOF0/HOO would be responsible for a micro-operator SMS, and for larger organisations, the safety manager and other personnel may be responsible for the management of hazard identification processes.

The remainder of this section will provide guidance on each hazard identification process described in subsection 2.1 of the SMSM.

Reporting obligations

Note for micro-SMSM users: The reporting obligations subsection is described in the micro-SMSM under the heading - *Internal reporting system - reporting obligations and process*.

The SMSM contain two levels of reporting obligations and responsibilities:

1. **Voluntary reporting**—for use by personnel to report potential safety issues, including safety occurrences, errors, accidents, incidents, hazards, potential hazards and any identified safety deficiency, including fitness-for-duty (fatigue, drug, alcohol) related occurrences. These are classified as ‘safety related matters’ for the purposes of the safety management system. The internal reporting system is used for this purpose.
2. **Mandatory reporting**—for use by personnel and your organisation when an incident or accident has occurred, or to report any of the matters required by Transport Safety Investigation Regulations (TSI Regulations). The Australian Transport Safety Bureau (ATSB) Aviation Occurrence Notification system is to be used for this purpose.

For ATSB mandatory reporting requirements, reportable safety occurrences are classified as:

1. Immediately reportable matter (IRM): Reported to the ATSB by telephone as soon as practicable and a written report submitted within 72 hours.
2. Routine reportable matter (RRM): A written report submitted to the ATSB within 72 hours.

ATSB Reporting:

- For immediately reportable matters call the ATSB on 1800 011 034.
- For routine reportable matters, complete the [ATSB Occurrence Notification - Aviation](#) form.

Any mandatory matter reported to the ATSB should also be reported in the organisation’s internal reporting system.

Internal reporting system

The SMSM describe a process for personnel to report safety information internally through a reporting system the organisation has made available for the purpose. The SMSM are supported by a reporting form titled *Form SMS-CSR - Confidential Safety Report Form*. Your organisation can choose to use this form, or other alternatives may be the use of a paper form, an online form (e.g., developed in Microsoft Forms) or a third-party online platform.

The reporting process described in the SMSM contains details of actions to be conducted by the person reporting, the safety manager, and the CEO. On receipt of a safety information report, the safety manager (or CEO) must conduct a risk assessment to determine the risk tolerability criteria of the reported safety matter. For risks assessed as ‘intolerable’ the CEO must be notified, and your organisation’s management team determine the appropriate actions to either implement controls to mitigate the risk to a tolerable level or suspend the operations or specific activity. It is expected that your organisation will determine if the risk tolerability criteria and actions described in the SMSM are appropriate for the size, nature and complexity of your organisation, and make appropriate changes where necessary.

The SMSM contains an SMS output for use of the internal reporting system. The intention of the SMS output is to review the volume of voluntary reports submitted, and ideally to show a trend in increased reporting. This can be a useful measure to determine that personnel are aware of their reporting obligations, are confident to report, and the organisation is managing reported information appropriately. However, caution should be taken that reporting behaviours are not developed simply for the purpose of meeting monthly/annual reporting targets, as this may have a detrimental effect on the organisation’s ability to collect useful hazard information.

SMS output - Use of the internal reporting system is a reviewable SMS output

Note for micro-SMSM users: The use of the internal reporting system is not included as an SMS output in the micro-SMSM.

Forms related to this SMSM process

Form	Description and purpose
Form SMS-CSR - Confidential Safety Report Form	To be used for reporting a safety matter or hazard
Related forms	
Form SMS-HRR - Hazard and Risk Register	To record the details of identified hazards and their associated risks and controls.
Form SMS-MR - Management Review	To record management review actions related to safety risk management processes of the SMS (e.g., safety occurrence and investigation review, hazard and risk register review).

Internal safety investigations

The SMSM describe investigation triggers, personnel responsible for actioning investigations and the investigation process.

Safety investigations are conducted as part of an organisation’s SMS to support hazard identification and risk assessment processes. Safety investigations are used to analyse hazards, safety occurrences, deficiencies, or to identify weaknesses in risk controls, and report findings and recommendations that can transform safety occurrences into actionable learning opportunities for your organisation.

Overview: Investigation is a necessary activity within any SMS, regardless of organisation size. Investigations should be viewed for their opportunity to support organisational learning, identify new or unforeseen hazards, and to correct deficiencies in organisational processes so that repeat errors or non-compliances do not recur. An overarching principle of any safety investigation is that the focus should be on finding what went wrong and why, rather than who caused the error or omission. The emphasis should be on learning and improvement of safety performance.

Investigations should be conducted into reported matters or audit findings involving non-compliance with company procedures or regulatory requirements. The focus should be on identifying system, organisational,

or procedural deficiencies that led to the non-compliance, rather than assigning individual blame. Expanding on the principles described above, importance should not be to identify “who did it” but to determine why the non-compliance occurred. However, investigations must distinguish between errors and intentional or wilful non-compliance. Appropriate actions should be considered by reference to the organisation’s just culture policy and decision-making process, and all identified non-compliances managed through the organisation’s corrective actions processes.

Human performance and organisational considerations should be included in investigations and other SMS processes (risk assessment and mitigation, management of change), as this is helpful to assist your organisation understand the ways in which people interact with the operational environment, equipment, procedures, and other personnel. Organisational factors should be considered to assist in identifying safety deficiencies or conditions from an organisational, management decision-making, and system-wide perspective.

Appendix C - Safety Investigation Guide, and *Form SMS-BSI - Basic Safety Investigation* each contain guidance for including human performance and organisational considerations in SMS processes.

Implementation strategy: Investigations can be performed by the safety manager and with assistance of other personnel or by use of subject matter experts (SME) to provide technical expertise. The results of investigations should be documented, as these are an SMS record which should be retained for future review (refer section 1.5 previously). Investigation records can be recorded in paper documents, electronically, or by third-party software. *Appendix C - Safety Investigation Guide* contains guidance on conducting and documenting safety investigations.

The SMSM describe matters that can be considered to initiate an investigation (safety investigation triggers) and the type of investigation (detailed or basic investigation). A detailed investigation could involve following the complete process in Appendix C, and a basic investigation could simply involve a desktop exercise and the recording of relevant information in *Form SMS-BSI - Basic Safety Investigation*.

Scalability considerations: Smaller organisations may not have the personnel, knowledge or experience to develop a process to conduct investigations. Consideration may be given to utilising services outside your organisation or contracting services from a third-party provider. The safety investigation guidance provided in Appendix C will assist developing a structured and documented investigation process, which should support safety management personnel develop relevant conclusions as long as they remain objective.

It is expected that your organisation will modify the safety investigation triggers, process and investigation timelines described in the SMSM so they are appropriate for the size, nature and complexity of your organisation.

Forms related to this SMSM process

Form	Description and purpose
Form SMS-BSI - Basic Safety Investigation	Use to document the outcomes of safety investigations. The form supports the investigation process described at subsection 2.1 of the SMSM.
Related forms	
Form SMS-IA - Internal Audit	Use to assist with management of corrective actions as a result of investigation processes.
Form SMS-MR - Management Review	Use to record management review actions related to safety risk management processes of the SMS (e.g., safety occurrence and investigation review, hazard and risk register review)
Form SMS-HRR - Hazard and Risk Register	Use to record the details hazards identified during investigations and their associated risks and controls.

Hazard identification – other internal sources

The review of your existing organisational processes and activities provide opportunities to identify hazards in addition to voluntary and mandatory reporting.

Overview: The review and evaluation of the outputs of internal audits and management of change processes provide an opportunity to identify the existence of, or potential for safety deficiencies or hazards. Internal audits can identify non-compliance with procedures or regulations, and if safety risk controls are being used as designed and having the intended effect on safety risks. Systematic and structured management of change process will assist in the identification of new hazards, or the impact of changes on existing safety risk controls.

The experiences and observations of your personnel in the workplace or operational environment provide opportunities to learn about hazards and safety matters that your organisation may otherwise not be aware of. This information can be provided by personnel (personnel feedback) during SMS training, safety meetings or during other organisation meetings and forums.

Implementation strategy: The SMSM describe three methods that can be utilised as internal sources of hazard identification (internal audits, management of change processes, personnel feedback). Your organisation is likely to be performing these processes as routine operational activities already. The primary consideration to implement these into SMS processes is to ensure each process is documented and hazard identification opportunities are not lost. For hazard information provided through personnel feedback, the preferred method of notification is the internal reporting system, as this facilitates investigation and formal risk assessment if required.

Hazards identified during internal audits, management of change processes and by personnel feedback should be documented in a hazard and risk register to assist with management, monitoring, and future review of hazards that may affect your organisation's operations. *Form SMS-HRR - Hazard and Risk Register* is designed for this purpose.

Scalability considerations: The safety manager is responsible for managing internal hazard identification processes. For micro-operators, this responsibility may rest with other key personnel such as the CEO or HOFD/HOO. Regardless of the size of the organisation, the management of hazards or deficiencies identified during internal audits or management of change processes remains the same. Personnel feedback opportunities for smaller organisations may involve more informal methods such as 'hangar or lunchroom safety talks' or simply by 'open door' communications with key personnel.

Hazard identification – external sources

The SMSM contain a process to access and review external sources of safety information as part of the organisation's hazard identification processes. External sources of safety information can be particularly helpful for smaller organisations with low volumes of internal reporting.

Overview: To supplement and contribute to your organisation's hazard identification processes, external sources of safety information may be periodically accessed and reviewed, including the outcomes from external safety assurance activities (audits) to assist in identifying hazards that may impact safety.

The primary objective of reviewing external sources of safety information is to broaden your organisation's knowledge and understanding of hazards and accident/incident precursors that may have potential to impact the safety of your operations, and to learn from the experiences of other industry stakeholders. This may include the review of investigation findings (e.g., by accident investigation agencies) and determine if your organisation needs to implement risk controls to prevent a similar safety occurrence in your operations.

Example:

An operator of Cessna 206 aircraft may access an aviation occurrence database and conduct a search for occurrences involving C206 aircraft for the previous 12-month period. When reviewing the search results, an occurrence is found that involved a delay in the search-and-rescue for the aircraft as a result of inappropriate actions in activating the accident organisation's emergency response plan. The organisation reviewing the occurrence decides to implement a risk control by increasing the frequency of emergency response plan desktop exercises to ensure all personnel are familiar with the ERP.

Implementation strategy: The SMSM include suggested links to occurrence databases that may be accessed and searched to assist with the review of safety information relevant to your organisation, (e.g., aircraft types/models used, type of flying activities, etc). These are suggested external resources. Your organisation may also consider access to other external sources to assist with hazard identification. These may include:

- Industry association membership (e.g., Regional Aviation Association of Australia, Australian Helicopter Industry Association, Australian Business Aviation Association, Australian Aviation Psychology Association)

- Flight Safety Foundation website resources
- Eurocontrol safety and human factors resources (HindSight magazine)
- Aviation safety conference and workshop attendance
- Attendance to CASA AvSafety seminars
- Networking with similar industry operators and sharing and exchanging safety information
- Subscription to periodical safety journals (CASA Flight Safety Australia, Aerosafety World).

Ensure each external source of safety information activity is documented and the hazard and risk register updated for any new hazards identified by the organisation.

Appendix D - ATSB Database Access contains a short example of accessing and reviewing safety information contained in the ATSB National Aviation Occurrence Database.

The outcomes of audits conducted by CASA or other external agencies are useful for identifying deficiencies in organisational systems, policies and procedures. Any non-compliance with standards, regulatory requirements or company procedures should be investigated, risks assessed and the relevant corrective actions taken. Hazards identified during external audit processes (non-compliances) must be documented in the hazard and risk register.

Scalability considerations: Accessing and reviewing external sources of safety information is particularly helpful for small organisations that experience low reporting volumes or may not have the personnel and resources to attend safety workshops, seminars or conferences.

External review of safety information activities may also be included in other SMS processes to assist with efficient use of organisational resources of time, personnel and flying schedules. For example, the organisation may schedule a management review activity (subsection 3.1 of SMSM), external safety information review (subsection 2.1 of the SMSM) and personnel safety communication activity (subsection 4.1 of the SMSM) during a single meeting scheduled for the purpose of these SMS processes. An example how a micro-operator could achieve this may involve:

- The CEO schedules a safety review team (SRT) meeting. The CEO is also the safety manager position holder. The HOFO is the other permanent member of the SRT.
- The organisation employs two pilots who both attend the SRT meeting with the CEO/SM and HOFO.
- The CEO/SM delegates one of the pilots to access and review the ATSB National Aviation Occurrence Database to search for Robinson R44 occurrences for the previous 12-month period. The HOFO is asked to review the emergency response plan, and the second pilot is asked to review the SMS manual.
- At the completion of each of the review actions, the SRT and two pilots discuss any deficiencies that require corrective actions with the ERP and SMS manual and record these outcomes in *Form SMS-MR Management Review*.
- The team discusses the ATSB occurrence database search results and reviews each occurrence to determine if any are relevant to the organisation's operations.
- Occurrences that are determined to include beneficial safety information are examined through the lens of safety education, hazard identification and risk reduction. This element of the meeting can be documented by using *Form SMS-PSM - Personnel Safety Meeting Agenda*.
- If the SRT decide that any hazards identified during the occurrence review should be added to the Hazard and Risk Register, a risk assessment can then be performed and the appropriate risk controls determined. These outcomes would be documented using forms *SMS-RAP - Risk Assessment Process* and *SMS-HRR - Hazard and Risk Register*.

The organisation has achieved numerous SMS actions, and SMS outputs, including:

SMS output - access and review of external sources of safety information is a reviewable SMS output

Hazard and risk register

The SMSM contain a policy and process to maintain a hazard and risk register. The hazard and risk register is intended to be used as a record of hazards associated with your organisation’s activities or identified through internal and external sources, how hazards are being mitigated and controlled, and who in your organisation is responsible for monitoring the risks associated with each hazard.

Overview: Maintaining a hazard and risk register ensures your organisation retains awareness of known and previously identified hazards. When hazards are identified, they can be cross-checked against previously recorded hazards to determine what actions were taken to mitigate the risks of the hazard. A well-developed and maintained hazard and risk register can be used to support consistent, and defensible risk-based decision making by your organisation. Additional benefits to maintaining a hazard and risk register include:

- It is a source of safety knowledge directly related to the size, nature, complexity, and risks associated with your organisation’s operations and may be used as a reference in safety decision making.
- It provides a source of safety information to assist with trend analyses and can be useful for safety training and communication activities.
- It can be useful to assist with internal or external audit activities, and new change management processes to monitor the performance of risk controls.

Implementation strategy: A hazard and risk register has been developed for the SMSM to support your organisation’s hazard and risk management processes. *Form SMS-HRR - Hazard and Risk Register* is provided for this purpose. It is a simple Excel worksheet and can be modified to suit your operations.

Form SMS-HRR - Hazard and Risk Register is pre-populated with five risks, which include: controlled flight into terrain (CFIT), loss of control in-flight (LOC-I), mid-air collision (MAC), runway excursion (RE), and runway incursion (RI). These risks are included as they have historically resulted in the most significant unsafe outcomes in commercial aviation operations and continue to feature prominently in accidents and incidents worldwide. These risks are categorised as global high-risk categories of occurrences (G-HRCs) and are included in *Form SMS-HRR - Hazard and Risk Register* for your organisation’s awareness and efforts to address and mitigate the safety risks associated with these types of occurrences.

Although your organisation may not have been directly affected by these accident types, including them in your hazard and risk register and your SMS education and communications activities assists personnel understand the risks, and controls to prevent these accidents from occurring in your operations.

Scalability considerations: The safety manager is responsible for maintaining the hazard and risk register. The CEO of an eligible micro-operator that has elected to be the safety manager position holder is responsible for this activity.

Forms related to this SMSM process

Form	Description and purpose
Form SMS-HRR - Hazard and Risk Register	Use to record the details of internally and externally identified hazards and their associated risks and controls.
Related forms	
Form SMS-MR - Management Review	Use to record management review actions related to safety risk management processes of the SMS (e.g., safety occurrence and investigation review, hazard and risk register review)

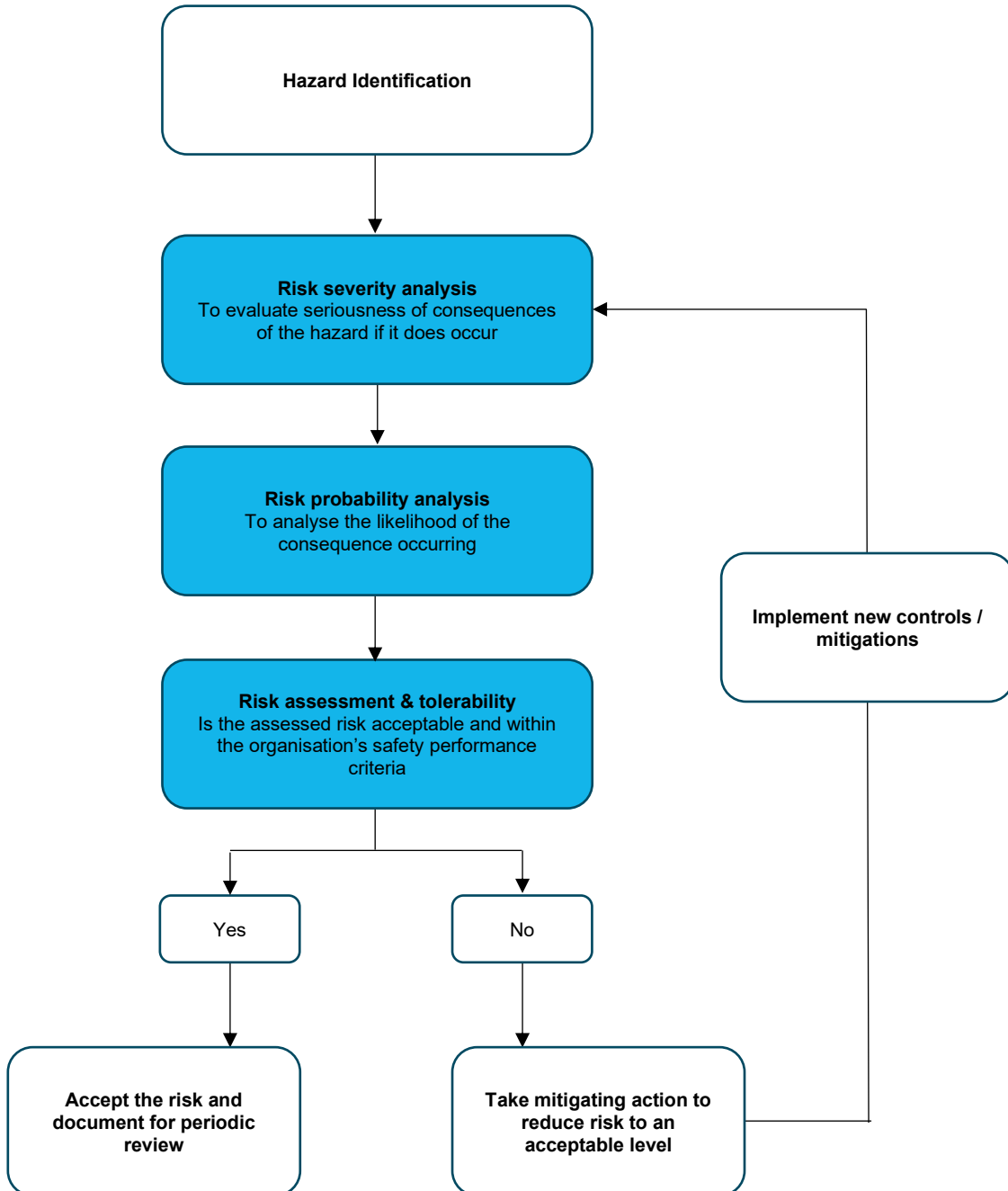
2.2 Safety risk assessment and mitigation processes

The SMSM describe processes to assist assess risks associated with identified hazards, establish risk controls, and to apply controls with the aim of reducing risks associated with your organisation's operations to an acceptable level.

There are many risk assessment methods available to organisations. If the risk assessment method or model used by your organisation is different from version 1.0 of the SMSM, it is expected your existing risk assessment and mitigation process will be documented and integrated into your SMS. This is important to ensure all personnel are performing risk assessments consistently within your organisation.

Figure 3 outlines the safety risk assessment and mitigation process described in version 1.0 of the SMSM.

Figure 3: Risk assessment process



Relevant references

CASR	119.190(2)(b)(ii), CASR 138.145(b)(ii)
AC	AC 119-01 Section 6.3
AMC/GM	AMC/GM Part 119 Section 7, AMC/GM Part 138 Subsection 3.6
OPS.08 PPW	Element 2.3.2 principle document
SMS resource kit	Booklet 3 - Safety Risk Management

Human performance (HP) integration into SMS:

- It is understood personnel may perceive the risks associated with hazards differently and variation in risk assessment may be influenced by experience, age, competence, operational pressure (perceived or real), or experience with previous risky decisions resulting in favourable outcomes.
- Management strives to understand risks that may result from human performance issues and their interaction with policies, procedures, equipment, technology, other people, training and the environment.
- Organisational factors that have the potential to create hazards or errors, such as high workload, pressure, distractions, inadequate equipment or procedures are considered.
- How personnel interact with existing or proposed risk controls is considered and if there is any risk of workarounds or trade-offs with the controls, these are addressed.
- The management of change process is followed to consider influences on human performance for any modification to, or proposed implementation of new procedures, systems, equipment or personnel.

Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.

Overview: The risk assessment and mitigation process involves determining risk severity and probability, and risk tolerability and control.

Risk severity and probability

For each identified hazard, your organisation should assess the severity of any potential for injury, damage or loss (i.e., the potential consequences) that could arise from an incident or accident involving the hazard, followed by an assessment of the probability or likelihood of the consequences occurring. It is important to ensure that severity and probability are assessed with reference to the potential consequence of exposure related to the hazard, rather than with reference to the hazard itself.

When determining severity, don't always assume the worst possible outcome (e.g., loss of life or destruction of equipment or property). It is important to involve your organisation's personnel and their expertise, experience, and judgement to assist arriving at valid risk assessments. This may involve assessing multiple severity and likelihood outcomes and comparing each with appropriate controls for each scenario. It is equally important to use data and information from the hazard and risk register, previous investigations, and information from other industry stakeholders where available. A review of accident statistics, accident investigation reports, CASA [Sector Safety Risk Profiles](#) and annual safety reviews (e.g., [ICAO Safety Report](#), [IATA Safety Report](#), [EASA Annual Safety Review](#)) can also be helpful to identify new and emerging risks.

The SMSM include a table and process to determine safety risk severity and probability. It is important that all personnel required to conduct risk assessments are trained in the process to ensure consistent risk assessment results, and the process is suitable for the size, nature and complexity of your organisation.

Risk assessment and tolerability

Once the risk severity and probability have been assessed, your organisation must determine if the risk is acceptable. The SMSM contain a risk matrix for this purpose. The risk matrix integrates the effect of severity of the outcome and probability of occurrence to allow the assignment of a numerical risk index and risk category of low, medium or high.

Your organisation must decide if the risk matrix contained in each version of the SMSM is appropriate for the size, nature and complexity of your organisation. If it isn't, it is expected your organisation will develop risk severity and likelihood criteria that are suitable for your organisation and operating environment. For example, severity levels may be defined in terms of dollar value of potential damage or loss, and risks may be categorised as what is determined to be important to your organisation, e.g., safety risks, financial risks, reputational risks, environmental risks, personnel risks).

Risk assessments are based on your organisation's experience, competence, and ability to make un-biased judgements (e.g., managing role conflict of interest risks). If the person conducting the risk assessment determines that a risk is acceptable, the process would be complete at that point. The risk assessment documentation should include why this decision has been made. If the risk assessor determines that the risk is not acceptable, the risk can be evaluated by the safety review team, and the safety risk management process continues with the development of risk controls until it is determined the risk is acceptable.

Your organisation's risk assessment and tolerability process must include immediate actions to be taken to prevent exposure to unacceptable risks, identify management personnel with authority to make risk acceptance decisions, and when these actions and decisions are to be made. For example, the SMSM include a policy and process where the CEO must be notified for any risk assessed as 'intolerable' and the relevant activity must either be stopped, or immediate risk control actions taken to reduce risk to a level that is tolerable or acceptable. This process recognises that some hazards will remain in the operational environment and provided appropriate risk controls are implemented and monitored to reduce the severity of the consequences of the hazard, the risk will be tolerated to a level that is acceptable to the organisation.

Your organisation must ensure all risk assessment and tolerability decisions are documented and where required, risk acceptance decisions are endorsed by the CEO or other authorised key personnel. Each SMSM form containing a risk assessment process is designed to document all risk assessment and tolerability decisions, including CEO endorsement.

Risk mitigation and control

The SMSM contain policy and processes to assist your organisation manage safety risks to an acceptable level by identifying, developing and implementing risk controls. If the risks associated with a hazard are determined to be unacceptable, you should identify and implement appropriate risk controls to mitigate the risks to a level that is acceptable to your organisation.

A risk control is a measure or actions put in place to reduce or eliminate the effects of hazards and could include any measures that would reduce the likelihood or severity of a potential incident or accident. Risk controls could include revising a process or system, modifying operational procedures, training, supervision, new equipment, software, changes to personnel arrangements or placing limitations on certain activities. Once risk controls are identified, prior to implementation, the proposed controls should be assessed for their effect on overall risk. This process should be repeated until a combination of controls reduces the risk to a level that is acceptable for the organisation.

Typical risk mitigation and control approaches may involve either *mitigating* the risk, *eliminating* the risk, *transfer* of the risk, or *avoidance* of the risk, which may be recalled by use of the acronym META. These approaches involve:

Mitigate the risk - mitigate the consequences of a hazard by either reducing *exposure* to the consequences of a hazard (i.e., reducing the likelihood component of the risk), or by reducing the *severity* of the consequences of the hazard (i.e., reducing the severity component of the risk). It is generally more practical to reduce exposure to the consequences of a hazard rather than attempting to reduce the severity. Risk mitigation is a widely used strategy in aviation and involves the use of risk controls. This strategy is suited to hazards that are permanent or recurring and cannot be eliminated. For example, seasonal bird migration near an aerodrome (wildlife hazard) may require specific action to be taken during the migration period (e.g., bird scaring, issuing NOTAMs).

Eliminate the risk - eliminate or remove the hazard entirely, along with its potential consequences. This is only possible if the hazard can be totally eliminated by conventional corrective actions such as repair, replacement, rectification or complete disposal of the hazardous condition or object. This approach is suitable for hazards that are temporary, isolated, or otherwise capable of being fully removed without ongoing risk mitigation measures. For example, the rubber layers that construct an aircraft tyre are worn down on one area, to the extent that the inner canvas material is exposed. To eliminate the risk of runway excursion which may result from a tyre blow-out (the hazard), a new tyre is fitted to the aircraft before the next flight.

Transfer the risk - risk transfer involves assigning ownership or responsibility of a risk to another entity that is most capable of managing it. The receiving entity must formally acknowledge and accept the responsibility for the risk. While risk transfer can be a valid mitigation strategy, it cannot be the only method used to mitigate high risks associated with a hazard. Safety risks must still be mitigated to medium or low before being acceptable. An example of risk transfer is the delegation of aircraft separation responsibility to the flight crew from air traffic control in applying visual separation procedures between aircraft. Another common example is the transfer of financial risk of aircraft hull loss to your insurance company.

Avoid the risk - this strategy involves avoiding the hazard (and its potential consequences) altogether by modifying, suspending, or cancelling the operational activity, or a relevant part of it. This strategy may be used when a safety risk remains intolerable despite all possible (or economically viable) controls being considered. An example is the suspension of several flight departures when there is severe weather (thunderstorms and lightning) activity at an airport.

The risk assessment and tolerability process (Steps 1 through 4 of the SMSM) form the basis for deciding on the implementation of appropriate risk controls. Risk control actions must consider the consequences associated with both intolerable and tolerable risks and what controls are both reasonable and practicable to reduce the risk further.

As the CEO is responsible for resourcing the SMS, most risk control measures will require resourcing to some extent, therefore the CEO is responsible for endorsing the implementation of risk controls. After controls have been implemented, the safety manager (or CEO, HOFO/HOO of a micro-operator) are responsible for monitoring their effectiveness.

An important consideration for your organisation and personnel is awareness that after the implementation of risk controls, if the risk is determined to be tolerable, does not mean the risk has been eliminated. Some level of risk remains; this is often referred to as 'residual risk'. The organisation must determine if the residual risk is acceptable, and that the controls implemented to mitigate the risk remain effective.

Implementation strategy: The SMSM contain a risk control implementation process. The process involves three steps (risk control selection, implementation, and monitoring for effectiveness).

Determine and select risk control

A good starting point when determining and selecting risk controls is by asking:

- What controls, if any, are already in place for controlling the hazard?
- Are the present controls effective?
- What variabilities could influence control effectiveness?
- What is the residual risk if the controls fail?

Risk controls have been implemented in the aviation system for many years, providing the industry with the benefit of decades worth of control development, refinement and improvement. Your organisation is most likely familiar with and already using risk controls, for example aircraft weather radar is a control to mitigate the risks associated with the hazard of thunderstorms. It is therefore useful to identify hazards and their associated controls together, as they almost always typically coexist, and then evaluate the effectiveness of the controls using the SMSM risk assessment process. The importance of identifying and evaluating existing controls is that close examination will usually reveal variation in the intended performance of the controls. For example, the control 'aircraft weather radar' may be ineffective if the pilot did not receive training in its use and limitations.

It is equally important for your organisation to consider new and emerging hazards and to develop corresponding controls, ensuring that your organisation's risk mitigation measures evolve in step with changes in the aviation system. For example, it is highly likely that in the near future, conventional (crewed) aircraft you are operating now will be sharing the same airspace and airports with uncrewed and remotely piloted aircraft, and it is likely that cyber threats will increasingly target the aviation industry.

You can use the SHELL or organisational model described at *Appendix C - Safety Investigation Guide* of this document to assess possible human factors issues on the effectiveness of controls. The model is also replicated in SMSM forms SMS-BSI - Basic Safety Investigation and SMS-RAP - Risk Assessment Process.

Once your organisation has determined the suitability of risk controls, you should ensure:

- They are implementable - the control is of limited hazard reduction value if it cannot be practically implemented.
- The controls are clearly and unambiguously described to personnel who will be required to implement or use the controls. This includes the updating of manuals and checklists where aircraft operating procedures have been modified.
- They should be documented - the controls are documented with sufficient clarity and detail to ensure all personnel, including those not directly involved in the process or activity can gain an understanding of how and why the controls were chosen.

- Relevant training is conducted - depending on the complexity of the controls, training of personnel may be required to ensure correct application and ongoing effectiveness of the controls.

Implementation of risk controls

Once risk controls are identified, responsibility for their implementation must be assigned to appropriate personnel (e.g., flying operations, maintenance department, senior management). You must assess whether the 'controlled' risk is acceptable and whether the control introduces any unintended consequences or new hazards. For example, as a security control an operator bans certain electronic devices in the aircraft cabin and requires those devices to be carried in the cargo locker. The unintended consequence of the security risk control is the creation of a safety risk (fire hazard) from lithium-ion batteries in a part of the aircraft that is inaccessible during flight.

You must also evaluate whether any remaining risk (the residual risk) is tolerable after the proposed risk controls are implemented. The SMSM require the CEO to endorse the implementation of risk controls.

Measure and monitor effectiveness of risk controls

The final step in the risk control process is to evaluate the effectiveness of the implemented controls. This is primarily a safety assurance function of the SMS. The SMSM include the monitoring and review of risk controls in the management review and internal audit processes described in subsection 3.1. Depending on the complexity of controls and the risks they are intended to mitigate, it may be necessary to repeat the SMSM risk assessment process (steps 1 to 4) to ensure the risk has been reduced to a tolerable level. This process should also verify that no new hazards have been introduced and that the existing controls remain effective. If the residual risk remaining is intolerable, the controls must be redesigned or new controls developed, and the SMSM risk assessment process (steps 1 to 4) repeated.

If after applying all possible risk control and mitigation measures, the risk cannot be reduced to a level acceptable to your organisation, the risk must be considered as unacceptable. In such cases, the original risk mitigation objectives should be reassessed, or in some cases, the proposed mitigations abandoned. In circumstances where risk remains intolerable, in accordance with the risk tolerability process and policy described in subsection 2.2 of the SMSM, the affected area of your operations must stop.

All risk assessments, decisions, and outcomes must be documented within the safety management system.

Scalability considerations: While there is no appreciable difference between the expected risk mitigation and control outcomes between a small organisation and a larger organisation, how you document, communicate, and monitor risk mitigation and control processes may vary based on the size, nature and complexity of each organisation.

In smaller and less complex organisations the risk control process could be performed by the CEO, HOFO or other employees in conjunction with the hazard identification and risk assessment processes performed during an investigation into a safety matter. This is appropriate as the CEO or HOFO already has a good understanding of the most significant risks the organisation is exposed to, and any control measures that can be readily applied.

Organisations that are more complex may have the risk control process performed by the safety manager, the safety review team, subject matter experts and other risk stakeholders to design and implement the controls. The CEO should be included in the risk control process, as controls generally involve resources, and it is the CEOs responsibility to ensure safety management resources are appropriately allocated.

Forms related to this SMSM process

Form	Description and purpose
Form SMS-BSI - Basic Safety Investigation	To document investigations, the pre-control risk assessment, control selection, implementation and monitoring actions, post-control risk assessment, and CEO endorsement.
Form SMS-CSR - Confidential Safety Report	For personnel to report hazards, include an initial risk evaluation, for the safety manager to manage the report (feedback to reporter), pre-control risk assessment, control selection, implementation and monitoring actions, post-control risk assessment, and CEO endorsement

Form	Description and purpose
Form SMS-RAP - Risk Assessment Process	To document any risk assessment not associated with a reported matter or investigation, pre-control risk assessment, control selection, implementation and monitoring actions, post-control risk assessment, and CEO endorsement
Form SMS-HRR - Hazard and Risk Register	To document risk and hazard types, consequences of hazards, existing controls, risk assessment and tolerability criteria, controls and actions taken to mitigate the risk, residual risk rating, risk owner and monitoring requirements

3. Safety Assurance

Section 3 of the SMSM describe the processes that are designed to assess the effectiveness of the SMS, including effectiveness of safety risk controls, and that the SMS is operating according to management's expectations and regulatory requirements. The SMSM safety assurance processes comprise three primary elements:

1. Safety performance monitoring and measurement—the verification and validation of safety performance and safety risk controls by establishing and monitoring safety performance indicators, and the conduct of internal audits.
2. Management of change—the processes utilised to ensure organisational or operational changes are managed effectively to identify new hazards, and any change-related safety risks are assessed and controlled.
3. Continuous improvement of the SMS—the processes utilised to conduct ongoing monitoring and validation of the SMS through verification by audits, reviews and periodical assessments.

3.1 Safety performance monitoring and measurement

The safety performance monitoring and measurement process is utilised to verify operational safety performance against the safety policy and objectives described at subsection 1.1 of the SMSM. This can be achieved by:

1. Setting safety performance indicators (SPI) that are aligned with your organisation's safety objectives.
2. Internal audits and reviews are performed to assess compliance with SMS policies and procedures, civil aviation legislation, effectiveness of safety risk controls and the overall effectiveness of the SMS.

Relevant references

CASR	119.190(2)(c)(i), CASR 138.145(c)(i)
AC	AC 119-01 Section 7, 7.1
AMC/GM	AMC/GM Part 119 Section 7, AMC/GM Part 138 Subsection 3.6
OPS.08 PPW	Element 2.4.1 principle document
SMS resource kit	Booklet 4 - Safety Assurance

Human performance (HP) integration into SMS:

- The CEO assures there are sufficient personnel and resources to deliver on the organisation's safety objectives.
- All levels of management allocate workload to ensure personnel can effectively accomplish their safety management responsibilities.
- Safety performance indicators and targets where possible are linked to human performance measures.
- The organisation's internal audit process provides adequate guidance to audit personnel to ensure audits are performed to the CEO expectations.
- Management ensures goal-conflicts that may influence internal audit focus and outcomes are appropriately managed by use of independent audit personnel where resources permit.

[Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.](#)

Overview: A common mistake in measuring safety performance is to focus only on whether your organisation has had any serious incidents or accidents, as these are easy to measure and attract more attention. A sole focus on high-consequence occurrences should be viewed with caution, because accidents and serious incidents are rare and relying on them alone can create a false perception that operations are safe. This narrow focus may also prevent your organisation from identifying system deficiencies, unknown hazards, or conditions that could act as pre-cursors to future occurrences. Safety is not merely the absence of accidents or incidents. It depends on identifying emerging and unforeseen hazards, maintaining effective safety risk controls, and counteracting any reduced effectiveness of those controls over time. The safety

performance monitoring and measurement processes described in the SMSM, if implemented effectively, will assist verification of your organisation's safety performance in line with your safety policy and objectives.

A starting point for your organisation's safety performance management processes is to ask:

1. What are your organisation's top safety risks? - at initial SMS implementation this information can be obtained by workshopping with personnel. The CEO and HOFO of smaller organisations will have a good understanding of the organisation's risks. As your organisation's SMS processes mature, this information can be collected from the voluntary reporting system, investigations, and internal audits.
2. What does your organisation want to achieve in terms of safety, and which safety risks must be prioritised? - this information is described in your organisation's safety objectives (Section 1 of the SMSM).
3. How will you know if your organisation is making progress towards achieving your safety objectives? - by setting performance indicators against the outcomes of organisational (and safety management) activities and processes that are linked to your safety objectives and are measured by setting a target. These are your safety performance indicators (SPI) and safety performance targets (SPT).
4. What safety data and information can be used to evaluate if SPIs and SPTs are measuring their intended outcomes? - voluntary reporting system information, investigations, management review of SMS processes, internal and external audits.

Implementation strategy: The SMSM contain processes to assist your organisation collect data and information from activities that your organisation is most likely already doing, and from a number of SMS activities that may be new to your organisation (e.g., internal/external hazard identification, internal audits). The SMSM assists your organisation implement safety performance monitoring and measurement processes in line with some basic principles that the SMSM defines:

1. Safety objectives - that are described at subsection 1.1 of the SMSM, which should reflect your organisation's high level and strategic safety outcomes, and should be developed or modified to be specific to your organisation's operational context. You can find more detailed information related to safety objectives contained in the SMSM at section 1 of this user guide.
2. Safety performance indicators (SPI) - are the measurement *criteria* related to the high-level safety objectives that are described in the safety policy at subsection 1.1 of the SMSM. SPIs are used as a reference to measure the outputs of SMS and organisational processes.
3. Safety performance targets (SPT) - are the measurement *targets* which are related to a SPI that are used to monitor the progress towards achieving your organisation's safety objectives.
4. Internal audit process - is used as an internal check of compliance with your SMS policies and procedures, and to identify areas that may require improvement.

The safety objectives at subsection 1.1 of the SMSM are intentionally 'process-oriented', (refer to section 1 of this guide for description). Together with the safety performance indicators at 3.1 of the SMSM, they provide performance measures for the initial implementation of your organisation's SMS while data collection from SMS processes is still developing. Once your SMS processes mature, including the identification of hazards, you should consider including 'outcome-oriented' safety objectives in your safety policy to better measure performance in reducing and containing incidents and other potential operational losses.

Scalability considerations: In smaller and less complex organisations, safety data and safety information collection often relies on routine operational activities performed by management directly involved in day-to-day operations, such as the CEO, HOFO (or HOO). This may include monitoring routine operational data for any safety significance, such as pilot fatigue reports, aircraft minimum equipment list deferred defects, fuel and oil consumption records, or external alerts (e.g., Airservices Australia airspace infringement notification). Use of data from these sources can assist your organisation understand areas of higher risk and develop safety objectives to manage those risks.

Organisations that are more complex may involve multiple levels of management in safety performance monitoring processes, that include at minimum the safety manager and CEO. Other personnel such as the HOFO and HOTC can assist by providing relevant data and information from their functional areas.

Regardless of the size, nature and complexity of your organisation, personnel that are trained and understand that their responsibilities also include safety performance monitoring during the normal course of duties can assist your organisation review day-to-day activities and detect operational inconsistencies and potential safety issues.

Safety performance indicators and targets

The SMSM describe Safety Performance Indicators (SPIs) and Safety Performance Targets (SPTs), which assist your organisation measure operational safety performance, identify irregularities in safety performance, and assess overall SMS effectiveness. Version 1.0 of the SMSM contains SPIs and SPTs relevant to the initial implementation phase of your SMS.

Overview: The organisation's safety performance may be monitored using SPIs and SPTs. SPIs allow comparison of operational safety outcomes against defined targets, help determine whether safety objectives are being met, and support evaluation of SMS effectiveness. SPTs are generally expressed as rates or numerical reductions in specific events over a set period. For example, an air operator might monitor tail strikes, unstable approaches, or runway incursions over a year to identify trends.

As your organisation's SMS processes mature, safety performance measurement should broaden to reflect a wider range of operational activities and their outcomes. This may include monitoring:

- Low-probability and high-severity events (e.g., accidents and serious incidents)
- High-probability and low-severity events (e.g., checklist use errors, communications errors)
- Process performance (e.g., completion of training, continuous improvement, voluntary reporting trends, investigation closure rates).

Achieving an SPT demonstrates an improvement in safety performance. SPIs and SPTs provide an objective and quantitative means of assessing whether desired safety outcomes are being achieved. As your organisation's SMS processes mature, when developing new SPIs, consider the following:

- **Relevance:** Avoid indicators based solely on rare events such as accidents. Prioritise measures occurring regularly within your operations (e.g., number safety issues reported and resolved).
- **Data availability:** In some cases, data may be limited. Adjust data collection methods as needed. Smaller organisations with low volumes or limited data may pool data with similar operators or refer to industry associations or [CASA sector safety risk profiles](#).
- **Data reliability:** Some safety data and information may be subjective or incomplete. Reported safety information in particular may not capture all aspects of an occurrence.
- **Use of generic SPIs:** Generic SPIs may be useful, particularly for smaller organisations. Some examples are provided in *Appendix E*.

Lagging and Leading SPIs

As your SMS processes mature you should use both *lagging* and *leading* SPIs.

Lagging SPIs measure safety events that have already occurred, typically reflecting undesired outcomes the organisation aims to avoid (e.g., accidents and incidents). They include:

1. Low probability/high-severity events - rare but serious occurrences (e.g., accidents). Due to their low frequency, analysing aggregated industry data (e.g., [Flight Safety Australia](#), [ATSB Occurrence Briefs](#), [Vector Online](#), [CASA Sector Safety Risk Profiles](#)) may assist in achieving more useful performance measurement information. An example of this type of SPI would be “*runway excursion due to unstable approach*”.
2. High probability/low-severity events - more frequent occurrences that may not result in an accident or serious incident, but act as precursors for such events. An example of this type of SPI would be “*unstable approach - due to excessive approach speed*”, which indicates the precursor event of a runway excursion rather than the incident or accident itself.

Leading SPIs measure the processes and activities implemented that are intended to influence future safety outcomes. An example of this type of SPI would be “*percentage of flight crew who have completed stabilised approach training*”.

Safety performance targets (SPTs)

SPTs represent short- and medium-term safety performance outcomes linked to SPIs that demonstrate progress towards achieving the organisation's safety objectives. When safety objectives, SPIs and SPTs are developed and aligned using the SMART principle (refer subsection 1.1 of this guide) safety performance is easier to communicate, monitor and verify.

Example:

An organisation has experienced several runway excursions and during investigation found 12 reported unstable approach occurrences in one year (e.g., precursor events to a runway excursion). A safety objective is set to reduce runway excursion risk over a four-year period.

1. SMART safety objective selected: “50% reduction in unstable approaches by year four”
2. SPI selected: “number of unstable approaches per year” and
3. SPT selected is a target that equates to an average 12% reduction of unstable approaches per year for the four-year period, for example:
 - SPT for year 1: < 11 unstable approaches
 - SPT for year 2: < 9
 - SPT for year 3: < 8
 - SPT for year 4: < 7

This example demonstrates how safety objectives, SPIs and SPTs are related by use of the SMART principle. The safety objective is *Specific* (reduction in unstable approaches), it is *Measurable* (50% reduction), it is *Achievable* (an incremental reduction over a period of time is more realistic than 100% elimination in a short time), it is *Relevant* (unstable approaches and runway excursions are a high-risk event that has occurred in the operation), and it is *Timely* (a reduction over four years is set).

Avoiding unintended outcomes when setting targets

When setting SPTs there are several considerations you should make to prevent unintended outcomes that can occur, for example performance targets that:

- Drive unintended behaviours - personnel focusing on “hitting numbers” rather than improving safety
- Prioritise quantity rather than quality - personnel direct efforts to achieve the target, but in doing so standards of work suffer.
- Inhibit innovation - efforts are relaxed and a perception that no further improvements are required once a target is achieved.

For example, setting a target to measure voluntary reporting volume may lead to trivial reporting or reduced reporting once the target is reached. For these reasons, if setting an SPT to measure voluntary reporting activity, it is more advisable to monitor trends (increase or decrease of reports).

Implementation strategy: The SMSM contain suggested SPIs and SPTs for initial SMS implementation. The micro-SMSM SPIs and SPTs are contained in *Form SMS-SPI - SPI and SPT register*, and the Part 119/138-SMSM SPIs and SPTs are contained in a table in subsection 3.1. It is expected that your organisation will ensure SPIs and SPTs used in your SMS are suitable for the size, nature, complexity, and risks for your organisation. If any of the suggested SPT values in the SMSM are not appropriate for your organisation, they must be modified.

As the maturity of your organisation’s SMS processes increases, SPIs and SPTs should evolve and be developed to reflect growing safety data volumes and operational insights. You can consider three phases of SMS maturity (refer Figure 1) to guide this development:

1. Implementation phase (nominally 12 months after initial implementation) - Focus is on using your SMS, generating SMS outputs and meeting regulatory SMS requirements. The SPIs contained in version 1.0 of the SMSM are primarily *leading SPIs* reflecting process implementation.
2. Operationalisation phase - (12 - 24 months) Focus is on developing a more comprehensive understanding of operational risks and controls. More operationally specific SPIs, including *lagging indicators*, should be developed on the basis of reported safety data and hazard identification outputs of the SMS (e.g., identified weaknesses and areas where safety improvements are required). A mix of lagging and leading SPIs is optimal.
3. Performance phase - (24 - 36 months) Focus is on continuous learning and improvement of the SMS. Voluntary reporting should be a normalised behaviour, and hazard identification and risk assessment processes should be well established. SPIs should target operational issues and hazards identified internally, and through external sources (e.g., [sector safety risk profiles](#), industry associations, other operators). A balanced mix of lagging and leading SPIs is optimal.

Scalability considerations: In all organisations, the CEO has a regulated responsibility to ensure SPIs and SPTs are established and regularly reviewed. The CEO of a micro-operator who is also the safety manager position holder will be responsible for these requirements. More complex organisations may involve multiple levels of management in the safety performance monitoring processes, that include the CEO and safety manager, where the safety manager is responsible for regularly reporting on the effectiveness of the SMS.

To assist the CEO and safety manager ensure compliance with these requirements, subsection 3.1 of the SMSM contains a management review process at least once every 12 months of safety objectives, SPIs, SPTs, management of change processes, audit outcomes and continuous improvement actions. It is expected that your organisation should set a review frequency (more frequent or less frequent) appropriate for the size, nature and complexity of your organisation, with more complex organisations considering more frequent reviews.

Each management review must be documented and may be scheduled to coincide with safety review team meetings. Outcomes of each management review must be endorsed by the CEO. *Form SMS-MR - Management Review* is provided to support this process.

SMS output - each management review activity is a reviewable SMS output

Internal audits

The SMSM describe a process for your organisation to perform internal audits of your SMS, including who is responsible for conducting the audits and suggested frequency for scheduling the audits.

Overview: Audits are an internal oversight process for your organisation to collect data and information to evaluate if SMS policies and processes are being followed. Internal audits typically involve participation with your operational management personnel and their area of responsibility (e.g., safety manager, HOFO/HOO). The aim of the internal SMS audit is to provide assurance of the effectiveness of safety management processes, and to provide your organisation an impartial and objective assessment of SMS records, processes and procedures to ensure the SMS can achieve expected results.

Your organisation should view internal audits as an activity that adds value to your SMS by identifying areas of non-compliance and opportunities for improvement. To ensure your organisation gains benefit and value from internal audits, you should conduct audits according to seven principles which include:

1. **Integrity:** auditing is performed ethically, honestly and fairly, and in an unbiased manner, with consideration to organisational influences that may affect judgement.
2. **Fair presentation:** audit outcomes, findings and conclusions are reported truthfully and accurately.
3. **Due professional care:** application of diligence, care and judgement appropriate to the importance of the audit activities being performed.
4. **Confidentiality:** information acquired or disclosed during audit activities must be protected. Audit information must not be used inappropriately (e.g., public or external release) or in a manner detrimental to the interests of the organisation.
5. **Independence:** where reasonably practicable, auditors should be independent of the activity being audited (e.g., person conducting the audit should not audit their own area of responsibility). If independence is not practicable, every effort made to mitigate for bias (e.g., peer review).
6. **Evidence-based approach:** audit evidence should be verifiable to ensure reliable and reproducible conclusions can be reached during the audit process.
7. **Risk-based approach:** audits consider both risks and opportunities.

Implementation strategies: Users of the micro-SMSM should find *Form SMS-IA - Internal Audit* appropriate to perform the internal audit process, including recording details of the audit, management of corrective actions, and CEO endorsement. For more complex organisations, subsection 3.1 of the Part 119/138-SMSM describes the process for conducting an internal audit and management of audit outcomes.

Form SMS-IA - Internal Audit is designed to assist you audit all areas of your SMS (all 4 components and 12 elements of the SMS framework). Each audit question in the form is based on the SMS performance evaluation guidance contained in CASA's [\(OPS.08\) Safety management systems assessment principle document](#). The audit questions contained in Parts 1, 2, and 3 of the form are intended to be first used during the operationalisation phase of your SMS to review that your SMS processes are 'operating' according to the

PSOE SMS evaluation principles described at Figure 1 of this guide. As your SMS processes mature, consideration should be given to include audit questions that evaluate the effectiveness of your SMS.

Scalability considerations: The safety manager has a regulated responsibility to manage corrective, remedial and preventative actions in relation to the SMS, and report to the CEO on the effectiveness of the system. The CEO of a micro-operator that is also the safety manager position holder will be responsible for these requirements.

To reduce the workload of performing an internal audit as one scheduled event, consideration can be given to conducting the audit in conjunction with other quality or assurance processes or conducting the audit activities as several smaller sampling events over multiple dates within the required audit period of 12 months (Part 119/138-SMSM) or 24 months (micro-SMSM).

It is expected your organisation will establish the frequency of internal audits (more frequent or less frequent) to a value that is appropriate for the size, nature and complexity of your organisation.

Each internal audit must be documented and the actions and outcomes of internal audits, including the management of corrective actions are to be provided to the CEO.

SMS output - each internal SMS audit activity is a reviewable SMS output

Forms related to this SMSM process

Form	Description and purpose
Form SMS-IA - Internal Audit	Used to record and report audit process and outcomes
Other related forms	
Form SMS-MR - Management Review	Used to review outcomes of internal audits by the safety review team and CEO

Safety assurance activity schedule

The SMSM contain a table in section 3 that describes the safety assurance activity schedule for safety review team meetings, management reviews and SMS internal audit activities, including the personnel responsible for actioning those activities. It is expected your organisation will determine the frequency of your safety assurance activities, and the values in red typeface contained in the table should be modified to be appropriate for the size, nature and complexity of your organisation.

Internal and external interface management

Your organisation must ensure that aviation safety is not adversely affected by products or services that external organisations provide, including risks from internal processes between teams and different internal departments of your organisation. The SMSM manage these as external and internal interfaces.

Overview: Your organisation should consider how internal and external entities interact with the delivery of your operational activities and identify areas where risk could be introduced into your operations. Identifying and managing interfaces, will assist your organisation have greater control over any hazards and risks that may occur as a result of the relationship with the interface.

Some examples of external interfaces could be between your organisation’s flying operations, and:

- Airport operators
- Air traffic control (particularly at Class D towered airports that may have unique local procedures)
- Customers
- Other air operators your organisation contracts services to
- Maintenance and airworthiness service providers, aircraft component suppliers
- Navigation data and aeronautical information providers

- Aviation management software providers
- Ground handlers and refuelling agents
- Contracted flight training providers (including flight simulation providers) and contracted flight examiners

Some examples of internal interfaces could be between your organisation's flying operations, and:

- Maintenance and airworthiness department
- Human resources
- Accounting and finance
- Internal flight training (e.g., Part 141 or 142 operations)
- Flight dispatch
- Marketing and business development
- Departments operating under multiple CASR Parts (e.g., rotorcraft, fixed wing, RPAS)

Example - external interface:

A refuelling installation located at a remote airport your aircraft accesses occasionally, where unknown to your organisation, the fuel installation operator does not perform routine quality checks of the fuel supply and equipment, resulting in algal contamination of the fuel supply. In this example there is a hazard (fuel contamination) with the risk of engine power interruption.

Example - internal interface:

An organisation that conducts both fixed wing and rotary wing operations, where as a result of the temporary unavailability of fixed wing pilots to crew a Part 135 air transport flight, the organisation assigns a rotary wing pilot who also holds fixed-wing authorisations, but has overlooked that the pilot has not satisfied flight review requirements to exercise their fixed-wing privileges. In this example there is a hazard (non-compliance with regulations) due to pilot competency risks.

The overall aim of the internal and external interface management processes of your SMS is to communicate and work collaboratively with external interfaces (that may or may not have an SMS) and internal interfaces, to encourage hazard and safety information sharing with each other when safety issues are identified through the interactions of both entity's processes.

Implementation strategy: Safety risks that may be introduced by internal and external interfaces are often overlooked, or it is assumed the other entity is responsible for safety and will take care of any issues. Your organisation's SMS processes should include identifying all possible interfaces and managing them according to their *safety criticality*. This can begin by listing all entities that support the delivery of your operations, and their *safety criticality* can be determined by considering the risks an interface may introduce, the interface's safety performance or compliance history, if it has an SMS, and the effectiveness of communication between the interface and your organisation.

Example:

A *low safety critical* interface may be an airport your organisation frequently operates (Airport A). The airport operator has an SMS, airport caretaking and safety personnel, frequent runway inspections and wildlife risk mitigation procedures. Your organisation considers the airport operator has appropriate risk mitigation measures in place. When conducting a risk assessment using the SMS, the risk level for operating at the airport is assessed as *low* (acceptable).

Example:

A *higher safety critical* interface may be another airport your organisation frequently operates (Airport B). There is a persistent wildlife hazard at the airport, the airport operator does not use an SMS, there are no airport caretaking and safety personnel in attendance, the airport operator does not conduct runway inspections or conducts any wildlife risk mitigation measures. Your organisation assesses the risk level from operating at the airport as *medium*, and tolerable with appropriate risk controls in place.

When considering SMS interface management procedures between the two airport examples, your organisation could elect to list Airport A in the interface register, monitor, and take no further action as Airport A has been considered a *low safety critical* interface. The appropriate actions for Airport B include listing the airport in the interface register, and may include communications with the airport operator, and establishing an agreeable method for alerting or communicating hazards and safety issues associated with the airport.

To identify external interfaces, it may be helpful to review invoices paid for products and services delivered over the previous 12-month period and review those entities.

You should also consider, that although some internal interfaces may not be directly associated with operational safety (e.g., human resources, accounting and finance, marketing), they may impact safety through their decisions and actions, which may impact areas such as resourcing safety, hiring suitable personnel and ensuring business growth is contained within the capabilities of the organisation.

Depending upon the safety critical nature of interfaces your organisation identifies, you may consider the necessity of conducting a risk assessment using the hazard identification and risk assessment process contained in Section 2 of the SMSM. And for newly contracted activities or organisations, using your organisation’s management of change process.

An important element of the interface management process is that once a hazard or safety deficiency is identified between interfacing entities, notification of the hazard should be provided to the interface that is in the best position to address the hazard and safety risks. To achieve this outcome your organisation should consider a formalised procedure that ensures:

- Roles and responsibilities for safety between each entity are understood.
- Formal lines of communication for safety matters and a method to report hazards between each entity is established.

Your organisation may consider it necessary to include an interface in your SMS training program or provide an appropriate level of SMS training or relevant information such as your organisation’s safety policy, and how to notify your organisation of a safety matter. For more complex interfaces, this may involve more formal methods such as a contract or service level agreement which includes responsibilities for the safe delivery of each entity’s products and services.

Scalability considerations: Both small and more complex organisations will have internal and external interfaces that may influence the safe delivery of the organisation’s aviation products and services. More complex organisations may have many internal and external interfaces, whilst a smaller organisation’s focus may predominately be identifying and managing safety risks of external interfaces.

The extent of effort to manage each interface is dependent upon your organisation’s resources and the safety critical nature of the interface to your organisation. Section 3 of the SMSM does not imply your organisation must include every interface in your organisation’s SMS training program. You may simply elect to establish lines of communications for identification of hazards or safety risks, or for more safety critical interfaces, provide specific training and access to the organisation’s reporting system.

For more complex organisations and interfaces it may be necessary to include some interfaces in formal SMS training, and consideration given for the services provided by the interface to be supported by written contracts or service levels of agreement, which include each organisation’s safety management responsibilities. For smaller organisations, a simple briefing or email to an interface would be sufficient, outlining who to contact if and when a safety matter arises.

Forms related to this SMSM process

Form	Description and purpose
Form SMS-IR - Interface Register	To formally document interfaces, their identified risks, lines of communication and hazard notification or reporting methods

3.2 Management of change

The objective of the management of change process is to ensure that safety risks resulting from changes are managed to an acceptable level.

Important

The management of change process is not exclusively triggered by changes that are defined as significant changes in aviation legislation, it is triggered by any aviation-related change that has the potential to affect aviation safety.

Relevant references

CASR	119.190(2)(c)(ii), CASR 138.145(c)(ii)
AC	AC 119-01 Section 7.2 AC 119-07 and 138-03 (Multi-part AC - Management of change)
AMC/GM	AMC/GM Part 119 Subsections 4, 7; AMC/GM Part 138 Subsections 3.3, 3.6
OPS.08 PPW	Element 2.4.2 principle document
SMS resource kit	Booklet 4 - Safety Assurance

Human performance (HP) integration into SMS:

- Consideration is given on how changes will impact the working environment, fatigue, workload and how personnel interact with others (internally and externally).
- Assessments are made to identify if stakeholders affected by the changes require new knowledge or skill sets, including additional training in relation to the changes.
- Management ensures there are sufficient people and resources to implement the changes safely.
- The impacts of operational changes taking place in parallel with other organisational changes are considered in the management of change process.
- The reasons and scope of the changes are communicated to all stakeholders impacted by the changes.
- All impacted stakeholders are given an opportunity to provide input into the management of changes.
- The organisation ensures impacted stakeholders understand the changes in relation to their responsibilities.
- The organisation considers the effects of fear, uncertainty, frustration, anxiety and stress on those impacted by changes.

Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.

Overview: Unmanaged or uncontrolled change can introduce unacceptable levels of risk into an organisation’s operations. The management of change process is used to identify and manage both internal and external changes that may have an adverse effect on the safety of your operations.

To assist your organisation to identify and assess the safety criticality of changes, including the extent of change implementation planning and risk assessments, changes may be grouped into three categories:

1. *Developmental change*—used to *improve* current organisational policies, processes and procedures, generally triggered as a result of continuous improvement activities, e.g., improving reporting procedures, updating audit processes, improving training.
2. *Transitional change*—used to *replace* existing organisational policies, processes and procedures with new policies, systems and personnel. May include corporate or management restructure, internal department changes, use of contractors, new products or services, implementation of new technology or equipment.
3. *Transformational change*—used when undergoing major organisational strategic or cultural changes, e.g., corporate merger or acquisition, major shift in operational scope (e.g., shift from single-pilot Part 135 operations to Part 121 operations in an aircraft certified for two-crew operations).

Change may have various positive or negative safety impacts. Consideration should be given that change may impact the effectiveness of existing safety risk controls in place to mitigate hazards previously identified and controlled. Additionally, new hazards and related safety risks may inadvertently be introduced into operations whenever change occurs. Under these circumstances, the management of change process should be used, change associated hazards identified, and any related safety risks assessed and controlled in accordance with the safety risk management processes contained in the SMS.

Some examples of changes that may affect air operators include:

- Organisational changes - ownership change, restructuring, expansion, or contraction.

- Operational changes - new types of operations or activities, new aircraft types or variants, outsourcing of operational activities (e.g., contracted training and checking).
- Maintenance and airworthiness changes - new or modified maintenance processes or procedures.
- Management personnel changes - operational key personnel, non-operational management personnel.
- Operational personnel changes - periods of significant recruitment (or redundancy) of personnel.
- Organisation improvement changes - internal processes, procedures, programs, systems and technology (e.g., artificial intelligence) that influence the safe conduct or your organisation's operations.
- Operating environment changes - operating bases, seasonal operating cycles, airspace changes.
- External changes - regulatory reform, economic climate, political, geo-political and social changes, pandemic, disaster, regional conflict, emergence of new risks—e.g., remotely pilot air systems and urban air mobility systems, cyber-threats.
- SMS interface changes - new suppliers of products and services (e.g., new maintenance provider, refueller), new customers (e.g., new business model or type of services, new contracts requiring significant commitment and resourcing).

It is therefore important that your organisation follows a structured and formal process to identify and manage both changes from within your organisation, or external changes, which may affect already established organisational processes and services. Consideration should also be given that small or incremental changes in your organisation's operations may gradually reduce the effectiveness of existing risk controls and inadvertently introduce new hazards or safety risks.

Implementation strategy: The SMS contain a policy at subsection 3.2 to utilise the management of change process contained in your organisation's exposition or operations manual. Subregulations 119.190(2)(c)(ii) and 138.145(c)(ii) require that your organisation's management of change process is an integral part of your SMS. The integration of your management of change process into your SMS can be achieved by ensuring hazards identified as a result of changes are documented in accordance with the hazard identification processes described at subsection 2.1, and risks are assessed and managed in accordance with the safety risk assessment and mitigation processes contained subsection 2.2 of the SMSM.

Scalability considerations: Regardless of the size, nature and complexity of aviation organisations, the process for managing changes will broadly involve similar steps. Scalability considerations do not so much reside in the management of change process, but in the complexity of proposed changes themselves. For example, a small organisation may propose to implement complex and high-risk changes, whilst a larger organisation may routinely implement many small changes with negligible safety risks. The overarching importance with managing change, is ensuring a documented process is followed to ensure all aspects of the change are considered, especially relating to risks and risk control. However, the details involved in each step of the management of change process will vary depending upon the complexity of the changes.

Example:

An organisation changes the formal reporting line for an operational manager position to report to the CEO and amends the organisational structure diagram in the exposition. There are no changes to the persons involved, or their responsibilities. Should the structured management of change process be followed for this small change, including a risk assessment? The answer to both questions is yes. By following the management of change process, it is identified that the change is a significant change requiring an application for approval. Because there are no changes to individual position holders or their responsibilities, the entire safety risk management process would not need to be followed, and if no hazards or risks are identified by updating the organisation diagram, the process could be considered complete.

Example:

An organisation proposes to implement a cloud-based aviation management software platform to manage operational data, flight scheduling, flight crew compliance records, rostering, and aircraft airworthiness tracking. The platform is intended to replace existing legacy systems (paper-based, spreadsheets, emails) used to manage each area. Internal auditing has found several issues from use of the legacy system which has resulted in operational non-compliances. When following the management of change process, the change initiator identifies the changes will affect all operational personnel and several external contractors (external interfaces) and has the potential to affect day to day operations, including non-compliance with company procedures if the changes are not implemented effectively. The change initiator conducts a risk assessment including the selection of appropriate risk controls. The organisation has determined that the proposed changes are likely to maintain and improve aviation safety, and as a risk control, implementation of

the platform is supported by communications and a training program for all personnel and relevant external interfaces.

In both examples, each of the steps in the management of change process should be followed and formally documented. The benefit of documenting all changes is that your organisation can review steps taken to implement changes and make modifications where necessary. Accurate records of management of change processes can also reduce future workload and use of resources when implementing new changes, as previously completed change processes can inform the implementation of new changes.

All completed management of change process documents must be archived and retained in accordance with the SMS record keeping and management policy at Section 1 of the SMSM.

Forms related to this SMSM process

Form	Description and purpose
Form SMS-MOC - Management of Change Implementation Plan	To document each step of the management of change process, including risk assessment and mitigation actions.
Form SMS-MOR - Management of Change Register	A record of all changes implemented by the organisation. Intended as a reference document for future proposed changes and internal auditing.
Other related forms	
Form SMS-MR - Management Review	Part B of the form used to document management of change process reviews as part of the management review at subsection 3.1 of the SMSM

3.3 Continuous improvement of the SMS

The aim of the continuous improvement processes of the SMS are to ensure your organisation corrects any issues, deficiencies or substandard performance of the SMS that could affect the monitoring and management of your organisation’s safety performance.

Relevant references

CASR	119.190(2)(c)(iii), CASR 138.145(c)(iii)
AC	AC 119-01 Subsection 7.3
AMC/GM	AMC/GM Part 119 Section 7; AMC/GM Part 138 Subsection 3.6
OPS.08 PPW	Element 2.4.3 principle document
SMS resource kit	Booklet 4 - Safety Assurance

Human performance (HP) integration into SMS:

- Management actively encourages feedback from personnel in the use of the SMS.
- Management ensures feedback is provided to personnel that make continuous improvement suggestions, including when no actions are taken to address the suggestions and the reason why.

Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.

Overview: The continuous improvement process is not so much as a standalone process itself, as it is supported by other safety assurance activities including management reviews, internal audits and feedback from personnel from their use of the SMS. The continuous improvement process is triggered when deficiencies or issues are identified during safety assurance processes or personnel feedback, and the relevant corrective or improvement actions are taken.

Implementation strategy: Continuous improvement of the SMS may target any component of the system where it is identified that modifications or changes will contribute to improving the effectiveness of the system over time. As the management review and internal audit processes (subsection 3.1 of the SMSM) are opportunities to identify SMS process deficiencies, it is important that your organisation adheres to the safety assurance activity schedule described in Section 3.0 of the SMSM for those processes. If necessary, you

should increase the frequency of those activities considering the size, nature and complexity of your organisation.

Personnel or other users of the SMS can provide your organisation important information to identify if SMS processes are functioning as intended. Therefore, it is important that these persons can readily provide feedback via an easily accessible method and are confident to do so.

Scalability considerations: The scalability considerations for the continuous improvement element of your SMS are primarily dependent upon the frequency and effectiveness of the management review and internal audit processes of your SMS, and who is responsible for performing these processes. The safety manager has a regulated responsibility to manage the maintenance and continuous improvement actions related to the SMS, and report to the CEO on the effectiveness of the system. The CEO of a micro-operator who is also the safety manager position holder will be responsible for these requirements.

Forms related to this SMSM process

Form	Description and purpose
Form SMS-CIS - Continuous Improvement Suggestion	To inform the organisation of any areas of the SMS that may not be performing to expectations or achieving the required outcomes.
Form SMS-CIR - Continuous Improvement Register	To record and track continuous improvement requests and associated actions and outcomes.
Other related forms	
Form SMS-MR - Management Review	Part C of the form documents the review of continuous improvement processes as part of the management review at subsection 3.1 of the SMSM.
Form SMS-IA - Internal Audit	Used to record and report audit process and outcomes. Deficiencies and non-compliances identified during internal audits are a trigger for the continuous improvement process of the SMS.

4. Safety Training and Promotion

Section 4 of the SMSM describe the processes and procedures your organisation may adopt that utilise safety outputs from your SMS (e.g., reported hazards, risk assessments, investigations) and inform personnel to assist learning, and promote safety attitudes and behaviours in alignment with your organisation's safety objectives.

Safety promotion involves ensuring that all personnel, through training and education are aware of their responsibilities in the SMS and that safety information and lessons learned are communicated at all levels of the organisation. The organisation's safety promotion processes comprise of two primary elements:

1. Safety management system training and education—to ensure personnel are trained and competent in the use of the SMS relevant to the scope of their responsibilities.
2. Safety management system safety communication—to ensure personnel understand the organisation's safety objectives and how to convey both operational and safety critical information (internally and externally) to maintain and improve aviation safety.

4.1 Safety management system training & education

The provision of SMS training and education to personnel, regardless of their level of seniority or role in the organisation is an indication of management's commitment to operating and maintaining an effective SMS.

Relevant references

CASR	119.190(2)(d)(i), CASR 138.145(d)(i)
AC	AC 119-01 Subsection 8, 8.2
AMC/GM	AMC/GM Part 119 Section 7, AMC/GM Part 138 Subsection 3.6
OPS.08 PPW	Element 2.5.1 principle document
SMS resource kit	Booklet 5 - Safety Promotion

Human performance (HP) integration into SMS:

- Management demonstrates safety leadership through their actions to enable and motivate personnel to understand the importance of safety and embrace safe behaviours and practices themselves.
- Empowering and involving personnel in the organisation's safety management processes assists to develop attitudes of ownership over safety and behaviours that are more likely to contribute positively to safety outcomes.

Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.

Overview: Initial and recurrent SMS training is required to be provided to personnel so they can perform their SMS-related duties and responsibilities. SMS training should be specific to personnel roles regarding their use of the system.

Implementation strategy: SMS training should be specific to the use and operation of your organisation's SMS and the expectations of the safety policy described at Section 1 of the SMSM. Your organisation's SMS training program should consider initial SMS training requirements for operational safety critical personnel, managers, key personnel, (including the CEO), non-operational safety critical personnel, and where appropriate, contractors or external interfaces. Recurrent training should also be included in the program to ensure personnel maintain the SMS-related knowledge and competencies for their area of responsibility.

As SMS-related responsibilities and duties differ, training content must be structured to each individual's responsibilities or duties, and their level of involvement in the SMS. For example, the scope of CEO and safety manager SMS training should include all areas relevant to the operation and management of the SMS, including training to ensure the effective discharge of their SMS-related role responsibilities, whilst non-operational safety critical personnel may only require training on hazard identification and reporting processes.

Appendix F - SMS Training Syllabus Outline provides an example of suggested SMS training program content for operational safety critical personnel, management personnel, safety manager, and other personnel.

Persons assigned by your organisation with the responsibility to deliver SMS training should be knowledgeable with the SMS framework requirements of the regulations, and your organisation's SMS policies, processes and procedures. Ideally, the person in your organisation that has been designated with the responsibilities to implement, manage and operate the SMS is likely to provide SMS training that is relevant to your organisation's SMS and provide the most optimal learning benefit for personnel in the use of the system. This also provides an opportunity to enhance the training with familiarity, highly contextualised lessons learned, and knowledge about risks specific to your organisation's activities.

SMS training can be in a format that is appropriate for the size, nature and complexity of your organisation, and may be in-person classroom, virtual classroom, or self-paced online learning. The use of an external vendor to provide your organisation's SMS training could be considered, however you must ensure that the training includes content that is specific to your organisation's SMS and relevant to the roles and responsibilities of your personnel receiving the training.

At the completion of SMS training, personnel should be assessed to ensure that they are competent in their specific SMS-related duties and responsibilities. Competence can be assessed by use of a written assessment (paper or online), verbal quiz, or by practical demonstration by the trainee. Whichever assessment method is most suitable for your organisation, a record of the assessment must be included in each participant's personnel training records.

The safety assurance processes described in subsection 3.1 of the SMSM include the periodical review of your organisation's SMS training to ensure the program meets the organisation's expectations set out in the safety policy and safety objectives. Effectiveness of your organisation's SMS training can be evaluated by training evaluation feedback, internal audit results, or by observing the 'SMS-related behaviours' of personnel, (e.g., feedback in training meetings, reporting system use).

Scalability considerations: The scalability considerations relevant to the SMS training and education element of your SMS are primarily related to personnel responsible in your organisation to deliver SMS training, and the method used for delivery and assessment of the training. To assist with effective use of your organisation's resources, initial SMS training can be performed during new personnel induction training, and recurrent SMS training aligned with other internal training activities (e.g., training and checking system activities).

The CEO of a micro-operator who is also the safety manager position holder will be responsible for SMS training and education and ensuring personnel understand the safety policy. This may simply be achieved by requiring personnel to read the organisation's SMS manual and completing a written or verbal assessment and retaining a record as evidence of training completion.

The SMSM contain a table in subsection 4.1 that outlines a recommended SMS training and education schedule. It is expected that your organisation will determine and document time intervals and frequencies that are appropriate for the size, nature and complexity of your organisation.

SMS output - initial or recurrent SMS training activities are a reviewable SMS output

Forms related to this SMSM process

Form	Description and purpose
Form SMS-TR - Training Register	Used to record SMS training completion.
Form SMS-TCE - SMS Training Course Evaluation	Used by participants to evaluate the training.
Other related forms	
Form SMS-MR - Management Review	Part C documents the review of SMS training and promotion activities as part of the management review process at subsection 3.1 of the SMSM.
Form SMS-IA - Internal Audit	Part 3 of the form is used to record and report audit process and outcomes for the safety training and education processes of the SMS.

4.2 Safety management system communication

The primary objective of SMS safety communications processes are to promote an environment where a positive safety and learning culture is encouraged, recognised, and advanced throughout the organisation through communicating lessons learnt and by providing feedback to personnel that communicate safety issues.

Relevant references

CASR	119.190(2)(d)(ii), CASR 138.145(d)(ii)
AC	AC 119-01 Subsection 8.3
AMC/GM	AMC/GM Part 119 Section 7, AMC/GM Part 138 Subsection 3.6
OPS.08 PPW	Element 2.5.2 principle document
SMS resource kit	Booklet 5 - Safety Promotion

Human performance (HP) integration into SMS:

- Recognising and promoting safety-conscious behaviours and actions, to set a positive example that influences peer behaviour.
- Communicating positive safety actions and contributions to strengthen organisational learning.

Sample text has been provided in the SMSM. It is expected that your organisation will review and modify policy and processes to ensure they are appropriate for the size, nature and complexity of your organisation.

Overview: The effectiveness of your organisation’s SMS is highly dependent upon the visibility and accessibility of information generated by your SMS processes. The primary objectives of the SMSM safety communications processes are to ensure:

- Personnel are fully aware of your organisation’s SMS, the safety policy and their safety responsibilities.
- Safety critical information relating to hazards and risks that could expose your organisation to an unacceptable level of risk are communicated to personnel in a timely manner.
- Provide information and raise awareness of new or modified safety procedures, risk controls and corrective actions made by the organisation.
- Provide feedback to personnel that have used the reporting system to ensure they remain confident to report and can see the benefits of reporting safety information to the organisation.

Implementation strategy: Safety communications should be made using a format that is relevant to personnel, their roles and their need to receive specific safety information. The distribution of safety information can be achieved through methods that are appropriate for the size, nature and complexity of your organisation. For example, for smaller organisations, safety communications may be simple and direct, such as the CEO or safety manager holding periodical personnel meetings or hangar/lunchroom safety talks. For all organisations, other methods may include safety newsletters (email or hard-copy), notices, briefings, safety/training meetings (in-person or virtual), or a safety performance dashboard on the organisation’s intranet.

Safety communications conducted by your organisation should be documented and a record retained for each safety communication activity. Accurate records of safety communications are helpful as this will assist future review of safety information that has been communicated to personnel and to accomplish the safety assurance activities described in Section 3 of the SMSM (e.g., management reviews, internal audits and continuous improvement processes).

Consideration should be given, that in-person safety communication activities such as briefings, safety/training meetings or hangar/lunchroom safety talks are an opportunity for personnel to raise concerns or safety matters that they may not otherwise report. The more frequent your organisation holds these types of activities supports the hazard identification processes (internal sources) described at subsection 2.1 of the SMSM.

Your organisation should determine if any internal and external interfaces should be included in safety communications activities. You may consider including interfaces with a higher safety criticality in safety communications such as safety newsletters, notices, and briefings as this is helpful in promoting your organisation’s safety expectations with entities that do not operate within a structured safety framework.

Section 1 of the SMSM includes a high-level safety objective that safety information, including the lessons learned from hazards or safety deficiencies is shared and communicated through your organisation and the broader aviation system. The hazards your organisation identifies, and the lessons learned from safety occurrences can be beneficial to assist other industry stakeholders consider safety impacts relevant to their operations and take any necessary preventive actions. Establishing a safety information sharing and exchange network with similar operators can be beneficial, particularly for smaller organisations to assist with supplementing low internal reporting volumes with external hazard information that otherwise may not be available to those organisations.

When establishing a safety information sharing and exchange network with other organisations you must ensure the confidentiality and safety information protection measures of Section 1 of the SMSM are taken, and shared safety information is only used for maintaining and improving safety.

Scalability considerations: Meetings that are periodically scheduled specifically for safety communications are the most effective method to promote the use and benefits of your SMS. Subsection 4.2 of the SMSM defines these activities as personnel safety meetings. These types of meetings provide an opportunity to brief personnel on your organisation's top safety risks, safety performance, and lessons learned from investigations or by access to external safety information. In-person meetings are also an opportunity for personnel to raise and discuss safety matters. In-person meetings are likely to provide the most benefit for both personnel and management, however this may not always be practical, and organisations with multiple bases may consider a hybrid format where both in-person and online meetings are held.

Very small organisations (1-5 persons) may need to consider other safety communications formats. Some examples include; providing personnel a required reading list of safety topics considered important the organisation, periodically scheduled 'safety meetups' with similar operators (e.g., establishing a safety information sharing and exchange network discussed previously), and attendance to safety workshops, CASA AvSafety seminars or safety webinars. Whichever format is the most achievable and effective for your organisation, you must ensure the frequency for these activities is documented in your SMS manual and a record of participation for each activity is retained in accordance with the record keeping and management policy described at Section 1.0 of the SMSM. Some examples of these safety communications resources include:

- [CASA AvSafety seminars](#)
- [CASA AvSafety podcasts and videos](#)
- [Flight Safety Foundation webinars](#)
- [SKYbrary SKYclips tutorials](#)
- [FAA FAASTeam Safety Videos](#)
- [NTSB General Aviation Safety Alert Videos](#)

The SMSM contain a table in subsection 4.2 that outlines recommended safety communications activities and associated schedules. It is expected that your organisation will determine and document relevant safety communications activities, time intervals and frequencies that are appropriate for the size, nature and complexity of your organisation.

SMS output - periodical safety communications activities (personnel safety meetings) are a reviewable SMS output.

Forms related to this SMSM process

Form	Description and purpose
Form SMS-PSM - Personnel Safety Meeting Agenda	Used to record personnel safety meetings, briefings and safety talks. The form is designed as a record of attendance, safety topics discussed (e.g., top safety risks, safety performance monitoring, safety investigation outcomes, hazard and risk register, safety alert information, and new safety information.
Form SMS-SA - Safety Alert	Used to communicate urgent and critical safety information to personnel and relevant stakeholders and any risk mitigation actions taken by the organisation or required to be taken by personnel.
Other related forms	
Form SMS-MR - Management Review	Part C documents the review of SMS training and promotion activities as part of the management review process at subsection 3.1 of the SMSM.
Form SMS-IA - Internal Audit	Part 3 of the form is used to record and report audit process and outcomes for the safety communications processes of the SMS.
Form SMS-IR - SMS Interface Register	The form is designed to be useable for all sizes of organisations to formally document interfaces, their identified risks, lines of communication and hazard notification or reporting methods. The form may be reviewed to determine the safety critical nature of interfaces and if the interface should be included in safety communications activities of the SMS.

Appendix A – Just culture decision framework guide

The just culture decision framework is in place to support your organisation’s just culture policy and principles and to ensure personnel remain willing to report their errors and mishaps with the understanding of their shared accountability and responsibility for safety (refer Figure A1).

The use of the just culture decision framework is to support the investigation process by including transparency and objectiveness regarding actions necessary for the purposes of maintaining and improving safety.

The intent of this guide is to support a decision-making process that differentiates between unintentional human error, from intentional acts of rule breaking, non-compliance or reckless disregard of known risks.

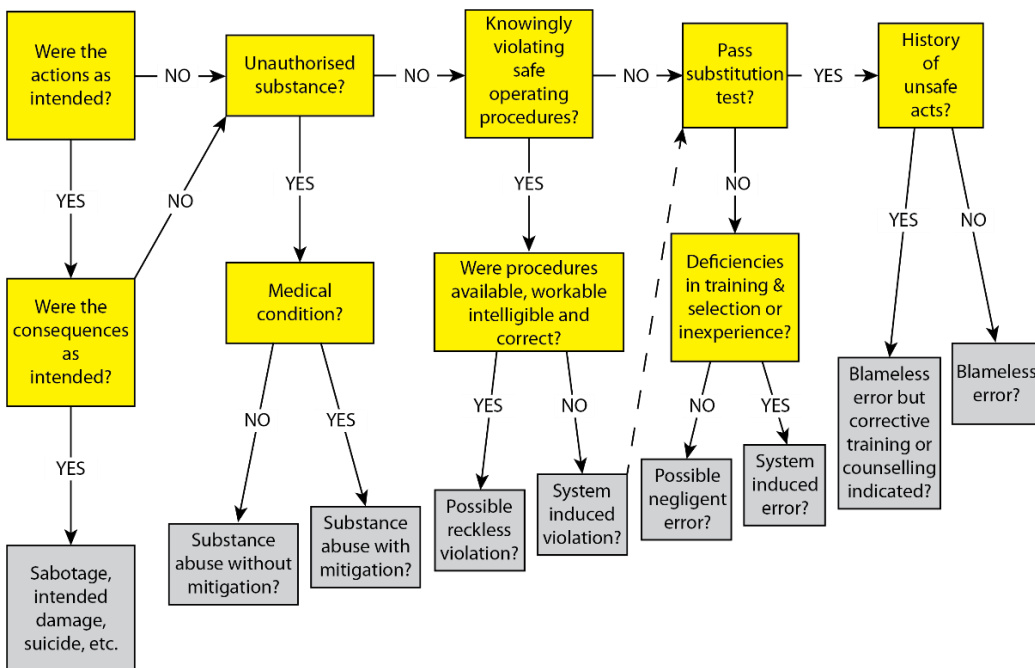
The organisation’s response to a hazard or risk to aviation safety may involve preventive, corrective or remedial actions. When such actions are taken within the SMS and just culture decision framework, they are not intended to be punitive or disciplinary, but as actions that are fundamental to the objectives of the SMS.

For the purposes of the just culture decision framework, preventive, corrective or remedial actions are defined as:

- Preventive action: may involve action taken to prevent the occurrence or recurrence of an event or mitigation of a hazard that poses an unacceptable risk to aviation safety. Preventive actions may involve immediate removal or suspension to perform an activity.
- Corrective action: may involve action taken to address particular safety-related shortcomings or deficiencies relating to compliance or competency standards. Corrective actions may involve suspension to perform an activity until compliance or competency with standards can be demonstrated.
- Remedial action: may involve action taken to address the underlying causes of particular safety-related shortcomings or deficiencies relating to compliance or competency standards. Remedial actions may involve retraining, counselling, mentoring.

Note: In some cases, preventive, corrective or remedial actions may serve more than one defined purpose. For example, actions taken that involve additional training and suspension from performing an activity until training is completed and competency is demonstrated. Such actions are both remedial, as they are intended to address the underlying cause of a safety issue, and may also be considered corrective to address an identified safety deficiency.

Figure A1: Just Culture Decision Framework



Adapted from Managing the risks of organizational accidents, by James Reason, and UNSW AVIA5015 SMS course

Important

The use of the just culture decision framework at Figure A1 should not be the only process used to differentiate between unintentional human error and acts of intentional non-compliance. Although the Figure A1 flowchart is designed to facilitate objectivity in the decision-making process by the intent of removing emotion, hindsight bias and prejudice from the investigation process, this in reality may be easier said than done. It is recommended that the just culture decision framework is only used to provide guidance during the investigation process and its use is supported by individuals with expertise in operations, training, human factors, and workplace laws.

Table A1: Application of just culture decision framework (to be used with Figure A1)

Process step	Action
1. Investigation	<ul style="list-style-type: none"> Has a safety occurrence investigation been completed?
2. Review relevant information and findings and establish context.	<ul style="list-style-type: none"> Establish all possible context of the safety event or matter reported, not only on the individual(s) concerned, including: <ul style="list-style-type: none"> Human performance considerations (Refer SHELL model at Appendix C) Organisational or system issues (Refer organisational causation model - Appendix C).
3. Refer to decision framework (Figure A1)	<ul style="list-style-type: none"> Apply to only one action (behaviour) at a time. If there are multiple actions by an individual, treat each separately. Use for individual personnel separately.
4. Move from left to right across decision framework	<ul style="list-style-type: none"> Locate the START point (top left corner). Determine the most accurate description of the behaviour. The left-side assists to identify malicious or reckless acts, the right-side assists to identify unintended actions. Reckless behaviour diminishes when moving towards right-side.
5. Determine actions (intentional or reckless violations)	<ul style="list-style-type: none"> Identify if the violation was intentional and if there was an 'intentional mental element' to commission an unsafe act or there was reckless disregard about the consequences. If Yes, possible disciplinary action required. Verify medical conditions and to check if any unauthorised substance use was involved. Identification of unauthorised substances (drugs, alcohol) is to be managed in accordance with the Drug and Alcohol Management Plan.
6. Interpretation of behaviour type	<ul style="list-style-type: none"> Unintentional error--an action where the individual was not aware they are breaking rules or procedures. If Yes, possible remedial action required. Routine violation--an action that was frequent, routine, standard practice or a 'work-around' by the individual or others against an established rule or procedure. The process or procedure should be examined (use SHELL - Appendix C). If Yes, possible remedial action required. General violation--an action that occurred due to a situational or environmental trigger or other factors. Possible remedial action required. Exceptional violation--a potentially hazardous course of action taken against procedures but may have been considered necessary under the circumstances for possible organisational reasons. The process or procedure should be examined (use SHELL - Appendix C), management and organisation process should be examined (use organisational causation model - Appendix C). Possible remedial action required.
7. Determine actions (error and procedural violations)	<ul style="list-style-type: none"> If necessary, apply the substitution test: <ul style="list-style-type: none"> Substitute the individual concerned with another person with comparable qualifications, experience and responsibilities. Consider, in the context of the safety occurrence, is it likely that the new individual would have behaved any differently; or given the prevailing circumstances at the time of the occurrence, could the new individual be certain they themselves would not have committed the same error or unsafe act? If the answer is that the new individual most likely would have behaved the same, apportioning blame or disciplinary action has no role to play. History of repetitive error or unsafe acts--check if the individual has history of repetitive error or unsafe acts. This is not to apportion blame or disciplinary action, but to indicate the necessity for remedial or corrective actions.
8. Documentation	<ul style="list-style-type: none"> Document all actions, including the just culture decision framework chart as a record in the individual's employee records.

Appendix B – Safety Manager Role Actions Within SMS Framework

The safety manager position holder has regulated responsibilities for managing and operating the SMS. To assist with achieving the effective discharge of those responsibilities, the following table describes actions and duties relative to each SMS framework component and element.

Table B1: Actions and duties within SMS framework

SMS component and elements	Actions and duties
Safety policy and objectives	
Management commitment	<ul style="list-style-type: none"> Ensuring everyone understands the safety policy and SMS processes and procedures. Promoting positive safety culture, encouraging reporting, ensuring just culture is applied.
Safety accountabilities and responsibilities	<ul style="list-style-type: none"> Communicating safety responsibilities across the organisation.
Appointment of key safety personnel	<ul style="list-style-type: none"> Ensuring the appointment of appropriately experienced, qualified and motivated persons to manage the SMS.
Coordination of emergency response planning	<ul style="list-style-type: none"> Maintaining emergency response plan (ERP) Coordinating ERP exercises
SMS documentation	<ul style="list-style-type: none"> Maintaining SMS documentation and records
Safety risk management	
Hazard identification	<ul style="list-style-type: none"> Ensuring reporting system is effective, timely investigation of occurrences, feedback given. Collecting, evaluating, processing, analysing internal (and external) safety information.
Safety risk assessment and mitigation	<ul style="list-style-type: none"> Conduct risk assessments, develop & implement risk controls. Monitoring risk tolerability, reporting to the CEO on risk tolerability matters.
Safety assurance	
Safety performance monitoring & measurement	<ul style="list-style-type: none"> Ensuring corrective & preventive actions are performing as intended, reported to CEO. Safety performance indicators and targets are implemented, monitored and reviewed.
Management of change	<ul style="list-style-type: none"> Assist the organisation identify if proposed changes have an impact on safety.
Continuous improvement of the SMS	<ul style="list-style-type: none"> Conduct surveys and assessments of organisational/safety culture. Schedule internal audits, reporting to CEO on audit outcomes and corrective/preventive actions.

SMS component and elements	Actions and duties
Safety promotion	
Safety management system training and education	<ul style="list-style-type: none"> • Coaching and training employees, third-parties in use of the SMS and reporting. • Ensuring safety training provided so that risk assessment processes and safety discussions ingrained in organisation.
Safety communications	<ul style="list-style-type: none"> • Challenging, inspiring, mentoring and encouraging positive safety attitudes and behaviours. • Facilitating safety meetings, safety committee. • Safety communications with internal/external Interfaces.

Appendix C – Safety investigation guide

Purpose

Safety investigations comprise of collecting information, analysing the information, determining causal and contributing factors, drawing up conclusions and making safety recommendations.

Investigations are initiated in accordance with triggers specified in subsection 2.1 of the SMSM, and broadly, in the case of:

- Accidents and incidents.
- Identification of new hazards and risks.
- Recurrent safety risks.

It is the CEO or safety managers discretion at any time to commence a safety investigation on an opportune basis for the purpose of maintaining or improving aviation safety.

Note: for the purpose of this Appendix the term ‘safety manager’ is synonymous with the individual that is the position holder of CEO-safety manager, or HOF0/HOO-safety manager for an eligible micro-operator.

Investigation procedure

1. Preparation and planning

Investigation team

Only the safety manager or person(s) assigned by the CEO are authorised to conduct safety investigations. The safety manager will act in capacity of lead investigator, other persons assigned to the investigation team shall work under the supervision of the safety manager.

Depending upon investigation complexity, external subject matter experts (SME) can be utilised to assist with investigations. SME can include representatives from original equipment manufacturers (OEM) for aircraft, engine, propellers, avionics, and other airframe systems, human factors specialists, medical practitioners, DAMP medical review officer, consultants, auditors or safety investigation specialists. The use of any external SMS must be authorised by the CEO.

Investigation activity preparation

Upon decision to launch an investigation, the safety manager shall determine the necessity for, or action the following:

- a. Immediate hazard or safety risk containment or isolation measures to prevent a repeat occurrence or further deterioration of safety, e.g., grounding aircraft, stand down of personnel.
- b. Post accident or serious incident drug and alcohol testing requirements in accordance with the DAMP.
- c. The need to temporarily stand-down from operational duty any personnel involved with the safety occurrence, or the investigation. The stand-down of personnel is not intended to be punitive or to assign blame, but in place to ensure the physical and psychological wellbeing of the affected personnel, and to maintain aviation safety. Temporary stand-down of personnel must be conducted in accordance with the just culture policy and procedures contained in Section 1 of the SMSM.
- d. Notification to CASA and the ATSB.
- e. If there are any travel and accommodation requirements.
- f. Establish what evidence and information will need to be collected, persons to be interviewed, or needed to assist with investigation.
- g. Establish a timeframe for the investigation.

2. Data and information collection

The data and information collection phase of the investigation is important to assist with the accurate analysis of the occurrence and to collect factual information to develop a comprehensive understanding of the event.

The timely collection of information and data is important to preserve the integrity of the information, including interviews of personnel or witnesses, to ensure accuracy of memory recall of events and timeframes.

Information and data sources

Examples of information, data and methods of collection includes:

Information or data source	✓
Physical examination of aircraft – accident/incident site	<input type="checkbox"/>
Interviews with persons involved or eyewitnesses	<input type="checkbox"/>
Observation of actions (e.g., reconstruction in flight simulation training device)	<input type="checkbox"/>
Consultancy and use of subject matter experts	<input type="checkbox"/>
Review of hazard and risk register (previous identification of hazard – effectiveness of controls)	<input type="checkbox"/>
Aerodrome Frequency Response Unit (AFRU) or ATC recordings (formal request required)	<input type="checkbox"/>
Meteorological reports, forecasts and NOTAMS	<input type="checkbox"/>
Flight tracking information (e.g., Spidertracks, Flightradar 24)	<input type="checkbox"/>
Documentation and files – flight related	<input type="checkbox"/>
Flight plan, fuel log, weight and balance, passenger/freight manifest, electronic flight bag, navigational charts	<input type="checkbox"/>
Electronic flight data capture devices (SD cards from digital avionics, engine, airframe systems/units)	<input type="checkbox"/>
Documentation and files – aircraft related	<input type="checkbox"/>
Maintenance release, minimum equipment list, aircraft flight manual, aircraft checklist	<input type="checkbox"/>
Approved data (navigation and flight management system databases)	<input type="checkbox"/>
Aircraft, engine, propeller, airframe systems OEM technical personnel	<input type="checkbox"/>
Documentation and files – aircraft maintenance related	<input type="checkbox"/>
Aircraft maintenance records	<input type="checkbox"/>
Approved maintenance data and reference documents	<input type="checkbox"/>
Documentation and files – personnel related	<input type="checkbox"/>
Flight, duty and fatigue related records, rostering records	<input type="checkbox"/>
Training and checking records (currency, proficiency checks)	<input type="checkbox"/>
Part 61 licence and medical records	<input type="checkbox"/>
Documentation and files – compliance and regulatory	<input type="checkbox"/>
Exposition / operations manual policy, processes and procedures	<input type="checkbox"/>
Aircraft standard operating procedures	<input type="checkbox"/>
Regulations and other compliance documents	<input type="checkbox"/>

All collected information is to be treated with confidentiality and stored in a master investigation file for the specific occurrence or reported matter.

Interview procedures

Interviews are to be conducted by the safety manager. Depending upon the complexity of the investigation other persons authorised by the CEO may be involved, and the person being interviewed may bring a support person to the interview.

The following principles are to be followed during interviews:

- The purpose of the interview must be clearly stated – i.e., to clarify information submitted in report form, and to develop additional context from information that was too complex to describe in report.
- Interview should be conducted in a transparent and ethical manner, conversational (as opposed to an interrogation) and must not be combative or antagonistic.
- A relatively informal, conversational and supportive interview setting has greater potential to elicit information that was missing in original report.

- Results of the interview should be recorded either written or electronically (with permission) so that both interviewer and interviewee can review and the record endorsed by the interviewee as a fair and accurate representation of the discussion.
- Information disclosed during interviews is to be treated with confidentiality and in accordance with the just culture policy and procedures contained in Section 1 of the SMSM.

Potential interview candidates

The following individuals may be considered to participate in interview:

- Individuals directly involved in the occurrence or report.
- Individuals not involved in an occurrence but may have knowledge that is relevant to the occurrence or may have observed the occurrence take place.
- Management or organisational personnel that are involved in organisational policies, processes and procedures.
- Individuals not involved in the occurrence but may have knowledge or expertise in factors that are relevant to the occurrence. These persons may be SME, OEM representatives.

All collected information is to be treated with confidentiality and stored in a master investigation file for the specific occurrence or reported matter.

3. Occurrence reconstruction

An occurrence reconstruction may be useful to validate information collected during the initial information and data collection phase. A reconstruction can prompt persons involved in the occurrence to remember helpful information that may have been unintentionally omitted in the aftermath of an occurrence.

An occurrence reconstruction that is performed in a supportive, impartial and non-judgmental environment may also have important psychological restorative and motivational benefits for individuals directly involved in an occurrence.

Reconstruction validation

The use of onboard flight data and navigational data recording devices, playback and simulation tools should be utilised when this information and tools are available (e.g., Garmin Pilot, CloudAhoy). The potential benefits of record and playback tools include the ability to replay flight, engine, navigational and airframe data to assist investigation and analysis of aircraft systems operation or handling that may contributed to the occurrence.

The use of flight simulation training devices (FSTD) may assist the reconstruction by reviewing a flight profile, sequence of flight, use of checklists, emergency procedures, or standard operating procedures. The use of a FSTD will allow the use of numerous reconstructions of a single occurrence to examine best and worst-case scenarios, and the effectiveness of existing risk controls, including testing of potential risk controls.

All collected information is to be treated with confidentiality and stored in a master investigation file for the specific occurrence or reported matter.

4. Occurrence analysis

The primary purpose of the investigation analysis is to integrate all the information and data collected during the investigation, analyse the facts, determine causes and identify associated hazards to develop an evidence-based explanation on WHY an occurrence happened.

The analysis should include examination of human performance, systems, and organisational factors.

SHELL model

The SHELL model can be used to help examine interrelationships between humans and various components of the aviation system. The SHELL model places an emphasis on the human operator and the relationship with other components of a system or features in the workplace.

The SHELL model is useful for:

- Assisting in the identification and management of the interactions and relationships within systems between people, activities, and the work environment.
- Developing and understanding of human capabilities and limitations.
- Analysing the effectiveness of existing or proposed risk controls.

Guidance on application of the SHELL model is located at the end of this Appendix.

Organisational causation model

The organisational causation model can be used to help identify failure of the numerous layers of existing safety defences or controls in a system, and if the failure is a consequence of organisational or management decisions, which when combined with other factors (e.g., poor weather, high workload, fatigue etc.), lead to a breakdown in safety.

The organisational causation model is useful for:

- Assisting in the identification of organisational circumstances (management decisions, processes, organisational culture) that may have allowed failure of existing safety defences or controls to occur.
- The examination of which organisational safety defences or controls are effective, and which ones have, or can be breached.
- The identification of where the organisation's operations could benefit from additional resources or safety defences and controls.

Guidance on application of the organisational model is located at the end of this Appendix.

5. Risk assessment and mitigation

Risk assessment

A risk assessment performed in accordance with the safety risk assessment and mitigation processes described in Section 2 of the SMSM must be completed. There are two ways in which risk assessments may be integrated into investigation processes:

1. A preliminary risk assessment on notification of the safety occurrence or matter.
2. A revised risk assessment based on the development of the investigation and identification of causal and contributing factors of the occurrence.

In assessing future probability of an occurrence, it is important not to simply consider the occurrence under investigation, but also to examine the hazard and risk register and other safety occurrences that have similar features and outcomes.

Risk controls

During the investigation it is important to identify what risk controls are in place to reduce or eliminate the effects of hazards or safety deficiencies that contributed to the occurrence. The purpose of this step is to examine the effectiveness of controls to mitigate the effects of existing and new or emerging hazards. There are five areas that should be considered:

1. What controls are presently in place to control the hazard.
2. The effectiveness of the present controls.
3. What variabilities are influencing the effectiveness of the controls.
4. Are there any residual risks if the controls fail; and
5. Have the controls introduced an unintended consequence of a new or unforeseen hazard.

Risk control principles are described at Section 2.2 of this user guide.

Completed risk assessments are to be stored in a master investigation file for the specific occurrence or reported matter.

6. Recommendations

Recommendation development and final report

The primary outcome of investigations is the development of recommendations that are to be made in a final report. Depending upon the complexity of the investigation and severity of the consequences of the safety occurrence or reported matter, the final report may be a simple short investigation feedback report or a safety investigation report.

The purpose of a short investigation feedback report is to provide a brief synopsis of an occurrence or reported matter, a list of investigation outcomes and findings, and any safety lessons for the reader to take away from the investigation. A safety investigation report contains greater detail and recommendations.

Recommendations shall contain the following elements:

- The problem and safety deficiencies to be addressed.
- Proposed corrective and remedial actions (including controls).
- Arguments to support the need, adequacy and feasibility of the corrective and remedial actions.
- Possible challenges or residual risks of implementation of the corrective and remedial actions.
- The individual(s) or organisational section responsible for implementation of the corrective and remedial actions.
- Implementation timeline.

Confidentiality

Information contained in a short investigation feedback report or safety investigation report shall only be used to maintain and improve aviation safety. The report and the information contained in it is not to apportion blame or determine liability. In accordance with the confidentiality statement contained in the just culture policy and principles (Section 1 of SMSM), final reports shall not contain the names of individuals involved in an occurrence or reported matter. It is important to inform personnel involved in an investigation that although confidentiality is assured, complete de-identification may not be practical as a result of awareness of the matter throughout the organisation and work colleagues, especially with smaller organisations.

Final report review

Final reports, for either a short investigation feedback report or safety investigation report is to be reviewed by the safety review team. The distribution of safety investigation information is to be authorised by the CEO.

A final report template is contained in this Appendix.

Feedback and safety communications

The information and knowledge developed as a result of a safety investigation is a useful and important source of information that can be communicated to personnel to help them, and the organisation develop a greater level of awareness and knowledge about the risks in the operational environment.

Feedback is to contain the following elements of information:

1. What happened—a brief summary of the occurrence or reported matter.
2. What hazards or safety deficiencies were identified, including human performance and organisational factors.
3. Findings—what controls or safety defences were in place to mitigate the hazard and why they were ineffective.
4. Recommendations—what corrective actions are proposed or in place to prevent reoccurrence, what additional controls are implemented.

Feedback is to be provided:

- a. To the individual that submitted the initial confidential safety report—this can be in the form of a meeting with the individual and the safety manager.
- b. To organisational personnel—this can be performed during scheduled personnel training meetings in accordance with SMSM Section 4 – Safety promotion.

- c. Into the SMS training program—if considered necessary the training syllabus is to be updated considering any findings and recommendations that provide additional safety value and benefit, this includes human performance related hazards or issues.
- d. Into the training and checking system—any human performance related hazards or issues revealed during the investigation should be considered to how these can be integrated into the organisation's training and checking system.
- e. The safety management system—update of the hazard and risk register to include new identified hazards, and implementation of new controls. If the investigation revealed any increasing trends of the occurrence or matter, consideration in development of safety performance indicators and targets to monitor the effectiveness of controls that have been implemented.

Safety investigation report template

This template is designed to provide a consistent format and to assist in ensuring all relevant information collected and analysed during an investigation is recorded in a form that is accessible and useable at a later date.

The template contains headings required and additional information to assist in developing the minimum relevant information to support the investigation findings.

1. **Title** – a short title of the hazard or occurrence, including place and date of occurrence or report.
2. **Summary** – a brief summary of the occurrence or reported matter that provides an overview of what happened.
3. **Factual information** – a chronology of events developed from the investigation and reconstruction, e.g., WHAT happened during the occurrence.
 - a. Summary of information obtained during interviews, flight data, simulation, reconstruction.
 - b. Additional information to support reliability of collected information and data, especially if information is inconsistent or missing.
4. **Analysis** – describes WHY the occurrence happened.
 - a. What contributed (effectiveness of safety controls).
 - b. Could the organisation or personnel have anticipated the occurrence or hazard.
 - c. Explanation of any identified human performance or organisational factors that contributed to the likelihood of the occurrence or hazard.
 - d. Where there any precursors to the occurrence that were not given appropriate attention.
5. **Conclusions** – list the findings and causal factors.
 - a. Could the occurrence or hazard been avoided, if not, what actions and controls can be taken to reduce the likelihood of future occurrences.
6. **Recommendations** – List each recommendation as a result of the investigation. If no recommendations made, this decision needs to be justified.

C1. Guidance for use of SHELL model

The SHELL model can be used to consider human factors impact and interaction with different components of a system or process. Use of the SHELL model may be used in a range of safety risk assessment processes including:

- Investigation of safety occurrences or hazards.
- Management of change processes.
- Implementation and review of risk controls.

This Appendix outlines the use of the SHELL model as described in the Fourth Edition of the ICAO Safety Management Manual (SMM).

Description

The SHELL model can be used to visualise interrelationships between the human operator and various components of a system. The human operator is located centrally in the model (L) to help develop an understanding of the relationship of the individual(s) to other components and features of a system or workplace.

The SHELL model (Figure C1) name is derived from its four components:

- Software (S) – (policy, processes, procedures, training etc.).
- Hardware (H) – (equipment, aircraft, tooling, aircraft systems etc.).
- Environment (E) – (the working environment).
- Liveware (L) – (the central human operator and others in the workplace or system).

Figure C1: SHELL Model



Adapted from the 4th Ed. ICAO SMM

Explanation of terms used with the SHELL model

- Component – each Software, Hardware, Environment, and Liveware block.
- Interface – irregularities between the central liveware component and other components of the system. This considers that humans do not integrate perfectly with the various components of the system in which they work.
- Mismatch – a potentially hazardous condition between the central liveware component and other four components.

Liveware

The central focus of the model are humans at the front line of operations (e.g., pilots, air traffic controllers, airworthiness personnel). The model considers that humans are adaptable, but of all the four components of the model are the least predictable and susceptible to performance variation as a result of physiological (hunger, fatigue, health), psychological (stress, cognition), and environmental (temperature, light, noise) influences.

The edges of each component block are irregular to consider that humans do not integrate perfectly with the various components of systems in which they work. It is the effects of these irregularities at the interfaces between the central liveware component and the other components of the SHELL model that can be examined, as a mismatch between the central liveware component and the other four components is what can contribute to a hazardous condition.

Interface descriptions

Table C1 describes the interfaces between the central liveware component and each other component. The table includes examples of mismatches between the components that may contribute to a hazardous condition.

When conducting an investigation or developing risk controls, examine each interface and its influence or potential impact on aviation safety.

Example:

Occurrence

Runway excursion as a result of high final approach profile and excessive final approach speed.

Investigation findings

- Pilot had an incorrect understanding of required approach speed.
- Previous training flights did not correct the routine use of excessive approach speed used by the pilot.
- The pilots initial training was not fully completed.

Application of SHELL

- Initial investigation indicates a mismatch between the Liveware-Hardware interfaces (pilot and aircraft).
- Further investigation indicates a mismatch between:
 - Liveware-Software – incorrect application of standard operating procedures, or aircraft flight manual procedures (pilot's use of incorrect airspeed).
 - Liveware-Liveware – training and checking personnel did not correct the pilot's routine use of excessive approach speed, and initial training not completed.

Further investigation into WHY the routine use of excessive final approach speeds were used by the pilot, and WHY their initial training was not fully completed. Additional investigation reveals:

- High pilot turnover and annual leave created shortfalls in appropriately qualified pilots to conduct the operators air transport operations resulting in management assigning the accident pilot to conduct air transport flights before reaching competency.

Application of SHELL

- The additional investigation indicates a mismatch between:
 - Liveware-Environment – management's decision to assign the pilot to an air transport flight before reaching and demonstrating competency (mismatch between pilot and organisational environment/culture).

The organisational causation model can be used during the investigation to analyse the issue further.

Table C1: Interface descriptions**Liveware-Hardware (L-H)**

The L-H interface can be used to consider the relationship between the human operator and equipment and technology (e.g., aircraft, avionics, powerplant, role equipment). The L-H interface may be used to consider how the human operator and equipment interact in the working environment, e.g., use and location of controls, flight instrument display presentation impact on information processing). It is important to examine the natural human tendency to adapt to poor equipment design by use of workarounds, as these may mask deficiencies as a result of successful task execution of a deficient system.

Mismatches at the L-H interface may result from:

- Poorly designed equipment.
- Inappropriate or missing procedures to use the equipment as designed.

Liveware-Software (L-S)

The L-S interface can be used to examine the relationship between the human operator and the policies, processes, procedures, and tools used in the workplace or system (e.g., checklists, standard operating procedures, operations manuals, regulations, electronic navigation data, computer applications). Issues to look for are appropriate design of policy, process or procedures, accuracy of information and data, format and presentation, clarity and symbology.

Mismatches in the L-S interface may result from:

- Insufficient or inappropriate procedure design.
- Misinterpretation, or confusing and ambiguous checklists or procedures.
- Confusing, misleading or cluttered documents, maps and charts.

Liveware-Liveware (L-L)

The L-L interface can be used to examine the relationship between the human operator and other persons in the work environment or system. These can be internal relationships (e.g., pilots, supervisors, managers, other technical personnel) or external relationships (e.g., other pilots, maintenance technicians, air traffic control).

Mismatches in the L-L interface may result from:

- Communications errors between individuals as a result of ambiguity, use on non-standard radio phraseology, interpersonal conflict, language barriers, national cultural barriers.

Liveware-Environment (L-E)

The L-E interface can be used to examine the relationship between the human operator and the internal and external environment. The internal workplace environment may include temperature, ambient light, noise, vibration. The external environment may include visibility, terrain, turbulence. Corporate and cultural environment considerations can also impact human performance and the quality of decision making and system performance.

Mismatches in the L-E interface may result from:

- Reduced performance resulting from poor sleep or irregular work-sleep patterns.
- Pilot perceptual errors induced by environmental conditions such as visual illusions during landing at nighttime.
- National cultural influences (in a multi-cultural work environment) influencing safety performance and decision making (e.g., assertiveness, power-distance).

C2. Guidance for use of the organisational causation model

The organisational causation model is useful to consider if organisational decisions or processes influenced or contributed to a safety occurrence. The benefit of utilisation of the organisational model is to remove the immediate focus away from the individuals directly involved in an accident or incident and investigate if organisational processes and management decisions created conditions which at some point in time could develop into a harmful outcome or hazard.

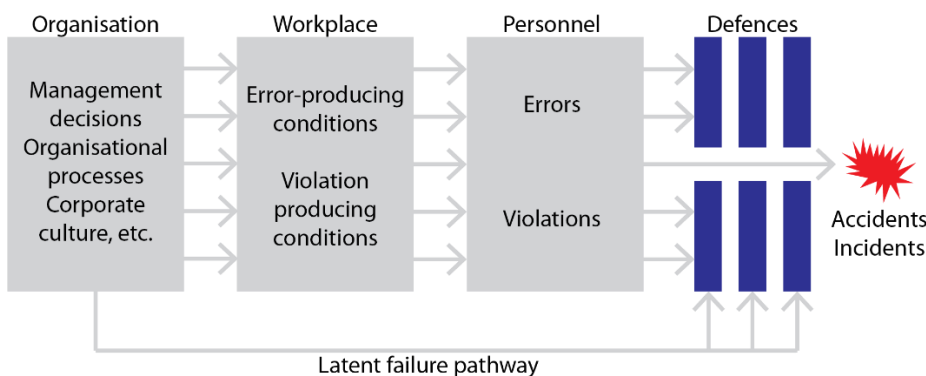
Use of the organisational causation model may be used in a range of safety risk assessment processes including:

- Investigation of safety occurrences or hazards.
- Management of change processes.
- The effectiveness or risk controls.
- To identify the need for additional risk controls.

Description and use of the organisational causation model

Figure C2 represents an adaption of the organisational causation model described by James Reason in *Understanding adverse events: Human Factors*.

Figure C2: Stages of development of an organisational accident



Adapted from *Understanding adverse events: Human Factors*, by James Reason, and UNSW AVIA5015 SMS course

Explanation of terms used with organisational causation model

- **Active failures** – actions or inactions, including errors and rule-breaking that have an immediate adverse effect. Active failures are associated with frontline personnel (pilots, air traffic controllers etc.) and may result in an incident or accident.
- **Latent conditions** – the delayed consequence of decisions or conditions that initially are not perceived as harmful which may remain dormant until their effects or potential for harm are activated by certain operating conditions. Individuals far removed from an accident or incident can be responsible for creating these conditions (e.g., management decisions).
- **Defences** – protections against a hazard materialising into an accident or incident, (e.g., training, SMS, approved maintenance processes, regulations, standard operating procedures, competent personnel).

Figure C2 shows the direction of accident or incident causality from left to right.

1. The trajectory of an accident/incident may begin with negative consequences of organisational processes and management decision making (e.g., poor policy, planning, scheduling, organisational change, change in leadership, poor resource allocation).
2. Latent conditions may be created and integrated into the workplace (cockpit, flight dispatch, maintenance hangar) where they create the conditions that facilitate errors or violations (e.g., inadequate training, understaffing, high workload).

3. Many errors and violations are likely to occur before they combine with conditions that cause a breach of the system defences.
4. Under certain conditions, the multiple layers of defences will be penetrated to result in an accident or incident.

Example: The runway excursion occurrence example previously provided for the SHELL model revealed:

Investigation findings

- Pilot had an incorrect understanding of required approach speed.
- Previous training flights did not correct the routine use of excessive approach speed used by the pilot.
- The pilots initial training was not fully completed.

Application of SHELL revealed:

- Initial investigation indicates a mismatch between the Liveware-Hardware interfaces (pilot and aircraft).
- Further investigation indicates a mismatch between:
 - Liveware-Software – incorrect application of standard operating procedures, or aircraft flight manual procedures (pilot's use of incorrect airspeed).
 - Liveware-Liveware – training and checking personnel did not correct the pilot's routine use of excessive approach speed, and initial training not completed.

Further investigation into WHY the routine use of excessive final approach speeds were used by the pilot and why their initial training was not fully completed. Additional investigation reveals:

- High pilot turnover and annual leave created shortfalls in appropriately qualified pilots to conduct the operators air transport operations resulting in management assigning the accident pilot to conduct air transport flights before reaching competency.

Application of SHELL revealed:

- The additional investigation indicates a mismatch between:
 - Liveware-Environment – management's decision to assign the pilot to an air transport flight before reaching and demonstrating competency (mismatch between pilot and organisational environment/culture).

The organisational causation model can be used during the investigation to analyse this issue further.

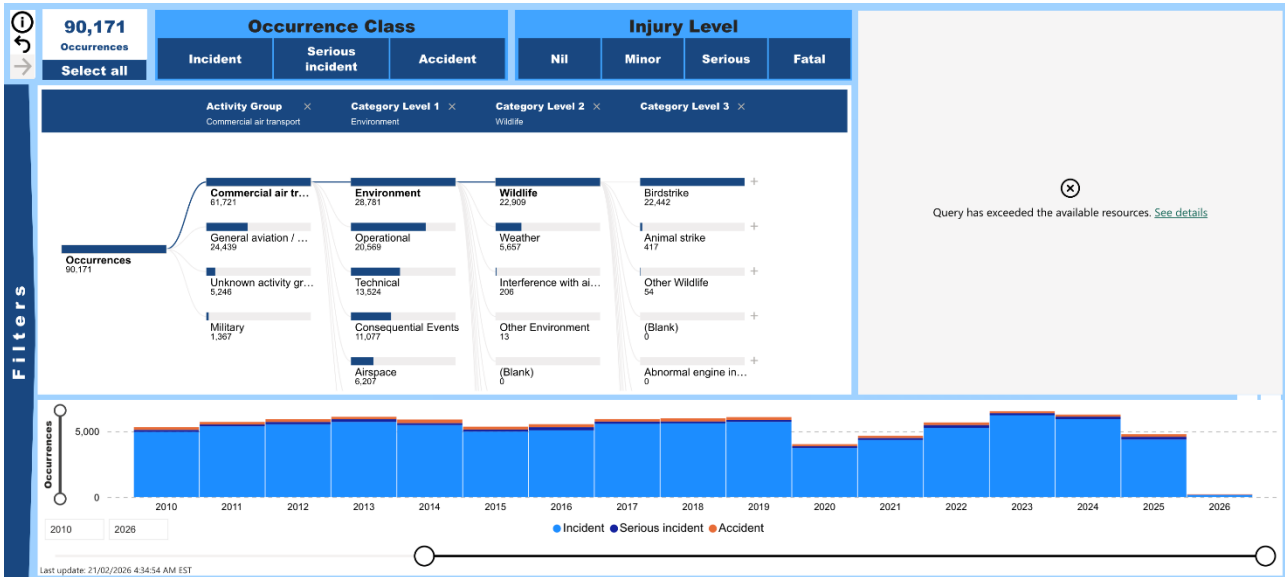
Application of the organisational causation model:

- What defences were breached – internal training and checking requirements.
- What latent conditions are identified:
 - Organisational process – ineffective rostering processes to ensure adequate crewing.
 - Management decision making – noncompliance with exposition and regulatory requirements.

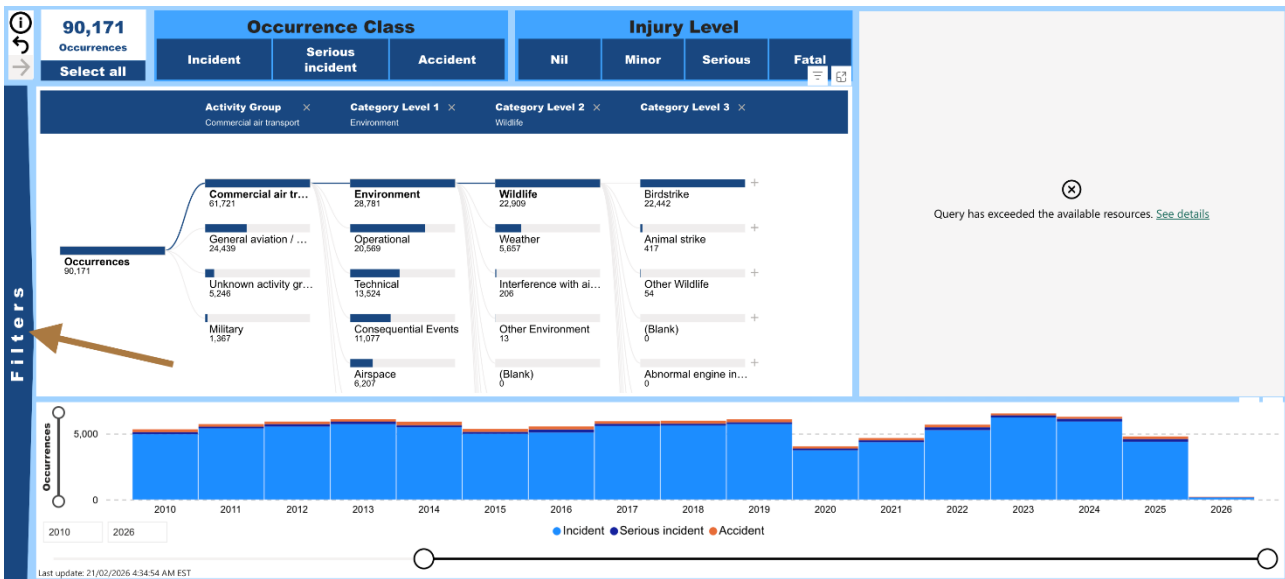
Appendix D – ATSB Database Access

This appendix contains a simple example of accessing the [ATSB National Aviation Occurrence Database](#) and filtering and reviewing safety occurrences that may assist in SMS hazard identification processes.

1. Go to the ATSB National Aviation Occurrence Database.
2. Read the user agreement and click on 'Start'. The following panel will display:



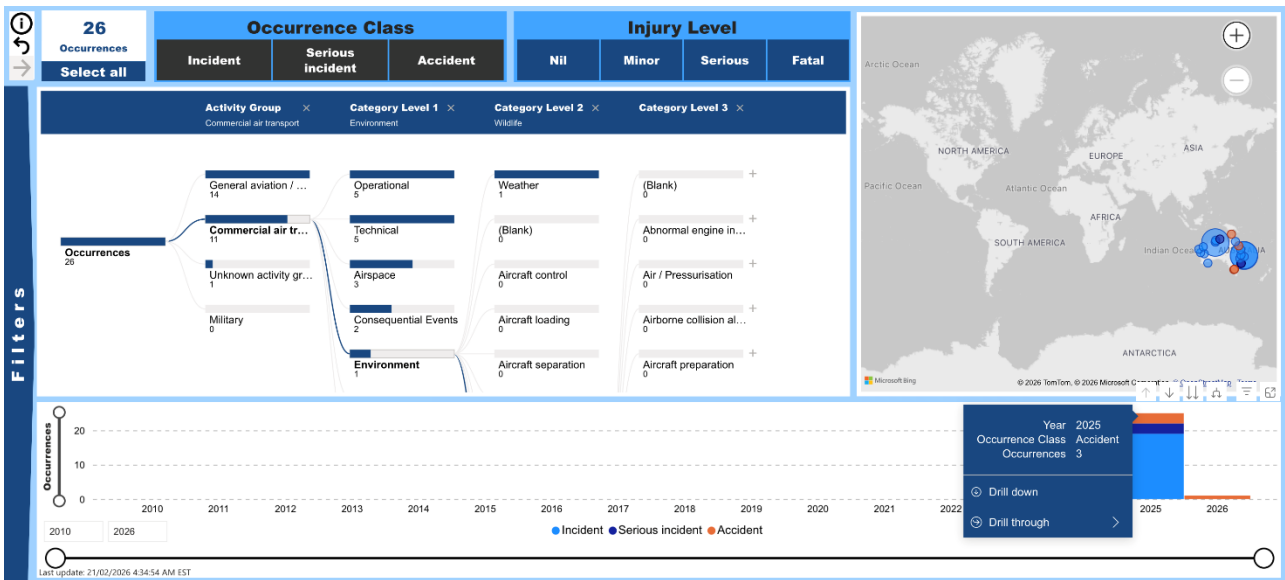
3. Click in the 'Filters' option on the left side of the panel.



4. The filtering panel will appear.
5. Select the filter options for the criteria you want the search to return.
6. In this example the filtered criteria are:
 - a. Occurrence Class (Incident, Serious Incident, Accident)
 - b. Occurrence Date (19/02/2025 to 19/02/2026)
 - c. Aircraft Manufacturer (Robinson Helicopter Company)
 - d. ICAO Aircraft Model (R44)
7. The selected filters returned 26 occurrences.

8. Select the 'Filters' option on the left side of the panel again to collapse the filters panel to return to the occurrences panel. The following panel will appear.
9. A bar graph for the occurrences for each year is located at the bottom of the panel. The bar graph for each year will include incidents (light blue), serious incidents (dark blue) and accidents (red).

10. Hover the mouse over the portion of the bar graph that you want to examine further, for example, if you wish to view the accident occurrence class for 2025, hover the mouse over the red portion of the bar graph and select the 'drill through' option.



11. The panel will reveal descriptive information for each 'accident' for the year 2025.

Reference	Investigation	Date Time	Location	State	Phase(s) of flight	Injury Level	Aircraft Damage Level	Occurrence Class	Occurrence Categories	Summary	Activity Group(s)
OA2025-00907		17/04/2025 2:34:00 PM	Moorabbin Aerodrome	VIC	Taxiing	Minor	Substantial	Accident	Collision with terrain Loss of control	The helicopter collided with terrain resulting in minor injury.	General aviation / R
OA2025-00972	AO-2025-022	2/05/2025 9:43:00 AM	27.9 km 163 degrees from Avalon Aerodrome	VIC	Cruise	Serious	Destroyed	Accident	Engine failure or malfunction Abnormal engine indications Collision with terrain Loss of control	During cruise, the engine lost partial power and the pilot lost directional control. The helicopter subsequently collided with water resulting in substantial damage. One occupant sustained serious injuries and two occupants sustained minor. The investigation is continuing.	Commercial air tran
OA2025-02377	AO-2025-062	8/10/2025 7:20:00 AM	23.9 km 46 degrees from Horn Island Aerodrome	QLD	Cruise	Serious	Substantial	Accident	Ditching Engine failure or malfunction	During cruise, the low rotor horn sounded and the engine failed. The pilot deployed the helicopter's floats and conducted a ditching into the ocean. The pilot and two passengers sustained minor injuries and the helicopter was substantially damaged.	Commercial air tran

12. To examine an occurrence in more detail, refer to the investigation column located on the left-side of the panel and note the investigation number for the occurrence of interest, e.g., AO-2025-062.

13. Go to the [ATSB Aviation Investigations](#) webpage and enter the investigation number in the filter. Select 'apply' at the bottom of the webpage to access the investigation report.

Filter:

Investigation number:

Investigation title keywords:

Location:

Investigation title	Investigation number	Occurrence date	Report status	Report release
Collision with terrain involving Beechcraft B200C, VH-PUY, near Normanton Airport, Queensland, on 6 February 2026	AO-2026-060	06/02/2026	Pending	
Collision with terrain involving Cessna 210N, VH-RDH, 15 km south-east of Goolwa Airport, South Australia, on 6 February 2026	AO-2026-010	06/02/2026	Pending	

Appendix E – Generic SPI examples

Table E1 provides examples of safety performance indicators suggested by the Safety Management International Collaboration Group (SM ICG) to assist organisations with the development of SPI that are relevant to their organisation, and specific for areas that management would like to improve safety performance.

Table E1: Safety performance indicators (SPI) for systems and process issues

Measurement criteria (for SPI)	Metrics (for SPT)
Compliance	
Internal or external audits - non-compliances	<ul style="list-style-type: none"> Total number per audit
Internal or external audits - serious non-compliances	<ul style="list-style-type: none"> Number of serious non-compliances vs total number of findings Number of repeat findings in consecutive audit cycles
Internal or external audits - response to corrective actions	<ul style="list-style-type: none"> Average lead time for completing corrective actions
Consistency of results between internal and external audits	<ul style="list-style-type: none"> Number of findings only revealed through external audits
SMS effectiveness	
Strategic safety management	<ul style="list-style-type: none"> The degree to which safety is considered in the safety policy The frequency with which the safety policy and objectives are reviewed
Management commitment to safety	<ul style="list-style-type: none"> Number of CEO and senior management walk-arounds per month/quarter/year Number of management meetings dedicated to safety per month/quarter/year
Attrition rate of key safety personnel	<ul style="list-style-type: none"> Length of term Number of cases where reason for leaving of key personnel has been analysed
Supervision of personnel	<ul style="list-style-type: none"> Number of cases where supervisors provided positive feedback to personnel demonstrating positive safety behaviours per month/quarter/year
Safety information reporting	<ul style="list-style-type: none"> Number of reports received per month/quarter/year (and \pm trend)
Hazard identification	<ul style="list-style-type: none"> Number of accident/serious incident scenarios or reports

Measurement criteria (for SPI)	Metrics (for SPT)
	<p>analysed to support safety risk management processes per month/quarter/year</p> <ul style="list-style-type: none"> • Number of new hazards identified through the voluntary reporting system per month/quarter/year • Findings from internal/external audits concerning deficiencies or hazards not identified by personnel or management
Risk controls	<ul style="list-style-type: none"> • Number of new risk controls implemented and validated per month/quarter/year • % of overall budget allocated for risk control implementation
Personnel safety responsibilities competence development	<ul style="list-style-type: none"> • % of personnel completion of safety management training • Frequency of reviewing scope, content and quality of safety training. • Number of changes made to safety training following continuous improvement feedback by personnel per month/quarter/year
Management of change	<ul style="list-style-type: none"> • Number of organisational changes for which a formal safety risk assessment was performed per month/quarter/year • Number of changes to Standard Operating Procedures (SOP) for which a formal safety risk assessment was performed per month/quarter/year • Number of technical changes (new equipment, facilities, systems) for which a formal safety risk assessment was performed per month/quarter/year • Number of risk controls implemented for changes per month/quarter/year • % of changes (organisational, SOP, technical) that have been formally risk assessed
Management of contractors (external SMS interfaces)	<ul style="list-style-type: none"> • % of contractors whose safety performance has been evaluated • Frequency for evaluating safety performance of contractors

Measurement criteria (for SPI)	Metrics (for SPT)
	<ul style="list-style-type: none"> • % contractors integrated into the organisation's safety reporting system • % of contractors for which SMS training has been provided • Number of safety reports received from contractors per month/quarter/year • Number of safety actions/improvements initiated following assessment of safety performance or safety reports received from contractors per month/quarter/year
Emergency response plan (ERP)	<ul style="list-style-type: none"> • Number of ERP exercises per year • Frequency of ERP document review • % of personnel trained on the ERP per month/quarter/year • Number of desktop exercises/meetings with main ERP stakeholders to coordinate ERP per month/quarter/year
Safety promotion	<ul style="list-style-type: none"> • Number of safety communications published • Number of safety briefings performed per month/quarter/year
Safety culture	<p>On a scale from 1 = low to 5 = high:</p> <ul style="list-style-type: none"> • The extent to which personnel consider safety as a value that guides their everyday work • The extent to which personnel consider that safety is highly valued by management • The extent to which human performance principles are applied • The extent to which personnel take initiatives in improving organisational practices or report problems to management • The extent to which positive safety behaviours are supported by management • The extent to which personnel and management are aware of the organisation's top risks

Measurement criteria (for SPI)	Metrics (for SPT)
Operational	
Mid-air collision (MAC) risk	<ul style="list-style-type: none"> Number of Traffic Collision Avoidance System (TCAS) advisories (TA, RA) per 1000 flight hours
Runway excursion (RE) risk	<ul style="list-style-type: none"> Number of unstabilised approaches per 1000 landings
Runway incursion (RI) risk	<ul style="list-style-type: none"> Number of runway incursion per 1000 take-offs or landings
Controlled flight into terrain (CFIT) risk	<ul style="list-style-type: none"> Number of Ground Proximity Warning System (GPWS) and Enhanced Ground Proximity Warning System (EGPWS) warnings per 100 flights
Loss of control inflight (LOC-I) risk	<ul style="list-style-type: none"> Number of occurrences where aircraft exceeded airframe limitations or entered flight outside normal operating envelope
Abnormal runway contact	<ul style="list-style-type: none"> Number of heavy landings / tail-strikes per 1000 landings
Turbulence encounter	<ul style="list-style-type: none"> Number of severe turbulence events per 100 flights
Occurrences related to poor flight preparation	<ul style="list-style-type: none"> Number of cases where flight preparation had to be executed in less than normally allocated time per 100 flights Number of low fuel state events per 100 flights Number of fuel calculation errors per 100 flights
Occurrences related to aircraft loading	<ul style="list-style-type: none"> Number of weight and balance errors per month/quarter/year (and \pm trend)
Occurrences related to fatigue	<ul style="list-style-type: none"> Number of flight crew extensions to duty period per month/quarter/year (and \pm trend)
Occurrences related to ground handling	<ul style="list-style-type: none"> Number of incidents with ground handling personnel/equipment per month/quarter/year (and \pm trend)
Occurrences related to aircraft maintenance and airworthiness	<ul style="list-style-type: none"> Pilot reports (airworthiness) per 100 take-offs MEL deferred items per month

Measurement criteria (for SPI)	Metrics (for SPT)
	<ul style="list-style-type: none"> • In-flight shutdown (engine) per 1000 flight hours • In-flight turn-backs and deviations per 100 take-offs • Number of defect reports submitted to CASA and original equipment manufacturer • Number of delays of more than 15 minutes due to technical issues per 100 take-offs • Number of cancellations per 100 scheduled flights due to technical issues • Rejected take-offs per 100 take-offs due to technical issues
Regulatory	
New regulatory requirements	<ul style="list-style-type: none"> • Number of new regulatory compliance requirements that will affect the organisation within next 12 months
Amendments or exemptions to regulatory requirements	<ul style="list-style-type: none"> • Number of amended regulatory requirements or use of exemptions to regulatory requirements that will affect the organisation within the next 6 months
Technology	
New technologies relevant to core business efficiency and safety - hardware	<ul style="list-style-type: none"> • % of total annual budget spent on new technologies
New technologies relevant to core business efficiency and safety - software	<ul style="list-style-type: none"> • % of total annual budget spent on new technologies
New technologies installed in aircraft	<ul style="list-style-type: none"> • Number of aircraft modifications requiring certification / regulatory approval • Number of aircraft modifications requiring flight crew training or new qualifications
Cyber security	<ul style="list-style-type: none"> • Number of measures implemented to ensure data security and to prevent unauthorised access to systems operated or accessed by organisation.

Measurement criteria (for SPI)	Metrics (for SPT)
Personnel	
Personnel attrition	<ul style="list-style-type: none"> • Number of personnel leaving the organisation per month/quarter/year • Average time to fill vacated position
Management personnel attrition	<ul style="list-style-type: none"> • Number of management personnel leaving the organisation per month/quarter/year • Average time to fill vacated management position

Appendix F – SMS Training Syllabus Outline

The CEO is responsible for ensuring each of the personnel described in Table F1 receive training in the syllabus content relevant to their role and complete the relevant assessment.

Table F1: SMS training syllabus outline

Role	Syllabus Content	Assessment activity
Operational safety critical personnel (OSCP)	<p>Safety objectives, safety policies and safety standards including:</p> <ul style="list-style-type: none"> • approach to ‘safety culture’ • not apportioning blame • difference between acceptable and unacceptable safety behaviours • internal safety investigation policy and procedures • high-level overview of the SMS framework and rationale for it • importance of complying with the safety policy and with the standard operating procedures that form part of the SMS • organisational roles and responsibilities of personnel in relation to safety • organisational safety record, including areas of systemic weakness • procedures for hazard and safety reporting • organisational safety management programs (e.g., reporting system, internal audit program etc.) • requirements for ongoing internal assessment of organisational safety performance (e.g., employee surveys, safety audits and assessments) • lines of communication for safety matters • feedback and communication methods for disseminating safety information • safety promotion and information dissemination • procedures for reportable matters (immediate and routinely) • specific safety initiatives, such as: threat and error management (TEM), crew resource management (CRM), approach and landing accident reduction (ALAR), maintenance error decision aid (MEDA), and line operations safety audit (LOSA) • seasonal safety hazards and procedures (weather-related operations etc.). • emergency procedures and response • current and recent safety situations • safety promotion, communication, and information dissemination. 	Knowledge and awareness assessment.
Management personnel	<p>Safety objectives, safety policies and safety standards including:</p> <ul style="list-style-type: none"> • approach to ‘safety culture’ • not apportioning blame • difference between acceptable and unacceptable safety behaviours • internal safety investigation policy and procedures • high-level overview of the SMS framework and rationale for it • the manager’s role in shaping the safety and reporting culture, including a ‘just culture’ • manager’s responsibilities and accountabilities for safety • the safety risk management processes • procedures for hazard and safety reporting • manager’s legal liabilities under CASA and WHS legislation • requirements for ongoing internal assessment of organisational safety performance (e.g., employee surveys, safety audits and assessments) • lines of communication for safety matters • feedback and communication methods for disseminating safety information • safety committee’s risk assessment and root cause analysis • safety promotion and communication and information dissemination 	Knowledge and awareness assessment.

Role	Syllabus Content	Assessment activity
Safety manager and other safety personnel	<p>Safety objectives, safety policies and safety standards including:</p> <ul style="list-style-type: none"> • approach to 'safety culture' • not apportioning blame • difference between acceptable and unacceptable safety behaviours • internal safety investigation policy and procedures • high-level overview of the SMS framework and rationale for it • procedures for hazard and safety reporting • monitoring safety performance • conducting risk assessments • current and recent safety situations • seasonal safety hazards and procedures (weather-related operations etc.) • managing the safety information system (database) • performing safety audits • understanding the role of human performance in accident causation and prevention • procedures for reportable matters (immediate and routinely) • investigation of reportable matters and hazardous events • crisis management and emergency response planning • feedback and communication methods for disseminating safety information • safety promotion and information dissemination. 	Knowledge and awareness assessment.
Non-operational safety critical personnel	<p>Safety objectives, safety policies and safety standards including:</p> <ul style="list-style-type: none"> • approach to 'safety culture' • not apportioning blame • difference between acceptable and unacceptable safety behaviours • internal safety investigation policy and procedures • high-level overview of the SMS framework and rationale for it • organisational roles and responsibilities of personnel in relation to safety • procedures for hazard and safety reporting • organisational safety management programs (e.g., reporting systems, internal audit program etc.) • requirement for ongoing internal assessment of organisational safety performance (e.g., employee surveys, safety audits and assessments) • lines of communication for safety matters • feedback and communication methods for disseminating safety information • safety promotion and information dissemination • emergency response plans 	Knowledge and awareness assessment.
Contractors or external interfaces	<p>Safety objectives, safety policies and safety standards including:</p> <ul style="list-style-type: none"> • high-level overview of the SMS framework and rationale for it • organisational roles and responsibilities of personnel in relation to safety • procedures for hazard and safety reporting • organisational safety management programs (e.g., reporting systems, internal audit program etc.) • lines of communication for safety matters • feedback and communication methods for disseminating safety information • safety promotion and information dissemination 	SMS information handout