

# **Safety Management System Inspector Competency Guidance and Training Programme Outline**



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This paper was prepared by the Safety Management International Collaboration Group (SM ICG). The purpose of the SM ICG is to promote a common understanding of Safety Management System (SMS) / State Safety Programme (SSP) principles and requirements, facilitating their application across the international aviation community. In this document, the term “organisation” refers to an aviation service provider, operator, business, and company, as well as aviation industry organisations; and the term “authority” refers to the regulator authority, Civil Aviation Authority (CAA), National Aviation Authority (NAA), and any other relevant government agency or entity with oversight responsibility.

The current core membership of the SM ICG includes the Aviation Safety and Security Agency (AESA) of Spain, the National Civil Aviation Agency (ANAC) of Brazil, the Bermuda Civil Aviation Authority (BCAA), the Civil Aviation Authority of the Netherlands (CAA NL), the Civil Aviation Authority of New Zealand (CAA NZ), the Civil Aviation Authority of Singapore (CAAS), Civil Aviation Department of Hong Kong (CAD HK), the Civil Aviation Safety Authority (CASA) of Australia, the Direction Générale de l'Aviation Civile (DGAC) in France, the Ente Nazionale per l'Aviazione Civile (ENAC) in Italy, the European Union Aviation Safety Agency (EASA), the Dominican Republic Civil Aviation Institute (IDAC), the Finnish Transport and Communications Agency (Traficom), the Irish Aviation Authority (IAA), Japan Civil Aviation Bureau (JCAB), the United States Federal Aviation Administration (FAA) Aviation Safety Organization, Transport Canada Civil Aviation (TCCA), United Arab Emirates General Civil Aviation Authority (UAE GCAA), and the Civil Aviation Authority of United Kingdom (UK CAA). Additionally, the International Civil Aviation Organisation (ICAO) is an observer to this group.

Members of the SM ICG:

- Collaborate on common SMS/SSP topics of interest
- Share lessons learned
- Encourage the progression of a harmonized SMS/SSP
- Share products with the aviation community
- Collaborate with international organisations such as ICAO and civil aviation authorities that have implemented or are implementing SMS and SSP

Please send any questions regarding this product to [smicg.share@gmail.com](mailto:smicg.share@gmail.com). For further information regarding the SM ICG or to download SM ICG products, please visit SKYbrary at <http://bit.ly/SM-ICG>.

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## 1. Introduction

Aviation regulator workforces include highly skilled positions with significant technical and educational requirements. As Safety Management System (SMS) implementation progresses, regulators may want to define SMS-related competencies for their inspector workforce, which will ensure that personnel requirements are aligned with the SMS and employees have the requisite skills and knowledge to perform SMS oversight<sup>1</sup> effectively.

This document provides Safety Management International Collaboration Group (SM ICG) recommended SMS competencies for inspectors tasked with accomplishing oversight activities and an SMS Inspector Competency Training Programme Outline. The SM ICG [“Guide to Safety Management System Inspector Competency Assessment Tool”](#) document contains information on a tool for Civil Aviation Authorities (CAAs) to evaluate individual inspectors’ level of SMS competency to perform SMS certification and oversight effectively. It also contains a link to the SM ICG [“SMS Inspector Competency Assessment Tool”](#) that can be downloaded from SKYbrary.

An SMS Inspector<sup>2</sup> should already possess the basic inspector competencies outlined in ICAO Doc 10070, *Manual on the Competencies of Civil Aviation Safety Inspectors (CASI)*. SMS-specific observable behaviours are additive to these basic inspector competencies. ICAO defines observable behaviours as single, role-related behaviours that can be observed and may or may not be measurable. This document does not establish metrics for performance standards.

Although this document focuses on specific SMS competencies, regulators should also consider how these competencies fit into their overall authority level competencies. It is not recommended or intended for regulators to have multiple sets of competencies that could be inconsistent or divergent from each other.

## 2. What Is a Competency?

ICAO defines competency as a dimension of human performance that is used to reliably predict successful performance on the job. A competency is manifested and observed through behaviours that mobilize the relevant knowledge, skills, and attitudes to carry out activities or tasks under specified conditions.

In essence, competencies are the integrated knowledge, skills, and attitudes that people need to perform a job effectively. By having a defined set of competencies for each role, the organisation shows employees the kind of behaviours it values and those it requires to help achieve its objectives.

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<sup>1</sup> Note: The term “SMS oversight” in this document is intended to cover:

- Initial SMS approval/certification/authorization,
- Surveillance of regulated organisations to verify that they continue to meet the applicable requirements, and
- SMS assessment evaluating the performance of SMS.

<sup>2</sup> Note: The term “SMS Inspector” in this document refers to aviation authority personnel authorized to carry out SMS oversight of regulated organisations.

A competency framework is a structure that identifies and defines each individual competency required to work in an organisation or part of an organisation. Competency frameworks are normally structured by subject areas and roles in an organisation.

### 3. Why Do We Need Competencies

Defining which SMS-related competencies are necessary for success can help regulators to:

- Recruit and select new staff more effectively,
- Ensure that employees demonstrate sufficient expertise,
- Evaluate safety performance more effectively,
- Identify skill and competency gaps more efficiently,
- Provide more customized training and professional development, and
- Plan for succession.

By using a competency framework as outlined in ICAO Doc 10070 and concentrating on key competencies and observable behaviours, regulators can define the set of practices needed for effective inspection and oversight of an SMS. By collecting and combining competency information, they can create a standardized approach to inspection that is clear and accessible to everyone in the organisation. The framework is designed to outline specifically what inspectors need to do to be effective in their SMS-related roles, and to clearly establish how their roles relate to effective inspection and oversight. The SMS-specific observable behaviours can be used as a basis for developing and delivering needed training to inspectors.

#### **Meeting Organisational Goals**

As SMS implementation progresses, regulators will need to identify SMS-related goals, establish corresponding competencies, and assess the skills of their current workforce against those competencies to identify any gaps that need to be filled.

### 4. Recommended SMS Competencies and Observable Behaviours

ICAO Doc 10070 outlines a CASI competency framework that details nine basic or core inspector competencies. This section identifies observable behaviours over and above the basic framework that are specific to an SMS competency. The SM ICG developed and agreed on the observable behaviours identified in this section, intended to be a common set of behaviours for SMS oversight and evaluation. Regulators may choose to create additional competencies with more specifics about how the safety management knowledge, skills, and attitudes apply to their organisation's context.

#### **Core SMS Competencies**

Competencies may have varying degrees of training requirements. In creating a competency framework for SMS, regulators may wish to concentrate on certain observable behaviours specific to the SMS Inspector role.

Since the publication of the SM ICG document “Inspector SMS Competency Guidance” (2013), and with the increasing maturity in the implementation of the standards and recommended practices of Annex 19, there has been a significant evolution in safety management. Oversight activities have changed from strictly compliance based, to evaluation of system safety performance activities.

In this context, this document updates the definitions and criteria for the competency of SMS Inspectors. It takes the ICAO CASI Competency Framework as a starting point and adapts the competencies associated with systems thinking and risk management in such a way that the inspector can successfully perform SMS oversight activities and, more broadly, contribute towards enhancing safety performance at national, regional, and global levels.

As part of the State safety oversight activities, the key roles of an SMS Inspector/Evaluator are assessing SMS performance and compliance, which may include analysing safety data, interpreting service provider safety performance, contextualizing service provider performance within the State Safety Programme (SSP), and evaluating safety promotion initiatives.

Thus, starting from the ICAO CASI Competency Framework, the competencies that an SMS Inspector should develop and demonstrate are:

1. **Systems Thinking:** Understands and determines how the various components of management systems interact and affect the overall system safety performance.
2. **Risk Management:** Demonstrates an effective approach to the oversight of a stakeholder considering its business model, risk profile, and its availability of resources.
3. **Ethics and Values:** Demonstrates integrity, transparency, openness, respect, and fairness and considers the consequences when making a decision or taking action. Acts consistently in accordance with fundamental values of the Civil Aviation Authority.
4. **Communication:** Effectively conveys, receives, and understands information in oral, written, and non-verbal modes.
5. **Problem Solving and Decision Making:** Solves issues of varied levels of complexity, ambiguity, and risk. Makes timely decisions that take into account relevant facts, tasks, goals, constraints, risks, and conflicting points of view.
6. **Initiative:** Identifies and addresses issues independently, proactively, and persistently to achieve objectives.
7. **Technical Expertise:** Applies and improves technical knowledge and skills to perform safety oversight duties in a specific aviation discipline.
8. **Leadership and Teamwork:** Collaborates up, down, and across the organisation to foster and promote a clear vision and common goals. Energizes others to achieve the goals and positive results.
9. **Critical Thinking:** Analyses information in order to consistently achieve desired outcomes.

Systems thinking and risk management require SMS-specific training. The SM ICG adapted observable behaviours for these competencies follow. For the remaining competencies, the observable behaviours are shown in Appendix C.

<b>Competency: SYSTEMS THINKING</b>	
<b>Description</b>	Understands and determines how the various components of management systems interact and affect the overall system safety performance.
<b>Observable Behaviours</b>	<p>ST1. Accurately evaluates the inter-relationship between policies, processes and procedures of the stakeholder's systems, particularly the SMS and SSP.</p> <p>ST2. Accurately evaluates the inter-relationship between various systems, including SMS, quality, and compliance of the stakeholder, recognizing how these components interact and interface, while maintaining an objective, non-punitive, and no-blame approach.</p> <p>ST3. Determines the effectiveness of the implementation of continuous improvement, reactive and proactive processes.</p> <p>ST4. Recognizes the essential components of a functional SMS and their interoperability, cultural aspects, human and organisational factors, and the confidentiality of safety information (particularly the reporting system).</p> <p>ST5. Determines whether the stakeholder's management systems are appropriate for the types of certificates, size and scope/complexity of the operation.</p> <p>ST6. Accurately assesses how different management systems interact with one another across various stakeholders, including interfaces and human and organizational factors.</p> <p>ST7. Uses the appropriate set of metrics to measure and monitor regulatory and organisational safety performance.</p> <p>ST8. Interprets findings from analysis of performance data within the organisational safety performance framework and indicators system.</p> <p>ST9. Assesses the achievement of safety performance objectives using risk management and compliance monitoring principles, considering organizational capability and maturity.</p> <p>ST10. Understands the impact of the regulatory framework on the safety issues and challenges of the stakeholder.</p> <p>ST11. Accurately determines whether the root cause(s) of deficiencies results from a single-point or systemic failure(s).</p> <p>ST12. Assesses the difference between compliance- and performance-based oversight.</p>

<b>Competency: RISK MANAGEMENT</b>	
Description	Demonstrates an effective approach to the oversight of a stakeholder considering its business model, risk profile, and its availability of resources.
Observable Behaviours	<p>RM1. Evaluates the appropriateness of risk assessments performed by stakeholders and actions taken to manage hazards to an acceptable level, including change management processes, and considering human performance aspects and organisational factors.</p> <p>RM2. Identifies whether strategic decisions consider risk assessment principles and results.</p> <p>RM3. Recognizes the role of human and organisational factors.</p> <p>RM4. Understands the relationship between Safety Risk Management and Safety Assurance processes, and evaluates risk mitigation actions and proposed system changes.</p> <p>RM5. Recognizes business practices or organisational cultures that are potential indicators of increased levels of risk, considering the influence of human performance and limitations.</p> <p>RM6. Applies appropriate certification requirements and surveillance techniques according to changing levels of risk, analysing critically the organisations safety performance.</p> <p>RM7. Identifies if appropriate remedial or enforcement action is required to address an issue at its root cause.</p> <p>RM8. Ensures that stakeholders implement remedial measures associated with safety issues or proposed changes.</p>

## 5. Implementation

As regulators finalize competencies, communication is vital. To help get buy-in from employees at all levels of the organisation, it is important to explain why the competencies have been developed, how they will be used, and the process that will be used to update them.

## 6. SMS Training Programme Outline

### Training Programme Outline Scope

The Training Programme Outline in this document focuses on developing inspector competencies for SMS oversight of regulated organisations. The Training Programme Outline assumes that the inspector has already developed the initial CASI competencies. Therefore, the Training Programme Outline focuses on SYSTEMS THINKING and RISK MANAGEMENT competencies as described in Section 4.

The scope of the Training Programme Outline includes prerequisites, learning objectives, topics to be covered, and resources for developing training that will help build these SMS competencies.



The scope of this document does not include lesson plans or methods for assessing inspector SMS competencies. The SM ICG “Guide to the Safety Management System Inspector Competency Assessment Tool” along with the SM ICG “SMS Inspector Competency Assessment Tool” can be used to assess SMS Inspector competency.

### **Appendices**

There are three appendices to this document. They are:

- **Appendix A: Overview of Training Programme Outline:** Gives an overview of learning objectives for training programme sections.
- **Appendix B: Detailed Training Programme Outline:** Details key learning points and resources to support each learning objective. These resources may be used to develop lesson plans for an SMS training programme. Note: The resources cited in Appendix B are not exhaustive.
- **Appendix C: The ICAO CASI (Civil Aviation Safety Inspector) Competency Framework:** Provides the competency framework for the SMS Inspector, reproduced from ICAO Doc 10070, with a reorganisation that places systemic thinking and risk management competencies at the beginning.

## **Appendix A: Overview of Training Programme Outline**

The Training Programme Outline for Inspector SMS Competency consists of four sections in order of progression:

- 1) Safety Management Concepts
- 2) Regulatory Framework
- 3) SMS Components
  1. Safety Policy and Objectives
  2. Safety Risk Management
  3. Safety Assurance
  4. Safety Promotion
- 4) SMS Evaluation

### **Learning Objectives for Training Programme Sections**

The Training Programme Outline is designed to develop and improve competencies. The learning objectives are connected to the behaviours indicated in parentheses.

#### **Section 1: Safety Management Concepts**

1. To explain what a management system is (ST1, ST2)
2. To identify how safety is integrated into an organisation's management system (ST1, ST2, ST4)
3. To recognize the potential safety impacts of interfaces between an organisation's SMS and other organisations (ST2, ST6, RM7)
4. To recognize the potential safety impacts of interfaces between systems within an organisation (ST2, ST6, ST11, RM3)
5. To recognize risks to safety related to human and organisational factors (ST4, ST6, RM4, RM8)
6. To recognize the impact of an organisation's safety culture on its safety performance (ST4, ST9, RM4)

#### **Section 2: Regulatory Framework**

1. To describe and explain the intent of the applicable international standards, State legislation, and regulations related to aviation safety management (ST1, ST4, ST10)
2. To recognize the relationship of the State Safety Programme (SSP) with SMS requirements (ST1)
3. To apply State policies and procedures with respect to SMS (ST1, ST10, RM1, RM3, RM5)
4. To explain the principles of prescriptive and performance-based requirements and oversight (ST1, ST12, RM5)

### **Section 3: SMS Components**

#### **Component 1: Safety Policy and Objectives**

1. To distinguish the accountability and responsibilities of the Accountable Executive, management, and key safety personnel (ST4)
2. To discern how management commitment to an organisation's SMS is reflected in the safety policy and evidenced by their actions throughout the organisation (RM2, RM4, RM5)
3. To identify how organisations set and measure safety objectives (ST7, ST9)
4. To validate an organisation's emergency response plan coordination process (ST4, ST5)
5. To evaluate an organisation's SMS documentation system (ST1, ST2, ST4, ST5)

#### **Component 2: Safety Risk Management**

1. To evaluate an organisation's safety reporting system and investigation process (ST1, ST11)
2. To assess an organisation's hazard identification processes (RM3, RM4)
3. To assess the effectiveness of an organisation's risk management process (RM6, RM1, RM7, RM8)

#### **Component 3: Safety Assurance**

1. To analyse an organisation's means to measure safety performance (ST7, ST8, RM1)
2. To evaluate how an organisation assesses its safety performance compared with its safety objectives (ST7, ST9)
3. To assess an organisation's change management process (RM2, RM6, RM7)
4. To explain the relationship between quality assurance and safety assurance (ST1, ST2, ST8, ST11)
5. To evaluate how an organisation assesses the effectiveness of its SMS, to continuously improve the SMS (ST3, ST7, RM5)

#### **Component 4: Safety Promotion**

1. To evaluate an organisation's safety communication, training, and education processes (ST1, ST5)

### **Section 4: SMS Evaluation**


1. To recognize different approaches to implementing and achieving an effective SMS (ST5, ST12)
2. To plan an assessment of an organisation's SMS (RM1, RM5)
3. To obtain objective evidence where possible and exercise judgment when necessary to reach conclusions about an organisation's SMS (ST1, ST2, ST6, ST9, ST12 RM2, RM4, RM1)
4. To explain the allowable use and control of information obtained from an organisation's SMS (ST4, ST6)
5. To identify systemic deficiencies in an organisation (ST10, ST11)
6. To assess the effectiveness of an SMS and discern whether the SMS is appropriate for the size and complexity of the organisation (ST1, ST2, ST4, ST5, ST9, ST12, RM1, RM6, RM1)

## Appendix B: Detailed Training Programme Outline




### Section 1: Safety Management Concepts




Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
1.1	To explain what a management system is	<p>Definition of management systems typically include:</p> <ul style="list-style-type: none"> <li>• Organisational structure</li> <li>• Framework for establishing accountability—responsibility and authority</li> <li>• Processes for setting goals and determining requirements</li> <li>• Processes for delivery of the organisation's products/services</li> <li>• A means of controlling and assuring attainment of the requirements (including corrective action processes)</li> <li>• Processes for communicating and assuring necessary competencies</li> </ul>	<p><a href="#">ISO 9000-2015 definition</a></p> <p>TCCA slide defining Safety and Security Management Systems:</p> <p><a href="#">ISO Management System Standards</a></p>	ST1, ST2
1.2	To identify how safety is integrated into an organisation's management system	<p>Purpose of SMS</p> <p>Integration of management processes (Plan-Do-Check-Act cycle) with technical and safety processes</p> <p>Application of safety management to operational/technical functions of the organisation</p>	<p><a href="#">ICAO SMM: 8.4.7, 9.7.5, "Integration of Management Systems"</a></p> <p><a href="#">SM ICG The Senior Manager's Role in SMS</a></p>	ST1, ST2, ST4



SMS Inspector Competency Guidance and Training Programme Outline

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
1.3	To recognize the potential safety impacts of interfaces between an organisation's SMS and other organisations	<p>Interfaces—and potential impacts—between other organisations</p> <p>Communication and agreements between organisations such as access to reporting systems and joint risk assessments</p> <p>Identification of hazards from external sources Risk acceptance (transfer, sharing, avoidance)</p> <p>Safety assurance of contractors and other organisations</p>	<p><a href="#">ICAO SMM</a>: 1.3.3, 2.5.2.12-2.5.2.13, 4.1.6</p> <p><a href="#">SM ICG SMS Integration: Points to Consider</a></p> <p><a href="#">CASA SMS for Aviation - A Practical Guide (3rd Edition) Booklet 2: Safety Policy and Objectives</a> (p.10)</p> <p><a href="#">FAA ATO SMS Manual Dec 2022</a>: 2.1 Introduction to Managing System Safety</p>  <p>2.1 Intro to Managing System Safety.JPG</p> <p><a href="#">Helicopter Maintenance Magazine, August 2013: "The Importance of an Integrated Quality Management System (QMS) and Safety Management System (SMS) in Aviation Operations"</a></p>	ST2, ST6, RM7
1.4	To recognize the potential safety impacts of interfaces between systems within an organisation	<p>Interfaces—and potential impacts—between systems within an organisation</p> <p>Systems include functional area systems and those related to organisation management systems (e.g., Quality Management System [QMS], Occupational Health and Safety Management System, Security Management System)</p> <p>Different certificates/privileges held by one organisation (e.g., Air Traffic Organisation [ATO], Approved Maintenance Organisation [AMO], air operator)</p>	<p><a href="#">SM ICG SMS Integration: Points to Consider</a></p> <p><a href="#">NZCAA AC 100-1, Safety Management</a>: 1.6, "SMS Integration with other Management Systems"</p> <p><a href="#">ICAO SMM</a>: 9.7.1, "System description," 9.7.2, "Interface management," 9.7.3, "Identification of SMS interfaces," 9.7.5, "Integration of Management Systems"</p> <p><a href="#">FAA ATO SMS Manual Dec 2022</a>: 2.1, "Introduction to Managing System Safety"</p>	ST2, ST6, ST11, RM3

SMS Inspector Competency Guidance and Training Programme Outline

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
		Accident causation models of safety events (cross-domain interactions)	 2.1 Intro to Managing System Safety.JPG  Case study on cross-domain interactions in accident causation: <a href="#">A STAMP Analysis of the LEX COMAIR 5191 Accident</a>	
1.5	To recognize human and organisational factors/related risks to safety	High-level key aspects of human and organisational factors considerations: <ul style="list-style-type: none"> <li>• Communications</li> <li>• Leadership</li> <li>• Human performance models (e.g., SHELL, 5M)</li> <li>• Situational awareness</li> <li>• Decision-making</li> <li>• Fatigue and fatigue risk management</li> <li>• Human error and error management</li> <li>• Workload and task design</li> </ul> (Note: This is not an HF course; thus, it only refers to key concepts.)	<a href="#">ICAO SMM: 2.1.4, 2.2, “Humans in the System”</a>  <a href="#">ICAO DOC 10151, Manual on Human Performance for Regulators</a>  <a href="#">CASA SMS for Aviation – A Practical Guide (3<sup>rd</sup> Edition) Booklet 6: Human Factors</a>  CASA Safety Behaviours: Human Factors Resource Guide for Engineers: Chapter 1, “Introduction”; Chapter 3, “Human performance and its limitations”; Chapter 12, “Human factors within an organization”   safety-behaviours-human-factors-engineer  CASA Integration of Human Factors into SMS   CASA HF into SMS.pdf  <a href="#">FSF Operator’s Guide to Human Factors in Aviation: Human Factors Strategy</a>	ST4, ST6, RM4, RM8


Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
			<p><a href="#">UK CAA CAP 716 Aviation Maintenance Human Factors (EASA Part 145)</a></p> <p><a href="#">TCCA Human Performance Factors for Elementary Work and Servicing</a></p> <p><a href="#">FAA ATO SMS Manual Dec 2022: 2.6, "The Human Element's Effect on Safety"</a></p>  <p>SMS Manual 2.6 Human Element.JPG</p> <p>FAA Human Factors Acquisition Job Aid</p>  <p>Human Factors in FAA Acquisition Job A</p> <p><a href="#">Human Factors Analysis and Classification System (HFACS)</a></p> <p><a href="#">ICAO Human Factors Guidelines for Aircraft Maintenance Manual (Doc. 9824)</a></p>	
1.6	To recognize the impact of an organisation's safety culture on its safety performance	<p>Definition of safety culture and its components: risk, just, reporting, learning, informed, and flexible cultures and their impact on personnel behaviours at various levels of the organisation</p> <p>Different types of national, ethnic, and professional cultures and how they may affect the safety culture of an organisation</p> <p>Importance of the safety policy and safety leadership to foster a positive safety culture</p>	<p><a href="#">CASA SMS for Aviation - A Practical Guide (3rd Edition) Booklet 4: Safety Assurance (p. 29–32)</a></p> <p>Eurocontrol Just Culture Policy</p>  <p>Just Culture Model Policy EUROCONTRO</p> <p><i>CANSO Standard of Excellence in Safety Management Systems (Appendix A, Section 1,</i></p>	ST4, ST9, RM4

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
		<p>Importance of an open reporting environment and its impact on the effectiveness of a management system</p> <p>Possible reduction of reporting due to sanctions applied by authorities against the organisation based on reported data</p> <p>Benefits of a Just Culture:</p> <ul style="list-style-type: none"> <li>• Increased safety reporting</li> <li>• Trust building</li> <li>• More effective safety and operational management. Punishment vs. Learning</li> <li>• Definition of the boundary between 'Acceptable Behaviour' and 'Unacceptable Behaviour'</li> <li>• Identification of processes and policies that support a just culture</li> </ul>	<p>pp. 18-20, "Development of a Positive and Proactive Safety Culture")</p> <div style="text-align: center;">  <p>CANSO Standard of Excellence in Safety M</p> </div> <p><a href="#">FAA ATO SMS Manual Dec 2022</a>: 1.4.1, "Safety Culture and Promotion in the ATO"</p> <div style="text-align: center;">  <p>1.4.1 Safety Culture.JPG</p> </div> <p><a href="#">ICAO SMM</a>: 3.1, "Safety Culture</p> <p><a href="#">SM ICG Industry Safety Culture Evaluation Tool and Guidance</a></p> <p><a href="#">SM ICG Organizational Culture Self-Assessment Tool and Guidance for Regulatory Authorities</a></p>	



**Section 2: Regulatory Framework**

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
2.1	To describe and explain the intent of the applicable international standards, State legislation, and regulations related to aviation safety management	ICAO Annex 19 Standards and Recommended Practices (SARPs)  National Regulations for SMS (and standards, if applicable)  SMS applicability (Which organisations does it apply to?)  Effective dates  National guidance material for SMS  Acceptable means of compliance guidance	ICAO Annex 19  State SMS Regulations	ST1, ST4, ST10
2.2	To recognize the relationship of the State Safety Programme (SSP) with SMS requirements	Relationship between SSP and SMS  The interaction between an organisation's SMS and the SSP	ICAO Annex 19 and SMM  State SSP  State SMS Regulations	ST1
2.3	To apply State policies and procedures with respect to SMS	National SMS policy(ies) and procedures (acceptance/certification, oversight/surveillance, etc.)  National enforcement policies and how they may differ in respect to SMS  State's approach to SMS implementation (use of implementation plans and timescales for implementation)	State SMS policies and procedures  State SSP	ST1, ST10, RM1, RM3, RM5

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
2.4	To explain the principles of prescriptive and performance-based requirements and oversight	<p>Principles of prescriptive requirements and performance-based requirements</p> <p>Verification of compliance using prescriptive and performance-based requirements</p>	<p><a href="#">ICAO SMM</a>: 8.3.5.2, “Prescriptive and Performance-Based Regulations”</p> <p>TCCA slide explaining types of regulations:</p>  <p>Slide on types of regulations.ppt</p> <p><a href="#">SM ICG SMS Evaluation Tool</a></p>	ST1, ST12, RM5

**Section 3: SMS Component 1 (Safety Policy and Objectives)**

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
3.1.1	To distinguish the accountability and responsibilities of the Accountable Executive, management, and key safety personnel	<p>Safety performance roles and responsibilities of:</p> <ul style="list-style-type: none"> <li>a) Accountable Executive</li> <li>b) Senior Management</li> <li>c) Frontline Managers</li> <li>d) Safety Manager</li> <li>e) Safety Committees, if applicable</li> </ul> <p>Safety accountability vs. responsibility (delegation)</p> <p>Level(s) of management with authority to make decisions regarding safety risk tolerability</p> <p>Accountable Executive in organisations holding multiple certificates</p>	<p><a href="#">SM ICG The Senior Manager's Role in SMS</a></p> <p><a href="#">SM ICG The Frontline Manager's Role in SMS</a></p> <p><a href="#">ICAO SMM</a>: 9.3.5, "Safety accountability and responsibilities" 9.3.6, "Appointment of key safety personnel"</p> <p><a href="#">CASA SMS for Aviation - A Practical Guide (3rd Edition) Booklet 2: Safety Policy and Objectives</a> (p. 1–7)</p> <p><a href="#">TCCA AC 107-001, Guidance on Safety Management Systems Development</a>: 3.5, "The Accountable Executive and Corporate Culture"</p>	ST4
3.1.2	To discern how management commitment to an organisation's SMS is reflected in the safety policy and evidenced by their actions throughout the organisation	<p>Safety policy does the following:</p> <ul style="list-style-type: none"> <li>• Defines the organisation's commitment to safety, including the promotion of a positive safety culture</li> <li>• Identifies the obligations of staff to use the safety reporting system</li> <li>• Describes what is unacceptable behaviour (including circumstances under which disciplinary action would not apply)</li> <li>• Commits to provide sufficient resources to manage safety (financial, human, material, and equipment)</li> </ul> <p>Organisational structure appropriate to the size and complexity of the organisation</p> <p>Management commitment and active support (alignment of the organisation's activities to the</p>	<p><a href="#">SM ICG The Senior Manager's Role in SMS</a></p> <p><a href="#">SM ICG The Frontline Manager's Role in SMS</a></p> <p><a href="#">SM ICG SMS Evaluation Tool</a></p> <p><a href="#">ICAO SMM</a>: 8.3.6.8, "State safety policy and safety objectives" 9.3.4, "Management commitment"</p> <p><a href="#">ISO 9001, Guidance on Auditing Top Management Commitment</a></p>	RM2, RM4, RM5

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Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
		<p>safety policy, allocation of resources, management reviews, dashboards, safety meeting attendance)</p> <p>Periodic review of safety policy (e.g., change of AE or significant organisational change)</p>		
3.1.3	To identify how organisations set and measure safety objectives	<p>Safety objectives do the following:</p> <ul style="list-style-type: none"> <li>• Reflect the organisation’s commitment to continuously improve the effectiveness of their SMS</li> <li>• Are communicated throughout the organisation and periodically reviewed</li> </ul> <p>Safety performance management reflects the State SSP/EASP or other regional safety plans (if available)</p> <p>Relationship between safety objectives, safety performance targets, and safety performance indicators</p>	<p><a href="#">ICAO SMM</a>: 4.1.6, “Safety performance management and interfaces”, 9.5.4.20</p> <p><a href="#">SM ICG SMS for Small Organizations</a> (p. 3)</p> <p><a href="#">SMS for Airports</a>: 4.2, “Safety Policy and Objectives”</p> <p><a href="#">TCCA AC 107-001, Guidance on Safety Management Systems Development</a>: 4.2–4.3, “Safety Policy and Objectives”</p>	ST7, ST9
3.1.4	To validate an organisation’s emergency response plan coordination process	<p>Sectors required by the State to establish and maintain Emergency Response Plans (ERP)</p> <p>Coordination of ERPs with the organisation’s affected external interfaces</p>	<p><a href="#">ICAO SMM</a>: 9.3.7, “Coordination of emergency response planning”</p> <p><a href="#">CASA SMS for Aviation - A Practical Guide (3rd Edition) Booklet 2: Safety Policy and Objectives</a> (p. 13–14)</p> <p><a href="#">TCCA AC 107-001, Guidance on Safety Management Systems Development</a>: 10.0, “Emergency Response Plan”</p> <p><a href="#">CAA NZ AC 100-1, Safety Management</a>: 2.2.2, “Coordinated Emergency Response Planning”</p>	ST4, ST5

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
			<p><a href="#">SMS for Airports</a>: Coordination of Emergency Planning (pp. 16–17)</p> <p><a href="#">FAA ACC 150/5200-31C, Airport Emergency Plan Change 2</a></p>	
3.1.5	To evaluate an organisation's SMS documentation system	<p>SMS documentation system includes:</p> <p>a) SMS Manuals—to describe SMS policies, processes, procedures, and accountabilities</p> <ul style="list-style-type: none"> <li>• Integration of SMS manual with other required documentation, need for document controls, periodic reviews</li> </ul> <p>b) SMS Records—outputs of the SMS processes and procedures (examples of records: meeting minutes, safety data, safety reports, hazard logs, risk registers, safety risk assessments, etc.)</p> <ul style="list-style-type: none"> <li>• Retention of records</li> </ul>	<p><a href="#">ICAO SMM</a>: 9.3.8, “SMS Documentation”</p> <p><a href="#">SM ICG SMS Evaluation Tool</a></p> <p><a href="#">ISO 9001, Guidance on Auditing Electronic Documented Information Systems</a></p> <p><a href="#">TCCA AC 107-001, Guidance on Safety Management Systems Development</a>:: 5.0, “Documentation”</p> <p><a href="#">CAA NZ AC 100-1, Safety Management</a>: 2.2.3, “Development, Control and Maintenance of Safety Management Documentation”</p> <p><a href="#">EHEST SMM for Complex Operators</a>: Chapter 7, “Documentation Control Procedure”</p>	ST1, ST2, ST4, ST5

**Section 3: SMS Component 2 (Safety Risk Management)**

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
3.2.1	To evaluate an organisation's safety reporting system and investigation process	<p>Mandatory and voluntary reporting systems</p> <ul style="list-style-type: none"> <li>Perimeter of mandatory and voluntary reporting systems: accessibility to third parties</li> </ul> <p>Maturity of reporting—types of reports (i.e., first-, second-, third- generation reports: “He has done something wrong,” “Something may go wrong,” “I have done something wrong,” etc.)</p> <p>Internal investigation of safety events</p> <ul style="list-style-type: none"> <li>Prioritisation of safety investigations causal analysis process and outputs</li> <li>Various models of causal analysis: BowTie, Fishbone Diagram, 5 Whys, etc.</li> </ul> <p>Timely corrective and preventive actions</p> <p>Validation of effectiveness in preventing recurrence</p> <p>Recurrence indicates ineffective corrective action</p>	<p><a href="#">ICAO SMM</a>: 5.2.5, “Mandatory safety reporting systems,” 5.2.6, “Voluntary safety reporting systems”</p> <p><a href="#">SM ICG SMS for Small Organizations</a>: 2.1.1–2.1.3, Appendix 8</p> <p><a href="#">CASA SMS for Aviation - A Practical Guide (3rd Edition) Booklet 4: Safety Assurance</a> (pp. 2–3)</p> <p><a href="#">SMS for Airports</a>: 6.4, “Safety Reporting”; 6.5, “Accident and Incident Investigation”</p> <p><a href="#">CAA NZ AC 100-1, Safety Management</a>: 2.4.1, “Safety Investigation”</p> <p><a href="#">TCCA AC 107-001, Guidance on Safety Management Systems Development</a>: 6.2, “Reactive Processes”</p> <p><a href="#">TCCA AC SUR-002, Root Cause Analysis and Corrective Action for TCCA Findings</a></p> <p><a href="#">Mini-Guide to Root Cause Analysis</a></p> <p><a href="#">Best Practices for Event Review Committees</a></p> <p><a href="#">CAP1760: Effective Problem Solving and Root Cause Identification</a></p>	ST1, ST11

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
3.2.2	To assess an organisation's hazard identification processes	<p>Definition of and relationship between hazards and consequences</p> <p>Methods of hazard identification (reactive, proactive)</p> <ul style="list-style-type: none"> <li>• Use of multiple sources of hazard identification</li> <li>• Hazard identification is ongoing</li> </ul> <p>Examples of typical hazards for aviation sectors</p> <ul style="list-style-type: none"> <li>• Hazards related to interfaces</li> <li>• Hazards related to human factors organisational hazards</li> </ul> <p>Collection and analysis of hazards</p>	<p><a href="#">SM ICG SMS Evaluation Tool</a></p> <p><a href="#">SM ICG Hazard Taxonomy Examples</a></p> <p><a href="#">SM ICG Development of a Common Hazard Taxonomy</a></p> <p><a href="#">ECAST SMS WG Guidance on Hazards Identification</a></p> <p><a href="#">SMS for Airports</a>: 5.3, "Identify Hazards"; Table 8, "Common Airport Hazards"</p> <p><a href="#">CASA SMS for Aviation - A Practical Guide (3rd Edition) Booklet 3: Safety Risk Management</a> (pp. 1–5)</p> <p><a href="#">CAA NZ AC 100-1, Safety Management</a>, 2.3.1, "Hazard Identification"</p> <p><a href="#">TCCA AC 107-001, Guidance on Safety Management Systems Development</a>: 6.3, "Pro-Active Processes"</p> <p><a href="#">ICAO SMM</a>: 2.5.1, "Introduction to hazards," 2.5.2, "Understanding hazards and their consequences," 9.4.4, "Hazard identification, 9.7.3, "Identification of SMS interfaces"</p> <p><a href="#">Shell Aircraft International: A Simplified Process for Hazard Management</a></p>	RM3, RM4

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
3.2.3	To assess the effectiveness of an organisation's risk management process	<p>Definitions and concepts related to risk management</p> <p>Risk management process (analysis, assessment, and control of the safety risks associated with identified hazards)</p> <p>Risk management techniques, tools, models, methods</p> <p>Tolerable level of risk and risk control prioritisation</p> <p>Safety-critical implications in risk management include:</p> <ul style="list-style-type: none"> <li>• Failing to identify latent hazards within the organisation, which could lead to unacceptable levels of risk</li> <li>• Under-rating risk (based on what happened or has happened in the past, not what could have happened)</li> <li>• Assessing risk in isolation (not involving staff with practical knowledge of the activity being assessed)</li> <li>• Assessing only the most severe outcome (which is usually also the least probable, while a less severe but more probable risk scenario could result in a higher risk rating)</li> </ul> <p>Awareness of vulnerability in underlying assumptions when determining probability and severity</p>	<p><a href="#">ICAO SMM</a>: 2.5.3 through 2.5.8</p> <p><a href="#">SM ICG SMS Evaluation Tool</a></p> <p><a href="#">CAA NZ AC 100-1, Safety Management</a>: 2.3.2, "Risk Management"</p> <p><a href="#">CASA SMS for Aviation - A Practical Guide (3<sup>rd</sup> Edition) Booklet 3: "Safety Risk Management"</a></p> <p><a href="#">EHEST SMM for Complex Operators</a>: Chapter 8, "Safety Risk Management"</p> <p><a href="#">SMS for Airports</a>: 5.4–5.7</p> <p><a href="#">FAA ATO SMS Manual Dec 2022</a>: Section 3, "The Safety Risk Management Process"</p> <p><a href="#">ARMS Methodology for Operational Risk Assessment in Aviation Organizations</a></p> <p><a href="#">FSF Basic Aviation Risk Standard</a></p> <p><a href="#">TCCA Integrated Risk Management Framework Lexicon</a></p>	RM6, RM1, RM7, RM8



**Section 3: SMS Component 3 (Safety Assurance)**

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
3.3.1	<p>To analyse an organisation's means to measure safety performance</p> <p>(What)</p>	<p>Definitions related to safety performance</p> <ul style="list-style-type: none"> <li>Safety performance relates to the organisation's contribution to aviation safety</li> </ul> <p>Indicators: Types of indicators, use of indicators, characteristics of effective indicators, possible unintended effects of using indicators and targets</p> <p>Data: Types of data, sources of data, quality of data, characteristics of data, limitations of data, data collection methods</p> <p>Data analysis: Tools, capability, trends</p> <p>Measuring what is important rather than what is easy to measure</p> <p>Results: Input into management review process, action taken</p>	<p><a href="#">ICAO SMM</a>: 4.3-4.4, 8.4.7.14-8.4.7.15</p> <p><a href="#">SM ICG A Systems Approach to Measuring Safety Performance – The Regulator Perspective</a></p> <p><a href="#">SM ICG Measuring Safety Performance Guidelines for Service Providers</a></p> <p><a href="#">SM ICG SMS for Small Organizations</a>: 3.1, “Safety Performance Monitoring and Measurement,” Appendix 11, “Safety Performance Indicators for a Small Organization”</p> <p><a href="#">SMS for Airports</a>: 6.7, “Measuring SMS Performance—Trend Analysis”</p> <p><a href="#">CAA NZ AC 100-1, Safety Management</a>: 2.4.2, “Monitoring and Measuring Safety Performance”</p> <p><a href="#">FAA ATO SMS Manual, Dec 2022</a>: 1.6.1, “Measuring NAS-Wide ATO Safety Performance”; 4.1, “Developing Safety Performance Targets”</p>	ST7, ST8, RM1

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
3.3.2	<p>To evaluate how an organisation assesses its safety performance compared with its safety objectives</p> <p>(How)</p>	<p>Links and robustness of the safety performance cycle:</p> <p>Set objectives, targets, and indicators → Determine sources of data → Gather and analyse data → Monitor performance indicators → Measure safety performance → Input into management review → Assess results and take action → Validate corrective action effectiveness → Review objectives and targets → etc.</p> <p>Effectiveness looks at whether:</p> <ul style="list-style-type: none"> <li>• The process is documented</li> <li>• Safety data is collected; what sources of data the organisation is using; the quality of the data used for safety indicators; how accessible safety reporting systems are</li> <li>• Safety data is analysed; what analytical capability the organisation has; what tools are used</li> <li>• Information is extracted; what trends are detected; how indicators are used as input into the management review process</li> <li>• Alert levels and alerting triggers are appropriate and activated</li> <li>• Indicators are understood and results are communicated; feedback to submitters using the reporting systems</li> <li>• Information drives corrective action or further improvement in safety performance targets; which management decisions are made</li> </ul> <p>Indicators are periodically reviewed for appropriateness and pertinence</p>	<p><a href="#"><u>SM ICG SMS Evaluation Tool</u></a></p> <p><a href="#"><u>EASA/ANSP Questionnaire for Measurement of Effectiveness of Safety Management SKPI</u></a></p>	ST7, ST9

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
3.3.3	To assess an organisation's change management process	<p>Recognizing which changes, in isolation or combination, may have a safety impact</p> <ul style="list-style-type: none"> <li>Changes which may affect the level of safety risk associated with the organisation's aviation products, infrastructure/system, management, operation, or services provided</li> </ul> <p>Recognizing the impact of internal and external change</p> <ul style="list-style-type: none"> <li>Identifying and managing the safety risks that may arise from those changes</li> </ul> <p>Effectiveness of existing risk controls/mitigations</p> <p>Introduction of new hazards</p>	<p><a href="#">ICAO SMM</a>: 8.5.6, "Management of change: State perspective" 9.5.5, "The management of change"</p> <p><a href="#">CASA SMS for Aviation - A Practical Guide (3rd Edition): Booklet 4, Safety Assurance</a> (pp. 2–3)</p> <p><a href="#">CASA Management of Change for Aviation Organizations</a></p> <p><a href="#">CAA NZ AC 100-1, Safety Management</a>: 2.4.3, "Management of Change"</p> <p><a href="#">SM ICG SMS for Small Organizations</a>: 3.2, "The Management of Change"; Appendix 13, "Management of Change Template"</p> <p><a href="#">EHEST SMM for Complex Operators</a>: 8.9, "The Management of Change"; Appendix 8, "Change Management Form"</p> <p><a href="#">TCCA Aviation Safety Letter – "An Ounce of Prevention"</a></p>	RM2, RM6, RM7
3.3.4	To explain the relationship between quality assurance and safety assurance	<p>Defining quality assurance and safety assurance</p> <p>Safety assurance complements quality assurance to validate the effectiveness of safety risk controls</p> <p>Interaction between quality assurance and safety assurance</p> <p>Basic characteristics of QMS and differences with SMS</p>	<p><a href="#">ICAO SMM</a>: 9.7.6, "SMS and QMS integration"</p> <p><a href="#">CAA NZ Resource Kit Booklet 2, From QMS to SMS</a></p> <p><a href="#">CAA NZ AC 00-3, Internal Quality Assurance</a></p> <p><a href="#">TCCA AC 107-001, Guidance on Safety Management Systems Development</a>: 9.0, "Quality Assurance Program"</p> <p><a href="#">ISO 9001 Guidance on Internal Audit</a></p>	ST1, ST2, ST8, ST11

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
			<a href="#">Safety Assurance v Quality Assurance (lessons learned from Toyota)</a>	
3.3.5	To evaluate how an organisation assesses the effectiveness of its SMS, to continuously improve the SMS	<p>What effectiveness means</p> <p>External/internal review processes (audits, surveys, safety performance indicators [SPIs], lessons learned, etc.)</p> <p>Outcomes feeding back into the SMS Link with the safety performance cycle</p> <p>Recognizing a change in safety performance and taking action</p> <p>Senior management review of the effectiveness of the SMS</p>	<p><a href="#">ICAO SMM</a>: 9.5.4, “Safety performance monitoring and measurement”</p> <p><a href="#">SM ICG SMS Evaluation Tool</a></p> <p><a href="#">ISO 9001, Guidance on Auditing Improvement</a></p> <p><a href="#">NZCAA AC 100-1, Safety Management</a>: 2.4.4, “Continuous Improvement of the SMS”; 2.4.5, “Internal Audit Programme”; 2.4.6, “Management Review”</p> <p><a href="#">SMS for Airports</a>: 6.6, “SMS and Internal Safety Assessments”; Annex B and C</p> <p><a href="#">SM ICG SMS for Small Organizations</a>: 3.3, “Continuous Improvement of the SMS”; Appendix 14, “Management Review Template”</p>	ST3, ST7, RM5

**Section 3: SMS Component 4 (Safety Promotion)**

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
3.4.1	To evaluate an organisation's safety communication, training, and education processes	<p>Training and Competency:</p> <ul style="list-style-type: none"> <li>• Competency definition and competency assessment</li> <li>• Training needs analysis (includes contracted personnel), including ongoing (recurrent) training</li> <li>• Training methodology appropriate to the material and the individual</li> <li>• Training will vary between different roles in the organisation</li> <li>• Competency of trainers (external providers or internally delivered)</li> <li>• Effectiveness of safety training programme is monitored</li> <li>• Training documentation and records</li> </ul> <p>Safety Communication:</p> <ul style="list-style-type: none"> <li>• Identification of relevant safety information sources (internal and external, including from interfacing organisations)</li> <li>• Communication of safety information (internal, and external to other affected organisations)</li> <li>• Methods of communication (appropriate to target audience)</li> <li>• Safety-critical information is communicated in a timely manner</li> </ul> <p>Ensuring communication is received and acted upon as required</p>	<p><a href="#">ICAO SMM</a>: 8.3.7.4-8.3.7.8, 8.6.4-8.6.6-8.6.9, 9.6.4-9.6.5</p> <p><a href="#">CASA SMS for Aviation - A Practical Guide (2nd Edition Booklet 5: Safety Promotion)</a></p> <p><a href="#">NZCAA AC 100-1, Safety Management</a>: 2.5.1, "Safety Training and Competency"; 2.5.3, "Communication of Safety-Critical Information"; 2.5.1, "Training and Competency Guidance Material"</p> <p><a href="#">SMS for Airports</a>: 6.8, "Safety Training and Education"</p> <p><a href="#">EHEST SMM for Complex Operators</a>: Chapter 10, "Safety Promotion"; Chapter 11, "Training and Communication on Safety"</p> <p><a href="#">SM ICG SMS Evaluation Tool</a></p> <p><a href="#">ISO 9001, Guidance on Auditing Competence</a></p> <p><a href="#">ISO 9001, Guidance on Auditing Internal Communication</a></p>	ST1, ST5

**Section 4: SMS Evaluation**

Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
4.1	To recognize different approaches to implementing and achieving an effective SMS	<p>Various approaches to implement SMS</p> <p>SMS procedures should be customized to each organisation</p> <p>Extending a single SMS over multiple activities requiring an approval/certificate</p> <p>Integration of SMS with existing management system</p>	<p>Less complex organisations:</p> <p><a href="#">SM ICG SMS for Small Organizations</a></p> <p><a href="#">SM ICG SMS for Small Organizations: Considerations for Regulators</a></p> <p><a href="#">CASA SMS for Aviation - A Practical Guide (2nd Edition)" Booklet 7: Scaling for Size and Complexity</a></p> <p><a href="#">CAA NZ Resource Kit Booklet 3, Implementing SMS Guidelines for Small Aviation Organizations</a></p> <p>UK CAA CAP 1059, <a href="#">Safety Management Systems: Guidance for Small, Non-Complex Organizations</a></p> <p>TCCA AC 107-002, <a href="#">SMS Development Guide for Smaller Aviation Organizations</a></p> <p>More complex organisations:</p> <p>UK CAA CAP 795, <a href="#">Safety Management Systems (SMS) Guidance for Organizations</a></p> <p>TCCA AC 107-001, <a href="#">TCCA AC 107-001, Guidance on Safety Management Systems Development</a></p>	ST5, ST12

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Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
4.2	To plan an assessment of an organisation's SMS	<p>Team management, work scheduling, planning effective interviews, and sampling, etc.</p> <p>Researching safety intelligence, safety record, enforcement record, and documentation of the organisation</p> <p>The authority's policies, processes, procedures, and tools for the assessment of an organisation's SMS</p>	<p><a href="#">TCCA AC SUR-004, Civil Aviation Surveillance Program</a></p> <p><a href="#">International Accreditation Forum "Duration of QMS and EMS Audits"</a></p>	RM1, RM5
4.3	To obtain objective evidence where possible and exercise judgment when necessary to reach conclusions about an organisation's SMS	<p>Cross-checking of information from different sources</p> <p>Seeking confirmation of doubts and concerns</p> <p>Gathering objective evidence to support evaluation activities</p> <p>Use of subjective judgment to assess effectiveness rather than just compliance</p>	<p>State legal authorities for inspectors re: evidence gathering</p> <p><a href="#">ISO 9001, Audit Guidance on Evidence Collection</a></p>	ST1, ST2, ST6, ST9, ST12 RM2, RM4, RM1
4.4	To explain the allowable use and control of information obtained from an organisation's SMS	<p>State legal framework and regulator policies for protection and release of organisation information (appropriate vs. inappropriate usage or disclosure)</p> <p>Appropriate information to take into the regulator's possession (what is evidence?)</p> <p>Potential impact of data release or inappropriate usage, including inadvertent disclosure</p> <p>State responsibility to determine the most appropriate action to address safety issues arising from sensitive information accessed (e.g., internal reporting systems, flight data monitoring [FDM])</p>	<p>State legal requirements and policies</p> <p>Example compliance philosophies:</p> <p><a href="#">FAA Order 8000.373C, Federal Aviation Administration Compliance Program</a></p> <p><a href="#">TCCA CAD 107-004, Aviation Enforcement – Safety Management Systems</a></p>	ST4, ST6

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Learning Objective #	Learning Objective	Key Learning Points	Resources	Core SMS Competency (ST: System Thinking RM: Risk Management)
4.5	To identify systemic deficiencies in an organisation	<p>Systems thinking (i.e., beyond how the organisation presents itself through its manuals, to understand their system and processes)</p> <p>Definition of systemic</p> <p>Difference between systemic and individual deficiencies</p> <p>Systemic deficiencies at an organisational level</p>	<p><a href="#">SKYbrary Toolkit: Systems Thinking for Safety/Systems Thinking Methods</a></p>	ST10, ST11
4.6	To assess the effectiveness of an SMS and discern whether the SMS is appropriate for the size and complexity of the organisation	<p>Typical markers of organisational complexity</p> <p>Application of the State SMS evaluation tool to assess an SMS, including scalability</p> <p>Acceptance criteria taken into account for the assessment and the expectation for different levels of performance (Present, Suitable, Operating, Effective)</p> <p>How well the SMS processes are applied to technical processes</p> <p>What is compliance? “Simple compliance” (are they complying?) vs. “effective compliance” (how they are complying, how compliance will be maintained, is the output as expected?)</p>	<p><a href="#">SM ICG SMS Evaluation Tool</a></p> <p><a href="#">EASA/ANSP Questionnaire for Measurement of Effectiveness of Safety Management SKPI</a></p> <p><a href="#">SM ICG SMS for Small Organizations: Considerations for Regulators</a></p> <p><a href="#">AeroSafetyWorld. May 2012. SMS Reconsidered</a>: Four questions to assess SMS effectiveness</p>	ST1, ST2, ST4, ST5, ST9, ST12, RM1, RM6, RM1



## Appendix C: The ICAO CASI (Civil Aviation Safety Inspector) Competency Framework

Below is the competency framework for the SMS Inspector, reproduced from ICAO Doc 10070, with a reorganisation that places systemic thinking and risk management competencies at the beginning. Note that an asterisk (\*) after a bullet signifies “observable behaviours considered particularly important for remediation and enforcement tasks.”

Competency: SYSTEMS THINKING	
Description	Understands and determines how the various components of management systems interact and affect the overall system safety performance.
Observable Behaviours	<ul style="list-style-type: none"> <li>• Accurately evaluates the inter-relationship between policies, processes, and procedures of the stakeholder’s systems.</li> <li>• Accurately evaluates the inter-relationship between various systems including quality planning, quality control, and quality assurance of the stakeholder.</li> <li>• Determines the effectiveness of the implementation of continuous improvement, reactive, and proactive processes.</li> <li>• Recognizes the essential components of a functional safety management system and their interoperability.</li> <li>• Determines whether the stakeholder’s management systems are appropriate for the size and scope of the operation.</li> <li>• Accurately evaluates the inter-relationships between the management systems across various stakeholders.</li> <li>• Uses the appropriate set of metrics to measure and monitor regulatory and stakeholder safety performance.</li> <li>• Interprets findings from analysis of performance data.</li> <li>• Assesses if the stakeholder safety performance objectives achieve the desired safety performance.</li> <li>• Provides feedback on potential deficiencies of the regulatory framework.</li> <li>• Accurately determines whether the root cause(s) of deficiencies results from a single-point or systemic failure(s).*</li> </ul>

Competency: RISK MANAGEMENT	
Description	Demonstrates an effective approach to the oversight of a stakeholder considering its business model, risk profile, and its availability of resources.
Observable Behaviours	<ul style="list-style-type: none"> <li>• Carries out comprehensive risk assessments of service providers using appropriate methodologies.</li> <li>• Makes strategic decisions based on risk assessment, principles, values, and business cases.</li> <li>• Accurately determines on a timely basis trends, problem areas, or hazards that may negatively impact safety.</li> <li>• Recognizes business practices or organisational cultures that are potential indicators of increased levels of risk.</li> <li>• Applies appropriate certification requirements and surveillance techniques according to changing levels of risk.</li> <li>• Evaluates appropriateness of safety cases submitted by service providers.</li> </ul>

	<ul style="list-style-type: none"> <li>• Evaluates appropriateness of risk assessments performed by stakeholders and actions taken to manage hazards to an acceptable level.</li> <li>• Identifies if appropriate remedial or enforcement action is required to address an issue at its root cause.*</li> <li>• Ensures that stakeholders implement remediation measures.*</li> </ul>
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### Competency: ETHICS AND VALUES

Description	Demonstrates integrity, transparency, openness, respect and fairness and considers the consequences when making a decision or taking action. Acts consistently in accordance with fundamental values of the civil aviation authority.
Observable Behaviours	<ul style="list-style-type: none"> <li>• Treats others respectfully, fairly and objectively regardless of differences.</li> <li>• Answers questions truthfully without embellishment or attempt to cover up a lack of knowledge.</li> <li>• Maintains privacy and confidentiality when appropriate.</li> <li>• Manages professional relationships with appropriate role boundaries.</li> <li>• Adheres to professional codes of conduct when taking action and making decisions.</li> <li>• Takes responsibility for own actions.</li> <li>• Identifies and mitigates conflict of interest situations.</li> <li>• Acts with integrity.</li> <li>• Uses resources of the CAA and aviation entities in a cost-conscious manner.</li> <li>• Demonstrates the values of the CAA.</li> </ul>

### Competency: COMMUNICATION

Description	Effectively conveys, receives, and understands information in oral, written, and non-verbal modes.
Observable Behaviours	<ul style="list-style-type: none"> <li>• Verifies that the recipient is prepared to receive information.</li> <li>• Confirms that information conveyed was received and accurately understood.</li> <li>• Listens actively and objectively without interrupting.</li> <li>• Checks own understanding of other's communication (e.g. repeats or paraphrases, asks additional questions).</li> <li>• Presents appropriate and accurate information in a clear, concise, and compelling manner in all media.</li> <li>• Adapts content, style, tone, and media of communication to suit the target audience including cultural considerations and to promote dialogue.</li> <li>• Understands other people's concerns.</li> <li>• Maintains open lines of communication with management, stakeholders, and colleagues.</li> <li>• Communicates complex issues clearly and credibly with diverse audiences.</li> <li>• Delivers difficult or unpopular messages with clarity, tact, and diplomacy.</li> </ul>

<b>Competency: PROBLEM SOLVING AND DECISION MAKING</b>	
Description	Solves issues of varied levels of complexity, ambiguity, and risk. Makes timely decisions that take into account relevant facts, tasks, goals, constraints, risks, and conflicting points of view.
Observable Behaviours	<ul style="list-style-type: none"> <li>• Collects related and sufficient information from a variety of sources in a timely manner.</li> <li>• Breaks down complex tasks into manageable parts.</li> <li>• Considers multiple possible causes of problems.</li> <li>• Identifies risks involved for different solutions to a problem.</li> <li>• Identifies interdependencies between various components of a problematic situation.</li> <li>• Develops solutions that address the situation in its entirety.</li> <li>• Takes steps to mitigate medium- to long-term impact of solutions when developing solutions to fix immediate issues.</li> <li>• Provides a rationale behind each decision.</li> <li>• Makes timely decisions based on applicable rules and procedures.</li> <li>• Responds decisively when inappropriate conduct is identified to affect positive change without delay.*</li> <li>• Recognizes scope of own authority for decision making and escalates to the appropriate level if necessary.</li> <li>• Demonstrates decisiveness when under pressure or faced with complex or sensitive situations.</li> <li>• Incorporates lessons learned in future decisions.</li> </ul>

<b>Competency: INITIATIVE</b>	
Description	Identifies and addresses issues independently, proactively, and persistently to achieve objectives.
Observable Behaviours	<ul style="list-style-type: none"> <li>• Seizes opportunities that arise.</li> <li>• Acts promptly in a crisis situation.</li> <li>• Deals with obstacles effectively.</li> <li>• Looks for ways to enhance efficiency and effectiveness.</li> <li>• Looks for resources to support objectives.</li> <li>• Anticipates and acts on potential issues.</li> <li>• Organises personal workload to ensure excellence in productivity and quality of service.</li> </ul>

<b>Competency: TECHNICAL EXPERTISE</b>	
Description	Applies and improves technical knowledge and skills to perform safety oversight duties in a specific aviation discipline.
Observable Behaviours	<ul style="list-style-type: none"> <li>• Applies technical knowledge and skills to correctly address a situation.</li> <li>• Accurately answers complex technical questions.</li> <li>• Keeps up to date on specialized technical knowledge and skills.</li> <li>• Recognizes trends in practice of one's own technical area and anticipates changes.</li> <li>• Interprets correctly and explains the intent of the applicable statute, regulation, or standard for a given context.</li> </ul>

	<ul style="list-style-type: none"> <li>• Evaluates efforts by stakeholders to demonstrate initial compliance with the regulations.</li> <li>• Develops and implements an effective programme to monitor continuing compliance of the regulations by stakeholders.</li> <li>• Contributes as a subject matter expert to the development of regulations and guidance.</li> <li>• Consistently provides appropriate guidance to stakeholders and colleagues on how to implement performance-based regulations.</li> <li>• Applies appropriate procedures in accordance with the CAA standards.</li> <li>• Applies enforcement measures when necessary and in accordance with applicable regulations.*</li> </ul>
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### Competency: LEADERSHIP AND TEAMWORK

Description	Collaborates up, down, and across the organisation to foster and promote a clear vision and common goals. Energizes others to achieve the goals and positive results.
Observable Behaviours	<ul style="list-style-type: none"> <li>• Gains the trust and confidence of others.</li> <li>• Promotes positive working relationships.</li> <li>• Encourages open discussion.</li> <li>• Facilitates resolution of conflicts.</li> <li>• Inspires others to collaborate and strive towards excellence.</li> <li>• Actively solicits constructive feedback.</li> <li>• Willingly adopts suggestion for improvement from others.</li> <li>• Directs the work of the team to adapt to circumstances.</li> <li>• Empowers team members to make decisions.</li> <li>• Identifies the required resources to support the team.</li> </ul>

### Competency: CRITICAL THINKING

Description	Analyses information in order to consistently achieve desired outcomes.
Observable Behaviours	<ul style="list-style-type: none"> <li>• Accurately analyses stakeholder performance data for trends.</li> <li>• Evaluates information with accuracy and objectivity.</li> <li>• Seeks additional detail or clarification from colleagues or stakeholders.</li> <li>• Synthesises data from a variety of sources appropriately.</li> <li>• Applies procedures appropriately.</li> <li>• Recognizes that different processes and procedures can lead to similar outcomes.</li> <li>• Analyses the thoroughness and effectiveness of all documented processes.</li> <li>• Determines if CAA employees understand and adhere to processes.</li> <li>• Determines if stakeholders understand and adhere to processes.</li> <li>• Assesses the efficiency and effectiveness of the implementation and maintenance of mandatory system-based programmes against operational requirements.</li> <li>• Distinguishes between lapses, negligence, and reckless action.*</li> </ul>