Advisory Circular

CAA-AC-SMS011

April, 2025

SAFETY MANAGEMENT SYSTEMS (SMS) TRAINING

1.0 PURPOSE

1.1 The purpose of this Advisory Circular (AC) is to provide guidance to service providers on the minimum requirement of an SMS training for aviation safety personnel as required by Civil Aviation (Safety Management) Regulations to enable them implement and maintain an effective SMS.

1.2 The implementation of processes related to SMS training shall be in accordance with requirements prescribed by the Authority in the Civil Aviation (Safety Management) Regulations. This AC provides information necessary to enable service providers to comply with these regulations.

2.0 REFERENCES

2.1 The Civil Aviation Act, CAP394

2.2 The Civil Aviation (Safety Management) Regulations

3.0 INTRODUCTION

3.1 The safety manager is responsible for ensuring that there is a suitable safety training program in place. This includes providing appropriate safety information relevant to specific safety issues encountered by the organization. Personnel who are trained and competent to perform their SMS duties, regardless of their level in the organization, is an indication of management's commitment to an effective SMS.

3.2 The service provider should identify the SMS duties of personnel and use the information to examine the safety training program and ensure each individual receives training aligned with their involvement with SMS. The safety training program should specify the content of safety training for support staff, operational personnel, managers and supervisors, senior managers and the accountable executive.

3.3 The training program should be tailored to the needs of the individual's role within the SMS. For example, the level and depth of training for managers involved in the organization's safety committees will be more extensive than for personnel directly involved with delivery of the

organization's product or services. Personnel not directly involved in the operations may require only a high level overview of the organization's SMS.

4.0   OBJECTIVE OF SAFETY MANAGEMENT TRAINING

4.1   The Civil Aviation (Safety Management) Regulations require that a service provider shall develop and maintain a safety training program that ensures that personnel are trained and competent to perform their SMS duties.

4.2   The scope of the safety training program developed by the service provider shall be appropriate to each individual's involvement in the SMS.

4.3   The aim of the SMS training course is to provide the trainees with the necessary knowledge, skills and attitude in developing, implementing and managing a SMS, as well as measuring the organization safety performance based on its size and complexity.

4.4   The main objective is that, on completion of the training, personnel are competent to perform their SMS duties. Competent trainers are usually the single most important consideration; their commitment, teaching skills and safety management expertise will have a significant impact on the effectiveness of the training delivered.

4.5   At the end of the course, the trainee should be able to:

4.5.1   have the knowledge and materials to begin the development and implementation of a Safety Management System (SMS) as an organized approach to managing safety. This includes the organizational structure, accountability, policies, and procedures;

4.5.2   assume the responsibility of coordinating and supervising the safety efforts of the organization related to the applicable position;

4.5.3   use the resources provided to start the development, implementation, and management of an effective Safety Management System;

4.5.4   understand the process, principles and business practices for the SMS implementation;

4.5.5   demonstrate cognitive skills by undertaking a problem analysis and exercising reasonable judgment in assessing SMS technical requirements; and

4.5.6   be an effective resource to the management team in the safety system.

5.0   TRAINING NEEDS IDENTIFICATION

5.1   The service provider shall determine who should be trained and to what depth, and this will depend on their involvement in the SMS. Most people working in the organization have some direct or indirect relationship with aviation safety, and therefore have different SMS duties. This applies to any personnel directly involved in the delivery of products and services, and personnel involved in the organization's safety committees. Administrative and support personnel who have limited SMS duties will require SMS training, as their work may still have an indirect impact on aviation safety.

5.2   The service provider shall identify levels of training needs taking into consideration of needs at organization level to meet desired goals and mission, needs at occupational level in developing knowledge, skills and attitude in the performance of safety management activities and needs to

address the individual knowledge and skills gap. Figure 1 shows levels for which training needs can be identified.
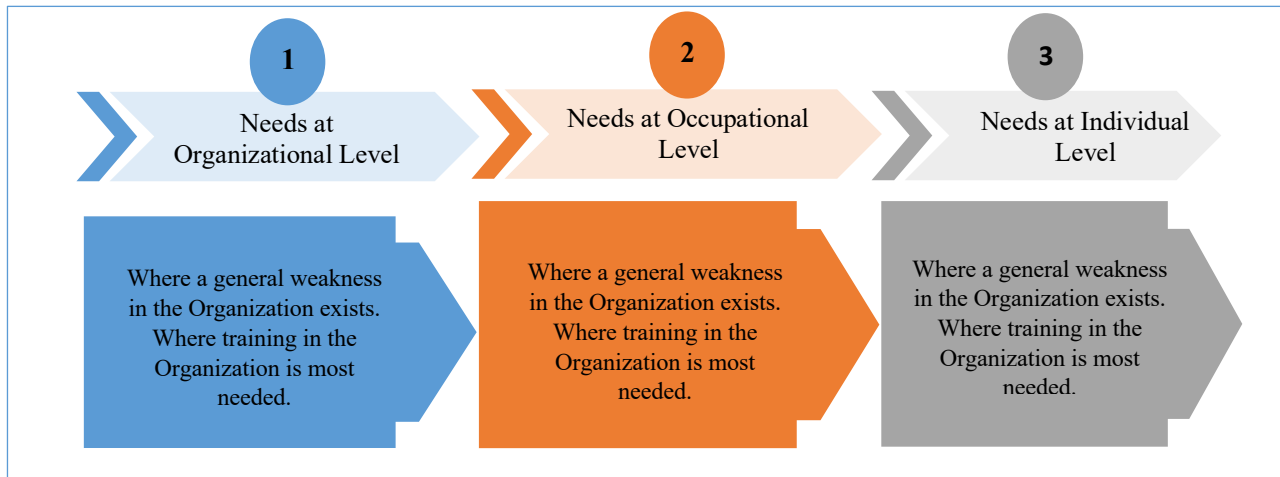

1	2	3
Needs at Organizational Level	Needs at Occupational Level	Needs at Individual Level
Where a general weakness in the Organization exists. Where training in the Organization is most needed.	Where a general weakness in the Organization exists. Where training in the Organization is most needed.	Where a general weakness in the Organization exists. Where training in the Organization is most needed.

Figure 1: Level for Training Needs Identification

6.0   METHODS FOR DETERMINING TRAINING NEEDS ANALYSIS

6.1   There are various methods for determining training needs analysis which include but not limited to the following criteria:

6.1.1   **Organizational Needs Analysis**. An analysis of the business needs or other reasons the training is desired. An analysis of the organization safety goals, objectives and expected deliverables. Other factors shall include why a training program is seen as the recommended solution to the organization, including the record and history regarding staff training and other management interventions.

6.1.2   **Person Analysis**. An analysis dealing with potential participants involved in the process. The importance of this analysis is to identify who will receive the training and their level of existing knowledge on the subject. This would also determine what learning style will be deployed and training institutions or instructors to be used. In addition, the organization shall determine which employees need to acquire the required skills.

6.1.3   **Job analysis / Task Analysis**. An analysis of the tasks being performed are identified and assessed. This is basically an analysis of the job and the requirements for performing a given task. Also, this analysis seeks to specify the main duties and skill level required. This helps ensure that the training which is developed will include relevant links to the content of the job.

6.1.4   **Performance Analysis**. An analysis conducted to assess on whether personnel are performing in line with the established standard. In the event that performance is below expectations, then the organization can determine if the training can improve the performance. To achieve this, the performance gap needs to be identified.

6.1.5   **Content Analysis**. An analysis of documents, laws, procedures that are used on the job. This analysis responds to questions relating to knowledge or information required to be used on the job. The information is obtained from manuals, documents, or regulations. It is important that the content of the training does not conflict or contradict job requirements. Experienced personnel can assist (as a subject matter expert) in determining the appropriate content.

6.1.6   **Training Suitability Analysis**. An analysis is conducted to establish if training is effective. Training is one of several solutions to achieve desired performance. It is therefore important to determine if training will be effective in resolving safety related issues.

6.1.7   **Cost-Benefit Analysis**. An analysis of the return on investment (ROI) of training. Effective training results in a return of value to the organization that is greater than the initial investment to produce or administer the training.

7.0   TRAINING PLAN

7.1   Following the completion of a training needs analysis, the results are to be used in the development of a training plan and associated documents. The required documentation will include:

7.1.1   a list of your personnel requiring SMS training, including third-party personnel

7.1.2   a training syllabus for each safety training course by role and type

7.1.3   the timing and type of each personnel member's specific safety training courses

7.1.4   SMS initial and recurrent for all personnel

7.1.5   a method for determining when each employee is due to undergo specific safety training courses

7.1.6   a method of determining training having been provided or completed for each employee

7.1.7   a means of evaluation of your safety training effectiveness.

7.2   Recommended guidance for development of the initial training plan is provided in *Appendix I*.

8.0   COURSE CONTENT

8.1   The training program should include initial and recurrent training requirements to maintain competencies. Safety Management training should consider, as a minimum, the following:

8.1.1   Organizational safety policies and safety objectives;

8.1.2   Organizational roles and responsibilities related to safety;

8.1.3   Safety Risk Management principles;

8.1.4   Safety reporting systems;

8.1.5   The organization's SMS processes and procedures; and

8.1.6   Human factors

8.2   Each module of the course should be taught as a separate unit of study with reference to the above. However, it is important that the safety personnel learn how each module works in conjunction with every other module. Problem based (Case Study) learning is encouraged.

8.3   It is important to identify the appropriate method for training. The method for training is not prescribed and is left to the discretion of the training organization/service provider. The adequacy of the methodology used will however be audited by KCAA during certification and surveillance audits.

8.4   The training reference material should incorporate the following:
        8.4.1   Civil Aviation (Safety Management) Regulations
        8.4.2   Service Provider's operations manual
        8.4.3   Industry best practices

8.5   Depending on the level of involvement and safety related responsibilities the training curricula can be tailored to specific group to meet specific learning objectives and competency enhancement needs.

8.6   The main purpose of the safety training program is to ensure that personnel, at all levels of the organization, maintain their competence to fulfil their safety roles; therefore, competencies of personnel should be reviewed on a regular basis.

8.7   The recurrent safety training should focus on changes to the SMS policies, processes and procedures, and should highlight any specific safety issues relevant to the organization or lessons learned.

8.8   The topics of study for safety management training conducted by a service provider is provided as *Appendix II*.

NOTE.

The criteria provided in Appendix II should not limit further expansion of the training course beyond these minimum recommended modules.

9.0   TRAINING CONTENT FOR ACCOUNTABLE EXECUTIVES AND SENIOR MANAGERS

9.1   The service provider shall facilitate and provide specific safety training for the accountable executive and senior managers that includes the following high-level topics:
        9.1.1   specific awareness training for new accountable executives and post holders on their SMS accountabilities and responsibilities;
        9.1.2   importance of compliance with national and organizational safety requirements;
        9.1.3   management commitment;
        9.1.4   allocation of resources, promotion and enhancement of skills and knowledge;
        9.1.5   promotion of the safety policy and the SMS;

9.1.6   promotion of a positive safety culture;

9.1.7   disciplinary policy;

9.1.8   effective interdepartmental and external safety communication, cooperation and collaboration;

9.1.9   determination and assessment of safety objectives, Safety Performance Indicators (SPIs), SPTs and alert levels;

9.1.10   safety data collection, processing and analysis for data-driven decision-making; and

9.1.11   Protection of safety data principles.

9.2   The main purpose of the safety training program to the high-level personnel is to ensure that personnel, at all levels of the organization, possess the necessary knowledge on the objectives and goals for implementation of the SMS and thereby support provision of resources required.

10.0   SPECIALISED SAFETY FUNCTIONS

10.1   The Safety Management System (SMS) will encompass several specialized safety-critical functions, necessitating personnel with targeted expertise. It is therefore important that individuals executing these functions possess demonstrable proficiency, achieved through rigorous training in the specific methodologies and techniques pertinent to each safety-critical area.

10.2   This specialised safety function training would be seen as beyond the basics of your SMS safety training program and may require your specialist safety personnel to undertake externally provided training qualifications.

10.2.1   These functions and tasks may include:

10.2.2   investigating safety events or incidents

10.2.3   monitoring and analysis of safety performance

10.2.4   conducting risk assessments

10.2.5   managing and maintaining safety databases

10.2.6   conducting safety audits

10.2.7   developing safety training programs

10.2.8   emergency response planning /crisis management

10.2.9   root-cause analysis

10.3   Depending on the depth of specialised training required and the level of existing expertise in safety management within the organisation, it may be necessary to obtain assistance from external experts or specialists to achieve these functions until the internal specialist safety personnel have undergone specialised training.

11.0   TRAINING OUTCOMES

11.1   To achieve safety training objectives and levels of safety competencies, the different categories of trainee competencies that can be achieved should be considered. The desired training outcomes are as below:

11.1.1   **Awareness:** awareness should introduce the basic safety and SMS concepts and provide a common 'language' and frame of reference for knowledge and skill development.

11.1.2 **Knowledge**: development of knowledge should focus on safety and SMS knowledge relevant to specific practical applications and skilled performance.

11.1.3 **Skills:** skills are the tools and techniques focused on treating or mitigating areas of increased safety risks, human errors, or severe consequence. They are initially developed through practice and feedback, followed with reinforcement at a later stage through recurrent training and assessment.

11.1.4 **Attitudes:** attitudes play an important part in determining overall safety behaviours and performance. This includes aspects relating to operational practices, desirable professional attributes, and dispositions conducive to professional performance can be considered. Appropriate attitudes are strongly emphasized in sustaining and implementing safe and effective operational practices.

11.2 For effective safety training outcomes to enhance your SMS, awareness and knowledge competencies should be achieved for all personnel. Skills and attitude outcomes are more relevant to operational safety-critical roles, who have a higher impact on safety performance and tactical risk management processes.

12.0 ASSESSMENT METHODS

12.1 SMS should be competency based and not compliance based. In a competency-based training program, individuals gain the knowledge and skills that they need to be able to perform their work. The training is based on what employees at work are expected to do and the standard of performance expected in the workplace. Knowledge is important in a competency-based program, however equally important is being able to apply that knowledge and the skills at work. These skills must also be matched with the enduring safety behaviours that the training is designed to achieve.

12.2 To ensure learning has taken place as a result of safety training, each individual who has undertaken the training should be assessed. To assess individuals, you need evidence of their level of basic safety knowledge as well as expected on the job or performance skills relating to safety. Safety training is only effective if each individual can not only show knowledge about the SMS and its processes but can also demonstrate they have the skills required to perform their safety related functions within the SMS. An example of this would be demonstrating knowledge of what a hazard or safety report is used for and being able to demonstrate how to submit a report.

12.3 The safety training program needs to have a process in place that evaluates the individual's competence and takes appropriate remedial action when necessary if they are unable to demonstrate appropriate competencies.

12.4 The main purpose of the safety training program is to ensure all personnel develop and maintain their competence to fulfil their safety roles. Therefore, competencies of your organisation's personnel should be assessed and reviewed on a regular basis.

12.5   The following assessment methods can be used to evaluate the effectiveness of the training provided:

12.5.1   Knowledge based questions

12.5.2   Problem based questions

12.5.3   Practical exercises

12.5.4   Case studies

13.0   TRAINING RECORDS

13.1   Records should be generated during all course offerings and retained to certify training completion and to facilitate a review or audit of training activities.

13.2   The service provider shall specify the methods to be used for management of active records (e.g training program, certificates, etc.) for easy retrieval and traceability.

Civil Aviation Authority

GUIDANCE FOR DEVELOPMENT OF THE INITIAL TRAINING PLAN

Role and Type of Training	Duration	Assessment
Non-operational safety critical personnel (with indirect, minimal or no contact with operational personnel).	2 days	Knowledge/awareness assessment
Operational safety-critical personnel. Modules tailored to specific roles i.e., flight crew, cabin crew, maintenance, aerodrome safety officers, engineering, ground handler, etc.	2 days	- Knowledge/awareness assessment. - Skills and practical application assessment required.
Management personnel i.e. Accountable Manager, Human Resources, finance, Procurement, legal, etc.	1 day	Knowledge/awareness assessment
Head of Safety, Safety Officers, and safety-critical post holders i.e. chief pilot, CFI, head of operations, head of quality, head of base maintenance, head of workshop, head of line maintenance, head of maintenance, head of training, head of engineering, head of ground flight safety, head of RFFS, maintenance liaison, Dangerous Goods coordinator, etc.	5 days	- Knowledge/awareness assessment - Skills and practical application assessment required.

***RECOMMENDATIONS**

Initial training *(within 2 months of starting)*
Refresher training every 2 years

SAFETY MANAGEMENT SYSTEMS TRAINING COURSE CONTENT

The guidance provided in this appendix stipulates course modules required for initial and recurrent SMS training to be provided by a service provider.

1. Module One – Safety Management Fundamentals

This module will provide participants with knowledge on fundamental safety management principles and concepts, including the influence of human as well as organizational factors in safety management.

SECTIONS	TOPICS TO BE COVERED
Section 1 - Concept of safety and its evolution	Fundamental safety management concepts Humans in the systems Accident causation Management dilemma
Section 2 - Safety risk management	Understanding hazards and their consequences Hazard identification Safety risk assessments Safety risk tolerability Safety risk mitigation strategies Safety risk management documentation
Section 3 - Safety culture	Safety culture and safety management Development of safety culture Monitoring of safety culture

2. Module Two – Safety Policy, Objectives and Resources

The purpose of this module is to provide the participant with the necessary knowledge and competency to implement and administer an SMS.

SECTIONS	TOPICS TO BE COVERED
Section 1 – SMS Organization and accountabilities	Identification of SMS accountable executive Appointment of project team and coordinator Definition of Terms of Reference for SMS Implementation team Safety management applicability Establishment of safety management responsibilities and accountabilities Identification of SMS/Safety manager
Section 2 – SMS gap analysis	Performance of SMS gap analysis Identification of action tasks Review organizational structure, safety accountabilities and procedures
Section 3 – SMS Implementation	Development of SMS implementation plan Monitoring of task implementation

SECTIONS	TOPICS TO BE COVERED
Section 4 – SMS Integration	Integration of SMS with QMS Integration of SMS with other relevant management systems System description and identification of interfaces
Section 5 – SMS manual and records management	Development of SMS documentation Approval and agreement of SMS manual Initiation of SMS records keeping system
Section 6 – SMS Committee and Administration	Initiation of SMS/Safety committee Recommendation of SMS/safety committee schedule and agenda to SMS accountable executive Establishment of a permanent SMS administration function/office Initiation of Departmental Safety Action Groups where appropriate
Section 7 – Safety policy and objectives	Development of safety policy statement Development of safety objectives
Section 8 – Emergency response planning	Initiation of organization's ERP Coordination of ERP with relevant external organizations

3. **Module Three – Safety Risk Management and Assurance**

The purpose of this module is to provide the participant with the necessary knowledge and competency to implement safety risk and assurance principles.

SECTIONS	TOPICS TO BE COVERED
Section 1 – Hazard Identification and voluntary reporting system	Hazard identification from occurrence notification reports Hazard identification from occurrence investigation process Hazard identification from internal voluntary reporting systems Hazard identification from review of aviation equipment and processes Hazard identification during safety/quality surveillance processes Hazard identification from operational monitoring system data review Establishment of supplementary hazard survey program Establishment of central hazards register Establishment of hazard prioritization procedure
Section 2 – safety risk assessment and mitigation	Risk assessment Establishment of risk mitigation procedure Establishment of safety risk mitigation (SRM) documentation Definition of SRM approval processes
Section 3 - Occurrence Reporting and Investigation	Establishment of mandatory occurrence notification and investigation procedures Establishment of routine incident notification and investigation procedure Establishment of safety data administration policy/procedure
Section 4 – Management of Change	Establishment of management of change procedures

SECTIONS	TOPICS TO BE COVERED
Section 5 – Internal and External SMS Audit	Establishment of internal SMS audit program and external SMS audit provisions
Section 6 – SMS disciplinary policy and procedures	Establishment of internal disciplinary policy and procedures Establishment of equitable disciplinary decision aid (safety culture)

4. Module Four – SMS Training and Safety Promotion

The purpose of this module is to provide the participant with the necessary knowledge and competency to develop internal SMS training and develop SMS audit program.

SECTIONS	TOPICS TO BE COVERED
Section 1 – SMS training programme	Development of SMS training programme Establishment of safety training records system
Section 2 – Safety information sharing, exchange and safety promotions	Establishment of mechanisms for safety and SMS communication within the organization Establishment of mechanisms to promote safety information sharing internally and externally

5. Module Five – Safety Performance Management

The purpose of this module is to provide the participant with knowledge on the following:
- (a) Development of SPIs,
- (b) Target settings,
- (c) Safety performance monitoring and
- (d) Identification of actions required to achieve acceptable level of safety performance

SECTIONS	TOPICS TO BE COVERED
Section 1 - Development of safety objectives	Development of safety objectives Safety analysis
Section 2 - Safety performance indicators and safety performance targets	Types of safety performance indicators Selecting and defining SPIs Setting safety performance targets Safety performance measurement Use of SPIs and SPTs
Section 3 - Monitoring safety performance	Baseline for safety performance Revision/refinement of SPIs Identifying actions required Update safety objectives

6. Module Six – Safety Data Collection and Processing

The purpose of this module is to familiarize participants on safety data collection, analysis, exchange and safety data protection provisions.

SECTIONS	TOPICS TO BE COVERED
Section 1 - Safety data collection, analysis and exchange	Safety data collection Reporting systems Safety data analysis Incident investigation Safety data governance Safety data protection
Section 2 - Safety data analysis	Types of analysis Safety data/information reporting Safety information exchange Data driven decision making