SOUTH AFRICAN **CIVIL AVIATION AUTHORITY**	**REPUBLIC OF SOUTH AFRICA** **CIVIL AVIATION AUTHORITY** **GENERAL NOTICE # CSD-2016/001**	**SACAA** **Private Bag X 73** **Halfway House** **1685**
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AVIATION SAFETY MANAGEMENT SYSTEM TRAINING

1. APPLICABILITY

This General Notice is applicable to all aviation training organizations

2. PURPOSE OF THIS GENERAL NOTICE

This General Notice serves to provide to   minimum criteria for the establishment of a SMS course for the training of aviation safety personnel as required by Part 140 CARs in order to enable the safety personnel to implement and maintain the Safety Management System.

3. REGULATORY REFERENCE

The issuance of this general Notice is necessitated by the following Regulations and Technical Guidance Material which relates to the implementation of safety management system:

CAR Part 140 – Safety Management System
CAR 140 – Safety Management Systems

4. INTRODUCTION

An SMS is a systematic approach to managing safety, including the necessary organizational structure, accountabilities, policies and processes. In order to reinforce the notion of safety management being a managerial process, the new ICAO safety management requirements include provisions for an organization to establish lines of safety accountability throughout the organization, as well as at the senior management level. The requirements impose upon States the responsibility to establish a safety programme and, as part of such programme, require that air operators, maintenance organizations, air traffic services providers, design and manufacturing organizations and aerodrome operators implement a safety management system (SMS).

SACAA is obliged to ensure that minimum standards for Aviation SMS training course are established in order to ensure consistency and credibility to SMS training programs.

 Information contained in this document sets the basis for the training content of safety management training courses. This document sets out the criteria for the development of a SMS training course for Safety personnel. These are persons who are, or will be, responsible for the implementation and maintenance of Safety Management System ("SMS"), within the context of CARs Part 140 and associated CATs.

The SMS training criteria contained in this document is intended to provide the training organization with the core training components necessary to establish a course of safety management system training. The person who successfully completes this SMS training will be expected to have the necessary knowledge, skills and attitude to implement and maintain a safety management system as required by CARs Part 140.

The criteria should not be seen as limiting further expansion of the training course beyond these minimum recommended components.

5. OVERVIEW

A training course for Safety personnel ("the Course") should be developed and presented at the level to teach the Safety personnel how to design, implement and maintain a SMS.

With an insight of the job skills required of modern-day aviation safety personnel the following is proposed as a basis for the minimum standard of aviation safety personnel. The basis of this proposed safety management course is based on the ICAO Doc 9859 Safety Management Manual (SMM) third Edition.

6. AIM OF THE TRAINING COURSE

The aim of the Aviation Safety Management System training course is to provide the student with the necessary knowledge, skills and attitude in developing, implementing and managing a Safety Management System, as well as measuring its performance in a medium to large aviation company.

7. COURSE GOALS

The goals of the Safety Management Systems (SMS) Course are to:
Develop the student's knowledge of safety management concepts and ICAO Standards and Recommended Practices (SARPs) on safety management in ICAO Annex 19 and ICAO Doc 9859.
Develop the student's knowledge to oversee the implementation of key components of a basic SMS, in compliance with CARs Part 140.

The SMS Course should address the following four general requirements of SMS:
Safety policy and objectives.
Safety risk management.
Safety assurance.
Safety promotion.

8. COURSE CONTENT

The course should address the following seven modules. Each module should be taught as a separate unit of study with reference to the overview 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.

The method for training is not prescribed and is left to the discretion of the training organization. The adequacy of the methodology used would however be audited by the SACAA during their certification and surveillance audits.

The following training reference material is required as a minimum, but any addition to training reference material would be left to the discretion of the training organization, to be audited by the SACAA.

9. TRAINING REFERENCE MATERIAL

Minimum required:
ICAO Annex 19 (1st amendment)
ICAO Doc 9859, third edition
CAR 140,
CATS Part 140

10. ASSESSMENT METHODS

Participants should be assessed by a combination of the following:
Knowledge based questions
Problem based questions
Practical exercises

11. PASS MARK

Minimum pass mark of 70 % must be attained by participants.

12. COURSE DURATION

Training must be 5 days minimum

MODULE ONE – Safety Management Fundamentals

Module Rationale

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	Minimum number of questions	Suggested SMM reference
Section 1 – Concept of safety	Fundamental safety management concepts from the ICAO SMM (ICAO Doc 9859)	1	2.1
Section 2 – Evolution of safety	Evolution of safety thinking	1	2.2
Section 3 – Accident causation	Concept of accident causation	2	2.3
Section 4 – People, context and safety	SHEL(L) Model	2	2.4 Fig 2-5
Section 5 – Error and violation	Types of errors Error reduction strategies Violations	3	2.5
Section 6 – Safety culture	Organizational culture Professional culture Reporting culture Safety culture and organization risk profile Healthy safety culture	4	2.6
Section 7 – Management dilemma	Production and protection	1	2.7

MODULE TWO – Hazard identification, safety risk management and safety reporting

Module Rationale

The purpose of this module is to familiarize participants with hazard identification concepts and safety reporting requirements.

Sections	Topics to be covered	Minimum number of questions	Suggested SMM reference
Section 1 – Safety reporting and investigation	Safety reporting systems Effective safety reporting characteristics Investigation of accidents and incidents Integration of safety investigation and HIRM process	3	2.10 Fig 2-7 2.10.5 2.10.7
Section 2 – Safety data collection and analysis	Safety data quality Safety data types Safety data analysis Analytical methods and tools Safety information systems requirements Considerations for protection of safety data Safety information indicators Purpose of safety data analysis and SPIs	2	2.11.1 2.11.10 2.11.13 Fig 2-7 2.11.19 2.12.1 2.12
Section 3 – Hazard Identification	Hazard identification Understanding hazards and consequences Hazards, threats and unsafe situations Hazard identification methodologies Difference between aviation and OHSE hazards Hazards management and documentation Hazard prioritization	4	2.13.8 2.13.12 2.13.11 2.13.12 2.15.5 App 3 to Chap 2
Section 4 - Safety Risk Mitigation	Safety risks Safety risk probability Safety risk severity Safety risk index Safety risk tolerability Safety risk management (ALARP) Risk mitigation and documentation Human factors and risk mitigation Risk mitigation and cost benefit analysis.	4	2.14.2 2.14.3 2.14.7 Fig 2-13 2.14.9 Fig 2-14 2.15.5 2.15.6 2.17.7

MODULE THREE – Safety Management Standards and Recommended Practices (SARPs) – ICAO Annex 19

Module Rationale

The purpose of this module is to familiarize participants on Annex 19 SARPS on the State safety management responsibilities, including the implementation of the State Safety Programme and the requirement for service providers to implement a SMS.

Sections	Topics to be covered	Minimum number of questions	Suggested SMM reference
Section 1 – state safety management responsibilities	State safety management responsibilities (SSP) Acceptable level of safety performance (ALoSP) SMS requirements for service providers SMS requirements for international general aviation	1	3.2 4.3.5.1 4.2.19 Annex 19
Section 2 – SSP framework	SSP components and elements State safety policy and objectives State safety risk management State safety assurance State safety promotion	4	4.2 4.2.3 4.2.16 4.2.24 4.2.38
Section 3 – SMS Framework	SMS regulatory framework Safety policy and objectives Safety policy and accountabilities Appointment of key safety personnel Coordination of emergency response planning SMS documentation Safety risk management Hazard identification Safety risk assessment and mitigation Safety assurance Safety performance monitoring and measurement Management of change Continuous improvement of SMS Safety promotion Training and education Safety communication SMS acceptance and accountability	4	CAR Part 140 5.3
Section 4 – Prescriptive and performance based requirements	Understanding risk based – performance based requirements Requirements for performance based requirements Baseline and equivalent level of safety Performance based monitoring and measurement Auditing performance based requirements	3	2.16 2.16.5 2.16.6 2.16.7 2.16.8

MODULE FOUR – Safety Data

Module Rationale

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	Minimum number of questions	Suggested SMM reference
Section 1 – Safety data collection, analysis and exchange	Safety data collection Safety data analysis Safety data protection Safety information exchange	3	Annex 19 Att. (Amndt 1)
Section 2 –Guidance for safety information protection	Purpose of safety information protection General safety information protection principles Principles of protection Principles of exception Public disclosure Responsibility of the custodian of safety information Protection of recorded information	2	Annex 19 Att. (Amndt 1)
Section 5 –Integration of management systems	Management systems Benefits of integration SMS and QMS integration	2	5.4.2

MODULE FIVE – SMS Implementation

Module Rationale.

The purpose of this module is to provide the participant with the necessary knowledge and competency to implement and administrate a Safety Management System (SMS)

Sections	Topics to be covered	Minimum number of questions	Suggested SMM reference
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 Establishment of SMS applicability/scope Establishment of safety management responsibilities and accountabilities Identification of SMS/Safety manager	3	SMS Element 1.2
Section 2 – SMS gap analysis	Performance of SMS gap analysis Identification of action tasks Review organizational structure, safety accountabilities and procedures	3	Appendix 7 to Chapter 5
Section 3 – SMS Implementation	Development of SMS implementation plan Verification of phased implementation Activation of phase 1/2/3/4 implementation tasks Monitoring of task implementation	3	Table 5-A7-2
Section 4 – SMS Integration	Integration of SMS with QMS Integration of SMS with other relevant management systems Definition of external SMS interfaces	3	5.4.2
Section 5 – SMS manual and records	Development of SMS documentation Approval and agreement of SMS manual Initiation of SMS records keeping system	3	Appendix 4 to Chapter 5
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	3	5.3.32-33
Section 7 – Safety policy and objectives	Development of safety policy statement Development of safety objectives	3	SMS Component 1
Section 8 – Emergency response planning	Initiation of organization's ERP Coordination of ERP with relevant external organizations	3	Appendix 3 to Chapter 5

MODULE SIX – SMS Implementation

Module Rationale.

The purpose of this module is to provide the participant with the necessary knowledge and competency to implement and administrate a Safety Management System (SMS)

Sections	Topics to be covered	Minimum number of questions	Suggested SMM reference
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 programmes Establishment of central hazards register Establishment of hazard prioritization procedure	3	Appendix 2 to Chapter 2 Appendix 3 to Chapter 2
Section 3 – safety risk mitigation	Establishment of risk mitigation procedure Establishment of safety risk mitigation documentation Definition of SRM approval processes	3	Appendix 2 to Chapter 2
Section 4 – Management of change	Establishment of management of change procedures	2	2.8
Section 5 - 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	3	2.10
Section 6 – SMS disciplinary policy and procedures	Establishment of internal disciplinary policy and procedures Establishment of equitable disciplinary decision aid (just culture)	3	Appendix 11 to Chapter 4
Section 7 – Safety data processing and analysis	Processing and analysis of safety data	2	2.11

Module Rationale.

The purpose of this module is to provide the participant with knowledge on the following:
 Development of SPIs,
Development of SPI charts,
Target settings,
Safety performance monitoring and
Establishment and achievement of ALoSP.

Sections	Topics to be covered	Minimum number of questions	Suggested SMM reference
Section 1 – SMS safety performance	Identification of high consequence SPIs Development of high consequence SPIs Establishment of high consequence SPIs target and alert setting Identification of lower consequence SPI Development of lower consequence SPIs chart Establishment of lower consequence SPI targets and alert settings Agreement with CAA on SPI package Establishment of routing SPI performance monitoring Establishment of SPI alert follow up procedures	4	Appendix 6 to Chapter 5 2.12 Fig 2-10 Tables: 5-A6-1 5-A6-2 5-A6-3 5-A6-4 5-A6-5 5-A6-6 5-A6-7
Section 2 - SPI and ALoSP development	Collate potential SPIs Selection of SPIs package Development of SPI charts Incorporation of SPI alerts and target settings Monitoring of individual SPI performance Establishment and achievement of ALoSP	4	Tables: 5-A6-1 5-A6-2 5-A6-3 5-A6-4 5-A6-5 5-A6-6 5-A6-7
Section 3 – SMS training programme	Development of SMS training programme Establishment of safety training records system	2	CATS 140
Section 4 – Safety information sharing and exchange	Establishment of mechanisms for safety and SMS communication within the organization Establishment of mechanisms to promote safety information sharing internally and externally	2	SMS Component 4.2
Section 5 – Internal and External SMS Audit	Establishment of internal SMS audit program Definition of external SMS audit provisions	2	SMS Element 3.3

13. QUERIES

Any queries or requests for further guidance as a result of this communications should be sent to:
The Manager, CS: e-mail address:sms@caa.co.za

Issued by the South African Civil Aviation Authority (SACAA) and validated by:		
SIGNATURE OF SENIOR MANAGER CONSISTENCY AND STANDARDIZATION	Mary Stephens	22 November 2016
	NAME IN BLOCK LETTERS	DATE