



Advisory Circular

AC 139 & CAR-ANS-009-01-0

IMPLEMENTATION OF
SAFETY MANAGEMENT SYSTEM (SMS)
FOR AERODROME & ANS PROVIDERS

Aerodrome & Air Navigation Safety Oversight Office (AANSOO)
Office of the Director General
Civil Aviation Authority of the Philippines
Old MIA Road, Pasay City, 1300

September 2009

Advisory Circulars (AC) are intended to provide recommendations and guidance, illustrate a means-but not necessarily the only means of complying with regulatory requirements, or to explain certain regulatory requirements by providing interpretative and explanatory materials.

CAAP will generally accept that when the provisions of an Advisory Circular have been met, compliance with the relevant regulatory obligations has been satisfied.

Where an AC is referred to in a “Note” within regulatory documentation, the AC remains as guidance material.

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

CONTENTS

1. References	1
2. Purpose	1
3. Status of the AC	1
4. Background	1
5. Applicability	2
Appendix A Guidance Material in the Implementation of SMS	A-1
Appendix B Gap Analysis Form (Ref. SMM 7-APP 2-2)	B-1
Appendix C System Description (Ref. SMM 7-APP 1-1)	C-1
Appendix D SMS Implementation Plan (Ref. SMM 10 –APP 2-2-11)	D-1

1. REFERENCES

1.1 This document may refer to portions of the following:

- Republic Act. 9497
- CAR-ANS Part 10 B
- Administrative Order 139
- Manual of Standards for Aerodrome
- ICAO Annex 11
- ICAO Annex 14 Volume 14th Edition as amended

2. PURPOSE

2.1 The Republic of the Philippines has developed a system for regulating aerodromes as prescribed in AO 139. Aerodromes that have international operations, or domestic air transport operations by aircraft certified to carry more than 30 passengers are required to be certified, and part of the certification requirement is that certified aerodromes in the Republic of the Philippines are required to have an acceptable safety management system in place. Likewise, CAR-ANS Part 10 B requires, as part of the CAAP Safety Programme, that an air traffic service provider implements a safety management system that as a minimum: identifies hazards, ensures the implementation of remedial action necessary to maintain agreed safety performance; provides for continuous monitoring and regular assessment of the safety performance; and aims a continuous improvement of the overall performance of the safety management system. This AC contains the guidance material in the SMS implementation (Appendix A).

3. STATUS OF THIS AC

3.1 ACs are numbered to reflect the regulatory basis, the serial number of the circular issued for that regulation and the revision status for that AC. In this case, the regulatory basis is AO 139 and CAR-ANS Part 10 B this is the first to be issued combining the regulatory requirements of both the AO 139 & CAR-ANS.

4. BACKGROUND

4.1. This AC specifies the guidelines in the implementation of the requirements for a service provider's safety management system (SMS) operating in accordance with Annex 11 — Air Traffic Services; and Annex 14 — Aerodromes, Volume I — Aerodrome.

It addresses aviation safety-related processes, procedures and activities rather than occupational safety, environmental protection, or customer service or product quality. The service provider is responsible for the safety of services or products contracted or subcontracted to, or purchased from, other organizations. An SMS is a management tool for the management of safety by an organization. The Annexes also establish that the SMS shall be accepted by the State and shall, as a minimum:

- a) identify safety hazards;
- b) ensure the implementation of remedial action necessary to maintain agreed safety performance;
- c) provide for continuous monitoring and regular assessment of the safety performance; and
- d) aim at continuous improvement of the overall performance of the safety management system.

5. APPLICABILITY

5.1 The overall responsibility for the implementation of an SMS rests with the aerodrome and air traffic service providers. The aerodrome and air traffic service providers are also responsible for compliance with the requirements of AO 139 at certified aerodromes and CAR-ANS respectively.

RUBEN F. CIRON, PhD
Director General
Civil Aviation Authority of the Philippines

September 2009

Appendix A

**GUIDANCE IN THE IMPLEMENTATION OF
SAFETY MANAGEMENT SYSTEM (SMS)
FOR AERODROME & ANS SERVICE PROVIDERS**

Aerodrome & ANS Safety Oversight Office
Office of the Director General, CAAP
September 2009

A-1

i

Foreword

This Implementation Procedures Guide has been developed to assist organizations with the implementation of their Safety Management System (SMS). The guide is designed to address a phased implementation approach. The phased approach will allow organizations the time they need to implement safety management in a planned, systematic way. It will also allow the civil aviation safety inspectors a means to effectively manage the workload associated with this program.

This guide will also provide information to assist organizations with the selection of an accountable executive.

The AANSOO will assist organizations wherever possible; however, the priority will be directed to organizations that are required through regulatory amendments, to implement a safety management system.

Acknowledgment is due to Transport Canada for most of the materials used in this document.

Further, acknowledgment is due to the following: Capt. John Slaughter, ICAO Aerodrome expert, Mr. Guillermo Iovino, ICAO Airworthiness expert, and ICAO USOAP Coordinator, for their expert advice and guidance in the development of this material.

The AANSOO Management & Staff.

September 2009

Table of Contents

Implementation Procedures For Safety Management Systems	1
1.1 Purpose	1
1.2 Background	1
1.3 Safety Management Systems Framework	2
1.3.1 Phase 1	3
1.3.2 Phase 2	4
1.3.3 Phase 3	5
1.3.4 Phase 4	7
2.0 Gap Analysis and Implementation Plan	8
3.0 Accountable Executive	9
4.0 Assessment Protocol	9
5.0 Guidance Material	10
6.0 Compliance Document.....	10
Appendix A - Compliance Document	A-1
Appendix B - Gap Analysis Form	B-1
Appendix C - Systems Description.....	C-1
Appendix E – Accountable Executive Selection Question List	D-1

IMPLEMENTATION PROCEDURES FOR SAFETY MANAGEMENT SYSTEMS

1.1 Purpose

This implementation procedures guide has been developed with a dual purpose, the first is to provide information to Aerodrome & ANS providers who are required to implement a Safety Management System (SMS) and the second is to provide information that will assist those organizations with the selection and appointment of an accountable executive.

The guide will offer information on the conduct of a gap analysis and creation of an implementation plan. It will also expand on the ICAO's phased-approach for SMS implementation. Several forms and examples are also included and can be used or amended to suit the needs of individual organizations.

This guide is intended as information only, if there is a discrepancy between this guide and the applicable regulations, standards or exemption, the regulation/ standard will take precedence.

1.2 Background

The CAAP, is committed to the implementation of safety management systems in civil aviation organizations. Systemic safety management is a principal aim of a sound aviation management program and a prime factor in the achievement of the goals set out in our enabling legislations, in the reduction of accidents and incidents and an increased level of public confidence in the Philippine air transportation system. The aim is to improve safety through proactive management rather than reactive compliance with regulatory requirements.

The CAAP, through the AANSOO, has developed a series of rules to introduce the regulatory requirements for SMS in civil aviation organizations. These rules are part of AO 139 of the Aerodrome Manual of Standards Aerodrome AO 139 and CAR-ANS Part XI. This guide will provide information for the implementation of all the SMS regulations.

Safety management focuses on organizational arrangements to promote a positive culture. The CAAP subscribes to the ICAO guidelines for a phased-approach to SMS implementation which is appropriate in providing a manageable series of steps for organizations to follow. Four implementation phases have been identified; each phase involves the introduction of specific SMS components and elements.

1.3 Safety Management Systems Framework

CAAP has developed an SMS framework that is outlined in Table A. This framework follows the same structure as the ICAO SMS model. The framework lists four components and corresponding elements.

Table A – This table is included for information purposes and as a reference for Phases 1 through 4.

Table A - SMS Framework

Component	Element	Phase
1. Safety Policy & Objectives	1.1 Management commitment and responsibility	1
	1.2 Safety accountabilities	1
	1.3 Appointment of key safety personnel	1
	1.4 Coordination of emergency response planning	1
	1.5 SMS documentation	1,2,3,4
2. Safety Risk Management	2.1 Hazard identification	2,3
	2.2 Safety Risk assessment and mitigation	2,3
3. Safety Assurance	3.1 Safety performance monitoring and measurement	4
	3.2 The management of change	4
	3.3 Continuous improvement of the SMS	4
4. Safety Promotion	4.1 Training and education	2,3,4
	4.2 Safety communication.	2,3,4

** The SMS Documentation and Training elements are common to all phases and are implemented as they apply to the other components or elements in that phase.*

The implementation of the SMS requirements has been divided into four phases with each phase having specific requirements as detailed below.

1.3.1 PHASE I — PLANNING SMS IMPLEMENTATION

1.3.1.1 The objective of Phase I of SMS implementation is to provide a blueprint on how the SMS requirements will be met and integrated into the organization's work activities, as well as an accountability framework for the implementation of the SMS.

1.3.1.2 During Phase I, basic planning and assignment of responsibilities are established. Central to Phase I is the gap analysis. From the gap analysis, an organization can determine the current status of its safety management processes and can begin detailed planning for the development of further safety management processes. One significant output of Phase I is the SMS implementation plan.

1.3.1.3 At the completion of Phase I, the following activities should be finalized in such a manner that meets the expectations of the civil aviation oversight authority, as set forth in relevant requirements and guidance material:

- a) Identify the Accountable Executive and the safety accountabilities of managers. This activity is based on Elements 1.1 and 1.2 of the ICAO SMS framework.
- b) Identify the person (or planning group) within the organization responsible for implementing the SMS. This activity is based on Element 1.5 of the ICAO SMS framework.
- c) Describe the system . This activity is based on Element 1.5 of the ICAO SMS framework.
- d) Conduct a gap analysis of the organization's existing resources compared with the national and international requirements for establishing an SMS. This activity is based on Element 1.5 of the ICAO SMS framework .
- e) Develop an SMS implementation plan that explains how the organization will implement the SMS on the basis of national requirements and international SARPs, the system description and the results of the gap analysis. This activity is based on Element 1.5 of the ICAO SMS framework.
- f) Develop documentation relevant to safety policy and objectives. This activity is based on Element 1.5 of the ICAO SMS framework.
- g) Develop and establish means for safety communication. This activity is based on Element 4.2 of the ICAO SMS framework. During this phase, affected organizations are required to complete a copy of the Compliance Document (Appendix A) and forward this to their respective inspectors as applicable. Completion of the compliance document will satisfy the requirements

of CAR-ANS Part 10 B and is an essential element of the SMS implementation process ensuring that all affected organizations are aware of their regulatory responsibility.

1.3.1.4 The compliance document will identify the accountable executive. It will also identify the person within the organization who is responsible for implementing the SMS and will contain a statement committing the organization to implementing that system. In some organizations, the accountable executive and the person responsible for implementation of the SMS may be the same person.

1.3.1.5 In addition to completing the compliance document, affected organizations will;

(a) conduct a gap analysis of the organization's existing systems compared to the CAR-ANS SMS requirements; and

(b) develop an SMS implementation plan that clearly demonstrates to the AANSOO how the organization will implement their SMS based on the requirements of the exemption and the results of the gap analysis.

1.3.1.6 The plan will be jointly agreed to between AANSOO and the organization implementing the SMS. To be effective, the implementation plan will include milestones for critical items such as dates for development and submission of policies and procedures, training of staff and review by AANSOO. These milestone dates are important, as CAAP inspectors will use them to plan their implementation responsibilities and commitments. Both AANSOO and the affected organization shall coordinate and agree to any changes.

1.3.1.7 The compliance document, gap analysis and implementation plan shall be completed and submitted as a package within the time limitations specified. The AANSOO will review the submission and provide a response within 90 days.

1.3.1.8 AANSOO endorsement of the compliance document will indicate review of the gap analysis and agreement with the plan..

1.3. 2 PHASE II — REACTIVE SAFETY MANAGEMENT PROCESSES

1.3.2.1 The objective of Phase II is to implement essential safety management processes, while at the same time correcting potential deficiencies in existing safety management processes. Most organizations will have some basic safety management activities in place, at different levels of implementation and with different degrees of effectiveness.

1.3.2.1 These activities may include inspections and audits reports, analysis of information from accident reports and incident investigations, and employee reports. This phase aims at solidifying existing activities and developing those which do not yet exist. However, because forward-looking systems have yet to be developed and implemented, this phase is considered reactive. Towards the end of Phase I, the organization will be ready to perform coordinated safety analyses based on information obtained through reactive methods of safety data collection.

Guidance

1.3.2.2 At the completion of Phase I, the following activities should be finalized in such a manner that meets the expectations of the civil aviation oversight authority, as set forth in relevant requirements and guidance material.

a) Implement those aspects of the SMS implementation plan that involve safety risk management based on reactive processes. This activity is based on Elements 2.1 and 2.2 of the ICAO SMS framework.

b) Deliver training relevant to the SMS implementation plan components and to safety risk management based on reactive processes. This activity is based on Element 4.1 of the ICAO SMS framework.

c) Develop documentation relevant to the SMS implementation plan components and to safety risk management based on reactive processes. This activity is based on Element 1.5 of the ICAO SMS framework.

d) Develop and maintain formal means for safety communication. This activity is based on Element 4.2 of the ICAO SMS framework.

1.3.3 PHASE III — PROACTIVE AND/OR PREDICTIVE SAFETY MANAGEMENT PROCESSES

1.3.3.1 The objective of Phase III is to structure forward-looking safety management processes. Safety information management and analytical processes are refined. Towards the end of Phase III, the organization will be ready to perform coordinated safety analyses based on information obtained through reactive, proactive and/or predictive methods of safety data collection. Proactive navigation aids require a less serious triggering event, probably with little or no damaging consequences, to take place in order to launch the safety data capture process.

Proactive navigation aids are based upon the notion that system failures can be minimized by identifying safety risks within the system before it fails, and taking the necessary actions to mitigate such safety risks. Mandatory and voluntary reporting systems, safety audits and safety surveys are examples of proactive navigation aids.

Predictive navigation aids do not require a triggering event to take place in order to launch the safety data capture process. Routine operational data are continually captured, in real time. Predictive navigation aids are based upon the notion that safety management is best accomplished by trying to find trouble, not just waiting for it to show up. Therefore, predictive safety data capture systems aggressively seek safety information that may be indicative of emerging safety risks from a variety of sources. Predictive safety data collection systems are essentially statistical systems, whereby a considerable volume of operational data, which alone are largely meaningless, are collected and analyzed, and combined with data from reactive and proactive safety data collection systems. The aggregation of data thus leads to the development of a most complete intelligence that allows organizations to navigate around obstacles. Hazard reporting systems, flight data analysis and normal operations monitoring are examples of predictive. At the completion of Phase III, the following activities should be finalized in such a manner that meets the expectations of the civil aviation oversight authority, as set forth in relevant requirements and guidance material.

- a) Implement those aspects of the SMS implementation plan that refer to safety risk management based on proactive and/or predictive processes. This activity is based on Elements 2.1 and 2.2 of the ICAO SMS framework.
- b) Develop training relevant to the SMS implementation plan components and to safety risk management based on proactive and predictive processes. This activity is based on Element 4.1 of the ICAO SMS framework.
- c) Develop documentation relevant to the SMS implementation plan components and to safety risk management based on proactive and predictive processes. This activity is based on Element 1.5 of the ICAO SMS framework.
- d) Develop and maintain formal means for safety communication. This activity is based on Element 4.2 of the ICAO SMS framework.

1.3.3. 2 During this phase, in addition to meeting the requirements of Phase 2, certificate holders must demonstrate to the satisfaction of the AANSOO that they have the Proactive Process element of the Safety Oversight component in place. This requirement will also include documented policies, procedures and training for personnel with assigned duties under the SMS.

1.3.4. PHASE IV — OPERATIONAL SAFETY ASSURANCE

In this phase operational safety assurance is assessed through the implementation of periodic monitoring, feedback and continuous corrective action to maintain the effectiveness of safety risk controls under changing operational demands. At the end of Phase III, safety information management and analytical processes ensure sustenance of safe organizational processes over time and during periods of change in the operational environment.

1.3.4.1 At the completion of Phase III, the following activities should be finalized in such a manner that meets the expectations of the civil aviation oversight authority, as set forth in relevant requirements and guidance material:

- a) Develop and agree on safety performance indicators, safety performance targets and SMS continuous improvement. This activity is based on Elements 1.1, 3.1, 3.2 and 3.3 of the ICAO SMS framework.
- b) Develop training relevant to operational safety assurance. This activity is based on Element 4.1 of the ICAO SMS framework.
- c) Develop documentation relevant to operational safety assurance. This activity is based on Element 1.5 of the ICAO SMS framework.
- d) Develop and maintain formal means for safety communication. This activity is based on Element 4.2 of the ICAO SMS framework.

1.3.4.2 During this phase, in addition to meeting the requirements of Phases 3, certificate holders must demonstrate to the satisfaction of the AANSOO, that they have the following components in place:

- (a) Operational Quality Assurance
- (b) Emergency Preparedness and Response
- (c) Training for personnel with assigned duties under the SMS that are relevant to the components and elements referred to in (a) and (b).

2.0 Gap Analysis and Implementation Plan

2.1 Phase one of SMS implementation requires affected organizations to conduct a gap analysis of their system(s) to determine which components and elements of a safety management system are currently in place and which components or elements must be added or modified to meet the regulatory requirements. The review involves comparing the SMS requirements found in Parts 10 B of the CAR-ANS and AO139 against the existing systems in your organization. Part I – General Provisions, contains several rule changes that are common to all civil aviation organizations and should be included in the analysis.

2.2 AANSOO has developed a Safety Management Systems Assessment Guide, which will assist organizations in conducting their gap analysis. This guide lists all the SMS components and elements and includes criteria linked to the appropriate regulation or standard. The SMS Assessment Guide will be appended to the AANSOO Inspection & Audit Manual.

2.3 A comprehensive gap analysis form is included in this guide as Appendix B-1. The form combines the criteria from the SMS Assessment Guide, as well as the applicable references to AO 139 of the Aerodrome Manual of Operations and the regulations and standards for Part XI of the CAR-ANS.

2.4 Organizations can use this format as a template to conduct their gap analysis or they can create their own provided they refer to the SMS Assessment Guide for the appropriate criteria for each component and element.

2.5 Each gap analysis question is designed for a “yes” or “no” response. If you respond with a “yes” answer you are indicating that your organization already meets the criteria for that particular SMS component or element. A “No” answer indicates that a gap exists between the stated criteria and your organization’s policies, procedures or processes. If the response is “yes”, the next column of the gap analysis form can be used to indicate where (in organization documentation) the requirement is addressed. If the response is “no”, the same column can be used to indicate how and/or where the policy, procedure or process will be further developed to bring the organization into compliance with the requirement.

2.6 Once the gap analysis is complete and fully documented, the items you have identified as missing or deficient will form the basis of your implementation plan. Organizations may format their implementation plan to suit their individual needs, however, a spreadsheet format or MS Project type layout is recommended for ease of viewing and tracking.

Each item will be assessed to determine how the organization will create or modify policies, procedures or processes to incorporate the required SMS components and elements. Components and elements can be grouped into larger projects and assigned to project manager(s) who will oversee the development and implementation of that project. Appendix D provides the guideline on the development of the implementation plan referenced from Doc. 9859 (Revised Ed.)...

2.7 Once complete, the compliance document, gap analysis and implementation plan will be submitted to your inspector. These documents will be reviewed in accordance with the requirements of the applicable SMS regulations and standards.

Circumstances that necessitate change(s) to the project plan must be communicated as soon as possible to the assigned inspector to gain agreement and ensure timely submission of required material. Periodic progress reporting is a key component of this process.

3.0 Accountable Executive

3.1 Coincident with the introduction of SMS regulations, organizations will also be required to appoint an accountable executive. The accountable executive will be a single, identifiable person within each organization who will assume full responsibility for performance of the organization's ongoing compliance with AO 139 and the CAR-ANS requirements. It is imperative that the correct person is identified as the accountable executive, and that the individual understands the roles and responsibilities associated with that position. This is not intended to be a position title without accountability.3.2. This guide includes a series of questions, to assist with the selection process. Once this person is determined, the questions will confirm the selected person is the correct choice. All questions must receive a 'yes' answer for the candidate to be acceptable.

Should any of the questions result in an organizational structure that does not result in the clear selection of an accountable executive, an appropriate candidate will be selected in consultation with the AANSOO. The nomination of the Accountable Executive will be validated during the next inspection, regulatory audit or safety management system assessment.

4.0 Assessment Protocol

The AANSOO SMS Assessment Protocol has been developed to give the CAAP a tool for systematically evaluating the state of Safety Management Systems. It is not meant to be an inspection or compliance audit, but rather, the assessment focuses on the effectiveness and efficiency of a management system and makes judgments on its performance.

Civil Aviation Safety Inspectors will use the tool for the review and acceptance of each organization's SMS. This protocol can also be used by affected organizations to "self assess" their program prior to review by the AANSOO.

5.0 Guidance Material

5.1 ICAO has published several guidance materials to assist organizations with their SMS program. This information is available on the <http://www.icao.org./SMS/menu.htm>

5.1.1 Organizations are encouraged to review this site with emphasis on the following;

- Safety Management Systems for organizations embraced by Annexes 11 & 14
- Doc 9859 Revised Edition (2009)

6.0 Compliance Document

6.1 Part 1 form may be used to satisfy the notification and acceptance requirements of AO 139 and CAR-ANS Part 10 B. Organizations required to implement an SMS will also complete Parts 2 & 3 of this form.

6.1.1 This compliance document, or a similarly worded form, the gap analysis and implementation plan, must be submitted within the time specified by the organization's inspector for review.

A question list is included in this guide. They can be used to assist your organization in identifying the accountable executive. The questions list is designed to ensure that a person, and not a position, is identified as the accountable executive.

Part 1

I, declare myself to be the accountable executive for:

(Name, position, title and signature)

For the following activities:

Air Traffic Service

Aerodrome

Part 2

Implementing the Safety Management will be the responsibility of:

(Name, position and title)

Part 3

As accountable executive,

I am committing _____
(Name of Organization)

to implement the Safety Management System per the attached SMS Implementation Plan.

(Accountable Executive)

The information contained in this document, the gap analysis, the SMS Implementation plan have been reviewed. Endorsement by the AANSOO indicates agreement with the attached implementation plan.

Signed: _____
(For the Director General)

Date

Part 4 Accountable Executive Selection Question List

