Advisory Circular

AC100-1

Safety Management Systems

Issue 2

01 July 2014

GENERAL

Civil Aviation Safety Authority Advisory Circulars (AC) contains information about standards, practices and procedures that the Director has found to be an Acceptable Means of Compliance (AMC) with the associated rule.

An AMC is not intended to be the only means of compliance with a rule, and consideration will be given to other methods of compliance that may be presented to the Director. When new standards, practices or procedures are found to be acceptable, they will be added to the appropriate Advisory Circular.

This Advisory Circular also includes Explanatory Material (EM) where it has been shown that further explanation is required. Explanatory Material must not be regarded as an acceptable means of compliance.

PURPOSE

The purpose of this Advisory Circular is to provide information and guidance relating to safety management system procedures. Organisations seeking certification are required, under Civil Aviation Rules, to have such procedures in place. Any organisation requiring a certificate under Civil Aviation Rules can apply the procedures and practices outlined in this AC. They are equally applicable to flight, maintenance, or security operations, as appropriate.

RELATED CAR

This AC relates to CAR Part 109, Part 119, Part 139, the 140-series Parts, and the 170-series Parts.

CHANGE NOTICE

This AC replaces the Initial Issue dated 07 December 2010.

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Background

Under traditional regulatory systems, surveillance consisted mainly of inspection of end products of the aviation system. Little attention was given to the systems and procedures that produced those end products. Aviation regulatory authorities in effect, provided an external quality control function for the aviation industry through a process of constant inspection and intervention.

Given the complexity of modern aircraft, aerodromes, and organisations engaged in aviation activities, this hands on, interventionist, approach from regulatory authorities is no longer appropriate. Inspections of end products provide only a snap shot view of an organisation's activities and do not identify the underlying causal factors of the failures that occur.

Recent aviation rulemaking in most States now places responsibility on certificated organisations to have in place a Safety Management System with appropriate internal quality assurance procedures that constantly monitor, review and improve the organisation's performance.

Under this revised approach, the regulatory authority examines the system that controls the activity, and ensures that there are appropriate procedures in place to address and achieve the required safety standard.

Public safety is enhanced because deficiencies are identified and immediately corrected when they are discovered by the operator rather than waiting for discovery and reporting by a third party.

PNG Legislation

The PNG Civil Aviation Act 2000 requires organisations entering the civil aviation system to have a safety management system in place.

The new PNG Civil Aviation Rules related to certification of organisations contain requirements which taken collectively cover all the elements of a safety management system. In developing, implementing and maintaining systems to ensure compliance with Part 119 or the 14# series Parts or the 17# series Parts, the organisation concerned will put in place a safety management system meeting the requirements of Civil Aviation Rule Part 100.

While the safety management system standards embedded in the Rules are structured around elements of ISO 9000, Quality Management and Quality Assurance Standards, the Rules do not address all elements of the ISO standard and organisations certificated under the new rules do not automatically qualify for ISO certification. Conversely, an organisation with ISO certification does not necessarily show compliance with the requirements of the applicable Civil Aviation Rules.

Subpart A – General

EM 100.1 Purpose

Part 100 applies to all organisations that are currently certified and seeking certification as CASA certificate holder. Organisations located outside Papua New Guinea that are CASA certificate holders are also required to comply with Part 100.

EM 100.3 Definitions

The definitions shown below in this rule are specific to Part 100. Definitions associated with more than one rule Part are contained in the document, PNG Civil Aviation Rules Part 1.

Safety - The state in which risks associated with aviation activities, related to, or in direct support of the operation of aircraft, are reduced and controlled to an acceptable level.

Safety Management System - A systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

Safety Culture - the product of individual and group values, attitudes, competencies and patterns of behaviour that determine the commitment to, and the style and proficiency of, the organisation's management to safety

Safety Performance – An aviation document holder's safety achievement as defined by its safety performance targets and safety performance indicators.

Safety Performance Indicator– A data-based parameter used for monitoring and assessing safety performance.

Safety Performance Target - The planned or intended objective for safety performance indicator(s) over a given period.

Safety Risk - The predicted probability and severity of the consequences or outcomes of a hazard.

Accident - An occurrence associated with the operation of an aircraft which, in the case of a manned aircraft, takes place between the time any person boards the aircraft with the intention of flight until such time as all such persons have disembarked, or in the case of an unmanned aircraft, takes place between the time the aircraft is ready to move with the purpose of flight until such time as it comes to rest at the end of the flight and the primary propulsion system is shut down, in which:

a) a person is fatally or seriously injured as a result of:
— being in the aircraft, or
— direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or
— direct exposure to jet blast,

except when the injuries are from natural causes, self-inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew;
or
b) the aircraft sustains damage or structural failure which:
— adversely affects the structural strength, performance or flight characteristics of the aircraft, and
— would normally require major repair or replacement of the affected component,
except for engine failure or damage, when the damage is limited to a single engine, (including its cowlings or accessories), to propellers, wing tips, antennas, probes, vanes, tires, brakes, wheels, fairings, panels, landing gear doors, windscreens, the aircraft skin (such as small dents or puncture holes), or for minor damages to main rotor blades, tail rotor blades, landing gear, and those resulting from hail or bird strike (including holes in the radome);
or
c) the aircraft is missing or is completely inaccessible.

Incident- An occurrence, other than an accident, associated with the operation of an aircraft which affects or could affect the safety of operation.

Serious injury. An injury which is sustained by a person in an accident and which:

a) requires hospitalization for more than 48 hours, commencing within seven days from the date the injury was received; or
b) results in a fracture of any bone (except simple fractures of fingers, toes or nose); or
c) involves lacerations which cause severe haemorrhage, nerve, muscle or tendon damage; or
d) involves injury to any internal organ; or
e) involves second or third degree burns, or any burns affecting more than 5 per cent of the body surface; or
f) involves verified exposure to infectious substances or injurious radiation.

Acceptable level of safety performance (ALoSP) - The minimum level of safety performance of a aviation document holder, as defined in its safety management system, expressed in terms of safety performance targets and safety performance indicators.

Accountable Executive - A single, identifiable person having responsibility for the effective and efficient performance of the aviation document holder's SMS.

Change management - A formal process to manage changes within an organization in a systematic manner, so that changes which may impact identified hazards and risk mitigation strategies are accounted for, before the implementation of such changes.

Defences - Specific mitigating actions, preventive controls or recovery measures put in place to prevent the realization of a hazard or its escalation into an undesirable consequence.

Errors - An action or inaction by an operational person that leads to deviations from organizational or the operational person's intentions or expectations.

High-consequence indicators - Safety performance indicators pertaining to the monitoring and measurement of high-consequence occurrences, such as accidents or serious incidents. High-consequence indicators are sometimes referred to as reactive indicators.

Risk mitigation - The process of incorporating defences or preventive controls to lower the severity and/or likelihood of a hazard's projected consequence.

Subpart B: Safety Management Systems

A Safety Management System comprises the structure, responsibilities, processes, and procedures of an organisation that taken together, promote and establish an environment and culture of continuing improvement and thus enhance the safety of aircraft operations.

Safety Management Systems provide for organisational self-control. Where such systems are prescribed in civil aviation legislation, there is a change in relationship between organisation (now self-controlling) and the Civil Aviation Authority (no longer inspecting, now monitoring).

EM 100.51 Establishment of a Safety Management System

An SMS is a management tool for the management of safety by an organization. CAR Part 100.51 requires the establishment of a SMS 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.

An SMS can be likened to a toolbox. It is a toolbox that contains the tools that an aviation organization needs in order to be able to control the safety risks of the consequences of the hazards it must face during the delivery of the services for which the organization is in business. In many cases the organization itself generates the hazards during service delivery. It is important to acknowledge that an SMS itself is neither a tool nor a process.

An SMS is the toolbox, where the actual tools employed to conduct the two basic safety management processes (hazard identification and safety risk management) are contained and protected. What an SMS

does for an organization is to provide a toolbox that is appropriate, in size and complexity, to the size and complexity of the organization.

Fig.1.1 SMS — A toolbox

EM 100.53 Safety Policy

The starting point to ensure efficacy and efficiency of the organization's SMS is the safety policy of the organization. Senior management must develop the safety policy of the organization, signed by the Accountable Executive.

An example of a safety policy is included in Appendix 1. In general terms, the safety policy shall include a commitment to:

a) achieve the highest safety standards reflect organizational commitment regarding safety;

b) observe all applicable legal requirements and international standards, and best effective practicesinclude a clear statement about the provision of necessary resources for the implementation of the safety policy;

c) include safety reporting proceduresprovide all appropriate resources;

d) enforce safety as a primary responsibility of all managers; and clearly indicate which type of behaviors are unacceptable related to the service provider's aviation activities and include the circumstance under which disciplinary action would not apply;

e) be signed by the Accountable Executive of the Organization ensure that the policy is understood, implemented and maintained at all levels.

f) be communicated with visible endorsement throughout the organization; and

g) be periodically reviewed to ensure it remains relevant and appropriate to the aviation document holder;

Once developed, senior management must communicate the safety policy, with visible endorsement, to all staff.

EM 100.53 Safety Objectives

Senior management must also establish safety objectives, as well as the standards of safety performance for the SMS and, therefore, for the organization as a whole. The safety objectives must identify what the organization wants to achieve, in terms of the management of safety, and lay out the steps the organization

needs to take to achieve the objectives. The standards of safety performance allow organizational behaviour to be measured vis-à-vis safety performance and therefore vis-à-vis the management of safety.

Both safety objectives and the standards of safety performance must be linked to the safety performance indicators, safety performance targets and action plans of the SMS.

EM 100.57 Roles, Responsibilities and Authorities

The safety accountabilities, responsibilities and authorities of all departmental heads and/or persons responsible for functional units, and in particular line managers, must be described in the organization's safety management systems manual (SMSM), discussed later in this chapter.

Safety accountabilities, responsibilities and authorities must be graphically depicted in a functional chart showing the interfaces and interrelationships in terms of the management of safety among the various sectors of the organization.

While the job descriptions of all employees, regardless of level, should include safety accountabilities and responsibilities, the safety accountabilities regarding the definition of safety responsibilities and authorities of key personnel refer to the inclusion in the job description of each senior manager (departmental head or person responsible for a functional unit), of the responsibilities regarding the operation of the SMS, to the appropriate extent, in addition to the specific responsibilities for the operation of the department/functional unit.

Under the perspective of the management of safety as a core business function, every departmental head or person responsible for a functional unit will have a degree of involvement in the operation of the SMS and its safety performance.

This involvement will certainly be deeper for those responsible for operational departments or functional units directly involved in the delivery of the basic services of the organization (operations, maintenance, engineering, training and dispatch, hereafter referred to by the generic term "line managers") than for those responsible for supporting functions (human resources, administration, legal and financial).

The organization must identify the Accountable Executive, who must be a single, identifiable person having final responsibility for the effective and efficient performance of the organization's SMS. Depending on the size and complexity of the organization, the Accountable Executive may be:

a) the Chief Executive Officer (CEO);

b) the Chairperson of the Board of Directors;

c) a Partner; or

d) the Proprietor.

There is a tendency to identify who the Accountable Executive should be, from the perspective of the function assigned to the person within the organization. However, more important than who the Accountable Executive should be are what authorities and responsibilities the Accountable Executive should have in order to properly account for the safety performance of the SMS.

These authorities and responsibilities include, but are not limited to:

a) full authority for human resources issues;

b) authority for major financial issues;

c) direct responsibility for the conduct of the organization's affairs;

d) final authority over operations under certificate; and

e) final responsibility for all safety issues.

In an SMS environment, the safety manager is the person responsible for the collection and analysis of safety data on hazards, and the distribution to line managers, of safety information regarding hazards and the safety risks of the associated consequences. The distribution of safety information is done through the Safety Services office. The Safety Manager's functions include but not necessarily limited to:-

1. Managing the SMS Implementation plan on behalf of the Accountable Executive

2. Performing/facilitating hazard identification and safety risk analysis

3. Monitoring corrective actions and evaluating their results

4. Providing periodic reports on the organization's safety performance

5. Maintaining records and safety documentation

6. Planning and facilitating staff safety training

7. Providing independent advise on safety matters

8. Monitoring safety concerns in the aviation industry and their perceived impact on the organization's operations aimed at service delivery

9. Coordinating and communicating (on behalf of the Accountable Executive) with CASA and States of Design on matters relating to safety; and

10. Coordinating and communicating (on behalf of the Accountable Executive) with International organizations on issues relating to safety.

As such, the safety manager will often be the bearer of bad news. For this reason the selection criteria for a safety manager acquires special significance and should include, but not be limited to, the following:

a) operational management experience;

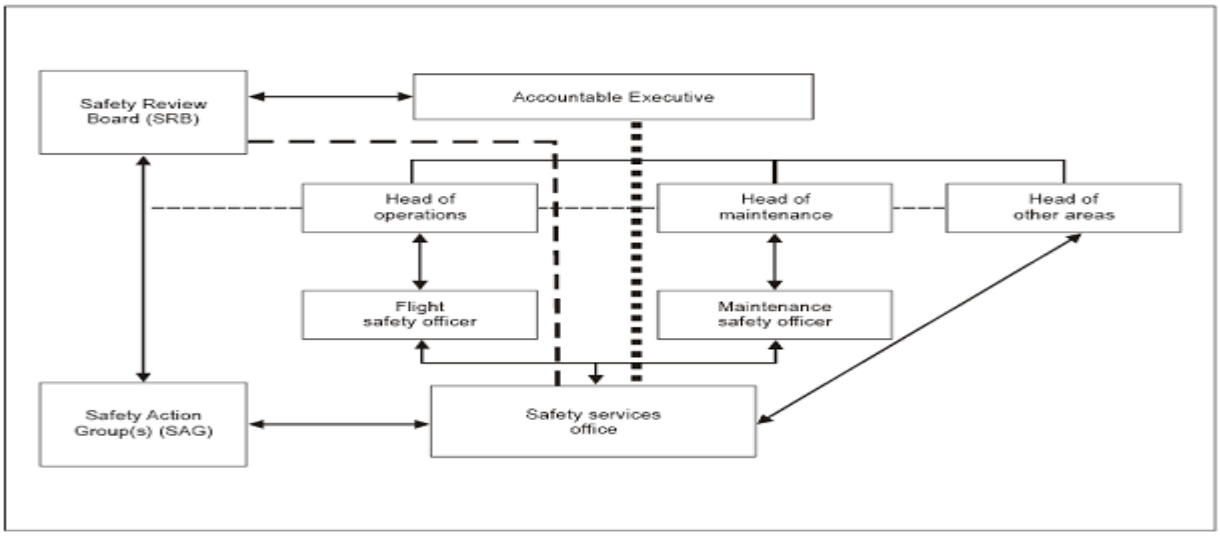
b) technical background to understand the systems that support operations;

c) people skills;

d) analytical and problem-solving skills;

e) project management skills; and

f) oral and written communications skills.



Safety Review Board(SRB) & Safety Action Group (SAG)

The safety review board is strategic and deals with high-level issues related to policies, resource allocation and organizational performance monitoring. Once a strategic direction has been developed by the SRB, implementation of safety strategies must be coordinated throughout the organization. This can be coordinated by creating a safety action group (SAG).SAGs are normally comprised of line managers and front-line personnel and are normally chaired by a designated line manager. SAGs are tactical entities that deal with specific implementation issues per the direction of the SRB.

The SAG :-

1. Oversees operational safety performance within the functional areas of the organization and ensures that appropriate safety risk management activities are carried out with staff involvement as necessary to build up safety awareness;

2. Coordinates the resolution of mitigation strategies for the identified consequences of hazards and ensures that satisfactory arrangements exists for safety data capture and employee feedback;

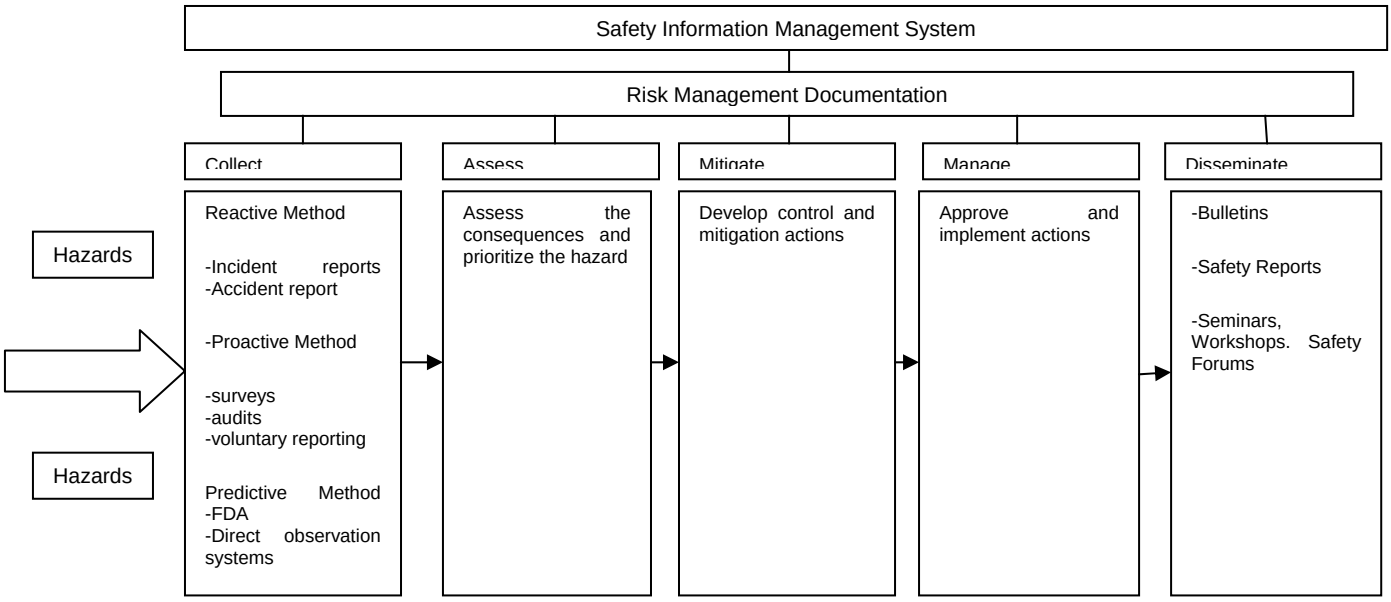
3. Assesses the safety impact of the introduction of operational changes or new technologies;

4. Coordinates the implementation of corrective action plans and ensures that corrective action is taken in a timely manner;

5. Reviews the effectiveness of previous safety recommendations;

6. Oversees safety promotion activities as necessary to increase employee awareness of safety issues and to ensure that they are provided adequate opportunities to participate in safety management activities.

EM 100.59 Hazard Identification



The aviation organization shall develop and maintain a formal process that ensures that hazards in operations are identified. Hazard identification shall be based on a combination of reactive, proactive and predictive methods of safety data collection.

Hazard identification is based on a combination of reactive, proactive and predictive safety data collection methods.

The three methodologies for identifying hazards are:

a) ***Reactive***. This methodology involves analysis of past outcomes or events. Hazards are identified through investigation of safety occurrences. Incidents and accidents are clear indicators of system deficiencies and therefore can be used to determine the hazards that either contributed to the event or are latent.

b) ***Proactive***. This methodology involves analysis of existing or real-time situations, which is the primary job of the safety assurance function with its audits, evaluations, employee reporting, and associated analysis and assessment processes. This involves actively seeking hazards in the existing processes.

c) ***Predictive***. This methodology involves data gathering in order to identify possible negative future outcomes or events, analysing system processes and the environment to identify potential future hazards and initiating mitigating actions**.**

Hazard identification is the first step in the safety risk management process. The corresponding safety risks are then assessed within the context of the potentially damaging consequences related to the hazard. Where the safety risks are assessed to be unacceptable, additional safety risk controls must be built into the system.

A structured approach to the identification of hazards ensures that, as much as possible, most hazards in the system's operational environment are identified. Suitable techniques for ensuring such a structured approach might include:

a) ***Checklists.*** Review experience and available data from similar systems and draw up a hazard checklist. Potentially hazardous areas will require further evaluation.

b) ***Group review.*** Group sessions may be used to review the hazard checklist, to brainstorm hazards more broadly, or to conduct a detailed scenario analysis. Hazard identification sessions require a range of experienced operational and technical personnel and are managed by a facilitator. The same group may also be used to assess corresponding safety risks.

Once hazards have been identified, their consequences evaluated and the safety risks of such consequences assessed (i.e. once safety information has been extracted from the safety data), safety information is delivered to line managers for resolution and on-going management of underlying safety concerns.

Line managers are subject-matter experts in their respective areas and therefore best able to design effective and efficient solutions and implement them. The safety services office is fundamentally a safety data collection and analysis unit. Through a combination of predictive, proactive and reactive methods, the safety services office captures what takes place within the operational drift, by continuously and routinely collecting safety data on hazards during service delivery activities.

Furthermore, line managers can take the last step in the safety data analysis process, by turning safety information into safety intelligence and by providing a context for the information on hazards distilled by the safety services office.

In mature safety management systems, hazard identification is a continuous and is an integral part of the aviation document holder's processes. A number of conditions trigger more in-depth and far-reaching hazard identification activities and may include:-

- Instances where the organization experiences an unexplained increase in aviation safety related events or regulatory non-compliances;

- Significant operational changes, including operational changes to key personnel or other major components; and

- Significant organizational changes, including anticipated growth and contraction, corporate mergers or acquisitions

EM 100.61 Risk Management

An organisation manages safety by ensuring that, through its safety management process, the safety risks of the consequences of hazards in critical activities related to the provision of services are controlled to an acceptable level of safety performance (ALoSP)

This is known as safety risk management, a generic term that encompasses two distinct activities: hazard identification and safety risk assessment and mitigation. Safety risk management builds upon a system design in which appropriate safety risk controls to eliminate or mitigate the consequences of anticipated hazards are embedded in the system. This is true whether the "system" in question is a physical system such as an aircraft, or an organizational system, such as an airline, an aerodrome or an air traffic service provider.

In terms of this manual, the latter — organizational system — is the "system" more commonly referred to. An organization is a system consisting of the structures, processes and procedures, as well as the people, equipment and facilities that are necessary to accomplish the system's mission.

Once hazards have been identified, the safety risks of their potential consequences must be assessed. Safety risk assessment is the analysis of the safety risks of the consequences of the hazards that have been determined as threatening the capabilities of an organization.

Safety risk analyst's use a conventional breakdown of risk into two components — the probability of occurrence of a damaging event or condition, and the severity of the event or condition, should it occur. Safety risk decision making and acceptance is specified through use of a risk tolerability matrix. While a matrix is required, discretion is also required.

The definition and final construction of the matrix should be left to the service provider's organization to design, and be subject to agreement by its oversight organization. This is to ensure that each organization's safety decision tools are relevant to its operations and operational environment, recognizing the extensive diversity in this area.

EM 100.63 Interfaces

An applicant for the grant of an organisational certificate must establish and maintain documented procedures for managing the interfaces between the applicant's organisation and relevant third parties.

The procedures required must—

a) identify external service providers; and

b) define the boundaries of each interface arrangement; and

c) identify the means by which each interface is reviewed; and

d) identify the scope of data or service provided across the interface; and

e) include procedures for identifying potential hazards and applying mitigators across the interface arrangement.

Any safety assessment should include the activities of contractors engaged by the company where the services of the contractor might affect the safety of the operation. Examples could include maintenance organizations, people who accept cargo on behalf of your organization, or airport operators.

EM 100.65 Change Management

Aviation organizations experience permanent change due to expansion; contraction; changes to existing systems, equipment, programmes, products and services; and introduction of new equipment or procedures. Hazards may inadvertently be introduced into an operation whenever change occurs. Safety management practices require that hazards that are a by-product of change be systematically and proactively identified and those strategies to manage the safety risks of the consequences of hazards be developed, implemented and subsequently evaluated.

Change can introduce new hazards, impact the appropriateness of existing safety risk mitigation strategies and/or impact the effectiveness of existing safety risk mitigation strategies. Changes may be external to the organization, or internal. Examples of external changes include changes in regulatory requirements, changes in security requirements, and reorganization of air traffic control. Examples of internal changes include management changes, introduction of new aircraft, equipment or procedures.

A formal process for the management of change should take into account the following three considerations:

a) ***Criticality of systems and activities.*** Criticality is closely related to safety risk. Criticality relates to the potential consequences of equipment being improperly operated or an activity being incorrectly executed — essentially answering the question, “how important is this equipment/activity to safe system operations?” While this is a consideration that should be made during the system design process, it becomes relevant during a situation of change. Clearly, some activities are more essential for safe delivery of services than others. For example, the changes in activities or procedures related to an aircraft’s return to service after major maintenance in an organization that has first implemented its own maintenance organization after previously subcontracting third-party maintenance, might be considered to be more safety-critical than a similar scenario regarding changes in meal catering activities. Equipment and activities that have higher safety criticality should be reviewed following change to make sure that corrective actions can be taken to control potentially emerging safety risks.

b) ***Stability of systems and operational environments.*** Changes may be the result of programmed change such as growth, operations to new destinations, changes in fleets, changes in contracted services, or other changes directly under the control of the organization. Changes in the operational environment are also important, such as economic or financial status, labour unrest, changes in political or regulatory environments, or changes in the physical environment such as cyclical changes in weather patterns. While these factors are not under the direct control of the organization, it must take action to respond to them. Frequent changes in either systems or operational environments dictate that managers need to update key information more frequently than in more stable situations. This is an essential consideration in management of change.

c) ***Past performance.*** Past performance of critical systems is a proven indicator of future performance. This is where the closed-loop nature of safety assurance comes into play. Trend

analyses in the safety assurance process should be employed to track safety performance measures over time and to factor this information into the planning of future activities under situations of change. Moreover, where deficiencies have been found and corrected as a result of past audits, evaluations, investigations or reports, it is essential that such information is considered to assure the effectiveness of corrective actions.

A formal management of change process should then identify changes within the organization which may affect established processes, procedures, products and services. Prior to implementing changes, a formal management of change process should describe the arrangements to ensure safety performance. The result of this process is the reduction in the safety risks resulting from changes in the provision of services by the organization to ALoSP.

Appendix 10 of this AC contains the CASA Risk Assessment and Change Management matrix form CAA-007 template which CASA uses. This may be tailored by operators and adapted or adopted into their SMS program.

EM 100.67 Internal Communication and Consultation

The organization should communicate SMS objectives and procedures to all operational personnel, and the SMS should be visible in all aspects of the organization's operations supporting the delivery of services. The safety manager should communicate the performance of the organization's SMS programme through bulletins and briefings.

The safety manager should also ensure that lessons learned from investigations and case histories or experiences, both internally and from other organizations, are distributed widely. Communication should flow between the safety manager and operational personnel throughout the organization. Safety performance will be more efficient if operational personnel are actively encouraged to identify and report hazards.

Safety communication therefore aims to:

a) ensure that all staff are fully aware of the SMS;

b) convey safety-critical information;

c) explain why particular actions are taken;

d) explain why safety procedures are introduced or changed; and

e) convey "nice-to-know" information.

Examples of organizational communication include:

a) safety management systems manual (SMSM);

b) safety processes and procedures;

c) safety newsletters, notices and bulletins; and

d) websites or email.

The contents should include the definition of hazards, consequences and risks, the safety risk management process, including roles and responsibilities and, quite fundamentally, safety reporting and the organization's safety reporting system(s).

Safety training for senior managers should include safety responsibilities including compliance with national and organizational safety requirements, allocation of resources, ensuring effective inter-departmental safety communication and active promotion of the SMS. In addition to the objectives of the two previous employee

groups, safety training for senior managers should include safety assurance and safety promotion, safety roles and responsibilities, and establishing acceptable levels of safety

Lastly, safety training should include special safety training for the Accountable Executive. This training session should be reasonably brief (it should not exceed one-half day), and it should provide the Accountable Executive with a general awareness of the organization's SMS, including SMS roles and responsibilities, safety policy and objectives, safety risk management and safety assurance.

EM 100.69 Accident and Incident Recording, Reporting and Investigation

Information for safety performance and monitoring comes from a variety of sources, including formal auditing and evaluation, investigations of safety-related events, continuous monitoring of day-to-day activities related to the delivery of services, and input from employees through hazard reporting systems. Each of these types of information sources may exist to some degree in every organization. However, specifications about what these sources should be or what they should "look like" should be left at an operational level, allowing individual organizations to tailor them to the scope and scale appropriate for the size and type of organization. Information sources for safety performance monitoring and measurement include:

a) hazard reporting;

b) safety studies;

c) safety reviews;

d) audits;

e) safety surveys; and

f) internal safety investigations.

Hazard reporting and hazard reporting systems are essential elements in hazard identification. Nobody knows actual system performance better than operational personnel. An organization that wishes to know how it really operates daily, as opposed as to how it should operate as per "the book", should ask operational personnel, hence the importance of reporting systems. There are three types of reporting systems:

a) mandatory reporting systems;

b) voluntary reporting systems; and

c) confidential reporting systems.

In ***mandatory reporting systems***, people are required to report certain types of events or hazards. This necessitates detailed regulations outlining who shall report and what shall be reported. Since mandatory systems deal mainly with "hardware" matters, they tend to collect more information on technical failures than on other aspects of operational activities. To help overcome this bias, voluntary reporting systems aim at acquiring more information on those other aspects.

In ***voluntary reporting systems*** the reporter, without any legal or administrative requirement to do so, submits voluntary event or hazard information. In these systems, regulatory agencies and/or organizations may offer an incentive to report. For example, enforcement action may be waived for events that are reported underlining errors or unintentional violations. The reported information should not be used against the reporters, i.e. such systems must be non-punitive and afford protection to the sources of the information to encourage the reporting of such information.

Confidential reporting systems aim to protect the identity of the reporter. This is one way of ensuring that voluntary reporting systems are non-punitive. Confidentiality is usually achieved by de-identification, and any identifying information about the reporter is known only to "gatekeepers" in order to allow for follow-up or "fill in voids" in the reported event(s). Confidential incident reporting systems facilitate the disclosure of hazards

leading to human error, without fear of retribution or embarrassment, and enable broader acquisition of information on hazards.

It is also important to note, in order to ensure the success of the reporting systems, that there is a normal reluctance by operational personnel to report. This statement is valid for all types of reporting, and particularly applicable where self-reporting of errors is involved.

There are reasons for this reluctance: retaliation, self-incrimination and embarrassment just to mention the topmost three. Education in terms of the importance of safety reporting in hazard identification systems and the protection of the sources of safety information are essential strategies to circumvent reluctance to report and to ensure an effective safety reporting environment.

Typical qualities of successful safety reporting systems include:

a) the reports are easy to make;

b) there are no disciplinary actions as a result of the reports;

c) the reports are confidential; and

d) feedback is rapid, accessible and informative.

It is imperative that the CASA establish Safety Performance Indicators (SPI's), the data is obtained from the industry on a monthly basis and this will shape and determine the SPI's that will be produced. Data collected over a two to three year period can be used to assist in establishing and defining the 'Acceptable Level Of Safety' for PNG as required under the ICAO State Safety Program.

Collation of this data will allow the CASA to establish current aviation baseline figures on activity, trends, movements, accidents, incidents, defects and overall industry growth.

The early identification and prevention of any industry trend will also assist in moving the industry from a reactive one, to a proactive one and ultimately a predictive one.

EM 100.71 Emergency Response Procedures

The aviation document holder shall ensure that an emergency response plan that provides for the orderly and efficient transition from normal to emergency operations and the return to normal operations is properly coordinated with the emergency response plans of those organizations it must interface with during the provision of its services.

An emergency response planning (ERP) outlines in writing what actions should be taken following an accident and who is responsible for each action. The purpose of an ERP is to ensure that there is an orderly and efficient transition from normal to emergency operations, including delegation of emergency authority and assignment of emergency responsibilities.

Authorization for action by key personnel is also contained in the plan, as well as the coordination of efforts to cope with the emergency. The overall objective is the safe continuation of operations or the return to normal operations as soon as possible

Airports must develop an airport emergency plan (AEP), air traffic service providers must develop contingency plans, and airlines must develop an emergency response plan. Since airport, ATC and airline operations overlap, it stands to reason that these plans should be compatible. The coordination of these plans should be described in the SMS manual.

EM 100.73 Safety Management System Training

The aviation document holder shall source or develop and maintain a safety training programme that ensures that personnel are trained and competent to perform the SMS duties. The scope of the safety training shall be appropriate to each individual's involvement in the SMS.

Training requirements and activities should be documented for each area of activity within the organization. A training file should be developed for each employee, including management, to assist in identifying and tracking employee training requirements and verifying that personnel have received the planned training.

Training programmes should be adapted to fit the needs and complexity of the organization. Safety training within an organization must ensure that personnel are trained and competent to perform their safety management duties. The SMS Manual (SMSM) should specify initial and recurrent safety training standards for operational personnel, managers and supervisors, senior managers and the Accountable Executive.

The amount of safety training should be appropriate to the individual's responsibility and involvement in the SMS. The SMSM should also specify safety training responsibilities, including contents, frequency, validation and safety training records management.

Safety training should follow a building-block approach. Safety training for operational personnel should address safety responsibilities, including following all operating and safety procedures, and recognizing and reporting hazards. The training objectives should include the organization's safety policy and SMS fundamentals and overview.

EM 100.75 Flight Data Analysis Programme

a) The organization shall analyze Flight data to demonstrate the effectiveness of:

1) risk controls in the organization's operational processes, and

2) the SMS.

b) Through Flight data analysis, the organization shall evaluate where improvements can be made to the organization's:

1) operational processes, and

2) SMS.

System Assessment

a) The organization shall assess the performance of:

1) safety-related functions of operational processes against their requirements, and

2) the SMS against its requirements.

b) System assessments shall result in a finding of:

1) conformity with existing safety risk control(s)/ SMS requirement(s) (including regulatory requirements);

2) nonconformity with existing safety risk control(s)/ SMS requirement(s) (including regulatory requirements); and

3) new hazard(s) found.

c) The SRM process will be utilized if the assessment indicates:

1) the identification of new hazards; or

2) the need for system changes.

d) The organization shall maintain records of assessments.

EM 100.77 Safety Performance Monitoring and Measurement

The primary task of safety assurance is control. This is achieved through safety performance monitoring and measurement, the process by which the safety performance of the organization is verified in comparison with the safety policy and approved safety objectives.

Safety assurance control is conducted by monitoring and measuring the outcomes of activities that operational personnel must engage in for the delivery of services by the organization. The international quality management standard, ISO-9000, supplies the following definition of process:

"… an interrelated set of activities that transform inputs into outputs." The emphasis on "activities" as basically "the things people do" is the reason why so much emphasis is placed on human error and workplace conditions in the discussions on safety and safety management, and eventually carried over to safety risk management.

It is these conditions that are at the root of most hazards, and it is these conditions that are the focus of most safety risk controls. Thus, most assurance activities under safety performance and monitoring are focused on conditions in the workplace that affect how people perform necessary activities for the delivery of services.

The following provides a list of generic aspects or areas to be considered to "assure safety" through safety performance monitoring and measurement:

a) ***Responsibility.*** Who is accountable for management of the operational activities (planning, organizing, directing, controlling) and its ultimate accomplishment.

b) ***Authority.*** Who can direct, control or change the procedures and who cannot as well as who can make key decisions such as safety risk acceptance decisions.

c) ***Procedures.*** Specified ways to carry out operational activities and that translate the "what" (objectives) into "how" (practical activities).

d) ***Controls.*** Elements of the system, including, hardware, software, special procedures or procedural steps, and supervisory practices designed to keep operational activities on track.

e) ***Interfaces.*** An examination of such things as lines of authority between departments, lines of

communication between employees, consistency of procedures, and clear delineation of responsibility between organizations, work units and employees.

f) ***Process measures.*** Means of providing feedback to responsible parties that required actions are taking place, required outputs are being produced and expected outcomes are being achieved.

Information sources for safety performance monitoring and measurement include:

a) hazard reporting;

b) safety studies;

c) safety reviews;

d) audits;

e) safety surveys; and

f) internal safety investigations.

Sub Part C: Quality Management System

EM 100.101 Establishment of a Quality Management System

An inherent component of a Safety Management System is an internal quality assurance system. All Civil Aviation Rule Parts for the certification of organisations state that an organisation is entitled to a certificate if it meets the requirements of the Part. One of those requirements is that an applicant must establish an internal quality assurance system to ensure compliance with the requirements of the applicable Part.

Objectives and Strategies

Objectives and strategies of the quality assurance system should be documented in the exposition to ensure all personnel know what the system is trying to achieve and how the organisation will go about reaching those achievements.

This understanding equips personnel to apply quality assurance procedures and participate in quality assurance programmes in an informed way.

Objectives would typically include—

a) To give effect to the safety policy through a total commitment of management and staff to quality

b) Transparent, objective evidence of compliance with all regulatory requirements

c) The needs and expectations of clients met through on time delivery of passengers and freight

d) The operation of aircraft which are defect free and able to attain the highest possible levels of reliability

e) Achievement of company financial targets through effective use of skilled and motivated staff in a safe and efficient working environment

f) A professional company image

Strategies would typically include—

a) Planned and systematic continuous quality improvement

b) Development and implementation of processes and systems to consistently ensure required actions are completed on time

c) Sound recording practices to provide traceability and accountability

d) Identification of required work skills and provision of training to meet needs

e) Integration of the quality assurance system with company strategic planning

f) Adherence to documented procedures

g) A planned programme of internal assessment which continually evaluates the effectiveness of the quality assurance system

Objectives and strategies should be contained in the quality assurance section of the exposition, generally ahead of detailed procedures and programmes.

Internal quality assurance procedures will identify, document and correct instances of non-conformance, or non-compliance. These procedures must be put in place for all areas of the organisation's activities that are covered by the rules. Internal quality assurance procedures, as well as providing confidence in the organisation meeting regulatory compliance, can improve the organisation's commercial performance and should be of benefit to both the organisation and its customers.

To provide a sound basis for the internal quality assurance system, specific elements of the safety management system are explicitly called up in each Part under the requirements for internal quality assurance.

These include a safety policy and procedures to ensure the safety policy and the quality system objectives and strategies are understood at all levels of the organisation. Standards for an internal quality assurance system are described in detail further on in this AC.

Organisations certificated under Civil Aviation Rules are required to have an internal quality assurance system which should include the following essential elements—

(a) a **Senior Person** responsible directly to the Chief Executive for the internal quality assurance system; and

(b) a documented **safety policy** issued by the Chief Executive; and

(c) documented **objectives and strategies** of the quality assurance system; and

(d) **procedures** for ensuring the safety policy and quality assurance system objectives and strategies are **understood** throughout the organisation; and

(e) **quality indicators**, including defect and incident reports, and personnel and customer feedback, and procedures to monitor these indicators to identify existing problems or potential causes of problems within the system; and

(f) a procedure for **corrective action** to ensure that the cause of a detected non-compliance or non-conformity within the system are corrected, and;

(g) a procedure for **preventative action** to ensure that the cause of a potential non-compliance or non-conformity that have been identified within the system are corrected; and

(h) a procedure for **occurrence investigations** conducted in accordance with Part 12; and

(i) an **internal audit programme** to audit the applicant's organisation for conformity with the procedures in its exposition and achievement of the objectives set for the quality assurance system; and

(j) a procedure for regular and structured **management review** of the Safety Management System and internal quality assurance outputs; and

(k) a **records system** that clearly documents what has taken place, allowing for statistical analysis and monitor for continuing suitability and effectiveness of the Safety Management System and the organisation's operation; and

(l) a **document control procedure** to manage, develop, document, change, and distribute the organisation's quality and operational procedures.

Senior Person

An organisation's exposition should identify a senior person within the organisation, who has the responsibility and authority to:

(a) develop, implement and maintain the internal quality assurance system; and

(b) manage the organisation's internal audit programme; and

(c) identify and record any findings or concerns, and the evidence necessary to confirm findings or concerns; and

(d) initiate, recommend, or provide solutions to findings or concerns through consultation with the management owning the non-conforming process or activity;

(e) communicate and co-ordinate activities with external auditors; and

(f) analyse the root causes of concerns and findings for presentation to management for a review of trends and potential areas of concern; and

(g) facilitate and record regular management reviews to ensure corrective and preventive actions are addressed and closed out within a specific time.

This senior person is normally assigned the title of Quality Assurance Manager and depending on the size of the organisation may head a team of quality assurance specialists or in the case of small organisations, may carry out all the functions as a single individual.

Irrespective of the size of the organisation, the Quality Assurance Manager and his team should have the authority to allow them to work within the organisation to implement and maintain the internal quality assurance procedures.

The Quality Assurance Manager should have a direct reporting line to the highest level of management necessary (generally the Chief Executive) to sustain management commitment to the organisation's safety policy.

For large organisations such as airlines operating under Part 121, operating size may justify the costs associated with having full-time, dedicated, resources and personnel in a separate quality assurance department or group.

For most organisations, a single person appointed full time to the position of Quality Assurance Manager will have the capacity to carry out all the necessary functions. However in the case of the smallest organisations, such as Part 145 maintenance providers employing only 3 or 4 engineers, it will be necessary to engage an outside person or organisation to carry out some of the functions of the Quality Assurance Manager.

Irrespective of how the role of Quality Assurance Manager is carried out, for those wishing to relate to ISO 9000, the person assigned to this position is the Management Representative.

EM 100.103 Audits

An audit is a methodical, planned review used to determine how activities are being conducted, and compares results with how the activities should have been conducted according to established procedures. Audits are conducted for different purposes and have distinct identities that are defined for the purposes of this AC.

First party audits

First party audits are those conducted internally by the organisation, using its own trained staff, to evaluate

the organisation's, or parts of the organisation's, performance. The results are used by management to confirm compliance with the documented standards and procedures to initiate corrective action when the standard is not met or preventive actions where there is potential for non-conformance or non-compliance.

The auditor must be independent of the function, operation or group being audited. For small operators it may be necessary to engage an outside agency. To contain costs, provided they can provide a substantive report and produce creditable findings and concerns, the outside agency could be—

a) a relative

b) another small operator

c) a sub-contractor

d) a business associate.

Second party audits

Second party audits are carried out by an organisation on its suppliers or subcontractors. These audits are intended to satisfy the contracting organisation that the subcontractor meets the agreed quality requirements.

Third party audits

Third party audits are those carried out by independent bodies such as regulatory authorities or commercial auditing companies. Audits carried out by the Civil Aviation Authority are third party audits and are intended to give the Director an assurance that the organisation is in control and that the organisation's Safety Management System and internal quality assurance procedures are working effectively.

Third party audits will confirm that non-compliances are being identified and corrected by first, or second, party audit.

The Audit Programme

A mandatory element of the internal quality assurance system is the organisation's audit programme. This programme should:

a) define the audit types and associated procedures;

b) maintain a cyclic schedule of audits that ensures complete coverage of the operation over a specified period;

c) define the frequency and scope of audits;

d) provide for review, reporting, and close-out of findings and concerns;

e) identify qualified personnel to conduct audits;

f) provide for follow-up audits to ensure effectiveness of any corrective and preventative action taken.

Planned Audits

Planned audits are performed during a set calendar period.

To facilitate and ensure a planned audit is thorough, the organisation should be divided into audit components or modules based on the organisation's operational or functional structure. The audit cycle

would usually ensure all components or modules are carried out in one year. The scheduling of particular components or modules should be sufficiently flexible to ensure adequate resources can be committed.

Special Purpose Audits or Spot Checks

Special purpose audits, or spot checks, should be conducted in response to concerns identified internally by the organisation, as a result of external audits, or from customer complaints. An organisation may also choose to schedule spot checks on specific activities in the organisation to determine priorities for planned audits.

External Audits

External audits are initiated and conducted by agencies with regulatory oversight of the organisation such as the CASA or by contracted customers of the organisation such as fuel companies.

The content and focus of an organisation's programme of planned audits will be largely determined by the need to anticipate or respond to the requirements and findings of external audits.

The internal audit programme should not be misunderstood as a process that will replace the existing third party audit requirements that are carried out by the Civil Aviation Authority.

Audit Construction

The various elements that comprise an effective audit are:

a) preparation by the auditor(s)

b) the opening or entry meeting:

c) introduce the audit team and confirm the scope of the audit;

d) outline the audit process to be used and the schedule;

e) confirm the resources, people and facilities needed for the audit are aware and available for the audit.

f) the examination:

g) interview personnel, review documents, observe and inspect operations and select samples;

h) document evidence;

i) document findings and concerns.

j) the closing or exit meeting:

k) present findings and concerns;

l) establish a programme to close-out findings.

m) a written audit report containing:

n) descriptions of all the findings and observations with the supporting evidence;

o) the agreed corrective and preventive actions;

p) the schedule for follow up and the closure of the corrective and preventive actions.

Procedures in the organisation's exposition should define the manner in which audits will be constructed and carried out in line with the elements described above. When full-time, dedicated audit resources and personnel are not practical, the organisation should develop procedures that preclude persons directly responsible for the areas to be evaluated from participating in an audit team.

For very small organisations, an appropriate approach to the audit requirement could consist of check-lists and a schedule for accomplishing the check-list items. Each checklist must be signed. The operator should then schedule a regular independent review of the check-lists and the checklist items.

CASA Monitoring and Intervention

The Civil Aviation Authority monitors the industry by carrying out surveillance and analysis to verify that operators are upholding their responsibilities. Internal quality assurance systems are intended to assist the Civil Aviation Authority's monitoring process by identifying and resolving safety related issues. The internal quality assurance documentation and records provide a convenient point of entry to the organisation for auditing purposes.

The results of Civil Aviation Authority audits act as a barometer of the organisation's performance. It will be apparent from the level of findings and resolutions in the internal quality assurance documentation and records whether the Safety Management System and the safety policy are functioning satisfactorily. The performance of the organisation will dictate the level of Civil Aviation Authority intervention that is necessary.

If the organisation performs well the Civil Aviation Authority will have less need to monitor its compliance. As confidence is built up the level, and frequency, of audits may be reduced.

EM 100.105 Management Review

Management should, at specified intervals, review—

a) quality indicators and audit results to verify the Safety Management System is working;

b) corrective and preventive actions to ensure they have been recorded, implemented, and closed out;

c) the effectiveness of internal quality assurance procedures;

d) the operation for opportunities for improvement;

e) training needs;

f) the need to respond to changing regulatory requirements;

g) the need to update the organisation's exposition.

For the purposes of this procedure, the term **management** *means the team or person who has the authority to resolve issues and take action.*

Management review meetings should be scheduled at a frequency appropriate to the organisation. For a newly certificated organisation, this would typically be every 3 months, increasing out to every 6 months when systems had been bedded in.

A management review meeting should not be regarded as an additional burden. It simply formalises a review process that should be operating in any successful business. In most organisations a set agenda can be used and the review meeting can be held in conjunction with a regular team meeting.

At least once a year, the organisation should review all company policies, processes, and procedures. The review should be carried out by senior staff and encompass all the activities, procedures, and processes of the organisation. This annual review should comprehensively consider the following:

a) the overall effectiveness of the organisation in achieving its stated objectives.

b) the ability of the internal quality assurance and the operational procedures to respond to new technologies, to market strategies, to legislative or regulatory changes, and to social or environmental conditions.

c) whether or not the current processes and procedures are up-to-date, effective, and relevant

The Chief Executive should provide leadership to the management review process by chairing management reviews.

The associated procedure contained in the organisation's exposition should identify who is assigned to the management review team, prescribe responsibilities for scheduling and organising review meetings, recording of proceedings, filing action, responsibilities and processes for follow-up of agreed actions, and how proceedings are communicated to personnel.

EM 100.107 Continuous Improvement

Continuous improvement of the overall level of safety**.** Managing safety is not a one-day affair. It is an ongoing activity that can be successful only through continuous improvement. An SMS aims to make continuous improvements to the overall level of safety of an organization. In accordance with the nature of safety management as a core business function, an SMS involves non-stop, daily hazard identification, collection and analysis, safety risk estimation, and implementation of mitigation strategies.

There is no specific point at which an SMS stops or slows down. An SMS is a constant, never-ending operation that aims at maintaining and, if possible, improving safety levels that are commensurate with the organization’s strategic objectives and supporting core business functions. In this sense, an SMS is profoundly different from the traditional notion of accident investigation, which waited for an accident to occur, then extracted and distributed as many safety lessons as possible learned from the investigation in order to prevent similar accidents.

An SMS actively looks for hazards, continuously assesses safety risks, to contain them before they result in an accident. Continuous improvement of the SMS thus aims at determining the immediate causes of below standard performance and their implications in the operation of the SMS, and rectifying situations involving below standard performance identified through safety assurance activities.

Continuous improvement is achieved through internal evaluations, internal and external audits and applies to:

a) proactive evaluation of facilities, equipment, documentation and procedures, for example, through internal evaluations;

b) proactive evaluation of an individual’s performance, to verify the fulfillment of that individual’s safety responsibilities, for example, through periodic competency checks (form of evaluation/audit); and

c) reactive evaluations in order to verify the effectiveness of the system for control and mitigation of safety risks, for example, through internal and external audits.

As a conclusion, continuous improvement can occur only when the organization displays constant vigilance regarding the effectiveness of its technical operations and its corrective actions. Indeed, without ongoing monitoring of safety controls and mitigation actions, there is no way of telling whether the safety management process is achieving its objectives. Similarly, there is no way of measuring if an SMS is fulfilling its purpose with efficiency.

EM 100.109 Error and Non Compliance Management Procedures

Quality Indicators

Each organisation should develop, measure and monitor it's own quality indicators. Some examples of typical quality indicators are:

a) Reports derived from the analysis of operational logs and records kept of incidents, occurrences, and accidents;

b) Root cause analysis from corrective and preventive action records;

c) Performance measurements of the organisation's operation;

d) Customer complaints;

e) Customer surveys, external and internal.

It is important that in establishing quality indicators, organisations select indicators which are easily measurable and provide a clear message with minimal effort. Detailed analysis should be avoided unless there are dedicated quality assurance staff available.

Limiting the number of the indicators chosen is necessary if their use is to be effective. Too many will result in the assessment and measurement task becoming a burden and eventually lead to disuse. It is also important that the indicators chosen are meaningful to that operation and are reviewed regularly and changed to reflect changes in the operation.

A standard should be attached to each indicator so that there is a measure of acceptability/unacceptability.

For example:

Indicator	Standard	Measurement	ComplianceCompliance Targets
Accidents and incidents are reported, analysed and corrective and preventative actions taken	All reportable accidents and incidents are formally reported to the CASA within 72 hours.	3 monthly review	100%
	All incidents are investigated, the root cause identified and corrective action taken within 10 days of the event.	3 monthly review	100%
Records are completed, actioned and maintained	Duty records show conformity with duty requirements.	2 monthly review	90%
Quality Improvement forms are processed in a timely manner	Quality Improvement forms are reviewed, investigated and actioned by the Chief Executive or Quality Assurance Manager within 14 days of the form being raised	Monthly review	85%

Corrective actions

Internal quality assurance system should include a procedure to ensure that corrective actions are

developed in response to findings or concerns.

The procedure should include:

a) how corrective actions are to be recorded;

b) the process for allocation and acceptance of ownership;

c) the form of monitoring to verify each corrective action is completed in the prescribed timeframe;

d) mechanisms to test that the corrective action is long-term and ensures the issue does not recur;

e) the requirement to regularly review root causes of all corrective actions.

Preventive actions

The internal quality assurance system should include procedures for preventive action identical to the corrective action procedure. The only difference is that preventive action anticipates and corrects the cause of a potential failure. Often a corrective action will generate one or more, associated, preventive actions to ensure a complete and long term fix.

Occurrence investigations

The internal quality assurance system should include procedures for conducting occurrence investigations and complying with the requirements of Part 12. Generally the approach to an occurrence investigation is that same as the process applied to investigating and implementing corrective and preventive actions.

There are specific reporting actions prescribed in Part 12 which the occurrence investigator must ensure compliance with. These requirements should be included in the documented procedure contained in the organisation's exposition.

Management Review

Management should, at specified intervals, review—

a) quality indicators and audit results to verify the Safety Management System is working;

b) corrective and preventive actions to ensure they have been recorded, implemented, and closed out;

c) the effectiveness of internal quality assurance procedures;

d) the operation for opportunities for improvement;

e) training needs;

f) the need to respond to changing regulatory requirements;

g) the need to update the organisation's exposition.

For the purposes of this procedure, the term **management** *means the team or person who has the authority to resolve issues and take action.*

Management review meetings should be scheduled at a frequency appropriate to the organisation. For a newly certificated organisation, this would typically be every 3 months, increasing out to every 6 months

when systems had been bedded in.

A management review meeting should not be regarded as an additional burden. It simply formalises a review process that should be operating in any successful business. In most organisations a set agenda can be used and the review meeting can be held in conjunction with a regular team meeting.

At least once a year, the organisation should review all company policies, processes, and procedures. The review should be carried out by senior staff and encompass all the activities, procedures, and processes of the organisation. This annual review should comprehensively consider the following:

a) the overall effectiveness of the organisation in achieving its stated objectives.

b) the ability of the internal quality assurance and the operational procedures to respond to new technologies, to market strategies, to legislative or regulatory changes, and to social or environmental conditions.

c) whether or not the current processes and procedures are up-to-date, effective, and relevant.

The Chief Executive should provide leadership to the management review process by chairing management reviews. The associated procedure contained in the organisation's exposition should identify who is assigned to the management review team, prescribe responsibilities for scheduling and organising review meetings, recording of proceedings, filing action, responsibilities and processes for follow-up of agreed actions, and how proceedings are communicated to personnel.

EM 100.111 Document Control

Controlled documented internal quality assurance and operational procedures are a mandatory element and requirement of a Safety Management System for all aviation certificated organisations.

Each organisation should review the size and complexity of their operation to determine the scale of processes and procedures that are appropriate for them and when documented will provide a transparent statement of how that organisation intends to comply with the requirements of the applicable rule Part.

Internal quality assurance procedures should:

a) be concise and complete enough to be a useful guide for a user with the appropriate skills to perform the task(s) within the procedure;

b) state specifically how the organisation will address and meet the requirements of Rules, the means of compliance and standards in ACs, or the standards in any other document relating to the procedure. For example, it is not sufficient for a procedure to simply state: Organisation ABC will comply with Rule XYZ.

c) be current and met the requirements of referenced document(s);

d) be accessible to all users of the process;

e) comply with a standard format defined by the organisation, for example—

(i) **Title**

(ii) **Purpose** (the objective of the procedure);

(iii) **Scope** (what the procedure applies to);

(iv) **Responsibility** (who is responsible for what);

(v) **Definitions** (definitions of terminology introduced by this procedure, or statements that may lead to misinterpretation)

(vi) **Procedure** (what is actually done to ensure compliance);

(vii) **References** (other documents, such as Rules, standards, and other procedures that affect or are related to this procedure);

(viii) **Flowchart**(s) (to support or clarify the procedure);

(ix) **Records** (for example checklists, reports, reviews, measurements.)

EM 100.113 Records

Records documenting the performance of quality assurance procedures and the results which arise should be maintained by the organisation. Records are the principal form of evidence. Documented evidence is essential in analysing and determining the root cause of findings or concerns so that potential areas of non-compliance or non-conformance can be identified by the organisation. The record must be accurate, complete, reliable, and accessible.

The following quality records should be maintained—

a) audit reports;

b) management reviews minutes, reports and supporting data;

c) corrective and preventive actions with supporting documentation;

d) analysis of root causes and the ensuing trends and management reports;

e) analysis of quality indicators and resulting reports to management

f) quality training plans and records.

Appendix 1 to AC100-1 EXAMPLE OF AN ORGANISATIONAL SAFETY POLICY

Safety is one of our core business functions. We are committed to developing, implementing, maintaining and constantly improving strategies and processes to ensure that all our aviation activities take place under an appropriate allocation of organizational resources, aimed at achieving the highest level of safety performance and meeting regulatory requirements, while delivering our services.

All levels of management and all employees are accountable for the delivery of this highest level of safety performance, starting with the [Chief executive officer (CEO)/managing director/or as appropriate to the organization].

Our commitment is to:

• support the management of safety through the provision of all appropriate resources that will result in an organizational culture that fosters safe practices, encourages effective safety reporting and communication, and actively manages safety with the same attention to results as the attention to the results of the other management systems of the organization;
• ensure that the management of safety is a primary responsibility of all managers and employees;
• clearly define, for all staff, managers and employees alike, their accountabilities and responsibilities for the delivery of the organization's safety performance and the performance of our safety management system;
• establish and operate hazard identification and risk management processes, including a hazard reporting system, in order to eliminate or mitigate the safety risks of the consequences of hazards resulting from our operations or activities, to achieve continuous improvement in our safety performance;
• ensure that no action will be taken against any employee who discloses a safety concern through the hazard reporting system, unless such disclosure indicates, beyond any reasonable doubt, gross negligence or a deliberate or wilful disregard of regulations or procedures;
• comply with and, wherever possible, exceed, legislative and regulatory requirements and standards;
• ensure that sufficient skilled and trained human resources are available to implement safety strategies and processes;
• ensure that all staff are provided with adequate and appropriate aviation safety information and training, are competent in safety matters, and are allocated only tasks commensurate with their skills;
• establish and measure our safety performance against realistic safety performance indicators and safety performance targets;
• continually improve our safety performance through continuous monitoring and measurement, regular review and adjustment of safety objectives and targets, and diligent achievement of these; and
• ensure that externally supplied systems and services to support our operations are delivered meeting our safety performance standards.

(Signed) _____
H. Simpson
Chief Executive Officer

Appendix 2 to AC100-1 SAMPLE MANAGEMENT REVIEW PROCEDURE

Purpose:

To define the procedure establishing a management review process, that test and confirm the suitability and effectiveness of the quality system.

Procedure:

A Review Meeting will be held regularly (once a month), with minutes, action plans and documents kept to support the observations, conclusions and recommendations reached.

These records will be retained for future reference and analysis. The Manager and Management Representative will nominate the attendees.

The agenda should include the review of the following items:

(a) Review previous minutes;

(b) corrective and preventive actions;

(b) internal and external audit program and results;

(c) training and development;

(d) document control;

(e) operational and managerial performance measurements;

(f) customer surveys; and

(g) customer complaints.

Appendix 3 to AC100-1 THE CASA SMS IMPLEMENTATION PLAN

The CASA understands that while all organisations will be expected to be compliant by the due date, the specifics of each SMS will be contextualized to both the size and nature of each individual organisation.

Priority 1 organisations are those that hold a 119/121,119/125,139, 145, 146, 148 and 172 certificates, while priority 2 organisations are those that hold a 109, 119/135, 119/136, 140, 141, 144, 171, 173, 174 and 175 certificate. The only distinguishable difference between these two priority groups is the compliance dates for each of the four phases.

N.B. If an organisation holds more than one certificate, the highest certificate for that organisation is the determinant. Ie. A 119 certificated organisation also holds 121, 125 and 145 certificates, then its 119 certificate determines the priority level for the organisation.

The four phases of proposed SMS implementation are as follows:

Phase I — Planning should provide a blueprint on how the SMS requirements will be met and integrated into the organization's work activities, and an accountability framework for the implementation of the SMS. During phase 1, basic planning and assignment of responsibilities are established. Central to phase 1 is the 'gap analysis'. From the gap analysis, an organization can determine the status of its existing SMS processes and can begin planning for the for the development of further safety management processes. The significant outcome of phase 1 is the SMS implementation plan.

At the completion of phase 1, the following activities should be finalized in such a manner that meets the expectation of CASA, as set forth in CAR Part 100 and this AC:-

Management Commitment and Responsibility– Element 1.1(i)

a) Identify the Accountable Executive and the safety accountabilities of managers; Identify the person (or planning group) within the organization responsible for implementing the SMS;

b) Establish an SMS implementation team. The team should be comprised of representatives from the relevant departments. The team's role is to drive the SMS implementation from the planning stage to its final implementation. Other functions of the implementation team will include but not limited to:-

1. Developing the SMS implementation plan.
2. Ensure adequate SMS training and technical expertise of the team in order to effectively implement SMS elements and related processes; and
3. Monitoring and reporting on the progress of the SMS implementation, providing regular updates and coordinating with the SMS Accountable Executive.

c) Define the scope of the organization's activities (departments/divisions) to which the SMS will be applicable. The scope of the organization's SMS applicability will subsequently need to be described in the SMS document as appropriate. This activity is based on Element 1.5 of the ICAO SMS framework. A system review and description of the SMS elements and their interface with existing systems and processes is the first step in defining the scope and applicability of the SMS. This exercise provides an opportunity to identify any gaps related to the service provider's SMS components and elements. The system description includes the SMS interfaces within the organization, as well as pertinent interfaces with other external organizations such as subcontractors. An overview of the system description and its accountability and reporting structure should be included in the SMS documentation. For large

and complex organizations, details of basic systems and organizational procedures are addressed in the service provider's relevant exposition or administrative manuals. In such cases, a brief outline together with an organizational chart with appropriate cross references may be adequate for the purpose of the system description.

d) Conduct a gap analysis of the organization's current systems and processes in relation to the CAR Part 100 and this AC. Guidance on an SMS gap analysis for a service provider is provided in Appendix 5 of this AC; and

SMS implementation plan – Element 1.5(i)

a) Develop an SMS implementation plan on how the organization will implement the SMS on the basis of the identified system and process gaps resulting from the gap analysis. An example of a basic SMS implementation plan is provided in Appendix 5 of this AC.

Appointment of key Safety Personnel – Element 1.3

a) Identify the key SMS person (safety/quality function) within the organization who will be responsible for administering the SMS on behalf of the accountable executive.
b) Establish the safety services office

Training and Education – Element 4.1(i)

a) Conduct a training needs analysis
b) Organize and set up schedules for appropriate training of all staff according to their individual responsibilities and involvement in the SMS.
c) Develop safety training considering:-
    1. Initial (general safety) job-specific training; and
    2. Recurrent training
d) Identify costs associated with training
e) Develop a validation process that measures the effectiveness of training
f) Establish a safety training records system.

Safety Communication – Element 4.2(i)

a) Initiate a mechanism or medium for safety communication.
b) Establish a means to convey safety information through any of:
    1. safety newsletters, notices and bulletins;
    2. websites;
    3. emails;

Phase II — The objective of Phase 2 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. This phase aims at consolidating existing activities and developing those which do not yet exist.

Management and Commitment Responsibility – Element 1.1(ii)

a) Develop a safety policy;

b) Have the SMS Accountable Executive sign the policy;

c) Communicate the safety policy throughout the organization;

d) Establish a review schedule for the safety policy to ensure it remains relevant and appropriate to the organization.

e) Establish safety objectives for the SMS by developing safety performance standards in terms of:

1. Safety Performance Indicators;
2. safety performance targets and alert levels; and
3. action plans.

f) Establish the SMS requirements for subcontractors:

1. Establish a procedure to write SMS requirements into the contracting process; and
2. Establish the SMS requirements in the bidding documentation.

Safety Accountabilities – Element 1.2

a) Define safety accountabilities and communicate them throughout the organization.

b) Establish the safety action group (SAG).

c) Establish the safety/SMS coordination committee.

d) Define clear functions for the SAG and the safety/SMS coordination committee.

e) Establish lines of communication between the safety services office, the accountable executive, the SAG and the safety/SMS coordination committee.

f) Appoint the accountable executive as the chairperson of the safety/SMS coordination committee.

g) Develop a schedule of meetings for the safety services office to meet with the safety/SMS coordination committee and SAG as needed.

Coordination of Emergency Response Planning – Element 1.4

a) Review the outline of the ERP related to the delegation of authority and assignment of emergency responsibilities.

b) Establish coordination procedures for action by key personnel during the emergency and the return to normal operations.

c) Identify external entities that will interact with the organization during emergency situations.

d) Assess the respective ERPs of the external entities.

e) Establish coordination between the different ERPs.

f) Incorporate information about the coordination between the different ERPs in the organization's SMS documentation

(Note.— Refer to Appendix 6 for further guidance on ERP).

SMS Documentation – Element 1.5 (ii)

a) Create an SMS documentation system to describe, store, retrieve and archive all SMS-related information and records by:

1. developing an SMS document that is either a stand-alone manual or a distinct section within an existing controlled organization manual (refer to Appendix 7 for guidance on developing an SMS manual);
2. establishing an SMS filing system to collect and maintain current records relating to the organization's ongoing SMS processes;
3. maintaining records to provide a historical reference as well as the current status of all SMS processes such as: a hazard register; an index of completed safety assessments; SMS/safety training records; current SPIs and associated safety objectives; internal SMS audit reports; SMS/safety committee meeting minutes and the SMS implementation plan;

4. maintaining records that will serve as evidence of the SMS operation and activities during internal or external assessment or audit of the SMS.

(CASA to commence discussion with industry towards the development of safety performance indicators and safety performance targets. The identification of these targets will assist in determining what information will be required to be supplied by industry on a regular basis)

Phase III — The objective of Phase 3 is to establish safety risk management processes. Towards the end of Phase 3, the organization will be ready to collect safety data and perform safety analyses based on information obtained through the various reporting systems.

Hazard Identification– Element 2.1 (i)

a. Establish a voluntary reporting procedure. Refer to Appendix 8 for Guidance.
b. Establish a programme/schedule for systematic review of all applicable aviation safety-related processes/equipment that are eligible for the HIRM process.
c. Establish a process for prioritization and assignment of identified hazards for risk mitigation.

Safety Risk Assessment and Mitigation – Element 2.2

a. Establish a safety risk management procedure, including its approval and periodic review process.

b. Develop and adopt safety risk matrices relevant to the organization's operational or production processes.

c. Include adopted safety risk matrices and associated instructions in the organization's SMS or risk management training material.

Safety Performance Monitoring and Measurement– Element 3.1(i)

a. Establish an internal occurrence reporting and investigation procedure. This may include mandatory or major defect reports (MDR) where applicable.

b. Establish safety data collection, processing and analysis of high-consequence outcomes.

c. Establish high consequence safety indicators (initial ALoSP) and their associated target and alert settings. Examples of high-consequence safety indicators are accident rates, serious incident rates and monitoring of high risk non-compliance outcomes. Refer to Appendix 6 for guidance on safety performance indicators.

d. Reach an agreement with the CASA on safety performance indicators and safety performance targets.

The Management of Change – Element 3.2

a. Establish a formal process for the management of change that considers:

1. The vulnerability of systems and activities;

2. The stability of systems and operational environments;

3. Past Performance;

4. Regulatory Industry and Technological changes;

b. Ensure that management of change procedures address the impact on existing safety performance and risk mitigation records before implementing new changes.

c. Establish procedures to ensure that safety assessment of new aviation safety-related operations, processes and equipment are conducted (or accounted for) as applicable, before they are commissioned.

Continuous Improvement of the SMS – Element 3.3(i)

a. Develop forms for evaluation;

b. Define an internal audit process;

c. Define and external audit process;

d. Define a schedule for evaluation of facilities, equipment, documentation and procedures to be completed through audits and surveys.

e. Develop documentation relevant to operational safety assurance.

(CASA to continue discussion with industry towards the development of safety performance indicators, safety performance targets and the information needed to be supplied by industry)

Phase IV —Phase 4 is the final phase of SMS implementation. This phase involves the mature implementation of safety risk management and 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.

Management Commitment and Responsibility – Element 1.1(iii)

a. Enhance the existing disciplinary procedure/policy with due consideration of unintentional errors/mistakes from deliberate/gross violations.
b. Integrate hazard identification and risk management procedures with the subcontractor or customer SMS where applicable.
c. If necessary, develop a process for prioritizing collected hazards for risk mitigation based on areas of greater need or concern.

Safety Performance Monitoring and Management – Element 3.1(ii)

a. Enhance the safety data collection and processing system to include lower-consequence events.
b. Establish lower-consequence safety/quality indicators with target/alert level monitoring as appropriate (mature ALoSP).
c. Reach an agreement with the State oversight authority on lower-consequence safety performance indicators and safety performance target/alert levels.

Continuous Improvement of the SMS – Element 3.3(ii)

a. Establish SMS audits or integrate them into existing internal and external audit programs.
b. Establish other operational SMS review/survey programs where appropriate.

Training and Education – Element 4.1(ii)

a. Complete an SMS training program for all relevant personnel.

Safety Communication – Element 4.2(ii)

a. Establish mechanisms to promote safety information sharing and exchange internally and externally.

SMS Elements progressively implemented throughout phases 1 to 4

In the phased approach implementation, the following three key elements are progressively implemented throughout each phase:

SMS Documentation– Element 1.5

As the SMS progressively matures the relevant SMS manual and safety documentation must be revised and updated accordingly. This activity will be inherent to all phases of SMS implementation and must be maintained after implementation as well.

Training and Education– Element 4.1 and Safety Communication –Element 4.2

As with SMS documentation, training, education and safety communication are important ongoing activities throughout all phases of SMS implementation. As the SMS evolves, new processes, procedures or regulations may come into effect or existing procedures may change to cater for the SMS requirements. To ensure these changes are effectively understood and implemented by all personnel involved in safety-related duties it is vital that training and communication remain as ongoing activities throughout and after the complete implementation of the SMS.

Compliance dates for the phased introduction of SMS are displayed in the following table:

Priority 1 Organisations –(Minimum Overall Performance)	**Priority 2 Organisations–(Minimum Overall Performance)**
Phase 1 by 1 April 2015 (45%)	Phase 1 by 1 July 2015 (45%)
Phase 2 by 1 June 2015 (65%)	Phase 2 by 1 October 2015 (65%)
Phase 3 by 1 June 2016 (85%)	Phase 3 by 1 August 2016 (85%)
Phase 4 by 1 September 2016 (100%)	Phase 4 by 1 October 2016 (100%)

Appendix 4 to AC100-1 DATA REQUIRED BY CASA PNG ON A MONTHLY BASIS

Collation of the data outlined below will allow the regulator to establish current aviation baseline figures on activity, trends, movements, accidents, incidents, defects and overall industry growth. This information will initially assist the regulator in determining its 'Acceptable Level Of Safety' as required in its State Safety Program. This data is to be treated separately from that required through form CAA 005 – Accident and Incident Occurrence Report

It is anticipated that this data will allow for quarterly comparisons to be conducted and to determine any possible industry trends earlier than existing methods. The early identification of trends by the regulator will allow the highlighting of these to industry and for any appropriate preventative action to be taken by any involved party thereby assisting the PNG aviation industry as it moves from a reactive to a proactive and ultimately, a predictive safety environment.

1. Total registered aircraft (to be broken down by A. Part 121, B. Part 125, C. Part 135, D. Part 136 aircraft).

2. Total aircraft Hours Flown (to be broken down by A. Part 121, B. Part 125, C. Part 135, D. Part 136 aircraft).

3. Total number of landings for Part 136 rotary wing aircraft regardless of location.

4. Total landings, including all those at PNG strategic certified aerodromes (as listed) and totals for other international and other domestic aerodromes.

5. Passenger totals, including those for all PNG strategic certified aerodromes (as listed), and totals for other international and other domestic aerodromes.

6. Freight only totals by weight (kgs).

7. On time departure information from scheduled operators given a fifteen minute window (% only)

8. Accident numbers (critical, major and minor).

9. Accident causal factors (active, organisational and environmental).

10. Incident numbers (ground, flying, bird and airspace).

11. Injuries resulting from accidents and incidents (fatal, serious and minor).

12. Defect numbers from all operators based on Part 121, 125 ,135 and 136 certificates.

13. Defect types including critical, major and minor across all types.

Numerical responses are required to all questions and sub-parts with 0 being acceptable depending on applicability. Data required is to be submitted by email to spidata@casapng.gov.pg for the previous calendar month by the 15th day of the following month. A Microsoft excel file titled SMS Monthly Data Sheet is available for download from our www.casapng.gov.pg website. This is the only file and format that CASA will accept for its monthly returns until notified otherwise. This will allow for the extraction of the monthly data in a set field format by our database program. No fields can be changed as the worksheet is protected and data can only be entered into the highlighted fields.

Organisation Name:

Date:

For Month/Year (MM/YYYY):

Q1. A (121). B (125). C (135). D (136).

Q2. A (121). B (125). C (135). D (136).

Q3. A (135). B (136).

Q4. A (Buka). B (Chimbu). C (Daru). D (Girua). E (Goroka). F (Gurney). G (Hoskins).
H (Kavieng). I (Kerema). J (Kiriwina). K (Kiunga). L (Madang). M (Mendi).
N (Momote). O (Mt Hagen). P (Nadzab). Q (Port Moresby). R (Tari). S (Tokua).
T (Vanimo). U (Wapenamanda). V (Wewak). W (Int Other). X (Dom Other).

Q5. A (Buka). B (Chimbu). C (Daru). D (Girua). E (Goroka). F (Gurney). G (Hoskins).
H (Kavieng). I (Kerema). J (Kiriwina). K (Kiunga). L (Madang). M (Mendi).
N (Momote). O (Mt Hagen). P (Nadzab). Q (Port Moresby). R (Tari). S (Tokua).
T (Vanimo). U (Wapenamanda). V (Wewak). W (Int Other). X (Dom Other).

Q6. (Freight Total Kgs).

Q7. (On Time %).

Q8. A (Critical). B (Major). C (Minor).

Q9. A (Active). B (Organisational). C (Environmental).

Q10. A (Ground). B (Flying). C (Bird). D (Environmental).

Q11. A (Fatal). B (Serious). C (Minor).

Q12. A (121). B (125). C (135).

Q13. A (Critical). B (Major). C (Minor).

Appendix 5 to AC 100-1

SMS GAP ANALYSIS CHECKLIST AND IMPLEMENTATION PLAN

1. INITIAL GAP ANALYSIS CHECKLIST (TABLE 5-A7-1)

1.1 The initial gap analysis checklist in Table 5-A7-1 can be used as a template to conduct the first step of an SMS gap analysis. This format with its overall "Yes/No/Partial" responses will provide an initial indication of the broad scope of gaps and hence overall workload to be expected. The questionnaire may be adjusted to suit the needs of the organization and the nature of the product or service provided. This initial information should be useful to senior management in anticipating the scale of the SMS implementation effort and hence the resources to be provided. This initial checklist would need to be followed up by an appropriate implementation plan as per Tables 5-A7-2 and 5-A7-3.

1.2. A "Yes" answer indicates that the organization meets or exceeds the expectation of the question concerned. A "No" answer indicates a substantial gap in the existing system with respect to the question's expectation. A "Partial" answer indicates that further enhancement or development work is required to an existing process in order to meet the question's expectations.

Note.— The SSP references in square [ ] brackets refer to guidance material in this manual relevant to the gap analysis question.

Table 5-A7-1. Gap analysis checklist

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
Component 1 — SAFETY POLICY AND OBJECTIVES			
Element 1.1 — Management commitment and responsibility			
1.1-1	Is there a safety policy in place?	☐ Yes ☐ No ☐ Partial	
1.1-2	Does the safety policy reflect senior management's commitment regarding safety management?	☐ Yes ☐ No ☐ Partial	
1.1-3	Is the safety policy appropriate to the size, nature and complexity of the organization?	☐ Yes ☐ No ☐ Partial	
1.1-4	Is the safety policy relevant to aviation safety?	☐ Yes ☐ No ☐ Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
1.1-5	Is the safety policy signed by the accountable executive?	☐ Yes ☐ No ☐ Partial	
1.1-6	Is the safety policy communicated, with visible endorsement, throughout the [Organization]?	☐ Yes ☐ No ☐ Partial	
1.1-7	Is the safety policy periodically reviewed to ensure it remains relevant and appropriate to the [Organization]?	☐ Yes ☐ No ☐ Partial	
Element 1.2 — Safety accountabilities			
1.2-1	Has [Organization] identified an accountable executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the [Organization], for the implementation and maintenance of the SMS?	☐ Yes ☐ No ☐ Partial	
1.2-2	Does the accountable executive have full control of the financial and human resources required for the operations authorized to be conducted under the operations certificate?	☐ Yes ☐ No ☐ Partial	
1.2-3	Does the Accountable Executive have final authority over all aviation activities of his organization?	☐ Yes ☐ No ☐ Partial	
1.2-4	Has [Organization] identified and documented the safety accountabilities of management as well as operational personnel, with respect to the SMS?	☐ Yes ☐ No ☐ Partial	
1.2-5	Is there a safety committee or review board for the purpose of reviewing SMS and safety performance?	☐ Yes ☐ No ☐ Partial	
1.2-6	Is the safety committee chaired by the accountable executive or by an appropriately assigned deputy, duly substantiated in the SMS manual?	☐ Yes ☐ No ☐ Partial	
1.2-7	Does the safety committee include relevant operational or departmental heads as applicable?	☐ Yes ☐ No ☐ Partial	
1.2-8	Are there safety action groups that work in conjunction with the safety committee (especially for large/complex organizations)?	☐ Yes ☐ No ☐ Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
Element 1.3 — Appointment of key safety personnel			
1.3-1	Has [Organization] appointed a qualified person to manage and oversee the day-to-day operation of the SMS?	☐ Yes ☐ No ☐ Partial	
1.3-2	Does the qualified person have direct access or reporting to the accountable executive concerning the implementation and operation of the SMS?	☐ Yes ☐ No ☐ Partial	
1.3-3	Does the manager responsible for administering the SMS hold other responsibilities that may conflict or impair his role as SMS manager?	☐ Yes ☐ No ☐ Partial	
1.3-4	Is the SMS manager's position a senior management position not lower than or subservient to other operational or production positions ?	☐ Yes ☐ No ☐ Partial	
Element 1.4 — Coordination of emergency response planning			
1.4-1	Does [Organization] have an emergency response/contingency plan appropriate to the size, nature and complexity of the organization?	☐ Yes ☐ No ☐ Partial	
1.4-2	Does the emergency/contingency plan address all possible or likely emergency/crisis scenarios relating to the organization's aviation product or service deliveries?	☐ Yes ☐ No ☐ Partial	
1.4-3	Does the ERP include procedures for the continuing safe production, delivery or support of its aviation products or services during such emergencies or contingencies?	☐ Yes ☐ No ☐ Partial	
1.4-4	Is there a plan and record for drills or exercises with respect to the ERP?	☐ Yes ☐ No ☐ Partial	
1.4-5	Does the ERP address the necessary coordination of its emergency response/contingency procedures with the emergency/response contingency procedures of other organizations where applicable?	☐ Yes ☐ No ☐ Partial	
1.4-6	Does [Organization] have a process to distribute and communicate the ERP to all relevant personnel, including relevant external organizations?	☐ Yes ☐ No ☐ Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
1.4-7	Is there a procedure for periodic review of the ERP to ensure its continuing relevance and effectiveness?	☐ Yes ☐ No ☐ Partial	
Element 1.5 — SMS documentation			
1.5-1	Is there a top-level SMS summary or exposition document which is approved by the accountable manager and accepted by the CASA?	☐ Yes ☐ No ☐ Partial	
1.5-2	Does the SMS documentation address the organization's SMS and its associated components and elements?	☐ Yes ☐ No ☐ Partial	
1.5-3	Is [Organization] SMS framework in alignment with the regulatory SMS framework?	☐ Yes ☐ No ☐ Partial	
1.5-4	Does [Organization] maintain a record of relevant supporting documentation pertinent to the implementation and operation of the SMS?	☐ Yes ☐ No ☐ Partial	
1.5-5	Does [Organization] have an SMS implementation plan to establish its SMS implementation process, including specific tasks and their relevant implementation milestones?	☐ Yes ☐ No ☐ Partial	
1.5-6	Does the SMS implementation plan address the coordination between the service provider's SMS and the SMS of external organizations where applicable?	☐ Yes ☐ No ☐ Partial	
1.5-7	Is the SMS implementation plan endorsed by the accountable executive?	☐ Yes ☐ No ☐ Partial	
Component 2 — SAFETY RISK MANAGEMENT			
Element 2.1 — Hazard identification			
2.1-1	Is there a process for voluntary hazards/threats reporting by all employees?	☐ Yes ☐ No ☐ Partial	
2.1-2	Is the voluntary hazard/threats reporting simple, available to all personnel involved in safety-related duties and commensurate with the size of the service provider?	☐ Yes ☐ No ☐ Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
2.1-3	Does [Organization] SDCPS include procedures for incident/accident reporting by operational or production personnel?	☐ Yes ☐ No ☐ Partial	
2.1-4	Is incident/accident reporting simple, accessible to all personnel involved in safety-related duties and commensurate with the size of the service provider?	☐ Yes ☐ No ☐ Partial	
2.1-5	Does [Organization] have procedures for investigation of all reported incident/accidents?.	☐ Yes ☐ No ☐ Partial	
2.1-6	Are there procedures to ensure that hazards/threats identified or uncovered during incident/accident investigation processes are appropriately accounted for and integrated into the organization's hazard collection and risk mitigation procedure?	☐ Yes ☐ No ☐ Partial	
2.1-7	Are there procedures to review hazards/threats from relevant industry reports for follow-up actions or risk evaluation where applicable?	☐ Yes ☐ No ☐ Partial	
Element 2.2 — Safety risk assessment and mitigation			
2.2-1	Is there a documented hazard identification and risk mitigation (HIRM) procedure involving the use of objective risk analysis tools?	☐ Yes ☐ No ☐ Partial	
2.2-2	Is the risk assessment reports approved by departmental managers or at a higher level where appropriate?	☐ Yes ☐ No ☐ Partial	
2.2-3	Is there a procedure for periodic review of existing risk mitigation records?	☐ Yes ☐ No ☐ Partial	
2.2-4	Is there a procedure to account for mitigation actions whenever unacceptable risk levels are identified?	☐ Yes ☐ No ☐ Partial	
2.2-5	Is there a procedure to prioritize identified hazards for risk mitigation actions?	☐ Yes ☐ No ☐ Partial	
2.2-6	Is there a programme for systematic and progressive review of all aviation safety-related operations, processes, facilities and equipment subject to the HIRM process as identified by the organization?	☐ Yes ☐ No ☐ Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
Component 3 — SAFETY ASSURANCE			
Element 3.1 — Safety performance monitoring and measurement			
3.1-1	Are there identified safety performance indicators for measuring and monitoring the safety performance of the organization's aviation activities?	☐ Yes ☐ No ☐ Partial	
3.1-2	Are the safety performance indicators relevant to the organization's safety policy as well as management's high-level safety objectives/goals?	☐ Yes ☐ No ☐ Partial	
3.1-3	Do the safety performance indicators include alert/target settings to define unacceptable performance regions and planned improvement goals?	☐ Yes ☐ No ☐ Partial	
3.1-4	Is the setting of alert levels or out-of-control criteria based on objective safety metrics principles?	☐ Yes ☐ No ☐ Partial	
3.1-5	Do the safety performance indicators include quantitative monitoring of high-consequence safety outcomes (e.g. accident and serious incident rates) as well as lower-consequence events (e.g. rate of non-compliance, deviations)?	☐ Yes ☐ No ☐ Partial	
3.1-6	Are safety performance indicators and their associated performance settings developed in consultation with, and subject to, the civil aviation authority's agreement?	☐ Yes ☐ No ☐ Partial	
3.1-7	Is there a procedure for corrective or follow-up action to be taken when targets are not achieved and alert levels are exceeded/ breached?	☐ Yes ☐ No ☐ Partial	
3.1-8	Are the safety performance indicators periodically reviewed?	☐ Yes ☐ No ☐ Partial	
Element 3.2 — The management of change			
3.2-1	Is there a procedure for review of relevant existing aviation safety-related facilities and equipment (including HIRM records) whenever there are pertinent changes to those facilities or equipment?	☐ Yes ☐ No ☐ Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
3.2-2	Is there a procedure for review of relevant existing aviation safety-related operations and processes (including any HIRM records) whenever there are pertinent changes to those operations or processes?	☐ Yes ☐ No ☐ Partial	
3.2-3	Is there a procedure for review of new aviation safety-related operations and processes for hazards/risks before they are commissioned?	☐ Yes ☐ No ☐ Partial	
3.2-4	Is there a procedure for review of relevant existing facilities, equipment, operations or processes (including HIRM records) whenever there are pertinent changes external to the organization such as regulatory/industry standards, best practices or technology?	☐ Yes ☐ No ☐ Partial	
Element 3.3 — Continuous improvement of the SMS			
3.3-1	Is there a procedure for periodic internal audit/assessment of the SMS?	☐ Yes ☐ No ☐ Partial	
3.3-2	Is there a current internal SMS audit/assessment plan?	☐ Yes ☐ No ☐ Partial	
3.3-3	Does the SMS audit plan include the sampling of completed/existing safety risk assessments?	☐ Yes ☐ No ☐ Partial	
3.3-4	Does the SMS audit plan include the sampling of safety performance indicators for data currency and their target/ alert settings performance?	☐ Yes ☐ No ☐ Partial	
3.3-5	Does the SMS audit plan cover the SMS interface with subcontractors or customers where applicable?	☐ Yes ☐ No ☐ Partial	
3.3-6	Is there a process for SMS audit/assessment reports to be submitted or highlighted for the accountable manager’s attention where appropriate.	☐ Yes ☐ No ☐ Partial	

No.	*Aspect to be analysed or question to be answered*	*Answer*	*Status of implementation*
Component 4 — SAFETY PROMOTION			
Element 4.1 — Training and education			
4.1-1	Is there a programme to provide SMS training/familiarization to personnel involved in the implementation or operation of the SMS?	☐ Yes ☐ No ☐ Partial	
4.1-2	Has the accountable executive undergone appropriate SMS familiarization, briefing or training?	☐ Yes ☐ No ☐ Partial	
4.1-3	Are personnel involved in conducting risk mitigation provided with appropriate risk management training or familiarization?	☐ Yes ☐ No ☐ Partial	
4.1-4	Is there evidence of organization-wide SMS education or awareness efforts?	☐ Yes ☐ No ☐ Partial	
Element 4.2 — Safety communication			
4.2-1	Does [Organization] participate in sharing safety information with relevant external industry product and service providers or organizations, including the relevant aviation regulatory organizations?	☐ Yes ☐ No ☐ Partial	
4.2-2	Is there evidence of a safety (SMS) publication, circular or channel for communicating safety (SMS) matters to employees?	☐ Yes ☐ No ☐ Partial	
4.2-3	Are [Organization] SMS manual and related guidance material accessible or disseminated to all relevant personnel?	☐ Yes ☐ No ☐ Partial	

2. DETAILED SMS GAP ANALYSIS AND IMPLEMENTATION TASKS (TABLE 5-A7-2)

The initial gap analysis checklist in Table 5-A7-1 should then be followed up by using the detailed “SMS gap analysis and implementation task identification plan” in Table 5-A7-2. Once completed, Table 5-A7-2 will provide follow-up analysis on details of the gaps and help translate these into actual required tasks and subtasks in the specific context of the organization’s processes and procedures. Each task will then accordingly be assigned to appropriate individuals or groups for action. It is important that correlation of individual element/task development with their descriptive placeholders in the SMS document be provided for in Table 5-A7-2 in order to trigger progressive updating of the draft SMS document as each element is implemented or enhanced. (Initial element write-ups in SMS documents tend to be anticipatory rather than declaratory.)

3. ACTIONS/TASKS IMPLEMENTATION SCHEDULE (TABLE 5-A7-3)

Table 5-A7-3 will show the milestones (start-end dates) scheduled for each task/action. For a phased implementation approach, these tasks/actions will need to be sorted according to the phase allocation of their related elements. Refer to Section 5.5 of this chapter for the phased prioritization of SMS elements as appropriate. Table 5-A7-3 can be a separate consolidation of all outstanding actions/tasks or, if preferred, be a continuation of Table 5-A7-2 in the form of a spreadsheet. Where it is anticipated that the actual number of tasks/actions and their milestones are sufficiently voluminous and complex so as to require utilizing a project management software to manage them, this may be done by using software such as MS project/Gantt chart as appropriate. Table 5-A7-4 is an illustration of a Gantt chart.

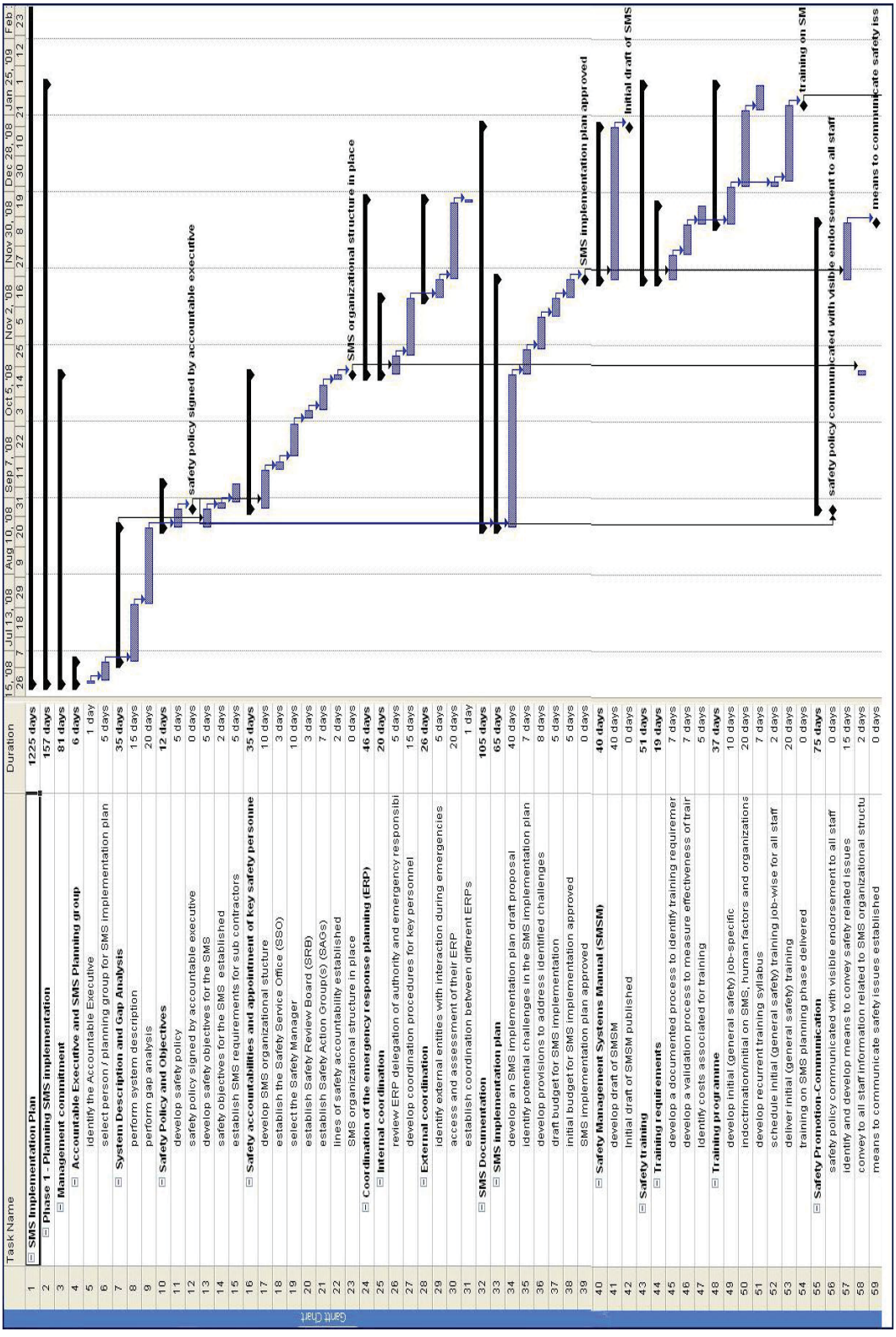
Table 5-A7-2. Example SMS gap analysis and implementation task identification plan

GAQ Ref.	*Gap analysis question*	*Answer (Yes/No/Partial)*	*Description of gap*	*Action/task required to fill the gap*	*Assigned task group/person*	*SMS document reference*	*Status of action/task (Open/WIP/Closed)*
1.1-1	Is there a safety policy in place?	Partial	The existing safety policy addresses OSHE only.	a) enhance the existing safety policy to include aviation SMS objectives and policies or develop a separate aviation safety policy; b) have the safety policy approved and signed by the accountable executive.	Task Group 1	Chapter 1, Section 1.3.	Open
etc.							

Table 5-A7-3. Example SMS implementation schedule

Action/task required to fill the gap	*SMS document ref.*	*Assigned task group/ person*	*Status of action/ task*	*Schedule/timeline*												
				1Q 14	*2Q 14*	*3Q 14*	*4Q 14*	*1Q 15*	*2Q 15*	*3Q 15*	*4Q 15*	*1Q 16*	*2Q 16*	*3Q 16*	*4Q 16*	*etc.*
1.1-1 a) Enhance the existing safety policy to include aviation SMS objectives and policies or develop a separate aviation safety policy.	Chapter 1, Section 1.3.	Task Group 1	Open													
1.1-1 b) Require the safety policy to be approved and signed by the accountable executive.																
etc.																

Table 5-A7-4. Sample SMS implementation schedule (Gantt chart)



Appendix 6 to AC100-1

GUIDANCE - EMERGENCY RESPONSE PLANNING

1. Perhaps because aviation accidents are rare events, few organizations are prepared when one occurs. Many organizations do not have effective plans in place to manage events during or following an emergency or crisis. How an organization fares in the aftermath of an accident or other emergency can depend on how well it handles the first few hours and days following a major safety event. An emergency response plan (ERP) outlines in writing what should be done after an accident or aviation crisis and who is responsible for each action. Among different product and service providers, such emergency planning may be known by different terms such as contingency plan, crisis management plan and continuing airworthiness support plan. In this manual, the generic term emergency response plan (ERP) is used to address the relevant contingency plans expected of aviation service providers whose products/services may have an impact on aviation safety.

2. While there is a tendency to think of emergency response planning with respect to aircraft or aerodrome operations, usually as a result of an aircraft accident, the expectation can equally be applied to other aviation service providers. In the case of ATS providers this may include a major power outage or loss of radar, communications or other major facilities. For a maintenance organization it may involve a serious breach of airworthiness requirements resulting in the grounding of a fleet (AOG). For a design and manufacturing organization, a serious design deficiency may result in a global AOG that requires emergency re-design, modification, production and retrofitting actions (emergency airworthiness directives) to address such a crisis. Where there is a possibility of an organization's aviation operations or activities being compromised by other crises or emergencies originating from external sources, such as a public health emergency/pandemic, these scenarios should also be addressed in its aviation ERP as appropriate. Hence, an ERP is essentially an integral component of an organization's safety risk management procedure to address all possible safety- or quality-related emergencies, crises or events that its product or services could contribute to or be associated with. The ERP should address all possible/likely scenarios and have appropriate mitigating actions or processes put in place so that the organization, its customers, the public and/or the industry at large may have a better level of safety assurance as well as service continuity.

3. Successful response to an emergency begins with effective planning. An ERP provides the basis for a systematic approach to managing the organization's affairs in the aftermath of a significant unplanned event — in the worst case, a major accident.

4. The purpose of an emergency response plan is to ensure:

a) delegation of emergency authority;

b) assignment of emergency responsibilities;

c) documentation of emergency procedures and processes;

d) coordination of emergency efforts internally and with external parties;

e) safe continuation of essential operations while the crisis is being managed;

f) proactive identification of all possible emergency events/scenarios and their corresponding mitigation actions, etc.

5. To be effective, an ERP should:

a) be appropriate to the size, nature and complexity of the organization;

b) be readily accessible to all relevant personnel and other organizations where applicable;

c) include checklists and procedures relevant to specific emergency situations;

d) have quick-reference contact details of relevant personnel;

e) be regularly tested through exercises;

f) be periodically reviewed and updated when details change, etc.

ERP contents

6. An ERP would normally be documented in the format of a manual that should set out the responsibilities, roles and actions of the various agencies and personnel involved in dealing with specific emergencies. An ERP should take account of such considerations as:

a) *Governing policies.* The ERP should provide direction for responding to emergencies, such as governing laws and regulations for investigations, agreements with local authorities, company policies and priorities.

b) *Organization.* The ERP should outline management's intentions with respect to the responding organizations by:

1) designating who will lead and who will be assigned to the response teams;

2) defining the roles and responsibilities of personnel assigned to the response teams;

3) clarifying the reporting lines of authority;

4) setting up an emergency management centre (EMC);

5) establishing procedures for receiving a large number of requests for information, especially during the first few days after a major accident;

6) designating the corporate spokesperson for dealing with the media;

7) defining what resources will be available, including financial authorities for immediate activities;

8) designating the company representative to any formal investigations undertaken by State officials;

9) defining a call-out plan for key personnel.

An organizational chart could be used to show organizational functions and communication relationships.

c) *Notifications.* The plan should specify who in the organization should be notified of an emergency, who will make external notifications and by what means. The notification needs of the following should be considered:

1) management;

2) State authorities (search and rescue, the regulatory authority, the accident investigation board, etc.);

3) local emergency response services (aerodrome authorities, fire fighters, police, ambulance, medical agencies, etc.);

4) relatives of victims (a sensitive issue that, in many States, is handled by the police);

5) company personnel;

6) media; and

7) legal, accounting, insurers, etc.

d) *Initial response.* Depending on the circumstances, an initial response team may be dispatched to the accident or crisis site to augment local resources and oversee the organization's interests. Factors to be considered for such a team include:

1) Who should lead the initial response team?

2) Who should be included on the initial response team?

3) Who should speak for the organization at the accident site?

4) What would be required by way of special equipment, clothing, documentation, transportation, accommodation, etc.?

e) *Additional assistance.* Employees with appropriate training and experience can provide useful support during the preparation, exercising and updating of an organization's ERP. Their expertise may be useful in planning and executing such tasks as:

1) acting as passengers or customers in exercises;

2) handling survivors or external parties;

3) dealing with next of kin, authorities, etc.

f) *Emergency management centre (EMC).* An EMC (normally on standby mode) may be established at the organization's headquarters once the activation criteria have been met. In addition, a command post (CP) may be established at or near the crisis site. The ERP should address how the following requirements are to be met:

1) staffing (perhaps for 24 hours a day, 7 days per week, during the initial response period);

2) communications equipment (telephones, facsimile, Internet, etc.);

3) documentation requirements, maintenance of emergency activity logs;

4) impounding related company records;

5) office furnishings and supplies; and

6) reference documents (such as emergency response checklists and procedures, company manuals, aerodrome emergency plans and telephone lists).

The services of a crisis centre may be contracted from an airline or other specialist organization to look after the service provider's interests in a crisis away from home base. Company personnel would normally supplement such a contracted centre as soon as possible.

g) *Records.* In addition to the organization's need to maintain logs of events and activities, the organization will also be required to provide information to any State investigation team. The ERP should address the following types of information required by investigators:

1) all relevant records about the product or service concerned;

2) lists of points of contact and any personnel associated with the occurrence;

3) notes of any interviews (and statements) with anyone associated with the event;

4) any photographic or other evidence.

h) *Accident site.* For a major accident, representatives from many jurisdictions have legitimate reasons for accessing the site: for example, police; fire fighters; medics; aerodrome authorities; coroners (medical examining officers) to deal with fatalities; State accident investigators; relief agencies such as the Red Cross and even the media. Although coordination of the activities of these stakeholders is the responsibility of the State's police and/or investigating authority, the service provider should clarify the following aspects of activities at the accident site:

1) nominating a senior company representative at the accident site if:

— at home base;

— away from home base;

— offshore or in a foreign State;

2) management of surviving victims;

3) the needs of the relatives of victims;

4) security of the wreckage;

5) handling of human remains and personal property of the deceased;

6) preservation of evidence;

7) provision of assistance (as required) to the investigation authorities;

8) removal and disposal of the wreckage; etc.

i) *News media.* How the company responds to the media may affect how well the company recovers from the event. Clear direction is required regarding, for example:

1) what information is protected by statute (FDR data, CVR and ATC recordings, witness statements, etc.);

2) who may speak on behalf of the parent organization at head office and at the accident site (public relations manager, chief executive officer or other senior executive, manager, owner);

3) prepared statements for immediate response to media queries;

4) what information may be released (what should be avoided);

5) the timing and content of the company's initial statement;

6) provisions for regular updates to the media.

j) *Formal investigations.* Guidance for company personnel dealing with State accident investigators and police should be provided.

k) *Family assistance.* The ERP should also include guidance on the organization's approach to assisting crisis victims or customer organizations. This guidance may include such things as:

1) State requirements for the provision of assistance services;

2) travel and accommodation arrangements to visit the crisis site;

3) programme coordinator and point(s) of contact for victims/customers;

4) provision of up-to-date information;

5) temporary assistance to victims or customers.

Note.— ICAO Circular 285, Guidance on Assistance to Aircraft Accident Victims and their Families*, provides further guidance on this subject.*

l) *Post-occurrence review.* Direction should be provided to ensure that, following the emergency, key personnel carry out a full debrief and record all significant lessons learned which may result in amendments to the ERP and associated procedures.

Checklists

7. Everyone involved in the initial response to a major aviation event will be suffering from some degree of disorientation. Therefore, the emergency response process lends itself to the use of checklists. These checklists can form an integral part of the company's operations manual or emergency response manual. To be effective, checklists must be regularly:

a) reviewed and updated (for example, currency of call-out lists and contact details); and

b) tested through realistic exercises.

Training and exercises

8. An ERP is a paper indication of intent. Hopefully, much of an ERP will never be tested under actual conditions. Training is required to ensure that these intentions are backed by operational capabilities. Since training has a short “shelf life”, regular drills and exercises are advisable. Some portions of the ERP, such as the call-out and communications plan, can be tested by “desktop” exercises. Other aspects, such as “on-site” activities involving other agencies, need to be exercised at regular intervals. Such exercises have the advantage of demonstrating deficiencies in the plan, which can be rectified before an actual emergency. For certain service providers such as airports, the periodic testing of the adequacy of the plan and the conduct of a full-scale emergency exercise may be mandatory.

Appendix 7 to AC100-1

GUIDANCE ON THE DEVELOPMENT OF AN SMS MANUAL

1. GENERAL

1.1 This appendix serves to guide organizations in their compilation of a top-level SMS manual (or document) to define their SMS framework and its associated elements. The manual can be a stand-alone SMS manual or be integrated as a consolidated SMS section/chapter within an appropriate approved manual of the organization (e.g. the organization's exposition manual or company manual). The actual configuration may depend on regulatory expectation.

1.2 Using the suggested format and content items in this appendix and adapting them as appropriate is one way in which an organization can develop its own top-level SMS manual. The actual content items will depend on the specific SMS framework and elements of the organization. The description under each element will be commensurate with the scope and complexity of the organization's SMS processes.

1.3 The manual will serve to communicate the organization's SMS framework internally as well as with relevant external organizations. The manual may be subject to endorsement or approval by the CAA as evidence of the acceptance of the SMS.

Note.— A distinction is to be made between an SMS manual and its operational supporting records and documents. The latter refers to historical and current records and documents generated during implementation and operation of the various SMS processes. These are documentary evidence of the ongoing SMS activities of the organization.

2. FORMAT OF THE SMS MANUAL

2.1 The SMS manual may be formatted in the following manner:

a) section heading;

b) objective;

c) scope

d) cross-reference documents.

2.2 Below each numbered "section heading" is a description of the "objective" for that section, followed by its "criteria" and "cross-reference documents". The "objective" is what the organization intends to achieve by doing what is described in that section. The "scope" defines what should be considered when writing that section. The "cross-reference documents" links the information to other relevant manuals or SOPs of the organization which contain details of the element or process as applicable.

3. CONTENTS OF THE MANUAL

3.1 The contents of the manual may include the following sections:

1. Document control;
2. SMS regulatory requirements;
3. Scope and integration of the safety management system;
4. Safety policy;
5. Safety objectives;
6. Safety accountabilities and key personnel;
7. Safety reporting and remedial actions;
8. Hazard identification and risk assessment;
9. Safety performance monitoring and measurement;
10. Safety-related investigations and remedial actions;
11. Safety training and communication;
12. Continuous improvement and SMS audit;
13. SMS records management;
14. Management of change; and
15. Emergency/contingency response plan.

3.2 Below is an example of the type of information that could be included in each section using the format prescribed in 2.2.

1. Document control

Objective

Describe how the manual(s) will be kept up to date and how the organization will ensure that all personnel involved in safety-related duties have the most current version.

Scope

a) Hard copy or controlled electronic media and distribution list.

b) The correlation between the SMS manual and other existing manuals such as the maintenance control manual (MCM) or the operations manual.

c) The process for periodic review of the manual and its related forms/documents to ensure their continuing suitability, adequacy and effectiveness.

d) The manual's administration, approval and regulatory acceptance process.

Cross-reference documents

Quality manual, engineering manual, etc.

2. SMS regulatory requirements

Objective

Address current SMS regulations and guidance material for necessary reference and awareness by all concerned.

Scope

a) Spell out the current SMS regulations/standards. Include the compliance timeframe and advisory material references as applicable.

b) Where appropriate, elaborate on or explain the significance and implications of the regulations to the organization.

c) Establish a correlation with other safety-related requirements or standards where appropriate.

Cross-reference documents

SMS regulation/requirement references, SMS guidance document references, etc.

3. Scope and integration of the safety management system

Objective

Describe the scope and extent of the organization's aviation-related operations and facilities within which the SMS will apply. The scope of the processes, equipment and operations deemed eligible for the organization's hazard identification and risk management (HIRM) programme should also be addressed.

Scope

a) Spell out the nature of the organization's aviation business and its position or role within the industry as a whole.

b) Identify the major areas, departments, workshops and facilities of the organization within which the SMS will apply.

c) Identify the major processes, operations and equipment which are deemed eligible for the organization's HIRM programme, especially those which are pertinent to aviation safety. If the scope of the HIRM-eligible processes, operations and equipment is too detailed or extensive, it may be controlled under a supplementary document as appropriate.

d) Where the SMS is expected to be operated or administered across a group of interlinked organizations or contractors, define and document such integration and associated accountabilities as applicable.

e) Where there are other related control/management systems within the organization, such as QMS, OSHE and SeMS, identify their relevant integration (where applicable) within the aviation SMS.

Cross-reference documents

Quality manual, engineering manual, etc.

4. Safety policy

Objective

Describe the organization's intentions, management principles and commitment to improving aviation safety in terms of the product or service provider. A safety policy should be a short description similar to a mission statement.

Scope

a) The safety policy should be appropriate to the size and complexity of the organization.

b) The safety policy states the organization's intentions, management principles and commitment to continuous improvement in aviation safety.

c) The safety policy is approved and signed by the accountable executive.

d) The safety policy is promoted by the accountable executive and all other managers.

e) The safety policy is reviewed periodically.

f) Personnel at all levels are involved in the establishment and maintenance of the safety management system.

g) The safety policy is communicated to all employees with the intent that they are made aware of their individual safety obligations.

Cross-reference documents

OSHE safety policy, etc.

5. Safety objectives

Objective

Describe the safety objectives of the organization. The safety objectives should be a short statement that describes in broad terms what the organization hopes to achieve.

Scope

a) The safety objectives have been established.

b) The safety objectives are expressed as a top-level statement describing the organization's commitment to achieving safety.

c) There is a formal process to develop a coherent set of safety objectives.

d) The safety objectives are publicized and distributed.

e) Resources have been allocated for achieving the objectives.

f) The safety objectives are linked to safety indicators to facilitate monitoring and measurement where appropriate.

Cross-reference documents

Safety performance indicators document, etc.

6. Roles and responsibilities

Objective

Describe the safety authorities, responsibilities and accountabilities for personnel involved in the SMS.

Scope

a) The accountable executive is responsible for ensuring that the safety management system is properly implemented and is performing to requirements in all areas of the organization.

b) An appropriate safety manager (office), safety committee or safety action groups have been appointed as appropriate.

c) Safety authorities, responsibilities and accountabilities of personnel at all levels of the organization are defined and documented.

d) All personnel understand their authorities, responsibilities and accountabilities with regard to all safety management processes, decisions and actions.

e) An SMS organizational accountabilities diagram is available.

Cross-reference documents

Company exposition manual, SOP manual, administration manual, etc.

7. Safety reporting

Objective

A reporting system should include both reactive (accident/incident reports, etc.) and proactive/ predictive (hazard reports). Describe the respective reporting systems. Factors to consider include: report format, confidentiality, addressees, investigation/evaluation procedures, corrective/ preventive actions and report dissemination.

Scope

a) The organization has a procedure that provides for the capture of internal occurrences including accidents, incidents and other occurrences relevant to SMS.

b) A distinction is to be made between mandatory reports (accidents, serious incidents, major defects, etc.), which are required to be notified to the CAA, and other routine occurrence reports, which remain within the organization.

c) There is also a voluntary and confidential hazard/occurrence reporting system, incorporating appropriate identity/data protection as applicable.

d) The respective reporting processes are simple, accessible and commensurate with the size of the organization.

e) High-consequence reports and associated recommendations are addressed to and reviewed by the appropriate level of management.

f) Reports are collected in an appropriate database to facilitate the necessary analysis.

Cross-reference documents

- - - - - - - - - - - - - -

8. Hazard identification and risk assessment

Objective

Describe the hazard identification system and how such data are collated. Describe the process for the categorization of hazards/risks and their subsequent prioritization for a documented safety assessment. Describe how the safety assessment process is conducted and how preventive action plans are implemented.

Scope

a) Identified hazards are evaluated, prioritized and processed for risk assessment as appropriate.

b) There is a structured process for risk assessment involving the evaluation of severity, likelihood, tolerability and preventive controls.

c) Hazard identification and risk assessment procedures focus on aviation safety as their fundamental context.

d) The risk assessment process utilizes worksheets, forms or software appropriate to the complexity of the organization and operations involved.

e) Completed safety assessments are approved by the appropriate level of management.

f) There is a process for evaluating the effectiveness of the corrective, preventive and recovery measures that have been developed.

g) There is a process for periodic review of completed safety assessments and documenting their outcomes.

Cross-reference documents

- - - - - - - - - - - - - -

9. Safety performance monitoring and measurement

Objective

Describe the safety performance monitoring and measurement component of the SMS. This includes the organization's SMS safety performance indicators (SPIs).

Scope

a) The formal process to develop and maintain a set of safety performance indicators and their associated performance targets.

b) Correlation established between the SPIs and the organization's safety objectives where applicable and the process of regulatory acceptance of the SPIs where required.

c) The process of monitoring the performance of these SPIs including remedial action procedure whenever unacceptable or abnormal trends are triggered.

d) Any other supplementary SMS or safety performance monitoring and measurement criteria or process.

Cross-reference documents

- - - - - - - - - - - - - -

10. Safety-related investigations and remedial actions

Objective

Describe how accidents/incidents/occurrences are investigated and processed within the organization, including their correlation with the organization's SMS hazard identification and risk management system.

Scope

a) Procedures to ensure that reported accidents and incidents are investigated internally.

b) Dissemination of completed investigation reports internally as well as to the CAA as applicable.

c) A process for ensuring that corrective actions taken or recommended are carried out and for evaluating their outcomes/effectiveness.

d) Procedure on disciplinary inquiry and actions associated with investigation report outcomes.

e) Clearly defined conditions under which punitive disciplinary action would be considered (e.g. illegal activity, recklessness, gross negligence or wilful misconduct).

f) A process to ensure that investigations include identification of active failures as well as contributing factors and hazards.

g) Investigation procedure and format provides for findings on contributing factors or hazards to be processed for follow-up action by the organization's hazard identification and risk management system where appropriate.

Cross-reference documents

- - - - - - - - - - - - - -

11. Safety training and communication

Objective

Describe the type of SMS and other safety-related training that staff receive and the process for assuring the effectiveness of the training. Describe how such training procedures are documented. Describe the safety communication processes/channels within the organization.

Scope

a) The training syllabus, eligibility and requirements are documented.

b) There is a validation process that measures the effectiveness of training.

c) The training includes initial, recurrent and update training, where applicable.

d) The organization's SMS training is part of the organization's overall training programme.

e) SMS awareness is incorporated into the employment or indoctrination programme.

f) The safety communication processes/channels within the organization.

Cross-reference documents

- - - - - - - - - - - - - -

12. Continuous improvement and SMS audit

Objective

Describe the process for the continuous review and improvement of the SMS.

Scope

a) The process for regular internal audit/review of the organization's SMS to ensure its continuing suitability, adequacy and effectiveness.

b) Describe any other programmes contributing to continuous improvement of the organization's SMS and safety performance, e.g. MEDA, safety surveys, ISO systems.

Cross-reference documents

- - - - - - - - - - - - - -

13. SMS records management

Objective

Describe the method of storing all SMS-related records and documents.

Scope

a) The organization has an SMS records or archiving system that ensures the retention of all records generated in conjunction with the implementation and operation of the SMS.

b) Records to be kept include hazard reports, risk assessment reports, safety action group/safety meeting notes, safety performance indicator charts, SMS audit reports and SMS training records.

c) Records should be traceable for all elements of the SMS and be accessible for routine administration of the SMS as well as internal and external audits purposes.

Cross-reference documents

- - - - - - - - - - - - - -

14. Management of change

Objective

Describe the organization's process for managing changes that may have an impact on safety risks and how such processes are integrated with the SMS.

Scope

a) Procedures to ensure that substantial organizational or operational changes take into consideration any impact which they may have on existing safety risks.

b) Procedures to ensure that appropriate safety assessment is performed prior to introduction of new equipment or processes which have safety risk implications.

c) Procedures for review of existing safety assessments whenever there are changes to the associated process or equipment.

Cross-reference documents

Company SOP relating to management of change, etc.

15. Emergency/contingency response plan

Objective

Describe the organization's intentions regarding, and commitment to dealing with, emergency situations and their corresponding recovery controls. Outline the roles and responsibilities of key personnel. The emergency response plan can be a separate document or it can be part of the SMS manual.

Criteria (as applicable to the organization)

a) The organization has an emergency plan that outlines the roles and responsibilities in the event of a major incident, crisis or accident.

b) There is a notification process that includes an emergency call list and an internal mobilization process.

c) The organization has arrangements with other agencies for aid and the provision of emergency services as applicable.

d) The organization has procedures for emergency mode operations where applicable.

e) There is a procedure for overseeing the welfare of all affected individuals and for notifying next of kin.

f) The organization has established procedures for handling the media and insurance-related issues.

g) There are defined accident investigation responsibilities within the organization.

h) The requirement for preservation of evidence, securing the affected area, and mandatory/ governmental reporting is clearly stated.

i) There is emergency preparedness and response training for affected personnel.

j) A disabled aircraft or equipment evacuation plan has been developed by the organization in consultation with aircraft/equipment owners, aerodrome operators or other agencies as applicable.

k) A procedure exists for recording activities during an emergency response.

Cross-reference documents

ERP manual, etc.

Appendix 8 to AC100-1

VOLUNTARY AND CONFIDENTIAL REPORTING SYSTEMS

Note.— The guidance below is based on the example of an integrated air operator and maintenance organization. For other service provider organization types, this guidance material may be customized as necessary.

An organization's voluntary and confidential reporting system should, as minimum, define:

a) the objective of the reporting system;

Example:

The key objective of [Organization name] voluntary and confidential reporting system is to enhance the safety of our company's aviation activities through the collection of reports on actual or potential safety deficiencies that would otherwise not be reported through other channels. Such reports may involve occurrences, hazards or threats relevant to the safety of our aviation activities. This system does not eliminate the need for formal reporting of accidents and incidents according to our company SOPs, as well as the submission of mandatory occurrence reports to the relevant regulatory authorities.

The [Name of system] is a voluntary, non-punitive, confidential occurrence and hazard reporting system administered by the [Name of department/office]. It provides a channel for the voluntary reporting of aviation occurrences or hazards relevant to our organization's aviation activities, while protecting the reporter's identity.

Note.— In establishing such a system, the organization will have to decide whether to integrate or segregate its Occupational Safety, Health and Environment (OSHE) reporting system from this aviation safety reporting system. This may depend on the respective aviation and OSHE authorities' expectations or requirements. Where there is a separate OSHE reporting system in the company, this should be highlighted accordingly in this paragraph to guide the reporter as necessary.

b) the scope of the aviation sectors/areas covered by the system;

Example:

The [Name of system] covers areas such as:

a) flight operations;

b) hangar aircraft maintenance;

c) workshop component maintenance;

d) technical fleet management;

e) inventory technical management;

f) engineering planning;

g) technical services;

h) technical records;

i) line maintenance;

j) etc.

c) who can make a voluntary report;

Example:

If you belong to any of these operational areas or departments, you can contribute to aviation safety enhancement through the [Name of system] by reporting on occurrences, hazards or threats relevant to our organization's aviation activities:

a) flight and cabin crew members;

b) air traffic controllers;

c) licensed aircraft engineers, technicians or mechanics;

d) employees of maintenance, design and manufacturing organizations;

e) airport ground handling operators;

f) aerodrome employees;

g) general aviation personnel;

h) etc.

d) when to make such a report;

Example:

You should make a report when:

a) you wish for others to learn and benefit from the incident or hazard but are concerned about protecting your identity;

b) there is no other appropriate reporting procedure or channel; and

c) you have tried other reporting procedures or channels without the issue having been addressed.

e) how the reports are processed;

Example:

The [Name of system] pays particular attention to the need to protect the reporter's identity when processing all reports. Every report will be read and validated by the manager. The manager may contact the reporter to make sure he understands the nature and circumstances of the occurrence/hazard reported and/or to obtain the necessary additional information and clarification.

When the manager is satisfied that the information obtained is complete and coherent, he will de-identify the information and enter the data into the [Name of system] database. Should there be a need to seek input from any third party, only the de-identified data will be used.

The [Name of system] form, with the date of return annotated, will eventually be returned to the reporter. The manager will endeavour to complete the processing within ten (10) working days if additional information is not needed. In cases where the manager needs to discuss with the reporter or consult a third party, more time may be needed.

If the manager is away from his office for a prolonged period, the alternate manager will process the report. Reporters can rest assured that every [Name of system] report will be read and followed through by either the manager or the alternate manager.

Safety information sharing within the company
and the aviation community

Relevant de-identified reports and extracts may be shared within the company as well as with external aviation stakeholders as deemed appropriate. This will enable all concerned personnel and departments within the company as well as appropriate external aviation stakeholders to review their own operations and support the improvement of aviation safety as a whole.

If the content of a [Name of system] report suggests a situation or condition that poses an immediate or urgent threat to aviation safety, the report will be handled with priority and referred, after de-identification, to the relevant organizations or authorities as soon as possible to enable them to take the necessary safety actions.

f) contacting the [Name of system] manager;

Example:

You are welcome to call the [Name of system] manager to enquire about the [Name of system] or to request a preliminary discussion with the [Name of system] manager before making a report. The manager and alternate manager can be contacted during office hours from Monday to Friday at the following telephone numbers:

[Name of system] administrator	Alternate administrator
Mr. ABC	Mr. XYZ
Tel.:	Tel.:

Appendix 9 to AC100-1

CASA PNG SMS REGULATORY ACCEPTANCE/ASSESSSMENT CHECKLIST

1. Table 4-A12-1 is a sample regulatory SMS assessment checklist (85 questions) which can be used for the initial assessment and acceptance of a service provider's SMS. For an initial acceptance process, the assessment questions need to be comprehensive in order to adequately address all SMS elements of the organization. This will ensure that all elements and their related processes are in place within the organization. The operational aspects of the SMS would be more appropriately addressed during subsequent routine/annual assessment of the SMS.

2. The minimum acceptable performance procedure illustrated provides for a three-stage minimum acceptable score criteria. This procedure will facilitate the CASA's progressive assessment of the service provider's SMS implementation process, instead of auditing only after a service provider's SMS has been fully implemented or is mature. Such a progressive assessment protocol will also ensure that CASA is actively involved in monitoring the industry's SMS implementation from the early phases.

3. CASA has adopted a phased-approach to SMS implementation and the questions in the checklist has been re-configured and adapted to align with the specific spread of elements across the relevant phases.

4. An illustrative corrective action notice (CAN) procedure is provided at the end of the checklist.

Table 4-A12-1. SMS assessment checklist — Initial SMS acceptance

SMS Assessment Checklist — Initial Acceptance			SMS audit checklist_routine /18 Aug 2011	
Input column: Annotate "Y" for Yes," N " for No, "N/A" for not applicable				
Organization name:	Date of assessment:		Assessed by:	Ref:

SMS Element	Level 1	Input	Doc ref/ remarks	Level 2	Input	Doc ref/ remarks	Level 3	Input	Doc ref/ remarks
Management commitment and responsibilities [1.1]	**SMS Component 1. Safety Policy and Objectives**								
	1.1/L1/1			1.1/L2/1			1.1/L3/1		
	There is a documented safety policy statement.	Y		There is evidence that the safety policy is communicated to all employees with the intent that they are made aware of their individual safety obligations.	N		There is a periodic review of the safety policy by senior management or the safety committee.	N	
	1.1/L1/2			1.1/L2/2			1.1/L3/2		
	The safety policy is relevant to aviation safety.	Y		The safety policy is endorsed by the accountable manager.	Y		The accountable manager's terms of reference indicate his overall responsibility for all safety issues.	N	
	1.1/L1/3			1.1/L2/3					
	The safety policy is relevant to the scope and complexity of the organization's operations.	N		The safety policy addresses the provision of the necessary human and financial resources for its implementation.	N		–		
Safety accountabilities [1.2]	1.2/L1/1			1.2/L2/1					
	There is a documented safety (SMS) accountability within the organization that begins with the accountable manager.	Y		The accountable manager's terms of reference indicates his ultimate responsibility for his organization's safety management.	N		–		
	1.2/L1/2			1.2/L2/2					
	The accountable executive has final authority over all the aviation activities of his organization.	N		The accountable manager's final authority over all operations conducted under his organization's certificate(s) is indicated in his terms of reference.	N		–		

SMS Element	Level 1	Input	Doc ref/ remarks	Level 2	Input	Doc ref/ remarks	Level 3	Input	Doc ref/ remarks
Safety accountabilities [1.2]	1.2/L1/3			1.2/L2/3			1.2/L3/1		
	There is a safety committee (or equivalent mechanism) that reviews the SMS and its safety performance.	Y		For a large organization, there are departmental or section safety action groups that work in conjunction with the safety committee.	N/A		The safety committee is chaired by the accountable manager or (for very large organizations) by an appropriately assigned deputy, duly substantiated in the SMS manual.	Y	
	1.2/L1/4			1.2/L2/4			1.2/L3/2		
	The safety committee includes relevant operational or departmental heads as applicable.	N		There is an appointed safety (SMS) coordinator within the safety action group.	N/A		The safety action groups are chaired by the departmental or section head where applicable.	N/A	
Appointment of key safety personnel [1.3]	1.3/L1/1			1.3/L2/1			1.3/L3/1		
	There is a manager who performs the role of administering the SMS.	Y		The manager responsible for administering the SMS does not hold other responsibilities that may conflict or impair his role as SMS manager.	N		The SMS manager has direct access or reporting to the accountable manager concerning the implementation and operation of the SMS.	N	
	1.3/L1/2						1.3/L3/2		
	The manager performing the SMS role has relevant SMS functions included in his terms of reference.	N		–			The SMS manager is a senior management position not lower than or subservient to other operational or production positions.	N	
Emergency response planning [1.4]	1.4/L1/1			1.4/L2/1			1.4/L3/1		
	There is a documented ERP or equivalent operational contingency procedure.	Y		The ERP includes procedures for the continuing safe production, delivery or support of aviation products or services during such emergencies or contingencies.	N		The ERP addresses relevant integration with external customer or subcontractor organizations where applicable.	N	
	1.4/L1/2			1.4/L2/2			1.4/L3/2		
	The ERP is appropriate to the size, nature and complexity of the organization.	Y		There is a plan for drills or exercises with respect to the ERP.	Y		There is a procedure for periodic review of the ERP to ensure its continuing relevance and effectiveness.	N	
	1.4/L1/3			1.4/L2/3					
	The emergency plan addresses possible or likely emergency/crisis scenarios relating to the organization’s aviation product or service deliveries.	N		ERP drills or exercises are carried out according to plan and the result of drills carried out are documented.	N		–		

SMS Element	Level 1	Input	Doc ref/ remarks	Level 2	Input	Doc ref/ remarks	Level 3	Input	Doc ref/ remarks
SMS documentation [1.5]	1.5/L1/1			1.5/L2/1			1.5/L3/1		
	There is an SMS document or exposition which is approved by the accountable manager and accepted by the CAA.	Y		The SMS document is accepted or endorsed by the organization's national aviation authority.	Y		The SMS procedures reflect appropriate integration with other relevant management systems within the organization, such as QMS, OSHE, security, as applicable.	N	
	1.5/L1/2			1.5/L2/2			1.5/L3/2		
	The SMS document provides an overview or exposition of the organization's SMS framework and elements.	Y		The SMS document's exposition of each SMS element includes cross-references to supporting or related procedures, manuals or systems as appropriate.	Y		The SMS procedures reflect relevant coordination or integration with external customer or subcontractor organizations where applicable.	N	
	1.5/L1/3			1.5/L2/3			1.5/L3/3		
	The SMS document is a stand-alone controlled document or a distinct part/section of an existing CAA endorsed/accepted document.	Y		Records are maintained pertaining to safety committee/SAG meeting (or equivalent) minutes.	Y		There is a process to periodically review the SMS exposition and supporting documentation to ensure their continuing relevance.	N	
	1.5/L1/4			1.5/L2/4					
	All components and elements of SMS regulatory requirements are addressed in the SMS document.	Y		Records pertaining to periodic review of existing safety/risk assessments or special review in conjunction with relevant changes are available.	N		–		
	1.5/L1/5								
	Records are maintained pertaining to safety risk assessments performed.	Y		–			–		
	1.5/L1/6								
	Records pertaining to identified or reported hazards/threats are maintained.	Y		–			–		

SMS Element	Level 1	Input	Doc ref/ remarks	Level 2	Input	Doc ref/ remarks	Level 3	Input	Doc ref/ remarks
Hazard identification [2.1]	**SMS Component 2. Safety Risk Management**								
	2.1/L1/1			2.1/L2/1			2.1/L3/1		
	There is a procedure for voluntary hazards/threats reporting by all employees.	Y		In the hazard identification system, there is a clear definition of and distinction between hazards and consequences.	N		There is a procedure to identify hazards/threats from internal incident/accident investigation reports for follow-up risk mitigation where appropriate.	N	
	2.1/L1/2			2.1/L2/2			2.1/L3/2		
	There is a procedure for incident/accident reporting by operational or production personnel.	Y		The hazard reporting system is confidential and has provisions to protect the reporter's identity.	N		There is a procedure to review hazards/threats from relevant industry service or incident/accident reports for risk mitigation where applicable.	N	
	2.1/L1/3			2.1/L2/3			2.1/L3/3		
	There is a procedure for investigation of incident/accidents relating to quality or safety.	Y		The organization's internal investigation and disciplinary procedures distinguish between premeditated and deliberate violations and unintentional errors and mistakes.	N		There is a procedure for periodic review of existing risk analysis records.	N	
Safety risk assessment and mitigation [2.2]	2.2/L1/1			2.2/L2/1					
	There is a documented HIRM procedure involving the use of objective risk analysis tools.	Y		Risk assessment reports are approved by departmental managers or at a higher level where appropriate.	N		–		
	2.2/L1/2			2.2/L2/2					
	There is a procedure for identification of operations, processes, facilities and equipment which are deemed (by the organization) as relevant for HIRM.	N		Recommended mitigation actions which require senior management decision or approval are accounted for and documented.	N		–		
	2.2/L1/3			2.2/L2/3			2.2/L3/1		
	There is a programme for progressive HIRA performance of all aviation safety-related operations, processes, facilities and equipment as identified by the organization.	N		There is a procedure to prioritize HIRA performance for operations, processes, facilities and equipment with identified or known safety-critical hazards/risks.	N		There is evidence of progressive compliance and maintenance of the organization's HIRA performance programme.	N	

SMS Element	Level 1	Input	Doc ref/ remarks	Level 2	Input	Doc ref/ remarks	Level 3	Input	Doc ref/ remarks
Safety performance monitoring and measurement [3.1]	**SMS Component 3. Safety Assurance**								
	3.1/L1/1			3.1/L2/1			3.1/L3/1		
	There are identified safety performance indicators for measuring and monitoring the organization's safety performance.	Y		There are lower-consequence safety performance indicators (e.g. non-compliance, deviation events).	N		There is a procedure for corrective or follow-up action to be taken when targets are not achieved and/or alert levels are breached.	N	
	3.1/L1/2			3.1/L2/2			3.1/L3/2		
	There are high-consequence data-based safety performance indicators (e.g. accident and serious incident rates).	Y		There are alert and/or target level settings within the safety performance indicators where appropriate.	N		Safety performance indicators are reviewed by the safety committee for trending, alert levels that have been exceeded and target achievement where applicable.	Y	
The management of change [3.2]	3.2/L1/1			3.2/L2/1			3.2/L3/1		
	There is a procedure for review of relevant existing aviation safety-related facilities and equipment (including HIRA records) whenever there are pertinent changes to those facilities or equipment.	N		There is a procedure for review of new aviation safety-related facilities and equipment for hazards/risks before they are commissioned.	N		There is a procedure for review of relevant existing facilities, equipment, operations or processes (including HIRM records) whenever there are pertinent changes external to the organization such as regulatory/industry standards, best practices or technology.	N	
	3.2/L1/2			3.2/L2/2					
	There is a procedure for review of relevant existing aviation operations and processes (including HIRA records) whenever there are pertinent changes to those operations or processes.	N		There is a procedure for review of new aviation safety-related operations and processes for hazards/risks before they are commissioned.	N		–		

SMS Element	Level 1	Input	Doc ref/ remarks	Level 2	Input	Doc ref/ remarks	Level 3	Input	Doc ref/ remarks
Continuous improvement of the SMS [3.3]	3.3/L1/1			3.3/L2/1			3.3/L3/1		
	There is a procedure for periodic internal audit/assessment of the SMS.	Y		There is a follow-up procedure to address audit corrective actions.	Y		SMS audit/assessment has been carried out according to plan.	N	
	3.3/L1/2			3.3/L2/2			3.3/L3/2		
	There is a current internal SMS audit/assessment plan.	N		–			There is a process for SMS audit/assessment reports to be submitted or highlighted for the accountable manager's attention when necessary.	N	
	3.3/L1/3			3.3/L2/3			3.3/L3/3		
	There is a documented internal SMS audit/assessment procedure.	N		The SMS audit plan includes the sampling of completed safety assessments.	N		The SMS audit plan covers the SMS roles/inputs of contractors where applicable.	N	
Training and communication [4.1, 4.2]	**SMS Component 4. Safety Promotion**								
	4.1/L1/1			4.1/L2/1			4.1/L3/1		
	There is a documented SMS training/familiarization policy for personnel.	Y		Personnel involved in conducting risk evaluation are provided with appropriate risk management training or familiarization.	N		There is evidence of organization-wide SMS education or awareness efforts.	N	
	4.1/L1/2			4.1/L2/2			4.1/L3/2		
	The manager responsible for SMS administration has undergone an appropriate SMS training course.	Y		Personnel directly involved in the SMS (safety committee/SAG members) have undergone appropriate SMS training or familiarization.	N		There is evidence of a safety (SMS) publication, circular or channel for communicating safety and SMS matters to employees.	N	
	4.1/L1/3								
	The accountable manager has undergone appropriate SMS familiarization, briefing or training.	Y		–			–		

SUBTOTAL	CATEGORY 1
Y	23
N	11
N/A	0
Number of questions completed	34

CATEGORY 2
6
21
2
29

CATEGORY 3
2
19
1
22

GRAND TOTAL*	
Y	31
N	51
N/A	3
Number of questions completed	85

ASSESSMENT RESULT (% OF YES):
38.7%

CORRECTIVE ACTION NOTICE (CAN) PROCEDURE

1) Minimum overall acceptable performance (phased SMS implementation):

First year/phase of assessment (e.g. 2012) — 45%.
Second year/phase of assessment (e.g. 2013) — 65%.
Third year/phase of assessment (e.g. 2014) and thereafter — 85%.
Ninety (90) days for corrective action to obtain not less than 45% overall performance.

2) Baseline performance (Level 1 questions) (during any year/phase of assessment subsequent to State's SMS required applicability date:

Corrective action notice (CAN) to be issued for "No" answers to any Level 1 questions (during any year/phase of assessment).
(Sixty (60) days for corrective action to obtain a "Yes" answer to the relevant question(s)).

CASA PNG Risk Assessment & Change Management (RACM)

(PNG rule reference : CAR 100.59, 100.61, 100. 65)

Date Initial Assement:	RACM No:
XXXXXX	XXXXX
Date of Review: XXXXXX	

Applicability: ☒ All Personnel ☐ Aircrew ☐ Engineering ☐ Ground Operations ☐ Cargo ☐ Cabin Crew ☐ Other _____

Project:

Work Location:

Task Description:

Risk Rating Calculator Tool

Likelihood	Severity				
	A. Catastrophic	B. Major	C. Moderate	D. Minor	E. Negligible
5. Almost Certain	Extreme	Extreme	Extreme	High	High
4. Likely	Extreme	Extreme	High	Medium	Medium
3. Possible	Extreme	High	High	Medium	Low
2. Unlikely	High	High	Medium	Low	Low
1. Rare	Medium	Medium	Low	Low	Low

Definitions

Likelihood:

- **Rare** – Extremely Improbable / Nil Events
- **Unlikely** – Improbable / Few events
- **Possible** – Remote
- **Likely** – Occasional / Regular recorded incidents
- **Almost Certain** – Frequent / Almost certain incident

Severity:

- **Negligible** – minor injury
- **Minor** – Serious injury
- **Moderate** – multiple injuries
- **Major** – Hazardous / Disabling injury or death
- **Catastrophic** – Multiple disabling injuries or deaths

Risk Score

Low – Acceptable – monitoring only

Medium – Acceptable based on Risk Mitigation

High – Tolerable for limited period only (requiring risk mitigation)

Extreme – Unacceptable under existing conditions

Developed By:

1			
2			
1			
2			
3			

Approved By:

1			
2			
3			

No.	Work Activity *List the Basic steps required to carry out the task*	Hazard / Risk *Identify and list the hazards that are possible in each step*	Risk Rating	Changes required to Mitigate Risk to 'Low' *List the actions or changes required to eliminate or reduce the hazards*	New Risk Rating	Action By	Status
1							
2							
3							
4							
5							