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DEPARTMENT OF CIVIL AVIATION
AERONAUTICAL INFORMATION SERVICE

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Safety Management Systems for Belize Aviation Service Providers

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Chapter 1: Introduction

1. Purpose

1.1 This Aeronautical Information Circular (AIC) provides the guidance to assist Aviation Service Providers in the establishment and implementation of a Safety Management System (SMS). This document provides the description of the regulatory requirements, guidance and methods of developing and implementing an SMS. The guidance material aligns itself with the requirements and structure of the SMS Standards of the International Civil Aviation Organization (ICAO) as published in ICAO Annex 19. This AIC may also be used by Air Operators interested in voluntarily developing an SMS.

1.2 The SMS is not meant to be a separate system built alongside or on top of other organizational systems but should be integrated into the existing structure. A properly integrated SMS fosters a fundamental and sustainable change in how service providers analyze data and information, make informed decisions, and how the service providers may develop new operational and organizational methods.

1.3 The SMS requirements are applicable to a wide variety of types and sizes of service providers. Therefore, these requirements are designed to be scalable, allowing service providers to integrate safety management practices into their unique organizational models. This AIC cannot provide a single means of compliance that applies to all service providers who are required to develop and implement an SMS, therefore each service provider is to tailor the program to their specific operation.

2. Applicability

2.1 This AIC applies to Belize Air Operator Certificate (AOC) holders, Belize Civil Aviation Regulation Approved Maintenance Organizations (BCAR AMOs), Aerodrome Operators, Air Traffic Service Providers, Approved Training Organizations and Organizations responsible for the design and/or manufacture of aircraft (all referred to as *service providers* in this AIC) who are related to, or in direct support of the safe operation of aircraft during the provision of their services. ICAO Annex 19 requires service providers to have an SMS that meets the standards in Appendix 2 and Chapter 4 of ICAO Annex 19 and Chapter 9 of the ICAO Safety Management Manual, Doc 9859 and that is acceptable to the Belize Department of Civil Aviation (BDCA). The service provider SMS implementation plan shall be used to evaluate compliance.

3. Scalability

3.1 The size and complexity of operations to be covered, the volume of data available, the size of the employee workforce, and resources required to manage an organization plays a huge role in determining the scale of the organization's SMS. The SMS requirements (Safety Policy, Safety Risk Management (SRM), Safety Assurance (SA) and Safety Promotion) are the same regardless of the size of the operation. This AIC allows that every service provider may scale their SMS to meet the SMS requirements, bearing in mind that the SMS functions may not need to be extensive or complex to be effective.

Chapter 2: Safety Management Systems (SMS) Foundations

1. Safety Culture and Safety Management

1.1 One key aspect that is essential to safety performance is the culture of the organization. "Safety culture" is the term that we apply to those aspects of the organization's culture that relate to safety performance. The concept of safety culture underlies safety management and is the basis for the BDCA SMS requirements.

1.2 Because the culture of an organization includes the deeply ingrained and automatic psychological and behavioral aspects of human performance, there is a strong correlation between safety culture and accident prevention. Therefore, safety culture and SMS are interdependent. Management's constant attention, commitment, and visible leadership are essential to guiding an organization toward a positive safety performance.

1.3 Safety Cultures are the product of the values and actions of the organization's leadership as well as the results of organizational learning. Cultures are not really "created" or "implemented" they emerge over time and as a result of experience. As with the development of any skill, it takes time, practice and repetition, the appropriate attitude, a cohesive approach, and constant involvement from organizational leadership. A safety culture matures as safety management skills are learned and practiced and become second nature across the entire organization.

1.4 A management framework that facilitates decision-making and shapes the environment in which employees work is crucial to organizational performance in all aspects of the organization, including safety. The following have been found to be characteristics of organizations that consistently achieve safe results:

a. **Open Reporting**. Policies and processes that foster open reporting while, at the same time, stressing the need for continuous diligence and professionalism. The organization should encourage disclosure of error without fear of reprisal, yet it should also demand accountability on the part of employees and management alike.

b. **Just Culture**. The organization should engage in identification of systemic errors, implement preventative corrective action, and exhibit intolerance of undesirable behaviors such as recklessness or willful disregard for established procedures. This is often referred to as a "just culture."

c. **Personnel Involvement**. Involvement of line personnel and all levels of management in functions dealing with aviation safety, including the accountable executive, is critical to effective safety management throughout an organization.

d. **Use of Information**. Effective use of all safety information assures informed management decision-making.

e. **Commitment to Risk Reduction**. The organization expects direct management involvement in identifying hazards and managing risk.

f. **Vigilance**. Processes that provide vigilance of ongoing operations and the environment to ensure the effectiveness of risk controls and awareness of emerging hazards.

g. **Flexibility**. Using information effectively to adjust and change to reduce risk, and a willingness to commit resources to making changes necessary to reduce risk.

h. **Learning**. The organization learns from its own failures and from those of allied and similar businesses. The organization actually uses acquired data to feed analysis processes, the results of which yield information that can be acted upon to improve safety.

1.5 Management should demonstrate their visible commitment to and involvement in safe operation performing their daily work. SMS processes do not have to be expensive or sophisticated; however, active personal involvement of operational leaders is essential. Safety management must be accomplished by those managers who "own" the processes in which risk resides. If positive aspects of culture are to emerge, the organization's management must set up the policies and processes that create a working environment that fosters safe behavior. That is the purpose of the SMS processes.

2. SMS Fundamentals

2.1 **What Is an SMS?** SMSs can be a complex topic with many aspects to consider, but the defining characteristic of an SMS is that it is a decision-making system. An SMS is built by structuring safety management around four components: safety policy, safety risk management (SRM), safety assurance (SA), and safety promotion. A brief description of these components and their respective elements as minimum requirements is provided below.

2.2 **Safety Policy**. Safety policy is where you set objectives, assign responsibilities, and set standards. It is also where management conveys its commitment to the safety performance of the organization to its employees. As SRM and SA processes are developed, you will come back to the safety policy to ensure that the commitments in the policy are being realized and the standards are being upheld.

Key Elements:

a. Management Commitment
b. Safety Accountability and Responsibilities
c. Appointment of Key Safety Personnel
d. Coordination of Emergency Response Planning
e. SMS Documentation

2.3 **Safety Risk Management (SRM)**. The SRM component provides a decision-making process for identifying hazards and mitigating risk based on a thorough understanding of the organization's systems and their operating environment. SRM includes decision-making regarding management acceptance of risk to operations. The SRM component is the organization's way of fulfilling its commitment to consider risk in its operations and to reduce it to an acceptable level. In that sense, SRM is a design process, a way to incorporate risk controls into processes, products, and services or to redesign controls where existing ones are not meeting the organization's needs.

Key Elements:

a. Hazard Identification
b. Safety Risk Assessment and Mitigation

2.4 **Safety Assurance (SA)**. SA provides you with the necessary processes to give you confidence that your system is meeting your organization's safety objectives and that your mitigations, or risk controls, developed under SRM are working. In SA, your goal is to watch what is going on and review what has happened to ensure that your objectives are being met. Thus, SA requires monitoring and measuring safety performance of operational processes and continuously improving the level of safety performance. Strong SA processes will yield information used to maintain the integrity of risk controls. SA processes are thus a means of assuring the safety performance of the organization, keeping it on track, correcting it where necessary, and identifying needs for rethinking existing processes.

Key Elements:

a. Safety Performance Monitoring and Measurement
b. The Management of Change
c. Continuous Improvement of the SMS

2.5 **Safety Promotion**. The last component, safety promotion, is designed to ensure that your employees have a solid foundation regarding their safety responsibilities, the organization's safety policies and expectations, reporting procedures, and a familiarity with risk controls. Thus, training and communication are the two key areas of safety promotion.

Key Elements:

a. Training and Education
b. Safety Communication

Chapter 3: Safety Management Systems (SMS) Components

1. Structure of the SMS

1.1 SMS requirements are organized around building blocks of safety management. These processes are essential for theSMS. This Chapter contains short descriptions of each SMS component and the structure and processes contained therein. After the title of each process are the following:

a. **Objective** – A brief explanation of the goal of the process or overview of the process.

b. **State Requirement** – The regulatory requirement of the State in the context of existing regulations and long-term forecast of major changes in legislation, regulations, procedures or facilities liable to affect flight safety. These are identified by bordered prose. Compliance with these requirements are mandatory.

c. **Discussion** – A detailed plain language explanation of the process as it relates to SMS.

d. **Scalability** – A short description of scalability as to how different Air Operators may meet the pertinent SMS requirements. Scalability is measured in terms of small and medium carriers. Small carriers are generally defined as carriers operating fewer than 10 aircraft, and medium carriers are those with fewer than 25 aircraft.

Note: Scalability do not impose specific resource allocation by the Air Operator.

2. The SMS

SUBPART A: GENERAL

1) Applicability: Requirements for Implementation

a. State Requirement

I All service providers who are related to, or in direct support of the safe operation of aircraft during the provision of their services shall have a Safety Management System that meets the requirements of this AIC and is acceptable to the BDCA.

II All service providers shall submit an SMS Manual and associated implementation plan to the BDCA for review no later than June 30, 2024. The implementation plan must be approved no later than June 30, 2024.

III The implementation plan may include any of the service providers existing programs, policies or procedures that intend to be used to meet the requirements of this AIC, including components of an existing SMS.

b. *Discussion*

I The Implementation planning is outlined in more detail in Chapter 4 of this AIC.

2) General Requirements: Components of the SMS

a. State Requirement

I All service providers required to have an SMS shall submit the SMS to the BDCA for acceptance. The SMS must be appropriate to the size, scope, and complexity of the service providers operation and include at least the following components:

i. Safety Policy in accordance with Subpart B of this AIC
ii. Safety Risk Management in accordance with the requirements of Subpart C of this AIC.
iii. Safety Assurance in accordance with the requirements of Subpart D of this AIC.
iv. Safety Promotion in accordance with the requirements of Subpart E of this AIC.

b. *Discussion*

I For context on size, complexity, and scope, see scalability examples in this Chapter 3.

3) Recordkeeping Requirements

a. State Requirement

I The Safety Management System shall be maintained in accordance with the recordkeeping requirements in Subpart B of this Chapter.

b. *Discussion*

I Documentation and recordkeeping requirements are in Subpart B, (6) of this Chapter.

4) Compliance with Belize Civil Aviation Regulations

a. *State Requirement*

I The SMS shall ensure compliance with the requirements specified in this AIC.

SUBPART B: SAFETY POLICY AND OBJECTIVES

1) Introduction

a. *Objective*

I This section of the AIC provides guidance about how the accountable executive, in coordination with other senior managers, might define safety performance objectives, assign accountability, and allocate resources. The safety policy should be appropriate to the size, scope, and complexity of the operation. Additionally, the safety policy component is where management defines its commitment to managing safety throughout the organization.

2) Safety Policy

a. State Requirement

I The service providers shall have a safety policy that includes at least the following:

i. The safety objectives of the service provider.
ii. A commitment of the service provider to fulfill the organization's safety objectives.
iii. A clear statement about the provision of the necessary resources for the implementation of the SMS.
iv. A safety reporting policy that defines requirements for employee reporting of safety hazards or issues.

v. A policy that defines unacceptable behavior and conditions for disciplinary action.
vi. An emergency response plan that provides for the safe transition from normal to emergency operations in accordance with the requirements of Subpart B, (5).

II The Safety Policy shall be signed by the accountable executive.
III The Safety Policy shall be documented and communicated through the service providers organization through a means acceptable to the BDCA.
IV The Safety Policy shall be regularly reviewed by the accountable executive to ensure it remains relevant and appropriate to the service provider.

b. *Discussion*

I The safety policy statement is a concise document from the accountable executive that conveys the organization's basic commitments to safety management. It provides a basis for more detailed setting of objectives for planning and performance measurement, assignment of responsibility, and reporting, including clear statements regarding behavioral and performance expectations. The safety policy may be supported by additional documents that expand in specific areas, and, where applicable, it may also set out procedures.

II Subpart B, (2) (a) requires the service provider to develop safety objectives as part of their safety policy. In setting these objectives, a number of categories may be considered, including:

i. Compliance with relevant regulations
ii. Milestones for implementation of safety related programs or initiatives.
iii. Reduction of error or incident rates.
iv. Tracking of safety events (Ground damage, pilot deviations, weight and balance errors, maintenance errors, etc).

c. *Scalability*

I Safety policies would not be expected to vary between small, medium, and large organizations; however, the levels of management involved in preparation and implementation of the policy may vary.

i. **Small**. The owner or most senior manager (the accountable executive) may personally perform this process. The policy can be a simple, often single-page, written document, signed by the accountable executive. Small organizations typically operate in smaller networks of employees, so the policy may be posted in organization work areas or included in organization briefings or in training.
ii. **Medium**. The accountable executive, with the involvement of other senior managers, is likely to develop, publish, and communicate the safety policy. The policy may be disseminated via organization newsletters, organization Web sites, employee briefings, or existing indoctrination and recurrent training.

3) Safety Accountability and Responsibilities

a. State Requirement

I	The service providers shall define accountability for safety within the organization's safety policy for the following individuals:

i. The accountable executive
ii. All members of management in regard to developing, implementing, and maintaining SMS processes within their area of responsibility, including, but not limited to:
    1. Hazard identification and safety risk management
    2. Assuring the effectiveness of safety risk controls
    3. Promoting safety as required in Subpart E of this Chapter
    4. Advising the accountable executive on the performance of the SMS and on any need for improvement.

II	The service providers shall identify and specify the levels of management with the authority to make decisions regarding safety risk acceptance.

b. *Discussion*

I The SMS process requires defined accountability for achieving safety performance objectives within the organization's safety policy for the following individuals.

NOTE: "Accountability" as used here, refers to active management and line employee involvement and action in managing and maintaining safety performance. A service provider defines accountability by ensuring that each of its management and line employees is aware of his or her specific role within SMS and actively participates in carrying out his or her SMS-related duties. Once the accountabilities for these employees have been defined, Subpart D (Safety Promotion) requires that these accountabilities be communicated throughout the organization.

i. **Accountable Executive**. The accountable executive has the ultimate responsibility for safety management within the organization.
ii. **All Members of Management**. Managers are the individuals who are responsible for identifying hazards, conducting risk assessments, and developing risk controls for their areas of responsibility. They have the technical expertise and are the ones responsible for implementation and operation of risk controls (often in the form of operational procedures, specified tools, training, communication, etc.). A key element in your SRM process is to identify the levels of management with the authority to make risk decisions related to aviation safety.
iii. **Employees**. All employees should be aware of the organization's safety policies, as well as the processes, procedures, and tools relevant to their responsibilities. They need to know how the confidential employee reporting system works.

c. *Scalability*

I The method for meeting these requirements is not expected to vary greatly between different organizations. Rather, the numbers and relationships of personnel will be unique to each organization.

4) Appointment of Key Safety Personnel

a. *Objective*

I This section of the Subpart addresses two processes:

i. The designation and responsibilities of the accountable executive, and
ii. The designation and responsibilities of Safety Management Personnel
iii. Competencies for safety manager

b. State Requirement

(A) The Designation and Responsibilities of the Accountable Executive

a. The service providers shall identify an accountable executive who, irrespective of other functions, satisfies the following:

i. Is the final authority over operations authorized to be conducted.
ii. Controls the financial resources required for the operations to be conducted.
iii. Controls the human resources required for the operations authorized to be conducted.
iv. Retains ultimate responsibility for the safety performance of the operations conducted.

b. Responsibilities of the accountable executive. The accountable executive shall accomplish the following:

i. Ensure that the SMS is properly implemented and performing in all areas of the service providers organization.
ii. Develop and sign the safety policy of the service provider.
iii. Communicate the safety policy throughout the service providers organization.
iv. Regularly review the service providers safety policy to ensure it remains relevant and appropriate to the service provider.
v. Regularly review the safety performance of the service providers organization and direct actions necessary to address substandard safety performance.

(B) **The Designation and Responsibilities of Safety Management Personnel**

a. The accountable executive shall designate a competent person or persons to fulfil the role of Safety Manager, who on behalf of the accountable executive, shall be responsible for the performance of the SMS and for the delivery of safety services to other departments in the organization. Functions also include but are not limited to:

i. Coordinate implementation, maintenance, and integration of the SMS throughout the service providers organization.
ii. Facilitate hazard identification and safety risk analysis.
iii. Monitor the effectiveness of safety risk controls.
iv. Ensure safety promotion throughout your organization as required in subpart E of this Chapter.
v. Regularly report to the accountable executive on the performance of the SMS and on any need for improvement.

vi. Manage the SMS implementation plan on behalf of the accountable executive (upon initial implementation).
vii. Monitor corrective actions and evaluate their results.
viii. Maintain SMS documentation and records.
ix. Plan and initiate staff safety training.
x. Provide independent advice on safety matters to managers, employees and contractors at all levels.
xi. Monitor safety concerns in the aviation industry and their perceived impact on the organization's operations aimed at product and service delivery; and
xii. Coordinate and communicate (on behalf of the accountable executive) with the Belize Department of Civil Aviation and other State authorities as necessary on issues relating to safety.

(C) **Competencies for a Safety Manager**

a. The operator shall present evidence demonstrating competencies for a designated safety manager which shall include but not limited to the following:

i. Safety/quality management experience.
ii. Operational experience related to the product or service provided by the organization.
iii. Technical background to understand the systems that support operations, or the product/service provided.
iv. Interpersonal skills.
v. Analytical and problem-solving skills.
vi. Project management skills.
vii. Oral and written communication skills; and
viii. An understanding of human factors.

c. *Scalability*

I In smaller organizations, the accountable executive may personally participate in or directly supervise operational processes. This individual may serve in multiple positions within the organization. In larger organizations, the accountable executive is responsible for ensuring that management personnel are clearly designated for ensuring the safety of operational and safety management processes.

5) Coordination of Emergency Response planning

a. State Requirement

I Where emergency response procedures are necessary, the service provider must develop and the accountable executive must approve as part of the safety policy, an emergency response plan that addresses at least the following:

i. Delegation of emergency authority throughout the service providers organization;
ii. Assignment of employee responsibilities during the emergency; and

iii. Coordination of the service providers emergency response plans with the emergency response plans of other organizations it must interface with during the provision of its services.

b. *Discussion*

I The plan should provide procedures for management decision-making and action in an emergency. This should include a line of succession of management authority sufficient to respond to emergencies. Coordination of your emergency response plans with the emergency response plans of other organizations might include first responders to accidents or incidents, airport authorities, and hazardous materials (hazmat) authorities. The plan might also address how you return or transition to normal operations after the emergency condition subsides. Many organizations already have emergency response plans that may be used to fulfill this requirement.

6) SMS Documentation and Recordkeeping

a. *Objective*

I To ensure the operator establishes and maintains SMS information, on either paper or electronic form, describing the safety-related processes and procedures. Additionally, the operator shall maintain the SMS records for the period of time specified in this Subpart.

b. State Requirement

(A) **SMS Documentation.**

a. The service provider shall develop and maintain SMS documentation that describes the service providers:

i. Safety Policy
ii. SMS Processes and Procedures

b. The service providers shall establish and maintain SMS information, in either paper or electronic form, describing the safety-related processes and procedures and interfaces between these. They should also implement a distribution system to ensure that the documents dealing with these processes and procedures are promptly updated whenever there is a change in one or more of these processes or procedures.

c. *Scalability*

i. **Small and Medium**. The owner/manager or designee may be responsible for maintaining and distributing current versions of guidance documents. Documentation may consist of a set of typewritten documents, spreadsheets, and forms that are kept in file cabinets, binders or electronic database tools.

(B) **SMS Records**

a. The service providers shall maintain records of outputs of safety risk management processes as described in subpart C of this Chapter. Such records must be retained for as long as the control remains relevant to the operation.

b. The service providers shall maintain records of outputs of safety assurance processes as described in subpart D of this part. Such records must be retained for a minimum of 5 years.
c. The service providers shall maintain a record of all training provided under Subpart E, (2) for each individual. Such records must be retained for as long as the individual is employed by the service provider.
d. The service providers shall retain records of all communications provided under Subpart E, (3) for a minimum of 24 consecutive calendar months.
e. The service providers shall give any person authorized by the BDCA access to any document or record which are related to SMS, and
f. The service providers shall make available all such documents and records, when requested to do so by the Belize Department of Civil Aviation, within 30 days of the initial request.

g. *Scalability*
    i. **Small**. The owner/manager or designee may be responsible for maintaining auditable records. Documentation may consist of handwritten records, spreadsheets, and completed forms that are kept in file cabinets, binders or electronic database tools.
    ii. **Medium**. An individual or small staff may coordinate document maintenance and retention. This staff may use a combination of paper and electronic media to administer the process. Some records may be retained by department heads in accordance with a procedure delegating this responsibility.

SUBPART C: SAFETY RISK MANAGEMENT (SRM)

1) Introduction

a. *Objective*

I SRM is a formal system for identifying and mitigating risk. There are 5 processes necessary to control and mitigate risk:
    i. System description and analysis.
    ii. Hazard identification.
    iii. Safety risk analysis.
    iv. Safety risk assessment.
    v. Safety risk controls.

2) Requirements to Apply SRM

a. *Objective*

I To determine situations where the SRM process must be applied.

b. State Requirement

I Service providers shall apply safety risk management to the following:
    i. Implementation of new systems.
    ii. Revision of existing systems.

iii. Development of operational procedures.
iv. Identification of hazards or ineffective risk controls through the safety assurance processes in subpart D of this Chapter.

c. *Discussion*

I To know when SRM process may be required, it is important to know what a system is. Systems could be people, hardware, software, information, procedures, facilities, services, and other support facets which are directly related to the organization's aviation safety activities. Examples of AOC holder's broad-based systems could include:

i. Flight operations,
ii. Operational control (dispatch/flight following),
iii. Maintenance and inspection,
iv. Cabin safety,
v. Ground handling and servicing,
vi. Cargo handling, and
vii. Training.

II Within these systems there are subsystems. Some examples of subsystems include crew scheduling systems, training curricula, maintenance control, fueling, aircraft fleet, ground operations, and hazmat training.

III The SRM process is triggered when proposed new systems or changes to systems are being considered. The SRM process is not triggered solely by major changes to a system; it is triggered by any revision of an existing system. The level of SRM documentation needed for smaller changes to a system may be significantly smaller than for major changes.

3) System Analysis and Hazard Identification

a. *Objective*

I This section addresses the following two processes identified in Subpart C, (1) (a):

i. System Description and Analysis
ii. Hazard Identification

b. State Requirement

(A) **System Description and Analysis**

a. When applying safety risk management, the service providers must analyze the systems identified in Subpart C, (2), (c). Those safety analysis must be used to identify hazards and the service providers must develop and implement risk controls related to the system.
b. In conducting the system analysis, the following information must be considered:

i. Function and purpose of the system.
ii. The system's operating environment.
iii. An outline of the system's processes and procedures.
iv. The personnel, equipment, and facilities necessary for the operation of the system.

c. *Scalability.*

i. **Small**. System description and analysis could be performed by the owner/manager and/or another assigned employee(s). An analysis could consist of a discussion among managers such as the Director of Operations (DOO) and/or Chief Pilot or other individuals designated by them.

ii. **Medium**. System description and analysis could be performed by a member of management or one of the designated SMS management representatives with a small workgroup of organization safety management experts and stakeholders.

(B) **Hazard Identification**

a. The service providers shall develop and maintain processes to identify hazards within the context of the system analysis.

c. *Discussion*

I Systems analysis is the primary means of proactively identifying and addressing potential problems before the new or revised systems or procedures are put into place. The system analysis should explain the functions and interactions among the hardware, software, people, and environment that make up the system in sufficient detail to identify hazards and perform risk analysis.

II The hazard identification process flows from the system analysis. In hazard identification, you would ask: What could go wrong with your processes, under typical or abnormal operational conditions, that could cause an accident?

4) Safety Risk Assessment and Mitigation

a. *Objective*

I This section addresses the following two processes identified in Subpart C, (1) (a):

i. Safety Risk Analysis
ii. Safety Risk Assessment
iii. Safety Risk Control

b. State Requirement

(A) **Safety Risk Analysis**

a. The service providers shall develop and maintain processes to analyze safety risk associated with the hazards identified in Subpart C, (3), (b).

b. For each identified hazard, define the potential for injury and damage that may result from an accident related to operating while exposed to the hazard. In order to determine potential for injury and damage, you need to define the likelihood of occurrence of an accident and severity of the injury or damage that may result from the aircraft accident. It is important to remember that the likelihood and severity do not refer to the hazard but, of a potential occurrence (accident or incident) related to the hazard.

c. *Scalability*

i. **Small**. Risk analysis could be performed by the owner/manager, and/or another employee(s). It might be performed in conjunction (by the same individual/group) with system description and analysis, hazard identification, risk assessment, and risk control.

ii. **Medium**. Risk analysis could be performed by a member of management and/or the designated management representative with a small workgroup of organization safety management experts and stakeholders.

(B) **Safety Risk Assessment**

a. The service providers shall define a process for conducting risk assessment that allows for the determination of acceptable safety risk.

b. Once the risk is analyzed, the service providers must assess whether the risk is acceptable. A common tool used in risk assessment decisions is a risk matrix. A risk matrix provides the user with a way to integrate the effect of severity of the outcome and the probability of occurrence, which enables you to assess risks, compare potential effectiveness of proposed risk controls, and prioritize risks where multiple risks are present.

c. *Scalability*

i. **Small**. Risk assessment could be performed by the owner/manager, and/or another employee(s) making the risk decisions. Risk acceptance would also probably be conducted by this individual/group. These processes could be similar to a flight risk management process, or you could use a risk matrix.

ii. **Medium**. SRM should be coordinated across the divisional and geographic units of the organization to ensure integrated decision-making and communication. Decisions involving multiple systems may require joint decision-making among departments or managers responsible for those systems.

(C) **Safety Risk Control**

a. Service providers shall develop and maintain processes to develop safety risk controls that are necessary as a result of the safety risk assessment process under paragraph (B) above.

b. Service providers shall evaluate whether the risk will be acceptable with the proposed safety risk control applied, before the safety risk control is implemented.

c. After hazards and associated risk are fully understood, risk controls must be designed for risks that the service providers deems unacceptable. This is accomplished using their risk assessment process. Examples of risk controls include new processes, equipment, training, new supervisory controls, new equipment or hardware, new software, changes to staffing arrangements, or any of a number of

other system changes. In short, anything that would lessen the likelihood or severity of a potential incident/accident.

d. *Scalability*

i. **Small**. The risk control process could be a documented activity performed by the owner/manager and/or another employee(s) designing and evaluating the risk controls. It might be performed in conjunction (by the same individual/group) with system description and analysis, hazard identification, risk analysis, and risk assessment.

ii. **Medium**. The risk control process could be performed by a member of management or SMS management representatives with a small workgroup of organization safety management experts and stakeholders to design the risk controls. There would be interdepartmental coordination before the controls are implemented. After the control is approved, it is implemented and documented through the organization's publication system. Implementation of risk controls may include distribution of manual revisions and training of organization personnel.

SUBPART D: SAFETY ASSURANCE

1) Introduction

a. *Discussion*

I Safety Assurance consists of the following processes divided into three sections.

i. Safety Performance Monitoring and Measurement
ii. Safety Performance Assessment and the Management of Change
iii. Continuous improvement of the SMS

2) Safety Performance Monitoring and Measurement

a. *Objective*

I This section consists of the following processes:

i. Monitoring of Operational Processes
ii. Monitoring of the Operational Environment
iii. Auditing of Operational Processes
iv. Evaluation of the SMS and Operational Processes
v. Investigation: Potential Noncompliance
vi. Confidential Employee Reporting Systems
vii. Analysis of Data

b. State Requirement

(A) Monitoring of Operational Processes

a. The service providers shall develop and maintain processes and systems to acquire data with respect to its operations, products, and

services to monitor the safety performance of the organization relevant to the operational processes.

b. *Scalability*

i. **Small**. Most of the data/information-gathering for monitoring of operational processes will likely occur as a normal business process by the management personnel who are directly involved in the day-to-day operations. For example, regularly reviewing (e.g., weekly, monthly, or quarterly) the flight dispatch logs and crewmember duty records is a form of monitoring and could be conducted during the normal course of duties.

ii. **Medium**. Line managers and departmental or key management personnel may observe and review day-to-day activity, noting work task inconsistencies and potential safety issues. Flight Operations Quality Assurance (FOQA) and Line Operations Safety Audit (LOSA) programs may also be sources of information to monitor operations.

(B) Monitoring of the Operational Environment

a. The service providers shall develop and maintain processes and systems to acquire data with respect to its operations, products, and services to monitor the safety performance of the organization relevant to detection of changes in the operational environment.

b. Monitoring of the operational environment involves practices that are similar to those of monitoring operational processes. The context for monitoring the operational environment of a system is developed from the system analysis that is conducted under SRM. Once the scope of the operational environment is defined under SRM, the operational environment must be monitored to assess impacts on aviation safety. For example, increases in the price of fuel may require airlines to change their scheduling, routes, and aircraft utilization.

(C) Auditing of Operational Processes and Systems

a. The service providers shall develop and maintain processes and systems to acquire data with respect to its operations, products, and services to monitor the safety performance of the organization relevant to the auditing of operational processes and systems.

b. Audits are a means of collecting data to confirm whether or not actual practices are being followed within a department. Audits should typically involve the operational management responsible for the system(s) being audited. Audit procedures should include the responsibilities and expectations for planning, conducting, reporting results of audits, maintaining records of audit results, and processes for auditing contractors and vendors, as necessary.

c. *Scalability*

i. **Small**. The auditing process could be carried out periodically by the accountable executive/owner, key management person, or a trained employee as a collateral duty. Audits may also be carried out as a subfunction of normal business processes. For example, comparisons of deferred maintenance logs and repair part receipts are a form of safety auditing that are probably already accomplished routinely.

ii. **Medium**. In a medium-size organization, the auditing process can be accomplished by operational departmental personnel, on a periodic basis, as determined by the needs of operational decision makers.

(D) Evaluation of SMS and Operational Processes and Systems

a. The service providers shall develop and maintain processes and systems to acquire data with respect to its operations, products, and services to monitor the safety performance of the organization relevant to the evaluations of the SMS and operational processes and systems.

b. An evaluation is typically an independent review of the organization's processes, procedures, and systems. The evaluation process builds on the concepts of audit and inspection. An evaluation is an internal oversight tool that provides the accountable executive with a snapshot of the safety performance of the carrier's operational processes and systems, as well as SMS processes. The evaluation should include all available data about the organization, including information from the audits conducted by the operational management.

c. *Scalability*

i. **Small**. The evaluation process could be carried out periodically by the accountable executive/owner, a key management person, or designated employees as a collateral duty under the direction of the accountable executive.

ii. **Medium**. This process could be accomplished by the Safety Manager on a monthly, quarterly, or other periodic basis, as determined by the information needs of the accountable executive or other senior management decision makers. Personnel resources to perform the observations and data collection for evaluations could be from small, dedicated department or selected line personnel as a collateral duty.

(E) Investigation of Incidents and Accidents

a. The service providers shall develop and maintain processes and systems to acquire data with respect to its operations, products, and services to monitor the safety performance of the organization relevant to the investigation of incidents and accidents.

b. Investigations should be treated as an opportunity for organizational learning to prevent a repeat of errors and/or change organization processes so that mistakes do not recur. Investigations should focus on

what went wrong rather than who caused the error and emphasize improvement of safety performance.

c. *Scalability*
    i. **Small**. Investigations can be conducted by the accountable executive or assigned employees.
    ii. **Medium**. Investigations can be conducted by a Safety Department, with additional assigned line personnel providing technical expertise.

(F) Investigation of Potential Noncompliance

a. The service providers shall develop and maintain processes and systems to acquire data with respect to its operations, products, and services to monitor the safety performance of the organization relevant to the investigation of reports about potential noncompliance with regulatory standards or other safety risk controls established by the service provider through the safety risk management process established in Subpart C of this Chapter.

b. This subject is very similar to the one described above in that the focus of the investigation should reveal information that, when utilized correctly, will concentrate on objective facts to identify system deficiencies, help prevent future recurrences, and improve system reliability. It is not as important to identify "who did it" as it is for you to learn why it happened. Within this process, it is important to distinguish between error and intentional/willful noncompliant actions. Investigations of reports regarding potential noncompliance with regulatory standards or of inadequate safety risk controls established by the service providers should be mitigated through the SRM process established in Subpart C.

c. *Scalability*
    i. Methods of conducting investigations of potential noncompliance can be accomplished in a manner similar to that for investigations of accidents and incidents.

(G) Confidential Employee Reporting System

a. The service providers shall develop and maintain processes and systems to acquire data with respect to its operations, products, and services to monitor the safety performance of the organization relevant to a confidential employee reporting system in which employees can report hazards, issues, concerns, occurrences, incidents as well as propose solutions and safety improvements.

b. In order to be effective, the organization needs to establish and maintain an environment in which employees feel comfortable to report hazards, issues, and concerns, as well as occurrences, incidents, etc., and propose safety solutions and improvements. The accountable executive and management team need to encourage employees to report safety issues and not fear reprisals from management. Policies

that assure employees of fair treatment and clear standards of behavior are an essential part of the reporting process.

c. *Scalability*
   i. **Small.** An employee reporting system for a small organization need not be highly sophisticated to be effective. The employees might report a hazard either orally or in a note or email to their supervisor.
   ii. **Medium.** A medium organization will most likely have an electronic employee reporting system

(H) Analysis of Data

a. The service providers shall develop and maintain processes that analyze the data acquired through the processes identified from Subpart D, (2), (b), (A-G).

b. Analysis involves examining data acquired from various sources in order to make inferences about the safety performance of operational systems and the SMS.

c. *Scalability*
   i. **Small.** Analysis of the data gathered could be done by the accountable executive, the Safety manager, other individual managers, or other designated employees as a collateral duty.
   ii. **Medium.** Analysis of data could be done by the Safety Manager, other individuals within a Safety Department, or a person(s) within each department, and then shared with other departments and management during regularly scheduled meetings.

3) Safety Performance Assessment and The Management of Change

a. *Objective*

I To make decisions regarding safety performance with reference to safety objectives and regulatory compliance.

b. State Requirement

I The service providers must conduct assessments of its safety performance against its safety objectives, which include reviews by the accountable executive, to:

   i. Ensure compliance with the safety risk controls established by the service providers;
   ii. Evaluate the performance of the SMS.
   iii. Evaluate the effectiveness of the safety risk controls and identify any ineffective controls.
   iv. Identify changes in the operational environment that may introduce new hazards.
   v. Identify new hazards.

II Upon completion of the assessment, if ineffective controls or new hazards are identified under paragraph (I)(ii) through (I)(v) of this section, the service

providers must use the safety risk management process described in subpart C of this Chapter.

c. Discussion
   I Assessments can have one of the following general outcomes:
      i. Performance is acceptable and objectives are being met.
      ii. Performance is not acceptable, and analysis suggests that the problem lies with conformity with regulations or organization policy and procedures, or necessary resources have not been provided. In the event this occurs, corrective action under Subpart D, (4) would be warranted.
      iii. Conformity with the risk controls and regulations appears to be satisfactory; however, desired results are not being obtained. In the event that this occurs, the SRM processes would be triggered.
      iv. New or uncontrolled hazards are discovered. This may be due to new hazards having arisen since the system was designed or discovery of factors that were overlooked. In this case, as in the previous, the SRM processes must be followed.

d. Scalability
   I **Small and Medium**. As an organization grows in size, it is normal to have additional personnel performing safety, quality, or internal evaluation functions. An SMS does not change the number and types of personnel in these situations as much as it may change the way in which these persons and organizations work and interact.

4) Continuous Improvement of the SMS

a. *Objective*
   I To provide the organization's decision maker with a means to correct safety performance deficiencies identified in the safety performance assessment.

b. State Requirement

I The service providers shall establish and implement processes to correct safety performance deficiencies identified in the assessments conducted in the safety performance assessment.

c. *Discussion*
   I This process is designed to ensure that you are correcting substandard safety performance identified during the safety performance assessment in order to continuously improve safety performance.

d. *Scalability*
   I Continuous improvement decision making is an output of the performance assessment process. Therefore, the arrangements discussed for assessment apply to scalability for continuous improvement activities. The managers, committees,

or working groups that make assessment decisions would also lay out courses of corrective action.

SUBPART E: SAFETY PROMOTION

1) Introduction

a. *Objective*

I To provide employees with effective SMS training commensurate with their safety responsibilities and to create a means to deliver organization wide safety communication.

b. *Discussion*

I Because a key component of SMSs is the effective control of risk, every member of the service providers organization must understand and take responsibility for the role they play in controlling risk by their actions and behavior. These members should also have access to up-to-date safety information so that they can properly fulfill their roles.

2) Training and Education

a. *Objective*

I To assure that employees are competent to perform their SMS related duties.

b. State Requirement

I The service providers shall provide adequate training to each individual identified in Subpart B, (3) and (4) to ensure the individuals attain and maintain the competence necessary to perform their duties relevant to the operation and performance of the SMS.

c. Discussion

I Employees must receive initial safety training for them to understand and perform their safety duties. Recurrent training is also necessary to reinforce these skills.

II It is the service providers responsibility to determine its own training needs based on competency requirements. Management personnel, specifically designated by the accountable executive to ensure the SMS is fully implemented, may need to be trained first and may also need specialized training to fulfill their responsibilities. Determining the organization's training needs starts with a careful review of the safety policy, processes, and objectives. Everyone working within the scope of SMS should receive training commensurate with their position in the organization.

d. *Scalability*

I Organizations of all sizes may choose to either train their employees in house or contract to outside training sources. The training shall be made specific to the organization's SMS and operations.

3) Safety Communication

a. *Objective*

I To ensure employees have current and pertinent safety information.

b. State Requirement

I The service providers must develop and maintain means for communicating safety information that, at a minimum:

i. Ensures that employees are aware of the SMS policies, processes, and tools that are relevant to their responsibilities.
ii. Conveys hazard information relevant to the employee's responsibilities.
iii. Explains why safety actions have been taken.
iv. Explains why safety procedures are introduced or changed.

c. *Discussion*

I Effective communication involves adjusting the content of the communication and manner in which the information is delivered to match the target employee's role in the organization. The accountable executive must ensure that communication mechanisms are available and are effectively utilized. The delivery system should be appropriate according to the size and complexity of the organization.

d. *Scalability*

I **Small**. Communicating safety considerations to employees will probably be simple and direct. For example, the organization owner or the organization could conduct regular all-hands/employee meetings, such as "hangar talk sessions." Additionally, communication could include regular and periodic briefings to the employees, posting the status of safety issues on bulletin boards, emails to employees, and face-to-face meetings with management teams.

II **Medium**. Communication methods may be more structured than in small organizations. Safety information may be published throughout the organization by printed or electronic means. Safety meetings are likely more structured and formal. Communication and feedback may be formalized in order to provide information to individual employees as well as organization-wide information for cross-boundary issues and/or common hazards.

Chapter 4: Building a Safety Management System to Implementation

1. Overview

1.1 **Existing Service Providers.** For existing service providers, the process of creating an SMS and an implementation plan consists of the following:

a. Mapping and analyzing your existing organization,
b. Determining the extent to which your organization already complies with the requirements of this AIC,
c. Develop a plan to comply with the requirements of this AIC with which your organization does not already comply, and
d. Submitting the implementation plan to the Belize Department of Civil Aviation for approval.

1.2 **New Certification.** SMS implementation for a service provider applicant is different than that for a current certificate holder. The implementation plan requirement and the specific deadline for full SMS implementation is dependent on when your organization's formal application is accepted by the BDCA.

2. Mapping and Analyzing your organization

2.1 The first step in developing an SMS is mapping out and analyzing your organization. The initial mapping and analysis start by describing and documenting your organizational structure, operational environment, and specific functions of each department.

3. Conducting a GAP Analysis

3.1 To build an implementation plan, you need to understand your current state of compliance with BDCA requirements, as well as programs you may already have that could be used to satisfy the requirements of this AIC. A gap analysis involves analyzing and assessing your existing programs, systems, processes, and activities with respect to SMS requirements found in this AIC. Your organization may use any technique to identify what needs to be done to implement an SMS. If you choose to utilize a gap analysis, the completed gap analysis will provide input for development of your implementation plan.

3.2 In order to establish overall organizational compliance, the service provider should compare its current organizational processes to BDCA requirements. An implementation plan is then prepared to fill the gaps identified in the analysis. An optional BDCA Gap Analysis Template has been developed to assist service providers in their gap analysis efforts. An example is available in Appendix 1, AOC Holder Gap Analysis Template, but any method and/or tool that ensures complete coverage of the requirements established in this AIC may be used by the service provider.

4. Preparing an Implementation Plan

4.1 **What is an Implementation Plan?** An implementation plan is a document that outlines the steps that the service provider plans to take to ensure that it has an SMS that is acceptable to the BDCA by June 30, 2024. It ensures that resources are being allocated and monitors the development and implementation of the SMS. The accountable executive should be designated prior to the development of the implementation plan. The accountable executive is ultimately responsible for the implementation and performance of the SMS.

4.2 **What should an Implementation Plan cover?** The Implementation plan must cover the functions of the organization that directly impact aviation safety and the complete timeline of the SMS development. The implementation plan need not be complex or excessively detailed but should provide a basic roadmap to meet the State requirements established in this AIC. It should include:

a. Milestones for development processes and procedures required by this AIC.
b. Update procedures as SMS implementation progresses.
c. A reference to each requirement established in this AIC and specify how it already complies with specific state requirements or how the organization plans to comply with a state requirement.
d. Assigned responsibility for completing implementation tasks or actions.

5. Phased SMS Implementation Strategy

5.1 The BDCA shall adopt a phased implementation approach to ensure the establishment and implementation of the SMS for service providers.

5.2 The four levels of phased implementation shall be:

a. Level A – Planning and Organization
b. Level B – Basic Safety Management
c. Level C – Fully Functional SMS
d. Level D – Continuous Improvement of the System

5.3 **Implementation Levels – overview.** The overall objective of the levels is to develop and implement an integrated, comprehensive SMS for your entire organization

a. **Implementation Level A: Planning and Organization.** Level A begins when the management team commits to providing the resources necessary for full SMS implementation. Level A includes a thorough understanding of the organizational structure and a comparison (gap analysis) between the state requirements established in this AIC and your organizational structure. Your organization will develop an implementation plan to bridge your identified gaps. The final implementation plan must be approved by your Accountable Executive and Safety Manager. The deadline for Implementation Level A is June 30, 2024.
b. **Implementation Level B: Basic Safety Management.** Level B is where service providers develop and implement basic Safety Risk Management (SRM) and Safety Assurance (SA) processes and apply those processes to existing systems. This is often called the “reactive phase.” At this phase, your organization is able

to identify hazards and address unacceptable risk. This phase may take up to 12 months.

c. **Implementation Level C: Fully Functional SMS.** Level C is where service providers SRM process will be applied to the initial design of systems, processes, organizations, and services; development of new or changed operational procedures; and planned changes to operational processes. This is the "proactive/predictive" phase, where risks in future planned operations are addressed. Both the SRM and SA processes developed in Level B are now applied in a predictive manner. At the completion of Level C, you have a fully implemented SMS.

d. **Implementation Level D: Continuous Improvement.** At Level D, service providers are monitoring their SMS and operational processes. By the time service providers reach this level, all required SMS processes are already in place. A major objective of a successful SMS is to attain and maintain this continuous improvement status for the life of the organization.

Appendix 1: Gap Analysis Template

AOC HOLDER GAP ANALYSIS TOOL	
Regulatory Requirement: Chapter 3, Subpart D, (2), (b), (G) Confidential Reporting System	The AOC holder shall develop and maintain processes and systems to acquire data with respect to its operations, products, and services to monitor the safety performance of the organization relevant to a confidential employee reporting system in which employees can report hazards, issues, concerns, occurrences, incidents as well as propose solutions and safety improvements.
Process Objective	To provide a means for employees to communicate safety information to management.
System	**Organizational Compliance**
Flight Operations	Current
Operational Control (Dispatch/Flight Following)	None
Maintenance and Inspection	Current
Cabin Safety	N/A
Ground Handling and Servicing	None
Cargo Handling	N/A
Training	In progress

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This AIC expires upon the publication of Belize Civil Aviation Regulations, BCAR 19 or any other provisions related thereto.

**** END ****