Attachment A

Bermuda Civil Aviation Authority (BCAA)

SMS Assessment Guidance

**Purpose**

This guidance has been developed by BCAA to be used for assessing an organisation’s SMS. It can be used for initial assessment or ongoing surveillance and oversight. The guidance is based on a series of indicators to enable BCAA staff to assess the effectiveness of an organisation’s SMS. It requires an interaction with the organisation including face to face discussions and interviews with a cross section of people as part of the assessment. It recognises the difference in oversight methodologies from traditional compliance-based oversight to performance-based oversight that assesses not only compliance but also the effectiveness of the SMS.

It has been designed to indicate the expected standard of an organisation’s SMS in terms of compliance with the SMS regulation and its performance to effectively manage safety risk.

**Initial assessment**

An initial assessment will be based on a desk top review of the documentation that focuses on assessing whether the ‘indicators for compliance and performance’ are present. Once the desk top review has been satisfied an on-site visit will be carried out to assess whether the indicators are operating and overall effectiveness is achieved.

It is important to structure the assessment in a way that allows interaction with a number of people at different levels of the organisation to determine how effective aspects are throughout the organisation. For example, to determine the extent that the safety policy has been promulgated and understood by staff throughout the organisation will require interaction with a cross-section of staff.

BCAA may also request the regulated organisation to partially complete the tool as a self-assessment, including the ‘how it is achieved’ box, and submit this to the BCAA, who will decide whether it was sufficiently progressed to warrant an on-site visit and then verify and validate the organisations self-assessment. It is expected that all elements of the SMS are present for an initial assessment.

**Ongoing surveillance**

It is recognized that it will take some period of time for an organization to establish an effective SMS. Once the SMS is established it will be operating and over a period of time effectiveness will improve. The objective is for organizations to ensure that individual indicators of compliance and performance should be at least operating and that effectiveness is achieved in all of the elements over a period of time.

**Competencies**

BCAA staff will have training and competency in:

* Safety Management Systems based on the ICAO SMS Framework
* Understanding of Quality Management Systems, compliance and auditing
* Interview techniques
* Understanding of risk management
* Appreciation of the difference between compliance and performance
* Report writing techniques to allow narrative to be used to summarise the assessment.
* On-job-training during an actual SMS assessment.

**Instructions**

This assessment guide evaluates the compliance and effectiveness of the SMS through a series of indicators. It is set out using the 12 elements of the ICAO SMS Framework with the Framework definition followed by an effectiveness statement for that element. For each element, a series of ‘indicators for compliance and performance’ is listed followed by a series of ‘indicators of best practice’. Each indicator should be reviewed to determine whether the indicator is present and operating and effective, using the definitions and guidance set out below, so that the overall effectiveness of the element can be justified and supported.

The assessment would normally be used by BCAA staff to record and document the SMS. Alternatively it can be partially completed by the organisation to assess itself (“How it is achieved” column) and by the regulator to verify and validate the organisation’s assessment (“Verification” column and “Summary comments” box).

**Applicability**

The assessment guide can be used to evaluate any regulated organisation. However, due consideration should be given to the size, nature and complexity of an organisation in carrying out the assessment and that for smaller organisations some indicators may not be applicable.

**DEFINITIONS USED IN THE TOOL**

**Present**

There is evidence that the ‘indicator’ is clearly visible and is documented within the organisation’s SMS Documentation. The documentation indicate it is suitable based on the size, nature, complexity of the organisation.

**Operating**

There is evidence that the indicator is in use and an output is being produced.

**Effective**

There is evidence that the indicator is effective and achieving the desired outcome.

**Evidence**

Evidence includes documentation, reports, records of interviews and discussions. For example, for an indicator to be present the evidence is likely to be documented only, whereas for assessing whether it is operating it may involve assessing records as well as face to face discussions with personnel within an organisation.

‘How it is achieved’ should include summary statements and any references to documentation and records.

**Verification**

The Verification Column should be for BCAA to record any observations, conversations, records and documents sampled.

**Summary comments**Once all indicators have been assessed by BCAA, a judgement can be made on whether the overall effectiveness of the ICAO element has been achieved; this should be noted in the summary comments box.

**Implementation of SMS**

For most organisations SMS will take time to implement and several years to mature to a level where it is effective. The following diagram shows the different levels of SMS maturity as an organisation implements and develops its SMS and it also shows how the guidance is used to assess the indicators against the service provider’s SMS maturity.

The evaluation can be used in stages looking initially for whether the key elements of an SMS are present. At a later stage the SMS can be assessed for how well it is operating and effective but it also recognised best practice. Service Providers can always strive towards excellence as part of their continuous improvement programs and the evaluation allows that best practice to be assessed. Best practice indicators have been determined based on experience with many service providers.

**1 SAFETY POLICY AND OBJECTIVES**

**1.1 MANAGEMENT COMMITMENT AND RESPONSIBILITY**

The organisation shall define its safety policy which should be in accordance with international and national requirements, and which shall be signed by the Accountable Executive of the organisation. The safety policy shall reflect organisational commitments regarding safety, including a clear statement about the provision of the necessary human and financial resources for its implementation and be communicated, with visible endorsement, throughout the organisation. The safety policy shall include the safety reporting procedures and clearly indicate which types of behaviours are unacceptable and shall include the conditions under which disciplinary action would not apply. The safety policy shall be periodically reviewed to ensure its remains relevant and appropriate to the organisation.

**EFFECTIVENESS** is achieved when the organisation has defined its safety policy that clearly states its intentions, safety objectives and philosophies and there is visible evidence of safety leadership and management ‘walking the talk’ and demonstrating by example.

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| **INDICATORS OF COMPLIANCE + PERFORMANCE** | **P** | **O** | **E** | **How it is achieved** | **Verification** |
| 1.1.1 | There is a safety policy that includes a commitment towards achieving the highest safety standards signed by the Accountable Executive. |  |  |  |  |  |
| 1.1.2 | The organisation has based its safety management system on the safety policy. |  |  |  |  |  |
| 1.1.3 | The Accountable Executive and the senior management team promote and demonstrate their commitment to the Safety Policy through active and visible participation in the safety management system. |  |  |  |  |  |
| 1.1.4 | The safety policy is communicated to all personnel with the intent that they are made aware of their individual contributions and obligations with regard to Safety. |  |  |  |  |  |
| 1.1.5 | The safety policy includes a commitment to observe all applicable legal requirements, standards and best practice providing appropriate resources and defining safety as a primary responsibility of all Managers. |  |  |  |  |  |
| 1.1.6 | The safety policy actively encourages safety reporting. |  |  |  |  |  |
| 1.1.7 | The safety policy states the organisation’s intentions, management principles and commitment to continuous improvement in the safety level. |  |  |  |  |  |
| 1.1.8 | The safety policy is reviewed periodically to ensure it remains current. |  |  |  |  |  |
| 1.1.9 | There is commitment of the organisation’s senior management to the development and ongoing improvement of the safety management system. |  |  |  |  |  |
| 1.1.10 | A disciplinary policy has been defined that clearly identifies the conditions under which punitive action would be considered (e.g. illegal activity, negligence or wilful misconduct). |  |  |  |  |  |
| 1.1.11 | There is evidence of decision making, actions and behaviours that reflect a positive safety culture. |  |  |  |  |  |

**1.2 SAFETY ACCOUNTABILITIES**

The organisation shall identify the Accountable Executive who, irrespective of other functions, shall have ultimate responsibility and accountability, on behalf of the organisation, for the implementation and maintenance of the SMS. The organisation shall also identify the safety accountabilities of all members of senior management, irrespective of other functions, as well as personnel, with respect to the safety performance of the SMS. Safety responsibilities, accountabilities and authorities shall be documented and communicated throughout the organisation, and shall include a definition of the levels of management with authority to make decisions regarding safety risk tolerability.

**EFFECTIVENESS** is achieved when there are clear lines of safety accountabilities throughout the organisation including an accountable person who has ultimate accountability for the SMS and the Accountable Executive and management team fully understand the risks faced by the organisation.

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| **INDICATORS OF COMPLIANCE + PERFORMANCE** | **P** | **O** | **E** | **How it is achieved** | **Verification** |
| 1.2.1 | An Accountable Executive has been appointed with full responsibility and ultimate accountability for the SMS to ensure it is properly implemented and performing effectively. |  |  |  |  |  |
| 1.2.2 | The Accountable Executive has control of the financial and human resources required for the proper implementation of an effective SMS. |  |  |  |  |  |
| 1.2.3 | The Accountable Executive is fully aware of their SMS roles and responsibilities in respect of the safety policy, safety standards and safety culture of the organisation. |  |  |  |  |  |
| 1.2.4 | Safety accountabilities, authorities and responsibilities are defined and documented throughout the organisation. |  |  |  |  |  |
| 1.2.5 | Personnel at all levels are aware of and understand their safety accountabilities, authorities and responsibilities regarding all safety management processes, decisions and actions. |  |  |  |  |  |
| 1.2.6 | Safety management is shared across the organisation (and is not just the responsibility of the Safety Manager and their team). |  |  |  |  |  |
| 1.2.7 | There are documented management organisational diagrams and job descriptions for all personnel. |  |  |  |  |  |

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| **1.2 SUMMARY COMMENTS** |

**1.3** **APPOINTMENT OF KEY PERSONNEL**

The organisation shall identify a Safety Manager to be the responsible individual and focal point for the implementation and maintenance of an effective SMS.

**EFFECTIVENESS** is achieved when the SMS is facilitated by the responsible individual and there is a safety structure of key personnel from the various operational areas of the organisation. Business area heads are actively engaged in the safety management system.

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| **INDICATORS OF COMPLIANCE + PERFORMANCE** | **P** | **O** | **E** | **How it is achieved** | **Verification** |
| 1.3.1 | A competent person with the appropriate knowledge, skills and experience has been nominated to manage the operation of the SMS.  |  |  |  |  |  |
| 1.3.2 | The person managing the operation of the SMS fulfils the required job functions and responsibilities. |  |  |  |  |  |
| 1.3.3 | There is a direct reporting line between the Safety Manager and the Accountable Executive. |  |  |  |  |  |
| 1.3.4 | The organisation has allocated sufficient resources to manage the SMS including manpower for safety investigation, analysis, auditing and promotion.  |  |  |  |  |  |
| 1.3.5 | Personnel in key safety roles are kept current through additional training and attendance at conferences and seminars. |  |  |  |  |  |

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| **1.3 SUMMARY COMMENTS** |

**1.4 CO-ORDINATION OF EMERGENCY RESPONSE PLANNING**

The organisation 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 organisations it must interface with during the provision of its service.

**EFFECTIVENESS** is achieved when the organisation has an emergency response plan that is appropriate to the organisation and is regularly tested and updated including coordination with other organisations as appropriate.

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| **INDICATORS OF COMPLIANCE + PERFORMANCE** | **P** | **O** | **E** | **How it is achieved** | **Verification** |
| 1.4.1 | An emergency response plan (ERP)that reflects the size, nature and complexity of the operation has been developed and defines the procedures, roles, responsibilities and actions of the various organisations and key personnel. |  |  |  |  |  |
| 1.4.2 | Key personnel in an emergency have easy access to the ERP at all times. |  |  |  |  |  |
| 1.4.3 | The organisation has a process to distribute the ERP procedures and to communicate the content to all personnel. |  |  |  |  |  |
| 1.4.4 | The ERP is periodically tested for the adequacy of the plan and the results reviewed to improve its effectiveness. |  |  |  |  |  |

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| **1.4 SUMMARY COMMENTS** |

**1.5 SMS DOCUMENTATION**

The organisation shall develop and maintain SMS documentation describing the safety policy and objectives, the SMS requirements, the SMS processes and procedures, the accountabilities, responsibilities and authorities for processes and procedures, and the SMS outputs. The organisation may incorporate the SMS documentation into its existing organisation documentation, or may develop and maintain a safety management system manual (SMSM) to communicate its approach to the management of safety throughout the organisation.

**EFFECTIVENESS** is achieved when the organisation has SMS documentation that describes their approach to the management of safety that is used throughout the organisation and is regularly reviewed and updated. The documentation meets the safety objectives of the organisation.

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| **INDICATORS OF COMPLIANCE + PERFORMANCE** | **P** | **O** | **E** | **How it is achieved** | **Verification** |
| 1.5.1 | There is documentation that describes the safety management system and the interrelationships between all of its elements. |  |  |  |  |  |
| 1.5.2 | SMS documentation is regularly reviewed and updated with appropriate version control in place. |  |  |  |  |  |
| 1.5.3 | SMS documentation is readily available to all personnel. |  |  |  |  |  |
| 1.5.4 | The SMS documentation details and references the means for the storage of other SMS related records. |  |  |  |  |  |

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| **1.5 SUMMARY COMMENTS** |

**2 SAFETY RISK MANAGEMENT**

**2.1** **HAZARD IDENTIFICATION**

The organisation shall develop and maintain a formal process that ensures that aviation safety hazards are identified. This should include the investigation of incidents and accidents to identify potential hazards. Hazard identification shall be based on a combination of reactive, proactive and predictive methods of safety data collection.

**EFFECTIVENESS** is achieved when aviation safety hazards are being identified and reported throughout the organization. Hazards are captured in a hazard register and assessed in a systematic and timely manner.

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| **INDICATORS OF COMPLIANCE + PERFORMANCE** | **P** | **O** | **E** | **How it is achieved** | **Verification** |
| 2.1.1 | The organisation has a reporting system to captures errors, hazards and near misses that is simple to use and accessible to all personnel. |  |  |  |  |  |
| 2.1.2 | The organisation has proactively identified all the major hazards and assessed the risks related to its current activities. |  |  |  |  |  |
| 2.1.3 | The safety reporting system provides feedback to the reporter of any actions taken (or not taken) and, where appropriate, to the rest of the organisation. |  |  |  |  |  |
| 2.1.4 | Safety investigations are carried out to identify underlying causes and potential hazards for existing and future operations. |  |  |  |  |  |
| 2.1.5 | Safety reports are acted on in a timely manner. |  |  |  |  |  |
| 2.1.6 | Hazard identification is an ongoing process and involves all key personnel and appropriate stakeholders. |  |  |  |  |  |
| 2.1.7 | Personnel responsible for investigating reports are trained in investigation techniques. |  |  |  |  |  |
| 2.1.8 | Investigations establish causal/contributing factors (why it happened, not just what happened). |  |  |  |  |  |
| 2.1.9 | Personnel express confidence and trust in the organisations reporting policy and process. |  |  |  |  |  |
| 2.1.10 | The hazards identified are documented and kept available for future reference.  |  |  |  |  |  |
| 2.1.11 | The organisation uses the results of investigation of incidents and accidents as a source for hazard identification in the system. |  |  |  |  |  |

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| **2.1 SUMMARY COMMENTS** |

**2.2 RISK ASSESSMENT AND MITIGATION**

The organisation shall develop and maintain formal process that ensures analysis, assessment and control of safety risks in operations to an acceptable level.

**EFFECTIVENESS** is achieved when there is a formal process that ensures analysis, assessment and control of the safety risks in operations to an acceptable level.

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| **INDICATORS OF COMPLIANCE + PERFORMANCE** | **P** | **O** | **E** | **How it is achieved** | **Verification** |
| 2.2.1 | There is a structured process for the management of risk that includes the assessment of risk associated with identified hazards, expressed in terms of severity and probability. |  |  |  |  |  |
| 2.2.2 | There are criteria for evaluating the level of risk the organisation is willing to accept. |  |  |  |  |  |
| 2.2.3 | The organisation has risk control strategies that include hazard elimination, risk control, risk avoidance, risk acceptance, risk mitigation, and where applicable an action plan. |  |  |  |  |  |
| 2.2.4 | Mitigating actions resulting from the risk assessment, including timelines and allocation of responsibilities are documented. |  |  |  |  |  |
| 2.2.5 | Risk management is routinely applied in decision making processes. |  |  |  |  |  |
| 2.2.6 | Effective and robust mitigations and controls are implemented. |  |  |  |  |  |
| 2.2.7 | Risk assessments and risk ratings are appropriately justified. |  |  |  |  |  |
| 2.2.8 | Senior management has visibility of medium and high risk hazards and their mitigation and controls. |  |  |  |  |  |

**3 SAFETY ASSURANCE**

**3.1 SAFETY PERFORMANCE MONITORING AND MEASUREMENT**

The organisation shall develop and maintain the means to verify the safety performance of the organisation and to validate the effectiveness of safety risks controls. The safety performance of the organisation shall be verified in reference to the safety performance indicators and safety performance targets of the SMS.

**EFFECTIVENESS** is achieved when the organisation has developed a series of safety performance indicators that are appropriate to the type of operation. There is a means to measure and monitor trends and take appropriate action when necessary.

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| **INDICATORS OF COMPLIANCE + PERFORMANCE** | **P** | **O** | **E** | **How it is achieved** | **Verification** |
| 3.1.1 | Safety objectives have been established. |  |  |  |  |  |
| 3.1.2 | Safety performance indicators have been defined, promulgated and are being monitored and analysed for trends. |  |  |  |  |  |
| 3.1.3 | Risk mitigations and controls are being verified/audited to confirm they are working and effective. |  |  |  |  |  |
| 3.1.4 | Safety audits are carried out that focus on the safety performance of the organisation and its services and assess normal operations. |  |  |  |  |  |
| 3.1.5 | Safety objectives and performance indicators are reviewed and updated periodically. |  |  |  |  |  |
| 3.1.6 | Safety objectives and targets are specific, measurable, agreed to, relevant and time-based. |  |  |  |  |  |
| 3.1.7 | Information obtained from safety assurance and compliance monitoring activities feeds back into the safety risk management process. |  |  |  |  |  |
| 3.1.8 | Safety assurance will monitor the effectiveness of risk controls including those applied by contracted organisations. |  |  |  |  |  |

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| **3.1 SUMMARY COMMENTS** |

**3.2 THE MANAGEMENT OF CHANGE**

The organisation shall develop and maintain a formal process to identify changes within the organisation and its operation, which may affect established processes and services, to describe the arrangements to ensure safety performance before implementing changes, and to eliminate or modify safety risk controls that are no longer needed to effective due to changes in the operational environment.

**EFFECTIVENESS** is achieved when the organisation uses the safety risk management system to proactively assess all major changes to the organisation and its operations.

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| **INDICATORS OF COMPLIANCE + PERFORMANCE** | **P** | **O** | **E** | **How it is achieved** | **Verification** |
| 3.2.1 | The organisation has established a process and conducts formal hazard analyses and risk assessments for major operational changes, major organisational changes and changes in key personnel. |  |  |  |  |  |
| 3.2.2 | Safety Case/Risk assessments are aviation safety focused. |  |  |  |  |  |
| 3.2.3 | Key stakeholders are involved in the change management process. |  |  |  |  |  |
| 3.2.4 | During the change management process previous risk assessments and existing hazards are reviewed for possible effect. |  |  |  |  |  |

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| **3.2 SUMMARY COMMENTS** |

**3.3 CONTINUOUS IMPROVEMENT OF THE SMS**

The organisation shall develop and maintain a formal process to identify the causes of substandard performance of the SMS, determine the implications of substandard performance of the SMS, determine substandard performance in operations, and eliminate or mitigate such causes.

**EFFECTIVENESS** is achieved when the organisation routinely monitors the SMS performance to identify potential areas of improvement and the outcomes of this process lead to improvements to the safety management system.

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| **INDICATORS OF COMPLIANCE + PERFORMANCE** | **P** | **O** | **E** | **How it is achieved** | **Verification** |
| 3.3.1 | The Safety Committee has the necessary authority to make decisions related to the improvement and effectiveness of the SMS. |  |  |  |  |  |
| 3.3.2 | The SMS is periodically reviewed for improvements in safety performance. |  |  |  |  |  |

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| **3.3 SUMMARY COMMENTS**  |

**4 SAFETY PROMOTION**

**4.1** **TRAINING AND EDUCATION**

The organisation shall 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.

**EFFECTIVENESS** is achieved when all personnel are trained and competent to perform their SMS related duties and the training programme is monitored for its effectiveness and updated.

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| **INDICATORS OF COMPLIANCE + PERFORMANCE** | **P** | **O** | **E** | **How it is achieved** | **Verification** |
| 4.1.1 | There is a documented process to identify Safety Management training requirements so that personnel are competent to perform their duties. |  |  |  |  |  |
| 4.1.2 | There is a process in place to measure the effectiveness of training and to take appropriate action to improve subsequent training. |  |  |  |  |  |
| 4.1.3 | There is a process that evaluates the individual’s competence and takes appropriate remedial action when necessary. |  |  |  |  |  |
| 4.1.4 | Training includes initial and recurrent training. |  |  |  |  |  |
| 4.1.5 | A training record is maintained for all personnel trained. |  |  |  |  |  |

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| **4.1 SUMMARY COMMENTS**  |

**4.2 SAFETY COMMUNICATION**

The organisation shall develop and maintain formal means for safety communication that ensures that all personnel are fully aware of the SMS, conveys safety critical information, and explains why particular safety actions are taken and why safety procedures are introduced or changed.

**EFFECTIVENESS** is achieved when all personnel are aware of the SMS, safety critical information and their role in respect of aviation safety.

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| **INDICATORS OF COMPLIANCE + PERFORMANCE** | **P** | **O** | **E** | **How it is achieved** | **Verification** |
| 4.2.1 | Safety plans and strategies are communicated throughout the organisation to all personnel. |  |  |  |  |  |
| 4.2.2 | Significant events and investigation outcomes associated with the organisation are communicated to all personnel, including contracted organisations where appropriate. |  |  |  |  |  |