

Trinidad and Tobago  
Civil Aviation Authority



# TTCAA Advisory Circular

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**SUBJECT: GUIDANCE ON DEVELOPING A SAFETY MANAGEMENT SYSTEM**

**TTCAA Advisory Circular TAC-044**

**Date: 06/11/15**

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## **PURPOSE**

1. The purpose of this TTCAA Advisory Circular (TAC) is to provide guidance to organizations in establishing a Safety Management System as required by the TTCARs.

## **APPLICABILITY**

2. (1) Under TTCAR No.12:52, an aerodrome operator is required to have a safety management system that complies with the standards set out in the Manual of Aerodrome Standards. The safety management system must be properly described in the aerodrome manual and be established by 1 January 2007.

(2) Under TTCAR No.15:5, a safety management programme is required to achieve an acceptable level of safety for ATS.

(3) Under ICAO Annex 6:3.2, from 1 January 2009, operators will be required, as part of their safety programme, to implement a safety management system acceptable to the Authority.

(4) This TAC applies to aerodrome operators, air traffic services providers, holders of air operator certificates and applicants for an air operator certificate.

## **BACKGROUND**

3. (1) A safety management system is an organized approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

(2) In any system it is necessary to set and measure performance outcomes in order to determine whether the system is functioning in accordance with design expectations. To determine whether a system is functioning as designed requires knowledge of the expected outcome and a method of measuring any deviation from it. The deviation can then be corrected through a feedback loop to ensure that the desired outcome is re-established. The desired outcome can be maintained by having continuous monitoring and feedback to correct any deviation as it occurs or even predict when it is likely to occur and take appropriate action.

## **MINIMUM REQUIREMENTS OF A SAFETY MANAGEMENT SYSTEM**

4. (1) A safety management system is no different from any other system in terms of the principles described in paragraph 3(2). In the application of a safety management system at an organization it is necessary to ensure that the measures which are expected to assure an acceptable level of safety do in fact, do so. The safety performance of the operation needs to be monitored, both proactively and reactively, to ensure that an acceptable level of safety continues to be achieved. This safety performance monitoring will be used as feedback to improve the system.

(2) As a minimum, a safety management system shall:

(a) Identify safety hazards;

(b) Ensure that remedial action necessary to maintain an acceptable level of safety is implemented;

(c) Provide for continuous monitoring and regular assessment of the safety levels achieved; and

(d) Aim to make continuous improvements to the overall level of safety.

(3) A key component of any SMS is to ensure compliance with relevant regulations and standards. Many of these requirements, including the operational provisions, will form part of the SMS.

(4) There are several ways of meeting the organization's needs for safety management. It is important to note that there is no single model that fits all situations. Size, complexity and type of operation as well as the corporate safety culture and operating environment will influence the structure most suited for the individual organization. For example, every aerodrome is unique in respect of parameters such as size of operation, layout of facilities, frequency of aircraft movements, therefore in the case of a safety management system for an aerodrome, it must be specific to the aerodrome and address site specific features.

### **SAFETY CULTURE IN A SAFETY MANAGEMENT SYSTEM**

5. (1) Effective safety management requires more than establishing an appropriate organizational structure and promulgating rules and procedures to be followed. It requires a genuine commitment to safety on the part of executive management. The attitudes, decisions and methods of operation at the policy-making level demonstrate the priority given to safety. The initial indication of corporate commitment to safety is in the organization's stated safety policy and objectives and whether staff believe that concerns for safety might, on occasion, override production objectives.

(2) A key indicator of management's commitment to safety is the adequacy of resource allocations. Establishing an appropriate management structure, assigning responsibilities and accountabilities, and allocating appropriate resources must be consistent with the organization's stated safety objectives. Sufficient experienced staff, relevant and timely training, and funding for the necessary equipment and facilities are fundamental to creating a working environment in which everyone takes safety seriously.

(3) Before an organization can effectively implement an effective SMS, it needs to possess an appropriate safety culture. For an effective safety culture, there must be clear reporting lines, clearly defined duties and well-understood procedures. Personnel must fully understand their responsibilities and know what to report, to whom and when. Executive management reviews not only the financial performance of the organization but also its safety performance.

(4) Safety culture relates to such intangibles as personal attitudes and the style of the organization. It is therefore difficult to measure, especially when the principal criterion for measuring safety is the absence of accidents and incidents. Yet, personal attitudes and corporate style enable or facilitate the unsafe acts and conditions that are the precursors to accidents and incidents.

### **A STEP BY STEP APPROACH TO ESTABLISHING A SAFETY MANAGEMENT SYSTEM**

6. (1) This TAC will give guidance on ten steps for the establishment of an effective safety management system. It is not expected that all the functions of an effective SMS would be implemented simultaneously. Ideally, the steps would be addressed gradually. This would allow the organization to adapt to, and become acquainted with, the requirements and results of each step before proceeding. As the various steps are implemented, progress may be monitored using the confirmation checklist provided at Appendix A to highlight the necessary actions.

(2) The ten steps are:

(a) Step 1 - Planning;

(b) Step 2 - Executive Management Commitment to Safety;

- (c) Step 3 - Organization;
- (d) Step 4- Hazard Identification;
- (e) Step 5 - Risk Management;
- (f) Step 6 - Investigation Capability;
- (g) Step 7 - Safety Analysis;
- (h) Step 8 - Safety Promotion and Training;
- (i) Step 9 - Safety Management Documentation and Information Management;
- (j) Step 10 - Safety Oversight and Safety Performance Monitoring.

## **STEP 1 - PLANNING**

7. (1) An organization's attitude to safety — its safety culture — is established from the outset by the extent to which executive management accepts responsibility for safe operations, particularly the proactive management of risk. In the planning phase, executive management can demonstrate its commitment by the appointment of a small planning team of line manager under the Safety Manager to assess the organization's current capabilities for safety management (including experience, knowledge, processes, procedures, resources, etc.). For example, there may already be internal procedures in place for the investigation of incidents, hazard identification, safety monitoring, etc. Existing procedures should be reviewed and shortcomings identified and rectified for integration within the SMS. It is important that the organization reuse as many existing procedures as practicable, as there is no need to replace known and effective procedures and processes. By building on such an experience base, the development of an SMS will be less disruptive. During this review process, the planning team should also examine best industry practices for safety management by consulting with other organizations of similar size and mission.

(2) A planning team of experienced managers should be assigned to define safety performance indicators and set safety performance targets for the organization. These indicators and targets must be realistic — taking into account the organization's size, complexity, type of operation, resource base, etc. A realistic time line for meeting the targets must also be agreed upon. Even though setting the indicators and targets may be difficult, they provide the basis for evaluating the success of the SMS.

(3) Based on the agreed safety targets, the planning team can develop a realistic strategy for meeting those needs and be a catalyst for the involvement of all staff in the organization, and prepare the way for effectively implementing change. The strategy should combine both reactive and proactive elements. Consideration should be given to the types of safety processes and safety activities that will be sought (as outlined in the 10 steps). Depending on the number of new initiatives being considered and the resource availability, a phased approach may be desirable.

(4) The results of the planning phase should be a detailed plan for the development and implementation of the SMS. Typically, the planning time frame will be one to three years. The plan should consider such aspects as safety objectives, safety strategy, safety management processes and activities, resource implications and time lines.

## **STEP 2 - EXECUTIVE MANAGEMENT COMMITMENT**

8. (1) Regardless of the size, complexity or type of operation, the success of the SMS depends on the extent to which executive management devotes the necessary time, resources and attention to safety as a core management issue. What management visibly does for safety will determine the safety culture (and hence the safety performance) of the organization.

(2) Safety policies and objectives set out what the organization is striving to achieve and how it is going to get there. Management's commitment to safety is first demonstrated to all personnel of the organization through its stated safety policy and objectives.

### ***Safety Policy***

9. (1) Management's commitment to safety should be formally expressed in a statement of the organization's *safety policy*. This should reflect the organization's philosophy of safety management and become the foundation on which the organization's SMS is built. The safety policy outlines the methods and processes that the organization will use to achieve desired safety outcomes, and it serves as a reminder as to "*how we do business here*". The creation of a positive safety culture begins with the issue of a clear, unequivocal direction.

(2) A safety policy may take different forms but will typically include statements concerning:

- (a) The overall safety objective of the organization;
- (b) The commitment of executive management to the goal of ensuring that all aspects of the operation meet safety performance targets;
- (c) A commitment by the organization to provide the necessary resources for the effective management of safety;
- (d) A commitment by the organization to make the maintenance of safety its highest priority; and
- (e) The organization's policy concerning responsibility and accountability for safety at all levels of the organization.

(3) The safety policy should be a written document that is issued under the authority of the highest level of management of the organization, approved by the regulatory authority and communicated to all staff. A sample corporate safety policy statement is included in Appendix B. This statement presents a tangible indication of executive management's commitment to safety. An alternative to this type of safety policy is a statement of commitment by the Chief Executive Officer (CEO) to the maintenance of the highest standards of safety. An example of topics that might be included in a CEO's statement of commitment to safety is included in Appendix C.

(4) In preparing a safety policy, executive management should consult widely with key staff members in charge of safety-critical areas. Consultation ensures that the document is relevant to staff and gives them a sense of ownership in it. Corporate safety policy must also be consistent with relevant civil aviation regulations.

### ***Safety Objectives***

10. Safety objectives should be clearly stated and documented along with the processes necessary to meet the objectives. These should include organization of the SMS, including the staffing arrangements, and the assignment of individual and team responsibilities on safety matters. Performance targets should be realistic and attainable.

## **STEP 3 - ORGANIZATION**

11. (1) One of the first tasks of the accountable manager is to appoint one person within the organization to be responsible for managing the SMS. This person is the Safety Manager whose responsibilities must be clearly defined. These responsibilities will include promoting safety awareness and

ensuring that safety management has the same level of priority throughout the organization as any other process. In this respect he should report directly to the Chief Executive Officer so that any reports, recommendations or urgent issues which impact safety can be assured of the highest level of consideration. A sample job description of a Safety Manager is at Appendix D

(2) It is important to note however, that safety management is a responsibility that is shared by each line manager and supported by the Safety Manager. Therefore, executive management should not hold the Safety Manager accountable for line managers' action or inaction. The safety manager's accountability would be to render effective staff support to all line managers to ensure the success of the SMS; he should not be held accountable for the safety performance of the organization.

(3) Depending on the size of the organization, the safety manager may need to be supported by a safety action team or safety committee. This team would act as a source of expertise and advice particularly with respect to safety recommendations and preparation of reports to executive management.

(4) The committee would also act as a forum for discussing organizational safety related issues. Ideally the committee would be chaired by the safety manager and meet on a regular basis. Minutes and action items are to be recorded as part of the normal functioning of the committee and made available to staff.

(5) Having staff who are competent for the tasks they are assigned to perform is a fundamental prerequisite for safety. Competency requirement and where appropriate, licensing requirements should be documented in the job description of all safety related positions. Line managers would be accountable for ensuring the continuing competence of personnel in safety related positions within their area of responsibility and for ensuring that any recurrent training requirements are met. All training programmes should include training in those aspects of the SMS and associated procedures that are relevant to the position.

#### **STEP 4 - HAZARD IDENTIFICATION**

**12.** (1) A hazard is "a source of potential or a situation with a potential to cause loss". Effective hazard identification programmes are fundamental to effective safety management. Hazard identification schemes may be reactive or proactive in nature and include voluntary incident reporting, safety surveys, operational safety audits, safety assessments, brainstorming by small groups, checklist reviews of standards, procedures and systems. Trend monitoring, occurrence reporting and investigations are essentially reactive. Other hazard identification processes actively seek feedback by observing and analyzing routine day-to-day operations. An organization's willingness to utilize several different hazard identification processes is an example of its commitment to safety. There are many ways of identifying hazards at the organization.

(2) To be successful, the hazard identification process must take place within a non-punitive safety culture. Management's interest is in learning of potential weaknesses in the system's safety net that could lead to an accident or otherwise compromise the efficiency of the operation. Blame is only an issue when individuals are culpable of reckless or negligent behaviour. If workers operate in a climate of fear of punishment for normal slips, lapses and mistakes in their daily duties, errors and unsafe conditions are likely to remain hidden.

(3) Some hazards may be obvious, such as ineffective bird management at an aerodrome, or they may be more subtle, such as utilizing inexperienced or untrained staff for any task that may have an impact on safety of operations.

## **STEP 5 - RISK MANAGEMENT**

**13. (1)** Risk management comprises three essential elements: hazard identification, risk assessment and risk mitigation. When hazards have been identified at the organization, they then need to be critically assessed and ranked in order of risk potential. Factors to consider are the likelihood of occurrence and the severity of the consequences. In assessing risks, the defenses that have been put in place to protect against hazards must also be evaluated. A determination can then be made on whether the risk is being appropriately managed or controlled. If the risks are at an acceptable level, the operation may continue. If they are unacceptable, then strategies must be put in place to remove or manage the hazard. Having decided upon a course of action, management must then communicate its safety concerns and planned actions to all affected persons.

(2) It is also important to recognize that hazard identification and risk assessment are not static processes. They need to be performed whenever –

- (a) A major organizational change is being planned;
- (b) The organization is undergoing rapid expansion or contraction;
- (c) The introduction of new equipment or facilities is being considered;
- (d) Existing equipment is being decommissioned;
- (e) The introduction of new procedures is being planned;
- (f) Existing procedures are being revised;
- (g) Changes to key personnel are taking place;

## **STEP 6 - INVESTIGATION CAPABILITY**

**14. (1)** Investigations of occurrences can identify warning signs, enabling similar warning signs to be recognized in the future before they lead to safety occurrences. An effective SMS includes the capability to investigate such occurrences from an organization's perspective using a structured methodology in order to efficiently assess and prioritize the risks and to recommend any necessary actions in the interest of safety. Determination of blame is not relevant to such safety investigations.

(2) The procedures for investigating reports need to be clearly spelt out so they are transparent to all users.

(3) Identifying the lessons to be learned from a safety occurrence requires an understanding of not just what happened, but why it happened. A complete understanding of why an occurrence happened requires an investigation that looks beyond the obvious causes and focuses on identifying all the contributory factors, some of which may be related to weaknesses in the system's defenses or other organizational issues.

**15. (1)** The SMS needs to include an ongoing hazard reporting, recording and action taken process. Staff should be able to report hazards or safety concerns as they become aware of them.

(2) For best results, and greatest acceptance amongst staff, the hazard reporting system should be just, confidential, simple and convenient to use. Once hazards are reported, they need to be acknowledged and investigated. Feedback about the hazard also needs to be provided in an appropriate manner. Feedback is essential in letting staff know that the reporting system is working.

## **STEP 7 - SAFETY ANALYSIS CAPABILITY**

16. Safety analysis involves a methodical and objective evaluation of facts in order to arrive at valid conclusions. Safety analysis has application in such areas as:

- (a) Trend analysis;
- (b) Occurrence investigation;
- (c) Hazard identification;
- (d) Risk assessment;
- (e) Evaluation of risk mitigation measures; and
- (f) Monitoring of safety performance.

## **STEP 8 - SAFETY PROMOTION AND TRAINING**

17. (1) The person designated as safety manager in the organization would be the most logical person to promote safety in the organization. Staff must be kept informed about current safety issues through relevant training, safety literature, participation in safety courses and seminars, etc. For new employees, initial training should describe the organization's SMS functions and emphasize "how we do business here". More experienced employees may need refresher training for particular safety processes where their direct involvement may be required, Regardless of their experience level, all employees benefit from feedback on hazards identified, safety actions taken, safety lessons learned, etc.

(2) The SMS should provide for staff training and competency, including the review and evaluation of the adequacy of the training and the system for testing competencies. Both induction and recurrent training need to be considered. New employees should be trained in the organizations safety philosophies and SMS as part of "job specific training". Through this process they will need to be encouraged to adopt the safety practices of the organization. Recurrent training is an essential element of any SMS, as it reinforces the positive aspects of a safe working environment and safe work practices.

(3) The SMS would also need to detail the procedures for training of staff when new equipment, new facilities, new technologies or processes are being introduced to the organization.

## **STEP 9 - SAFETY MANAGEMENT DOCUMENTATION AND INFORMATION MANAGEMENT**

18. (1) A safety management manual or document is required to describe the safety management system and make clear the relationship of safety management within the organization and how it relates to the organization's safety policy. The manual should document all aspects of the SMS, including the safety policy, individual safety accountabilities, safety procedures, etc. Where the SMS Manual is a stand-alone document it should be subject to document control procedures, with a person assigned as the Manual Controller. A system will need to be put in place to update and distribute the document.

(2) Operating a safety management system generates significant amounts of information in both paper and electronic forms, such as occurrence reports, hazard identification notices, accident statistics, etc.. There must be a disciplined approach to documentation and information management. With careful management, this information can serve the SMS well, particularly the risk management process. Without the tools and skills to record, store, secure and retrieve the necessary information, such information is essentially useless and its collection a waste of time. The SMS will also necessitate a reliable recording system for all internal safety audits, technical inspections and specialist reports. The system should enable easy retrieval of this information

(3) The SMS document should also clearly indicate the process the organization has in place for monitoring and updating the manual in line with changes in the Regulations that govern its activities.

(4) It is important that the organization maintain a record of the measures taken to control risks and to ensure that adequate levels of safety are maintained. Records should be maintained in sufficient detail to ensure traceability of all safety-related decisions.

**STEP 10 - SAFETY OVERSIGHT AND SAFETY PERFORMANCE MONITORING**

19. (1) It is the responsibility of the Chief Executive Officer/General Manager of the organization to ensure that the SMS is reviewed and evaluated at regular intervals. As already emphasized, feedback is an essential component of any system and performance monitoring allows validation of the SMS by confirming that personnel are doing what is expected of them and that the organization is achieving its safety objectives. Feedback and performance monitoring can be achieved through internal safety audits or assessments to check that correct procedures are being followed. They should also include a check of the activities of third parties such as contractors and consultants.

(2) Procedures that provide for internal safety audit of the system need to be clearly stated so that there is no confusion over the role of the auditor or audit team.

(3) A second aspect of the internal safety audit process is the thorough investigation of all near misses incidents and accidents. Remembering of course that the primary purpose of the investigation is to uncover the root causes and contributing factors to the incident – not to apportion blame.

(4) Every incident/ accident offers the opportunity to learn, not only what happened, but also why it happened. This is only revealed however, if incidents and accidents are thoroughly investigated. A full and open investigation will reveal the human and organizational factors behind the incident.

***TTCAA Oversight***

20. When the SMS is in place, TTCAA inspectors will assess its effectiveness as part of its surveillance process.

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Ramesh Lutchmedial  
Director General of Civil Aviation

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## APPENDIX A

## A SAFETY MANAGEMENT SYSTEM CHECKLIST

This checklist is designed to assist organizations in preparing an SMS for their organization. This is not intended to be an exhaustive list, merely a starting point based on the 10- Step Method described in this TAC.

| <b>PLANNING</b>  | <b>YES</b> | <b>NO</b> | <b>N/A</b> |
|--|------------|-----------|------------|
| 1. Has a safety planning team been designated?   |            |           |            |
| 2. Has a safety manager been designated?   |            |           |            |
| 3. Does the planning team comprise of an appropriate experience base?  |            |           |            |
| 4. Does the planning team meet regularly with executive management?  |            |           |            |
| 5. Does the planning team receive resources including time for meetings)?  |            |           |            |
| 6. Has the planning team developed a realistic strategy and implementation plan for an SMS that will meet the organization's safety needs?                 |            |           |            |
| 7. Has executive management endorsed the plan?   |            |           |            |
| <b>EXECUTIVE MANAGEMENT'S COMMITMENT TO SAFETY</b>   |            |           |            |
| 8. Is executive management involved in, and committed to, the SMS?   |            |           |            |
| 9. Has executive management approved the organization's safety policy and safety objectives, the SMS implementation plan and operational safety standards? |            |           |            |
| 10. Are these communicated to all staff, with visible endorsement by executive management?   |            |           |            |
| 11. Has the safety policy been developed by management and staff and signed by the CEO?  |            |           |            |
| 12. Does the safety policy enjoy the commitment and involvement of all staff?  |            |           |            |
| 13. Has the safety policy been aligned with other operational policies?  |            |           |            |
| 14. Does the safety policy provide direction for implementing the policy?  |            |           |            |
| 15. Does the safety policy state the responsibilities and accountabilities for directors, managers and employees?  |            |           |            |
| 16. Is the safety policy reflected in the actions and decisions of all staff?  |            |           |            |
| 17. Has the safety policy been communicated to all staff?  |            |           |            |
| 18. Is the safety policy reviewed periodically?  |            |           |            |
| 19. Are safety objectives and goals practical and achievable?  |            |           |            |
| 20. Are safety objectives and goals regularly reviewed for relevance?  |            |           |            |
| 21. Are performance standards including deadlines) established?  |            |           |            |
| 22. Are responsibilities for actions clearly understood?   |            |           |            |
| 23. Do managers follow through and hold those responsible to account for their progress towards the safety goals?  |            |           |            |
| 24. Are appropriate resources allocated to support the safety manager?   |            |           |            |
| 25. Does executive management commit resources to correct hazards posing unacceptable risks?   |            |           |            |
| 26. Has executive management established an appropriate reporting chain for safety issues?   |            |           |            |
| 27. Does executive management actively encourage participation in the various safety programmes of the SMS?  |            |           |            |
| 28. Does executive management promote a positive safety culture whereby safety information is actively sought?   |            |           |            |
| 29. Does executive management promote a positive safety culture whereby personnel are trained for their safety responsibilities?                           |            |           |            |

## APPENDIX A

A SAFETY MANAGEMENT SYSTEM CHECKLIST (*cont'd*)

| <b>EXECUTIVE MANAGEMENT'S COMMITMENT TO SAFETY (<i>cont'd</i>)</b>   | <b>YES</b> | <b>NO</b> | <b>N/A</b> |
|--|------------|-----------|------------|
| 30. Does executive management promote a positive safety culture whereby safety is a shared responsibility?   |            |           |            |
| 31. Does executive management promote a positive safety culture whereby safety-related information is disseminated to all affected personnel?  |            |           |            |
| 32. Does executive management promote a positive safety culture whereby potential system failures and hazards lead to prompt managerial inquiries and any necessary reforms?   |            |           |            |
| 33. Does executive management promote a positive safety culture whereby a formal programme is in place to regularly assess safety performance?   |            |           |            |
| 34. Does executive management promote a positive safety culture whereby new ideas related to safety are welcomed?  |            |           |            |
| <b>ORGANIZATION</b>  |            |           |            |
| 35. Does the organizational structure facilitate lines of communication between the safety manager and the CEO and with the line managers?   |            |           |            |
| 36. Does the organizational structure facilitate a clear definition of authorities, accountabilities and responsibilities, thereby avoiding misunderstanding, overlap and conflict e.g. between the safety manager and line management)? |            |           |            |
| 37. Does the organizational structure facilitate hazard identification and safety oversight?   |            |           |            |
| 38. Has a safety manager with appropriate competencies and capacity) been appointed?   |            |           |            |
| 39. Are the roles and responsibilities of the safety manager and any staff) clearly defined and documented?  |            |           |            |
| 40. Does a safety committee meet regularly to review safety results and make recommendations to executive management?  |            |           |            |
| 41. Has have) the safety manager and any staff) received appropriate safety training?  |            |           |            |
| 42. Do staff and management understand and support the roles of the safety manager?  |            |           |            |
| 43. Does the safety manager receive the CEO's support?   |            |           |            |
| <b>HAZARD IDENTIFICATION</b>   |            |           |            |
| 44. Are formal mechanisms such as safety assessments and safety audits) in place for the systematic identification of hazards?   |            |           |            |
| 45. Is an occurrence reporting system in effect, including a voluntary incident reporting system?  |            |           |            |
| 46. Has management provided adequate resources for hazard identification?  |            |           |            |
| 47. Does staff receive necessary training to support the hazard identification programmes?   |            |           |            |
| 48. Do competent personnel administer the hazard identification programmes, keeping them relevant to current operations?   |            |           |            |
| 49. Is staff involved in any recorded or reported incidents aware that they will not be penalized for normal errors?   |            |           |            |
| 50. Is a non-punitive just) environment fostered by management?  |            |           |            |
| 51. Are all identified hazard data systematically recorded, stored and analysed?   |            |           |            |
| 52. Are security measures in place to protect sensitive material?  |            |           |            |

## APPENDIX A

A SAFETY MANAGEMENT SYSTEM CHECKLIST (*cont'd*)

| <b>RISK MANAGEMENT</b>   | <b>YES</b> | <b>NO</b> | <b>N/A</b> |
|--|------------|-----------|------------|
| 53. Are criteria established for assessing risks?  |            |           |            |
| 54. Are risks analysed and ranked by competent personnel including experienced staff representatives)?   |            |           |            |
| 55. Are viable risk control measures evaluated?  |            |           |            |
| 56. Does management take action to reduce, eliminate or avoid the risks?   |            |           |            |
| 57. Is staff aware of the actions taken to avoid or eliminate identified hazards?  |            |           |            |
| 58. Are procedures in place to confirm that the actions taken are working as intended?   |            |           |            |
| <b>INVESTIGATION CAPABILITY</b>  |            |           |            |
| 59. Has key operational staff received formal training in safety investigations?   |            |           |            |
| 60. Is each hazard and incident report evaluated with further safety investigation as necessary?   |            |           |            |
| 61. Does management support the acquisition and analysis of safety information?  |            |           |            |
| 62. Does management take an active interest in investigation findings and applies risk management procedures for identified hazards?                           |            |           |            |
| 63. Are safety lessons learned, widely disseminated?   |            |           |            |
| 64. Is the regulatory authority apprised of significant safety concerns potentially affecting other operators or requiring action by the regulatory authority? |            |           |            |
| <b>SAFETY ANALYSIS CAPABILITY</b>  |            |           |            |
| 65. Is the safety manager experienced in analytical methods?   |            |           |            |
| 66. Has the safety manager received training in analytical methods?  |            |           |            |
| 67. Does the safety manager have access to competent safety analysts?  |            |           |            |
| 68. Are analytical tools and specialist support) available to support safety analyses?   |            |           |            |
| 69. Does the organization maintain a credible safety database?   |            |           |            |
| 70. Are other information sources accessible?  |            |           |            |
| 71. Are hazard information and performance data routinely monitored trend analysis, etc.)?   |            |           |            |
| 72. Are safety analyses subject to a challenge process peer review)?   |            |           |            |
| 73. Are safety recommendations made to management?   |            |           |            |
| 74. Are corrective actions taken and tracked to ensure that they are appropriate and effective?  |            |           |            |
| <b>SAFETY PROMOTION AND TRAINING</b>   |            |           |            |
| 75. Does management recognize that all levels of the organization require training in safety management and that the needs vary across the organization?       |            |           |            |
| 76. Do job descriptions reflect competency requirements?   |            |           |            |
| 77. Do all personnel receive safety indoctrination training for safety management?   |            |           |            |
| 78. Do all personnel participate in specific ongoing training for safety management?   |            |           |            |
| 79. Does the organization have an effective programme for the timely promotion of safety issues?   |            |           |            |

## APPENDIX A

A SAFETY MANAGEMENT SYSTEM CHECKLIST (*cont'd*)

| <b>SAFETY PROMOTION AND TRAINING (<i>cont'd</i>)</b>  | <b>YES</b> | <b>NO</b> | <b>N/A</b> |
|---|------------|-----------|------------|
| 80. Is staff aware of their role in the elements of the SMS pertinent to their duties?  |            |           |            |
| 81. Is additional safety awareness training provided when the operating environment changes seasonal changes and changes in operational conditions, regulatory requirements, etc.)?                               |            |           |            |
| 82. Does staff understand that safety management has nothing to do with attributing blame?  |            |           |            |
| <b>SAFETY MANAGEMENT DOCUMENTATION AND INFORMATION MANAGEMENT</b>   |            |           |            |
| 83. Does management support the need for careful documentation and data control?  |            |           |            |
| 84. Is the SMS well documented in a safety management manual?   |            |           |            |
| 85. Are documents updated regularly?  |            |           |            |
| 86. Are documents readily available to those who need them?   |            |           |            |
| 87. Have credible measures been taken for the protection of sensitive safety information?   |            |           |            |
| 88. Are appropriate equipment and technical support available for managing safety information?  |            |           |            |
| 89. Are safety databases used to support safety analyses and performance monitoring?  |            |           |            |
| 90. Does appropriate staff have access to safety databases?   |            |           |            |
| 91. Has staff received the necessary training for using and maintaining the safety information management system?   |            |           |            |
| <b>SAFETY OVERSIGHT AND SAFETY PERFORMANCE MONITORING</b>   |            |           |            |
| 92. Are safety performance indicators agreed upon and realistic safety targets established?   |            |           |            |
| 93. Are adequate resources allocated to the safety oversight and safety performance monitoring functions?   |            |           |            |
| 94. Is staff input sought and provided without fear of repercussion?  |            |           |            |
| 95. Are regular safety audits conducted in all operational areas of the organization including the activities of contracting agencies)?   |            |           |            |
| 96. Does safety oversight include the systematic review of all available feedback, for example, safety assessments, quality assurance programme results, safety trend analyses, safety surveys and safety audits? |            |           |            |
| 97. Are findings communicated to staff?   |            |           |            |
| 98. Are reform measures implemented as required to strengthen the system?   |            |           |            |

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**APPENDIX B****SAMPLE SAFETY POLICY STATEMENT**

Safety is the first priority in all our activities. We are committed to implementing, developing and improving strategies, management systems and processes to ensure that all our aviation activities uphold the highest level of safety performance and meet national and international standards.

**Our commitment is to:**

- a) Develop and embed a safety culture in all our aviation activities that recognizes the importance and value of effective aviation safety management and acknowledges at all times that safety is paramount;
- b) Clearly define for all staff their accountabilities and responsibilities for the development and delivery of aviation safety strategy and performance;
- c) Minimize the risks associated with aircraft operations to a point that is as low as reasonably practicable/achievable;
- d) Ensure that externally supplied systems and services that impact upon the safety of our operations meet appropriate safety standards;
- e) Actively develop and improve our safety processes to conform to world-class standards;
- f) Comply with and, wherever possible, exceed legislative and regulatory requirements and standards;
- g) Ensure that all staff are provided with adequate and appropriate aviation safety information and training, are competent in safety matters and are only allocated tasks commensurate with their skills;
- h) Ensure that sufficient skilled and trained resources are available to implement safety strategy and policy;
- i) Establish and measure our safety performance against realistic objectives and/or targets;
- j) Achieve the highest levels of safety standards and performance in all our aviation activities;
- k) Continually improve our safety performance;
- l) Conduct safety and management reviews and ensure that relevant action is taken; and
- m) Ensure that the application of effective aviation safety management systems is integral to all our aviation activities, with the objective of achieving the highest levels of safety standards and performance.

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## APPENDIX C

### SUGGESTED TOPICS TO BE INCLUDED IN A CEO STATEMENT OF CORPORATE SAFETY COMMITMENT

1. Listed below are topics that are frequently covered in statements of corporate safety commitment. Following each topic are subjects that are commonly addressed to amplify the corporate position on that topic.

#### *Core Values*

2. Among our core values, we will include:

- (a) Safety, health and the environment;
- (b) Ethical behaviour; and
- (c) Valuing people.

#### *Fundamental Safety Beliefs*

3. Our fundamental safety beliefs are:

- (a) Safety is a core business and personal value.
- (b) Safety is a source of our competitive advantage.
- (c) Our business will be strengthened by making safety excellence an integral part of all aviation activities.
- (d) All accidents and serious incidents are preventable.
- (e) All levels of line management are accountable for our safety performance, starting with the Chief Executive Officer (CEO)/Managing Director.

#### *Core Elements of our Safety Approach*

4. The five core elements of our safety approach include:

- (a) Top management commitment:
  - (i) Safety excellence will be a component of our mission.
  - (ii) Executive management will hold line management and all employees accountable for safety performance.
- (b) Responsibility and accountability of all employees:
  - (i) Safety performance will be an important part of our management/employee evaluation system.
  - (ii) We will recognize and reward safety performance.
  - (iii) Before any work is done, we will make everyone aware of the safety rules and processes, as well as each one's personal responsibility to observe them.

**APPENDIX C**

**SUGGESTED TOPICS TO BE INCLUDED IN A CEO STATEMENT OF CORPORATE SAFETY COMMITMENT (cont'd)**

- (c) Clearly communicated expectations of zero accidents:
  - (i) We will have a formal written safety goal, and we will ensure that everyone understands and accepts that goal.
  - (ii) We will have a communications and motivation system in place to keep our employees focused on the safety goal.
- (d) Auditing and measuring performance for improvement:
  - (i) Management will ensure that regular safety audits are conducted.
  - (ii) We will focus our audits on the behaviour of people, as well as on the conditions of the workplaces.
  - (iii) We will establish performance indicators to help us evaluate our safety performance.
- (e) Responsibility of all employees:
  - (i) Each of us will be expected to accept responsibility and accountability for our own behaviour.
  - (ii) Each of us will have an opportunity to participate in developing safety standards and procedures.
  - (iii) We will openly communicate information about safety incidents and will share the lessons learned with others.
  - (iv) Each of us will be concerned for the safety of others in our organization.

***Objectives of the Safety Process.***

**5. Our objectives include:**

- (a) ALL levels of management will be clearly committed to safety.
- (b) We will have clear employee safety metrics, with clear accountability.
- (c) We will have open safety communications.
- (d) We will involve all relevant staff in the decision-making process.
- (e) We will provide the necessary training to build and maintain meaningful safety leadership skills.
- (f) The safety of our employees, customers and suppliers will be a strategic issue of the organization.

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## APPENDIX D

### SAMPLE JOB DESCRIPTION FOR SAFETY MANAGER

#### OVERALL PURPOSE

1. The safety manager (SM) is responsible for providing guidance and direction for the operation of the organization's safety management system.

#### DIMENSION

2. (1) The position requires the ability to cope with changing circumstances and situations with little supervision. The SM acts independently of other managers within the organization.

(2) The SM is responsible for providing information and advice to executive management on matters relating to safe operations. Tact, diplomacy and a high degree of integrity are prerequisites.

(3) The job requires flexibility as assignments may be undertaken with little or no notice and outside normal work hours.

#### NATURE AND SCOPE

3. The SM must interact with operational personnel, executive managers and departmental heads throughout the organization. The SM should also foster positive relationships with regulatory authorities, agencies and service providers outside the organization. Other contacts will be established at a working level as appropriate.

#### QUALIFICATIONS

4. The suggested attributes and qualifications include:

- (a) Broad operational knowledge and experience in the functions of the organization (e.g. aircraft operations, air traffic management and aerodrome operations);
- (b) Sound knowledge of safety management principles and practices;
- (c) Good written and verbal communication skills;
- (d) Well-developed interpersonal skills;
- (e) Computer literacy;
- (f) The ability to relate to all levels, both inside and outside the organization;
- (g) Organizational ability;
- (h) Capable of working unsupervised;
- (i) Good analytical skills;
- (j) Leadership skills and an authoritative approach; and
- (k) Worthy of respect among peers and management.

**AUTHORITY**

- 5. (1) Regarding safety matters, the SM has direct access to the CEO and appropriate management.
- (2) The SM is authorized to conduct safety audits of any aspect of the operation.
- (3) The SM has the authority to convene an inquiry into an accident or incident in accordance with the procedures specified in the safety management manual.

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