Regulations

SUBPART 1:
SAFETY MANAGEMENT SYSTEM

Applicability

140.01.1 (1) This Part applies to—

(a) a holder of a category 4 or higher aerodrome licence issued in terms of Part 139 where commercial activities take place;

(b) a holder of an ATO approval issued in terms of Part 141 that is exposed to safety risks related to aircraft operations during the provisions of the services for flight activities;

(c) a holder of an AMO approval issued in terms of Part 145 that provides services to holders of AOC issued in terms of Parts 121, 127 or 135;

(d) an organisation responsible for manufacturing of aircraft approved in terms of Part 148;

(e) a holder of an ATSU approval issued in terms of Part 172;

(f) an organisation responsible for the type design of aircraft, engine, propeller, etc approved in terms of Part 147; and

(*g*) a holder of an operating certificate issued in terms of Part 121, 127 or 135.

(2) Certain provisions of this Part apply to—

(a) a holder of an aerodrome licence issued in terms of Part 139 other than those mentioned in sub-regulation (1);

(b) a holder of an AMO approval issued in terms of Part 145 that provides services to holders of AOC issued in terms of Part 93 and 128;

(c) a holder of an operating certificate issued in terms of Part 93 or 128;

(d) a holder of a procedure design organisation approval issued in terms of Part 173;

(e) a holder of an electronic services organisation approval issued in terms of Part 171; and

(f) an organisation handling or conveying dangerous goods by air in terms of Part 92.

Establishment of safety management system

140.01.2 (1) An entity referred to in regulation 140.01.1 shall—

(a) establish a safety management system as prescribed in Document SA-CATS 140, that is commensurate with the size, scope and complexity of its operation;

(b) document the safety management system in a SMSM, for approval by the Director, either as part of the operational manual system of the organisation or as a standalone document, as prescribed in Document SA-CATS 140;

(c) ensure the designation of an accountable manager who, irrespective of other functions, shall have ultimate responsibility and accountability for the implementation and continued effectiveness of the SMS;

(d) appoint a safety manager who shall be suitably qualified to perform functions as prescribed in Document SA-CATS 140;

(e) ensure that the safety manager is directly accountable to the accountable manager for the implementation and administration of the SMS;

(f) establish SRC to monitor the effectiveness of the SMS. The composition and functions of the SRC are prescribed in Document SA-CATS 140;

(g) establish SAG to oversee the implementation of SMS whose composition and functions are prescribed in Document SA-CATS 140; and

(*h*) have a process for conducting periodic scheduled reviews or audits of the safety management system.

(2) A person responsible for operations and or maintenance shall be responsible for the final development and implementation of all corrective action plans arising out of the corrective recommendation in a manner that will ensure the timely resolution of safety issues at acceptable levels.

(3) Where a person responsible for operations or maintenance has delegated any responsibility held under these regulations to another person, such other person shall keep the respective manager currently informed. The respective manager shall maintain responsibility for the corrective action plans arising out of the SMS.

Requirements of safety management system

140.01.3 (1) An entity referred to in regulation 140.01.1 (1) shall include in its safety management system the following components and elements—

(*a*) safety policy and objectives—

(i) management commitment and responsibility;

(ii) safety accountabilities;

(iii) appointment of key safety personnel;

(iv) coordination of emergency response planning;

(v) SMS documentation.

(*b*) safety risk management—

(i) hazard identification;

(ii) safety risk assessment and mitigation.

(*c*) safety assurance—

(i) safety performance monitoring and measurement;

(ii) management of change;

(iii) continuous improvement of the SMS.

(*d*) safety promotion—

(i) training and education;

(ii) safety communication.

(2) An entity referred to in regulation 140.01.1 (2) shall at least include the following components and elements—

(*a*) a process to identify actual and potential safety hazards and assess the associated risks;

(*b*) a process to develop and implement remedial action necessary to maintain an acceptable level of safety; and

(*c*) provision for continuous and regular assessment of the appropriateness and effectiveness of safety management activities.

(3) An operator of an aircraft with a maximum certificated take-off mass in excess of 27 000 kg shall ensure that the SMS includes—

(*a*) a confidential flight data analysis programme which is non-punitive;

(*b*) a procedure for analysis of data obtained from the programme referred to in paragraph (*a*); and

(*c*) a LOSA programme to identify hazards and unsafe events.

(4) A holder of an air traffic service unit approval shall make use of the NOSS to identify hazards and unsafe events.

Training requirements

140.01.4 (1) Any training on safety management system shall be conducted by—

(*a*) an ATO approved by the Director in terms of Part 141, which has SMS included as part of their scope of approval;

(*b*) an ATO approved by an appropriate authority of a contracting State and acceptable to the Director; or

(*c*) an international organisation whose training syllabus has been accepted by the Director as prescribed in Document SA-CATS 140.

(2) The Director shall publish the SMS training syllabus.

SUBPART 2:
SAFETY DATA AND SAFETY DATA COLLECTION SYSTEMS

Safety data collection systems

140.02.1 (1) The Director and each of the entities referred to in regulation 140.01.1 shall establish—

(*a*) a mandatory incident reporting system to facilitate the collection of information on actual or potential safety deficiencies;

(*b*) a voluntary reporting system to facilitate the collection of information on actual or potential safety deficiencies that may not be captured by the mandatory incident reporting system; and

(*c*) a confidential reporting system to facilitate the collection of information on actual or potential safety deficiencies that may not be captured by mandatory or voluntary reporting systems.

(2) With approval of the Director, a small and less complex entity may put in place a simplified mechanism for the collection, evaluation, processing, analysis and storage of details of occurrences. The entity may share those tasks with other entities of the same nature, while complying with the rules on confidentiality and protection pursuant to this regulation.

(3) No information obtained under the voluntary reporting system shall be used against a person reporting in any disciplinary, legal or proceedings relating to the capacity or competence of such person.

Mandatory occurrence reporting

140.02.2 (1) An entity referred to in regulation 140.01.1 shall report to the Director, according to the timelines prescribed in Document SA-CATS 140, aviation accidents, incidents, hazards and other safety related occurrences.

(2) Any person involved in an accident or incident, or observing any accident, incident, hazard or discrepancy that may affect aviation safety, shall notify the Authority.

(3) The Director shall publish occurrences which may present a significant risk to aviation safety.

(4) A form and manner of reporting an accident, incident, hazard or discrepancy shall be as prescribed in Document SA-CATS 140.

Safety data protection

140.02.3 (1) The handling of safety data collected through safety data collection and processing systems shall be done with a view to preventing the use of information for purposes other than safety, and shall appropriately safeguard the confidentiality of the identity of the person making the report and of the persons mentioned in occurrence reports, with a view to promoting a "just culture".

(2) The Director and an entity referred to in regulation 140.01.1 shall take the necessary measures to ensure appropriate confidentiality of data collected through reporting systems referred to in regulation 140.02.1 (1) (*b*) and (*c*).

(3) The Director and an entity referred to in regulation 140.01.1 shall process personal data only to the extent necessary for the purposes of this regulation and in compliance with national legislation dealing with the protection of personal information.

(4) Data collected through safety data collection and processing systems referred to in regulation 140.02.1 shall be used only for the purpose for which it has been collected.

(5) The Director, any entity or any other person shall not make available or use information on occurrences in order to attribute blame or liability or for any purpose other than the maintenance or improvement of aviation safety.

(6) The Director shall not be prevented from taking any action necessary for maintaining or improving aviation safety.

Safety data analysis

140.02.4 (1) The Director shall establish and maintain a safety data collection and processing system to facilitate analysis of information on actual or potential safety deficiencies obtained, including that from its occurrence reporting systems or databases, and to determine any actions required for the enhancement of safety.

(2) An entity referred to in regulation 140.01.1 shall establish and maintain a safety database to facilitate analysis of information on actual or potential safety deficiencies obtained, including that from its occurrence reporting systems/databases, and to determine any actions required for the enhancement of safety.

(3) An entity referred to in regulation 140.01.1 shall submit aviation safety performance indicators and targets to the Director, in which an acceptable level of safety shall be commensurate with the size, scope and complexity and shall be acceptable to the Director.

(4) The Director and any entity referred to in regulation 140.01.1 shall establish a process for—

(*a*) identifying hazards and occurrences to aviation safety and for evaluating and managing the associated risks;

(*b*) internal reporting and analysing of hazards and occurrences for developing remedial action plans for the timely resolution of all identified safety hazards and incidents;

(*c*) early alerting of the persons responsible for operations or maintenance about known or suspected hazards and occurrences that would require immediate safety resolution action to be taken through the operational or maintenance control systems.

Safety information exchange

140.02.5 (1) The Director shall establish a safety information sharing network among all role players within aviation industry and shall facilitate the free exchange of information covering actual and potential safety deficiencies.

(2) An entity referred to in regulation 140.01.1 shall establish a safety information sharing network among employees and service providers within its operations and shall facilitate free exchange of information covering actual and potential safety deficiencies.

Technical Standards

140.01.2 ESTABLISHMENT OF SAFETY MANAGEMENT SYSTEM

1. General

(1) The entities must establish a safety management system as prescribed in the CAR 140.01.2 and these technical standards, in a format acceptable to the Director, for the control and supervision of the services covered by the operation.

(2) In addition, in respect of an aerodrome, to the extent that there is no conflict with these technical standards, the requirements as further prescribed in ICAO Doc 9774.

(3) While it is accepted that the entity's safety management system (SMS) will be developed in accordance with the scope, size and complexity of the operator, every SMS must be capable of delivering compliance with CAR Part 140 and these technical standards at a level commensurate with size and complexity of the operator.

(4) An entity shall perform a gap analysis to assess the current state of safety management system and devices implementation plan to address any identified deficiencies, detailing the implementation of missing components or elements of SMS. Implementation plan must be acceptable to the Director.

(5) The SMS shall aim to implement –

(a) a mechanism for the timely resolution of safety issues on both a short and long term basis and where safety issues are proven to be systemic, an effective way of precluding the likelihood of recurrence;

(b) a safety information reporting system that is non-punitive in nature and capable, upon request of the person providing information, of a means of assuring anonymity and protection;

(c) a safety programme to monitor, on a continuous basis, the safety programme being implemented and provide critical assessment as to the effectiveness of the programme. The entities referred to in CAR 140.01.1(2)may combine safety and quality functions in one office.

Note: Further guidance on ICAO requirements, which have been incorporated into this technical standard, is contained in ICAO Doc 9859.

2. Requirements for Safety Management System Manual

2.1 Safety Management System Manual (SMSM) and Documents

(1) Dependent upon the scope, size and complexity of the operator, a number of documents may be required to implement and control the SMS. These documents become part of the larger manual system falling under the control of the entity's manual system referred to in subsection 2.8 below.

(2) Except as noted in these technical standards, all documents generated for the SMS must be consistent with the established policies and procedures published in the relevant regulations in the entity's operations manual/s.

2.2 Use of Third Party Generated SMSM

Safety management system manuals developed by third parties must be presented for the Director's approval using the same establishment and amendment procedures approved for the entity's operations manual.

2.3 Principle of Operational Control

(1) Where applicable, it is vital that the principle of operational control and supervision be maintained.

(2) Operational control is the legal responsibility of the entity's operations manager as laid down in applicable regulations and this principle of authority must be maintained notwithstanding any responsibilities, policies and procedures, or reporting relationships established for the SMS programme.

2.4 Development criteria of an SMSM

The information contained in the SMSM and other SMS documents must use a common layout, language, definitions and format as have been approved for the operations manual.

Notes –

1. *Where a SMSM is produced in electronic format it must employ a means of ensuring ease and speed of access to the information at least equivalent to hard copy manuals. Electronic manuals must also employ an information pick list, be appropriately hyper-linked and provide a search engine that will provide logical access to all time-critical, emergency, abnormal or other information as deemed appropriate by the Director. Where electronic manuals are used the bulletin system intended to provide quick dissemination of information shall be produced in both electronic and hard copy.*

2. *An operator may not introduce electronic manuals until the intended user groups have been equipped and trained in the use of the electronic system.*

2.5 Organization

(1) Information relating to safety policies and procedures shall be organized according to criteria which ensure quick and easy access to information required for operations. This is particularly important for flight, cabin, technical and ground operations of operators.

(2) Distribution and revision of operational documents shall be in the same manner as provided for in the operations manual except where the urgent issue of safety related information or procedures necessitates a non-standard distribution of revision procedure. Such procedure shall be described in the operations manual. Information contained in a safety document system should be grouped according to the importance and use of the information, as follows –

(a) time critical information, e.g. information that if not immediately available could jeopardize the safety of the operation;

(b) time sensitive information, e.g. information that if not available in a quick and easy manner could affect the level of safety or delay the operation;

(c) frequently used information; e.g. information that while not directly affecting safety is required for operational or safety considerations;

(d) reference information, e.g. information that is required for the operation but does not fall under (b) or (c) above; and

(e) information that can be grouped based on the phase of operation in which it is used, e.g. Pre-flight, the various flight profiles, post flight, report writing etc.

Notes –

1. Time critical information should be placed early and prominently in the safety documents.

2. Time critical information, time sensitive information, and frequently used information should be placed in quick-reference sections, guides and checklists.

2.6 Design

(1) An SMSM shall be suitably divided and indexed so as to provide quick and easy access to the information contained therein (See subsection 2.8 below).

(2) Notwithstanding the foregoing where deemed necessary certain pages, or bulletins, produced under the authority of the operations, or safety manual, may be developed or designed in a manner so as to be conspicuous for easy recognition of their significance.

2.7 Manual indexing and control

(1) Where the SMSM consists of more than one safety manual, a comprehensive master index must be included in the manual detailing the list of manuals comprising the SMSM.

(2) Manual control for each manual in the system shall be in the same manner as approved for the operations manual; e.g. page numbering, list of effective pages, amendment instructions, etc.

Note — The master index must be placed in the front of each document.

2.8 Use of SMSM

(1) Operators or entities must monitor the use of the SMSM to ensure the procedures are appropriate and realistic, based on the characteristics of the operational environment, and are both operationally relevant and beneficial to operational personnel.

(2) This monitoring should include a formal feedback system for obtaining input from operational personnel. Those portions of the SMSM that provide information with respect to the operations must be available to the appropriate crew members/staff on duty.

2.9 Amendments

(1) SMSM shall employ the manual amendment procedures approved for the operations manual. For revision planning, entities should develop an information gathering, review assessment and distribution control system to prioritise the amendment process.

(2) Information and data obtainable from all sources, relevant to the type of operation conducted, including, where applicable, any other State where similar aircraft or aviation operations take place, as well as manufacturer and equipment vendors, shall form part of the entity's amendment research process.

(3) Amendment procedures must include a tracking system to ensure currency by operational personnel. The tracking system should include a procedure to verify that operational personnel have the most recent updates.

2.10 Mandatory amendments

(1) The entity must ensure their information gathering, review and assessment process also focuses on information resulting from changes that originate from within the entity. Mandatory amendments shall be incorporated for at least the following situations –

(a) changes in scope of entity's certificate;

(b) whenever deemed necessary by the Director.

2.11 SMSM review schedule

(1) Operators must publish their SMSM review schedule and ensure their SMSMs are reviewed –

(a) on a regular basis (at least once in two years);

(b) after major events (mergers, acquisitions, rapid growth, downsizing, etc.);

(c) after changes in safety regulations, or any time so directed by the Director.

140.01.3 REQUIREMENTS OF SAFETY MANAGEMENT SYSTEM

1. Minimum standards for a safety management system

(1) This section prescribes the requirements of a safety management for the entity listed in CAR 140.01.1.

(2) A description of the safety management system established in terms of subsection (1) by the entity, to the satisfaction of the Director, for the control and supervision of the services covered by the operation, shall include –

(a) the identification of safety hazards and incidents;

(b) remedial action necessary to maintain an acceptable level of safety;

(c) continuous monitoring and regular assessment of the safety level achieved; and

(d) continuous improvement to the overall level of safety.

(3) The safety management system shall clearly define lines of safety accountability throughout the aviation operation, including a direct accountability for safety for senior management.

(4) The safety management system must include the following minimum standards:

(a) a clear definition of the level of safety that the operator intends to achieve;

(b) proof by the approved entity or operator to the Director that adequate safety measures to maintain the required level of safety will be or are instituted;

(c) the components and elements described in section 2 below.

2. Components and elements of a safety management system

2.1 Safety Policy & Objectives

(1) Safety policy that outlines the principles, processes and methods of entity's SMS to achieve the desired safety outcomes. The policy establishes senior management's commitment to incorporate and continually improve safety in all aspects of its activities.

(2) The safety policy shall be documented and signed off by the accountable manager.

(3) Safety objectives must be further enhanced with the establishment of specific safety performance indicators and targets that the entity intends to achieve.

(4) Safety objectives, indicators and targets must be accepted by the Director and the entity must maintain sufficient records to prove that they monitor their performance against their safety performance targets.

(5) The safety policy shall entail the following:

(a) Management commitment and responsibility

An entity shall define its safety policy in accordance with international and national requirements. The safety policy shall:

(i) reflect entity's commitment regarding safety;
(ii) include a clear statement about the provision of the necessary resources for the implementation of the safety policy;
(iii) include safety reporting procedures;

(iv) clearly indicate which types of behaviours are unacceptable related to the entity's aviation activities and include the circumstances under which disciplinary action would not apply;

(iv) be signed by the accountable executive of the organization;
(v) be communicated, with visible endorsement, throughout the entity; and
(vi) Be reviewed every two years to ensure that it remains relevant and appropriate to the operator.

(b) Safety accountabilities

An entity shall –

(i) identify the accountable manager who, irrespective of other functions, has ultimate responsibility and accountability, on behalf of the entity, for the implementation and maintenance of the SMS. The safety manager or officer shall report directly to the accountable manager of an entity as to maintain independence from the operations;

(ii) clearly define lines of safety accountability throughout the entity, including a direct accountability for safety on the part of senior management and clearly identifying the reporting line of the safety manager or officer;
(iii) identify the accountabilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the SMS;
(iv) document and communicate safety responsibilities, accountabilities and authorities throughout the organization; and
(v) define the levels of management with authority to make decisions regarding safety risk tolerability.

2.2 Appointment of key safety personnel

(1) An entity shall appoint a safety manager who is responsible for the implementation and maintenance of an effective SMS.

(2) An entity shall appoint a safety review committee (SRC) that is chaired by the accountable manager and composed of senior managers, including line managers responsible for functional areas as well as those from relevant administrative departments with the safety manager participating on an advisory capacity. The SRC shall:

(a) monitor the effectiveness of the SMS;

(b) monitor that any necessary corrective action is taken in a timely manner;

(c) monitor safety performance against the organisation's safety policy and objectives;

(d) monitor the effectiveness of the organisation's safety management processes which support the declared corporate priority of safety management as another core business processes;

(e) monitor the effectiveness of the safety supervision of subcontracted operations; and

(f) ensures that appropriate resources are allocated to achieve safety performance beyond that required by regulatory compliance.

(3) Entities referred to in CAR 140.01.1(1) shall appoint Safety Action Groups (SAG) that deal with specific implementation issues as per direction of the SRC, SAGs are chaired by designated line manager and composed of line managers and front line personnel. The responsibilities of a SAG include –

(a) overseeing operational safety performance within the functional areas of the organisation and ensures that appropriate safety risk management activities are carried out with staff involvement as necessary to build up safety awareness;

(b) coordinating the resolution of mitigation strategies for the identified consequences of hazard and ensures that satisfactory arrangements exist for safety data capture and employee feedback;

(c) assessing the safety impact related to the introduction of operational changes or new technologies;

(d) coordinating the implementation of corrective action plans and ensures that corrective action is taken in a timely manner;

(e) reviewing the effectiveness of previous safety recommendations; and

(f) overseeing safety promotion activities as necessary to increase employee awareness of safety issues and to ensure that they are provided appropriate opportunities to participate in safety management activities.

(4) The functions performed by the safety manager includes –

(a) managing the operation of the safety management system;

(b) collecting and analysing safety information in a timely manner;

(c) administering any safety related surveys;

(d) monitoring and evaluating the results of corrective actions;

(e) ensuring that risk assessments are conducted when applicable;

(f) monitoring the industry for safety concerns that could affect the organization;

(g) being involved with actual or practice emergency responses;

(h) being involved in the development and updating of the emergency response plan and procedures; and

(i) ensuring safety-related information, including organizational goals and objectives, are made available to all personnel through established communication processes.

(5) Notwithstanding the above, an entities' safety manager or officer shall perform the function listed in below dependant on the size, scope and complexity of the operation:

(a) the establishment and maintenance of mandatory, voluntary and confidential reporting systems to ensure the timely collection of information related to potential hazards, incidents and accidents that may adversely affect safety;

(b) the identification of latent hazards and carry out risk management analyses of those hazards;

(c) the investigation, analysis and identification of the root cause of all hazards or the contributing factors of incidents and accidents identified under the SMS to ensure the operator has adequate mitigation in place;

(d) the establishment and maintenance of a safety data system, either by electronic or by other means, to monitor and analyse trends in hazards, incidents and accidents;

(e) the maintenance of a continuous monitoring system that evaluates the results of corrective actions with respect to hazards, incidents and accidents;

(f) monitor safety concerns in the aviation industry and their perceived impact on the organization's operations aimed at service delivery;

(g) coordinate and communicate (on behalf of the accountable manager) with the Director and other relevant agencies as necessary on issues relating to safety;

(h) the co-ordination of the organisation's aviation safety programme and all related safety matters;

(i) co-operation with the training section with regard to safety training of all the organizations/entity or operators staff for e.g. aerodrome, air navigation, maintenance, design, manufacturing staff flight, cabin and ground crews, as applicable;

(j) the oversight of aircraft handling regarding matters related to safety in cooperation with ground support services;

(k) the investigation of all incidents and accidents involving the organisation's/entities or operators aircraft, equipment and property, including fire and emergency procedures, not undertaken in accordance with Part 12;

(l) the actioning and distribution of accident, incident and other occurrence reports;

(m) the co-ordination with security personnel to ensure all aspects of security regarding the organisation's aircraft;

(n) the establishment of an emergency response plan in the event of an accident or serious incident, which includes the actions to be followed by relevant personnel;

(o) in concert with the person responsible for quality, the maintenance of an integrated safety and quality assurance programme within the organisation and

(p) promulgation of safety bulletins such as aerodromes, air navigation, maintenance flight, cabin, ground to all staff within the organisation;

(q) conducting meetings with all relevant personnel regarding safety matters;

(r) maintenance of safety equipment;

(s) safety audits/inspections or assessment;

(t) the realisation of other duties may include –

(i) occupational health and safety systems;

(ii) environmental management safety systems.

2.3 Coordination of emergency response planning

(1) The entity shall ensure that its emergency response plan is properly coordinated with the emergency response plans of those entities it must interface with during provision of its service.

(a) The entity shall develop, coordinate and maintain an aviation emergency response plan that ensures orderly and efficient transition from normal to emergency operations, and return to normal operations.

(b) Each entity shall meet those requirements for aviation emergency response planning and contingency planning as required by the regulations under which their certificates of operation are issued and required ICAO manuals. (E.g. Aerodrome operators comply with CAR 139.02.7).

2.4 SMS Documentation

(1) The entity shall develop an SMS implementation plan, formally endorsed by the entity that defines the entity's approach to the management of safety in a manner that meets the entity's safety objectives. The entity's implementation plan shall be based on their gap analysis against CAR 140 requirements, and will clearly describe the entity's approach to the initial implementation of the SMS. The entity shall develop and maintain SMS documentation that describes, where applicable, the following:

(a) the safety policy and objectives;

(b) SMS requirements;

(c) SMS processes and procedures;

(d) accountabilities, responsibilities and authorities for SMS processes and procedures;

(e) SMS outputs;

(f) scope of the SMS;

(g) safety accountabilities and responsibilities;

(h) key safety personnel;

(i) documentation control procedures;

(j) safety management policies, procedures and processes;

(k) coordination of emergency response planning;

(l) hazard identification and risk management schemes;

(m) Safety reporting process;

(n) Flight Data Analysis Program;

(o) Line Operational Safety Audit Program;

(p) NOSS program;

(q) safety assurance;

(r) safety performance measurement and monitoring;

(s) safety auditing (internal and external);

(t) safety surveys;

(u) safety reviews;

(v) safety studies;

(w) safety inspections (internal and external);

(x) safety investigations;

(y) management of change;

(z) safety promotion;
    a. safety communication;
    b. contracted activities;

(2) The SMS implementation plan of the entity shall explicitly address the coordination between the SMS of the entity and the SMS of other entity's or service providers (that may affect aviation safety and security) with whom the entity may interface during the provision of services, and shall address –

(a) the SMS standards to be achieved;

(b) the accountabilities, responsibilities and authorities for procedures and processes;

(c) the SMS areas of responsibilities; and documentation into its operations manual to communicate its approach to safety throughout the operation, including the provision of applicable portions to, for example airports tenants, airlines, maintenance organisations, air navigation services, ground handlers, etc. or in a separately approved SMS manual.

2.5 Safety risk management

(1) The safety risk management shall include, but is not limited to:

(a) Hazards and or incidents identification process

(i) The entity shall develop and maintain a formal process for effectively identifying, collecting, recording, acting on and generating feedback covering hazards/incidents in operations, based on a combination of reactive, proactive and predictive methods of safety data collection.

(ii) The entity shall implement a mechanism for the timely resolution of safety issues on short and long term basis, where safety issues are proven to be systematic, an effective way of precluding the likelihood of recurrence

Note: *Reactive methods approved entity or operator refers to methods of identifying hazards and or incidents that are based on the investigation of occurrences. Proactive methods aim to use any other information within the entity for the identification of potential hazards and or incidents. Predictive methods rely on data that is collected within the entity that could be used effectively to predict the existence of hazards and or incidents, usually done by trend analysis.*

(b) Risk assessment and mitigation process

(i) The entity shall develop and maintain a formal risk management process that ensures analysis (in terms of probability and severity of occurrence), assessment (in terms of tolerability or acceptability) and control (in terms of mitigation) of risks to an acceptable level.

(ii) The following matrixes should be used for purposes of analysing and assessing risk:

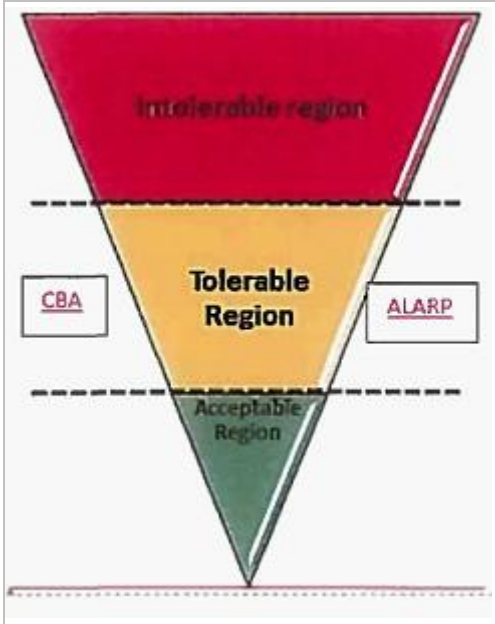
Risk Severity Matrix		
Risk Severity definition	**Description: Consequence (can lead to)…**	**Examples of what to look out for…**
Category A Catastrophic	multiple deaths & complete loss/destruction of equipment	A major accident.
Category B Hazardous	Serious injuries/Major Damage to equipment	Large reduction in safety margins, physical distress or workload such that the operators cannot be relied upon to perform their tasks accurately or completely.
Category C Major	Minor injuries/Minor equipment damage	A significant reduction in safety margins, a reduction in the ability of the operators to cope with adverse operating conditions as a result of increase in workload, or as a result of conditions impairing their efficiency.
Category D Minor	Incidents	Operating limitations are breached. Procedures are not used correctly.
Category E Negligible	Negligible/Inconvenience	Few consequences. No safety consequences. Nuisance.

Risk Probability Matrix		
Likelihood/ Probability Category	**Description**	**Examples of what to look out for**
1	Extremely improbable (Rare)	Almost inconceivable that the event will occur.
2	Improbable (Seldom)	Very unlikely that the event will occur. It is not known that it has ever occurred before.

3	Remote (Unlikely)	Unlikely but could possibly occur. Has occurred rarely.
4	Occasional	Likely to occur sometimes. Has occurred infrequently.
5	Frequent	Likely to occur many times/regularly. Has occurred frequently/regularly.

RISK PROBABILITY		**RISK SEVERITY**				
		Catastrophic A	**Hazardous B**	**Major C**	**Minor D**	**Negligible E**
Frequent	5	5A	5B	5C	5D	5E
Occasional	4	4A	4B	4C	4D	4E
Remote	3	3A	3B	3C	3D	3E
Improbable	2	2A	2B	2C	2D	2E
Extremely improbable	1	1A	1B	1C	1D	1E

Risk assessment Index	**Suggested Criteria**
5A, 5B, 5C, 4A, 4B, 3A	Unacceptable under the existing circumstances. Risk mitigation critical.
5D, 5E, 4C, 4D, 4E, 3B, 3C, 3D, 2A, 2B, 2C, 1A	Risk mitigation required. It might require management decision.
3E, 2D, 2E, 1B, 1C, 1D, 1E	Acceptable.

TOLERABILITY DESCRIPTION	**ASSESSED RISK INDEX**	**SUGGESTED CRITERIA**
	5A, 5B, 5C, 4A, 4B, 3A	Stop operation or process immediately. Unacceptable under the existing circumstances. Do not permit any operation until sufficient control measures have been implemented to reduce the risk to an acceptable level. Top management approval required
	5D, 5E, 4C, 4D, 4E, 3B, 3C, 3D, 2A, 2B, 2C, 1A	Caution. Ensure that risk assessment has been satisfactorily completed and declared preventive controls are in place. Senior management approval of risk assessment before commencement or continuation of the operation or process.
	3E, 2D, 2E, 1B, 1C, 1D, 1E	May be acceptable with or without review by appropriate management. Requires tracking and possible action. There are acceptable policies and procedures in place, but improvement is possible.

(iii) The following is an example of strategies that can be introduced for mitigation (risk control):

Avoidance	The operation or activity is cancelled because the risks exceed the benefits of continuing the operation or activity.
Reduction	The frequency of the operation or activity is reduced, or action is taken to reduce the magnitude of the consequences of the accepted risks.
Segregation of exposure	Action is taken to isolate the effects of risks or build in redundancy to protect against it.

(iv) Alternative means of analysing, assessing and controlling risk may be implemented by the approved entity or operator with the approval of the Director.

(v) All safety information reported to the Director shall be in the format specified in the above matrixes.

(vi) The approved entity or operator shall also define those levels of management with authority to make decisions regarding the tolerability/acceptability of safety risks, and the introductions of mitigating measures.

2.6 Safety assurance

(1) Monitoring and measurement of safety performance

(a) The entity shall develop and maintain the means to verify the safety performance of the operation compared to the safety policy and objectives, and to validate the effectiveness of safety risk controls.

(b) The entities' safety performance shall be verified in reference to the safety performance indicators and safety performance targets of the SMS established out of data collection.

(c) The entity shall collect its data to support safety performance indicators. Information sources for safety performance monitoring and measurement, where applicable, shall include the following:

(i) Safety occurrence reporting,

(ii) Hazard reporting,

(iii) Flight Data Analysis Programme,

(iv) Line Operational Safety Audits,

(v) NOSS program,

(vi) Confidential reporting system,

(vii) Internal safety investigations,

(viii) Safety studies,

(ix) Safety reviews, including trend analysis,

(x) Internal audits,

(xi) External audits,

(xii) Risk assessments,

(xiii) Employee surveys (safety and culture),

(xiv) Employee improvement suggestions,

(xv) Interviews and meetings,

(xvi) Customer/ stakeholder feedback,

(xvii) Competency assessment results.

(d) The safety reporting procedures relating to safety performance and monitoring shall clearly indicate which types of operational behaviours that are acceptable or unacceptable, and include the conditions under which immunity from disciplinary action would be considered. A non-punitive policy is required to enhance the reporting culture. Immunity from disciplinary action may not be granted in instances of violation and gross negligence.

(e) The entity shall create an environment where voluntary and confidential reporting mechanisms are established as in addition to the mandatory collection of safety-related information.

(2) The management of change

(a) The entity shall develop and maintain a formal process to identify changes within the entity which may affect the level of safety risk, 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 or effective due to changes in the operational environment.

(b) The management of change shall follow a risk based approach as prescribed in subsection 2.5(1) and safety risk management which includes risk assessments.

(c) The organisation shall ensure their management of change review and risk assessment process also focuses on the following situations:

(i) changes resulting from the installation of new equipment;

(ii) new areas of operations, whether geographical or other;

(iii) changes in response to operating experience;

(iv) changes in an organisation's policies, procedures and manuals;

(v) changes in scope of organisations' certificate;

(vi) passenger safety information;

(vii) products or services;

(viii) operational changes;

(ix) exemptions or alternative means of compliance;

(x) for air operators, changes for purposes of maintaining cross fleet standardisation; and

(xi) after major events (mergers, acquisitions, rapid growth, downsizing, etc.);

(xii) after significant occurrences involving the company or similar companies where unanticipated hazards or incidents were implicated; and

(xiii) after changes in relevant applicable safety regulations, or any time so directed by the Director.

(3) Continuous improvement of the SMS

(a) The entity shall develop and maintain a formal process to identify the causes of sub-standard performance of the SMS, to determine the implications of sub-standard performance in operations, and to eliminate such causes. This may be achieved through audits of the SMS to ensure its effective implementation.

(b) Entities shall develop a process for conducting periodic scheduled reviews, inspections or audits of SMS not exceeding a 24 month cycle. Such reviews shall include but not limited to safety reporting systems, safety studies, safety reviews, safety audits, safety surveys and occurrence investigations.

(c) A safety and quality assurance programmes which shall be integrated to monitor on a continuous basis the operational and safety programmes to improve the organization assurance and oversight functions.

2.7 Safety promotion

(a) **Safety communication** – The entity shall develop and maintain formal means for safety communication that:

(i) ensures personnel are aware of the SMS to a degree commensurate with their positions;

(ii) conveys safety critical information;

(iii) explains any particular safety actions are taken;

(iv) explains why safety procedures are introduced or changed;

(v) ensures safety promotion;

(vi) ensures the advertisement of scheduled of safety meetings and record of such; and

(vii) ensures that a procedure for reporting progress to the Accountable manager is in place.

3. Requirements of SMS Training Programme

3.1 Training and education

(1) The entity shall develop and maintain a safety training programme that ensures that personnel responsible for the associated functions as contained in the SMS are trained and competent to perform their respective duties and thus not compromising SMS goals.

(2) The entity must ensure that all personnel are provided with safety information appropriate to their identified needs, to the extent of their safety functions and responsibilities.

(3) Safety training shall be delivered by persons with appropriate knowledge skills, and experience in the applicable subject area.

3.2 SMS training programme – Categories

(1) The entity shall base and develop its SMS training programme around the four components of the ICAO SMS framework and take into account the different levels of knowledge required for the functions of different position within the entity.

3.3 In-house SMS levels of training

(1) When developing SMS training programme, the entity shall take into account the different levels of knowledge and awareness required for the functions and responsibilities of the different staff positions within the entity.

(2) The four levels of in-house SMS training are:

	Level of training	Recipients	Training Objective	Training content	Recurrence	Level of Instructor
(a)	Aviation Safety content for Induction training.	Non Operational staff within 90 days of service commencement.	To familiarise trainees with the Entities SMS safety policies, objectives and SMS fundamentals.	• The Safety Policy and Objectives • Hazards, consequences and risks. • Safety reporting.	Once off, 1 hour training during induction.	Company Instructor/safety manager/officer personnel or approved Part 141organisation
(b)	Aviation Safety training for Operational personnel.	Within 90 days All operational staff of entities	To familiarise trainees with the entities safety policies, objectives, their role in hazard identification and risk management and SMS fundamentals.	• The Safety Policy and Objectives • Hazards, consequences and risks. • Safety risk management process, including roles and responsibilities. • Safety reporting. • Human factors	5 hours of training within each three year period	Company Instructor/safety manager/officer personnel or approved Part 141organisation
(c)	Safety Review specific training as per CAR Part 141.01.1. (a)	Entities personnel actively involved in the Safety Review Process, including middle, executive/senior management and accountable manager	To familiarise trainees with safety concepts, relevant to their respective roles, functions and responsibilities including compliance with national and organisational safety requirements and inter-departmental safety communication and active promotion of SMS.	In addition to training contents referred to in (b) above, training should include the following: • Hazard identification and risk management processes. • Safety data collection and analysis. • Safety roles and responsibilities • Safety assurance and safety promotion • Establishment of safety performance targets, indicators, alerts and safety performance of SMS • The role and responsibilities of Operational	5 hours of training within each three year period	Company Instructor/safety manager/officer personnel or approved Part 141organisation

				management within the SMS.		
(d)	Aviation Safety Management training	Safety manager and approved SMS instructors	Initial training as outlined in section 3.5	As outlined in section 3.5	Once within each three year period	Instructor or institution approved by the director or an acceptable aviation Entity.

3.4 Training documentation

(1) Training requirements and activities for each level within the entity shall be documented.

(2) A training file shall be developed for each staff member, including management staff, to assist in identifying and tracking staff safety training requirements and verifying compliance.

(3) SMS training programmes shall be adapted to fit the needs and complexity of entities' aviation activities.

3.5 Safety manager training programme

(1) The training programme shall include at least the learning content reflected below. The training shall ensure an understanding of the concepts listed as well as the ability to implement and maintain them.

Skill	Learning content
Safety Management	1. Safety concepts, science and philosophy. 2. The history of safety. 3. Safety principles and practices 4. Aviation safety management system 5. Integration within disciplines (flight safety, cabin safety, ground safety, technical safety and emergency response disciplines). 6. Role and functions of the stakeholders 7. Behaviour based safety. 8. Safety compliance and application of requirements 9. Safety manager functions in an organization 10. Safety as a management function 11. Measurement of effectiveness 12. Contractor safety program management 13. Conformance monitoring

	14. Development of safety policies, procedures and practices in line with regulations 15. Identify, develop and maintain a risk assessment system Develop risk profile, interpret risk data, producing and presenting recommendations 16. Define and describe safety risk methodology 17. Development of safety performance indicators and targets. 18. Change management. 19. Safety Communication
Safety Legislation	1. Applicable aviation acts and regulations as well as safety acts and regulations
Safety Structure, Responsibilities and Accountability	1. Safety responsibilities and accountability of the various positions within the Organizational structure 2. Developing and implementing an effective aviation safety organizational structure 3. Defining safety responsibilities and accountability 4. Measuring the effectiveness of the safety organization
Safety Risk Management	1. Risk management models 2. Identification of hazards and its consequences. 3. Identification of the risk of consequences in terms of likelihood (probability) and severity (impact) 4. Assessing risk and loss exposures and prioritization 5. Methods for risk control (Mitigation) and prevention strategies 6. Defining Safety hazards 7. Analyzing hazard information from all sources available 8. Determine the probability, frequency and severity of risk occurrence 9. Defences (counter measures/controls) and their role.
Accident/Incident Investigation	1. Concepts covered by Annex 13 2. Accident / incident (occurrence) reporting and its role in the safety management system

	3. Investigation of occurrences not required to be investigated by the Accident and Investigation Authority.
Safety Awareness	1. Defining requirements for safety awareness (who, what, when, how) 2. Means for improving awareness. 3. Identification of media and means available 4. Planning for delivery of a safety awareness project
Safety Research	1. Process of safety research 2. Sources of information for application in safety research 3. Questionnaires and data management techniques. 4. Information analysis
Aviation Safety Management Information	1. Development of aviation safety management information system (Library/database) 2. Safety reporting and presentation of safety information
Emergency Response Planning	1. The concept of emergency response planning 2. Emergency response principles and practices 3. The role, functions and responsibilities of the different role players in emergency response 4. The role and functions of the different centers in emergency response 5. Design and management of emergency response exercises 6. Development and implementation of emergency response procedures

(2) The training programme may include the learning content reflected below:

Skill	Learning content
Strategic Safety Management	1. The science and philosophy of strategic management. 2. The factors affecting strategic management 3. Setting of strategic safety objectives and performance targets 4. Development of safety cases 5.

	Aviation safety planning in support of the corporate business plan 6. Monthly and annual aviation safety reporting
Auditing	1. Role of safety manager in auditing (mainly contractors) 2. Developing, producing and monitoring an audit schedule 3. Audit planning and preparation 4. Conducting audits 5. Implementation of effective corrective measures including monitoring of its success
Communication	1. Written: Report writing and presentation 2. Verbal: Motivation, negotiation and logical presentation
Aviation safety administration	1. Safety administration system (document and system management)
Financial management	2. Fundamentals of financial management 3. Formulation of budget 4. Budget monitoring 5. Cost benefits analysis of safety implementation
[Editorial Note: Numbering as per CAA issued content.]	
Project management	1. Basic project management skills 2. Organization and coordination of resources.

3.6 Organizations which may provide safety management system training

(1) The Director recognises the following international organisations as organisations which may conduct SMS training outside of the auspices of Part 141 approval:

(a) International Civil Aviation Organisation (ICAO);

(b) International Air Transport Association (IATA);

(c) Civil Air Navigation Services Organisation (CANSO);

(d) Airports Council International (ACI).

4. Qualifications of safety manager

(1) The qualifications of the safety manager include, the following skills, qualifications and experience:

(a) full-time experience in aviation safety in the capacity of an aviation safety investigator, safety/quality manager or safety risk manager;

(b) sound knowledge of the organization's operations, procedures and activities;

(c) broad aviation technical knowledge;

(d) an extensive knowledge of safety management systems (SMS) and have completed appropriate SMS training;

(e) an understanding of risk management principles and techniques to support the SMS;

(f) experience implementing and/or managing an SMS;

(g) experience and qualifications in aviation accident/incident investigation and human factors;

(h) experience and qualifications in conducting safety/quality audits and inspections;

(i) sound knowledge of aviation regulatory frameworks, including ICAO Standards and Recommended Practices (SARPS) and relevant civil aviation regulations;

(j) the ability to communicate at all levels both inside and outside the company;

(k) the ability to be firm in conviction, promote a "just and fair culture" and yet advance an open and non-punitive atmosphere for reporting;

(l) the ability and confidence to communicate directly to the accountable executive as his advisor and confidante;

(m) well-developed communication skills and demonstrated interpersonal skills of a high order, with the ability to liaise with a variety of individuals and organizational representatives, including those from differing cultural backgrounds;

(n) Computer literacy and superior analytical skills.

140.02.2 MANDATORY OCCURRENCE REPORTING

1. Form and manner of reporting

(1) The safety reporting requirements shall be described and implemented to facilitate reporting of occurrences and perceived hazards to the area operational management and/or safety manager.

(2) Reporting procedures shall include management reporting and reporting to the Director.

(3) The entity shall report any hazard with intolerable/high/unacceptable risk identified through its SMS to the Director within thirty (30) days of it being verified through its SMS processes. The report shall include the mitigation actions taken to address the risk.

(4) The Pilot In Command or flight crew member or entity shall report the following safety information to the Director:

(a) Aviation accidents as soon as possible but at least within 24 hours since the time of the accident in a manner prescribed by the Director;

(b) Serious incidents as soon as possible but at least within 48 hours since the time of the incident/serious incident in a manner prescribed by the Director;

(c) Incidents as soon as possible but at least within 72 hours since the time of the incident in a manner prescribed by the Director and other safety related occurrences as per schedule agreed to with the Director;

(d) The hazards identified by the entities on an annual basis to include all hazards in the intolerable region and tolerable region to list not exceeding 20; and

(e) the mitigation strategies implemented to address the risk.