



## Advisory Circular

AC 119-2

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### Air Operations - Safety Management Systems

Initial Issue

01 March 2008

#### GENERAL

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

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

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

#### PURPOSE

This Advisory Circular provides methods and explanatory material for showing compliance with the air operator certification requirements of Part 119, in relation to safety management systems, for air operations conducted in accordance with Civil Aviation Rule Parts 121, 125 and 135.

#### RELATED CAR

This AC relates specifically to Civil Aviation Rule Part 119 but also refers to the operating rules in Part 121, 125 and 135.

#### CHANGE NOTICE

There was no previous issue of this AC, consequently no change is in effect.

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## 1. REFERENCES AND EM 119.201

- Guidance material for the establishment of a safety management system can be found in ICAO Document 9422 – AN/923, *Accident Prevention Manual* and ICAO Document 9376 – AN/914 *Preparation of an Operations Manual*.
- An operator's guide to building a safety programme located at the CASA web site at :  
<http://www.casa.gov.au/avreg/business/safemang.htm>
- CAA (UK) CAP 712 safety management systems for commercial air transport operations located at the UK CAA web site at :  
[http://www.srg.caa.co.uk/publications/cap712\\_sms\\_for\\_commercial\\_air\\_transport\\_operations.pdf](http://www.srg.caa.co.uk/publications/cap712_sms_for_commercial_air_transport_operations.pdf)
- Transport Canada TP 13739 safety management systems located at the Transport Canada web site at :  
[http://www.tc.gc.ca/aviation/syssafe/tp13739/pdf/sms\\_e.pdf](http://www.tc.gc.ca/aviation/syssafe/tp13739/pdf/sms_e.pdf)

## 2. PURPOSE AND EM 119.201

This Advisory circular (AC) provides general principles and practical guidance in complying with the requirements for a Safety Management System as required by Subpart D of CAR Part 119 and CAR 119.76. This AC should be read in conjunction with Subpart D.

## 3. STATUS OF THIS AC AND EM 119.201

This is the first PNG AC produced on this subject.

## 4. DEFINITIONS AND EM 119.201

**Safety Management** is defined as the systematic management of the risks associated with flight operations and related ground operations to achieve high levels of safety performance.

**A Safety Management System** is an explicit element of the corporate management responsibility that sets out an operator's safety policy and defines how it intends to manage safety as an integral part of its overall business.

## **5. INTRODUCTION AND EM 119.201**

### **5.1**

CAR Part 119.76 requires an operator to whom Parts 121, 125 and 135 applies to have a safety management system which includes provision for a safety management, accident prevention and flight safety management system. This requirement is based on the ICAO standards recommended practices (Annex 6 Parts I and II) for operators to have such a system in place. ICAO Document 9422 - AN/923, *Accident Prevention Manual* gives appropriate guidance material and describes a safety management system.

### **5.2 Benefits of a Safety Management System**

To improve on existing levels of aviation safety in the light of the continuing growth of the industry, additional measures are needed. One such measure is to require operators to introduce their own Safety Management System (CAR Part 119 subpart D). Such a system is as important to business survival as a financial management system and the implementation of a Safety Management System should lead to achievement of one of civil aviation's key business goals: enhanced safety performance aiming at best practice and moving beyond mere compliance with regulatory requirements.

### **5.3 What is a Safety Management System?**

**5.3.1** A Safety Management System can be compared with a financial management system as a method of systematically managing a vital business function. It is instructive to look briefly at this aspect.

**5.3.2** The features of a financial management system are well recognised. Financial targets are set, budgets are prepared, levels of authority are established and so on. The formalities associated with a financial management system include 'checks and balances'. The whole system includes a monitoring element so that corrections can be made if performance falls short of set targets.

**5.3.3** The outputs from a financial management system are usually felt across the company. Risks are still taken but the finance procedures should ensure that there are no 'business surprises'. If there are, it can be disastrous for a small company. For the larger company, unwelcome media attention follows an unexpected loss.

**5.3.4** An aircraft accident is also 'an unexpected loss' and not one that any company in the civil aviation industry wishes to suffer. It should be apparent that the management of safety must attract at least the same focus as that of finance. The adoption of an effective Safety Management System (SMS) will provide this.

**5.3.5** A developed SMS provides a transparent, recorded system to manage safety and deserves at least the same degree of care that would be applied to a financial management system.

**5.3.6** A similar argument applies to a comparison with Quality Management, which should interface with Safety Management as part of the organisation/s core management system.

## **6. GENERAL AND EM 119.201**

### **6.1 The Fundamental Requirement of Safety Management**

Success in a company's safety performance will be greatly strengthened by the existence of a positive safety culture. Safety culture in an organisation can be described as the way in which it conducts its business and particularly in the way it manages safety. It emanates from the communicated principles of top management and results in all staff exhibiting a safety ethos which transcends departmental boundaries. It can be measured by informal or formal staff surveys, or by observations conducted in safety-related work areas. Safety must be actively managed from the very top of a company. Safety management must be seen as an integral strategic aspect of business management, recognizing the high priority attached by the company to safety. To that end, a demonstrable Board-level commitment to an effective formal Safety Management System must exist.

Equally, every level of management must be given a safety accountability. The contribution of the staff at and below supervisor level must be emphasised.

### **6.2 Understanding and Implementing a Safety Management System**

**6.2.1** Four points must be made at the outset, to indicate that implementation of a SMS involves evolution rather than revolution.

- Companies establishing a SMS need to take a pragmatic approach, building where possible on existing procedures and practices (particularly Quality Management). SMS identifies and prioritises the use of resources to manage risk and it should lead to gains in efficiency.
- Adoption of 'best practice' standards must be the goal.
- A fully-fledged SMS is a formalised, company-wide system. Established at the corporate level, the SMS then devolves out into the individual departments of the company. Flight Operations, Engineering and Maintenance, Ground Operations and all other departments whose activities contribute to the operator's safety performance will have their own processes and procedures under the umbrella of the corporate SMS.
- Where safety sensitive functions of the operator are outsourced (e.g. maintenance, ground handling), contractual agreements should identify the need for equivalent, auditable SMS in the supplier.

**6.2.2** Many existing procedures and practices are reactive, i.e. they are put in place following a safety event. SMS is both proactive and reactive, giving a means to anticipate and prevent or reduce the effect of risks. This is the essential benefit of Safety working in partnership with Quality Management.

**6.2.3** Successful development of SMS in a company follows an initial approach to the task; preparation for and implementation of SMS and, finally, the assurance of continued success of the system.

**6.2.4** Unless 'starting from scratch', it is not necessary to adhere to any particular sequence of actions. Many, perhaps all, operators will find their existing processes and procedures can be linked into the framework of a formal SMS.

## **7. SAFETY MANAGEMENT SYSTEM AND EM 119.201**

### **7.1**

A safety management system is a customised and structured method used by the operator to manage the safety of operations and personnel in an active and integrated manner.

### **7.2**

This management system incorporates all of the operator's activities undertaken in the organisation.

### **7.3**

The Safety Management System requirements have been established so that the system is documented and implemented by operators to be compatible with quality assurance and total quality management systems. Operators are encouraged to structure their documented processes to achieve a fully integrated management system.

## **8. SAFETY POLICY AND AMC 119.203**

### **8.1**

The safety policy should include a statement in writing, signed by the operator's CEO that the CEO is committed to:

- a) achieving and maintaining the operator's safety objectives mentioned in Part 119.205; and
- b) giving emphasis to the importance of a positive safety culture in the operator's organisation; and
- c) managing fatigue through the operator's fatigue management system.

## 8.2

The safety policy should:

- a) be appropriate for the needs of the organisation; and
- b) provide for a commitment to compliance with the Act, the CARs and the operator's AOC and Exposition; and
- c) provide for a commitment to the establishment and review of the operator's safety objectives; and
- d) be communicated throughout the organisation; and
- e) be regularly reviewed to ensure that it remains appropriate for the organisation.

## 9. SAFETY OBJECTIVES AND AMC 119.205

### 9.1

The safety objectives should state an intended safety outcome. The safety objectives may comprise both long-term objectives and short-to-medium term objectives.

The safety objectives should;

- a) be specific, measurable, achievable and realistic; and
- b) have a specified and timely timeframe within which they are to be achieved.

### 9.2

The operator should have documented safety plans to achieve each specified safety objective.

## 10. PERSONNEL - DOCUMENTATION OF ROLES, RESPONSIBILITIES AND AUTHORITIES AND AMC 119.207

Personnel should be grouped into tasks. Position descriptions should relate to activities performed. Each person employed should have a clear direction from management as to how to conduct all the activities they are required to perform. Reporting lines should provide for each of the operator's personnel, within their task groupings, to identify their responsibilities and accountabilities for all safety related activities.

## **11. MANAGEMENT REVIEWS OF SAFETY MANAGEMENT SYSTEM AND AMC 119.209**

### **11.1**

A reference to the operator's key personnel includes a reference to any person to whom a function of a key personnel position in the operator's organisation has been delegated.

### **11.2**

The review should be carried out at least annually, through a combination of an annual strategic review, and more frequent tactical reviews, of the performance of the safety management system.

### **11.3**

An annual strategic review should focus on the performance and continuing suitability of:

- a) the safety management system; and
- b) the safety policy; and
- c) the safety objectives;

in response to statistics prepared by the operator's safety manager on the performance of the safety management system and to reports to the CEO by other key personnel in accordance with Part 119.209.

### **11.4**

A tactical review should focus on the following:

- a) ongoing progress of accident, serious incident and incident investigations, and subsequent actions;
- b) corrective and preventive actions in progress;
- c) risk management procedures including safety improvement reporting actions as required by Part 119.217;
- d) results of emergency planning exercises and subsequent actions; and
- e) internal audit and external audit results.

### **11.5**

Each review should:

- a) be an integral part of the operator's management meeting schedule; and

- b) follow appropriate meeting protocols, including the taking of minutes, a review of previous minutes and action items and the recording and assigning of action items.

## **11. SAFETY MANAGEMENT SYSTEM IMPROVEMENT AND PREVENTIVE ACTION AND AMC 119.211**

### **12.1**

The operator should establish and maintain procedures for analysing data from internal and external sources using appropriate statistical techniques.

### **12.2**

The operator, when establishing procedures for preventive action as required by Part 119.211, should include requirements for:

- a) identifying potential accidents, serious incidents, incidents or reported problems and their causes;
- b) implementation of preventive action needed;
- c) recording results of action taken;
- d) reviewing preventive action taken.

See item 22.1 (d) in this AC for definition of preventive action.

## **12. SAFETY PRACTISES AND EM 119.201**

The outcome from the application of Safety Practices will be the development of a positive safety culture.

### **13.1 Benefits of a Safety Culture**

In addition to a moral and legal obligation to provide employees with a safe work environment many benefits will flow from a positive safety culture. These include but are not limited to:

#### **13.1.1 Trust**

A positive safety culture will generate trust on the part of employees, contractors and other airlines and has the potential to generate additional business opportunities.

#### **13.1.2 Improved and realistic audits**

Rather than being an imposition and potential threat, a positive safety culture will welcome audits as an important source of external information and or confirmation of how well the organisation is doing.

## 13.2 What is Culture?

**13.2.1** Culture is a term that can be applied to nations, organisations, sections and even small work groups. This means that at any given time your work behaviour is being influenced by several overlapping cultures. This raises the question: Exactly what is culture? There are various definitions, but for our purposes culture can be thought of as having three components. They are:

- a) What is important (to us);
- b) What we believe; and
- c) The way we do things around here.

**13.2.2** In order to understand "What is important" in an organisation, you must begin by looking at its Policy Statements. However, these are indications of intention and do not necessarily reflect current organisational practices. You must go further and consider your organisation's actual reward and punishment practices. In many respects these practices, both formal and informal, are what define your culture: Those things that are important are rewarded; those things that are not important are ignored; and those things that are not wanted may be punished.

**13.2.3** By themselves, rewards and punishments do not define a culture. How we react to rewards and punishments and take them into account as we go about flying or maintaining our aircraft depends to a large extent on what we believe. To borrow an old phrase, "*If we believe something to be true, we will behave as though it is true*". This means that, regardless of what an organisation's stated policies might be, employees will act on their beliefs. For example, if someone believes that if they make and then report an error they will suffer an unpleasant consequence. They are therefore unlikely to make the report. At this point it is very important to mention that beliefs can be tenacious and very resistant to change, even in some cases where there is overwhelming evidence for the need to change.

**13.2.4** Finally, all work organisations have informal or "understood" rules and procedures about how things actually are done. This is known as peer group influence and it can be very powerful. For example, a research project looking at the tendency for a pilot to violate SOPs found that an adverse peer comment was often enough to stop the violation from occurring. To follow on from the error-reporting theme, it may be that in your organisation errors may be seen as a sign of weakness or lack of diligence (possibly reflecting "can do" or "macho" attitudes). The result can be that errors are not reported to supervisors or management. That is, the "understood" rule might be "around here we work from memory", etc.

## 13.3 Culture and Behaviour

**13.3.1** Many things influence how we perform on the job. These include knowledge, skills, abilities, training, practice, availability and appropriateness of tools and procedures, etc. The list is almost endless. It is apparent, therefore,

that culture does not determine behaviour. Rather, culture shapes and predisposes behaviour. As Professor Patrick Hudson suggested, a positive culture is the added extra in the creation and maintenance of high performing and safe organisations.

**13.3.2** It is apparent from the foregoing that a positive safety culture must include a clear policy statement to the effect that safety is important and that this statement must be backed up by development and support of social and technical practices that encourage positive safety behaviour. Also included must be a belief shared by all employees that they will not experience negative consequences if they behave in a manner consistent with a positive safety outcome. Finally, behaviour in a manner consistent with a positive safety outcome must become the norm for all your employees, as must the willingness to speak up if an unsafe (or less than safe) practice or behaviour is observed.

### **13.4 Characteristics of a Safety Culture**

The goal of a positive safety culture is to encourage, promote, and support safe behaviour. A Safety Culture must include the following:

#### **13.4.1 Just**

- (1) How individuals are treated following the investigation of a mistake or event is at the very foundation of a safety culture. One of the most challenging tasks here will be to remove the idea that blame is useful. Accomplishing this will be difficult as blaming individuals for mistakes and events is a strongly ingrained part of our national and aviation culture. This in no way suggests, however, that you should adopt a “No Blame” policy - punishment and sanctions do have their place. What is required is that there be a clear distinction between what is acceptable behaviour and what is not, and that following a negligent action or deliberate non-compliance, people are treated accordingly.
- (2) For these distinctions to be accepted, they must be developed by all those involved. They must not be simply imposed from the top.
- (3) It should be noted that behaviour unrelated to safety, can also influence the safety culture. Actions which are perceived or believed to be unfair, for example, can create a negative reaction to all other actions by the organisation. Therefore, the concept of “just” must be applied to any, or all mistakes or events whether they have safety implications or not.

#### **13.4.2 Reporting**

Your employees must be willing to report their own errors and near misses. To encourage this reporting, your systems need to be easy to use and employees must be convinced that incidents are worth reporting. Good reporting will only happen in a “just” culture.

### 13.4.3 Informed

Your managers must know what is really going on. Once reported, there must be agreed ways to analyse mistakes and events to reveal underlying systemic and/or individual issues. The key here is that “you cannot manage what you do not measure”.

### 13.4.4 Wary

- (1) You can anticipate and plan for most threats and hazards. However, most accidents do not happen because people plan poorly or decide to gamble and lose, they happen because they did not believe that the accident was even possible.
- (2) Everyone in your organisation must be on the lookout for the “impossible” accident. There needs to be a chronic unease when you can’t seem to see anything wrong.

### 13.4.5 Flexible

Your organisation and employees must be flexible. This means that they must be prepared to shift away from the “status quo” or the traditional way of doing things. Policies, procedures and programmes must be defined by what is safe and sensible. This will require all employees have a sense of ownership of the goals, a fundamental knowledge of risk assessment and the authority to act within their competence. Above all, the aim here is to be flexible enough to avoid following procedures all the way to an accident.

### 13.4.6 Learning

Your organisation and its employees must learn from their experiences. That is, they must learn from the outcomes of mistakes and events and reports on unsafe or inadvisable practices. This will require some experimentation with revised procedures and the willingness to try again if the revisions don’t work first time.

## 13.5 Creating a Safety Culture

Safety Culture is an integral part of a Safety Management system and it cannot be developed in isolation. Concurrently, with the development of a Safety Management System, attention must be paid to each of the six characteristics of a safety culture. However, you must start somewhere. As the concept of a “just” culture is a core characteristic of a safety culture, it might be useful to start with an analysis of the practices within the organisation and the development of error and violation management strategies. With this as a starting point, it will rapidly become apparent how the other characteristics will develop.

## 13.6 Stages of a Developing Safety Culture

**13.6.1** Safety cultures can be placed on a continuum from *pathological*, or caring less about safety than about not being caught, through *calculative*; that is, mechanically following all the necessary steps, to *generative*, in which safe behaviour is fully integrated into everything the organisation does. (see Figure 1).

Regardless where an organisation starts, it will progress through each stage in order. It is not possible to jump or circumvent a state.

**13.6.2** At the *pathological* stage, an organisation is not even interested in safety and has to reach the first level of acquiring a value system that includes safety as a necessary element.

**13.6.3** The *reactive* stage is one in which safety issues begin to acquire importance, often driven by both internal and external factors as a result of having many incidents. At this first stage of development, safety values are beginning to be acquired by the beliefs, methods and working practices are still quite basic. At this stage, top management believes accidents to be caused by stupidity and inattention and even willfulness on the part of their employees. Many messages may flow from on high, but the majority still reflects the organisation's primary aims, often with "*and be safe*" tacked on at the end.

**13.6.4** The next stage, *calculative*, involves the recognition that safety needs to be taken seriously. The term *calculative* is used to stress that safety is calculated; quantitative risk assessment techniques and overt cost-benefit analyses are used to justify safety and to measure the effectiveness of proposed measures. Such techniques are typical problem-solving methods. Often simple calculations suggest that failing to be safe, or at least having incidents, costs money. Furthermore, organisations that are seen from outside as being uncaring about safety may have image problems that knock on to the bottom line. Despite this stance and despite what can become an impressive safety record, safety is still an add-on, certainly when seen from outside. This is the level of mechanical application of a management system. A true safety culture is one that transcends the *calculative* levels.

**13.6.5** A Safety Culture can only be considered to have developed in the later *proactive* or *generative* stages of this evolutionary line. The foundation can now be laid for acquiring the belief that safety is worthwhile in its own right. By constructing deliberate procedures, an organisation can force itself into taking safety seriously but the values are not yet fully internalized. The methods are still new and individual beliefs generally lag behind corporate intentions.

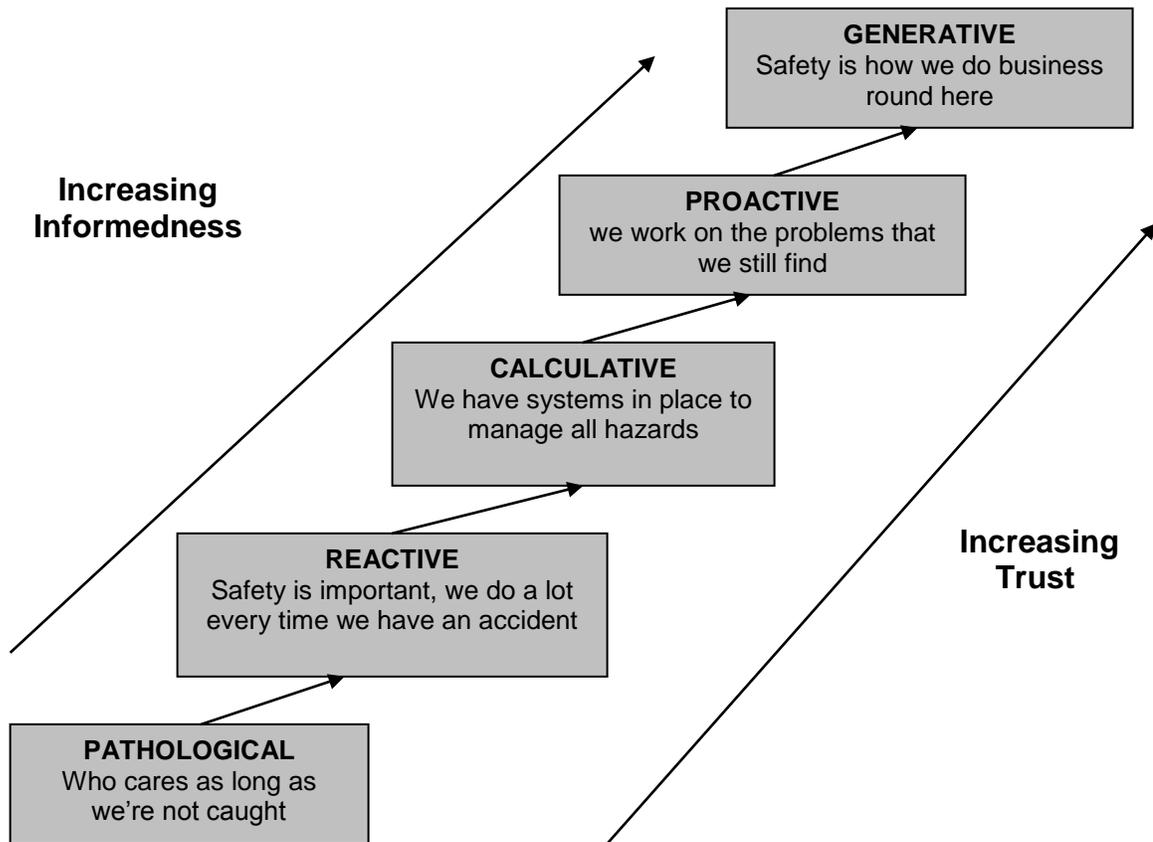
**13.6.6** This demonstrates a significant characteristic of a true safety culture, that the value system associated with safety and safe working has to be fully internalised as beliefs, almost to the point of invisibility and that the entire suite of approaches the organisation uses, are safety-based. What this also stresses is that the notion of a safety culture can only arise in an organisational context within which the necessary technical steps and procedures are already in place and in operation.

## 13.7 Maintaining a Safety Culture

**13.7.1** How do you maintain your effort and prevent regression or backsliding? Paradoxically, the biggest threat to a developing safety culture is success. There is a strong feeling that because mistakes or events have started to decrease that the "war" has been won and "peace" (safety) has broken out so

we can now get back our “real” business. Nothing could be further from the truth. One of the best ways to continue the struggle is to stay wary and worried. Look at your hazard identification programme or look around you. If you aren’t having mistakes or events, someone else is. Borrow theirs and treat them as your own.

## The Evolution of Safety Culture



### 14. SAFETY MANAGEMENT SYSTEM TRAINING AND AMC 119.214

#### 14.1

The briefings should include the following matters:

- a) the basic principles of the safety management system and the way in which the system will function in the organisation;

- b) the importance of complying with the operator's safety policy and with the requirements of procedures that form part of the operator's safety management system;
- c) the roles and responsibilities of personnel in achieving compliance with the safety policy and procedures.

## **14.2**

The operator should ensure that new personnel are trained in the operation of the safety management system during their initial training programme.

## **14.3**

Also see AC 119-3 for an Acceptable Means of Compliance.

# **15. RISK MANAGEMENT PROCEDURES AND IDENTIFICATION OF SAFETY IMPROVEMENTS AND AMC 119.217**

## **15.1 Risk Management Procedures**

Risk management procedures should involve the following:

- a) risk identification;
- b) risk analysis;
- c) risk assessment;
- d) risk management;
- e) reporting procedures.

## **15.2 Risk Identification**

**15.2.1** Risk identification should involve a systematic process of regular meetings where organisational risks are identified, managed and introduced in a manner that does not compromise the safety of aircraft operations.

**15.2.2** Organisational risks are to be determined individually by identifying the types and extend of any:

- a) changes to operations authorised by the operator's AOC or to the operator's organisation; or
- b) new internal or external influences.

## **15.3 Risk Analysis**

Risk analysis should involve a determination of the severity of the consequences of each identified risk and the likelihood of its occurrence.

## **15.4 Risk Assessment**

Risk assessment should:

- a) involve determining the priority of an identified risk; and
- b) include an assessment of the defences which exist to protect against the risk and the adequacy of those defences.

## **15.5 Risk Management**

**15.5.1** Risk management should involve the establishment of appropriate procedures to eliminate or minimise a risk.

**15.5.2** Risk minimisation should involve:

- a) providing and implementing solutions; and
- b) the development of procedures; and
- c) personnel training.

## **15.6 Reporting Procedures**

**15.6.1** Procedures for the identification, reporting, analysis and management of identified safety improvements should be documented and implemented as part of the risk management procedures.

**15.6.2** Depending on the size and complexity of the operator's organisation and the nature of the potential risk, an appropriate way of reporting may be one, or more of the following:

- a) to the safety manager directly;
- b) through a safety committee;
- c) through a confidential reporting or suggestion-box scheme.

## **16. INTERNAL COMMUNICATION AND CONSULTATION PROCEDURES AND AMC 119.219**

### **16.1**

The internal communication and consultation procedures should be appropriate to the size and complexity of operations authorised by the operator's AOC and the operator's organisation.

### **16.2**

An operator should establish and maintain information management procedures to ensure that all personnel have access to the sources of relevant information to enable them to carry out tasks effectively.

*Information Management Procedures* includes, but is not limited to, the distribution of safety-related literature, magazines, periodicals, textbooks, posters, video's, CD's, DVD's and web based information.

## **17. DOCUMENT CONTROL PROCEDURES AND DOCUMENT CONTROL AND AMC 119.221**

### **17.1**

Document control procedures should:

- a) include methods of identifying the current issue of any safety-related document so that the currency of the document set to which it belongs can be determined; and
- b) ensure that changes to any safety-related document are clearly identified within the document and are communicated to all personnel to whom the document applies.

### **17.2**

A safety-related document may be in any form (including electronic form) or format.

### **17.3**

A safety-related document should :

- a) be readily accessible to all personnel who need to use it; and
- b) present information, procedures or instructions in a way that can be clearly understood and followed by those personnel.

### **17.4**

A safety-related document that is not authorised, or is obsolete, should be:

- a) clearly marked as not authorised, or as obsolete; or
- b) removed from the workplace to prevent its issue.

### **17.5**

If a safety-related document is updated, an archive copy of any superseded document should be stored, for at least 3 years, in order to maintain a historical record of updates.

## **18. RECORD CONTROL PROCEDURES AND AMC 119.223**

### **18.1**

An operator should establish and maintain documented record control procedures to ensure that records form a resource for statistical analysis and preventative action.

### **18.2**

The records may be stored in any form (including electronic form).

### **18.3**

The records should be:

- a) adequately filed and labeled; and
- b) stored in a way that prevents loss or deterioration; and
- c) readily accessible to an authorised officer.

### **18.4**

The procedures should specify:

- a) the period for which the records are required to be kept; and
- b) the means of their disposal.

## **19. INTERNAL AUDIT AND AMC 119.225**

### **19.1**

An internal audit should include at least the following processes:

- a) a defined scope of the audit;
- b) planning and preparation;
- c) gathering and recording evidence; and
- d) analysis of the evidence.

### **19.2**

The operator should consider the following methods for inclusion in an internal audit:

- a) a review of existing procedures relating to the operation being audited;
- b) interviews or discussions with personnel;
- c) the witnessing of the activities involved in the operation being audited; and

- d) the examination of an adequate sample of records.

### **19.3**

An internal audit may be undertaken by one or more internal auditors.

### **19.4**

In determining the frequency of internal audit of an operation, the internal audit procedures should take into account:

- a) the importance of the operation to be audited; and
- b) the frequency of significant changes to the organisation, management, operation, relevant technology or regulatory requirements.

### **19.5**

The internal audit procedures should provide for unscheduled audits to be carried out when trends that indicate potential problems are identified.

### **19.6**

An operator may increase the frequency of audits under the internal audit procedures but should not decrease the frequency without the written permission of the CAA.

### **19.7**

If an internal audit shows that procedures relating to the audited operation can be improved, the operator should take steps to improve those procedures.

## **20. AUDITORS FOR INTERNAL AUDITS AND AMC 119.227**

### **20.1**

An internal auditor may be employed or engaged by an operator on a full-time or part-time basis.

### **20.2**

An internal auditor should have appropriate responsibility and authority to do the following :

- a) carry out internal audits;
  - b) initiate and recommend solutions to concerns and findings through the operator's safety manager;
  - c) verify the implementation of solutions within specified timeframes; and
  - d) report directly to the safety manager.
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An internal auditor should have the relevant operational and maintenance experience to carry out an internal audit of an operation that is to be audited.

## 21. ACCIDENT AND INCIDENT RECORDING, REPORTING AND INVESTIGATION SCHEME AND AMC 119.229

### 21.1

The detailed objectives of the reporting scheme are:

- a) to enable an assessment of the safety implications of each accident, serious incident or incident to be made, taking into account any previous similar occurrence, so that any necessary action can be taken; and
- b) to ensure that information gained through the investigation of accidents, serious incidents and incidents is disseminated so that other operators and their personnel, and other interested organisations, may improve the safety aspects of their operations.

### 21.2

The procedures established for the reporting scheme should be accessible to all personnel.

## 22. REMEDIAL, INVESTIGATIVE AND CORRECTIVE ACTION AND 119.231

### 22.1

The procedures should deal with the following:

- a) **Remedial Action.** Action required to be taken, in response to an audit finding, to remedy the immediate situation so that operations are brought within safe parameters, to enable the operations to continue until such time as corrective action(s) can be initiated.
- b) **Investigative Action.** Action required to be taken to investigate the accident, incident or problem and to determine the root cause;
- c) **Corrective Action.** Action required to address the root cause so as to ensure that the accident, serious incident, incident or problem does not recur;
- d) **Preventive Action.** The action, resulting from internal processes to analyse data (from internal and external sources), to eliminate the causes of potential problems.

**22.2**

The operator should establish and maintain monitoring procedures to review corrective action and ensure that it is effective.

**23. EMERGENCY RESPONSE PROCEDURES AND AMC 119.235**

The operator's CEO, together with the operator's other key personnel, should:

- a) review the emergency response procedures on a regular basis and particularly after the occurrence of an accident, incident or emergency situation; and
- b) periodically test the procedures, where practicable.