# Practical safety management

**Bruce Byron**

THE management of any operation requires attention to many factors that are essential to the business. At the centre of any senior manager's activity will be budgetary issues followed closely by resources, equipment and personnel matters. All of these things are required to deliver a product, and all involve cost. Many senior managers and CEOs can quite naturally become absorbed in these issues which are necessary to run the business, sometimes at the expense of monitoring the safety health of their organisation.

Since senior management is responsible for the organisation, it seems logical to involve them with both operational managers and technical staff in a structured manner to collectively manage and control safety issues. The way we structure these various players and the processes that they all use to address safety concerns, is in fact a safety management system.

**What is a safety management system?** Any aviation organisation that is in business to sell a service will understand that "less safe" is bad for business. As the travelling public becomes more knowledgeable about aviation issues, they naturally demand a safe service.

History tells us that all human activity is prone to error. Errors can occur in the development of policy and procedures by management, in the same way that errors can occur on the flightdeck or in the hangar. In short, errors by all participants in an organisation can contribute to that "less safe" condition.

A safety management system recognises the potential for these errors, and endeavours to establish robust defences to ensure that those errors do not result in incidents or accidents.

A safety management system should include:

- A documented management structure including the responsibilities and processes that link the main players.
- Identification of management accountability for running the system as documented.
- Communication processes that flow both up and down in the organisation.
- Involvement of staff at all levels in the organisation.
- Formal review of safety-related information.

**What does a safety management system do?** Left alone and poorly managed, most organisations will become less safe. Management neglect, worker apathy and an absence of analysis will all eventually create a less-safe operation.

On the other side of the equation, a successful safety management system can produce very positive safety outcomes. In this sense, a safety management system is clearly good for business.

The potential benefits of safety management systems are generally recognised throughout the world to the extent that many ICAO nations now require commercial operators to have documented safety systems. Future amendments to the Civil Aviation Safety Regulations are likely to include similar requirements.

**Management responsibility:** The various levels of management in an aviation operation are shown in Figure 1.

Senior management, most likely the CEO, provides overall policy for implementation by the functional operational managers such as the chief pilot and chief engineer.

These managers then provide the detailed procedures which are applied by technical personnel, be they pilots, flight attendants, engineers or ramp staff.

In the same way that senior management is responsible for an organisation's budget, senior management also needs to be responsible for establishing and maintaining the safety management system. In many organisations the CEO of the business is also in charge of the Air Operator's Certificate (AOC) and/or the Certificate of Approval (CofA). If the safety system is to be successful, that person needs to be involved by mandating the system structure and encouraging operational staff to provide feedback on the safety health of the organisation.

Apart from the need to manage aspects of the operation that are important to the business, the Civil Aviation Act places the responsibility on senior management and directors of the company, to exercise "due care and diligence". What that really means is senior management must take all reasonable steps to manage the safety of the operation: quite different to merely satisfying specific regulatory requirements.

The operational management team are at the heart of any sound safety system. Depending on the size of the organisation, this team could involve a number of people. In the case of an organisation with an AOC, the team should include the heads of flying operations, engineering and if appropriate, airport services or ramp.

Ideally, these people should work together in a disciplined manner to identify problem areas

and allocate responsibility to fix those problems. It is not satisfactory to have these areas represented by "safety officers" – this is often a deficiency in many large organisations.

Safety officers don't control aspects of the operation – that is the role of managers. Hence it is vital that functional managers form the safety committee or a similar review process to provide the specific solutions to identified safety deficiencies. This group is sometimes known as the operations safety committee (OSC).

**The operations safety committee:** In large healthy organisations there could be locally based or workgroup safety committees that target detailed aspects of the operation. However, assessment of safety cannot be conducted only as a series of "silos" in isolation. At some point, those responsible for different parts of the operation need to sit down together and look at the safety of the entire operation. This process should be done by the operations safety committee.

A mistake made by some airlines is to consider only flight operations in safety review processes. The operations safety committee should include the managers for all functions that impact on the safety of the operation, including flight operations, maintenance control, engineering, training, network support and ramp handling. In smaller organisations, management responsibility may of course be merged for some of these activities.

Collectively, this group should be in a position to review a list of standard information inputs. A comprehensive list in a healthy organisation would include:

- Mandatory safety reports - air safety incident reports (ASIR) and major defect reports /service difficulty reports (MDR/SDR).
- Non-mandatory safety reports from staff.
- Confidential reports.
- Accident or incident report recommendations.
- Identified trends from safety reports.
- Conformance audit issues and trends.
- Safety compliance audit findings.
- Technical staff safety committee recommendations.
- Operational risk assessments.

**Generating solutions:** By systematically reviewing this type of information, an organisation should be in a good position to identify emerging problems, generate solutions and then ensure that the responsible manager provides the action necessary for closure.

Most sources of information should be available to medium to large organisations. ASIR and MDR reporting provide mandatory reporting information, but it is vital that a safety-related non-mandatory system is available for technical staff to share their thoughts on possible deficiencies that could cause an accident or incident.

Similarly, access to a confidential reporting system is important, but it will only work if the organisation is able to prove to staff that their identity will be protected.

**Operational risk assessment:** One important source of information needed for this review process relates to operational risks.

Most operational managers would agree that they are generally uncomfortable when they have to manage change; be it new aircraft, new route, new staff or new procedures. That discomfort is generally well-founded because operational change is quite often associated with increased risk.

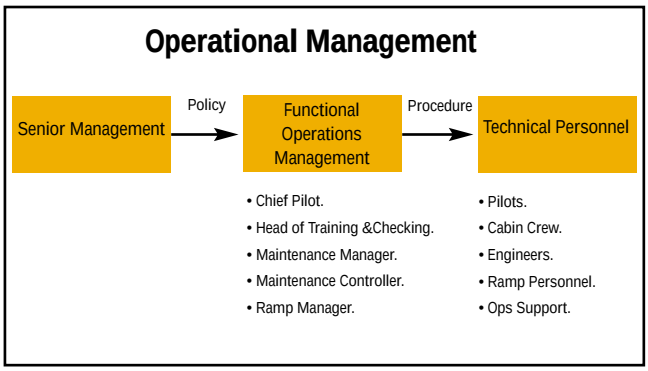


**Figure 1: The CEO provides overall policy for implementation by the functional operational managers such as the chief pilot and chief engineer. These managers then provide the detailed procedures which are applied by pilots, flight attendants, engineers and ramp staff.**

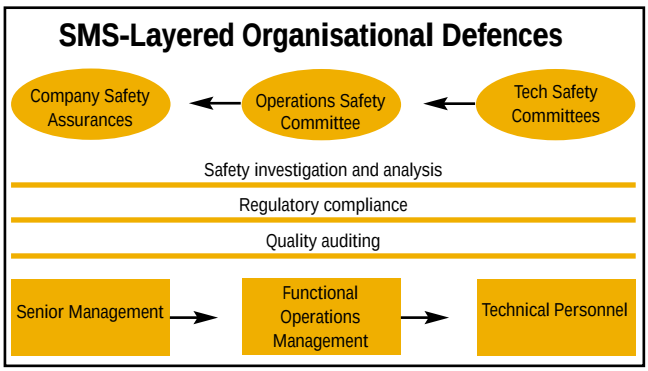


**Figure 2: Normal oversight functions such as audit, combine with management responsibility and safety-committee review to provide layered organisational defences.**

The most appropriate people to conduct such risk assessments are those that have to manage the change – managers of operational functions who are part of the OSC.

Various risk assessment tools are available from experts in that field. However, operational managers would be wise to use their own knowledge to initially identify areas of change, possible failures as a result of those changes and then put in place solutions to minimise risks. The important thing is to go through a disciplined process of analysing the impact of change on the operation, rather than just hoping it will be "alright on the night'.

**Layered organisational defences:** One of the rewards of a successful safety management system is that an error or failure is less likely to result in a reduction in safety.

The flight deck and the hangar have long been recognised as areas where we must strengthen our defences against error. In these areas, airlines around the world have made significant progress. The widespread application of crew resource management is an excellent example of this.

Safety management systems allow aviation businesses to extend those gains to identify and remedy weaknesses throughout the whole organisation. As safety management systems develop and become more widespread, we will have greater success in identifying and resolving organisational issues.

Provided management and staff at all levels are able to contribute to the system, and provided staff are given feedback on decisions made by management on safety issues, a safety management system can provide solutions simply by organising existing people and resources in a safety-focused manner.

Giving staff and management the responsibility to consider safety issues at the same time as making decisions for the business is a low-cost solution to a potentially high-cost alternative.

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