Module N° 9 – SMS operation

Objective

✈ When completing the module the participants will be able to describe the requirements associated to the operation of an SMS.

Outline

✈ Safety risk management
✈ Safety assurance
✈ Safety promotion
✈ Questions and answers
✈ Points to remember
Module N° 9  
ICAO Safety Management Systems (SMS) Course

ICAO SMS framework

1. Safety policy and objectives
   1.1 – Management commitment and responsibility
   1.2 – Safety accountabilities of managers
   1.3 – Appointment of key safety personnel
   1.4 – SMS implementation plan
   1.5 – Coordination of emergency response planning
   1.6 – Documentation

2. Safety risk management
   2.1 – Hazard identification processes
   2.2 – Risk assessment and mitigation processes

3. Safety assurance
   3.1 – Safety performance monitoring and measurement
   3.2 – The management of change
   3.3 – Continuous improvement of the SMS

4. Safety promotion
   4.1 – Training and education
   4.2 – Safety communication

2 Safety risk management

2.1 – Hazard identification processes (Module 4)
   - A formal means of collecting, recording, acting on and generating feedback about hazards and risks in operations.
   - Three methods:
     - Reactive
     - Proactive
     - Predictive

3 Safety risk management

3.1 – Safety performance monitoring and measurement

4 Safety risk management

4.1 – Training and education

5 Safety risk management

5.1 – Hazard identification processes

6 Safety risk management

6.1 – Hazard identification processes

ICAO Safety Management Systems (SMS) Course
Module N° 9 – SMS operation
2 Safety risk management

2.1 – Hazard identification processes

Typical qualities of successful confidential reporting systems:

- Reports easy to make.
- No disciplinary actions as result of reports.
- Reports are confidential.
- Feedback is rapid, accessible and informative.

2 Safety risk management

2.1 – Hazard identification processes

Four steps for action:

1. Reporting hazards, events or safety concerns.
2. Collecting and storing the data.
3. Analyzing reports.
4. Distributing the information distilled from the analysis.

ICAO SMS framework

1 Safety policy and objectives
   1.1 – Management commitment and responsibility
   1.2 – Safety accountabilities of managers
   1.3 – Appointment of key safety personnel
   1.4 – SMS implementation plan
   1.5 – Coordination of emergency response planning
   1.6 – Documentation

2 Safety risk management
   2.1 – Hazard identification processes
   2.2 – Risk assessment and mitigation processes

3 Safety assurance
   3.1 – Safety performance monitoring and measurement
   3.2 – The management of change
   3.3 – Continuous improvement of the SMS

4 Safety promotion
   4.1 – Training and education
   4.2 – Safety communication

2 Safety risk management

2.2 – Risk assessment and mitigation processes

- The analysis and elimination, and/or mitigation to an acceptable level of risks that threaten the capabilities of an organization.

- To remember – The risk tolerability matrix
ICAO SMS framework

1. Safety policy and objectives
   - 1.1 – Management commitment and responsibility
   - 1.2 – Safety accountabilities of managers
   - 1.3 – Appointment of key safety personnel
   - 1.4 – SMS implementation plan
   - 1.5 – Coordination of emergency response planning
   - 1.6 – Documentation

2. Safety risk management
   - 2.1 – Hazard identification processes
   - 2.2 – Risk assessment and mitigation processes

3. Safety assurance
   - 3.1 – Safety performance monitoring and measurement
   - 3.2 – The management of change
   - 3.3 – Continuous improvement of the SMS
   - 3.4 – Training and education
   - 3.5 – Safety communication

Safety assurance

3.1 – Safety performance monitoring and measurement
   - Safety audits are used to ensure that the structure of the SMS is sound in terms of:
     - Levels of staff;
     - Compliance with approved procedures and instructions;
     - Level of competency and training to:
       - Operate equipment and facilities; and
       - Maintain their levels of performance.

3.1 – Safety performance monitoring and measurement
   - Safety surveys examine particular elements or processes of a specific operation.
     - Problem areas or bottlenecks in daily operations.
     - Perceptions and opinions of operational personnel.
     - Areas of dissent or confusion.
3.1 – Safety performance monitoring and measurement

- **Safety surveys** may involve the use of:
  - Checklists
  - Questionnaires.
  - Informal confidential interviews.
- Since surveys information is subjective, verification may be needed before corrective action.
- Surveys may provide an inexpensive source of significant safety information.

- **Internal safety investigations** include occurrences or events that are not required to be investigated or reported to State.
  - In-flight turbulence (flight operations)
  - Frequency congestion (ATC)
  - Material failure (maintenance)
  - Ramp vehicle operations (aerodrome)

---

ICAO SMS framework

1. Safety policy and objectives
   - 1.1 – Management commitment and responsibility
   - 1.2 – Safety accountabilities of managers
   - 1.3 – Appointment of key safety personnel
   - 1.4 – SMS implementation plan
   - 1.5 – Coordination of emergency response planning
   - 1.6 – Documentation
2. Safety risk management
   - 2.1 – Hazard identification processes
   - 2.2 – Risk assessment and mitigation processes
3. Safety assurance
   - 3.1 – Safety performance monitoring and measurement
   - 3.2 – The management of change
4. Safety promotion
   - 4.1 – Training and education
   - 4.2 – Safety communication

3.2 – The management of change

- Aviation organizations experience permanent change due to expansion, introduction of new equipment or procedures.
- Changes can:
  - Introduce new hazards.
  - Impact the appropriateness of risk mitigation.
  - Impact the effectiveness of risk mitigation.
### 3 Safety assurance

#### 3.2 – The management of change

- **External changes**
  - Change of regulatory requirements.
  - Security.
  - Reorganization of air traffic control.
  - …

- **Internal changes**
  - Management changes
  - New equipment.
  - New procedures.
  - …

A formal management of change process should:

- identify changes within the organization which may affect established processes and services.
- prior to implementing changes describe the arrangements to ensure safety performance.

### ICAO SMS framework

1. **Safety policy and objectives**
   - 1.1 – Management commitment and responsibility
   - 1.2 – Safety accountabilities of managers
   - 1.3 – Appointment of key safety personnel
   - 1.4 – SMS implementation plan
   - 1.5 – Coordination of emergency response planning
   - 1.6 – Documentation

2. **Safety risk management**
   - 2.1 – Hazard identification processes
   - 2.2 – Risk assessment and mitigation processes

3. **Safety assurance**
   - 3.1 – Safety performance monitoring and measurement
   - 3.2 – The management of change
   - 3.3 – Continuous improvement of the SMS

4. **Safety promotion**
   - 4.1 – Training and education
   - 4.2 – Safety communication

#### 3.3 – Continuous improvement of the SMS

Continuing improvement aims at:

- Determining the immediate causes of below standard performance and their implications in the operation of the SMS.
- Rectifying situations involving below standard performance identified through safety assurance activities.
3.3 – Continuous improvement of the SMS

Continuing improvement is achieved through:

- **Proactive** evaluation of facilities, equipment, documentation and procedures through audits and surveys.
- **Proactive** evaluation of the individuals' performance, to verify the fulfillment of their safety responsibilities.

3.3 – Continuous improvement of the SMS

Continuing improvement is achieved through:

- **Reactive** evaluations in order to verify the effectiveness of the system for control and mitigation of risks, for example: accidents, incidents and major events investigations.

ICAO SMS framework

1. Safety policy and objectives
   - 1.1 – Management commitment and responsibility
   - 1.2 – Safety accountabilities of managers
   - 1.3 – Appointment of key safety personnel
   - 1.4 – SMS implementation plan
   - 1.5 – Coordination of emergency response planning
   - 1.6 – Documentation
2. Safety risk management
   - 2.1 – Hazard identification processes
   - 2.2 – Risk assessment and mitigation processes
3. Safety assurance
   - 3.1 – Safety performance monitoring and measurement
   - 3.2 – The management of change
   - 3.3 – Continuous improvement of the SMS
4. Safety promotion
   - 4.1 – Training and education
   - 4.2 – Safety communication

4. Safety promotion

4.1 – Training and education

The safety manager should, in conjunction with the personnel department, review the job descriptions of all staff, and identify those positions that have safety responsibilities.
4 Safety promotion

4.1 – Training and education

❖ Who?
- Operational personnel
- Managers and supervisors
- Senior managers
- Accountable executive

❖ Why?
- To ensure that personnel are trained and competent to perform the SMS duties.

❖ How much?
- Appropriate to the individual’s involvement in the SMS.

ICAO SMS framework

1 Safety policy and objectives
- 1.1 – Management commitment and responsibility
- 1.2 – Safety accountabilities of managers
- 1.3 – Appointment of key safety personnel
- 1.4 – SMS implementation plan
- 1.5 – Coordination of emergency response planning
- 1.6 – Documentation

2 Safety risk management
- 2.1 – Hazard identification processes
- 2.2 – Risk assessment and mitigation processes

3 Safety assurance
- 3.1 – Safety performance monitoring and measurement
- 3.2 – The management of change
- 3.3 – Continuous improvement of the SMS

4 Safety promotion
- 4.1 – Training and education
- 4.2 – Safety communication

Module N° 9 ICAO Safety Management Systems (SMS) Course
4 Safety promotion

4.2 – Safety communication

△ Safety communication aims to:
- Ensure that all staff are fully aware of the SMS.
- Convey safety critical information.
- Explain why particular actions are taken.
- Explain why safety procedures are introduced or changed.
- Convey “nice-to-know” information.

Safety promotion

4.2 – Safety communication

△ The means to communicate may include:
- Safety policies and procedures
- News letters.
- Bulletins.
- Website.
△ Safety communication is an essential foundation for the development and maintenance of a positive culture.

ICAO Safety Management Systems (SMS) Course
Module N° 9 – SMS operation
Q: Name four qualities of successful confidential reporting systems.

A:
- Reports easy to make.
- No disciplinary actions as result of reports.
- Reports are confidential.
- Feedback is rapid, accessible and informative.

Q: What is safety performance monitoring and measurement?

A:
The process by which the safety performance of the organization is verified in comparison to the approved safety policies and objectives.

Q: What is the objective of a formal management of change process?

A:
- A formal management of change process should:
  - identify changes within the organization which may affect established processes and services.
  - describe the arrangements to ensure safety performance prior to implementing changes.

Points to remember:
1. Key ingredients for successful reporting
2. The importance of a formal management of change
3. Safety training – Who, why and how much