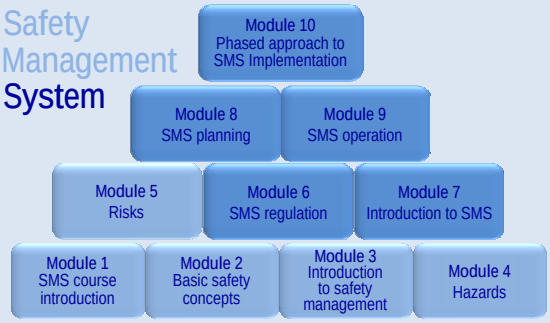
Safety Management Systems (SMS) Course

Module N° 8 – SMS planning

Addis Ababa – Ethiopia
29 September to 3 October 2008

Building an SMS



Objective

- *When completing the module the participants will be able to describe the requirements associated to the planning of an SMS, and explain the structure of an SMS implementation plan.*

Outline

- The components of SMS
- The elements of SMS
- Safety policy and objectives
- Questions and answers
- Points to remember
- Exercise 08/01 – *Cuzco International Airport operation (See Handout N° 5)*

The components of SMS

1. Safety policy and objectives
2. Safety risk management
3. Safety assurance
4. Safety promotion

The elements of SMS

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

The elements of SMS

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

ICAO SMS framework

1. Safety policy and objectives
   - 1.1 – Management commitment and responsibility
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1 Safety policy and objectives

1.1 – Management commitment and responsibility

- ❖ Senior management must:
  - ➢ Develop the safety policy, signed by the accountable executive. The safety policy must include a commitment to:
    - Achieve the highest safety standards.
    - Observe all applicable legal requirements and international standards, and best effective practices.
    - Provide appropriate human and financial resources.
    - Enforce safety as one primary responsibility of all managers.
    - Ensure that the policy is understood, implemented and maintained at all levels.

1 Safety policy and objectives

1.1 – Management commitment and responsibility

- ❖ Senior management must:
  - ➢ Communicate, with visible endorsement, the safety policy to all staff.
  - ➢ Establish safety objectives and performance standards for the SMS.
    - The safety objectives and performance standards should be linked to the safety performance indicators, safety performance targets and safety requirements of the SMS.

1 Safety policy and objectives

1.1 – Management commitment and responsibility

- ❖ Identify the accountable executive
  - ➢ Single, identifiable person.
  - ➢ Full responsibility for the organization's SMS
    - CEO/Chairman Board of Directors
    - A partner
    - The proprietor

1 Safety policy and objectives

1.1 – Management commitment and responsibility

- ❖ Accountable executive must have:
  - ➢ Full authority for human resources issues.
  - ➢ Authority for major financial issues.
  - ➢ Direct responsibility for the conduct of the organization's affairs.
  - ➢ Final authority over operations under certificate.
  - ➢ Final responsibility for all safety issues.

ICAO SMS framework

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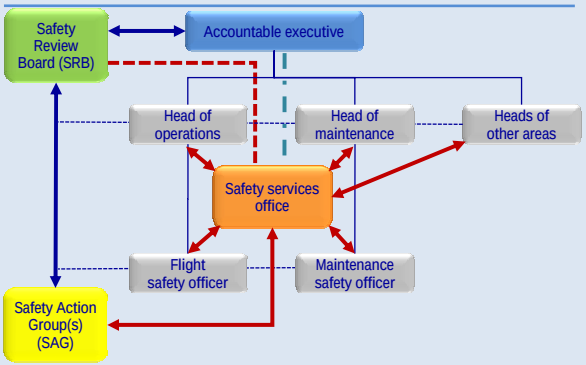
1 Safety policy and objectives

1.2 – Safety accountabilities of managers

- SMS organization
- Safety responsibilities of key personnel

Safety responsibilities – An example



ICAO SMS framework

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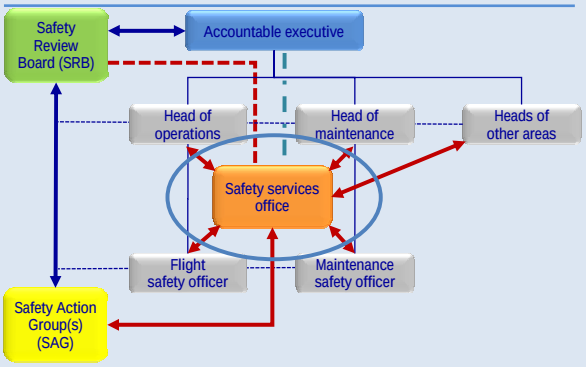
Safety responsibilities



1 Safety policy and objectives

1.3 – Appointment of key safety personnel

- The safety office – *Corporate functions*
  - Advising senior management on safety matters.
  - Assisting line managers.
  - Overseeing hazard identification systems.

1 Safety policy and objectives

1.3 – Appointment of key safety personnel

- The safety manager – *Responsibilities*
  - Responsible individual and focal point for the development and maintenance of an effective safety management system.

1 Safety policy and objectives

1.3 – Appointment of key safety personnel

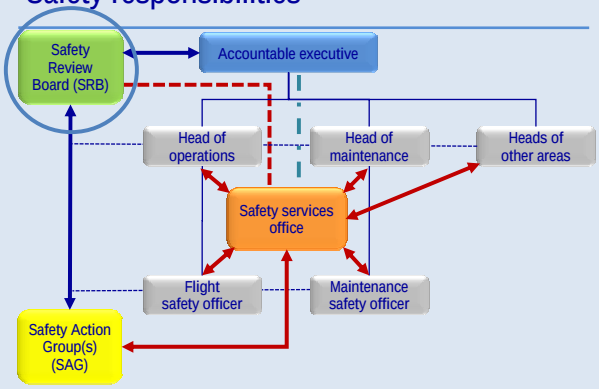
- The safety manager – *Functions*
  - Manages the SMS implementation plan on behalf of the accountable executive.
  - Facilitates hazard identification and risk analysis and management.
  - Monitors corrective actions to ensure their accomplishment.
  - Provides periodic reports on safety performance.
  - Maintains safety documentation.
  - Plans and organizes staff safety training.
  - Provides independent advice on safety matters.

1 Safety policy and objectives

1.3 – Appointment of key safety personnel

- The safety manager – *Selection criteria*
  - Operational management experience and technical background to understand the systems that support operations.
  - People skills.
  - Analytical and problem-solving skills.
  - Project management skills.
  - Oral and written communications skills.

Safety responsibilities



1 Safety policy and objectives

1.3 – Appointment of key safety personnel

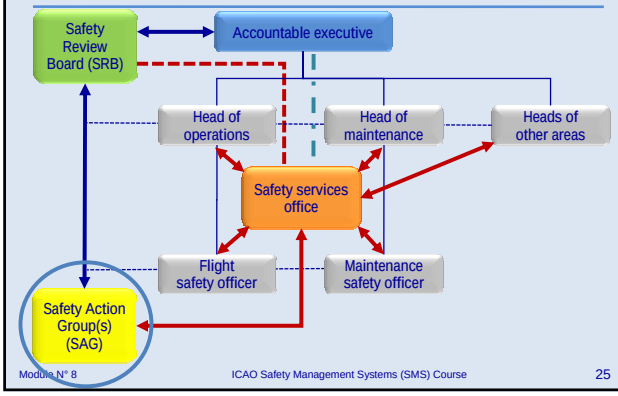
- The Safety Review Board (SRB):
  - High level committee
  - Strategic safety functions
    - Chaired by the accountable executive.
    - It may include the Board of Directors.
    - Composed of heads of functional areas.

1 Safety policy and objectives

1.3 – Appointment of key safety personnel

- SRB monitors :
  - Safety performance against the safety policy and objectives.
  - Effectiveness of the SMS implementation plan.
  - Effectiveness of the safety supervision of sub-contracted operations.
- SRB ensures that appropriate resources are allocated to achieve the established safety performance.
- SRB gives strategic direction to the SAG.

Safety responsibilities



❶ Safety policy and objectives

1.3 – Appointment of key safety personnel

❖ Safety Action Group(s) (SAG):

- ➢ Reports to SRB and takes strategic direction from SRB.
- ➢ Members:
  - ▪ Managers and supervisors from functional areas.
  - ▪ Front-line personnel.

❶ Safety policy and objectives

1.3 – Appointment of key safety personnel

❖ SAG:

- ➢ Oversees operational safety within the functional area.
- ➢ Resolves identified risks.
- ➢ Assesses the impact on safety of operational changes.
- ➢ Implements corrective action plans.
- ➢ Ensures that corrective action is taken in a timely manner.
- ➢ Review the effectiveness of previous safety recommendations.
- ➢ Safety promotion.

ICAO SMS framework

❶ Safety policy and objectives
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3.3 – Continuous improvement of the SMS
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❶ Safety policy and objectives

1.4 – SMS implementation plan

- Developed by a planning group, which:
  - Comprises an appropriate experience base.
  - Meets regularly with senior management.
  - Receives resources (including time for meetings).
- A realistic strategy for the implementation of an SMS that will meet the organization's safety needs.
- A definition of the approach the organization will adopt for managing safety.

❶ Safety policy and objectives

1.4 – SMS implementation plan – Contents

1) Safety policy
2) Safety planning, objectives and goals
3) System description
4) Gap analysis
5) SMS components
6) Safety roles and responsibilities
7) Safety reporting policy
8) Means of employee involvement
9) Safety training
10) Safety communication
11) Safety performance measurement
12) Management review (of safety performance)

❶ Safety policy and objectives

1.4 – SMS implementation plan

- Senior management endorses the plan.
- Typical implementation time frame will be one to four years ahead.
  - *See Module 10 – Phased approach to SMS Implementation.*

ICAO SMS framework

❶ Safety policy and objectives
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❶ Safety policy and objectives

1.5 – Coordination of emergency response planning

- ❖ Emergency response planning outlines in writing what should be done after an accident, and who is responsible for each action.
  - ➢ *Airport Emergency Plan (AEP)*
  - ➢ *Contingency Plans (ATC)*
  - ➢ *Emergency Response Plan (Operators)*
- ❖ The coordination of the different plans should be described in the SMS Manual

ICAO SMS framework

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❶ Safety policy and objectives

1.6 – Documentation

- ❖ Applicable regulations
- ❖ SMS records and documentation
- ❖ Records management
- ❖ The safety management system manual (SMSM)

❶ Safety policy and objectives

1.6 – Documentation – SMSM

- ❖ Key instrument for communicating the organization's approach to safety to the whole organization.
- ❖ Documents all aspects of the SMS, including the safety policy, objectives, procedures and individual safety accountabilities.

❶ Safety policy and objectives

- ❖ 1.6 – Documentation – SMSM contents

1. Scope of the safety management system.
2. The safety policy and objectives.
3. Safety accountabilities.
4. Key safety personnel.
5. Documentation control procedures.
6. Hazard identification and risk management schemes
7. Safety performance monitoring.
8. Emergency response planning.
9. Management of change.
10. Safety auditing.
11. Safety promotion.
12. Contracted activities.

Conclusion

- ❖ The successful management of safety is a functional responsibility that requires the participation of all operational personnel and the supervision of the organization (Systematic).
- ❖ This principle must be reflected in the structure of the organization (Explicit).

Conclusion

- ❖ The organization must define, document and communicate individual lines of responsibility and authority in regard to the management of operational safety (Explicit).
- ❖ The means to manage safety within the organization include hazard identification, risk management, safety assurance and safety promotion (Proactive).

SMS planning

Questions and answers

Questions and answers

- Q: What are the elements of the SMS component *Safety risk management*?
- A:
  - 2.1 – Hazard identification processes
  - 2.2 – Risk assessment and mitigation processes

Slide number: 6

Questions and answers

- Q: What does the SMS element "*safety accountabilities of managers*" comprise?
- A:
  - SMS organization.
  - Safety responsibilities of key personnel.

Slide number: 14

Questions and answers

- Q: What is the safety manager selection criteria?
- A:
  - Operational management experience and technical background to understand the systems that support operations.
  - People skills.
  - Analytical and problem-solving skills.
  - Project management skills.
  - Oral and written communications skills.

Slide number: 21

Questions and answers

- Q: List five subjects that should be included in the contents of the Safety management system manual (SMSM).
- A:
  - Scope of the safety management system
  - The safety policy and objectives
  - Safety accountabilities
  - Key safety personnel
  - Documentation control procedures
  - Hazard identification and risk management schemes
  - Safety performance monitoring
  - Emergency response planning
  - The management of change

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Points to remember

1. *The four components of an SMS.*
2. *The elements of an SMS.*
3. *The importance of documenting safety responsibilities.*
4. *SRB, SAG and the safety services office.*
5. *The SMS implementation plan.*
6. *The SMSM.*

SMS planning

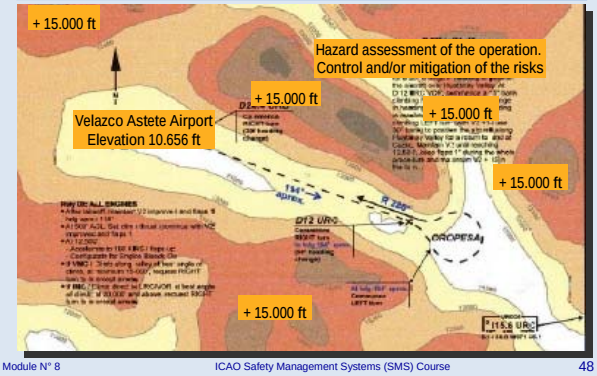
Exercise 08/01 – Cuzco International Airport operation *(Handout N° 5)*

Cuzco International Airport operation

❖ Group activity:

- ➢ A facilitator will be appointed, who will coordinate the discussion.
- ➢ A summary of the discussion will be written on flip charts, and a member of the group will brief on their findings in a plenary session.

Cuzco International Airport operation



Cuzco International Airport operation

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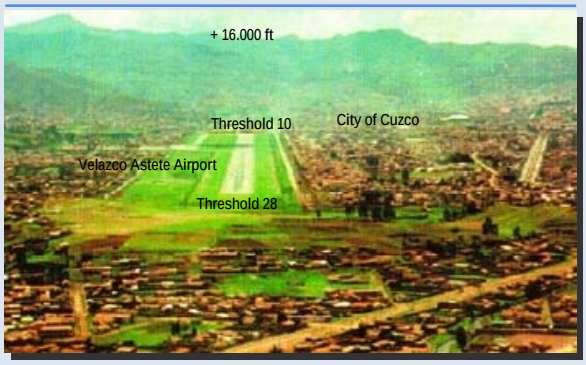
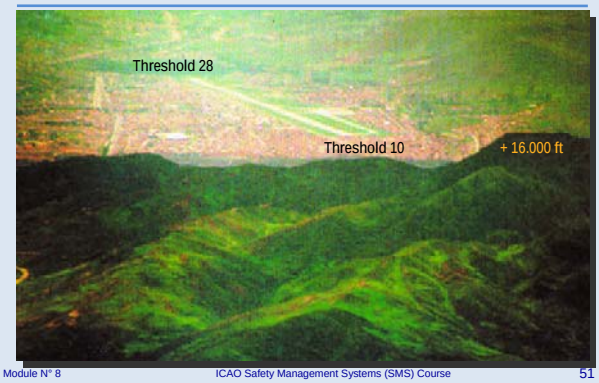
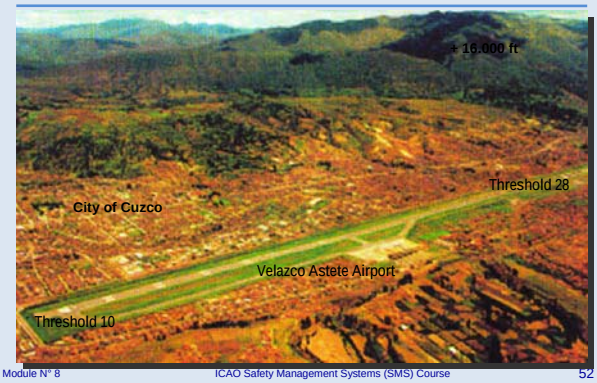


Cuzco International Airport operation



Cuzco International Airport operation



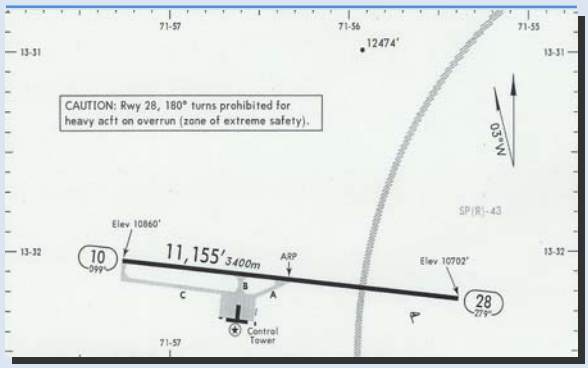
Cuzco Airport characteristics and operation

- VMC and day-light aircraft operation
- Landing on runway 28 only.
- Take-off on runway 10 only.

Cuzco Airport characteristics and operation

- In case of engine fire, engine-out or emergency condition return to airport is mandatory, except if the aircraft's weight and performance allow the aircraft to comply with obstacle clearance net trajectory.
- Katabatic wind forces tailwind take offs from approximately 16:00 hours daily.
- No ILS approach is available.
- VOR used for instrument letdown (URCOS) not located at the aerodrome.

Cuzco Airport characteristics and operation



What is the safety concern?

- Issues to be considered:
  - Aerodrome infrastructure.
  - Navigational radio aids.
  - Weather conditions.
  - Aircraft performance.
  - In-flight procedures.
  - Documentation
  - Training:
    - Pilots and cabin crew
    - Flight dispatchers
    - Safety ground crew

Cuzco International Airport operation

- Your task:
  - List the type of operation or activity.
  - State the generic hazard(s)
  - State the specific components of the hazard(s).
  - State the hazard-related consequences and assess the risk(s).
  - Assess existing defences to control the risk(s) and resulting risk index.
  - Propose further action to reduce the risk(s) and resulting risk index.
  - Establish individual responsibility to implement the risk mitigation
  - Complete the attached log *(Table 08/01).*

Table 08/01 – Hazard identification and risk management

N°	Type of operation or activity	Generic hazard	Specific components of the hazard	Hazard-related consequences	Existing defences to control risk(s) and risk index	Further action to reduce risk(s) and resulting risk index	Responsible person
1					*Risk index:* *Risk tolerability:*	*Risk index:* *Risk tolerability:*	
2					*Risk index:* *Risk tolerability:*	*Risk index:* *Risk tolerability:*	
3					*Risk index:* *Risk tolerability:*	*Risk index:* *Risk tolerability:*	
4					*Risk index:* *Risk tolerability:*	*Risk index:* *Risk tolerability:*	
5					*Risk index:* *Risk tolerability:*	*Risk index:* *Risk tolerability:*	

Safety Management Systems (SMS) Course

Module N° 8 – SMS planning