



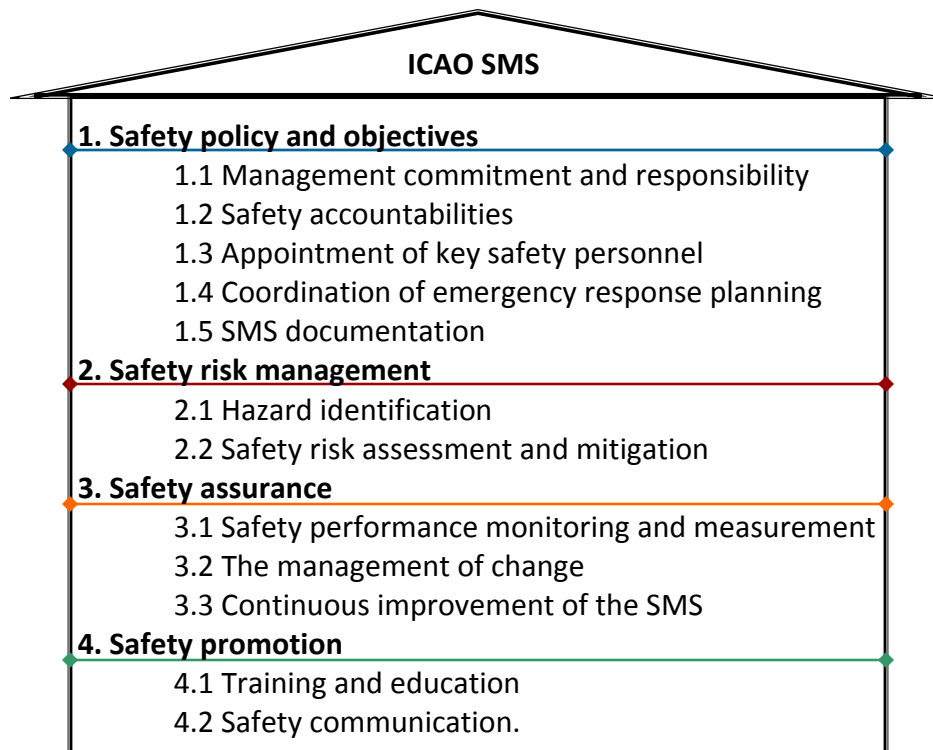
## SAFETY TRAINING ELEMENT

Training Topic:

# GAP ANALYSIS– SAFETY MANAGEMENT SYSTEM

### Introduction

When undertaking safety management system (SMS) implementation, completing an SMS gap analysis may prove beneficial. A gap analysis evaluates what SMS elements may currently be in place from an existing safety program, and identify elements that must be added or modified. The objective is to recognize conformance with a selected standard or regulation, and to assess safety vulnerabilities and the need for additional resources to reduce or eliminate those vulnerabilities. In short, it's a comparison of the safety posture currently in place with the detailed elements that comprise the internationally acceptable ICAO SMS framework, shown divided into four components and twelve elements below.



**The Gap Analysis Checklist**

Evaluation of the various SMS components is most effectively accomplished through the use of a gap analysis checklist. It may come as a surprise, but it is highly unlikely that any operation will have to start their SMS completely from scratch. For example, a company may already have a hazard reporting program that far exceeds regulatory requirements. The company reduces safety vulnerability by ensuring employees report hazards they encounter. The gap analysis checklist will help identify existing elements like that already in place and also identify elements that are missing. It's also possible to determine the effectiveness of any element currently in place, and decide what needs to be accomplished to ensure what improvements, if any, are required to align with the corresponding ICAO element. When performing a gap analysis it is important to understand that the scope of the SMS components and elements should be commensurate with the complexity and nature of the operation.

Following is a sample work-through of Component 2 question– Safety Risk Management, Element 2.2– Safety Risk Assessment and Mitigation part of the ICAO SMS Framework.

First, let's take a look at a sample gap analysis question:

<b>Component 2- Safety Risk Management</b>			
<b>Aspects to be analyzed or question to be answered</b>	<b>Yes</b>	<b>No</b>	<b>Status of implementation</b>
<i>Element 2.2- Safety risk assessment and mitigation</i>			
<a href="#">Is there a structured process for the analysis of the safety risks associated to the consequences of identified hazards, expressed in terms of probability and severity of occurrence?</a>	<input type="checkbox"/>	<input type="checkbox"/>	

**What does this mean?**

Safety risk management is a generic term that encompasses the assessment and mitigation of the safety risks and the consequences of hazards that threaten the capabilities of an organization, to a level as low as reasonably practicable (ALARP). The objective of safety risk management is to provide the foundations for a balanced allocation of resources between all assessed safety risks and those safety risks the control and mitigation of which is viable. In other words, safety risk management assists in resolving the “dilemma of the two Ps, protection and production”. Safety risk management is a therefore key component of the safety management process. Its added value, however, lies in the fact that it is a data-driven approach to resource allocation, thus defensible and easier to explain.

**Response to this question**

This question is essentially asking whether or not the company uses a structured process, such as using the risk assessment matrix, to determine the probability and severity of an event. The process should: define parameters for the categories of severity, it should research the probability of the hazard occurring, and it should establish when continued operation is permissible. All parties involved in the process also has to be established, as well as which accountable executive is responsible for making the final decision to allocate resources to mitigate the risk, based on the outcome of the risk assessment matrix process.

The analysis must determine whether:

- ⇒ Such a process is in place?
- ⇒ It is documented correctly to reflect the actual process?
- ⇒ It is actively being performed?
- ⇒ Are effective outcomes produced?

PRISM Master Risk Matrix Template

Frequency of Occurrence	Hazard Categories (Severity)				
	A Catastrophic	B Critical	C Major	D Minor	E Negligible
5 Frequent	A5	B5	C5	D5	E5
4 Occasional	A4	B4	C4	D4	E4
3 Remote	A3	B3	C3	D3	E3
2 Improbable	A2	B2	C2	D2	E2
1 Extremely Improbable	A1	B1	C1	D1	E1

From this evaluation, an operator will be able to determine where they stand, and what improvements are necessary for conformance. (For a detail view into the risk management process, please review the PRISM Safety Training Element: Risk Management on the PRISM website.)

**The end result**

Upon completion of a thorough gap analysis, the safety manager and/or group can devise a realistic SMS implementation plan. The gap analysis should reveal existing methods in place that address safety vulnerabilities (identified hazards) as well as items to be transferred into the new SMS. Furthermore, it should help reveal any measures necessary to further develop safety management, and as a result, increase resilience to future risk. The end result should be a plan of action to address actions required to close gaps and refine SMS implementation.

**Using the PRISM Gap Analysis**

To help aid in performing a GAP analysis, PRISM has developed an easy-to-use Microsoft Excel file for use. It provides questions for each component and element of the ICAO SMS framework, and also presents helpful descriptions for questions as necessary via hyperlinks. Keep in mind, a GAP analysis can also be used as a safety assessment for internal purposes, to measure continuous improvement in an SMS, or in preparation for an external audit. It's also a great way to close out and validate SMS implementation, assuring what has been put in place is aligned with ICAO SMS requirements.