

# INTRODUCTION TO SYSTEM SAFETY

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**Objective:** The objective of a Safety Management System (SMS) is to provide a structured management system to control risk in operations. A formal system of hazard identification and safety risk management is essential in controlling risk to acceptable levels. Safety management is centered on a systematic approach to hazard identification and risk management, in the interests of minimizing the loss of human life, property damage, and financial, environmental and societal losses.

Significant attention to safety in the aviation industry has evolved over many years of applying good practices. Continuous improvement in aviation safety, with balance achieved between safety and efficiency, demands that all participants in the system challenge the processes, the culture, and themselves, to identify weaknesses and to seek corrective solutions.

**Description:** System Safety falls under the umbrella of Safety Management Systems (SMS). The definition of SMS is a Systemic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures. The result is the ability to systemically identify hazards and control risks as well as provide assurance that risk controls are effective. Although we currently do a good job of identifying hazards and controlling risks, we are not realizing the full benefit that a system wide approach provides.

The foundation of SMS consists of four “pillars,” they are Safety Policy, Safety Risk Management, Safety Assurance and Safety Promotion. When fully implemented SMS provides and promotes a Positive Safety Culture. A Positive Safety Culture is an Informed Culture, Flexible Culture, Learning Culture, Just Culture, and a Reporting Culture that captures the operational knowledge and experience of the employees and involves them in the safety achievement process. The desired end result of this cultural shift is to achieve the status of a Highly Reliable Organization (HRO). \*\*

In an **Informed Culture** people are knowledgeable about the human, technical, organizational and environmental factors that determine the safety of the system as a whole. In a **Flexible Culture** people can adapt organizational processes when facing high temporary operations or certain higher levels of risk, shifting from the conventional pyramid organization model to a flatter model. In a **Learning Culture** people have the willingness and the competence to draw conclusions from safety information systems and the will to implement major reforms. A **Just Culture** encourages people (even rewards) to provide essential safety-related information. However there is a clear line that differentiates between acceptable and unacceptable behavior. In a **Reporting Culture** people are prepared to report their errors and experiences. To successfully implement a Positive Safety Culture we need participation from top leadership, down to all of the people accomplishing the mission or task.

Following your review of the stated **Objective and Description** of System Safety, you probably have questions on how to best utilize the Guide, as well as how this fits into “the big picture”. First the big picture; the agencies started looking into System Safety in 2005. Their findings were positive and in 2006 the BLM entered into an Interagency partnership with the USFS to start work on Aviation Safety Assessments. The first assessments were completed by Interagency Subject Matter Experts (SME) in March of 2007 and were made available on line in May of 2007. These are the second revision, completed in March of 2008, are posted online and have been distributed in hard copy in this **Aviation System Safety Guide**. Our goal is to work towards an Interagency Safety Management System that incorporates all four of the SMS pillars mentioned earlier. Adoption of SMS also brings the agencies into alignment with the minimum aviation safety standards agreed to internationally within guidelines of the International Civil Aviation Organization. (ICAO 9859).

Where are we at with the processes that will achieve the SMS “four pillar” goal?

Pillar number one is **Safety Policy**. We have existing policy in place that supports the foundation of SMS in our aviation safety programs.

Pillar number two is **Safety Risk Management**. This currently is our strongest area, as we have completed Assessments on Helicopter Operations, Rappel, External Loads, Aerial Supervision, SEATs, Heavy Airtankers, and the Infra-Red program.

Pillar number three is **Safety Assurance**. Accident Investigation, Preparedness Reviews, Fire Aviation Safety Teams (FAST), Aviation Safety Assistance Teams (ASAT), SAFECOMs, and numerous other tools monitor and report the health of our prevention efforts. Currently we are working towards implementation of an Aviation Lessons Learned/BLOG web site, trending Interagency SAFECOMs multiple times during fire season, and work towards a “Reporting Culture”.

The fourth Pillar is **Safety Promotion**. We have the ability to implement very positive change in this area by creating a positive “Learning Culture”. Communication is the key to success in this pillar. Training systems are being updated to reflect the principles and procedures being implemented in SMS. Other tools include Safety Alerts, Technical Bulletins, safety memoranda, Aviation Safety Committees, tailgate sessions and video clips such as the Six Minutes for Safety series.

\*\* Weick and Sutcliff, Managing the Unexpected