Safety Management Systems:

How To Better Manage Known Risks

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The 2005 International Helicopter Safety Symposium marked the beginning of an international effort by the helicopter industry to reduce the accident rate by at least 80 percent by 2016. The International Helicopter Safety Team (IHST) was formed to lead efforts toward reaching that objective.

The IHST formed the Joint Helicopter Safety Analysis Team (JHSAT) to analyze the accident history and provide recommendations to reduce the accident rate and the Joint Helicopter Safety Implementation Team (JHSIT) to develop cost effective strategies and action plans to reduce accidents. The Airborne Law Enforcement Association (ALEA) is a member of IHST and JHSIT.

IHST involves associations such as Helicopter Association International (HAI), International Civil Aviation Organization (ICAO), American Helicopter Society (AHS) International, ALEA, Association of Air Medical Services (AAMS), Tour Operators Program of Safety (TOPS), the military, aircraft and engine manufacturers, the insurance industry, helicopter industry customer base and line personnel (e.g. pilots, other crewmembers and maintenance technicians).

JHSAT analyzed 197 reported helicopter accidents for the year 2000 as recorded in the National Transportation Safety Board (NTSB) U.S. database. The team found that a major contributing factor in most accidents was the failure to adequately manage known risks. Due to the lack of a systematic process, including leadership and accountability, operators did not adequately prioritize and address the risks that lead to most accidents.

Safety Management Sysytems (SMS) will help operators develop a fit-for-purpose system that will show a return on investment and/or cost effectiveness from both financial and safety perspectives. The SMS should be designed to fit the size, nature and complexity of the organization. Organizations that adopt a SMS will benefit from the reduced exposure to risk, reduced costs associated with incidents and accidents, and better retention of personnel. The SMS must be economically viable and operationally appropriate to the individual operating environment and mission.

Definition of SMS

A SMS can be defined as a coordinated, comprehensive set of processes designed to direct and control resources to optimally manage safety. SMS takes unrelated processes and builds them into one coherent structure to achieve a higher level of safety performance, making safety management an integral part of overall risk management. SMS is based on leadership and accountability. It requires proactive hazard identification, risk management, information control, auditing and training. It also includes incident and accident investigation and analysis.

Why Is SMS Needed?

A SMS is needed to help facilitate the proactive identification of hazards and maximize the development of a better safety culture, as well as modify attitudes and actions of personnel in order to make a safer work place. SMS lets managers identify hazards, assess risk and build a case to justify controls that will reduce risk to acceptable levels. SMS is a proven process for managing risk that ties all elements of an organization together laterally and vertically and ensures appropriate allocation of resources to safety issues.

SMS will assist organizations in achieving their desired safety performance objectives while allowing them to choose the best way to reach that outcome. This is commonly known as a performance based approach and encourages organizations to choose the solution that best suits their needs and ensures they meet their performance objectives. JHSIT has developed the IHST SMS

Toolkit, which can help any organization determine its level of safety compliance and develop an action plan to include the necessary components.

Attributes of SMS

Although the details and level of documentation of a SMS may vary, there are 11 fundamental attributes that will assist in ensuring the SMS is effective for any organization. The core attributes of the IHST's SMS are:

1. SMS Management Plan.
2. Safety Promotion.
3. Document and Data Information Management.
4. Hazard Identification and Risk Management.
5. Occurrence and Hazard Reporting.
6. Occurrence Investigation and Analysis.
7. Safety Assurance Oversight Programs.
8. Safety Management Training Requirements.
9. Management of Changes.
10. Emergency Preparedness and Response.
11. Performance Measurement and Continuous Improvement.

Successful safety management systems are tailored to fit the size, nature and complexity of an organization. Although the details and level of documentation may vary, respecting the fundamental attributes will assist in ensuring the SMS is effective for any organization.

SMS Management Plan

A SMS Management Plan should clearly define safety objectives, how the organization intends to execute and measure the effectiveness of the SMS, and how the SMS will support the organization's operations plan and/or objectives. The plan should:

- Express management's commitment to safety and clearly state the policies, objectives and requirements of SMS.

- Define the structure of the SMS as well as the responsibilities and authority of key individuals for managing the SMS.

- Define each element of the SMS.

- Convey the expectations and objectives of the SMS to all employees.

- Explain how to identify and maintain compliance with current safety regulatory requirements.

Safety Promotion

Safety must be recognized as a core value. Procedures, practices, training and the allocation of resources must clearly demonstrate management's commitment to safety. Organizations should have procedures to identify and manage the information necessary to ensure compliance with SMS policies and procedures. To effectively promote safety, management must:

- Publish a statement of its commitment to the SMS.

- Management should demonstrate their commitment to SMS by example.

- Communicate the outputs of the SMS to all employees.

- Provide training for personnel commensurate with their level of responsibility.

- Define competency requirements for individuals in key positions.

- Document, review and update training requirements.

- Share lessons learned that promote improvement of the SMS.

- Have a safety feedback system with appropriate levels of confidentiality that promote participation by all personnel in the identification of hazards.

- Implement a just culture process that ensures fairness and open reporting in dealing with human error.

Occurrence & Hazard Reporting

Occurrences are unplanned safety related events, including accidents and incidents that could impact the safety of guests, passengers and personnel, equipment or the work environment.

The identification of a hazard provides an opportunity to learn how to prevent accidents and incidents it might cause. Procedures need to be in place for internal reporting of hazards. Timely collection of information allows the organization to react to the information.

Hazard Identification & Risk Management

The SMS needs to include a process to identify hazards and develop processes to identify and manage risks. Key elements of hazard identification and risk management programs are:

- Proactive identification of existing and potential hazards. This includes those hazards associated with organizational change when the organization is undergoing rapid growth or introducing new services, equipment or personnel.

- A process to prioritize risk management.

- A method to track identified hazards.

A risk assessment matrix is a useful tool to identify the level of risk and the levels of management approval required for any risk management plan. There are various forms of this matrix, but they all have a common objective to define the potential consequences or severity of a hazard versus the probability or likelihood of the hazard resulting in a mishap.

Organizational Requirements

In SMS, policies and procedures are the ways organizations express and achieve their desired level of safety. Policies characterize the nature and performance of an organization, and procedures define how to execute policies. Policy is information which establishes a basic requirement for how the organization functions (what you want to do). It should be short and to the point. Customers should also know what the organization's policies are so they can base their expectations on them. Policies guide the development of procedures.

Procedures

Procedures define the actual methods that the organization uses to apply its policies. In other words, how you go about achieving the goals that you set.

Implementing SMS

Integrating SMS can be done in incremental steps. This allows the organization to become acquainted with the requirements and results before proceeding to the next step. The 11-item list shown below should be used as a guide in validating the attributes as they are implemented:

- Safety Management Plan.

- Safety Promotion.

- Document and Data Information Management.

- Hazard Identification and Risk Management.

- Occurrence and Hazard Reporting.

- Occurrence Investigation and Analysis.

- Safety Assurance Oversight Programs.

- Safety Management Training Requirements.

- Management of Changes.

- Emergency Preparedness and Response.

- Performance Measurements.

SMS is a win-win tool that allows any organization to maximize safety and minimize risk while increasing efficiency and effectiveness. For a complete copy of the IHST SMS Toolkit, refer to the ALEA website (www.alea.org) and then click on SMS Toolkit to download.