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**SMS and the Development of
Effective Safety Culture**

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SMS And The Development Of Effective Safety Culture

Whenever you turn on the nightly news, chances are you will be hearing some mention of the aviation industry. It may be an account of an

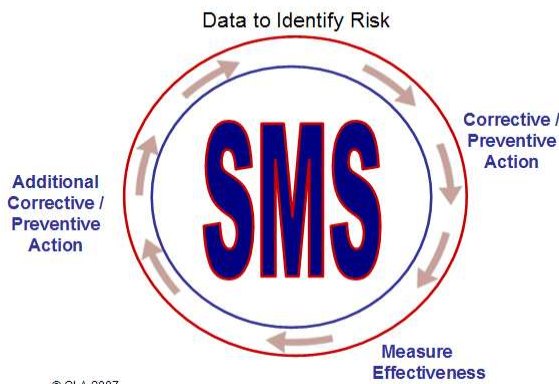


aviation-related incident. It may be a report detailing changing airline policies or the rising cost of air transportation. Or, more recently, it may be a discussion of air safety and new FAA regulations.

As we all know, Safety Management Systems, or SMS, has been of primary importance to the FAA for a number of years. SMS was recognized as vital to the continued growth and success of the aviation industry that a set of uniform safety standards should be created, one which would conform to international SMS aviation protocols while being flexible enough to accommodate the needs of individual American airports. To this end the FAA implemented a pilots program to study and compare the current Airport Certification Programs and developing SMS

principles. The results of this pilot program are already being put to use by the FAA, resulting in the implementation of new safety protocols for

Safety Management Systems



the aviation industry, and the establishment of SMS as a US aviation regulatory standard.

But although we know why SMS should be adopted and what it should accomplish, Safety Management Systems are about more than just regulations and enforcement. In order for SMS to not only work but to remain effective, the aviation industry needs to create a *culture of safety*.

Safety culture can be very simply defined as an organizational commitment to safety at all levels of operation. Establishing an effective safety culture, however, is anything but simple. Effective safety cultures distinguish themselves through having clearly defined procedures, a well-understood hierarchy of responsibilities at all levels, and clear lines of reporting to facilitate effective and useful communications regarding safety issues. A more detailed list of the attributes of an effective safety culture was presented by the International Civil Aviation Organization, which placed a strong emphasis on the role of senior management and

In A Good Safety Culture, Senior Management

- **Places a strong emphasis on safety**
- **Has an understanding of hazards within the workplace**
- **Accepts criticism and is open to opposing views**
- **Fosters a climate that encourages feedback**
- **Emphasizes the importance of communicating relevant safety information**
- **Promotes realistic and workable safety rules**
- **Ensures staff are well educated and trained so that the consequences of unsafe acts are understood**

(Flannery, 2001)

the importance of communication.

All levels of aviation management must make it clear that safety culture is concerned with the safety not only of airline passengers but also of airport and airline employees. Safety management should not be viewed as simply a means to an end or a blind adherence to industry standards, but rather as a company-wide – and indeed industry-wide – commitment to best-practices and continuous improvement of everything safety-related. In an effective safety culture under SMS, human error is seen as inevitable, and the focus is shifted from reactive to the proactive method of managing risk. And the prevailing view of risk should be

professional and realistic, focusing on eliminating or maintaining optimum levels of acceptable risk using past incidents, perspective, and insight.

The aviation industry has in the past been comfortable maintaining a reactive position to safety regarding occurrences as isolated incidents, and consistently taking action only when something happens. This attitude gradually became more calculated, growing into a regulatory system and developing a bureaucracy to enforce it. The introduction of SMS is shifting the focus from enforcement-centered to a more proactive approach, and hopefully will give rise to a culture of safety so firmly established that the perception will be that safety is simply the best, most effective, and most profitable way to do business.

THE EVOLUTION OF SAFETY CULTURE

Pathological

We don't care as long as we don't get caught

Reactive

We take action only in response to incidents

Calculative

Our approach to safety is systematic, through an established bureaucracy

Proactive

We take steps to deal with issues before incidents occur

Generative

Safety is how we do business

(Hudson, 2001)

Effective safety management is a learned skill and, as with any skill, continues to grow and develop over time the more it is practiced. Therefore an effective culture of safety is one that has practiced safety management until that skill set has become second-nature – safety is simply the way business is done, and improvements to the system are considered improvements to the company as a whole.

Of course, this procedure for creating and maintaining a safety culture sounds much easier than it actually is; roadblocks must be expected at throughout the process at all levels. Management, initially on board with the implementation of SMS, may become less enthusiastic as they realize that some changes will not be cheap or simple to implement. Managers may be uncomfortable soliciting and responding to negative feedback, and lower-echelon staff members may be difficult to convince that reporting honestly on current or potential problems is in their best interest. And in some groups, such as pilots or physicians, where perception of infallibility can be closely linked to professional reputation, the idea of admitting personal error may be akin to admitting personal and professional failure—or possibly to committing professional suicide. These are all hurdles which must be overcome systematically at an organizational level, with a major top-down emphasis on building trust and establishing non-punitive reporting systems. Without these two

factors in place, SMS cannot be successful and a culture of safety will not develop successfully. Similarly, the basic conditions which must exist in order for safety culture to flourish are

- Trust
- A non-punitive policy toward error
- Commitment to taking action to reduce risk-inducing conditions
- Diagnostic data that show the nature threats and the types of errors occurring
- Training in threat recognition and error avoidance and management strategies for crews (CRM)
- Training in evaluating and reinforcing threat recognition and error management for instructors and evaluators (Helmreich, 1999)

The concept of Crew Resource Management, or CRM, is based on the idea that organizations must recognize that human error is unavoidable and that it is the responsibility of a mature organization to effectively manage that error (Hayward, 1999). CRM seeks to

- Reduce the likelihood of error
- Isolate errors before they have an operational effect
- Reduce the consequences of errors when they do occur

CRM as it is known today is an outgrowth of Cockpit Resource Management training, which was developed in the early 1980s and gradually expanded into other aspects of aviation and outward from there into other industries. Properly implemented according to the specific needs and culture of a particular organization, this approach to the

handling of incidents and reporting can be highly effective for combating and correcting issues with reporting, feedback, and admission of fallibility.

“There is a growing awareness that safety is a system phenomenon and that accidents represent a concatenation of multiple factors that cannot be addressed by training or by new technology alone.”

Robert L. Helmreich, PhD (1999)

Establishing and maintaining such systems requires a firm commitment from management to ‘stay the course’ even when, from a purely financial perspective, it would be more advantageous not to. Data-gathering, for example, can be a costly and time-consuming process, as can the creation and implementation of new training programs. Management must not only be cognizant of the long-term benefits of those costly, inconvenient actions, they must also be aware that employee and indeed public perception of their willingness to pursue safety ahead of or at least on a visibly equal basis with profit will greatly contribute to the trust-building which is such a vital element of effective safety culture.

Finally, the concept of safety culture cannot be discussed without also touching on the related concept of safety climate. These terms are sometimes used interchangeably, but they actually define different dimensions of the issue of safety. Safety culture, so closely tied to SMS,

speaks to the development of safety regulations and related organizational safety systems which work to create a stable and long-lasting environment. Safety climate, on the other hand, more often refers to the psychological perception of the state of safety at a particular time (Zhang et al., 2002), which of course can be expected to change frequently under the influence of any number of social and environmental factors. Monitoring the safety climate within an organization, therefore, should provide valuable insights into the state of that organization's developing culture of safety, especially during the implementation phase of new systems and procedures.

All in all, safety culture should be seen as a natural outgrowth of the application of well thought-out Safety Management Systems, the commitment of senior management to safety as the best way to do business, and the growth and development of safety-oriented organizational norms. Like SMS, the evolution of safety culture is a continuous process, not a means to an end or a static goal to be reached; a healthy culture of safety should maintain its stability while constantly reaching toward new heights, never stopping in place and saying, "That's good enough, we don't need to do any more." And through this continuous process the aviation industry, and other industries as well, can proactively expect to reach a goal where safety truly will become just the way we do business.

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