

Safety Management Systems – 2009

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Introduction

Powered by a 2009 ICAO deadline, the Safety Management System (SMS) is taking hold within airlines, air traffic service providers, and aviation maintenance organisations worldwide. These organizations are moving rapidly beyond the reactive mode of managing safety in which safety advances typically follow accident investigation and the resulting investigations. Now a more predictive system is being established under SMS in which data collection and analysis enable risks to be identified and mitigated before they result in unacceptable and costly outcomes.

This paper originates from the 2009 FSF IAC Workshop and aims to share the experience of SMS implementation as this great change takes place across the aviation industry. It builds on a paper about SMS circulated last year to the IAC.

ICAO Worldwide SMS Requirements

Detailed SMS requirements have been set out in the ICAO Safety Management Manual (SMM) 9859 issued in 2006 and now released as a 2nd edition in late 2008.

With the release of the ICAO SMM there comes a strong expectation that SMS should be established as soon as practicable. Implementation of SMS by service providers cannot be completed effectively however without the corresponding adoption and implementation of a State Safety Programs (SSPs) by national governments.

SMS Implementation at the Regulatory Level

A key feature of the second edition of the ICAO SMM is the detailed guidance given to civil aviation authorities for the development of the SSP.

The UK CAA has recently issued its SSP in the form of CAP 784. For the UK CAA, development of the SSP was particularly challenging due to the involvement of other organizations – most notably the Department for Transport and the European Aviation Safety Agency (EASA). In addition, because military aircraft are so active within UK airspace, the CAA decided that the SSP would address both civil and military aviation.

Meanwhile, in the United States the Federal Aviation Administration (FAA) is continuing its efforts to develop specific SMS requirements. The FAA has encouraged adoption of SMS within the industry and has published Advisory Circular 120-92, Introduction to Safety Management Systems for Air Operators, which contains information on the development and implementation of SMS on a voluntary basis.

Sceptics see SMS as being a form of deregulation or industry self – regulation. To help counter such perceptions experience in Canada has shown that there is a need for improvements in the SMS transitional planning; a better defined standard for an acceptable level of oversight; and, most importantly, the establishment of performance indicators to evaluate the extent to which SMS and other safety programs are contributing to the objectives of the whole organization.

SMS Implementation Experiences of Service Providers

To provide guidance on SMS implementation for airlines IATA has issued an interactive toolkit which takes the “integrated” management system approach employed by IOSA – the IATA Operational Safety Audit. This embraces the “system of systems” thinking which calls for the integration of safety, risk, quality, security and supplier management systems and cultures.

Probably the biggest challenges amongst airlines and other service providers is countering negative perceptions of the SMS implementation task, too often portrayed as costly, time-consuming, troublesome and difficult. A more positive and productive approach is to recognize existing capabilities of the organisation and simplify implementation from the existing elements. Many airlines are using IOSA - itself based on ICAO Standards - as the benchmark and a reliable means of identifying the SMS “gap”. IOSA accreditation confirms that the airline has got the basic building blocks of an SMS and risk management system in place across all of the operational disciplines of an airline, meaning they are well down the road with SMS implementation.

Above all, for the SMS to be effective it must be appreciated that the safety management is done by line managers, the people who match task and resources. The SMS implementation plan should be designed with a view to building on the existing well proven parts of the safety system, recognising that SMS is likely to introduce significant change for line managers who have all sorts of other pressures upon them. Training in SMS for the line manager is therefore a vital part of implementation. The aim is not to make SMS work for the safety manager, rather to make it work for the line manager.

Safety Data and SMS

There are some challenges impacting at the very core of SMS beginning with the preservation of the life blood of the system - its data. A lack of proper reporting and release of data may be the single greatest obstacle to implementation of SMS and integrating it with the service provider as a whole. The key to effective SMS is a generative safety culture employing a voluntary employee reporting system which analyzes data and shares information.

Once the data is obtained the process of unlocking the value of the data and turning it into useful information is largely achieved by having the right tools and the expertise. Today's powerful data management systems enable the risk exposure to be mitigated not only in the operational safety arena but across the aviation enterprise as a whole. Such data-driven integration is vital to the implementation of an SMS. It reduces complexity, crosses organizational boundaries, improves business efficiency, reduces costs, identifies threats and delivers countermeasures, and therefore saves lives.

The SMS Performance Expectation

Safety is a performance expectation. For effective continuous monitoring of the SMS performance, a set of safety targets must be established. Too often, however, this is regarded as a “soft” item because it is not an easy task to get all departments, organisations, or even geographic regions to agree on what are reasonable targets. The industry is beginning to see a plethora of metrics purporting to measure safety. As reactive safety management is joined by proactive and predictive tools within the SMS, it is vital to ensure that the accompanying process of performance measurement is sufficiently reliable and robust so as not to distort the subsequent mitigation efforts.

More research is therefore required into finding the right safety performance metrics and there is considerable scope for sharing ideas amongst regulators and service providers in this area. There is risk that organisations will take a local, perhaps narrow view of safety performance rather than pursue the integrated system-wide approach. It is certainly an area which should involve the regulators and indeed the other aviation service providers in the region. The key metrics will be those which not only measure the performance against the organisation's safety plan but also the targets set for the implementation of the SMS itself.

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