

## Risk-Based Safety Oversight for the Federal Aviation Administration

While the US air transportation system is the safest in the world, the Federal Aviation Administration (FAA) is moving toward a more proactive approach to further reduce risk. To assure the continuation of high safety levels into the future, the FAA is working to instill a culture of prevention throughout its safety oversight organization and reengineer its processes so potential problems can be spotted and averted before they can develop into hazardous conditions. The FAA has called on Booz Allen Hamilton to help.

### Needed: A New Approach to Aviation Safety Oversight

Today's air transportation system relies heavily on enforcement of regulations written in response to past incidents, rather than on anticipation and prevention of potential problems before they start. This method works well for known safety risks, but requires considerable inspection resources to monitor more than 2,300 air operators and nearly 4,900 maintenance and repair facilities. As a result, the work force is strained—a problem that will only increase as more “boomer generation” employees retire and as the aviation industry introduces new technology and systems through the Next Generation Air Transportation System (NextGen).

Adding urgency to the need for a new approach to safety oversight is the nature of the risk itself.

Together, the FAA and aviation industry have been successful in preventing accidents due to mechanical failure or deficient design. Going forward, however, as aircraft technology grows more complex, the majority of risk will increasingly reside in human performance, which is more difficult to predict and “design out.”

The International Civil Aviation Organization, which sets air safety standards around the world, has called on regulators, air operators, and agencies to implement safety management systems (SMS) designed to identify hazards in operator system design and performance and to establish controls to prevent incidents from occurring or to minimize their potential consequences.

In response to these complex factors, the FAA has set a goal of SMS integration throughout its safety oversight processes and has called on Booz Allen to help design new methodologies and systems and implement change through its System Approach for Safety Oversight (SASO) Program Office.

### Proactive Safety Oversight

In developing its new approach to aviation safety, the SASO Program Office is looking to reengineer safety oversight processes and to facilitate change through training and transfer of knowledge, skills, tools, and strategic communications.

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Working with the Program Office, Booz Allen conducted a baseline review of the current oversight practices for air operators and repair stations as well as a review of the FAA's history of regulatory change. The study revealed a number of trends—such as historic tensions between promoting and regulating the industry—and provided evidence that while regulators and industry have responded rapidly to correct problems following accidents, they have been less focused on prevention of unanticipated problems.

The SASO Program Office selected Booz Allen to help develop an approach to making safety oversight more adaptable to an evolving air transportation system. As the system evolves with NextGen technologies and procedures, the FAA will need to be agile in its ability to focus resources in the areas of highest risk and greatest impact on air safety. Booz Allen is working with the SASO Program Office to first address the segments of the aviation industry that provide most of the air transportation services to the flying public, and together Booz Allen and SASO are developing new processes and capabilities that make up the FAA's safety assurance system as part of its SMS. Based on the capability, configuration, and effectiveness of an air operator's or repair station's systems, the FAA will use the safety assurance system to adapt the way it conducts safety oversight. Changes will include measures to relieve the strain on resources through risk-based prioritization of oversight activities.

### Helping the FAA Be Ready for What's Next

Booz Allen draws on its technical aviation and safety experience, as well as its capabilities in business process redesign and change management, to help the FAA design and implement new approaches that will improve safety and the effective use of inspector resources. By directing resources to where they

are most needed and incorporating new tools and processes for anticipating risk, the FAA will be even better prepared to protect all who use the nation's air transportation system.

New models for safety oversight based on better data collection and aggregation are emerging from our work with the FAA. As more air safety information is collected and analyzed, nationwide trends of potential safety risks will be easier to detect. Data collected today emphasizes the application of regulations rather than the effectiveness of risk controls as intended by the regulations. By aggregating data on the quality of risk controls at a national level, decision makers can objectively assess the effectiveness of current safety standards and justify the need for new ones. Booz Allen is helping the FAA develop data collection tools and processes for its SMS that emphasize the quality of risk controls and the use of data-driven decisions for making changes to standards before an accident occurs.

### Ready for What's Next

The challenges the FAA confronts have implications for risk-management and oversight throughout government. Many agencies confront the same issues—constrained resources and need for proactive oversight practices. Our work in aviation safety is creating forward-thinking approaches to risk-based oversight. The ideas we are developing for the FAA can be applied in areas such as energy, food and drug safety, and financial security as well. To learn more about how we can help your team be ready for what's next, visit [www.boozallen.com](http://www.boozallen.com).

**contact:** Herbert MacArthur, Vice President  
**e-mail:** [macarthur\\_herbert@bah.com](mailto:macarthur_herbert@bah.com)  
**phone:** 703/377-1186

**contact:** Jacqueline Duley, Senior Associate  
**e-mail:** [duley\\_jacqueline@bah.com](mailto:duley_jacqueline@bah.com)  
**phone:** 703/984-1787