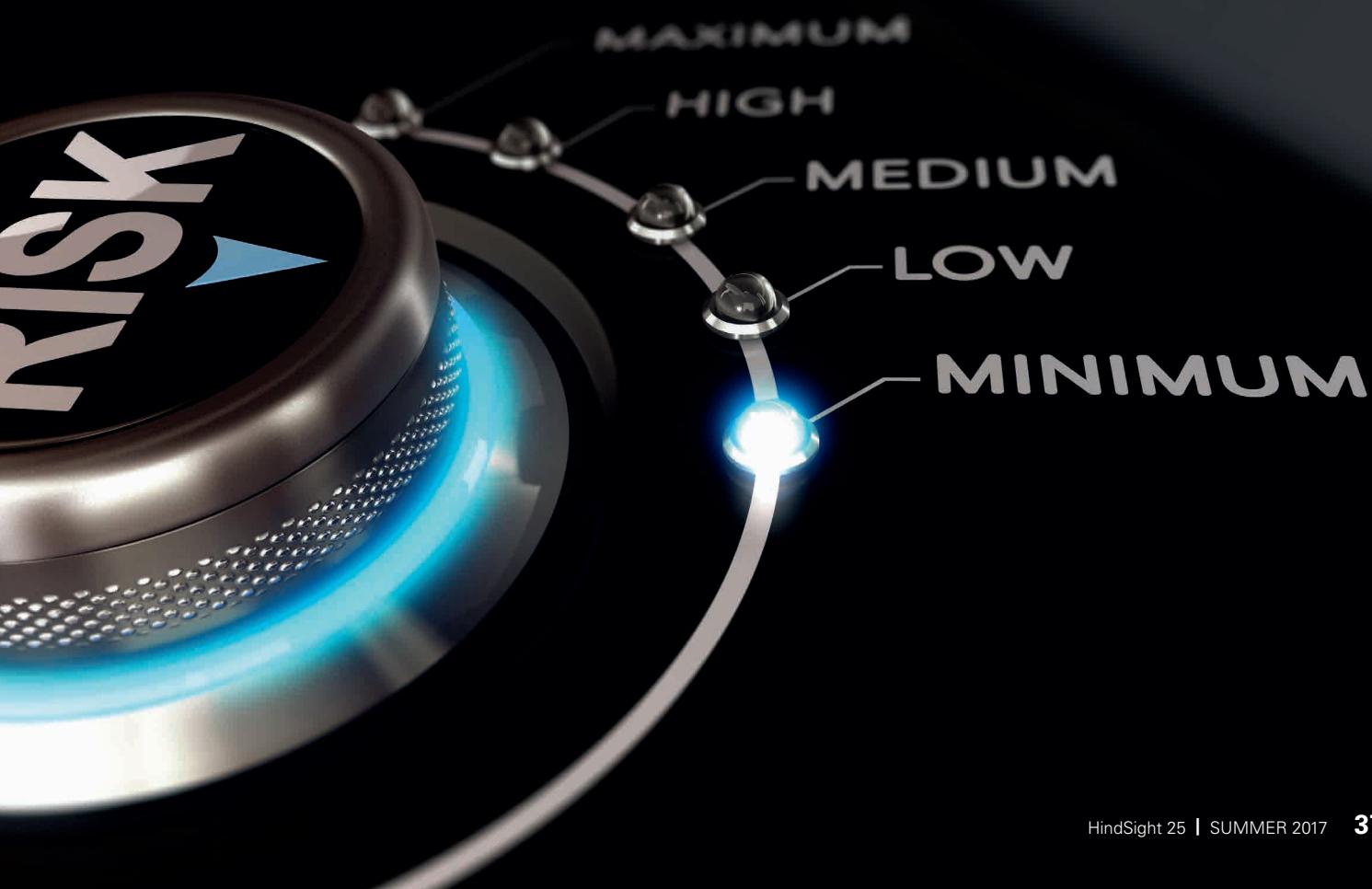


WORK-AS-IMAGINED AND WORK-AS-DONE: A SAFETY MANAGEMENT REALITY CHECK FOR REGULATORS

Regulators are in a difficult position. Despite conflicting goals, increasing workload, very limited resources, and distance from the reality of work-as-done, they have to imagine and prescribe – at some level – how work must be done. For regulated service providers, compliance is not straightforward. In this article, **Don Arendt** explores some of the tensions of regulation.

KEY LEARNING POINTS

1. As risk is inherent in aviation operations, safety performance can be expressed in terms of how well risk is managed.
2. Regulators and service providers must understand and carefully consider the situations faced in real operations (work-as-done) to accurately design the controls necessary for safety (work-as-imagined).
3. Regulatory and oversight strategies must also be matched to the service providers' safety management capabilities to foster growth in their safety cultures.
4. Service providers and regulators must both be able to look not only 'if' compliance is achieved but 'how' regulations are implemented in order for them to serve as effective risk controls.



Sensemaking in a changing world

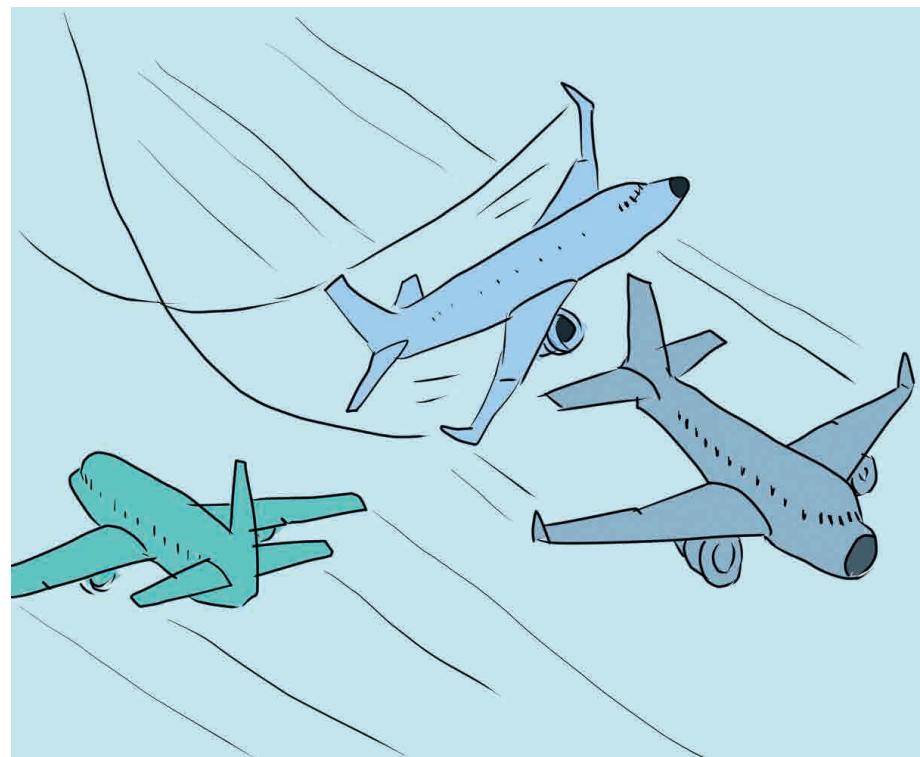
The U.S. Supreme Court once stated, "Safe is not the equivalent of risk free". This is certainly true in aviation where risk is inherent and safety performance can be expressed in terms of how well risk is managed. In studies of 'high reliability organisations' (HROs), which consistently operate safely in high-risk environments, Professors Karl Weick and Kathleen Sutcliffe offer 'sensitivity to operations' as a key trait of these organisations. The ability to perceive situational realities – 'work-as-done' – and adapt to them is essential for consistent risk management.

People make sense of situations based on their perception of the current situation and their anticipation of its future state. The accuracy of perceptions with respect to actual situations is important in decision-making. What makes sense to people involved in actual work situations may not match how the situation was envisioned by designers of processes, procedures, and rules. When this happens, people may be forced to work in ways that don't make sense in terms of the current reality of their work. People may be unaware of the risks that exist and risk controls that apply to their actual situation. Decision-makers, who are not aware of how work is done at the sharp end, may base their decisions on assumptions rather than reality.

Imagining the work-as-done: Rulemaking challenges

Rulemakers must assume a set of system and environmental conditions, hazards encountered, risks to be controlled, and constraints that can be applied to control those risks. Compliance consists of applying rules to the assumed situations. Thus it is vitally important for regulators to fully understand the real situations faced by service providers ('work-as-done') in order to accurately 'imagine' the controls necessary for safety.

At the same time, regulators have to understand the need to be flexible in discerning the range of capabilities of typical service providers and the level of maturity of individual service providers to determine the best regulatory and



- These new routes aren't what I imagined!
- Me neither!
- Nor me!

oversight approaches. Applying an approach that is too prescriptive may stifle innovation in mature, capable organisations while others may need considerably more structure. Regulations and oversight must provide a uniform level of safety performance across the aviation system under varying individual service provider needs and capabilities. Regulators must have a clear understanding of how work is actually done and how their actions will apply across a broad range of service provider capabilities.

Doing the work: effective compliance

Service providers must determine how their systems and environmental conditions compare to the assumptions of the regulations in order to comply effectively. Mismatches between what was imagined by regulators vs how their regulations are applied by service providers can render regulations ineffective as risk controls. It will be important for regulators to provide service providers with information regarding the assumptions of the rule in terms of expected behaviours and the operational situations envisioned.

This information will be essential for effective compliance with the regulations.

This suggests a more nuanced look at what regulators mean by 'compliance'. Compliance is often viewed as being black and white while it is seldom, if ever, so simple. Even the most prescriptive standards require understanding and development of strategies to fit behaviours into the expectations of the rule. Regulators must determine if compliance, in the context of work-as-done, accomplishes the intent of the rule as an effective control of an imagined risk situation. The focus needs to be on effective compliance: not just if service providers comply, but how.

Oversight of work-as-done

The regulator's culture can have an impact on the maturation of service providers' safety management capability and the growth of their cultures as well. Regulators must recognise the safety management capability of service providers they oversee. This is part of regulators' recognition of work-as-done, i.e., what's

really going on out there. Oversight strategies that over-emphasise a prescriptive approach may inhibit service provider cultural growth, although they may be appropriate in some situations, particularly with service providers' whose safety culture is still maturing.

Regulators must also take the time to collect information and analyse the results of their oversight activities, not only to determine the level of compliance with regulations but also their effectiveness. This may entail a recalibration of the assumptions that went into the design assumptions of the regulations and the oversight approach.

Oversight strategies that over-emphasise a prescriptive approach may inhibit service provider cultural growth

Regulators must understand not only what can go wrong, sometimes referred to as Safety-I, but they must also have a clear recognition of desirable performance, associated with Safety-II. Safety-I tends to be measured by the numbers, rates, causal factors, etc. of safety failures. Having a clearer picture of work-as-done may help us to recalibrate what we assume is 'right', in ways that better fit actual situations.

Challenges for performance based oversight: Imagining reality

The move toward performance-based oversight will also require regulators to be more attentive to the status and changes in conditions in service providers' systems and operational environments, and to their safety management capability. We can't assume that all service providers will have the same levels of skill in developing effective performance based compliance strategies. Thus oversight strategies must be able to discern whether the service provider's methods of compliance are achieving the expected results of regulations in terms of effective risk control. Oversight strategies must include continuous performance assessment and adaptability of practices to control risk in situations that may be very dynamic.

Fostering cultural growth

Regulators also need to consider whether our approach to service provider/regulator relationships can enhance or hinder growth in the maturity of service providers' safety culture. As an organisation's safety culture and their approach to safety management matures, they become less dependent on external inputs and gain a higher degree of collective awareness of risk. Less mature organisations may respond to prescriptive standards and directive oversight, but may be less capable of proactive risk management. More mature organisations may develop and apply innovative strategies to proactively identify and address new hazards and foster a collective mindfulness, the 'sensitivity to operations' – work-as-done, within their organisations. This may be more effective than a 'one size fits all' prescriptive strategy. Regulators' safety promotion needs to include educational efforts to foster growth of effective safety management capabilities of service providers and a flexible oversight approach rather than a 'one size fits all' strategy.

Safety Management International Collaboration Group (SMICG)

The SMICG, a group of representatives of aviation safety authorities from 20 States/international organisations, was established for the purpose of promoting a common understanding of safety management, including safety management system and state safety program principles and requirements among regulators. The SMICG is completing a development project to provide tools and processes for assessment of service provider safety culture and recently commenced work on a similar process to assess regulator cultures and the effects of both on safety performance. To help States

evolve towards performance based oversight the SMICG also developed an SMS evaluation tool and published guidance and a training outline for inspectors. The SMICG intends to more fully explore the needs of performance based oversight in the near future.

Conclusion

Regulators must make certain assumptions about both broad sectors of the industry and individual service providers: work-as-imagined. In order to make appropriate decisions, regulators must have an accurate assessment of the situations faced by service providers: work-as-done. As performance-based oversight strategies are increasingly applied, it is essential that both service providers and regulators share information in order to assure the accuracy of their collective knowledge of work-as-done. Oversight approaches that do not match the actual situations of those populations (the reality of their work-as-done) may be ineffective as risk controls. 

Visit the SMICG page on Skybrary:
<http://bit.ly/SMICG>

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Acknowledgement

The author would also like to express sincere thanks to colleagues in the Safety Management International Collaboration Group (SMICG) for sharing their insight, ideas and assistance in preparing this paper.

The opinions expressed in this paper are those of the author and do not reflect the official position of the U.S. FAA.