International Civil Aviation Organization

MIDANPIRG/19 and RASG-MID/9 Meetings

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Agenda Item 3.2: MID Region Safety priorities (Plenary)

VOLUNTARY SAFETY REPORTING, SAFETY CULTURE, AND EFFECTIVE MANAGEMENT OF RISK

(Presented by the United States)

SUMMARY

The ICAO High-level Conference on COVID-19 (HLCC) recently reaffirmed the continued importance of a robust Reporting culture in its Recommendation 1/2. Through this paper, the United States seeks to share best practices in safety culture and voluntary reporting programs, and invite cooperation, with the objective of enhancing the safety, efficiency, and sustainability of aviation around the world.

1. INTRODUCTION

1.1 The aviation and aerospace landscape continues to evolve, and the pace is quickening. We are seeing tremendous innovation in drones, advanced air mobility, "quiet boom" supersonic aircraft, and orbital and suborbital commercial spacecraft. This innovation is coinciding with other technological advancements in artificial intelligence and increasingly complex cybersecurity needs for aviation and aerospace. Regulators must constantly innovate and evolve to keep pace with all of this change. At the same time, regulators must continue to operate the safest, most efficient aerospace system possible. Potential hazards from changes to a system are often identified by frontline employees who have detailed knowledge of system operations. That is why the Federal Aviation Administration (FAA), as the U.S. aviation regulator, continues to refine its safety management practices and strengthen its safety culture through the evolution of its voluntary safety programs.

1.2 In 1975, the U.S. established the legal framework for the aviation community to voluntarily share safety data in a non-punitive setting, starting with the Aviation Safety Reporting System and continuing through programs such as the Aviation Safety Action Program, Air Traffic Safety Action Program, Flight Operations Quality Assurance, and the Voluntary Disclosure Reporting Program.

1.3 The FAA and Industry established the Commercial Aviation Safety Team, the General Aviation Joint Steering Committee, the U.S. Helicopter Safety Team, the Unmanned Aircraft Systems Safety Team, and the Aviation Safety Information Analysis and Sharing Program. These government-industry partnerships were formed to increase public safety by adopting an integrated, data-driven strategy to reduce the fatality risk in commercial air travel and general aviation. Their efforts focus on safety data collection, analysis and sharing, and understanding risks before accidents or incidents occur. An integral part of proactive safety management is leveraging the safety information gleaned from such voluntary safety programs, which are built on a Reporting culture.

1.4 All of these aforementioned vital safety programs were controversial at their inception. Now the programs and approach to aviation regulation and safety are recommended by ICAO as a best practice in the ICAO Safety Management Manual (see Doc 9859 Section 3.2.5 “Safety culture and its influence on safety reporting”). The success of these and other U.S. voluntary safety programs has demonstrated that a collaborative approach, supported by a positive safety culture, provides the highest levels of compliance with regulations, the most effective identification of hazards, and the most efficient management of risks.

1.5 In the large, complex aviation system, the U.S. safety culture has proven to be effective, and national safety performance metrics reflect that success.

1.6 The newest safety culture success story in the area of voluntary reporting is the FAA Aviation Safety (AVS) Voluntary Safety Reporting Program (VSRP), which is discussed in more detail below.

2. DISCUSSION

2.1 From the beginning of aviation to today, accidents attributable to “Machine Causes” have continued to decrease. During the same span of time, the proportion of accidents attributable to “Human Causes” have increased. Understanding human behavior and the underlying causes of human error, including the systemic context that contributed to the error, is essential to continue driving decreases in aviation accidents/incidents/occurrences. Providing non-punitive spaces for regulator and service provider employees to report issues or errors aids this understanding and improves safety. Service providers can leverage the experience of front-line employees to optimize operations to reduce the likelihood and effect of human error. Similarly, regulators gain more insight into front-line operations, which enables oversight resources to focus on elements that will have the greatest effect on safety. This improved focus leads to more effective oversight and better safety outcomes.

2.2 Safety culture is the set of enduring values, behaviors, and attitudes regarding safety, shared by every member at every level of an organization. An organization’s culture is influenced from the top through the actions and behaviors of the senior management team, which permeate the workforce. It should be assessed at all levels of the organization. In simple terms, safety culture is how people behave towards safety when no one is watching.

2.3 A positive safety culture is essential to an effective Safety Management System. It creates an openness that encourages people to report safety issues. This in turn will help people at the top of the organization make informed decisions based on what is really going on through having a:

a) **Reporting culture:** Does the organization encourage reporting?

b) **Just culture:** How does the organization treat people who make errors?

c) **Learning culture:** Does the organization treat information as an opportunity to grow its safety culture?

d) **Flexible culture:** Does the organization act on information to improve safety?

2.4 Reporting culture emerges from personal beliefs about, and attitudes toward, the benefits and advantages of robust reporting systems. A healthy Reporting culture is built on a just culture, which aims to differentiate between intentional and unintentional deviations, and determines the best course of action for both the system as a whole as well as the individuals involved. Employees must know that they

will not be punished for faults in the larger system and that the information they submit will be acted upon. Otherwise, they will determine there is little or no perceived benefit to the employee in submitting a report.

2.5 Voluntary reporting mechanisms for regulators and service providers facilitate the collection of safety data that may not be captured by a mandatory incident reporting system. U.S. regulations describe when and how the FAA protects voluntarily reported information from disclosure consistent with the Protection of Safety Data, Safety Information and Related Sources in Chapter 7 of the ICAO Safety Management Manual (Doc 9859). This approach fosters the resolution of safety issues through corrective action rather than through punishment or discipline. Participants in a Just culture are able to report potential safety issues without fear of recrimination. This can help to educate appropriate parties in preventing a reoccurrence of the same type of safety event. Focusing on the context of the event and systemic factors that are present, rather than what an individual did wrong, will better support prevention of the same type of event across the system, not just for the individual who committed the error. In this way, the entire system can learn from the experience of the individual.

2.6 The FAA AVS VSRP, launched in April 2021, provides AVS employees with a system to voluntarily and confidentially self-report aviation safety concerns. The information specified in those reports is used to validate or verify an aviation safety concern, identify the root causes, and determine appropriate corrective actions. The AVS VSRP was created to foster a safety culture in which there is an open, trusting commitment to compliance, self-correction, and voluntary disclosure. The FAA operates with a safety-first mindset in a Learning culture and Flexible culture that enables greater autonomy across the workforce. This culture increases awareness of safety concerns, best practices, and mutual trust in the safe handling and appropriate use of raw data and information.

2.7 The FAA AVS VSRP also provides a systematic process for documented review of safety concerns raised by FAA employees and risk-based, data-driven development of corrective actions to mitigate identified safety concerns and systemic issues. Reports are reviewed, analyzed, and evaluated by a group of Event Review Team members. Team members operate independently, are afforded wide latitude in the evaluation of reported aviation safety concerns, and determine need for corrective actions. There is a direct correlation between the mission of the FAA AVS VSRP and establishing a Reporting culture for the AVS organization. A Reporting culture is fundamental to ensuring the success of Safety Management, consistent with ICAO Annex 19. VSRP helps AVS learn more about safety issues and provides critical details to ensure that the organization can resolve them.

2.8 Since the early days of voluntary safety programs in the FAA and in collaboration with the aviation industry, the U.S. experiences high rates of regulatory compliance and has demonstrated a commendable safety record, with a near-zero commercial fatal accident rate and zero commercial passenger fatalities in Fiscal Year 2021.[1]The launch of the AVS VSRP is the latest example of how a positive safety culture can help to identify safety issues early, understand organizational systems and practices that could lead to an accident, and take non-punitive corrective action. The success of the AVS VSRP continues to show what a positive safety culture can do by identifying safety issues early, understanding organizational systems and practices that could lead to an accident, and taking non-punitive corrective action. By supporting a positive Reporting culture, both FAA and industry employees are encouraged to “say something when they see something.”

2.9 In addition to the FAA AVS VSRP, the United States has multiple reporting programs that collect information and encourage a Reporting culture. More information on these voluntary reporting programs is provided in **Appendix A**.

2.10 The key to continuous improvements in aviation safety is to create a sustainable culture of safety through an open and transparent exchange of safety information and data between the State and the aviation community. Recommendation 1/2 resulting from the ICAO HLCC also reaffirmed the continued

importance of a robust Reporting culture. U.S. voluntary safety reporting is built upon a strong safety culture, including a Reporting culture. Safety culture is not just a set of programs and cannot simply be "established" or "implemented". A safety culture requires the open and transparent exchange of information, mutual-cooperation, and trust. A Just regulatory culture is essential to building effective, non-punitive, safety reporting and data-sharing programs.

2.11 A Safety Management System promotes a defined structure and a Learning culture within an aviation organization that continually seeks and analyzes information, then turns that information into action that eliminates or mitigates safety risks before they become unwanted events. Safety Management Systems are reliant on effective information collection to manage risk. A positive safety culture that improves information collection is essential for the success of a Safety Management System.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information provided.

APPENDIX A

The FAA utilizes multiple voluntary safety reporting programs to collect safety information and support a reporting culture, including the following:

- **Aviation Safety Action Program (ASAP).** ASAP is intended to prevent accidents and incidents by encouraging employees of certificate holders to voluntarily report safety issues and events. ASAP provides for education of appropriate parties and the analysis and correction of safety concerns that are identified in the program. ASAPs are intended to create a nonthreatening environment that encourage the employee to voluntarily report safety issues even though they may involve violation of Title 49 of the United States Code (49 U.S.C.), Subtitle VII, or violation of Title 14 of the Code of Federal Regulations (14 CFR). ASAP is based on a safety partnership between the FAA and the certificate holder and may include any third party such as an employee labor organization. These programs are intended to generate safety information that may not otherwise be obtainable.
- **Air Traffic Safety Action Program (ATSAP).** ATSAP is a non-punitive program designed to encourage transparency in the realm of air traffic. The intent is to identify and report all events that may or did lead to a breakdown in safety or increase risk to air traffic operations. ATSAP Positives are resolutions taken as the result of safety issues reported by employees and facilitated by an Event Review Committee (ERC). The program continues to enable the identification and mitigation of hazards in the National Airspace System (NAS) as evidenced by the growing number of ATSAP Positives.
- **Flight Operational Quality Assurance (FOQA).** FOQA is a voluntary safety program designed to improve aviation safety through the proactive use of flight-recorded data. Operators will use these data to identify and correct deficiencies in all areas of flight operations. Properly used, FOQA data can reduce or eliminate safety risks, as well as minimize deviations from regulations. Through access to de-identified aggregate FOQA data, the FAA can identify and analyze national trends and target resources to reduce operational risks in the NAS, Air Traffic Control, flight operations, and airport operations. The value of FOQA programs is the early identification of adverse safety trends, which, if uncorrected, could lead to accidents. A key element in FOQA is the application of corrective action and follow-up to ensure that unsafe conditions are effectively remediated.
- **Airport Voluntary Reporting System (AVRS).** AVRS enables FAA Airports employees to report hazards, safety-related issues, concerns, and incidents through a process in which they can provide recommended solutions and ideas for safety mitigation or improvement. The AVRS process begins when an employee files a confidential report to raise a safety issue through an online reporting system. An AVRS oversight board, comprised of three FAA executives from headquarters or the region, will then review, investigate, and help resolve the reported items. To ensure positive control, all board members are required to sign a confidentiality agreement. Once the board reaches a resolution, the recommendations are sent to the appropriate manager and the solution is monitored for application or implementation. A final report is sent to the employee who raised the safety concern.
- **Aviation Safety Reporting System (ASRS).** ASRS was established in 1976 as a partnership between the National Aeronautics and Space Administration and the FAA. ASRS is confidential, non-punitive and is available to all participants in the NAS who wish to voluntarily report safety incidents and situations. ASRS offers two important protections to those who report: confidentiality and limited immunity from FAA enforcement actions under FAA Advisory Circular 00-46E. ASRS receives, de-identifies, and analyzes aviation safety incident reports from pilots, air traffic controllers, cabin crew, maintenance technicians, dispatchers, ground personnel and others involved in aviation operations. Safety reports received by the ASRS are used to identify system-

level safety risks and threats in the NAS, which are communicated by way of Safety Alerts and For Your Information notices.

- **Voluntary Disclosure Reporting Program (VDRP).** VDRP provides incentives for an air carrier, repair station, qualified fractional ownership program, or other eligible FAA-regulated entity to voluntarily identify, report, and correct instances of regulatory noncompliance. The program allows the FAA to oversee and participate in the root-cause analysis of the events leading to the violations. The FAA reviews, approves, and oversees corrective actions and conducts follow-up surveillance. The agency accepts the voluntary disclosure, foregoes legal enforcement action, and protects the public release of qualifying disclosures and corrective actions when all of the following criteria are met:
    - The certificate holder, qualified fractional ownership program, notifies the FAA of the apparent violation immediately after detecting it and before the agency learns of it by other means.
    - The apparent violation is inadvertent.
    - The apparent violation does not indicate a lack, or reasonable question, of qualification of the certificate holder or qualified fractional ownership program.
    - Immediate action, satisfactory to the FAA, is taken upon discovery to terminate the conduct that resulted in the apparent violation.

More information about these and other voluntary safety programs implemented by the FAA can be found at https://www.faa.gov/newsroom/aviation-voluntary-reporting-programs-1.

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