NATIONAL ACADEMIES *Sciences
Engineering
Medicine*

OPEN SOLICITATION TO PRESENT
Workshop on Future Emerging Issues in Commercial Aviation Safety

BACKGROUND

The Committee on Emerging Trends in Aviation Safety is soliciting presentations from organizations proposing to implement novel commercial aviation technologies, operations, and services for which there are not-yet widely established standards in the industry for assuring their safety. These presentations will be the starting point of a workshop discussing new and emerging safety issues in commercial aviation and how safety can be monitored and mitigated. In particular, the workshop will provide a forum for frank discussion amongst industry, regulators and researchers as to the safety cases required to implement novel changes in aviation, and the methods and data required to demonstrate these safety cases and monitor for safety within operations. This event is NOT part of the formal application process for regulatory approval.

This committee is responding to a request to the National Academies from Congress regarding the U.S. commercial airline sector's capability to identify emerging hazards and mitigate them before they result in accidents. The National Academies is acting as a neutral third party to foster dialogue among industry, regulators, and independent experts, and then provide an informed assessment on the challenges of assuring safety during times of innovation and transformative changes in a report to be authored over the next year.

GOALS

The workshop intends to serve both innovators in the aviation industry and the Federal Aviation Administration (FAA) in anticipating safety issues for innovations in aviation technology and operations sufficient to inform the safety cases that organizations may ultimately be required to prepare and options that regulators such as the FAA may choose to employ. The committee's interest is in developing methods by which stakeholders and experts representing a variety of perspectives can elicit insights on emerging hazards that have not been captured by other methods.

WORKSHOP DESIGN

The workshop will be all-day and in-person on **Tuesday, August 29, 2023**. We envision three or four organizations will each present an innovation they propose in aviation technology and/or operations, and the elements they propose in a safety case sufficient to allow their implementation, particularly focusing on those aspects for which the industry, and regulatory guidance, have not yet established standards. The safety case should holistically

discuss potential risks associated with the innovation and/or changes in how current risks are protected against, and how they may be mitigated by a range of factors including technologies, operational design, human factors, and organizational performance.

CRITERIA FOR REVIEW OF REQUESTS TO PRESENT

Interested parties are invited to submit an expression of interest to participate that includes a response by email to the criteria described in this paragraph (no more than 1,000 words). The committee will review all expressions of interest and decide which participants to invite. However, the committee will NOT review applications regarding new inventions or services that are entirely conceptual at this stage. Applications should instead discuss innovations sufficiently mature to have a fully developed concept of operations (CONOPS), the essential elements of a safety case, and the key concepts underlying a safety management system (SMS), including how the hazards of on-going operation would be identified, monitored, and mitigated. The workshop will not afford the time to review complete CONOPS, proposed safety cases, or proposed SMSs in detail. Instead, the application should propose a presentation focusing on a new or unusual challenge in establishing a safety case that their innovation is facing. Presentations will not require disclosure of proprietary information. However, applicants must be able to discuss in an open forum key design aspects and assumptions central to the safety case (or challenge in creating a safety case). The committee will select presentations representing a diverse set of innovations to discuss during the workshop. Applicants who are not invited to present may request participating in the workshop, which the committee will consider regarding achieving a balance of perspectives and expertise, and relative to limitations in the meeting facilities. Applicants interested in presenting should contact Lida Beninson of the National Academies (lbeninson@nas.edu) by **July 7, 2023**. To comply with Federal Advisory Committee Act (Pub. L. 92-463), all applications to present at the workshop will be publicly assessable.

REPORT

This workshop is the second of its kind that the committee has hosted to invite open discussions among experts in aviation safety about how to anticipate the hazards that may emerge in the 5-to-10-year future, as discussed in its first report. A proceedings of the first workshop will not be made available, nor will the proceedings of the second workshop. These events will used to inform the committee's second report to Congress in July 2024.