

Federal Aviation Administration
Flight Standards Service
Air Carrier Training Aviation Rulemaking Committee (ACT ARC)

ACT ARC Recommendation 20-6
Operational Suitability Demonstration/Evaluation Activities

I. Submission

The recommendations below were submitted by the Flight Standardization Board Workgroup (FSB WG) for consideration by the Air Carrier Training Aviation Rulemaking Committee (ACT ARC) Steering Committee at F2F-22, March 4-5, 2020. The ACT ARC Steering Committee adopted the recommendations, and they are submitted to the Federal Aviation Administration (FAA) as ACT ARC Recommendation 20-6.

II. Statement of the Issue

The FAA asked the ACT ARC to examine whether the FAA should reconsider its Flight Standardization Board (FSB) Operational Evaluation (OE) process and, if so, to recommend what elements should be included and what standards should be used to ensure consistent conduct of OEs. The ACT ARC established the FSB WG to complete this FAA-initiated tasking. Current FAA guidance does not address the conduct of operational suitability determination activities by the Aircraft Evaluation Groups (AEG). Both AEG and Aircraft Certification Office (ACO) evaluations require ground and flight testing of aircraft. There have been occasions when AEGs conducting such activities have not taken advantage of opportunities for joint use of scheduled FAA certification test activities. The amount of integration between AEG and ACO is currently highly dependent on the relationship between the ACO and the individual AEG office and/or fleet chairman involved. Additionally, some tests conducted by ACOs and AEGs are similar in nature, and if the Aircraft Certification Service (AIR) and AEG do not coordinate their activities, Original Equipment Manufacturers (OEM) may be required to conduct multiple separate tests to satisfy requirements of both the AEG and ACO.

III. Proposed Recommendations

The ACT ARC recommends the FAA consider the following actions:

1. Define Operational Suitability in policy and guidance.
2. Define the roles and responsibilities of the AEG and the ACO in alignment with the FAA's Operational Suitability definition.
3. Emphasize within the Flight Standardization Board (FSB) process, and document in FAA policy and guidance, that the AEG operational suitability determination for new/derivative aircraft should be carried out to the maximum extent possible without compromising safety, during normal FAA Aircraft Certification Service certification testing. This should include both ground testing and flight tests such as Function and Reliability (F&R) flights. AEG operational flight testing should be limited to flights necessary for the completion of pilot type rating training and qualification requirements determinations, unless new or novel operational authorizations are deemed necessary by the FAA.

4. Until validation procedures covering FSB activities are agreed upon between the FAA and bi-lateral partners, the AEG should liaise with other participating authorities (*i.e.*, during dual or tri-partite exercises) to attempt to eliminate duplication of efforts and sorties, and to better utilize Original Equipment Manufacturer (OEM) resources.
5. The AEG should establish parameters and criteria for flights for the FSB operational suitability assessment. For example, number of flights, sorties, specific test points and/or maneuvers should be quantified when possible for clarity.

IV. Rationale and Discussion

Greater involvement of the AEG in dedicated certification tests may help satisfy the AEG's Operational Suitability assessment responsibilities without duplication of efforts and schedule delays to the OEM. Such involvement should be conducted when possible without compromising safety or degrading the effectiveness of certification or operational suitability test. Human factors workload evaluations, failure hazard analysis tests, and F&R flight tests are areas where the AEG could accomplish evaluations of operational use, compatibility with the operating environment, interoperability, and human factors aspects with minimal need for repeated operational suitability assessments.

Early involvement of the AEG in technical briefings with the certification team has been extremely helpful for all parties in past FSBs. It offers the chance for the AEG to achieve a better understanding of the scope of the changes introduced and an opportunity to discuss operational aspects and requirements with the flight test team and their certification counterparts.

FAA guidance does not specify the essential elements of an Operational Suitability assessment, and interpretations by the AEG and ACO can differ. One solution to this issue would be to more clearly define the operational suitability tasks of a certification project and describe the roles and responsibilities of both the AEG and ACO. This reasoning is in line with the recommendations of the Safety Oversight and Certification Aviation Rulemaking Committee (SOC ARC).¹

The recommendations provided in this document about integrated AEG/FSB activities are complementary to input from the Department of Transportation Special Committee, Joint Authorities Technical Review (JATR), and SOC ARC.

V. Background Information

¹ See Appendix H to the Safety Oversight and Certification Aviation Rulemaking Committee (SOC ARC) Recommendation Report to the Federal Aviation Administration, December 31, 2018:

Type certification project management roles and responsibilities for certification plan development, approval and performance are not adequately coordinated between AIR and AFX. In particular, AEG activities are not fully integrated into the design approval process nor are their overlapping evaluations coordinated and managed consistent with other applicable requirements.

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Flight Standards AEG activities required for type certification, such as the review and acceptance of ICA and AFM/S, should be integrated into the AIR transformation roadmaps which are being developed and implemented in collaboration with industry.

ACT ARC Recommendation 20-6 addresses Items 1 and 3.a-c in the FSB WG Scope of Work and ACT ARC Initiative #43 (see below):

FSB WG Scope of Work:

1. Examine whether the FAA should reconsider its current process of an FAA operational evaluation.
 - a. If the WG decides that the FAA should reconsider, the WG should examine the possible alternatives to the current process.

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3. In developing proposed recommendations responsive to (1) . . ., consider, at minimum, the following:
 - a. Would the new or improved operational evaluation include some or all the elements that are currently included in an FAA operational evaluation?
 - b. Would the new or improved operational evaluation include elements that are not included in a current FAA operational evaluation?
 - c. What standards should be used to ensure the consistent conduct of operational evaluations?

ACT ARC Initiatives:

- Initiative #43: Examine how the FAA could improve its current Flight Standardization Board (FSB) Process and product (FSB Report) to meet the interests of all stakeholders.

Source Reports

- Safety Oversight and Certification Aviation Rulemaking Committee (SOC–ARC) Recommendation Report to the Federal Aviation Administration, December 31, 2018.