ACT ARC Recommendation 20-3

Enhanced FAA Oversight of Operational Evaluation

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 20-3.

II. Statement of the Issue

The FAA process for Flight Standardization Boards (FSB) is an important component of evaluating aircraft and aircraft type design changes to support entry into service and operations. First established in Advisory Circular (AC) 120–53 in 1991, the process has effectively addressed the "operational certification" requirements of pilot type rating training and the operational suitability of new aircraft. The FAA asked the ACT ARC to examine whether the FAA should reconsider its 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.

As original equipment manufacturers (OEM) have begun to design aircraft incorporating technologies such as fly-by-wire to achieve commonalities in operating principles and handling qualities between types and models, the role of the FSB has begun to focus on operational and training relationships between aircraft. This emphasis has required FAA personnel to have greater technical expertise and a more complete understanding of aircraft design technologies. At the same time, evaluations have become more complex and more numerous as OEMs apply more modifications (MOD) having possible impacts on pilot training. These factors affect the timely publication of the FSB Report (FSBR) and its use by industry to support entry into service of new or modified aircraft. Such issues affect the ability of manufacturers, operators, and training providers to use FSB results in a timely manner following aircrafts' entry into service. The recommendations and supporting rationale below propose a new, applicant-supported process using the existing evaluation processes of AC120–53B, Change 1, while engaging more resources and technical expertise from manufacturer applicants under the FAA's risk-based oversight to support the timely publication of FSBR.

III. Proposed Recommendations

The ACT ARC recommends that the FAA, as a long-term goal, develop and institute a revised applicant-supported operational evaluation that accommodates the changing technology landscape and assists the FAA to focus its oversight resources on safety critical items. Such an evaluation would have the following characteristics or components:

1) Relying on FAA-approved processes, procedures, and criteria, the applicant (original equipment manufacturer (OEM) or other applicant for type design changes) would organize and support the evaluation process and publish the resulting operational data for reference or use by all stakeholders (*i.e.*, FAA offices, US operators, third

country civil aviation authorities and operators, flight training providers, and pilot labor unions). The applicant would also maintain and manage this data throughout the aircraft life-cycle.

2) The FAA would continue to own the evaluation process using a risk-based oversight approach to the industry-supported evaluation.

3) Findings and approval of bilateral partners having a similar process (*e.g.,* the European Union Aviation Safety Agency's (EASA) Operational Suitability Data (OSD) Flight Crew process) would be recognized by the FAA through mechanisms under each country agreement.

4) Under such a system;

   a. The FAA responsibilities would be—

      i. Determining the need for an operational evaluation taking into consideration the applicant's assessment and associated supporting data;
      ii. Establishing the operational evaluation basis. (In the case of a joint evaluation involving a bilateral partner or other regulatory agency, the FAA should coordinate the possible resolution of all applicable policy differences prior to the evaluation);
      iii. Overseeing the operational evaluation process, including identifying appropriate roles and responsibilities; and
      iv. Approving the operational data developed by the applicant.

   b. The applicant (OEM or modifier) responsibilities would be—

      i. Assessing the need for an operational evaluation and providing supporting data;
      ii. Organizing the operational evaluation and showing compliance with applicable operational requirements;
      iii. Compiling the results of the evaluation;
      iv. Managing and making available the operational data (*e.g.*, pilot type rating, pilot training, operational suitability) to the stakeholders. The process of availability and the definition of stakeholders should be specified in FAA policy and be granted at a level equivalent to the current FAA system; and
      v. Maintaining the continued validity of the operational data.

IV. Rationale and Discussion

The purpose of this recommendation is to take full advantage of the capabilities and technical expertise of manufacturer applicants and derive both process efficiencies and timely distribution of the operational data necessary for entry into service of new and modified aircraft after obtaining type design certification. Such an evaluation process would also reduce redundancies where separate certifications are proposed under similar regulatory schemes (*i.e.*, FAA and EASA). In the case of certification authorities performing as bilateral partners, such an industry-supported process would, in turn, support validation of activities and results. This, in turn, would acknowledge language in the Technical Implementation Procedures for Airworthiness and Environmental Certification between the FAA and EASA, Revision 6 (TIP 6) which states that the FAA and EASA are working together to develop validation processes for OSD elements.

This proposed process would allow the FAA to determine the operational requirements for pilot training and certification through regulation and policy, and the evaluation process through guidance such as advisory circulars. The FAA would maintain complete oversight responsibility for the process. Although the manufacturer would coordinate the evaluation process, the level of involvement by the FAA would be determined by the FAA based on a risk-based approach and an understanding of the experience of the applicant and the maturity of the applicant's processes. If the FAA determines an applicant does not have the necessary experience, processes, or resources to support such an evaluation, the FAA would maintain the necessary organizational structure, processes, and personnel to complete a full legacy evaluation process. In implementing this recommendation, the Observations, Findings, and Recommendations of the Boeing 737 MAX Flight Control System Joint Authorities Technical Review (JATR) with respect to the Organization Designation Authorization (ODA) process may be instructive.

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 Safety Oversight and Certification Aviation Rulemaking Committee (SOC ARC).

V. Background Information

ACT ARC Recommendation 20-3 addresses items 1 and 3(d) 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.

* * *

3. In developing proposed recommendations responsive to (1) and (2), consider, at minimum, the following:
    a. If parties other than the FAA will be wholly or partly responsible for conduct of operational evaluations—
        i. Would all such parties, including new entrants, have necessary resources to conduct the operational evaluation? If not, how would the operational evaluation be completed?
        ii. How would the FAA validate operational evaluations conducted by other parties?

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.

References

- Advisory Circular 120–53B, Change 1, October 24, 2016.
- Technical Implementation Procedures for Airworthiness and Environmental Certification between the FAA and EASA, Revision 6, September 22, 2017.
- Observations, Findings, and Recommendations of the Boeing 737 MAX Flight Control System Joint Authorities Technical Review (JATR), October 11, 2019.