

Air Carrier Training Aviation Rulemaking Committee (ACT ARC)

**ACT ARC Recommendation 21-6
Flight Standardization Board Test Subjects and Membership**

I. Submission

The recommendations below are submitted by the Flight Standardization Board Workgroup (FSB WG) for consideration by the Air Carrier Training Aviation Rulemaking Committee (ACT ARC) Steering Committee at its April 28, 2021, meeting. The ACT ARC Steering Committee adopted the recommendations, and they are submitted to the Federal Aviation Administration (FAA) as ACT ARC Recommendation 21-6.

II. Statement of the Issue

The current Flight Standardization Board (FSB) process for conducting evaluations for the purposes of determining type rating, training, checking, and currency requirements on new or derivative aircraft (T Tests) generally uses Federal Aviation Administration (FAA) aviation safety inspectors (ASI). This policy is stated in FAA Advisory Circular (AC) 120–53B, Change 1, Guidance for Conducting and Use of Flight Standardization Board Evaluations (the AC), and FAA Order 8900.1. Currently, the AC does not provide for the use of test subjects from outside of the FAA (*i.e.*, industry pilots). There are also several areas relating to test subjects which the ACT ARC believes would benefit from more detailed guidance.

III. Recommendations

There is one portion of the recommendation on which the members were unable to reach full consensus. Although the working group agrees that the FAA should be allowed the use of line pilots from air carriers and/or business jet operators as test subjects, we were unable to reach consensus on when and how often they are to be used. Therefore, recommendation number one in the list below presents two options and their respective rationale for consideration by the FAA.

The ACT ARC recommends the FAA consider the following actions:

The FAA should consider revising Appendix 3 to AC 120–53B, Change 1 to make the following changes regarding test subjects used in FAA FSB evaluations for the purposes of determining pilot type rating, training, checking, and currency requirements (T Tests):

1. T Test subjects should include current line pilots from air carriers and/or business jet operators. Line pilots from air carriers and/or business jet operators should be added to the list of possible FAA T Test subjects in Section 1.h. of Appendix 3.

Option A:

When selecting test subjects for T Tests, the FSB Chairman should give strong consideration to using current line pilots from air carrier and/or business jet operators. If the FSB Chairman elects to not use industry pilots, it is recommended that he should

substantiate and document his decision. Additionally, T Test subjects should be representative of a cross-section of pilots who will ultimately operate the candidate aircraft.

The following organizations support Option A for the use of line pilots: Air Line Pilots Association (ALPA), Airlines for America (A4A), and CAE.

Option B:

When selecting test subjects for T Tests, the applicant should propose in its evaluation plan the expected pilot pre-requisites, including any need for pilots with specific types and amounts of line experience. This proposal should be made with consideration for the scope of the project (*e.g.*, evaluation of a new, derivative, or modified aircraft, evaluation of operational capability, evaluation of credits based on aircraft commonalities, *etc.*) as well as the type of evaluation being conducted (*e.g.*, T2, T3, T5, *etc.*). This proposal should ensure that the FSB evaluation results can be validated as suitable for the cross-section of pilots who will ultimately operate the candidate aircraft.

When FAA pilots do not provide the necessary number of test subjects meeting the pre-requisites, line pilots from air carriers and/or business jet operators should be considered as possible T Test subjects.

The following organizations support Option B: Airbus, Boeing, Bombardier, Dassault Aviation, and Embraer.

2. T Test subjects should meet experience prerequisites and entry level competencies determined by mutual agreement between the FAA and the applicant.
3. The number of test subjects for a T Test will be determined by mutual agreement between the FAA and the applicant with consideration for the scope of the project (*i.e.*, evaluation of a new, derivative or modified aircraft, evaluation of operational capability, evaluation of credits based on aircraft commonalities, *etc.*) as well as the type of evaluation being conducted (*i.e.*, T2, T3, T5, *etc.*).
4. The allowance for OEM pilots to be used as test subjects in T6 tests should be removed from the AC. Although the use of OEM pilots is not allowed in the AC for any other T Tests, it is further recommended that OEM pilots not be used as test subjects in any FAA FSB T Tests.
5. Part 142 training center program managers (TCPM) and flight training program managers (FTPM) should be added to the list of possible FAA T Test subjects in Section 1.h.5. of Appendix 3.
6. The FSB chairman should consider not selecting individuals as test subjects for T Tests who have had technical or operational exposure to the candidate aircraft which would jeopardize their capability to conduct a fair and impartial evaluation.

IV. Rationale and Discussion

Recommendation 1:

The ACT ARC believes there are several reasons to revise the list of possible test subjects in AC 120–53B, Change 1. While FAA pilots provide an important perspective from the regulator’s point of view, industry pilots will add the perspective of pilots in day-to-day operations.

T Test subjects from industry may also be necessary to meet specific proficiency requirements needed for the evaluation, due to the FAA not having ASIs who can meet the necessary requirements. In some cases, the FAA has not been able to provide T Test subjects meeting the necessary requirements and the applicant has absorbed the financial burden of allocating time and resources to qualify ASIs ahead of the start of the FSB.

One concern raised regarding the use of line pilots from air carrier and/or business jet operators in FAA T Tests is how to compensate them and ensure the burden of compensation does not unduly disadvantage any one stakeholder or party. Because FAA participation is necessary to the development of a meaningful solution, and the FAA cannot participate in the development of ARC recommendations, it is recommended that the FAA convene a non-ARC work group comprised of representatives from FAA, aircraft manufacturers, airlines, business jet operators, and pilot unions to address this issue. FAA participation in the development of this solution would allow its representatives to share past experiences where line pilots were used as test subjects and how they were compensated. The FAA would be able give its opinion on how well the compensation in each of those instances worked along with possible solutions to issues identified in these circumstances.

Option A Rationale and Discussion:

It is recommended that the FAA consider revising AC 120–53B, Change 1 to generally direct the use of current line pilots from air carriers and business jet operators, as opposed to the current language, which only allows FAA pilots.

Among the important qualities pilots from air carriers and business jet operators provide are:

- Proficiency in the base aircraft in addition to being current and qualified;
- Line proficiency (*i.e.*, significant recent experience in normal operations outside the flight test and training environments);
- Muscle memory; and
- Familiarity with specific sight pictures, aircraft handling qualities and energy management.

There may be times when line pilots are not needed for an evaluation. Because each evaluation is unique, it would be difficult to list specific situations where line pilots are not needed. Even seemingly small aircraft modifications may benefit from line pilot involvement in evaluations and it is possible that such small modifications may impact pilot training more than initially anticipated. Option A’s supporters believe it would be best to leave the decision not to use line pilots as test subjects with the FSB Chairman and then have him document and substantiate the decision for consistency and accountability reasons. Under this option, the applicant would still submit the pilot profiles and prerequisites it believes are necessary for an evaluation, but the FSB Chairman would give strong preference to line pilots when selecting test subjects.

Several findings in the Joint Authorities Technical Review (JATR) report support option A for the recommendation to use line pilots as test subjects:

- Finding F10.1-B, The [Aircraft Evaluation Group (AEG)] pilots are not a representative sample of the operators' pilot population.
- Finding F10.1-D: The AEG's evaluation flights do not evaluate crew performance and do not represent operators' pilots' experience level or operation.
- Recommendation R9.3: Where the assessment of the effectiveness of differences training is not conducted in an aircraft, the FAA should require the AEG to use operational flight crew complements (e.g., line captains and line first officers), with a range of flight experience, as part of the assessment.

Option B Rationale and Discussion:

It is recommended that the FAA consider revising AC 120–53B, Change 1 to allow the use of line pilots from air carriers and business jet operators as T Test subjects when necessary.

For complex operational evaluations (e.g., evaluation of a derivative aircraft with design or procedural changes having a potential important impact on pilot competences and training), option B supporters believe that test subjects with specific types or amount of line experience may be required in order to ensure that the pilot qualification and training requirements are validated as suitable for the cross-section of the pilots that will operate the candidate aircraft. The applicant should propose in its evaluation plan the expected test subjects' prerequisites, using a risk-based approach. The scope of the project (in particular, the magnitude of the potential impacts on the pilot tasks) as well as the type of evaluation to be performed (T Tests) are criteria influencing the risk that the fidelity of the evaluation results is not assured unless test subjects with specific types or amount of line experience are used.

Where sufficient FAA pilots are not available or cannot meet the prerequisites, particularly in terms of recent line experience, line pilots from air carriers and business jet operators can offer more flexibility in scheduling the T test.

In order to smoothly implement the use of line pilots from air carrier and/or business jet operators, the FAA should convene a work group comprised of representatives from FAA, aircraft manufacturers, air carriers, business jet operators, and pilot unions to establish a system and policy for incorporating line pilots into FAA T Test evaluations. This group should also develop the risk-based decision-making guidance for use by the applicants when proposing the expected pilot prerequisites and number of test subjects in the evaluation plan.

Rationale and discussion for recommendations 2 through 7:

The number of test subjects should be appropriate to the evaluation being conducted (*i.e.* full evaluation, variant, major change, *etc.*). The range of qualifications and experience of pilots used for T Tests should be a reasonable representation of those that will fly the aircraft in its operational environment. While an industry initial cadre may be included, it is not an exclusive requirement. In the case of joint evaluation or validation activities, the FAA should coordinate the selection of T Test subjects with the other participating regulatory authorities.

The ACT ARC is recommending that OEM pilots not be used in T6 tests or any other T Tests. OEM pilots would have too much knowledge about the candidate aircraft because they belong to the applicant organization, and therefore cannot qualify as a Test Subject. These recommendations do not preclude the use of OEM pilots as safety pilots during T Tests nor do they preclude OEM pilots from flying the T Test profile for OEM data collection purposes.

The ACT ARC is recommending the addition of TCPMs and/or FTPMs to the list of possible T Test subjects to provide feedback with regards to FAA Order 8900.1 and part 142 training program requirements, to complement the determination of operational suitability. Furthermore, having TCPMs and/or FTPMs as test subject would allow for a more collaborative approach between the AEG and the Certificate Management Office (CMO) to facilitate the Part 142 training program approval.

Lastly, a test subject should not be exposed to any technical or operational data or experience that might familiarize him with the candidate aircraft and, in turn, jeopardize his ability to undertake a fair evaluation. Often, AEG representatives attend meetings for planning FSB activities and/or attend meetings for the development of the Master Minimum Equipment List for several months or years before the T Tests begin. This recommendation is not intended to limit briefings prior to T Tests or the certification plan.

Ultimately, the decisions made on composition of test subjects used in T Tests should ensure the fidelity of the validation. The recommendations for test subjects used in FAA T Tests, including the use of line pilots from air carriers or business jet operators, as detailed in this recommendation, will help guide the FAA selection process to ensure this fidelity is maintained. The outcome of such a selection will ensure the minimum training and checking requirements, determined through the FSB evaluation process and published in FSB reports, are as realistic as possible.

V. Background Information

Recommendation 21-6 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) and (2), consider, at minimum, the following:
 - a. Would the new or improved operational evaluation include some or all of 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.

References

- FAA AC 120-53B, Change 1
- FAA Order 8900.1