



U.S. Department
of Transportation

**Federal Aviation
Administration**

Memorandum

Subject: **ACTION:** Policy Memorandum 2000-03, Issuance of a
Special Airworthiness Certificate in the Experimental
Category for Show Compliance Flight Testing

Date: March 28, 2000

From: Manager, Production and Airworthiness
Certification Division, AIR-200
Manager, Aircraft Engineering Division, AIR-100
Manager, Aircraft Maintenance Division, AFS-300

Reply to
Attn. of:

To: All Directorate Managers
All Aircraft Certification Offices
All Manufacturing Inspection Offices,
District/Satellite Offices, and
Certificate Management Offices/Units
All Flight Standards Regional and District Offices
Brussels Aircraft Certification Staff

1. PURPOSE. The purpose of this policy memorandum (PM) is to clarify airworthiness certification requirements for show compliance flight testing during approval of a Supplemental Type Certificate (STC), amended Type Certificate (TC), or to perform Research and Development (R&D) testing. To add clarification, this PM also defines a "show compliance flight test." The benefits provided by implementing and using this PM include:

- Process standardization among all Federal Aviation Administration (FAA) field offices and their designees.
- Clear definition of a show compliance flight test and associated airworthiness certification requirements.
- Clear definition of an operational flight check.
- Up-front applicant understanding of show compliance requirements.
- Definition of a streamlined standard airworthiness reinstatement process, after show compliance flight testing is complete.

The main focus of this PM is in three primary areas: (1) early communication with the applicant regarding show compliance requirements, (2) early FAA determination of show compliance requirements, and (3) the Aviation Safety Inspector (ASI) or designee's role in returning the aircraft back to a Standard Airworthiness Certificate.

2. CANCELLATION. This PM cancels Guidance Memorandum (GM) 95-4. If there are any conflicts between this PM and any other directives or field level documents, this PM will take precedence.

3. BACKGROUND. In the past, GM 95-4 allowed aircraft to be operated on a Standard Airworthiness Certificate for show compliance flight testing of certain equipment installations. However, Title 49 United States Code, section 44704(d) and Title 14 Code of Federal Regulations (14 CFR) section 21.183, do not permit operation of an aircraft that is not in compliance with the TC for which its current Standard Airworthiness Certificate was issued. Therefore, an aircraft in this status cannot be operated legally under its Standard Airworthiness Certificate when a "show compliance flight test" is necessary, and requires the issuance of a Special Airworthiness Certificate in the experimental show compliance category (see attached Office of Chief Counsel letter for legal interpretation).

This memorandum was published in the Federal Register allowing 60 days for public review and comment (Vol. 64, No. 223, dated November 19, 1999). All comments were reviewed and considered prior to release of this PM.

4. DEFINITION. The term "show compliance flight test" is used to identify flight tests that are performed to gain APPROVAL of an STC, or amended TC (14 CFR section 21.191(b)). The purpose is to show compliance to airworthiness regulations when no other form of analysis or ground testing can be used.

5. PROCEDURES. The Aircraft Certification Office (ACO) will schedule an early familiarization meeting to discuss limitations and conditions surrounding the intended modification to the aircraft and to determine methods to establish airworthiness requirements during the project. The applicant and all necessary Manufacturing Inspection District Office (MIDO), Manufacturing Inspection Office (MIO), Flight Standards District Office (FSDO) if applicable, and ACO systems, airframe, and flight testing personnel that will be involved in the process will be scheduled to participate in the familiarization meeting.

NOTE: The FAA and Industry Guide to Product Certification, and FAA Order 8130.2, Airworthiness Certification of Aircraft and Related Products, are good sources of guidance during this process.

a. During the initial approval phase of an STC or an amended TC project, the ACO with geographic responsibility will make the determination if show compliance flight testing will or will not be required.

b. The applicant shall present a data package as defined in FAA Order 8110.4, Type Certification Process. The applicant's package should enable the ACO engineer to make an assessment and determination of whether show compliance flight testing is necessary, or whether other means such as analysis, and/or ground testing could be used to show compliance. It is important to emphasize that changes to the type design only require show compliance flight testing when other means cannot be used to fully show compliance to the airworthiness regulations.

c. The ACO engineering project manager shall create a file for the project as defined in Order 8110.4. Upon completion of show compliance flight testing, if required, the final test results will be included in the file.

d. If compliance to the airworthiness regulations can be shown through analysis, and/or ground testing there is no need for flight testing and issuance of a Special Airworthiness Certificate in the experimental category.

e. Where the applicable regulations specifically require flight testing or the ACO determines that no form of analysis, and/or ground testing can be used to show compliance, the following steps will be taken:

(1) The ACO project engineer will inform the applicant that a Special Airworthiness Certificate in the experimental category will be required prior to show compliance flight testing.

(2) The responsible MIDO/MIO will inform the applicant of the requirements for application and reinstatement of the Standard Airworthiness Certificate after flight testing is complete. The MIDO/MIO will specify that the applicant shall continue to comply with the existing approved maintenance, preventive maintenance, rebuilding, and alteration programs that are in effect under the aircraft's current Standard Airworthiness Certificate. The MIDO/MIO will also explain to the applicant that failure to do so will have an impact on the Standard Airworthiness Certificate reinstatement process.

NOTE: Any flight testing that the applicant performs prior to the issuance of a show compliance flight test Type Inspection Authorization (TIA), will require that the aircraft be placed in the experimental R&D Category for that portion of the evaluation.

(3) Issuing a Special Airworthiness Certificate in the experimental category. Once an aircraft has been modified introducing a change to the type design, or a TIA has been issued, the ASI or designee issuing the Special Airworthiness Certificate in the experimental category will remove and hold the Standard Airworthiness Certificate in suspense for subsequent reinstatement. Entries into the Aircraft Maintenance Records (logbook) as described in paragraphs 5e(3)(a) and (b) below will be made. These entries will help to streamline the reinstatement of the Standard Airworthiness Certificate:

Note: The ASI/designee will hold in suspense and reinstate the original Standard Airworthiness Certificate if the amount of time that the aircraft will be under a Special Airworthiness Certificate is limited to 30 days or less.

(a) Explain in detail the reason for issuance of the Special Airworthiness Certificate (e.g., to perform show compliance flight testing or R&D testing).

(b) Provide all information that will help expedite reinstatement of the Standard Airworthiness Certificate (e.g., type of modification and/or alteration performed).

(4) Reinstatement of the suspended Standard Airworthiness Certificate after flight testing has been completed and the aircraft either: (1) has been returned to its original configuration or (2) remains in its modified condition and the modification has been approved. The ASI or designee will:

(a) Require only the documentation and/or inspections that are necessary to confirm what has transpired since the aircraft was modified, up to the point of Standard Airworthiness Certificate reinstatement. These requirements apply unless the ASI or designee can justify and document the need for a more in-depth inspection.

(b) Make an entry in the Aircraft Maintenance Records thoroughly explaining what has transpired. The following statements are to be entered, along with any other pertinent information:

1 "Inspection for the reinstatement of the original Standard Airworthiness Certificate was performed based on all installations and modifications related to (enter STC, amended TC number, or other form of project description), performed from (enter date the modification(s) was first installed) to (enter current date)."

2 "This certification process does not replace or change the due dates or times of scheduled inspection requirements" (e.g., annual or 100-hour inspections).

(5) Ensure that copies of all Airworthiness Certificates (Standard and Special) are placed in the certification file.

6. OPERATIONAL CHECK FLIGHTS OF FAA-APPROVED DATA. Operational check flights do not require a Special Airworthiness Certificate in the experimental category. The term operational check flight (14 CFR section 91.407b) includes flight tests that are performed to check installation and/or operation of an APPROVED STC, amended TC, or any other FAA-APPROVED data after installation and return to service. Operational check flights, when required, will be performed under the current Standard Airworthiness Certificate. The purpose is to ensure that the approved modification and/or alteration is functioning properly and has no adverse effect on aircraft operation. Furthermore, operational check flights do not replace the requirements for a "show compliance flight test."

7. CONCLUSION. Utilizing this PM for the issuance of a Special Airworthiness Certificate in the experimental category and subsequent reinstatement of the Standard Airworthiness Certificate will be less burdensome and more productive. Aircraft Certification Directorate managers and Flight Standards Division managers will ensure through the monitoring of their directorates and divisions (ACO's, MIDO's, and FSDO's) that this PM is followed and achieves standardization and consistency among FAA field offices and their designees. This process will be monitored and evaluated for a 6-12 month period. Based on input from the FAA and Industry it will be revised, as necessary, and incorporated into permanent policy documents.

This PM has been reviewed by and coordinated through the Aircraft Maintenance Division, AFS-300.

If there are any questions, please contact a member of the Production and Airworthiness Certification Division, AIR-200, at (202) 267-8361.

/S/

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Manager, Production and Airworthiness
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/S/

James C. Jones
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Attachment

Section 21.181(a)(1) of Title 14 of the CFR states that a standard airworthiness certificate remains effective as long as maintenance, preventive maintenance, and alterations of the aircraft are performed in accordance with 14 CFR parts 43 and 91. Section 91.407(a)(1) states that an aircraft that has undergone maintenance, preventive maintenance, rebuilding, or alteration may not be operated unless it has been approved for return to service by a person authorized under 14 CFR § 43.7, and the maintenance record entry required by §§ 43.9 or 43.11 has been made. Therefore, a standard airworthiness certificate for an aircraft that has undergone alteration is not effective until the aircraft is returned to service in accordance with part 43.

When the applicant for an ATC or STC alters an aircraft in accordance with the proposed change in type design, a flight test of the altered aircraft may be required in order to show compliance with the applicable airworthiness requirements. If required, a successful flight test will be necessary for the FAA to approve the applicant's data. The flight test to show compliance will be performed after alterations are made to the aircraft, but before the aircraft is returned to service; thus, there is no effective airworthiness certificate for the altered aircraft unless the FAA issues an experimental airworthiness certificate. The FAA issues that experimental certificate under 14 CFR § 21.191(b), *Experimental certificates for showing compliance with regulations*.

There is a difference between the flight test for showing compliance with regulations and the "operational flight check" required by 14 CFR § 91.407(b). Paragraph (a) of § 91.407 prohibits all persons from operating an altered aircraft prior to return to service; in contrast, paragraph (b) addresses operation of the aircraft with passengers aboard. Thus, paragraph (b) of § 91.407 is premised on the operator of the aircraft complying with paragraph (a), and the flight test required by paragraph (b) is conducted *after* the aircraft is returned to service. After the aircraft is returned to service, the standard airworthiness certificate is effective, and there is no need for an experimental airworthiness certificate to be issued for the operational flight check.

Prepared by: Airworthiness Law Branch, Regulations Division, Office of Chief Counsel

Appendix 1 to Policy Memorandum (PM) 2000-03 dated March 28, 2000

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Based on input from FAA field offices, use the following information to implement PM 2000-03. Attach this appendix to the PM; a revised copy of the PM will be issued at a later date incorporating changes as required.

1. In order to have a standardized transition to the requirements in PM 2000-03, the following transition plan will be used:

a. Any application data package received after March 28, 2000, will be processed according to the procedures in paragraph 5. If flight testing is required, the applicant will be notified early in the program that a Special Airworthiness Certificate in the experimental category is required.

b. Any Type Inspection Authorizations (TIA's) that were written prior to April 16, 2000, or for applications received prior to March 29, 2000, may continue under the previous procedures until May 31, 2000, at which time a Special Airworthiness Certificate in the experimental category will be required. The applicants should be notified immediately that flight tests not completed by May 30 will require a Special Airworthiness Certificate in the experimental category.

c. For any TIA's written after April 15, 2000, or for open projects where TIA's have yet to be written, the applicant should be notified immediately of the change in FAA policy and that a Special Airworthiness Certificate in the experimental category will be required.

2. Paragraph 5.e.(5) is changed to read: Ensure that copies of all Airworthiness Certificates (Standard and Special) are placed in the Aircraft Certification Office, Type Certification project file.

3. Paragraph 5.e.(3) **NOTE** is changed to read: **After issuance of a Special Airworthiness Certificate, the FAA Form 8130-6, Application For Airworthiness Certificate and the Standard Airworthiness Certificate may be retained by the Federal Aviation Administration or properly authorized designee for a maximum of 30 calendar days.**

4. Aircraft requiring flight test less than 30 days: The ASI or designee will return the original Standard Airworthiness Certificate to the applicant's Aircraft after the STC or amended TC is FAA-approved and the requirements contained in this PM have been satisfactorily complied with. At that time the following statement must be entered into Form 8130-6, FAA CODING block, "Do Not Code Per AIR-210 PM 2000-03." This will ensure that the Aircraft Registration Branch, AFS-750, does not change the aircraft airworthiness status in the computer data. The application will then be forwarded to AFS-750 with the terminated Special Airworthiness Certificate attached.

5. Aircraft requiring flight test exceeding 30 days: The FAA or designee will identify the applicant's Standard Airworthiness Certificate as superseded, and then sign and date the certificate. Attach the superseded certificate to the backside of the application Form 8130-6 and forwarded to AFS-750. At the completion of the flight test program, the applicant will be required to submit an application for a Standard Airworthiness Certificate.

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