



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

800 Independence Ave., S. W.  
Washington, D.C. 20591

FEB 23 2010

Mr. Chris Erickson  
Director of Safety and Compliance  
Erickson Air-Crane, Inc.  
3100 Willow Springs Road  
P.O. Box 3247  
Central Point, OR 97502-0010

Dear Mr. Erickson:

SUBJECT: Consistency and Standardization Initiative; Maintenance and Alteration Data

This is in response to your questions relating to the relationship between approved technical data and the methods, techniques, and practices used to perform maintenance, preventive maintenance, and alterations. It supplements the Federal Aviation Administration's (FAA) previous letters of September 17, October 8, and December 21, 2004, and March 15, 2005.

We apologize for the delay in responding to your inquiry and trust the following information will be useful in assessing compliance with the pertinent regulations.

1. What is technical data?

A synonym for technical data is engineering information.<sup>1</sup> As stated in Title 14 Code of Federal Regulations (14 CFR) section 21.31<sup>2</sup> and Advisory Circular (AC) 120-77, Maintenance and Alteration Data, technical data include drawings and specifications, including a list of drawings and specifications, needed to define the configuration and design features of a particular article, repair, or alteration. Typically, these include information on materials, dimensions, and processes necessary to define structural strength, any required airworthiness limitations, and any data necessary to determine the airworthiness, noise characteristics, fuel venting, and exhaust emissions (as applicable) of the altered or repaired aircraft or other article. Technical data also include test data and engineering analyses and other engineering information, such as engineering handbooks or approved military or industry specifications. These may also include operational and service experience, maintenance and alteration experience, reliability data, and other documented factual information that can be shown to be directly applicable to the airworthiness of the article.

2. How does technical data become FAA-approved?

---

<sup>1</sup> See, for example, 14 CFR section 183.29 relating to the privileges of a designated engineering representative (DER).

<sup>2</sup> All regulatory citations are to 14 CFR unless otherwise noted.

Technical data are approved under part 21, usually when the FAA issues a design approval. Design approvals include, but are not limited to, type certificates (TC), supplemental type certificates (STC), parts manufacturer approvals (PMA), and technical standard order authorizations (TSOA); other approvals can be issued under section 21.305. When changes to those designs are made in accordance with the regulatory framework described in item 3 below, those data are also considered approved.

Technical data can also be approved in support of repairs and alterations such as a field approval by an FAA inspector in block 3 of Form 337, by a DER on Form 8110-3, or pertinent organization designation authorization (ODA) on Form 8100-9.

- a. How does the technical data remain FAA-approved as the design of an article changes over time?

Design changes are classified as minor or major in accordance with section 21.93<sup>3</sup> and approved by the FAA.

Pursuant to section 21.95, minor changes are approved in accordance with a method acceptable to the FAA. The minor change procedure does not have to be submitted to and reviewed by the FAA in order for it to be acceptable; however, it must comply with part 21. The approval of a minor change normally occurs before the data are submitted to the FAA. The vast majority of design changes made by a design approval holder (DAH) are minor.

Major changes must be submitted to and approved by the FAA before they are implemented as required by section 21.97. For example, FAA approval of a major change to a type-certificated product occurs through the issuance of an amendment to an existing TC or STC or the issuance of a new STC.

- b. Is part 21-approved data adequate for demonstrating compliance with the requirement in sections 65.95(d)(1), 121.379(b), 135.437(b), and 145.201(c) that major repairs and major alterations be performed in accordance with technical data approved by the FAA?

Yes, but part 21-approved data may or may not contain the methods, techniques, and practices. They usually define a design configuration and may not contain the how-to instructions. These data would be sufficient to meet the intent of sections 65.95(d)(1), 121.379(b), and 145.201(c); however, it may not meet the performance standards of section 43.13(a). The methods, techniques, and practices generally contained in a manufacturer's maintenance manual or Instructions for Continued Airworthiness (ICA) may not be part of the technical data required by part 21.

---

<sup>3</sup> Similar design change rules also appear in section 21.619 (TSOA) and new section 21.319 (PMA) as they relate to those articles.

3. When an authorized person performs a major repair or major alteration in accordance with a manufacturer's maintenance manual or other manufacturer's "service information," does this comply with the requirement that the work be accomplished in accordance with approved technical data?

Yes, provided the manual or other manufacturer's service information is developed using FAA-approved technical data as described above. In the absence of a special circumstance such as an airworthiness directive (AD) or airworthiness limitation, there is no requirement in 14 CFR that a maintenance manual be FAA-approved. When performing a major repair or major alteration, only the technical data must be approved. Such data are initially approved upon issuance of a design approval for a product or article. Subsequently developed technical data are also FAA-approved when design changes are made in accordance with part 21. Following the methods, techniques, and practices contained in a manufacturer's maintenance manual or service information prepared using part 21-approved data would, therefore, comply with sections 43.13(a), 65.95(d)(1), 121.379(b), 135.437(b), and 145.201(c).

4. What does the term "manufacturer" mean for purposes of section 43.13(a)?

The term "manufacturer" means a design or production approval holder. For example, a PMA or TSOA holder is a DAH. A PMA holder may issue a Component Maintenance Manual (CMM) or similarly named document. The methods, techniques, and practices contained in a CMM are developed using approved technical data.

Design change procedures (on which manual revisions will often be based) vary depending on whether a PMA holder obtained its design approval on the basis of identity through a licensing agreement with the TC or STC holder or by an independent showing that the design complied with the pertinent airworthiness standards (i.e., by test and computation). If through a licensing agreement with the TC or STC holder, the FAA requires that identity be maintained by ensuring design changes are properly coordinated between the PMA holder and the TC holder. If the PMA design is issued based on test and computation, the PMA holder is authorized to implement design changes without coordinating with a TC or STC holder.

In some cases, a supplier to a TC or STC holder does not hold a PMA but may be the actual designer and producer of an article as well as the issuer of a CMM. In this case, the TC holder (the DAH) will ensure the coordination of any design changes prior to its implementation in accordance with the supplier control procedures in the part 21-required quality manual (the DAH may, but is not required to, "bless" the CMM or any revisions thereto; only the technical data must be approved). In this event, the FAA would consider the DAH to be the manufacturer for purposes of section 43.13(a).

5. Must a manufacturer that develops and issues a maintenance manual also hold an FAA design and production approval for the article in question?

No, provided the supplier has access to the DAH's approved data, and subsequent design changes which affect the maintenance manual are coordinated with the DAH. The DAH is ultimately responsible for regulatory compliance.

6. If a particular repair or alteration contained in a manufacturer's maintenance manual was major in accordance with part 1 and part 43, appendix A, would it comply with the requirement that the work be performed in accordance with approved technical data?

Yes, because the technical data required to be provided during the certification process were approved as part of that certification. The manufacturer's maintenance manual (methods, techniques, and practices) was developed utilizing the manufacturer's technical data.

7. What if there was a deviation or change from the repair or alteration procedure contained in the manufacturer's manual?

The deviation or change would need to be evaluated to determine whether it is major or minor.<sup>4</sup> If major, the technical data supporting the deviation would require FAA approval.

8. If a major repair or major alteration is performed in accordance with a manufacturer's manual, do the regulations require the submission of an FAA Form 337 or other authorized document in accordance with section 43.9(d) and part 43, appendix B?


The recordkeeping regulations apply to all major repairs and alterations but will differ depending on what type of maintenance provider accomplishes the work. For example, a repair station accomplishing major repairs in accordance with a manufacturer's instructions need not submit an FAA Form 337, but a part 65 mechanic with inspection authorization would have to submit the form. In general, all major alterations are to be recorded on an FAA Form 337; air carriers may use another method for recording major alterations as specified in their maintenance manuals.

9. What is the regulatory significance when the FAA has approved a maintenance manual, such as a Structural Repair Manual (SRM)?

It signifies that the FAA has approved the technical data supporting the methods, techniques, and practices described in the SRM. When performing a major repair or major alteration, only the technical data must be approved. Therefore, for purposes of compliance with sections 65.95(d)(1), 121.379(b), 135.437(b), and 145.201(c), the approval of an SRM or other maintenance manual has no added regulatory significance.

Please let me know if you have any questions.

Sincerely,

  
John M. Allen  
Director, Flight Standards Service

---

<sup>4</sup> See paragraph 12 of AC 120-77.