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June 9, 2013

Delivered by electronic mail: major.ra.order@faa.gov

John Cerra
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Federal Aviation Administration
Aircraft Certification Service
Engineering Procedures Office, AIR-100
Mike Monroney Aeronautical Center
P.O. Box 25082
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RE: Draft Order 8300.X, Major Repair and Alteration Data

Dear Mr. Cerra:

The Aeronautical Repair Station Association (ARSA) submits these comments to the above-referenced draft order. ARSA represents entities certificated under 14 Code of Federal Regulations (CFR) part 145. The companies range from large corporations to single person shops; the majority are small to medium-sized businesses. All the entities are directly impacted by draft order 8300.X.

Background

According to the FAA's web site --

> This order will replace and expand on the information contained in Order 8900.1, Volume 4, Chapter 9. This order provides guidance on the responsibilities and requirements for the approval of technical data associated with major repairs or alterations (emphasis added).

Although the draft focuses on the field approval process it also addresses various types and sources of technical data, how data is developed and approved, and how major repairs and major alterations are substantiated.

ARSA is concerned that draft Order 8300.X is inconsistent with AC 120-77, Repair and Alteration Data by introducing different definitions than those set forth in that document. Additionally, the draft does not adequately consider the FAA's February 23, 2013 letter to Erickson Air-Crane, Inc. (EAC) in response to EAC's submission under the Consistency and Standardization Initiative (CSI) (Attachment 1). The FAA's CSI response resulted from a multi-year effort

involving Aircraft Certification, Flight Standards and ARSA. It focused on how technical data is approved under 14 CFR part 21 and how this relates to regulatory requirements in parts 65, 121, 135 and 145[1] that major repairs and major alterations be performed in accordance with FAA-approved technical data. The FAA's CSI letter also addressed the relationship between technical data and the requirement in § 43.13(a) to perform maintenance, preventive maintenance and alterations in accordance with methods, techniques and practices acceptable to the FAA.

Specific comments

1. Chapter 4, entitled Data should be re-named Technical Data. Title 14 CFR uses the term "technical data" in numerous sections and FAA guidance should be the same as the language used in the regulations.

2. The chapter on Technical Data should be moved to chapter 2. This information is critical to understanding the draft order and consequently should be stated early in the document.

3. The definitions of technical data and substantiating data in chapter 4 are different than the definitions of the same terms in AC 120-77, Repair and Alteration Data:

   t. Technical Data. 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, this includes 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. Technical data also includes test data and engineering analyses and other **engineering information**, such as engineering handbooks or approved military or industry specifications. It 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. (Reference Part 21, section 21.31.)

   r. Substantiating Data. Technical data used to show that an article complies with the applicable airworthiness standards (e.g., Parts 25 or

[1] See §§ 65.95(d)(1), 121.379(b), 135.437(b) and 145.201(c)

33). Compliance may be shown by tests, analysis, experience, and/or computations appropriate to the maintenance, alteration, or continue-in-service condition of the article being evaluated. Substantiating data shown to comply with the applicable airworthiness standards is acceptable to the Administrator. This is because it establishes that the article meets the regulatory requirements and would be returned to its original or properly altered condition by use of this data. (Reference sections 21.31, 25.603, and 43.13(b).)

The FAA should avoid using multiple definitions of the same term in different guidance documents. Indeed, eliminating potential sources of ambiguity in FAA rules and guidance is the primary recommendation made by the Consistency and Regulatory Interpretation (CRI) Aviation Rulemaking Committee (ARC) convened pursuant to section 313 of the FAA Modernization and Reform Act of 2012. ARSA recommends that Order 8300.X use the same definitions as those appearing in AC 120-77.

4. The term “acceptable data” as used in Chapter 4 does not appear in Title 14 CFR. In pertinent part, section 43.13(a) requires that maintenance, preventive maintenance and alterations be performed using methods, techniques and practices (i.e., work instructions) acceptable to the FAA. There is significant confusion among FAA and industry representatives regarding the difference between technical data (i.e., engineering information) and methods, techniques and practices. This is one of the fundamental principles explained in the FAA’s CSI letter. By using “acceptable data” interchangeably with “acceptable methods, techniques and practices” in the draft order the FAA is helping to perpetuate this confusion. If acceptable data is to be defined in the new order, it should read “technical data not requiring FAA approval but which is shown to return the article to its original or properly altered condition.”

5. Chapter 4 should include the following definition of methods, techniques and practices from AC 120-77:

> **Methods, Techniques, and Practices.** The step-by-step, “how-to” instructions for accomplishing maintenance, preventive maintenance, and alterations. These instructions are considered “acceptable to the Administrator” if the certificate holder shows that the instructions will return the aircraft, engine, or other article to its original or properly altered condition. (Reference sections 21.50(b), and 43.13(a).)

6. Figure 4-1 of the draft is entitled Sources of Approved Data Relevant to Major Repairs and Alterations. Among the items on that list and their accompanying descriptions are:

    - Appliance manufacturer's manuals or instruction, unless specifically not approved by the FAA, are approved for major repairs only;
    - FAA-approved portions of SRMs;
    - FAA-approved service bulletins (SBs) and service letters or similar documents as documented in AC 20-77, Use of Manufacturer's Maintenance Manuals; and
    - Original aircraft manufacturer's service and repair data in accordance with current regulations, for major repairs on non-pressurized elements of airplanes that are 12,500 pounds or less maximum certificated take-off weight provided the person intending to perform such repair makes certain determinations.

    The above items are contrary to Title 14 CFR and the FAA's CSI letter in the following respects:

    a. The technical data supporting a repair or alteration contained in most manufacturer's maintenance manuals has been approved during the design approval process.
    b. The data remains FAA-approved in accordance with §§ 21.93, 21.95 and 21.97 and similar design change rules in other subparts of part 21 (i.e., PMA, TSOA).
    c. Therefore, in the absence of a major deviation from the manufacturer's manual there is no need for the technical data to be re-approved when accomplishing a major repair or alteration.
    d. The approval of a Structural Repair Manual or other maintenance manual has no added regulatory significance for purposes of compliance with §§ 65.95(d)(1), 121.379(b), 135.437(b) and 145.201(c).

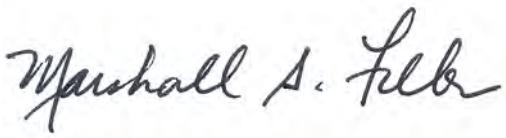
    Consequently, the above bulleted items above should be removed from Figure 4-1 of the draft order and replaced with the following statement:

    > Maintenance manuals issued by design and production approval holders and certain supplier manuals (i.e., those for which the supplier is the actual designer and producer of an article that is approved under part 21) were developed using part 21-approved technical data. This technical data remains FAA-approved provided the design change requirements of part 21 are followed. Therefore,

it does not require re-approval when a major repair or major alteration is performed in accordance with these maintenance manuals.

ARSA appreciates the FAA's consideration of its comments on draft Order 8300.X. Please let me know if you have any questions or desire additional information.

Sincerely,



Marshall S. Filer
Managing Director & General Counsel

Attachment

Attachment 1

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

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

FEB 2 3 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.[1] As stated in Title 14 Code of Federal Regulations (14 CFR) section 21.31[2] 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?

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[1] See, for example, 14 CFR section 183.29 relating to the privileges of a designated engineering representative (DER).

[2] 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[3] 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.

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[3] 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 identicality 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 identicality 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.[4] 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

[4] See paragraph 12 of AC 120-77.