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

Office of the Chief Counsel

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

REGULAR U.S. MAIL APR - 8 2011

John D. Collins
[redacted]

Re: Request for Legal Interpretation of FAA Advisory Circular 43.13-2B On Approved Data For Major Alterations—Specifically, Installing an ELT

Dear Mr. Collins:

This is in response to your December 8, 2010, request for a legal interpretation on the use of the data contained in FAA Advisory Circular (AC) 43.13-2B as FAA-approved data for use in performing major alterations. In this regard, the primary focus of your inquiry is the use of the data in the AC for installing an ELT (emergency locator transmitter). As an ancillary matter, you also asked whether, under criteria similar to that specified in the AC for its use as approved data, the ELT installer may follow "the installation instructions (not FAA approved) provided by the manufacturer of a TSO[1] ELT, and any aircraft manufacturer's data (in the form of maintenance manuals also not FAA approved) and have the data considered to be approved data?" We assume all of your questions are premised on the installation at issue applying to a non-pressurized area of a civil aircraft weighing less than 12,500 pounds, because those are the applicability limits of the AC.

As you noted, the Purpose paragraph of the AC states:

PURPOSE. This advisory circular (AC) contains methods, techniques, and practices acceptable to the Administrator for the inspection and alteration on non-pressurized areas of civil aircraft of 12,500 lbs gross weight or less. This AC is for use by mechanics, repair stations, and other certificated entities. This data generally pertains to minor alterations; however, the alteration data herein may be used as approved data for major alterations when the AC chapter, page, and paragraph are listed in block 8 of FAA Form 337 when the user has determined that it is:

Appropriate to the product being altered,

Directly applicable to the alteration being made, and

Not contrary to manufacturer's data.

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[1] TSO means Technical Standard Order. A TSO ELT is an ELT that has been produced under a TSO authorization from the FAA. A TSO authorization is an FAA design and production approval issued to the manufacturer. A TSO is a minimum performance standard for a specified article (in this case, an ELT).

Assuming the installation of the ELT is a major alteration on a non-pressurized area of a civil aircraft of 12,500 lbs gross weight or less, and that it meets the criteria of the AC (*i.e.*, the data is appropriate to the product being altered; the data is directly applicable to the alteration being made; and the data is not contrary to manufacturer's data), the relevant AC chapter, page, and paragraph(s) may be listed in block 8 of FAA Form 337 as approved data. For major alterations, the regulations do require the use of FAA-approved *technical* data and the completion of a Form 337. Section 43.7(b) of the Federal Aviation Regulations, 14 C.F.R. § 43.7(b), in conjunction with section 65.95(a)(1), 14 C.F.R. § 65.95(a)(1), require that major alterations be done in accordance with technical data approved by the FAA. And, section 43.9(d) requires that, for a major alteration, the maintenance entry must be made as prescribed in appendix B to part 43—and this requires the completion of the FAA Form 337. It is in block 8 of Form 337 (Description of Work Accomplished) where a reference to FAA-approved data would appear, including any applicable field approval of technical data.

Under the definition of a *major alteration*, however, we doubt that the installation you describe would be considered a major alteration. Section 1.1 of the Federal Aviation Regulations defines major alteration as follows:

> *Major alteration* means an alteration not listed in the aircraft, aircraft engine, or propeller specifications—
>
> (1) That might appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or
>
> (2) That is not done according to accepted practices or cannot be done by elementary operations.

14 C.F.R. § 1.1. Unlike the definition of *major repair*, the definition of *major alteration* assumes the work (installation) is done properly. The Aircraft Maintenance Division (AFS-300) in the Office of Flight Standards Office has expressed the view that the installation of a TSO ELT in a small airplane using the methods, techniques, and practices contained in AC 43.13-2B would not constitute a major alteration to the aircraft. In view of the definition of major alteration, we concur with that determination. Accordingly, completion of an FAA Form 337 would not be required.

As to whether some particular ELT installation that *would* be considered a major alteration (or some other modification that would be considered a major alteration) could be done in accordance with instructions from the manufacturer that are contained in a maintenance manual or some other document that is not specifically FAA-approved, and be considered to be done in accordance with approved data, we note the following.

The term *technical data* must be distinguished from the "how to install" instructions, *i.e.*, the methods, techniques, and practices that, under section 43.13(a), must be acceptable to the FAA. In general, the methods, techniques, and practices provided in manufacturers' maintenance manuals are acceptable to the FAA unless they have been found to be

unacceptable through an Airworthiness Directive (AD) or some other notice and comment rulemaking.

A synonym for technical data is engineering information such as that found in a type design. As stated in section 21.31, of the Federal Aviation Regulations, 14 C.F.R. § 21.31, technical data include drawings and specifications, including a list of drawings and specifications, needed to define the configuration and design features of an aircraft, aircraft engine, or propeller. 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.

Technical data are approved under 14 C.F.R. 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. 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. The FAA has recently published guidance material on how to prepare and submit a data package when seeking FAA approval of a major repair or a major alteration. This is found in Advisory Circular AC 21-47, *Submittal of Data to an ACO, a DER or an ODA for a Major Repair or a Major Alteration.*

Please note that FAA-approved data may or may not contain the methods, techniques, and practices needed for installation. 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(a)(I), 121.379(b), and 145.201(c); however, they 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 (lCA) may not be part of the technical data required by part 21.
The following question and answer, previously provided by the FAA in response to an inquiry[2], is relevant to and answers your ancillary question:

> 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?

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[2] Letter from the Director, Flight Standards Service, dated February 23, 2010, to Mr. Chris Erickson, Director of Safety and Compliance, Erickson Air-Crane, Inc., on Maintenance and Alteration 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, presently 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(a)(l), 121.379(b), 135.437(b), and 145.201(c).

This response was prepared by Edmund Averman, an Attorney in the Regulations Division in the Office of the Chief Counsel, and coordinated with the Aircraft Maintenance Division (AFS-300) in the Office of Flight Standards and the Director's Office in the Aircraft Certification Service (AIR-2). If you have additional questions regarding this matter, please contact us at your convenience at 202) 267-3073.

Sincerely,

Rebecca Lynn MacPherson

Rebecca MacPherson
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