

# NOTICE

U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

**N 8110.111**

National Policy

Effective Date:  
04/16/2010

Cancellation Date:  
04/16/2011

**SUBJ: Authorizing Designated Engineering Representative (DERs) to Approve Repair Specifications**

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**1. Purpose of this Notice.** This notice specifies the requirements for authorizing designated engineering representatives (DERs) to manage and approve the technical data in repair specifications (RS).

**a.** This notice is not retroactive. Previous approvals will not be re-evaluated to comply with this process unless obvious regulatory non-compliance is discovered. However, all new repair specifications will be expected to comply with these requirements within 3 months of the effective date.

**b.** This notice does not affect the way that design approval holder (DAH) data for multiple use, non serial number specific repair data is approved for their products.

**2. Audience.** We've written this notice for aircraft certification office (ACO) managers, engineers and DERs.

**3. Where to Find This Notice.** You can find and download this Notice on the Federal Aviation Administration's (FAA) Orders and Notices website at:  
[http://www.faa.gov/regulations\\_policies/orders\\_notices/](http://www.faa.gov/regulations_policies/orders_notices/)

**4. How this Notice Affects Organization Designation Authorizations (ODA) Approvals.**

Major repair, alteration and airworthiness (MRA) organization designation authorizations (ODA's) can manage the approval of a RS as defined in this notice. For MRA ODA's we, the FAA, will sign the RS, in addition to the ODA statement of completion, when the ODA unit has approved the data and the RS meets the requirements of this notice. It is the MRA ODA administrator's responsibility to ensure that all requirements of this notice are met and the RS is included in the ODA's quarterly activity report or as required by their procedures manual.

**5. Background.**

Title 14 of the Code of Federal Regulations (14 CFR) part 183 allows us to appoint individuals to represent the FAA. For many years, we've authorized DERs, by special delegation, to approve data for major repairs.

**a.** The FAA has identified a need to require certain multiple-use, non serial number specific, major repair data to be approved, and authorized in the form of repair specifications. Because of this ACOs may delegate coordination and approval of the technical data in the repair specifications to DERs. The ability to delegate multiple, non serial number specific, major repair data already exists in FAA Order 8110.37, *Designated Engineering Representative (DER) Handbook*. This notice defines the qualifications, roles, and responsibilities of DERs granted this authority. This notice does not apply to DAHs approving data for their products.

**b.** To support this need for RS approval and authorization, we are:

- (1) Creating a new authority for RS under the special delegation for major repairs, and
- (2) Changing how specially delegated DERs approve data for multiple-use repairs.

**c.** DERs granted the specific authority to manage and approve technical data in the repair specifications are called repair specification – designated engineering representative (RS-DERs) in this notice. RS-DERs are not a new type of DER. An “RS-DER” is a shortened name for a DER with the special delegation to approve serial number specific major repair data, non serial number specific major repair data, and manage RS approvals.

**d.** After this notice is published the *only* way for multiple-use, non serial number specific, non DAH, major repair data to be FAA approved will be via a repair specification.

**6. What is a Repair Specification (RS)?** Repair specifications provide an alternative to the methods, techniques and/or practices contained in the current manufacturer’s manuals, service bulletins, or instructions for continued airworthiness (ICA). They are required when the repair will be used for multiple-use, non serial number specific, non-DAH repairs. They include step-by-step “how to” instructions for performing the repair. In the past this type of data has been referred to by many names including repair specifications, repair procedures, and maintenance specifications.

**a.** The RS describes:

- 1) What the specific repair accomplishes,
- 2) When the repair is applicable,
- 3) How the repair will be accomplished,
- 4) How the repair is substantiated,
- 5) How the repair will be inspected,
- 6) How the repair must be maintained, and
- 7) How the repair specification will be kept up to date.

**b.** An acceptable RS:

- 1) Results in a consistent, repeatable end state that can be evaluated to show compliance to the applicable airworthiness standards.
- 2) Provides the technical data for use in approving the aircraft or product for return to service.
- 3) Is a procedure not listed in the current manufacturer's maintenance manual, ICA or FAA-approved portions of service documents.
- 4) Is intended to be used repeatedly.
- 5) Requires FAA data approval.
- 6) Is authorized for use by the FAA for a specific maintenance entity. This includes maintenance facilities holding a 14 CFR part 145 certificate, and operators having a maintenance program authorized by operations specifications (OpSpecs) under 14 CFR part 121 or 135.

**7. Requirements for ICAs.** The developer of the RS must determine if the repair affects the ICA or existing maintenance requirements of the affected article. Major repairs may require a change in existing maintenance requirements or inspection intervals. For example, a major structural repair such as a repair to a static engine component could influence the life limits on critical rotating parts or need more frequent inspections. This determination should be performed with special consideration of the repair falling into an alteration category which is beyond the scope of this Notice.

**a.** The RS must address whether or not the existing ICA are adequate and clearly state that finding.

**b.** If it's determined that the existing ICA are inadequate because of the proposed repair, the repair specification must contain the appropriately revised ICA. These revised ICA become part of the RS. Subsequent revisions to the ICA will be processed in accordance with the RS revision process. (See, Changes to the Repair Specification, paragraph in appendix A)

**c.** The DER must not sign on the cover page of the RS until the ICA has been addressed. The DER *cannot* approve/accept revisions to the ICA. Coordination with the appropriate FAA office is required. (See Order 8110.54, *Instructions for Continued Airworthiness Responsibilities, Requirements and Contents*, for additional guidance.) The RS-DER can help an applicant determine the revised ICA content requirements.

**8. Authorizing DERs.**

**a.** Existing DERs who are already authorized for serial number specific repairs may continue to make those findings and are not affected by this notice.

**b.** DERs may ask for, and be authorized, to perform two specific functions in the RS approval process:

- (1) To manage the RS project and approve the technical data in the RS, and/or
- (2) To approve data in support of multiple-use, non DAH, non serial number specific repairs.

**c.** A DER must be authorized for at least one of those two specific functions to support RS approvals. Existing DERs who are already authorized for multiple-use repairs can approve data to support RS approvals without any additional specific authorization.

**d.** Once the RS-DER determines that the RS meets all the requirements, they must sign the cover page with their name and DER number.

**9. RS-DER Qualifications.** To be authorized to manage RS approval projects, the DER must have appropriate experience and be qualified to manage RS data approvals.

**a.** A DER must be experienced in both approving repair designs and managing repair data projects. *Managing* projects means ensuring all applicable certification requirements for the repair are identified, overseeing others develop and approve data that demonstrates compliance with the certification requirements, and ensuring that compliance issues resulting from or associated with overlapping of engineering disciplines are resolved. Finally, it means being the primary contact with the FAA, both flight standards district offices (FSDO)/ certificate management offices (CMO)/international field offices (IFO) and ACOs, for all discussions and decisions about repair data approval.

**b.** ACOs will ensure that the DER has the following experience before authorizing RS authority:

(1) Have at least three years experience as a DER with the special delegation of major repairs, or major repairs and major alterations, (or equivalent experience such as an ACO engineer or ODA unit member), and

(2) Have at least five years experience in at least one of the DER disciplines (or equivalent experience such as an ACO engineer or ODA unit member). A DER may be limited to working on RS appropriate to their experience. For example, we may limit a structures DER to airframe RS. Yet we wouldn't have to limit them if their experience allowed them to manage RS data approvals in other technical areas with the support of authorized DERs in those areas.

**10. Responsibilities of an RS-DER.** To manage RS approvals the RS-DER performs a role for the FAA similar to an ACO certification project manager for a design approval project. The RS-DER will review the RS to ensure that it complies with the established type certification requirements for the product. They will ensure compliance with each applicable certification regulation has been found. The RS-DER evaluates the RS to ensure the repair design results in a

repair that restores the part or product to an airworthy condition. Managing activities for compliance includes:

**a. Managing Data approval.** An RS-DER will develop a compliance plan to ensure that all the activity necessary to review and approve individual data items is accomplished as part of the project. This includes design data, reports, analyses, inspection results, test plans, results, and reports. The approved technical data for the RS may originate either from the RS-DER using their own authority or from other DERs with the required authorization of multiple repairs. DERs must be authorized the special delegation of major repairs, and have specific authority to approve data for multiple-use repairs. The RS-DER must review all FAA Form 8110-3s, *Statement of Compliance with the Federal Aviation Regulations*, submitted by other DERs to determine that all necessary findings of compliance have been made.

**b. Managing Test Activity.** Normally, a repair does not require any testing to substantiate it. However, there may be some cases where testing is required. We authorize the RS-DER to review and approve test plans, coordinate the company's test article conformity, witness tests, and evaluate and make findings on test results. The RS-DER may rely on other DERs for some, all, or none of these tasks. The use of other DERs for structural, electrical, material, and other aspects of the repair are limited to those tasks for which they're authorized.

**c. Coordinating Project Activity and Resolving Issues.** The RS-DER is responsible to coordinate with the managing FSDO/CMO/IFO and obtain their concurrence that the proposed RS is within the capability of the applicant or that their rating will be adjusted to allow its use.

**d. Approving the RS.** After the RS-DER finds that the data substantiates the repair design and the repair complies with applicable certification regulations, they indicate that the technical data in the RS is approved for use on multiple products by signing the cover page of the RS with their DER number along with the applicant who plans on using the RS. Copies of the signed cover page of the RS must then be sent to the RS-DERs managing ACO advisor and the FSDO/CMO/IFO principal maintenance inspector (PMI). See appendix A for a sample cover page.

**11. FAA Form 8110-3 Doesn't Indicate RS Approval.** DERs can use one or more FAA Form 8110-3s to approve RS technical data, but RS-DERs may *not* use FAA Form 8110-3 to show approval of a complete RS. RS approval is indicated when the specification cover page bears all required signatures. The RS is not approved until the title page bears the signature of the applicant, and the RS-DER with their DER number or, if appropriate, the ACO.

## **12. Limitation on Repairs Affecting Critical or Life-Limited Parts.**

**a.** A RS-DER may manage a RS project affecting critical or life-limited parts, but prior to starting the RS project the RS-DER must coordinate with the managing ACO. The ACO may or may not delegate the approval of the RS. If they do not delegate the approval, the amount of involvement and whether or not the RS-DER recommends approval of the RS is at the discretion of the ACO. In this case the applicant and the ACO must sign the cover page of the RS to indicate the approval.

**b.** It's the applicant's responsibility to state when the repair affects critical or life-limited parts. If the applicant states critical or life-limited parts are not affected, and any DER believes otherwise, the DER must notify the ACO. The ACO must make a determination and then notify the DER plus the FSDO, CMO or IFO. If the ACO agrees with the DER, the FSDO/CMO/IFO notifies the applicant. If the ACO determines the part is not critical or life-limited, the RS approval process continues.

**13. Distribution.** Distribute this notice to the branch level in the Aircraft Certification directorates and the Flight Standards Service; to the branch level in the Aircraft Certification offices and the regional Flight Standards divisions; to the FAA Academy and the Regulatory Support Division; to all flight standards district offices; international field offices; international area offices; aircraft certification offices; and manufacturing inspection district and satellite offices.



For David W. Hempe  
Manager, Aircraft Engineering Division  
Aircraft Certification Service

**Appendix A. Sample Title/Signature Page**

[Specification Name and/or Control Number (Assigned by Applicant)]  
[Revision Number and Revision Date]

Data contained in this specification may be used as approved data when: The repair is accomplished by the Certificate Holder identified below, and the specification title page contains all required signatures.

[Company Name]  
[Address]  
[FAA Certificate Number and Ratings]

List of applicable products or components:

I certify that the repair described in this document will restore the aircraft or aircraft component, as applicable, to an airworthy condition.

\_\_\_\_\_ Date: \_\_\_\_\_

Signature—Certificate Holder’s Authorized Representative

\_\_\_\_\_

Printed Name and Title—Certificate Holder’s Authorized Representative

I find the technical data are adequate to substantiate the repair design and the repair is compliant with applicable airworthiness CFRs.

\_\_\_\_\_ Date: \_\_\_\_\_

ACO/RS-DER Signature

Office ID/RS-DER ID Number: \_\_\_\_\_

**Changes to the Repair Specification.** The FAA must authorize any change to the repair specification before the applicant implements the change. The repair specification holder must submit all technical data to support the proposed change. Minor changes that do not differ appreciably from the previously authorized data and having no bearing on safety are permitted provided the FSDO/CMO/IFO is notified of the change.