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RE: Release to Service of Aircraft with Prototype Parts Following Design Approval

Dear Ms. Daeschler and Mr. Rasmussen:

The Aeronautical Repair Station Association (ARSA) is seeking verification from the European Union Aviation Safety Agency (EASA) that ARSA's answers (in **bold**) to the following questions (in *italics*) are correct:

(1) *May an appropriately rated and capable Part-145 EU Aircraft Maintenance Organization Approval Holder (MOAH) approve an aircraft for release to service with "prototype" parts installed following issuance of an EASA Supplemental Type Certificate (STC) after confirming that the installed parts conform to the approved design data and are in condition for safe operation?*

Under EASA's Good Practices document,¹ the answer is yes.

(2) *Must another (i.e., "fresh") Form 1 (or equivalent) be issued for each installed "prototype" part following issuance of the STC before the modified aircraft can be approved for release to service?*

No. Following verification by the MOAH that the design data referenced in block 12 of the prototype Form 1 (or equivalent) has been approved, that original "prototype" form fully complies with points 145.A.42(a), (b) and (c) and a new "fresh" Form 1 need not be issued.

However, if a "fresh" Form 1 is desired, the Production Organization Approval Holder (POAH) may recertify the prototype components as "New" in accordance with Appendix 1 to Part-21.² Or, the MOAH may record its inspection and verification that the design data referenced on the installed "prototype" Form 1 has been approved and the affected articles

¹ *Coordination between Design and Maintenance, First Installation of a Change to a Product*, EASA S_21_GP001, Issue 10/09/2012 ("Good Practices document"), paragraph 3.8, page 26.

² See AMC No. 2 to point 21.A.163(c). In ARSA's view, this is a questionable practice; not only are the parts out of the production organization's quality system, they have been installed and are not "new." The production organization has no knowledge of the article's current condition, i.e., whether it underwent repairs in the field or was otherwise damaged or mishandled during or after installation.

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are in condition for safe operation by issuing a “fresh” Form 1 with a right-side signature for the inspection or verification.³

(3) Following issuance of the STC, must a “New” (i.e., “fresh”) Form 1 (or equivalent) be issued for each prepositioned (i.e., uninstalled) “prototype” part under the MOAH’s control?

No, the same legal guidance applies to installed and uninstalled “prototype” parts under the control of the MOAH.

Background

Unfortunately, during an audit by its competent authority, an EU-based MOAH and ARSA member was advised that prototype parts installed during the design and certification phase of an STC project, which the MOAH subsequently confirmed complied with the approved design once the STC was issued did not comply with point 145.A.42.⁴

The finding focused on the Authorized Release Certificates for each prototype article that certified conformity to non-approved design data⁵ rather than on the fact that following the issuance of the STC, the aircraft was released to service in accordance with the approved design data. The competent authority’s misinformed finding was exacerbated by it requesting an exemption for the ARSA member in accordance with the procedure described in Article 71 of the Basic Regulation, and EASA recommending that the exemption be denied.

ARSA submits that the competent authority’s original finding and subsequent evaluation are incorrect making an exemption unnecessary. Unfortunately, the reason for EASA recommending denial is unclear; therefore, it has created confusion in the MOAH community, which the association has been asked to address with EASA.

Analysis

The word “prototype” does not appear in EASA’s continuing airworthiness rules or its associated acceptable means of compliance (AMC) and guidance material (GM).

Rather, “prototype” parts are addressed in Part-21 and in EASA S_21_GP001 “Good Practices” document. The excerpts below make clear that after the STC is issued the MOAH may release the aircraft to service with the previously designated “prototype” parts installed, after making the requisite findings that the parts were manufactured to the STC-approved data and are in condition for safe operation. The Good Practices document also concludes that any prepositioned parts can be “declared airworthy” under the same verification procedure.

New (“fresh”) Form 1s need not be issued unless the customer desires that the previous prototype parts be recertified as “New,” in which case only the POAH may take that action. In lieu of a manufacturer’s issuance of a “fresh” Form 1, the MOAH may issue a Form 1 with a certification that the articles were produced to the approved data and are in condition for safe operation if it

³ An aircraft rated MOAH does not need a component rating to inspect prototype parts for installation any more than it requires such a rating to install an approved part. Only the MOAH has custody of the parts, it and only it can make an airworthiness determination (before and) following issuance of an STC.

⁴ Components which are in a satisfactory condition, released on an EASA Form 1 or equivalent and marked in accordance with Subpart Q of the Annex I (Part-21) to Regulation (EU) No 748/2012, unless otherwise specified in Annex I (Part-21) to Regulation (EU) No 748/2012 or in this Annex II (Part-145).

⁵ GM No 4 to 21.A.165(c), Airworthiness Release or Conformity Certificate.

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has an arrangement or interface document in place with the DOA and with the owner/operator (or its CAMO).

In pertinent part, the Good Practices document provides (emphasis added as indicated):

1.4.5 Current issues

How to ensure that first installation components and aircraft are conforming to the design data and are in condition for safe operation at the time of STC approval, so they may be declared airworthy?

1.4.6 Good Practices⁶

A new component is no longer under control of the production organisation once it leaves the facility, it is under control of the maintenance organisation as soon as it has been received and accepted.

Tasks and components under MOAH approved control system may be released for service after the STC approval, subject to airworthiness data exchanges with the design organisation and with the aircraft owner or operator or its CAMO.

An arrangement, or interface document, between the DOAH and the MOAH and specific procedures are required.

The maintenance procedures to implement a first STC installation and assist the DOAH in development and certification activities are owned by the MOAH and accepted by the DOAH under control of its Design Assurance System.

3.5.2 Management of Prototype Components⁷

Reference	Good Practices
145.A.42 (a), (b), (c) Acceptance, classification, quarantine, Eligibility Local fabrication	The MOAH receives, accepts, classifies, tracks and quarantines all prototype components.
	It ensures that they are kept in condition for safe operation and can be declared airworthy upon approval of the STC.

3.8 STC Approval⁸

b) Recertification of new prototype components

The POAH recertifies new components for design data approval as instructed in part 21, appendix I.

d) Components and aircraft release to service

The MOAH verifies conformity of the prototype components and aircraft final configuration to the approved design data prior to release to service.

⁶ Page 6

⁷ Page 19

⁸ Page 25

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They must be in a condition for safe operation and airworthy (for instance, time limited components must not have reached an AD or other limit...). It completes the work order to record design data approval.

Following airworthiness verification and inspection, prepositioned components shall be declared airworthy and transferred from quarantine storage to spare parts storage. Statement of design data approval and all issues of Form 1 and aircraft technical log book shall be kept, copies provided to the aircraft owner/operator. After STC installation, the aircraft including installed STC components, is declared airworthy.

The aircraft at this stage **may recover** its **CoA**.

Conclusion

In summary, the confusion created by the unfortunate finding and subsequent exemption process can be addressed by EASA providing ARSA verification that its answers to the questions posed are correct. If the answers are incorrect, ARSA requests a meeting to discuss each element and where the analysis was misaligned with the Agency's legal requirements and best practices.

Please let me know if you have any questions or desire additional information.

Sincerely,



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