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**Airworthiness Inspectorate**

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# Repairs and Changes to Type Design

### Introduction

This IAN serves as a guideline to aircraft owners and operators for the approval of changes and repairs.

Issue 06 of this IAN is intended to cover new developments in the approval of standard repairs and changes pursuant to EASA bilateral agreements with FAA, TCCA and ANAC.

### Responsibility

EASA is responsible for certification of Type design and changes to Type Certificates (TC), Supplemental Type Certificates (STC) and repairs. However TM CAD has the safety oversight responsibility for the continuing airworthiness of Maltese registered aircraft. This means that EU/EASA certification regulations/requirements have to be complied with for initial and continuing airworthiness of Maltese Registered aircraft falling under the Basic Regulation (EU) No 2018/1139.

### REPAIRS

Approval of repairs for Maltese registered aircraft falling under Regulation (EU) 2018/1139, is regulated by (EU) No [748/2012](#) Part-21 Subpart M – Repairs.

### Definition

Part-21.A.431A(c) gives a definition of 'repair'. Classification of repairs as major or minor is accomplished either by an appropriately approved design organisation or by EASA.

Part-21.A.431B provides a definition of 'standard repair' and the aircraft to which the standard repair is applicable.

### Approval

Major repairs are approved by:

- An appropriately approved Part-21 Design Organisation Approval, approved in accordance with Subpart J who is also a Type Certificate Holder; or
- EASA.

Part-21 does not specify a standard form for the approval of repairs however the TM CAD Airworthiness Inspectorate expects the repair design approval document to include:

- Specific technical drawings reference,
- Repair schemes and maintenance task instructions references,
- Endorsement from appropriately authorized signatories, and
- A statement in accordance with Part-21.A.263(c)3.

Minor repairs are approved by an appropriately approved Part-21 DOA. Evaluation of unrepaired damage may be approved by EASA or by an appropriately approved Part-21 DOA or TC Holder.

**NOTE: Standard repairs as defined by Part-21.A.431B are not subject to an approval process.**

### **Standard Repairs (SR)**

Standard Repairs may be carried out in accordance with [Certification Specifications for Standard Changes and Standard Repairs \(CS-STAN\)](#), pursuant to [ED 2015/016/R](#).

CS-STAN defines detailed acceptable methods, techniques and practices, including requirements for the marking of the parts and instruction for continued airworthiness in order to implement Standard Repairs without the need for a design approval for:

- (i) Aeroplanes of 5700 kg Maximum Take-Off Mass (MTOM) or less;
- (ii) Rotorcraft of 3175 kg MTOM or less;
- (iii) Sailplanes and powered sailplanes and airships as defined in ELA1 and ELA2

**In addition to the condition of 21.A.431B, for each SR, the CS may further restrict its applicability to certain aircraft or to some areas of an aircraft or to certain aircraft operations.**

#### **NOTE**

**CS-SR801a** allows [FAA Advisory Circular AC 43.13-1B](#) for repairs of aircraft with metal, composite, wood and mixed structure.

*Classification of the repair according to the AC is not required for SRs.*

**This is applicable to:**

**Aeroplanes not being complex motor-powered aircraft and any ELA2 aircraft**

Guidance on the implementation of SR can be found in [AMC M.A.801](#) of the AMC to Part-M.

CAMO's and Maintenance Organisations that have aircraft within the above enlisted criterion within their scope of approval shall amend Part M CAME Section 1.7/ (Part-145 MOE Section 2.9 or Part- CAO CAE (whichever applicable) to meet the requirements set by [AMC M.A.801/ML.A.801](#).

Documentation of preparation and embodiment of the SR is executed by an EASA Form 123. On completion of the SR, an Aircraft Logbook entry referring to EASA Form 123 must be executed. Both EASA Form 123 and the maintenance release to service are required to be signed by the same person (the certifying staff). Only natural or legal persons entitled to release to service an aircraft after maintenance in accordance with Part-M or Part-145 are considered as an eligible installer responsible for the embodiment of a SC/SR when in compliance with applicable requirements.

Any restriction or limitation applicable due to the embodiment of the SC/SR is included in the aircraft manuals or records, as necessary, and in the EASA Form 123.

The person/organization responsible for the continuing airworthiness of the aircraft shall ensure that the manuals, limitations, supplements, ICA's and other information referenced in the EASA Form 123 is transcribed/forwarded or inserted in the applicable documentation (AFM, AMP/ Weight and Balance schedule etc.).

**NOTE:**

**If specific data issued by the TC holder exists for the repairs as described in CS-STAN subpart C, the TC holder data takes precedence over a SC. Where the repair conflicts with the TC holder data, CS-STAN should not be followed and the repair should be approved following Part-21 Subparts D or M.**

**Repair design approved by EASA**

Application for approval of major repairs through the EASA route may be submitted using the forms listed on the EASA website:

<https://www.easa.europa.eu/document-library/application-forms>

<https://www.easa.europa.eu/document-library/application-forms/focert00031>

Applications shall be made by registering to and using the EASA applications portal <https://ap.easa.europa.eu/>

**Repair design from the USA**

A Major Repair designed by a United States TC holder which is covered by a properly executed FAA Form 8110-3, 8100-9 or Form 337 is sufficient proof of compliance with Part-21 pursuant to the [Technical Implementation Procedures between FAA and EASA](#) .

Field repairs originating from US TC/STC holders or DAO should be covered by FAA Form 8100-9 or else FAA Form 8110-3 from a DER. In such case the forms should contain and cover repair drawings and repair design/instructions.

This is an extract from the **Technical Implementation Procedures for Airworthiness and Environmental Certification between the FAA and EASA:**

**3.3.5.3 EASA Acceptance of FAA Repair Design Data**

(a) EASA shall accept data used in support of major repairs regardless of the SoD of the product, part or article, if:

- (1) EASA has certificated/validated the product or article;
- (2) The FAA is the Authority of the SoD for the repair design data; and

(3) The FAA repair design data approval is substantiated via an FAA letter, FAA Form 8110-3, FAA Form 8100-9, FAA Form 337 or a signed cover page of a repair specification.

(b) EASA shall also accept data used in support of minor repairs when:

- (1) EASA has certificated/validated the product or article;
- (2) The FAA is the Authority of the SoD for the repair design data;
- (3) The repair design data has been provided by the U.S. TC, STC, PMA, or TSOA holder; and Technical Implementation Procedures September 22, 2017 30
- (4) For minor repairs from other than the U.S. TC, STC, PMA, or TSOA holder, the determination that data are acceptable (under 14 CFR part 43) has been made by a U.S. maintenance organization under the FAA's authorized system.  
Note: An EASA approved maintenance organization must use EASA Part 21 for the approval of repair data for use on an EU-registered aircraft, unless the data for a minor repair has been previously used to repair an N-registered aircraft.

(c) In these circumstances, repair design data are considered to be EASA-approved following its approval or acceptance under the FAA's system. This process does not require application to EASA or compliance findings to the EASA certification basis.

EASA shall also accept data used in support of minor repairs when:

- (1) EASA has certificated/validated the product or article; [and]
- (2) The FAA is the Authority of the SoD for the repair design data; [and]
- (3) The repair design data has been provided by the U.S. TC, STC, PMA, or TSOA holder; [or]
- (4) For minor repairs from other than the U.S. TC, STC, PMA, or TSOA holder, the determination that data are acceptable (under 14 CFR part 43) has been made by a U.S. maintenance organization under the FAA's authorized system.

Note: An EASA approved maintenance organization must use EASA Part 21 for the approval of repair data for use on an EU-registered aircraft, unless the data for a minor repair has been previously used to repair an N-registered aircraft.

### **Repair design from Canada**

A Major Repair designed by a Canadian TC holder released under a properly executed Transport Canada Design Approval Organisation (DAO) certificate is sufficient proof of compliance with Part-21 and **Section 2.10** of [https://www.easa.europa.eu/sites/default/files/EASA-TCCA\\_Technical\\_Implementation\\_Procedures\\_for\\_airworthiness\\_and\\_environmental\\_certification\\_Revision\\_4\\_dated\\_10\\_12\\_2018.pdf](https://www.easa.europa.eu/sites/default/files/EASA-TCCA_Technical_Implementation_Procedures_for_airworthiness_and_environmental_certification_Revision_4_dated_10_12_2018.pdf)

## Repair design from Brazil

Repair design for Brazilian products is covered by Section 2.10 of [ANAC - EASA Technical Implementation Procedures for Airworthiness and Environmental Certification](#)

## Unrepaired Damage and Approved Data

Repair design data to permanent or temporary repairs under the provisions of Part-21.A.445 'Unrepaired Damage', shall be approved. **NO TECHNICAL OBJECTIONs** from the TC Holder or any similar form of agreement with the TC Holder are not acceptable and do not constitute legal certification in accordance with Regulation (EU) No [748/2012](#) Part-21 or applicable EASA Decisions.

The operator shall ensure that the TC Holder provides the necessary certification for repair data/instructions/technical drawings. Such certification would be issued under the TC Holder DOA/DAO approval or State of Design approval. Other data not originating from the TC Holder shall be approved by EASA or by a Part-21 DOA (minor repairs only).

## CHANGES TO TYPE DESIGN CERTIFICATES (MODIFICATIONS)

For Maltese Registered aircraft falling under Regulation (EU) No 2018/1139 approval of changes is regulated by Regulation (EU) No [748/2012](#) Part-21 Subpart D – Changes to Type Certificates.

Part-21.A.90B provides a definition of 'standard changes' and the aircraft to which the standard change is applicable.

### Classification and Approval of Changes

Classification and Approval of changes shall be carried out in accordance with Regulation (EU) No [748/2012](#), Part-21.A.91, 21.A.95 and 21.A.97.

### EASA Approval of Changes

Application for approval of major changes/STCs through the EASA route may be submitted using the forms listed on the EASA website:

<https://www.easa.europa.eu/document-library/application-forms>

<https://www.easa.europa.eu/document-library/application-forms/focert00031>

Applications shall be made by registering to and using the EASA applications portal <https://ap.easa.europa.eu/>

### Continuing Airworthiness

The owner or the operator of the aircraft should liaise with the Airworthiness Inspectorate on continuing airworthiness issues related to a minor or major change/STC in accordance with Regulation (EU) No [1321/2014](#) Part-M/Part-ML

A Major Change can also take the form of an STC when this change does not originate from the TC Holder of the aircraft.

EASA website provides information about EASA approved STCs, grandfathered STCs and applications for approval of STCs. <https://www.easa.europa.eu/document-library/type-certificates/supplemental-type-certificates>

In case Foreign STCs originally deemed as 'grandfathered STCs,' the operator/owner of the aircraft shall verify with the assistance of the STC holder and the Airworthiness Inspectorate whether this STC has already been incorporated on another aircraft registered in an EASA member state prior to 29 September 2003. All STCs accepted by EASA member states prior to 29 September 2003 are deemed as acceptable to EASA in accordance with Article 4 of Regulation (EU) No [748/2012](#).

**NOTE: Standard changes as listed in CS-STAN Subpart B are not subject to an approval process.**

### **Standard Changes (SC)**

Standard Changes may be carried out in accordance with [Certification Specifications for Standard Changes and Standard Repairs \(CS-STAN\)](#), pursuant to [ED 2015/016/R](#).

CS-STAN defines detailed acceptable methods, techniques and practices, including requirements for the marking of the parts and instruction for continued airworthiness in order to implement Standard Changes without the need for a design approval for:

- (i) Aeroplanes of 5700 kg Maximum Take-Off Mass (MTOM) or less;
- (ii) Rotorcraft of 3175 kg MTOM or less;
- (iii) Sailplanes and powered sailplanes and airships as defined in ELA1 and ELA2

#### **NOTE:**

**In addition to the condition of 21.A.90B, for each SC, the CS may further restrict its applicability to certain aircraft or to certain areas of an aircraft or to certain aircraft operations.**

Guidance on the implementation of SC can be found in [AMC M.A.801](#) of the AMC to Part-M.

CAMO's and Maintenance Organisations that have aircraft within the above enlisted criterion within their scope of approval shall amend Part M CAME Section 1.7/ (Part-145 MOE Section 2.9 or Part M Subpart F MOM (whichever applicable) to meet the requirements set by [AMC M.A.801](#).

Documentation of preparation and embodiment of the SC is executed by an EASA Form 123. On completion of the SC, an Aircraft Logbook entry referring to EASA Form 123 must be executed. Both EASA Form 123 and the maintenance release to service are required to be signed by the same person (the certifying staff). Only natural or legal persons entitled to release to service an aircraft after maintenance in accordance with Part-M or Part-145 are considered as an eligible installer responsible for the embodiment of a SC/SR when in compliance with applicable requirements.

Any restriction or limitation applicable due to the embodiment of the SC is included in the aircraft manuals or records, as necessary, and in the EASA Form 123.

The person/organization responsible for the continuing airworthiness of the aircraft shall ensure that the manuals, limitations, supplements, ICA's and other information referenced in the EASA Form 123 is transcribed/forwarded or inserted in the applicable documentation (AFM, AMP/ Weight and Balance schedule etc.).

**NOTE:**

**If specific data issued by the TC holder exists for the changes as described in CS-STAN subpart B, the TC holder data takes precedence over a SC. Where the change conflicts with the TC holder data, CS-STAN should not be followed and the change should be approved following Part-21 Subparts D or M.**

**Equipment installed as part of a SC cannot be used to eliminate or reduce the existing airworthiness limitations and operational limitations of the aircraft.**

### **Changes originating from the USA**

A Major Change designed by a United States TC/STC holder located in the United States of America would be approved in accordance with the [FAA – EASA Technical Implementing Procedures for Airworthiness and Environmental Certification](#) and [Decision 2004/04/CF \(as amended by Decision 2007/001/C\)](#)

Minor changes and changes to STC's originating from the USA are also covered by the TIPs and Decision 2004/04/CF of the Executive Director of EASA.

FAA STC's (major changes from non-TC Holders) shall also be approved by EASA. In such cases the owner/operator of the aircraft shall request the STC holder/Part-21 DOA to make an application to EASA for approval.

#### **Extract from the FAA – EASA Technical Implementing Procedures for Airworthiness and Environmental Certification:**

EASA recognizes, as within the scope of this agreement, the Following FAA Design Approvals as the Basis for EASA Design Approval:

2.3.1.1 TCs for all products for which the U.S. is the SoD;

2.3.1.2 All STCs and subsequent Amended STCs and Amended TC's for products that have been issued both an FAA and EASA type design approval; and

2.3.1.3 Any other FAA-approved design changes as identified under paragraph 3.2 for products and articles for which the U.S. is the SoD.

2.3.2 EASA recognizes, as within the scope of this agreement, the Following FAA Approved Design Data:

2.3.2.1 FAA-approved design data used in the support of repairs and alterations (except for alterations on critical components) as identified in paragraphs 3.3.4 and 3.3.5 for products and articles of:

- (a) U.S. SoD;
- (b) EU SoD; or
- (c) A third country SoD, when both the FAA and EASA have issued a type design approval for the product.

### **Changes originating from Canada**

A Major or Minor Change designed by a Canadian Type Certificate holder released under a Transport Canada approved DAO certificate is sufficient proof of compliance with Part-21 as stated in the [TCCA – EASA Technical Implementing Procedures for Airworthiness and Environmental Certification](#) and [Decision 2012/002/C](#).

### **Changes originating from Brazil**

Changes designed by a Brazilian Type Certificate holder released in accordance with Brazil ANAC regulatory oversight are automatically approved by EASA, as stated in the EASA [Decision 2004/01/CF](#) and [ANAC - EASA Technical Implementation Procedures for Airworthiness and Environmental Certification](#).

### **Instructions for Continuing Airworthiness (ICA)**

Implementation of continuing airworthiness instructions (together with Aircraft Flight Manual supplements, mass and balance status, and maintenance data updates) by the owner/operator, related to changes/repairs and STC's falls under the remit of TM CAD, in terms of safety oversight, in accordance with Regulation (EU) No [1321/2014](#) Part-M.

The owners/operators shall ensure that all the documentation/approved data related to the changes and repairs are kept and updated. In the case of ICA's, these shall be incorporated in the AMP and maintenance planning and tracking software. MMEL/DDG supplements shall be forwarded to responsible personnel/departments in their organisation for incorporation in the aircraft MEL. AFM supplements shall be also incorporated in the AFM. Mass and balance data shall also be incorporated in the mass and balance schedule of the aircraft. AMM supplements and any other maintenance data shall be forwarded to the contracted maintenance providers.

### **Regulation (EU) No 2018/1139 Article 71.1 Exemptions**

TM CAD would issue temporary exemptions from Regulation (EU) No [748/2012](#) Part-21 pursuant to Article 71.1 of Regulation (EU) No 2018/1139 to allow the aircraft to operate, when the formal approval of a repair, change or STC embodied/installed on the aircraft is not yet issued, only in the following cases:

- The TC Holder has notified in writing of its intent to issue the formal approval of repair design data (Repair) for applicable for a period of not more than 24 hours; or



- EASA has issued a project number for approval of foreign STC for aircraft being imported into Europe for first time(on a case by case basis).
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