MAJOR MODIFICATIONS AND REPAIRS APPROVAL

1.0 PURPOSE

This Order is issued to provide guidance to inspectors when assessing an application of a major modification or major repair for approval.

2.0 REFERENCE

2.1 Civil Aviation (Airworthiness) Regulation as amended
2.2 ICAO DOC 9760 as amended

3.0 GUIDANCE

3.1 Terminology

3.1.1 Modification

A modification to an aeronautical product means a change to the type design which is not a repair. Throughout this chapter alteration and modification are intended to be synonymous. Guidance is presented in the Appendix B to this chapter to assist in determining whether a particular modification or repair is major or minor.

3.1.1.1 Major Modification

Means a type design change not listed in the aircraft, aircraft engine or propeller specifications:

a) that might appreciably affect the mass and balance limits, structural strength, performance, power plant operation, flight characteristics or other qualities affecting airworthiness or environmental characteristics; or

b) that will be embodied in the product according to non-standard practices.

3.1.1.2 Minor Modification

A minor modification means a modification other than a major modification.
3.1.1.3 Repair
A repair to an aeronautical product means a design change intended to restore it to an airworthy condition after it has been damaged or subjected to wear.

3.1.1.4 Major Repair
A major repair means a design change which is intended to restore an aeronautical product to an airworthy condition:
(a) where the damage being repaired might appreciably affect the structural strength, performance, power plant operation, flight characteristics, or other qualities affecting airworthiness or environmental characteristics; or
(b) that will be embodied in the product using nonstandard practices.

3.1.1.5 Minor Repair
A minor repair means a repair other than a major repair. Guidance is presented in the Appendix to this Chapter to assist in determining whether a particular modification or repair is major or minor.

3.2 General Information

3.2.1 A major modification or repairs to an aircraft are normally accomplished in accordance with design data approved by the State of Design and accepted by the Authority.

3.2.2 Major modifications and repairs design are prepared only by persons duly authorised with knowledge of the design principles embodied in the aircraft type being modified or repaired.

3.2.3 The effects of any potential incompatibilities between the proposed design change and any known existing or reasonably foreseeable modifications or repairs information to correct airworthiness deficiencies discovered in service which relate to the design change should be documented and submitted to facilitate the approval analysis.

3.2.4 There should be a provision to notify the Authority immediately during the course of incorporation or operation an unsafe condition related to the design change is found.

4.0 Application for Approval of Major Modifications and Repairs

The application for major modification and/or repair is made by submitting in duplicate a dully completed original Authority’s prescribed application Form: CAA-Form-AIW014 for approval of major modifications and/or repairs.

5.0 Acceptance of the Application

5.1.1 Ensure application has been made using the prescribed application form submitted in duplicate.
5.1.2 The following modification or repair documents should be attached –

a) Detailed description of the proposed modification or repair;
b) A master documentation list detailing the individual drawings and specifications which define the modification or repair;
c) Drawings and instructions necessary for incorporation of the modification or repair;
d) Testing procedures or methods to meet certification and operating rules, such as flammability, carbon monoxide, and noise requirements;
e) Test procedures that are appropriate to the modification or repair and to verify that the modification or repair meets applicable certification requirements.
f) Detailed design standards, to ensure that the operator has considered all applicable design requirements and acceptance engineering reports including expected test results to be used in determining the compliance of the modified or repaired product.
g) A record of the change in mass and moment arm when the modification or repair is installed in the aeronautical product;
h) A record of the change in electrical load when the modification or repair is installed in an aircraft;
   i) Supplements to:
      (i) The approved flight manual
      (ii) Maintenance instructions;
      (iii) Instructions for continuing airworthiness
      (iv) Repair instructions.
j) Any other factors that may affect safety or airworthiness;

6.0 Application and Documents Evaluation

6.1.1 The major modification or repair documents submitted must be in accordance with the aircraft design data approved by the state of design.

Note: Repairs designed in accordance with the manufacturers Structural Repair Manual (SRM) approved by the airworthiness authority of the State of Design may be accepted because such manuals are considered to be in accordance with approved type certificate data.

6.1.2 Evaluate Application to ensure that:

a) The description of the proposed modification or repair correctly and accurately describes the modification or repair.
b) Documents are complete and if not advice applicant what additional information is needed.
c) The applicant has conducted and submitted an acceptable conformity evaluation statement that ensures the proposed modification or repair will not impact the airworthiness of the aircraft.

d) There is proof that the modification or repair is compatible with previously approved modification or repairs.

6.1.3 Study the application document and verify that:

a) The proposed modification or repair has no unsafe features;

b) The applicant has met the requirements for the provision of engineering data and documentation from the State of Design; and

c) The applicant is authorized or has stated a competent AMO to perform the modification or repair.

7.0 Approval

7.1.1 Approval of major modifications and repairs is signified by signing the approval section of the application forms. One copy is returned to the applicant the other is retained by the Authority for records.

7.1.2 If the modification or repair documentation as required has not been submitted, the approval process is stopped and the person responsible for safety oversight is informed and the applicant is notified in writing the reasons for suspension or denial.

7.1.3 The applicant can be given opportunity to make corrections as necessary and re-submit the application.

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Civil Aviation Authority