

	TANZANIA CIVIL AVIATION AUTHORITY DIRECTORATE OF SAFETY REGULATIONS AIRWORTHINESS	Revision: 1 Advisory Circular
Document No.: TCAA-AC-AWS0014D	Title: Aircraft Modifications and Repairs	Page 1 of 4

1.0 PURPOSE

This Advisory Circular (AC) is issued to provide guidance to operators by setting acceptable means for ensuring that modifications or repairs to aircraft comply with the requirements of the applicable Regulations

2.0 REFERENCE

- 2.1 Regulation 66 of the Civil Aviation (Air Operator Certification and Administration) Regulations.
- 2.2 Regulation 68 of the Civil Aviation (Air Operator Certification and Administration) Regulations.
- 2.3 Application for Major Modification & Repair: Form; **TCAA-AC-AWS014A**
- 2.4 Major Mods & Repairs Record -Form: **TCAA-AC-AWS0014B**

3.0 GUIDANCE AND PROCEDURE

3.1 General Information

3.1.1 This AC applies to all types and classes of aircraft for which a Type Certificate or equivalent document has been issued, and it includes all associated systems and components of the aircraft such as engines, propellers and equipment.

3.1.2 A major modification or repair to an aircraft should be accomplished in accordance with design data approved by, or on behalf of, or accepted by the Authority of the State of Registry such that the modification or repair design conforms to applicable standards of airworthiness.

3.1.3 The design of major modifications or repairs to aircraft should not be attempted unless the applicant has a sound knowledge of the design principles embodied in the aircraft type being modified or repaired.

3.1.4 In many cases access to the analysis and test reports from the original type certification of the aeronautical product will be required. For this reason, participation in, or review of, the modification or repair design by qualified representatives of the organization responsible for the type design is recommended. Where such co-operation is not available, the responsible Authority should not approve the modification or repair design unless it is confident that the applicant has:

a) comprehensive knowledge, experience and capabilities in the applicable

This is a controlled document	TCAA-AC-AWS0014D	Issued on: August 2025
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	TANZANIA CIVIL AVIATION AUTHORITY DIRECTORATE OF SAFETY REGULATIONS AIRWORTHINESS	Revision: 1 Advisory Circular
Document No.: TCAA-AC-AWS0014D	Title: Aircraft Modifications and Repairs	Page 2 of 4

technologies, such that in-depth analyses going back to first principles have been performed where required; and

b) sufficient information on the type design of the aircraft involved. If there is any doubt, consultation is suggested with the Authority of the State of Design.

3.1.5 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.

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

4.0 Terminology

4.1 Major Modification

Major modification - in respect of an aeronautical product for which a type certificate has been issued, means a change in the type design that has an appreciable effect, or other than a negligible effect, on the mass and balance limits, structural strength, engine operations, flight characteristics, reliability, operational characteristics, or other characteristics or qualities affecting the airworthiness or environmental characteristics of an aeronautical product.

4.1.2 Minor Modification

A minor modification means a modification other than a major modification.

4.1.3 Repair

Repair means the restoration of an aircraft, engine, propeller or associated part to an airworthy condition in accordance with the appropriate airworthiness requirements after it has been damaged or subjected to wear.

4.1.4 Major Repair

A major repair means a repair of an aeronautical product that might appreciably affect the weight, balance, structural strength, performance, power plant, operations, flight characteristics, or other qualities affecting airworthiness or environmental characteristics, or that will be embodied in the product using non-standard practices

4.1.5 Minor Repair

A minor repair means a repair other than a major repair

This is a controlled document	TCAA-AC-AWS0014D	Issued on: August 2025
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	TANZANIA CIVIL AVIATION AUTHORITY DIRECTORATE OF SAFETY REGULATIONS AIRWORTHINESS	Revision: 1 Advisory Circular
Document No.: TCAA-AC-AWS0014D	Title: Aircraft Modifications and Repairs	Page 3 of 4

5 Application for Acceptance of Major Modifications and Repairs

The application for major modification and/or repair is made by submitting in duplicate a duly completed original Authority's prescribed application **Form: TCAA-AC-AWS014A** as amended for acceptance of major modifications and/or repairs.

5.1 Ensure application has been made using the prescribed application form submitted in duplicate.

5.1.1 The following modification or repair documents should be attached

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- 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) Information if the modification acceptance requires amendments to the Type Certificate (TC) or Supplemental Type Certificate (STC)
- h) STC for major modification or any other document from the state of design that approve the modification for the aircraft/component or Repair scheme approval from manufacturer
- i) An Authorization document from STC holder/Organization/Individual who own the document authorising applicant to use the STC/state of design approved document
- j) A record of the change in mass and moment arm when the modification or repair is installed in the aeronautical product.

This is a controlled document	TCAA-AC-AWS0014D	Issued on: August 2025
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	TANZANIA CIVIL AVIATION AUTHORITY DIRECTORATE OF SAFETY REGULATIONS AIRWORTHINESS	Revision: 1 Advisory Circular
Document No.: TCAA-AC-AWS0014D	Title: Aircraft Modifications and Repairs	Page 4 of 4

- k) A record of the change in electrical load when the modification or repair is installed in an aircraft.
- l) Supplements to:
 - (i) The approved flight manual
 - (ii) Maintenance instructions.
 - (iii) Instructions for continuing airworthiness
 - (iv) Repair instructions.
- m) Any other factors that may affect safety or airworthiness.
- n) Proof of payment of prescribed fees for modification and repair data approval

5.2 The application for Major Modification and Repair Data Approval, **Form: TCAA-AC-AWS014A** and the attached documents shall be evaluated by the Authority and upon successful completion the document shall be signed for approval. One copy of the approved Form will be returned to the applicant allowing them to proceed with the proposed modification or repair



Director Safety Regulation