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**AIRWORTHINESS**

**MAINTENANCE**

**APPROVAL OF MODIFICATIONS OR REPAIRS TO AIRCRAFT**

- ☞ Indicates changes.
- ☞ This AIC replaces AIC 61-6 dated 13 JAN 2011 in total.

**SECTION A: GENERAL INFORMATION**

**1. BACKGROUND**

Most aircraft have been modified or repaired in their history. These modifications and repairs or design changes result from improved equipment, increased safety requirements, increased and different aircraft utilisation, and they promise financial benefits for operators. Part 43 of the Civil Aviation Regulations, 1997 ("the Regulations"), recognises the need for design changes to aircraft and equipment and provides the regulatory requirements that must be met for installation. Whereas Part 43 provides for the installation of design changes, Part 21 of the Regulations provides the certification basis and procedures that ensure that the changes to the type design of the products are approved.

**2. SIGNIFICANT CHANGES FROM PREVIOUS VERSION**

**The Acting Director of Civil Aviation has granted an exemption from Regulations 43.02.15(1) & (2) for certain types of repairs and modifications, provided the conditions as outlines in Sections C & D are met. For such modifications and repairs described under the Sections C & D, no approval is required from the Director prior to carrying out these modifications or repairs, and no application or application fee is required to be submitted to the Director.**

**A new CA43-08 Modification and Repair Notification form has been introduced, which is required to be submitted upon completion of all modifications and repairs, within 48 hours from the issuance of the Certificate of Release/CRMA for the modification or repair concerned.**

**3. PURPOSE**

This AIC provides methods and information acceptable to the SACAA for showing compliance with Part 43 and Part 21 of the Regulations, pertaining to modifications to aircraft.

**Note: Appendix A attached to this circular contains a comprehensive flow chart to assist with understanding the content of this AIC. It is advisable to work through the flow chart for easy reference.**

**4. EXPLANATIONS OF TERMS**

**Design change** means a change to the type design of a product, part or appliance, by means of a modification or a repair.

**Modifications** are intended to change the function, operation, limitation, performance and/or characteristic of the physical or functional element(s) of an existing aircraft, engine and/or propeller for the purpose of achieving a desired feature, role or capability for the affected product.

**Repair** means any change to an aircraft, including its airframe, engines, propellers, instruments, equipment or their installation/removal, in order to rectify deficiencies and restore the airworthiness standard of the product.

**Technical data** are drawings, instructions or other data required to be used for product certification, approvals and authorisations under Part 21 or for the maintenance, modification and repair of products, their components and appliances.

**SECTION B: CRITERIA FOR CATEGORISATION OF MODIFICATIONS AND REPAIRS**

**1. CATEGORISATION**

A design change (modification or repair) may be categorised into three categories, namely:

- a. **Category 1** – Modification or repair conducted in accordance with data approved, or acceptable to, the Director (i.e. data as listed in condition 1 of Section C). The approval process for this category is described in Section D.
- b. **Category 2** – Modification or repair conducted in accordance with data which has not been approved, or has not been accepted, by the Director. This includes data not listed in condition 1 of Section C, which has been classified as a minor design change. The approval process for this category is described in Section E.
- c. **Category 3** – Modification or repair conducted in accordance with data which has not been approved, or has not been accepted, by the Director. This includes data and STCs not listed in condition 1 of Section C, which has been classified as a major design change. The approval process for this category is described in Section E.

**2. CLASSIFICATION**

Only the Certification Engineering section of the SACAA or a SACAA-Approved Design Organisation (ADO) (within its scope of approval) are eligible to classify a design change (modification/repair) as major or minor in accordance with Regulation 147.02.9 (2).

If the applicant does not provide substantial technical or suitably detailed descriptive data with the application, the SACAA would inevitably classify the design change as major, which may cause further delays if the design change requires re-classification at a later stage.

Modifications are categorised into three categories as tabulated below:

**Table 1: Aircraft Modification/Repair Categorisation**

Modification Categories	Category 1	Category 2* (Minor Design Change)	Category 3* (Major Design Change)
Data specifications	<u>Approved/Acceptable Data</u> -Approved/Acceptable Data from reputable authorities as listed in condition 1 of Section C. -All conditions of Section C are complied with.	<u>Approved/Acceptable Data Not Available</u> -Includes data not listed in condition 1 of Section C, or -Includes modifications and repairs which do not comply with the conditions as listed Section C.	<u>Approved/Acceptable Data Not Available</u> - Includes STCs from authorities which are not listed in condition 1.a. of Section C, or -Includes data not listed in condition 1 of Section C, or -Includes modifications and repairs which do not comply with the conditions as listed Section C.
Approval Process	-CA43-14 Application <u>not</u> required. - No prior approval from the Director required to install <b>[Exemption from Regulation 43.02.15(1) provided all conditions of Section C are complied with]</b> -AMO installs the modification/repair in accordance with approved acceptable data, submits CA43-08 form to SACAA along with document amendments (STC, FMS, ICA, Mass and Balance, Equipment List, etc.)	-CA43-14 Application form submitted to the SACAA/DOA.* -SACAA/DOA classifies design change -If classified as minor, SACAA or DOA reviews and approves data. -If classified as major, refer to Category 2 approval process. - AMO installs the modification/repair, submits CA43-08 form to SACAA.	-CA43-14 Application form to be submitted to the SACAA/DOA.* -SACAA classifies design change -If classified as minor, refer to Category 1 approval process. -If classified as major, DOA substantiates/develops technical data, applies for STC (CA21-05) through SACAA. -If data is an STC not listed in condition 1.a. of Section C, SACAA reviews and validates data. -SACAA reviews and approves data. -AMO installs the modification/repair, submits CA43-08 form to SACAA.

**NB: \*** - No applicable modification or repair may be carried out until the Director of Civil Aviation has granted permission as per Regulation 43.02.15(1).

## SECTION C: EXEMPTION CONDITIONS

The Acting Director of Civil Aviation has granted an exemption from Regulations 43.02.15(1) & (2), provided the following conditions are met:

1. Exemption is only applicable to design changes installed in accordance with already approved/acceptable technical data as listed below:
  - a. Supplemental Type Certificates (STCs) approved by the following authorities:
    - i. South African Civil Aviation Authority (SACAA);
    - ii. Federal Aviation Administration (FAA - USA);
    - iii. European Aviation Safety Agency (EASA);
    - iv. Transport Canada (TC);
    - v. Civil Aviation Safety Authority (CASA - Australia);
    - vi. Civil Aviation Authority of New Zealand (CAANZ);
    - vii. State of Design for the Class I product concerned.
  - b. Airworthiness Directives which have been issued by the authority of the State of Design for the Class I product concerned, which gives a specific instruction for modification or repair.
  - c. Data giving a specific instruction for modification or repair contained in a maintenance manual, repair manual, overhaul manual, instruction for continued airworthiness, service bulletin, or an equivalent provided by the manufacturer of the Class I product for which it is to be used and which is listed in the type certificate, or by reference in the type acceptance certificate
  - d. Repairs conducted in accordance with repair design data provided by the OEM and approved by the authority of the State of Design for the Class I product concerned.
2. The approved design data listed in condition 1.a. are appropriate to the product, component, or appliance being altered, and are directly applicable to the alteration being made and the work being carried out (i.e. there are no deviations from the approved design data).
3. The data provided by the manufacturer of a component does not conflict with data provided by the manufacturer of the product or assembly of which the component is to form a part.
4. The foreign supplemental type certificate, as listed in condition 1. a., are acceptable provided —
  - a. a complete new flight manual is not introduced;
  - b. the aircraft type is not re-designated;
  - c. the data are supplemental to the particular type certificate accepted by the Director and that type certificate is referenced on the supplemental type certificate or supplemental type approval;
  - d. The installer has the written permission of the STC holder to install the STC on the Class I product concerned.
5. New CA43-08 "Modification and Repair Notification" form is to be completed and submitted with all relevant data (e.g. copies of STC, FMS, ICA, CRMA, Equipment List, Mass and Balance, etc.) within 48 hours from the issuance of the Certificate of Release/CRMA for the modification or repair concerned.
6. Exemption is not applicable to STCs from states not listed in condition 1. a. above. Prior written approval for installation will be required for these STCs through the CA43-14 form (refer to Section E).
7. Exemption is not applicable to minor modifications for which there is no approved design data available. These modifications will be approved through the current CA43-14 form (refer to Section E).
8. Exemption is not applicable to major modifications for which there is no approved design data available, or for which the design data is to be developed, or yet to be approved. For such cases, the design change requires approval by the issuance of a South African STC and installation approval through the CA-43-14 form once the design is mature for installation/testing (refer to Section E).
9. The SACAA reserves the right to review for validation, or acceptance, the technical data substantiating the issuance of the foreign STCs, or other foreign approved design data, listed in condition 1. a. above in order to ascertain that the requirements of Part 21 have been fulfilled.
10. A statement of "No Technical Objection", or similar wording, by the manufacturer does not constitute "approved" or "acceptable" data and shall not be used without further approval by the Director.
11. This exemption is not applicable to Part 24 aircraft.

12. Where the installer fails to (or is unable to) comply with any of the above conditions of the exemption, the requirements of Regulations 43.02.15 (1) & (2) shall be enforced in full. Such a modification or repair would require approval through the current CA43-14 form process prior to installation (refer to Sections E).

#### SECTION D: CATEGORY 1 DESIGN CHANGES

##### 1. GENERAL

As in table 1, provided the data complies with the requirements of Section C, Category 1 modifications need no submission of the CA43-14 application to the SACAA (see exemption from Regulation 43.02.15(1) and associated exemption conditions as stated in Section C).

AMO to submit a completed CA43-08 "Modification and Repair Notification" form to the SACAA within 48 hours of issuance of the certificate of release for the modification/repair concerned, along with required documentation amendments such as a copy of the STC, Applicable Model List (AML), Flight Manual Supplement (FMS), Instructions for Continued Airworthiness (ICA), amended equipment list, mass and balance form (CA43-17).

##### 2. CATEGORY 1 PROCESS

- a. Category 1 process is based on the exemption granted by the Director as per Section C.
- b. Only design change data acceptable to, or approved by, the Director as listed in condition 1 of Section C, may be utilised in the Category 1 process.
- c. These modifications or repairs may be embodied without prior written approval from the Director in terms of Regulation 43.02.15(1), provided the work is carried out by a suitably rated/approved AME/AMO.
- d. These modifications and repairs are exempted from the requirements of Regulations 43.02.15(1) & (2) and hence **DO NOT** require submission of:
  - CA 43-14 form (application for approval of modification);
  - An application fee.
- e. As part of these exemption conditions, Category 1 modifications and repairs require submission of a completed CA43-08 form (Modification and Repair Notification), accompanied by –
  - A copy of the STC and AML (where applicable);
  - A copy of the Flight Manual Supplement (FMS);
  - A copy of the Instructions for Continued Airworthiness (ICA);
  - A copy of the amended Equipment List;
  - A copy of the amended Mass and Balance (CA43-17 form);
  - A copy of the Certificate of Release/CRMA;to the SACAA Certification Engineering section within 48 hours from the issuance of the Certificate of Release/CRMA, for the modification or repair concerned.
- f. The AMO should –
  - give a signed copy to the aircraft owner to be entered in the aircraft maintenance records
  - make the proper entry in the aircraft maintenance records making reference to the form CA43-08
  - forward a copy of the CA43-08 and a copy of the amended documentation to the SACAA Certification Engineering section within 48 hours;
- g. The CA43-08 form will be reviewed by the Certification Engineering section for compliance to the exemption conditions of Section C. Any potential discrepancies or findings will be investigated, and may involve enforcement or penalties.
- h. The CA43-08 form will be filed in the relevant aircraft file and become part of the aircraft permanent records.
- i. A copy of the CA43-08 form or CRMA should be entered into the aircraft logbook by the AMO.
- j. The data listed in a. above becomes part of the aircraft permanent records and the relevant documents should be amended or supplemented with this data (e.g. Flight Manual Supplement should be incorporated into the Aircraft Flight Manual, etc.)
- k. If there is any deviation required from the data listed in, or from any of the conditions of Section C, the Category 1 process cannot be utilised for the modification or repair concerned.

## SECTION E: CATEGORY 2 AND 3 (CA43-14) DESIGN CHANGES

### 1. GENERAL APPROVAL PROCESS FOR CATEGORY 2 AND 3

- a. *Category 2 & 3 modifications and repairs are not covered under the exemption of Section C and hence require submission of:*
  - *The latest revision to CA 43-14 (Application for Approval of Modification);*
  - *An application fee in terms of Part 187 of the Regulations and*
  - *Two copies of all substantiation data (one set will be kept on file at the SACAA, the other set will be returned to the client, where necessary, with appropriate SACAA acceptance and/or approval).*
- b. *A minimum of three (3) days is required for permission issuance, provided that all data has been submitted as per Table 1.*
- c. *Form CA43-14 may not contain more than one independent modification to a single aircraft.*
- d. *Form CA43-14 may identify one or more aircraft of the same make and model for a modification or repair, however, an application fee must be submitted for each aircraft identified on CA 43-14.*
- e. *Modifications which entail the sharing of equipment between multiple aircraft shall be submitted on a single CA 43-14 form which identifies each aircraft's registration number. However, an application fee must be submitted for each aircraft identified on CA 43-14.*
- f. *Temporarily installed equipment will also follow the complete approval process as per Table 1. Subsequent removal or re-installation will be covered by a CRMA and/or logbook entry.*
- g. *Equipment approval (e.g. ZA-TSO) does not constitute approval to fit to an aircraft.*

### 2. CATEGORY 2 PROCESS

*If the technical design data defining the modification/repair does not comply with the conditions of Section C, the data must be approved, and an approval must be granted by the Director prior to installation of the modification/repair in terms of Regulation 43.02.15(1).*

*A CA43-14 application must be completed and submitted to the SACAA along with the relevant substantiating technical data.*

*Based on the data supplied, the SACAA/ADO will classify the design change as either minor or major. If minor (category 2), the SACAA/ADO will review and, if found acceptable, approve the technical data on the CA43-14 form. The AMO will follow its internal processes and finalise modifications that are classified as Category 2 modifications and repairs as tabulated in Table 1.*

*If the design change is classified as major, the design change must be approved through the issuance of a local Supplemental Type Certificate in terms of Part 21 (see Category 3 Approval Process).*

*Issuance of a Final Modification Approval will be considered approval of the technical data if the design change has been classified as a minor design change and grants permission to install the minor design change in terms of Regulation 43.02.15(1).*

*AMO to submit a completed CA43-08 "Modification and Repair Notification" form to the SACAA within 48 hours of issuance of the certificate of release for the modification/repair concerned, along with required documentation amendments such as equipment list, mass and balance form (CA43-17), etc.*

### 3. CATEGORY 3 PROCESS

*If the technical design data defining the modification/repair does not comply with the conditions of Section C, the data must be approved, or accepted, and an installation approval must be granted by the Director prior to installation of the modification/repair in terms of Regulation 43.02.15(1).*

*A CA43-14 application must be completed and submitted to the SACAA along with the relevant substantiating technical data.*

*Based on the data supplied, the SACAA/ADO will classify the design change as either minor or major. If classified as minor, the Category 2 approval process would be followed.*

*If the data is approved but does not meet condition 1 of Section C, the SACAA will review and validate the data. If the technical data is found acceptable, the SACAA will issue an installation approval (Conditional Approval) on the CA43-14 form.*

If the design change is classified as major, and has not been approved by a foreign authority, an application for a local STC will be required by the SACAA. **Only an ADO may apply for a STC in terms of Part 147.** The ADO is to develop all the technical design data required to demonstrate compliance to the appropriate airworthiness design standard(s).

This category is where the SACAA Certification Engineering section is most involved. This process may be extensive and therefore adequate planning of resources and time is essential on the applicant's side. Approval will be based upon the design data meeting the applicable airworthiness requirements. The certification engineer will liaise directly with the relevant ADO regarding data requirements, timelines, review of data and finding of compliance as per the Technical Guidance Material for Supplemental Type Certification.

The design data is approved through the issuance of a STC by the SACAA in terms of Part 21.

The SACAA will approve the installation of the modification/repair on the CA43-14 form (Conditional Approval), allowing the AMO to install the modification/repair to an aircraft in terms of Regulation 43.02.15(1). This would be required, for example, for flight testing as part of the Supplemental Type Certification process. The design of the modification/repair, and the associated documents, are only approved with the issuance of the STC.

Once the modification/repair has been embodied, the AMO shall submit a completed CA43-08 "Modification and Repair Notification" form to the SACAA within 48 hours of issuance of the certificate of release for the modification/repair concerned, along with required documentation amendments such as equipment list, mass and balance form (CA43-17), etc.

Issuance of a Final Modification Approval will only be considered once the relevant STC has been issued.

## SECTION F: DATA REQUIREMENTS FOR CATEGORY 2 AND 3 DESIGN CHANGES

### 1. GENERAL

In developing a modification, technical data must be generated or sourced. This data describes and substantiates the design and provides the details for the embodiment of the modification. Minor modification/repair design data may be developed by any competent person. The data itself need not be complicated or involved and straightforward descriptions of modifications are very effective. In the more complicated cases (i.e. for major modifications or repairs) a design organisation should be contracted to source, develop and approve the technical data based upon the customer's requirements. Only a SACAA-Approved Design Organisation may apply for the approval of a major design change (e.g. STC) in terms of Part 147.

The technical data must be assessed against the applicable airworthiness design standards. Part 21 requires compliance with these standards and other airworthiness requirements, to be indicated by a statement of compliance issued by a design organisation (CA21-44 form).

For convenience, a modification package directed to the SACAA may be accompanied by a request that a statement of compliance be completed during the design approval process.

The modification applicant is responsible for presenting a complete substantiation data package and to secure authorization to use any proprietary data. It is important to note that for major design changes, the ADO becomes the responsible holder of the design change data, and is therefore responsible for continued airworthiness of the design change. This does not, however, preclude a third-party organisation from owning commercial design rights to the design change if such an agreement is in place between the ADO and the third-party organisation.

Applicants are encouraged to inform the SACAA of their intent to do modifications and repairs as far in advance as possible, so that the type of substantiation data and/or tests that will be required, may be determined beforehand.

### 2. DEVELOPMENT OF DATA

As the design change is developed, the assembled technical data forms the design data package. This package includes descriptive data, substantiating data and other data to support the embodiment of the design change. The sections of the package should be clearly identified, with references to the applicable airworthiness requirements being evident. The package should be included with the SACAA form CA 43-14 and submitted to the SACAA or Part 147 (ADO) organisation for assessment and approval.

In developing the data, the following aspects should be considered in order to minimise any potential problems or delays:

- **Structural requirements.** If the structure is reduced, added to, or otherwise changed, will its integrity be impaired?
- **Hazards to the aircraft or its occupants.** Is the equipment added, or any associated supporting features, likely to create a danger to the safety of the occupants or the aircraft itself?
- **Operating aspects.** Does the modification/repair fulfil the operating requirement intended and has the integration of any equipment or kits been tested to ensure there are no adverse affects?
- **Detail design standards.** Have the particular airworthiness design standards been met, such as flammability, vibration, noise and evacuation provisions?

In order to describe a modification/repair adequately, submitted data should include, where applicable:

- The use and application of the design change;
- The purpose of the design change;
- Maintenance, operating and performance data including any limitations for the use of the design change;
- Installation properties including any factors that affect the interaction of the design change with other equipment;
- References to standards and specifications used during the development of the design change;
- Drawings, diagrams and other physical descriptions of the design change, including special processes and their required outcomes, i.e. heat treatments, surface finishes, weld quality, all dimensions including undercuts, fillet radii, fits and tolerances;
- An equipment list that details the parts, including those sourced complete from other places, that make up the completed item by part number, location and method of attachment;
- A summary of particular manufacturing considerations, including pressures, temperatures and environments;
- A list that details the substantiating data for ease of reference (Index).

### 3. TYPES OF DATA

The following is a description of data which is required on Category 2 and 3 modification/repair applications, depending on the nature and complexity of the modification/repair.

### 4. COMPLIANCE CHECKLIST REQUIREMENTS

For Category 2 & 3 modification/repairs, a compliance checklist may be required.

The certification basis for each aircraft is defined on the Type Certificate Data Sheet (TCDS). The certification basis must be used to generate a compliance checklist. The latest amendment of the airworthiness design standard should be used, unless it is deemed impractical, not commercially viable, or does not enhance the safety of the modification.

The compliance checklist will list each requirement from the airworthiness design standards (e.g. FAR 23/FAR 25, etc) that is affected (or identified as likely to be affected) by the modification and identify the method for demonstrating compliance. Prescribed methods for demonstrating compliance are:

- Analysis (electrical, structural, comparative, risk, etc.);
- drawing review;
- inspection and
- testing (static, flammability, flight, functional, EMI/EMC, etc.).

Generally, if the modification or repair requires an extensive investigation for the finding of compliance with the certification basis, the design change is classified as major.

The applicant may submit a working draft of the compliance checklist for input by SACAA before the final draft submission.

### 5. AMENDMENTS TO APPROVED DOCUMENTS

An amendment to documents and manuals is an important aspect of a complete design package. Maintenance manuals, illustrated parts catalogues and flight manuals are documents that may require amendment as a result of a modification/repair being incorporated. A design package may provide supplements to these types of manuals that would subsequently be provided to the purchaser of the design or equipment manufactured to that design.

By definition, if an amendment to these approved documents is required, the design change is classified as major. Flight Manual Supplements and changes to Instructions for Continued Airworthiness may only be approved as part of the STC process.

### 6. INSPECTIONS AND TESTS

Part 21 of the Regulations requires that the aircraft be returned to its original or properly modified condition. To ensure that the modification made, has resulted in the aircraft performing correctly, inspections and tests are required. These inspections and tests should be detailed in the data and should include procedures for the confirmation that:

- The modified item complies with the applicable airworthiness requirements;
- The materials used conform to the applicable specifications;
- All components of the modification conform to the drawings in the applicable design.

A design change is generally classified as major if the inspections or tests require significant involvement of the SACAA.

## 7. OTHER REQUIREMENTS

Applicants must adhere to all other requirements specified as conditions of Conditional Approval for Category 2 & 3 design changes.

### SECTION G: COMPLETING CA43-08 AND CA43-14 FORMS

#### 1. COMPLETING THE CA 43-14 FORM

Tick the appropriate block for a modification, an installation or a repair.

The following correspond to the numbering on CA 43-14:

1. Fill in the registration number of the aircraft on which the modification, installation or repair is being conducted.
2. a) Complete the fields for the make and model of the airframe, engine and/or propeller or equipment affected.  
b) Fill in the serial numbers of the airframe, engine and/or propeller and the equipment.
3. Provide a description of the modification, installation or repair (attach separate page if required).
4. State the reason for the modification, installation or repair. Note that "client request" is not a sufficient reason.
5. State the nature of the modification (Mechanical or Avionics, or both).
- 6-9. Answer Yes or No to all of these questions, and provide relevant information.
10. Complete all contact details for both the applicant and the modification holder and the legal entity in charge of continued airworthiness of the modification (clarification regarding applicant and modification holder is found in Section E of this AIC).

Ensure that the application form is signed. An unsigned application will not be accepted (the applicant may sign on behalf of the modification holder if modification is on behalf of a foreign STC holder).

#### 2. COMPLETING THE CA 43-08 FORM

The following correspond to the numbering on CA 43-08:

1. A reference to the design change approval should be entered here. This could be the STC number, or approval number issued by the authority or ADO, or the approved document reference number. It should be made clear which authority or ADO approved the data.
2. Complete the fields for the registration marks of the aircraft, the aircraft serial number, make, model and series (where applicable) of the airframe affected. These details can be found on the aircraft Certificate of Registration and manufacturer's identification plate.
3. Fill in the Owner's details and address, which should match the Certificate of Registration.
4. Type - Identify in the appropriate column if the component was modified or repaired.
5. Unit Identification - These panels are used to identify the airframe, engine, propeller, or component that has been modified or repaired.
6. This block should be completed only if the modification or repair is assessed as major, or is listed as approved by, or acceptable to, the Director as listed in Section C. For a modification or repair using technical data yet to be approved, this block should be left blank until the technical data approval block is completed by the appropriate person. Once the data is approved and the modification or repair embodied, this block should be completed by the AME, AMO or equivalent authorised person who performed the work and/or found compliance to the approved design data.

One copy of the form CA43-08 should be given to the aircraft owner, the work details should be entered in the appropriate maintenance record, and a copy of the form forwarded to the SACAA Certification Engineering section within 48 hours of the work being inspected.

A signature in this block certifies that—

- the technical data was—
  - appropriate for the modification or repair described on the form;
  - appropriate for the aircraft described on the form;
- the modification or repair was accomplished in accordance with that technical data and Part 43.

The signatures on the form do not indicate approval of the work described on the form for release to service. Release to service must be completed in accordance with Part 43 in the appropriate maintenance record.

7. The technical data requiring approval, or the acceptable technical data used as the basis for certifying the modification or repair for release to service should be identified and described in this area. Section F of this advisory circular provides more guidance on the contents of technical data.

For data listed as acceptable in Section C or included on separate sheets, only a suitable reference need be included.

It is recommended that this block contain only a listing of the attached sheets and that the attached sheets contain the detail of the data. Extra sheets describing the repair or modification should be attached to the form CA43-08 bearing the aircraft registration mark and the date the work was completed. A clear, concise and legible statement describing the work carried out should be entered in this block. It is important that the location of the repair or modification, relative to the aircraft or component, be described. The description should refer to the applicable sections of the approved technical data used.

If the repair or modification is to be covered with other structure then a statement should be made certifying that a pre-cover inspection was carried out and the work completed is satisfactory.

Other required documentation amendments such as a copy of the STC, Applicable Model List (AML), Flight Manual Supplement (FMS), Instructions for Continued Airworthiness (ICA), amended equipment list, mass and balance form (CA43-17).

## **SECTION H: GENERAL REQUIREMENTS WHICH APPLY TO ALL MODIFICATIONS AND REPAIRS**

### **1. GENERAL**

The applicant shall be an appropriately rated approved AMO acting on behalf of the aircraft owner/operator. If the modification/repair holder is someone other than the aircraft owner/operator, both the aircraft owner/operator and the modification holder must sign the SACAA form CA 43-14. This requirement can be superseded if there is a legal agreement on record at the SACAA which identifies an individual/company to represent and act on behalf of the aircraft owner/operator.

All modifications and repairs shall be reported to the Director by submission of the completed CA43-08 form, within 48 hours of issuance of the certificate of release for the modification/repair concerned, along with required documentation amendments such as equipment list, mass and balance form (CA43-17), etc.

### **2. QUALIFICATION REQUIREMENTS**

All modifications, maintenance and repairs shall only be carried out by:

- A suitably rated and approved aircraft maintenance organisation on Type Certified Aircraft, and/or
- An approved aircraft maintenance organisation, a licensed aircraft maintenance engineer, or an appropriately rated approved person (AP) on **Non Type Certified Aircraft**.

### **3. DESIGN CHANGE APPROVAL DOCUMENTS**

The approved documents which describe the design change must accompany the CA43-14 application and/or CA43-08 form. Examples of these documents could include copies of STCs, the Applicable Model List showing eligibility of the aircraft type, or other approved documents as listed in condition 1 of Section C.

### **4. LOGBOOK AND/OR CRMA REQUIREMENTS**

All modifications, maintenance, or repairs must be recorded in the applicable logbook(s) in accordance with Regulation 43.03.1.

CRMA/Logbook entries must be:

- recorded prior to the aircraft's return to service;
- submitted with the CA43-08 (Modification and Repair Notification) form;
- submitted to the Director of Civil Aviation before final approval will be granted for modifications and repairs as per Category 2 and 3.

### **5. MASS AND BALANCE REQUIREMENTS**

All modifications, maintenance and repairs that affect the empty mass of an aircraft require an amendment to the mass and balance and must be:

- recorded prior to the aircraft's return to service, and
- submitted on the prescribed form (CA43-17), with the CA43-08 (Modification and Repair Notification) form to the Director of Civil Aviation.

## 6. EQUIPMENT LIST REQUIREMENTS

All modifications, maintenance and repairs that remove, replace, or install equipment require an amendment to the equipment list and must be:

- recorded prior to aircraft return to service, and
- submitted to the Director of Civil Aviation with the CA43-08 (Modification and Repair Notification) form.

## 7. SPECIAL FLIGHT PERMIT REQUIREMENTS

A special flight permit is required for all aircraft operating under a Conditional Approval for the purpose of a Flight Test of a minor design change, and shall be issued in terms of Part 21 of the Regulations and at the discretion of the Director of Civil Aviation. A special flight permit is generally issued if a single flight is required in order to demonstrate compliance.

Aircraft undergoing a series of flight tests for the purpose of certification of a major repair/modification for the issuance of an STC, require the issuance of an Experimental Certificate of Airworthiness in terms of Part 21 of the Regulations.

## 8. AFM/AWL/ICA AMENDMENTS

Should the design change reference an amendment to the existing AFM (i.e. Flight Manual Supplement), AWL (i.e. Airworthiness Limitations), or ICA (i.e. Instructions for Continued Airworthiness), these documents will need to be submitted to the SACAA with the CA43-08 form.

## SECTION I: DEFINITIONS

### **Type Certificate:**

A design approval for Class I product issued in terms of the Regulations.

### **Class 1 Product:**

A complete aircraft, aircraft engine or propeller, which –

- (a) has been type certificated in accordance with the provisions of these Regulations and for which the South African specifications or type certificate data sheets have been issued; or
- (b) is identical to a type certificated product referred to in paragraph (a) in all respects, except where otherwise acceptable to the appropriate authority of the importing State.

### **Major Repair:**

Is a repair,

- (a) which, if improperly done, may appreciably affect weight, balance, structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness; or
- (b) which is not done according to accepted practices or cannot be done by elementary operations.

### **State of Design:**

The State which has authority over the organisation responsible for the type design.

### **Major Modification:**

Major modification means a modification not listed in the aircraft, aircraft engine, or propeller specifications –

- (a) which may appreciably affect weight, balance, structural strength, performance, powerplant operations, flight characteristics, or other qualities affecting airworthiness; or
- (b) which is not done according to accepted practices or cannot be done by elementary operations.

## DEFINITIONS OF TERMS USED IN THIS AIC

### **Airworthiness Directive:**

A set of mandatory instructions issued by the appropriate authority (i.e. SACAA, FAA, etc.) of an aircraft.

### **Compliance Checklist Certification Basis**

The airworthiness design standards that a type certified Class I product demonstrated compliance to as defined in the Type Certificate Data Sheet.

**Conditional Approval:**

Conditional modification, installation, or repair approval issued by the South African Civil Aviation Authority which expires after a stated period and identifies outstanding data that must be submitted for further evaluation before a final approval can be issued.

**Final Approval:**

Final modification or repair approval issued by the South African Civil Aviation Authority.

**Hourly Rate:**

Fee charged in addition to the application fee for all work in excess of 30 minutes.

**Minor Modification:**

Minor modification means a modification other than a major modification.

**Minor Repair:**

Minor repair means a repair other than a major repair.

**Type Certified Aircraft:**

Aircraft which have been issued with a type certificate by an appropriate authority (i.e. SACAA, FAA, etc.)

**Type Certificate Data Sheet:**

This is the specification for a Class I product which has acquired a Type Certificate.

**Type Certificate Holder:**

Person or company responsible for the design data of a Class I product as recognized by an appropriate authority (i.e. SACAA, FAA, etc.)

  
**DIRECTOR OF CIVIL AVIATION**

APPENDIX A – CATEGORISATION OF MODIFICATIONS AND REPAIRS

