



# Advisory Circular

TCAA-AC-AWS014D

February 2020

## MODIFICATIONS AND REPAIRS

### 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 Regulations 66 and 68 of the Civil Aviation (Air Operator Certification and Administration) Regulations, 2017

### 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 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

Throughout this Order "alteration" and "modification" are intended to be synonymous. Guidance is presented in the appendix to this chapter to assist in determining whether a particular modification or repair is major or minor.

##### 4.1 Modification.

A modification to an aeronautical product means a change to the type design which is not a repair.

a) **Major.** A major modification means a type design change not listed in the aircraft, aircraft engine or propeller specifications:

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

or

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

b) **Minor.** A minor modification means a modification other than a major modification.

*Note.- Some States use the term "alteration" instead of modification. Throughout this chapter alteration and modification are intended to be synonymous.*

##### 4.2 Repair

4.2.1 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.

a) **Major.** A major repair means a *design change* which is intended to restore an aeronautical product to an airworthy condition:

i) where the damage being repaired might appreciably affect the *structural strength, performance, powerplant operation, flight characteristics, or other qualities affecting airworthiness or environmental characteristics*; or

- ii) that will be embodied in the product using non-standard practices.

4.2.2 Where a repair design is intended to correct damage to an aeronautical product, the design is generally unique to the specific unit damaged. Approval may be granted for a number of units where the damage to each is such that a common repair design is applicable. A repair design may be approved for all units of a given type of aeronautical product where the repair is suitable for repeated incorporation during overhaul and maintenance activities. Such repairs usually correct the effects of normal usage.

4.2.3 A major repair to an aeronautical product shall be accomplished in accordance with design data approved by, or acceptable to the Authority. In this regard the structural repair manual (SRM) of the manufacturer of the aeronautical product is usually accepted, provided that it has been approved by the Authority of the State of Design directly or by delegation. Repairs incorporated in accordance with such a manual may be deemed to be in accordance with approved data.

4.2.4 In the case where a repair is not already approved or accepted, the following activities are required to be performed by, or on behalf of, the applicant by a person or organization acceptable to the Authority:

- (a) Conduct all analyses, calculations and tests necessary to demonstrate compliance with the applicable airworthiness and environmental standards;
- (b) Prepare all necessary documentation;
- (c) Determine that the design can be installed in the product in conformity with the drawings and instructions; and
- (d) Ensure that adequate instructions are provided for the continuing airworthiness of the repair, e.g. inspection programme amendments.

4.2.5 Compliance must be shown with the approval basis of the aeronautical product. To ensure compliance with the approval basis of the aeronautical product, all applicable factors included in the original approval of the product must be addressed. This may require reference to the original type design holder. The following are some areas to be considered:

- (a) Static and fatigue strength of structure;
- (b) Whether structure is safe-life, fail-safe or damage tolerant;
- (c) Corrosion protection;
- (d) Mass and balance (for the aircraft overall or for balanced flight control surfaces);
- (e) Flammability standards;
- (f) Access and inspect ability requirements;
- (g) Electromagnetic interference (EMI) protection;
- (h) Electrical conductivity (lightning strike);

- (i) Colour and reflectance (i.e. ultraviolet absorption, thermal radiation);
- (j) Process specifications (nitriding, etc.);
- (k) Environmental standards (noise, smoke and gaseous emissions); and
- (l) Failure modes and effects analysis.

### 4.3 Documentation

Third Schedule of the Civil Aviation (Airworthiness) Regulations requires an applicant for a major modification or repair to make a formal request to the Authority on the appropriate form including, but not limited to, the following information:

- a) Reason for modification (briefly state the reason)
- b) detailed description of the proposed modifications/repair
- c) Master drawing or drawing list, production drawings, and installation instructions;
- d) Drawings and instructions necessary for the installation of the modification
- e) Submission of approved Maintenance Schedule amendment
- f) Testing procedures or methods to meet certification and operating rules, such as flammability, carbon monoxide, and noise requirements
- g) Test procedures, to ensure that they include all tests necessary to substantiate that the modification meets applicable certification requirements and are appropriate to the modification
- h) Flight test requirements: Performance and handling test requirements/flight test of radios;
- i) Engineering reports (static strength, fatigue, damage tolerance, fault analysis, etc.)
- j) Mass and moment change data;
- k) Maintenance and repair manual supplements;
- l) Instructions for continuing airworthiness; and
- m) Flight manual supplement.

### 4.4 Approved data

4.4.1 Data that can be used to substantiate major repairs/major modifications, derived from (but not limited to) the following:

- a) Type Certificate Data Sheets
- b) Supplemental Type Certificate (STC) data, provided that it specifically apply to the item being repaired/altered
- c) Airworthiness Directives (AD)
- d) Airframe, engine, and propeller manufacturer's "CAA-approved" maintenance manuals or instructions.



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- e) Component manufacturer's manuals or instruction, unless specifically not approved by the Authority of State of Design or resulting in an alteration to the airframe, engine, and/or propeller
- f) Major repair or modification/alteration form, when the specified data has been previously approved
- g) Structural Repair Manuals (SRM), only as a source of approved data for a major repair, when it is a State of Design-approved document. Data that is contained in an SRM that is not approved, can be used on a case-by-case basis if prior Authority approval is granted for that repair.
- h) Repair data, issued by State of Design delegated engineering Authority holder,
- i) Foreign bulletins, for use on locally certificated foreign aircraft, when approved by the foreign Authority
- j) Service bulletins and letters or similar documents which are specifically approved by the foreign Authority (under a TSO, PMA, or other type-certificated basis)
- k) Foreign bulletins as applied to use on a locally certificated product made by a foreign manufacturer who is located within a country with whom a bilateral agreement is in place and by letter of specific authorization issued by the foreign Authority
- l) Other data approved by the Authority of State of Design
- m) FAA Advisory Circular 43.13-1, Acceptable Methods, Techniques, and Practices - Aircraft Inspection and Repair, as amended

**Note:** AC 43.13-1, may be used as approved data, only if the following three prerequisites are met:

- i) The user has determined that it is appropriate to the product being repaired/altered;
- ii) The user has determined that it is directly applicable to the Repair/alteration being made;
- iii) The user has determined that it is not contrary to manufacturer's data

## 5.0 Approval basis

5.1 It is recommended that the approval basis for a major modification or major repair should be the *design standard* in effect on the date of application; however, in certain circumstances discussed below, the Authority of the State of Registry may accept an earlier

amendment of the applicable design standard. In such cases the minimum acceptable approval basis would be that recorded in the *type certification data sheet* or equivalent document issued or accepted by the State of Registry for the aeronautical product being modified or repaired.

5.2 The applicant should be required to comply with the applicable design standards in effect on the date of application for any design change that the Authority classifies as being significant. Examples of aircraft modifications that would normally be considered as being in the significant classification include changes in the *length of the fuselage* or the *number of flight crew*. The introduction of a *cargo door* on an existing aircraft or the *installation of skis* or floats would also be regarded as *significant changes*. Similarly, the replacement of *reciprocating engines* with the same number of *turbo-propeller engines* would normally be classified as a significant changes. On the other hand, the installation in an aircraft of an alternative engine, using the same principle of propulsion with minimal change in thrust, would be an example of a modification that would not usually be considered a significant change. Examples of avionic changes which typically would be regarded as being in the significant classification include a *major flight deck upgrade*, or installation of avionic equipment where operational credit is to be taken for its presence in the aircraft. A general avionic equipment change would not usually be considered significant, nor would the installation of new equipment such as a global positioning system for information purposes, where no credit is taken for it as an aid.

5.3 The approval basis recorded in the type certification data sheet would normally be deemed appropriate for:

- a) a change that the Authority finds not to be in the significant classification;
- b) those areas, systems, components, equipment and appliances that are not affected by the change; or
- c) those areas, systems, components, equipment and appliances that are affected by the change, provided the Authority finds that compliance with the latest amendment to the standard would be impractical or would not contribute materially to the level of safety.

5.4 In areas not affected by the change the approval basis recorded in the type certification data sheet may be used, but it is important that the effects of the change are properly assessed. General characteristics of the aeroplane, such as performance, handling qualities, emergency provisions, fire protection, structural integrity and crashworthiness must be considered as well as the physical aspects of systems, components, equipment and appliances. For example, adding a fuselage plug is likely to significantly affect performance and handling qualities.

5.5 Within the physical aspect it is necessary to make a distinction between *principal changes* such as a fuselage plug and *secondary changes* such as lengthening of the various aeroplane circuits as a result of the fuselage plug. Secondary changes may be considered to be unaffected areas.

5.6 Compliance with the latest amendment to the design standards could be considered impractical if the applicant can show that the resulting revisions required to the design



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change produce costs that are not commensurate with the change.

5.7 Compliance with the latest amendment could be considered not to contribute materially to the level of safety when an applicant can show that the design has compensating features, that relevant experience shows such compliance is unnecessary, or that compliance may compromise the existing level of safety. Consistency of design requirements should be considered under these provisions. For example, when a fuselage plug is added there will likely also be additional seats and overhead bins, which may be identical to the existing ones. The plug structure may also be identical to the existing structure. Under such circumstances application of the latest amendment only to the changed parts may not contribute materially to the level of safety, in which case compliance with the existing approval basis would be acceptable.

5.8 Other considerations may influence the Authority in requiring compliance with later amendments to the design standards, such as instances where retroactive regulations have been enacted, or in individual cases where experience has shown this to be warranted. For example, many older aircraft were type certified to design standards written before the advent of modern equipment and technology. These older standards may be inadequate to maintain the appropriate level of safety when modifications involving new technology and or equipment are made on these aircraft. Other examples include the application of the latest cabin interior smoke and fire protection standards where these have been imposed by retroactive regulation, and application of damage tolerance requirements to an aircraft originally designed to fail-safe standards in cases where a Supplemental Structural Inspection Document (SSID) has been issued for the aircraft type.

5.9 In some cases, the applicant may elect to show compliance to a later amendment of the applicable design standard than that required by the Authority. In such instances, compliance should be required with the entire amendment to the extent that it relates to the modification or repair for which approval is sought. In particular, partial compliance with later amendments, resulting in an alleviation of standards without compliance with related compensatory amendments, should not be approved.

## 6.0 Special conditions

Special conditions for approval of modifications may be specified when the Authority finds that the applicable existing regulations do not contain adequate or appropriate safety standards for an aeronautical product because of novel or unusual design features. The special conditions should contain such safety standards, as the Authority finds necessary, in order to establish a level of safety equivalent to that established in the regulations.

## 7.0 Design changes requiring a new type certificate

7.1 Some design changes may be so extensive that an application for a new type certificate will be required. Such changes are outside the scope of this Advisory Circular.

7.2 Application for a new type certificate would be required if the Authority finds that the change in design, power, thrust or mass is so extensive that a substantially complete investigation of compliance with the applicable design standards is required. Therefore a new design derived from an existing aeronautical product design and proposed either by the original manufacturer, or as a modification to the product by someone other than the



original manufacturer, may require a new type certificate.

7.3 A substantially complete investigation is required when most of the existing justification is not applicable to the changed product. This applies to the scope of the investigation required to establish compliance. For example, an extensive change may negate the validity of extrapolation or use of certain analyses or tests that were used to show compliance in the original or previous type certification of the product.

7.4 A new type certificate would normally be required for an increase in the number of engines, particularly from one engine to two, because such a change would generally affect the aeroplane's complexity to a considerable extent. Similarly, a change in the principle of propulsion from either a reciprocating or turbo-propeller engine to a turbo-jet usually would be regarded as substantial enough to require a new type certificate.

### 8.0 Compatibility with existing design changes

Consideration should be given during the design process to compatibility between the proposed design change and other existing design changes, such as modifications, repairs and Airworthiness Directives.

### 9.0 Retention of substantiating data

To show that the modified or repaired aeronautical product complies with the appropriate design standards, reports on analyses and tests should be prepared. The Authority granting the approval of the design of the modification or repair should require that the holder of the approval:

- a) retain the records of the analyses and tests performed to demonstrate compliance until the aircraft modified or repaired in conformity with the approved modification or repair are permanently withdrawn from service;
- b) Upon completion of the modification or repair, details of the work carried out must be entered on the Major Repair and Modification Record, **Form: TCAA-AC-AWS014A**, which will be part of the operators records and shall be made readily available for inspection by the Authority when required and a copy shall be submitted to the Authority and
- c) ensure that no person destroys or otherwise disposes of any record referred to above without its prior permission.

### 10.0 Responsibilities of holders of approvals

The Authority of State of Design issuing the modification or repair design approval should require that the person or organization responsible for the design of the modification or repair:

- a) furnish at least one set of any amendment or supplement to a flight manual, maintenance manual or instructions for continuing airworthiness produced in obtaining approval of the design to each intended user and make available to any user subsequent changes to such documents;



- b) if service experience shows a safety deficiency in the modification or repair:
  - i) advise the Authority of the deficiency immediately;
  - ii) prepare appropriate design changes and make them available to the Authority for mandatory continuing airworthiness action; and
  - iii) make available the descriptive data concerning the changes to all operators of products affected by the mandatory action.

Descriptive data concerning changes to a modification or repair would normally be published in the form of a Service Bulletin. The approval holder's responsibility includes the need to advise operators of any vendor bulletins for equipment included in a modification.

### 11.0 Structural Repairs

The design of repairs for structural components must take into consideration the nature of the structure involved. Three different structural philosophies have been used in the design of aircraft structures which are in service at present. These are discussed below.

#### a) Safe-life

This is a term applied to a structure that has been evaluated as being able to withstand the repeated loads of variable magnitude expected during its service life without detectable cracks. Safe-life structure often has a non-redundant arrangement of load-carrying members. Because failures of elements of this type of structure can be critical to the safety of the aircraft, fatigue life limits are carefully determined and it is mandatory to remove safe-life components from service when the life limits are reached.

Because configuration changes can drastically affect fatigue life, the repair of a safe-life component necessitates that the remaining life be re-established and approved by, or on behalf of, the Authority. In most cases this task should not be attempted without the assistance of the organization having responsibility for the type design.

#### b) Fail-safe

This is a term applied to a structure that has been evaluated to ensure that catastrophic failure is not probable after fatigue failure or obvious partial failure of a single, principal structural element. A fail-safe structure is characterized by multiple or redundant load paths. Considerations which should be addressed in the design and substantiation of repairs to fail-safe structure include:

- i) The static strength must be shown to be adequate after failure of single neighbouring structural elements, i.e. fail-safe design cases must be considered;
- ii) Fail-safe design features must not be compromised (e.g. integrity of crack stoppers must

- be maintained);
- iii) Inspectability must be maintained or, alternatively, appropriate non-destructive inspection procedures introduced;
  - iv) Good detail design should be employed to reduce to the extent possible, the introduction of stress raisers leading to premature fatigue cracking of the repair or the surrounding area; and
  - v) The structural inspection intervals for the area repaired should be re-assessed to determine whether they should be shortened to account for possible fatigue life reduction resulting from the repair.

### c) **Damage tolerant**

This is a term applied to a structure that has been evaluated to ensure that should serious fatigue, corrosion, or accidental damage occur within the operational life of the aircraft, the remaining structure can withstand reasonable loads without failure or excessive structural deformation until the damage is detected. Characteristics often, but not always, found in a damage tolerant structure include multiple or redundant load paths, materials with slow crack growth rates, ability to withstand relatively long cracks before unstable crack growth occurs, and design for good inspectability. An effective structural inspection programme is an essential element of damage tolerant design and must be developed to permit adequate opportunity to detect damage in principal structural elements before such damage becomes critical.

Substantiation of a repair to a damage tolerant structure requires that a damage tolerance evaluation be performed in addition to a static strength substantiation. The damage tolerance evaluation requires a determination of the probable location and modes of damage due to fatigue, corrosion and accidental damage. Fatigue initiation thresholds and crack propagation rates must be established. Inspection methods, thresholds and frequencies must be defined such that the residual strength of the repaired structure at any time during the operational life of the aircraft is sufficient to withstand the damage tolerance load cases listed in the applicable design requirements. The aircraft damage tolerance documentation must be revised to reflect new inspection methods, thresholds and frequencies established for the repaired structure and the revisions approved by, or on behalf of, the Authority of State of Design. A damage tolerance assessment should not normally be attempted without the assistance of the organization having responsibility for the type design.

### **12.0 Service Limitations for Repairs**

Pending the completion of a permanent repair, it is occasionally necessary to restore a damaged aeronautical product. Such a repair may be permissible under controlled operating conditions and subject to the approval of the Authority. Two categories in which service limitations apply are described below.

**12.1 Interim repairs** are deemed to comply with applicable design standards at the time of their



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implementation and for a limited time thereafter. However, they may be subject to long-term effects which in time would compromise their compliance with regulatory requirements. An example of an interim repair is a structural repair which has been shown to have adequate static strength, but which has not been substantiated for damage tolerance requirements. In such a case a two-stage evaluation may be acceptable, as follows:

- (a) A static structural strength evaluation is made prior to release of the aircraft into service with a stated time for completion of the damage tolerance evaluation; and
- (b) A damage tolerance evaluation of the repair is made within the prescribed time period after this interim release.

**12.2 Temporary Repairs** do not fully restore damaged components to compliance with applicable regulatory requirements, but instead restore the aircraft to a condition acceptable for ferry flight, with appropriate restrictions, to a maintenance base for permanent repair.

## 13.0 Compatibility of Modifications and Repairs

13.1 When any modification or repair is installed on an aircraft, care must be taken to ensure that it is compatible with all other design changes installed on that aircraft. Modifications or repairs designed separately may conflict or interfere with each other, despite having been individually analysed, tested and shown to comply with all applicable standards of airworthiness. Interaction between different modifications or repairs may be of a physical, aerodynamic, structural or fatigue strength, electromagnetic or any other nature. Such interaction may jeopardize the airworthiness of the aircraft.

13.2 An example of potential incompatibility would be a repair installed in close proximity to an existing repair. While the two repairs individually may be completely satisfactory if separately installed on an aircraft with no other design changes in the vicinity, the combination in close proximity may introduce additional stress concentrations which cause fatigue cracks to occur after a period of time in service. The designer of a repair scheme should survey the aircraft to be repaired to establish whether there are any other design changes in the vicinity which may interfere. In the case of an existing repair in close proximity to the new damage, it may be necessary to remove the old repair and install a new repair encompassing both damage areas, designed in a manner to reduce any stress concentrations to a level that will not produce fatigue cracking.

13.3 In a more general situation, modifications may be separately designed for the same basic aircraft type by different organizations with no knowledge of the other's work. The modifications may be shown separately to comply with all applicable airworthiness standards; however, on attempting to install them on the same aircraft, it may be found that they physically interfere with each other. Alternatively, no problems may be encountered with the installations, but it may be found in service that the combination causes aerodynamic buffeting, stability or control problems, fatigue cracking, structural failure, electromagnetic interference, or any number of other problems. If the concurrent installations of different modifications are not rigorously assessed for compatibility, there exists the possibility that in combination they may cause serious airworthiness hazards.



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## 14.0 Responsibility to Modifications and Repairs

Modifications and repairs may be designed by the same organization that operates the aircraft into which they are incorporated. In the more general case, however, the organization that designs and obtains design approval for the modification or repair, the operator of the aircraft, and the organization that installs the design change on the aircraft may all be different. Their separate responsibilities are discussed below.

### 14.1 Responsibilities of holders of approvals [TC/STC]

14.1.1 In the case of a design change intended as a unique installation on a single aircraft, the aircraft records and the aircraft itself should be surveyed to identify all other design changes to the aircraft which may in any way interfere with the proposed installation. All such existing installations should be considered in the analysis and testing conducted to demonstrate compliance with the standards of airworthiness.

14.1.2 In the more general case where a design change is intended to be sold to many aircraft operators and incorporated on multiple aircraft, it may not be feasible for the designer of the modification or repair to obtain knowledge of the modification status of every aircraft affected. The designer should account for the effects of any potential incompatibilities between the proposed design change and any known existing or reasonably foreseeable modifications or repairs when conducting analyses and tests to demonstrate compliance with the standards of airworthiness and obtain design approval. Alternatively, limitations may be placed on the design change, explicitly advising potential users that it has not been cleared for compatibility with other modifications or repairs and that the installer should obtain separate design approval for installation in combination with those others.

14.1.3 The holder of a design change approval has a responsibility to assist the approving Authority to correct airworthiness deficiencies discovered in service which relate to the design change. If, during the course of investigating a perceived unsafe condition related to the design change, the approval holder determines that the unsafe condition results from an incompatibility between the design and another modification or repair, the approval holder should notify the Authority immediately and recommend corrective measures. If the Authority determines that the design change must be altered to prevent the unsafe condition from occurring in other aircraft on which it is installed, it will normally require the approval holder to develop the corrections and issue instructions for the installer. These instructions should provide corrective measures for existing installations and revisions to the installation instructions for future installations. The Authority should issue an airworthiness directive to mandate the measures to correct the deficiency on existing installations.

### 14.2 Responsibilities of Installers

Because the holder of a design approval for a particular modification or repair cannot be expected to be aware and to have conducted analyses and tests for all the possible design changes installed on all aircraft of a given type, the installer has a responsibility to verify compatibility with other modifications and repairs before installing any design change. The installer should survey the



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aircraft records and the aircraft itself to determine what other design changes exist on the aircraft. Any questions of incompatibility with other modifications or repairs arising from the survey should be referred for resolution to the operator.

## 14.3 Responsibilities of Operators

14.3.1 Operators have the overall responsibility to ensure the compatibility of all design changes incorporated in their aircraft. The operator contracting with an installer for incorporation of any aircraft modification or repair should provide the installer with information on all existing design changes to the aircraft so that compatibility may be verified. Any questions of design change incompatibility which may arise during installation or in service should be thoroughly investigated by consultation with the approval Authority or approval holder, or by an independent engineering organization. In every case of incompatibility between modifications or repairs, the problem must be corrected and it must be established to the satisfaction of the Authority of the State of Registry that the modified aircraft continues to comply with the applicable standards of airworthiness.

14.3.2 In addition to correction of the problem on the aircraft on which it is discovered, it is necessary that any incompatibilities between modifications or repairs be addressed on all other affected aircraft. The operator should promptly report any design change incompatibilities detected during installation or in service to the approval holder, to the installer and to its own local Authority.

## 14.4 Responsibilities of States

The Authority issuing a design change approval should require that compatibility with other existing modifications, repairs and airworthiness directives be adequately verified. Additionally, some authorities have a standard caution statement concerning compatibility with other design changes, which is included on each modification and repair approval document issued.

## 15.0 Application for Approval of Major Modifications and Repairs

15.1 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 approval of major modifications and/or repairs.

15.2 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

A handwritten signature in black ink, appearing to be 'A. P. ...', is written over a light blue horizontal line.

**Director Safety Regulation**