

**DEPARTMENT OF CIVIL AVIATION
MALAYSIA
AIRWORTHINESS NOTICE**

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Date: 15 May 2005

APPROVAL OF MODIFICATION

1. INTRODUCTION

1.1 Modifications are changes made to a particular aircraft, including its components, engines, propellers, radio apparatus, accessories, instruments, equipment, and their installations. Substitution of one type for another when applied to components, engines, propellers, radio installation, accessories, instruments and equipment, is also considered to be a modification.

Note : A repair, the design of which has not been approved under the Type Certification process, must be treated as a modification.

1.2 The approval of modifications will be subject to compliance with the procedures outlined in this document.

1.3 Approval is only issued for a change that is not so extensive as to require a new Type Certificate. Determination of such changes shall be made by DCA.

Note : A new Type Certificate (TC) is required when the proposed change in design, configurations, power, power limitation (engine), speed limitation (engine), or weight is so extensive that a substantially complete investigation of compliance with the applicable regulations is required.

1.4 Applicant is required to ensure that the proposed modification can be incorporated to the subject aircraft or its components and that the interrelationship between the modification and any other modification(s) incorporated will not adversely affect the airworthiness of the modified product. Inspection of appropriate documents of the aircraft or its components (such as log books and modification record book) is necessary to determine the status or history of the subject aircraft or its components.

1.5 Definitions of terms used in this document :

DATA PACKAGE A set of documents required for the justification/accomplishment of the modification.

APPROVED DATA Data Package that have been investigated and approved by DCA or an acceptable authority such as FAA, JAA and UK CAA. Data approved by other than DCA, are classified as either OEM DATA or NON-OEM DATA.

ORIGINAL EQUIPMENT MANUFACTURER (OEM) The organisation responsible for the design of the certificated equipment/product e.g. the holder of TC, TSOA or PMA

DESIGN ORGANISATION APPROVAL (DOA) An organisation that is approved by the DCA for design activities.

STATEMENT OF COMPLIANCE (SOC) A form used as the top-level document for the data package. SOC form shall be signed by a Design Approval signatory or authorised person. The SOC form is available from the DCA. (See Appendix 5)

CERTIFICATION COMPLIANCE DOCUMENT (CCD) A controlled document which addresses each applicable section of the regulations. An acceptable format is available from the DCA as a sample. (See Appendices 2 and 3)

MODIFICATION DOCUMENT A document providing details of the modification and its accomplishment instructions. It is generated by the applicant and based on a standard format provided by the DCA. The format (see Appendix 4) for the form is based on the Service Bulletin format and shall include, as a minimum, the following :

- Part I, Planning Information
- Part II, Accomplishment Instructions
- Part III, Material Information

2. APPROVED DATA CLASSIFIED AS OEM DATA

2.1 Modifications contained in STC (FAA), STC (JAA) or AAN (UK), which are classified as OEM Data, requires DCA Installation Approval. (See Appendix 7)

- 2.2 Modifications contained in Service Bulletins approved by the authority for State of Design, which are classified as OEM Data, need not be submitted for approval.
- 2.3 For incorporation of the modifications, the instructions and limitations (including the applicability) of these modifications shall be strictly followed without any deviation. Any deviation from these Approved Data shall be considered as a new modification and will be subject to compliance with the procedures outlined in this document.
- 2.4 The data package for the modifications shall include information pertaining to the operational limitations, weight & balance changes, Flight Manual Supplements and amendments to the Illustrated Parts Catalogue (IPC) and Maintenance Manual.

3. APPROVED DATA CLASSIFIED AS NON-OEM DATA

- 3.1 Approved Data, which are classified as Non-OEM Data, must be submitted to DCA for review and approval. These modifications may be in the form of STC (FAA), STC (JAA) or AAN (UK).
- 3.2 These modifications shall be reviewed and approved by the DCA, either directly, or through the modification procedures of a DOA to ensure that they are applicable and suitable for incorporation on the aircraft. The review will also ensure that the data package for the modifications is complete and includes information pertaining to the operational limitations, weight & balance changes, Flight Manual (FM) Supplements and amendments to the Illustrated Parts Catalogue (IPC) and Maintenance Manual (MM). All the required information pertaining to the installation, operation and continuing airworthiness shall also be available.
- 3.3 For incorporation of the modifications, the instructions and limitations (including the applicability) of these modifications shall be strictly followed without any deviation. Any deviation from these Approved Data shall be considered as a new modification and will be subject to compliance with the procedures outlined in this document.
- 3.4 When the application for the modification is undertaken by other than a DOA, a SOC shall be completed, signed by an authorised person of the organisation and submitted to the DCA.
- 3.5 The data package for the application shall consist at least the following:-
 - a) SOC.
 - b) Modification document.
 - c) The approval certificate such as STC, AAN or any other document from the foreign authority.
 - d) Associated documents for incorporation of the modification.
 - e) Manuals amendments such IPC, MM, FM (if applicable).
 - f) Airworthiness limitations.
- 3.6 If the modification is very complex, close monitoring of the modification work may be necessary. The modification will only be approved when all the conditions and requirements are satisfied.

4. OTHER THAN APPROVED DATA

- 4.1 A Data Package which have not been classified as Approved Data is further classified as either Major or Minor Modification according to the following (refer Appendix 6) :
 - 4.1.1 **Major Modifications** are changes that :-
 - a. have appreciable effect on the weight, balance, structural strength, reliability, operational characteristics, or other characteristics affecting the airworthiness of the product. **or**
 - b. are not done according to accepted practices or cannot be done by elementary operations. **or**
 - c. require the particulars given in the Certificate of Airworthiness, or associated documents, be amended, even though no physical change to the product is involved.
 - 4.1.2 **Minor Modifications** are changes other than major modifications.
- 4.2 At an early stage of the design of a modification, brief particulars shall be provided to the DCA so that the modification may be classified and certification basis may be defined.
- 4.3 All major modifications shall be approved by the DCA. Application for major modifications shall only be made by a DOA via the SOC form, signed by an approved signatory. A CCD shall also be required for major modifications but it is not required for repair schemes.

- 4.4 All minor modifications shall be approved by the DCA, either directly, or through the modification procedures of a DOA. When the design of the modification is undertaken by other than a DOA, a SOC shall be completed, signed by an authorised person of the organisation and submitted to the DCA.
- 4.5 The applicant may, under the sub-contract arrangement, use the services of a competent design organization outside Malaysia such as FAA Design Engineering Representative (DER), JAA Approved Design Organisation, etc to assist the applicant in preparing the data package.
- 4.6 The applicant shall ensure, where necessary through the medium of an Organisation approved by the DCA for the purpose, that the proposed modification is such that the design of the aircraft, when modified, complies with the following :-
- a) The requirements in force at the time the aircraft type was originally certified. Regulatory and design requirement that have been amended since the issue of the initial Type Certificate will also be considered.
 - b) Such other requirements as the DCA may notify, in writing, in respect of the aircraft design.
- 4.7 All relevant design information, drawings and test reports shall be held at the disposal of the DCA. No such design records shall be destroyed without authorisation from the DCA.
- 4.8 Each design drawing shall bear a descriptive title, drawing number, issue number and date of issue. All alterations to drawings shall be made in accordance with a drawing amendment system such as will ensure amendment to design records.
- 4.9 Immediately after an alteration is made to a drawing, whether the alteration is permanent or temporary, the drawing shall be identified with a new issue number and date. Where an alteration affects the interchangeability of any item in any way, a new part number shall be issued such as to avoid confusion with the original item.
- 4.10 Where modifications affect unit interchangeability, or are of such an extent as to require amendment of approval documents or any documents associated with the Certificate of Airworthiness, a separate type design or designation reference shall be allocated to the modified unit.
- 4.11 Information concerning the conditions of acceptance of modifications previously approved by the DCA will not be confidential to the applicant and may be made available by the DCA on request. This does not apply to design information, including drawings and test reports; these are held, by the DCA, as confidential documents.

5. APPROVAL APPLICATION FOR OTHER THAN APPROVED DATA

- 5.1 The data package for the application of approval shall consist of at least the following :-
- a) Standard documents Modification documents
SOC
CCD (if applicable)
Manuals amendments (if applicable)
 - b) Type Design documents Drawings
Specifications
Information on dimensions, materials and processes
Airworthiness limitations
Any other data necessary to describe the modification
 - c) Substantiating data Test and analysis reports
Justification reports

6. REVIEW OF MODIFICATIONS

- 6.1 Applicants are advised to refer to the flowchart in Appendix 1 of this notice before submitting the data package to DCA. The definitions of the terms use in the flowchart are in paragraph of 1.5 above.
- 6.2 DCA may conduct compliance inspections and witness tests to establish the compliance of the modification to the applicable regulations.
- 6.3 When no further compliance inspection is required, consent will be provided for the modification work to proceed and to signify the acceptance of the design data.
- 6.4 Conformity inspections may also be conducted to ensure that conformity to the approved data is established.

- 6.5 Flight test, if required, shall only be conducted after a satisfactory conformity inspection
- 6.6 All amendments to documents, such as Maintenance Manual, Illustrated Parts Catalogue, Weight and balance report/schedule/record and Flight Manual Supplement, affected by the modification shall be submitted to DCA.
- 6.7 The modification approval shall only be issued when the DCA determines that the modification meets the applicable requirements, i.e. :
- a) the pertinent technical data have been examined and found satisfactory,
 - b) all necessary tests and compliance inspections have been completed,
 - c) the modification has been found to conform with the technical data,
 - d) all relevant amendment to affected documents are available.
- 6.8 Once the SOC is approved, the data package is considered as an Approved Data and incorporation of the modification on other aircraft is subject to the established applicability. Installation Approval will also be issued for successful application to authorize the incorporation of the modification.

7 Cancellation

This Notice cancels Airworthiness Notice No. 78, Issue 1, dated 1 October 2002, which should be destroyed.

DIRECTOR GENERAL
DEPARTMENT OF CIVIL AVIATION
MALAYSIA