

# General Policy for Approval of Types and Specifications of Appliances

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Airworthiness Division, Engineering Department  
Civil Aviation Bureau  
Ministry of Land, Infrastructure, Transport and Tourism

Note:

This is a translation of JCAB Circular for reference and shall not be construed as an official text.

(translated on Nov. 27, 2015)

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Director-General, Civil Aviation Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism

## Part I: Guidelines for Type/Specification Approval of Appliances (Order of the Director-General, Civil Aviation Bureau)

### Chapter 1: General Provisions

(Purpose)

Article 1. The purpose of the Guidelines here is to establish procedures and others for carrying out approvals or authorizations of the following items:

- (1) Approvals for types or specifications of equipment or parts (hereinafter referred to as “appliances”), according to the provisions of Article 14 of the Civil Aeronautics Regulations (Ordinance of the Transport Ministry/No. 56/1952; hereinafter referred to as “CAR”);
- (2) Authorizations of appliances in compliance with the approved type, according to the provisions of Article 15 of the CAR; and
- (3) Approvals for types of Specified Emergency Equipment, according to the provisions of Article 152 of the CAR.

### Chapter 2: Type/Specification Approvals of Appliances

(Application)

Article 2. The documents attached to the application under Article 14-2 Paragraph (1) of the CAR, and when to submit them, should be as follows.

Still, some of the documents may be omitted, when intending to make a change or an addition regarding the type(s) or specification(s) of the appliances already approved, or in the case of such documents considered unnecessary because of their nature.

Item	When to submit
<ol style="list-style-type: none"> <li>1. Specifications</li> <li>2. Drawing list</li> <li>3. Parts list</li> <li>4. Inspection procedures to obtain authorizations according to Article 15 of the CAR (applicable only in the case of type approval)</li> <li>5. Inspection procedures for completed products (applicable only in the case of specification approval)</li> <li>6. Compliance checklist</li> <li>7. Document containing the method of markings that should be made according to the provisions of Article 14-2 Paragraph (4) of the CAR</li> </ol>	<p>When the application is made</p>
<ol style="list-style-type: none"> <li>8. Procedures to report service difficulties</li> <li>9. Procedures for issuing technical information (service bulletin)</li> <li>10. Analysis documents and others enough to substantiate that the type or specification intended to be approved complies with the standards specified in the Appendices to the CAR, or with such standards that the Director of Airworthiness Division considers equivalent to the said ones, and drawings</li> <li>11. Document explaining the method of quality control</li> <li>12. Service manual (including procedures for maintenance and installation)</li> </ol>	<p>Not later than 30 days before the date desired by the applicant for starting inspection (Regarding the test report in the case of intending substantiation by test(s), it should be submitted as soon as possible after the test(s).)</p>

(Inspections)

Article 3. When an application under preceding article is made, more than one specimen of the appliances manufactured according to the type or specification concerned are inspected based upon the following, so as to determine whether the appliances of the said type or specification can secure the safety of aircraft: regarding the design concerned, compliance checklist as well as the documents to substantiate the safety of the type or specification intended to obtain approval; regarding the manufacturing process, the documents explaining the method of quality control; and regarding the current condition after completion of the products, inspection procedures to obtain authorizations according to Article 15 of the CAR (applicable in the case of type approval) or inspection procedures for completed products (applicable in the case of specification approval). Still, some or all of the inspections may be omitted for such products as follows: products recognized similar to the types or specifications already approved; appliances produced by foreign manufacturer(s) and approved by the government of the manufacturing country; products authorized by the Ministry of Defense; and products which have obtained Type Approval from the

Ministry of Internal Affairs and Communications.

(Approval)

Article 4. If it is recognized, as a result of inspections under preceding article, that the appliances of the type or specification concerned can ensure the safety equivalent to or higher than the standards specified in Appendix 1 to the CAR, type approval or specification approval for appliances is issued regarding the appliances concerned.

2. When issuing an approval under preceding paragraph, the Appendices to the Certificate of Approval are to be the documents 1 to 7 specified in Article 2.

(Revocation of approval)

Article 5. If a person who obtained a type approval or specification approval for appliances has manufactured appliances in violation of the content(s) of the certificate of approval or the appendices thereto, the approval may be revoked.

(Reissue of the certificate of approval)

Article 6. A person who request reissue of the certificate of approval because he/she has lost, broken or stained it, should submit an application for reissue of the certificate of approval (Form TCF-23-14A).

(Markings)

Article 7. Regarding the appliances manufactured according to the approved type or specification, following items must be indicated on their bodies. Still, such indication may be marked on the package or others, if it is impossible to mark on the body.

- (1) Nomenclature of the appliances, as well as its type/specification name or part number;
- (2) Serial number or production lot number;
- (3) Category of the approval concerned and the approval number;
- (4) Date when the company inspection was performed, as well as the stamp to show the criteria were satisfied; and
- (5) Due date for service limit (only if necessary).

(Report of service difficulties)

Article 8. When any defect or failure that may seriously affect the safety is found in the appliances manufactured according to the approved type or specification, the manufacturer must report to the Director of Airworthiness Division in a manner specified separately by the Director.

(Service bulletins)

Article 9. Regarding the appliances manufactured according to the approved type or specification, if

an approval of such change(s) as modification(s) for higher performance or due to defects/failures is obtained from the Minister for Land, Infrastructure, Transport and Tourism, or if there is such technical information that is desirable to be known to customers, the manufacturer must issue a service bulletin in a manner specified separately by the Director of Airworthiness Division.

## Chapter 3 Authorization of Appliances

(Application)

Article 10. In relation to appliances, those who request authorization under Article 15 of the CAR (hereinafter referred to as “the authorization”) should submit an application for authorization inspection (Form TCF-23-11-2A) to the Director-General of the Regional Civil Aviation Bureau having jurisdiction over the location of the factory producing the appliances for which the authorization concerned is requested, no later than 10 days before the day when the inspection is desired.

(Inspection)

Article 11. The inspection under Article 15 Paragraph (1) of the CAR is conducted according to the inspection procedures specified in the appendices to the certificate of approval.

(Authorization)

Article 12. The authorization is granted to the appliances recognized satisfactory through the inspection under the preceding article, by issuing a tag (Form TCF-137A) with an authorization stamp (TCF-1-133).

## Chapter 4 Type Approval of Specified Emergency Equipment

(Type approval of Specified Emergency Equipment)

Article 13. The provisions of Chapter 2 are applied accordingly to type approvals of emergency appliances. In this case, read as follows: in the table in Article 2, “specification approval” should read “approval of types of Specified Emergency Equipment under the provisions of Article 152 of the CAR”, and “Article 14-2 Paragraph (4) of the CAR” should read “Article 152 Paragraph (5) of the CAR” respectively; and, in Article 3, “specification approval” should read “approval of types of Specified Emergency Equipment under the provisions of Article 152 of the CAR.”



Supplementary Provisions

A Type Approval-Authorization Inspection- Authorization Tag by Form TCF-137 may be in use for the time being besides Form TCF-137A.

## Application for Reissue of the Certificate of Approval

Addressed to: \_\_\_\_\_ (Minister's name)

Minister for Land, Infrastructure, Transport and Tourism

Application Date: \_\_\_\_\_

Applicant's address: \_\_\_\_\_

Applicant's name: \_\_\_\_\_ (Stamp)

I hereby submit to you an application for reissue of the Certificate of {select "Type" or "Specification"} Approval set forth below.

Certificate Number	
Holder's name	
Holder's Address	
Reason for Application	
Remarks	

Note: Japanese Industrial Standard A4 size

Signature of an applicant is acceptable, instead of entering his/her name along with the stamp.

Form TCF-23-11-2A

Application for Authorization Inspection

Addressed to: Director-General, {select “Tokyo” or “Osaka”} Regional Civil Aviation Bureau

Application Date: \_\_\_\_\_

Applicant's address: \_\_\_\_\_

Applicant's name: \_\_\_\_\_(Stamp)

I hereby submit to you an application for Authorization Inspection regarding {enter Nomenclature Concerned} of which details are as follows.

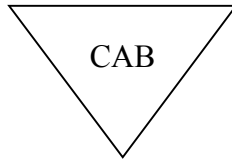
Nomenclature	
Type Name	
Type Approval Number	
Quantity and Serial Number(s)	
Inspection Location Desired	
Inspection Date Desired	
Remarks	

Note: Japanese Industrial Standard A4 size

Signature of an applicant is acceptable, instead of entering his/her name along with the stamp.

Front Side

Form TCF-137A



Authorization Stamp  
(TCF-1-133)

Type Approval-Authorization Inspection-Authorization Tag

(Tokyo or Osaka) Regional Civil Aviation Bureau

Authorization Inspection-Authorization Granted on: \_\_\_\_\_ (Date)

Type Approval Number: \_\_\_\_\_

Nomenclature: \_\_\_\_\_

Type: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Applicant's Name: \_\_\_\_\_

No. \_\_\_\_\_

No. \_\_\_\_\_

Type Approval Number: \_\_\_\_\_

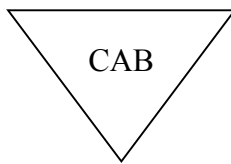
Nomenclature: \_\_\_\_\_

Type: \_\_\_\_\_

Serial number: \_\_\_\_\_

Applicant's Name: \_\_\_\_\_

Remarks: \_\_\_\_\_



Authorization Stamp  
(TCF-1-133)  
\_\_\_\_\_  
(Date)

Back Side

- 1 This product has been authorized to be the article which conforms to such type approved by the Minister for Land, Infrastructure, Transport and Tourism that are specified on the front side.
- 2 When installing this product in an aircraft, it requires evaluation through inspection for Airworthiness Certification or Spare Part Certification, or through an Inspection of Repair or Alteration.
- 3 In the inspection of the preceding paragraph, compliance with the technical standards referred to in Article 10 Paragraph 4 of the Civil Aeronautics Law is considered to be certified, as long as this product is concerned.

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Director of Airworthiness Division,  
Aviation Safety and Security Department,  
Civil Aviation Bureau,  
Ministry of Land, Infrastructure, Transport  
and Tourism

## Part II: Guidance to Type Approval and Specification Approval

### Chapter 1: General Provisions

#### 1-1 Purpose

The purpose of this Guidance is to establish basic procedures practically in relation to the matters required when carrying out processes for approval of a type and specification (hereinafter referred to as “type/specification”) based upon “Guidelines for Type/Specification Approval of Appliances (hereinafter referred to as ‘the Guidelines’)”.

NOTE: The procedures regarding engines, equipment, parts and Specified Emergency Equipment designed in foreign countries are prescribed in other document.

#### 1-2 Related Laws and Regulations

This guidance is based upon the related laws and regulations as follows:

- (1) Civil Aeronautics Law (Law No. 231 of 1952: hereinafter referred to as “the Law”) (Related provisions: Articles 10 and 62)
- (2) Cabinet Order relating to the Enforcement of Civil Aeronautics Law (Cabinet Order No. 421 of 1952)
- (3) Civil Aeronautics Regulations (Ordinances of the Ministry of Transport/No. 56 of 1952: hereinafter referred to as “CAR”) (Related provisions: Articles 14, 14-2, 15 and 152, and Appendix 1)

### Chapter 2: Application

A person wishing to obtain the approval for types/specifications of components/parts (hereinafter referred to as “components”) or types of prescribed emergency equipment subject to Type/Specification Approval, based on paragraph (1) of Article 14-2 of the Regulations for

components based on paragraph (2) of Article 152 of the Regulations for prescribed emergency equipment, shall complete an application to the Minister of Land, Infrastructure, Transport and Tourism, and file the same to the Airworthiness Division, Aviation Safety and Security Department, Civil Aviation Bureau, with relevant documents such as annexes attached.

## 2-1 Categories of Applications

Applications are categorized as follows for the sake of convenience. Meanwhile, there will be no significant difference in basic procedures among application categories.

### (1) New application

This means an application made when seeking an approval for the first time, regarding a type/specification of an appliance covered by Type/Specification Approval or of Specified Emergency Equipment. Even in the case that the applicant has already obtained an approval for some type/specification, and further if he/she intends to obtain an approval for a different type/specification, this category is applied.

### (2) Amendment Application

This means an application made when seeking an approval for changes to a type/specification already approved or to the contents of the Attachment (technical data file).

### (3) Additional application

This means an application made when intending to add a derivative model — from the basic design of a type/specification already approved (hereinafter referred to as “the original type/specification”) — on to the basic type/specification, as to be the same series model (or the derivative model).

### (4) Amendment Application or additional application, regarding manufacturers or factories

This means an application made when intending to change or add a manufacturer or factory related to a type/specification already approved — including cases where only the name of the manufacturer or factory is to be changed.

## 2-2 Submission of the Application

The form of an application is as follows: for appliances, Application for Approval of Type/Specification of Appliances under CAR Article 14-2 Paragraph (1) (CAR Form No. 7-2: refer to the Attachment 2 of this Guidance); for Specified Emergency Equipment, Application for Approval of Type of Specified Emergency Equipment under CAR Article 152 Paragraph (2) (CAR Form No. 28-3: refer to the Attachment 3 of this Guidance).

### (1) Applicant

An applicant should be a person who designed appliances or Specified Emergency Equipment intended to obtain a Type/Specification Approval.

Meanwhile, in the case that any other person than those who designed the article concerned will make an application as a representative: the representative for application should state clearly at the stage of application that he/she is delegated as a representative by the person who



designed the article concerned; and further, the representative is requested to act appropriately, responding to inquiries from the Civil Aviation Bureau (hereinafter referred to as “the CAB”) in relation to the contents of the documents to be submitted as an attachment to the application as well as of the documents to be presented to the CAB, and ensuring that inspections are carried out smoothly.

(2) Classification of appliances.

Concerning the “classification” of appliances, such names that are shown as examples in the Circular “Parts Covered by Type Approval” or “Parts Covered by Specification Approval” are, in principle, to be used. If there is no applicable name in the circulars or in the case that the name(s) shown in the circulars is/are inappropriate, such term(s) that is/are popular in the aviation community may be used.

As for the “classification” of Specified Emergency Equipment, applicable one among the following should be used: emergency signal light, life jacket, life raft, airborne emergency locator transmitter, or parachute.

(3) Type/Specification name

In principle, a Type/Specification name is assigned as follows for each Type or Specification:

(Example) “{enter Make} Model \_\_\_\_\_”  
(Designer's name)

(3-1) How to arrange Types or Specifications

(3-1-1) How to deal with Types/Specifications of series models

This relates to the case that an applicant intends to obtain approval for more than one type/specification belonging to same classification: if the articles concerned are derivative models from the basic design of each Type/Specification, and further, if it is considered appropriate to treat them as types/specifications of the same series (hereinafter referred to as “series types/specifications”), they may be treated as series types/specifications: in this case, the title of “Type/Specification series” may be established representing the articles concerned.

Also in the case that an applicant intends to obtain another approval for the type/specification of an article to which modification has been made to the extent that the modification concerned basically brings about no effect on the original Type/Specification, the following will apply: if that article concerned is a derivative model from the original type/specification, and further, if it is considered appropriate to treat that article as one of the series types/specifications, it may be treated as series type/specification, and the title of “Type/Specification series” may be established representing the articles concerned.

Each Type/Specification name of series types/specifications should be established so that mutual relations are clear by adding “- Number” following the name representing Type/Specification series, or in a similar manner. In addition, the details of establishing series types/specifications should be discussed with the CAB personnel in charge.

(Example)	Type/Specification series name	Type/Specification name	Part number
	{enter Make} Model XY series	{enter Make} Model XY-1 {enter Make} Model XY-2 {enter Make} Model XY-3	XY-1-1, XY-1-2 XY-2-1, XY-2-2 XY-3-1, XY-3-2

(3-1-2) How to deal with types/specifications related to systems

This relates to the case that an applicant intends to obtain approval for more than one types/specifications which are different each other but belong to the same system; and if said types/specifications of appliances are integrated to work as a single system (e.g., autopilot system), such integrated system is treated as a single Type/Specification of system or considered to be a single Type/Specification.

(Example)	Type/Specification series name	Type/Specification name	Nomenclature
	{enter Make} Model XY system	{enter Make} Model XY-1 {enter Make} Model XY-2 {enter Make} Model XY-3	... control device ... display device ... control device

(3-2) Notes on arranging types/specifications

Even in the case of appliances designed for the same purpose, e.g., installation on a specific aircraft; any appliances — having, on the one hand, independent function respectively but, on the other hand, not recognized it proper to be dealt with among series types/specifications or types/specifications of a certain system (hereinafter referred to as “series Types/Specifications”)—should be treated according to each type/specification.

When an application is made in relation to series Types/Specifications, a Type/Specification series name should be entered in the blank for a Type/Specification name. In that case, each name of the types/specifications intended to obtain approval should be specified in the space for remarks.

- (4) Designer's name and address
- (5) Manufacturer's name and factory

A person representing the manufacturer and the factory concerned should be, in principle, the same person as the designer concerned or a person who belongs to the designer. A person representing the manufacturer and the factory may be different from the designer only when the designer concerned has enough ability to ensure to the manufacturer that each appliance or Specified Emergency Equipment manufactured conforms to the specifications.

- (6) Applicant’s proposal of location(s) and date(s) for official inspections

If an applicant proposes the dates of official inspections to be carried out, such proposal should be made, taking it into consideration that the documents of items from 8 to 12 in the table

in Article 2 of the Guidelines — except a test report — should be submitted no later than 30 days before the date desired by the applicant for starting official inspections. Some examples are shown as follows:

(Examples) Desired month: {enter “desired month”},  
Around {select “the beginning”, “the middle” or “the last”} ten days of {enter  
“month”}, or  
From {enter “starting day and month”} to {enter “ending day and month”}.

Note that the term of inspections here include inspections for manufacturing process, compliance inspections related to tests for substantiation and test witnessing.

(7) Remarks

The following items should be set forth in the blank for “Remarks”. If the blank for “Remarks” is not large enough to express all items, a separate document may be prepared and attached. In that case, such attached document should clearly be referred to in the blank for “Remarks” in a manner as follows:

(Example) For \_\_\_\_\_, refer to the Appendix \_\_\_\_\_.

↑ The title, document number, revision code (number) and issued date of the document to be attached

(7-1) Reason for application

(7-2) Outline of the Type/Specification

The outline of the Type/Specification intended to obtain approval should be described, along with schematic drawing(s).

Full description on the following is necessary: in the case of an amendment application, a description of the changes from the Type/Specification already approved, as well as the changes to the Attachment (technical data file); and in the case of additional application, the Type/Specification name(s) to be added, the differences from the original Type/Specification, as well as the changes to the Attachment (technical data file).

(7-3) Outline of the test(s) for substantiation and the schedule to carry out the test(s)

(7-4) Document List (including document number, revision code (number), and the date of submission) regarding submitted ones (including those under preparation)

(7-5) Name of the liaison person, along with his/her contact information

2-3 Submission of the Attachment (technical data file)

The following documents should be integrated into one package and submitted to the CAB personnel in charge, together with the application letter: documents 1 to 7 specified in the table in Article 2 of the Guidelines — specifications, drawing list, parts list, inspection procedures for completed products to obtain authorization (related to Type Approval), inspection procedures for completed products (related to Specification Approval), compliance checklist, and method of markings — along with a cover sheet, list of certificates of approval, amendment record, list of

effective pages, list of part numbers, and table of contents.

Meanwhile, in the case of “an amendment application” or “an additional application”, as well as in the case of “an amendment application or an additional application, regarding manufacturers or factories”, such pages that do not contain any changes etc. need not be submitted, except for the cover sheet, list of certificates of approval, Amendment record, list of effective pages, and list of part numbers.

### 2-3-1 General

#### (1) Paper size of documents

The paper size of documents is to be the Japanese Industrial Standard A4 size. Regarding drawings and the like, however, size changing into the A4 size or folding into the A4 size should be employed.

#### (2) Writing and binding methods of each document

The text of each document should be written horizontally (from left to right); and binding documents should be along the L/H edge (long side edge of the paper), as well as in a manner that allows easy replacement of sheets.

#### (3) Divider sheet

To make it easy to identify each document regarding the items specified in the table in Article 2 of the Guidelines, colored divider sheets of the same size as the text sheets are to be prepared, and the title of each item should be put down on each divider sheet. In addition, a tab with corresponding identification should be provided for each divider sheet.

#### (4) Numbering of pages

Page numbers should be provided in an appropriate manner on the pages of the Attachment (technical data file) — from the specifications to the method of markings, including drawings inserted as a part of the Attachment. In addition, each page should have provision to enter a revision code and the date of approval/acceptance.

Further, in the case of such series Type/Specification that the Attachment (technical data file) is prepared for each type/specification, either the type/specification name itself or letters to identify respective Type/Specification (e.g., Volume X) should be indicated besides each page number, in every Attachment (technical data file) prepared for each type or specification.

(Examples) AB XY-1/ 1 (“AB XY-1” corresponds to “Make and Model”, and “1” is an example of the page number.)

Vol. X/ 1 (“1” shows an example of the page number.)

In relation to an amendment application or an additional application; if the description of some pages of the Attachment (technical data file) already approved is to be amended, a vertical line should be provided in the R/H margin of each relevant page, corresponding to each portion related to the amendment; in addition, the revision code should also be indicated. Further, in the case that a new page or new pages is/are to be added, the page number of each additional page

should be indicated in order following “-” (dash) applied after the page number just before the page newly added.

(Example) 25-1, if the page is inserted between pages 25 and 26

46-2, if the page is inserted between pages 46-1 and 47

Notwithstanding above, if intending to revise most part of the Attachment (technical data file), it is preferable to put page numbers sequentially again.

(5) Filing the documents

Each document file (binder) should be such one with a hard cover as thick as possible — at least as thick as the cover sheet of letter files on the market; and further, the following items should be indicated on the spine (back) of each file. Meanwhile, if all the documents cannot be banded in one file, “each volume number/total number of volumes” should be indicated to know total volumes at any time.

<1> “Attachment (technical data file) to the Certificate of Type or Specification Approval No. XXX”

The approval number should be as follows: in the case of a new application, the blank need not be filled, and the approval number will be entered after obtaining approval; and in the case of an amendment application or an additional application, enter the approval number for it (see the Explanation in Section 2-3-4).

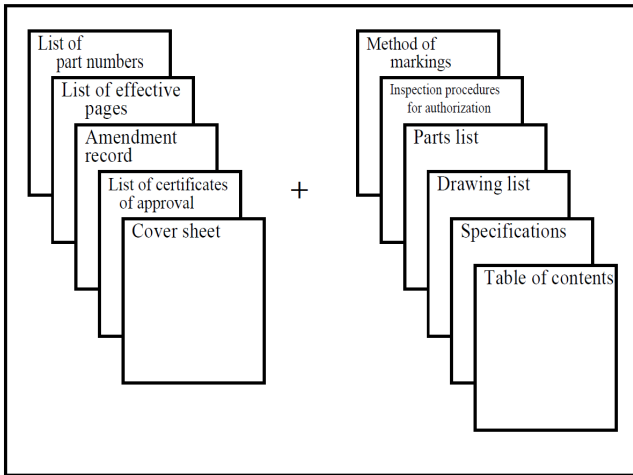
<2> Classification and Type/Specification name of the appliances or of the specified emergency equipment

The classification and the Type/Specification name should be those set forth in the application.

<3> The name of the person who designed the articles

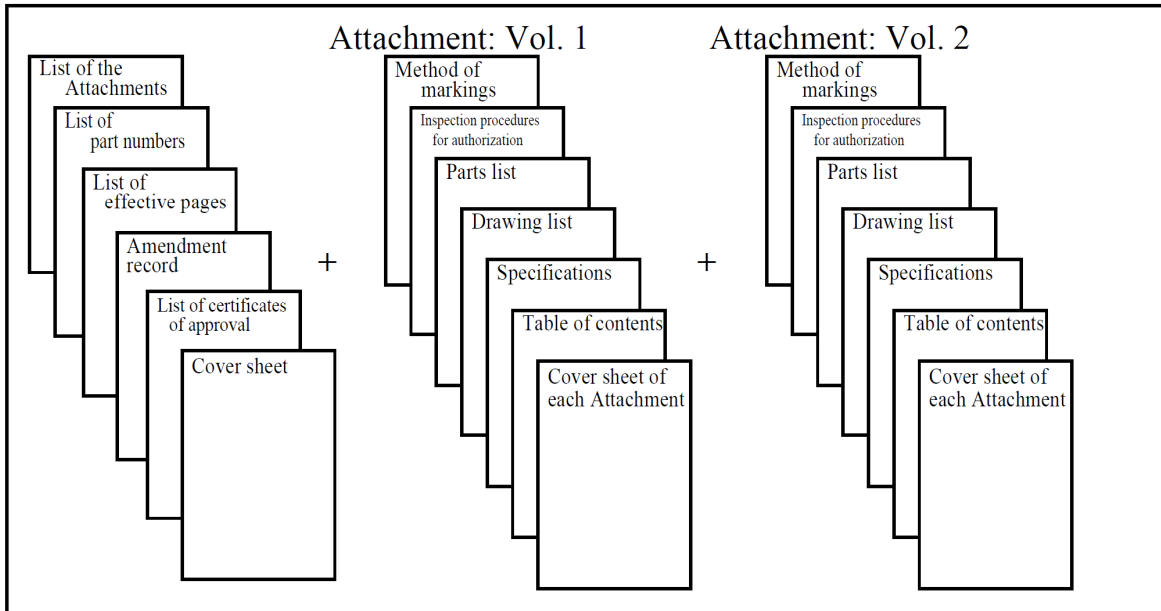
2-3-2 Methods to edit Attachment (technical data file)

(1) Method to cover series Types/Specifications in one volume of an Attachment

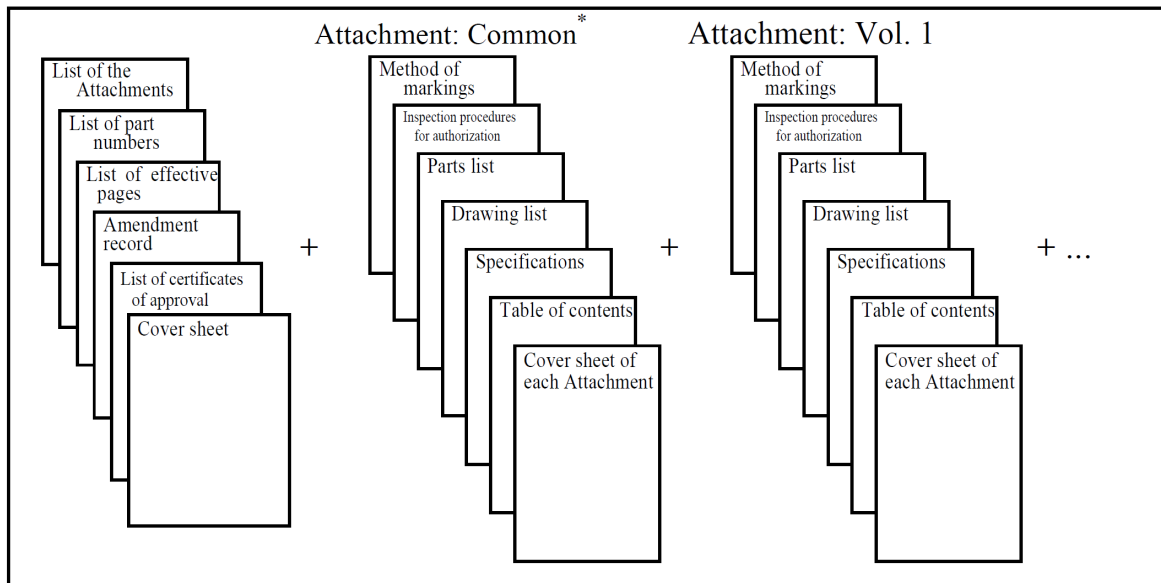


(NOTE) Each document should cover all the types of the series Types/Specifications

(2) Method to prepare respective volume of an Attachment for each type/specification



- (3) Method to describe common portion of the relevant types/specifications into a common volume, while describing mutually different portion into an independent volume for each type/specification



Each Attachment is prepared as follows: common portion of the relevant types/specifications is described in the “Attachment: Common”; while each independent volume of the Attachment covers specific items of each type/specification.

An applicant, when preparing an Attachment, should discuss with the CAB personnel in charge. Note that even in the case of (2) or (3) above, it is necessary that — in relation to an Attachment (full package) — a cover sheet, list of certificates of approval, Amendment record, list of effective pages and list of part numbers should be prepared in such a manner as can be commonly applicable throughout whole contents of the Attachment.

### 2-3-3 Cover Sheet of Attachment

- (1) Cover sheet of an Attachment (full package)

A cover sheet should be provided at the top of an Attachment (technical data file). The form of a cover sheet may be determined by the applicant, while identification of the document should clearly be provided on the spine (back) of the file. (See Appendix 1-1)

- (2) Cover sheet in the case of series Types/Specifications

This relates to series Types/Specifications: in the case that an Attachment will be prepared for each type/specification respectively, a cover sheet is necessary for the volume of each Type/Specification as well as for the full package of series Type/Specification

In that case, the cover sheet for the volume of each Type/Specification should — as well as the cover sheet for the full package of the Attachment — clearly be indicated with the following items: (See Appendix 1-2)

- <1> “Attachment to Certificate of Type/Specification Approval No. \_\_\_” (In the blank for number, the approval number — see the Explanation in Section 2-3-4—should be entered.)
- <2> Volume number for each Type/Specification
- <3> Classification and each Type/Specification name of the appliances or Specified Emergency Equipment
- <4> Designer's name

#### 2-3-4 List of Certificates of Approval

- (1) The list of certificates of approval has the purpose to clarify the approval status of the relevant Type/Specification or series Type/Specification, and should be inserted at the front of the Attachment.
- (2) The list of certificates of approval should contain the title “List of Certificates of Approval” and the Type/Specification name, and provide columns for the “Date of approval”, “Certificate number” and “Remarks”. (See Appendix 1-3)
- (3) The columns for “Date of approval” and “Certificate number (see the explanation below)” should be left blank when an application is made because they will be filled after the approval.
- (4) In the case of derivative Types/Specifications, provide the Type/Specification series name instead of the Type/Specification name, and enter the names of individual types/specifications to be approved in the column for “Remarks” of the list.
- (5) If the list extends to more than one page, provide the number of pages in the margin.
- (6) In the case of an amendment or additional application, submit the list of certificates of approval for the Type/Specification already approved, adding necessary information to it. In particular, provide description regarding changes etc. and the relevant Type/Specification name in the column for “Remarks”.

(Explanation) “Approval number” means the number registered and issued by the CAB for each Type/Specification for which an application has been made. In the case of derivative Types/Specifications, the approval number is issued covering total of the series Type/Specification, and not to each individual Type/Specification.

“Certificate number” means the number provided to the certificate of approval that is issued in response to an application. The approval number and the certificate number are the same regarding a new application; meanwhile, in the case of an amendment or additional application, a certificate number which has an additional number following the approval number (e.g. “No. XXX-X”) is provided for each certificate of approval to be issued. In that case, the approval number corresponds to the first part of the number, that is, “No. XXX”

#### 2-3-5 Amendment Record

- (1) The amendment record has the purpose to clarify the status of changes, additions or deletions



(hereinafter referred to as “changes etc.”). In the case of a new application, prepare the amendment record as described below. In the case of an amendment or additional application, use the amendment record for the Type/Specification already approved, and add necessary information to it.

- (2) The amendment record should contain the title of “Amendment record”, as well as the Type/Specification name or Type/Specification series name similarly to the list of certificates of approval; and provide columns for the “Date of approval or acceptance”, “Outline of changes” and “Pages”. (See Appendix 1-4)
- (3) The column for “Date of approval or acceptance” should be left blank when an application is made because it will be filled after the approval or acceptance. Fill in the "Outline of changes" column referring to the example shown in the appendix. In the case of derivative Types/Specifications, clarify each individual Type/Specification name as necessary.
- (4) In the “Pages” column, enter “All page numbers” for a new application; meanwhile, in the case of changes or additions to the application, enter the pages relating to the changes etc. As for the pages that are deleted, set forth the relevant information clearly.
- (5) If the list extends to more than one page, provide the number of pages in the margin. If moving to the next page with a blank space left in the lower side of the present sheet, draw a diagonal line in that space.
- (6) In the case of an amendment or additional application, and if there is an amendment record already approved in the former form (with a confirmation stamp), establish new pages following to the former amendment record.

#### 2-3-6 List of Effective Pages

- (1) The list of effective pages has the purpose to clarify the status of the effective pages after amendments/deletions due to changes etc. in the Attachment.
- (2) The list of effective pages should contain the title “List of Effective Pages”, as well as the Type/Specification name or Type/Specification series name similarly to the list of certificates of approval. Further, in the case of a series Type/Specification, a list of effective pages may be prepared for each Type/Specification separately, but it is also necessary to provide the list of all effective pages at the front of the whole volume of the Attachment. In that case, provide the Type/Specification series name and the individual Type/Specification names under the title of “List of Effective Pages”.
- (3) In the list of effective pages, provide columns for the “Pages”, “Revision code” and “Date of approval or acceptance”, and enter these items. (See Appendix 1-5)
- (4) The column for “Date of approval or acceptance” should be left blank when an application is made because it will be filled after the approval or acceptance.
- (5) In the case of changes or additions to the application, the list submitted should be such that reflects the items to be approved (e.g. changes of revision codes and additions of pages). For

pages to be deleted, relevant information (e.g., “Deleted”) should be provided in the “Revision code” column, and the date when the deletion is approved or accepted should be set forth in the “Date of approval or acceptance” column.

- (6) If the list extends to more than one page, provide each page number in the margin.

#### 2-3-7 List of Part Numbers

- (1) The list of part numbers has the purpose to clarify the status of the part numbers of appliances or Specified Emergency Equipment, based on the approved Type/Specification.
- (2) The list of part numbers should contain the title “List of Part Numbers”, as well as the Type/Specification name or Type/Specification series name similarly to the list of certificates of approval. Further, in the case of a series Type/Specification, a list of part numbers may be prepared for each Type/Specification separately, but it is also necessary to provide the list of all part numbers at the front of the whole volume of the Attachment. In that case, provide the Type/Specification series name and the individual Type/Specification names under the title “List of Part Numbers”.
- (3) In the list of part numbers, provide columns for the “Part number”, “Date of approval or acceptance”, “Nomenclature” and “Remarks”, and enter these items as written in the specifications. (See Appendix 1-6)
- (4) The column for “Date of approval or acceptance” should be left blank when an application is made because it will be filled after the approval or acceptance.
- (5) In the case of changes or additions to the application, the list submitted should be such that reflects the items to be approved. For the “Date of approval or acceptance” column, however, the date when a part number was newly approved should remain unchanged unless the part number is changed, even if there has been a change in the Type/Specification.
- (6) If there is any part number that is abolished when obtaining the approval, provide relevant information in the “Remarks” column.  
(Example) “Abolished according to Certificate of Approval No. XXX-X”
- (7) If the list extends to more than one page, provide each page number in the margin.

#### 2-3-8 Table of Contents

- (1) Prepare the table of contents including documents 1 to 7 specified in the table in Article 2 of the Guidelines (specifications, drawing list, parts list, inspection procedures for completed products to obtain authorization (related to Type Approval), inspection procedures for completed products (related to Specification Approval), compliance checklist, and method of markings). (See Appendix 1-8)
- (2) In the case of derivative Types/Specifications, and if the Attachment is made for each Type/Specification, the list including classification codes and each Type/Specification name should be prepared (see Appendix 1-7) and inserted instead of the table of contents; and further,

insert a table of contents — clarifying each Type/Specification name concerned and its classification code — for each Type/Specification respectively.

#### 2-3-9 Document of specification data (See Appendix 1-9)

##### (1) Purpose

This document should clarify the Type/Specification name according to the example below. If it is necessary to establish a Type/Specification name in English, enter the English Type/Specification name after the applicable “Type/Specification name or series Type/Specification name”.

(Example) This document specifies the {select Type or Specification} that is applied to {insert classification and nomenclature of the applicable appliances or Specified Emergency Equipment} — {insert corresponding Type/Specification name or series Type/Specification name} — designed and manufactured by {insert the name of the designer}.

##### (2) Applicable appliances

Provide the name of the appliances or Specified Emergency Equipment to which the Type/Specification is applied (if intending to mark the name in English on the nameplate, provide also the English name) and part number. In the case of derivative Types/Specifications, clarify the relation between each Type/Specification and the applicable appliance which covers each medal.

In addition, the name shown here should be used in the Attachment, on the nameplate.

(Example)	Nomenclature	Part number
	Altimeter (ALTIMETER-XY)	XY-2-1
	Altimeter (ALTIMETER-XY)	XY-2-2

##### (3) Applicable criteria Regarding the criteria applicable to the Type/Specification concerned, the title, revision code (number), the issue date and the items applied actually should be set forth

The applicable criteria would basically be the Airworthiness Inspection Manual that is effective at the time of application, and such criteria that the CAB considers appropriate (such as FAR and JAR).

##### (4) Applicable standards Specify the standards that are applied to materials and parts. The applicable standards should be publicly known ones recognized by the CAB (such as TSO, MIL, JIS and RTCA).

When these standards are partially used, the quoted parts should clearly be defined in the specifications.

##### (5) Reference materials Such materials, if any, as follows should be listed, only if it is necessary: standard established by the designer of the relevant Type/Specification (applicant’s standard), criteria or standards specified by the designer of the aircraft on which the equipment is installed, or specifications specified by an air carrier.

If criteria or standards that specifies the type of aircraft and engine is referred to, set forth, in the blank for “Operational Conditions” mentioned in the next item, as follows: “(Example) This Type/Specification has been proved to comply with applicable criteria based upon {insert ‘the criterion or standard’} that covers {insert ‘the type of aircraft and engine’}”.

- (6) Outline of specifications, basic data and requirements/conditions Necessary information should be provided, establishing titles appropriately as follows: general description of the Type/Specification, an outline of the basic structure, configuration of the system, composition of key materials, functions, performance data, major dimensions, weight and C.G. position, requirements/conditions, limitations, operational conditions and operational environment (for appliances to which a standard such as RTCA DO-160 or JIS W0812 is applied, the title and category of the environmental test referred to), service life limits. For appliances having an electric circuit, electric data, outline of the circuit should be provided.

(Explanation) The items above not only specify the specifications but also are the basis to determine whether the manufactured appliance or Specified Emergency Equipment complies with the relevant specifications including the applicable criteria, and so the said items should include all items necessary and sufficient to clarify the scope of the specifications.

Concerning the maximum weight, for example, each of the manufactured appliance or Specified Emergency Equipment is required to be within the weight; therefore the maximum weight should necessarily be specified as the weight determined in such a manner that the design weight is compensated with manufacturing errors.

- (7) Factory

To identify the factory that will manufacture the appliance or Specified Emergency Equipment, set forth items related to the factory written in the application, i.e., the name, department responsible for production and quality assurance, and address. Further, if there are more than one factory — i.e., factories each of which manufactures the same products independently, factories each of which is responsible for the shared process respectively to carry out complete production—, clarify the relation among them. Even in the case that a part of the manufacturing process is outsourced: if the process is a key process from the viewpoint of quality control, set forth the supplier(s) as one of the factories.

- (8) Other items to be noted

Set forth items that are necessary to be clarified, including: items specific to the appliances or Specified Emergency Equipment; and installation requirements of the appliances to be provided, such as the weight, C.G. position, shape, major dimensions, maximum power consumption (in this case, it is necessary to set forth such requirements, making it clear that the article(s) provided is/are outside the scope of the Type/Specification Approval).

(9) Three-view drawing of the general assembly

Indicate clearly the title, drawing number and revision code (number), and insert the drawing — with a page number — at the end of the specifications. In the drawing, also specify the position to install the nameplate, which contains the items prescribed in the next section, “(10) Drawing of the nameplate”. Note that parts or components not covered by the relevant Type/Specification Approval should, in principle, not be entered in the drawing concerned.

If there is any such marking as required by the applicable criteria — that of operating limitation, service restrictions — or as requested by the CAB, provide a drawing of the marking — including the content on it — and the position to display it.

Further, as for an appliance that includes an electric circuit, prepare and insert the wiring diagram (electric circuit) or block diagram in addition to the three-view drawing of the general assembly.

(10) Drawing of the nameplate

Insert the drawing of the nameplate — with a page number — at the end of the specifications. The items to be indicated on the nameplate are as shown below. (This relates to the Article 7 of the Guidelines.) Specify items indicated in advance and those marked later by stamping.

<1> Nomenclature of the appliances or Specified Emergency Equipment

In the case of a system Type/Specification, indicate a nomenclature representing the whole system and the name of each component, in a way that the relation between them is easily known.

(Example)     Autopilot system (Controller)  
                  Autopilot system (Display)

<2> Type/Specification name or part number

The nomenclature of the appliances or Specified Emergency Equipment, as well as its Type/Specification name and part number, should agree with those set forth in the specifications (description thereof). (See Note 1)

<3> Serial number or production lot number

<4> Category of the approval and its approval number

The category of the approval (Type Approval or Specification Approval) and the approval number should be indicated according to the examples below. (See Note 2)

(Example)     • For Type Approval of appliances or Specified Emergency  
                  Equipment:  
                  MLIT Type Approval No. \_\_\_\_ or CAB T.A. No. \_\_\_\_  
                  • For Specification Approval of appliances:  
                  MLIT Specification Approval No. \_\_\_\_ or CAB S.A. No. \_\_\_\_

<5> Date when the applicant’s own inspection is performed and the stamp of acceptance

<6> Service life limit (only if necessary)

(Note 1) If indicating the part number specified by the designer of the target aircraft or engine etc.

(hereinafter referred to as “the aircraft designer etc.”) for the relevant Type/Specification, along with the part number specified by the designer of the Type/Specification, the conditions shown below should be satisfied.

<1> It is clearly shown in such a way as writing that the matter has been approved by the aircraft designer etc.

<2> In the case that a foreign country has a responsibility regarding the design approval (type certification) of the target aircraft or engine etc., it is clearly shown in such a way as writing that direct delivery (direct shipping) of the relevant appliances is permitted.

As for appliances that have obtained a TSO design approval, indicate only the part numbers covered by the Type/Specification Approval and TSO design approval.

(Note 2) CAB is the abbreviation for the Civil Aviation Bureau

T.A. is the abbreviation for Type Approval

S.A. is the abbreviation for Specification Approval

(Explanation) When a Type Approval or Specification Approval was granted, it was a rule in old days that the certificate of approval was issued to the applicant, and at the same time the information was announced in a government newsletter; however, according to the amended rule dated November 25, 1971, it was decided, instead of an announcement in a government newsletter, to put a marking on the body of the appliances or Specified Emergency Equipment (or on the package, if it is not appropriate to put a marking on the body) indicating that the product was approved by the Minister of Transport.

Note that the Circular TCL-1033-72 “Markings on Type/Specification Approved Products” dated February 14, 1972, which was issued in relation to the above, was superseded by this circular, because its content was incorporated into this section.

Other than above, such items would be indicated as specific ratings, specific function(s), weight (allowable and actual), operating limitations, installation limitations, and, in the case of electronic devices and environmental tests applied.

Further, if it is planned to obtain a TSO design approval, a blank for the TSO marking may be provided.

### 2-3-10 Drawing List

(1) Regarding drawings, only the drawing list should be, in principle, attached to the Attachment; and note that all the drawings related to the design and production of the relevant Type/Specification should be included in the list. (See Appendix 1-10)

(2) As for the drawing list, the title, drawing number and revision code (number) of each drawing should be specified. Also, that list should be prepared taking it into consideration that the mutual

connection (relations), in relation to each drawing, would be understandable.

- (3) If the CAB considers necessary, insert the relevant drawings (wiring diagram, cross sectional drawing and three-view drawing for part assembly.) in the Attachment.

#### 2-3-11 Parts List

- (1) Parts list should be prepared regarding the composing parts of the appliances or Specified Emergency Equipment based upon the Type/Specification to be approved. (When the composing parts include a unit and/or assembly, the composing parts of such unit and/or assembly, may not be listed, if referring to the document separately prepared.)
- (2) The parts list should completely contain such items of each part as follows: the part name, part number, material, applicable standards (if it is not a publicly known standard, the specification or drawing should otherwise be clarified), quantity, supplier, and other items that the CAB considers necessary. (See Appendix 1-11)

#### 2-3-12 Inspection Procedures for Completed Products to Obtain Authorization (only for Type Approval of the appliances)

- (1) Inspections for authorization prescribed in Article 15 paragraph (1) of the Civil Aeronautics Regulations mean the individual inspections to authorize the appliances produced after the Type Approval is obtained, whether they are in compliance with the Type concerned; and these inspections are necessary only in relation to Type Approval.
- (2) In the Attachment, inspection items and inspection methods (including criteria) to obtain authorizations should be specified practically. (See Appendix 1-12)
- (3) The inspections should include, not only those of the appearance (dimensions and weight), but also those to ensure that the requirements specified in the specifications and functions of the appliances concerned, are satisfied. In addition, if quoting any other document with regard to individual inspection method of the inspection procedure for authorization, list the document number, revision code (number) and issue date of the document.

#### 2-3-13 Indication Method

- (1) With regard to the indication method to be implemented pursuant to paragraph (10) of Article 14-2 or paragraph (5) of Article 152 of the Civil Aeronautics Regulations, the type (Type Approval/Specification Approval) approved by the Minister of Land, Infrastructure, Transport and Tourism and the approval number shall be described with consideration of the following matters.
  - <1> The markings should neither interfere with the intended purpose of the appliances or Specified Emergency Equipment, nor affect their life.
  - <2> The markings should be positioned so that they are visible easily from outside as much as possible.

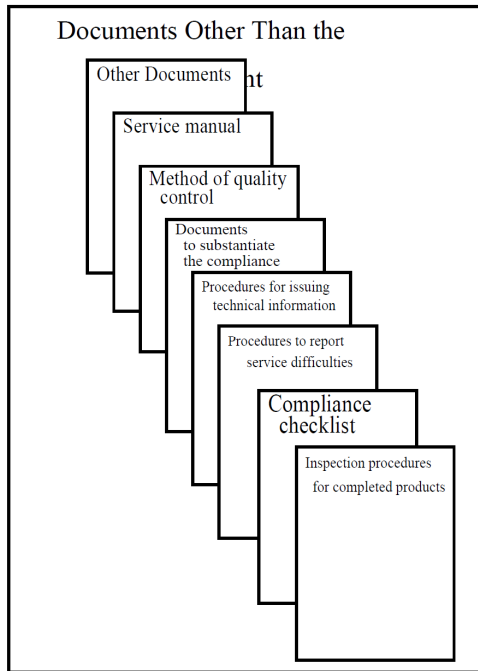
<3> The markings should endure the environmental conditions under which the main body of the appliances or Specified Emergency Equipment is placed, and have a life equivalent to that of the main body, except for the cases that it is not desirable to put markings on the main body and so they are put on the package.

- (2) Such items as follows should be set forth practically: specific contents of the markings (what is written or its drawing), location and method of markings (in the case of a nameplate, for example, the material, method of installation to the appliances, and type of paint when paint is used). If putting the markings on the nameplate, the description of “2-9-3(10) Drawing of the nameplate” may be quoted. Note that the markings of the category of approval and approval number should be indicated, in principle, after the approval is obtained.

#### 2-4 Submission of Documents Other Than the Attachment

The documents 5, 6, and 8 to 12 specified in the table in Article 2 of the Guidelines — Inspection procedures for completed products (applicable only in the case of appliances and Specified Emergency Equipment in relation to Specification Approval; the same is applied below), Compliance checklist, Procedures to report service difficulties, Procedures for issuing technical information (service bulletin), documents to substantiate the compliance, document explaining the method of quality control, and Service manual — should be banded, in principle, into one volume inserting divider sheets and submitted to the CAB personnel in charge according to the following schedule: regarding Inspection procedures for completed products and Compliance checklist, at the time of application; and regarding other documents, no later than 30 days before the desired date for official evaluation (if demonstrating the compliance by test, the test report should be submitted promptly after the test).





Further, concerning an amendment or additional application: if there is no change in the

Procedures to report service difficulties, Procedures for issuing technical information (service bulletin), and document explaining the method of quality control, from those submitted last time; or in the case where more than one application is made at the same time and if the contents of the above documents are same: the submission of such documents may be omitted by submitting the information in writing according to the example shown below.

However, the documents should be submitted promptly if the CAB personnel in charge considers necessary.

(Example) "The submission of the {enter the title of the relevant document} is omitted; because it is as same as {enter the title, document number, revision code (number) and the issue date of the document} submitted for the application for approval of {enter the Type/Specification name and the classification of the appliances or Specified Emergency Equipment} that obtained Type/Specification Approval on {enter the date}, and also there is no change since then."

#### 2-4-1 General

As for the paper size for documents, ways for writing and binding, divider sheets and filing, follow accordingly the method of arranging documents into an Attachment described in the previous section, "2-3 Submission of the Attachment (technical data file)".

Meanwhile, for items marked on the spine (back) of each file, "Attachment to Certificate of Type/Specification Approval No. \_\_\_\_" should read "Documents Related to Certificate of Type/Specification Approval No. \_\_".

## 2-4-2 Inspection Procedures for Completed Products

Inspections for completed products mean individual inspections performed, after the Specification Approval or Specified Emergency Equipment Type Approval is obtained, by the person who has obtained the Specification Approval or Specified Emergency Equipment Type Approval, to confirm whether the product conforms to the Specification or Type.

As for the contents of the inspections, follow the description of Section 2-3-12(3) accordingly.

## 2-4-3 Compliance Checklist

The compliance checklist is such a document, in relation to compliance with the applicable criteria or standards, that lists the substantiation methods and related documents, as shown in the example below.

(Example)

Requirements	Substantiation Methods	Related Documents
Airworthiness Inspection Manual, Part III		
Chapter 3: Strength		
3-1-1 Load	Strength test	Implementing procedures of strength test TP-1-001 Rev. 3 (3/4/2000) Strength test report TR-1-001 Rev. New (7/8/2000)
3-1-2 Factor of Safety	Analysis	Strength analysis report ANL-2-002 Rev. New (4/5/2000)
3-1-3 Strength and Deformation	Calculation	Load calculation report CAL-3-003 Rev. A (5/6/2000)
3-1-4 Substantiation of Strength	Drawings	Drawing of _____ No. DWG-4-004 Rev. B (6/7/2000)

Requirements --- Set forth such items in the Airworthiness Inspection Manual that are specified as the applicable criteria in the specifications. If the requirements of the U.S. FAR are applied, enter them along with the above or list them. In addition, if standards of TSO and/or RTCA are applied, they should also be entered for each item.

Substantiation Method --- Set forth the substantiation methods, such as drawings, verification of the current condition of the actual and tests for demonstration.

Related Documents --- Set forth descriptions about actual substantiation, or the titles and codes of the documents which include the said descriptions.

#### 2-4-4 Procedures for Reporting Service Difficulties

Regarding the reporting procedure when a defect or failure that may significantly affect the safety is found in the appliances or Specified Emergency Equipment according to a manufacturer's inspection and/or information from a customer, set forth following items, based upon the Circular No. 6-002 "Reporting System of Aircraft Service Difficulties": the form of the service difficulty reporting performed by the person who has obtained Type/Specification Approval, description about responsibility (department in charge) and authority in the company, and reporting criteria.

Meanwhile, the Circular No. 6-002 "Reporting System of Aircraft Service Difficulties" only describes the basic points, and so, specific contents (reporting criteria, reporting procedure and reporting system) should be established according to the Type/Specification, and further, their operation should adequately be understood in the company.

Reporting should be made to the Airworthiness Division and the jurisdictional Airworthiness Engineer Office.

#### 2-4-5 Procedures for Issuing Service Bulletins (SB etc.)

Based on Circular No. 1-013 "Approval for Service Bulletins (SB, etc.)," procedures concerning the issuing organization in charge of service bulletins, standards for issuing, Service Bulletins (SB etc.) and procedures for service bulletin specifications by a certified person under Type/Specification Approval shall be specifically stated.

In addition, in cases where there is an intention to issue service bulletins concerning type (specification) changes, this shall be done after obtaining approval for said type (specification) changes.

#### 2-4-6 Documents to Substantiate Compliance

##### (1) Substantiation of compliance by testing

If substantiating the compliance with the applicable criteria or standards by testing, submit the implementing procedure of the test and the test report.

##### (1-1) Implementing Procedure of Test

Regarding implementing procedure of a test, its content should be confirmed and approved by the applicant or someone who belongs to the applicant, and then the procedure with the indications of the said confirmation/approval (including the stamp or signature of the accountable person in the company, position of the person, and the date of confirmation/approval) should be submitted to the CAB no later than 30 days before the desired date for performing the test.

The implementing procedure of a test should be accompanied by a Statement for Implementing Procedure of a Test which contains the title "Statement for Implementing Procedure of the Test", the Type/Specification name, nomenclature of the appliances or

Specified Emergency Equipment, title of the implementing procedure of the test (for example, “Implementing Procedure of the Test for \_\_\_\_”), document number and revision code (number) of the implementing procedure of the test, name of the person who approved it as well as the date of approval, and a space to be used for approval by the CAB (space to enter the signature, date of approval by the CAB, and comments) (See Appendix 1-14)

The implementing procedure of a test should cover the items described below.

If quoting, as a part of the implementing procedure of a test, a test method specified by the designer of the aircraft on which the relevant appliance or Specified Emergency Equipment is intended to be installed, specify the title, number, revision code (number) and issue date of the quoted document for each item quoted; and submit a document which contains the test method, attaching to the implementing procedure of the test.

In addition, if the applicant will rent an outside test site, test equipment, or if the applicant does not carry out some portion or all of the tests because of outsourcing, the detail should be set forth clearly. In that case, the applicant has the responsibility to ensure that the rented site and facilities are suitable for the purpose, and that the outsourced tests are being carried out appropriately at the contracted site; and further, the organization system to confirm and guarantee this should clearly be defined in the procedure.

<1> Title of the implementing procedure of the test

(Example) “Implementing Procedure of the Test \_\_\_\_”

<2> Document number and revision code (number)

<3> Purpose of the test

(Example) This procedure prescribes the instructions of the test to substantiate that the Type/Specification of {enter the nomenclature of the appliances or Specified Emergency Equipment} — {enter the Type/Specification name or Series Type/Specification name} — designed and manufactured by {enter the designer’s name} and intended to be installed on {enter the applicable aircraft model (as required)}, complies with {enter the articles to be substantiated of the applicable criteria}.

<4> Applicable criteria to comply with for substantiation

<5> Organization for implementing the test (including the accountable person to implement the test (the test witness))

<6> Test site and test environment

<7> Test equipment

Regarding tools, set forth the document number and revision code (or revision number) of their design specifications or design drawings; and regarding test instruments and measuring instruments, set forth required data, performance, accuracy and standards.

(Note) For measuring instruments to be used, an appropriate accuracy should be required, taking into consideration instrumental error and parallax (reading

error).

- <8> Description of the specimen Describe the outline of the specimen, inserting drawings as necessary. The description should cover items and requirements required for the specimen of the test, as much as necessary and sufficiently. If the specimen is different from one that is based on the Type/Specification intended to be approved, attach a drawing of it and technically explain that the specimen is appropriate as a specimen for the test to be implemented.
- <9> Procedure for setting up test layout (including methods and location for installing measuring instrument)
- <10> Regarding specimen, test set-up and test equipment: methods for confirming the conformity (in relation to material, dimensions, weight, functions and manufacturing process), and the method for reporting
- <11> Test items and test methods
  - (Note) The values of loads set or measured during set-up and tests should be such ones as taking into consideration instrumental error and parallax (reading error) of the measuring instruments used to measure aforementioned values.
- <12> Criteria/limit values as well as procedures to determine acceptance/rejection
  - Even in the case that specific values are not set forth in the applicable requirements, specific values should appropriately be established, taking into consideration the usage and installation location of the appliances or Specified Emergency Equipment concerned.
- <13> Procedure for taking action or making report when service difficulty has occurred

(1-2) Report of the test result

After the tests are completed, submit a test report outlining the tests performed and their results. Records regarding tests and their results (test data and photographs) would be required to be submitted or presented as necessary.

The cover sheet of the test report should contain the title (for example, Test Report of \_\_\_\_), document number, revision code (number), and the applicant's approval date. Further, the report should contain the description as follows:

<1> Purpose of the report

(Example) This document reports on the tests carried out to substantiate that the Type/Specification of {insert the nomenclature of the appliances or Specified Emergency Equipment} — {insert the Type/Specification name or Series Type/Specification name}—designed and manufactured by {insert the designer's name} and intended to be installed on {insert the applicable aircraft model (as required)}, complies with {insert the articles to be substantiated of the applicable criteria}.

<2> Title of the implementing procedure of the test that is applied, its document number, revision code (number), and the date of approval by the CAB

- <3> If there is any approved document other than the implementing procedure of the test (such as a correction list of the implementing procedure of a test ), the title of the document, its document number, revision code (number), and the date of approval by the CAB
  - <4> Applicable criteria to comply with for substantiation
  - <5> Organization for implementing the test (including the accountable person to implement the test)
  - <6> Test site and test environment
  - <7> Information of the test equipment (including tools, test instruments, and measuring instruments) used, including: name, part number, serial number, manufacturer, performance data, design specification or design drawing number, due date, the control number which allows tracing of inspection or calibration record
  - <8> Description of the conformity of the specimen used and the statement of conformity (to be attached)
  - <9> Description of the test set-up actually used
  - <10> Description of the test items performed, specific test methods, date when the tests were performed
  - <11> Outline of the noncompliance or nonconformity that occurred during the tests, and actions taken to cope with them
  - <12> Test results and Criteria/limit values to determine acceptance/rejection
  - <13> Result of the applicant's judgment and a person who made the judgment (department, his/her name, and the signature or stamp)
- (2) Substantiating the compliance through other methods than testing

If substantiating the compliance with the applicable criteria or standards through other methods than testing, submit documents that describe the content of the substantiation (i.e., drawing, calculation or analysis report, and/or document explaining that the safety equivalent to or higher than that of a Type/Specification already approved is ensured).

In addition, if the applicant intends to omit the testing, it is acceptable only when the applicant corresponds to the following cases and at the same time when he/she can substantiate the compliance with the applicable criteria or standards through other methods than testing.

- <1> The case that a technical analysis is conducted with a reliable method. If using techniques, formulae and numerical values based on the experience of the applicant, it should be substantiated that they are reliable.
- <2> The case that an amendment application or additions is to be made, and at the same time, if it can be technically substantiated that the Type/Specification has the safety equivalent to or higher than the results of substantiation tests of a Type/Specification that belongs to the same series already approved.

Referring to the Item 5 — Guidance for Composition and Arrangement of an Approved Organization Exposition (AOE) — of the Circular No. 2-001 “General Policy for Approved Organizations”, prepare and submit a document explaining the outline of the quality control performed by the applicant, adding to it the obligations of the Type/Specification Approval holder, which is described later in Chapter 6.

#### 2-4-8 Instruction Manual

(1) To provide an explanation of the proper usage method to users and repairers, the instruction manual should explain storage (places and periods), packages, transportation and equipping (installation) methods for components or prescribed emergency equipment, equipping the body of a plane away from applicants, and required methods of maintenance, adjustment while in use, checkup (including types, intervals and applicable judgment standards with regard to repair and enabling/disabling) and small decomposition methods, after ensuring the regular function where necessary and maximum hours of use.

(2) Instructions for repairs and complete overhaul should be contained for procedures, equipment, appliances, parts, materials, and inspections and tests needed for repairs and overhauls as usual.

Parts and materials shall be defined for the use of regular parts.

This document may be included in the instruction manual of paragraph (1).

#### 2-4-9 Other Documents

If there is any document or reference material that is considered necessary other than the above documents, attach it at the end of the required documents described up to the previous section, inserting a divider sheet before it.

In the case of an amendment application, attach the relevant pages of the (current) Attachment in which the amendment concerned is not yet reflected.

## Chapter 3 Inspection for Evaluation

As prescribed in Article 3 of the Guidelines, we carry out following inspections to determine whether the appliances or Specified Emergency Equipment of the Type/Specification concerned can ensure the safety of aircraft. Note that, in the case of an amendment or additional application, the inspections may be omitted.

#### 3-1 Inspections on Design

Concerning the appliances or Specified Emergency Equipment for which an application was

made, we carry out inspections item by item based upon the compliance checklist (Section 2-4-3), regarding the compliance with the criteria at the design stage, as well as the appropriateness of the substantiation methods.

### 3-1-1 Substantiation by testing

If intending to substantiate the compliance by testing, demonstrate it by performing tests according to the approved implementing procedure of the test. In that case, even if the witnessing by the CAB personnel in charge is partly omitted, the tests should be carried out as described below, separating them from the company tests performed by the applicant (e.g. preliminary tests, and tests for research and development), because the tests of the subject are official ones to substantiate that the Type/Specification complies with the applicable requirements.

#### 3-1-1-1 Approval of the Implementing procedure of a test by the CAB

- (1) Before carrying out the substantiation tests, an implementing procedure of a test prescribed in Paragraph (1-1) of Section 2-4-6 should be submitted and approved by the CAB.
- (2) If the applicant would make changes to the implementing procedure of a test after it is approved by the CAB, he/she should submit the implementing procedure of a test reflecting aforementioned changes (with its amendment record updated), and obtain an approval again from the CAB. Meanwhile, if the content of the change is extremely insignificant and does not affect the tests, i.e. in such cases as correction of a typographical error, partial amendment not including a change to the test procedures, and/or such partial change of the shape of the test article that does not affect the tests, the applicant may submit a document describing only the changed part(s) to obtain an approval from the CAB. (See Appendix 1-15)

Note that the applicant should obtain such approval of a change before starting the tests.

#### 3-1-1-2 Confirmation of Conformity by the Applicant

- (1) Regarding the relevant test article, test layout and test equipment (including tools, test devices and measuring instruments), the applicant should confirm conformity (100 percent compliance) with the implementing procedure of the test approved by the CAB, for each of the test items intended to be performed, and substantiate it. For that purpose, the applicant should evaluate all of the items required by the implementing procedure of the test as well as those considered necessary by the CAB. Note that, if something is found not complying with the implementing procedure of the test, the applicant should take necessary action and make confirmation of conformity again.

(Explanation) “100 percent compliance” means the compliance with all the items specified in the implementing procedure of the test approved by the CAB (involving such items that are, though not specified in the implementing procedure of the test, requested from the viewpoint of quality control including specifications,



drawings and manufacturing process). If disagreement is found, consider it to be noncompliance, take corrective action, and make confirmation of conformity again.

- (2) When the applicant, after evaluating conformity of the test article, test layout and test equipment, confirmed their conformity, he/she should: submit or present a document that contains the following items (Statement of Conformity; See Appendix 1-16); submit or present the records regarding the confirmation of conformity, and substantiate that the confirmation has been appropriately carried out; and be subjected to the conformity inspection by the CAB personnel in charge.

Title (“Statement of Conformity”)

- <1> Type/Specification name
- <2> Nomenclature of the appliances or Specified Emergency Equipment
- <3> Part number and serial number of the specimen
- <4> Title of the implementing procedure of the test that is applied, its document number, revision code (number), and the date of approval
- <5> If there is any approved document other than the implementing procedure of the test (description about amendment of the implementing procedure of the test), the title of the document, its document number, revision code (number), and the date of approval by the CAB
- <6> Classification of conformity checks (conformity check of the specimen, conformity check of the test layout, and conformity check of the test equipment) and the check results
- <7> Nonconformities found during conformity checks and the corrective action taken for them
- <8> Current status of conformity
- <9> Date when the conformity checks were carried out; the department, name, signature or stamp of the person who carried out the conformity checks

- (3) In principle, the set-up of the test layout should not be started before the applicant’s conformity check and the conformity inspection by the CAB personnel in charge have been completed.

### 3-1-1-3 Conformity Inspection by CAB Personnel in Charge

- (1) The CAB personnel in charge carries out conformity inspection in relation to the implementing procedure of the test regarding: current conditions of the documents submitted and presented by the applicant, specimen, test set-up and test equipment. Concerning the procedure to request the inspection, consult with the CAB personnel in charge.
- (2) As a result of the inspection, if any nonconformity is found, or if it becomes necessary to make a change to the implementing procedure of the test, the applicant should take necessary action.

#### 3-1-1-4 Implementation of Testing for Substantiation

- (1) The specimen, test layout and test equipment that are subjected to the tests should be those which have completed the conformity inspection by the CAB personnel in charge.
- (2) If the specimen used in some test is used again, the conformity should be evaluated again and subjected to the conformity inspection. Meanwhile, that is not the case, if it is specified in the approved implementing procedure of the test that some portion or all of the conformity check and conformity inspection may be omitted.
- (3) The CAB personnel in charge will witness some portion or all of the tests (including the case that the test site and test equipment are rented, or the case that the applicant himself/herself does not carry out some portion or all of the tests because of outsourcing), and evaluate whether the test is carried out as specified in the implementing procedure of the test, as well as the test results. For that purpose, the test schedule should be discussed with the CAB personnel in charge before starting the tests.
- (4) The tests should be carried out according to the instructions specified in the approved implementing procedure of the test. Even in the case that the applicant intends to prepare instruction of testing other than the implementing procedure of the test and carry out the tests according to that instruction, he/she should guarantee that the tests are accomplished based upon the implementing procedure of the test. Meanwhile, follow the directions of the CAB personnel in charge, if the officer considers them appropriate.
- (5) The test equipment used in the tests should comply with the requirements specified in the implementing procedure of the test and be under appropriate accuracy control and storage management. Especially for such equipment which requires accuracy control, traceability to the corresponding calibration standards (instruments/equipment) should be confirmed.
- (6) Even in the case that the applicant will rent an outside test site, test equipment, or that the applicant does not carry out some portion or all of the tests because of outsourcing, the applicant has the responsibility to carry out the tests, and the tests should be appropriately accomplished with the witness by the applicant or the person who belongs to him/her. In addition, if a contractor prepares documents and records, the applicant should: check the contents of them on the applicant's responsibility, in the same manner when the applicant himself/herself prepared them; and then submit or present the aforementioned documents and records. If the approved implementing procedure of the test specifies the instruction to guarantee the conformity when an outside test site or test equipment are rented, as well as the instruction to control the contractor to whom some portion or all of the tests is outsourced, follow the test procedure.

#### 3-1-1-5 Report on the Substantiation Test Results

After the substantiation tests are completed, the applicant should submit a test report prescribed in Paragraph (1-2) of Section 2-4-6. Note that the records regarding the tests and their results (e.g. test data and photographs) are required to be submitted or presented as necessary.

### 3-1-2 Substantiation through methods other than testing

If the applicant intends to substantiate the compliance through methods other than testing, we evaluate the compliance with criteria and the appropriateness of the methods of substantiation, concerning the document containing the contents of the substantiation and submitted under Paragraph (2) of Section 2-4-6,.

### 3-2 Inspection of the Manufacturing Process

Concerning the appropriateness of the manufacturing process of appliances or Specified Emergency Equipment manufactured according to the document explaining the method of quality control (Section 2-4-7) and when an application was made, we carry out inspection applying accordingly the requirements prescribed in the CAR Article 35 (requirements for approval of organization) and Section 3 of the Circular No. 2-001 “General Policy for Approval of Organization”.

### 3-3 Inspection of Current Condition after Completion

Regarding the current condition of one or more unit of the appliance or Specified Emergency Equipment after the manufacturing is completed, we carry out inspection to evaluate that the aforementioned product(s) conforms/conform to the Type/Specification for which an application has been made, based upon the Inspection Procedures for Completed Products to Obtain Authorization described in Section 2-3-12 or the Inspection Procedures for Completed Products in Section 2-4-2.

## Chapter 4 Issuance of Certificate of Approval

If the CAB determines, as a result of Inspection described in Chapter 3, that the appliance or Specified Emergency Equipment for which an application has been made is in compliance with Article 14 or 152 of the CAR, a Certificate is issued to the applicant as follows: in the case of appliances, a Certificate of Type/Specification Approval for Appliances (Form No. 7-3 of the CAR), based upon Article 14-2 Paragraph (2) of the CAR and Article 4 of the Guidelines; and in the case of Specified Emergency Equipment, a Certificate of Type Approval for Specified Emergency Equipment (Form No. 28-4 of the CAR), based upon Article 152 Paragraph (3) of the CAR and Article 4 of the Guidelines.

(Explanation) Even in the case that a Type/Specification is approved based on an amendment or additional application, the approval (regarding its scope) is, in principle, issued covering all the Type/Specification concerned. In that case, the newly

issued certificate of approval supersedes the certificate of approval already issued, and so the already issued certificate of approval is invalidated by the issuance of the new certificate of approval.

If the applicant is granted a Certificate of Type/Specification Approval for Appliances or Certificate of Type Approval for Specified Emergency Equipment (hereinafter referred to as "the Certificate of Approval"), the applicant should enter the date of approval and approval number in the Attachment (original). In the case of an amendment or additional application, removing of old pages and inserting of new pages in the Attachment (original) should be promptly made and the invalidated pages should clearly be separated.

A person who has been granted the Certificate of Approval (hereinafter referred to as "the Type/Specification Approval holder") should insert and keep the Certificate of Approval or a copy of it between the cover sheet and the list of certificates of approval of the Attachment (original).

The documents submitted in relation to the approved Type/Specification — the Attachment, required documents other than the Attachment, and any other documents submitted to the CAB — are, in principle, returned to the Type/Specification Approval holder (the applicant) after the approval. Steps to return aforementioned documents is, in principle, as follows: regarding the Attachment, after the submission of the electronic media prescribed in Chapter 5; and regarding other submitted documents than the Attachment, at the time when the Certificate of Approval is issued.

## Chapter 5

### Submission of Electronic Media after Approval

After obtaining the approval, the Type/Specification Approval holder should record the Attachment (including the cover sheet and the Certificate of Approval) — with the date of approval and approval number entered — and other submitted documents than the Attachment in electronic media, and submit it (one set) to the CAB.

The specifications of the electronic media are prescribed in "Appendix 2: Specifications of Electronic Media".

## Chapter 6

### Obligations to the Type/Specification Approval Holder

#### 6-1 Maintaining the Attachment and Other Submitted Documents Than the Attachment

The Type/Specification Approval holder should keep following documents appropriately, so that they can be promptly submitted or presented upon request by the CAB: the Attachment (including the Certificate of Approval), other submitted documents than the Attachment, and such other

documents issued after obtaining the approval as service difficulty reports and technical information (i.e. Service Bulletins). Duration to keep such documents is as long as the relevant Type/Specification is held.

#### 6-2 Confirmation of Conformity of Components in Relation to the type (specification)

Where components or prescribed emergency equipment in relation to the type (specification) have been manufactured, the Type/Specification Approval holder him/herself shall, based on the certified inspection procedures (those concerning the type approval of components) or the inspection procedures for finished products (those concerning the type approval of components or prescribed emergency equipment), conform with the approved type (specification), and indicate only on the products for which conformity is confirmed pursuant to the provisions of paragraph (10) of Article 14-2 or paragraph (5) of Article 152 of the Regulations. The indication method shall be pursuant to the indication method of Annex.

#### 6-3 Obtaining Manufacturing Inspection Approval

Based on paragraph (9) of Article 2 of Regulation 14, to ensure safety and uniformity for components, a person who produces components or prescribed emergency equipment regarding Type/Specification Approval within the country shall obtain the relevant approval under production and completion inspection based on paragraph (1), items (2) or (6) of Article 20 of the Act (hereinafter referred to as “manufacturing inspection approval”), and produce.

In addition, a person having already obtained manufacturing inspection approval, in cases where it does not contain components or prescribed emergency equipment regarding Type/Specification Approval in the scope of said approval shall obtain approval to include in the scope of said certification.

#### 6-4 Reporting

When the Type/Specification Approval holder has found such defects or service difficulties that may significantly affect the safety or such facts that the uniformity is not ensured, through his/her own inspections and audits, or through information from customers, he/she should report it promptly according to the Procedures for Reporting Service Difficulties, and take necessary corrective action. Note that, if corrective action cannot be taken promptly, necessary measures should be taken in the meantime.

## Chapter 7 Suspending the Manufacture of the Product Related to the Type/Specification Approval

#### 7-1 Notification of Suspension of Manufacture

If the Type/Specification Approval holder has temporarily suspended the manufacture of the appliances or Specified Emergency Equipment related to the Type/Specification Approval, he/she should notify the Director of Airworthiness Division of it, making the following clear: the reason for suspension, Type/Specification name of the product of which manufacture has been suspended, category of approval and approval number. (See Annex 4)

If he/she is thinking of resuming the manufacture after notifying the suspension, the fact should be notified before restarting the manufacture. In that case, quality audit may be conducted as necessary.

## 7-2 Surrendering of Approval

If the Type/Specification Approval holder has already discontinued the manufacture of the appliances or Specified Emergency Equipment related to the Type/Specification Approval and will no longer manufacture them in the future, he/she should submit to the CAB the document of Annex 5 together with the Certificate of Approval, making the following clear: the reason for discontinuation, Type/Specification name to be withdrawn and the relevant approval number.

It should be noted that the surrendering of an approval is possible only when the manufacture of the appliances or Specified Emergency Equipment based on the relevant Type/Specification has been discontinued, and at the same time, when it is guaranteed that the products already manufactured are not in service on aircraft.

(Explanation) Even if the manufacture of the appliances or Specified Emergency Equipment based upon the relevant Type/Specification has already been discontinued, it should have also been confirmed that the products already manufactured are not in service on aircraft. Further, if there is a possibility for the products to be installed on aircraft, the Type/Specification Approval holder cannot request to surrender the Type/Specification Approval unless the approval holder takes necessary action to prevent relevant products from being installed on aircraft — because it is necessary that he/she need to carry out issuing of service bulletins and reporting of service difficulties if such case has occurred in relation to the products concerned,

In the case that a TSO design approval from the U.S. Federal Aviation Administration (FAA) is awarded for the Type/Specification concerned, the Type/Specification Approval holder should submit following documents to the CAB personnel in charge: such letter addressed to the FAA office in charge (written in English) that includes the description of the request to withdraw the TSO design approval concerned, the reason of the request and relevant part number(s) together with the FAA letter that states the relevant TSO design approval or its copy.

## Chapter 8

### Procedure for Correcting the Text of the Attachment

#### 8-1 Applicable cases for Notification of Editorial Correction

If intending to make a change to the description of the Attachment regarding the approved Type/Specification, the applicant should make an amendment or additional application prescribed in Chapter 2, and obtain approval regarding the Type/Specification after the change; notwithstanding above, only the correction of editorial errors of the Attachment can be dealt with through submission of a Notification of Editorial Correction of the Attachment to Type/Specification Approval (hereinafter referred to as “notification of editorial correction”: see Annex 6).

Even in the case of intending to make a change to the text of the Attachment, it can be dealt with through submitting a notification of editorial correction, provided the change do not affect the applicable criteria as well as the weight, C.G. position, strength, reliability, characteristics and any other airworthiness factors of the product, and also provided the change are as slight as follows — although that is the case only if the CAB recognizes it appropriate to treat the change as editorial correction of the Attachment.

<1> A change that do not cause a change in the Type/Specification

<2> A change for such portion that was certified at the time of approval not through testing but through such data as calculations

(Except the case that compliance with the applicable criteria should be re-evaluated)

<3> A change that do not cause loss of compatibility and also do not cause a change of the Type/Specification name

<4> A change to such materials, parts and circuit constant that do not belong to the primary portion.

Notwithstanding above, even for a change that do not cause a change to the Type/Specification, a notification of editorial correction does not apply to the following: a change of the applicable criteria; a change to the portion where compliance with the applicable criteria is substantiated by tests or calculations; a change to the portion where compliance with the applicable criteria should be evaluated.

#### 8-2 Submission of Notification of Editorial Correction and Related Documents

If intending to make editorial correction to the Attachment, submit a notification of editorial correction, together with the related documents, to the CAB personnel in charge.

The content of the correction should be clearly provided in the notification of editorial correction. If all the content cannot be set forth in the notification of editorial correction, additional sheet(s) should be prepared and attached to the notification. In that case, clarify the attached document in the blanks for “Content of correction” and “Reason for correction” according to the example below.

(Example) For \_\_\_\_\_, refer to the Appendix \_\_\_\_\_.



The title, document number, revision code (number) and issued date of the document to be attached

The related documents should be such pages of the Attachment that are intended to be corrected. For preparation of the pages to be corrected, procedures of an amendment application can be applied accordingly. Note that “\_\_\_\_\_ based upon the Certificate of Approval No. \_\_\_\_-\_-” in the amendment record and list of part numbers should read “\_\_\_\_\_ based on the Notification of Editorial Correction”.

### 8-3 Acceptance of Notification of Editorial Correction

When a notification of editorial correction is submitted, the CAB will accept it and the fact will be informed to the applicant, if: the content is editorial correction of the text; the notification of editorial correction is prepared well; and necessary documents are attached.

The person who made the notification should enter the date of acceptance as required in the Attachment, promptly remove old pages and insert new pages in the Attachment (original); and further, the invalidated pages should clearly be separated.

In addition, the Attachment recorded in electronic media should be submitted after the acceptance, according to Chapter 5 "Submission of Electronic Media after Approval".

## Chapter 9 Procedure for Amendment to the Documents Submitted Other than the Attachment

When some documents submitted at the time of an application in relation to a Type/Specification already approved — procedures to report service difficulties, procedures to issue technical information (service bulletins), a document describing procedure for quality control, service manual — are intended to be amended, the applicant should make clear the contents to be amended, and notify it to the CAB in writing, attaching related document(s).

## Chapter 10 Quality Audit

From the perspective of ensuring safety and uniformity of components or prescribed emergency equipment produced based on Type (Specification) Approval, after the issuance of Type (Specification) Approval, a quality audit shall be conducted for Type/Specification Approval holders



(including subcontractors, etc.).

#### 10-1 Timing of Implementation of Audit

Concerning the Type/Specification Approval, a periodic audit shall be conducted once a year in principle.

In addition, in cases where the person subject to audit has a certification of manufacturing inspection approval regarding type (specified) components or prescribed emergency equipment approval, or in cases where the production of components or prescribed emergency equipment is discontinued regarding approved types, and when submitting notification of the discontinuation of manufacture pursuant to “7-1 Submission of a Notification of the Discontinuation of Manufacture,” the quality audit can be omitted.

Furthermore, in case where the Director of Airworthiness Division, Jurisdictional Senior Airworthiness Engineer or Residential Chief Airworthiness Engineer deems it necessary, periodic audit aside, temporary audits may be conducted on all or a portion of the material subject to the audit.

This temporary audit may be conducted both with and without prior notice of the timing of implementation.

- (Example)
- When an application for qualification inspection and safety certificate inspection.
  - When restarting production while submitting notification of the discontinuation of manufacture.
  - Others, where it is necessary to ensure safety or uniformity of components or prescribed emergency equipment.

#### 10-2 Auditing Standards

Concerning the safety or uniformity of components or prescribed emergency equipment related to the approved Type/Specification, pursuant to the standards specified in Article 35 of the Regulations “Approved organization standards” and paragraph (3) of Circular No. 2-001 “General Policy for Approved organization,” furthermore, an audit shall be conducted on whether to appropriately execute “Chapter 6: Performance Obligation of Type/Specification Approval Holders.” Audit guidance shall be provided below to determine the appropriateness of the standards.

##### (1) Facilities

The facilities prescribed in this provision do not mean only buildings, but mean, as general term, such equipment, work area and storage facility that are required to perform the approval holder's business.

##### (a) Equipment

###### a. Necessary equipment

Necessary equipment is such provisions that are specified necessary by the designer and manufacturer of the aircraft or appliances concerned. Note that the equipment includes

measuring equipment, test equipment and tools used for the business.

b. Office

The office does not mean only a waiting room for employees, but it means a room for process control and engineering staff, and a room to maintain technical data.

(b) Work area

Work area should have sufficient space to carry out the business, and be kept in sufficient environmental conditions (regarding temperature, humidity, lighting, dust and noise) as specified by the designer and manufacturer of the aircraft or appliances related to the business.

(c) Storage facility

The facility for suitable storage is such one, in relation to the articles to be stored, that has sufficient store conditions as specified necessary by the relevant designer and manufacturer, as well as has sufficient capacity

In addition, items to be stored include measuring equipment, test equipment and tools, in addition to materials, parts and appliances.

Note: Also concerning adhesives, there are cases where storage temperatures are specified, and so caution is necessary.

(d) Renting of facilities and equipment

Although work area, storage facility and equipment may not be always owned by the approval holder himself/herself, it should be clear that the approval holder can rent them any time when the work is conducted, or the concerned business should not be performed unless they are rented — i.e., as for facilities/equipment rented at each work concerned, it is not allowed to perform relevant work unless they are available.

Regarding rented items, the approval holder himself/herself should carry out periodic confirmation whether rented items are appropriately controlled according to the standards of the approval holder —not the standards of outsourced party.

If it is considered that the approval holder rents such facilities at each work, he/she should establish the procedures to confirm that the concerned facilities/equipment comply with his/her standards.

(2) Organization

(a) Appropriate grouping

Appropriate grouping means that works of approval holder are shared with proper balance among relevant groups or to each group heads.

(b) Meaning of organization

It is not always necessary for an organization to take independent and subdivided form, provided the authority, responsibility and mutual relationship are clearly defined, and also as long as there are no difficulties when carrying out its business; and further, assignment of a staff to more than one group, or the number of personnel in total is not a significant factor.

(3) Personnel

(a) Personal competence to carry out assigned work properly

The personnel of each group in the approval holder's organization should have enough competence to carry out the business assigned to each group. As for the system to assure competence, there are national licensing system, qualification system within the organization, work experience, and classification of competence according to personal records of receiving education/training.

Personnel who are directly engaged in inspection tasks (hereinafter referred to as “inspection personnel”) should be qualified based upon such qualification system that corresponds to the inspection system prescribed in paragraph (4) (f).

Personnel who are engaged in specialized services should be qualified based upon such qualification system that is based upon the official standards — e.g. the latest National Aerospace Standard.

(Examples)

JIS W-0905: Aerospace non-destructive inspection personnel qualification and certification

NAS-410: NAS Certification & Qualification of Nondestructive Test Personnel  
(Regarding above, note that the examples are not limited to them, and so it is possible to be based accordingly upon other equivalent official standards.)

(b) Appropriate assignment of personnel

Regarding personnel of each group in the approval holder's organization, the number should be sufficient to properly perform the volume of work assigned to the group. In addition, when the volume of work is expanding, it is often the case that the shortage of work force may often cause problems for proper performance of works, and so it is necessary to grasp the required number of personnel in quantity for the work concerned.

(4) Implementation Work Methods

Implementation work methods defined herein refer to specific methods for the production of components or prescribed emergency equipment regarding the approved type (specification). Implementation methods of production work regarding the approval (work instructions, inspection votes, work procedures, drawings, manuals, etc.) shall be set based on the approved specification, and should be appropriately documented.

Implementation work methods include functional inspection in the work process and intermediate and final inspections. Also, regarding the post-production inspection (qualification inspection or finished product inspection), it shall be pursuant to 2-3-12 approved inspection procedures or 2-4-2 inspection procedures for the finished products certification of inspection carried out after manufacture (or finished goods inspection certification inspection).

In addition, for such audits, regarding components based on Type/Specification Approval, the country shall survey them to ensure they conform to the type (specification) that meets the

(specification) model. Test results, where non-conformance to the type (specification) is confirmed, may involve recommendations being made for business improvement, including stoppages of shipment or revocation of said products.

(5) Quality control system

(a) Maintenance of facilities

The requirements for the appropriateness regarding maintenance of facilities specified in paragraph (1) are as follows.

Note that, in the case that facilities are rented or shared, a person renting or sharing a facility/facilities concerned should be able to assure that the control by the owner or responsible person for the facility/facilities meets the following requirements:

a. Assignment of responsibility and authority

Responsible organization or groups should clearly be defined, regarding the assignment of responsibility and authority in relation to the operations of this quality control system.

b. Maintenance of equipment and tools

Maintenance of equipment and tools should be based upon such methods as specified by the designers of each item. In the case that such specified methods are not available, the approval holder may establish a method by himself/herself, referring to other similar equipment. In this case, the approval holder should have a system to verify the adequacy of the method. The result of the check and inspection should be documented.

c. Accuracy control

In relation to such equipment and tools that require accuracy control: traceability to standard instruments should clearly be established; and the intervals as well as methods for calibration should be defined and observed according to the methods specified by the designers of the relevant equipment and tools. In addition, for the case where it is found, during calibration of tools, that some of the calibration data are out of tolerance specified by the designer, a procedure should be established to investigate properness of works conducted by using the tool(s) concerned. Further, for measuring instruments, relevant calibration intervals (or due dates) should be indicated on them so that the aforementioned intervals can be easily known to a person using such instrument. Furthermore, for such tools that do not require calibration, relevant information should be indicated on them.

d. Number control

Registration of equipment and tools should be controlled by documents and/or electronic methods, and the actual number should be checked periodically.

(b) Education and training

The requirements for appropriateness of education/training regarding personnel specified in section (3) are as follows. Note that the method of education/training will include not only such education/training apart from everyday works, but also such form of education/training

performed during actual works (on the job training: OJT).

Meanwhile, provided the performance of education/training is outsourced, the outsourcing party should be able to assure that the contractor meets the requirements described below.

a. Assignment of responsibility and authority

The responsible organization or groups should clearly be defined, regarding the assignment of responsibility and authority in relation to the operations of this education/training system.

b. Method and procedure to carry out education/training

Persons to be educated or trained, as well as categories, methods and procedures of education/training, should clearly be defined; and requirements for instructors should also be defined and consistent with the contents of the education/training.

c. Contents of education/training

The contents of education/training should be appropriate to persons to be educated or trained, and should contain the knowledge and skill about human performance including the mutual relationship with other maintenance personnel and flight crew. The contents should be based upon the latest materials. Note that training materials corresponding to the training curriculum should be acknowledged by the organization. The education/training should include not only initial one but also recurrent one carried out according to the defined schedule. The persons for the recurrent training should include maintenance personnel as well as certifying staff, inspection personnel and auditor. (Regarding recurrent training, the contents may be such as provided at each time for the purpose of: improvement of quality control system; maintenance of proficiency, and prevention of deficiencies caused by human factors.)

d. Relationship between qualification and education/training

Relationship between requirements for certifying staff, in-house qualification system and the relevant education/training system should clearly be established.

e. Evaluation of education/training

Regarding the education/training conducted, evaluation should be made for each person who received them, except the case where evaluation for each person is not required depending upon the content.

(c) Revision of implementation method of works (changes)

The appropriateness standards regarding the revision of the implementation method of works as specified in paragraph (4) are as follows:

a. Assignment of responsibility and authority

The responsible organization or groups should clearly be defined, regarding the assignment of responsibility and authority to operate the task of this subject.

b. Content of modification

The amended contents should comply with the item (5) mentioned above and should be

updated with the latest information.

c. Control of deleted methods/procedures

Such methods/procedures that are superseded by the amendment should not be in use in actual works.

(d) Control of technical data/documents

The technical data/documents should always be controlled in the latest condition. Actual examples of technical data/documents are considered as follows.

<1> Civil Aeronautics Law, related Cabinet Order, Ordinances of the MLIT, Executive Orders and Notifications (including the airworthiness directives of Japan)

<2> Such technical data/documents related to Type Certification, Change of Type Certification, Supplemental Type Certification, Type Approval, Specification Approval, and the like

<3> Airworthiness Directives from the Aviation Authorities of the Country of Design or Manufacture (AD and CN)

<4> The technical data/documents issued by the designer or manufacturer (Manufacturing Drawings, Test Methods, Flight Manual, Maintenance Manual, Component Overhaul Manual, Service Bulletins and Service Information)

<5> Maintenance Manual of an air carrier

<6> Technical information from customers of aircraft or appliances

<7> Technical documents related to the relevant standards (JIS, NAS, MIL, ISO and TSO)

The requirements for appropriateness of obtaining, controlling and operations of technical data/documents are as below. If the work of obtaining, controlling and operations of technical data is outsourced, the outsourcing party should be able to assure that the contractor meets the aforementioned requirements.

a. Assignment of responsibility and authority

The responsible organization or groups should clearly be defined, regarding the assignment of responsibility and authority to operate the task of the subject.

b. Obtaining technical data/documents

The organization should be able to obtain the latest technical data/documents necessary for the business.

c. Controlling and operations of technical data/documents

The latest technical data/documents obtained should be provided to all personnel who will use them. The addresses to which the technical data/documents are distributed should be identified; and at each address, a person responsible for controlling the technical data/documents (including the replacement of the revised pages) should be appointed. Further, technical data/documents not controlled by the approval holder should not be brought into the work area.

d. Control of technical data/documents deleted

The technical data/documents deleted after amendment should not be used for the business.

(e) Management of materials, parts and components

The requirements for appropriateness of the management of materials, parts and appliances are as follows.

Note that, when the management of materials, parts and appliances is outsourced, the outsourcing party should be able to assure that the contractor meets the requirements described below.

a. Assignment of responsibility and authority

The responsible organization or groups should clearly be defined, regarding the assignment of responsibility and authority to operate the task of the subject.

b. Method of storage

The method of storage should clearly be defined and be in accordance with the method specified by the designer. For articles which require a special method for storage (such articles as storage temperature are specified), relevant information should be indicated on them or on their packages.

c. Prevention of mixing with unserviceable articles

Unserviceable materials and parts appliances should properly be segregated and never be used as serviceable, by chance. Regarding unserviceable materials, parts and appliances, a method to indicate “Unserviceable” clearly on the articles concerned should be established.

d. Inventory control

A method of inventory control should be established. The inventory control should be performed using documents and electronic method. In addition, the articles actually stored should be checked periodically against the list of inventory.

e. Retention Periods

When items are provided with retention periods, a method for retention period management shall be established, and a validated date indicated on such products or containers.

f. Other

Concerning materials, parts and components, in cases where there are supplies from aircraft users, said handling should be identified. Furthermore, even if there are supplies, the holders of approval shall basically implement quality control at their own responsibility.

(g) Inspection system

a. Acceptance inspection of materials, parts and appliances

Acceptance inspection means such inspection as carried out when receiving: relevant materials, parts and appliances purchased from their manufacturers; and manufactured products or repaired articles with the spare parts certificate or the authorized release

certificate, incoming from their manufacturers and repair companies. Although acceptance inspections should be, in principle, performed by the approval holder himself/herself, the location for inspection may be outside his/her facility. Note that acceptance inspections are also necessary when materials, parts and appliances are received from other group of the same organization. When acceptance inspections are outsourced, the outsourcing party should confirm that the contractor meets the requirements specified in this section and should also make contract management to the relevant contractor based on the requirements specified in section (h).

(i) Assignment of responsibility and authority

The responsible organization or groups should clearly be defined, regarding the assignment of responsibility and authority to operate the task of the subject.

(ii) Standards and methods of acceptance inspection

The standards for acceptance inspection impose that the materials, parts and components to be used must meet the criteria specified in the method of conducting the operation, and the methods shall be sufficient to evaluate the appropriateness for the standards.

Regarding each material, part and components, a certificate (such as FAA Form 8130-3, EASA (JAA) Form One and/or certifying documents for material inspection) to be confirmed when conducting inspection shall be clearly specified.

(iii) Inspection personnel for acceptance inspection

The inspection personnel for acceptance inspection should have competence to perform such inspection based on the requirement and method of acceptance inspections mentioned above. Meanwhile, the inspection personnel (inspector) may be the same person who performs the work (work force).

(iv) Handling of nonconforming items

The articles determined nonconforming to the requirement of (ii) above should clearly be segregated from the conforming articles, and further, such nonconforming articles should never be used as serviceable, by chance. Those rejected articles should have definite indication to the effect on them.

Regarding articles of which nonconformity have been determined, the fact should clearly indicated.

b. Acceptance, intermediate and completion inspections for components

An acceptance inspection is an incoming inspection when receiving components. An acceptance inspection to receive materials, parts and components used for the business shall be handled as an acceptance inspection of item A.

Intermediate and completion inspections are those in the manufacturing process; intermediate inspections shall be implemented at the intermediate stage and completion inspection shall be implemented at the last stage.



In addition, in cases where a completion inspection is needed, it shall include functional and flight inspections.

The standards for the appropriateness of acceptance, intermediate and completion inspections for components concerning the approval holder's business are as follows:

(i) Assignment of responsibility and authority

The responsible organization or groups should clearly be defined, regarding the assignment of responsibility and authority to operate the task of the subject.

(ii) Check of history regarding articles subjected to shop-in inspections

Regarding articles subjected to shop-in inspections, necessary information on their history — contents of deficiencies, results of corrective actions, time in service, and compliance status with Airworthiness Directives — should be obtained from customers.

(iii) Requirement and method of the inspections

The requirement and method of the inspections should be consistent with the procedures of works specified in Section 3-1 (5) of Circular No. 2-001 — note that such form of inspections are included as inspections by a person himself/herself who performed the task, inspections by a third party independent from a person who performed the task. In addition, at the time of acceptance inspections, if an article with damage(s) is under inspection, also the area surrounding the damage(s) should be checked enough. Regarding each phase of inspections performed in the work, relevant instructions — including description when to carry out inspections — should clearly be specified in the work procedure documents, and further, acceptance criteria (limit values) should be defined. Note that such inspection items may be quoted as are specified in the standard document, i.e., the relevant Maintenance Manual approved under Article 104 of the Law.

(iv) Inspection personnel

Inspections should be carried out by personnel who have sufficient proficiency to be engaged in the inspections specified in (ii) and (iii). The organization should have the system which assures the proficiency of the inspection personnel. Note that persons to carry out inspections (inspection personnel) may be the same persons who perform the work.

(v) Result of inspections

Results of inspections performed under (ii) or (iii) should be recorded and provided to persons concerned. The items determined to be nonconforming as a result of inspection should be taken necessary corrective actions or be definitely segregated from others as nonconforming articles.

(g) Process control system

The requirements for appropriateness of process control system are as follows.

a. Assignment of responsibility and authority

The responsible organization or groups should clearly be defined, regarding the assignment of responsibility and authority to operate the task of the subject.

b. Contents of process control

The process of works should be consistent with the procedures of works specified in Section 3-1 (5) of Circular No. 2-001.

Note that the process of works should also be consistent with the procedures of works specified in Section 3-1 (5) of Circular No. 2-001, even in the case: that some work is carried over from one process to another process; or that some work is carried over in the same process due to the work shift among personnel.

(h) Management of Outsourcing

Although there are various types of outsourcing, e.g. outsourcing of specialized process works, outsourcing in the form of procurement (work force is supplied) is also treated in the same manner according to this item (h).

The requirements for appropriateness of management system for outsourcing are as follows.

The outsourcing party (a party which makes outsourcing of some works) should always assure through the contractor management that the contractor has sufficient capability to accomplish the contracted work and is carrying out the work in accordance with the orders from the outsourcing party.

Note that such appliances may not be covered by the aforementioned management system for outsourcing: that have a spare part certificate; as well as that have been issued the authorized release certificate, based upon the provisions of the Law Article 17 Paragraph (3), after the confirmation of compliance with the requirements of the Law Article 10 Paragraph (4) item (1).

a. Assignment of responsibility and authority

The responsible organization or groups should clearly be defined, regarding the assignment of responsibility and authority to operate the task of the subject.

b. Selection of contractor

When some works are intended to be outsourced, such requirements for selecting the contractor should clearly be defined that are applied to evaluate the appropriateness of the contractor's capability — facilities, organization, personnel, materials and systems — in relation to the outsourced works, and the outsourcing party should evaluate the contractor through adequate methods whether the contractor concerned meets the requirements.

Note that, in the case that the contractor is a certificate holder of an Approved Organization, the outsourcing party should examine the contractor whether the outsourced works are covered within the classification of certification and ratings/limitations granted to the contractor.

Notwithstanding above, the outsourcing party should evaluate the contractor regarding the items in the gap between the contractor selection requirements specified by the

outsourcing party and the technical requirements of the approved organization.

c. Scope of contracted work

The contents of contracted work should clearly be defined.

d. Making orders to contractor

The detail of each work to be outsourced should correctly be notified to the contractor.

(Example) Work order, specifications of contracted works or terms of reference  
(Applicable service bulletins are specified.)

e. Acceptance inspections

In relation to the work outsourced, such requirement and method of inspections by the outsourcing party should clearly be defined that are enough to determine whether the contracted works are performed as specified in the documents of the previous item. Meanwhile, in the case that the contractor is a certificate holder of an Approved Organization, and when he/she has carried out confirmation based upon the certificate of the Approved Organization concerned, it is acceptable if such requirement and method of inspections by the outsourcing party are defined that are enough to determine whether the aforementioned confirmation is performed. Acceptance inspections should be carried out by the outsourcing party. Inspections by the contractor should not be regarded as acceptance inspections. Note that acceptance inspections may be performed at the contractor — outside the Approved Organization.

f. Audit to contractor

Such requirements should clearly be defined that are applied to evaluate the appropriateness of the contractor's capability in relation to the outsourced works; and the outsourcing party should audit the contractor through adequate methods and frequency whether the contractor concerned meets the requirements.

Note that the said audit may be omitted, in the case that the contractor is a certificate holder of an Approved Organization, and at the same time, when the outsourced works are covered within the classification of certification and ratings/limitations granted to the contractor; although, if some gap exists between the requirements specified by the outsourcing party and the requirements of the approved organization — contractor, and at the same time, if the contractor has not performed internal audit regarding the gap, it is necessary for outsourcing party to audit the contractor regarding items in the gap.

g. Personnel to perform inspections/audits

The audits prescribed in paragraphs b, e and f should be carried out by persons who have enough ability to accomplish each task, and a system to assure the ability should be established.

(i) Recordkeeping

The requirements for appropriateness of recordkeeping are as follows. In addition, if recordkeeping is outsourced, the outsourcing party should be able to assure that the contractor

meets the requirements described below.

a. Assignment of responsibility and authority

The responsible organization or groups should clearly be defined, regarding the assignment of responsibility and authority to operate the task of the subject.

b. Scope and contents of records

The scope and contents of records should be enough to assure that the work is being performed properly.

c. Method and duration of recordkeeping

Recordkeeping should be in such a manner that makes it possible to present the records without delay when requested.

(Note) Regarding a method to retain records, electronic method is acceptable, instead of documentation with paper.

(j) Internal audit

a. Purpose of internal audit system

For approval holders, inspections by the government are carried out through quality audit; still, among aviation community where progress of technology is rapid, approval holders themselves should also conduct audits repeatedly and take required corrective actions timely and properly to maintain all the time compliance with the laws and regulations related to the business; and further, it is necessary to make it clearer that primary responsibility of the compliance stays on approval holders themselves — as a result, introduction of internal audit system was decided. Therefore, it is necessary that internal audits are carried out on the responsibility of approval holders who have the final responsibility for the compliance with the related laws and regulations; and in the case of an approval holder who himself/herself does not carry out internal audit, he/she should appoint an auditor from his/her employees and request the appointed auditor to report the results of internal audits directly to the approval holder.

b. Requirements for appropriateness of internal audit system

The requirements for appropriateness of the internal audit system are as follows.

(i) Assignment of responsibility and authority

The responsible organization or groups should clearly be defined, regarding the assignment of responsibility and authority to operate the task of the subject. The organization carrying out audits may not always be permanent one, but the audit plan should always be controlled by the organization concerned.

(ii) Scope of audit

The scope of audit should cover all areas concerning the business of the organization.

(iii) Readiness to plan audits

Audits should be conducted with appropriate planning and interval. Concerning business at main facilities, each audit should be carried out within one year every time;

and for business at other facilities, each audit should be carried out within two years every time.

Note that, as one type of audits, unscheduled audit may also be carried out, when change in approved business is required or when the approval holder deems it necessary.

(iv) Requirement of audit

The requirement of audit is whether the business concerned complies with Civil Aeronautics Law, related Ordinances of the MLIT and Executive Orders. Note that such a checklist and the like that describe audit items practically should be prepared.

(v) A person to carry out audits

A person to carry out audits should: belong to a section — which may not necessarily be a permanent organization — independent of the internal organization to be audited; have enough knowledge and experience with respect to the works to be audited; and have finished in-house education/training for the quality assurance system and audit methods. A qualification system within the organization concerned may be established to assure the competence of an auditor.

Note that it should be established that the auditor should not be engaged in the audit of the section to which he/she belongs.

(vi) Results of audits

The results of audits should be recorded. The records should be reported directly to the person responsible for the audit.

(vii) Corrective actions

Nonconformities/noncompliance found during audits should be corrected on the responsibility of the approval holder. Regarding effectiveness of corrective actions, another audit should be carried out, as necessary.

(viii) Records of audit and its submission to the government

Results of audits and the related corrective actions should be recorded, and the record should be provided to the government upon request.

c. Outsourcing of internal audit

It is necessary that approval holders should be responsible for schedules and implementation of internal audits and for monitoring the performance of corrective actions as a result of the audit; regarding a person, however, to be engaged in actual works of audits, approval holders may outsource the relevant tasks to other person outside the organization, with the condition that the approval holder himself/herself would evaluate whether the person possesses the competence prescribed in item (v) above and would specify the procedures to perform the audit.

Even in that case, however, it is obvious that approval holders should have primary responsibility for the practice of audits.

### 10-3 Notification of Result

The director of Airworthiness Division will inform the audited company of the result of audit in writing. Meanwhile, when there are no findings or when findings are minor and corrections can apparently be expected, the CAB may make only oral notification instead of notification in writing.

Upon receiving findings orally or in writing regarding results of an audit, the audited company should, as soon as possible, submit a correction plan and corrective actions in writing to the director of Airworthiness Division and make necessary corrective actions. After completion of the corrective actions, it should be reported to the director of Airworthiness Division.

The director of Airworthiness Division, having received a report regarding the corrective actions to aforementioned findings, will evaluate the corrected conditions through checking relevant documents or making audit again.

## Chapter 11 Revocation of Approval

If it is determined that the safety or uniformity is not ensured for the appliances or Specified Emergency Equipment of which Type/Specification has been approved, the Minister of Land, Infrastructure, Transport and Tourism will revoke the Type/Specification Approval based upon Article 14-2 Paragraph (3) or Article 152 Paragraph (4) of the CAR, and Article 5 of the Guidelines.

## Chapter 12 Current Information of Type/Specification Approval

Information regarding the approved type (specification) and the approval holder will be accepted. Inquiries can be made at each inspection office, and will be available by the Air Safety Information Management System (ASIMS). Private information of the reporter shall be kept confidential when disclosing information.

Public URL

<https://www.asims.mlit.go.jp/>

Supplementary Provisions (April 26, 2005)

- 1 This Circular becomes effective on July 25, 2005.
- 2 This Circular consolidates the Circulars related to Type Approval and Specification Approval, and is issued as the Circular No. 1-004.
- 3 This Circular supersedes the following documents: TCM-23-002E-99 “Instructions for Type Approval and Specification Approval”, TCM-23-007F-99 “Guidance of Type Approval and Specification Approval”, TCL-35 “Handling of Specification Approval Parts Including Parts Covered by Type Approval” and TCL-1100-92 “List of Specification Approvals”.

Supplementary Provisions (June 30, 2011)

1. This Circular shall be applied on July 1, 2011.

Supplementary Provisions (July 13, 2011)

This Circular shall be applied on September 1, 2011. However, that the revised provisions, paragraph 6-3 shall be applied on September 1, 2014.

For further questions or comments regarding this Circular, please contact the following:

Airframe Section, Power Plant Section or Equipage Section,  
Airworthiness Division, Aviation Safety and Security Department, Civil Aviation Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism

2-1-3 Kasumigaseki, Chiyoda-ku, Tokyo, 100-8918

TEL: 03-5253-8735

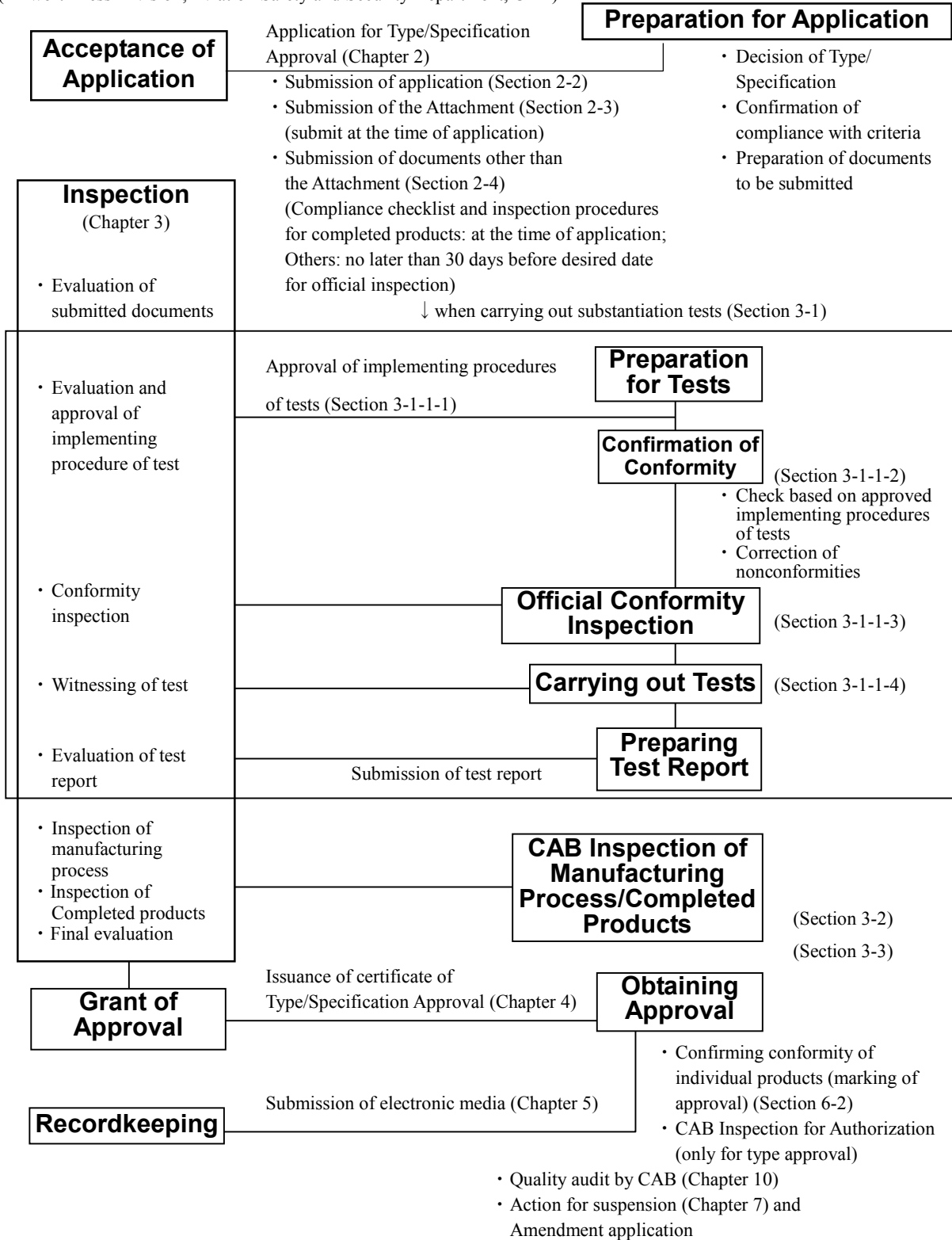
FAX: 03-5253-1661



# Annex 1: Flow of Procedure for Type/Specification Approval

Minister of Land, Infrastructure, Transport and Tourism Applicant  
 (Airworthiness Division, Aviation Safety and Security Department, CAB)

Applicant



**Annex 2: Form CAR 7-2** (Japanese Industrial Standard A4 size)

Application for Appliance {select Type or Specification} Approval

To: Minister of Land, Infrastructure, Transport and Tourism

Date:

Applicant's Address or Location of Main Office

Applicant's Name along with Stamp

I hereby submit to your office an application along with the related documents, for {select Type or Specification} Approval of the {select “equipment” or “part(s)”} as shown below.

Classification	
{select Type or Specification} name	
Designer's name and address	
Manufacturer's name and address	
Name and location of the factory	
Inspection location desired	
Inspection date desired	
Remarks	

Note: Signature of an applicant is acceptable, instead of entering his/her name along with the stamp.

**Annex 3: Form CAR 28-3 (Japanese Industrial Standard A4 size)**

Application for Type Approval of Specified Emergency Equipment

To: Minister of Land, Infrastructure, Transport and Tourism

Date:

Applicant's address

Applicant's Name along with Stamp

I hereby submit to your office an application along with the related documents, for Type approval of the Specified Emergency Equipment as shown below.

Classification	
Type name	
Designer's name and address	
Manufacturer's name and address	
Name and location of the factory	
Inspection location desired	
Inspection date desired	
Remarks	

Note: Signature of an applicant is acceptable, instead of entering his/her name along with the stamp.

**Annex 4: Notification of Suspension of Manufacture of Type/Specification Approved Product**  
(Japanese Industrial Standard A4 size)

Notification of Suspension of Manufacture of {select Type or Specification} Approved Product

To: Director, Airworthiness Division

Date:

Approval holder's address

Approval holder's name along with Stamp

I hereby report to you that I have suspended the manufacture of the {select “equipment”, “part(s)”  
or “Specified Emergency Equipment”} as shown below:

Description

Category of approval: (e.g.) Type Approval, or Specification Approval

Approval number: No. \_\_\_\_\_

Type or Specification name: (e.g.) {enter Make} Model XXXXXX

Reason:

Note: Signature of a person concerned is acceptable, instead of entering his/her name along with the stamp.

**Annex 5: Request for Surrendering of Type/Specification Approval (Japanese Industrial Standard A4 size)**

Request for Surrendering of {select Type or Specification} Approval

To: Minister of Land, Infrastructure, Transport and Tourism

Date:

Approval holder's address

Approval holder's name along with Stamp

I hereby submit an application along with the Certificate, to request surrendering of the {select Type or Specification} Approval of the {select “equipment”, “part(s)” or “Specified Emergency Equipment”} as shown below:

Description

Category of approval: (e.g.) Type Approval, or Specification Approval

Approval number: No. \_\_\_\_\_

Type or Specification name: (e.g.) {enter Make} Model XXXXXX

Reason:

Note: Signature of an applicant is acceptable, instead of entering his/her name along with the stamp.

**Annex 6: Notification of Editorial Correction of the Attachment to Type/Specification Approval** (Japanese Industrial Standard A4 size)

Notification of Editorial Correction of the Attachment  
to {select Type or Specification} Approval

To: Director, Airworthiness Division, Aviation Safety and Security Department ,  
Civil Aviation Bureau

Date:

Notifier's address  
Notifier's name along with Stamp

Classification		Type name or Specification name	
Category of approval	<input type="checkbox"/> Equipment <input type="checkbox"/> Type Approval <input type="checkbox"/> Part(s) <input type="checkbox"/> Specification Approval <input type="checkbox"/> Specified Emergency Equipment	Approval number	No. ____
Contents of correction			
Reason of correction			
Submitted documents			

**Appendix 1: Example of the Attachment to Certificate of Approval**

**Appendix 1-1: Example of the Cover Sheet**

**Attachment to  
Certificate of Type Approval**

**No. XXXXX**

**Altimeter**

**{enter Make} Model XY Series**

**AB Co., Ltd.**

**Appendix 1-2: Example of the Cover Sheet for Each Type**

**Attachment to  
Certificate of Type Approval**

**No. XXXXX**

**Volume**

**Altimeter**

**{enter Make} Model XY-1**

**AB Co., Ltd.**



**Appendix 1-3: Example of the List of Certificates of Approval**

**List of Certificates of Approval**

{enter Make} Model XY Series

Date of approval	Certificate number	Remarks
{enter Date}	No. <u>XXX</u>	{enter Make} Model XY-1 {enter Make} Model XY-2
{enter Date}	No. <u>XXX-2</u>	[Deleted] {enter Make} Model XY-1 [Added] {enter Make} Model XY-3
{enter Date}	No. <u>XXX-3</u>	[Added] {enter Make} Model XY-4

(Page)

**Appendix 1-4: Example of Amendment record**

**Amendment record**

{enter Make} Model XY Series

Date of approval or acceptance	Outline of Amendment	Pages	Remarks
{enter Date}	Newly prepared Volume 1: {enter Make} Model XY-1 Volume 2: {enter Make} Model XY-2	All pages	
{enter Date}	Addition and deletion of type names based upon Certificate of Approval No. <u>XXX-2</u> : Volume 1: [deleted] {enter Make} Model XY-1 Volume 3: [added] {enter Make} Model XY-3	Volume 1: all pages (deleted) Volume 3: pp. 1-24	
{enter Date}	Change to entries in the Attachment based upon Notification of Editorial Correction of the Attachment: Volume 2: {enter Make} Model XY-2 <ul style="list-style-type: none"> <li>• Correction of typological errors</li> <li>• Conversion of paper drawings into CAD drawings</li> </ul>	Volume 2: pp. 1, 6, 6-1, 8 (deleted), and 9	
{enter Date}	Change and addition of type names based upon Certificate of Approval No. <u>XXX-3</u> : <ul style="list-style-type: none"> <li>• Volumes 2 and 3:                              Change of material of the case of: {enter Make} Model XY-2 and {enter Make} Model XY-3, and the accompanying change of part numbers:                              P/N XY-2-1 → XY-2-1A                              XY-2-2 → XY-2-2A                              XY-3-1 → XY-3-1A                              XY-3-2 → XY-3-2A                         </li> <li>• Volume 4: [added] {enter Make} Model XY-4</li> </ul>	Volume 2: pp. 3 (deleted), 6, 6-1, 6-2 and 6-3 Volume 3: pp. 4, 5-1 and 5-2 Volume 4: all pages	

(Page)

**Appendix 1-5: Example of the List of Effective Pages (in the case of a series type and preparing for each type)**

List of Effective Pages

{enter Make} Model XY Series  
 Volume 2: {enter Make} Model XY-2

Page	Revision code	Date of approval or acceptance	Page	Revision code	Date of approval or acceptance
Volume 2: {enter Make} Model XY-2					
1	A	{enter Date}			
2		{enter Date}			
3	(Deleted)	{enter Date}			
4		{enter Date}			
5		{enter Date}			
6	B	{enter Date}			
6-1	A	{enter Date}			
6-2		{enter Date}			
6-3		{enter Date}			
7		{enter Date}			
8	(Reserved)	———			
9	A	{enter Date}			
10		{enter Date}			
11		{enter Date}			
12		{enter Date}			
Volume 3: {enter Make} Model XY-3 (The rest omitted)					

(Page)

**Appendix 1-6: Example of the List of Part Numbers (in the case of a series type and preparing for each type)**

**List of Part Numbers**

{enter Make} Model XY Series  
 Volume 2: {enter Make} Model XY-2

Part number	Date of approval	Name	Remarks
XY-2-1	{enter Date}	ALTIMETER-XY	Abolished according to Certificate of Approval No. <u>XXX-3</u>
XY-2-2	{enter Date}	ALTIMETER-XY	Abolished according to Certificate of Approval No. <u>XXX-3</u>
XY-2-1A	{enter Date}	ALTIMETER-XY	Added according to Certificate of Approval No. <u>XXX-3</u>
XY-2-2A	{enter Date}	ALTIMETER-XY	Added according to Certificate of Approval No. <u>XXX-3</u>

(Page)

## **Structure of Attachments {enter Make} Model XY Series**

**Volume 1: Attachment for {enter Make} Model XY-1**

**Volume 2: Attachment for {enter Make} Model XY-2**

**Volume 3: Attachment for {enter Make} Model XY-3**

**Volume 4: Attachment for {enter Make} Model XY-4**

**Appendix 1-8: Example of the Table of Contents of the Attachment**

**Volume 2: Attachment for {enter Make} Model XY-2  
Table of Contents**

	Page
1. Specifications .....	1
2. Drawing List.....	6
3. Parts List.....	7
4. Inspection Procedures for Authorization.....	10
5. Compliance Checklist.....	11
6. Method of Markings.....	12

(Note) Revision codes are omitted.

## Appendix 1-9: Example of the Description of Specifications

Date of approval (acceptance): {enter Date}

Revision: A

### 1. Specifications of the Altimeter, {enter Make} Model XY-2

#### 1.1 Purpose

This document specifies the type that is applied to the Altimeter, {enter Make} Model XY-2 (type name in English: AB XY-2), designed by AB Co., Ltd. and manufactured at the \_\_\_\_ Factory of AB Co., Ltd.

#### 1.2 Applicable Appliance

Altimeter, {enter Make} Model XY-2

Nomenclature	Part number	Applicable aircraft
Altimeter (ALTIMETER-XY)	XY-2-1	{enter Make} Model 787-100
Altimeter (ALTIMETER-XY)	XY-2-2	{enter Make} Model 787-200

#### 1.3 Applicable Criteria

- (1) Part III of the Airworthiness Inspection Manual (KU-KEN-381, dated October 20, 1966)

Note that revisions up to KU-KI-557, dated May 22, 1998 should be included.

Chapter 3: Strength	3-1 General
Chapter 4: Design and Structure	4-1 General
Chapter 6: Equipment	6-1 General (excluding 6-1-3 and 6-1-4) 6-2-3 Equipment of instruments (static pressure system) 6-3 Electric system and electric equipment
Chapter 7: Operating Limitations, Makings and Flight Manual	7-1 General 7-2-11 Operating limitations (maximum operating altitude) 7-3 Makings and placards

- (2) FAR Part 25, including Amdt. 25-1 to 25-82:

25.301, 25.303, 25.305, 25.307, 25.601, 25.603, ...

(Note) The applicable requirements shown above are only examples, and not intended to show applicable requirements for altimeters actually.

#### 1.4 Applicable Standards

- (1) TSO-C10b Aircraft Altimeter, Pressure Actuated, Sensitive Type
- (2) RTCA DO-160D
- (3) MIL-x-xxx

## 1.5 Reference Materials

{enter the title of documents referred to} issued by {enter the name of the Company}

## 1.6 Specifications

### 1.6.1 Outline and general functions

The {enter Make} Model XY-2, ALTIMETER-XY, is .....

### 1.6.2 Basic structure

.....

### 1.6.3 Performance data

.....

### 1.6.4 Dimensions

.....

### 1.6.5 Mass

The mass of xxxx should not exceed the values shown below:

Maximum mass (for each unit): XXX kg (XXX lbs)

In addition, when the following appliances are installed, the mass of each appliance and the total mass should not exceed the values shown below. Note that the mass with strength substantiation of xxxxx including the appliances is as follows:

Mass with strength substantiation: XXX kg (XXX lbs)

.....

### 1.6.6 Operating limitations and operating conditions

.....

### 1.6.7 Factory

{enter the name of the factory} of {enter the name of the approved holder's company}:  
main process and final inspection

{enter the name of the factory} of {enter the name of the approved holder's company}:  
production and inspection of the {enter the name of the component, as applicable}



Date of approval (acceptance): {enter Date}

Revision: Initial version

### 1.7 Three-view Drawing — General Assembly

{enter the drawing title}: ALTIMETER-XY XY-2-1A Rev. B

(Insert three-view drawing of the general assembly at the end of the specifications.)

### 1.8 Nameplate

Nameplate drawing: AIP-1245 Rev. C (Insert at the end of the specifications.)

Indicated items on the nameplate are as follows:

Name: ALTIMETER-XY XY-2-1A

Type name: {enter Make} Model XY-2

Part number: XY-2-1A

Serial number: should be stamped after manufacture

Approval number: Ministry of Land, Infrastructure , Transport and Tourism Type  
Approval No. XXXXXX

Inspection date: should be stamped as follows after inspection:  
(Day)/(Month)/(Year)

Acceptance stamp: should be marked according to the {enter the title of the document related  
to the relevant management}

Maximum mass: should be marked as follows:  
(Actual mass) kg / Maximum mass XXXXXX kg

Environmental test category: RTCA DO-160D Env.Cat.xxxxxx

**Appendix 1-10: Example of the Drawing List**

Date of approval (acceptance): {enter Date}

Revision: B

**2. Drawing List**

	Drawing title	Drawing number and revision code	Remarks
1	Three-view Drawing - General Assembly	ABCD-1234 Rev. New	for XY-2-1A
2	• Three-view Drawing - xx Subassembly	ABCD-1235 Rev. A	ditto
3	• • Cross sectional drawing	ABCD-1236 Rev. B	ditto
4	• • Installation drawing	ABCD-1237 Rev. C	ditto
5	• • Wiring diagram	ABCD-1238 Rev. D	ditto
6	• • Wiring diagram	ABCD-1239 Rev. E	ditto
7	• Three-view Drawing - zz Subassembly	VWXY-1234 Rev. New	for XY-2-2A
8	• • Cross sectional drawing	VWXY-1235 Rev. F	ditto
9	• • Installation drawing	VWXY-1236 Rev. G	ditto
10	• • Wiring diagram	VWXY-1237 Rev. H	ditto
11	• • Wiring diagram	VWXY-1238 Rev. J	ditto

**Appendix 1-11: Example of the Parts List**

Date of approval (acceptance): {enter Date}

Revision: Initial version

**3. Parts List**

Part name	Part number	Standard	Qty.	Supplier	Remarks
Fixed film resistor	R12	MIL-X-XXX	1	{enter supplier's name}	
Diaphragm	210-0102	AN XXXX	1	{enter supplier's name}	for XY-2-1A
Packing	333-555	JIS X XXX	2	{enter supplier's name}	(Made of Teflon)
Connector	2CV-R600	Drawing No. ____	5	in-house production	for XY-2-2A
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•

**Appendix 1-12: Example of the Inspection Procedures for Authorization**

Date of approval (acceptance): {enter Date}

Revision: Initial version

**4. Types of Inspections to Be Performed under the Provisions of Civil Aeronautics Regulations  
Article 15 Paragraph (1) (Inspection Procedures for Authorization)**

4.1 Inspection Items

- 1 Structural material inspection
- 2 Normal temperature indication error inspection
- 3 Friction error inspection
- 4 xxxx inspection

4.2 Inspection Methods

- 1 Structural material inspection  
.....
- 2 Normal temperature indication error inspection  
.....
- 3 Friction error inspection  
.....
- 4 xxxx inspection  
.....

## **Appendix 1-13: Example of the Method of Markings**

Date of approval (acceptance): {enter Date}

Revision: Initial version

### **5. Method of Markings to Be Indicated under the Provisions of Civil Aeronautics Regulations Article 14 Paragraph (5) (Method of Markings)**

#### **5.1 Content of Markings**

Based upon the Nameplate Drawing (AIP-1245).

#### **5.2 Location of Markings**

Based upon the Three-view Drawing of the General Assembly (ABCD-1234).

#### **5.3 Method of Markings**

The nameplate is made of {enter the kind of material}, and attached at {enter the position for attachment} with {enter the tool and method to fix}.

**Appendix 1-14: Example of the Statement for Implementing Procedure of a Test**

(Document number)

(Issue date)

**Statement for Implementing Procedure of a Test**

- 1 Type Name and Appliance Name  
{enter Make} Model XXXXXX, xxx
  
- 2 Title of the Implementing Procedure of a Test  
Implementing Procedure of {insert the title of the test}  
Document Number: xxxxx-xx  
Revision Code: xx
  
- 3 Approval  
XXXXX Division, xxx Co., Ltd.: (Name and Stamp, or Signature)  
Date of Approval: {enter Date}
  
- 4 Approval by the Civil Aviation Bureau  
Airworthiness Division, Civil Aviation Bureau: (Name and Stamp, or Signature)  
Date of Approval: {enter Date}

Comments by the Civil Aviation Bureau:

\* If the document extends to more than one page, give the document number and page number on each page.



**Appendix 1-16: Example of the Statement of Conformity**

(Document number)

## Statement of Conformity

- 1 Type Name and Appliance Name  
{enter Make} Model: XXXXXX, xxxxxx
  
- 2 Part Number and Serial Number of the Test Article  
Part Number:                      Serial Number:
  
- 3 Applicable Implementing Procedure of a Test  
Implementing Procedure of {insert the title of the test}  
Document number: xxxxxx-xx    Revision code: xx  
Date of approval by the Civil Aviation Bureau: {enter Date}  
Notice of Correction for the Implementing procedure of a test  
Document number: xxxxxx-xx  
Date of approval by the Civil Aviation Bureau: {enter Date}
  
- 4 Object(s) of Conformity Checks  
 Test article(s)  
 Test set-up  
 Test equipment  
 Others
  
- 5 Nonconformities and Corrective Action(s) Taken  
.....
  
- 6 Conformity Status  
.....
  
- 7 Conformity Confirmed by:  
(Name and stamp, or signature), (Department), on {enter Date}

\* If the document extends to more than one page, give the document number and page number on each page.



## Appendix 2: Specifications of Electronic Media

Taking into account the convenience of the Type/Specification Approval holder, the procedure for preparing the Attachment and other documents using electronic media is prescribed below.

### 1. Scope of Application

The Attachment to the Certificate of Type/Specification Approval and the required documents other than the Attachment.

### 2. Revision of Specifications

Because of the rapid progress of technological development of electronic media, hardware and software, the specifications will be revised appropriately as necessary. In particular, since the electronic media and data formats that can be used are expected to be revised frequently, consult the CAB personnel in charge for any question regarding these specifications, including data formats that can be used.

### 3. Electronic Media That Can Be Used

Though a wide variety of electronic media are in widespread use, CD/CD-R (hereinafter referred to as “CD”) or DVD-R/DVD-RAM (hereinafter referred to as “DVD”) should be used, taking into account the convenience and prevalence. However, up to three discs are allowed to be used for each Type/Specification Approval. Good quality media should be used to prevent data from being destroyed.

The data formats should be those in which data can be input and output using a Microsoft Windows long filename, and should be compatible with ISO 9660 JOLIET for CD and with ISO 9660 JOLIET or ISO/IEC 13346 (UDF) for DVD.

### 4. Data Formats That Can Be Used

Standard data formats are shown below. If using any format other than these, make an inquiry about the matter to the CAB personnel in charge in advance (except for the index).

#### (1) Document (word processor and text editor)

- Rich Text Format file (\* .rtf)
- Microsoft Word (Version 97 or later) file (\* .doc)
- JUST SYSTEM Ichitaro (Ver. 6 or later) (\* .jtd)
- Text file (\* .txt)

#### (2) List (spreadsheet)

- Microsoft Excel (Version 97 or later) file (\* .xls)

- (3) Flowchart and schedule
  - Microsoft Visio (Version TBD) file (\* .vsd)
  - Microsoft Project (Version TBD) file (\* .mpp)
- (4) Image
  - Tagged Image File Format file (\* .tiff/ \* .tif)
  - Bitmap file (\* .bmp)
  - JPEG (Joint Photographic Coding Expert Group) file (\* .jpeg/ \* .jpg)
  - CompuServe's Graphics Interchange Format (GIF) file (\* .gif)
  - Kodak Photo CD file (\* .pcd)
- (5) Animation
  - Animation file (\* .mov/ \* .qt/ \* .vfw)
- (6) Others
  - Hyper Text Markup Language file (\* .htm/ \* .html)
  - Adobe Acrobat (Version 5 or later) file (\* .pdf)

## 5. Label on Electronic Media

- (1) The surface of the CD or DVD should be marked with the following items
  - a. "Attachment to Certificate of Type Approval No. XXX" or "Attachment to Certificate of Specification Approval No. XXX"
  - b. Classification and Type/Specification name of the appliances or Specified Emergency Equipment
  - c. Designer's name
  - d. Date of approval
  - e. Date of the last revision
  - f. If more than one disc is used, the disc number and the total number of discs (e.g. "1/5").
- (2) The case of the CD or DVD should be marked with, in addition to the above, the following items:
  - g. Name and version of the application with which the Attachment was prepared
  - h. List of file names and a general description of the contents of the files.

## 6. Format to Record on Electronic Media

Each document should be recorded, in principle, on the electronic media in the format and location as shown below. Besides, each document should be prepared in a format to ensure that the document, when printed as is, is as same as the submitted paper document as much as possible. If the document is lengthy, it may be divided appropriately. Documents that are difficult to record on electronic media may be recorded as image files using an image scanner.

(1) Index

- Prepare the document in a text file (\*.txt).
- Enter the following content in addition to items a to h in the previous section “5. Label on Electronic Media”.
  - “i. Outline of the appliance (a brief description of the characteristic features and operating procedures of the appliance)”
- Save the file in the root directory of the media (all discs, if there are more than one)
- The file name should be “index.txt”.

(2) List of certificates of approval

- Prepare the cover sheet, list of certificates of approval, amendment record, list of effective pages, and list of part numbers in one file, in a word processor document or with spreadsheet software.
- Save the file in the root directory of the first CD or DVD.
- The file name should be “approval list.\*\*\*” (\*\*\* is the extension corresponding to the application used; the same applies below).

(3) Table of contents

- Prepare the document in a word processor document or with spreadsheet software. Save the file in the root directory of the first CD or DVD.
- The file name should be “contents.\*\*\*”.

(4) Specifications

- Prepare the document in a word processor document or in a PDF file.
- Drawings should be pasted onto the word processor document if it is possible to do so. If it is not, drawing files may be prepared separately, and when doing so, the information of the fact should be clearly indicated at the location where each drawing is inserted. If a drawing is detailed and can be illegible, prepare it accordingly in an appropriate manner.
- Create a subdirectory named “¥specifications¥” directly under the root directory of any CD/DVD, and save the file there.
- The file name should be “specifications.\*\*\*”.
- If the document extends over more than one file, append the file name with a number, such as “specifications 1.\*\*\*” and “specifications 2.\*\*\*”, in the order of the page numbers of the document.

(5) Drawing list

- Prepare the document in a word processor document or with spreadsheet software.
- Create a subdirectory named “¥drawing list¥” directly under the root directory of any CD/DVD, and save the file there.
- The file name should be “drawing list.\*\*\*”.
- If the document extends over more than one file, append the file name with a number, such as “drawing list 1.\*\*\*” and “drawing list 2.\*\*\*”, in the order of the page numbers of the

document.

(6) Parts list

- Prepare the document in a word processor document or with spreadsheet software.
- Create a subdirectory named “parts list” directly under the root directory of any CD/DVD, and save the file there.
- The file name should be “parts list.\*\*\*”.
- If the document extends over more than one file, append the file name with a number, such as “parts list 1.\*\*\*” and “parts list 2.\*\*\*”, in the order of the page numbers of the document.

(7) Certification inspection procedure

- Prepare the document in a word processor document or in a PDF file.
- Drawings should be pasted onto the word processor document if it is possible to do so. If it is not, drawing files may be prepared separately, and when doing so, the information of the fact should be clearly indicated. If a drawing is detailed and can be illegible, prepare it accordingly in an appropriate manner.
- Create a subdirectory named “certification inspection” directly under the root directory of any CD/DVD, and save the file there.
- The file name should be “certification inspection.\*\*\*”.
- If the document extends over more than one file, append the file name with a number, such as “certification inspection 1.\*\*\*” and “certification inspection 2.\*\*\*”, in the order of the page numbers of the document.

(8) Method of markings

- Prepare the document in an image file and word processor file.
- Create a subdirectory named “marking method” directly under the root directory of any CD/DVD, and save the file there.
- The file name should be “marking.\*\*\*”.

(9) Inspection procedure for completed products

- Prepare the document in a word processor document or in a PDF file.
- Drawings should be pasted onto the word processor document if it is possible to do so. If it is not, drawing files may be prepared separately, and when doing so, the information of the fact should be clearly indicated. If a drawing is detailed and can be illegible, prepare it accordingly in an appropriate manner.
- Create a subdirectory named “completion inspection” directly under the root directory of any CD/DVD, and save the file there.
- The file name should be “completion inspection.\*\*\*”.
- If the document extends over more than one file, append the file name with a number, such as “completion inspection 1.\*\*\*” and “completion inspection 2.\*\*\*”, in the order of the page numbers of the document.

(10) Compliance checklist

- Prepare the document in a word processor document or with spreadsheet software.
- Create a subdirectory named “¥checklist¥” directly under the root directory of any CD/DVD, and save the file there.
- The file name should be “checklist.\*\*\*”.
- If the document extends over more than one file, append the file name with a number, such as “checklist 1.\*\*\*” and “checklist 2.\*\*\*”, in the order of the page numbers of the document.

(11) Procedure for reporting service difficulties

- Prepare the document in a word processor document or with spreadsheet software.
- Create a subdirectory named “¥service difficulty report¥” directly under the root directory of any CD/DVD, and save the file there.
- The file name should be “service difficulty report.\*\*\*”.
- If the document extends over more than one file, append the file name with a number, such as “service difficulty report 1.\*\*\*” and “service difficulty report 2.\*\*\*”, in the order of the page numbers of the document.

(12) Procedure for issuing technical information

- Prepare the document in a word processor document or with spreadsheet software.
- Create a subdirectory named “¥technical information¥” directly under the root directory of any CD/DVD, and save the file there.
- The file name should be “technical information.\*\*\*”.
- If the document extends over more than one file, append the file name with a number, such as “technical information 1.\*\*\*” and “technical information 2.\*\*\*”, in the order of the page numbers of the document.

(13) Documents to substantiate the compliance

- Prepare the documents in word processor documents or in PDF files.
- Drawings should be pasted onto the word processor document if it is possible to do so. If it is not, drawing files may be prepared separately, and when doing so, the information of the fact should be clearly indicated in the document. If a drawing is detailed and can be illegible, prepare it accordingly in an appropriate manner.
- Create subdirectories named “¥test procedure¥”, “¥test report¥”, “¥analysis¥” and so forth, directly under the root directory of any CD/DVD, and save the files there.
- The file names should be “test procedure.\*\*\*”, “test report.\*\*\*”, “analysis.\*\*\*” and so forth.
- If any document extends over more than one file, append the file name with a number, such as “test procedure 1.\*\*\*” and “test procedure 2.\*\*\*”, in the order of the page numbers of the document.

(14) Method of quality control

- Prepare the document in a word processor document or in a PDF file.
- Drawings should be pasted onto the word processor document if it is possible to do so. If it is

not, drawing files may be prepared separately, and when doing so, the information of the fact should be clearly indicated. If a drawing is detailed and can be illegible, prepare it accordingly in an appropriate manner.

- Create a subdirectory named “¥quality control¥” directly under the root directory of any CD/DVD, and save the file there.
- The file name should be “quality control.\*\*\*”.
- If the document extends over more than one file, append the file name with a number, such as “quality control 1.\*\*\*” and “quality control 2.\*\*\*”, in the order of the page numbers of the document.

(15) Service Manual

- Prepare the document in a word processor document or in a PDF file.
- Drawings should be pasted onto the word processor document if it is possible to do so. If it is not, drawing files may be prepared separately, and when doing so, the information of the fact should be clearly indicated.
- If a drawing is detailed and can be illegible, prepare it accordingly in an appropriate manner.
- Create a subdirectory named “¥Service Manual¥” directly under the root directory of any CD/DVD, and save the file there. The file name should be “Service Manual.\*\*\*”.
- If the document extends over more than one file, append the file name with a number, such as “Service Manual 1.\*\*\*” and “Service Manual 2.\*\*\*”, in the order of the page numbers of the document.

Volume Label: Attachment to Certificate of Type Approval No. \_\_\_\_\_

¥	index.txt		(Note: should be saved in all discs)
	approval list.***		(Note: should be saved in the first disc)
	contents.***		(Note: should be saved in the first disc)
¥	specifications	specifications.***	(If more than one file, specifications 1.***, specifications 2.***, ... specifications n.***)
¥	drawing list	drawing list.***	(If more than one file, drawing list 1.***, drawing list 2.***, ... drawing list n.***)
¥	parts list	parts list.***	(If more than one file, parts list 1.***, parts list 2.***, ... parts list n.***)
¥	certification inspection	certification inspection.***	(If more than one file, certification inspection 1.***, certification inspection 2.***, ... certification inspection n.***)
¥	marking method	marking.***	
¥	completion inspection	completion inspection.***	(If more than one file, completion inspection 1.***, completion inspection 2.***, ... completion inspection n.***)
¥	checklist	checklist.***	(If more than one file, checklist 1.***, checklist 2.***, ... checklist n.***)
¥	service difficulty report	service difficulty report.***	(If more than one file, service difficulty report 1.***, service difficulty report 2.***, ... service difficulty report n.***)
¥	technical information	technical information.***	(If more than one file, technical information 1.***, technical information 2.***, ... technical information n.***)
¥	test procedure	test procedure.***	(If more than one file, test procedure 1.***, test procedure 2.***, ... test procedure n.***)
¥	test report	test report.***	(If more than one file, test report 1.***, test report 2.***, ... test report n.***)
¥	analysis	analysis.***	(If more than one file, analysis 1.***, analysis 2.***, ... analysis n.***)
¥	quality control	quality control.***	(If more than one file, quality control 1.***, quality control 2.***, ... quality control n.***)
¥	Service Manual	Service Manual.***	(If more than one file, Service Manual 1.***, Service Manual 2.***, ... Service Manual n.***)

(Example) Document format (index.txt)

- a. Attachment to Certificate of Type Approval No. 765
- b. Make: NAI, Series Model: MB-A 10
- c. Nippon Aircraft Instrument Co., Ltd.
- d. October 3, 1996
- e. December 3, 1998
- f. 1/3
- g. \*.doc       Word97  
   \*.txt       Notepad  
   \*.xls       Excel97  
   \*.bmp       Paintbrush  
   \*.pdf       Acrobat reader Ver3.0J
- h.  
   1/2  
   index.txt                   Index file  
   approval list.doc         Cover sheet, List of certificates of approval,  
                                  Amendment record, List of effective pages,  
                                  and List of part numbers  
  
   contents.doc               Table of contents  
   ¥specifications¥contents.doc   Table of contents of the specifications  
   ¥specifications¥specifications 1.doc   Specifications (pp. 1-30)  
   ¥specifications¥specifications 2.doc   Specifications (pp. 31-58)  
   ¥specifications¥specifications 3.bmp   Specifications (p. 59), drawing  
   ¥specifications¥specifications 4.bmp   Specifications (p. 60), drawing  
   ¥drawing list¥drawing list.doc       Drawing list  
  
   2/2  
   ¥parts list¥parts list.xls           Parts list  
   ¥marking method¥marking method.bmp   Method of markings  
  
      •  
      •  
      •
- i. Make: AIL, Model: 1230 Aircraft Altimeter



Director, Airworthiness Division,  
Aviation Safety and Security Department, Civil  
Aviation Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism

### Part III: Guidelines for Type/Specification Approval of Foreign-made Appliances or Specified Emergency Equipment

#### (Purpose)

The purpose of this document is to provide procedures to carry out the following: regarding appliances manufactured in a foreign country (hereinafter referred to as “foreign-made appliances”), Type/Specification Approval based upon Article 14 Paragraph (1) of the Civil Aeronautics Regulations (Ordinance of the Ministry of Transport/No. 56 of 1952: hereinafter referred to as “the CAR”); or regarding Specified Emergency Equipment manufactured in a foreign country, Type Approval based upon the proviso of Article 152 Paragraph (1) of the CAR.

#### (Policy)

When carrying out Type/Specification Approval of foreign-made appliances or a Type Approval of foreign-made Specified Emergency Equipment, it is our basic policy to confirm consistency between technical data respecting the compliance status at the time of issuing certificate or approval (hereinafter referred to as “certificate etc.”) by the country of manufacture and technical standards of our country.

In addition, when carrying out approval processes, Articles 14-2 and 152 of the CAR as well as Circulars “Guidelines for Type Approval/Specification Approval of Equipment/Parts” and “Guidance for Type Approval and Specification Approval” should, in general, be based upon, except for the matters prescribed below.

#### 1 Application

An applicant should be a person who holds a certificate etc. issued by the country of manufacture or his/her representative. In the case of an application by his/her representative, it must be noted that the application should follow paragraph 2-2 (1) of the Circular “Guidance for Type Approval and Specification Approval”, as well as that said application is acceptable only if the representative can correspond continuously to the obligation of the Type/Specification Approval holder, even after the approval is obtained.

## 2 Documents to Be Submitted

### 2-1 Attachments to the Application

When an application is made, the applicant should submit the following documents as attachments to the application.

It must be noted that the contents of these documents, in principle, should be identical to those filed when the certificate etc. of the country of manufacture was obtained — subsequent revisions approved by the authorities of the country of manufacture should be included.

(1) List of the submitted documents

A list of the documents submitted as attachments should be prepared and submitted. The list should contain following items regarding each document: the title, document number, revision code (number), date of issue, and the date of submission to the authorities. Further, if additional documents are necessary after the application, a list of documents reflecting the latest status should be prepared and submitted once again.

(2) Document to confirm certification by the country of manufacture

(Example) Type certificate

(3) Document that shows the specifications related to the certificate etc.

This document should specify the standards applied. If the standards are not specified, such document that specifies the applied standards should additionally be submitted. Further, if there are such special conditions, exemptions and equivalent level of safety items that are established by the country of manufacture, document regarding these issues should also be submitted. Notwithstanding above, said document is not required in the case of Specified Emergency Equipment manufactured in a foreign country.

(Examples) Type Certification Data Sheet, Specification Documents

(4) Three-view drawing of the general assembly

As for an appliance that includes an electric circuit, the wiring diagram (electric circuit) or block diagram should also be submitted. Notwithstanding above, said documents are not required in the case of Specified Emergency Equipment manufactured in a foreign country.

(Examples) Top Drawing, Wiring Drawing

(5) Drawing list

This document is not required in the case of Specified Emergency Equipment manufactured in a foreign country.

(Example) Major Drawing Lists

(6) Parts list

This document is not required in the case of Specified Emergency Equipment manufactured in a foreign country.

(Example) Major Parts List

(7) Procedural documents regarding final inspection and testing of completed products

Such documents are not required in the case of Specified Emergency Equipment manufactured in a foreign country.

(Example) Production Certification Procedure

(8) Method of markings

(Example) Placard Drawing

(9) Document explaining the method of quality control

If a certificate etc. is awarded by the country of manufacture with regard to the production of the equipment, the relevant document should be submitted.

(10) Service Instruction manual

In the case of engines and propellers, Instructions for Continued Airworthiness specified in the Airworthiness Inspection Manual of Japan

(11) Other documents

Items <2> to <5> below are not required in the case of Specified Emergency Equipment manufactured in a foreign country.

<1> General description of the designer (Company Profile and Organization Chart)

<2> A table with the description to evaluate compliance with the airworthiness requirements — Compliance Checklist — as well as any other certification document(s) requested by the Civil Aviation Bureau of Japan.

<3> If there are items in particular that were subject to investigation when certification by the country of manufacture was sought, documents regarding these items (Issue Paper, Certification Review Item)

<4> Documents that substantiated the compliance with the requirements regarding strength (Test Plan, Test Report and Stress Analysis)

Notwithstanding above, certification data regarding following items are required, in the case of turbine engines:

- Stress level,
- Low-cycle fatigue,
- Endurance,
- Icing,
- Injection, and
- Blade containment.

<5> Documents regarding engine emissions — such documents that contain environmental compatibility including the compression ratio of turbojet and turbofan engines, together with other relevant items: only when applicable

<6> Any other documents considered necessary.

## 2-2 Markings

Such markings that are required by the country of manufacture in relation to certification may be

regarded as the markings related to the Type/Specification approval in Japan.

### 2-3 Reporting of failures, malfunctions and defects

Failures should be reported in accordance with the system of the country of manufacture.

### 2-4 Technical Information

Service Bulletins should be issued and reported in accordance with the system of the country of manufacture.

## 3 Demonstration of Compliance with Applicable Criteria

To substantiate compliance with the applicable requirements, it is our basic policy for the applicant to confirm consistency between technical data respecting the compliance status at the time of issuing certificate or approval by the country of manufacture and technical standards of our country. Notwithstanding above, when there are some differences between mutual technical standards compared with Japan, and further, if it is recognized necessary to carry out certification other than that by the country of manufacture, refer to Section 3-1 of the Circular "Guidance for Type Approval and Specification Approval".

## 4 Inspection and Quality Audit

Inspection and quality audit during the process and after the completion of products may be omitted, provided an airworthiness certificate for export is attached. However, they may not be omitted if the Director of Airworthiness Division recognizes necessary.

## 5 Submission of Electronic Media after Approval

After each approval, relevant electronic media should be submitted according to Chapter 5 of the Circular "Guidance for Type Approval and Specification Approval".

## 6 Miscellaneous

- (1) Regarding such equipment to be imported to Japan that was awarded Type Approval/Specification Approval according to "Guidelines" here, if new products are to be exported to Japan, such airworthiness certificate for export should be attached that was issued by the aviation authority of the country of manufacture or by a representative who is authorized to carry out certification on behalf of the authority.
- (2) The language used should be Japanese or English. In the case that it is requested to submit the documents of which contents are identical to those filed in the country of manufacture, and further, if the original documents are not written in English, a Japanese or English translation should be attached.

#### Supplementary Provisions

1. This Circular shall be applied on July 1, 2005.
2. This Circular consolidates Circulars regarding Type (Specification) Approval, and is issued as Circular No. 1-004.3. This Circular supersedes the following: TCM-23-019-98 “Guidelines for Type Approval of Imported Engines” and TCM-23-017-89 “Guidelines for Type Approval of Foreign-made Specified Emergency Equipment” are superseded by this Circular.

#### Supplementary Provisions (June 30, 2011)

1. This Circular shall be applied on July 1, 2011.

For further questions or comments regarding this Circular, please contact the following:

Airframe Section, Power Plant Section or Equipage Section,  
Airworthiness Division, Aviation Safety and Security Department, Civil Aviation Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism  
2-1-3 Kasumigaseki, Chiyoda-ku, Tokyo, 100-8918  
TEL: 03-5253-8735  
FAX: 03-5253-1661

## Appendix

### List of Required Materials for TA/SA

1. Presentation documents list
2. One copy of the Certificate (Type Certificate, approval letter, etc.)
3. One copy of the current official components specification that includes certification basis, special conditions, exemptions, and/or equivalent level of safety (e.g.; Type Certification Data Sheet, specification documents)  
(NOTE) This is not necessary for emergency equipment.
4. The 3D figure of an assembly (e.g.; Top Drawing, Wiring Drawing)  
(NOTE) This is not necessary for emergency equipment.
5. Major Drawing list  
(NOTE) This is not necessary for emergency equipment.
6. List of parts (Major parts and equipment list)  
(NOTE) This is not necessary for emergency equipment.
7. Components final production inspection/test procedure  
(NOTE) This is not necessary for emergency equipment.
8. Drawing or materials that shows identification plate
9. One copy of Production Certificate/Production Organization Approval or the documents prescribing quality assurance system
10. One copy of instructions for continued airworthiness (e.g.; Maintenance Manual, Overhaul Manual)
11. Other documents
  - <1> Company Profile, Organization Chart
  - <2> Components certification compliance table (checklist) based on the selected applicable requirements, and indicating that these requirements are complied with.  
(NOTE) This is not necessary for emergency equipment.
  - <3> One copy of the Certification Review Items or Issue Papers  
(NOTE) This is not necessary for emergency equipment.
  - <4> Evidence of substantiation regarding as follows (for only turbine engine);
    - Stress analysis
    - Start-stop cycle stress (Low cycle fatigue)
    - Endurance test
    - Injection system icing
    - Foreign objection injection
    - Blade containment and rotor unbalance test  
(NOTE) The required material will be identified and notified to the applicant by JCAB after

reviewing of certification compliance table. If a summary of evidence or the report is available, it will be acceptable.

<5> One copy of the report for compliance with fuel venting and exhaust emission requirements of ICAO Annex 16 Volume I(When it corresponds)

<6> In addition, documents it is accepted that are required (e.g. parts catalog, installation/operating manual, list of service bulletins, One copy of list of applicable airworthiness directive of FCAA)

(NOTE) It is preferable that these materials (Item <6>) be submitted using media like CD-ROMs.

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April 26, 2005 First issue

(KOKU-KU-KI-911)

Director, Airworthiness Division,  
Aviation Safety and Security Department, Civil  
Aviation Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism

## Part IV Parts Covered by Type Approval

### 1 Purpose

This document has the purpose to specifically prescribe the aircraft parts that are covered by type approval.

### 2 Parts Covered by Type Approval

Major equipment/parts that are covered by spare part certification provided in Article 17 Paragraph (1) of Civil Aeronautics Law (hereinafter referred to as "the Law") and Article 27 of the Civil Aeronautics Regulations (hereinafter referred to as "the CAR") should, in principle, obtain type approval from the Minister of Land, Infrastructure, Transport and Tourism under the provisions of Article 14 Paragraph (1) of the CAR, if they are intended to be manufactured in Japan and used. These major equipment/parts subject to spare part certification are called "parts covered by type approval".

### 3 Examples of Parts Covered by Type Approval

Below are examples of parts covered by type approval in the order provided in Article 17 Paragraph (1) of the Law and Article 27 of the CAR.

#### I. Engine

Engine

Engine module

Compressor module

Combustor module

Turbine module

Fan rotor module

#### II. Propeller

#### III. Rotor

Main rotor assembly

Main rotor hub assembly

Main rotor hub  
Main rotor blade  
Auxiliary rotor assembly  
Auxiliary rotor hub assembly  
Auxiliary rotor hub  
Auxiliary rotor blade

IV. Transmission

Transmission gearbox for helicopter main rotor and auxiliary rotor  
Propeller drive reduction gearbox (for extended drive shaft type)  
Accessory drive gearbox

V. Instruments

See the Appendix.

VI. Other equipment

(1) Starter

(2) Magneto

(3) Generator

Main generator (engine driven, propeller turbine driven)

Auxiliary generator

Starter-generator

(4) Fuel pump

Engine driven fuel pump

Emergency fuel pump

Fuel booster pump

Fuel transfer pump

(5) Propeller governor

(6) Carburetor

Carburetor

Automatic mixture control

(7) Hydraulic pump

Engine driven or motor driven hydraulic pump

Manual hydraulic pump

(8) Cabin supercharger

Supercharger assembly

\* Sensing devices equipped separately from the assembly are not subject to TA.

(9) Anti-ice burner

Burner unit

\* Sensing devices equipped separately from the unit are not subject to Type Approval.

(10) Deicing fluid pump

- Alcohol pump
- (11) Pneumatic pump
  - Pneumatic supercharger
  - Auxiliary power unit (APU)
  - APU module
  - \* APU and an APU module subject to TA are limited to in-flight use units only. The same applies to their accessories.
- (12) Vacuum pump
- (13) Inverter
  - Inverter
  - Emergency inverter
  - Transformer-rectifier (TR)
- (14) Landing gear
  - Landing gear assembly
  - Strut assembly
  - Oleo-pneumatic shock absorber
  - Brake assembly, brake unit
  - Anti-skid device
  - Bogie beam (or bogie assembly)
  - Wheel assembly
  - Master cylinder
  - \* Shimmy damper, steering unit, bogie trim, swivel unlocking devices and other similar parts are not subject to TA.
- (15) Float
- (16) Ski
  - Ski
  - Snow shoe
- (17) Skid
- (18) Constant speed generator drive
  - Constant speed drive
- (19) Water-alcohol injection pump
- (20) Exhaust (gas) turbine
  - Turbocharger
  - Density controller
  - Controller actuator
  - Wastegate actuator
  - Bypass valve actuator
  - Pressure controller

(21) Combustion type cabin heater

Exhaust gas heat exchanger and compressor type heat exchanger are not subject to TA of this category.

(22) Rudder

Rudder assembly

\* Tab and torque tube as piece parts are not subject to TA.

(23) Elevator

Elevator assembly

\* Tab and torque tube as piece parts are not subject to TA.

(24) Aileron

Aileron assembly

\* Tab and bellcrank as piece parts are not subject to TA.

(25) Flap

Flap assembly

\* Guide-rail and mechanical links as piece parts are not subject to TA.

(26) Fuel injection pump

Fuel injector

Injector pump

(27) Oil pump

Following pumps are not subject to TA;

- A pump integrally built in an engine or gearbox and which is not removable without tearing down the higher assembly, or
- One that does not function as a pump if removable and removed.

(28) Coolant pump

(29) Feathering pump

Feathering pump

Feathering pump drive motor

Unfeathering pump

Unfeathering pump drive motor

(30) Fuel control system

Fuel control unit

Fuel trimmer actuator

Power turbine governor

Gas producer fuel control (GPFC)

Boost control

Air intake unit

(31) Anti-icing and deicing controls

Anti-icing hot air or pneumatic air distributor valve

- Control unit
- Controller timer
- Controller motor
- (32) Oxygen regulating devices
  - Oxygen flow regulator
  - Oxygen pressure regulator
- (33) Air conditioning system pressure control devices
  - Outflow valve
  - Outflow valve actuator
  - Safety valve, relief valve
  - Cabin pressure control amplifier
  - Cabin pressure controller
  - Cabin pressure rate controller
  - Cabin pressure regulator
  - Pressure limit control
  - Pressure control valve motor
- (34) Pneumatic air supply regulating devices
  - Pneumatic air pressure regulator
  - Pneumatic airflow control valve
- (35) Pneumatic air regulating devices
  - Pneumatic airflow control unit
- (36) Electrical power regulators
  - Voltage regulator
  - Frequency control unit
  - Load controller
  - Generator control unit
- (37) Hydraulic power regulating devices
  - Hydraulic pressure regulator
  - \* Relief valve and others as piece parts do not require TA.
- (38) Hydraulic power control devices
  - Hydraulic system selector
  - Hydraulic system control valve
- (39) Oil cooler
- (40) Coolant radiator
- (41) Fuel tank (except integral type)
- (42) Oil tank
- (43) Powered control actuators
  - Rudder actuator

Elevator actuator  
Aileron actuator  
Trim tab actuator  
Stabilizer trim actuator  
Flap actuator  
Spoiler actuator  
Slat actuator  
Helicopter power cylinder  
Helicopter servo unit  
Auto pilot rudder servo motor  
Auto pilot elevator servo motor  
Auto pilot aileron servo motor  
Flap motor  
Trim tab servo motor

\* These actuators other than electric, hydraulic or pneumatic powered do not require TA.

(44) Landing gear actuators

Landing gear retract/extend actuator  
Door actuator  
Lock actuator  
Landing gear motor

\* Only those actuators driven by electric, hydraulic or pneumatic power are subject to TA.

(45) Power plant actuators

Cowl flap actuator  
Oil cooler actuator  
Thrust reverser actuator  
Propeller synchronizer actuator

\* These actuators other than electric, hydraulic or pneumatic powered do not require TA.

(46) Ignition distributor

(47) Ignition exciter

\* Only those mainly composed of an ignition coil and capacitor for a turbine engine are subject to TA.

Booster and vibrator that are used only for starting a piston engine do not require TA.

(48) Engine mount

\* Only those with an integrated frame structure are subject to TA. Engine supporting structures that are assembled using bolts or like fasteners and can be disassembled, individual links and fittings that constitute the structure, and engine supporting structures considered to be a part of the airframe structure, do not require TA.

(49) Navigation equipment

See the Appendix.

\* Except for radio equipment of a radio station to which the Radio Law is applied.

Supplementary Provisions

1. This Circular shall be applied on July 25, 2005.
2. This Circular consolidates Circulars regarding type and specification approval, and is issued as the Circular No. 1-004.
3. TCM-23-003B-78 "Parts Covered by Type Approval" is superseded by this Circular.
4. As a transitional measure, for a period of 12 months after this Circular comes into effect, replacement of any of the equipment/parts shown in the table below may be treated as a minor repair, considering it as a type of work prescribed in Section 3-2 a. in the Circular No. 3-001.

System/equipment	Display/indicator	Processor	Sensor
Integrated flight and navigation instrument	Integrated flight and navigation instrument	Symbol generator	
Integrated engine instrument and other integrated instrument	Integrated engine instrument and other integrated instrument	Symbol generator	
LORAN-C receiver equipment	LORAN-C display	LORAN-C receiver	
MLS receiver equipment	MLS display	MLS receiver	
Area navigation (RNAV) system	Control/display unit	RNAV computer	
Windshear warning system		Windshear computer	
Airborne collision avoidance system (ACAS)		TCAS-II computer TCAS-I computer TAS computer	
GPS equipment	Control and display unit	GPS receiver	
Ground Proximity Warning System (GPWS)		GPWS computer Terrain awareness warning system (TAWS) computer	
SBAS capable GPS receiver system	Control/display unit	SBAS capable GPS receiver	

System/equipment	Display/indicator	Processor	Sensor
GPS/GBAS-capable receiver system	Control and display unit	GPS/GBAS-capable receiver Local area augmentation signal receiver	

Supplementary Provisions (June 30, 2011)

1. This Circular shall be applied on July 1, 2011.

For further questions or comments regarding this Circular, please contact the following:

Airframe Section, Power Plant Section or Equipage Section,  
Airworthiness Division, Aviation Safety and Security Department, Civil Aviation Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism  
2-1-3 Kasumigaseki, Chiyoda-ku, Tokyo, 100-8918  
TEL: 03-5253-8735  
FAX: 03-5253-1661



**Appendix: Instruments and Navigation Equipment**

For the systems shown below, a system as a whole is, in principle, subject to TA. However, any of the components specified in the following tables (display/indicator, processor and sensor) by itself is also subject to TA. In addition, any major components (such as amplifier, transmitter and computer) other than those specified in the tables are also subject to TA.

1 Flight and Navigation Instruments

System/equipment	Display/indicator	Processor	Sensor
Speedometer	Airspeed indicator True airspeed indicator Machmeter Maximum permissible speedometer		Pitot tube Pitot-static tube
Altimeter	Barometric altimeter Cabin altimeter Encoder altimeter		
Vertical speed indicator	Vertical speed (rate of climb/descent) indicator Cabin rate of climb/descent indicator		
Clock	Aviation clock		
Attitude indicator	Bank indicator Pitch indicator Artificial horizon (attitude gyro)		
Turn indicator	Gyroscopic turn indicator Turn and bank (or slip) indicator		
Direction indicator	Gyroscopic direction indicator (directional gyro)		
Vacuum meter	Vacuum meter		
Accelerometer	Accelerometer		

System/equipment	Display/indicator	Processor	Sensor
Free-air temperature indicator	Free-air temperature indicator		
Magnetic compass	Magnetic compass Remote compass indicator		Remote compass transmitter
Gyrosyn compass	Radio magnetic indicator Gyrosyn compass indicator	Gyrosyn compass controller Gyrosyn amplifier Latitude adapter Repeater amplifier Compass controller Compass rack assembly Servo amplifier Slave amplifier Power supply	Flux valve Directional gyro
Position indicators	Flap position indicator Trim tab position indicator Landing gear position indicator Control surface position indicator  Horizontal stabilizer position indicator		Flap position transmitter Trim tab position transmitter Landing gear position transmitter Aileron position transmitter Rudder position transmitter Elevator position transmitter Spoiler position transmitter Horizontal stabilizer position transmitter
Radio altimeter	Radio altitude indicator		

System/equipment	Display/indicator	Processor	Sensor
Integrated flight instruments and navigation displays	Integrated flight instruments and navigation displays	Symbol generator	

## 2 Engine Instruments and Other System Instruments

System/equipment	Display/indicator	Processor	Sensor
Pressure indicators	Fuel pressure indicator Oil pressure indicator  Manifold pressure indicator Coolant pressure indicator Duct pressure indicator Hydraulic pressure indicator Pneumatic pressure indicator Vacuum pressure indicator		Fuel pressure transmitter Oil pressure transmitter  Manifold pressure transmitter Coolant pressure transmitter Duct pressure transmitter Hydraulic pressure transmitter Pneumatic pressure transmitter Vacuum pressure transmitter
	Oxygen pressure indicator Supercharger pressure indicator  Water-alcohol pressure indicator		Oxygen pressure transmitter Supercharger pressure transmitter  Water-alcohol pressure transmitter

System/equipment	Display/indicator	Processor	Sensor
Temperature indicators	Cylinder temperature indicator Exhaust (gas) temperature indicator Oil temperature indicator Fuel temperature indicator Hydraulic oil temperature indicator Duct temperature indicator Heater temperature indicator Pneumatic temperature indicator Nacelle temperature indicator Manifold temperature indicator Turbo compressor bearing temperature indicator		
Tachometer	Tachometer RPM (%) indicator		Tachometric transmitter RPM (%) transmitter
Synchronization indicator	Synchronization indicator		Synchronization transmitter
Mixture ratio indicator	Mixture ratio indicator		Mixture ratio transmitter

System/equipment	Display/indicator	Processor	Sensor
Flow indicators	Fuel flow indicator Oxygen flow indicator Induction flow indicator Pneumatic flow indicator		Fuel flow transmitter Oxygen flow transmitter Induction flow transmitter Pneumatic flow transmitter
Pressure ratio indicator	Engine pressure ratio (EPR) indicator		Engine pressure ratio (EPR) transmitter
Differential pressure indicators	Cabin differential pressure indicator		
Torque indicators	Torque indicator		Torque transmitter
Fluid level indicators	Fuel quantity indicator Oil quantity indicator Hydraulic oil quantity indicator Anti-icing fluid quantity indicator Water-alcohol quantity indicator Water level indicator		Fuel quantity transmitter Oil quantity transmitter Hydraulic oil quantity transmitter Anti-icing fluid quantity transmitter Water-alcohol quantity transmitter Water level transmitter
Ammeters	Ammeter Anti-ice heater ammeter Load meter		
Voltmeter	Voltmeter		
Frequency indicator	Frequency meter		

System/equipment	Display/indicator	Processor	Sensor
Integrated engine indicators and other system indicators	Integrated engine indicator and other system indicator	Symbol generator	

### 3 Autopilot, Flight Director and Other Related Systems

System/equipment	Display/indicator	Processor	Sensor
Autopilot (AP) and flight director (FD)	AP indicator FD indicator Three-axis trim indicator Pictorial deviation indicator	AP mode selector/controller FD mode selector/controller AP/FD roll channel computer AP/FD pitch channel computer Yaw damper computer Auto throttle computer Speed control computer Air data computer Stabilization computer Automatic stabilizer trim unit Roll servo amplifier/motor Pitch servo amplifier/motor Yaw servo amplifier/motor Stabilizer trim servo amplifier/motor Compass amplifier	Linear accelerometer Normal accelerometer Directional gyro Vertical gyro Rate gyro Air data sensor

System/equipment	Display/indicator	Processor	Sensor
Stability augmentation system (SAS)		SAS unit	SAS pitot tube Differential pressure sensor

\* Other kinds of stability augmentation systems and trim systems by any other name are subject to TA.

#### 4 Navigation Systems

System/equipment	Display/indicator	Processor	Sensor
Inertial navigation system	Control and display unit Alignment display unit	Inertial navigation unit	Inertial sensor unit
Onboard Distance Measuring Equipment (DME)	DME indicator	DME transceiver	
Automatic direction finder (ADF)	ADF indicator	ADF receiver	Loop antenna (mechanically rotatable antenna only)
VOR receiver system	VOR indicator	VOR receiver	
Onboard TACAN system	TACAN indicator	TACAN transceiver	
Air traffic control transponder system (ATC transponder)	Control unit (only those with transponder function)	ATC transponder	
Localizer receiver system	ILS indicator	Localizer receiver	
Glide slope receiver system	ILS indicator	Glide slope receiver	
Marker receiver system		Marker receiver	
Weather radar system	Weather radar display	Weather radar transceiver	Weather radar antenna

System/equipment	Display/indicator	Processor	Sensor
Doppler radar system	Doppler radar indicator	Doppler radar transceiver Tracker Navigation computer Navigation controller	Doppler radar antenna
LORAN-C receiver system	LORAN-C display	LORAN-C receiver	
MLS receiver system	MLS indicator	MLS receiver	
Area navigation (RNAV) system	Control and display unit	RNAV computer	
Windshear warning system		Windshear computer	
Airborne collision avoidance system (ACAS)		TCAS-II computer TCAS-I computer TAS computer	
GPS receiver system	Control and display unit	GPS receiver	
Ground Proximity Warning System (GPWS)		GPWS computer Terrain awareness warning system (TAWS) computer	
SBAS capable GPS receiver system	Control and display unit	SBAS capable GPS receiver	
GPS/GBAS-capable receiver system	Control and display unit	GPS/GBAS-capable receiver	



April 26, 2005

First issue (KOKU-KU-KI-911)

Director, Airworthiness Division,  
Aviation Safety and Security Department, Civil  
Aviation Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism

## Part V Parts Covered by Specification Approval

### 1 Purpose

This document has the purpose to specifically prescribe the aircraft parts that are covered by specification approval.

### 2 Scope of Parts Covered by Specification Approval

Based on the bilateral agreement for reciprocal acceptance of airworthiness approvals, parts that have passed TSO testing of the FAA may be exported to the United States, on the premise that they have been approved in Japan. Accordingly, all parts that are subject to TSO but not subject to type approval are subject to specification approval.

### 3 Parts Covered by Specification Approval

#### I. Basic Parts with Special Design That Are Important in Terms of Function and Strength

(Note) Special design here means design not based on public standards: more specifically, design of manufacturing drawings, standard design drawings and purchased part drawings by the manufacturers of aircraft, engines, etc.; and original design by the part manufacturers.

- (1) High-strength bolts and studs
- (2) Nuts
- (3) Rivets
- (4) Bearing (including rod-end bearing)
- (5) Pulley
- (6) Gears
- (7) Steel cable
- (8) Chain
- (9) Cable end
- (10) Turnbuckle
- (11) Joints

Examples: Universal joint

Ball joint

Socket joint

(12) Fittings

Example: Quick disconnect fitting

(13) Bushing and sleeve

(14) Clamps

Examples: Exhaust system clamp

Propeller blade clamp

(15) Spring

## II. Parts with Special Design

(1) Toggle switch

(2) Rotary switch

(3) Push-button switch

(4) Warning switch

(5) Timer switch

(6) Limit switch

(7) Thermal switch

(8) Ignition switch

(9) Electrical wire

(10) Electrode plate

(11) Battery case

(12) Brush

(13) Electron tube

(14) Transistor

(15) Circuit breaker

(16) Fuse

(17) Selsyn (autosyn and magnesyn)

(18) Caging motor

(19) Adjusting resistor

(20) Compensating lead wire

(21) Ammeter shunt resistor

(22) Shock absorbing rubber (shock mount)

(23) Restrictor fitting

(24) Quick joint

(25) Light bulb

(26) Warning light

### III. Airframe Structural Parts

Examples: Control surface hinge

Tie rod

Seat fastener

Mounting bracket for antenna or other external equipment

Landing gear torque link

Landing gear drag link

Bungee

Side bracing (landing gear)

Axle

Swivel joint

Tab

Fabric

Windshield

Window pane

Cargo container (those for which strength requirements are specified as a part of the airframe structure)

Evacuation slide

Galley

Note: Refer to the Introduction.

### IV. Piston Engine Parts

Examples: Crank shaft

Crank shaft gear

Crank shaft counterweight

Crank shaft counterweight bushing

Crank shaft bearing

Crank shaft bearing oil seal

Connecting rod

Connecting rod bearing

Connecting rod bolt

Connecting rod nut

Link pin

Piston

Piston pin

Piston ring

Cylinder

Cylinder barrel

Cylinder head  
Cylinder sleeve  
Cylinder hold-down bolt  
Cylinder hold-down stud  
Cylinder hold-down nut  
Induction valve  
Exhaust valve  
Induction valve seat  
Exhaust valve seat  
Induction valve rocker  
Exhaust valve rocker  
Induction valve rocker shaft  
Exhaust valve rocker shaft  
Induction valve rocker arm  
Exhaust valve rocker arm  
Induction valve rocker arm bushing  
Exhaust valve rocker arm bushing  
Induction valve guide  
Exhaust valve guide  
Induction valve tappet  
Exhaust valve tappet  
Induction rocker cover  
Exhaust rocker cover  
Induction valve spring  
Exhaust valve spring  
Crankcase  
Crankcase through bolt  
Induction pipe  
Exhaust pipe (including exhaust manifold and muffler)

V. Turbine Engine Parts

All parts except those listed in Section 4.

VI. Propeller Parts

All parts except those listed in Section 4.

VII. Control System Parts

Examples: Control column

Control surface linkage  
Flaps linkage  
Sprocket  
Sector  
Pedal  
Bell crank  
Torque link  
Torque tube  
Elastic control cable (those directly related to airworthiness, such as those for propeller, throttle valve and mixture valve)

#### VIII. Electrical and Electronic System Parts

Examples: Navigation light (including wing-tip light)

Landing light (including hovering light)

Taxi light

Anti-collision light

Parking light

Instrument light

Light shield

Utility light (including individual seat light except those for passengers)

Anchor light

Light to be displayed on the water Floating light

Wing floodlight

Relay

Variable resistor (light dimmer)

Rechargeable battery

Connector

Ground power receptacle

Vibrator

Booster coil

Carbon pile

Fire sensor

Icing sensor

Smoke detector

Voltage regulator (for inverter)

Frequency regulator (for inverter)

Amplifier (including magnetic amplifier)

Filter (wave filter, frequency filter)

Rectifier (electrical power)  
Transformer (for electrical power or instruments)  
Coaxial cable  
Radome  
Audio equipment, audio system  
Electronic equipment (except those subject to TA)  
Cockpit voice recorder  
Flight data recorder  
Waveguide  
Galley electrical appliances (of high power consumption)

#### IX. Instrument Parts

Examples: Cabin temperature indicator (cockpit indication only)

Heater fuel pressure gauge  
Cabin temperature mixing valve indicator  
Cabin supercharger air flow indicator  
Wattmeter  
Reactive power meter  
Oxygen pressure gauge (for oxygen flow regulation)  
Oxygen flowmeter (for oxygen flow regulation)  
Analyzer  
Flexible shaft (for tachometer use)  
Surge chamber  
Static heater  
Heat-insulated chamber  
Vacuum regulator  
Oil separator  
Induction air filter  
Fuse plug  
Venturi tube  
Filter element  
Rack (housing critical parts)  
Accumulator cage  
Resistance bulb  
Temperature bulb  
Thermocouple

## X. Functional Parts

### (1) Valves

Examples: Check valve

Relief valve

Safety valve

Sequence valve

Shutoff valve

Shuttle valve

Bypass valve

Drain valve

Stop valve

Booster valve

Pneumatic control valve

Pneumatic selector valve

Purging valve

Selector valve (for vacuum and static pressure systems)

Solenoid valve

Reducing valve

### (2) Cylinders

Examples: Lockout cylinder

Master cylinder

Steering cylinder

Trim-compensating cylinder

Door actuating cylinders (for cargo doors, entrance doors and heat exchanger doors except landing gear actuating cylinders)

### (3) Dampers

Examples: Flutter damper

Shimmy damper

Vibration damper (for helicopter use)

### (4) Autopilot components

Examples: Speed control valve

Balanced oil valve

Hydraulic pressure regulator

Follow-up mechanism

Servo control motor

Servo control generator

Flight reference selector

(5) Cabin temperature control system components

Examples: Refrigerator unit, refrigerating machine

Cooling turbine

Heat exchanger

Compressor

(6) Other functional parts

Examples: Reservoir

Accumulator

Oxygen bottle

Air filter

Hydraulic oil filter

Blower, fan

Propeller turbine (for airflow-driven generator)

Portable fire extinguisher

Wiper motor

Vibrator (instrument panel use)

Magnetic governor and trim control (for constant speed drive unit)

Rotor brake

Pressure lock

XI. Other Parts Covered by Inspection by the Authorities

Examples: Tire and tube

Brake lining

Deicer boot

Shafting

Shaft key

Rubber rope

Expander tube

Safety belt

Shoulder harness

Seat

Bed, bunk or berth

Litter (except those carried inside the cabin)

Crop duster kit, hoist kit and other externally mounted equipment

Flexible hose and hose assembly

Non-metallic material, adhesive and sealant of special property

Materials of windshield and window pane

Air duct hose



Tank sealant  
Conduit  
Terminal  
Helical insert  
Shock absorbing rubber  
Rubber vibration isolator  
Diaphragm  
Honeycomb panel  
Propeller hum nut, snap ring, piston pin lock ring, wrist pin lock ring and other critical snap rings

#### 4 Parts outside the Scope of Specification Approval

Parts in this category are defined as those which fall under one of the following definitions and do not affect the airworthiness of aircraft.

- (1) Parts whose breakage, failure or malfunction would not directly compromise the safety of the aircraft or occupants
- (2) Parts whose material, structure or manufacture is not novel or unusual
- (3) Parts whose operating environment, such as temperature, humidity, pressure and stress, is normal.
- (4) Presumably highly reliable parts and/or those parts whose failure is readily detectable without delay
- (5) Parts that are normally not used in high-speed, high-vibration or high-stress moving parts and hard to wear
- (6) Parts not used in structurally critical locations
- (7) Parts to which fire resistance is not required
- (8) Engine parts or propeller parts which do not directly affect the operation and performance of the engine or propeller
- (9) Basic parts based on public standards

Examples: Bolts and studs (except those specified in 3-I-(1))

Nuts (except those specified in 3-I-(2))

Rivets (except those specified in 3-I-(3))

Bearing, rod-end (except those specified in 3-I-(4))

Pulley (except those specified in 3-I-(5))

Gears (except those specified in 3-I-(6))

Steel cable (except those specified in 3-I-(7))

Chain (except those specified in 3-I-(8))

Cable end (except those specified in 3-I-(9))

Turnbuckle (except those specified in 3-I-(10))

Joints (except those specified in 3-I-(11))  
Fittings (including union, nipple, tee and elbow fittings; and except those specified in 3-I-(12))  
Bushing and sleeve (except those specified in 3-I-(13))  
Clamps (except those specified in 3-I-(14))  
Spring (except those specified in 3-I-(15))

(10) Other parts based on public standards

Examples: Toggle switch (except those specified in 3-II-(1))  
Rotary switch (except those specified in 3-II-(2))  
Push-button switch (except those specified in 3-II-(3))  
Warning switch (except those specified in 3-II-(4))  
Timer switch (except those specified in 3-II-(5))  
Limit switch (except those specified in 3-II-(6))  
Thermal switch (except those specified in 3-II-(7))  
Ignition switch (except those specified in 3-II-(8))  
Electrical wire (except those specified in 3-II-(9))  
Electrode plate (except those specified in 3-II-(10))  
Battery case (except those specified in 3-II-(11))  
Brush (except those specified in 3-II-(12))  
Electron tube (except those specified in 3-II-(13))  
Transistor (except those specified in 3-II-(14))  
Circuit breaker (except those specified in 3-II-(15))  
Fuse (except those specified in 3-II-(16))  
Selsyn (autosyn and magnesyne; except those specified in 3-II-(17))  
Caging motor (except those specified in 3-II-(18))  
Adjusting resistor (except those specified in 3-II-(19))  
Compensating lead wire (except those specified in 3-II-(20))  
Ammeter shunt resistor (except those specified in 3-II-(21))  
Shock absorbing rubber (shock mount; except those specified in 3-II-(22))  
Conduction liquid  
Restrictor fitting (except those specified in 3-II-(23))  
Quick joint (except those specified in 3-II-(24))  
Light bulb (except those specified in 3-II-(25))  
Warning light (except those specified in 3-II-(26))  
Fluorescent paint  
Luminous paint  
Helical insert (except those specified in 3-XI)

(11) Other parts outside the scope of specification approval

Example: Landing gear shock cord

- Lightening arrester
- Servo bracket
- Connector hose and hose liner
- Dowel pin
- Small screws and nuts
- Screws
- Pins
- Washer
- Shim
- Fastener
- Spacer
- Grommet
- Fairlead
- Clip
- Plugs
- Caps
- Flanges
- Nail
- Plates (bracket, cover and cylinder baffle plates)
- Keys (except those specified in 3-XI)
- Snap rings (except those specified in 3-XI)
- Plumbing adapter
- Safety wire
- Rods for control and operating systems
- Return spring for operating system
- Engine pylon, engine mount
- Rubber vibration absorber for cylinder fins
- Felt parts
- Dust keeper
- Vinyl tube
- Scotch tape (fluorescently painted)
- Insulation tape
- Bonding ring
- Bonding jumper
- Toggle switch tip
- Toggle switch guard

Call buzzer  
Call bell  
Service cord  
Leveling switch  
Fixed resistance  
Terminal post (terminal board)  
Splice  
Static discharger  
Liquid receptacle  
Choke coil  
Germanium diode  
Capacitor  
Ballast lamp  
Warning light (including fuel pressure, oil pressure and fire warning lights; and except those specified in 3-II-(26))  
Terminal (except those specified in 3-XI)  
Conduit (except those specified in 3-XI)

#### Supplementary Provisions

1. This Circular shall be applied on July 25, 2005.
2. This Circular consolidates Circulars regarding type and specification approval, and is issued as the Circular No. 1-004.
3. TCM-23-004E-74 “Parts Covered by Specification Approval” is superseded by this Circular.

#### Supplementary Provisions (June 30, 2011)

1. This Circular shall be applied on July 1, 2011.

For further questions or comments regarding this Circular, please contact the following:

Airframe Section, Power Plant Section or Equipage Section,  
Airworthiness Division, Safety Department, Civil Aviation Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism  
2-1-3 Kasumigaseki, Chiyoda-ku, Tokyo, 100-8918  
TEL: 03-5253-8735  
FAX: 03-5253-1661

**[Intentionally Blank]**

April 26, 2005

First issue (KOKU-KU-KI-911)

Director, Airworthiness Division,  
Aviation Safety and Security Department, Civil  
Aviation Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism

## Part VI: Additional Requirements for Type Approval and Specification Approval

### Chapter 1: Specification Approval of Retreaded Tires

#### 1-1 Purpose

This document provides a guideline for retread level (R-Level) escalation testing in relation to the specification approval of retreaded tires.

#### 1-2 R-Level Escalation Testing

##### 1-2-1 R-Level Escalation Testing of Tires for Which a Specification Approval is Newly Sought

This relates to the tires of the standards equivalent to TSO-C62c and -C62d, and when a specification approval of retreading is newly sought for said tires on and after April 1, 1983, FAA Advisory Circular (AC) 145-4 is applied except for paragraph 1-2-3 below related to R-Level escalation testing.

##### 1-2-2 R-Level Escalation Testing of Tires for Which a Specification Approval is Already Obtained

In the case of tires that had been retreaded according to FAA AC 43.13 on and before March 31, 1983, retreading should be carried out according to the procedures below on and after April 1, 1983.

- (1) As for tires for which a specification approval has been obtained only based upon the standard equivalent to TSO-C62b, retreading may be continued to be carried out according to FAA AC 43.13.
- (2) As for tires for which a specification approval has been obtained based upon the standard equivalent to TSO-C62c (including tires for which a specification approval has been obtained in accordance with both TSO-C62b and -C62c standards)—retreading may be continued to be carried out according to FAA AC 43.13, within the maximum number of times of retreading at the time of March 31, 1983; however, if they are retreaded beyond the maximum number of times of retreading at March 31, 1983, FAA AC 145-4 is applied except for paragraph 1-2-3 below related to R-Level escalation testing. It must be noted that the results of an R-level

escalation testing should be reported to the Civil Aviation Bureau.

### 1-2-3 R-Level Escalation Testing

- (1) Concerning the number of tire specimens for an R-Level escalation testing, one more additional specimen is required each time when one additional retreading is undertaken. Regarding tire specimen(s), such one(s) should be selected that the service experience is severer than others.
- (2) Bonding strength resulted from R-level escalation testing should be as follows: the bonding strength of the tread along the buff lines should be equal to or more than 36 lb/in; and the bonding strength between the third ply and the forth ply from the top of the body plies should be equal to or more than 26 lb/in.
- (3) Even in the case that the criteria of the bonding strength according to paragraph (2) above are not met, one more tire specimen may be selected and can be tested once again through carrying out Dynamometer Test Cycles specified in AC 145-4, provided that the bonding strength of the tread along the buff lines is equal to or more than 30 lb/in, and that the bonding strength between the third ply and the forth ply from the top of the body plies is equal to or more than 20 lb/in. It must be noted that, also regarding this tire specimen, such one should be selected that the service experience is severer than others.
- (4) As for radial tires, Dynamometer Test Cycles specified in AC 145-4 should be performed as an R-level escalation testing, instead of bonding strength testing set forth in paragraph (2).

## Chapter 2: Type/Specification Approval of Electrical/Electronic Equipment

### 2-1 Purpose

When determining applicable criteria and standards for electrical/electronic equipment (such equipment that contains electrical/electronic parts), the Civil Aviation Bureau (CAB) recommends that environmental tests for generic electrical/electronic equipment be applied in addition to the criteria and standards specific to the electrical/electronic equipment.

Hereafter, an outline of the standards is set forth.

### 2-2 Outline of the Standards

The latest version of DO-160 “Environmental Conditions and Test Procedures for Airborne Equipment” developed by RTCA (Radio Technical Commission for Aeronautics: see Note) is applied. The latest version of that standard as of January 1, 2005 is revision E (issued on December 9, 2004), i.e., DO-160E.

The latest version of the standard may be purchased directly from the RTCA through the Home

Page shown below, or may also be purchased from the Japanese Standards Association.

In addition, JIS W0812-2004 “Kokuki Tosai Kiki—Kankyo Joken oyobi Shiken Tejun” (i.e., “Airborne equipment — Environmental conditions and test procedures”) is published as a Japanese translation of the standard, although it corresponds to DO-160D representing revision D and a Japanese translation which corresponds to DO-160E has not yet been published as of January 1, 2005. Therefore, care must be taken when using that translation.

Further, in the case of such equipment that utilizes a microcomputer and software, DO-178B “Software Considerations in Airborne Systems and Equipment Certification” — guidelines for airworthiness evaluation — should also be applied to ensure the quality of the software. The latest version of this standard as of January 1, 2005 is revision B, i.e., DO-178B.

(Note) The RTCA is a private, not-for-profit corporation in the United States and develops standards etc. mainly for aeronautical telecommunication equipment and radio navigation equipment. The member organizations are: the FAA, research institutes, aircraft manufacturers, avionics manufacturers, electronics manufacturers, major air carriers, and so forth. Regarding Japan, the Japan Radio Air Navigation Systems Association (JRANSA) is one of the members. Standards developed by the RTCA are controlled with a classification code headed by the letter “DO” representing “Document”; and otherwise, the RTCA has developed more than 250 standards which relate to GPS, MLS, ADS-B and so forth. Although these standards are not formally official ones, they are often regarded as equivalent to official ones in the aviation community.

Home Page: <http://www.rtca.org>

### 2-3 Outline of DO-160E

DO-160E defines the standard environmental test conditions necessary for airborne equipment. The environmental condition tests are, in general, classified into 23 items shown below, and each of them is defined from Section 4 to Section 26 of DO-160E.

For every test item, the applicant should determine whether the test is applicable or not, taking into consideration the characteristics of the equipment, ambient conditions, type of aircraft on which the equipment is installed, and the position where the equipment is installed. Furthermore, when some test(s) is/are applicable, the category/categories of the test(s) (Depending upon the tests, categories are often classified into various ones according to the level of importance.) must be determined.

When submitting test procedures, such data in relation to each test item must be listed and attached that include: applicable category of the test, the reason for determining the test category, or if the test is not applicable, the reason for it.

It must be noted that conditions for not applying a test and for selecting category are described in respective section of DO-160E; however, if it is difficult to make decision, consult the inspector in charge.



The environmental test items are as follows:

- (1) Temperature and altitude,
- (2) Temperature variation,
- (3) Humidity,
- (4) Operational shocks and crash safety,
- (5) Vibration,
- (6) Explosion proofness,
- (7) Waterproofness,
- (8) Fluids susceptibility,
- (9) Sand and dust,
- (10) Fungus resistance,
- (11) Salt spray,
- (12) Magnetic effect,
- (13) Power input,
- (14) Voltage spike,
- (15) Audio frequency conducted susceptibility - power inputs,
- (16) Induced signal susceptibility,
- (17) Radio frequency susceptibility (radiated and conducted),
- (18) Emission of radio frequency energy,
- (19) Lightning induced transient susceptibility,
- (20) Lightning direct effects,
- (21) Icing,
- (22) Electrostatic discharge, and
- (23) Fire, flammability.

#### 2-4 Outline of DO-178B

DO-178B is recognized as international standards/guidelines for software authorization processes pertaining to certification of airborne systems and equipment, and is useful to eliminate software errors through strict verification/check processes, which, as a result, ensures that the software design is faithful to the system specifications.

DO-178B classifies software into five levels, i.e., from A to E, depending upon the impact of failure caused by loss of function or malfunction of equipment due to anomalous behavior of a software component:

##### Level A (Catastrophic)

Software whose anomalous behavior would cause or contribute to failure conditions that would prevent continued safe flight and landing.

##### Level B (Hazardous/Severe-Major)

Software whose anomalous behavior would cause or contribute to failure conditions

which would reduce the capability/performance of the aircraft or the ability of the crew to cope with adverse operating conditions to the extent that there would be:

- (1) a large reduction in safety margins or functional capabilities of the aircraft,
- (2) physical distress or higher workload such that the flight crew could not be relied on to perform their tasks accurately or completely, or
- (3) adverse effects resulting in serious or fatal injuries to a small number of occupants.

#### Level C (Major)

Software whose anomalous behavior would cause or contribute to failure conditions which would reduce the capability/performance of the aircraft or the ability of the crew to cope with adverse operating conditions to the extent that there would be: for example, “a significant reduction in safety margins or functional capabilities”, “a significant increase in crew workload”, “conditions impairing crew efficiency”, or “discomfort to occupants, possibly including injuries” may be resulted.

#### Level D (Minor)

Software whose anomalous behavior would cause or contribute to failure conditions which would not significantly reduce aircraft safety, and which would involve crew actions that are well within their capabilities. “A slight reduction in safety margins or functional capabilities”, “a slight increase in crew workload such as routine flight plan changes”, or “some inconvenience to occupants” may be resulted.

#### Level E (No Effect)

Software whose anomalous behavior does not result in any adverse effect on the operational capability or crew workload.

The description above is for guidance, and so, when determining the level of the software applied to the equipment that is actually manufactured, consult the CAB inspector in charge.

The applicant should prepare Plan for Software Aspects of Certification based upon the equipment specifications, as well as documents related to it; although there may be slightly different matters depending upon the software level. The applicant himself/herself should carry out the development, verification and final inspection of the software according to the plan.

The CAB inspection is normally carried out in the form of evaluating documents to determine whether the software has been properly developed in accordance with DO-178B, through reviewing all the documents prepared in the process of developing the software; and still, consult the inspector in charge as to procedures in actual case. Although the required documents vary depending upon the type of the equipment manufactured and the software level, they are mainly as listed below. Regarding specifically required documents and contents, refer to DO-178B.

- (1) Plan for Software Aspects of Certification
- (2) Software Development Plan
- (3) Software Verification Plan

- (4) Software Configuration Management Plan
- (5) Software Quality Control Plan
- (6) Software Requirements Standards
- (7) Software Design Standards
- (8) Software Code Standards
- (9) Software Requirements Data
- (10) Software Design Description
- (11) Source Code
- (12) Executable Object Code
- (13) Software Verification Cases and Procedures
- (14) Software Verification Results
- (15) Software Life Cycle Environment Configuration Index
- (16) Software Configuration Index
- (17) Software Problem Reports
- (18) Software Configuration Management Records
- (19) Software Quality Assurance Records
- (20) Software Accomplishment Summary

## 2-5 Markings

If RTCA DO-160 standards are applied, the applicable category defined by RTCA DO-160 should be identified on the nameplate. Regarding the details of the identification methods, refer to RTCA DO-160 standards and "Guidance for Type Approval and Specification Approval".

In the case that DO-178 standards are applied, markings are not required.

## Supplementary Provisions

1. This Circular shall be applied on July 25, 2005.
2. This Circular consolidates Circulars regarding type and specification approval, and is issued as the Circular No. 1-004.
3. TCM-23-018-93 "Standards for Dummies Used in Dynamic Tests of Seats and Restraint Systems" and TCM-23-014-1-92 "Specification Approval of Retreaded Tires" are superseded by this Circular.

## Supplementary Provisions (June 30, 2011)

1. This Circular shall be applied on July 1, 2011.

For further questions or comments regarding this Circular, please contact the following:

Airframe Section, Power Plant Section or Equipage Section,  
Airworthiness Division, Aviation Safety and Security Department, Civil Aviation Bureau,

Ministry of Land, Infrastructure, Transport and Tourism

2-1-3 Kasumigaseki, Chiyoda-ku, Tokyo, 100-8918

TEL: 03-5253-8735

FAX: 03-5253-1661

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Director, Airworthiness Division,  
Aviation Safety and Security Department, Civil  
Aviation Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism

## Part VII: Application for TSO Design Approval to the FAA

### 1 Purpose

The purpose is to establish procedures in cases of obtaining TSO Design Approval for appliances, parts or emergency equipment, etc. (hereinafter referred to as “products”) produced in Japan subject to TSO, based on an exchange of notes regarding mutual recognition of airworthiness certificates between Japan and the United States.

(Notes) Partial amendments to the Federal Aviation Regulations (FAR) of the United States were made (effective on September 9, 1980), and the provisions related to TSO were transferred to Part 21 of said regulations. In conjunction with this, the U.S. Federal Aviation Administration (FAA) shall grant TSO Authorization as usual to components in the United States, evaluate only for the suitability with technical standards (when revising existing technical standards or newly creating the same, this shall be provided for separately in the Advisory Circular issued by the FAA), and TSO Design Approval granted for components from abroad.

Further, evaluation on quality control was excluded, when describing the TSO Number on every product (when exporting products) after obtaining TSO Design Approval on behalf of the same, the attachment of an Equipment Standards Conformity Certificate issued by a certified person under a Certificate of Airworthiness for Export or paragraph (1) item (2) or item (6) of Article 20 of the Civil Aeronautics Act by government-issued of exporting countries shall be required. In addition, where TSO Approval was obtained on or before September 9, 1980, new TSO Design Approval need not be obtained, but the attachment of a Certificate of Airworthiness for Export or Equipment Standards Conformity Certificate shall be needed.

### 2 Application

- (1) The applicant should have sufficient understanding of FAR Part 21 and the relevant U.S. laws/regulations relating to TSO.
- (2) The articles concerned should have obtained type or specification approval prescribed in Article 14 Paragraph (1) of the Civil Aeronautics Regulations (the CAR), or type approval for

Specified Emergency Equipment prescribed in Article 152 of the CAR (hereinafter referred to as "type approval etc.")).

### 3 Procedures for Application

An application for TSO approval to the FAA is made via the Civil Aviation Bureau (CAB) as follows:

- (1) The applicant must submit, in advance and to the Director of Airworthiness Division, Aviation Safety and Security Department, Civil Aviation Bureau, an application which contains the reason for seeking TSO design approval, as well as the copies (one set respectively) of the application documents listed in Item 4 and addressed to the FAA, and then he/she must sit for the evaluation concerned;
- (2) The responsible Section Chief of the CAB evaluates the documents submitted by the applicant, and then, if it is recognized that they are satisfactory, he/she sends a letter to the FAA, requesting to approve the compliance with the TSO requirements regarding the articles concerned (see Attachment 4); and
- (3) The applicant should send to the FAA a complete set of the documents for application addressed to the FAA.

### 4 Documents to be submitted (Refer to FAR §21.621.)

The application documents addressed to the FAA are as follows:

- (1) Application letter for TSO design approval addressed to the FAA (see Attachment 1);
- (2) A document stating that the article concerned meets the TSO requirements (see Attachment 2);
- (3) Technical documents:  
Specifications, design drawings, test results, and so forth showing that the article concerned meets the TSO requirements (If any of these documents refers to such materials that were submitted for obtaining TSO design approval in the past, copies of said materials shall also be attached.); and
- (4) Any other required documents specified in the applicable TSO:  
A service manual of the article concerned, and a document specifying limitations.

### 5 Evaluations by FAA (Refer to FAR §21.603.)

- (1) The FAA carries out evaluations regarding compliance with the technical standards applicable to each article, through the documents described in Item 4; and then, if something is not sufficient, additional request is made to the applicant. If the applicant fails to respond to the request within 30 days, the application is discarded, of which the applicant is notified.
- (2) The FAA determines whether the application satisfies the requirements or not within 30 days from the acceptance of the application. Also about paragraph (1) above, the FAA determines whether the application satisfies the requirements or not within 30 days from the acceptance of

the additional documents.

- (3) In the case that some of the TSO-related requirements are not satisfied, the applicant may submit such document(s) to show equivalent airworthiness is secured in some way; and then, if the FAA recognizes the document(s) satisfactory, the approval will be granted.
- (4) When the approval to the product concerned is granted, the Letter of Approval is sent from the FAA to the Director of Airworthiness Division. In addition, a copy of the Letter is sent to the applicant.

## 6 Obligations to Those Who Obtained TSO Design Approval

(Refer to FAR §21.613 and 21.617.)

A person who obtained TSO design approval must comply with the requirements described in (1) to (3) below, in addition to the requirements based upon type approval etc.

- (1) When exporting the products, they must have an Equipment Standards Conformity Certificate attached, issued by a certified person under Certificate of Airworthiness or paragraph (1) item (2) or item (6) of Article 20 of the Civil Aeronautics Act and be clearly indicated for the products below. In addition, where indication requirements are specially provided for by an applicable TSO, it shall be pursuant to said provision.

<1> The name and address of the manufacturer

<2> The nomenclature, category of authorization/approval, as well as part number or type/specification name of the product

<3> The serial number or the date of manufacture

<4> The applicable TSO number

(Note 1) Concerning the procedures relating to the issuance for a Certificate of Airworthiness and Equipment Standards Conformity Certificate, refer to Circular No. 1-014 "Issuance of Certificate of Airworthiness for Export" and Circular No. 7-001 "Mutual Recognition Agreements on Aviation Safety with Foreign Countries." (2) The applicant must keep the documents as shown below:

<1> Technical data, including product design drawings and specifications

Retention period: until the withdrawal of Type (Specification) Approval of the product.<2>

Records or certificate of the inspection and testing prove conformance to TSO requirements.

Retention period: until the withdrawal of Type (Specification) Approval of the product.

<3> An FAA letter of TSO design approval.

Retention period: while the approval is in effect

- (3) He/she must properly respond to such investigations and directions by CAB that will be required based upon inquiries from the FAA regarding TSO articles.

## 7 Procedures for Design Changes (Refer to FAR §21.618 and 21.619.)

A person who obtained TSO design approval should, if he/she intends to make design changes to a



TSO article, take actions to the FAA as follows and accordingly to Item 3, after completing required procedures for type approval etc.

7-1 For Minor Changes (Other than Major Changes):

- (1) In the case where there is neither any change in the model number of the original design nor the design itself, notification of the design change should be reported via CAB.
- (2) When the data of minor changes are forwarded to the FAA, he/she should submit in advance to the Director of Airworthiness Division a letter of request accompanied by copies (one set for each) of such documents addressed to the FAA as listed in 7-1 (3), and should sit for the evaluation. The responsible Section Chief of the CAB will, when it is recognized all are satisfactory as a result of evaluation, send to the FAA a letter requesting the approve of the minor changes concerned (See Attachment 5.); and
- (3) The documents necessary to be forwarded are as follows, and they are sent to the FAA after completion of the evaluation set forth in 7-1 (2):
  - <1> Notification of the minor changes (See Attachment 3.),
  - <2> A document stating that the design changes comply with the TSO requirements (See Attachment 4.),
  - <3> Amendment of the documents submitted when application for the approval is made, and
  - <4> Technical documents required (See Section 4.).

7-2 For Major Changes:

Basically, such changes as require discussion whether they meet the TSO requirements are considered major changes. In the case of major changes, the model name must be changed and a new TSO application must be made.

8 Revocation of TSO Design Approval (Refer to FAR §21.613.)

If a person who obtained TSO design approval no longer satisfies the relevant TSO requirements, the FAA may revoke the approval. In that case, the FAA notifies of the revocation.

9 Procedures for Ceasing Production of TSO Articles

When the production of a TSO article is to be ceased, it should be notified to the FAA via CAB. In that case, the person who obtained TSO design approval should take necessary actions to surrender the approval or to cease the production, in the context of the type approval etc. of the article concerned; and further, he/she should submit to the Airworthiness Division a document including information below and addressed to the FAA, together with the request letter addressed to the Director of Airworthiness Division and asking for necessary actions.

- <1> The name and address of the person who obtained TSO design approval
- <2> The nomenclature, type and part number of the article
- <3> The applicable TSO number and the date of approval

<4> Reason

<5> Any other necessary information

#### 10 Miscellaneous

- (1) The property of TSO design approval may not be transferred.
- (2) The duration of an approval is indefinite unless otherwise directed by the FAA.
- (3) The latest list of the TSO can be found on the website of the FAA (<http://www.faa.gov>).

#### Supplementary Provisions

- 1 This Circular becomes effective on July 25, 2005.
- 2 This Circular consolidates the Circulars related to type/specification approvals, and is issued as the Circular No. 1-004.
- 3 This Circular deletes the TCL-110B-1-85 "Application for TSO Design Approval to the FAA."

#### Supplementary Provisions (June 2, 2008)

1. This Circular shall be applied on June 2, 2008.

#### Supplementary Provisions (June 30, 2011)

1. This Circular shall be applied on July 1, 2011.

#### Supplementary Provisions (July 13, 2011)

1. This Circular shall be applied on September 1, 2011.

For further questions or comments regarding this Circular, please contact the following:

Airframe Section, Power Plant Section or Equipage Section,  
Airworthiness Division, Aviation Safety and Security Department, Civil Aviation Bureau,  
Ministry of Land, Infrastructure, Transport and Tourism  
2-1-3 Kasumigaseki, Chiyoda-ku, Tokyo, 100-8918  
TEL: 03-5253-8735  
FAX: 03-5253-1661

**Attachment 1: Application for TSO Design Approval Addressed to the FAA**

(Date)

Mr./Ms. \_\_\_\_\_  
Manager,  
Los Angeles Aircraft Certification Office  
Northwest Mountain Region  
Federal Aviation Administration  
3960 Paramount Boulevard  
Lakewood, California 90712-4137  
U.S.A.

Subject: Application for TSO Design Approval

Dear Sir:

We hereby apply with pertinent data on {enter the name of the article concerned} for TSO Design Approval under the provisions of Federal Aviation Regulation, Part 21.

- 1. NAME OF APPLICANT .....
- 2. BUSINESS ADDRESS .....
- 3. FACTORY ADDRESS .....
- 4. TYPE OF ORGANIZATION  
(Example) Company, Limited
- 5. TSO NUMBER  
TSO-C {enter applicable Number}
- 6. MODEL & P/N DESIGNATION

<u>MODEL</u>	<u>P/N</u>	<u>REMARK</u>
.....	.....	.....

We would greatly appreciate your consideration on issuing a letter of TSO Design Approval for {enter the name of the article concerned}.

Yours sincerely,  
(Signature)  
Name of the representative  
Name of the manufacturer

**Attachment 2: Document Stating that the Article Concerned Complies  
with the TSO Requirements**

(Date)

Mr./Ms. \_\_\_\_\_  
Manager,  
Los Angeles Aircraft Certification Office  
Northwest Mountain Region  
Federal Aviation Administration  
3960 Paramount Boulevard  
Lakewood, California 90712-4137  
U.S.A.

Subject: Statement of Conformance

Dear Sir:

We hereby certify that {enter the name of the article concerned} listed below has been evaluated under the requirements of TSO-C {enter applicable Number} and meets the performance in TSO-CXXX.

In addition, all other provisions of Part 21 of the Federal Aviation Regulation applicable have been met.

<u>MODEL</u>	<u>P/N</u>	<u>TSO NO.</u>	<u>REMARKS</u>
.....	.....	.....	.....

The following documents for TSO Design Approval are enclosed herewith:

1. Technical Data
2. ....
3. ....

Yours sincerely,

(Signature)

Name of the representative

Name of the manufacturer

**Attachment 3: Notification of Minor Change(s) (in the case of minor changes)**

(Date)

Attention: Technical Support Specialist, ANM-103L  
Los Angeles Aircraft Certification Office  
Northwest Mountain Region  
Federal Aviation Administration  
3960 Paramount Boulevard  
Lakewood, California 90712-4137  
U.S.A.

Subject: Minor Change Information for TSO C\_\_\_ Design Approval of {enter the model name and part number of the article concerned}

Dear Sir:

We hereby announce the minor change information for TSO C\_\_\_ design approval of {enter the model name and part number of the article concerned}.

For your review and approval, we have mentioned change items as follows:

[Describe the contents of the minor changes.]

Best Regards,

(Signature)

Name of the representative

Name of the manufacturer

\* List of the documents attached (date and revision code shall be set forth on each of them)

**Attachment 4: Document Stating that the Contents of the Changes Comply with the TSO Requirements (in the case of minor changes)**

**TSO Minor Change NOTIFICATION**  
**STATEMENT OF CONFORMANCE**

(Date)

Attention: Technical Support Specialist  
Los Angeles Aircraft Certification Office  
Northwest Mountain Region  
Federal Aviation Administration  
3960 Paramount Boulevard  
Lakewood, California 90712-4137  
U.S.A.

Subject: Notification of Minor Change in accordance with FAR 21.611(a);  
TSO C\_\_\_ Design Approval of {enter the model name and part number of the article concerned}

Gentlemen:

This relates to the notification of minor change for {enter the model name and part number of the article concerned} granted on {enter the date} for Technical Standard Order (TSO) C\_\_\_.

The TSO authorization was approved on {enter the date of the TSO design approval}. The minor change(s) consist(s) of {enter the contents of the minor changes.}.

I undersigned hereby to certify that, in connection with the minor change, the above article(s) meet(s) the performance standards of Technical Standard Order (TSO) C\_\_\_. In addition, applicable provisions of Part 21 of the Federal Aviation Regulations have been met.

The technical data related to the TSO authorization that has been changed are transmitted herewith. (Or under separate cover.)

Best Regards,

(Signature)

Name of the representative

Name of the manufacturer

**Attachment 5: Example of a Letter from the Civil Aviation Bureau to the FAA  
(TSO Design Approval)**

*Civil Aviation Bureau*

*Ministry Of Land, Infrastructure, Transport and Tourism*

2-1-3, Kasumigaseki, Chiyoda-ku,  
TOKYO 100-8918, JAPAN

KOKU-KU-KI- number

(Date)

Mr./Ms. \_\_\_\_\_

Manager

Los Angeles Aircraft Certification Office

Northwest Mountain Region

Federal Aviation Administration

3960 Paramount Boulevard

Lakewood, CA. 90712-4137

U. S. A.

Subject: TSO Design Approval for {enter the article concerned} manufactured by {enter the name of the manufacturer}

Dear Mr./Ms. \_\_\_\_\_ :

This relates to FAA TSO design approval and informs you that the following {enter the article(s) concerned} manufactured by {enter the name of the manufacturer} has (have) been examined, tested in accordance with the test plans approved by the CAB of Japan and found to meet TSO-C\_\_\_\_.

As a result of the foregoing, we would like to request you to issue a letter of TSO Design Approval for the [Article Concerned] listed below;

**MODEL**

.....

**P/N**

.....

**TSO No.**

.....

**REMARKS**

.....

Thank you in advance for your cooperation in this matter.

Sincerely,

(Signature)

[Chief Airworthiness Engineer ]

Chief Airworthiness Engineer

**Attachment 6: Example of a Letter from the Civil Aviation Bureau to the FAA  
(in the case of minor changes)**

*Civil Aviation Bureau*

*Ministry Of Land, Infrastructure, Transport and Tourism*

2-1-3, Kasumigaseki, Chiyoda-ku,  
TOKYO 100-8918, JAPAN

(Date)

Attention: Technical Support Specialist  
Los Angeles Aircraft Certification Office  
Northwest Mountain Region  
Federal Aviation Administration  
3960 Paramount Boulevard  
Lakewood, California 90712-4137  
U.S.A.

Subject : TSO Design Approval for {enter the article concerned} manufactured by {enter the name of the manufacturer}

Gentlemen:

This letter informs you of a minor change to {enter the article concerned as well as its model/part number}, manufactured by {enter the name of the manufacturer}, to which TSO-C\_\_\_design approval was issued on {enter the date of the TSO design approval}.

We evaluated the change as referenced in {enter the title(s) of the document(s) related to the change} and found that {enter the article concerned} incorporating the change still meets TSO-C\_\_\_.

As a result of the foregoing, we would like to request your acceptance for the change on the {enter the article concerned} listed below;

<u>MODEL</u>	<u>P/N</u>	<u>TSO No.</u>	<u>REMARKS</u>
.....	.....	.....	.....

Thank you in advance for your cooperation in this matter.

Sincerely,

(Signature)

[Responsible Section Chief]

Airworthiness Division