

Maintenance and management program for small turbine  
engines which have module structure

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

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JCAB Circular

Director of the Airworthiness Division  
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Subject: Maintenance and management program for small turbine engines which have module structure

1. Purpose

This circular is intended to clarify the handling on the maintenance and management program for small turbine engines which have module structure.

2. Definition

2-1 Module

Where an engine can be disassembled into several components (such as compressor assembly, turbine assembly, and gearbox assembly), and can be restored to serviceable condition again after the exchange of a component or the implementation of repair or alteration for a component, without complex disassembling, assembling, and adjusting work, those components are referred to as "Modules" (the term might be differed depending on the manufacturer) and the engine is referred to as "engine which has module structure."

The determination of whether the engine has module structure or not, or of the extent of module structure, shall be made by the description of the maintenance manual etc. Spare Parts Certificate whose category is under "engine" can be issued to each module.

2-2 Module management

Module management means to manage the time and cycles for each module in accordance with the measures stipulated in the maintenance manual etc. issued by the manufacturer.

2-3 Module Maintenance

The module maintenance is intended to be performed on engines designed and manufactured to enable the maintenance for each module, and it is also intended to as follows:

- To disassemble an engine into several modules and assemble the engine from serviceable modules.
- To inspect, repair (including overhaul) or alter the modules which were disassembled or removed.

### 3. Maintenance and Management for Engines

#### 3-1 Management of operating hours and cycles

With regard to the establishment of life limit for operating hours and management of the state of usage, refer to the following documents.

Circular 3-004: Establishment of Life Limits for Operating Hours and Maintenance Programs, and the Management for Engines etc.

Circular 3-024: Maintenance of Private Aircraft

Circular TCL-41A-71: Operating Hours etc. of Aircraft

#### 3-2 Workers who are assigned to maintenance and facilities

With regard to the requirements for workers and facilities etc. to be used, they should follow the descriptions in the maintenance manual etc. issued by the manufacturer. They should also be managed referring to Circular 3-024 "Maintenance of Private Aircraft."

#### 3-3 Exchange of Modules

If a module which has an identification plate indicating the serial number of the engine is removed during the implementation of module maintenance, the identification plate should be detached from the module and be attached to a module which will be newly installed. It is prohibited to produce a new engine which doesn't have its serial number by combining each module.

Even where an engine does not adopt the module management, exchange of modules can be performed for repair of malfunctions or for alteration. However, in this case, remaining TBOs (time being left until next overhaul) of the modules installed shall be greater than the remaining TBO of the engine. Also, when the engine reaches the life limit for operating hours, the engine shall be overhauled together with the modules which have been exchanged halfway, even though the modules still have remaining TBOs.

### 4. Work Category of the Maintenance

With regard to the work category for module maintenance being performed, refer to Circular 3-001 "Maintenance and Alteration of Aircraft."

### 5. Handling of Engine Logbook etc.

#### 5-1 Necessary logbook etc.

When engine maintenance is performed based on the module maintenance program, a historical-record book for each module should be prepared in addition to the engine logbook.

Note - Even though the definition in Section 2 shows that each module is categorized as "engine" for Spare Parts Certificate, an engine logbook should be prepared for each serial number of engine and is not required for each module.

## 5-2 Records

With regard to the engine logbook, the items listed in paragraph 5-2-1 should be recorded in addition to the items stipulated in item (ii) under paragraph 2, Article 142 of the Civil Aviation Regulation and Circular 3-001.

With regard to the historical-record book for each module, items listed in paragraph 5-2-2 should be recorded.

### Note

1. Implementation records of repair, alteration or maintenance for each module should be entered in the historical-record book for the module concerned.
2. Implementation records of repair, alteration or maintenance for parts other than each module should be entered in the engine logbook.

### 5-2-1 Engine logbook

- (1) Parts Number (P/N) and Serial Number (S/N) of the module installed
- (2) Total operation Time (T.T.) and Total operation Cycles (T. Cycles) of the engine since manufacturing as of the time when the replacement is implemented
- (3) Module's state of usage (T.T., operation Time Since previous Overhaul (T.S.O.), operation Time Since previous Check (T.S.C.) and T. Cycles etc.) necessary for management as of the time when the replacement is implemented

### 5-2-2 Historical-record book for each module

#### 5-2-2-1 Following the records on the replacement of the module concerned for the engine

- (1) Date and place for the replacement
- (2) S/N of the engine which the module is installed
- (3) T.T. and T. Cycles of the engine as of the time when the replacement is implemented
- (4) Module's state of usage (T.T., T.S.O., T.S.C. and T. Cycles etc.) necessary for management as of the time when the replacement is implemented
- (5) Reasons for the replacement

#### 5-2-2-2 Following records of implementation on the repair, alteration or maintenance for the module concerned

- (1) Date and place for the implementation
- (2) Reasons for the implementation, subject portion, and replaced parts
- (3) Module's state of usage (T.T., T.S.O., T.S.C. and T. Cycles etc.) necessary for management as of the time of implementation

#### 5-2-2-3 Following records on the time controlled parts used in the module concerned

- (1) Part name (Nomenclature), P/N and S/N
- (2) Life limit time, life limit period (calendar limit) and the number of cycles of the part concerned
- (3) T.T. and T. Cycles of the part concerned as of the time when the part is installed in the module

- (4) T.T. and T. Cycles of the module as of the time when the part concerned is installed
- (5) T.T. and T. Cycles of the module as of the expected time when the part concerned will be removed and replaced

#### Supplementary Provisions

1. This Circular shall be enforced on April 25, 2018.
2. This Circular integrates Circulars relating to the handling for modules of turbine engines, and is issued as Circular 3-006.
3. Circulars TCL-125A-81 (issued on April 27, 1981) and TCL-130-83 (issued on May 17, 1983) shall be superseded by this Circular.

For questions and comments about this circular, please contact the following:

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