United Kingdom Overseas Territories Aviation Circular

OTAC 145-17

Engine and Component Maintenance under OTAR Part 145 Subpart D (Option 2)

Issue 1
March 2021

Effective on issue

GENERAL

Overseas Territories Aviation Circulars are issued to provide advice, guidance and information on standards, practices and procedures necessary to support Overseas Territory Aviation Requirements. They are not in themselves law but may amplify a provision of the Air Navigation (Overseas Territories) Order or provide practical guidance on meeting a requirement contained in the Overseas Territories Aviation Requirements.

PURPOSE

This Overseas Territories Aviation Circular provides information and guidance on engine and component maintenance to those applying for the issue of or maintaining a Maintenance Organisation approval under OTAR Part 145 Subpart D (Option 2).

RELATED REQUIREMENTS

This Circular relates to OTAR Part 145; specifically, Section 145.59.

CHANGE INFORMATION

First issue.

ENQUIRIES

Enquiries regarding the content of this Circular should be addressed to Air Safety Support International at the address on the ASSI website www.airsafety.aero or to the appropriate Overseas Territory Aviation Authority.

CONTENTS

59.1 Scope of Maintenance

(a) The organisation should only maintain engine types and Components that are listed on their scope of approval (B and C ratings).

(b) For components the organisation should only maintain components that are listed in their MOE or referenced in a capability list that is acceptable to the Governor. This capability list should:

(a) correspond to the ATA chapters of the C ratings on the OTAR 145 approval certificate
(b) specify the part number and level of work to be performed
(c) make reference to the Component Maintenance Manual (CMM)

The engine and component ratings that are attached to the OTAR 145 approval certificate are detailed in Appendix A.

59.2 Facilities

For engine and component maintenance the workshops should comply with the guidance of OTAC 145-1.

59.3 Component Certifying Staff Definition

Engine/Component Certifying Staff means staff authorised by the maintenance organisations to release Engines, APU and components under the OTAA Part-145 Option 2 approval.

59.4 Component certifying staff authorisations

(a) Authorisation Procedures

When a maintenance organisation is nominating engine or component certifying staff, the maintenance organisation should detail in the MOE the relevant Certifying Staff authorisation procedures (initial and renewal) together with the adequate qualification criteria, depending on the complexity of the engine/component and the assessment process.

(b) Initial Authorisations

The maintenance organisation should detail in the MOE the established eligibility prerequisites for OTAR Part-145 Engine/Component Certifying Staff (CC/S) as per the Minimum qualification criteria detailed in paragraph 59.5.

In addition, the maintenance organisation should also explain (in the MOE) the Assessment procedure for granting engine/component certifying staff authorisations.

(c) Authorisation renewal process

The maintenance organisation should (detail in its MOE the CC/S authorisation renewal procedure such as, but not limited to:

- The continuation training requirements (maintenance organisation procedures, human factors and new technologies);

- The maintenance experience requirements (6 months of relevant experience in the preceding 2-year period) and the associated records of evidence;
- The assessment procedure for renewing the CC/S authorisation;
- The management of the CC/S List and individual CC/S authorisations;
- The CC/S records (responsibility, record of experience, content of the CC/S files).

59.5 Engine/Component Certifying Staff (CC/S) Qualifications

(a) Basic requirements.

(1) Educational Requirements.

As there are no licences directly available for Engine or Component maintenance, the qualification requirements are based on the guidance outlined in this section (59.5)

The minimum educational level should be a school level or apprenticeship evidenced by the appropriate certificates.

(2) Basic training requirements.

The CC/S should be able to demonstrate that he/she has received a basic training on the appropriate field:

- an aeronautical school diploma or certificate or;
- a technical school diploma / certificate, if the intended scope of work concerns non-complex electrical components or instruments and cabin and safety equipment or;
- an aeronautical military school diploma or certificate. Depending on the complexity of the intended scope of authorisation, a higher level of the basic training should be considered.

(3) Aeronautical experience requirements.

The CC/S should be able to demonstrate at least:

- 2 years of Aeronautical experience in the field of aviation maintenance including at least 12 months of practical experience in the specific component maintenance area and/or Workshop;
- 3 years in the field of aviation maintenance for complex components such as engine/APU and landing gears, including 24 Months of practical experience in the specific component maintenance area / Workshop

(b) Technical training requirements.

(1) Component training.

Depending on the complexity and the technology of the component, the CC/S should be able to demonstrate that he/she has received appropriate theoretical and practical component training from:

- the OEM or;
- an OEM recognised training organisation or;
- An appropriately rated maintenance organisation provided that:
  - the person nominated to carry out the training can demonstrate he/she has received training to an appropriate level for the subject component; and
  - the person nominated to carry out the training is appropriately authorised by the maintenance organisation and is able to demonstrate a significant experience on the relevant component maintenance; and the training syllabus has been reviewed by the Engineering Manager and/or the Quality Manager; and
  - the component is available for practical training purpose; For simple component, the maintenance organisation may take credit of the CC/S experience and/or a previous training on a component from the same family and same technology.

(2) Bench Test training.

Where there is a need to use Bench Test (e.g. engine or ATEC bench test), the CC/S should be able to demonstrate that he/she has received appropriate training. Training for the use of specific tools required by the OEM maintenance data should be received from:

- The OEM or;
- The Bench Test manufacturer or;
- An appropriately rated maintenance organisation.

(3) Specific equipment training.

Where there is a need to use specific equipment, the CC/S should be able to demonstrate that he/she has received the appropriate training. This training for the use of specific tools required by the OEM maintenance data should be received from:

- The OEM or;
- The specific tool manufacturer or;

- An appropriately rated maintenance organisation.

(4) Additional training.

The CC/S should be able to demonstrate that he/she has received, appropriate, training on:

- Initial Human Factors training
- The MOE and internal procedures applicable to CC/S (including issuance of OTAR 145.59 Release Certificate).

In addition, where needed, the CC/S should demonstrate that he/she has received appropriate training on:

- Fuel Tank Safety items, CDCCL level 1, or level 2
- Electrical Wiring Interconnection System (EWIS)
- Any additional training(s) justified during the assessment performed by the maintenance organisation (e.g. human factors, aviation legislation, etc.).

59.6 Maintenance Data

The organisation should hold and use, applicable, approved and current maintenance data when performing engine and component maintenance, including modifications and repairs.

'Applicable' means relevant to any engine, component or process specified in the organisation's approval class rating schedule and in any associated capability list.

59.7 Equipment Tools and Materials

The organisation should refer to OTAC 145-2.

59.8 Engine and Component Release to Service

Each engine or component that is maintained by an organisation holding an Option 2 approval should be released on an OTAR 145.59 Release certificate.

Appendix A – Class and Rating Systems

Class and Rating Systems used for the Approval of Maintenance Organisations referred to in OTAR Part 145.

1. The table referred to in Point 11 provides the standard system for the approval of maintenance organisation under OTAR Part 145. An organisation must be granted an approval ranging from a single class and rating with limitations to all classes and ratings with limitations.

2. In addition to the table referred to in point 11 the approved maintenance organisation is required to indicate its scope of work in its maintenance organisation manual/ exposition. See also paragraph 10.

3. Within the approval class(es) and rating(s) granted by the OTAA, the scope of work specified in the MOE defines the exact limits of approval. It is therefore essential that the approval class(es) and rating(s) and the organisation's scope of work are matching.

4. A Category A class rating means that the maintenance organisation may carry out maintenance on the aircraft and any component (including engines and/or Auxiliary Power Units (APUs)), in accordance with aircraft maintenance data or, if agreed by the OTAA, in accordance with component maintenance data; only whilst such components are fitted to the aircraft. Nevertheless, such A rated approved maintenance organisation may temporarily remove a component for maintenance, in order to improve access to that component, except when such removal generates the need for additional maintenance not eligible for the provisions of this paragraph. This will be subject to a control procedure in the MOE to be approved by the organisation. The limitation section will specify the scope of such maintenance thereby indicating the extent of approval.

5. A category B class rating means that the approved maintenance organisation may carry out off-wing engine maintenance, excluding complete engine overhaul programme(s) of work.

6. A Category C class rating means that the approved maintenance organisation may carry out maintenance on uninstalled components (excluding complete engines and APUs) intended for fitment to the aircraft or engine/APU. The limitation section will specify the scope of such maintenance thereby indicating the extent of approval. A maintenance organisation with a category C class rating may also carry out maintenance on an installed component during base and line maintenance or at an engine/APU maintenance facility subject to a control procedure in the maintenance organisation exposition. The MOE scope of work should reflect such activity where permitted by the OTAA.

7. In the case of maintenance organisations approved in accordance with OTAR Part 145, Category A class ratings are subdivided into 'Base' or 'Line' maintenance. Such an organisation may be approved for either 'Base' or 'Line' maintenance or both. It should be noted that a 'Line' facility located at a main base facility requires a 'Line' maintenance approval.

8. The 'limitation' section is intended to give maximum flexibility to customise the approval to a particular organisation. Ratings should be mentioned on the approval only when appropriately limited, the table referred to in Point 11 specifies the types of limitation possible whilst maintenance is listed last in each class rating it is acceptable to emphasise that it could be related to a maintenance task rather than the aircraft or engine type or manufacturer, if this is more appropriate to the

organisation. An example may be avionic systems installations and maintenance. Such mention in the limitation section indicates that the maintenance organisation is approved to carry out maintenance up to and including this particular type/task.

9. When reference is made to series, type and group in the limitation section of Class A and B, 'Series' means a specific type series such as Airbus 300, 310 or 319 or Boeing 737-300 series or RB211-524 series etc. Type means a specific type or model such as Airbus 310-240 type or RB 211-524 B4 type etc. Any number of series or types may be quoted. Group means for example Cessna single piston-engined aircraft or Lycoming non-supercharged piston engines etc.

10. When a lengthy capability list is used which could be subject to frequent amendment, then such amendment should be in accordance with a procedure acceptable to the OTAA and included in the MOE. The procedure should address the issues of who is responsible for capability list amendment control and the actions that need to be taken for amendment. Such actions include ensuring compliance with OTAR Part 145 for products or services added to the list.

11. The maintenance ratings that may be granted to a Maintenance Organisation are given in Table 1. These will be indicated on the OTAR Part 145 Approval Certificate.

Table 1 Class and Ratings

CLASS	RATING	LIMITATIONS	BASE	LINE
AIRCRAFT	A1 Aeroplanes/above 5700 kg	Rating reserved for Maintenance Organisations approved in accordance with (OTAR Part 145) specify aeroplane manufacturer or group or series or type and/or the maintenance task(s) *Example: Airbus A320 Series*	[YES / NO]*	[YES / NO]*
	A2 Aeroplanes/5700 kg and below	specify aeroplane/ manufacturer or group or series or type and/ or the maintenance tasks *Example: DHC-6 Twin Otter series*	[YES / NO]*	[YES / NO]*
	A3 Helicopters	specify helicopter manufacturer or group or series or type and/or the maintenance task(s) *Example: Robinson R44*	[YES / NO]*	[YES / NO]*
	A4 aircraft other than A1, A2 and A3	specify aircraft series or type and/or the maintenance task(s)	[YES / NO]*	[YES / NO]*
ENGINES	B1 Turbine	specify engine series or type and/or the maintenance task(s) *Example: PT6A Series*		

	B2 Piston	specify engine manufacturer or group or series or type and/or the maintenance task(s)
	B3 APU	specify engine manufacturer or series or type and/or the maintenance task(s)
COMPONENTS OTHER THAN COMPLETE ENGINES OR APUs	C1 Air Cond & Press	specify aircraft type or the aircraft manufacturer or component manufacturer or particular component and/or cross refer to a capability list in the exposition and/or the maintenance task(s)
	C2 Auto Flight	
	C3 Comms and Nav	
	C4 Doors - Hatches	
	C5 Electrical Power & Lights	
	C6 Equipment	
	C7 Engine - APU	
	C8 Flight Controls	
	C9 Fuel	
	C10 Helicopter-Rotors	
	C11 Helicopter-Trans	
	C12 Hydraulic power	
	C13 Indicating recording systems	
	C14 Landing Gear	
	C15 Oxygen	
	C16 Propellers	
	C17 Pneumatic & Vacuum	
	C18 Protection ice/rain/ fire	
	C19 Windows	
	C20 Structural	
	C21 Water ballast	
	C22 Propulsion Augmentation	

Delete as appropriate

Appendix B – List of Abbreviations

APU: Auxiliary Power Unit
ATEC: Aero-Engine Test Cell
CC/S: Engine/Component Certifying Staff
CDCCL: Critical Design Configuration Control Limitation
EWIS: Electrical Wiring Interconnection System
MOE: Maintenance Organisation Exposition
OEM: Original Equipment Manufacturer
OTAA: Overseas Territory Aviation Authority