

# Components, Engines and APU certifying staff Qualification Guidance

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# Introduction

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## Revision history

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### Issue 1 June 2024

Initial issue.

## Definitions and abbreviations

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AMC	Acceptable Means of Compliance
AML	Aircraft Maintenance Licence
AMO	Aircraft Maintenance Organisation
AMTO	Approved Maintenance Training Organisation
ANAC	Brazilian Aviation Authority
AOG	Aircraft On Ground
CAAS	Civil Aviation Authority of Singapore
CAP	Civil Aviation Publication
C/S	Certifying Staff
CC/S	Component Certifying Staff
EU	European Union
ESM	Engine Shop Manual
FAA	Federal Aviation Administration (U.S.A)
GM	Guidance Material
ILAC	International Laboratory Accreditation Cooperation
IORS	Internal Occurrence Reporting System
MOA	Maintenance Organisation Approval
MOAP	Maintenance Organisation Approval Procedures
MOE	Maintenance Organisation Exposition
MOR	Mandatory Occurrence Reporting
NDT	Non-Destructive Testing

NDI	Non-Destructive Inspection
OEM	Original Equipment Manufacturer
PMA	Parts Manufacturer Approval
PPB	Principal Place of Business
SRM	Structural Repair Manual
S/S	Support Staff
STCH	Supplemental Type Certificate Holder
TCCA	Transport Canada Civil Aviation
TCH	Type Certificate Holder
UKAS	United Kingdom Accreditation Service
WH	Working Hours

## Scope and applicability

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The CAA is the Competent Authority for UK approved Part-145 organisations having their principal place of business located within the UK or in a third country. The CAA is responsible for the approval of these maintenance organisations and for establishing procedures detailing how Part-145 applications and approvals are managed.

The provisions of this guidance document are complementary to the requirements of [UK Regulation \(EU\) No 1321/2014, Annex II \(Part-145\)](#), as amended, and does not supersede or replace the associated regulatory requirements.

## Purpose

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- This guidance is designed to be used by organisations applying for, or holding a UK Part 145 approval, to assist them with the production or amendment of their Maintenance Organisation Exposition (MOE).
- Defining the Component Certifying Staff qualification procedure in the MOE.
- Assessing each Component Certifying Staff authorisation granted.

It will also be used by the CAA as guidance when approving the MOE and conducting routine oversight of CAA approved Part 145 'B' and 'C' rated organisations.

Note: Further information may be published on the CAA's [Guidance for Part 145 approval holders](#) webpage.

## Associated Instructions

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The CAA has developed associated instructions including Forms and Templates, that detail specific matters which have to be considered as an integral part of this procedure.

A complete listing of these documents, together with their applicability to the maintenance organisations, can be found on the CAA's [Guidance for Part 145 approval holders](#) webpage.

## Communication

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All documents and correspondences between the maintenance organisation and the CAA shall be in the English language.

# 1 General guidance

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## Component Certifying Staff Definition

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- 1.1 Component Certifying Staff (CC/S) means staff authorised by a Part 145 organisation to release Engines, APU and components under their Part 145, 'B' or 'C' rating approval.

## Component Certifying Staff Authorisation Procedures

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- 1.2 For standardisation purposes, all Part 145 organisations nominating component certifying staff, the organisation shall detail in its Maintenance Organisation exposition (MOE) the relevant CC/S authorisation procedures (initial and renewal) together with the adequate qualification criteria depending on the complexity of the component and the assessment process.
- 1.3 When the organisation is not based in the UK, and the dominant language of the country in which the approval is held is not English, the MOE shall be in English and in the case of a multilingual MOE, the English text shall precede the second language. The organisation must ensure that any translation is accurate.

## Initial Authorisation Procedure

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- 1.4 The Part 145 organisation shall detail in its Maintenance Organisation Exposition (or associated procedures referenced in the MOE) the established prerequisites to be eligible as Part 145 Component Certifying Staff:
- Minimum qualification criteria including:
    - Education, basic and technical training requirements.
    - Aeronautical/Component experience requirements.
    - Language knowledge.
    - Human Factor and Aviation Legislation training in accordance with UK Part 66.
    - Training on the Organisation procedures.

Note: the minimum age for Component Certifying Staff is 21 years. Refer to 145.A.35(l).

- 1.5 In addition, the Part 145 organisation shall also explain in the Maintenance Organisation Exposition section 3.4, the assessment procedure for granting a CC/S authorisation, which must specify:

- The person responsible for this process.
- When the assessment shall take place.
- The validation of qualification records.
- Procedures for the initial assessment (i.e. methods, including actions to be taken when the assessment is not satisfactory).
- Recording of assessment results.
- The management of the CC/S List and individual authorisations.
- The CC/S records (responsibility, content of the (CC/S) files, etc.).

1.6 Further guidance is included in [CAP2375: Part 145 Maintenance Organisation Exposition Guidance](#).

## Authorisation Renewal Process

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- 1.7 The Part 145 organisation shall detail in its MOE the CC/S authorisation renewal prerequisites such as but not limited to:
- The recurrent training requirements (organisation procedures, new technology, human factor issues, etc.).
  - The maintenance experience requirements (6 months of relevant maintenance experience in the last 2-year period) and the associated records of evidence. Refer to [CAP2377: Part 145 - 6/24-month Recency Guidance](#). The assessment procedure for renewing the CC/S authorisation which shall at least specify:
    - the persons responsible for this process.
    - when the assessment shall take place.
    - the validation of qualification records.
    - means and methods for the continuous control of competence.
    - actions to be taken when assessment is not satisfactory.
    - recording of assessment results.
  - 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).



## Component Certifying Staff Qualification Criteria (Part 145.A.35(o))

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### Basic Requirements

#### Educational Requirements

##### Part 145.A.35(f)

- 1.8 The minimum educational level shall be a school level or apprenticeship evidenced by the appropriate certificates.

#### Basic Training Requirements

##### Part 145.A.35(f)

- 1.9 The CC/S shall be able to demonstrate they have received basic training in the appropriate field, such examples maybe:
- 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 shall be considered.

#### Aeronautical Experience Requirements

##### Part 145.A.35(c)

- 1.10 The CC/S shall be able to demonstrate at least: 2 years of Aeronautical experience in the field of aviation maintenance which should include at least 6 months of practical experience in the specific component maintenance area / workshop.

### Technical Training and Qualification Requirements

#### Component Training

##### Part 145.A.35(a)

- 1.11 Depending on the complexity and the technology of the component being maintained, the CC/S shall be able to demonstrate they have received appropriate theoretical and practical component training from:
- the OEM or;
  - the OEM recognised training organisation or.

- An appropriately rated Part 145 organisation provided:
  - the person nominated to carry out the training can demonstrate they have received training to an appropriate level for the subject component.
  - the person nominated to carry out the training is appropriately authorised by the Part 145 organisation and is able to demonstrate significant experience on the relevant component maintenance.
  - the training syllabus has been reviewed by the Engineering Manager and/or the Compliance Monitoring Manager.
  - the component is available for practical training purpose.

1.12 For a simple component, the organisation may take credit of the CC/S experience and/or previous training on a component from the same family and same/similar technology.

### **Bench Test Training**

1.13 Where there is a need to use Bench test (e.g. engine or ATEC bench test), the CC/S shall be able to demonstrate they have received appropriate training. This training for the use of specific tools required by the OEM maintenance data shall be received from:

- The OEM or.
- The bench test manufacturer or.
- An appropriately rated Part 145 organisation.

### **Specific Equipment Training**

1.14 Where there is a need to use specific equipment, the CC/S shall be able to demonstrate they have received the appropriate training. This training for the use of specific tools required by the OEM maintenance data shall be received from:

- The OEM or.
- The specific tool manufacturer or.
- An appropriately rated Part 145 organisation.

### **Additional Training**

#### **Appendix IV to AMC to 145.A.30(e) and 145.B.10(3), AMC20-22**

1.15 Where needed, the CC/S shall demonstrate they have received appropriate training on:

- Fuel Tank Safety items, CDCCL level 1, or level 2 after 31/12/2010, (normally for fuel system related components. Refer to [UK Part 145, Appendix IV to AMC 145.A.30\(e\)](#)).
- Electrical Wiring Interconnection System (refer to [AMC 20-22](#) for further details);
- Any additional training(s) justified during the assessment performed by the Organisation (e.g. human factor, aviation legislation, etc..).

### Specific Qualifications

1.16 Specialist tasks that are carried out as part of engine/APU/component maintenance that require specific qualifications. If these are not held by the CC/S, the CC/S shall ensure the person that carried out the task was appropriately qualified before they issue the Certificate of Release to Service. Such tasks include, but are not limited to:

- NDT – Qualified i.a.w EN4179
- Welding – Qualified i.a.w British Civil Airworthiness Requirements, Section A, Chapter A8-10

## General Requirements

### Language Knowledge

1.17 The CC/S must be able to demonstrate a working knowledge of the language in which the maintenance data is published and to an English Language proficiency that is assessed as per [International Civil Aviation Organisation \(ICAO\) Language proficiency](#) which requires the minimum standard for a licence holder to be Level 4.

### Human Factor and Aviation Legislation Training

#### Part 145.A.30(e)

- 1.18 The CC/S shall be able to demonstrate they have received a training on:
- human factors referred to in module 9 of Appendix I to Annex III (UK Part-66). The organisation shall ensure they are in a position to demonstrate that the Human factor training and the training level are compliant to the syllabus and the level (B1/B2) of training of Appendix I to Annex III (UK Part-66). The demonstration process is left to the discretion of the organisation.
  - aviation legislation referred to in module 10 of Appendix I to Annex III (UK Part-66).
- 1.19 The organisation shall ensure and be in a position to demonstrate that the aviation legislation training syllabus and the training level are compliant to the

syllabus and the level (B1/B2) of training of Appendix I to Annex III (UK Part-66). The demonstration process is left to the discretion of the organisation.

### **Training to the MOE Procedures.**

- 1.20 The CC/S must be able to demonstrate they have received appropriate training with the MOE and internal procedures applicable to CC/S (including issuance of CAA Form 1).

### **Recent maintenance experience**

- 1.21 The maintenance organisation must ensure that CC/S can demonstrate recent experience on the Component area/ workshop relevant to the component type intended to be authorised.
- 1.22 The recent maintenance experience is understood as meeting the requirement of 6 month of relevant maintenance experience in two years period preceding the intended date of issuance of the certification authorisation.
- 1.23 Further guidance is provided in [CAP2377: Part 145 - 6/24-month Recency Guidance](#).

### **Additional criteria for the renewal of individual authorisation**

#### **Part 145.A.35(d), Appendix IV to AMC to 145.A.30(e) and 145.B.10(3), AMC20-22**

- 1.24 The CC/S must receive continuation training that covers Technical Development including Human Factors, FTS, EWIS and Aviation Regulation as applicable to the approval ratings and scope of work.
- 1.25 The CC/S must demonstrate 6 months of relevant maintenance experience during the two-year period preceding the renewal of authorisation. Further guidance is provided in [CAP2377: Part 145 - 6/24-month Recency Guidance](#).

### **Structure of the Exposition**

- 1.26 The aim of the assessment is to ensure compliance of the Component Certifying Staff with the relevant UK Part 145 requirements, with the criteria defined in this guidance and to ensure that each CC/S possesses the expected competence(s) associated to their job function (proposed scope of work and level of maintenance <sup>1</sup>), before granting them an initial UK Part 145 authorisation, to renew or to extend the scope of their issued authorisation.
- 1.27 This assessment must also take into consideration attitude and behaviour. The organisation must demonstrate through a competence assessment that the CC/S:

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<sup>1</sup> level of maintenance means Overhaul, test, repair, Level 1, 2 and 3 for electronic / electric components as addressed in the CMM

- Meets the qualification criteria addressed above.
  - Has the relevant knowledge to perform the maintenance tasks related to their job function.
  - Has the relevant skill and ability to perform the maintenance tasks related to their job function including the relevant language knowledge.
  - Is able to determine when the Component is ready to release to service and when it shall not be released to service.
- 1.28 The competence needs to be assessed by evaluation of “On the Job Performance” and /or “testing of knowledge” by appropriately qualified personnel.
- 1.29 The qualification criteria addressed above are summarised in section A.
- 1.30 The minimum topics to be assessed during the initial CC/S Part 145 authorisation process, the renewal or extension of their scope of authorisation are summarised in section B. For any MOE chapters that are not applicable, the MOE should clearly indicate this.
- 1.31 Further guidance on competency assessment is provided in [CAP1715: Competency Assessment Guidance Document](#).

## Management of the CC/S List and Individual Authorisation

- 1.32 The management of the list of Certifying Staff and the management of the individual CC/S authorisation must be detailed within the exposition and approved by the CAA. The organisation is responsible to ensure that the CC/S remain current in terms of procedures, HF and technical knowledge. This recurrent training should be of sufficient duration in each two-year period, the organisation is strongly advised to align the validity of the CC/S authorisation accordingly.

## Records

### Part 145.A.35; AMC 145.A.35(a), GM 145.A.35

- 1.33 The organisation must retain a copy of all detailed maintenance records and any associated maintenance data for three years from the date on which the component to which the work relates was issued with a certificate of release to service. In addition, it shall retain a copy of all the records related to the qualification and competency of the certifying staff that supports an authorisation.
1. The records under this point shall be stored in a manner that ensures protection from damage, alteration and theft.

2. Any computer hardware used to ensure backup shall be stored in a different location from that containing the working data in an environment that ensures they remain in good condition.
3. When an organisation approved under Part 145 terminates its operations, all retained maintenance records from the period of three years preceding the termination of operations of the organisation shall be distributed to the last owner or customer of respective aircraft or component or shall be stored in a way specified by the CAA.

1.34 The internal compliance system must periodically review and archive the relevant files.

1.35 This means that certificates, experience logbook, diploma, continuation training evidence, assessment evidence (including assessment results which could be in a form chosen by the organisation) must be kept.

# A Summary for PART 145 Component C/S qualification criteria

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## Component type

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### Engine/APU/Propeller

**Hydraulic components** L/G assy, actuator, etc.

**Electrical components** Motors, actuators, chargers, power supplies, batteries, etc.

**Electronic components** Card assy, mic, head set, etc.

**Mechanical components** Wheel, Brake unit, structure

**Electronic Units** computers, com/nav receiver, indicators, power supplies

### Instruments

**Cabin Equipment** BFE, PSU, Pax Entertainment

**Safety equipment** Life raft, life jacket, O<sup>2</sup> bottle, O<sup>2</sup> masks

Note: The complexity and technology of the component shall be considered. For simple components, the organisation may take credit of the CC/S experience and/or a previous training on a component from the same family and same technology.

## Basic requirements

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**Educational level** Secondary school

**Basic training** Aeronautical & technical school or aeronautical military school or QA assessment

**Aeronautical experience** 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 / workshop.

For complex components such as engine/APU, helicopter rotors/transmissions and Landing gears including, 3 years of Aeronautical experience is required in the field of aviation maintenance including 24 Months of practical experience in the specific component maintenance area / workshop.

## Technical training

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<b>Component training</b>	OEM or OEM recognised Training Org. or UK Part 145 AMO
<b>Bench test training</b>	OEM of the bench test or UK Part 145 AMO
<b>Tool training</b>	OEM or UK Part 145 AMO
<b>CDCCL / EWIS</b>	Where needed

## General training

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<b>Language knowledge</b>	Working knowledge of the language in which the maintenance data is published AND working knowledge of English for the CRS (and for UK Airworthiness directives if required).
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### HF and Aviation legislation training

Human Factor and aviation Legislation training as detailed in the UK Part 66.

### Safety Management Systems training

Appropriate training in Safety Management Systems as detailed in UK Part 145

### Recent Maintenance experience

6 months of experience in two years period preceding the intended date of issuance of the certification authorisation

### MOE procedures

Appropriate training to the MOE and internal procedures applicable to CC/S (including issuance of CAA Form 1)

## Renewal criteria

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<b>Recurrent training</b>	OEM or OEM recognised Training Org. or UK Part 145 AMO
<b>Maintenance experience</b>	6 months of relevant experience in the last 2-year period



## B Summary of Assessment for Component Certifying staff

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Note: This list shall not be considered as exhaustive. It remains the responsibility of the organisation/applicant to adjust it.

### I QUALIFICATION

- I.1. Refer to section A, Summary for PART 145 Component C/S qualification Criteria

### II KNOWLEDGE

- II.1. Knowledge of human factors, human performance and limitations
- II.2. Knowledge of Safety Management principles
- II.3. Knowledge of organisation capabilities, privileges and limitations
- II.4. Knowledge of UK Part-M/ML, UK Part-145 (and any other relevant regulations)
- II.5. Knowledge of relevant parts of the MOE and associated procedures
- II.6. Knowledge of safety risks linked to the working environment
- II.7. Knowledge on CDCCL (when relevant)
- II.8. Knowledge on EWIS (when relevant)
- II.9. Knowledge of occurrence reporting system and understanding of the importance of reporting occurrences, incorrect maintenance data and existing or potential defects

### III UNDERSTANDING

- III.1. Understanding of professional integrity, behaviour and attitude towards safety
- III.2. Understanding of conditions for ensuring continuing airworthiness of aircraft and components
- III.3. Understanding of human performance and limitations, including their own
- III.4. Understanding of personnel authorisations and limitations
- III.5. Understanding critical tasks and critical parts

**IV ABILITY**

- IV.1 Ability to supervise the performance of tasks carried out by non-CC/S personnel (i.e. mechanics, etc.)
- IV.2 Ability to compile and control completed work cards
- IV.3 Ability to consider human performance and limitations.
- IV.4 Ability to determine required qualifications for task performance
- IV.5 Ability to identify and rectify existing and potential unsafe conditions
- IV.6 Ability to check and document proper accomplishment of maintenance tasks
- IV.7 Ability to identify and properly plan performance of critical task
- IV.8 Ability to prioritise tasks and report discrepancies
- IV.9 Ability to process the work requested by the customer
- IV.10 Ability to properly process removed, uninstalled and rejected parts
- IV.11 Ability to properly record and sign for work accomplished
- IV.12 Ability to determine the acceptability of parts to be installed prior to fitment
- IV.13 Ability to understand work orders, work cards and refer to and use applicable maintenance data
- IV.14 Ability to use information systems
- IV.15 Ability to use, control and be familiar with required tooling and/or equipment

Adequate communication and literacy skills:

The component certifying staff shall be able to demonstrate a working knowledge of the language in which the maintenance data is published. In addition, should the language of the maintenance data not be English, then English language working knowledge is required.