

Air Traffic Safety Electronics Personnel Training & Competence Requirements

CAP 1649

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Civil Aviation Authority
Aviation House
Beehive Ring Road
Crawley
West Sussex
RH6 0YR

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Enquiries regarding the content of this publication should be addressed to: ATS.Enquiries@caa.co.uk

Safety and Airspace Regulation Group, Civil Aviation Authority, Aviation House, Beehive Ring Road,
Crawley, West Sussex, RH6 0YR

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Revision history

Edition 2

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CAP1649, *Air Traffic Safety Electronics Personnel - Training & Competence*, has been produced for Air Traffic Safety Electronics Personnel (ATSEP), Training Organisations and Air Navigation Service Providers (ANSPs) to assist in interpreting the relevant requirements laid down in Regulation (EU) No. 2017/373 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018 (UK(EU) Reg No 2017/373) Annex XIII Part-PERS pertaining to ATSEP training and competence assessments. This document also includes recommendations and guidance specific to the United Kingdom, as well as United Kingdom requirements for limited certificate holder ANSPs.

CAP 1649 replaces CAP 670 APP02 (Personal Technical Certificates).

Foreword

International obligations and requirements

The Air Traffic Safety Electronic Personnel Training and Competence Requirements CAP [1649] is based upon national legislation and non-legislative regulatory material, such as ICAO Standards and Recommended Practices (SARPs) and Procedures for Air Navigation Services (PANS). It is published in order to provide UK ANS providers (ANSPs) with:

- a) guidance and clarification on the means of achieving compliance with UK regulatory requirements and ICAO SARPs and PANS; and,
- b) details of any additional national requirements, including appropriate supporting administrative procedures.

Two strands of UK aviation related legislation now exist. That made under the Air Navigation Order (which includes the Rules of the Air Regulations) and that made under The Basic Regulation (UK Reg (EU) No 2018/1139 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018) and its Implementing Rules.

Some EU aviation law was accompanied by acceptable means of compliance (AMC) and guidance material (GM) published by EASA. The CAA has adopted the version of AMC and GM that was in force on 31 December 2020 as its policy with regard to compliance with the relevant UK law from 1 January.

In publishing the Air Traffic Safety Electronic Personnel Training and Competence Requirements CAP 1649, the CAA satisfies the obligations placed upon it by the Transport Act 2000¹, Chapter 1 Article 2 'CAA's general duty', which in paragraph 2(a) requires the CAA to exercise its functions under the Act in the manner it thinks best calculated, to further the interests of operators and owners of aircraft, owners and managers of aerodromes, persons travelling in aircraft and persons with rights in property carried in them. The only interests to be considered under subsection (2)(a) are interests regarding the range, availability, continuity, cost and quality of air traffic services.

Publication of the Air Traffic Safety Electronic Personnel Training and Competence Requirements CAP 1649 additionally satisfies the requirements set out by the Civil Aviation Authority (Chicago Convention) Directions 2007² to ensure that it acts consistently with the obligations placed on the UK under the Chicago Convention. The CAA is obliged to consider

¹ <http://www.legislation.gov.uk/ukpga/2000/38/contents> or
<http://www.legislation.gov.uk/ukpga/2000/38/data.pdf>

² [https://webarchive.nationalarchives.gov.uk/20100422174722/http://www.caa.co.uk/docs/286/CAA\(ChicagoConvention\)Directions2007\(asamended\).pdf](https://webarchive.nationalarchives.gov.uk/20100422174722/http://www.caa.co.uk/docs/286/CAA(ChicagoConvention)Directions2007(asamended).pdf)

whether it is necessary to amend United Kingdom aviation legislation to ensure appropriate implementation of an ICAO provision.

Where (a) the CAA considers it inappropriate to transpose an ICAO provision into domestic legislation and (b) the CAA has discretionary power to enforce the requirements of such a provision through a certificate, licence, or other means of approval, the Civil Aviation Authority (Chicago Convention) Directions 2007 obliges the CAA to develop and publish such requirements as are necessary to implement the ICAO provision and shall ensure that it is able to verify adherence to those requirements.

The Air Traffic Safety Electronic Personnel Training and Competence Requirements CAP 1649 is subject to periodic revision to take account of changes to source regulatory material, feedback from industry, and recognised best practice. The Air Traffic Safety Electronic Personnel Training and Competence Requirements CAP 1649 provides applicable guidance and clarification relating to – and is to be read in conjunction with - the regulatory material referenced below. ***Non-inclusion of source regulatory material within this CAP does not preclude the end user from either the need to be aware of, or the need to comply with, the requirements contained within the source regulatory materials unless otherwise exempted from those requirements.***

It is the policy of the UK government that, unless a Difference from an ICAO Standard has been established, compliance with the relevant international (i.e. ICAO and applicable equivalents such as the International Telecommunications Union) provisions is required to the extent mandated in law. Moreover, unless an alternative 'Means of Compliance' (AltMoC) (related to a CAA 'Acceptable Means of Compliance' (AMC)) has been approved for use, then compliance with the relevant AMC is required to the extent mandated in the law as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018. Finally, compliance with other national requirements that are not addressed by international requirements or retained EU regulations is also required.

The words 'must', 'shall' and 'will' indicate that compliance with applicable regulatory requirements is necessary. In the case of AMC, the word 'should' indicates that compliance is required, unless acting in compliance with an approved AltMoC.

Regulatory References

The Air Traffic Safety Electronic Personnel Training and Competence Requirements CAP 1649 is published to assist ANSPs' understanding of, and compliance with the requirements laid down in:

UK:

Regulation (EU) 2017/373 as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018.

Where appropriate, this document references EU Regulations as retained (and amended in UK domestic law) under the European Union (Withdrawal) Act 2018, as source material. References to the 'Cover Regulation' are cited as either UK Reg (EU) No. XXX/YYYY followed by the appropriate Article, or UK Reg (EU) YYYY/XXX; where 'X' is the number of the Regulation and 'YYYY' is the year of publication.

Where applicable, references to provisions contained within an Annex to the Regulation are cited as they appear in the Annex; for example, provisions contained within the Standardised European Rules of the Air (SERA) Annex to UK Reg (EU) No. 923/2012 are cited as 'SERA.XXXX', where 'X' refers to the number of the provision.

State regulatory body

In the United Kingdom, the Civil Aviation Authority (CAA) as the competent authority under UK (EU) 2017/373 Article 4, regulates Air Navigation Services (ANS) in accordance with the Civil Aviation Act and relevant articles of the Air Navigation Order (ANO).

The Safety & Airspace Regulation Group (SARG) of the CAA are responsible for regulatory oversight of ATSEP training and competence.

Format of this document

CAP 1649 is required to be read in conjunction with Regulation UK (EU) 2017/373 and its associated Acceptable Means of Compliance (AMC) and Guidance Material (GM) as the regulation will be referenced throughout this document.

Any reference to a specific gender should be understood to include both male and female Persons, except where explicitly stated.

Key links

1. Regulation UK (EU) 2017/373 (the common requirements) is available online from [ATM/ANS provision of services | Civil Aviation Authority \(caa.co.uk\)](#)
2. Acceptable Means of Compliance and Guidance Material to Part-PERS is also available from [ATM/ANS provision of services | Civil Aviation Authority \(caa.co.uk\)](#)
3. The UK publishes a consolidated version of Regulation UK (EU) 2017/373, Acceptable Means of Compliance and Guidance Material [ATM/ANS provision of services | Civil Aviation Authority \(caa.co.uk\)](#)

Definitions

The following definitions and abbreviations have been included for ease of reference or where terms are unique to the UK.

Additional guidance can also be found within Annex 1 of Regulation No UK (EU) 2017/373 and CAP 1430 'UK Air Traffic Management Vocabulary'.

Ab Initio	A candidate ATSEP with no previous or relevant ATSEP training/experience.
Acceptable Means of Compliance (AMC)	A non-binding standard adopted by the Competent Authority to illustrate means to establish compliance with Regulation UK (EC) No 216/2008 and its implementing rules.
Aerodrome Flight Information Service (AFIS)	A flight information service and alerting service for aerodrome traffic at an aerodrome.
Air Ground Communication Service (AGCS)	A service provided from an aerodrome-to-aerodrome traffic by means of radio signals and 'air/ground communications service unit' is to be construed accordingly.
Air Navigation Services (ANS)	Services provided to air traffic during all phases of operations including air traffic management, communication, navigation and surveillance, meteorological services for air navigation.
Air Navigation Service Provider (ANSP)	Any public or private entity providing ANS for general air traffic, including an organisation having applied for a certificate to provide such services.
Air Traffic Control (ATC)	A service provided for the purpose of preventing collisions between aircraft, and on the manoeuvring area between aircraft and obstructions; and expediting and maintaining an orderly flow of traffic.
Air Traffic Safety Electronics Personnel (ATSEP)	Any authorised Personnel who are competent to operate, maintain, release from, and return into operations, equipment of the functional system. <i>This is considered by the CAA to mean any or all of the above.</i>
Alternative Means of Compliance (AltMOC)	Those means of compliance that propose an alternative to an existing AMC or those that propose new means to establish compliance with Regulation UK (EC) No 216/2008 and its Implementing Rules for which no associated AMC have been adopted by the Competent Authority.

Authorisation	Formal recorded award of a System and Equipment Rating.
Basic Training	Training designed to impart fundamental knowledge of the Air Navigation Service Provider's operational environment.
Candidate	A generic term for a Person performing a learning activity without any reference to his or her status (ab initio/apprentice/student/trainee).
Commissioning	The process by which a system/equipment, which has been installed, is tested to ensure that it works according to its design objectives or specifications, and that it is ready to be operated and maintained in accordance with the users' operational requirements.
Competence	A situation where ATSEP possess the required level of knowledge, technical and behavioural skills and experience, and language proficiency when required, in order to be authorised to perform duties on the system and equipment they are competent to work on.
Continuation Training	Training designed to maintain and/or augment existing knowledge and skills related to the ATSEP assigned responsibilities and duties.
Degraded Situation	A situation that is the result of a technical system failure or malfunction, a set of circumstances arising from human error or violation of rules affecting the quality of the service provided.
Emergency	A serious, unexpected and/or potentially dangerous situation requiring immediate action(s).
Emergency Training	Training designed to broaden knowledge, skills and behaviour in case of emergency, unusual or degraded situation.
Facilities Management Systems	Support services (separate from the CNS systems) used for the efficient and effective delivery of ATS and/or CNS provision. Examples include (but are not limited to) power supplies, air conditioning, telephone exchanges.
Fatigue	A physiological state of reduced mental or physical performance capability resulting from sleep loss or extended wakefulness, circadian phase or workload (mental or physical activity, or both) that can impair an individual's alertness and ability to safely perform his/her tasks.
Functional System	A combination of procedures, human resources and equipment, including hardware and software, organised to perform a function within the context of ATM/ANS and other ATM network functions.

Guidance Material (GM)	Non-binding material developed by the Competent Authority that helps to illustrate the meaning of a requirement or specification and is used to support the interpretation of Regulation UK (EC) No 216/2008, its implementing rules and AMC.
Recommendation	Material developed by the Competent Authority that helps to illustrate the meaning of a requirement or specification.
Instrument Approach Procedure (IAP)	A comprehensive definition for an Instrument Approach Procedure can be found in CAP 1430.
Maintain	Refers to planned, preventative and corrective maintenance, including fault-finding.
Note	Text used to provide clarity, further explanation or bring attention to a given topic.
On the Job Training	Training provided to employees on unfamiliar/new equipment for which they have no or limited experience. This is delivered by a qualified On the Job Training Instructor, and typically consists of “hands-on” instruction and observation and is formally recorded.
On the Job Training Instructor	A formally qualified instructor, experienced in the training topic, the equipment and has the skills to intervene in instances where safety may be compromised during training.
Operate	Refers to the ability of the ATSEP to actively control a system and should not be confused with, for example, the air traffic controllers’ function to operate particular equipment in order to provide air traffic services.
Qualification Training	Training designed to impart knowledge and skills appropriate to the qualification stream to be pursued in the Air Navigation Service Provider’s operational environment.
Release from Operations	Refers to the process of withdrawal from use of a system/equipment from the operational environment, in accordance with both risk assessment and mitigation.
Refresher Training	Training designed to review, reinforce or upgrade existing knowledge and skills (including team skills).
Return into Operations	Refers to the process whereby the system/equipment is checked and restored to operational use, in accordance with both risk assessment and mitigation.

Safety Management System	A systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies, and procedures.
Streams	A cluster of training objectives that support a particular area of work.
System and Equipment Rating	The authorisation which allows the ATSEP to perform operational tasks on a specific system/equipment and may, optionally, include an association with operational site/s, location/s and/or maintenance task levels. The award of this rating follows the successful assessment of operational competence. <i>The term 'Equipment Rating' or 'Competence Rating' may also be used.</i> NOTE: The term 'rating' in the definition of 'system/equipment rating training' should not be associated with the definition of 'rating' in Regulation UK (EC) No 216/2008.
System and Equipment Rating Training	Training designed to impart specific system/equipment knowledge and skills leading towards operational competence.
Technical Skills Assessor (TSA)	A Person who is considered suitable to determine whether an ATSEP is technically competent to operate, maintain, release from and return into operations systems that are necessary for the provision of services.
Training & Competence Assessment Programme (TCAP)	A documented programme indicating the method by which the unit manages the training and competence of its ATSEPs.
Unusual Situation	A set of circumstances which are neither habitually nor commonly experienced and for which an ATSEP has not developed a practised response.

Abbreviations

2017/373	Regulation No UK(EU) 2017/373 (The Common Requirements)
AAA	Airspace, Air Traffic Management & Aerodromes
AFIS	Aerodrome Flight Information Service
AGCS	Air Ground Communication Service
AltMOC	Alternate Means of Compliance
AMC	Acceptable Means of Compliance
ANO	Air Navigation Order 2016 (as amended)
ANS	Air Navigation Service
ANSP	Air Navigation Service Provider
ATC	Air Traffic Control
ATM	Air Traffic Management
ATS	Air Traffic Service
ATSEP	Air Traffic Safety Electronics Personnel
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CNS	Communications, Navigation & Surveillance
IAP	Instrument Approach Procedure
ILS	Instrument Landing System
ICAO	International Civil Aviation Organisation
MET	Meteorological Equipment
OJT	On-the-Job Training
OJTI	On-the-Job Training Instructor

SARG	Safety and Airspace Regulation Group
TCAP	Training and Competence Assessment Programme
TSA	Technical Skills Assessor
UK	United Kingdom