

Air Traffic Safety Electronics Personnel Training & Competence Requirements

CAP 1649



Published by the Civil Aviation Authority, 2019

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First published 22nd October 2019, effective 2 January 2020

Second publication 11th April 2022

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Revision history

Edition 2

April 2022

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	<p>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></p> <p>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.</p>
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

Implementing Regulation No UK (EU) 2017/373 (Part-PERS)

United Kingdom ATSEP Training & Competence Regulation

Implementing Regulation, No UK (EU) 2017/373 Annex XIII (Part-PERS), details the requirements for Air Navigation Service Providers (ANSPs) concerning Air Traffic Safety Electronics Personnel (ATSEP) training and competence assessment.

Acceptable Means of Compliance and Guidance Material have also been published by the United Kingdom which includes the ATSEP Basic and Qualification Training Content.

Subject matter

Implementing Regulation, No UK (EU) 2017/373 Annex XIII, establishes the requirements to be met by the ANSP with respect to the training and the competence assessment of Air Traffic Safety Electronics Personnel (ATSEP).

Regulation No UK (EU) 2017/373 references two separate types of ANSP certification: Service Provider Certificate and Limited Certificate. For the purposes of this CAP, a Service Provider Certificate will be referred to as a Full Certificate with Limited Certificate remaining as is.

For ANSPs holding a limited certificate in accordance with Implementing Regulation No UK (EU) 2017/373 Annex III, the minimum requirements to be met with respect to the training and the competence assessment of ATSEP shall be determined by the competent authority.

Section 5 of this document determines the minimum requirements to be met, with respect to the training and competence assessment of ATSEP, for ANSPs applying for, or holding, a limited certificate in accordance with Implementing Regulation No UK (EU) 2017/373 Annex III ATM/ANS.OR.A.010.

Guidance on which sections of this CAP need to be adhered to, by full and/or limited certificated Air Navigation Service Providers, is detailed in Table 1.

Table 1

Certification & Equipment Level	Training Requirements	Competence Requirements
Fully Certified Air Navigation Service Provider.	All elements of CAP 1649 Sections 1, 2, 3 & 4.	All elements of CAP 1649 Sections 1, 2, 3 & 4.
ATC Provider holding a Limited ANSP Certificate with Published IAPs. (See Note 1).	All elements of CAP 1649 Sections 1, 2, 3 & 4.	All elements of CAP 1649 Sections 1, 2, 3 & 4.
AFIS Provider holding a Limited ANSP Certificate with Published IAPs. (See Note 1).	All elements of CAP 1649 Sections 1, 2, 3 & 4.	All elements of CAP 1649 Sections 1, 2, 3 & 4.
ATC Provider holding a Limited ANSP Certificate with no Published IAPs. (See Note 1).	All elements of CAP 1649 Sections 1 & 5, including applicable elements of Section 5 Annex 1.	All elements of CAP 1649 Sections 1 & 5.
AFIS Provider holding a Limited ANSP Certificate with no Published IAPs. (See Note 1).	All elements of CAP 1649 Sections 1 & 5, including applicable elements of Section 5 Annex 1. (See Note 2).	All elements of CAP 1649 Section 1 & 5. (See Note 2).
AGCS Provider holding a Limited ANSP Certificate.	All elements of CAP 1649 Sections 1 & 5, including applicable elements of Section 5 Annex 1. (See Note 2).	All elements of CAP 1649 Section 1 & 5. (See Note 2).

NOTE 1: In this context 'Published IAPs' only refers to IAPs using ground-based equipment, not Global Navigation Satellite System (GNSS).

NOTE 2: ATSEP training & ongoing competence assessments will not be required for communications equipment at AFIS & AGCS Units (holding a Limited ANSP Certificate), if a CAA Licenced Avionics Engineer is used to maintain this equipment, however an initial competence assessment will be required (see Section 5, General Requirements paragraph 5.5 for further guidance).

General Requirements – Structure of this Document

This document will cross refer to Implementing Regulation No UK (EU) 2017/373.

The abbreviation 2017/373 shall be interpreted as meaning Implementing Regulation No UK (EU) 2017/373.

The structure of this document follows that of 2017/373 Annex XIII (Part-PERS), and is divided into five sections:

Section 1: General Requirements

Section 2: Training Requirements

Section 3: Competence Assessment Requirements

Section 4: Instructors and Assessors Requirements

Section 5: Limited Certificate Requirements

NOTE: The contents of Section 5 are not contained within 2017/373 Annex XIII (Part-PERS). This section applies to the United Kingdom only.

2017/373 Annex XIII (Part-PERS) contains Appendices 1 to 4 which detail the syllabus for Basic Training and Qualification Training. Appendix 5 of 2017/373 describes the syllabus structure. Reference should be made to the 2017/373 Annex XIII (Part-PERS) for these appendices.

The design (including software design), testing, installation and commissioning of operational systems and equipment are excluded from the scope of 2017/373 Annex XIII, except where installation and testing may affect operational systems, in which case supervision by an ATSEP is required.

Authority

The Airspace, Air Traffic Management and Aerodromes (AAA) division of the Safety and Airspace Regulation Group (SARG) is responsible for the initial acceptance and periodic oversight of the ANSP's ATSEP Training and Competence Assessment Programme (TCAP).

ANSP & ATSEP Responsibilities

- The ANSP is responsible for ensuring that only fully trained, competent, and authorised ATSEPs operate, maintain, release from, and return into operations, equipment of the functional system.

- The individual ATSEP is responsible for ensuring that their System and Equipment Rating is authorised and recorded by the manager accountable for CNS service provision and remains valid and in date.
- Successful completion of System & Equipment training, followed by successful completion of an initial competence assessment, is deemed to be sufficient for initial authorisation to allow the ATSEP to perform operational tasks on a specific system/equipment.
- An operational system that has been released from operational service but remains connected to the operational environment must be maintained by an ATSEP.
- An operational system that has been removed and fully isolated from the operational environment by an ATSEP, and cannot be returned without ATSEP intervention, may be maintained by a non-ATSEP (e.g. manufacturer), but will be subject to the ANSP's integrity checks before return to the operational environment.
- A non-ATSEP is not authorised to remove an operational system from the operational environment.
- A non-ATSEP is not authorised to return a system into the operational environment.
- An ATSEP is responsible for determining the operational system status/serviceability before returning it to the operational environment.

SECTION 1

General Requirements

Scope – ATSEP.OR.100

- 1.1 This Subpart establishes the requirements to be met by the ANSP with respect to the training and the competence assessment(s) of ATSEP.
- 1.2 ANSPs holding a limited certificate in accordance with points (a) and (b) of point ATM/ANS.OR.A.010 and/or declaring its activities in accordance with point ATM/ANS.OR.A.015, shall meet the ATSEP training and competence requirements as determined by the Competent Authority. (Refer to Table 1).
- 1.3 **Recommendation:** *Training for Facility Management systems is not included in the scope of the ATSEP training provisions; however, it is acknowledged that Facility Management systems and equipment can be critical elements of the aviation safety chain. To that end, the ANSP should ensure that Facility Management Personnel are appropriately trained and competent to operate and maintain the facility management systems and equipment associated with the provision of ATS and/or CNS.*

Training & Competence Assessment Programme – ATSEP.OR.105

- 1.4 In accordance with point ATM/ANS.OR.B.005(a)(6), an ANSP employing ATSEP shall establish a training & competence assessment programme (TCAP) to cover the duties and responsibilities to be performed by ATSEP.
- 1.5 When ATSEP are employed by a contracted organisation, the ANSP must comply with 2017/373 Annex III ATM/ANS.OR.B.015.

NOTE: Where a contracted organisation provides specific engineering maintenance expertise and support by its personnel who are not considered to be ATSEP (for instance engineers employed by manufacturers who do not normally work in an operational ATM environment), the ANSP should assure itself that these personnel are appropriately trained, competent, and approved by the contracted organisation to carry out the required maintenance tasks. The level of assurance required will depend on the complexity of the maintenance tasks. Copies of curriculum vitae (CVs) and company training policies are expected to provide this assurance. However, ATSEP employed by the ANSP, and who hold relevant system and equipment ratings, must still carry out the release from and return into

operations of the equipment (See Section “General Requirements – ATSEP Responsibilities).

NOTE: For ANSPs holding Limited Certificates, and who do not employ resident engineers, it may be appropriate for ATCO or FISO personnel to carry out the release from and return into operations of some systems (such as UHF radios and Meteorological systems), subject to confirmation from the contracted engineer that the equipment is fully serviceable before a return into operational service.

NOTE: ANSPs are reminded that where the contracted organisation is not certified, the ANSP is responsible for oversight of that organisation, and it should ensure it is given access to the contracted organisation’s training and competence records to determine continued compliance with the relevant requirements.

- 1.6 Suggested content for the ANSP’s TCAP is detailed within GM1 ATSEP.OR.105 of 2017/373 Annex XIII.
- 1.7 A TCAP designed by the UK CAA, for use by Limited Certificated ANSPs with no published IAPs, is provided in Section 5 of this publication.
- 1.8 **Recommendation:** *When an already qualified and competent ATSEP moves from one ANSP to another, the receiving ANSP should conduct and record an analysis of their previous training and knowledge and carry out and record an initial competence assessment (gap analysis of previous training & competence). Any identified training shortcomings, relative to the ATSEPs new duties and assignments, should be addressed through additional training.*

NOTE 1: In this instance, “ANSP” could mean either a UK based Certified Air Navigation Service Provider, a Certified Air Navigation Service Provider from a foreign state, or a Military or Civil Organisation who’s engineers are trained to a similar standard as ATSEP. A CAA ATS/ATM Inspector should be contacted for further information and guidance.

NOTE 2: If the receiving ANSP chooses not to conduct and record this recommended gap analysis then the ANSP must declare the ATSEP as “ab initio” and the ATSEP must then complete all elements of Section 2 of this CAP, irrespective of previous employment, experience and/or training.

Record Keeping – ATSEP.OR.110

- 1.9 In addition to point ATM/ANS.OR.B.030, an ANSP employing ATSEP shall maintain records of all the training completed by ATSEP, as well as the competence assessments of ATSEP, and make such records available:
- (a) on request, to the ATSEP concerned;

- (b) on request, and with the agreement of the ATSEP, to the new employer when the ATSEP is employed by a new ANSP.

Language Proficiency – ATSEP.OR.115

- 1.10 The ANSP employing ATSEP shall ensure that all ATSEP are proficient in the language(s) required to perform their duties.

UK Recommendation: *The ANSP may choose a language standard against which to measure and record language proficiency. A recommended standard is the ICAO Language Proficiency Scale.*

Language Proficiency – AMC1 ATSEP.OR.115

Language Level - ANSPs should determine the level of language proficiency based on the particular ATSEP duties, the safety criticality of the system ATSEP will need to work on and taking into account the language requirements related to operating instructions, manuals, and the need to communicate across operational boundaries that require a common language.

Additional UK Guidance

- 1.11 The UK CAA may authorise certain ANSPs (Full or Limited Certificate Holders) to allow ATCOs, FISOs or ATSAs to undertake specific routine maintenance tasks on ATS equipment at Units operated where there is no resident ATSEP (for example Voice Recorder checks). Any authorisations shall be on a case-by-case basis and, if granted, the relevant ATCO/FISO/ATSA will not be considered as ATSEP, and the requirements of 2017/373 Annex XIII (Part-PERS) do not apply. However, the tasks to be undertaken shall be described in the unit procedures, for example in the MATS Part 2 or FISO Manual, and suitable training included within the Unit Training Programme.
- 1.12 Also, in the case of ANSPs holding a Limited Certificate, the UK CAA may authorise individual Persons (typically with an electrical engineering background) to carry out specific Level 1 tasks on ATS equipment at Units where there is no resident ATSEP (for example meter readings or detailed visual inspections). These authorisations shall be on a case-by-case basis with the agreement of the contracted ATSEP and, if granted, the Person will not be considered as ATSEP, and the requirements of 2017/373 Annex XIII (Part-PERS) do not apply. However, the tasks to be undertaken shall be described in the Unit Maintenance Exposition and the UK CAA will require specific evidence of experience and training before issuing any authorisation.

NOTE: ATSEP requirements do not apply to normal functional operation including powering on/off or reset of equipment or similar HMI interactions performed by operational staff.

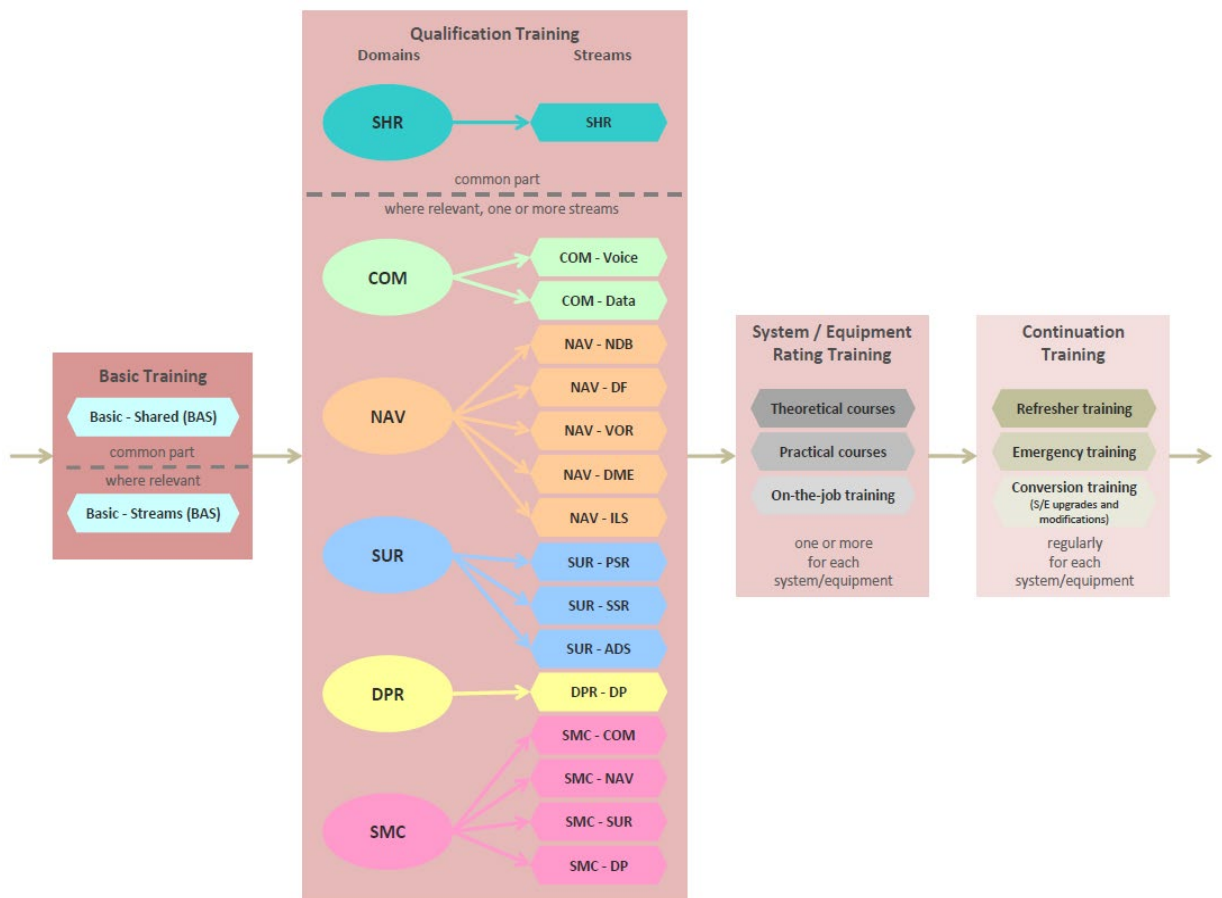
SECTION 2 Training Requirements

General – ATSEP.OR.200

- 2.1 An ANSP employing ATSEP shall ensure that all ATSEP:
1. have successfully completed:
 - a) the basic training as set out in point ATSEP.OR.205;
 - b) the qualification training as set out in point ATSEP.OR.210;
 - c) the system/equipment rating training as set out in point ATSEP.OR.215;
 2. have completed continuation training as set out in point ATSEP.OR.220.

2.2 ATSEP TRAINING PHASES

The following diagram illustrates the phases of ATSEP training:



Basic Training – ATSEP.OR.205

- 2.3 The Basic Training of ATSEP shall comprise:
- a) all subjects, topics and sub-topics contained within 2017/373 Annex XIII Appendix 1 (Basic training – Shared);
 - b) where relevant to the ANSP's activities, the subjects contained within 2017/373 Annex XIII Appendix 2 (Basic training – Streams).
- 2.4 The ANSP may determine the most suitable educational requirements for its candidate ATSEP and, consequently, adapt the number and/or level of subjects, topics or sub-topics referred to in Section 2, paragraph 2.2 where relevant.

Basic Training – AMC1 ATSEP.OR.205

General – The selection of the subjects, topics and sub-topics should be tailored to:

- (a) the duties of the ATSEP regarding the ANSP's activities;
- (b) prior experience and education of the candidate ATSEP.

Basic Training – AMC1 ATSEP.OR.205(a)

Shared – The objectives contained in 2017/373 Annex XIII Appendix 1a to this AMC should be included in the basic training course.

Basic Training – AMC1 ATSEP.OR.205(b)

Streams – The topics, sub-topics and objectives contained in 2017/373 Annex XIII Appendix 2a should be included in the basic training course.

Qualification Training – ATSEP.OR.210

- 2.5 The Qualification Training of ATSEP shall comprise:
- a) the subjects, topics and sub-topics contained within 2017/373 Annex XIII Appendix 3 (Qualification Training – Shared);
 - b) where relevant to the ANSP's activities, at least one of the qualification streams, contained within 2017/373 Annex XIII Appendix 4 (Qualification Training – Streams).

Qualification Training – AMC1 ATSEP.OR.210

General – The selection of the subjects, topics and sub-topics should be tailored to:

- (a) the duties of the ATSEP regarding the ANSP's activities;
- (b) prior experience and education of the candidate ATSEP.

Qualification Training – AMC2 ATSEP.OR.210

Shared – The objectives contained in 2017/373 Annex XIII Appendix 3a to this AMC should be included in the qualification training course.

Qualification Training – AMC1 ATSEP.OR.210

Streams – The objectives contained in 2017/373 Annex XIII Appendix 4a to this AMC should be included in the qualification training course.

System & Equipment Rating Training – ATSEP.OR.215

- 2.6 The system and equipment rating training of ATSEPs shall be applicable to the duties to be performed and include one or several of the following:
1. theoretical course(s);
 2. practical course(s);
 3. on-the-job training.
- 2.7 The system and equipment rating training shall ensure that candidate ATSEP acquire knowledge and skills pertaining to:
1. the functionality of the system and equipment;
 2. the actual and potential impact of ATSEP actions on the system and equipment;
 3. the impact of the system and equipment on the operational environment.
- 2.8 **UK Recommendation:** *The equipment / systems, subjects and level of detail to be delivered under System & Equipment Rating Training should be determined as appropriate to the CNS infrastructure and activities of the ANSP and is expected to be detailed within the ANSP's TCAP.*
- 2.9 Following successful completion of System & Equipment Rating Training the ATSEP must successfully complete an initial competence assessment to be granted authorisation to perform operational tasks on specific system/equipment.

Continuation Training – ATSEP.OR.220

- 2.10 The continuation training of ATSEPs shall comprise refresher, equipment/systems upgrades and modifications, and/or emergency training.

NOTE: Refresher training and training to cover equipment/system upgrades and modifications may not necessarily be required at a specified periodicity. However, the ANSP's TCAP must provide details of how this training will be delivered if it is

needed.

NOTE: It is expected that emergency training shall have a specified periodicity, the frequency and duration of which is expected to be detailed within the ANSP's TCAP. Any emergency training periodicity greater than 2 years must first be accepted by the CAA.

- 2.11 **Recommendation:** *The equipment / systems, subjects and level of detail to be delivered under Continuation Training should be determined as appropriate to the ANSP's infrastructure and activities and is expected to be detailed within the ANSP's TCAP.*

Continuation Training – AMC1 ATSEP.OR.220

General – The frequency and duration of continuation training should be determined by taking into account the ATSEP task exposure (recency) as well as the complexity of the operation and of the maintenance of systems.

- 2.12 To aid compliance with the requirements contained within Section 2, the UK has published GM which is available from the “Key Links” section of this publication.

Maintenance Task Levels

- 2.13 An ANSP employing ATSEP shall define Maintenance Task Levels to represent the categorisation of maintenance tasks by complexity, knowledge, skills and operational impact. Three categories will usually suffice but could be further subdivided for highly complex or diverse systems. These Maintenance Task Levels are expected to be described and detailed within the ANSP's TCAP.
- 2.14 Detailed below are CAA suggested Maintenance Task Levels. ANSPs employing ATSEP are invited to use these Maintenance Task Levels, but, if the ANSP wishes to create their own Maintenance Task Levels, they must seek CAA acceptance prior to implementation.

NOTE: Use of the Maintenance Task Levels detailed below do not require prior CAA acceptance, but the ANSP's TCAP must clearly state that this is the Maintenance Task Level model that is being used.

Level 1

Level 1 equipment ratings are primarily associated with service restoration or reconfiguration ('front-panel level'). This includes system reconfiguration using front panel controls or HMI and simpler maintenance and repair tasks such as fuse, filter and lamp/LED replacement. This rating also includes authority to return to service following any Level 1 maintenance task.

This rating is appropriate for personnel that have been trained to understand the elements of an equipment or system(s), their interrelationships and effects on the functional purpose, but do not require in-depth knowledge of these elements.

An ATSEP holding a Competence Rating of Level 1 shall only be authorised to undertake maintenance activities and fault rectification at this level.

NOTE: ATSEP requirements do not apply to normal functional operation including powering on/off or reset of equipment or similar HMI interactions performed by operational staff.

Level 2

Level 2 equipment ratings are associated with in-depth preventative maintenance, problem solving, fault analysis and repair at the system/equipment level. This rating also includes authority to return to service following any Level 1 or Level 2 maintenance task. Repairs will be undertaken normally to Line Replacement Unit (LRU) level / module level, although in some cases where discrete components are used (such as in radar transmitters) repairs to component level may be undertaken.

This rating is appropriate for Personnel who have been trained to a level of knowledge consistent with the ability to undertake more complicated maintenance tasks on a specific equipment/system.

An ATSEP holding a Competence Rating of Level 2 shall be authorised to undertake maintenance and fault rectification activities to Level 1 and Level 2.

NOTE: ATSEP requirements do not apply to normal functional operation including powering on/off or reset of equipment or similar HMI interactions performed by operational staff.

Level 3

Level 3 equipment ratings are associated with maintenance tasks involving major overhaul and refurbishment, the detailed diagnosis of a software problem, or fault diagnosis and repair of faulty Line Replacement Units such as Printed Circuit Boards (PCB) or modules to component level. This usually requires the use of automated test equipment at a suitable location and is usually carried out by Personnel trained in detailed fault diagnosis and repair techniques. Where a Level 3 task is carried out in an offline environment (e.g. a workshop), it is not mandatory that the Personnel carrying out this task is trained as an ATSEP. However, in this circumstance, the Unit Manager shall still satisfy themselves of the competence and training of the Personnel and ensure that the TCAP or Maintenance Exposition describes who is carrying out Level 3 tasks for each equipment (e.g. manufacturer, ATSEP, or other agency).

An ATSEP holding a Competence Rating of Level 3 is not authorised to carry out Level 1 and Level 2 tasks unless they also hold those ratings.

NOTE: ATSEP requirements do not apply to normal functional operation including powering on/off or reset of equipment or similar HMI interactions performed by operational staff.

SECTION 3

Competence Assessment Requirements

General – ATSEP.OR.300

- 3.1 An ANSP employing ATSEP shall ensure that ATSEP:
1. have been assessed as competent before performing their duties;
 2. are subject to ongoing competence assessment in accordance with point ATSEP.OR.305.
- 3.2 **Recommendation:** *The frequency of ongoing competence assessments should be determined as appropriate to the ANSP's CNS infrastructure and activities. It is recommended that this periodicity should not exceed 3 years for any system/equipment and is expected to be detailed within the ANSP's TCAP. An ANSP wishing to extend their competence periodicity beyond 3 years (for example to implement a \pm 3-month tolerance) must submit a request to the CAA for consideration.*

Assessment of initial and ongoing competence – ATSEP.OR.305

- 3.3 An ANSP employing ATSEP shall:
1. establish, implement and document a process for:
 - a) assessing the initial and ongoing competence of ATSEP;
 - b) addressing a failure or degradation of ATSEP competence, including an appeal process;
 - c) ensuring the supervision of Personnel who have not been assessed as competent.
 2. define the following criteria against which initial and ongoing competence shall be assessed:
 - a) technical skills;
 - b) behavioural skills;
 - c) knowledge.
- 3.4 To aid compliance with the requirements contained within Section 3, the UK has published GM which is available from the “Key Links” section of this publication.

SECTION 4

Instructors and Assessors Requirements

ATSEP Training Instructors – ATSEP.OR.400

- 4.1 An ANSP employing ATSEP shall ensure that:
1. ATSEP training instructors are suitably experienced in the field where instruction is to be given;
 2. on-the-job training instructors have successfully completed an on-the-job-training course and have the skills to intervene in instances where safety may be compromised during the training.
- 4.2 **Recommendation:** *In-house and / or external training providers may be utilised. Manufacturer training instructors may also be utilised for system and equipment rating training.*
- 4.3 **Recommendation:** *In accordance with point 4.1(2) above. Where a formally trained OJTI is suitably experienced in the domain where OJT is to be given but lacking an up-to-date competence rating on a particular system/equipment, training may be augmented by utilising a subject matter expert (SME) drawn from local or corporate resource, where that Person is a trained ATSEP with up-to-date competence rating on the system/equipment under instruction.*

Technical Skills Assessors – ATSEP.OR.405

- 4.4 An ANSP employing ATSEP shall ensure that Technical Skills Assessors (TSA) have successfully completed an assessor course and are suitably experienced to assess the criteria defined in Section 3, point 3.3(2).
- NOTE:** There is no requirement for a TSA to hold a current system/equipment rating on the system that they are assessing the candidate ATSEP against. However, a competence assessment requiring work on an operational system must be undertaken under the supervision of a rated ATSEP, otherwise the system must be removed from service to perform the assessment.
- 4.5 If the ANSP wishes to utilise a TSA from another organisation (i.e. from another ANSP), then it is the ANSPs responsibility to ensure that the TSA complies with ATSEP.OR.405 and all applicable AMC.

NOTE 1: For ANSPs holding a Full Certificate, UK CAA TSAs should only be utilised in **exceptional circumstances and on a case-by-case basis**. It is

expected that ANSPs holding a Full Certificate will employ their own TSAs in accordance with 2017/373 Annex XIII Part-PERS.

NOTE 2: Where TSA's are utilised from an external organisation it is still the ANSP's responsibility to award the relevant System and Equipment rating and grant authorisation for the ATSEP to commence operational tasks.

Technical Skills Assessors – AMC1 ATSEP.OR.405

Experience – To be considered suitably experienced, technical skills assessors should:

- (a) have clear understanding of the service provider's assessment process and procedures applicable;
- (b) have clear understanding of the performance required of the ATSEP during the assessment and/or on-going assessment;
- (c) have the ability to evaluate, in an objective and independent manner, whether the ATSEP has achieved or is maintaining the level of performance required;
- (d) have the ability to assess and, if required, act when intervention is necessary to ensure that safety is not compromised;
- (e) have the ability to analyse and accurately describe and/or record strengths and weaknesses of an ATSEP performance; and
- (f) use appropriate interpersonal and communication skills to brief and debrief an ATSEP, if required.

4.6 To aid compliance with the requirements contained within Section 4, the UK has published GM which is available from the "Key Links" section of this publication.

SECTION 5

UK CAA ATSEP Training & Competence Assessment Programme

Introduction

- 5.1 The CAA UK ATSEP Training and Competence Assessment Programme (TCAP) is intended to provide a framework to ensure that technical staff performing maintenance tasks are competent to perform such tasks, in accordance with Part-PERS of Commission Implementing Regulation No UK (EU) 2017/373. This scheme is only applicable to ATSEPs working at airports where instrument approach procedures are not provided, and where the ANSP is a limited certificate holder. This CAA UK ATSEP TCAP is therefore unlikely to be applied to ILS or surveillance equipment.

Scope

- 5.2 This CAA UK ATSEP TCAP only applies to CNS and Meteorological (MET) equipment; aerodrome maintenance tasks on systems such as Aeronautical Ground Lighting are out-with the scope of this process.
- 5.3 This CAA UK ATSEP TCAP may also be used as a template for ANSPs developing their own Training and Competence Assessment Programme at airports where the ANSP is a limited certificate holder providing IAPs, and therefore subject to full compliance with the competence and training requirements of Part-PERS.

General Requirements

- 5.4 Before an ATSEP can engage in maintenance activities, they must be authorised through the granting of Initial System/Equipment Ratings by the manager accountable for CNS service provision. These Ratings shall only be granted following successful completion of all relevant training as well as successful completion of a Competence Assessment Check undertaken by a qualified Technical Skills Assessor (TSA). The Unit may use a CAA Inspector ATS/ATM TSA, their own qualified TSA with CAA agreement or a qualified TSA from another ANSP, also with CAA agreement. Non-rated ATSEP may only undertake maintenance activities if they are supervised by an ATSEP holding the necessary System and Equipment Ratings.
- 5.5 ATSEP training (including the need to produce a Training Plan) and ongoing competence assessments will not be required for AFIS & AGCS Providers holding

a Limited ANSP Certificate if a UK CAA Licenced Avionics Engineer is used to maintain communications equipment. However, the Licenced Avionics Engineer will still be required to undertake an initial, one-off competence assessment in accordance with points 5.23 to 5.26. This initial competence check is the assurance to the ANSP (and the CAA) that the Licenced Avionics Engineer is competent and familiar with the ANSPs unique equipment configuration, power supply arrangements and documentation.

NOTE: This dispensation is applicable to communications equipment only and must first be agreed with a CAA Inspector ATS/ATM. Furthermore, if a UK CAA Licenced Avionics Engineer is used to maintain communications equipment, the ANSP must be able to provide the Avionic Engineer's licence details on request.

- 5.6 A fully trained and competent ATSEP may maintain equipment for several different ANSPs provided that they hold a valid system/equipment rating for each system at each Unit/Aerodrome (see points 5.24 and 5.29).
- 5.7 Other situations may arise where a dispensation is required which will be addressed on a case-by-case basis.

Training Requirements

Basic & Qualification Training

- 5.8 An ATSEP new to a Unit/Aerodrome with no prior CNS experience (Ab Initio), or an ATSEP training on new qualification streams, will be required to attend suitable training, either generic to all ATSEP activities or tailored to the activities of the ANSP for whom they are employed or contracted. The *minimum* content of the training delivered must meet the requirements of the ANSP's Training Plan. Guidance on the creation of this Training Plan is detailed in Section 5, Annex 1 of this CAP.
- 5.9 A previously qualified and rated ATSEP, intending to work on new systems or equipment, will be required to undertake a manufacturers' training course; or have undergone structured on-the job training (OJT) to a syllabus agreed with the CAA; or have previously undertaken suitable work on similar equipment, with OJT provided to give information on any differences between the equipment.

System/Equipment Rating

- 5.10 To be granted an initial System/Equipment Rating an ATSEP must have completed suitable basic training, relevant qualification (stream) and system/equipment training and have been assessed as competent. This will be met by successfully passing a formal competence assessment.
- 5.11 Equipment Ratings are only valid for a maximum period of **3 years**; in extenuating circumstances this can be extended by up to 6 months by agreement with a CAA Inspector ATS/ATM.

- 5.12 It is the ATSEP's responsibility to ensure that they hold valid equipment ratings before undertaking any maintenance or repair tasks, however, the ANSP should also monitor the expiry dates of ratings.

Equipment Rating Categorisation

5.13 Level 1

Level 1 equipment ratings are primarily associated with service restoration or reconfiguration ('front-panel level'). This includes system reconfiguration using front panel controls or HMI and simple maintenance and repair tasks such as fuse, filter and lamp/LED replacement. This rating also includes authority to return to service following any Level 1 maintenance task

This rating is appropriate for Personnel who have been trained to understand the elements of an equipment or system(s), their interrelationships and effects on the functional purpose, but do not require in-depth knowledge of these elements.

NOTE: ATSEP requirements do not apply to normal functional operation including powering on/off or reset of equipment or similar HMI interactions performed by operational staff.

5.14 Level 2

Level 2 equipment ratings are associated with in-depth preventative maintenance, problem solving, fault analysis and repair at the system/equipment level. This rating also includes authority to return to service following any Level 1 or Level 2 maintenance task. Repairs will be undertaken normally to Line Replacement Unit (LRU) level, although in some case where discrete components are used (such as in radar transmitters) repairs to component level may be undertaken.

This rating is appropriate for Personnel who have been trained to a level of knowledge consistent with the ability to undertake the more complicated maintenance tasks on the equipment/system.

A holder of a Level 2 rating may also undertake Level 1 tasks.

NOTE: ATSEP requirements do not apply to normal functional operation including powering on/off or reset of equipment or similar HMI interactions performed by operational staff.

5.15 Level 3

Level 3 equipment ratings are associated with maintenance tasks involving major overhaul and refurbishment, the detailed diagnosis of a software problem, or fault diagnosis and repair of faulty Line Replacement Units such as Printed Circuit Boards (PCB) or modules to component level. This usually requires the use of automated test equipment at a suitable location and is usually carried out by Personnel trained in detailed fault diagnosis and repair techniques. Where a Level 3 task is carried out in an offline environment (e.g. a workshop), it is not mandatory

that the Personnel carrying out this task is trained as an ATSEP. However, in this circumstance, the Unit Manager shall still satisfy themselves of the competence and training of the Personnel and ensure that the TCAP or Maintenance Exposition describes who is carrying out Level 3 tasks for each equipment (e.g. manufacturer, ATSEP, or other agency).

A holder of a Level 3 equipment rating is not authorised to carry out Level 1 and Level 2 tasks unless they also hold those ratings.

NOTE: ATSEP requirements do not apply to normal functional operation including powering on/off or reset of equipment or similar HMI interactions performed by operational staff.

Continuation Training

Refresher Training

- 5.16 ANSPs are advised to arrange periodic refresher training for ATSEPs to maintain their knowledge and technical skills. This may be in the form of manufacturer training, OJT or self-learning as appropriate.
- 5.17 Where there is evidence of declining but adequate competence, a TSA may recommend refresher training.

Emergency Training

- 5.18 The ANSP shall ensure that Emergency Training is delivered every 3 years on each relevant qualification stream to broaden knowledge in case of emergency, unusual or degraded situations.
- 5.19 The term 'emergency' is considered as a serious, unexpected and/or potentially dangerous situation requiring immediate action(s), for example: Loss of main, standby and emergency communications on multiple frequencies due to external interference blocking the radiotelephony channels.
- 5.20 The term 'unusual situation' is considered as a set of circumstances which are neither habitually nor commonly experienced and for which an ATSEP has not developed a practised response.
- 5.21 The term 'degraded situation' is considered as a situation that is the result of a technical system failure or malfunction or a set of circumstances arising from human error or violation of rules affecting the quality of the service provided (i.e. the service continues to be available, though in a reduced or limited way). For instance, external main supply's failure to a Transmitter site or a normally dual channel DME having a fault on one channel. A degraded situation can also come about due to certain maintenance activities.

Equipment Upgrade Training

- 5.22 Training shall be provided for any significant upgrades or modifications to systems and/or equipment.

Competence Assessment Procedure

NOTE: The following competence process is only applicable if the ANSP requires the services of a CAA Inspector ATS/ATM to act as their Technical Skills Assessor (TSA). **(A charge may be made for this service).**

NOTE: If the ANSP wishes to utilise their own internal TSA, or a TSA from another ANSP, then the ANSP must have a documented process to follow in accordance with the regulatory requirements and their management system(s). All evidence of initial and ongoing assessment checks must be available for inspection. Failure to provide evidence of initial and ongoing competence assessment checks will result in the withdrawal of the ATSEP's System/Equipment Rating and could result in any associated system/equipment being withdrawn from operational service.

Initial Competence Rating Assessment

- 5.23 When an initial competence assessment check is required, the Unit Manager (or manager accountable for CNS provision) shall notify, via email, the Unit's allocated CAA Inspector ATS/ATM (henceforth referred to as the CAA TSA) requesting an initial competence assessment check. A date for this check will then be mutually agreed. The Unit must present evidence of the candidate ATSEP's basic, qualification and system/equipment training (or Avionic Licence details if a Licenced Avionics Engineer is being initially assessed in accordance with point 5.5).
- 5.24 A competence assessment check requiring work on an operational system must be undertaken under the supervision of a rated ATSEP, otherwise the system must be removed from service prior to the assessment commencing. The CAA TSA will carry out the assessment using SARG Form ATSEP01 and base the outcome on knowledge, technical and behavioural skills demonstrated during the assessment. Where an ATSEP conducts maintenance on the same equipment types at multiple locations, SARG may accept a request for an initial competence rating assessment conducted at one location to cover other locations. It would be expected that the request would include confirmation of coordination and agreement across the affected organisations, and consideration and justification of any particular equipment nuances or considerations at individual locations through local familiarisation training. In this situation a separate System/Equipment Rating should be issued by each ANSP for each location covered.
- 5.25 The ATSEP and Unit Manager will be advised of the outcome of the assessment. In the event of a successful competence assessment, and the Unit Manager also

being satisfied of the ATSEPs behavioural skills, the Unit Manager can then issue a SARG Form ATSEP01 granting the Equipment Award at the appropriate Level(s).

- 5.26 In the event of an unsuccessful competence assessment the ATSEP and Unit Manager will be advised. The Unit Manager will propose a course of action which must be agreed with the CAA TSA and the ATSEP under assessment. The ANSP should also have an appeal process if a candidate ATSEP, who has failed a competence check, wishes to appeal against the result.

Ongoing Competence Assessment

- 5.27 ATSEPs will be subject to ongoing assessment of competence. This will be through a formal competence assessment, which shall be carried out prior to the expiry date of a System/Equipment Rating.
- 5.28 ANSPs are required to monitor periods between competence assessments to ensure that a date for an ongoing competence assessment check is agreed with a CAA TSA at least six months prior to the competence assessment being due. The competence assessment will be of a similar format to an initial assessment; however, the CAA TSA will also review the experience of the ATSEP since the last assessment.
- 5.29 Where an ATSEP conducts maintenance on the same equipment types at multiple locations, SARG may accept a request for an on-going competence assessment conducted at one location to cover other locations. It would be expected that the request would include confirmation of coordination and agreement across the affected organisations, and consideration and justification of any particular equipment nuances or considerations at individual locations through local familiarisation training. In this situation a separate System/Equipment Rating should be issued by each ANSP for each location covered.

Loss of Competence

- 5.30 If either the Unit Manager or CAA TSA/Inspector has concerns with the competence of an ATSEP holding a System/Equipment Rating they must discuss it with each other and agree a course of action which may require a formal competence assessment. If, following the agreed course of action, it is still considered that the level of competence is inadequate then the Unit Manager must withdraw that rating.

NOTE: Where a loss of competence is detected, the ATSEP must stop all maintenance and repair activities on the equipment related to the System/Equipment Rating affected.

Annex 1 of Section 5

Training Plan for ANSPs Holding Limited Certificates

1. ANSPs are required to produce a Training Plan for Basic and Qualification training containing details of each applicable Subject, Topic & Sub-Topic. This will include information such as who is providing the training, subjects covered, reference to associated material or document(s) and any other relevant information.
2. When developing a Training Plan the ANSP is encouraged to use the tables below as a template and as an aid in understanding which Subjects, Topics & Sub-Topics will be required. The ANSP, must at all times, comply with their Safety & Quality Management Systems, and evidence of ATSEP training must be available on request.
3. All sub-topics identified as “Mandatory” are to be included within the scope of ATSEP training.
4. All sub-topics identified as “Mandatory if applicable” are to be included within the scope of ATSEP training if applicable to the ANSP’s operation / infrastructure.
5. All sub-topics identified as “Discretionary” contain training elements which may relate to the ANSP’s operation / infrastructure (or may relate to industry “best practice”) and therefore may, or may not, need to be included within the scope of the ANSP’s ATSEP training. If the ANSP decides that a discretionary sub-topic is not required, then rationale must be provided justifying the decision.
6. The ANSP shall ascertain the appropriate content and level of detail to be covered under each sub-topic.
NOTE: This may have to be altered at a later date if deemed to be inadequate by the CAA.
7. Training instructors are required to be suitably experienced in the field where instruction is to be given. The ANSP may consider use of internal Personnel, contracted Personnel, another ANSP or professional training organisations for training delivery.
8. Recommended elements for each Sub-Topic, which should be used to plan the training content, are detailed in the AMC and GM material published by EASA. This is available from the “Key Links” section of this CAP. (Key link #3 Easy Access Rules for ATM-ANS).

BASIC TRAINING – SHARED

SUBJECT 1 - INDUCTION
<i>TOPIC 1: Induction</i>
1.1: Training and assessment overview (Mandatory)
1.2: National organisation (Mandatory)
1.3: Workplace (Mandatory)
1.4: ATSEP role (Mandatory)
1.5: European/worldwide dimension (Discretionary)
1.6: International Standards and Recommended Practices (Mandatory)
1.7: Data security (Mandatory related to the ANSP Management System)
1.8: Quality management (Mandatory related to the ANSP Management System)
1.9: Safety Management System (Mandatory related to the ANSP Management System)
1.10: Health and safety (Mandatory related to the ANSP Management System)

SUBJECT 2 - AIR TRAFFIC FAMILIARISATION
<i>TOPIC 1: Air Traffic Familiarisation</i>
1.1: Air Traffic Management (Discretionary)
1.2: Air Traffic Control (Discretionary)
1.3: Ground-based Safety nets (Mandatory if applicable)
1.4: Air Traffic Control tools and monitoring aids (Discretionary)
1.5: Familiarisation (Mandatory)

BASIC TRAINING – STREAMS

SUBJECT 3: AERONAUTICAL INFORMATION SERVICES (AIS)
<i>TOPIC 1: Aeronautical Information Services</i>
1.1: Aeronautical Information Services (Mandatory if applicable)

SUBJECT 4: METEOROLOGY
<i>TOPIC 1: Meteorology</i>
1.1: Introduction to meteorology (Mandatory if applicable)
1.2: Impact on aircraft and ATS operation (Mandatory if applicable)
1.3: Meteorological parameters and information (Mandatory if applicable)
1.4: Meteorological systems (Mandatory if applicable)

SUBJECT 5 COMMUNICATIONS
<i>TOPIC 1: General Introduction</i>
1.1: Introduction to communications (Mandatory)
<i>TOPIC 2: Voice Communications</i>
2.1: Introduction to voice communications (Mandatory)
2.2: Air-ground communication (Mandatory)
2.3: Ground-ground communication (Mandatory if applicable)
<i>TOPIC 3: Data Communications</i>
3.1: Introduction to data communications (Mandatory if applicable)
3.2: Networks (Mandatory if applicable)
3.3: Aviation specific networks, applications and ATM/ANS providers (Discretionary)
SUBJECT 6 NAVIGATION
<i>TOPIC 1: Introduction</i>
1.1: Purpose and use of navigation (Mandatory if applicable)
<i>TOPIC 2: The Earth</i>
2.1: Form of the Earth (Discretionary)
2.2: Coordinate systems, direction and distance (Discretionary)
2.3: Earth's magnetism (Discretionary)
<i>TOPIC 3: Navigational System Performance</i>
3.1: Factors affecting electronic navigation performance (Mandatory if applicable)
3.2: Performance of navigation systems (Discretionary)
3.3: Means of navigation (Discretionary)
<i>TOPIC 4: Navigation Systems</i>
4.1: Terrestrial navigation aids (Mandatory if applicable)
4.2: On-board navigation systems (Discretionary)
4.3: Space-based navigation systems (Discretionary)
<i>TOPIC 5: Performance-Based Navigation</i>
5.1: PBN (Discretionary)
5.2: Future developments (Discretionary)

SUBJECT 7 DATA PROCESSING
<i>TOPIC 1: Data Processing</i>
1.1: Introduction to data processing (Mandatory if applicable)
1.2: System software and hardware principles (Mandatory if applicable)
1.3: Surveillance data processing (Mandatory if applicable)
1.4: Flight data processing (FDP) (Mandatory if applicable)
1.5: Human machine interface systems (Mandatory if applicable)
1.6: Miscellaneous information (Mandatory if applicable)

QUALIFICATION TRAINING – SHARED

SUBJECT 1 SAFETY
<i>TOPIC 1: Safety Management</i>
1.1: Policy and principles (Mandatory)
1.2: Concept of risk and principles of risk assessment (Mandatory)
1.3: Safety assessment process (Mandatory)
1.4: Air navigation system risk classification scheme (Mandatory)
1.5: Safety regulation (Mandatory)

SUBJECT 2 HEALTH & SAFETY
<i>TOPIC 1: Hazard Awareness and Legal Rules</i>
1.1: Hazard awareness (Mandatory)
1.2: Regulations and procedures (Mandatory)
1.3: Handling of hazardous material (Mandatory)

SUBJECT 3 HUMAN FACTORS
<i>TOPIC 1: Introduction to Human Factors</i>
1.1: Introduction (Discretionary)

<i>TOPIC 2: Working Knowledge and Skills</i>
2.1: ATSEP knowledge, skills and competence (Discretionary)

<i>TOPIC 3: Psychological Factors</i>
3.1: Cognition (Discretionary)

<i>TOPIC 4: Medical</i>
4.1: Fatigue (Discretionary)
4.2: Fitness (Discretionary)
4.3: Work environment (Discretionary)

<i>TOPIC 5: Organisational and Social Factors</i>
5.1: Basic needs of people at work (Discretionary)
5.2: Team resource management (Discretionary)
5.3: Teamwork and team roles (Discretionary)
<i>TOPIC 6: Communication</i>
6.1: Written report (Discretionary)
6.2: Verbal and non-verbal communication (Discretionary)
<i>TOPIC 7: Stress</i>
7.1: Stress (Discretionary)
7.2: Stress management (Discretionary)
<i>TOPIC 8: Human Error</i>
8.1: Human error (Discretionary)

QUALIFICATION STREAM COMMUNICATION - VOICE

SUBJECT 1: VOICE
<i>TOPIC 1: Air - Ground</i>
1.1: Transmission/reception (Mandatory)
1.2: Radio antenna systems (Mandatory)
1.3: Voice switch (Mandatory if applicable)
1.4: Controller/Operator working position (Mandatory)
1.5: Radio interfaces (Mandatory if applicable)
<i>TOPIC 2: Ground - Ground</i>
2.1: Interfaces (Discretionary)
2.2: Protocols (Discretionary)
2.3: Switch (Discretionary)
2.4: Communication chain (Discretionary)
2.5: Controller/Operator working position (Discretionary)
SUBJECT 2: TRANSMISSION PATH
<i>TOPIC 1: Lines</i>
1.1: Lines theory (Discretionary)
1.2: Digital transmission (Discretionary)
1.3: Types of lines (Discretionary)
<i>TOPIC 2: Specific Links</i>
2.1: Microwave link (Discretionary)

2.2: Satellite (Discretionary)

SUBJECT 3: RECORDERS

TOPIC 1: Legal Recorders

1.1: Regulations (Mandatory if applicable)

1.2: Principles (Mandatory if applicable)

SUBJECT 4: FUNCTIONAL SAFETY

TOPIC 1: Safety attitude

1.1: Safety attitude (Mandatory related to the ANSP Management System))

TOPIC 2: Functional safety

1.1: Functional safety (Mandatory)

QUALIFICATION STREAM COMMUNICATION - DATA

SUBJECT 1: DATA

TOPIC 1: Introduction to Networks

1.1: Types (Discretionary)

1.2: Networks (Discretionary)

1.3: External network services (Discretionary)

1.4: Measuring tools (Discretionary)

1.5: Troubleshooting (Discretionary)

TOPIC 2: Protocols

2.1: Fundamental theory (Discretionary)

2.2: General protocols (Discretionary)

2.3: Specific protocols (Discretionary)

TOPIC 3: National networks

3.1: Network technologies (Discretionary)

TOPIC 4: European networks

4.1: Microwave link (Discretionary)

TOPIC 5: Global networks

5.1: Networks and standards (Discretionary)

5.2: Description (Discretionary)

5.3: Global architecture (Discretionary)

5.4: Air-ground subnetworks (Discretionary)

5.6: Networks on board of the aircraft (Discretionary)

5.7: Air-ground applications (Discretionary)

QUALIFICATION STREAM NAVIGATION – (NDB)

SUBJECT 1: PERFORMANCE-BASED NAVIGATION
<i>TOPIC 1: Nav concepts</i>
1.1: Operational requirements (Discretionary)
1.2: Performance-based navigation (Discretionary)
1.3: Area navigation concept (RNAV) (Discretionary)
1.4: NOTAM (Mandatory)
SUBJECT 2: GROUND BASED SYSTEMS - NDB
<i>TOPIC 1: NDB/Locator</i>
1.1: Use of the system (Mandatory if applicable)
1.2: Ground station architecture (Mandatory if applicable)
1.3: Transmitter subsystem (Mandatory if applicable)
1.4: Antenna subsystem (Mandatory if applicable)
1.5: Monitoring and control subsystem (Mandatory if applicable)
1.6: On-board equipment (Discretionary)
1.7: System check and maintenance (Mandatory if applicable)
SUBJECT 3: FUNCTIONAL SAFETY
<i>TOPIC 1: Safety attitude</i>
1.1: Safety attitude (Mandatory related to the ANSP Management System)
<i>TOPIC 2: Functional safety</i>
1.1: Functional safety (Mandatory)

QUALIFICATION STREAM NAVIGATION – (DME)

SUBJECT 1: PERFORMANCE-BASED NAVIGATION
<i>TOPIC 1: Nav concepts</i>
1.1: Operational requirements (Discretionary)
1.2: Performance-based navigation (Discretionary)
1.3: Area navigation concept (RNAV) (Discretionary)
1.4: NOTAM (Mandatory)
SUBJECT 2: GROUND BASED SYSTEMS - DME
<i>TOPIC 1: DME</i>
1.1: Use of the system (Mandatory if applicable)
1.2: Fundamentals of DME (Mandatory if applicable)
1.3: Ground station architecture (Mandatory if applicable)

1.4: Receiver subsystem (Mandatory if applicable)
1.5: Signal processing (Mandatory if applicable)
1.6: Transmitter subsystem (Mandatory if applicable)
1.7: Antenna subsystem (Mandatory if applicable)
1.8: Monitoring and control subsystem (Mandatory if applicable)
1.9: On-board equipment (Discretionary)
1.10: System check and maintenance (Mandatory if applicable)

SUBJECT 3: FUNCTIONAL SAFETY

<i>TOPIC 1: Safety attitude</i>

1.1: Safety attitude (Mandatory related to the ANSP Management System))

<i>TOPIC 2: Functional safety</i>

1.1: Functional safety (Mandatory)

ATSEP Competence Assessment and System/Equipment Rating Award



Name
Unit/Location
Assessment Date
Assessor

Date Current System/Equipment Rating Expires <i>(If initial mark as N/A)</i>
Assessment Level <i>(i.e., Level 1 or 2)</i>
System/Equipment

Assessment Reference Number <i>(Unique Ref number produced by ANSP)</i>
Assessment Description

Assessor Comments

Assessor Recommendations

Accountable Manager Comments

Pass/Fail
Rating Award (i.e., Level 1 or 2)
Next Assessment Due
ATSEP Signature
Unit Manager Signature

Subject to the unit manager's approval, and within the validity period of this assessment, this rating award permits the ATSEP detailed above to remove, maintain, operate and return to operational service the specified equipment/system.



ATSEP Competence Assessment Checklist

ATSEP Name:		Location:	
Assessors Name:		Assessment Reference Number (Locally Produced):	
System/Equipment:		Date of Assessment:	
Observation	Comments		
Equipment safely removed from service and recorded.	Pass <input type="checkbox"/> Fail <input type="checkbox"/>		
Locally produced job card (if applicable).	Pass <input type="checkbox"/> Fail <input type="checkbox"/>		
Correct Maintenance Schedule and latest issue.	Pass <input type="checkbox"/> Fail <input type="checkbox"/>		
Check for correct T&ME and calibration date.	Pass <input type="checkbox"/> Fail <input type="checkbox"/>		
Maintenance Schedule followed correctly.	Pass <input type="checkbox"/> Fail <input type="checkbox"/>		
Use of T&ME.	Pass <input type="checkbox"/> Fail <input type="checkbox"/>		
Candidate's knowledge of the System/Equipment.	Pass <input type="checkbox"/> Fail <input type="checkbox"/>		
Recording of test results.	Pass <input type="checkbox"/> Fail <input type="checkbox"/>		
Equipment safely returned to service and recorded.	Pass <input type="checkbox"/> Fail <input type="checkbox"/>		
Candidate's attitude to safety.	Pass <input type="checkbox"/> Fail <input type="checkbox"/>		