



Australian Government

UEEEEC0046 Operate and maintain amateur radio communication stations

Release: 1

UEEEEC0046 Operate and maintain amateur radio communication stations

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to operate and maintain amateur radio communication stations.

It includes applying correct operating procedures, using safe working practices and testing techniques, dismantling and assembling apparatus, disconnecting and reconnecting components, and operating to the relevant industry standard.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

Competency Field

Electronics and Communications and Communications

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to operate an amateur radio communication station

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1.1 Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures for a given work area are identified, obtained and applied

- 1.2 WHS/OHS risk control measures and workplace procedures are followed in preparation for amateur radio activities
 - 1.3 Scope of operation of activity is identified in accordance with relevant industry standards
 - 1.4 Sources of materials required for the amateur radio activities are identified and utilised in accordance with manufacturer specifications and workplace procedures
 - 1.5 Interference with other services is recognised and maintained in accordance with operating practices and advice is sought from relevant person/s
 - 1.6 Resources, tools, apparatus and testing devices needed to carry out work are obtained and checked for correct operation and safety
- 2 Operate an amateur radio communication station**
 - 2.1 WHS/OHS risk control measures and workplace procedures for carrying out the work are followed
 - 2.2 Need to test and measure equipment is determined in accordance with WHS/OHS and workplace procedures
 - 2.3 Circuits/apparatus are checked and isolated in accordance with WHS/OHS and workplace procedures
 - 2.4 Radio communications operating practices are demonstrated in accordance with workplace procedures and applicable radio spectrum regulations
 - 2.5 Amateur radio communication station is operated in accordance with relevant industry standards
 - 2.6 Methods for dealing with unplanned situations are selected on the basis of safety discussions with relevant person/s and/or specified work outcomes
 - 2.7 Set-up is carried out efficiently without waste of materials or damage to apparatus, the surrounding environment or services using sustainable energy principles
- 3 Maintain an amateur radio communication station**
 - 3.1 WHS/OHS work completion risk control measures and procedures are followed
 - 3.2 Dismantled modules/sub-assemblies are tagged for

- reassembly and stored to protect them against loss or damage
- 3.3 Apparatus is dismantled and assembled in accordance with manufacturer guidelines
 - 3.4 Repairs are conducted without damage to other components, apparatus or circuits in accordance with workplace procedures
 - 3.5 Repairs are carried out efficiently without unnecessary waste of materials or damage to apparatus, the surrounding environment or services using sustainable energy practices
 - 3.6 Apparatus is assembled in an appropriate sequence with all modules/sub-assemblies and parts correctly placed, secured and connected in accordance with manufacturer guidelines and relevant industry standards
 - 3.7 Repaired radio equipment is inspected, tested and returned to service to ensure operating parameters are in accordance with relevant industry standards and applicable radio spectrum regulations
 - 3.8 Workplace procedures for referring unplanned events to relevant authorities are followed
 - 3.9 Work and operating area is cleaned and made safe in accordance with workplace procedures
- 4 Identify and assemble amateur radio communication equipment**
- 4.1 WHS/OHS risk control measures and workplace procedures for carrying out the work are followed
 - 4.2 Items are identified for assembly
 - 4.3 Item is assembled in accordance with workplace procedures and relevant engineering standards
 - 4.4 Assembled unit is tested and operating parameters of the station are in accordance with workplace procedures, relevant industry standards and applicable radio spectrum regulations
 - 4.5 Adjustments are made to equipment, as required, for optimise reception
 - 4.6 Equipment is commissioned as constructed for on-air

performance

5 Complete work and maintain reports

- 5.1** WHS/OHS work completion risk control measures and procedures are followed
- 5.2** Worksite is cleaned and made safe in accordance with workplace procedures
- 5.3** Adjustment settings are documented and relevant person/s notified in accordance with workplace procedures

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEENEEB101A Operate and maintain amateur radio communication stations.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEEEC0046 Operate and maintain amateur radio communication stations

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (WHS/OHS) requirements, including risk control measures
- assembling apparatus in an appropriate sequence with all modules/sub-assemblies and parts correctly placed
- carrying out set-up efficiently without waste of materials or damage to apparatus, the surrounding environment or services using sustainable energy principles
- completing work and maintaining reports
- connecting and disconnecting components to radio equipment manufacturer requirements and appropriate engineering requirements
- correctly using an amateur radio in accordance with relevant industry standards and workplace procedures
- dealing with unplanned events in accordance with WHS/OHS and workplace procedures
- dismantling and assembling apparatus in accordance with manufacture guidelines
- following manufacturer service instructions for radio station assembly and dismantling, including transmitter, power, measurement and adjustment
- identifying and assembling amateur radio communication equipment
- maintaining an amateur radio communication station
- operating an amateur radio communication station
- preparing to operate an amateur radio communication station
- testing and measuring equipment
- testing and operating parameters of the station in accordance with workplace procedures and relevant industry standards
- using testing devices.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- amateur radio communication principles, operation and maintenance including:

- amateur radio technical basics
- interference and electromagnetic compatibility (EMC) overview
- licence conditions
- mathematics used for amateur radio operation
- measurements
- nature of amateur radio
- operating practices and procedures overview
- propagation overview
- safety overview
- transmission lines and antennas overview
- transmitters and receivers
- problem-solving techniques
- relevant industry standards, including:
 - Standard Licence Operator's level as prescribed by the Australian Communication Media Authority (ACMA)
- relevant manufacturer specifications and operating instructions
- relevant radio spectrum regulations
- relevant resources, tools, apparatus and testing devices
- relevant job safety assessments or risk mitigation processes
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- sustainable energy principles.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated suitable workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, tools, facilities and equipment currently used in industry
- relevant Australian and international standards for the assembly and operation of an amateur radio station

- resources that reflect current industry practices in relation to assembling, dismantling and operating an amateur radio station, including the assembly of an antenna, power supply unit or an equivalent circuit
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>