



Australian Government

AVIE4001 Maintain aircraft radio communications

Release: 1

AVIE4001 Maintain aircraft radio communications

Modification History

Release 1. This is the first release of this unit of competency in the AVI Aviation Training Package.

Application

This unit involves the skills and knowledge required to maintain aircraft radio communications, in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority (CASA) and national operating standards.

It includes operating radio equipment, managing radio equipment malfunctions and operating transponders.

This unit addresses aviation technical skill requirements (physical, mental and task-management abilities) related to aircraft radio operator duties of flight crew, and contributes to safe and effective performance in complex aviation operational environments.

Operations are conducted as part of recreational, commercial and military aircraft activities across a variety of operational contexts within the Australian aviation industry.

Work is performed independently or under limited supervision within a single-pilot or multi-crew environment.

Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Use for Defence Aviation is to be in accordance with relevant Defence Orders, Instructions, Publications and Regulations.

Pre-requisite Unit

Not applicable.

Competency Field

E – Communication and Calculation

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

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|--|---|
| 1 Operate radio equipment | 1.1 Serviceability of radio equipment is confirmed |
| | 1.2 Transmission and receipt of radio communications is conducted using appropriate procedures and phraseology |
| | 1.3 A listening watch is maintained and applicable transmissions responded to appropriately |
| | 1.4 Appropriate emergency and urgency transmissions are conducted |
| 2 Manage radio equipment malfunctions | 2.1 Radio failure procedures are performed as required |
| | 2.2 Fault-finding procedures and corrective actions not involving special tools or instruments are employed |
| 3 Operate transponder | 3.1 Aircraft transponder is operated and monitored in accordance with the aeronautical information publication (AIP) during normal operations |
| | 3.2 Aircraft transponder is operated and monitored in accordance with the AIP during abnormal and emergency operations |

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.

Unit Mapping Information

This unit replaces and is equivalent to AVIE4001B Maintain aircraft radio communications.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=4725260a-0af3-4daf-912b-ef1c2f3e5816>

Assessment Requirements for AVIE4001 Maintain aircraft radio communications

Modification History

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Performance Evidence

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

- adapting to differences in equipment and operating environment in accordance with standard operating procedures
- applying basic fault-finding techniques related to defective radiotelephone equipment
- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant legislation and workplace procedures
- communicating effectively with others
- completing relevant documentation
- complying with regulatory requirements pertaining to aircraft radiotelephone communications
- identifying and correctly using relevant radiotelephone equipment
- implementing contingency plans
- implementing work health and safety (WHS)/occupational health and safety (OHS) procedures and relevant regulations
- interpreting and following operational instructions and prioritising work
- interpreting and reacting appropriately to light signals from air traffic control
- interpreting relevant instructions, regulations, procedures and information
- manipulating any switch or device requiring the release of flight controls without changes to height, heading, speed, attitude, exceeding engine speed (RPM) or power limits
- modifying activities depending on workplace contingencies, situations and environments
- monitoring and anticipating operational problems and hazards and taking appropriate action
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- selecting and using required personal protective equipment conforming to industry and WHS/OHS standards
- using Aviation English Language to a proficiency standard that enables requests and instructions to be understood by air traffic service and other stations, and ensures compliance with received instructions
- using oral and written English language communication skills sufficient to support situational awareness within flight radio operations
- working collaboratively with others

- working systematically with required attention to detail without injury to self or others, or damage to goods or equipment.

Knowledge Evidence

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

- characteristics of radio waves, wave propagation, transmission and reception:
 - radio frequency band ranges
 - medium frequency (MF)
 - high frequency (HF)
 - very high frequency (VHF)
 - ultra high frequency (UHF)
 - properties of radio waves
 - propagation of paths of radio waves
 - ground waves
 - sky waves
 - factors affecting the propagation of radio waves
 - terrain
 - ionosphere
 - sun spot activity
 - interference from electrical equipment
 - thunderstorms
 - power attenuation
 - radio antennas
 - characteristics of antennas
 - use of antennas
- components of aeronautical radio systems:
 - power source or battery switch, radio master, microphone
 - transmitter
 - receiver
 - antenna

- location of aerial antennas relevant to radio configuration
- headphones and speaker
- procedures for using an aeronautical radio system
- setting up an aeronautical radio relevant to radio configuration
- use of radio transmit and receive selector switches (VHF, HF, intercom(I/C), public address (PA))
- turning a radio on and off
- selecting correct frequencies
- use of squelch control
- correct use of a microphone
- documented radio procedures relevant to the visual flight rules (VFR)
- emergency transponder codes for distress, radio failure and unlawful interference
- fault-finding procedures and corrective actions for radiotelephone equipment not involving special tools or instruments
- faults that may occur in radiotelephone equipment and appropriate fault detection and remedial action that can be taken
- international radio telephony distress frequencies
- light signals, including interpretation and actions required
- operating procedures for aircraft radiotelephone equipment
- phonetic alphabet
- principles of effective radio telephony communications
- problems that may occur during radio communications and action that can be taken to overcome them
- relevant sections of Civil Aviation Orders and regulations pertaining to aircraft radio communications
- relevant WHS/OHS and environmental procedures and regulations
- responsibilities of an aeronautical radio operator:
 - secrecy of communications
 - unauthorised transmissions
- standard radiotelephony phraseology as outlined in an aeronautical information publication (AIP).

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

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Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect 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
- acceptable means of simulation assessment
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
- relevant materials, tools, equipment and personal protective equipment currently used in industry.

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