



Australian Government

AVIW4028 Manage aircraft sensor systems

Release: 1

AVIW4028 Manage aircraft sensor systems

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 manage aircraft sensor systems, in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority (CASA) and national operating standards

It includes initialising aircraft sensor systems and optimising aircraft sensor performance.

This unit addresses aviation technical skill requirements (physical, mental and task-management abilities) related to equipment and system operations of flight crews, 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

W – Equipment and Systems Operations

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.

1 Initialise aircraft sensor systems

- 1.1 Equipment is enabled in accordance with manufacturer instructions, and organisational policy and procedures
- 1.2 Equipment functional checks are performed in accordance with manufacturer instructions, and organisational policy and procedures
- 1.3 Hazards are identified, risks are assessed and hazard management is implemented
- 1.4 System parameters are initialised for anticipated meteorological and/or oceanographic conditions

2 Optimise aircraft sensor performance

- 2.1 Sensor output is monitored and operational information is used to support operational task requirements
- 2.2 Real time environmental conditions are monitored
- 2.3 System parameters are modified to maintain optimal sensor performance
- 2.4 Abnormal or emergency aircraft sensor system situations are handled in accordance with organisational and regulatory requirements
- 2.5 System faults are identified, diagnosed and appropriate responses are undertaken

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

Sensor systems must include one or more of the following:

- airborne surveillance radar
- acoustics
- communications systems
- electro optical systems

- Environmental conditions must include one or more of the following:
- electronic support measures
 - forward looking infra-red (FLIR)
 - magnetic anomaly detection systems
 - visual observations
 - atmospheric conditions
 - currents
 - local weather conditions
 - salinity
 - sea state
 - Southern Oscillation Index (SOI)
 - water depth and temperature
- Abnormal or emergency aircraft sensor system situations must include one or more of the following:
- avionics malfunction
 - equipment damage
 - fire on-board
 - instrument failure
 - operator/crew incapacitation
 - sensor system malfunction and/or failure

Unit Mapping Information

This unit replaces and is equivalent to AVIW4028A Manage aircraft sensor system.

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 AVIW4028 Manage aircraft sensor systems

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 and range of conditions on at least one occasion and include:

- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant aeronautical knowledge
- applying relevant legislation and workplace procedures
- communicating effectively with others
- completing relevant documentation
- determining and implementing appropriate counter measures
- giving and receiving instructions related to managing aircraft sensors
- identifying and using required communications technology
- implementing contingency plans
- implementing work health and safety (WHS)/occupational health and safety (OHS) procedures and relevant regulations
- interpreting and compiling sensor data
- interpreting and following aircraft documentation
- interpreting and following operational instructions and prioritising work
- maintaining situational awareness
- modifying activities depending on operational contingencies, risk situations and environments
- monitoring work activities in terms of planned schedule
- operating and adapting to differences in communications equipment in accordance with standard operating procedures
- planning own work, predicting consequences and identifying improvements
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- recognising sensor jamming
- reporting and/or rectifying problems, faults or malfunctions promptly, in accordance with workplace procedures
- 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 range of conditions and include knowledge of:

- abnormal/emergency conditions and responses
- communications emission control
- effects of environmental variations on data received from sensors
- magnetic anomaly detection theory
- organisational policy and procedures for managing aircraft sensors
- radar theory
- relevant WHS/OHS responsibilities
- sensor capabilities and limitations
- sensor characteristics and operation
- sonar theory
- typical problems that may occur when managing aircraft sensor, actions and appropriate solutions.

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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