Australian Government

Department of Education, Employment and Workplace Relations

AVIW4028A Manage aircraft sensor systems

Revision Number: 1

ISC INDUSTRY SKILLS COUNCILS
Creating Australia's Future

AVIW4028A Manage aircraft sensor systems

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor	This unit involves the skills and knowledge required to initialise and optimise tactical and/or operational sensors in an aircraft. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit	Work must be carried out in compliance with the relevant regulatory requirements of the Civil Aviation Safety Authority and national operating standards.
	Use for ADF Aviation is to be in accordance with relevant Defence Orders and Instructions and applicable CASA compliance.
	Operations are conducted across a variety of operational contexts within the Australian aviation industry.
	Work is performed under limited supervision.
	This unit of competency is nominally packaged at Certificate IV.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Employability Skills   This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Initialise aircraft sensor systems	1.1 Equipment is enabled in accordance with manufacturers instructions and organisational policy and procedures
	1.2 Equipment functional checks are performed in accordance with manufacturers instructions and organisational policy and procedures
	1.3 System parameters are initialised for anticipated meteorological and/or oceanographic conditions
2 Optimise aircraft sensor performance	2.1 Sensor output is monitored in accordance with organisational policy and procedures
	2.2 Real time environmental conditions are monitored
	2.3 System parameters are modified to maintain optimal sensor performance
	2.4 System faults are identified, diagnosed and appropriate responses undertaken in accordance with organisational policy and procedures

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Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

Required knowledge:

- Organisational policy and procedures in relation to managing aircraft sensors
- Knowledge of the effects of environmental variations on data received from sensors
- Radar theory
- Sonar theory
- Magnetic Anomaly Detection theory
- Sensor characteristics and operation
- Sensor capabilities and limitations
- Communications emission control
- Abnormal/emergency conditions and responses
- Relevant OH&S responsibilities
- Typical problems that may occur when managing aircraft sensor, actions and appropriate solutions

Required skills:

- Interpret and compile sensor data
- Perform optimisation of sensor system settings
- Recognise sensor jamming
- Determine and implement appropriate counter measures
- Give and receive instructions related to managing aircraft sensors
- Maintain situational awareness
- Complete documentation related to managing aircraft sensors
- Interpret and follow aircraft documentation
- Communicate effectively with others when managing aircraft sensors
- Read and interpret instructions and procedures relevant to managing aircraft sensors
- Interpret and follow operational instructions and prioritise work
- Identify and use required communication technology
- Work collaboratively with others when managing aircraft sensors
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when managing aircraft sensors in accordance with workplace procedures
- Implement contingency plans for unanticipated situations that may arise when managing

REQUIRED KNOWLEDGE AND SKILLS

aircraft sensors

- Apply precautions and required action to minimise, control or eliminate hazards that may exist when managing aircraft sensors

- Plan own work including predicting consequences and identifying improvements

- Monitor work activities in terms of planned schedule

- Modify activities depending on differing operational contingencies, risk situations and environments

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

- Operate and adapt to differences in communication equipment in accordance with standard operating procedures

Evidence Guide

EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	• The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying: • the underpinning knowledge and skills • relevant legislation and workplace procedures • other relevant aspects of the range statement
Context of and specific resources for assessment	• Performance is demonstrated consistently over a period of time and in a suitable range of contexts • Resources for assessment include: • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or • access to an appropriate range of relevant operational situations in the workplace • In both real and simulated environments, access is required to: • relevant and appropriate materials and equipment, and • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals
Method of assessment	• Assessment of this unit must be undertaken by a registered training organisation • As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests • Practical assessment must occur: • through activities in an appropriately simulated environment at the registered training organisation, and/or • in an appropriate range of situations in the workplace

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Range Statement

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Aircraft may include:	• single or multiple engine • fixed or rotary wing
Sensor systems may include:	• airborne surveillance radar • acoustics • electro optical systems • magnetic anomaly detection systems • forward looking infra-red (FLIR) • electronic support measures • communication systems • visual observations
Work environment may include:	• by day or by night • over land or over sea • Prepared or Unprepared aircraft landing sites
Environmental conditions may include:	• water depth and temperature • salinity • sea state • currents • local weather conditions • atmospheric conditions • Southern Oscillation Index (SOI)
Abnormal/emergency situations may include:	• avionics malfunction • instrument failure • fire • equipment damage • operator/crew incapacitation
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures
Information/documentation may include:	• relevant sections of Civil Aviation Safety Regulations • in Defence context, relevant Defence Orders and Instructions • Flight Manual/Pilot's Operating Handbook (POH) • Aeronautical Information Publication (AIP) • charts • operations manuals

RANGE STATEMENT

	• approved checklists
	• workplace procedures and instructions and job specification
	• induction and training materials
	• conditions of service, legislation and industrial agreements including workplace agreements and awards
Applicable regulations and legislation may include:	• relevant Civil Aviation Safety Regulations and Civil Aviation Orders
	• in Defence context, relevant Defence Orders and Instructions
	• relevant state/territory OH&S legislation
	• relevant state/territory environmental protection legislation
	• relevant Australian Standards

Unit Sector(s)

Not applicable.

Competency field

Competency Field   W - Equipment and Systems Operations