Australian Government

Department of Education, Employment and Workplace Relations

AVIZ5049A Manage situational awareness in the air traffic control environment

Revision Number: 1

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Modification History

Not applicable.

Unit Descriptor

Unit Descriptor	This unit involves the skills and knowledge required to work as an individual and as part of a team to correctly establish and maintain situational awareness in an air traffic control (ATC) environment. 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 air traffic control regulatory requirements of the Civil Aviation Safety Authority (CASA). Use for ADF Aviation is to be in accordance with relevant Defence Orders and Instructions and applicable CASA compliance. Work is performed under various levels of supervision dependent on workplace context, and in a team environment. This unit of competency is packaged at Diploma level.

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 Establish and maintain situational awareness	1.1 Incoming information and cues are noticed and received 1.2 Information is comprehended and prioritised 1.3 Status of the ATC environment is established 1.4 Status of the elements within the ATC environment are projected to the future and consequences are established 1.5 ATC environment is monitored and status of elements is updated
2 Identify and rectify loss of situational awareness	2.1 Factors affecting situational awareness are understood 2.2 Loss of situational awareness identifiers are recognised 2.3 Actions are taken to recover situational awareness
3 Manage team situational awareness	3.1 Factors affecting team situational awareness are understood 3.2 Required information is recognised and shared 3.3 Team situational awareness is established 3.4 ATC environment is monitored and the status of the elements is updated to relevant team members

Required Skills and Knowledge

REQUIRED KNOWLEDGE AND SKILLS

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

Required knowledge:

- Relevant sections of Civil Aviation Safety Regulations
- Relevant OH&S and environmental procedures and regulations
- Principles of effective air traffic control
- Separation standards and traffic information requirements and conditions for their use
- Procedures for managing situational awareness in the air traffic control environment
- Relevant control zone, airspace/route structure and traffic patterns
- Classification and special use airspace
- Radar coverage
- Sector/traffic hot spots
- Sector/control zone geography and topography
- Aircraft performance characteristics
- Weather phenomena affecting flight operations and safety
- Responsibilities of air traffic controllers when managing situational awareness in the air traffic control environment
- Area of responsibility
- The impact on adjacent area/s of responsibility
- Local procedures
- Relevant sections of the air traffic services procedures manual
- Safety hazards and risks that exist when managing situational awareness in the air traffic control environment
- Problems that may occur when managing situational awareness in the air traffic control environment
- The impact of adverse weather events and specific weather phenomena

Required skills:

- Communicate effectively with others when managing situational awareness in the air traffic control environment
- Actively listen when managing situational awareness in the air traffic control environment
- Read and interpret instructions, regulations, procedures and other information relevant to managing situational awareness in the air traffic control environment
- Interpret and follow operational instructions and prioritise work
- Perceive incoming information associated with strategic, tactical, geographic, spatial, system and environment components of a complex system

REQUIRED KNOWLEDGE AND SKILLS

- Comprehend incoming information and develop the current airspace and flight path model

- Complete documentation related to managing situational awareness in the air traffic control environment

- Provide leadership and work collaboratively with others when managing situational awareness in the air traffic control environment

- Communicate in a team by exchanging information through assigning responsibility, acknowledgment, inquiring, and by recognising and noting facts that create team rapport and enhance team outputs

- Promptly report and/or rectify any identified problems that may occur when managing situational awareness in the air traffic control environment in accordance with regulatory requirements and workplace procedures

- Demonstrate temperament reflecting a calm, composed and cooperative characteristic and emotional response under challenging situations

- Make decisions related to managing situational awareness in the air traffic control environment

- Conduct aeronautical decision making

- Project and develop future airspace and flight path scenarios

- Maintain a strategic traffic management goal for the jurisdiction airspace

- Adhere to procedures through a series of steps followed in a regular definite order or a traditional or established way of doing things when this is required

- Implement contingency plans for unexpected situations that may arise when managing situational awareness in the air traffic control environment

- Judge and form an opinion or evaluate situations by discerning and comparing information

- React to some form of treatment or stressful situation by a considered and measured response in a timely fashion

- Apply precautions and required action to minimise, control or eliminate hazards that may exist when managing situational awareness in the air traffic control environment

- Monitor and anticipate operational problems and hazards and take appropriate action

- Monitor work activities in terms of planned schedule

- Modify activities dependent on differing workplace contingencies, situations and environments

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

- Adapt to differences in equipment and operating environment in accordance with standard operating procedures

- Be receptive to training for the skills, knowledge, or experiences acquired or gained over a career

- Implement OH&S procedures and relevant regulations

- Identify and correctly use equipment required when managing situational awareness in the air traffic control environment

- Be confident but not complacent or reliant on automation and technology, and readily apply

REQUIRED KNOWLEDGE AND SKILLS

human reasoning to airspace and flight path scenarios

- Allocate attention according to demand and constantly switch between: managing the Human-machine Interface (HMI) or equipment use; managing communications; and managing traffic

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

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.

Operations may be conducted:	• by day or night • in variable weather conditions
Performance may be demonstrated in:	• simulated situations, and/or • an operational air traffic control workplace
Air traffic control workplace may be a workstation in:	• Area Control • Approach Control • Aerodrome Control
Situation awareness (SA):	• involves an awareness of airspace and flight path history, an awareness of the current airspace model and awareness of the probable future airspace and flight path situation • involves the ability to notice incoming information and cues • involves the integration and comprehension of the information leading to • involves the projection and prediction of future airspace and flight path scenarios • must be present at all times while providing ATS • must also exist in teams where team members share critical information to achieve team goals and synergy
Factors affecting situational awareness include:	• the projection and prediction of future airspace and flight path scenarios • individual - abilities, knowledge, skills, health, attitude, training and experience • environment - system capabilities and interface, stress, workload, complexity, automation, fatigue and distraction
Loss of situational awareness identifiers include:	• ambiguity or confusion • fixation or channelled attention • poor R/T communication • failure to meet targets • failure to stay ahead of the traffic
Loss of situational awareness prevention techniques include:	• delegation during high workload • solicit information and input from team • verbalise important conditions • avoid preoccupation and fixation - rotate attention • monitor and evaluate current status relative to plan • project ahead and consider contingencies

RANGE STATEMENT

	• create visual and aural reminders for interrupted tasks
	• speak up when SA appears to be breaking down
Factors affecting team situational awareness include:	• level of communication and coordination
	• degree of information sharing
	• assertiveness of team members
	• personality conflict
	• level of team experience and training
Information/documents may include:	• training curricula and syllabi
	• relevant sections of Civil Aviation Safety Regulations
	• relevant CASA Manuals of Standards (MOS)
	• air traffic control Local Instructions (LI) and Temporary Local Instructions (TLI)
	• Manual of Air Traffic Services (MATS)
	• Aeronautical Information Publication (AIP)
	• Training Standards Manual (TSM)
	• ICAO Document 4444, ATM/501, Procedures for Air Navigation Services, Air Traffic Management
	• workplace procedures and instructions
	• occupational specification for air traffic controllers
	• equipment manufacturers specifications and instructions
	• induction and training materials
	• conditions of service, legislation and industrial agreements including workplace agreements and awards
	• training and assessment records
	• operator s handbook and system manuals
	• documented learning and assessment strategies
Applicable regulations and legislation may include:	• International Civil Aviation Organization (ICAO) Standards and Recommended Practices (SARP)
	• Civil Aviation Safety Regulations (CASR) and Manuals of Standards (MOS)
	• relevant Defence Orders and Instructions
	• Airservices Act (Commonwealth) 1995
	• OH&S Legislation (state and federal)
	• Civil Aviation Act (Commonwealth) 1988 and the Civil Aviation Amendment Act 1995

Unit Sector(s)

Not applicable.

Competency field

Competency Field   Z - Situation Awareness