AVIZ3052A Apply situational awareness in remote pilot aircraft systems (RPAS) operations

Release 1

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Modification History

Release 1. This is the first release of this unit.
This unit replaces and is equivalent to AVIZ3051A Manage situation awareness in remote pilot aircraft systems (RPAS) operations.

Unit Descriptor

This unit involves the skills, knowledge and attitudes required to apply situational awareness in remote pilot aircraft systems (RPAS) operations, including maintaining and managing RPA's situation both alone and in conjunction with others when appropriate, assessing situations and making appropriate decisions, setting priorities and managing tasks, and maintaining all necessary communications.

Application of the Unit

Work must be carried out in compliance with the relevant licence and RPAS rating requirements of the Civil Aviation Safety Authority (CASA); relevant airspace control requirements; Visual Meteorological Conditions (VMC); regulations, safety codes, protocols and procedures relevant when managing situation awareness in RPAS flight.
Use for Defence Aviation is to be in accordance with relevant Defence Orders and Instructions
Operations are conducted across a variety of operational contexts within the Australian Aviation Industry.
Work is performed under limited supervision.

Licensing/Regulatory Information

Refer to Application of the Unit.

Pre-Requisites

Nil.

Employability Skills Information

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

1 Maintain situational awareness	1.1	Continuous monitoring of all critical factors relevant to the safe progress of a flight is demonstrated
	1.2	Situational awareness is demonstrated through application of an effective visual scan, crew interaction, use of radio and inter-crew communication, use of traffic information and use of RPA systems where applicable
	1.3	Trends towards an unsafe situation are recognised and appropriate corrective action is employed in accordance with workplace procedures and regulatory requirements
	1.4	Breakdown in situational awareness is identified and is rectified promptly
2 Assess situations and make decisions	2.1	Operational problems are identified and analysed
	2.2	Operational risks are assessed and reported according to workplace procedures and regulatory requirements
	2.3	Potential solutions are identified and control measures are decided upon and implemented
	2.4	Determined plan of action is communicated and tasks are allocated to others as appropriate
	2.5	Plan of action is implemented and monitored to achieve optimum outcomes
	2.6	Plan of action and implementation process is re-evaluated and amended as needed to achieve optimum outcomes
	2.7	Extended operational changes resulting from action plan and related risks are monitored and managed to ensure a safe outcome of flight
3 Set priorities and manage tasks	3.1	Priorities and workload are organised to ensure completion of all tasks relevant to the safety of the flight
	3.2	Safe and effective operation of the RPA is prioritised ahead of

competing tasks

	3.3	Critical events and tasks are anticipated and managed to ensure completion within available time constraints
	3.4	Technology is used to reduce workload and improve ability to perform mental and manipulative activities safely
	3.5	Fixation on single actions/functions is avoided
	3.6	Signs and symptoms of fatigue are identified and appropriate actions are taken to manage fatigue of self or others
4 Work with others in the management of situational awareness	4.1	Collaboration with others is demonstrated in order to ensure the safe completion of a flight
	4.2	Effective and efficient communications and interpersonal relationships are established and maintained with all stakeholders to ensure the safe outcome of the flight
	4.3	Crew members are encouraged to participate in and contribute to the safe outcome of a flight
	4.4	Appropriate action is taken in conjunction with others to cooperatively correct any identified unsafe situations which may develop during an RPA flight

Required Skills and Knowledge

This section describes the knowledge and skills required for this unit.

Required knowledge:

- Risk identification, analysis and control
- Error management, including error types, causes and consequences as relevant to this unit
- Human performance and its limitations, including the senses, memory and situational awareness as relevant to this unit
- The decision making process as relevant to this unit
- Management of fatigue as relevant to this unit
- Stress, workload and time pressure management in relation to this unit
- Effective communication as relevant to this unit
- Relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders
- In Defence context, relevant Defence Orders and Instructions
- Relevant WHS/OHS and environmental procedures and regulations
- The principles of flight
- Procedures for maintaining situational awareness
- Use of navigational computers and equipment
- RPA energy source usage rates
- Air Traffic rules and procedures
- Air navigation techniques
- Aeronautical communication procedures and protocols
- Standard radiotelephony phraseology as detailed in the Flight Radiotelephone Operator Licence (FROL) syllabus and the Aeronautical Information Publication (AIP)
- Problems that may occur when managing situation awareness and action that can be taken to overcome them
- Procedures for transferring RPA control between crew members
- Operational hazards that may be identified when managing situation awareness and ways of controlling those hazards and associated risks

Required skills:

- Set priorities and manage tasks
- Maintain all necessary communications
- Maintain compliance with WHS/OHS and regulatory requirements
- Select and use appropriate instruments, displays, communications equipment and aids
- Source and interpret aviation weather forecast products appropriate to flight planning and navigation procedures
- Apply safety practices and regulations

- Transfer RPA control between crew members, where appropriate

- Communicate effectively with others when managing situation awareness in RPA flight

- Read and interpret instructions, regulations, procedures and other information relevant to managing situation awareness in RPA flight

- Interpret and follow operational instructions and prioritise work

- Complete documentation related to managing situation awareness in RPA flight

- Operate electronic communication equipment to required protocol

- Work collaboratively with others when managing situation awareness in RPA flight

- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others

- Promptly report and/or rectify any identified problems that may occur when managing situation awareness in RPA flight in accordance with regulatory requirements and workplace procedures

- Implement contingency plans for unexpected events that may arise when managing situation awareness in RPA flight

- Apply precautions and required action to minimise, control or eliminate hazards that may exist when managing situation awareness in RPA flight

- 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

- Select and use required personal protective equipment conforming to industry and WHS/OHS standards

- Identify and correctly use equipment required when managing situation awareness in RPA flight

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 competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include: • risk management • human factors • safety management systems and: • required 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 time and in a suitable range of contexts. Resources for assessment include access to: • 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	Practical assessment must occur in a: • real or appropriately simulated environment. A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate to this unit: • knowledge and performance questions and direct observation.

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.

Tasks may be undertaken in:	• visual line of sight, • visual meteorological conditions
Performance may be demonstrated in:	• single engine RPA • multi engine RPA • synthetic training device approved by the appropriate authority • variable air traffic conditions • variable flight situations • abnormal situations • classes of airspace as designated by the Civil Aviation Safety Authority
Aircraft may include:	• remotely piloted aircraft (RPA)/unmanned aircraft
Crew may include:	• remote pilot • observers
Instruments may be:	• fitted flight instruments • head up displays
Limitations may be imposed by:	• local noise abatement requirements and curfews
Classes of airspace may be:	• Class G airspace, as designated by the Civil Aviation Safety Authority • restricted and danger areas • military control zones
Factors that may adversely affect the safe outcome of a flight or manoeuvre may include:	• changes in the wind and weather conditions en route • changes in the wind and weather conditions at the destination • engine or equipment malfunction or failure • instrument or display malfunction or failure • air traffic in the vicinity of the RPA • running out of fuel/energy • errors in navigation • becoming lost • security threat at RPA control station • exceeding nominated operating parameters and tolerances for the RPA
Dependent on the type of organisation concerned and the local terminology used,	• company procedures • enterprise procedures

workplace procedures may include:	• organisational procedures • established procedures • standard operating procedures
Information/documents may include:	• relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders pertaining to the management of situation awareness during an aircraft flight • in Defence context, relevant Defence Orders and Instructions • Manual of Standards • Flight Manual/Pilot's Operating Handbook (POH) • Aeronautical Information Publication (AIP) • En Route Supplement Australia (ERSA) • relevant sections of the Civil Aviation Advisory Publications (CAAP) • performance charts • operations manuals • 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 WHS/OHS legislation • relevant state/territory environmental protection legislation • relevant Australian Standards
Performance includes tolerances specified in either of:	• relevant licence and aircraft rating requirements of the Civil Aviation Safety Authority (CASA) such as: • Manual of Standards • relevant Defence documentation such as: • Defence Orders and Instructions

Unit Sector(s)

Not applicable.

Custom Content Section

Z - Situation Awareness

Transport & Logistics Industry Skills Council