



Australian Government

AVIF3021B Manage human factors in remote pilot aircraft systems (RPAS) operations

Release 1

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Modification History

Release 1. Revised unit.

This unit replaces and is equivalent to AVIF3021A Manage human factors in remote pilot aircraft systems (RPAS) operations.

Unit Descriptor

This unit involves the skills, knowledge and attitudes required to manage human factors in a remote pilot aircraft mission including monitoring one's own performance, recognising errors and managing corrective actions, and managing own physiological and psychological conditions.

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

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 human factors in RPAS operations.

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 Unit Descriptor.

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

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| 1 Manage personal performance | <ul style="list-style-type: none">1.1 Pre- and post-mission personal condition is managed to ensure safe outcome of operation1.2 Own performance is monitored against workplace standards, procedures and requirements1.3 Degradation of personal condition and/or limitations are recognised and appropriate strategies implemented to ensure the safe outcome of the mission |
| 2 Recognise threats and errors, and manage preventative and corrective action | <ul style="list-style-type: none">2.1 Relevant environmental or operational threats that are likely to affect the safety of the mission are identified2.2 Countermeasures to manage threats are developed and implemented2.3 Mission progress is monitored and assessed to ensure a safe outcome2.4 Corrective actions are employed as required to ensure a safe outcome2.5 Checklists and standard operating procedures are applied to prevent RPA handling, procedural or communication errors; and committed errors are identified before safety is affected or RPA enters an undesired operational state2.6 RPAS mission environment and crew members are monitored and information is collected and analysed to identify potential or actual errors2.7 Countermeasures are implemented to prevent errors, or action is taken in the time available to correct errors before the RPA enters an undesired operational state |

Required Skills and Knowledge

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

Required knowledge:

- Risk identification, analysis and control
- Relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders
- In Defence context, relevant Defence Orders and Instructions
- Relevant work health and safety (WHS)/occupational health and safety (OHS) procedures and regulations
- Requirements for reporting and documenting any safety incidents and safety critical errors that may have occurred during a mission
- Recognition of undesired RPAS states
- 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.

Required skills:

- Recognise threats and errors and take appropriate corrective action to avoid an undesired RPAS state
- Manage own physiological and psychological condition
- Manage and control stress before and during a mission
- Maintain compliance with relevant regulatory requirements including the avoidance of alcohol and drugs before and during a mission
- Monitor own performance before and during a mission
- Set priorities and manage workload to ensure safe task completion in the time available
- Manage aspects of lifestyle that may impact upon remote pilot performance
- Recognise signs of fatigue and apply appropriate fatigue management techniques
- Identify symptoms of deterioration in physiological/psychological condition and recognise signs of error that might endanger the safety of a mission and take appropriate corrective action
- Apply relevant air safety practices and regulations
- Communicate effectively with others when managing human factors in RPA mission
- Interpret and follow operational instructions and prioritise work
- Operate electronic communication equipment to required protocol

- Work collaboratively with others when managing human factors in RPA mission
- 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 human factors in RPA mission in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise when managing human factors in RPA mission
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the management of human factors in RPA mission
- 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
- Implement WHS/OHS procedures and relevant regulations
- Identify and correctly use equipment required to manage human factors in RPA mission

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 must be undertaken in:	• within visual line of sight in accordance with Day Visual Meteorological Rules
Performance may be demonstrated in:	• single engine RPA • multi engine RPA • synthetic training device approved by the appropriate authority
Aircraft may include:	• Remotely Piloted Aircraft (RPA)/Unmanned aircraft
Crew may include:	• Remote Pilot • Observers
Classes of airspace may be:	• CASA designated class G Airspace • Military control zones
Deterioration of physiological condition may result from such causes as:	• physical illness • injury • disease • fatigue • drugs • alcohol
Causes of stress may include:	• emergency situations • poor planning and prioritisation of tasks • interpersonal conflict • fear and anxiety • lack of sufficient knowledge to adequately manage mission tasks and contingencies • inability to carry out simultaneous multiple tasks • time pressures • unfamiliar environments/situations • illness
Types of errors may include:	• out of tolerance operation of RPAS • abnormal recovery/ landing • misinterpretation of communications • non compliance with instructions
Dependent on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures

Information/documents may include:

- relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders pertaining to human factors and their effect on remote pilot performance
- Civil Aviation Safety Regulations concerning limitations on drug and alcohol use by remote pilots
- in Defence context, relevant Defence Orders and Instructions
- Manual of Standards
- Flight Manuals
- operations manuals
- approved checklists
- workplace procedures and instructions and job specifications
- 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 pertaining to human factors and their effect on remote pilot performance
- in Defence context, relevant Defence Orders and Instructions
- relevant state/territory WHS/OHS legislation
- relevant regulations limiting the use of drugs and alcohol by remote pilots
- relevant Australian Standards

Performance includes tolerances specified in either of:

- relevant licence and RPAS rating requirements of the Civil Aviation Safety Authority (CASA) such as:
- Manual of Standards
- relevant Defence documentation such as:
 - Defence Orders and Instructions
 - Regulator approved curricula and training documentation

Unit Sector(s)

Not applicable.

Competency Field

F – Safety Management