



Australian Government

AVIF0013 Manage human factors in remote pilot aircraft systems operations

Release: 1

AVIF0013 Manage human factors in remote pilot aircraft systems operations

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 human factors in remote pilot aircraft systems (RPAS) operations, in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority (CASA) and national operating standards.

It includes managing personal performance, communicating effectively within an aviation environment, and recognising threats and errors.

This unit addresses aviation non-technical skill requirements (mental, social and personal-management abilities) related to safety management duties of flight operations personnel, 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 as a single operator or within a team 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

F – Safety Management

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Manage personal performance

- 1.1 Pre- and post-operational personal condition is managed to ensure safe and effective performance
- 1.2 Individual performance when conducting remote pilot operations is monitored against workplace standards, procedures and requirements
- 1.3 Degradation of physiological condition is recognised and appropriate strategies are implemented to ensure safe outcome of RPAS operations
- 1.4 Degradation of psychological condition is recognised and appropriate strategies are implemented to ensure the safe outcome of RPAS operations
- 1.5 Sources of stress are identified and managed to maintain a safe aviation operating environment
- 1.6 Limitations to personal performance are communicated to crew/team to maintain a safe RPAS operating environment

2 Communicate effectively within an aviation environment

- 2.1 Effective listening skills are applied
- 2.2 Questions are used to gain additional information and to clarify understanding
- 2.3 Information received is clarified as required, interpreted, and accurately communicated or reported with due observation of ethics and protocols required of the operational environment
- 2.4 Communication is undertaken in varying situations with culturally diverse, familiar and unfamiliar individuals, teams and crews
- 2.5 Appropriate protocols and procedures are followed when using communications systems during routine and contingency aviation operations
- 2.6 Responses are sought from and provided to others in a timely manner

3 Recognise and respond to actual

- 3.1 Potential environmental or operational threats and errors that are likely to affect the safety of RPAS flight are recognised

**and potential threats
and errors**

- 3.2 Hazards are identified, risks are assessed and hazard management is implemented
- 3.3 Actual environmental or operational threats that affect the safety of RPAS flight are recognised
- 3.4 Competing operational priorities and task demands that may represent a threat to the safety of RPAS flight are identified
- 3.5 Threat countermeasures are identified and implemented
- 3.6 RPAS flight progress and effect of countermeasures are monitored and assessed to ensure a safe outcome
- 3.7 Alternative countermeasures are identified and implemented, and effectiveness of countermeasures are re-evaluated
- 3.8 Checklists and standard operating procedures are implemented to prevent RPAS handling, procedural or communication errors
- 3.9 Committed errors are identified and responded to before aircraft enters an undesired state
- 3.10 RPAS are monitored using a systematic scan technique to collect and analyse flight information for potential or actual error recognition purposes
- 3.11 RPAS operating environment is monitored to collect and analyse flight information for potential or actual error recognition purposes
- 3.12 Own performance is self-monitored to recognise potential or actual error occurrence
- 3.13 Countermeasure implementation is undertaken to prevent or correct errors before RPAS enters an undesired state
- 3.14 Countermeasure implementation is undertaken to prevent or correct errors after RPAS enters an undesired state

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.

Unit Mapping Information

This unit replaces but is not equivalent to AVIF3021B Manage human factors in remote pilot aircraft systems (RPAS) operations.

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 AVIF0013 Manage human factors in remote pilot aircraft systems operations

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 and performance criteria on at least one occasion and include:

- adapting to differences in equipment and operating environment in accordance with standard operating procedures
- applying effective listening techniques when managing human factors in remote pilot aircraft systems (RPAS) operations
- applying effective questioning techniques to obtain information and clarify information while communicating with others
- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant air safety practices and regulations
- communicating effectively with others
- identifying symptoms of deterioration in own physiological condition that might endanger the safety of RPAS operations and taking appropriate corrective action
- identifying symptoms of deterioration in own psychological condition that might endanger safety of RPAS operations and taking appropriate corrective action
- identifying and rectifying undesired RPAS states:
 - incorrect RPAS configuration associated with a reduced margin of safety
 - inappropriate RPAS flight mode awareness and selection
 - misapplication of flight controls
 - pilot induced aircraft position
 - pilot induced speed deviation
- implementing contingency plans
- interpreting and following operational instructions and prioritising work
- maintaining compliance with relevant regulatory requirements including avoiding alcohol and drugs before and when conducting RPAS operations
- managing and controlling stress before and when conducting RPAS operations
- managing aspects of lifestyle that may impact on personal performance
- managing and monitoring own physical performance
- managing and monitoring own psychological performance
- modifying activities depending on workplace contingencies, situations and environments
- monitoring and anticipating operational problems and hazards and taking appropriate action
- monitoring work activities in terms of planned schedule

- operating electronic communications equipment to required protocol
- reading, interpreting and following relevant instructions, regulations, procedures, information and signs
- recognising and responding to actual and potential RPAS threats and errors
- recognising signs of fatigue and applying appropriate fatigue management techniques
- reporting or rectifying problems, faults or malfunctions promptly, in accordance with workplace procedures
- responding appropriately to cultural differences in the workplace
- setting priorities and managing workload to ensure safe task completion in available time
- 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 and performance criteria and include knowledge of:

- aeronautical decision-making processes relevant to RPAS operations
- aspects of lifestyle that may adversely influence personal physiological condition
- aspects of lifestyle that may adversely influence personal psychological condition
- crew coordination:
 - basic principles of crew coordination
 - verbal and non-verbal communication factors
 - barriers to communication
 - listening skills
 - assertion skills
 - factors affecting decision-making processes
- communication:
 - communication – attitude
 - personality
 - judgement
 - leadership style
- leadership qualities
- poor crew coordination factors
- effective communication techniques
- effects of stress on personal performance and ways of managing and controlling stressors that may impact on RPAS operations:
 - concepts of fatigue
 - environmental stress symptoms, causes and effects

- ergonomics of control systems and instruments
- principles of stress management
- short- and long-term stressor effects on performance
- stress and arousal interaction
- error management, including error types, causes and consequences
- human factors that may influence personal performance during RPAS operations
- human performance and its limitations, including the senses, memory and situational awareness
- in a Defence context, relevant Defence Orders and Instructions
- relevant work health and safety (WHS)/occupational health and safety (OHS) procedures and regulations
- relevant sections of Civil Aviation Safety Regulations (CASRs) and Civil Aviation Orders:
 - human factors limitations
 - physical examination requirements
 - medical clearances
- requirements for reporting and documenting safety incidents and safety critical errors that may have occurred during an RPAS mission
- RPAS flight instruments visual scanning techniques
- undesired RPAS states:
 - incorrect RPAS configuration associated with a reduced margin of safety
 - inappropriate RPAS flight mode awareness and selection
 - misapplication of flight controls
 - RPAS pilot induced aircraft position
 - RPAS pilot induced speed deviation.

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 processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

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 and appropriate materials, tools, equipment and personal protective equipment currently used in industry.

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