



Australian Government

AVIW0007 Perform aerial mapping and modelling using remote piloted aircraft systems

Release: 1

AVIW0007 Perform aerial mapping and modelling using remote piloted aircraft systems

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 application of skills and knowledge required to conduct aerial mapping and modelling using remote piloted aircraft systems (RPAS), in compliance with the relevant regulatory requirements of the Civil Aviation Safety Authority (CASA) and national operating standards.

It includes conducting pre-flight operations, performing operational area evaluations, and conducting aerial surveys.

This unit addresses aviation technical skill requirements (physical, mental and task-management abilities) related to aircraft operational duties of flight crew and contributes to safe and effective performance in complex aviation operational environments.

Operations are conducted as part of commercial and military aircraft activities across a variety of operational contexts within the Australian aviation industry.

Work is performed independently or under limited supervision within a single-pilot or multi-crew environment.

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

Pre-requisite Unit

Not applicable.

Competency Field

Y – Aircraft Operation and Traffic 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 Conduct pre-flight actions

- 1.1 Own fitness for flight and planned operations is self-assessed
- 1.2 Operational aircraft type is determined for suitability for type of aerial mapping and modelling operation
- 1.3 Aircraft and role equipment are checked and assessed for serviceability prior to commencing flight operations
- 1.4 Required applicable maintenance documentation is compiled and checked for accuracy and completeness
- 1.5 Role equipment calibration is checked and adjusted as required
- 1.6 Planned aerial mapping and modelling operations are assessed for potential or actual hazards
- 1.7 Fuel/power requirements are determined and established within aerial operational plans
- 1.8 Issues relating to aircraft weight, performance, dimensions, load and meteorological conditions are identified and managed

2 Conduct planning and risk management

- 2.1 Suitability of current and forecast weather is determined
- 2.2 Mapping and modelling plan is developed and used as the basis for aerial operations
- 2.3 Potential and actual hazards and operational requirements are identified, risks to aerial mapping and modelling operations are assessed and appropriate risk controls implemented in accordance with the application management plan
- 2.4 Area map is correctly interpreted
- 2.5 Acceptable aircraft performance for aerial mapping and modelling operational conditions is confirmed through performance planning

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| | 2.6 | Normal and abnormal operational communications and signals are confirmed |
| 3 | Conduct aerial mapping and modelling | |
| | 3.1 | Appropriate aerial survey plans are developed for conducting safe aerial mapping and modelling operations |
| | 3.2 | Operating area boundaries are established and environmentally sensitive areas identified, including areas that are noise sensitive, biologically susceptible, populated and urban, and restricted or dangerous |
| | 3.3 | Potential emergency or alternate landing areas are identified and/or established for contingency operations |
| | 3.4 | Environmental hazard factors affecting aerial mapping and modelling operations are considered |
| | 3.5 | Wind velocity and direction are assessed for effect on operations |
| | 3.6 | Mapping/modelling operations are conducted safely in accordance with the flight plan |
| | 3.7 | Aerial mapping/modelling equipment is operated within scope of the plan |
| | 3.8 | Decisions to suspend or continue safe aerial mapping/modelling are taken based on planned or actual operating conditions |
| | 3.9 | Power lines within and outside the treatment area during an aerial survey are identified and accurately assessed to support safe operations in vicinity of power lines, including safe flying parallel to wires |
| 4 | Provide aerial mapping and modelling imagery | |
| | 4.1 | Selected data is imported into data analysis software according to manufacturer procedures |
| | 4.2 | Data is evaluated for preliminary indication of non-conformity and trends or patterns |
| | 4.3 | Findings from data are collated and reported to appropriate persons according to team procedures |
| | 4.4 | Data is stored for later retrieval according to procedures |
| | 4.5 | Final inspection is made to ensure work is to workplace expectations and data is presented ready for use |

- 4.6** Data recording equipment is checked and stored according to workplace procedures
- 4.7** Workplace documentation is processed according to workplace procedures

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

No equivalent unit.

Links

AVI Training Package Companion Volume Implementation Guide available on VET Net: - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=4725260a-0af3-4daf-912b-ef1c2f3e5816>

Assessment Requirements for AVIW0007 Perform aerial mapping and modelling using remote piloted aircraft systems

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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:

- applying relevant aeronautical knowledge
- assessing and checking aircraft and role equipment for flight serviceability
- assessing identified environmental hazard factors
- assessing own fitness for flight and planned operations
- assessing relevant wind velocity and direction
- compiling applicable maintenance documentation
- conducting pre-flight operational planning
- determining relevant aircraft type suitability
- developing, amending and modifying mapping and modelling plans
- establishing and implementing safe operating condition margins during aerial mapping and modelling operations
- establishing operational power requirements for normal and contingency operations
- identifying aerial mapping and modelling hazards
- identifying logistical considerations for management plan
- identifying potential contingency and alternate landing areas
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs.

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:

- aerial human factors, including:
 - heat stress and dehydration
 - in-flight distractions
 - maintaining situational awareness
 - mental and physical fatigue
- aerial mapping and modelling role equipment
- applicable regulations that relate to conducting a safe aerial mapping and modelling operation

- aviation risk and fatigue risk management processes
- Civil Aviation Safety Regulation (CASR) Part 61 Manual of Standards (MOS) Schedule 3 Aeronautical Knowledge relevant to aerial application operations
- factors to be considered when determining payload weights for aerial application
- global navigation satellite system (GNSS) equipment and operator procedures
- low-level flight safety hazards and risks
- meteorological factors affecting aircraft flight performance during low-level flight
- relevant aerodynamics and aircraft performance
- terrain following techniques.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

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

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.

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 materials, tools, equipment and personal protective equipment (PPE) currently used in industry.

Links

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