



Australian Government

AVIY0026 Conduct aerial application operations using remote pilot aircraft systems

Release: 1

AVIY0026 Conduct aerial application operations using remote pilot 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 application operations using remote pilot 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, conducting an aerial survey, applying substances through aerial application, and conducting global navigation satellite system (GNSS) swath guidance equipment operations.

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 in small teams 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.

1 Conduct pre-flight actions

PERFORMANCE CRITERIA

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

- 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 application 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 application operations are assessed for potential or actual hazards
- 1.7** Fuel/power requirements are determined and established within aerial application management plans
- 1.8** Logistical considerations are addressed within scope of application management plan

2 Conduct planning and risk management

- 2.1** Suitability of current and forecast weather is determined
- 2.2** Application management plan is developed and used as the basis for aerial application operations
- 2.3** Potential and actual hazards and operational requirements are identified, risks to aerial application operations are assessed and appropriate risk controls are implemented in accordance with the application management plan
- 2.4** Treatment area map is correctly interpreted
- 2.5** Pilot decision on the safety of the proposed application, including refusing to undertake an application where the risks are considered to be too high, is made as required
- 2.6** Appropriate selection of application pattern and

direction of treatment is made taking into consideration safety, efficiency, hazards and terrain

2.7 Acceptable aircraft performance for aerial application operational conditions is confirmed through performance planning

2.8 Normal and abnormal operational communications and signals are confirmed

3 Perform operational area evaluation

3.1 Operational landing areas are assessed for condition, approach/landing direction, hazard identification and meteorological conditions

3.2 Issues relating to aircraft weight, performance, dimensions, load and meteorological conditions are identified and managed

3.3 Landing areas suitable for conducting aerial application operations are selected

3.4 Aircraft pre-landing/launch checks are performed in accordance with operational procedures

3.5 Appropriate landing and launch techniques are conducted during aerial application operations

3.6 Aerial application operations are performed in accordance with published regulations requirements

3.7 Appropriate aerial survey plans are developed for conducting safe aerial application operations

3.8 Operating area boundaries are established and environmentally sensitive areas are identified, including areas that are noise sensitive, biologically susceptible, populated and urban, and restricted or dangerous

3.9 Potential emergency or alternate landing areas are identified and/or established for contingency operations

3.10 Environmental hazard factors affecting aerial application operations are considered

3.11 Wind velocity and direction are assessed for effect on operations

3.12 Application management plans are amended or modified based on aerial survey assessment results as required

- 3.13** GNSS familiarity is applied to the appropriate level of operational requirement
 - 3.14** Sound judgement is applied during application treatment area pattern selection
 - 3.15** Aircraft is operated at maximum permissible weights for aerial application operations in accordance with manufacturer and regulatory requirements
 - 3.16** Aircraft launch weight is determined within requirements relevant to operating conditions
- 4 Operate within the vicinity of power lines**
 - 4.1** Power lines within and outside the treatment area during an aerial survey are identified
 - 4.2** Power line infrastructure cues are interpreted to aid wire run identification
 - 4.3** Wire heights are accurately assessed to support safe operations in vicinity of power lines, including safe flying parallel to wires
 - 4.4** Other hazards relevant to operations near power lines, such as pole stays, crop height, fences or machinery that may pose a risk, are identified and managed
 - 4.5** Safe command decision whether to fly over or under a wire is made
 - 4.6** Aerial application operations over wires, including adequate safety buffers for pull-up and let down and accurate cut-off and on-off application equipment, are conducted
 - 4.7** Aerial application operations under wires, including assessment of safe clearance distances, are conducted
 - 4.8** Application approaches towards power lines when passage beneath is unachievable are terminated safely
 - 4.9** Human factors that may affect operations near power lines, particularly distraction, short-term memory limitations and inattention (perceptual) blindness are applied during aerial application operations
- 5 Apply substances through aerial application**
 - 5.1** Substances are applied safely in accordance with the application management plan

- 5.2 Correct application height relevant to terrain, application type and meteorological conditions is established and maintained
- 5.3 Appropriate airspeed and flight profile are controlled on entry or re-entry to operational areas
- 5.4 Aerial application equipment is operated within scope of the application management plan
- 5.5 Hazard areas are manoeuvred around with adequate safety margins during application operations
- 5.6 Application flow rates, pressure and product quantities are monitored during application operations
- 5.7 Decisions to suspend or continue safe aerial application operations are made based on planned or actual operating conditions
- 5.8 Clean-up operations and hazard safety checks are conducted on completion of aerial application

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 AVIY0026 Conduct aerial application operations using remote pilot 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
- implementing work health and safety (WHS) procedures and relevant regulations
- assessing and checking aircraft and 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 aircraft launch weights relevant to operational conditions
- determining landing area suitability for normal and contingency operations
- determining relevant aircraft type suitability
- developing, amending and modifying application management plans
- establishing and implementing safe operating condition margins during aerial application operations
- establishing operational energy and power requirements for normal and contingency operations
- identifying aerial application hazards
- identifying logistical considerations for application management plan, including:
 - ground support requirements
 - personal supplies and life support
- 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 application human factors, including:

- heat stress and dehydration
- in-flight distractions
- maintaining situational awareness
- mental and physical fatigue
- planning and risk management associated with aerial applications
- application area evaluation, including:
 - meteorological conditions
 - regulations and requirements with aerial applications
 - environmental hazard factors
- aerial application role equipment
- aircraft configuration and flight characteristics for the aircraft being flown during maximum weight flight and operations
- aircraft flight manual, performance, engine and systems
- applicable regulations that relate to conducting a safe aerial application operation
- aviation risk and fatigue risk management processes
- 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.

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