



Australian Government

AVIY0053 Manage remote pilot aircraft systems energy source requirements

Release: 1

AVIY0053 Manage remote pilot aircraft systems energy source requirements

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

It includes planning energy source requirements, managing energy source system, and refuelling and recharging the RPAS.

This unit addresses aviation technical skill requirements (physical, mental and task-management abilities) related to aircraft operational duties of flight crew and ground personnel 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 RPAS 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

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

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| 1 Plan energy source requirements | 1.1 Total en route and reserve energy source requirements are calculated and determined in accordance with RPAS type-specific requirements |
| | 1.2 Adjusted allowances are made for possible abnormal or emergency situations |
| | 1.3 Energy source calculations are documented in accordance with workplace procedures |
| 2 Manage energy source system | 2.1 Energy source contents and quality are inspected and confirmed before launch |
| | 2.2 RPAS is configured to achieve desired profile, range or endurance status |
| | 2.3 Potential hazards are anticipated and relevant controls implemented |
| | 2.4 Energy source system is operated in accordance with aircraft flight manual (AFM)/pilot's operating handbook (POH) |
| | 2.5 RPAS endurance and energy source status is monitored throughout flight and is modified appropriately as circumstances change |
| | 2.6 Work health and safety (WHS) procedures are followed at all times when carrying out energy source management procedures |
| 3 Refuel/recharge RPAS | 3.1 Appropriate precautions are undertaken to ensure the safety of personnel and property during refuelling/recharging operations |
| | 3.2 RPAS is correctly refuelled/recharged in accordance with AFM/POH, WHS requirements, regulatory requirements and 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

This unit replaces and is equivalent to AVIY3078 Manage remote pilot aircraft systems energy source requirements.

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 AVIY0053 Manage remote pilot aircraft systems energy source requirements

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, performance criteria and range of conditions on at least one occasion and include:

- adapting to differences in equipment and operating environment in accordance with standard operating procedures (SOPs)
- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant legislation and workplace procedures
- applying relevant safety practices and regulations
- calculating energy source allowances, consumption and endurance
- communicating effectively with others
- completing relevant documentation
- identifying and correctly using relevant equipment
- identifying applicable grade of fuel/fuel cell/battery for remote pilot aircraft system (RPAS) type
- implementing contingency plans
- implementing safety precautions during RPAS refuelling/recharging
- implementing work health and safety (WHS) procedures and relevant regulations
- interpreting and following operational instructions and prioritising work
- maintaining compliance with regulatory requirements
- maintaining relevant workplace records
- managing operation of RPAS energy source systems
- modifying activities depending on workplace contingencies, situations and environments
- monitoring and anticipating operational problems and hazards and taking appropriate action
- monitoring energy source usage to achieve desired profile, range or endurance following configuration changes
- monitoring work activities in terms of planned schedule
- monitoring RPAS endurance
- operating electronic communications equipment to required protocol
- performing energy source quality control checks
- planning RPAS energy source requirements
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs

- recognising deteriorating situations impacting on energy source requirements
- reporting and/or rectifying identified problems promptly in accordance with regulatory requirements and workplace procedures
- selecting and using required personal protective equipment (PPE) conforming to industry and WHS standards
- 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, performance criteria and range of conditions and include knowledge of:

- aerodynamic, engine and airframe requirements for RPAS to achieve best range and endurance
- aeronautical decision-making processes
- calculation of conversion between imperial and metric measures
- dangers of using the incorrect grade of fuel/fuel cell/battery
- effective communication
- energy source consumption of RPAS at varying propulsion and systems power settings
- energy source principles relating to RPAS
- energy source reserve requirement for RPAS
- energy source transfer equipment appropriate for the type of RPA and energy source being used
- energy sources, including:
 - battery charger
 - gas
 - liquid fuel
 - other power producing source
 - other renewable energy
 - power producing sources that power the on-board systems and thrust producing components of the specific RPAS
 - solar
- energy source allowances, including:
 - en route and destination meteorological forecasts
 - fixed energy source reserves
 - holding requirements
 - operational tasking requirements
- error management, including error types, causes and consequences
- factors affecting energy source consumption
- hazards that exist when refuelling/recharging RPAS and related hazard control procedures

and precautions

- methods of identifying applicable grade of fuel/fuel cell/battery for RPAS type
- mixture leaning or power conservation techniques
- operation of the specific RPAS energy source system
- principles of RPAS energy source systems
- problems that may occur when managing RPAS energy source and appropriate action that should be taken in each case
- regulations and procedures for refuelling/recharging RPAS
- relevant sections of Civil Aviation Safety Regulations (CASRs) and Civil Aviation Orders
- relevant WHS and environmental procedures and regulations
- stress, workload and time pressure management.

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 PPE currently used in industry.

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