



Australian Government

AVIY3077 Manage remote pilot aircraft systems in abnormal flight situations

Release: 1

AVIY3077 Manage remote pilot aircraft systems in abnormal flight situations

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) in abnormal flight situations, in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority and national operating standards.

It includes managing loss of thrust after take-off, performing forced recovery following loss of thrust, and recognising and recovering from stall. It also includes recognising and recovering from an incipient spin, conducting precautionary search and recovery, and managing RPAS abnormal and emergency situations.

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 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 within a single-pilot or multi-crew RPAS 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

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 Manage loss of thrust after take-off

- 1.1 Loss of thrust is identified as an abnormal situation
- 1.2 RPAS is controlled at all times in accordance with workplace procedures
- 1.3 Immediate recovery actions are performed in accordance with aircraft flight manual (AFM) and pilot's operating handbook (POH)
- 1.4 A recovery area within gliding distance is selected, and emergency procedures are performed in accordance with AFM/POH
- 1.5 Appropriate flight profile is flown to enable controlled recovery
- 1.6 Controlled recovery is achieved in accordance with workplace procedures

2 Perform forced recovery following loss of thrust

- 2.1 Control of RPAS is maintained at all times
- 2.2 Immediate actions are performed in accordance with AFM/POH
- 2.3 A recovery area within gliding distance is selected and RPAS is manoeuvred to nominated recovery area as required
- 2.4 Consideration is given to restarting the engine and engine is restarted as required
- 2.5 Flight profile is flown from that a controlled recovery can be achieved
- 2.6 Controlled recovery is achieved in accordance with workplace procedures

3 Recognise and recover from stall

- 3.1 Stall signs and symptoms are recognised
- 3.2 Height loss, consistent with RPAS type, is identified
- 3.3 RPAS altitude and power settings are adjusted to resume normal flight on advent of stall

4 Recognise and recover from an incipient spin	4.1	Incipient spin signs and symptoms are recognised
	4.2	Recovery at incipient spin stage is performed and controlled flight is resumed
	4.3	Recovery at incipient spin stage during a turn is performed and controlled flight is resumed
5 Conduct precautionary search and recovery	5.1	Search and recovery intentions are communicated to RPAS crew
	5.2	Aircraft is configured for appropriate inspection flight profile
	5.3	Recovery area is selected and inspected for suitability of safe approach, recovery distance, surface and obstacle clearance
6 Manage RPAS abnormal and emergency situations	6.1	Abnormal and emergency situations are identified, and managed in accordance with relevant emergency procedures and regulatory requirements
	6.2	Appropriate emergency procedures are followed in accordance with AFM/POH and published procedures while maintaining control of the RPAS
	6.3	Control of RPAS is maintained at all times

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.

- Abnormal situations must include one or more of the following:
- engine failure at take-off
 - engine failure during flight
 - forced landing
 - incipient spin
 - RPAS abnormal operational situations involving equipment, instruments, control, airframe, fire or other emergency stall

Unit Mapping Information

This unit replaces and is equivalent to AVIY3077A Manage remote pilot aircraft systems (RPAS) in abnormal flight situations.

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 AVIY3077 Manage remote pilot aircraft systems in abnormal flight situations

Modification History

Release 1. This is the first release of this unit of competency in the AVI Aviation Training Package.

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
- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant legislation and workplace procedures
- communicating effectively with others when managing abnormal remote pilot aircraft system (RPAS) flight situations including using a radio
- compensating for the secondary effects of controls
- completing relevant documentation
- ensuring compliance with relevant emergency procedures and regulatory requirements
- identifying and correctly using relevant equipment
- identifying symptoms of incipient and developed stalls
- implementing contingency plans
- implementing work health and safety (WHS)/occupational health and safety (OHS) procedures and relevant regulations
- interpreting and following operational instructions and prioritising workload
- 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
- operating the RPAS within its limitations
- performing various functions simultaneously as required
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- recognising situations that may require a precautionary recovery
- reporting and/or rectifying identified problems promptly, in accordance with regulatory requirements and workplace procedures
- selecting and using relevant equipment
- selecting and using required personal protective equipment conforming to industry and WHS/OHS standards
- using instruments and displays to monitor RPAS performance

- working collaboratively with others when managing abnormal RPAS flight situations including using a radio
- 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:

- action plan to be used in an engine failure in flight, other than after launch
- action planning processes
- action required to recover from a stall during a turn
- actions required to recover from an incipient spin (wing drop at point of stall)
- actions to be conducted following a forced recovery
- aeronautical decision-making processes
- all applicable checklist items
- causes of stalling
- controllability checks and external inspection procedures
- difference between a spin and spiral dive
- ditching procedures as specified in the AFM/POH or company operations manual
- effective communication
- effects of a partial engine failure on RPA performance with respect to straight and level flight and turning while maintaining level flight
- emergency radio procedures
- engine failure emergency procedures
- error management, including error types, causes and consequences
- factors affecting a stall
- factors to be considered when deciding whether to recover immediately or proceed to a more suitable recovery area after a partial engine failure
- fatigue risk management
- functions and effects of all RPAS flight controls
- hazards associated with flying operations at low level
- hazards associated with turning an RPA at slow speed using large angles of bank while maintaining level flight following a partial engine failure after launch
- height loss while gliding including minimum height to achieve safe turns towards selected recovery area
- human performance and its limitations, including the senses, memory and situational

awareness

- in a Defence context, relevant Defence Orders and Instructions
- potential dangers of unbalanced flight at slow speed
- practical action plans for engine failure after launch
- principles of aerodynamics
- recovery techniques
- relevant sections of Civil Aviation Regulations and Orders pertaining to abnormal flight situations
- spin entry and recovery techniques
- stress, workload and time pressure management
- symptoms of the approach to the stall and the stall
- WHS/OHS and environmental procedures and regulations.

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.

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

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

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=4725260a-0af3-4daf-912b-ef1c2f3e5816>

