



Australian Government

AVIY0086 Manage abnormal situations and emergencies - helicopter

Release: 1

AVIY0086 Manage abnormal situations and emergencies - helicopter

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 manage abnormal and emergency helicopter flight situations in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority (CASA) and national operating standards, specifically H7 Manage abnormal situations and emergencies – helicopter.

It includes managing a forced landing from level flight after take-off or on approach, managing an engine failure at the hover or during taxi, managing a tail rotor malfunction, and managing a jammed flight control system. It also includes managing adverse aerodynamic conditions and managing a malfunction of the helicopter operating systems.

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.

If the Manual of Standards is amended after the publication of this unit of competency, the delivery of the unit must be in accordance with the latest Manual of Standards as published by CASA.

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 Manage a forced landing from level flight

- 1.1** Engine failure is identified correctly and control of helicopter maintained
- 1.2** Helicopter in autorotative flight is established and maintained
- 1.3** Balance is maintained
- 1.4** Rotor revolutions per minute (RRPM) is controlled within limitations
- 1.5** Suitable landing area is selected
- 1.6** Appropriate radio transmissions are made if time permits
- 1.7** Emergency checks are performed
- 1.8** Passengers are briefed as appropriate
- 1.9** Autorotative landing is performed and helicopter is secured

2 Manage engine failure during take-off and on final approach

- 2.1** Engine failure is identified correctly and control of helicopter is maintained
- 2.2** Helicopter in autorotative flight is established and maintained
- 2.3** Skids are maintained parallel to direction of travel
- 2.4** Autorotative landing or power termination is performed and helicopter is secured

3 Manage engine failure during hover or hover taxi

- 3.1** Engine failure is correctly identified during hover, yaw and drift are controlled, and controlled touchdown is performed

- | | | |
|----------|---|---|
| | 3.2 | Engine failure is correctly identified during hover taxi, yaw and drift are controlled, skids are maintained parallel to direction of travel, controlled touchdown is performed and ground-slide is controlled |
| 4 | Manage tail rotor malfunctions | |
| | 4.1 | Tail rotor malfunction is correctly identified during flight, control of the helicopter is maintained, a suitable landing area is selected, helicopter is manoeuvred to a position where the safest landing is ensured and the helicopter is landed |
| | 4.2 | Tail rotor malfunction is correctly identified during hover, control of the helicopter is maintained, a suitable landing area is selected and the helicopter is landed |
| 5 | Manage jammed flight control systems | |
| | 5.1 | Jammed flight controls are correctly identified |
| | 5.2 | Any objects that are causing the jam are located and removed |
| | 5.3 | Control of the helicopter is maintained and the malfunction is rectified, if applicable |
| | 5.4 | Helicopter is manoeuvred to the safest landing area available |
| 6 | Manage helicopter systems malfunctions | |
| | 6.1 | Control of the helicopter is maintained |
| | 6.2 | The system malfunction is identified and confirmed |
| | 6.3 | The malfunction is managed appropriately |
| | 6.4 | The system is isolated where applicable |
| | 6.5 | Emergency procedures are performed |

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.

Non-essential conditions may be found in the AVI Aviation Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to AVIY0064 Manage abnormal and emergency helicopter 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 AVIY0086 Manage abnormal situations and emergencies - helicopter

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 and performance criteria 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 helicopter aeronautical knowledge
- applying relevant legislation and workplace procedures
- communicating effectively with others
- completing relevant documentation
- identifying and correctly using relevant equipment
- implementing contingency plans
- implementing work health and safety (WHS)/occupational health and safety (OHS) procedures and relevant regulations
- interpreting/using a helicopter manufacturer height/velocity diagram/graph
- modifying activities depending on workplace contingencies, situations and environments
- monitoring and anticipating operational problems and hazards and taking appropriate actions
- monitoring work activities in terms of planned schedule
- operating electronic communications equipment to required protocol
- reading, interpreting and following relevant regulations, instructions, procedures, information and signs
- 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 (PPE) conforming to industry and WHS/OHS standards
- setting local or area barometric pressure adjusted for sea level (QNH) at appropriate stages of flight
- solving problems associated with managing a helicopter in abnormal and emergency situations
- using instruments to monitor helicopter performance
- 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:

- actions to be conducted following a forced landing
- aerodynamic factors affecting helicopter flight performance
- all applicable checklist items
- applicable helicopter system malfunctions, including:
 - cautions, warnings and indications
 - engine failure/s
 - tail rotor malfunction
 - jammed or malfunctioning flight controls
 - critical flight controls:
 - fuel systems
 - hydraulics
 - flight instruments
- application of a height/velocity diagram/graph
- basic principles of aerodynamics
- Civil Aviation Safety Regulation (CASR) Part 61 Manual of Standards Schedule 3 Aeronautical Knowledge relevant to aeroplane or helicopter operations
- emergency procedures
- emergency radio procedures
- functions and effects of all helicopter controls
- hazards and risks when managing a helicopter in abnormal and emergency flight situations and precautions for controlling the risks
- impact of high gross weight and high-density altitude on key hazards
- key hazards and typical causal factors and contributing operational situations, avoidance and recognition of symptoms and recovery techniques, including:
 - vortex ring state
 - ground resonance
 - loss of tail rotor effectiveness (LTE)
 - low 'g' force and mast bumping
 - overpitching or low rotor revolutions per minute (RRPM) – rotor stall
 - retreating blade stall
 - recirculation
 - dynamic rollover
- local air traffic control (ATC) procedures and instructions
- low-level weather and topography effects
- managing system malfunctions

- practical action plans for use in an engine failure
- prioritising tasks when managing malfunctions
- problems that may occur when managing a helicopter in abnormal and emergency flight situations and appropriate action that should be taken in each case
- procedures for using performance charts
- purpose and functions of helicopter systems
- relevant sections of CASRs and Civil Aviation Orders pertaining to abnormal flight situations
- relevant WHS and environmental procedures and regulations
- threat and error management (TEM), including:
 - flight planning to avoid hazardous or adverse aerodynamic flight conditions and regimes
 - techniques to avoid a potentially hazardous situation developing while in flight.

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.

Links

Companion Volume Implementation Guides are found in VETNet' -

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