



Australian Government

AVIY4012 Control helicopter in hovering flight

Release: 1

AVIY4012 Control helicopter in hovering flight

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 control a helicopter in hovering flight, in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority and national operating standards.

It includes lifting off to hover and performing hovering checks, hovering a helicopter in cross and tail winds, performing turns around the mast, conducting turns around nose and tail, and performing sideways and backwards flight. It also includes landing from the hover, managing a mishandled landing, and managing a mishandled lift off.

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 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 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 Lift off to hover and perform hover checks

- 1.1 Aircraft performance is calculated for flight
- 1.2 Pre-take-off checks are performed
- 1.3 Flight controls are set to prepare for lift-off to hover
- 1.4 Flight and power controls are used to lift helicopter off the surface to a stable hover at appropriate height for helicopter while controlling heading
- 1.5 Wind effect is anticipated and accounted for with appropriate control inputs to maintain position over nominated hover point
- 1.6 Awareness of adverse effects of rotor downwash on surrounding aircraft, people, objects and environment is applied
- 1.7 Flight control functions, centre of gravity and hover power checks are performed
- 1.8 Hover taxi manoeuvre is commenced, maintained and stopped at a constant and safe hover height, while maintaining engine power and rotor speed (RRPM) within limits
- 1.9 Coordinated corrective action is used to counter wind effects
- 1.10 Implications of environmental conditions are assessed and appropriate compensation is made
- 1.11 Helicopter is maintained clear of obstructions
- 1.12 Lookout is maintained using a systematic scan technique at a rate determined by traffic density, visibility or terrain

2 Hover helicopter in cross and tail winds

- 2.1 Helicopter is maintained in hovering flight remaining over a nominated hover point at a nominated height and heading in cross and tail winds
- 2.2 Coordinated corrective action is used to maintain a constant rate of turn and to counter wind effects

- | | |
|--|--|
| 3 Perform turns around mast | <p>3.1 Helicopter is turned around the mast while maintaining a constant height and specified rate of turn over nominated hover point</p> <p>3.2 Turn is completed on nominated heading</p> <p>3.3 Controlled corrective action is used to control effects of wind gusts</p> <p>3.4 Helicopter is maintained clear of obstructions</p> <p>3.5 Lookout is maintained using a systematic scan technique at a rate determined by traffic density, visibility, obstructions and terrain</p> <p>3.6 RPM is managed within limits during turn</p> |
| 4 Perform turns around nose and tail | <p>4.1 Helicopter is turned around nominated point on or forward of helicopter nose while maintaining a constant height and specified rate of movement around point</p> <p>4.2 Helicopter is turned around nominated point on or aft of helicopter tail while maintaining a constant height and specified rate of movement around point</p> <p>4.3 Controlled corrective action is taken to counter effects of wind gusts</p> <p>4.4 Helicopter is maintained clear of obstructions during turning manoeuvres</p> <p>4.5 Lookout is maintained using a systematic scan technique at a rate determined by traffic density, visibility, obstructions and terrain</p> <p>4.6 Turns in a specified direction are commenced and stopped at a specified heading</p> <p>4.7 RPM is managed within limits during turn</p> <p>4.8 Ground track is maintained at a constant distance from nominated point</p> <p>4.9 Anti-torque pedals are used to ensure helicopter nose or tail is pointed at nominated turning point</p> |
| 5 Perform sideways and backwards flight | <p>5.1 Helicopter is transitioned from static hover to sideways and rearward flight</p> |

- 5.2 Lookout is maintained in direction of flight using a systematic scan technique at a rate determined by traffic density, visibility, obstructions and terrain
- 5.3 Rearward movement is only conducted after visually checking behind helicopter, and height is adjusted as required
- 5.4 Helicopter directional control is maintained and manoeuvred clear of obstructions during sideways and backwards flight manoeuvres
- 5.5 RPM is managed within limits during turn
- 5.6 Rate of movement of helicopter is maintained at a safe speed
- 5.7 Sideways and rearward flight is terminated over nominated hover point
- 6 Land from the hover**
 - 6.1 Pre-landing checks are completed as required
 - 6.2 Helicopter is lowered onto nominated point from hovering flight without adverse longitudinal, lateral, yawing or rolling movements
 - 6.3 Helicopter stability on landing gear is ensured prior to fully lowering collective
 - 6.4 After-landing checks are performed
- 7 Manage a mishandled landing**
 - 7.1 Appropriate action is taken to identify when an adverse landing situation is developing
 - 7.2 Appropriate action is taken to either land aircraft or discontinue landing and return to hover safely
- 8 Manage a mishandled lift off**
 - 8.1 Appropriate action is taken to identify when an adverse lift off situation is developing
 - 8.2 Appropriate action is taken to discontinue lift off and return to ground safely

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 AVIY4012B Control helicopter in hovering flight.

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 AVIY4012 Control helicopter in hovering flight

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
- 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 and following operational instructions and prioritising work
- 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
- 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 controls/equipment including throttle, rotor controls, anti-torque pedals and collective and cyclic pitch controls
- selecting and using required personal protective equipment 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 when controlling a helicopter in hovering flight
- using instruments to monitor helicopter performance
- working collaboratively with others when controlling helicopter in hovering flight
- 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:

- aerodrome and helicopter landing site markings
- aircraft operational limitations
- application of a height/velocity graph
- calculation of aircraft performance for flight
- CASR Part 61 Manual of Standards Schedule 3 Aeronautical Knowledge relevant to helicopter operations
- dynamic rollover
- effect of wind on rotor blade control (blade sailing)
- effects of rotor wash
- ground resonance
- hazards and risks when controlling a helicopter in hovering flight and precautions for controlling the risks
- helicopter braking and steering systems
- helicopter hovering procedures
- hover checks
- how to use of fire extinguisher system fitted to helicopter being used
- landing a helicopter
- light and marshalling signals
- local air traffic control procedures
- local noise abatement procedures and curfews
- maintaining hovering flight in a range of operational conditions
- making a transition from static hover to sideways and rearward flight
- managing a mishandled landing
- managing a mishandled lift off
- operating on different surfaces, including sealed and unsealed surfaces
- operational and start limitations of typical helicopters
- pre-take-off checks
- recirculation
- relevant helicopter/equipment characteristics
- relevant sections of aircraft flight manual (AFM)/pilot's operating handbook (POH)
- relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders
- relevant WHS/OHS and environmental procedures and regulations
- turning a helicopter around the mast.

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>