



Australian Government

AVIY0089 Operate helicopter solo in the circuit area

Release: 1

AVIY0089 Operate helicopter solo in the circuit area

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 operate helicopter solo in the circuit area in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority (CASA) 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 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

PERFORMANCE CRITERIA

Elements describe the essential outcomes.

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

1 Conduct operational communication using an aeronautical radio

- 1.1** Effective communication is maintained with others on operational matters
- 1.2** Communication is conducted effectively in unfamiliar, stressful or non-standard situations
- 1.3** Phonetic alphabet is applied
- 1.4** Numbers are transmitted
- 1.5** Transmissions are made using standard aviation phraseology
- 1.6** Plain English is used effectively when standard phraseology is inadequate, receiving appropriate responses to transmissions
- 1.7** Transmissions are responded to, and correct actions taken
- 1.8** Communication errors and misunderstandings are recognised and managed effectively
- 1.9** Clarification is sought in the time available if a message is unclear or uncertainty exists
- 1.10** A variety of regional accents are understood and respected

2 Maintain effective lookout

- 2.1** Traffic separation is maintained using a systematic visual scan technique at a rate determined by traffic density, visibility and terrain
- 2.2** Radio listening watch are maintained, and transmissions interpreted to determine traffic location and intentions
- 2.3** Airspace-cleared procedure is performed before commencing any manoeuvre

3 Assess situations and make decisions

- 3.1** Problems are identified

- 3.2 Problems are analysed
 - 3.3 Solutions are identified
 - 3.4 Solutions and risks are assessed
 - 3.5 A course of action is decided on
 - 3.6 Plans of action are communicated
 - 3.7 Tasks are allocated for action, as relevant
 - 3.8 Actions are taken to achieve optimum outcomes for the operation
 - 3.9 Progress is monitored against plan
 - 3.10 Plan is re-evaluated to achieve optimum outcomes
- 4 **Lift off to hover and perform hover checks**
 - 4.1 Aircraft performance is calculated for flight
 - 4.2 Pre-take-off checks are performed
 - 4.3 Helicopter lift-off is completed
 - 4.4 Hover taxi manoeuvre is commenced, maintained and stopped at a constant and safe hover height, while maintaining engine power and rotor revolutions per minute (RRPM) within limits
 - 4.5 Helicopter remains clear of the manufacturer's 'height-velocity diagram avoid area' when applicable
 - 4.6 Aborted take-off from the hover is performed
- 5 **Hover helicopter in cross- and tail-winds**
 - 5.1 Helicopter is maintained in hovering flight remaining over a nominated hover point at a nominated height and heading in cross- and tail-winds
 - 5.2 Controlled corrective action is used to maintain a constant rate of turn and to counter wind effects
- 6 **Land from the hover**
 - 6.1 Pre-landing checks are completed as required
 - 6.2 Touchdown point is nominated

- 6.3** Helicopter is lowered onto nominated point from hovering flight without adverse longitudinal, lateral, yawing or rolling movements
 - 6.4** Helicopter is landed at a suitable rate and maintain a constant heading without lateral or longitudinal drift while maintaining the requisite RRPM during the landing sequence
 - 6.5** Helicopter stability on landing gear is ensured prior to fully lowering collective
 - 6.6** Post-landing checks are performed
- 7 Take off helicopter**
 - 7.1** Transition to forward flight is performed and take-off path is maintained
 - 7.2** Translational lift effect is recognised and controlled
 - 7.3** Recommended or nominated climb speed is accelerated to and maintained
 - 7.4** Helicopter is controlled to remain outside of the height-velocity (Hv) avoid curve, balanced and trimmed, as applicable
 - 7.5** Obstacle clearance is ensured
 - 7.6** Correct power and attitude are maintained for the profile and indicated airspeed (IAS) to be flown
 - 7.7** Landing gear is retracted after a positive rate of climb is established, as applicable
 - 7.8** Noise abatement procedures are complied with, where applicable
 - 7.9** Post-take-off checks are completed
- 8 Approach to hover**
 - 8.1** Suitable termination point is selected
 - 8.2** Checklists are completed as applicable for manoeuvre
 - 8.3** Correct approach angle and track is intercepted and maintained

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| | 8.4 | Power and attitude are adjusted to achieve a controlled decreasing closure rate to the termination point |
| | 8.5 | Landing gear is aligned to the planned approach direction |
| | 8.6 | Loss of translational lift is recognised and controlled |
| | 8.7 | RRPM is controlled within limits |
| | 8.8 | Approach is terminated to the hover over the termination point |
| 9 | Perform go-round procedure | |
| | 9.1 | Adverse conditions that require the execution of a go-round are recognised |
| | 9.2 | Go-round is initiated safely in the time available |
| | 9.3 | Power and attitude are set to achieve safe climb at appropriate IAS |
| | 9.4 | Control throughout go-round procedure is maintained |
| | 9.5 | Landing gear is aligned with the planned take-off direction until the point at which balanced flight is required |
| | 9.6 | Post-take-off checks performed |
| 10 | Perform circuits and approaches | |
| | 10.1 | Descent is planned and conducted |
| | 10.2 | Traffic pattern is joined |
| | 10.3 | Safe separation is maintained from other traffic joining, departing or in the traffic pattern |
| | 10.4 | Upwind is tracked on extended centreline to 500 ft or according to local safety conditions |
| | 10.5 | Circuit is adjusted to ensure spacing with preceding traffic |
| | 10.6 | Helicopter is established on cross-wind tracking 90° to the runway |

- 10.7** Helicopter is established on downwind at circuit height tracking parallel to the runway at a specified distance from the runway
- 10.8** Pre-landing checks are performed
- 10.9** Aircraft is established on base leg a specified distance from helicopter landing site
- 10.10** Rate of descent to maintain approach path is commenced and controlled
- 10.11** Helicopter is aligned with specified runway when applicable
- 10.12** Helicopter is established on final approach in approach configuration not below 500 ft above ground level (AGL) or according to local safety conditions
- 10.13** Termination point is selected
- 10.14** Closure rate to the termination point is maintained
- 10.15** Helicopter is maintained on extended centreline, approach slope and approach speed
- 10.16** Speed is adjusted to compensate for wind gusts
- 10.17** Final approach checks are completed
- 10.18** Helicopter is balanced and trimmed, as applicable
- 10.19** Approach at the termination point is completed

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 not equivalent to AVIY0060 Control helicopter in hovering flight.

This unit replaces and is not equivalent to AVIY0061 Take off helicopter and approach to hover.

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 AVIY0089 Operate helicopter solo in the circuit area

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 and following operational instructions and prioritising work
- lifting off helicopter, including the following:
 - setting flight controls correctly to prepare for lift-off to the hover at the location
 - using correct flight and power controls to lift helicopter off the surface to a stable hover at the appropriate hover height for the helicopter while controlling heading
 - anticipating and taking account of wind effect with appropriate control inputs to maintain position over hover point
 - demonstrating awareness of rotor downwash on surrounding aircraft, people, objects and environment
 - confirming the proper functioning of the flight controls and the centre of gravity and power required to hover are within limits
- 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 (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 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
- Civil Aviation Safety Regulation (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 (ATC) 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 CASRs and Civil Aviation Orders
- relevant WHS/OHS and environmental procedures and regulations
- turning a helicopter around the mast.

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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