



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **AVIY4019B Operate helicopter at low level**

**Revision Number: 1**

## **AVIY4019B Operate helicopter at low level**

### **Modification History**

Not applicable.

### **Unit Descriptor**

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This unit involves the skills and knowledge required to operate a helicopter at low level, including planning low level operations, manoeuvring a helicopter at low level, performing quick stop manoeuvres, executing reversal turns, and executing a forced landing from below 200 feet AGL. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

### **Application of the Unit**

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Work must be carried out in compliance with the relevant licence and aircraft rating requirements of the Civil Aviation Safety Authority (CASA) and/or ADF; airspace control requirements and Day Visual Flight Rules (Day VFR); and aircraft control principles, regulations, safety codes, protocols and procedures required when operating a helicopter at low level.

Use for ADF Aviation is to be in accordance with relevant Defence Orders and Instructions and applicable CASA compliance.

Operations are conducted as part of commercial or military aircraft activities across a variety of operational contexts within the Australian aviation industry.

Work is performed under limited supervision.

This unit is nominally packaged a Certificate IV.

### **Licensing/Regulatory Information**

Not applicable.

## **Pre-Requisites**

Not applicable.

## **Employability Skills Information**

**Employability Skills**                      This unit contains employability skills.

## **Elements and Performance Criteria Pre-Content**

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<b>1 Plan low level operations</b>	<ul style="list-style-type: none"><li>1.1 The requirement to operate at low level is identified and justified in accordance with workplace procedures and regulatory requirements</li><li>1.2 The risks in the low level operations are analysed and an appropriate decision is made concerning the safe conduct of these operations</li><li>1.3 Action plans for the operation are formulated to ensure the safe and effective operation of the helicopter at low level</li><li>1.4 Unplanned manoeuvres are avoided</li><li>1.5 Compliance is maintained with air traffic control instructions, regulatory and reporting requirements</li></ul>
<b>2 Manoeuvre helicopter at low level</b>	<ul style="list-style-type: none"><li>2.1 Low level flight manoeuvres are performed safely using pre-planned manoeuvres at planned altitudes</li><li>2.2 Effects of wind velocity, false horizons, rising ground and mountainous terrain are managed, and control of the helicopter is correctly maintained</li><li>2.3 Pilot's visual attention is focused outside the cockpit</li><li>2.4 Lookout is maintained using a systematic scan technique at a rate determined by traffic density, visibility and/or terrain</li><li>2.5 Natural horizon is used as primary attitude reference</li><li>2.6 Nose of aircraft is cleared to ensure forward visibility when appropriate</li><li>2.7 Situation awareness is maintained at all times during the low level manoeuvres</li><li>2.8 Helicopter is safely manoeuvred adjacent to power lines and wires</li><li>2.9 All obstacles are identified and are appropriately and safely avoided</li><li>2.10 Personnel, animals, vehicles and buildings are identified and are appropriately and safely avoided</li><li>2.11 Height is maintained by visual reference to the earth's surface when below 500 AGL</li><li>2.12 Weather conditions are monitored and appropriate responses are made</li><li>2.13 Fuel status is monitored and appropriate responses are made</li><li>2.14 Local and published noise abatement requirements and curfews are observed</li></ul>
<b>3 Perform quick stop manoeuvre</b>	<ul style="list-style-type: none"><li>3.1 Deceleration of the helicopter from forward flight is initiated while either into wind or down wind to terminate to the hover into wind at a nominated hover point</li></ul>

ELEMENT	PERFORMANCE CRITERIA
	3.2 Deceleration manoeuvre is conducted within the time and distance limitations specified whilst maintaining a constant height above the surface
	3.3 Wind velocity is estimated and is appropriately taken into account in manoeuvres
	3.4 Helicopter inertia is anticipated and appropriate allowance is made in manoeuvres
	3.5 Situation awareness is maintained at all times during a quick stop manoeuvre
	3.6 Obstructions are identified and are appropriately and safely avoided
<b>4 Execute reversal turn</b>	4.1 Adverse conditions requiring reversal turn are recognised and manoeuvre is commenced without delay
	4.2 Helicopter is turned steeply through 180° manoeuvring in the horizontal and vertical planes, without exceeding 30° pitch
	4.3 Straight and level flight is resumed at entry height
<b>5 Execute forced landing from below 200 feet AGL</b>	5.1 Emergency situations requiring a forced landing are identified
	5.2 Immediate actions are performed in accordance with Flight Manual/POH
	5.3 A landing area within autorotative distance is selected and an appropriate action plan is formulated
	5.4 Emergency procedures are performed in accordance with Flight Manual/POH and the established action plan
	5.5 Air Traffic Service and other traffic are advised of intentions during the emergency
	5.6 Helicopter is landed in accordance with the Flight Manual/POH and the established action plan

## Required Skills and Knowledge

### REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

#### Required knowledge:

- Relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders
- Relevant OH&S and environmental procedures and regulations
- Critical operational conditions, including retreating blade stall, vortex ring, overpitching, loss of anti-torque effectiveness, negative g effects
- Purpose and functions of helicopter systems
- Functions and effects of all helicopter controls, including rotor RPM management (governors) and engine acceleration response
- Meteorological factors affecting helicopter flight performance during low level flight
- Terrain following techniques
- Air traffic requirements
- Safety hazards and risks of low level helicopter operations and precautions for controlling the risks
- Procedures for the use of performance charts
- Application of the height/velocity diagram/graph
- Local air traffic control procedures and instructions
- Problems that may occur when operating a helicopter at low level and appropriate action that should be taken in each case

#### Required skills:

- Solve problems associated with the operation of a helicopter at low level
- Use instruments to monitor helicopter performance during the operation of a helicopter at low level
- Apply knowledge to the operation of a helicopter at low level
- Read and interpret instructions, procedures and information relevant to the operation of a helicopter at low level
- Identify and justify a decision to operate a helicopter at low level
- Use instruments to monitor helicopter performance during the operation of a helicopter at low level
- Communicate effectively with others when operating a helicopter at low level
- Read and interpret instructions, regulations, procedures and other information relevant to a helicopter at low level
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to operating a helicopter at low level

## **REQUIRED KNOWLEDGE AND SKILLS**

- Operate electronic communication equipment to required protocol
- Work collaboratively with others when operating a helicopter at low level
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Promptly report and/or rectify any identified problems that may occur when operating a helicopter at low level in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise when operating a helicopter at low level
- Apply precautions and required action to minimise, control or eliminate hazards that may exist when a helicopter is at low level
- Monitor and anticipate operational problems and hazards and take appropriate action
- Monitor work activities in terms of planned schedule
- Modify activities dependent on differing workplace contingencies, situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Adapt to differences in equipment and operating environment in accordance with standard operating procedures
- Select and use required personal protective equipment conforming to industry and OH&S standards
- Implement OH&S procedures and relevant regulations
- Identify and correctly use equipment required when operating a helicopter at low level

# Evidence Guide

## EVIDENCE GUIDE

The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

### **Critical aspects for assessment and evidence required to demonstrate competency in this unit**

- The evidence required to demonstrate competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
  - the underpinning knowledge and skills
  - relevant legislation and workplace procedures
  - other relevant aspects of the range statement

### **Context of and specific resources for assessment**

- Performance is demonstrated consistently over a period of time and in a suitable range of contexts
- Resources for assessment include:
  - a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or
  - access to an appropriate range of relevant operational situations in the workplace
- In both real and simulated environments, access is required to:
  - relevant and appropriate materials and equipment, and
  - applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

### **Method of assessment**

- Assessment of this unit must be undertaken by a registered training organisation
- As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
- Practical assessment must occur:
  - through activities in an appropriately simulated environment at the registered training organisation, and/or
  - in an appropriate range of situations in the workplace

## Range Statement

### RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

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|--|--|
| Tasks may be undertaken in:                                  | <ul style="list-style-type: none"><li>• variable weather conditions in accordance with Day Visual Flight Rules</li></ul>   |
| Performance may be demonstrated in:                          | <ul style="list-style-type: none"><li>• single engine helicopter</li><li>• multi engine helicopter</li><li>• single main rotor helicopter</li><li>• multi main rotor helicopter</li><li>• variable air traffic conditions</li><li>• variable flight situations</li><li>• abnormal situations</li></ul> |
| Performance may be demonstrated on an helicopter with:       | <ul style="list-style-type: none"><li>• fully functioning dual controls</li><li>• an electronic intercom system</li><li>• dual control brakes</li><li>• wheeled and/or skidded undercarriages</li></ul>  |
| Crew may include:  | <ul style="list-style-type: none"><li>• single pilot</li><li>• multi crew</li></ul>  |
| Limitations may be imposed by:                               | <ul style="list-style-type: none"><li>• local noise abatement requirements and curfews</li></ul>   |
| Checklists may include:                                      | <ul style="list-style-type: none"><li>• pre-flight</li><li>• pre-start</li><li>• engine start</li><li>• pre-taxi</li><li>• take-off</li><li>• after take-off</li><li>• approach and landing</li><li>• shutdown</li><li>• post-flight</li></ul>   |
| Classes of airspace are:                                     | <ul style="list-style-type: none"><li>• those designated by the Civil Aviation Safety Authority</li></ul>  |
| Operational hazards during low level operations may include: | <ul style="list-style-type: none"><li>• variable surface conditions</li><li>• other aircraft</li><li>• loose objects</li><li>• personnel</li><li>• animals</li><li>• birds</li><li>• propeller/tail rotor/rotor wash and jet blast</li><li>• trees</li><li>• powerlines</li></ul>                      |

## RANGE STATEMENT

- fences
  - buildings
  - terrain variations
  - vehicles
  - obstacles
  - air traffic control instructions
  - light signals
  - aerodrome markings
  - company procedures
  - enterprise procedures
  - organisational procedures
  - established procedures
  - standard operating procedures
  - geographical limits of the flight area is demonstrated on a chart
  - prominent geographical features are identified using a chart
  - the limits of the flight area are identified on the ground
  - the position of controlled airspace is determined using a chart and geographical features
  - restricted areas are identified using a chart and geographical features
  - departure from the circuit area and transition to the flight area is completed without incident
  - departure from the flight area and transition to the circuit area is completed without incident
  - relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders including Day Visual Flight Rules (Day VFR)
  - in Defence context, relevant Defence Orders and Instructions
  - Flight Manual/Pilot's Operating Handbook (POH)
  - Manual of Standards - Pilot Licensing (MOS-PL)
  - Aeronautical Information Publication (AIP)
  - En Route Supplement Australia (ERSA)
  - charts
  - operations manuals
  - approved checklists
  - workplace procedures and instructions and job specification
  - induction and training materials
- Guidance during low level operations may be provided by:
- Dependent on the type of organisation concerned and the local terminology used, workplace procedures may include:
- Procedures maintaining compliance with airspace requirements are:
- Information/documents may include:

## RANGE STATEMENT

Applicable regulations and legislation may include:

- conditions of service, legislation and industrial agreements including workplace agreements and awards
- relevant Civil Aviation Safety Regulations and Civil Aviation Orders
- in Defence context, relevant Defence Orders and Instructions
- relevant state/territory OH&S legislation
- relevant state/territory environmental protection legislation
- relevant Australian Standards

Performance includes tolerances specified in either of:

- relevant licence and aircraft rating requirements of the Civil Aviation Safety Authority (CASA) such as:
  - Day VFR Syllabus
  - Manual of Standards
- relevant Defence documentation such as:
  - Defence Orders and Instructions
  - approved curricula and training documentation

## Unit Sector(s)

Not applicable.

## Competency field

**Competency Field**

Y - Aircraft Operation and Traffic Management