Australian Government

Department of Education, Employment and Workplace Relations

AVIY4014B Take off helicopter and approach to hover

Revision Number: 1

AVIY4014B Take off helicopter and approach to hover

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to take off a helicopter and control its approach to hover at a termination point, including carrying out pre-take-off checks, taking off the helicopter, approaching to hover prior to landing, and performing the go-around procedure. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Application of the Unit

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 taking off a helicopter and controlling its approach to hover.

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
1 Carry out pre-take-off checks	1.1 Pre-take-off checks are completed in accordance with approved checklist, workplace procedures and regulatory requirements
	1.2 Helicopter is lined up in the take-off direction
	1.3 Helicopter is positioned at the optimum position within the helicopter landing site (HLS)
	1.4 Line-up checks are performed in accordance with approved checklist, when appropriate
2 Take off helicopter	2.1 Air traffic control clearances are obtained and compliance is maintained with clearance conditions and requirements
	2.2 Helicopter is moved from a stationary position in a specified direction passing through translational lift remaining clear of obstructions and establishing a climb
	2.3 After-take-off checks are completed in accordance with approved checklist
	2.4 Local and published noise abatement requirements and curfews are observed
	2.5 Awareness of circuit traffic is maintained and conflict is avoided
	2.6 Situation awareness is maintained in accordance with workplace procedures and regulatory requirements
3 Approach to hover	3.1 Pre-landing checks are completed in accordance with approved checklist, workplace procedures and regulatory requirements
	3.2 Helicopter is descended to the hover at the termination point at a reducing closure rate and along a specified track on an approach angle appropriate to the helicopter type and conditions
	3.3 During the descent to the termination point, helicopter operation is maintained within all specified limitations in accordance with workplace procedures, manufacturers instructions and regulatory requirements
	3.4 Appropriate approach angle and track is intercepted and approach manoeuvres are conducted in accordance with workplace procedures, air traffic control instructions and regulatory requirements
	3.5 Approach is terminated at the hover over the termination point
4 Perform go-around procedure	4.1 Critical situations are recognised and timely decisions are made to go-around in circumstances that require discontinuation of a circuit or approach
	4.2 Climb is initiated from any position in the circuit pattern
	4.3 Obstructions and traffic are appropriately avoided during the climb following a decision to go-around

ELEMENT	PERFORMANCE CRITERIA
	4.4 Lookout is maintained using a systematic scan technique at a rate determined by traffic density, visibility or terrain
	4.5 Appropriate decisions affecting safety are implemented in the time available
	4.6 Awareness of all circuit traffic is maintained and conflict avoided
	4.7 Different aircraft types are identified and appropriate adjustments made to flight operations to accommodate the situation of the identified aircraft
	4.8 Radiotelephone (R/T) listening watch is maintained and compliance with requirements is observed
	4.9 Local and published noise abatement requirements and curfews are observed

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
- Basic principles of aerodynamics
- Purpose and functions of helicopter systems
- Functions and effects of all helicopter controls
- Aerodynamic factors affecting helicopter flight performance including:
- ground effect
- flapback
- inflow roll
- translational lift
- settling with power
- overpitching
- loss of tail rotor effectiveness
- weight and balance
- All pre- and after-take-off and pre- and after-landing checks
- Air traffic requirements
- Factors affecting take-off and climb performance
- Procedures for the use of performance charts
- Application of the height/velocity diagram/graph
- Local air traffic control procedures and instructions
- Hazards and risks when taking off a helicopter and controlling its approach to hover and precautions for controlling the risks
- Problems that may occur when taking off a helicopter and controlling its approach to hover and appropriate action that should be taken in each case

Required skills:

- Apply the knowledge to the taking off of a helicopter and controlling its approach to hover at a termination point
- Select and use relevant controls/equipment relevant to the taking off of a helicopter and controlling its approach to hover
- Read and interpret instructions, procedures and information relevant to the taking off of a helicopter and controlling its approach to hover

REQUIRED KNOWLEDGE AND SKILLS

- Use instruments to monitor helicopter performance
- Interpret/use a helicopter manufacturers height-velocity diagram/graph
- Solve problems associated with the taking off of a helicopter and controlling its approach to hover
- Communicate effectively with others when taking off a helicopter and controlling its approach to hover
- Read and interpret instructions, regulations, procedures and other information relevant to taking off a helicopter and controlling its approach to hover
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to taking off a helicopter and controlling its approach to the hover
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when taking off a helicopter and controlling its approach to the hover
- 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 taking off a helicopter and controlling its approach to hover in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise when taking off a helicopter and controlling its approach to hover
- Apply precautions and required action to minimise, control or eliminate hazards that may exist when taking off a helicopter and controlling its approach to hover
- 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 taking off a helicopter and controlling its approach to hover

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.

Tasks may be undertaken in:	• variable weather conditions in accordance with Day Visual Flight Rules
Performance may be demonstrated in:	• single engine helicopter • multi engine helicopter • single main rotor helicopter • multi main rotor helicopter • variable air traffic conditions • variable flight situations • abnormal situations
Performance may be demonstrated on an helicopter with:	• fully functioning dual controls • an electronic intercom system • dual control brakes • wheeled and skidded undercarriages
Crew may include:	• single pilot • multi crew
Limitations may be imposed by:	• local noise abatement requirements and curfews
Classes of airspace are:	• those designated by the Civil Aviation Safety Authority
Checklists may include:	• pre-flight • pre-start • engine start • pre-taxi • take-off • after take-off • approach and landing • shutdown • post-flight
Hovering procedures may be performed at:	• a prepared or unprepared aerodrome • an approved helicopter landing site (HLS)
Operational hazards during take-off and approach to the hover may include:	• variable surface conditions • other aircraft • loose objects • personnel • animals • birds

RANGE STATEMENT

Dependent on the type of organisation concerned and the local terminology used, workplace procedures may include:	• propeller/tail rotor/rotor wash and jet blast • company procedures • enterprise procedures • organisational procedures • established procedures • standard operating procedures
Procedures maintaining compliance with airspace requirements are:	• 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
Information/documents may include:	• 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 • conditions of service, legislation and industrial agreements including workplace agreements and awards
Applicable regulations and legislation may include:	• 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

RANGE STATEMENT

Performance includes tolerances specified in either of:	• relevant Australian Standards • 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