



Australian Government

Department of Education, Employment and Workplace Relations

AVIY4060A Pilot a helicopter during winching operations

Revision Number: 1

AVIY4060A Pilot a helicopter during winching operations

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to operate a helicopter during winching operations including planning, pre/post briefing, winching and abnormal operations. 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), Night VFR; and aircraft control principles, regulations, safety codes, protocols and procedures required when operating a helicopter at low level and piloting a helicopter during winching operations.

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 of competency 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 Plan winching operations	1.1 Tasking requirements are identified 1.2 Crew and equipment required to ensure safe achievement of task are determined 1.3 Helicopter performance data is interpreted and calculated to ensure suitability of aircraft for operations 1.4 Outbound and return flight routes are planned 1.5 Operations at winch site including obstructions, terrain and any factors that may adversely affect lift are planned 1.6 Security and care of passengers and/or equipment to be winched on board is planned
2 Conduct pre-flight briefings for winching operations	2.1 Requirements of the winch operation are explained and confirmed 2.2 Location, terrain features (sea state as applicable) and forecast weather conditions are obtained and confirmed 2.3 Winch and role equipment is checked 2.4 Pilot and crew responsibilities and communication procedures are explained 2.5 Mode of lift (e.g. single strop lift, double lift, net deployment, etc.) is explained 2.6 Arrangements for care and security of passengers and/or equipment to be winched are explained 2.7 Winch emergency procedures are explained
3 Operate the helicopter during winching operations	3.1 Adequacy of hover power margin and control limits to perform winching operations is checked and maintained 3.2 Site inspection, approach and hover heading are determined in accordance with operational requirements 3.3 Descent and approach is controlled to terminate over winch site (both land and water) 3.4 Control is applied to helicopter to maintain position over winch site 3.5 Winch limitations are observed 3.6 Cable fouling is avoided 3.7 Power is applied to lift external load 3.8 Safety and security of passengers and/or cargo is managed
4 Manage abnormal and emergency situations during winching operations	4.1 Helicopter, passengers and load are controlled 4.2 Abnormal or emergency situations are identified and managed in accordance with workplace procedures and Flight Manual/Pilot's Operating Handbook 4.3 Load is jettisoned if/when appropriate

ELEMENT**PERFORMANCE CRITERIA****5 Conduct post-flight briefings for winching operations**

- 5.1 Operating procedures and outcomes of the flight are reviewed and analysed
- 5.2 Effectiveness, efficiency and performance of equipment is analysed and reported

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
- In Defence context, relevant Defence Orders and Instructions
- Engine performance checks for the helicopter type to be flown
- Aircraft performance calculations (for all phases of flight)
- Internal and external load limitations for the helicopter type to be flown
- Winch limitations
- Functions and effects of all aircraft controls and instruments
- Principles of aerodynamics
- Control effectiveness in all phases of flight
- Hazards that exist and problems that can occur when operating an aircraft during winching operations
- Helicopter dimensions
- Communication procedure and terminology applicable to winching operations

Required skills:

- Solve problems associated with the operation of a helicopter during winching operations
- Identify and assess vertical, horizontal and relative spatial distances in relation to the aircraft fuselage, rotor system, mission and/or operational stores and equipment with regard to potential obstacles to the safety of flight
- Maintain situational awareness
- Use instruments to monitor helicopter performance during winching operations
- Read and interpret instructions, procedures and information relevant to the operation of a helicopter during winching operations
- Apply knowledge to the operation of a helicopter during winching operations
- Identify and justify a decision to operate a helicopter during winching operations
- Interpret hover performance and power available/power required from graphs/charts
- Communicate effectively with others when operating a helicopter during winching operations
- Complete documentation related to operating a helicopter during winching operations
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when operating a helicopter during winching operations
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and

REQUIRED KNOWLEDGE AND SKILLS

interactions with others

- Apply reporting procedures for identified problems that may occur when operating a helicopter during winching operations
- Implement contingency plans for unexpected events that may arise when operating a helicopter during winching operations
- Apply precautions and required action to minimise, control or eliminate hazards that may exist when a helicopter is performing winching operations
- 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 during winching operations

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
 - following relevant legislation and workplace procedures
 - planning winching operations including all sub-tasks
 - conducting pre-flight and post-flight winching operations briefing including all sub-tasks
 - operating the helicopter during winching operations including all sub-tasks
 - identifying and managing abnormal and emergency situations in accordance with workplace procedures and Flight Manual/Pilot's Operating Handbook

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">• variable weather conditions in accordance with Day Visual Flight Rules and Night VFR |
| Performance may be demonstrated in: | <ul style="list-style-type: none">• 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 a helicopter with: | <ul style="list-style-type: none">• fully functioning dual controls• an electronic intercom system• dual control brakes• wheeled and/or skidded undercarriages |
| Night VFR environment may include: | <ul style="list-style-type: none">• unaided• aided utilising night vision devices |
| Crew may include: | <ul style="list-style-type: none">• single pilot• multi crew |
| Hover control directions may include: | <ul style="list-style-type: none">• with crewman• without crewman |
| Limitations may be imposed by: | <ul style="list-style-type: none">• local noise abatement requirements and curfews |
| Checklists may include: | <ul style="list-style-type: none">• Flight Manual/Pilot's Operating Handbook• approach and landing• hover |
| Classes of airspace are: | <ul style="list-style-type: none">• those designated by the Civil Aviation Safety Authority• restricted and danger areas• Military control zones• Air Defence identification zones |
| Operational hazards during low level operations may include: | <ul style="list-style-type: none">• structures• other aircraft• loose objects• birds• engine salt ingestion• trees• dust |

RANGE STATEMENT

Guidance during low level operations may be provided by:

- air traffic control instructions
- light signals
- aerodrome markings

Dependent on the type of organisation concerned and the local terminology used, workplace procedures may include:

- company procedures
- enterprise procedures
- organisational procedures
- established procedures
- standard operating procedures

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
- 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