



Australian Government

Department of Education, Employment and Workplace Relations

AVIY4058A Pilot a helicopter during external load operations

Revision Number: 1

AVIY4058A Pilot a helicopter during external load operations

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to operate a helicopter during external load operations including preparation and planning, pre/post briefing, external load 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 external load 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 Prepare and rig a sling load	1.1 Tasking requirements are identified 1.2 External load is secured, stabilised and rigged in accordance with workplace procedures and Flight Manual/Pilot's Operating Handbook
2 Plan external load operations	2.1 External load procedure, equipment and personnel required for task are determined 2.2 Helicopter performance data is interpreted and calculated to ensure suitability of aircraft for external load operations 2.3 Outbound and return flight routes are planned 2.4 Secure and stable load preparations are arranged 2.5 Load lifting equipment strength and suitability are assessed
3 Conduct pre-flight briefings for external load operations	3.1 Requirements of the load task are explained and confirmed 3.2 Personnel responsible for inspecting the load lifting equipment for serviceability and security are identified 3.3 Communication and hook-up procedure is explained 3.4 Hook-up person and hook-up procedure is specified 3.5 Departure, transit, approach, termination and load release procedures are explained 3.6 Emergency procedures are explained and confirmed 3.7 Pilot vertical reference (long line) procedure is explained if applicable 3.8 Crew and ground loadmaster are briefed on all aspects of the load lifting task 3.9 Seating is adjusted to ensure full exercise of the flight controls and the ability to scan the instrument panel 3.10 Helicopter performance data is interpreted and calculated to ensure suitability of aircraft for operations 3.11 The removal of doors and the security of internal equipment is arranged as required
4 Operate the helicopter during external load operations	4.1 Functional and safety checks on role equipment are performed, and defects are reported 4.2 Fuel and cargo load combinations to achieve task are calculated 4.3 Adequacy of power margin and directional control are determined 4.4 Stable hover over the load during hook-up/delivery procedures is maintained 4.5 External load is lifted and transported to a separate location and placed at a specified position 4.6 Load is monitored and appropriate actions are taken to ensure

ELEMENT	PERFORMANCE CRITERIA
	load security and stability during flight
	4.7 Excessive load swing during transit is avoided
5 Manage abnormal and emergency situations during external load operations	5.1 Helicopter control is maintained
	5.2 Abnormal or emergency situations are identified and managed in accordance with workplace procedures and Flight Manual/Pilot's Operating Handbook
	5.3 Load is jettisoned when appropriate
6 Conduct post-flight activities for external load operations	6.1 Operating procedures and outcomes of the flight are reviewed and analysed
	6.2 Effectiveness, efficiency and performance of equipment is analysed and reported
	6.3 Inspection, servicing and stowage of equipment is organised

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
- Aerial delivery equipment operation, safe working loads and limitations
- Cargo hook limitations, problems and hazards
- Awareness of load rigging and preparation for flight
- Principles of aerodynamics
- Control effectiveness in all phases of flight
- Hazards that exist and problems that can occur when operating an aircraft during external load operations
- Procedures to address problems associated with a helicopter during external load operations
- Helicopter dimensions
- Vertical reference (long line) operation procedures if applicable
- External load lifting equipment inspection procedures
- Communication procedure and terminology applicable to external load operations

Required skills:

- Solve problems associated with the operation of a helicopter during external load 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
- Perform external load scan techniques
- Use instruments to monitor helicopter performance during external load operations
- Read and interpret instructions, procedures and information relevant to the operation of a helicopter during external load operations
- Apply knowledge to the operation of a helicopter during external load operations
- Interpret hover performance and power available/power required from graphs/charts
- Communicate effectively with others when operating a helicopter during external load

REQUIRED KNOWLEDGE AND SKILLS

operations

- Complete documentation related to operating a helicopter during external load operations
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when operating a helicopter during external load operations
- 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 during external load operations in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise when operating a helicopter during external load operations
- Apply precautions and required action to minimise, control or eliminate hazards that may exist when a helicopter is performing external load 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 external load 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
 - preparing and rigging sling load including all sub-tasks in accordance with workplace procedures and Flight Manual/Pilot's Operating Handbook
 - planning external load operations including all sub-tasks
 - conducting pre-flight briefing including all sub-tasks
 - operating the helicopter during external load 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 (VFR) 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 |
| Load lifting may be carried out: | <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

	• inadvertent release of load • unstable load • low visibility • turbulence • wind strength • sea state
Guidance during low level operations may be provided by:	• air traffic control instructions • light signals • aerodrome markings
Load lifting equipment may include:	• cargo hooks • swivels • shackles • load lifting strops • nets
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) • pilot vertical reference (long line) procedures • 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

RANGE STATEMENT

Performance includes tolerances specified in either of:

- relevant state/territory OH&S legislation
- relevant state/territory environmental protection legislation
- 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