



Australian Government

AVIY4058 Pilot a helicopter during external load operations

Release: 1

AVIY4058 Pilot a helicopter during external load operations

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 pilot a helicopter during external load operations, in compliance with relevant regulatory requirements of the Civil Aviation Safety Authority and national operating standards.

It includes planning and preparing for external load operations, conducting pre-flight briefings, and operating the helicopter during external load operations. It also includes managing abnormal and emergency situations, and conducting post-flight activities.

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 recreational, 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.

Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Use for Defence Aviation is to be in accordance with relevant Defence Orders, Instructions, Publications and Regulations.

Pre-requisite Unit

Not applicable.

Competency Field

Y – Aircraft Operation and Traffic Management

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

1 Plan and prepare for external load operations

- 1.1 External load tasking requirements are identified
- 1.2 External load is secured, stabilised and rigged in accordance with workplace procedures
- 1.3 External load procedure, equipment and personnel required for task are determined
- 1.4 Helicopter performance data is interpreted and calculated to ensure suitability of aircraft for external load operations
- 1.5 Outbound and return flight routes are planned
- 1.6 Secure and stable load preparations are arranged
- 1.7 Load-lifting equipment strength and suitability are assessed

2 Conduct pre-flight briefings

- 2.1 Requirements of load task are explained and confirmed
- 2.2 Personnel responsible for inspecting load-lifting equipment for serviceability and security are identified
- 2.3 Communication and hook-up procedure is explained
- 2.4 Hook-up person and hook-up procedure is specified
- 2.5 Departure, transit, approach, termination and load release procedures are explained
- 2.6 Emergency procedures are explained and confirmed
- 2.7 Pilot vertical reference (long line) procedure is explained
- 2.8 Crew and ground support personnel are briefed on all aspects of external load operation
- 2.9 Seating is adjusted to ensure full exercise of flight controls and ability to scan instrument panel
- 2.10 Helicopter performance data is interpreted and calculated to ensure suitability of aircraft for operations
- 2.11 Aircraft is configured for external load operations and

		security of internal equipment is arranged as required
3 Operate helicopter	3.1	Functional and safety checks on role equipment are performed, and defects are reported
	3.2	Fuel and cargo load combinations to achieve task are calculated
	3.3	Adequacy of power margin and directional control are determined
	3.4	Stable hover over load during hook-up/delivery procedures is maintained
	3.5	External load is lifted and transported to a separate location and placed at a specified position
	3.6	External load is monitored and appropriate actions are taken to ensure load security and stability during flight
4 Manage abnormal and emergency situations	4.1	Helicopter control is maintained
	4.2	Abnormal and/or emergency situations are identified and managed
	4.3	Load is jettisoned when flight safety is compromised or load stability is uncontrollable
5 Conduct post-flight activities	5.1	Operating procedures and outcomes of flight are reviewed and analysed
	5.2	Effectiveness, efficiency and performance of equipment is analysed and reported
	5.3	Inspection, servicing and stowage of equipment is organised

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.

Unit Mapping Information

This unit replaces and is equivalent to AVIY4058A Pilot a helicopter during external load operations.

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 AVIY4058 Pilot a helicopter during external load operations

Modification History

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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
- applying precautions and required action to minimise, control or eliminate identified hazards
- applying relevant helicopter aeronautical knowledge
- communicating effectively with others
- completing relevant documentation
- following relevant legislation and workplace procedures
- identifying and assessing vertical, horizontal and relative spatial distances in relation to aircraft fuselage, rotor system, mission and/or operational stores and equipment with regard to potential obstacles to flight safety
- identifying and correctly using equipment required when operating a helicopter during external load operations
- implementing contingency plans
- implementing work health and safety (WHS)/occupational health and safety (OHS) procedures and relevant regulations
- interpreting hover performance and power available/power required from graphs/charts
- maintaining situational awareness
- managing abnormal and emergency situations:
 - load instability:
 - controllable
 - uncontrollable
 - inadvertent load release
 - single engine failure (single/multi-engine)
 - double engine failure (multi-engine only)
 - external load aircraft system failure
- 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

- performing external load scan techniques
- preparing and rigging sling load including all sub-tasks in accordance with workplace procedures and the aircraft flight manual (AFM)/ pilot's operating handbook (POH)
- reading and interpreting relevant instructions, procedures and information
- reporting and/or rectifying identified problems promptly, in accordance with regulatory requirements and workplace procedures
- selecting and using required personal protective equipment conforming to industry and WHS/OHS standards
- setting local or area barometric pressure adjusted for sea level (QNH) at appropriate stages of flight
- using instruments to monitor helicopter performance during external load operations
- working collaboratively with others
- 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:

- aerial delivery equipment inspection, operation, safe working loads and limitations
- aerial inspections for external load operations
- aircraft dimensions
- aircraft performance calculations (for all phases of flight)
- awareness of load rigging and preparation for flight
- cargo hook limitations, problems and hazards
- CASR Part 61 Manual of Standards Schedule 3 Aeronautical Knowledge relevant to helicopter external load operations
- communication procedure and terminology applicable to external load operations
- control effectiveness in all phases of flight
- engine performance checks for helicopter type to be flown
- external load operational planning and risk control
- external load operations on, or in vicinity of, non-controlled and controlled aerodromes or airstrips
- flight rules applicable to external load operations
- hazards that exist and problems that can occur when operating an aircraft during external load operations
- helicopter dimensions and operating weights:
 - helicopter landing site (HLS) requirements
 - all up weight (AUW)

- maximum all up weight (MAUW)
- human factors applicable to external load operations:
 - dehydration and its impact on pilot cognitive function and reaction time
 - fatigue and its impact on pilot cognitive function and situational awareness
 - stress and its short-term and long-term impact
 - drugs (particularly over the counter) impact on pilot cognitive function, reaction time and coordination
 - spatial disorientation and illusions:
 - night external load operations
- in a Defence context, relevant Defence Orders and Instructions
- internal and external load limitations for helicopter type to be flown
- load rigging and preparation for flight
- low-level flight techniques for external load operations
- meteorological requirements for external load operations
- operational planning requirements for external load operations:
 - pre-flight and after-flight inspections
 - operational inspections
- principles of aerodynamics
- privileges and limitations of a low-level rating
- procedures to address problems associated with a helicopter during external load operations
- relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders
- relevant WHS/OHS and environmental procedures and regulations
- vertical reference (long line) operation procedures.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

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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.

Assessment must occur in workplace operational situations. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

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 personal protective equipment currently used in industry.

Links

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