Australian Government

Department of Education, Employment and Workplace Relations

AVIY4057A Perform helicopter deck landing operations

Revision Number: 1

AVIY4057A Perform helicopter deck landing operations

Modification History

Not applicable.

Unit Descriptor

Unit Descriptor

This unit involves the skills and knowledge required to operate a helicopter during deck landing operations including planning, pre/post briefing, transit, approach, landing, take-off, climb and abnormal operations to/from a helideck. 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, Instrument Flight Rules (IFR); and aircraft control principles, regulations, safety codes, protocols and procedures required when operating a helicopter to/from a helideck.

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 deck landing operations	1.1 Tasking requirements are identified 1.2 Crew, role equipment and safety equipment necessary to ensure safe achievement of task are determined 1.3 Helicopter is certified for the task in accordance with regulations and workplace procedures 1.4 Outbound and return flight loading and flight routes are planned 1.5 Security and care of passengers or equipment for deck landing operations are planned
2 Conduct pre-flight briefings for deck landing operations	2.1 Flight/ground crews and other relevant stakeholders are briefed on allocated duties 2.2 Weather suitability is determined and confirmed against workplace procedures and limitations 2.3 Briefs/self-briefs for deck landing operations are performed
3 Take off and transit to and from vessel	3.1 Appropriate take-off and departure configurations are selected 3.2 Helicopter is navigated to the rendezvous 3.3 Information regarding identified vessel's ability to receive aircraft is obtained 3.4 Vessel is instructed to manoeuvre to achieve optimum deck conditions for landing 3.5 Relative wind, ship pitch and roll information, hover heading and helideck location are obtained and acceptability confirmed 3.6 Pre-descent checks are completed 3.7 Descent profile and circuit pattern are determined
4 Approach and land on vessel helideck	4.1 Control manipulation, instrument scan and visual cues are used to manoeuvre the aircraft safely during approach and landing 4.2 Night interception of glide slope is carried out as appropriate 4.3 Touch-down point and reference markers are indentified and confirmed 4.4 Constant angle approach and landing is performed 4.5 Safe termination of approach and stable hover over helideck is performed 4.6 Helideck landing is performed
5 Take off and climb out from vessel helideck	5.1 Safety and security during deck operations is managed 5.2 Stable hover over deck is established 5.3 Obstacles are identified and avoided 5.4 Instrument take-off under no horizon conditions is performed 5.5 Instrument climb-out procedure is performed
6 Manage abnormal and	6.1 Abnormal or emergency situations are identified and confirmed

ELEMENT	PERFORMANCE CRITERIA
emergency situations during deck landing operations	6.2 Helicopter is controlled to maintain safe flight 6.3 Abnormal or emergency situations are managed in accordance with workplace procedures, Flight Manual/Pilot's Operating Handbook 6.4 Aborted approach from final approach is performed 6.5 Ditching and underwater escape procedures are applied as required

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)
- Functions and effects of all aircraft controls and instruments
- Principles of aerodynamics
- Control effectiveness in all phases of flight
- Hazards that exist when controlling an aircraft during deck landing operations
- Helicopter dimensions
- Communication procedure and terminology applicable to deck landing operations
- Planning and briefing requirements for helicopter deck landing operations
- Post flight de-briefing techniques
- Helicopter underwater escape procedures
- Aircraft evacuation procedures
- Survival equipment location and operation
- Survival skills post ditching
- Crash on deck procedures
- Lighting and marshalling signals
- Helideck markings
- Effects of excessive vessel movement on the serviceability of aircraft
- Vessel movement limitations
- Operation of night vision devices

Required skills:

- Solve problems associated with the operation of a helicopter during deck landing 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
- Operate night vision devices if applicable
- Use instruments to monitor helicopter performance during deck landing operations
- Apply knowledge to the operation of a helicopter during deck landing operations

REQUIRED KNOWLEDGE AND SKILLS

- Read and interpret instructions, procedures and information relevant to the operation of a helicopter during deck landing operations
- Identify and justify a decision to operate a helicopter during deck landing operations
- Interpret hover performance and power available/power required from graphs/charts
- Conduct planning, briefing and de-briefing
- Communicate effectively with others when operating a helicopter during deck landing operations
- Complete documentation related to operating a helicopter during deck landing operations
- Operate electronic communication equipment to required protocol
- Work collaboratively with others when operating a helicopter during deck landing operations
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others
- Apply reporting procedures for identified problems that may occur when operating a helicopter during deck landing operations
- Implement contingency plans for unexpected events that may arise when operating a helicopter during deck landing 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 deck landing 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 deck landing operations
- conducting pre-flight briefs of all relevant stakeholders
- taking off and transiting to vessel
- approaching and landing on vessel helideck
- taking off and climbing out from vessel helideck
- identifying, confirming 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.

Tasks may be undertaken in:	• variable weather conditions in accordance with Day Visual Flight Rules (VFR) and Night VFR • simulated Instrument Meteorological Conditions (IMC) • IMC
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 a helicopter with:	• fully functioning dual controls • an electronic intercom system • dual control brakes • wheeled and/or skidded undercarriages
Night VFR environment may include:	• unaided • aided utilising night vision devices
Crew may include:	• single pilot • multi crew
Briefing information may include:	• helideck location and configuration • helideck markings • vessel configuration • obstructions • hazards associated with deck landing operations (e.g. ship movement, engine salt ingestion, wind, pitch, roll limitations) • crash on deck procedures • landing and take-off procedures • lighting signals • marshalling signals • aircraft securing procedures • communication procedures • transit route to and from ship • approach and departure procedures • ditching procedures • emergency situations (e.g. fire,

RANGE STATEMENT

	engine/transmission/aircraft system malfunctions) • location and operation of survival equipment • aircraft evacuation procedures (on ditching)
Limitations may be imposed by:	• local noise abatement requirements and curfews
Classes of airspace are:	• those designated by the Civil Aviation Safety Authority • restricted and danger areas • Military control zones • Air Defence identification zones
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

RANGE STATEMENT

- 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