



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **AVIY4051A Conduct external load-lift operations**

**Revision Number: 1**

## **AVIY4051A Conduct external load-lift operations**

### **Modification History**

Not applicable.

### **Unit Descriptor**

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This unit involves the skills and knowledge required to conduct external load-lifting operations in a helicopter. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

### **Application of the Unit**

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Work must be carried out in compliance with the relevant regulatory requirements of the Civil Aviation Safety Authority and national operating standards.

Use for ADF Aviation is to be in accordance with relevant Defence Orders and Instructions and applicable CASA compliance.

Operations are conducted across a variety of operational contexts within the Australian aviation industry.

Work is performed under limited supervision.

This unit of competency is nominally packaged at 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
<b>1 Prepare for load-lifting operations</b>	<ul style="list-style-type: none"><li>1.1 External load characteristics and dimensions are determined and calculated</li><li>1.2 Aircraft safety hazards are identified using established procedures</li><li>1.3 Aircraft power availability is calculated</li><li>1.4 Wind speed and direction are determined</li><li>1.5 Approach and overshoot paths are determined</li><li>1.6 Load-lifting location and surrounds are checked for suitability</li><li>1.7 Helicopter cargo hook system is prepared and checked for correct operation</li><li>1.8 Aerial delivery equipment is prepared and checked as required in accordance with equipment manuals and publications</li><li>1.9 External load-lifting plan is developed and communicated to other crewmembers</li></ul>
<b>2 Perform load-lifting operations</b>	<ul style="list-style-type: none"><li>2.1 Helicopter is directed to external load-lifting point</li><li>2.2 Pre-take-off lifting checks are conducted in accordance with organisational policy and procedures</li><li>2.3 Commentary on the progress of the external load-lifting operation is maintained in accordance with established communication procedures</li><li>2.4 External load is attached in accordance with organisational policy and procedures</li><li>2.5 External load is monitored during flight for instability, and flight profile is adjusted as required for optimum safety of flight</li><li>2.6 External load is released in accordance with organisational policy and procedures and aircraft manuals</li></ul>
<b>3 Conclude load-lifting operations</b>	<ul style="list-style-type: none"><li>3.1 Aerial delivery equipment is recovered as required</li><li>3.2 Cargo hook equipment and control systems are secured and checked in accordance with manufacturers specifications and organisational policy and procedures</li></ul>
<b>4 Respond to load-lifting emergencies and abnormal situations</b>	<ul style="list-style-type: none"><li>4.1 External load-lifting emergencies are identified, communicated and diagnosed as per established procedures</li><li>4.2 Emergency and/or remedial actions are undertaken in accordance with aircraft flight manuals and organisational policy and procedures</li></ul>

## Required Skills and Knowledge

### REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

#### Required knowledge:

- Helicopter capabilities and limitations
- Cargo hook system and aerial delivery equipment capabilities and limitations
- Approved operational procedures and processes for different external load-lifting operations
- Occupational health and safety issues applicable to operations, aircraft and personnel safety
- Correct aerial delivery equipment configuration
- External load-lifting emergency procedures
- Approach and overshoot considerations
- External load-lifting verbal/non-verbal communication procedures
- External load safety and configuration
- External load-lifting risk assessment principles
- Organisational policies and procedures for load-lifting operations
- Practices concerning external load-lifting operations
- Procedures and protocols for the use of communication systems during an emergency
- Typical problems that may occur when conducting external load-lifting operations and appropriate action and solutions

#### Required skills:

- Perform external load-lift operations
- Complete aerial delivery equipment assembly
- Use communication skills for helicopter control
- Determine wind speed and direction
- Operate aerial delivery equipment
- Perform weight calculations
- Apply external load-lifting risk assessment principles
- Interpret and follow flight and operational manuals and safety policies
- Read and interpret instructions and procedures relevant to the conducting load-lifting operations
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to work activities when conducting load-lifting operations
- Identify and use required communication technology
- Work collaboratively with others when conducting load-lifting operations
- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and

## REQUIRED KNOWLEDGE AND SKILLS

interactions with others

- Promptly report and/or rectify any identified problems, faults or malfunctions that may occur when conducting external load-lifting operations in accordance with workplace procedures
- Implement contingency plans for unanticipated situations that may arise when conducting external load-lifting operations
- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the conducting of external load-lifting operations
- Plan own work including predicting consequences and identifying improvements
- Monitor work activities in terms of planned schedule
- Modify activities depending on differing operational contingencies, risk situations and environments
- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment
- Operate and adapt to differences in communication equipment in accordance with standard operating procedures

# 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.

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|--|--|
| Aircraft may include:                  | <ul style="list-style-type: none"><li>• single or multiple engine</li><li>• rotary wing</li></ul>  |
| Aircraft publications may include:     | <ul style="list-style-type: none"><li>• checklists</li><li>• flight manuals</li><li>• organisational policy and procedures manuals</li><li>• aviation maintenance documentation</li></ul>  |
| Work environment may include:          | <ul style="list-style-type: none"><li>• by day or by night</li><li>• over land or over sea</li><li>• Prepared or Unprepared Helicopter Landing Sites</li></ul>   |
| Load-lifting emergencies may include:  | <ul style="list-style-type: none"><li>• inadvertent release</li><li>• load instability</li><li>• helicopter electrical/mechanical failure and/or malfunction</li><li>• cargo hook electrical/mechanical release mechanism failure</li><li>• intercom failure</li></ul> |
| Loads may include:                     | <ul style="list-style-type: none"><li>• replenishment stores</li><li>• operational equipment</li><li>• vehicles</li><li>• other aircraft</li><li>• trailers</li><li>• plant equipment</li><li>• cargo nets</li></ul>   |
| Load characteristics may include:      | <ul style="list-style-type: none"><li>• dangerous goods</li><li>• non-dangerous</li><li>• size</li><li>• weight</li><li>• rigging</li><li>• dimensions</li><li>• fragility</li></ul>   |
| Aerial delivery equipment may include: | <ul style="list-style-type: none"><li>• lifting slings</li><li>• chains</li><li>• pendant assemblies</li><li>• palnets</li><li>• strops</li><li>• swivel assemblies</li><li>• cargo nets</li></ul>   |



## RANGE STATEMENT

	<ul style="list-style-type: none"> <li>• shackles</li> <li>• fire-fighting buckets</li> <li>• 'D' rings</li> <li>• clevis assemblies</li> <li>• hooks</li> <li>• single link assemblies</li> <li>• semi-rigid strops</li> <li>• drogue chutes</li> <li>• rigging cordage</li> </ul>
Helicopter safety hazards may include:	<ul style="list-style-type: none"> <li>• man-made structures</li> <li>• smoke</li> <li>• meteorological conditions</li> <li>• terrain</li> <li>• other aircraft</li> <li>• flora</li> <li>• fauna</li> <li>• ship structures and rigging</li> <li>• ship movements</li> </ul>
Locations and surrounds may include:	<ul style="list-style-type: none"> <li>• Helicopter Landing Site</li> <li>• Unprepared Helicopter Landing Site</li> </ul>
Aircraft publications may include:	<ul style="list-style-type: none"> <li>• checklists</li> <li>• flight manuals</li> <li>• organisational policy and procedures manuals</li> <li>• aviation maintenance documentation</li> </ul>
Depending on the type of organisation concerned and the local terminology used, workplace procedures may include:	<ul style="list-style-type: none"> <li>• company procedures</li> <li>• enterprise procedures</li> <li>• organisational procedures</li> <li>• established procedures</li> </ul>
Information/documentation may include:	<ul style="list-style-type: none"> <li>• relevant sections of Civil Aviation Safety Regulations</li> <li>• in Defence context, relevant Defence Orders and Instructions</li> <li>• Flight Manual/Pilot's Operating Handbook (POH)</li> <li>• Aeronautical Information Publication (AIP)</li> <li>• charts</li> <li>• operations manuals</li> <li>• approved checklists</li> <li>• workplace procedures and instructions and job specification</li> <li>• induction and training materials</li> <li>• conditions of service, legislation and industrial agreements</li> </ul>

**RANGE STATEMENT**

Applicable regulations and legislation may include:

- including workplace agreements and awards
- 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

**Unit Sector(s)**

Not applicable.

**Competency field**

**Competency Field**

Y - Aircraft Operation and Traffic Management