



**Australian Government**

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

# **DEFCA006B Perform an individual free fall parachute descent**

**Release: 1**

## **DEECA006B Perform an individual free fall parachute descent**

### **Modification History**

Not applicable.

### **Unit Descriptor**

#### **Unit Descriptor**

This unit covers the competency required to perform a free fall parachute descent that commences from an altitude below 12 000 feet above ground level.

Free fall parachute descents are a method of deploying from an aircraft where the individual paratrooper is responsible for selecting, preparing and fitting parachuting equipment; carrying out safety checks; exiting from an aircraft; controlling free fall descent; activating the parachute and steering the canopy to land safely on a drop zone.

During the parachute descent individuals must demonstrate situational awareness of their position in relation to altitude, orientation and the location of other paratroopers. They must also be able to communicate verbally, and non-verbally, and to manage a number of potentially hazardous situations.

Free fall parachuting is an inherently dangerous activity consequently paratroopers must be competent to perceive in themselves and others the signs and symptoms of altitude induced medical conditions and to seek assistance.

The individual must also be competent in reacting to and managing, a range of routine parachute opening problems, malfunctions, and other contingencies and emergencies.

## Application of the Unit

### Application of the Unit

The application of this unit in the workplace - the environments, complexities and situations involved - will be written during Phase II of the Review of the PUA00 Public Safety Training Package.

This text will be useful for the purposes of job descriptions, recruitment advice or job analysis; where possible, it will not be too job specific to allow other industries to import it into other Training Packages, where feasible.

## Licensing/Regulatory Information

Not applicable.

## Pre-Requisites

Prerequisite Unit/s Nil

## 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. Where bold italicised text is used, further information is detailed in the Required Skills and Knowledge and/or the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

## Elements and Performance Criteria

### ELEMENT

### PERFORMANCE CRITERIA

<p>1. <b>Prepare for free fall parachute descent</b></p>	<p>1.1 Instructions to conduct a free fall parachute descent are received and details are confirmed with supervisor as necessary</p> <p>1.2 Appropriate <i>parachute equipment</i> is selected, <i>inspected for serviceability</i> and fitted, in accordance with <i>standard procedures</i></p> <p>1.3 Unserviceable equipment is quarantined and reported in accordance with standard procedures</p>
<p>2. <b>Complete on board aircraft procedures</b></p>	<p>2.1 Aircraft is boarded, and self and equipment are positioned and secured, in accordance with standard procedures</p> <p>2.2 <i>Verbal and non-verbal communication</i> is used effectively with other personnel on board</p> <p>2.3 <i>On board procedures</i> and <i>individual safety checks</i> are carried out when instructed by authorised personnel, in accordance with standard procedures</p> <p>2.4 Signs and symptoms of <i>altitude induced conditions</i> in self and others are monitored and any anomalies are reported to supervisor</p>
<p>3. <b>Exit from the aircraft and descend by free fall</b></p>	<p>3.1 Aircraft is exited using <i>approved techniques</i> within <i>permitted tolerances</i></p> <p>3.2 Stability in free fall flight is established and maintained</p> <p>3.3 When necessary, instability is recovered during exit and free fall</p> <p>3.4 <i>Situational awareness</i> is maintained</p> <p>3.5 <i>Individual free fall positions and manoeuvres</i> are carried out in accordance with standard procedures</p> <p>3.6 Verbal and non-verbal communication is used to communicate effectively with other paratroopers as required</p>
<p>4. <b>Control a ram-air canopy descent</b></p>	<p>4.1 Parachute is activated to open at a designated time or height in accordance with standard procedures</p> <p>4.2 Relevant drills are conducted to detect and rectify <i>malfunctions</i> and <i>routine opening problems</i>, in accordance with standard procedures</p> <p>4.3 Descent is controlled within permitted tolerances</p>

## 5. Land on a drop zone

using *canopy control and manoeuvre techniques*

4.4 *Controllability checks* and *malfunction drills* are conducted as required

4.5 *Contingency and emergency situations* are assessed and the *correct drills* are applied to rectify the situation

5.1 Designated *drop zone marking and wind indicators* are identified and target approach is planned

5.2 *Target approach techniques* are applied in accordance with standard procedures

5.3 *Landing* is completed in accordance with *environmental conditions* and to the permitted tolerance

5.4 *Emergency landing* is completed, as required, in accordance with standard procedures

5.5 Harness release and drag procedures are applied in accordance with standard procedures, and *drop zone* is cleared

## 6. Complete free fall post descent procedures

6.1 *Post descent de-servicing* of parachute equipment is conducted in accordance with standard procedures

6.2 Performance during the individual free fall parachute descent is *reviewed*

6.3 *Documentation* is completed accurately and clearly in accordance with standard procedures

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required Skills

- communicate effectively interpret instructions
- provide reports and appropriate documentation
- situational awareness

#### Required Knowledge

- activation and malfunction drills
- application of problem solving procedures
- canopy control techniques
- controllability checks
- design, construction, characteristics and capabilities of free fall parachutes
- effect of environmental conditions on parachuting
- effects of turbulence on the canopy
- exit techniques
- free fall positions and manoeuvres
- health and safety hazards of parachuting
- inspection procedure/routine
- instability recovery procedures
- landing techniques
- log books and descent folders
- malfunction and emergency drills
- safety checks
- signs, symptoms and treatment of:
  - decompression illness
  - hyperventilation
  - hypothermia
  - hypoxia
- theory of flight and canopy control
- verbal and non-verbal communication

# Evidence Guide

## EVIDENCE GUIDE

### **Critical aspects for assessment and evidence required to demonstrate competency in this unit**

Assessment must confirm the ability to:

- perform at least five solo free fall descents
- parachute descents from an aircraft at an altitude below 12 000 feet above ground level
- demonstrate parachute activation at varying heights from the ground with at least one activation occurring within 10 seconds of exiting the aircraft
- demonstrate correct servicing, fitting and setting of:
  - automatic activation device
  - altimeter
  - audible altitude warning device
  - personal apparel
  - parachute
- demonstrate the following individual free fall manoeuvres:
  - box position
  - poised pull position
  - forward glide
  - back slide
  - fast fall
  - slow fall
  - track
  - turns left and right
  - hard arch/wide spread position
  - wave-off
- identify and respond to the following routine opening problems:
  - twists
  - end cell closure
  - slider hang up below the cascades
  - premature brake release
  - pilot chute hesitation
- identify and respond to the following activation malfunctions:
  - a high speed malfunction (hard pull, floating ripcord handle, complete malfunction, pilot chute in tow, bag lock, horseshoe malfunction, streamer and premature release of the three rings)
  - a low speed malfunction (line over, slider hang-up above the cascades, broken suspension line, pilot

## EVIDENCE GUIDE

chute over or in the front cell, rip or tear in canopy, brake lock, broken steering line and two canopies flying)

- demonstrate the following canopy control and manoeuvre techniques:
- turns (full glide, half brake depression, half brake fly off, full brake, rear riser and front riser)
- stalls (steady state and dynamic) and stall recovery
- flying modes (full glide, half brakes, full brakes, front riser, rear riser)
- demonstrate the correct drills to recover from a range of emergency situations which as a minimum must include uncontrolled or involuntary turns in free fall, entanglement, and collisions in free fall and under canopy
- demonstrate the correct drills for an emergency landing on or in buildings, trees, wire and water.

Permitted tolerances are:

- achieving stability within 1 000 feet of exiting the aircraft
- achieving stability within 1 000 feet of becoming unstable during free fall
- completing exits with a deviation no more than 45 degrees off the aircraft heading
- completing turns within 45 degrees of the specified heading
- conducting forward glide and the track for a minimum of 5 seconds with no more than a 45 degrees deviation off the specified heading
- landing safely within 25 metres of the target
- activating the ripcord within 250 feet of the planned opening height above ground level with a deviation of no more than 45 degrees off the specified heading.

### Consistency in performance

Competency must be demonstrated over a minimum of five solo parachute descents supported by simulated opening problems, malfunctions and other contingencies and emergencies that could be expected in the workplace.

Assessment should be conducted in a timeframe and in a range of contexts and conditions that allows evidence to



## EVIDENCE GUIDE

### Context of and specific resources for assessment

be gathered on the correct application of free fall parachute skills and techniques, consistent with the Range Statement and the operating environment.

#### Context of assessment

Competency must be assessed during the preparation and performance of actual free fall parachute descents although due to safety limitations, assessment of the individual's response to routine opening problems, malfunctions and other contingencies and emergencies will need to be undertaken in a simulated environment.

#### Specific resources for assessment

Access to:

- aircraft and aircrew
- parachutes
- suitable air space
- suitable land drop zone
- parachute training facilities that provide adequate simulation
- parachute packing facilities/matted undercover area
- communications equipment
- transport to and from airport and drop zone.

## 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. ***Bold italicised*** wording in the Performance Criteria is detailed below.

#### **Parachute equipment may include**

Automatic activation device  
 Altimeter  
 Audible altitude warning device  
 Hook knife  
 Parachute  
 Personal apparel:  
 • boots  
 • coveralls  
 • gloves  
 • goggles  
 • helmet

#### **Inspecting parachute equipment for serviceability include**

Servicing instruments  
 Setting instruments

#### **Standard procedures may include**

Civil Aviation Safety Authority (CASA) manuals and regulations  
 Defence instructions and publications  
 Job guides, other publications  
 Manufacturers' handbooks, industry specifications and technical instructions  
 Occupational health and safety (OH&S) regulations  
 Operating procedures  
 Procedure manuals  
 Routine Orders  
 Written and verbal orders

#### **Verbal and non-verbal communication may include**

Aircraft visual and audible warning devices  
 Hand signals  
 Panels and markers  
 Plot boards

**RANGE STATEMENT**

	Radio communications
	Voice commands
<b>On board procedures may include</b>	Carrying out drills or procedures directed by air crew or despatchers
	Exit procedures
	Fitting of parachuting equipment
	Safety checks
	Stop drop and aborted sortie procedures
<b>Individual safety checks may include</b>	Arming the automatic activation device
	Individual parachute equipment checks in aircraft
	Pin checks
<b>Altitude induced conditions may include</b>	Decompression illness
	Hyperventilation
	Hypothermia
	Hypoxia
<b>Approved techniques to exit the aircraft may include</b>	From the ramp:
	<ul style="list-style-type: none"> <li>• back off</li> <li>• dive</li> <li>• pivot</li> </ul>
	From the door:
	<ul style="list-style-type: none"> <li>• back off</li> <li>• dive</li> <li>• pivot</li> </ul>
<b>Permitted tolerances include</b>	Achieving stability within 1 000 feet of exiting the aircraft
	Achieving stability within 1 000 feet of becoming unstable during free fall
	Completing exits with a deviation of no more than 45 degrees off the aircraft heading
	Completing turns within 45 degrees of the specified heading
	Conducting forward glide for a minimum of 5 seconds with no more than a 45 degrees deviation off the specified heading

**RANGE STATEMENT**

	Landing safely within 25 metres of the target
	Pulling the ripcord within 250 feet of the planned opening height above ground level with a deviation of no more than 45 degrees off the specified heading
<b>Situational awareness may include</b>	Monitoring altitude/height
	Monitoring the position of other paratroopers
	Orientation to target and/or aircraft
<b>Individual free fall positions and manoeuvres may include</b>	Back loop
	Back slide
	Box position
	Delta position
	Fast fall
	Forward glide
	Hard arch/wide spread position
	Heading maintenance
	Poised pull position
	Slow falls-track
	Track
	Turns left and right
	Wave-off
<b>Malfunctions may include</b>	A high speed malfunction:
	<ul style="list-style-type: none"> <li>• bag lock</li> <li>• complete malfunction</li> <li>• floating ripcord handle</li> <li>• hard pull</li> <li>• horseshoe malfunction</li> <li>• pilot chute in tow</li> <li>• premature release of the three rings</li> <li>• streamer</li> </ul>
	A low speed malfunction:
	<ul style="list-style-type: none"> <li>• brake lock</li> <li>• broken steering line</li> <li>• broken suspension line</li> <li>• line over</li> </ul>

**RANGE STATEMENT**

	<ul style="list-style-type: none"> <li>• pilot chute over or in the front cell</li> <li>• rip or tear in canopy</li> <li>• slider hang-up above the cascades</li> <li>• two canopies flying</li> </ul>
<b>Routine opening problems may include</b>	<p>End cell closure</p> <p>Premature brake release</p> <p>Pilot chute hesitation</p> <p>Slider hang up below the cascades</p> <p>Twists</p>
<b>Canopy control and manoeuvre techniques may include</b>	<p>Flying modes:</p> <ul style="list-style-type: none"> <li>• half brakes</li> <li>• full brakes</li> <li>• full glide</li> <li>• front riser</li> <li>• rear riser</li> </ul> <p>Stalls:</p> <ul style="list-style-type: none"> <li>• dynamic</li> <li>• steady state</li> </ul> <p>Turns:</p> <ul style="list-style-type: none"> <li>• half brake depression</li> <li>• half brake fly off</li> <li>• full brake</li> <li>• full glide</li> <li>• front riser</li> <li>• rear riser</li> </ul>
<b>Controllability checks include checking</b>	<p>If canopy requires more than 50% opposite toggle to counter a turn</p> <p>If canopy stalls/collapses after conducting left and right 90 degree turns</p> <p>If canopy stalls prior to 50% brakes</p>
<b>Malfunction drills apply when</b>	<p>Canopy is deemed uncontrollable</p>
<b>Contingency and emergency situations may include</b>	<p>Collisions:</p> <ul style="list-style-type: none"> <li>• in free fall</li> <li>• under canopy</li> </ul>

**RANGE STATEMENT**

	Emergency abandoning of aircraft
	Entanglements
	Equipment moving or coming undone
	Loss of stability on exit or in free fall
	Tumbling and somersaulting during free fall
	Uncontrolled or involuntary turns in free fall
<b>Correct drills to rectify contingency and emergency situations include</b>	Collisions in free fall and under canopy
	Emergency landing on or in buildings, trees, wire and water
	Entanglement
	Uncontrolled or involuntary turns in free fall
<b>Drop zone marking and wind indicators may include</b>	Alphanumeric marker panels
	Geographic features
	Smoke
	Streamers and flags
	Wind sock
<b>Target approach techniques may include</b>	High wind approach
	Standard approach
<b>Landing may include</b>	Half brake parachute landing roll
	Dynamic stall landing (flared landing)
<b>Environmental conditions may include</b>	Turbulence
	Variable altitude
	Variable temperatures
	Variable weather conditions
	Wind:
	• high
	• low
<b>Emergency landing may include landing in or on</b>	Buildings
	Trees
	Vehicles
	Water

**RANGE STATEMENT**

	Wire
<b>Drop zone may include</b>	Known or designated Land or water Open country
<b>Post descent de servicing may include</b>	Cleaning parachute and equipment Inspecting parachute and equipment, and identifying faults Rectifying or reporting defects with the parachute and/or equipment in accordance with standard procedures
<b>Reviewing performance may include</b>	Obtaining feedback from supervisors, and individuals on parachuting performance and taking corrective action Viewing video of flight and correcting faults
<b>Documentation may include</b>	Descents folder Paratroopers log card

**Unit Sector(s)**

Not applicable.

**Corequisite Unit/s**

**Co-requisite Unit/s** Nil