



Australian Government

Department of Education, Employment and Workplace Relations

SISOCVE306A Rig ropes and establish belays in caves

Release: 2

SISOCVE306A Rig ropes and establish belays in caves

Modification History

Not Applicable

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to independently select fixed or natural anchors for the attachment of ropes and equipment for belays. These anchors are to be used in establishing belay systems and rigging rope pitches for abseiling and single rope technique in caves. Anchors must be selected from a diversity of locations, offering different environmental conditions.

Application of the Unit

This unit applies to those working as caving guides or instructors either autonomously or as part of a team in familiar and unfamiliar situations within a range of natural cave locations with simple obstacles and vertical single pitches where rigging ropes and establishing belays are required to accommodate different belayer and abseiler abilities.

This unit also applies to outdoor recreation leaders working for outdoor education or adventure providers, volunteer groups, not-for-profit organisations or government agencies.

Licensing/Regulatory Information

No licensing, regulatory or certification requirements apply to this unit at the time of endorsement.

Pre-Requisites

Nil

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

1. Choose anchor or anchors.

1.1. Assess ***condition*** of ***anchors***, including performance under ***likely load***, and the ***stability of the surroundings***.

1.2. Identify and select solid and secure anchors according to ***organisational policies and procedures*** and ***contextual issues***.

1.3. Select anchors that minimise ***environmental impact*** according to ***participant's*** characteristics and abilities, location of the anchors, and requirements of the abseil.

1.4. Determine appropriate ***belay systems*** and back-up systems, according to the type of anchors selected and organisational policies and procedures.

2. Select and set up a belay system.

2.1. Select a belay system according to the abilities, limitations and needs of the belayer and abseiler.

2.2. Identify potential forces generated during a fall and how this may impact on selection of belay system.

2.3. Establish a belay system according to contextual issues, ***relevant legislation*** and organisational policies and procedures.

2.4. Demonstrate the rigging of multiple anchors, ensuring equalisation and minimal shock loading, where applicable.

2.5. Set up a belay that maintains ***safety of belayer*** and minimises movement of the belayer in the event of a fall.

2.6. Establish a belay from which the belayer is able to escape and safely perform a rescue.

2.7. Select a ***belay device*** that is suitable for the situation and the belayer's ability, and demonstrate use according to manufacturer's specifications and organisational policies and procedures.

ELEMENT**PERFORMANCE CRITERIA**

3. Rig rope pitches.
- 2.8. Check all **equipment** for signs of corrosion, abrasion, impact and aging and take measures to correct any deficiency.
 - 2.9. Identify potential **hazards** and procedures to minimise **risks** to abseiler and belayer.
 - 3.1. Identify safe access to and egress from the site according to relevant organisational policies and procedures.
 - 3.2. Determine ascent or descent route according to contextual issues and organisational policies and procedures.
 - 3.3. Tie **knots** suitable for the type of system established and for potential retrieval or rescue situations.
 - 3.4. Set up anchors and ropes to facilitate potential rescue.

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- problem-solving skills to:
 - select anchors and belay systems for the context and conditions of the activity
 - identify and overcome hazards
 - assess condition of all equipment prior to use
 - takes steps to rectify any deficiencies
 - rig ropes and anchors safely
- self management skills to take responsibility for rigging of ropes and anchors, and establishing belays
- first aid and emergency response skills appropriate to the location to enable initial response to emergencies and personal health care.

Required knowledge

- legislation and organisational policies and procedures to enable the safe conduct of all activities
- equipment types, characteristics and technology used to rig ropes and establish belays in caves to enable the safe selection, use and maintenance of all required equipment
- principles of anchor systems such as equally shared load, single component failure and effect, redundancy and angle of separation
- principles and types of belay systems and devices, such as top and bottom belays, self belays, dynamic and static belays
- advantages and disadvantages of various knots in a variety of situations
- safety systems and emergency procedures relevant to the location and situation to ensure safety of self and others.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

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

Evidence of the following is essential:

- selects and establishes solid and secure anchors after considering the factors that affect their stability
- establishes a belay system at the top and bottom of cave pitches according to contextual issues and the individual situation
- uses suitable belay devices and knots for different situations and determines the need for back up belay systems
- establishes a self belay system where required
- identifies and eliminates hazards to ensure risk minimisation.

Context of and specific resources for assessment

Assessment must ensure establishment of belay systems and rigging of ropes for single pitch abseiling activities in caving environments that reflect local conditions and are of sufficient breadth to demonstrate competency and consistency of performance.

Assessment must also ensure access to:

- suitable natural cave sites with various qualities and fixed anchors
- belay equipment and natural and fixed anchors to rig ropes and establish belays.

Method of assessment

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:

- observation of selecting suitable anchors and belay systems according to the situation and participant's abilities
- observation of rigging ropes and establishing belays within a single pitch caving context
- oral or written questioning to assess knowledge of relevant legislation and organisational policies and procedures to ensure safe and appropriate use of equipment
- third-party reports from a supervisor detailing performance.

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:

- SISOCVE302A Apply single pitch abseiling skills in caves.

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, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Condition may include:

- age
- location
- wear
- decay
- corrosion
- weathering
- environmental stress
- insect damage.

Anchors may include:

- natural
- fixed.

Likely load may include:

- group size
- set up
- type of use, such as abseiling and laddering
- cavers ability
- technique.

Stability of surroundings may include:

- location
- cracks
- deformities
- fissures
- underlying structural features of natural anchors.

Organisational policies and procedures may include:

- occupational health and safety
- use, maintenance and storage of equipment
- communication protocols
- minimal impact environmental and caving codes
- Australian Speleological Federation Codes and Guidelines
- code of ethics.

Contextual issues may include:

- belayer's and abseiler's abilities
- weight ratio of abseiler to belayer
- group size
- other users
- pitch height

- Environmental impact*** may include:
- environmental impact
 - soundness of rock
 - access and egress
 - weather conditions
 - rock dislodgement
 - compacting of soil
 - damage to flora, fauna, bird's nests, fossils and bone remains and cave formations
 - effect on other users of the site.
- Participant*** may include:
- experienced
 - inexperienced
 - adults
 - children.
- Belay system*** may include:
- at the top of a pitch
 - at the bottom of the pitch
 - dynamic and static belays
 - self belays.
- Relevant legislation*** may include:
- occupational health and safety
 - permits or permission for access
 - environmental regulations.
- Safety of belayer*** may include:
- attachment to anchor or alternate safety system
 - positioning out of direct line of rock or equipment fall.
- Belay devices*** may include:
- plate devices
 - auto-locking devices
 - tubular devices
 - Prussik cord and suitable friction hitch.
- Equipment*** may include:
- ropes
 - tape slings
 - rope protectors
 - karabiners
 - maillon rapids:
 - belay devices
 - harnesses
 - helmets
 - first aid equipment.
- Hazards*** may include:
- loose rocks or gear
 - sharp edges
 - moving ropes running over stationary ropes, tape or webbing
 - tripping on rigging.

Risks may include:

- injuries
- stings or bites
- equipment failure.

Knots may include:

- end-of-rope knots
- mid-rope-knots
- rope joining knots
- tape knot
- friction knots.

Unit Sector(s)

Outdoor Recreation

Competency Field

Caving