



Australian Government

Department of Education, Employment and Workplace Relations

SISOCVE412A Rig multi pitches in complex vertical cave systems

Release: 2

SISOCVE412A Rig multi pitches in complex vertical cave systems

Modification History

Not Applicable

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to independently rig multi pitches in complex vertical systems using caving specific techniques. These are applicable to multi pitch caves with long or difficult to traverse pitches.

Application of the Unit

This unit applies to those working as caving adventure guides, instructors or program managers required to rig multi pitches in complex vertical caving systems with long or difficult to traverse pitches, with objective dangers such as regular flooding, very loose pitches or complex systems requiring careful navigation.

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

SISOCVE410A Rig a complex pitch using caving specific techniques

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 <i>condition</i> of <i>anchors</i>, including performance under <i>likely load</i>, and the <i>stability of surroundings</i>. 1.2. Identify and select solid and secure anchors according to <i>organisational policies and procedures</i> and <i>contextual issues</i>. 1.3. Select anchors and <i>equipment</i> that minimise <i>environmental impact</i> according to <i>participant's</i> characteristics and abilities, location of the anchors, and requirements of the activity. 1.4. Select anchors according to the <i>belay system</i>, re-belays, re-directions and back-ups being used. 1.5. Place artificial protection to create an anchor.
2. Rig rope pitches.	2.1. Identify safe access to and egress from the <i>cave site</i> according to <i>relevant legislation</i> and organisational policies and procedures. 2.2. Determine ascent or descent route according to contextual issues and organisational policies and procedures. 2.3. Tie <i>knots</i> suitable for the type of system established and for potential retrieval or rescue situations. 2.4. Set up anchors and ropes to facilitate potential rescue.
3. Rig a complex pitch.	3.1. Rig re-belays and re-directions to minimise <i>difficult rigging situations</i>. 3.2. Identify places where <i>complex rigging</i> may be required. 3.3. Rig for complex non routine situations and solve non-routine rigging problems to enable safe ascents and descents.

Required Skills and Knowledge

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

Required skills

- problem-solving skills to:
 - select anchors for the context and conditions at the site
 - assess condition of anchors, equipment and pitch prior to use
 - solve non-routine multi pitch rigging problems
 - rig re-belays, re-directions, ropes and anchors safely
 - identify and eliminate pitch hazards to enable safe ascent and descent
- self management skills to take responsibility for rigging a complex multi pitch within the context of a cave
- 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
- natural, fixed and artificial anchors and equipment types, characteristics and technology used in complex, multi pitch situations
- care and maintenance of equipment to ensure prolonged life span and safety requirements, as advised by the manufacturer's specifications for equipment use
- difficult rigging situations and non-routine rigging problems that may require re-belays and re-directions
- knots used in caving when rigging complex, multi pitches
- characteristics of the cave location to enable safe access to and egress from the site
- rescue and emergency procedures relevant to the location and complex 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:

- independently selects natural, fixed and or artificial anchors and other relevant caving and safety equipment according to contextual issues
- identifies and negotiates pitch hazards, difficult rigging conditions and complex non-routine situations to rig multi pitches that enable safe ascent and descent.

Context of and specific resources for assessment

Assessment must ensure participation in rigging multi pitches in complex vertical cave systems that reflect local conditions and are of sufficient breadth and duration to demonstrate competency and consistency of performance.

Assessment must also ensure access to:

- natural multi pitch cave sites suitable for the rigging of complex vertical systems
- natural, fixed and artificial anchors to rig a complex pitch
- caving and safety equipment.

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 for the rigging of a complex multi pitch vertical cave system
- oral or written questioning to assess knowledge of organisational policies and procedures and relevant legislation to enable safe conduct of all rigging activities
- observation of rigging a complex multi pitch cave system, including re-belays and re-directions
- observation of identifying and dealing with non-routine rigging problems, pitch hazards and difficult rigging conditions
- 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:

- SISOCVE411A Apply vertical caving skills.

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
- environmental stress
- insect damage.

Anchors may include:

- natural
- fixed
- artificial.

Likely load may include:

- group size
- set up
- type of techniques used
- caver's ability
- efficiency of 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
- risk management
- communication protocols
- minimal impact environmental and caving codes
- Australian Speleological Federation Codes and Guidelines
- code of ethics.

Contextual issues may include:

- caver's abilities
- weight variance in differing participants
- group size
- other users of the same cave system

- pitch height and difficulty
 - environmental impact
 - soundness of rock
 - access and egress
 - climatic conditions, at the surface and underground
- Equipment** may include:
- belay devices
 - ropes
 - caving ladders
 - rope protectors
 - harnesses
 - helmets
 - karabiners
 - first aid kit
 - rescue equipment
 - communication devices.
- Environmental impact** may include:
- rock dislodgement
 - damage to speleothems
 - compacting of soil
 - damage to flora and fauna.
- Participant** may include:
- experienced
 - inexperienced
 - adults
 - children.
- Belay system** may include:
- top of a pitch
 - bottom of the pitch
 - self belaying.
- Cave site** may include:
- multi pitches
 - complex vertical caving systems
 - long or difficult to traverse pitches.
- Relevant legislation** may include:
- occupational health and safety
 - permits or permission for access
 - environmental regulations.
- Knots** may include:
- end-of-rope knots
 - mid-rope knots
 - rope-joining knots
 - friction knots
 - tape knot.
- Difficult rigging situations** may include:
- knots in the rope
 - awkward traverses
 - poorly placed rope protectors or pads

Complex rigging may include:

- short re-belay loops
- weight of rope on the pitch
- confined or awkward spaces at belay or rig site
- problems caused by variance in party members' body mass
- poorly placed re-belays or redirections.
- pendulum swings
- rigging to prevent drowning in a waterfall or potential waterfall
- traverses across a pitch to a side passage lead
- awkward squeezes on a pitch
- placement of bolts or other artificial aids to allow further exploration of the cave
- tie-backs to previous pitches in multi pitch caves that lack solid anchors at pitch heads.

Unit Sector(s)

Outdoor Recreation

Competency Field

Caving