



Australian Government

SISOCLM004 Lead climb multi pitches, natural surfaces

Release: 1

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Modification History

Not applicable.

Application

This unit describes the performance outcomes, skills and knowledge required to climb multi pitches on natural surfaces using lead climbing techniques. It also requires the ability to belay climbers and to ascend multi pitch routes as a second climber.

It applies to leaders, guides or instructors who use these skills when leading participants during climbing activities. Leadership skills are provided in complementary units.

This unit applies to any type of organisation that delivers outdoor recreation activities including commercial, not-for-profit and government organisations.

No occupational licensing, certification or specific legislative requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Competency Field

Climbing

Unit Sector

Outdoor Recreation

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes

1. Prepare for the climb.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1. Select clothing, footwear and personal protective equipment suitable for the climb and conditions.
- 1.2. Confirm activity safety and emergency response procedures to ensure compliance during activities.
- 1.3. Confirm protocols for communications between climber and belayer.
- 1.4. Interpret route description; identify position of natural features, the climb route and contingencies.

- 1.5. Determine need for artificial protection during ascent; select and rack for accessibility during climb.
 - 1.6. Attach and adjust belay equipment to self and tie knots suitable for the established belay system.
 - 1.7. Complete equipment safety checks prior to climbing or belaying.
2. Climb multi pitch routes.
 - 2.1. Use safety procedures at bottom, top of and throughout climbs to minimise risk to self and others present.
 - 2.2. Maintain balance and use appropriate posture and climbing techniques to link a series of controlled moves to enable progress.
 - 2.3. Locate and utilise rest positions to reduce fatigue.
 - 2.4. Safely approach, avoid or negotiate hazards to ascend in a controlled manner.
 - 2.5. Maintain effective communication with belayer throughout climb.
 - 2.6. Use techniques that minimise damage to equipment and the surface during climb.
3. Ascend multi pitch routes as a lead climber.
 - 3.1. Evaluate potential direction of falls, magnitude of force and second climber's ability.
 - 3.2. Select suitable type and set anchors and belay system safely and efficiently throughout climb.
 - 3.3. Place protection periodically during climb to reduce fall distance.
 - 3.4. Use techniques to minimise rope drag, displacement of artificial protection and injury in the event of a fall.
 - 3.5. Monitor and maintain the safeguard system continuously.
 - 3.6. Retreat from pitches when climber safety is compromised.
 - 3.7. Select solid and secure anchors at top of pitch, or place artificial protection.
 - 3.8. Establish belay system at top of pitch to maximise climber and belayer safety.
4. Ascend multi pitch routes as a second climber.
 - 4.1. Utilise belaying system to maximise climber safety.
 - 4.2. Remove artificial protection with and without a nut tool and minimise damage to equipment and natural surface.
5. Change over at belay stations.
 - 5.1. Maintain continuous attachment to a reliable anchor system or anchor point.
 - 5.2. Exchange climber roles at belay stations and transition to next pitch without entangling ropes.
 - 5.3. Confirm alignment and stability of belay system before transitioning to next pitch.

6. Belay climbers.
- 6.1. Avoid or negotiate hazards and use safety procedures to minimise risk to self and others present.
 - 6.2. Establish belaying position and attach self to anchor, as required, to allow effective and safe use of belay system.
 - 6.3. Maintain rope tension to minimise fall distance and ensure climber movement is not unduly restricted.
 - 6.4. Monitor climber progress constantly, and maintain clear communication with climber.
 - 6.5. Arrest falls promptly using technique suitable to belaying device and situation.
 - 6.6. Safely and efficiently secure climber, when compromised, using tie off techniques.

Foundation Skills

Foundation skills essential to performance in this unit, but not explicit in the performance criteria are listed here, along with a brief context statement.

SKILLS	DESCRIPTION
Reading skills to:	interpret detailed and familiar organisational safety and emergency response procedures.
Oral communications skills to:	use clear and unambiguous verbal and non-verbal communications to make intent known.
Numeracy skills to:	- visually estimate angles, estimate load on ropes to determine appropriate tension for climbing and belaying - calculate loads for anchors and ropes under normal conditions and in the event of a fall to determine fall distances.
Planning and organising skills to:	manage own timing to complete activities within planned timeframes.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume Implementation Guides -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1ca50016-24d2-4161-a044-d3faa200268b>

Assessment Requirements for SISOCLM004 Lead climb multi pitches, natural surfaces

Modification History

Not applicable.

Performance Evidence

Evidence of the ability to complete tasks outlined in elements and performance criteria of this unit in the context of the job role, and:

- work as lead climber on four multi pitch climbs
- work as second climber on four multi pitch climbs
- across the climbs, collectively use six of the following techniques:
 - bridging
 - chimneying
 - crimping
 - heel hooks
 - jamming
 - layaways
 - laybacking
 - lunging
 - mantle
 - pinch grips
 - side pulls
 - smearing
 - underclings
- during each climb consistently:
 - follow safety procedures and safely negotiate hazards to climb in a controlled manner
 - connect self to belay system using appropriate devices and or knots
- across the climbs, collectively establish these types of anchor systems:
 - multi-directional
 - uni-directional
 - self-equalising
- across the climbs, collectively use the following rope systems
 - single rope
 - double rope technique
 - twin rope
- across the climbs collectively select and tie at least four different types of knots suitable for the system type established, and appropriate for the intended load and function
- belay climbers according to safety procedures, and complete the following:

- two top rope top belayed ascents
- two top rope bottom belayed ascents
- two simulated climber falls, and safely and efficiently secure and release climbers to continue.

Knowledge Evidence

Demonstrated knowledge required to complete the tasks outlined in elements and performance criteria of this unit:

- organisational safety and emergency response procedures for climbing activities
- purpose, features, and correct fit for safety, of personal protective equipment for climbers and belayers to include:
 - clothing
 - climbing shoes
 - abseiling/climbing helmets
 - harnesses of different types, advantages and disadvantages
- features, functions, advantages and disadvantages of different types of artificial anchors used as protection for lead climbing to include:
 - spring loaded camming devices
 - nuts, wires and hexes
 - pitons
- techniques used to secure and remove the above types of protection
- types of forces generated during lead climb falls, and how to calculate:
 - fall factor
 - fall distances
 - placement of artificial protection
- features, functions, advantages and disadvantages of different types of anchor systems used in lead climbing:
 - multi-directional
 - uni-directional
 - self-equalising
- features, functions and operation of climbing and belaying equipment used for multi pitch lead climbs on natural surfaces:
 - carabiners
 - static and dynamic rope and when each might be used
 - tape
 - sewn sling
 - Prusik cord
 - chalk bag and chalk
 - belay systems:
 - single rope

- double rope technique
- twin rope
- top rope top belay
- top rope bottom belay
- self-belay
- belay devices:
 - assisted locking
 - inline
 - plate
 - figure 8
 - tubular
 - improvised
- types of knots used, and how to tie them, when:
 - attaching belay equipment to self
 - attaching belay system to anchors
- principle of closing the system, advantages, disadvantages and methods used
- types of personal and equipment safety checks completed prior to climbing and belaying
- lead climbing techniques and appropriate posture for natural surfaces to include those for:
 - bridging
 - chimneying
 - crimping
 - jamming
 - laybacking
 - lunging
 - mantle
 - pinch grips
 - side pulls
 - smearing
 - underclings
 - lowering self during descents
- climbing techniques which are best suited to these climb features found in natural environments:
 - aretes
 - chimneys
 - corners
 - cracks
 - edges
 - flakes
 - jugs
 - overhangs

- roofs
- pinnacles
- ledges
- pockets
- techniques for belaying others during lead climbs on natural surfaces to include those for:
 - establishing belaying position for effective and safe use of belay system
 - rope handling and maintaining adequate rope tension
 - arresting climber falls
 - securing climber, tying off belay system and releasing
 - protecting second on traverse
- reasons for attaching belayer to anchor system when belaying others including:
 - minimising belayer movement to retain stable position and stance
 - minimising effects of force of climber fall and risk of injury to belayer
 - minimising risk of belayer fall
- communication protocols used between climbers and belayers to include:
 - calls
 - hand signals
 - whistles
- typical hazards for multi pitch lead climbing on natural surfaces, and techniques used to safely negotiate these:
 - falling rocks, water, debris, gear
 - abrasion points
 - sharp edges
 - squeezes and overhangs
 - ledges
 - traverses
 - slippery or unstable terrain
 - dense vegetation and trees
 - strong breezes
 - tangled rope
 - stuck ropes
- how to care for climbing equipment during activities to avoid damage, and promote long lifespan
- techniques used to minimise damage to climbing surfaces in natural environments when climbing.

Assessment Conditions

Skills must be demonstrated in an outdoor environment where multi pitch lead climbs are completed on natural surfaces.

The following resources must be available to replicate industry conditions of operation:

- first aid equipment
- communication equipment for emergency response
- rescue equipment.

Assessment must ensure use of:

- participants with whom the individual interacts during climbing activities
- personal protective equipment to include:
 - abseiling or climbing helmets
 - harnesses
- anchors to include:
 - fixed artificial
 - naturally occurring
 - artificial removable
- climbing equipment to include:
 - carabiners
 - rope which can include static and or dynamic rope
 - rope protectors
 - tape or sewn sling
 - slings
 - Prusik cords
 - chalk bag and chalk
 - belay devices
- template safety checklists
- organisational safety and emergency response procedures for climbing activities.

Assessors must satisfy the Standards for Registered Training Organisations requirements for assessors, and:

- have a collective period of at least three years' experience as a climbing leader, guide or instructor, where they have applied the skills and knowledge covered in this unit of competency: the three years' experience can incorporate full and or part time experience.

Links

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