



**2007**

**“ Alpine Skills in Snow”**

Internal assessment for:

Unit standard 18132 Version 2

Demonstrate basic movement skills and the use of ice axe and  
crampons

**Credits: 3**

---

<b>Name:</b>	<b>Competent :</b>  <b>Date:</b>
--------------	--

<b>level:</b>	<b>2</b>
<b>credit:</b>	<b>3</b>
<b>final date for comment:</b>	April 2008
<b>expiry date:</b>	December 2009
<b>sub-field:</b>	Outdoor Recreation
<b>replacement information:</b>	This unit standard and unit standard 18133 replaced unit standard 4585.
<b>purpose:</b>	People credited with this unit standard are able to demonstrate mountain movement skills to maintain safety of self and others and use mountaineering equipment to maintain personal safety.
<b>entry information:</b>	Open.
<b>accreditation option:</b>	Evaluation of documentation by NZQA and industry.
<b>moderation option:</b>	A centrally established and directed national moderation system has been set up by the Sport, Fitness and Recreation Industry Training Organisation - Outdoor Recreation Advisory Group.
<b>special notes:</b>	<ol style="list-style-type: none"> <li>1 For the purposes of this unit standard the assessment should be conducted on a variety of non-avalanche terrain, including low angled (up to 20-degree) terrain, and short, steep terrain.</li> <li>2 For technical standards necessary for climbing a mountain, refer to Unit 20140, <i>Demonstrate technical mountain craft skills</i>.</li> <li>3 All activities must comply with any relevant environmental, legislative and/or regulatory requirements set out in <i>New Zealand Environmental Care Code</i>, Health and Safety in Employment Act 1992, Injury Prevention, Rehabilitation, and Compensation Act 2001, and their subsequent amendments. The <i>New Zealand Environmental Care Code</i> is available from the Department of Conservation, Head Office, PO Box 10420, Wellington.</li> <li>4 There are minimum assessor requirements for the assessment of this unit standard. The details of these requirements are available on the Sfrito website <a href="http://www.sfrito.org.nz/">http://www.sfrito.org.nz/</a>.</li> </ol>

## ***Elements and Performance Criteria***

### **element 1**

Demonstrate mountain movement skills.

#### **performance criteria**

- 1.1 Walking techniques are applied taking into account the terrain and snow conditions.
- Range: walking techniques - traversing, down hill, up hill;  
terrain and snow conditions - rock, scree, surface snow conditions, snowpack, run-out, visibility.
- 1.2 Steps are kicked, and provide secure footing for climbing, descending or traversing a snow-slope.
- Range: edging, pigeonholing, plunge steps.
- 1.3 Steps are cut on a snow slope using ice axe, taking into account terrain and snow conditions, and steps are used for ascending and descending.
- Range: terrain and snow conditions include - surface snow, snowpack, run-out.

### **element 2**

Use ice axe and crampons.

#### **performance criteria**

- 2.1 Ice-axe techniques are applied taking into account the terrain and snow conditions.
- Range: techniques - step-cutting, walking stick, self-arrest;  
terrain and conditions may include - surface snow conditions, snowpack, run-out, visibility.

- 2.2 Crampons are fitted and adjusted to the boot size.
- 2.3 Correct application of crampon techniques is demonstrated taking into account the terrain and snow conditions.
- Range: traverse, climb, descend;  
techniques -10 point, front point.
- 2.4 Ice axe and crampon techniques are applied correctly in combination.

---

This unit standard is covered by AMAP 0102 which can be accessed at <http://www.nzqa.govt.nz/site/framework/search.html>.

## **Purpose:**

People credited with this unit standard are able to demonstrate mountain movement skills to maintain safety of self and others and use mountaineering equipment to maintain personal safety.

## **Special Notes:**

1. For the purposes of this unit standard the assessment should be conducted on a variety of non avalanche terrain, including low angled (up to 20-degree) terrain, and short, steep terrain.
2. For technical standards necessary for climbing a mountain, refer to Unit 20140, Demonstrate technical mountain craft skills.
3. All activities must comply with any relevant environmental, legislative and/or regulatory requirements set out in New Zealand Environmental Care Code, Health and Safety in Employment Act 1992, Injury Prevention, Rehabilitation, and Compensation Act 2001, and their subsequent amendments. The New Zealand Environmental Care Code is available from the Department of Conservation, Head Office, PO Box 10420, Wellington.
4. There are minimum assessor requirements for the assessment of this unit standard. The details of these requirements are available on the Sfrito website <http://www.sfrito.org.nz/>.

## **Overview of assessment:**

This assessment has 3 tasks

Task 1: Walk on varied alpine terrain using an ice axe

- a. Without crampons
- b. Using crampons

Task 2: Self-arrest from a variety of positions

Task 3: Cut steps in hard snow using an ice axe

### **Resources for all tasks:**

- Each candidate will need to have available the gear required for alpine walking (ice axe, helmet, boots,
- personal clothes and waterproof gear, pack, food.
- The group may need additional safety equipment. The equipment carried will depend on the nature of the trip but could include emergency shelter, first aid kit, mountain radio, cellphone, spare warm clothing,
- Stove
- NZMSC Alpine Skills Manual
- Mountaineering: Freedom of the Hills, 6th ed, edited by Don Graydon; published by The Mountaineers, Seattle, WA.

**Task 1: Walk on varied alpine terrain using an ice axe**

**a. Without crampons**

**b. Using crampons**

**Overview of Task 1:** the focus of the assessment is to show safe and efficient movement skills in an alpine environment using an ice axe, and crampons when they are needed

**Instruction to candidate:**

During the task you are required to:

- Walk on rock and scree
- Walk on snow using an ice axe only
- Walk on hard snow using an ice axe and crampons
- Walk in a safe, balanced and efficient way

<b>Element 1: Demonstrate mountain movement skills</b>	
<b>Performance criteria</b>	<b>Evidence/ Judgement</b>
<b>1.1</b> Walking techniques are applied taking into account the terrain and snow conditions.  Range: walking techniques -traversing, down hill, up hill; terrain and snow conditions - rock, scree, surface snow conditions, snowpack, run-out, visibility	
<b>1.2</b> Steps are kicked, and provide secure footing for climbing, descending or traversing a snow-slope.  Range: edging, pigeonholing, plunge steps.	

<p><b>Element 2: Use ice axe and crampons</b></p>	
<p><b>2.1</b> Ice-axe techniques are applied taking into account the terrain and snow conditions.</p> <p>Range: techniques - step-cutting, walking stick, self-arrest; terrain and conditions may include - surface snow conditions, snowpack, run-out, visibility.</p> <ul style="list-style-type: none"> <li>· Balance is maintained, Sliding is avoided</li> <li>· Avoids slopes where a self-arrest would be required to avoid a hazardous runout</li> <li>· Route or technique is altered based on:Runout e.g. takes a different route if snow conditions are hard and runout is hazardous</li> <li>· Uses ice axe on snow for balance and security: <ul style="list-style-type: none"> <li>- As a walking stick</li> <li>- As a self-belay</li> </ul> </li> <li>· When using ice axe on steeper snow: <ul style="list-style-type: none"> <li>- Keeps axe in uphill hand</li> <li>- Maintains 2 points of contact with snow (2 feet, or 1 foot and axe)</li> <li>- Changes direction on slope using axe and feet to create a solid stance</li> </ul> </li> </ul> <p>While walking without crampons:</p> <ul style="list-style-type: none"> <li>· Walks with confidence up, down and across 15° to 20° angled slopes of: <ul style="list-style-type: none"> <li>- Rock</li> <li>- Scree</li> <li>- Soft snow e.g. fresh snow or slush</li> <li>- Hard snow (less than 2cm foot penetration)</li> </ul> </li> </ul>	
<p><b>2.2</b> Crampons are fitted and adjusted to the boot size.</p> <ul style="list-style-type: none"> <li>- Crampons are securely fitted to boots, with long straps tucked away</li> </ul>	

<p><b>2.3</b> Correct application of crampon techniques is demonstrated taking into account the terrain and snow conditions.  Range: traverse, climb, descend;  techniques -10 point, front point.</p> <p>Walks up, down and across snow slopes of at least 25° using flat-footed technique, keeping all downwards-facing points in contact with snow</p> <ul style="list-style-type: none"> <li>- Ascends and descends snow slopes of at least 25° using front points</li> </ul>	
<p><b>2.4</b> Ice axe and crampon techniques are applied correctly in combination.</p> <p>Combines skills in <b>2.1</b> and <b>2.3</b> effectively – movements are confident, fluid and show little hesitation.</p> <p>While walking with crampons: Manages balling up proactively</p>	

## Task 2: Self-arrest from a variety of positions

**Overview of task:** The focus of this assessment is to show an ability to stop a slide on moderate angled snow

### Notes to the Assessor

Self-arresting with crampons on can be very hazardous. The technique can be covered in a static situation.

### Instruction to candidate:

During this task you are required to self arrest using good technique from 4 positions:

Demonstrate the following in a controlled location selected by the instructor.	
--	--

Technique should include correct grip on ice axe, axe placement, crampons clear of snow.	
--	--

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>• · On belly head uphill</li><li>• · On belly head downhill</li><li>• · On back head uphill</li><li>• · On back head downhill</li></ul> |  |
|---|--|

### **Task 3: Cut steps in hard snow using an ice axe**

**Overview of task:** The focus of this assessment is to show the ability to move on hard snow without crampons

**Instruction to candidate:**

During this task you are required to cut steps using an ice axe while walking up and down a slope

<p><b>1.3</b> Steps are cut on a snow slope using ice axe, taking into account terrain and snow conditions</p> <p>Range: terrain and snow conditions include - surface snow, snowpack, runout.</p> <p>Cuts steps while walking up and down hard snow slopes.</p> <ul style="list-style-type: none"><li>• On low-angled slopes with a good runout a single blow gives enough of an edge to maintain grip</li><li>• On steeper slopes, or slopes with poor runout, steps are big enough for whole boot</li><li>• Steps are cut efficiently e.g. use of straight arm pendulum technique; adze doesn't get stuck in the snow</li><li>• Steps are cut on slopes of above 15°</li></ul>	
---	--