

## Table of Contents

|  |           |
|--|-----------|
| <b>LOWHILLS TRAINING.....</b>  | <b>3</b>  |
| SCOPE OF THE SCHEME.....   | 3         |
| DEFINITION OF LOWHILLS TERRAIN.....  | 3         |
| <b>STRUCTURE OF THE SCHEME .....</b>   | <b>4</b>  |
| PRE-TRAINING REQUIREMENTS .....  | 4         |
| FIRST AID.....   | 5         |
| ACCREDITATION FOR PRIOR LEARNING/EXPERIENCE .....                                | 5         |
| UPDATE TRAINING.....   | 5         |
| LINKS WITH NATIONAL SCHEMES .....  | 5         |
| TRAINING CONTENT.....  | 5         |
| COURSE CONTENT.....  | 6         |
| <b>PLANNING.....</b>   | <b>7</b>  |
| PLANNING CONSIDERATIONS.....   | 7         |
| CONTINGENCY PLANNING .....   | 8         |
| <b>NAVIGATION.....</b>   | <b>9</b>  |
| MAP SKILLS.....  | 9         |
| MEASURING DISTANCE.....  | 10        |
| MEASURING HEIGHT .....   | 10        |
| GRID REFERENCES.....   | 10        |
| SETTING THE MAP .....  | 11        |
| OBSERVATION .....  | 12        |
| MEASURING DISTANCES .....  | 13        |
| TIMING SPEED OF TRAVEL.....  | 13        |
| PARTS OF THE COMPASS.....  | 15        |
| TAKING A BEARING FROM THE MAP .....  | 16        |
| OTHER NAVIGATION AIDS .....  | 18        |
| <b>GROUP MANAGEMENT .....</b>  | <b>20</b> |
| <b>RISK ASSESSMENT.....</b>  | <b>21</b> |
| <b>WEATHER .....</b>   | <b>23</b> |
| <b>IMPACT OF WEATHER ON THE GROUP.....</b>                                       | <b>24</b> |
| <b>FOOD AND DRINK .....</b>  | <b>26</b> |
| <b>CLOTHING AND EQUIPMENT .....</b>  | <b>28</b> |
| <b>SCOTTISH OUTDOOR ACCESS CODE.....</b>   | <b>33</b> |
| <b>ENVIRONMENTAL AWARENESS.....</b>  | <b>34</b> |
| <b>REMOTE SUPERVISION MODULE FOR D OF E SUPERVISORS.....</b>                     | <b>36</b> |
| <b>CAMP CRAFT .....</b>  | <b>38</b> |
| <b>RESPONSE TO UNFORESEEN CIRCUMSTANCES INCLUDING EMERGENCY SITUATIONS .....</b> | <b>39</b> |
| <b>WATER HAZARDS .....</b>   | <b>41</b> |
| <b>OTHER ENVIRONMENTAL HAZARDS .....</b>   | <b>43</b> |

|  |           |
|--|-----------|
| <b>ANSWERS TO QUESTIONS.....</b>                     | <b>44</b> |
| <b>APPENDIX .....</b>                                | <b>46</b> |
| <b>SAMPLE GENERIC RISK ASSESSMENT: LOWHILLS.....</b> | <b>49</b> |
| <b>PERSONAL SKILLS CHECKLIST .....</b>               | <b>51</b> |
| <b>SUGGESTED READING AND USEFUL CONTACTS.....</b>    | <b>52</b> |

## **LOWHILLS TRAINING**

Lowhills Training is an employment based (In-house) training scheme provided by Aberdeenshire and Moray Council's for their employees. The scheme operates within these Councils' management procedures and policies of safe practice.

Entry to the scheme is designed to encourage those members of staff with minimal hillwalking experience to participate in training, enabling them to lead groups on Lowhills terrain.

Walking on Lowhills terrain is reasonably straightforward on most days of the year. However, hills of this height can still be hazardous and challenging at times, and require appropriate skills and leadership. Lowhills training is intended to provide staff with a basic level of knowledge and expertise to lead groups on this terrain.

### **SCOPE OF THE SCHEME**

Lowhills Training is intended for:

1. Council employees working in the context of their employment with the council
2. Use on Lowhills terrain as defined below in **summer conditions** only, generally May-October inclusive.

The Lowhills award remit precludes terrain which is snowy or icy.

### **DEFINITION OF LOWHILLS TERRAIN**

Land that is:-

1. to the east of the A9 between Dunkeld and Inverness and north of a line drawn from Dunkeld to Montrose.
2. between 300 and 600 metres above sea level.

Routes that:-

1. are primarily path and track based, with no more than very short sections of untracked terrain between established paths
2. do not include planned water crossings except for simple steps across small burns that cross established paths and are no more than ankle deep
3. are known to the leader
4. remain within approximately 5km (1 hrs walk) of a tarred road.

Where the level of a planned walk is not clear, advice should be sought from the **Adventure Activities Consultant**.

### **LOW LEVEL ACTIVITY - UP TO 300M APPROX**

A considerable range of educational activity on foot takes place at low level, much of which is more appropriately considered as "off-site" activity rather than hillwalking.

Training is not specifically required to operate at low level. However both the learning value and safe conduct of low level activity may be considerably enhanced by participation in Lowhills training. This is especially true for coastal and cliff-top walking for which Lowhills training would be strongly recommended.

Walking at low level is not necessarily constrained to the summer months only, but considerable thought should be given to winter walking even at this level, particularly with younger children.

## **STRUCTURE OF THE SCHEME**

The scheme comprises of:

- A log book that records personal walking experience before and after Lowhills training.
- A training manual that acts as an aide-memoir to the training course.
- The Local Authority safety policy: '**Guidance for Off-Site Excursions Including Adventurous Activities**'.
- A training course of a minimum of 12 hours duration.
- A required level of achievement by the end of the training course (See Personal Skills Checklist in the appendix). Where appropriate for the individual, further training may be offered to enable an acceptable standard of competence to be reached.
- An additional 1 day **D of E Supervision Module**. This is required for those wishing to supervise on overnight camps or remotely.  
For candidates new to the Lowhills scheme who wish to assist or supervise on Duke of Edinburgh expeditions or similar, this module is mandatory. It is strongly recommended for existing Lowhills holders and will be mandatory at the next due update for staff involved in the Duke of Edinburgh scheme or who intend to camp with groups.
- A technical adviser who manages the scheme and acts as a source of advice and guidance (Adventure Activities Consultant.)
- Update training within 5 years (One hill day with update on the scheme and council policies).

## **PRE-TRAINING REQUIREMENTS**

1. Candidates must be a minimum age of 18.
2. Candidates must have experience of hillwalking in different Lowhills areas over at least 20 days. (**See page 3 – Definition of Lowhills terrain**) Experience relevant to the Lowhills Award can be gained in a number of different situations, such as leading a group, being a member of a led group, or walking with a group of friends or solo. However the experience is gained some, the following should apply:
  - At least part, if not all of the area should be unfamiliar.
  - The journey should be a minimum duration of 5 hours or minimum distance of 10km.
  - The terrain or conditions should challenge the individual in some way, for example requiring navigational or group management decisions to be made.
  - Knowledge or skill should be increased as a result of the day.

**PLEASE NOTE THAT A COMPLETED LOGBOOK WITH RELEVANT EXPERIENCE IS AN INTEGRAL PART OF THIS AWARD.**

**Please note that candidates with only minimal levels of experience will often require additional training before being given Lowhills approval. The above requirements are a minimum and where possible should be exceeded.**

### **FIRST AID**

All groups operating in Lowhills terrain should be accompanied by an adult holding a current First Aid qualification. As a minimum this should be an HSE (6 hour) award, although First Aiders operating in Lowhills are recommended to attend courses with an additional element of training in outdoor/mountain safety.

### **ACCREDITATION FOR PRIOR LEARNING/EXPERIENCE**

Experience or training elsewhere may be recognised as equivalent to a Lowhills training course. Any such experience should relate to structure, training content and standards, be delivered by a suitably recognised trainer, and will be at the discretion of the Adventure Activities Consultant.

### **UPDATE TRAINING**

Updating will be either by participation in a specific training event within five years or by progression to further training (e.g. one of the national awards).

Candidates requiring update training should produce an updated logbook to demonstrate their continued involvement in the activity.

### **LINKS WITH NATIONAL SCHEMES**

Those wishing to gain a national award which is not employment or regionally limited should consider applying to Mountain Training UK to participate in one of their schemes.

*Advice regarding progression to these schemes may be sought from the Adventure Activities Consultant.*

### **TRAINING CONTENT**

The exact format of the Lowhills course will be planned by the trainer taking into consideration the needs of the trainees and the weather conditions and will be structured to meet the following criteria:

- Will involve a minimum of 12 hours training.
- Will involve a minimum of six hours on Lowhills terrain, four hours of which must be in one session.
- Must be completed over a period of no longer than 40 days.

## **COURSE CONTENT**

- Introduction to the scheme
- Planning a journey, including use of route cards and individual/group needs.
- Navigation
- Group management
- Risk assessment
- Weather and its impact on the group
- Food and drink
- Clothing and equipment
- Access and conservation
- Response to unforeseen circumstances including emergency situations
- Other environmental hazards including water hazards

## **REMOTE SUPERVISION MODULE:**

- Remote supervision of groups
- Use of stoves and tents
- Expedition risk assessment
- Teaching basic navigation
- Camping hygiene

## **PLANNING**

Lowhills leaders are expected to be familiar with the ‘planning procedure’ of a trip in their establishment. This procedure should include the following:

- Clear aims for the day which are these appropriate and achievable.
- Permission from the Head of Establishment.
- A completed risk assessment. (See Appendix for sample Risk Assessment).
- A notification form (OE01) sent to the Adventure Activities Consultant including details of intended route.
- Information to participants/parents/guardians with sufficient notice given. It is a statutory duty of the organiser to inform parents and guardians.
- Consent forms and other information referring to medical conditions. There needs to be enough time before the trip to ensure all are returned and checked.
- A designated co-coordinator/contact person from the establishment who has been identified to parents, and who has access to all relevant documentation and contact numbers. Contact arrangements should be sufficient to enable a co-ordinated response in the event of an emergency.
- Insurance. Checks should be made to ensure no further insurance is needed for the event.
- Access arrangements.

Useful planning checklists are available in the Council’s safety policy: “*Safety and Good Practice in Adventurous Activities*” which should be available in all establishments.

## **PLANNING CONSIDERATIONS**

- MEDICAL INFORMATION. Recent illness or injury, asthma, allergies, epilepsy etc.
- BEHAVIOURAL PROBLEMS. All members of the group have a responsibility to the rest of the group in terms of self control and carrying out simple instructions. Ensure that staffing is adequate.
- PHYSICAL FITNESS. If the group is unused to physical activity you will need to take this into account when planning your journey, perhaps allowing greater time to complete the walk, shortening it or factoring in more breaks.
- EXPERIENCE. More consideration may need to be given to group management; equipment etc. if the group is inexperienced.
- COMPATIBILITY. Group dynamics can play a large part in not only the enjoyment but the safety of the journey.

- AIMS OF THE JOURNEY.

After all the relevant information has been gathered in the first stage of the planning process, it may become clear that the original plan is unsuitable for all the members of the group and an alternative plan may need to be made.

### **CONTINGENCY PLANNING**

The original plan may have to be changed for one of any number of reasons, for example:

- Illness of a key member of staff.
- Mini-bus breakdown.
- One or more of the group members arriving inadequately dressed or with inappropriate footwear or clothing.
- Exceptionally bad weather.
- A delayed start due to unforeseen circumstances.

Contingency plan or ideas should be explored in the planning phase and mentioned on the information to parents, helping avoid cancellation and disappointment.

Possible contingency plans may include:

- Visiting an orienteering or wayfaring course.
- Visiting National Trust castle trails.
- A river-side walk.
- Having another member of staff take those with inappropriate clothing or footwear home.
- A shorter low level walk.
- A different route on the hill that would take less time.

Flexibility and clearly defined cut-off times are important so that you can modify your plans if conditions are too bad or the time available for the journey has been shortened for some reason.

The above measures will help you make decisions at the appropriate time and help prevent problems occurring during the journey when they will be more difficult to resolve.

It is important that the establishment co-ordinator is made aware of any changes to the original plan.

# NAVIGATION

A fundamental element of safety when leading a group on open hill terrain is knowing exactly where you are and how to get to where you want to go.

Navigation is not only a skill used in poor weather conditions. The group leader needs to know, regardless of the weather conditions at the time, where they are and how they are going to get to their objective.

Navigation can be described in simplistic terms. However, there are many navigational ‘tools’ available to us. The key to successful navigation is to be able to use one or more of these ‘tools’ appropriately and with efficiency.

## MAP SKILLS

### SCALES

Different **scales** of map provide different amounts of detail. The scale of every map is printed on the cover and is expressed as the ratio between a unit of length on the map and the equivalent distance on the ground. Most common types used by hillwalkers are 1:25,000 (4 cm = 1 Km), and 1:50,000 (2 cm = 1 Km). Larger scales, for example 1:250,000 are ideal for cycling or motoring and a smaller scale, 1:10,000 would be ideal for orienteering.

### IDENTIFYING FEATURES

Developing a good understanding of how the ground, its shape and features are represented on a map is fundamental to good navigation. Leaders should be able to recognise the following:

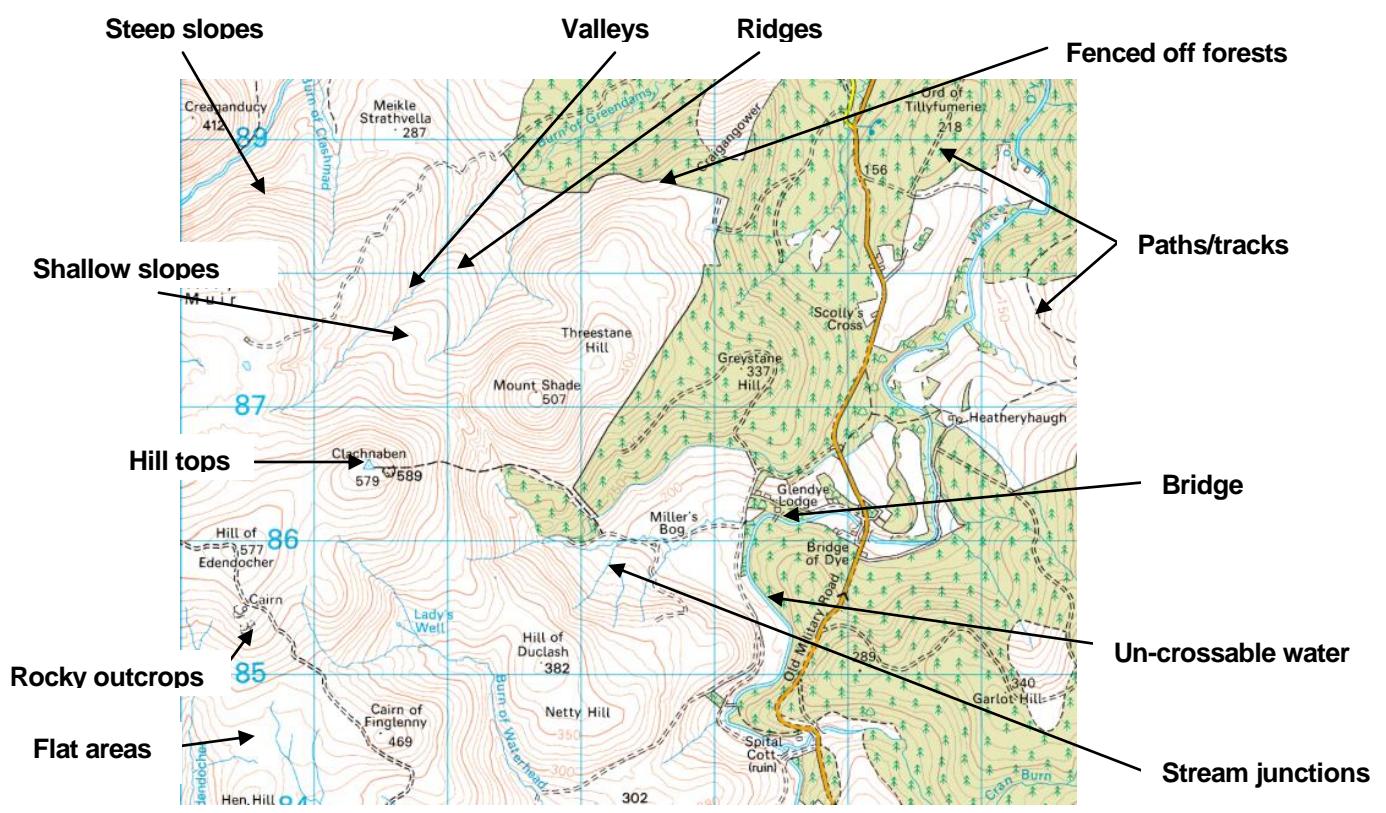


Fig. 1: Identifying features on a map

## **MEASURING DISTANCE**

The **Grid Lines** on all ordnance survey maps are spaced 1 km apart. A grid square is approximately 1.5 km from corner to corner. This helps us estimate distance with the eye.

For accurate navigation, distance needs to be **measured** and this is usually done by using a measuring scale on the compass. It would be normal for a navigation section to be measured in hundreds of metres.

## **MEASURING HEIGHT**

The third dimension (or relief) on a map is represented by **contour lines**. These are lines of equal height above sea level. On 1:50,000 and 1:25,000 scale OS maps they show a **vertical interval** of 10 metres. Every fifth contour line is a thicker brown line, these divide the height into 50m sections.

## **GRID REFERENCES**

The need often arises, especially in emergency situations, to be able to fix an exact position on the map and then pass this information to others. This is done with a **Grid Reference**.

All the gridlines on a map are numbered. Therefore it is possible to refer to a particular **grid square** by recording the number of the two lines which bound it on the lower left hand corner. The vertical gridlines are called '**eastings**' as they are numbered eastward, and are always recorded first. The horizontal lines are called '**northing**s' as they are numbered northwards. These are always recorded second. (Memory jogger: "Along the corridor and up the stairs.")

To fix a point on the map accurately a **six figure** Grid Reference is used. This is done by dividing the grid square into 10 (100 metre sections) from the square's lower left hand corner. The division can be done either by using the measuring scale on the compass or as a visual estimate. This figure is added respectively to the easting and northing as described above, e.g. 615826

This 6 figure grid reference refers to a 100m square on the ground. It is therefore important to always give a **description of the feature** along with the grid reference, e.g. Path junction GR 615826.

## Some grid reference examples:

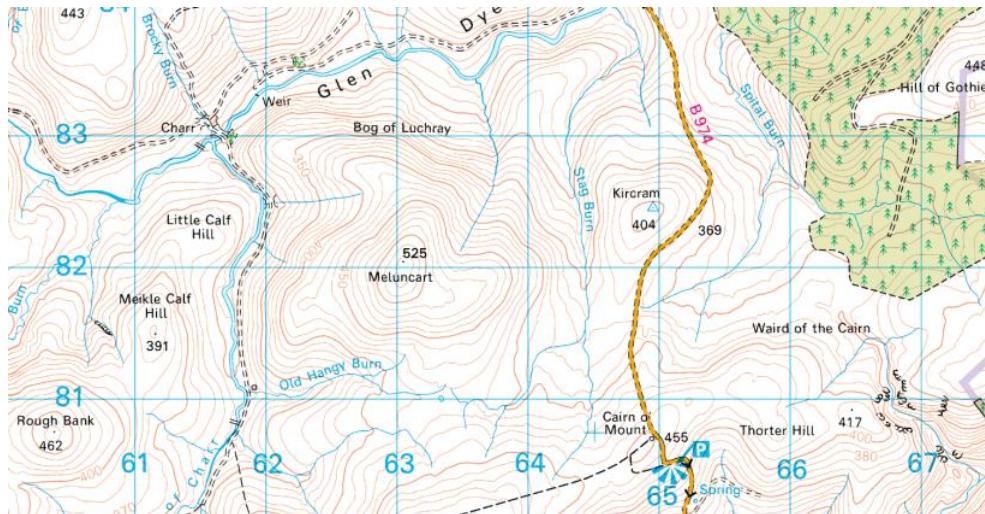


Fig. 2: Grid references

Meikle Calf Hill is approx. 612815

What is the 6 fig Grid Ref for:

- a) The top of Meluncart? \_\_\_\_\_
- b) Kirgram? \_\_\_\_\_

Which features do the following grid references describe

- a) 617830 \_\_\_\_\_
- b) 627812 \_\_\_\_\_
- c) 669830 \_\_\_\_\_

**Answers on Page 44**

## **SETTING THE MAP**

It is important that you 'set' the map before trying to use the information it is giving you as it is much harder to interpret this information if the map is not aligned with the ground.

This can be done by using the compass or obvious features on the map. To use the compass, simply place it on the map and turn the map underneath it until the grid lines that point North are aligned with the magnetic needle on the compass, which also points North.

Leaders should practice keeping the map set to the ground as they walk.

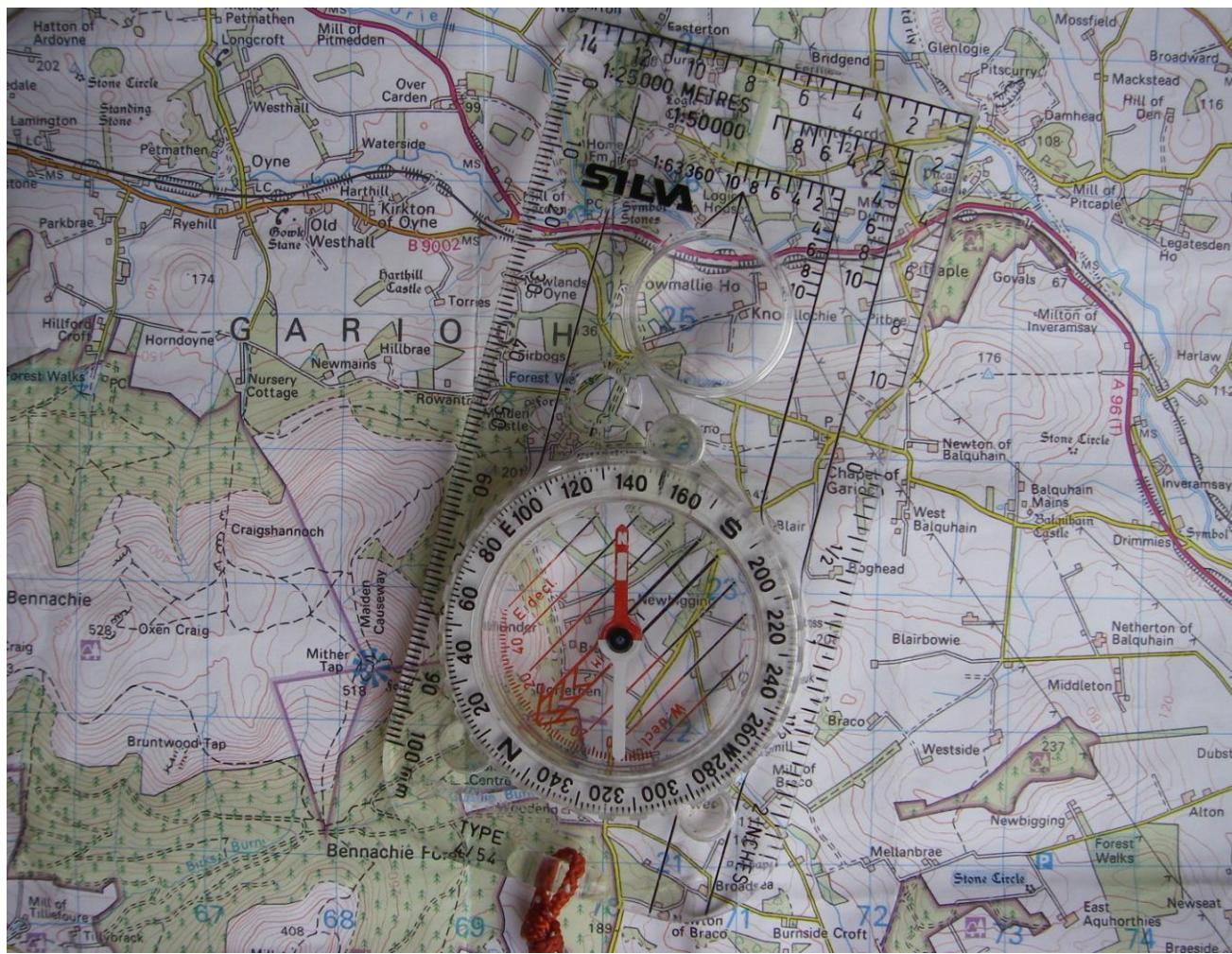


Fig. 3: Setting the map using the compass

Through practice and experience the map reader needs to be able to:

- ‘Set’ the map so it aligns with the ground, and then navigate using the lie of the land as a guide.
- Be able to make a 3D mental image of the landscape from the information given by the map.
- Anticipate how the map/landscape may have changed since the map was made. For example, forests may have been felled or paths and tracks extended. New plantations are common on low hills. It is worth asking Estate Officers if they have any new plantations or deer fences, which will not be shown on a new map.

## **OBSERVATION**

The greatest percentage of navigation is done by observing the relationship between what is seen on the ground and what is shown on the map.

By continually observing the features and lie of the land as you walk you will be able to build up a ‘story’ of events which can then be compared with the map. Proximity to features such as streams and forest boundaries can be gauged and as progress is made along the track you can frequently relocate yourself on the map as you approach, arrive and leave behind recognisable features.

Similarly, before embarking on your journey or separate 'leg', you can anticipate what you will expect to see along the way by first consulting the map and looking at the successive features of that particular section. In this way, it is unnecessary to have to continually refer to the map.

When visibility is poor, note any features close to or on the path or track and check the direction the track is travelling in.

### **MEASURING DISTANCES**

By using techniques which allow us to calculate the distance we have travelled we can pinpoint our location more easily, especially in poor visibility. Measuring how long it will take to complete a leg of a journey may be done on its own or in conjunction with other navigational techniques, depending upon the situation.

### **TIMING SPEED OF TRAVEL**

The leader needs to be able to calculate the speed the group will be travelling at in order to:-

- plan a realistic route for the whole group.
- estimate the time of arrival at certain points during the day.
- assist in the process of relocation

A normal adult walking speed on flat ground would be 5 kph. From this the following can be calculated:

- It takes 12 minutes to walk 1 km.
- It takes 6 minutes to walk 1/2 km (500 m)
- It takes 1.2 minutes to walk 100m (1 minute and 12 seconds)

The overall group speed may average out at 3 - 4 kph, which could be looked at as:

#### 3kph

20 mins to walk 1km  
10 mins to walk 500m ( $\frac{1}{2}$ km)  
2 mins to walk 100m

#### 4kph

15 mins to walk 1km  
7 mins to walk 500 km  
1.5 mins to walk 100m

Added to this calculation of speed is an allowance for the height gained. A reasonably fit hillwalker can expect to have to add about **1 minute for every 10 metres (or one contour line)**. The group leader would need to determine the fitness level of the group in working out timings. It is much safer to over-estimate times when planning a whole day.

There are many factors to be taken into account when calculating the speed at which you are walking.

- Speed and direction of wind – walking into a strong head wind will reduce walking speed
- The gradient of the slope you are on – a steep incline will naturally slow a party down while a steep descent may increase or reduce speed depending on the individual nature of terrain
- Large rucksacks such as those used on overnight camps will slow progress

- A group will tend to walk faster at the start of the day while energy levels are still high, and slower towards the end of the journey as the muscles tire.
- A cold, hungry, demotivated group will generally slow down.
- An individual will tend to walk faster than a group.

### **TOP TIP!**

If you are using timing as part of your navigational process, it is important to take into account any stops made and stop your watch accordingly.

### PACING

Pacing is a technique used to measure a given distance over the ground over which you are travelling. For example, a leader may take 68 double paces (every time, say, the left foot hits the ground) for every 100m on a flat track.

In order to locate a junction or a feature, the distance to that feature can be measured using the compass and then paced in 100m sections.

The following considerations should be given when pacing:

- Counting individual 100 m stretches is easier than continuing to count the total number of paces in succession and makes it easier to rectify any mistakes.
- The same factors that affect speed of travel also affect pacing, e.g. gradient of slope, walking into a head wind etc. It is a good idea to practice this skill on lots of different types of terrain, gradients and in different weather conditions.
- When the ground becomes so steep as to require zigzagging, pacing becomes very difficult and less reliable

### **TOP TIP!**

A way of counting off each 100m paced is useful. Try attaching sprung beads to your compass string or onto your rucksack strap. Ideally a pedometer could be used.

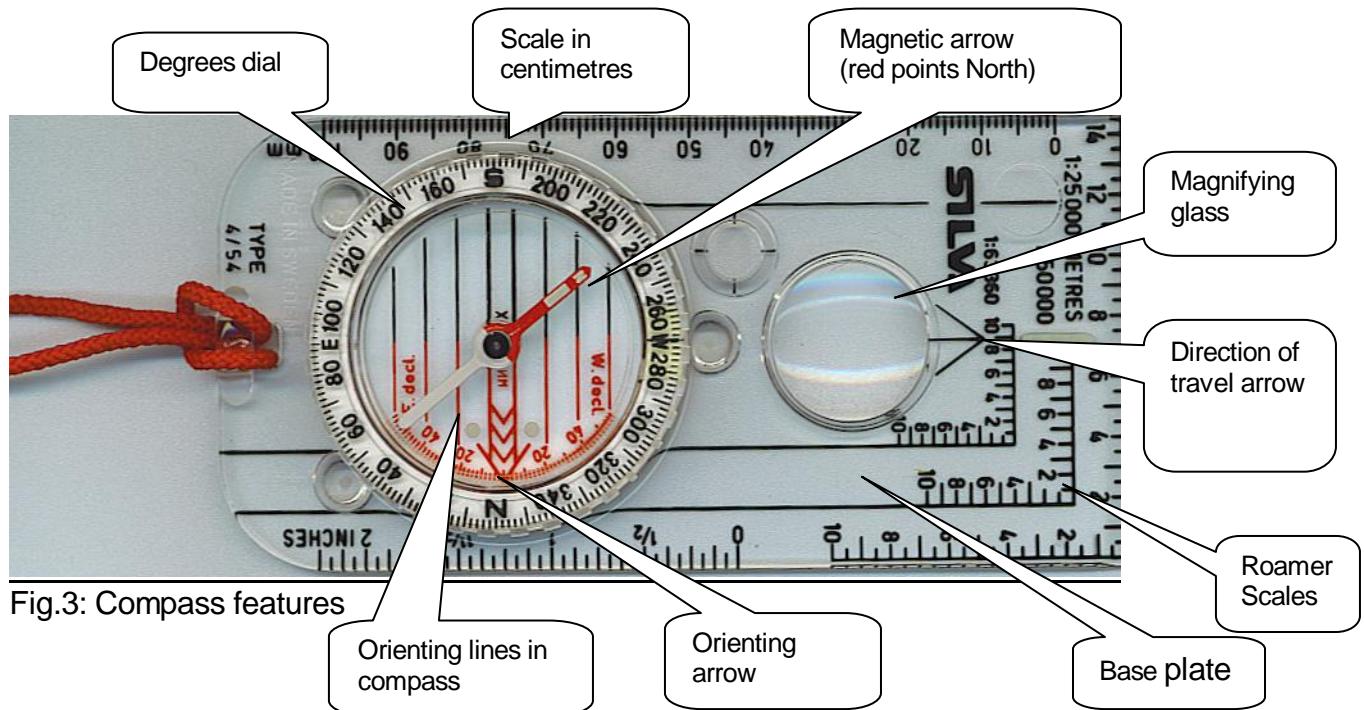
### COMPASS SKILLS

The compass adds another dimension to the skill of navigation. Modern compasses are the combination of a **fixed direction (North)** and a **protractor** giving an angle from that fixed direction. The result is a bearing from North.

The compass can be used to:

- align the map to correspond with the features on the ground
- check the direction of a linear feature such as a stream or path
- give a direction of travel to follow in poor visibility
- identify features in the distance such as hill tops or buildings
- pinpoint the navigator's position on the map by using identifiable features in the distance
- check the aspect of a slope
- measure distances on the map

## PARTS OF THE COMPASS



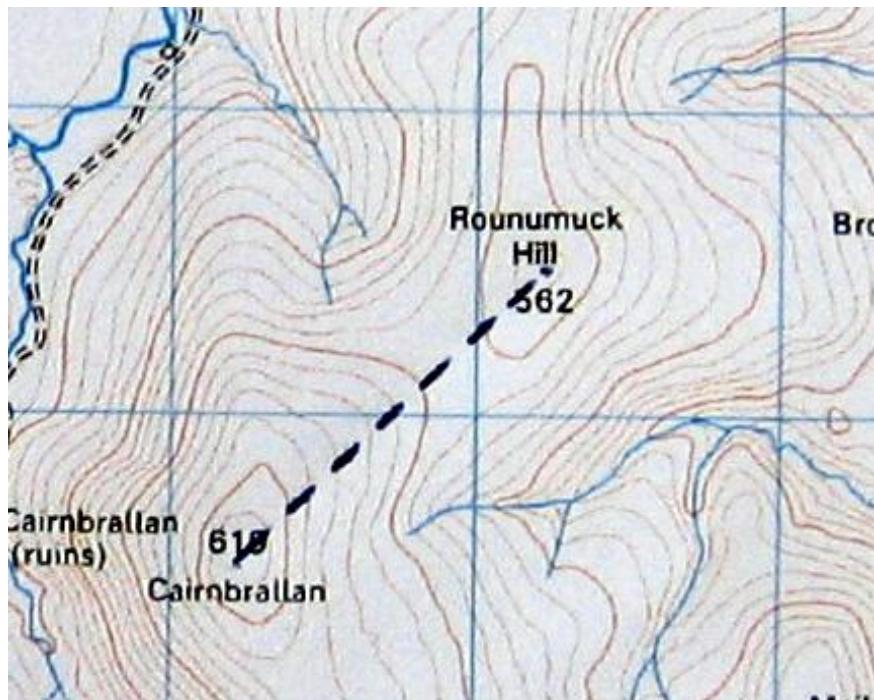
### **TOP TIP!**

When buying a compass it is best to favour models with 'roamer' scales and longer base plates.

The following page shows how to take a bearing from the map. Walking on a bearing is not easy. There are many distractions when leading a group.

**By the end of the two day training course, leaders would be expected to demonstrate taking a bearing and walking on it with confidence.**

## TAKING A BEARING FROM THE MAP



1. Hold map flat. (It does not matter which way it is pointing).

2. Estimate the bearing by eye. Here approx  $45^{\circ}$  when going from Cairnbrallan to Rounumuck Hill.

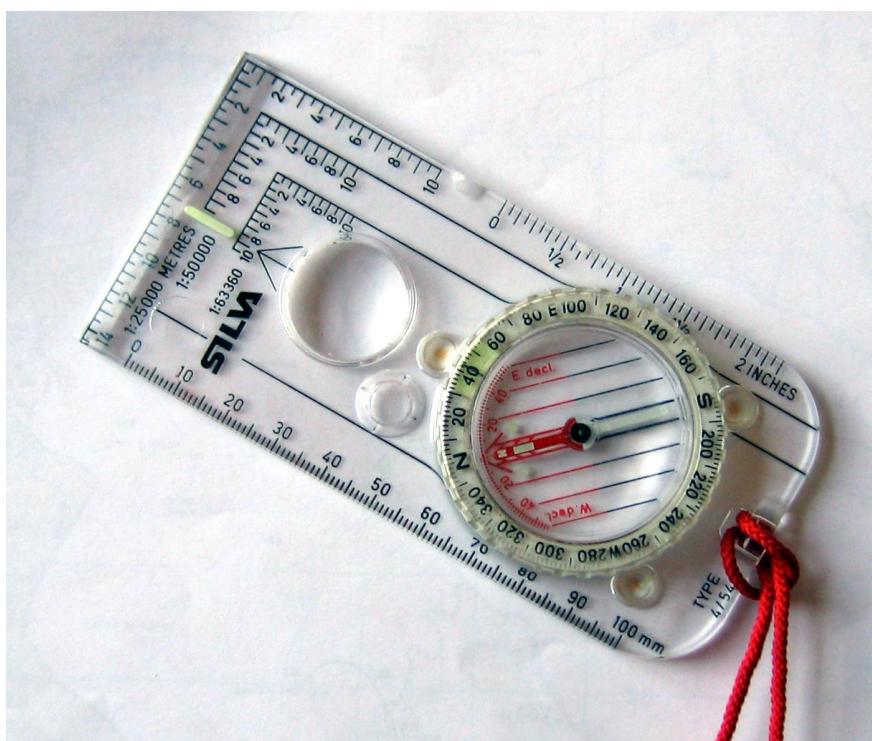


3. Place one long edge of compass along the line A-B with direction of travel arrow pointing the way you want to go.

At this point it does not matter where the magnetic needle is pointing.



This is a grid bearing.



4. Turn compass housing until the orienting lines are parallel to map grid (orienting arrow in compass housing must point to top of map = North).

Read bearing here

5. Hold the compass in front of you and turn yourself round until the magnetic needle is aligned with the red housing arrow. The direction of travel arrow indicates where you want to go.

Remember that different situations require different navigational techniques and the leader needs to consider which 'tools' are right for the job. In clear weather on easy terrain simply observing obvious features on the ground and relating them to the map may be enough. In trickier conditions, several tools may need to be employed at one time.

A successful navigator is someone who is able to employ these techniques appropriately and with speed and efficiency.

## **OTHER NAVIGATION AIDS**

### **Global Positioning System (GPS)**

The use of a GPS is increasingly common and can be a useful tool. However its use should never be regarded as a substitute for the map, compass and observational skills previously described.

### **Altimeters**

These can be useful aids to positioning or re-location. Altimeters that monitor air pressure need to be recalibrated throughout a day but can also be useful for indicating changing weather conditions.

### **QUESTIONS ON NAVIGATION:**

Which navigational technique/s would be most useful in the following situations:

1. You have reached a track junction and would like to confirm that the direction you are about to take correlates with that which is shown on the map.  
.....  
.....

2. You are able to identify your location on a track and need to locate another track at a junction 300m ahead. The map shows the track you need to find as being quite small and you are unsure that you will be able to see it easily.  
.....  
.....

3. You have stopped for lunch and the group would like to take in a particular spot height before descending again. You are unsure as to whether or not you have enough daylight hours left to do so.  
.....  
.....

4. Your group have been slower than you anticipated and it is now approaching dusk. You are at a spot height and need to locate a path junction on your way down the track from current location. Near the junction you want is a similar junction whose path leads to a car park on the other side of the hill from where you are parked.  
.....  
.....

5. You are able to locate yourself with certainty and are trying to find a forestry track 400m away. The path towards this forestry track is vague, the visibility is poor, and you are concerned that you may not be able to follow the path with certainty.
- 
- 

***Answers on Page 44***

## **GROUP MANAGEMENT**

**During a day walk a group leader will have to use a number of group management Strategies. Different situations call for different styles of leadership to be applied so as to ensure overall group security, control and enjoyment for everybody.**

Good management will ensure that:

- The group is always together, unless directed otherwise.
- The speed of travel is suitable for everybody.
- Everybody has energy to finish the whole walk.
- The leader can see everybody all the time.
- Group members are not endangered by cliffs or steep slippery ground.

**REMEMBER : It's not the speed of the group members that's the problem, it's the difference between their speeds.**

Depending on the situation the leader should adopt a leadership style between very strict and very relaxed. For example:

Leaders can keep the speed down by being the front person in the group.  
On steeper ground the leader is best placed at the front so that he/she can adopt a pace suitable for everyone

Leaders can position themselves between any steep craggy drop and the group.  
The leader should be at the front of the group when approaching potentially hazardous terrain. An assistant can keep an eye on the group from the back.

In poor visibility, the group needs to keep close together.

On non hazardous terrain in good weather, group members can be tasked to set a suitable pace for everybody whilst the leader adopts a position in the middle of the group.

In some situations, it may be acceptable for group members to amble on at their own pace.

A different management style will be adopted for different types of terrain, at different times of the day and to achieve different objectives with the group.

Areas that present the most danger and need the tightest control are:

- country roads
- steep ground on rock or grass
- exposed craggy areas

## **RISK ASSESSMENT**

Risk assessment should be part of the planning process for any Lowhills day. This approach allows group leaders to assess the risks involved in a particular expedition and put measures in place to prevent or reduce them to an acceptable level.

Group leaders are required to read and implement the council's generic risk assessment/s and operating procedures related to their planned activity. Additionally, any site specific hazards not covered by the generic risk assessments must be detailed on the notification form submitted to the Adventure Activity Consultant prior to the activity place. A sample risk assessment is included in the Appendix.

Group leaders should consider:

- What are the hazards?
- Who might be affected by them?
- What is the likelihood of an accident occurring?
- What safety measures need to be put in place to reduce risks to an acceptable level?

Many of the hazards may be generic, occurring each time a group ventures into the Lowhills, for example wet and windy weather leading to a risk of hypothermia. Other hazards will be specific to a particular route, for example the risk of slips or falls from the tor on Bennachie, or problems crossing swollen streams on a particular route. The level of risk presented by a particular hazard may be entirely different depending on the composition of the group, weather and other factors. A group of pupils with behavioural problems on the summit of Bennachie will present an entirely different management problem to a group of sensible 6<sup>th</sup> formers in the same location.

In assessing risk thought should therefore be given to the following factors prior to the day:

- Group members' age, competence, fitness, temperament and behaviour
- Any special educational or medical needs
- Competence, experience and confidence of accompanying staff
- Ratio of staff to group members
- Suitability of available equipment, e.g. footwear, waterproofs
- Seasonal conditions, weather and timing
- Length of route, type of terrain and any specific hazards
- Escape routes and accessibility of the group's transport

Where groups carry out repeat visits to the same location many of the risks will be the same but it is essential not to become complacent as factors such as the make-up of the group may significantly alter the level of risk. Evaluation of each visit may highlight new safety measures which need to be put in place.

Risk assessment should also be an ongoing mental process undertaken by Lowhills leaders during the day. For example a group of competent 6<sup>th</sup> formers arrives at the summit of Clachnaben. Hazards include slips and falls from the tor. Given the experience of the group and calm dry weather the likelihood of a slip is medium to low. The group leader decides to ascend the tor with the group, spotting carefully to avoid slips. The same group arrives at the tor but the weather has become wet and windy. The likelihood of a slip is now high. Safety measures may include a decision not to

ascend the tor or taking students two at a time on to the tor spotted by experienced staff.

Safety should always be a prime consideration and group leaders should be prepared to turn back or alter the route if risks are assessed during the day to be too high.

## **WEATHER**

The weather in the Scottish hills is rarely stable for more than a few hours as weather systems are constantly passing over the British Isles, changing the weather on the ground. Weather forecast reports are generally very accurate as long as they are interpreted meaningfully to upland areas and hill terrain.

### **SOURCES OF WEATHER FORECAST**

The internet now provides one of the most reliable and up to date sources of weather information. Both the BBC and Met Office forecasts can be obtained easily online giving accurate local information. Mountain Weather Information Service ([www.mwis.org.uk](http://www.mwis.org.uk)) also gives specific mountain forecasts for all the upland areas in Scotland whereas the other forecasts tend to be specific to sea level.

- Radio - both National and Local Stations give good forecasts. The Shipping Forecasts are very accurate.
- Newspapers put their forecast in print but they work twelve to twenty-four hours beforehand and tend to lose accuracy as a result.
- 'Weathercall' is a 24hr recorded forecast. For Grampian and East Highlands 09068 500 423. For UK weather 09068 500 400
- Fax - the Met Office has a very good fax service giving good detail and maps of weather systems. Fax for Scottish weather (5 day forecast): 09060 100 418.

### **FORECAST INTERPRETATION**

Many forecasts give temperatures and wind speeds for sea level. With increased height these conditions change, usually for the worse. When interpreting forecasts for upland areas the following must be taken into account:

- As height is gained atmospheric pressure drops. The lower the atmospheric pressure the more likely it is to be cloudy and wet.
- Air temperature goes down with increased height by approximately  $1^{\circ}\text{C}$  for every 150m.
- Upland areas restrict normal air/wind flow. This leads to an acceleration of winds on high ground. Wind chill refers to the ability of wind to remove heat from the body. A stiff cold wind will whip away warmth from a body much faster than if the air were still. If the skin or clothing is wet this will happen faster still.
- When planning a route over the hills take into account the weather's recent history. This will affect ground conditions i.e. very dry or wet, and may make some streams impassable..
- Take wind direction into account when planning a route. It may be possible to walk a route a direction that means the group does not spend the day battling into the wind

## **IMPACT OF WEATHER ON THE GROUP**

The weather affects us all the time, especially if we are out on a hillside. Apart from raising or lowering our morale, it can take its toll in a number of physical ways. The best documented of these is perhaps hypothermia.

### **Hypothermia**

Hypothermia is the gradual loss of heat from the body to such an extent that the 'core temperature' is reduced. This then starts to affect normal bodily functions and behaviour. All group leaders need to be familiar with the signs, symptoms and treatment for hypothermia - see Appendix. It needs to be stressed that hypothermia is usually brought on by a combination of wet, cold and windy **weather**. These combined effects strip heat very rapidly from those who are ill prepared and inappropriately clad.

### **Acute sunburn**

Often brought on by a combination of weather conditions, usually strong sunlight and a cool breeze. The individual's skin is kept cool by the breeze and as consequence burning is unnoticed.

### **Heat stroke**

The combined effects of strong sun, physical activity, dehydration and no cooling breeze. The body becomes over heated and symptoms including acute headache and nausea manifest themselves.

## **EFFECTS OF SINGLE ELEMENTS UPON THE GROUP**

**Wind** - In strong winds we constantly fight to keep our balance, which can be very tiring in the short term and have an exhaustive effect over the period of a day. Strong winds also dramatically affect communication, especially 'up wind'.

**Rain** - People without good waterproofs will become wet, cold and ultimately miserable in sustained and heavy rainfall. When hoods are up hearing and vision are impaired, which affects the ability to communicate effectively with the group. Ground conditions become slippery, boggy and hard to walk on.

**Cloud** - Wet, cold weather and poor visibility generally lead to a reduction in the group's morale and ability to concentrate, whilst the need to navigate accurately increases.

## **POSITIVE ASPECTS OF ADVERSE WEATHER**

As long as warm and dry conditions are not far away, a low level walk in strong winds and driving rain can be a very worthwhile and enjoyable experience. In the same way few people experience real 'darkness', many people do not experience being out in challenging weather conditions. There is a place for such an experience as long as it is in a controlled and safe situation.

**QUESTIONS ON WEATHER:**

1. If the temperature at sea level is 12 degrees, what can you expect it to be at 600m?

.....

.....

.....

2. Give three ways in which the wind can affect the safety of the group.

.....

.....

.....

3. How is the weather in the hills likely to differ from a sea level forecast?

.....

.....

.....

***Answers on Page 44***

## **FOOD AND DRINK**

The energy needed for a day hillwalk can be four to five times that of a normal day. Bearing this in mind together with the environmental problems of litter and packaging there are a number of considerations the group leader needs to take into account.

### **TIMING OF MEALS AND SNACKS**

A large wholesome breakfast needs to be eaten. Since the leader will not always know if the group members have eaten breakfast, it may be wise to plan a snack stop early in the walk.

Snack stops should be factored into the day and people should be encouraged to eat little and often.

After the walk a full meal is needed to replenish the body.

### **TYPES OF FOOD**

**Before the walk:** breakfast foods that release energy slowly, i.e. foods high in proteins, carbohydrates and fats are a good idea. The traditional cooked breakfast is an excellent combination of these.

**During the day:** foods that provide a steady release of energy are required to sustain the body. Carbohydrates and sugars are good for this. Simple sugars that give a 'quick hit' are not as useful as those which provide longer lasting energy. Cereal bars are a good alternative to chocolate and dried fruit, bananas and sandwiches are useful hill foods.

**After the walk** the body needs to replenish, build and repair so a full hot balanced meal is a good idea.

### **DRINKS**

Our bodies need fluid to operate. Fluids are heavy and make a big difference to the weight of the rucksack. Despite this each person needs to have plenty to drink bearing in mind that:

Dehydration contributes to both heat exhaustion and hypothermia and inhibits body functions that provide energy to the muscles.

Drinks (especially sweet drink) provide a fast and easily absorbed source of energy.

Cans and cartons are best avoided as they are non re-sealable. Try to encourage bottles.

Groups should be encouraged to carry hot drinks (preferably in unbreakable flasks) in cold weather.

## PACKAGING WASTE AND LITTER

Our duty to any outdoor environment is to leave it in the condition in which we find it (or better). No litter of any type is acceptable including food wastes that are biodegradable, e.g. peel, cores, crusts. Feeding the birds is also not acceptable as this upsets the normal food chain of the area and has an adverse effect upon the wildlife.

## **QUESTIONS ON FOOD AND DRINK:**

1. Give five examples of food that is appropriate for a hill environment.

.....  
.....

2. What is the problem with group members consuming lots of simple sugars during the day?

.....  
.....

3. Outline why it is better to factor in several short food and drink stops instead of just one long one.

.....  
.....

***Answers on Page 44***

## **CLOTHING AND EQUIPMENT**

The leader of a group has a responsibility to be adequately and appropriately clothed themselves as well as ensuring the group has the right clothing for the day. Never assume that members of the group are properly kitted out. **Always check before it is too late to send them back.**

### **THE BASIC PRINCIPLES:**

- Clothing worn should reflect the current weather conditions and those forecast, i.e. lots of warm layers in colder weather and loose fitting lightweight clothing when it is hot.
- Clothing worn in a hill environment should ideally be warm, hard wearing and correctly fitting. Woolly tights, leggings, tracksuit bottoms and thermals make great underclothes.
- The greater the number of layers the better. Layers of air are trapped between the garments and therefore keep more heat in.
- Wool and fleece are better for insulation than nylon and cotton but the latter are cooler in hot weather
- On hot days, clothes should be lightweight and preferably made of synthetic material which allows sweat to evaporate more freely. Group members should still have clothing with them that they can cover their skin with if there is a risk of sunburn. Sunhats, visors or sunglasses as well as sun cream are important additions to the equipment carried.
- Denim should be avoided as it becomes heavy and uncomfortable when wet and has little insulating properties
- Shorts and T-shirts should never be seen as adequate on their own. A full body cover is needed either for solar protection or warmth.
- It is appreciated that many people do not have clothes suited to hill country. This increases the need for the leader to ensure they have several layers of whatever clothes they do have.
- The leader should always have spare clothes to fit the size of the people in the group.

Remember that spare items of clothing do not necessarily have to be carried by the leader and can be shared out amongst the rest of the party.

### **PROBLEMS ASSOCIATED WITH CLOTHING:**

- Any clothes lose their insulation when they become wet especially denim and cotton
- Fashion encourages clothes to either fit too tight or too loose.
- many people arrive minimally dressed as opposed to adequately dressed.

## WINDPROOF AND WATERPROOF GARMENTS

To keep the body insulated windproof and waterproof layers need to be carried. A windproof will stop the warm trapped air from being whipped away but usually has little in the way of waterproof qualities. Waterproofs will act as both windproof and waterproof but create a condensation problem unless made of breathable fabric.

The following should be considered when checking the group's equipment:

- Garments rated 'shower-proof' are not waterproof.
- Non-breathable waterproofs trap water vapour from condensation. Clothing worn underneath this rapidly becomes wet, particularly when waterproofs are worn as a windproof layer in dry weather.
- Borrowed waterproofs are often too big.
- If in any doubt about the weather, waterproofs (including waterproof trousers) should always be carried.

## HATS AND GLOVES

Few people realise the importance of hats and gloves. Wearing a hat is one of the most effective ways of retaining body heat since a large percentage of heat is lost through the head. When hands get cold, they don't work properly and even a simple act such as zipping up a jacket becomes difficult or impossible.

It is a good idea as a leader to carry a few spare pairs of hats and gloves unless you know for certain that everyone within the group has these items with them.

## FOOTWEAR

Suitable foot wear is one of the greatest problems when equipping a group. Foot wear must be suitable to the terrain. Boots should be worn where the ground *is* classed as rough, steep or rocky. The following should be considered when checking boots.

Plastic soles provide very little grip on wet rocks or grass

Boots should provide support to the ankle

The tread needs to be deep

A degree of waterproofing is important if there is a chance of getting wet feet

Other types of foot wear can be worn if they are suited to the ground e.g. trainers and wellies.

## FOOT CARE

The main causes of blisters are:

- Long toe nails
- Borrowed or old boots

- New boots not broken in
- A single pair of thin socks. (Thick socks are a better idea)
- Failing to treat sore or hot spots on the feet before they develop into blisters

### SUN PROTECTION

In hot weather sun hats, long sleeved shirts, sun cream and extra drink should be carried.

### LEADERS RUCKSACK

The extra equipment carried by a leader is designed to assist in the prevention and treatment of an emergency situation. In any case of injury or illness the leader should have ensured that they and the rest of the party are carrying enough equipment to remain relatively comfortable in any weather condition until the situation can be resolved. The leader should be aware of different designs and types of rucksack and their own rucksack should be large enough to carry the following:-

- **A first aid kit.** Should be comprehensive but practical. Ensure you are familiar with its contents and carry with you what you know how use.
- **A group shelter.** This is one of the most important items of group equipment and should be large enough to accommodate the entire group. Group shelters are not only essential in emergency situations, they are useful as a way of escaping the wind and rain for a while in order to check on the group or refuel.
- **A 'bivvy' bag.** Gore-tex bivvy bags are great but expensive. A simple orange plastic or silver foil bag/blanket will suffice.
- **Spare clothes.** A spare insulating layer in a large size and a couple of spare pairs of hats and gloves are a good idea as well as those which should be carried by individual group members.
- **A headtorch.** Headtorches are far more useful than hand held torches since they allow free use of both hands and are less likely to be dropped. Many headtorches come with LED bulbs which have a longer battery life and tend to be more compact. A headtorch should have a decent beam and it is a good idea to carry some spare batteries.
- **A mobile phone.** The quickest way to transfer information in an emergency or if you have changed your plans for the day is by phone. These need not intrude on the day for any other reason and should be kept in a waterproof casing fully charged in the leader's rucksack.  
(NB. Sometimes your phone may say 'emergency only' on the display which means that you will still be able to contact the emergency services via a different network from your own. In the case of no reception at all, moving to a different, higher location will often regain reception.)
- **Spare map and compass.** A spare map and compass are useful additions within the party since maps can and do blow away and compasses can break.

- **Whistle.** This can be used to attract attention in the event of an emergency. Six blasts following by a minutes pause. (Flashes from a headtorch can be used in a similar way.)
- **Flask/drinks bottle**
- **Writing equipment.** Waterproof paper and a pencil may be needed to note details in an emergency.

#### GROUP EQUIPMENT

Each person in the group should be self sufficient with:

- Own rucksack/rucksack liner
- Food and drink
- Spare clothes
- Waterproof
- Hat and gloves

#### **'Leisurelend', Aberdeenshire's Equipment resource:**

The Leisurelend store in Inverurie has a range of equipment including waterproofs, boots, group shelters and camping equipment which can be hired to groups at a minimal cost.

Tel: 01467 625088

**QUESTIONS ON CLOTHING AND EQUIPMENT:**

1. List 3 of the main features of appropriate footwear for the hill and explain why they are important.

.....

.....

2. Why are denim and cotton considered inappropriate materials for a hill environment? Can you think of an occasion to wear them and what are the alternatives?

.....

.....

3. List what you consider to be the most important items of clothing for someone walking in a Lowhills environment on an unsettled day.

.....

.....

.....

***Answers on Page 45***

## **SCOTTISH OUTDOOR ACCESS CODE**

The Scottish Outdoor Access Code was approved by the Scottish Parliament in July 2004. The Code is based on three key principles and these apply to the public and to land managers.

**Respect the interests of other people.** Acting with courtesy, consideration and awareness is very important. If you are exercising access rights, make sure that you respect the privacy, safety and livelihoods of those living or working in the outdoors, and the needs of other people enjoying the outdoors. If you are a land manager, respect people's use of the outdoors and their need for a safe and enjoyable visit.

**Care for the environment.** If you are exercising access rights, look after the places you visit and enjoy, and leave the land as you find it. If you are a land manager, help maintain the natural and cultural features, which make the outdoors attractive to visit and enjoy

**Take responsibility for your own actions.** If you are exercising access rights, remember that the outdoors cannot be made risk free and act with care at all times for your own safety and that of others. If you are a land manager, act with care at all times for people's safety.

Information regarding the Scottish Outdoor Access Code can be obtained from  
[www.snh.org.uk](http://www.snh.org.uk)  
[www.outdooraccess-scotland.com](http://www.outdooraccess-scotland.com)

## **ENVIRONMENTAL AWARENESS**

Lowhills leaders are ideally placed to help group members to become more aware of our complex and interdependent relationship with the natural environment. Leaders should endeavour through good practice – both personal and taught – to develop an ethos that encourages understanding of and stewardship of the natural environment.

Through many generations of land management and of increased recreational use, the hill environment has been changed from its natural state. Many delicate environments have disappeared and rare varieties of plant and animal species have been lost or disturbed. It is our responsibility as recreational users of the environment to play our part in reducing these degenerative changes by adopting a policy of **MINIMUM IMPACT**.

It is impossible to have no impact upon the ground on which we tread. However, we can minimise our impact by becoming more aware of the countryside through which we are travelling and making our groups more aware of environmental issues, e.g. deer management, forest regeneration, conservation measures.

### **MINIMUM IMPACT**

We can minimise our impact by considering the following:

- The size of group
- How much noise we make.
- The frequency of use of the area.
- Our choice of routes.
- Litter. All litter including food scraps, apple cores, etc. should be removed.
- Toilet arrangements.
- Parking (limiting the number of vehicles used and parking considerately.)
- Avoiding disturbance of animals, plants, birds, and crops.
- Footpath erosion (e.g. avoid cutting corners on zigzags)
- Disturbance of the activities of those who work on the land, e.g. lambing, stalking, grouse shooting

### **LAND MANAGEMENT CONSIDERATIONS**

**Red Deer Stalking:** The open season for culling red deer stags is from 1<sup>st</sup> July – 20<sup>th</sup> October, and for hinds from 21<sup>st</sup> October–15<sup>th</sup> February. However, the most critical time is generally from mid-August to mid-October.

**Lambing:** The exact time of hill lambing in Scotland varies according to the area, but is generally between mid-March and the end of May.

**Grouse Shooting:** The grouse shooting season runs from the 12 August-10 December, with most shoots taking place during the earlier part of that period. Ground nesting moorland birds can be very vulnerable to disturbance and walkers should take particular care during nesting times

Before setting out for the hills during the stalking season, leaders can inform themselves about possible problem areas by contacting the local estate, or seeking information from the Mountaineering Council of Scotland website: [www.mountaineering-scotland.org.uk](http://www.mountaineering-scotland.org.uk)

## **ENVIRONMENTAL KNOWLEDGE**

Leaders might wish to extend their knowledge and understanding of the upland environment including topics such as:

- History and use of the land - agriculture, settlement, forestry, estate management etc.
- Conservation issues and knowledge of the work of protective agencies, e.g. National Parks, RSPB.
- Recognition of plant and animal species and their resistance to disturbance and human pressure.
- Recognition of different types of habitats such as moorland, woodland (planted/natural/regenerated), wetlands.
- Aberdeenshire Council's Countryside Ranger Service would be an excellent source of help and guidance.

[www.aberdeencity.gov.uk/acci/web/site/Parks/NSS/pos\\_CountryParks.asp](http://www.aberdeencity.gov.uk/acci/web/site/Parks/NSS/pos_CountryParks.asp)

## **D OF E SUPERVISION MODULE**

It has now been recognised that in addition to the skills outlined previously in this manual, further training is often required by those wishing to assist or supervise on the Duke of Edinburgh Award scheme which runs in many schools and establishments.

The following aspects of leadership are fundamental to safe supervision of this and other similar schemes.

### **INDIRECT SUPERVISION**

Many Lowhills Leaders will be required to exercise indirect supervision of groups operating independently in Lowhills terrain, e.g. Duke of Edinburgh's Award expedition groups. While there is considerable educational value in these activities it is important that such events are carefully planned and that participants are fully prepared. Particular attention should be given to the planning of such events where there are special educational or medical needs or where a behavioural problem is likely.

Supervising staff retain full responsibility for the group, regardless of the presence or involvement of an assessor. Parents should be informed of any plans for young people to operate without direct supervision.

Training provided to participants should be sound and thorough. The group leader must be satisfied that participants have acquired the necessary skills and have the experience, confidence, physical ability and judgement to proceed with the activity and cope with any unforeseen circumstances. The condition and suitability of any equipment to be used, e.g. stoves, tents, boots etc. should have been assessed by staff prior to the event and participants trained in its use.

Participants should operate on types of terrain previously encountered in supervised sessions where the appropriate skills to perform the expedition have been adequately demonstrated.

Careful planning is essential to the safety and success of indirectly supervised events. Staff should be familiar with the terrain and routes chosen so that potential errors in navigation and other problems, such as swollen streams or vague path junctions can be highlighted prior to the event and contingency/supervisory plans prepared (see sections on **Risk Assessment** and **Planning**). Clear procedures should be established for ongoing contact with staff and dealing with emergency situations. All involved should clearly understand these arrangements.

Supervision may take the form of:

- Shadowing the group.
- Meeting the group regularly at agreed locations.
- Phone calls to a base contact (beware of reliance on mobile phones in hill locations where a signal is not always obtainable)
- Messaging systems, such as 'check in' sheets left at specific locations.
- Unobtrusive observation of participants.
- Occasional accompaniment in potentially hazardous terrain or during very bad weather.

Where potentially serious errors are foreseeable staff should be in a position to observe and intervene if necessary, for example near major path junctions where an error would result in a considerable diversion.

Different methods of supervision may be appropriate at different times and will depend on the group and their level of experience.

**Potential hazards to consider:**

- Paths crossing swollen streams
- Bad weather forecast
- Indistinct paths or new, unmarked paths
- Untracked areas
- Disease carrying insects such as ticks
- Access problems which necessitate diversion from the planned route
- Poor equipment used by the group, e.g. leaking waterproofs/boots, heavy expedition equipment, broken tent poles/ insufficient pegs etc
- Rocky areas, e.g. tors
- Students becoming lost or their whereabouts uncertain to the supervisor

**How to minimise the risks:**

- There should be thorough training and planning with the group prior to the event
- The supervisor should research and be familiar with the route beforehand
- Staff training and qualifications should be up to date
- Equipment should be checked well in advance and changed if necessary
- Clear risk assessments should be written and staff should be familiar with these
- Route cards should be comprehensive, with escape routes where necessary
- The group should be given clear briefings and have methods of externally communicating with a base contact or emergency service, such as a mobile phone and relevant contact details
- Staff should be aware of any medical issues within the group which may affect the trip
- Staff should employ appropriate supervisory methods throughout the event

## **CAMPCRAFT**

Overnight camping is an important element of the Duke of Edinburgh Award scheme and can be a richly rewarding experience for many.

However, significant risks are associated with this if it is not planned well and carried out in a safe manner.

### **Potential problems associated with camping:**

- The use of stoves and fuel by inexperienced groups
- Insufficient insulation from sleeping bags
- Leaking or broken tents which expose the group to wet cold conditions
- Overnight bad weather raising water levels
- Enforced evacuation in the dark due to illness or injury
- Insects – midges/ticks etc

Prior planning and preparation is again essential to minimise these risks.

## **TEACHING NAVIGATION**

In the planning stages of an expedition, a significant amount of time should be devoted to the teaching of basic navigation in order for the group to possess the necessary confidence and skills required to complete the journey.

Classroom based sessions can be very useful in the initial stages of learning, where the group can begin to understand contours, distances, grid references and basic compass techniques.

Games may also be employed to initiate interest in the subject, and orienteering trails can allow a group to learn the skills in a fun, interactive way.

It is important that the skills taught are those which will work in most situations, avoiding complicated compass techniques which are difficult to remember and irrelevant in most associated situations (e.g. aspect of slope or triangulation) unless the group are very experienced.

## **RESPONSE TO UNFORESEEN CIRCUMSTANCES INCLUDING EMERGENCY SITUATIONS**

Unforeseen circumstances may arise at any time. This may be on the hill or travelling to or from it.

The leader needs to be able to respond in a measured and structured way. This response needs to take into account the security and well-being of the whole group. How effectively this can be done depends considerably on the arrangements already made when planning the event, particularly on the arrangements made for communication with the establishment and with parents and guardians.

The priority action list below is written particularly for incidents occurring on the hill but will equally apply to other off-site situations.

1. Assess the situation
2. Stabilise the situation
3. Apply first aid
4. Create a strategy to resolve the situation

### **ASSESS THE SITUATION**

- What has happened?
- Who is affected?
- Does the hazard still exist and for whom?
- How serious are any injuries?
- What resources are available – people, equipment etc?

### **STABILISE THE SITUATION**

- Secure and care for the group
- Deal with any hazards

### **APPLY FIRST AID**

- Operate within training received and within basic principles of first aid
- Consider the needs of the rest of the group

### **FORM A STRATEGY TO DEAL WITH THE SITUATION**

- If you need to summon help you may need to decide who goes for help, and in what manner
- Gather all relevant information (This may need to be written down)
- Pass information to base contact/establishment co-ordinator where appropriate and within pre-determined procedures
- Evacuate casualty and group safely

The strategy will depend on many things, such as the remoteness and nature of the terrain, the equipment available and the nature of the weather. There is NO DEFINITIVE ANSWER.

## ATTRACTING ATTENTION

- Shout or seek assistance from others nearby.
- Six blasts of whistle or six torch flashes followed by a minutes pause
- Mobile phone (for Mountain Rescue call the Police on 999 or 112)
- Radio

## SENDING FOR HELP

Ensure the following information is taken in written form:

- What the problem is and nature of injuries ( if any).
- Where the problem is (six fig grid reference + description)
- Who is involved
- When it happened
- What the problem is
- What equipment they have

## **WATER HAZARDS**

The potentially serious nature of rivers and fast flowing streams cannot be over-emphasised. It is essential that leaders are aware of the effect which heavy rain, flooding or snowmelt may have on proposed routes, particularly where groups are walking unaccompanied and routes should be planned to avoid such hazards.

A decision to cross moving water must only be made when the leader is satisfied that no significant risk is posed by doing so. This will depend upon the training the leader and group have received, the volume and temperature of the water, the distance of the crossing and potential consequences involved.

Any crossing which requires more than a simple step across a small stream should not be underestimated and must only occur when a full risk assessment has been made that it is safe to do so.

The council's in house Lowhills Award does not provide formal training in dealing with water hazards, and leaders who are qualified in this capacity are required to ensure that any water crossings carried out under their supervision are of no more than ankle depth, able to be carried out easily and are inconsequential in the event of a slip.

Contingency plans should be drawn up for those situations where water is above ankle level or where the outcome of a crossing is uncertain. These should include alternative routes or waiting until water levels recede



## **OTHER ENVIRONMENTAL HAZARDS**

### **LIGHTNING**

Most good weather forecasts will tell of impending storms and you should modify your plans accordingly. However, if you do find yourself in a lightning storm, you should descend as quickly as possible and avoid sheltering under lone trees or in caves and hollows where you may find yourself a convenient alternative to the spark gap!

### **ADDERS**

These can be a hazard in Lowhill areas, particularly where adders are disturbed when sunbathing on warm rocks. It is important that groups are briefed to avoid snakes and not to try to pick them up. Where an adder bite is suspected the casualty should keep calm and still and help should be sought.

### **LYMES DISEASE**

Lymes Disease is caused by infection from a sheep or deer tick which carries the bacillus Borrelia Burgdorferi. A significant proportion of ticks actually carry the disease. It is a serious illness and if left untreated, people with the infection are at risk of late complications including arthritis and meningitis.

**Symptoms** of Lymes disease include a circular ringed rash, with joint pains and flu like symptoms.

Groups should be made aware of the hazard and briefed to conduct a daily body examination if operating in areas where the possibility of ticks exist.

### **E-COLI**

There have been a number of recent cases as a result of camping in agricultural areas. Wash hands wherever possible and avoid picnicking in agricultural areas.

Drinking water directly from natural sources should be discouraged, particularly in low-lying and populated areas.

## **ANSWERS TO QUESTIONS**

### **GRID REFERENCE:**

a = the bridge at Charr,

b = the stream junction at Old Hangy Burn

c = the right turn in the forestry track near Hill of Gothie

### **NAVIGATION:**

1. If there are plenty of features around, you may be able to determine whether or not the track lines up with that on the map simply by 'setting' the map to the ground. If in doubt, by taking a bearing along the linear feature of the track you can see which direction it is going in (e.g. NW or SE) and then check this against the track shown on the map.
- NB Beware of small bends in tracks which may belie its true direction.
2. If you are unsure as to whether you can locate something along a linear feature, you can either work out the distance and time it, or pace. Pacing tends to give a greater measure of accuracy but it can also be used in conjunction with timing as a back up.
3. In this situation you can measure the distance on the map, decide which speed you will most likely be walking at and estimate the time needed for the journey, remembering to add on time for any height gained (1 minute per contour approx.)
4. Again, working out the distance to the track you are looking to locate and then timing the leg will give you a good indication that you are at the right junction. Because of the fact that it is almost dark, you should back this up with pacing, and when you arrive at the junction, you should check its direction with the compass.
5. If you are in doubt about whether you can locate a feature in poor visibility, you should take a bearing as well as timing and/or pacing the leg.

### **WEATHER:**

1. Between 6 and 8 degrees depending on humidity

2. Communication becomes harder – both visual and verbal

Windchill causes significant heat loss and is exacerbated in wet conditions

There is a higher chance of being blown off a rock top or onto dangerous terrain

Walking is impeded and the group tire faster

Essential items of equipment can blow away – e.g. maps, gloves etc.

3. Air temperature is often colder due to the 'lapse rate', wind speed is likely to be higher and rain is more likely due to moist air rising and condensing into clouds.

### **FOOD AND DRINK:**

1. Dried fruit, energy or cereal bars, cheese, sandwiches, nuts, bananas.

2. Simple sugars provide a quick burst of energy but the blood sugar levels drop rapidly afterwards, leaving the walker feeling more tired and hungry than before.

3. Eating little and often keeps energy levels more stable than consuming one large amount of food.

Shorter stops prevent people getting too cold.  
Morale is boosted when people are able to rest and eat something.  
A break allows you to reconnect with the groups and their needs.

#### CLOTHING AND EQUIPMENT:

1. Good tread to minimise the risk of slipping on wet rocks or grass.  
A solid upper layer that provides support and protection from the terrain and elements, keeping feet warm and dry.  
Good ankle support to minimise the risk of sprains or breaks of this joint
2. Denim becomes very heavy and uncomfortable when wet and, along with cotton loses most of its insulating properties.  
Cotton can be useful on very hot sunny days as it is cool and lightweight.  
Good alternatives are lightweight quick drying synthetics such as polyester which help wick moisture away from the body for hot dry days and fleece and windproof synthetics for poorer weather.  
Wool is very insulating, even when wet, but can feel very bulky and heavy.
3. Several layers of synthetic clothing  
Waterproof jacket and trousers  
Hat and gloves
4. Group shelter  
Bivvy bag  
Phone  
Spare map/compass  
Spare food/drink  
Spare hat/gloves

## **APPENDIX**

### **HYPOTHERMIA**

In normal conditions, the body's core temperature remains virtually constant at approximately 37°C. When the loss of heat exceeds the body's ability to generate replacement heat then the core temperature will fall. Hypothermia occurs when the body's core temperature falls below its normal rate.

#### **Causes:**

Exposure to adverse weather conditions, including cold, wind and rain.

Other factors include:

- fatigue and anxiety
- illness or injury
- lack of, or inappropriate food and drink
- inadequate clothing or equipment

#### **Syptoms:**

The following symptoms may indicate a developing and deteriorating condition.

- Physical lethargy
- lack of enthusiasm
- slowing pace
- Cold pale skin and/or shivering
- Slow thinking: failure to respond to and understand questions, inability to perform familiar tasks
- Uncharacteristic behaviour such as aggression or sudden outbursts of energy
- Loss of function; speech may be slurred, vision disturbed and co-ordination may fail causing stumbling and falling
- Slow and shallow breathing
- Weakening pulse
- In extreme cases loss of consciousness / eventual cardiac arrest

**Progression:**

In the early stages of heat loss the condition is regarded as mild hypothermia and if recognised and promptly dealt with may generally be treated within the resources of the party.

If heat loss progresses and the core temperature continues to fall then the condition of the individual is much more serious, requiring considerable care in evacuation and rewarming in hospital.

**N.B Unconscious casualties should always be dealt with by qualified professionals.**

**Prevention:**

See sections on Planning, Food and Drink, Clothing.

Ensure that the event is thoroughly planned, taking into account weather forecasts, fitness of the party, equipment and duration of the walk.

In poor conditions leaders should be alert to the early signs of hypothermia. A "buddy" system can also be used for monitoring.

**Treatment:**

In all cases the essential priority is to prevent any further heat loss from the body (either by exposure to the elements or further energetic activity). The condition of the whole party should be considered, as well as the individual who has become hypothermic.

When mild hypothermia is recognised at a sufficiently early stage it should be prevented from developing further by the following immediate action:

- Rest
- Shelter
- Extra clothing
- Food and warm drinks.

If the casualty's colour and energy returns they may be walked off the hill by the shortest route. Be prepared to stop and summon help if any deterioration occurs. Bear in mind that if a person has displayed the early symptoms, they will remain vulnerable to further deterioration even though they appear to recover quickly.

If the casualty's condition deteriorates or they are semi-conscious, they must be treated with great care. Evacuation is generally beyond the resources of the party. Rewarming will normally only be undertaken at fully equipped hospitals.

The person should be insulated as well as possible and shelter created around them. They should not be moved and must be kept at rest until a rescue operation can be organised.

If the person is conscious, easily digestible food and warm drinks may be given.

External or "artificial" warming (hot water bottles, alcohol etc.) should not be attempted.

Unconscious casualties should be placed in the "recovery position" with the head slightly lower than the body and the airway maintained.

(Someone other than fully conscious must be classed as not conscious i.e. unconscious.)

While awaiting evacuation treatment should be extended to the whole party to prevent further casualties.

## **SAMPLE GENERIC RISK ASSESSMENT: LOWHILLS**

| <b>HAZARD</b>                                  | <b>CONTROL MEASURES</b>   |
|--|---|
| <u><b>General</b></u>                          | <p>The group is managed by a Leader who has completed Aberdeenshire Council's Lowhills Training</p> <p>Leader is accompanied by other staff as appropriate to the age, ability and behaviour of the group, and nature of the route</p> <p>A suitable route is chosen by the Leader taking account of the ability level of the group, weather conditions and equipment available</p> <p>The group is briefed on hazards which are likely to be encountered and appropriate action is taken</p> <p>Appropriate safety equipment, clothing and food will be carried by the group and Leader</p> <p>Group size is such that adequate supervision is possible</p> <p>Leaders operate on known routes</p> |
| <u><b>Weather</b></u>                          | <p>Weather forecast will be obtained</p> <p>Assessment of its consequence will be made by the Leader prior to and during the walk</p> <p>The Leader will ensure that each member of the group is appropriately clothed and equipped and that additional clothing and equipment is available depending on the conditions and activity</p> <p>Equipment is checked prior to the walk</p> <p>The Leader will modify or curtail the activity if in his or her judgement, prevailing conditions are not appropriate for the group or planned route</p> <p>Leaders are trained to recognise the signs of hypothermia/sunstroke and take remedial action</p>   |
| <u><b>Slips/Falls</b></u>                      | <p>Leaders are trained to identify hazardous ground and control the group and pick routes in these areas</p> <p>Leaders ensure that group footwear is appropriate</p> <p>Leaders and unaccompanied groups are trained in emergency procedures</p>   |
| <u><b>Lost group<br/>/group<br/>member</b></u> | <p>Leaders and unsupervised groups are trained in navigation and leadership</p> <p>Leaders leave a record of their route and expected time of return with establishment base co-ordinator</p> <p>Adequate systems are in place to check unaccompanied groups</p>  |
| <u><b>Other Hazards</b></u>                    | <p>Leaders and unaccompanied groups are trained to recognise and avoid other hazards such as water hazards and adders</p>   |

## S4 TRIP TO BENNACHIE 20/6/03:SPECIFIC HAZARDS

| <b>HAZARD</b>                  | <b>CONTROL MEASURES</b>  |
|--------------------------------|--|
| <u>Behaviour</u>               | Extra member of staff with hillwalking experience to accompany autistic child: David Thompson<br>Coach to remain in Visitor centre car park                |
| <u>Bennachie</u><br><u>Tor</u> | Group size restricted to 10 plus 3 adults<br>Group to be stopped before tor and ascent strictly controlled by Lowhills leader                              |
| <u>Medical</u>                 | Severe peanut allergy; Susan Jones<br>Ensure epi-pen is carried and staff member trained in its use<br>Warn other children to avoid nuts in packed lunches |

## **PERSONAL SKILLS CHECKLIST**

On completion of the training course candidates are expected to meet the following criteria:

**Logbook:** Has a suitable breadth of logged experience.

**Planning:** Is familiar with their establishment's policies and procedures for planning outdoor excursions.

Understands the role of and importance of contingency planning.

**Group Management:** Sets an appropriate pace for all group members and manages the party effectively on different terrain.

Has an understanding of different leadership styles and is able to assert themselves when appropriate.

Is able to apply sensible strategies in response to emergency situations or unforeseen circumstances.

**Navigation:** Shows good map interpretation skills.

Understands map scales.

Is able to accurately and easily measure distance and height.

Is able to give a six figure grid reference.

Has good locating and re-locating skills.

Is able to take a compass bearing quickly and can use it with accuracy and with confidence.

**General hill safety:** Has knowledge of relevant sources of weather forecasts and is able to interpret that information to hill terrain.

Has knowledge of the factors that lead to hypothermia and a basic understanding of its recognition and management.

Is confident of own ability to safely lead parties on low hill terrain.

Has knowledge of appropriate clothing/equipment and food and drink for low hill terrain based on an understanding of the underlying principles.

**Environment:** Has a knowledge and understanding of a Lowhills environment and related access issues.

## **SUGGESTED READING AND USEFUL CONTACTS**

Aberdeenshire Council Safety policy '**Guidance for Off-Site Excursions Including Adventurous Activities**'.

The DofE Expedition Guide: [www.dofe.org](http://www.dofe.org)

The Cairngorm Panel: [cairngormpanel@hotmail.com](mailto:cairngormpanel@hotmail.com)

**Hillwalking** by Mountain Leader Training UK

**Mountaineering and Leadership** by Eric Langmuir

**Mountain Navigation** by Peter Cliff

**Hostile Habitats** by Scottish Natural Heritage

**Mountain Weather** by David Pedgley

### **CONTACTS**

**Aberdeenshire Council Outdoor Learning:**

<http://www.aberdeenshire.gov.uk/outdoorlearning/index.asp>

**Adventure Scotland**

Croft House

Croftside

Aviemore

PH22 1QJ

Tel: 01479 811411

e-mail: [info@adventure-scotland.com](mailto:info@adventure-scotland.com)

**Leisurelend**

[www.aberdeenshire.gov.uk/sport/equipment/LeisurelendArtstoreItemsforLendorHire.pdf](http://www.aberdeenshire.gov.uk/sport/equipment/LeisurelendArtstoreItemsforLendorHire.pdf)

**Hillphones**

[www.snh.org.uk/hillphones](http://www.snh.org.uk/hillphones)

**Mountaineering Council of Scotland**

The Mountaineering Council of Scotland

The Old Granary

West Mill Street

Perth

PH1 5QP.

Telephone. 01738-493942

[www.mountaineering-scotland.org.uk](http://www.mountaineering-scotland.org.uk)

**Scottish Outdoor Access Code**

Scottish Natural Heritage

Great Glen House  
Leachkin Road  
INVERNESS  
IV3 8NW.  
Tel: 01463 725000  
[www.outdooraccess-scotland.com](http://www.outdooraccess-scotland.com)

**Met Office/BBC weather**  
[www.metoffice.gov.uk/weather/uk/gr/gr\\_forecast\\_weather.html](http://www.metoffice.gov.uk/weather/uk/gr/gr_forecast_weather.html)

**Mountain Weather Information Service**  
[www.mwis.org.uk](http://www.mwis.org.uk)