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# *Route Planning*

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Like any other journey, a hiking or climbing trip should be planned. The main requirements of any route are that it should be safe and that it should allow the group to achieve its specific objective or objectives. A hiking group may want to walk far, fast, or it may simply wish to enjoy a leisurely stroll, sightseeing along the way. Each group will have its own objectives and its own route plan which best suits its purposes.

Safety considerations, too, vary from one group to another. They depend on the size, strength and objectives of the group: some parties can safely tackle a project that would be hazardous or foolhardy for a less experienced or weaker party to try. Irrespective of the level of experience of his group, however, the leader must remember that the safety of each member of the group is the single most important factor he should consider when planning the route.

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## *Group size and composition*

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Before any hike you need to consider very carefully the size and composition of your group.

### **The size of the group**

There is no such thing as an ideal group size. Ask yourself: how many people can I handle safely on a hiking trip? A good rule of thumb is that a leader should be looking after not more than three to four inexperienced children on a hiking trip, or more than eight suitably experienced children. Ideally, no group should consist of fewer than four hikers: if one person is injured, someone can stay with him while the other two seek assistance. In any group, particularly one with children, one or two experienced helpers will greatly simplify the leader's task.

When trying to determine an appropriate group size for a particular hike, you need to consider the following factors which will affect your ability to exercise efficient control:

- The distance to be covered.
- The kind of terrain to be negotiated.
- Likely (and possible) weather conditions.
- The fitness, age and sex of members of the group.
- The number of experienced hikers in the group.
- Restrictions placed by the authorities on the size of hiking groups, for example on national hiking trails.

### **The composition of the group**

Are the proposed group members young or old, fit or unfit, experienced hikers or novices? Bearing in mind that a group can only move as fast as its slowest member, you should at all times base your itinerary on your assessment of the abilities of the weakest members of the party. Particularly when dealing with novices, all plans should be flexible and should have a comfortable margin of error built in.

Fitness is important on a hike. Since any hiking or climbing trip requires a certain degree of physical effort, a fit person is much more likely to enjoy a hiking trip than an unfit one. In addition, a single unfit person on whom everybody continuously has to wait can spoil the trip for the whole group. It is the leader's responsibility to inform the members of his party beforehand regarding the level of fitness required for a proposed hike and to ensure that the abilities of the group match the demands of the hike.

If you are planning a difficult or strenuous trip, you must be prepared to change your plans to suit the abilities of the party members. Otherwise, you should use your powers of tactful persuasion to dissuade any person from going who, in your opinion, is not up to the physical demands of the trip — for their own sake and for the sake of the others.

The size of the group and the experience and expertise of its individual members should be taken into account when the following route details are considered:

- The time allowed for completing the route.
- Safety considerations.
- The degree of difficulty of the route.

If these parameters are fixed or inflexible (as in an attempt to climb the Amphitheatre Wall) they will largely determine the composition and size of the group. In the case of an Amphitheatre Wall ascent or any similar potentially risky undertaking, the climb should be attempted only by a reasonably small group of experienced rock climbers, adept at route finding, able to navigate in mist and rain, and experienced in rescue techniques.

The ability to assess in advance what demands a given expedition will make on a group (also taking into account what might go wrong), is an important requirement of the leader, and this ability can be acquired only through experience.

## The pre-trip meeting

At some stage before the trip you should call a meeting for everybody who is interested in going. If the composition of the group has not been finalised yet, prospective group members can be told at this meeting what demands the hike will make on them and what equipment they will need.

The pre-trip meeting also provides an opportunity to appoint a 'treasurer' and to delegate tasks and organise the following:

- Transport arrangements.
- Access and booking.
- A first aid kit.
- Food and cooking arrangements.
- The purchase of equipment and food.

To simplify control later on, make a note of which persons have been delegated to perform various tasks.

Find out whether any member has a medical problem and make provision for such problems in your planning. By the end of the pre-trip meeting each member of the group should know exactly what the plans are for the hike and what will be expected of him before, during and after the trip.

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## **Available time**

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You need to take time into account in almost all your route planning arrangements. Consider the answers to the following questions:

- Is travelling time an important consideration (including, for example, time required to move motor vehicles from the start of the hike to the end point)? If so, the time allowed for the hike itself must be adjusted accordingly.
- Is time a crucial factor for the group as a whole? If so, this also imposes certain limitations on the route and the aims that the group can realistically hope to achieve in the time available.
- How great a margin of error should be allowed? This is an important consideration, especially if the route and the terrain are unknown or if it is important to complete the route by a predetermined time. The speed at which the group can move will be determined by the terrain, the weather, the size of the group, and the experience and fitness of the group members. The old saying applies: a group can only move as fast as its slowest member.
- Before and during the hike you need to adjust the time margin of error in your plans in accordance with your assessment of the group, the weather, and your knowledge of the area.

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## **Planning the route**

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Route planning is a continuous process which starts before the hike and continues throughout the course of the trip. The initial planning should entail the following:

- Use a 1:50 000 map to plan the best route (see Chapter 6, Map Reading and Navigation).
- Estimate the amount of time required to complete the route (see below).
- Decide on camp sites and alternative camp sites, water points, suitable lunch spots, escape routes, and similar route details.
- Make sure that the route can be completed in the time available and that each person in the group can walk the distance planned for each day.
- Proceed to detail planning.

## **Planning a route on the map**

- Indicate the best route for each day's hike.
- Noting places that may prove difficult to find, or where it would be easy to take a wrong turning.
- Note obstacles such as steep slopes, cliffs, rivers and dense bush.
- Remember that water supplies need to be replenished regularly.

- Indicate escape routes\* i.e. routes or shortcuts that will allow you to return quickly and safely to civilisation in case of emergency.
- Decide on the distances to be walked each day. If the group has unfit members, plan to walk only a short distance on the first day.

## Estimated time of completion

A good method for estimating the time it will take to walk a certain distance is afforded by Naismith's rule (W. Naismith was the founder of the Scottish Mountaineering Club). According to this useful rule of thumb, the average adult hiker, carrying no equipment, walks at a speed of 5 km/h (12 min./km). A hiker carrying camping gear slows down to approximately 4 km/h (15 min/km).

To the basic estimate derived from Naismith's rule you should add 10 min. for each 100 m climbed unladen, or approximately 14 min. for each 100 m, if laden. On roads or good tracks an estimated walking speed of 6,5 km/h can be achieved. A reasonably fit hiker should be able to keep up this pace for at least six hours, provided rest stops are taken.

Most hikers increase their walking speed on slight declines. On steeper downhill slopes, however, a point is reached where it becomes more time-consuming to go downhill than to walk on level ground, because of the extra care that has to be taken.

Over a whole day's hiking, down hills are usually not taken into account: it is assumed that an increased pace on a slight downhill will be cancelled out by the reduction in hiking speed on slight up hills.

Naismith's rule does not take into account rest periods, fatigue, bad weather, or a number of other variables. Having arrived at an estimate of the time required to walk a certain distance, you should then take in the account the following factors which can increase the time required:

## The size and composition of the group

Safety considerations require that the group must stay together. Since the group can move only as fast or as slowly as its slowest member, the larger the group, the slower it is likely to move. The number of inexperienced hikers or children in the party will also affect the speed at which it moves.

## The nature of the terrain

If no footpaths are indicated on the map, work on the assumption that there are no paths. Walking through the open veld takes considerably longer than walking on a path.

Difficult terrain can reduce the hiking speed of the group to a crawl. Any incline will slow you down. Boulderhopping takes two to three times as long as hiking on a path, while dense bush, thick snow, and loose rocks can easily double the time it takes to cover a certain distance, particularly if encountered on a slope. In extreme cases, such terrain can increase hiking time by as much as 400 per cent. A further difficulty is that it is not always possible beforehand to know where such terrain will be encountered.

Allow extra time for river crossings. They can take a considerable time, even if shoes only are removed (add this time to the time allowed for rest stops when calculating the time required for a day's hike).

## Weather conditions

Progress through snow is very slow, while mist slows a group down and can cause it to lose its way. A strong headwind, with or without rain or snow, can reduce the speed of the group to less than 2 km/h. Conversely, a good tailwind can increase your hiking speed (sometimes dangerously so!).

A very hot day will slow the group down and necessitate more frequent rest stops. On the other hand, cold or rainy weather often results in rest stops being shortened or less frequent, resulting in the group making faster progress.

## The weight of the rucksack

The weight of a rucksack seems to increase with the distance walked. Certainly, the heavier the rucksacks carried, the slower the group will move. A person carrying a heavy pack may take twice as long to cover a certain distance as a person without a rucksack (taking into account longer rest stops and a slower hiking speed). Make allowance for heavy rucksacks by using a lower hiking speed of 3 km/h or even 2 km/h in Naismith's rule.

## General guidelines regarding time estimates

- Particularly in warm weather it is a good idea to start hiking early. The group should be sufficiently well organised to ensure, that no more than two hours elapse between waking up and beginning to hike.
- Do not try to walk too far on one day. Plan for no more than eight hours' hiking (rest included) for a group of average fitness.
- Plan for regular (not necessarily frequent) rest stops. A five to ten minute rest each hour should be adequate. Try not to rest every few minutes, since this breaks your walking rhythm.
- The occasional unscheduled rest stop is very enjoyable. Do not hesitate to stop for a swim or quick cup of tea or cooldrink when the opportunity arises. Such a stop is mentally and physically refreshing.
- Allow at least one hour for lunch and allow sufficient time to ensure that you can pitch camp before dark.
- It is important during the course of the day to relate the distance covered to the time elapsed and to make adjustments in good time either to the hiking speed and rest times, or to the distance you still intend to cover. This is very important if it appears that you cannot reach your intended camp site before dark.
- If weather conditions make it dangerous to continue hiking, it is better to stay where you are than to cling at all costs to armchair scheduling. Remember that mountain weather is unpredictable and take this into account in your planning.
- With all these factors to consider, it may sound impossible to arrive at a realistic estimate of the time required to cover a given distance. However, all that is needed to arrive at a reasonable estimate of the time needed is common sense and a bit of practice. Any estimate that is accurate to within ten per cent is quite good.

## Adjusting time estimates

Bearing in mind the above guidelines, ask yourself the following questions: • Is it possible to complete the route in the time originally estimated?

- Have all factors that may affect time arrangements been considered?
- Do planned escape routes allow the route to be shortened if the group's progress is slower than expected, or if the weather deteriorates?

Adjust your time estimates in accordance with the answers to these questions.

## Detail planning

The importance of a written plan needs to be emphasised; both for you and your party and for the

rescue co-ordinator at home who will set a search and rescue in motion should you fail to return at the arranged time. A route card is a good, if too seldom used, way of drawing up a written record of your hike; it is also a useful aid to route planning.

*An example of a route card. The facing page shows the reverse of the card.*

<h1>ROUTE CARD</h1>							
DATE _____							
MAIN OBJECTIVE _____							
From	To	To (Map Ref)	Magnetic bearing	Distance	Height lost/gained		Time
Totals:							

Compass bearings at difficult or important points should be worked out before the trip, for example the bearing from the top of a pass to a cave where you intend to over-night. Use the map to decide on likely camp sites, which should preferably be close to water. Compass bearings to prominent landmarks from particular points, for example the turning to a hut or pass, could also be noted on the map beforehand. Grid references of camp sites and places you intend to visit could be noted on the map.

In addition to detail route planning using a map (see also Chapter 6 in this regard), other aspects of detail planning which the leader must see to include:

- Checking whether all delegated tasks have been completed properly.
- Making all the necessary access arrangements (permits, passports, etc).
- Confirming that the rescue co-ordinator has a copy of the route card and knows what to do and whom to contact in case of an emergency.

TODAYS Escape / ALTERNATE Routes				12
Route 1 – From:	Route 1 – To:	Route 2 – From:	Route 2 – To:	11
				10
				9
				8
				7
<b>General Information</b>				6
STOVES		FOOD (DAYS)		5
SAFETY ROPE		COMPASS		4
MAPS		WHISTLE		3
WET GEAR		COLD GEAR		2
FIRST AID KIT		TENTS		1
			ASSISTANT	
			LEADER	
<i>Your route card could save your life. Leave one with a responsible person at home &amp; one in your car.</i>				

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## Safety arrangements

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Before and during the hike the leader has a number of specific responsibilities with regard to the safety of his party. To neglect any of these precautions is to fail in your primary responsibility as leader and to invite disaster.

### The rescue co-ordinator

Before the trip you should appoint someone at home as contact person (or persons), in case of an emergency. This contact person should have the name, address and telephone number of the next of kin of each member of the group, the complete itinerary and the route to be followed, and a copy of the route card, if available. (To simplify a rescue attempt, it is important that you should plan your route so that other people can also understand it.)

At least one contact person should be available at home for the duration of the trip. The task of this person is to raise the alarm if the group fails to return on schedule; to liaise with the groups carrying out the rescue (Police, Mountain Club, etc.); and to contact the next of kin to reassure them and inform them of developments. Each member of the group should know the telephone number of this person.

### Rescue registers

On visits to the Drakensberg the group leader must fill in the Mountain Club rescue register which is kept at Police stations and entry points controlling access to the mountain. Details of the members of the group, motor vehicle registration numbers, the planned route, the colour of the group's rucksacks and tents, and the expected time of return are filled in on the form.

It is very important that you 'sign out' again before leaving the area, otherwise a rescue attempt will be launched by the authorities to find your party, and you may have to foot the bill.

## Important precautions

The leader is responsible for ensuring that his group is properly prepared for a hike. This means that you should ensure that they are fit enough and have the right equipment for the proposed hike. (See Chapter 1 for a list of basic survival equipment which must be carried by every member of the party.) While it is not necessary for everybody to carry a compass and a map of the area, this is recommended. You should have a good map of the area (1:50 000 scale) and a compass. Ensure that your map covers the entire area.

It is best if you have walked the particular route before, or if at least one of the members of the group knows the route.

The group should carry a communal first-aid kit, even if it is only sufficient for treating bleeding and shock. Snakebite serum should be carried only if someone in the group is trained in its use and if the correct medication is carried to deal with possible allergic reaction to the serum.

A rope should be carried if there is any possibility that it might be required. (Refer to Chapter 9 for circumstances that might necessitate the use of a rope.)

An equipment check prior to setting out for the wilderness is essential. In the case of beginners or first-time hikers you should personally confirm that everybody is carrying the essential survival equipment listed in Chapter 1. Check that all food is accounted for (with nothing left in the fridge) and that fuel and food are packed properly and separately. Stoves, torches and torch batteries should be checked, as well as all communal equipment such as the first-aid kit and stove repair kit.

## Safety during the hike

- Ensure that nobody becomes separated from the group; do not allow the group to split up.
- If you are not walking at the front, appoint an experienced route leader and a rearman; provide them with specific instructions regarding their duties.
- As far as possible, stick to the itinerary filled in in the rescue register, since this will be the route any rescue party will follow.
- Know the procedures for calling for assistance.
- Be aware of rescue facilities available in the area (e.g. rescue equipment dumps).
- You should have a basic knowledge of first aid and should be able to identify in good time the symptoms of typical medical conditions that affect mountaineers. These include: hypothermia, heat exhaustion, sunstroke and altitude sickness. Particularly on a long trip or expedition it is good idea for a doctor or someone with medical knowledge to accompany the group.

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## Access rights

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You and your party have no rights on property of which you are not the owner. You therefore need to find out whose permission is required to visit a particular area and make appropriate arrangements in good time.

In line with the multi-use concept of conservation, many local authorities, farmers and individual land owners permit their land to be used for purposes of conservation and recreation. Since the land is often also used for, for example, agriculture or forestry, as water catchment areas, for mining or military use, or for power generation, there exists potential for conflict between the hiker and mountaineer on the

one hand and the owner or controlling authority on the other. The bottom line is that abuse or misuse of the land by those who claim to be using it for recreation gives those who own or manage land reason to restrict or deny access. If owners and users are to co-exist without problems, it is up to the leader, teacher and instructor to foster a responsible attitude to property rights and the environment in general.

## Access to State owned or controlled land

Most hiking and mountaineering activities occur on land owned or controlled by the State, i.e. central government, provincial authorities, municipalities, or official agencies such as the National Parks Board. Access to these areas is subject to strict rules and regulations, and you must contact the relevant authority to obtain permission to visit them. In the case of land controlled by divisional councils and municipalities you should write or phone the town clerk or the official in charge.

In the case of land under the control of the Department of Forestry or the National Parks Board you should apply to the local forestry official or Parks Board officer or the Parks Board itself for permits. This should be done well in advance of the intended date of your hike, especially over holiday periods. Permits are issued on a first come, first served basis and party numbers are strictly limited, particularly in proclaimed wilderness areas. If you are not sure of whom to contact to obtain access permission, the correct addresses can be found in appropriate guide books and maps from National Parks Authorities, the Department of Environment Affairs, landowners and other agencies.

For many day hikes, for example in areas of Table Mountain in the Cape Peninsula, no hiking permits are needed (though you should still obtain the permission of land-owners where necessary). At the other extreme, if you plan to visit neighbouring states, visas or passports may be required. These often have to be applied for weeks in advance, and if you leave it till the last possible moment and something goes wrong, you might have to cancel the trip.

## Access to private land

This is land owned by farmers, individuals, and clubs. Access arrangements on privately owned land vary from region to region and even from farm to farm, and it is therefore essential to obtain access permission from the owner of the land and to find out what rules and regulations apply in each particular case. You need to find out, for example, where to park, when to arrive and leave, and which access roads to use. Personal, telephonic or written contact should be made well in advance of the trip to sort out these details.

A number of hiking areas are owned, or access to them controlled, by Sections of the Mountain Club of South Africa. You should write to the MCSA Section concerned to obtain permission to enter these areas. Sometimes land-owners on whose property there are beautiful gorges or hiking areas allow MCSA members and a controlled number of non-members access to these areas. In most cases this permission is contingent upon the MCSA assisting in conserving the natural fauna and flora, combating veld fires, and helping to control the numbers of hikers and climbers who visit the area.

To effect controlled access to its own properties and to those of private landowners who permit access to their property the MCSA makes use of a permit system, which restricts the number of people who may visit an area at any one time. As has happened in a number of cases, land-owners can ban all access to their property if, for example, hikers damage fences, make fires, remove plants, leave plastic bags or other rubbish lying around to deface the environment and poison farm animals, or otherwise disregard permit conditions. The only way to ensure that landowners permit access to their land is therefore to follow a minimum impact approach (see Chapter 2). This approach is summed up by the following simple rule: 'Take only photographs and leave only footprints.'

## The need for permits

The various access requirements described above are not meant to keep people out of the wilderness. They have become necessary because an ever increasing number of people wish to visit nature areas. In some places the natural balance is being upset and nature is being so degraded that the potential for enjoyment is severely reduced. Erosion, pollution of water resources, veld fires, deposits of rubbish,

and the destruction of fauna and flora are all problems associated with unlimited access; and, more often than not, land owners react to the destruction of their land by imposing controls or prohibiting access.

Rather than simply banning all access to nature areas under threat, various systems such as permit systems have been implemented for controlling entry to these areas and limiting the number of people who visit them

Please help conservation authorities and land-owners to preserve our natural environment for future generations by ensuring that, before starting a hike, you make the necessary access arrangements and, where necessary, obtain the required permits.

## **Responsibilities of the leader**

The following is a summary of the leader's responsibilities with regard to access arrangements:

1. Obtain permission and/or permits.
2. Collect permit fees and parking fees, where applicable.
3. Call on the owner or forester and fill in the visitors' book or rescue register, where applicable.
4. In new areas, find out who the owner of the land is, obtain permission before the visit, and record the following information in a log book: name and telephone number of the owner or contact person; problems you may have encountered; and length of trip, time of departure, etc. Liaison with the owner or owners of land you intend to cross during the hike is an important function of the leader, and every attempt should be made to ensure the goodwill of farmers and other land owners.

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## ***Changing your plans during the hike***

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Proper route planning is essential. That is not to say that everything must be planned in advance to the very last detail. However, if you deliberately want to leave certain decisions for later you will find that, paradoxically, this decision also has to be planned for.

The greater the degree of 'planlessness', the greater the safety margin required, for example, in your timing. The more thorough your original planning on the other hand, the more unlikely it is that you will be forced to deviate from it.

Route planning does little more than provide you with a guideline. Bear your original planning in mind during the hike, but remain flexible and adapt your plans to changing circumstances.

Should the group move slower than you originally planned, accept the fact and change your plans accordingly. On the other hand, if your estimates were conservative and you find yourself with time in hand you can extend the route, explore the area, or spend a whole 'unplanned' morning next to a mountain pool.

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## ***After the hike — tying up the loose ends***

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After the trip, finances are usually sorted out and petrol and other costs totted up. If someone has kept a careful record of all expenses, this task can be carried out quickly and fairly.

If you and the members of the group belong to a hiking club, you should prepare a brief written report on the trip, noting information that might assist others with their route planning. Other parties might find the following details useful in future:

- Contact person and telephone number for making access arrangements.
- Maximum group size allowed.
- Access routes.
- Rules regarding the making of fires.
- A short description of your hike, noting highlights and scenic points.
- Specific mountain hazards to beware of.
- Campsites and water points.
- Specific arrangements.

It is also a good idea to keep a personal record of outings that you have led, as a reference source; stored with your maps of the area, such a record could come in useful later.

A very pleasant way to round off a trip is to organise an informal post-tour get-together or 'reunion'. Slides can be shown, experiences recalled, and the next trip mooted over a glass of wine.