

Planning a Lightweight Expedition

by Frances Chatterton



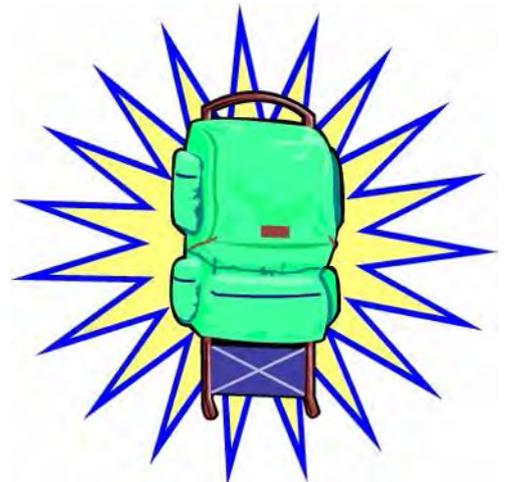
*Go my sons, burn your books,
Buy yourselves stout shoes.
Get away to the mountains, the deserts
And the deepest recesses of the Earth.
In this way and no other will you gain
A true knowledge of things and
Of their properties.*

Peter Severinus 1571 AD

Why tramp on a treadmill when you can hike through the hills? Hiking is one of the most enjoyable forms of exercise - not only do you give your legs a good workout (especially if you're going over a lot of hills and rough terrain), you get to enjoy the beauty of the scenery around you. Every part of the world, and every season, has its own unique personality - fascinating rock formations, sheltering trees, cool streams, fresh scents, animals of all sizes and types. You'll also find the hot sun beating down on you, rocks that make your feet hurt, poison plants... and animals of all sizes and types, including bugs and hungry, hostile beasts. Before you go running back to the safety of your living room, however, keep in mind that you can avoid or lessen most of the potentially bad aspects of hiking by being prepared. Like any physical activity - running, dancing, swimming, etc. - hiking has certain ground rules. In fact, hiking has a few more than most because nature is not exactly a controlled environment (that's what makes it so wonderful). Get the proper equipment and take the necessary precautions, and you'll make hiking a regular part of being active. Forge through the forest without any forethought, and you're courting disaster (or at least a nasty case of sunburn and a few bug bites).

I have an inclination to say JUST DO IT, but I cannot, because the bush can be a dangerous place, even for those who are experienced. Consequently, I recommend a few preliminary steps as you begin your lightweighting adventures.

- Acquire Backpacking Knowledge through reading – there are lots of reputable books on backpacking basics plus the internet.
- Acquire Knowledge & Experience through attending courses or joining organisations – these groups provide a fast way to learn proven techniques and make friends who have similar interests
- Get in Shape--Stay in Shape: - It's important for hiking, and especially backpacking, that we have strong lower back, upper back, and abdominal muscles, in addition to strong legs. Find exercises that strengthen those muscles. Get in shape to carry your anticipated 16kg load before the trip. Several weeks before a trip, I anticipate how much weight I will be carrying, then prepare a pack that weighs 4kg more than that. That, then, becomes my training pack for the next several weeks--about four or five nights a week--right up to two or three days before the trip.



The Most Important Essential--Common Sense

- "**Common Sense**"--one of those abstract concepts that we use when talking to employees, students, and children, with the assumption that everyone understands what it means, when in fact, we don't. Well, here's what it means when I use it:

- **Common-Sense Glossary:** (from the *Oxford Modern English Dictionary*):
 - **Sense:** (n)**4.a/** quick or accurate appreciation, understanding, or instinct regarding a specific matter....**b/** the habit of basing one's conduct on such instinct. **5/** practical wisdom or judgement, common sense; conformity to these....
 - **Common Sense:** (n) sound practical sense, esp. in everyday matters.
 - **Practical:** (adj) **1/** concerned with practice rather than theory. **2/** suited to use or action.....**5/** concerned with what is actually possible.

The exercise of common-sense is a requirement for the entire "bush-experience life-cycle", from initial thoughts, through actual planning, transportation to, execution of the hike, and return trip home.



Plan Carefully. Plan your expeditions, thoroughly, before you leave home. Be as knowledgeable about what lies ahead as physically possible, and you will be much better positioned to achieve and maintain a healthy attitude, perceived and actual security, as well as have a good time. Have a plan, even if you're just making a short trip. How else will you know what to bring? A three-hour hike has different needs from one that's going to last all day or a couple of days. So think about where you're going, what time of day you'll be hiking, the season and the type of terrain this hike entails.

Research the trail and terrain. With the wonders of the Internet, this has become extremely easy. Nearly every park has a website where you can find information about the trails - their length, difficulty, landmarks, the best season to visit and more. You may even be able to print out a map. You'll also want to know what kind of plants and animals you're going to encounter. And be aware of the weather - if there's a chance of a rain, it might be nice to be prepared! Before you take girls on a new track make sure someone in your group has hiked the trail - never take girls on a hike where no one is familiar with the trail.

Communicate Your Plans to friends & family. Make a hardcopy of the destination and time table for your trip and give it to a nominated person who will be responsible for contacting the authorities if you do not return in a designated time and will be the contact person for the families. Draw on a topographical map where you will be, how long you will be there, and when you should be back home. This may be your link to survival should you run into trouble in an isolated area.

Hike with at least one other person, and make sure someone knows where you're going and how long you plan to be gone. Even experienced outdoorsmen have been known to make this mistake. You remember that [climber who had to cut off his own arm because it got wedged in a rock](#). He has admitted that this may have been avoided had he not been alone. Need we say more?



Know When to Turn Around & Go Back. Follow your knowledge, training, and gut instincts (the "sixth sense"). If you are unsure about a traverse, a climb, a trail, exposure to weather--whatever--back off, live another day, and contemplate your alternatives. Select a different route; Pitch your tent and layover until the storm passes; Wait til morning when the river's water level is lower, before crossing, etc. Keep in mind, ignoring your "sixth sense" and pushing forward into a questionable situation might be challenging and macho, but it can also be called stupid and have deadly consequences. Remember, many of the climbers who've been killed on Everest were the victims of their own inability to turn around when their guts were telling them to do so.

Listen to Your Body--Undress Before Overheat, Dress Before Chills--Drink Often--Eat Regularly. Not only does our psychological and spiritual being speak to us, but our physiological parts send us loud messages, as well.

Carry Gear That You Perceive Will Maintain Your High Level of Security: Determine the gear that YOU NEED to maintain your personal level of security and then seek out the smallest, lightest, highest-quality manifestation of that gear. Don't be overly influenced by "lightweight gear freaks", but, also, for your own safety, avoid the "everything but the kitchen sink syndrome". Decide what makes you feel safe and comfortable, then start out with that as a baseline. As you become more experienced, you will discover that your gear configurations will evolve toward more efficiency and, hopefully, lighter weight. Remember, though, as you determine your gear needs, a too-large pack makes a person more vulnerable to falling down as well as to back, leg, knee, and foot injuries, and a too-small pack may compromise your personal security, due to lack of necessary gear.

EQUIPMENT:

Strive for a Simple, Light Load on your back. A light, but efficient load, will allow you to have a more enjoyable time with energy left over to celebrate when you reach your destination

Know Your Requirements. Before embarking on a gear shopping trip, have your pockets full of information related to:

- What kind of trips you will be taking:
 - how many days ?
 - how many kilometres?
 - in what kind of terrain--on trail, off trail ?
 - at what altitude—rainforest, mountainous, open plain ?
 - in what seasons--Summer, winter, autumn
 - in what kind of weather ?
 - how many people--2-person, 6 – 8 person etc. ?

TENTS:

A backpacking tent provides shelter and security while at the same time being lightweight

It is important to consider the types of conditions in which you often backpack. If you enjoy backpacking in regions where rain is likely, this will impact your selection as you will want a tent with a rainfly that is large enough to give you room to store your belongings underneath it and stay dry. Storing your gear under the rainfly keeps your gear dry and makes you a happier camper in the mornings. If you only backpack in warm areas where the temperature rarely dips beneath 15 degrees at night, you will want a tent that has more mesh thereby allowing more air to circulate.



How large of a tent do you need? We usually share the tent with one other person therefore a two person tent will fit our needs. You can measure the sleeping mat you take with you on trips and use those dimensions as a guide for how large a tent you will need.

Groundsheets can prolong the life of your tent because it will add an additional layer of protection from sharp stones or sticks. Also, they help to keep the base of the tent dry when you are forced to set up camp in a wet area.

The main criteria for backpacking tents are quality of materials, weight and stability. It makes sense to divide the tent's components (poles, tent, tent fly) between two people. With that in mind, here's what to look for:

- A tunnel or half-dome design (or modified versions of either)
- Rip-stop and mesh upper section
- Floor coating that extends about four to six inches up the sides, often referred to as a "bathtub" design, which prevents the seepage of ground moisture.
- 7000 series aluminum shock-corded poles that do not obstruct entry/exit points. 7000 series poles are good aluminum poles about 1/4 inch in diameter, flexible yet strong, anodized or coated in an electrolytic process, and are easy to fit together because they're held together with shock cords (thick, elastic bungee cords nestled inside the poles). Even better, some poles are designed to be easily repaired in the field.
- A fly that extends to within a few inches of the grounding.

Also, remember that a quality tent may cost more at the on-set, but will last longer and be less likely to need repairs even in the harshest conditions. With tents – you get what you pay for.

A practical note here, related to colours: for general purpose, three season use, choose tents with light colours (light blue, green, yellow) for increased light inside your tent and to reflect sunlight so that your tent stays cooler in warm weather. Darker colours absorb sunlight and heat, as well as make it darker inside the tent.

BACKPACKS:



There are two types of backpacks, internal and external frames. Although there is nothing wrong with external packs, internal frames have become the standard because they are narrower, offer more features, and hug closer to your body. An internal frame pack often has two internal aluminium strips that can be moulded to fit your back. Since these packs are designed for heavier loads, it is necessary to have good padded hip straps to transfer the weight off your shoulders. Again, good shoulder and back padding is necessary, but too much can add excessive weight. Some good features to look for include an adjustable suspension system, external side compression straps, and a removable or adjustable top lid.

A properly fitted internal frame pack in good repair with a capacity of about 60 litres (3700 cu. in.) is recommended. It should hold all your gear except the clothes you will wear. The pack should weigh no more than 2.3 kg. Filled with your gear it should weigh less than 10 kg and with food and water included around 15kg.

- Look for a backpack ranging from 3000 - 5000 cubic inches.
- The upper end of the capacity range, 4500 - 5000 cubic inches, is best suited for weeklong trips, while the lower range is generally enough for a weekend.
- These packs often come in a regular and large size. Regular fits a torso of 15 to 18 inches, which is average.
- Internal frame is best for increased comfort. An external frame pack is often considered to be less comfortable.
- Multiple pockets, rain hood, and accessory straps, or places to put straps.
- Padded shoulder straps and hip belt.
- A hydration compatible pack is a plus. Most reservoirs work with most backpacks that are listed as being hydration compatible.

Women often find they prefer to pack the weight low whether they're hiking regardless of which pack style they're carrying. You are the ultimate judge of what feels comfortable to you. Experiment with different load arrangements to determine what feels best.

Make sure some items are easily accessible, packed in places where they can be reached with a minimum of digging: such as the map and compass, snack food, first aid kit, insect repellent, water, headlamp.

Don't waste empty space. Cram every nook with something. Put a small item of clothing inside your pots, for example. Smaller items, such as food, pack more efficiently in individual units rather than when stored loosely inside a stuff sack.

Split up the weight of large items (a tent, for instance) with other group members. Don't make one person become an involuntary packhorse.

Minimize the number of items you strap to the outside of your pack. Gear carried externally may adversely affect your balance. Secure any equipment you carry outside so it doesn't swing or rattle.

Make sure the cap on your fuel bottle is screwed on tightly. Position it below your food inside your pack in case of a spill.

SLEEPING BAGS:

There are lightweight sleeping bags for everyone, but we are all *so* different. Some can't sleep in a mummy bag. Others can sleep in anything. Some won't be gentle enough to use a fragile high-tech bag, while others seem to make their gear last forever.

Down is lighter as an insulation. Ounce-for-ounce nothing insulates as well as down. Down bags are much more compressible than the synthetic ones, so they take noticeably less space in the pack. They also can be



rejuvenated by throwing them in the dryer with a shoe. This "fluffs" up the down. 30-year-old down sleeping bags regain virtually all of their original loft after a treatment like this.

You might think now that a down bag is the ultimate lightweight sleeping bag. Well...maybe. The primary problem with down is that it is worthless when wet. Also, down will sometimes leak out, especially if you tear a seam.

Good lightweight synthetic sleeping bags take abuse well, and they keep insulating even if they are wet. The well-designed ones are getting very close in weight to down bags. They still take a lot more space in your pack, however, and the insulation always breaks down after a few years. They are so worry-free while they are relatively new, though. It is a tough choice.

There are four basic designs for sleeping bags; mummy, modified mummy, barrel and rectangular. Except for rectangular (which is too bulky and usually not as warm), the other three are all suitable. A mummy bag is the warmest.

You can travel with a lighter sleeping bag if you learn to stay warm. Start by camping in the right place, wear your clothes to bed. If you shake out and fluff up the clothes they will insulate better. Wear a hat or beanie to bed. This is probably equal to another ½ kilo of insulation in your sleeping bag. Up to 55% of the body's heat can be lost through your head when it isn't covered.

Stay Dry! Stay up late until your clothes have dried, or change into dry clothes if you have them. Try hard not to crawl into that bag in wet clothes. Breathe into your sleeping bag if you are really cold. However, you should only do this if you are in a dry climate, or it is your last night out. You will get a little damp, but you will dry quickly from hiking in the morning.

Heat water and fill a water bottle to take to bed with you. This is probably easier than heating up rocks and placing them around you.

CLOTHES:

If you're wearing all cotton or wool clothing, you'll be hating life the moment you start sweating. At all costs avoid cotton t-shirts, cotton socks and blue jeans. These clothes do not wick away water and sweat and lose their warmth when wet and to add insult to injury, they are heavy! The best items to wear on a hike are those made from synthetic materials that wick moisture away from your skin - fibers with names like gortex and capilene. These will keep you cooler and drier. They're also more lightweight than cotton and wool, and they don't take up as much space when you're packing them in your backpack. Lightweight synthetic clothing can be layered. By using layers you can adjust for the significant changes in temperatures between day and night.

Look for the following:

- Lightweight synthetic long underwear
- Synthetic t-shirt
- Synthetic long sleeve shirt/zip neck
- Hiking pants with zip-off legs
- Synthetic hiking socks
- Pair of gaiters
- Light fleece or soft shell jacket
- Lightweight breathable waterproof jacket and rain pants
- Ball cap or sun hat
- Light gloves and warm hat



Rain Gear: Trousers and hooded jacket. A good quality rain suit is essential. You should be able to pull the trousers on over your hiking boots. It should not be too light or it will tear on branch stubs or snags. Factory sealed Gore-Tex is ideal.

But really there is NO need for an extra pair of pants. Even in the worst weather on the longest trips one pair of pants, one long john bottom and one pair of rainpants will cover all situations. This is not a fashion show. I went with a girl once who carried a change of clothes for each day and wondered why her pack was so oppressive. But she sure looked great!

SHOES:



Take care of your feet – after all they are your main means of transport. For most short hikes you're better off with trail runners or light hiking boots with a bit of ankle support. Like any other shoe, hiking shoes should feel comfortable and easy to wear - sporting a few new blisters in the middle of nowhere is a decidedly unpleasant experience. **New boots or shoes must be broken in by wearing them for a few days before leaving home not on the trail.**

When trying on hiking shoes and boots, take the socks you would wear during your expedition --as well as orthopedic inserts (orthotics). If you don't know what socks you'll be wearing, then that's where you should start. If you change thickness and design of sock subsequent to purchase, that good boot fit you work hard for, may be history. As with your other apparel, you'll want a sock with moisture-wicking features and enough for each day.

Since you lift your shoes with every step, wearing running shoes can save more energy than any other lightweight clothing choice. Lifting boots with every step results in lifting literally tons of weight on a long hike. They say that every .5kilo on your feet is equivalent to 3kg on your back. You wear running shoes for every day use because they're more comfortable. Those same shoes are more comfortable on a hike, too. They dry out quickly if they get wet. They make you more agile. And most importantly, you feel less fatigue at the end of the day.

GAITERS:

They should hook onto your bootlaces and have a strap or rope around the bottom of your boot at the instep. They should reach above the calf muscle snugly. They are extremely important in wet muddy weather and ideal for walking through spear grass.

COOKING:



Take just minimal equipment to cook food. Buy equipment that is durable and will last. Seek out TITANIUM (or other ultralight) materials. Pots, stoves, backpack stays, tent pegs, anything metal, if made of titanium, will be significantly lighter than any other metal. For example, a titanium cook pot (with lid & handles) weighs 6 oz.

A tight-fitting lid is critical in order to maximize the efficiency of your stove. If you have a tight-fitting lid, the contents of the pot will heat faster and, thus, you'll consume less stove fuel. You can also blacken your cooking pots to use less fuel. A blackened pot will absorb and distribute heat faster than a shiny surfaced one. Paint the outside of your pots with flat-black stove paint.

Shop at stores with reputable, experienced salespeople. This may surprise you, but my advice, if you are just starting out -- UNLESS YOU KNOW EXACTLY WHAT YOU NEED -- is to stay away from outdoor chain stores (you know who they are)! Check you local area for the best outdoor shops where you can get advice from experienced people. If the chain stores are all you have, then make darn sure you've done your homework--for your own good--and get a second and third opinion. Resist Gadgets. It seems every camp store has dozens of clever little gadgets to add weight to your pack. Don't buy them!

Know Your Gear. Acquiring the right gear is the first step. You must then gain a keen knowledge of how each piece of gear works, how it is assembled, and how to maintain it. Practice using each gear item, before you leave home. Visualize having to repair each item in the field (and be prepared to do so). The more you know about your gear and the more comfortable you are with it, the more secure and comfortable you will be while on the trail.

Keep track of the time and your location. If you've packed lightly and only expect to be out for a few hours, you really don't want to find yourself kilometres from your destination when night falls. Hiking should be a fun, not a test in survival.



FOOD:

You may want to hike for just a few hours, or you may want to hike for a few days. One meal and some snacks are all that's needed for a short hike. Planning meals for a longer hike requires more thought. You have to choose foods that are light enough to carry in a backpack and that can be transported safely.

Carbohydrates, proteins and fats are the three energy nutrients. High carbohydrate foods, such as cereals, pastas, grains, beans and fruits are excellent sources of energy. They are burned immediately as glucose or stored in the muscles as glycogen for later use. At the beginning of a hike, the body burns glucose, then the glycogen that is stored in the muscles and finally after about 30 minutes it begins to burn stored body fat along with glycogen. Exhaustion occurs when the body has depleted all of its supply of glycogen. The body can replace its store of glycogen each day with a diet that has sufficient carbohydrates. With an inadequate supply, three days of hard backpacking will produce fatigue and reduced speed and endurance. The best plan is to start the morning with a high carbohydrate breakfast. This could include cereal, cocoa mix with powdered milk, and some dried fruit, then munch lightly along the trail. Save the fat and protein meal components for the evening meal. Fats and proteins take a long time to digest, require water and oxygen for digestion and are best eaten after the heavy physical work of backpacking is finished.



If you are backpacking for more than a day, the food situation gets a little more complicated. You can bring cold foods for the first day, but you'll have to pack shelf-stable items for the next day. Canned goods are safe, but heavy and not recommended besides you still have the tin to carry out in your backpack as rubbish. You can now purchase relatively lightweight staples that don't need refrigeration or careful packaging. For example:

• Tuna in foil packs;
• Dried noodles and soups;
• Beef jerky and other dried meats;
• Dehydrated foods;
• Dried fruits and nuts; and
• Powdered milk and fruit drinks.

- Eat Heavy Foods, First ! Foods such as, mealpack bars, fresh fruits & veggies, semi-dried sausages, etc., add the most weight to your pack. Eat them first to lighten your load.

Carefully select snack foods. It is very, very easy to carry too many of these. Be tough on yourself on these and carry barely what you'll need. Carry very light backup foods -- that meal you have for emergency situations. Dried fruit is another heavy item. Carry only what you'll eat. Count them. 2-3 pieces of fruit per day is likely to be enough. Dried bananas are an exception. They are truly dry and light. A big bag of nuts is also (too) heavy. The weight for food should be around 1.13kg per day.

WATER:



Water is one of the most important items in your pack, and one of the heaviest. You need it to sustain energy. You need it to avoid body aches, headaches, and becoming so uncomfortable that you don't enjoy your hiking experience. If you can avoid carrying too much water, you'll enjoy a far lighter pack. Your ability to find safe water and know how and when to treat it is a valuable skill. . Much of the water we find outdoors is safe, especially at high elevations and when you're near the original source. Always consider what is upstream, and err on the side of caution if you don't know what is above you. Does the

water look clear? Don't worry too much about small animal life in the water. Worry more if there isn't any life in the water, and ask why.

Some experts talk about running water being safer than still water, but studies have found lake water to be among the cleanest because the ultraviolet rays of the sun kill bacteria near the surface. When taking water from a lake or pond, take water under the surface, but near the surface. Check the rate of water that is flowing into and out of the lake. Are there any stock animals or other animals that could make the water impure?

When hiking at lower elevations, you need to be cautious of manmade contamination from agriculture and industry, including herbicides, pesticides, and fertilizers.

No matter what water treatment system you use, be sure your hands are clean, especially after bathroom breaks. This is one of the most important points of this article. Impure hands can often transfer micro organisms to food or water, and the water gets blamed for the result.

Boiling is the oldest and most basic way to purify water. A rolling boil will destroy any pathogens. To be safe, bring the water to a rolling boil for 3 to 5 minutes. Boiling water for drinking is slow and tedious, and adds to the weight of the fuel in your pack.

If it becomes necessary to use water from streams, lakes, and springs, purify the water, with purification tablets and water filters, no matter how clean it appears. The purification tablets – which contain iodine, halazone, or chlorine – kill most waterborne bacteria, viruses, and some (but not all) parasites. Some parasites – such as *Cryptosporidium parvum*, *Giardia lamblia*, and larger bacteria – are not killed by purification tablets; you must also use a water filter. These water filtering devices must be 1 micron absolute or smaller. Water purification tablets, filters, and sanitizing tablets can be purchased at camping supply stores.

How much water should you carry? Aim for at least two litres per person - the warmer it is, the more you need. Most people will probably drink 4 litres of water in warm weather. The body can only assimilate about 4 ounces of water at a time the rest goes through your kidneys so it's important that you sip water frequently rather than gulp infrequently. When considering pack weight - one litre water = 1kg.

WALKING ON THE TRAIL.



- **Maintain an efficient posture**, while walking on the trail. First of all, you need to make sure your pack is packed correctly. Assuming your pack is relatively lightweight and properly packed, you should be able to walk only slightly leaning forward under the weight of the pack. Try to maintain the posture you would normally have while walking--head up; shoulders back; relaxed, swinging arms--in order to reduce muscle strain and make you a more efficient backpacker.
- **Discover Your Hiking Pace !** This is very important. Everyone has a preferred pace, and to deviate from that pace is somewhat annoying, uncomfortable, and even injury producing. When first starting out, don't concentrate too much on your stride and pace, just do what comes naturally and comfortably. It's important that you hike at your own pace to maintain that comfort level. You're out there to have fun and achieve enjoyment, not to keep up with someone else. If you hike with a group--most groups, if properly

guided, will allow for this, and even encourage this. Eventually, you may want to concentrate on quickening your pace or even slowing down. Over time, I have learned to comfortably quicken my pace or slow my pace, depending on the situation. Walking pace should be restricted to that of the slowest member of the party. A leader should be with students at the front of the group, whilst a strong walker should remain at the rear to provide supervision and support for slower walkers. The leader must make regular checks on group numbers and ensure contact between all members of the group is maintained. You should have an understanding of what distances you can hike. Most people have no sense of how far a kilometre really is and how long it actually takes to hike a kilometre. A safe, conservative estimate is 3 kilometres per hour (though 3.5 is more likely the pace you'll be going). It goes down to 1.5 to 2 kilometres per hour for going up hill (depends on how steep) or in scrubby terrain or creek rockhopping on dry rocks. It can go as low as .25 to 1 kilometre rockhopping on wet slippery rocks, travelling in very steep terrain or walking on soft beach sand. Five

kilometres per hour is very fast for a hiking pace. Anything over 10 kilometres is a long day hike. 16 kilometres is a really long day hike. Add an extra hour for every five hours of hiking to allow for fatigue.

- **Watch where you're going.** Especially nowadays, many trails are in a bad way--roots, ruts, wash-outs, rocks. Keep your eyes and mind on the tread in front of you. Plan each step, carefully. Your eyes, mind, and foot placement must be in coordination with your feet. That is why its important to travel at your naturally comfortable pace. If you go too fast, your foot placement may become uncoordinated Accidents can occur--and do. Even on well-kept trails, footing can be treacherous when wet, especially. Be careful going downhill on wet tread. Use your walking stick for added support and stability.

STAY HEALTHY

- **Drink much, eat much, and maintain a stable body heat,** as previously mentioned. When you plan your daily kilometres, take into consideration water, fuel, & clothes breaks. Also take into consideration the terrain you'll be travelling in and make the appropriate clothing and supplies readily available in or on your pack. If the garments, sunscreen, food, etc. are readily available, you'll be more likely to stop and use them-- as opposed to the hassle of digging around in the pack looking for things.
- **Rest** occasionally. Whenever you or someone in your group gets weary, it's important to stop and rest. It's actually best if you rest before anyone gets weary. A tired backpacker, is a backpacker who is more prone to injury. When planning your daily kilometres, be flexible. Be prepared to stop for the day when you and/or your group gets weary and wants to stop, rather than pushing on to a pre-determined goal and risk someone getting injured.
- **Protect yourself from sunburn.** Carry and use hats with wide brims which protect the eyes and face and with shrouds that cover ears and neck. Frequently apply sunblock--at least, SPF 15-- in the mountains, try SPF 30 or higher.
- **Prevent & treat blisters.** If your boots fit correctly, you'll be less likely to encounter blisters. A good boot fit will be snug in the heel area and long enough that toes don't jam up against the front of the boot when going downhill. Also, wear good hiking socks with padded bottoms. Those are the three areas in which blisters occur the most. If you have a history of blisters, then apply moleskin or 2nd skin or whatever to that area prior to hitting the trail. If already on the trail, stop immediately upon feeling a "hot" spot. When you feel the hot spot, the blister is already forming. If you stop right away and apply moleskin to the reddened area, you'll most likely have little more than a sore spot for a couple days. If you don't stop and take care of it, it could develop into a condition too painful to walk on. If a full-blown blister does occur, you can drain it by lancing it at its base and then applying first, an antibacterial gel, and second, a cushioned, adhesive bandage. Another solution, is to leave it, as is, undrained, and cover it as follows: cut a section of 1/8" thick molefoam which is larger than the blister by 1/2" on each side. Then cut a hole in the middle of the molefoam a little larger than the blister and place it over the blister. Next, Cut a piece of moleskin the same size as the molefoam and place over the top of the molefoam. You've now encased and protected the blister from further abrasion. You should be able to continue on your journey.



- **Bugs.** You'll have to deal with bugs, one way or another especially flies and mosquitoes. There are many bug-off solutions--juices, creams, gels, sprays--most of which are DEET based. You can also purchase bug-net clothes. This is probably the main reason that I carry a tent. If there were no bugs in the world, I'd be happy carrying, at most, a bivy for many of the outings I go on. There's no magic solution, you just have to discover a way to deal with it.
- **Ticks.** In tick country, make sure feet, legs, arms are covered with clothing. Wear light-colored clothing so ticks will be more visible. Check often for ticks on clothes and in hair and on exposed skin. If you do find a tick embedded in your skin the recommendation is to remove it immediately by pinching your skin with special tick-removing tweezers just below the head of the tick and lift the tick straight up and out. It is very important to not squeeze or twist the tick during the removal process since this can cause the tick to regurgitate germs into the wound. Also, do not try to burn or otherwise harrass the tick because it may burrow deeper. After removal, apply first aid to the wound, and it wouldn't hurt to save the specimen and take it and yourself to see a physician, upon your return to civilization.

- **Leeches.** Leeches are not life-threatening but most of us don't like them very much. There are a couple of things you can do to discourage the little "suckers". If you have leather boots make sure they are well oiled or waxed leeches don't seem to like these substances. For joggers try spraying well or coating with Rid or other insect repellent. Use insect repellent (Bushman is the strongest) on your skin and/or clothes. Folding the tops of socks over the top of your shoes or wearing gaiters can also make it harder for leeches to get inside your shoes. Carry insect repellent in a handy place.

Salt is effective in killing the leech once it has attached and pack a ground sheet close to the top of your pack to ensure a leech free break.

- **First Aid Kit** – it is absolutely imperative that you carry a first aid kit when hiking. Each person should have a personal first aid kit in a small lightweight container (a zip lock bag is good). No matter what you decide to carry in your kit make sure you check it each time before you go hiking. Toss out old or out of date medications and restock with fresh supplies. Never be complacent and always take a First Aid Kit with you. The one time you don't will be the time you need it.

The following items should be considered when stocking a basic First Aid kit:

- Bandages – various sizes – one for treating snake bite
- Pain relievers – Panadol, ibuprofen
- Adhesive tape
- Alcohol/antiseptic wipes
- Antihistamine
- Antiseptic ointment
- Gauze pads
- Band-aids
- Butterfly
- Antifungal skin cream
- Anti-diarrhoea medicine
- Safety pins
- Scissors or multi-tool
- Sunscreen
- Triangular bandage
- Tweezers
- Prescription medicines + extra dose
- Cling wrap



STAY FOUND



Hikers must bear in mind the fact that they practise a sport that entails certain elements of risk. They should be considerate and remember that the community is not impressed with having to meet expensive search costs because of their incompetence.

Carry & know how to use map & compass. Even if you always stay on the trail and have no intentions of leaving it, it is important to carry a good quality topographical map of the terrain that you're in. A poor quality map, which doesn't show contours will only lead to shocks when you are facing that steep accent. If for a brief moment, you may not be paying attention or may get distracted and, consequently, take an incorrect fork in the trail, the tread of which gradually fades away. You turn around and see no trail--you're disoriented and probably lost. In my opinion, the map is the most important tool you have because even if you don't know the intricacies of using a compass, the map (assuming you know how to read it) will allow you get re-oriented. You can climb to a high place pick out some outstanding land features then find them on the map (or vice versa) in order to approximate where you're at. With this knowledge you'll have an easier time finding your way back to the trail. If you know how to read the compass--which you should-- you'll have an even better chance of finding your way back.

Unfortunately many hikers don't pull out the map until they're thoroughly lost.

The fact is it's usually a simple matter to continually monitor your location on a map, double-checking to confirm that you're correct. It's far more difficult to figure out your location after you're so lost that you haven't a clue.

As you hike, frequently ask yourself:

- Are we going in the compass direction the map indicates we should be travelling?
- Are we going uphill or downhill when expected?
- Are we passing through the type of terrain (open fields, forest) indicated on the map?
- Do trail junctions correspond with what shows on the map?
- Are we crossing roads or streams where the map shows them?
- Are visible landmarks showing up in the direction they should be?

If reality suddenly stops corresponding to what the map tells you to expect, but everything was checking out five minutes ago, then it's easy to retrace your steps for five minutes, and see if you missed a turn. If you've been hiking along in the wrong direction for an hour, you'll have a much tougher time salvaging the situation.

Don't just rely on one hiker in front to lead the way. At least one other person in a group should always be double-checking. And really, everyone should be keeping track, for several reasons:

- You'll be less likely to miss a turn if everyone is watching.
- If someone strays from the group, they need to know where they are, and where they're going.
- This gives everyone a chance to practice their map-reading skills, and to compare their conclusions against those of more experienced hikers.
- And finally, it's fun. Route-finding is a puzzle; sometimes an easy one, sometimes more challenging. If you haven't a clue how to go about solving the puzzle, it may be boring to wait for the leaders while they work on the puzzle. But once you understand the process and get involved, route-finding becomes part of the pleasure of a day of hiking.
- **Be familiar with & pay attention to, the terrain you're in.** Before you venture into an area, become familiar with the terrain by studying your map. As you travel, pay attention, stay aware of where you are--don't just blindly follow the trail. Periodically, stop, turn around and look behind you. See if you can approximate where you're at on the map. Stay alert, don't space out, and you'll stay found.
- **Stay on the trail.** Use your map to become familiar with the trail, including intersections with other trails. It's not uncommon to come across side trails which are well travelled by wild animals, climbers, fisherman, and soon-to-be-lost hikers. Again, pay attention to the map, pay attention to the trail. Stay on the right one. If you have a question about which way to go, refer to your present location on the map, pull out your compass, take a bearing and follow the appropriate trail. Not all trails are well-defined, be prepared to use map, compass, and common sense to validate the direction you travel.
- **Keep track of Each Other.** If in a group, the rule of thumb is don't lose sight of the person in front of and/or behind you. If each person has this attitude and practice, persons will have a better chance of staying found; those who become lost can be retrieved before they become "too lost"; and injured individuals can be quickly located and administered to.
- **If lost, don't panic.** Once you realize that you're lost, stay calm, relax, and evaluate the situation. Stay where you are at, continuing on may just take you farther from help. Use your emergency whistle to signal distress, or if you don't have your whistle, make a loud noise however you can. Get to the highest place in the immediate area, and using your basic map and compass skills to approximate your location, and begin working your way back to the trail, continuing to make noise, until you are found, again.

RELATED TO THE TRAIL

As much as possible, stay on the trail. Since many trails aren't properly maintained, nowadays, they can get pretty mucky. Try to stay on the trail, anyway. That's why we have waterproof hiking boots. Every time we leave the trail to avoid the muck, we contribute to further erosion and degradation of the trail. However, on those occasions when we do need to leave the established trail, in order to avoid "excessive muck", we need to be careful of the vegetation and try to walk where others have walked, in order to minimize and isolate the impact.

- Do not litter. Whatever we pack in, we must pack out.
- If you can, pick up refuse that you find which someone else has left behind.
- Do not cut new trails or shortcut existing trails.

- **Selecting a Camp Site:**



Take the time to seek out natural camp sites:

- Camp 200 feet or more, away from water sources--draw your water for cooking, drinking, and bathing and carry it to your cooking & camping areas.
- Honour designated low-use or no-use areas. Especially, ones where revegetation efforts are underway. Don't Camp There !
- Camp on well-drained sandy or rocky sites, or on vegetation that is heavily-laden with soft humus.
- Do not establish camp on high ridges that are exposed to wild weather--cold, high winds and lightening. Camp at lower elevations that are protected by surrounding rocks, trees, and brush. Avoid camping in basins because cold, damp air collects and you'll probably awake, cold and damp. Find level ground somewhere in between, out of the wind.
- Do not sleep laterally on a slope or you will awaken--assuming you even get to sleep--with sore muscles where you've been attempting (consciously and unconsciously) to compensate for the downhill pull of gravity.
- Seek out slightly sloped areas to ensure that you don't awaken in the middle of a puddle of water when that late-evening rain shower occurs. Whether you sleep with your head or your feet on the upside of the slope is up to you. I feel more comfortable with my head on the upside, others feel more comfortable, relaxed and better the next day by putting feet on the upside. Decide for yourself.
- When smoothing out your bedsite, be gentle. Don't carry out excavation beyond what you can fully repair, afterward. Firstly, pick out the obvious larger sticks, stones, and sticks, then, lightly, run your hand over the area brushing aside other obstacles that might poke you (or your mattress). Do not, under any circumstance, uproot vegetation. Consider what the ground looks like where an animal has bedded for the night. Your bedsite should not look worse than that, when you're finished using that space.
- Avoid digging holes, trenches, and, otherwise rearranging fragile terrain

- **Animals & Your Food:**

- Typically, it is recommended that you don't store your food in your tent. Rodents don't mind chewing holes in your tent and pack, in order to get to it.
- Hang food high above the ground using a proven technique a considerable distance from where you are sleeping.
- In general, keep food away from your sleeping quarters--tent, sleeping bag--and anything else you keep inside your tent--clothes. Just remember, if you spill that delicious pot of spaghetti on your sleeping bag, you might end up being the meatball !



- **Take Care of Our Streams and Lakes:**

- Camp, at least, 200 feet away from streams and lakes, in order to minimize water pollution.
- Do not urinate in and around streams and lakes.
- Wash yourself and dirty cookware a reasonable distance from fresh water sources.
- Do not dump soap suds into streams and lakes.

- **Sanitation**

- Bury human waste at least 6 inches deep .
- Toilet Paper - definitely take some--overestimate quantity. Nettles and Sandpaper figs are not good alternatives.

- Don't dump soap suds from bathing or dishwashing into the water. For bathing, take along a few "hand-wipes" and draw a pot of water for rinsing. Do this 200 feet away from water sources. A little biodegradable soap dumped on the ground is okay, but never dump it in water sources--it takes much longer to degrade and someone else might want to use the water source after you leave. Or, in the case of a stream, someone might be downstream drawing water for cooking or drinking purposes.
- Cleanup your campsite before you leave. Food refuse, pieces of paper, unburnt garbage, etc. Leave a sanitary and aesthetically pleasing campsite for the next person.

● **If You Must Have A Fire:**

- Use only downed dead or dying trees (never take from live ones).
- Use existing fire rings, where possible.
- Do not leave fire unattended. Make sure fire is completely out before you leave the campsite. If possible, remove all traces of the fire.
- Do not leave unburned trash in the fire pit. Carry it out !
- Create only small fires in safe areas.



IF YOU ARE LOST:



If you realise you are lost, do not panic. STOP (Stop, Think, Observe and Plan). Sit down and calmly try to work things out. Appoint a leader and her decision to hold at all times. Ideas are to be discussed with the leader. Note the time and estimate how long you've been astray and how far you can go before dark. You may be able to retrace your steps until you can orientate yourself again. If you have been navigating carefully, the chances are that you will not be very badly bushed. It is important that before you move, you make a careful note of the bearing you are taking. If this fails and you can see higher ground, head for it and try to ascertain your position by visual means. Climb a tree if necessary and if possible. Any movement is normally best made on ridges and spurs not in scrub-choked gullies. If in a rainforest or scrub follow the ridge not the creek. Preferably wear brightly coloured clothing and ration the food you have with you. Once on a ridge you may be able to use equipment such as a mobile phone IF you have reception. Satellite phones allow communication to the standard telephone network from anywhere in Australia to almost anywhere in the world. Some sat phones also offer GPS tracking and location facilities but some can be bulky.

If you cannot see higher ground, walk on a fixed bearing in what you think is the most likely direction to higher ground. Mark the trail as you go with tracking signs. Do not walk more than a kilometre and carefully note your bearings. Do not lose height. If it is getting dark set up camp in the remaining light rather than stumble around in the bush.

If you still cannot decide on a direction to get you out of trouble:

- Keep the group together
- Return to your original position and make camp but do not camp too close to running water as this makes searches calls inaudible.
- Light a fire close by, which is visible, especially from the air (smoke by day, flaming by night)
- If you hear or see birds this is an indication that water can be located in gullies.
- If you have to go down for water, return to your original position with the water as soon as possible.
- If you decide to move, leave a clear trail (arrows, other tracking signs, break sticks, mark trees etc) and leave messages at camp-sites giving departure times, intentions and physical condition of party.
- Don't wander too far from your original route as possible as the person you have left your hike plan with will notify the authorities and that area is where rescuers will start searching for you.
- Flash planes only if position is desperate. Accepted distress signal is three – 3 whistle blasts, 3 cooees, 3 fires, 3 flashes of a mirror or torch. These must be regularly spaced or they may not be noticed.

- A GPS is a great tool but it has its limitations. In order for it to be useful after you get lost you need to use it before you get lost. Enter waypoints as you travel including your starting point. Then if you get lost you have marked an electronic trail back to your starting point. You should know how to use a compass and be able to position yourself on a map. Never rely on a GPS. Thick forest canopy, bad weather and flat batteries can render it useless. Batteries usually run down after a days use.
- A two way UHF radio should be used for communication if possible if someone has to leave the group for any reason. A radio's actual range will be about 3.2 kilometres or less.

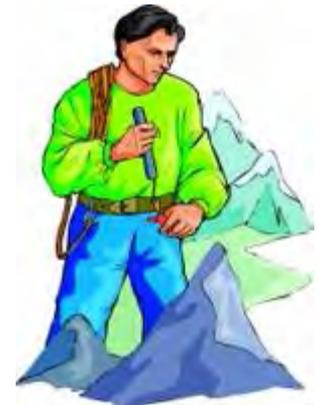
Why? Several factors can inhibit two-way radio performance:

- Topography (hills, deep canyons, ridgelines, tall formations)
- Weather (such as thick clouds)
- Electromagnetic interference (lightning)
- Obstructions (dense forest, structures)
- Large metal surfaces (inside a vehicle, range is usually less than 1 mile)

The human body (which is dense and watery) can also block radio waves. You may boost reception of incoming signals if you attach a radio to a section of your pack that remains away from your body instead of clipping it to your belt. Potential causes of radio interference are as random as nature itself. So yes, your two-way radio results may vary.

While dense forests or multiple ridgelines can be major impediments to radio signals, scattered trees and bushes are mostly transparent or "translucent" to these signals. So even in forested or hilly territory, two-way radios generally do a fair to good job of transmitting short-range signals. The more powerful the radios the quicker they use batteries – with constant use they will use a set of standard batteries per day.

Citizens Radio Emergency Service Teams" (CREST) are volunteers who are trained and monitor the Government allocated emergency channels on the Citizens Band Radio frequencies and summon help in cases of emergencies. They monitor Channel 9 HF (High Frequency) radio, Channel 5 on the older 18 channel radio, in addition to which channel 5/35 on UHF(Ultra high Frequency) is also monitored. These Channels are legally reserved for emergency and assistance calls only. These channels may not be used for any other purpose. In some areas this monitoring service operates on a 24 hour-a-day basis, relaying emergency and assistance calls via radio and telephone to the needed authority or service.



- If you have an EPIRB (Emergency Position Indicating Radio Beacon) move to elevated position and trigger it. An EPIRB is a radio distress beacon that can be activated in an emergency to transmit continuous radio signals on the frequencies of 121.5MHz and 243 MHz simultaneously. These signals can be detected by any commercial or RAAF aircraft within range and line of sight, and reported immediately. The signals can also be detected by orbiting satellites and the signal relayed back to earth where the signal is passed directly to the Rescue Coordination Centre (AusSAR) in Canberra. When the signal is received by AusSAR details are passed to the Police Service which is responsible for coordinating Search and Rescue operations. The response time to an EPIRB signal may take several hours or even one or more days depending on the weather conditions. It is a valuable aid to an expedition that is properly planned and equipped.

If someone sustains an injury, good judgment is required to determine if it is: safe to proceed; better to send someone (two people, if possible) back for help; or stay where you are and wait for help.