YOUR GUIDE TO

HIKING GEAR

UPDATED - NOVEMBER 2017

COOKING EQUIPMENT

SHAPE, SIZE AND DESIGN
HOW STOVES WORK
PROS AND CONS

TIPS

FOR CHOOSING A DAY PACK

10 ESSENTIALS

CHECKLIST

HIKING BOOTS

CHOOSING THE RIGHT FOOTWEAR

WHAT TO WEAR ON THE TRAIL

Your clothing for hiking is important as it is your first line of protection from the cold, the wind, rain, sun, insects, snakes and the scrub.

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TRAILHIKING™ AUSTRALIA

WHAT'S INSIDE

This eBook has been prepared with the aim of enhancing your hiking experience.

If you're looking for another adventure checkout my site, join me on Facebook and if you are able to, please feel free to donate. Your support will go a long way to helping out.

Darren Edwards
Author

Trail Hiking Australia
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DID YOU KNOW?

Trail Hiking Australia is not a commercial initiative. I have personally funded and developed the website and eBooks and offer them FREE for the outdoor community.

Kind of my way of giving back.

Any support you can offer will be greatly appreciated. I would love to receive new hiking trails, tips, articles or financial donations; all which will help further develop these tools for you.

Darren Edwards

PASSIONATE ABOUT HIKING

WHY I HIKE

I have been running my own design agency for the past 24 years and spend a lot of time sitting at my desk in front of a computer. I didn't do a lot of exercise apart from a few short walks and a bit of manual labour. One day I woke up and realised that I was not as fit or skinny as I used to be and running around after my two young boys would leave me feeling exhausted. I had just passed the 40-year mark too and felt like if I didn't make a change now then the second half of my life would really be tough.

I have always enjoyed the outdoors, walking, camping, fishing but had never truly hiked. In Christmas 2012 we were holidaying at the Grampians with friends when I decided I'd had enough of sitting around the campsite so I headed to the Pinnacle for a short hike. It was so tiring and felt like it took me hours to finally reach the summit. But I loved it. It hurt but it felt good. So the next day I work up at 5:30am, grabbed my pack and breakfast and headed up there again to watch the sun rise. I did that every day for an entire week before we returned home.

I was fortunate to be living on the edge of the Lerderderg State Park in Victoria's west so when we returned home I purchased a topographical map of the area and started hiking. I hiked every weekend, sometimes on both days and after approximately four months I was astonished that I had lost 14kg.

I hiked for fitness and I hiked for mental well-being. I found that getting up early on Saturday morning and going for a hike separated my working life from my family life and I could better engage with everyone around me. That is where it started and I have never looked back.

Now hiking has become my life!

WHY I STARTED WWW.TRAILHIKING.COM.AU

I love detail, analysing and information. As soon as I started hiking I tracked and photographed every trail that I hiked. When I returned home from the hike I would write up detailed trail notes and would store all of this information on my PC for my own personal use.

In 2013 I joined a hiking group as I wanted to start to experience more remote locations that I didn't feel comfortable visiting alone. After speaking with people on hikes I was quite amazed at how little people knew of the local trails and parks close to Melbourne and beyond.

As my background is in web design I decided to set up a blog so that I could easily share trails with others. The site quickly grew and after two years of hiking I already had in excess of 150 trails that I had hiked, I had to find more.

Today my goal is to:

- Encourage everyone to care for their health through hiking
- Make it easier for the community to find quality web-based information on hiking trails
- Provide a central source of information regarding all things hiking including trail information, gear reviews, safety tips and planning advice
- Connect adventurers with each other and encourage everyone to 'discover their next adventure!'
- Reinforce Australia as a great hiking destination

The addition of trails to the website is an ongoing process. I am well on the way, but have a reasonable way to go before all of Australia's trails are published on this site – so please be patient if your favourite trail isn't there yet. Or better still, submit your favourite trails today.

CARRYING THE ESSENTIAL GEAR

DO YOU HAVE THE TEN ESSENTIALS IN YOUR PACK?

words by Darren Edwards

What you carry in your day pack obviously depends on the weather, terrain, time of year and a number of other factors. Whether I'm going for a two-hour walk or a day-long hike my checklist for day hikes always starts with the required Ten Essentials. Adapt those and the remaining items on the list based on weather and the remoteness of destination, as well as the experience and preferences of your group.

1. Navigation.

Topographic map and assorted maps in waterproof container plus a magnetic compass, optional altimeter or GPS.

2. Sun protection.

Sunglasses, sunscreen for lips and skin, hat, clothing for sun protection. Carry sunscreen with you and reapply regularly. If you are hiking for a day, you will need to reapply your sunscreen. Sweat can also cause your sunscreen to rub off quicker than normal, so remember to take it with you.

3. Insulation.

Hat, gloves, jacket, extra clothing for coldest possible weather during current season. Avoid cotton and adjust each layer based on the forecast; always prepare, too, for the chance that conditions will turn colder, wetter and windier. Here is what I suggest you wear or carry in your kit, adjust this of course to suit the hike length, duration, destination and the elements.

- Wicking T-shirt or long-sleeve top
- Wicking underwear or long-underwear bottoms (women's, men's)
- Socks plus a spare pair
- Quick-drying pants or shorts
- UPF-rated shirt
- Sun hat and/or rain hat
- Insulating hat or headband
- Insulating fleece or soft-shell jacket or vest and pants
- Bandana or Buff
- Mosquito net clothing
- Rain jacket
- Rain pants
- Hiking boots or shoes
- Gaiters
- Watersport sandals

4. Illumination.

Headlamp, flashlight, batteries. LED bulb is preferred to extend battery life. Even on day hikes, a torch is important in case you are delayed or misjudge how long it will take to get back to camp and end up walking at night. I use a lightweight headlamp so I don't need to carry it and it takes little room in my pack, but any lightweight torch will do.

5. First-aid supplies.

Even if you are going for a short walk, there is always a small possibility you could break a limb, cut yourself or get bitten by insects or snakes, so you need to be prepared for the worse. Most first-aid kits are compact and contain all the essential items you'll need. If you are building a kit from scratch I recommend taking:

- Compact first aid manual
- Pressure immobilisation bandages
- Regular roller bandages
- Triangular bandage for breaks
- Gauze or cotton pads for wounds
- Assorted bandaids for blisters and cuts
- Moleskin and/or blister kit
- Ointment for insect bites
- Antiseptic cream
- Tweezers and splinter needles
- Soluble pain relievers
- Antihistamine
- Insect repellent
- Salt (for leeches)
- Matches
- Whistle and unbreakable signal mirror
- Personal medications – with instructions

I personally carry and highly recommend that you always carry a personal survival kit.

6. Fire.

Butane lighter, matches in waterproof container.

7. Repair kit and tools.

Knives, multi-tool, scissors, pliers, screwdriver, trowel/shovel, duct tape, cable ties. Common sense should prevail here when choosing which items to take.

8. Nutrition.

Dry food is preferred to save weight and usually needs water. You will burn a lot of calories when hiking so take more for lunch than you normally eat as well as snacks that are rich in protein and carbohydrates. Also carry appropriate food. If it is hot, don't take meat or dairy foods that are likely to spoil. Even for a short walk, it is a good suggestion to carry extra food in case of emergency or delays in your hike. A protein rich food that won't go off is good to keep in your pack for emergencies such a cereal bar or dried fruit and nut mix.

9. Hydration.

This one is kind of obvious, but many people underestimate how much water to carry. Have at least 2 litres of water per day and add an extra 2 litres of water for one additional day (for emergency). The volume that you carry will depend on the weather, altitude, your personal health, how much you're carrying, how strenuously you are hiking and so forth. Either way carrying too much is better than too little.

10. Emergency shelter.

Tarp, bivouac sack, space blanket, plastic tube tent, jumbo trash bags, insulated sleeping pad, reflective safety blanket. Never go on a day hike without having a reflective safety blanket. You never know when you might need to do a spontaneous overnighter, and knowing you have one in your pack really helps to stay calm!

Day Hike Extras

In addition to these Ten Essentials, and if you have any room left in your pack I would suggest also considering the following items.

- Daypack (well that was obvious)
- Charged mobile phone, satellite phone or a UHF Radio for emergencies.
- Multifunction watch
- GPS
- Camera and accessories
- Satellite messenger
- Personal locator beacon
- Energy beverages or drink mixes
- Lunch utensils
- Drinking cup
- Quick-dry towel
- Binoculars
- Hiking poles
- Route description or guidebook
- Interpretive field guide(s)
- Outdoor journal with pen/pencil
- Bag for collecting trash
- Post-hike snacks, water, towel, clothing change
- Two itineraries: 1 left with friend + 1 under car seat
- Toilet paper
- Sanitation trowel
- Menstrual and urinary products
- Waste bag(s)
- Hand sanitiser
- Playing cards
- Ice axe and crampons for glacier or snowfield travel (if necessary)

Overnight Extras

Day hikes are usually simple affairs that start and end at the door of your vehicle at a trail-head. When you get the urge to travel further than your legs can carry you in a day, the affair becomes a bit more complicated. More skills, gear, food, and planning are required for a successful multi-day hike. If you are going on an overnight hike then there are even more things you will need and other things to consider.

- Overnight Pack
- Suitable Clothing
- Shelters
- Sleep Pads
- Sleeping Bags and Pillow
- Cooking Equipment
- Food
- Portable water purification and water bottles
- Ice axe and crampons for glacier or snowfield travel (if necessary)

CHOOSING YOUR HIKING PACK

Choosing the right backpack for your trip is essential for any hiking adventure as it will be your companion, even your house, accompanying you around the world.

But if it's too big, you'll have too much extra weight (uncomfortable); too small, you'll never fit anything in (impractical); pick the wrong material, your items will be soaked when it rains (extremely annoying). There are so many options out there that it can be very confusing!

Read on to learn the few important considerations to take note of to ensure you choose and purchase the right pack for your next hiking adventure.

Style

First, you will most definitely want an internal frame travel backpack . There will be no need to attach things to the external frame unless you are primarily camping and carry bulky items like a bedroll. Internal frame packs keep everything self-contained and are definitely the most popular style for travel.

An internal frame backpack usually includes a large integral compartment on the bottom for your sleeping bag. This provides greater protection from the weather (since the bag is actually inside the backpack) and eliminates the chance of the sleeping bag being lost or damaged while hiking. In wetter conditions, this is a major benefit.

Many internal frame backpacks use compression straps to compress the backpack if it is not fully loaded. The compression straps eliminate the extra space by compressing the entire load into a smaller, tighter package and prevent load shift.

Size

Next, you will have to decide on the size. Carrying too much on your backpacking trip will drastically alter your experience (not for good!) and packing too much is the number one mistake that all new travellers make. You can avoid the chances of packing too much by choosing a smaller backpack it simply won't fit!

50-80 litres is the most popular size for extended budget travel trips such as gap years, but if you can get away with a smaller backpack do it! Remember, never leave the house with a backpack completely full, it will never work! You will actually be better off buying a slightly larger pack and not filling it to capacity.

An alternative option which works well is to buy a larger main pack and putting a smaller, collapsible day pack inside of it. That way you only have one bag to carry until you can drop the larger backpack and switch to the smaller day pack.

Durability

The two critical features on any backpack that are most prone to wear and tear are the straps and zippers. Look for double stitching, good quality metal zippers, and buckles that don't feel flimsy or fragile. You can pretty well judge how prone a zipper is to locking up just by trying it a few times back and forth.

Good backpacks have ventilation systems or netting that keeps the load off of your lower back so that your clothes will not sweat through. While this certainly helps comfort, do take more care as these are slightly more prone to getting torn up than just a simple back pad.

Fit

Along with capacity, you will have to decide on a size (small, medium, large, extra-large) for the pack frame itself. Most men will end up with a 'large' pack while women choose 'medium' framed packs. Look for specific brands or backpacks that specialise in 'women's fit' styles that fit on a woman's shoulders, rather than just making their packs smaller.

Regardless of the brand, size, or capacity a backpack should be fitted to your body and feel comfortable when loaded with at least 25kg (don't worry, this is only a test method; you might not be arrying this much weight!). The average weight of a backpacker's pack is between 12 15kg.

Side or Top loading

This depends entirely on preference and backpackers will debate it to the end.

Top loading packs are the most popular, but everything packs into them in a linear fashion so you have to pack based on when you will need to access things. See here for tips on filling a pack like this.

Side loading packs open like a duffel bag, allowing access to all the contents in exchange for slightly more awkward handling.

There is no 'perfect' decision - it all depends on your personal preference!

There are many brands and styles out there, so apart from the few important considerations listed above, the rest is up to your style of travel and preference.

words by Mountain Designs

HOW TO FILL YOUR PACK

When embarking on a hike or travel, never underestimate the importance of pack organisation. It can affect your centre of balance, comfort, back health if wearing for extended periods, and accessibility to items. Use this guide to ensure you're packing smart to get the most out of any adventure!

Firstly, make a checklist of all the items that you want to take with you (using the Gear Lists feature of the Mountain Designs App will help with this!). Collect those articles and spread them on the floor in front of you. Identify items that will require quick access afterwards (map, flashlight, water bottle, etc.), as they belong in easy to reach areas like external pockets. Then start packing by the following rule of thumb:

1. Light items at the bottom
2. Heavy items at the back
3. Medium items (or bulky equipment) at the top and front

Packing that way will put the heaviest items close to your centre of gravity (your back) and make it easy to keep your balance afterwards.

During Packing

- Use smooth items to cushion cornered objects that might otherwise pinch against your spine
- Partly filled stuff sacks can be squeezed into gaps (when differently coloured, they can help you find things and stay organised
- Protect delicate items by packing them inside hard objects (pots, shoes)
- Don't pack food underneath containers that might spill (liquids, powders)
- Pay attention to even weight distribution between the right and left sides

CARING FOR YOUR PACK

Ensure your pack stays in top condition by following a few basic tips.

Cleaning your pack is probably the last thing you'll think about doing after a long trip, you'll empty your pack and put it away and forget about it; but proper care will extend the life of your pack. Different treatments are required depending on the type of fabric; refer to your hang tag where possible.

To ensure your pack stays in top condition we have put together some basic tips below.

Cleaning your pack

Where ever your adventure takes you, your pack is likely to get dirty. Your pack will absorb sweat, body oils, dirt and grime, which over time can break down the fabric. Your pack should always be cleaned before being stored for a prolonged time.

First give your pack a good shake - you'll be amazed how much dirt is hiding in it.

Then a simple process of scrubbing the pack down using a soft bristled brush and a mild detergent/soap mixed with warm water and hosing or rinsing it off. To dry, simply hang your pack, out of direct sunlight.

For stubborn stains, let the pack soak in warm water with a mild detergent for a few hours, before scrubbing the stains.

Mould

Mould can occur if you store the pack when it is still wet. To remove mould start by soaking your pack in warm water with a diluted solution of antiseptic or a specialised mould remover. Then, gently scrub the pack with a soft bristled brush, you may need to use a lot of elbow grease to remove the mould. Rinse the pack until it is clean. White vinegar may be added to the rinse water as it helps to prevent the return of mould. Hang the pack out to dry, out of direct sunlight.

Waterproofing your pack

Canvas and nylon packs can be quite water repellent; however, water may be still able to seep through seams or zippers in a heavy downpour.

Water repellent product: To improve the water proofness of the fabric you can apply a water repellent product.

Pack Cover: Pack covers are like a shower cap for your pack. They have an elastic hem that hugs the outside of the pack and keeps it dry.

Pack Liner: A pack liner is simply a large bag that acts as an internal shield/extra waterproof barrier to keep your gear dry

Dry Bags: Another alternative is to use a collection of dry bags. Dry bags are similar to a pack liner, a dry bag will keep your items dry and protected. These are available in a collection of sizes.

Storing

Once you've cleaned your pack, you should store your pack in a cool, dry place away from pests. Never keep it near concrete as the moisture and chemicals in concrete can damage the fabrics. It is better to keep your pack in a cardboard box with air holes in a well-ventilated place. If you live in a humid climate it is recommended to store your pack with silica or a similar product.

Take away tips to remember

After each trip be sure to clean out your pack thoroughly - remove all your gear, shake the dirt out, wipe and scrub away any stains
If it's wet hang out to dry, out of direct sunlight
Loosen all the straps
Store your pack in a cool, dry location
Remember to wash your pack every now and then

words by Mountain Designs

TIP

Stuff sacks and dry bags make a huge difference to the available space in your pack. Use them for packing, organisation, and protection of your gear. They are perfect for storing your cooking utensils, food, first aid kit, clothes, tent, electronics. Stuff sacks also make a great pillow if you are trying to save on space.


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FIELD TEST

CamelBak Fourteener 20 Pack

words by Darren Edwards

When it comes to hiking there is one piece of equipment that I love. I really can't explain what it is that has led me to now own over 25 packs of different shapes and sizes but every time I see a new pack on the market I am keen to get it on my back and see how well it performs. I am certainly not the Imedla Marcos of packs, but I do find that every style of hike requires a different approach and as such, a different pack.

Deep down I am somewhat a perfectionist so maybe my fascination is born from an ongoing need to find the 'perfect pack' that does everything I need. Through this ongoing search I have developed quite a comprehensive pack selection criterion. Does it have separate hydration compartments, enough storage compartments, expandable pockets for varying loads, adequate ventilation, external gear loops, is it comfortable to wear, it is light weight, is it durable, does it pack down well for transport and storage? The list could go on, but these are the basics that I always assess.Of late I have been telling myself I will never find the perfect pack, so I will need to be content with the selection I have on hand. That being said, I was somewhat excited when I was asked by CamelBak to field test their new Fourteener 20 day pack. My first thought was, Yay, I don't think I have a 20-litre pack yet so that will make a nice addition to my collection.Why the interesting name, Fourteener 20? Before the pack arrived, I wasn't certain if it was going to be a fourteen-litre pack or a twenty-litre pack or one that was typically smaller but expandable to accommodate twenty litres if required. So, I carried out a bit of research into the name. In mountaineering language, a fourteener is a mountain peak with an elevation of at least 14,000 feet. The world is covered in many of these mountains, and CamelBak's Fourteener range was designed to help you bag them.

When getting this pack ready to hit the trail for the first time I was pleased to find so many storage compartments. The separate reservoir compartment allows you to stow your water supply away from your gear, this is great for ease of access as well as protection for the reservoir. Recently I had one rupture on a hike as the pack I was using did not have a separate hydration space. The brand-new 3 litre Crux Reservoir loads easily into the pack and has a few internal loops for securing the reservoir in place. This helps to prevent the reservoir from ending up in the bottom of your pack as you hydrate. As you would expect, the hose can then be passed through the wall of the pack and secures neatly to clips on either shoulder strap.

I have always been a fan of CamelBaks hydration reservoirs (yes, I own a few of each size) and I was pleased to find that the new model delivers more water per sip, has an ergonomic handle for easier refilling, and a larger on/off lever that makes it easier to access (especially when wearing gloves) as well as prevent leaks.In addition to the main compartments, I counted a total of 7 internal and external pockets. There seemed to be pocket for everything. The rear face of the pack has a large zippered stretch pocket, perfect for carrying jackets or gear that is bulky and needs to be accessed quickly. Above this is a smaller zippered pocket which is internally lined to carry any valuables such as phone, gps, watch etc. There are pockets on both hip belts too. The left hip has a large zippered pocket while on the right you will find two stretch pockets for carrying water bottles, gloves, sunglasses, hat etc. Inside the main compartment you will find two additional pockets, one mesh, one solid, both with zips. These smaller pockets are great as they allow you to manage your gear for faster access as required. The Fourteener 20 is certainly designed everything you need for a day hike; extra layers, food, head lamp, trail map, hiking poles, ice axe, navigation tools, sunglasses, first-aid kit, lunch, snacks, water etc etc. With all of these pockets you would think that the pack would be bulging on your back when fully loaded but I found that the pockets have been well positioned to place your gear where it counts for a secure and comfortable carry. The pack also has daisy chain straps, hiking pole loops and an ice axe loop so is great for all season hiking.

The load bearing hip belt is wide and sits comfortably, even on my hips (or lack thereof) therefore taking any load off your shoulders and placing it firmly on your hips where it belongs. The shoulder straps have and open mesh inner to maximize breathability and I found the cut of the straps to be especially appealing as they have been cleverly curved to conform to the shape of your body and sit neatly and comfortably over your shoulder. Out of all the packs I have worn, these straps were certainly the most comfortable I have ever experienced. They just felt natural and didn't shift or rub. The breast strap can be fastened easily (even with gloves) and has a huge adjustment range that will easily accommodate most body shapes and sizes.

Fully loaded and secured to my back I could hardly feel that I was wearing this pack. The back panel features a series of three mesh pods, one that sits on your lumbar, one mid-way through the back and one at shoulder height. The purpose of these 'Air Support' pods is for increased comfort, load transfer and improved ventilation and they seemed to perform as expected. One thing I don't particularly like about many of my packs is the way the back panel is addressed. Some have awesome ventilation/air flow features while others have none and leave you with a horribly wet back even after a few hours on the trail. The CamelBak Fourteener 20 seems to get the balance right and offered the breathability and comfort that I would expect from a pack.

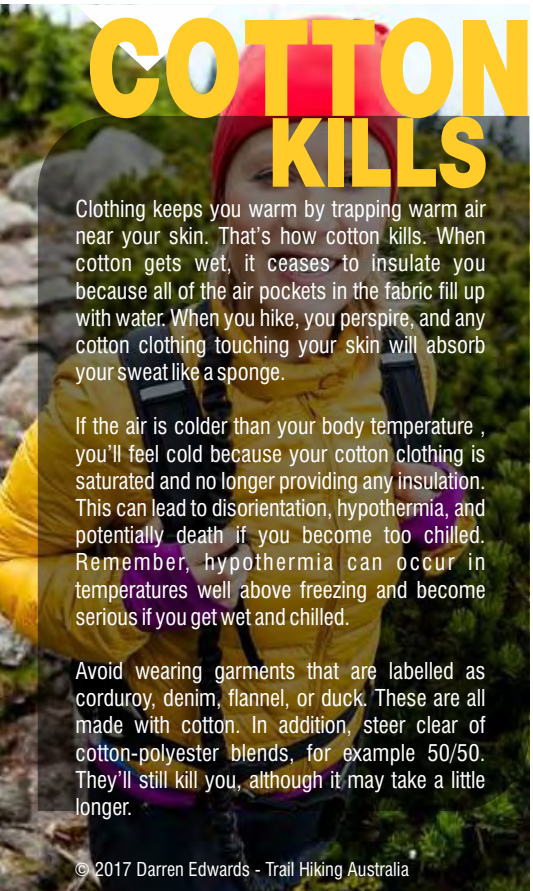
As I mentioned earlier, I am a bit of a perfectionist at heart and one day hope to find (or design) the perfect pack that addresses my needs for every hike. I know that is a big ask as every hike and every hiker is different. So far, I am really impressed with the CamelBak Fourteener 20. I have only hit the trail with it on four occasions so far so cannot comment on durability, but I can comment on all the other features that are on my wish list for the 'perfect pack'. It ticks all the boxes. There are only a few small things I would suggest for future improvement and they would be to incorporate a rain cover into the pack, add an additional ice axe loop and change the breast strap fastening clip to one that incorporates a whistle as I feel that is a great safety addition to any pack.All in all, the CamelBak Fourteener 20 is a comfortable, versatile and lightweight pack (weighing in at only 1.1kg) and I look forward to many more adventures with it. If you are looking for a new or replacement pack, I highly recommend checking these out.

CLOTHING YOUR FIRST LINE OF PROTECTION

words by Darren Edwards

Quite simply, the right clothing for hiking ensures you enjoy hiking in both comfort and safety.

Your clothing for hiking is important as it is your first line of protection from the cold, the wind, rain, sun, insects, snakes and the scrub. A number of light, adjustable layers is preferable to a few layers of thick fabric. Adjust zippers and layers to minimize sweating during exercise and be sure to add layers before you feel cold at rest stops.



COTTON KILLS

Clothing keeps you warm by trapping warm air near your skin. That's how cotton kills. When cotton gets wet, it ceases to insulate you because all of the air pockets in the fabric fill up with water. When you hike, you perspire, and any cotton clothing touching your skin will absorb your sweat like a sponge.

If the air is colder than your body temperature , you'll feel cold because your cotton clothing is saturated and no longer providing any insulation. This can lead to disorientation, hypothermia, and potentially death if you become too chilled. Remember, hypothermia can occur in temperatures well above freezing and become serious if you get wet and chilled.

Avoid wearing garments that are labelled as corduroy, denim, flannel, or duck. These are all made with cotton. In addition, steer clear of cotton-polyester blends, for example 50/50. They'll still kill you, although it may take a little longer.

Cotton
My personal opinion (and that of many others) is to leave all your cotton clothes at home. Cotton can Kill. Cotton is not a good wicking fabric, does not breathe well and will make you cold when wet. I experienced this on many hikes where I have been forced to remove my cotton clothing due to over saturation. It's just not worth the hassle.

Avoid wearing garments that are labelled as corduroy, denim or flannel. These are all made with cotton.

- Advantage: Cool sun protection, non irritant
- Disadvantage: Cold when wet, slow drying

Wool

- Advantage: Warm when wet, low flammability
- Disadvantage: Skin irritant, slow drying, heavy when wet (unless superfine merino)

Synthetics

- Advantage: High warmth/weight ratio, absorbs little moisture, quick drying
- Disadvantage: Warm in hot weather, often expensive, non fire resistant

When choosing your clothing for a specific trip make allowances for dealing with the expected terrain and the worst weather conditions that may be encountered in the walk area. In alpine regions be prepared for rapid change to blizzard conditions in all seasons. Neither should the danger from the sun be underestimated. Despite the deceptively cooler air temperatures generally encountered at altitude, ultraviolet levels are significantly higher, and reflection from snow can reach parts of the body not usually exposed to the sun's rays. Resist the temptation to reduce pack weight by leaving spare clothing behind.

Consider the following elements when determining what you will wear or pack for your hike.

Terrain
Always wear comfortable, well treaded footwear. Many hikers prefer boots with ankle support when pack carrying or hiking on rough ground. Thick well fitting woolen socks are invaluable. Gaiters give protection from grass seeds, stones, scrub, snow, snakes and leeches.

Rain
The weather, particularly in southern states of Australia, can be unpredictable. Sunny one minute, bucketing down with rain the next. Always carry a good water and windproof jacket, preferably thigh length with integral hood, NOT padded and NOT a light nylon "spray jacket". Waterproof over-pants. Not jeans.

Cold
Beanie/balaclava, mittens/gloves, jumper/polar fleece, windproof shirt, thermal underwear, woolen socks. Not jeans.

Sun
Hat, light weight long-sleeved shirt.

Additional Items
Keep a pair of spare socks with you. I always take a spare change of socks on a day hike in case my feet get wet or sweaty. A change of socks can be improve your mood dramatically when hiking as well as prevent blisters.

You might want to carry warm clothing in case you get caught out after dark.

HOW TO LAYER

DID YOU KNOW?

Trail Hiking Australia is not a commercial initiative. I have personally funded and developed the website and eBooks and offer them FREE for the outdoor community.

Kind of my way of giving back.

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Darren Edwards

To maximise comfort and stay outdoors for longer, master the art of layering with our 3-layer approach. You'll be surprised how much of a difference it makes.

Layering clothing is crucial for the comfort and protection of any adventurer. Each layer has a function to maximise your comfort in the outdoors. This simple concept allows you to make quick adjustments based on your activity level and changes in the weather. Call it an art or call it science, when the cold weather rolls in you'll be glad you learnt how to do it right.

Before we get into the finer details, let's break the layering system down. The base layer manages moisture; the mid layer protects you from the cold and allows your skin to breathe; the outer layer shields you from wind and rain. When the weather changes, you simply add or subtract layers as needed.

Base Layer

This is the layer closest to your body and manages moisture and heat. This layer usually allows for freedom of movement whilst also retaining your body heat to keep you warm and toasty. The material of this layer avoids remaining damp and instead is extremely breathable with quick moisture evaporation. Depending on the location and expected temperature, you can opt for a singlet top or a long sleeved top for extra warmth.

Mid Layer

This is the second layer of clothing and is specifically used for protecting against the wind and keeping you nice and dry throughout the adventure. It should comfortably fit over your first base layer and allow for relatively easy movement. Middle layers should be made of material that is moisture wicking and breathable, whilst still providing a barrier against the harsh wind. Stopping at this layer is great for warmer climates.

words by Mountain Designs

Outer Layer

The final layer acts as a shield to natural elements like rain and wind. It should fit comfortably over both the base and middle layers without being overly large. To maximise comfort and wind resistance, look for an outer layer with an elastic or corded bottom to keep the wind out.

Three Key Elements of Outdoor Comfort

Before purchasing your layers, keep in mind a couple of key elements that will make a big difference.

1. **Be weight conscious**
Ensure you choose items that are lightweight. You will be lugging your clothes around with you at all times, so be sure they don't weigh you down too much.

2. **Integrated fit**
Make sure your entire layering system is designed to integrate and allow dynamic movement, even when wearing many layers. Always try on the full system.

3. **Finally, comfort is key**
Make sure all items are comfortable and promise to do exactly what you expect them to do.

To maximise comfort and stay outdoors for longer, master the art of layering with our 3-layer approach. You'll be surprised how much of a difference it makes.

3 KEY ELEMENTS

Choosing Your OUTERWEAR

Be prepared and stay protected in any weather

Jackets can protect you against humidity, wind and cold. When choosing an outdoor jacket, you either put emphasis on one of those three factors, or compromise for a sufficient level of all-round protection.

The major fabrics used for the face of outdoor jackets are polyester and nylon. Polyester is widely appreciated as quick drying and water-repellent. Nylon excels with durability at low weight, but is usually less waterproof. In combination with state of the art treatments, the individual fabric qualities can be significantly improved.

When fitting an outdoor jacket you should keep its end use in mind. Whether you want a tight or close fit is not just a question of looks. Insulated jackets are used as outer layers, which calls for a bulkier fit, whereas windproof clothing might be worn under climbing gear and should therefore have a closer fit.

Rainwear

Rainwear shields you from water. Light rainwear is an easy-to-pack item that protects you from showers in the open. Choosing heavier rainwear means you trade breathability for more effective rain protection. Decreased breathability means that heavy rainwear is not suitable for physically challenging activities — you would soon be drenched in sweat, which is quite dangerous in cold environments.

The length of a rain jacket also depends on the expected activity. When choosing rainwear look for an item that you can change into quickly and easily, as well as to prevent water leakages.

It is useful to look for:

- Fully taped seams
- Zipper flaps
- Roomy cut
- Volume adjustable hood (to accommodate a helmet, if needed)
- Rain-shedding brims

Windproof

During highly physical activities you come to appreciate windproof products. Their main job is to prevent wind penetration, but it doesn't stop there. Windproof garments allow moisture and excess heat to ventilate away from your body. This process is called Moisture Vapour Transfer (MVT).

Many windproof products, while not being fully waterproof, can withstand light showers. By keeping the wind in check, windproof products provide you with a feeling of warmth. When you are running or cycling in a cold but dry environment, a windproof garment is a light and handy item.

Fleece

You've got to have fleece! Its unique features have made it the fabric of choice for many outdoor people.

Fleece products can be comfortably worn with other layers of clothing and are suitable as a base, mid or outer layer depending on your conditions. When wet, fleece retains much of its warmth and dries quickly. High-quality fleece keeps its loft and warmth during its long life.

Nice to wear and easy to care for, fleece is the fabric you want. For extra protection, look out for our windproof fleece products!

Softshell

Softshells provide warmth, breathability and wind-resistance in a very lightweight package. They use a soft and stretchable surface to block wind, shed snow and light rain. The outer fabrics withstand abrasion from rocks, trees, and ice; underneath, a highly breathable membrane allows the release of body moisture.

Softshells can be worn as convenient outer layers in most weather conditions except heavy rain. This makes them the ideal choice for 90% of activities in fair to average weather. Their athletic fit makes them perfect for carrying a pack, their stretchy fabrics allow freedom of movement, and their plain styling adds to their robustness.

If you are in it for day-long activities in cool and dry weather, soft shell is what you are looking for. For the ultimate protection, pair it with a lightweight rain jacket for when the sky falls down unexpectedly! Try them both on together to make sure they fit together comfortably.

Insulative Fill

Insulated clothing excels in cold conditions, keeping you warm when you need it the most. How warm your clothing will feel depends on your body (fitness, diet, activity level), therefore there are no realistic temperature ratings for insulated clothing.

To assess the quality of an insulated product, you can check for the following attributes:

- Water-resistant
- Windproof
- Breathable
- Downproof (prevents down from leaking out)
- The insulation for outdoor clothing needs to be light, compressible, resilient and durable.

Down provides the best warmth for weight of any insulator. It is more resilient than synthetics and can be a lifetime investment if properly cared for. The measure of down quality is fill power, expressed as cubic inches per ounce. A loft of 400-450 is considered medium quality, 500-550 is considered good, and 600-700 is excellent.

The warmth of insulated clothing is strongly affected by the method of sewing. The common construction methods are:

- Sewn-through or quilted (most common and least expensive, but creates cold spots along the stitch lines)
- Triple-layer (compromise between warmth and weight, increases wind resistance, reduces heat loss)
- Offset quilt (eliminates cold spots, but adds weight and bulk)
- Baffled (eliminates cold spots, ultimate warmth-to-weight ratio)

Merino Outerwear

Merino wool is an excellent natural fabric that comprises many of the qualities to look for in a travel garment. Merino is a breed of sheep famous for its fine, soft wool and its ability to thrive in New Zealand's extremely cold high country. Why? Because they have the best wool for it! Check out some of the qualities of merino wool below. Pair up a merino jacket with a rain jacket or windbreaker for the most comfort in strong conditions.

- Merino fibres are extremely fine, enabling them to blend well which makes them feel soft and luxuriously gentle next to your skin.
- Merino fibres are naturally moisture wicking, which absorbs your body moisture vapour then moves it away to evaporate into the air. This makes it extremely breathable without losing body heat.
- It regulates body temperature so that you stay warm when the weather is cold, and cool when the weather is hot. In contrast to synthetics, Merino is an active fibre that reacts to changes in body temperature.
- Merino is odour free, so you can feel confident on multi-day wears - perfect for travel!
- Static free and flame retardant so you can feel safe in these warm natural fibres
- Wrinkle resistant

words by Mountain Designs

GAITERS
THE EXTRA LAYER OF PROTECTION

Whether snow, rain or overgrown trails are the environment you are hiking through, there are different types of gaiters that excel for different activities.

Planning on hiking through frosted peaks of the alpine regions, heading out for a hike during this spring's colossal snow melt or lacing up for an ultra-long trek? The extra layer of protection provided by gaiters will help keep your outing a challenging adventure rather than a painful suffer-fest.

While waterproof hiking boots will provide a huge amount of protection, gaiters work in tandem with your boots to protect the little nooks and crannies that are vulnerable to being encroached by abrasive environments or sneaky drops of rain or snow – like the top of the boot.

Whether snow, rain or overgrown trails are the environment you are hiking through, there are different types of gaiters that excel for different activities, each with different features. But which kind of gaiter you need largely depends on what you'll be doing.

When to wear them

When I first started hiking I didn't wear gaiters. Like most people new to hiking I had no idea what they were or what purpose they served. I ended up buying a pair, just because all serious looking hikers wore them, but still I never put them on. Over the last few years on the trail I have now discovered a handful of very good reasons why you should invest in a pair of gaiters and wear them as the trail conditions require.

- Provide protection against snake bites on your lower leg
- Great for shin protection when heading off trail through low scrub
- Ideal for river crossings as you can tighten them up to keep water out of your boots and off your lower leg
- Perfect for keeping mud out of your boots and off your lower leg
- Great when walking through long wet grass and low wet shrubs as they keep your legs dry
- Gaiters also come in handy when hiking through sand and scree as they keep tiny particles of grit from creeping down into your boots or even into your socks
- Offers protection against stinging nettles, rose thorns and blackberry thorns
- Helps prevent mosquito, blackfly and leech bites – especially if wearing shorts
- Help to control the spread of weeds as burs are less likely to cling to them
- Keep snow out of your boots and pants
- Helps to keep boot laces from freezing and your pants from freezing to your boots
- Provide a little extra warmth on a cold day
- Keep your hiking crampons from snagging on your pants

It all depends on your outing. But first, let's dissect the construction of the gaiter.

Gaiters typically run from the bottom of your foot to mid-calf and are made with sturdy weather-resistant materials. This design and fabrication works well to protect your foot and lower leg from deep snow, wet underbrush or debris that you can pick up while hiking or mountaineering. Low gaiters are about ankle high and are designed for less extreme conditions.

In addition to the fabrication and design, most gaiter are also equipped with: a strap that fits over the instep of your boot or shoe or lace hook that holds the gaiter in place; a top closure that cinches or clips tight to seal the upper half of the gaiter; and some sort of entry system. Often the entry system is a closure like Velcro, but can also be a zipper. In the case of ultra minimalist gaiters, a tighter, stretchy design serves this purpose. Typically, gaiters have a front entry – where the closure system runs down the length of your shin – which makes getting in and out of the gaiter on the trail or in the hills a hassle-free task.

There are three different types of gaiters currently available: expedition, alpine and trail. They range from the beefcakes of the mountaineering world to everyday gaiters for a quick hike down the trail. Expedition gaiters are by far the toughest gaiters, built sturdy to withstand harsh conditions and long mountaineering trips. Made with waterproof and breathable three-layer GORE-TEX® to combat the snow, rain and cold climates of mountaineering, these gaiters also have tear-resistant Cordura® strategically placed on this inside of the leg to prevent snags and rips from wearing crampons. They also have a larger circumference to fit over insulated pants and mountaineering boots.

Alpine gaiters have a more general purpose. Crafted to protect your feet while hiking, snowshoeing or cross-country skiing, these gaiters are made with waterproof and breathable fabric uppers and also an abrasion-resistant lower to protect your ankles and lower legs from sticks, rocks and other trail debris.

Alpine gaiters are generally a fitted design with sturdy fabrication of GORE-TEX® upper and Cordura® lower. They are ideal for use in snowy environments as well as the dry and brushy trail. They fit well in your pack's essentials kit and come in both men's and women's styles.

Trail gaiters are lightweight and breathable and provide the most basic protection against wet terrain and the thick underbrush of trails. They pair with anything from cross-country ski boots to trail running shoes. Trail gaiters are breathable, water-resistant, are stretchy with a molded boot section to conform to the shoe and streamline the design.

Simply put, gaiters protect your feet and help keep you focused on your moving forward comfortably.

words by Outdoor Research

THE RIGHT FOOTWEAR

Hiking footwear needs to protect feet from damage and to provide a solid grip. Other considerations, depending on the individual or the trip, may include keeping your feet dry and ankle support. Durability, cost and weight will also come into the equation. There is quite an art to Choosing and Caring for Hiking Boots. The good news is that there are so many good products on the market now that there is bound to be something just right for you – all you have to do is find it.

How to Choose the Right Footwear

The type of environment you will be walking in is a key consideration as a day stroll on your local constructed walking track is a far cry from carrying a backpack for two weeks through the bogs and mountains of Tasmania. The survival of your footwear (materials, construction), the sort of ground you will be traversing, how much you are carrying and the amount of water protection required all need to be factored in.

Personal considerations will include how strong your ankles are, what type of footwear you're used to and the shape and size of your feet. People's feet come in all sorts of odd shapes and sizes, but unfortunately footwear doesn't. It's not uncommon for feet to be slightly different sizes, even up to one full size, which you need to allow for when getting an ideal fit.

For many walkers, the answer is a range of footwear types to cover diverse activities. Although strong sandshoes are still seen around, the advent of modern lightweight boots has almost eliminated the old division between sandshoes and heavy boots.

Consider the type of trip you are planning

Outdoor footwear can be divided into basic categories. You could start your search for the right boots or shoes by focusing on the category that best matches your trip plans.

Sandals – durable, all-purpose sports sandals are designed for walking and water wear with athletically-inspired outsoles for traction on a variety of surfaces. Lightweight sandals offer stability and comfort for everything from day walks to days at the beach.

Approach Shoes – are used to approach various outdoor activities such as rock climbing or paddling. They are great for easy scrambling, fast hiking, or trail running. The emphasis is on lightness and sensitivity, with a function-specific sole.

Lightweight walking – these boots and shoes are designed for day walking and very short overnight trips only. Emphasis is on lightness, comfort, stability and breathability. As a result, they are less supportive and durable than the options below.

Hiking/backpacking – these boots are designed for use on two to three day walks with light to moderate backpacking loads both on and off the beaten track. Although emphasis is still on lightness and comfort, these boots should also be durable, water resistant and supportive.

Trekking/bushwalking – these boots are designed for long distance walks over moderate to rough terrain with moderate to heavy backpacking loads. They are designed with multi-day trips in mind. Durable and supportive, they provide a high degree of ankle and foot protection and as a result, they are heavier, and will take longer to break in than hiking boots. Emphasis is on control, long-term support, water-resistance and the boots' ability to withstand abuse. Some are stiff enough to accept crampons for snow/ice travel.

Mountaineering – boots are designed for mountaineering, glacier travel, or aggressive backcountry travel. These boots are stiff and very durable. Mountaineering boots are compatible with step-in crampons for more technical walking/climbing.

Materials

The materials used in a given boot or shoe will affect its weight, breathability, durability and water-resistance. Different fabrics can be very similar in performance, so personal preference is often the key when choosing between them.

Full-grain leather – cut from the complete cowhide which retains the hide's tough outer surface, it's denser and therefore more water resistant and supportive. It is used primarily in boots designed for extended trips, heavy loads and hard terrain. It conforms well to the foot over time, can be waterproofed, is abrasion resistant and will last for years when properly cared for. Full-grain leather usually requires a break-in period.

Nubuck leather – is full-grain leather that is distinguished by its sanded, textured finish that looks like suede. This finish is more resistant to marking than a full grain but requires more maintenance. Otherwise it has similar characteristics to full-grain leather.

Suede (split leather) – does not retain the outer skin membrane. Compared to full-grain leather, it is generally less abrasion resistant, is more prone to stretching and less stiff, but still water resistant and durable. Although suede is less appropriate for heavy-duty applications, its flexibility, breathability and lower price make it a good choice for lightweight boots and shoes.

Fabric (usually mesh or 1000-denier nylon) – is often used in lighter shoes and boots for its breathability, low cost and ease of breaking in. Fabric is often used in conjunction with suede or leather to construct footwear that achieves a good balance between support, lightness and breathability. Fabric is difficult to waterproof, but can be treated to become water resistant. It's not as durable as leather, so it is usually found only in lighter-duty footwear.

Plastics (or Nylon) – are used in mountaineering boots. They provide absolute waterproofness and durability. The rigidity of plastic boots makes them well suited to use with crampons in extreme conditions. Plastics, however, will not break in and are used almost exclusively in "double" boots where a padded inner boot buffers the foot from the outer shell.

Waterproof barriers – Lightweight, waterproof barriers (like GORE-TEX® membrane) are built into many boots to enhance water resistance. These barriers are available in a variety of boot styles, from lightweight walking boots right through to the trekking models. Waterproof performance depends upon the type of barrier used, the materials protecting it and how well the boots/shoes are taken care of. If cared for correctly, these waterproof barriers often last longer than the boots themselves.

Liners – Most boots are lined with Cambrelle™, a fabric that absorbs sweat. Some high-end boots are lined with leather, which requires a longer break-in period but results in a custom-molded fit. Cambrelle is a breathable, absorbent lining fabric that transfers moisture away from the skin. It resists odour and mildew.

Leather remains the preferred boot material, although it's often combined with lighter synthetic materials. The best leather is full-grain leather. Lightweight boots may also have this mixed construction, or consist of light (2.0-2.5mm thick) full-grain leather. Heavy backpacking boots are made of full-grain leather, robust stuff 2.5-3.0mm or thicker.

words by Wild Earth

THE RIGHT FOOTWEAR

continued...

Construction

Upper construction

The more seams a boot or shoe has, the higher the risk for leaks or blowouts. Leaking occurs when water seeps through the needle-holes or spaces between the boot panels. Blowouts occur when general wear, repeated flexing or a snag causes stitching to break and the panels to separate. In general, the less seams an upper has, the more water-resistant and more durable it will be.

The connection between the upper and the sole

The soles are either stitched or bonded/cemented to the rest of the boot. Stitching is durable and can be undone to replace the sole. Once it has worn down it is a more expensive process. Bonding is faster and less expensive than stitching, resulting in lower boot prices. Traditionally bonding was not as reliable, but most modern methods produce durable, lost-lasting bonds (depending upon the process and specific glue used). Some bonded boots can now be resoled just like traditional stitch-down models.

Midsole

The midsole of a boot provides lateral support via a shank – a piece of molded plastic, fibreboard or metal that cradles the foot. To absorb shock it also contains an insert made of EVA, polyurethane or rubber. The shank varies in length depending upon the intended end-use. For trekking or bushwalking a three-quarter or half-length shank will suffice and is more comfortable. Most day walking boots or shoes omit the shank, relying on construction more similar to running shoes. If you are a mountaineer, a full-length shank will hold the foot rigid on difficult terrain.

Outsole

The outsole of a boot needs to be durable, with a deep tread pattern for grip in a variety of conditions. Typically outsoles are made of rubber, with some companies mixing in sticky rubber for enhanced grip on hard, rocky surfaces. All outsoles must make a trade-off between durability and good grip, softer soles grip well, but wear out fairly quickly.

Fitting footwear

Once you have narrowed down the options to a handful of boots or shoes, the best way to decide between them is to try them on, as every boot model is built around a different "last" (standard foot shape), so each one will fit you a little differently, but buying online shouldn't get you scared if you measure your foot, follow the brand specific size chart online, and ask the store for some advice if you feel you need to.

Don't rely solely on your usual shoe size when searching for the best fitting boots or shoes as one manufacturer's sizing may vary from another's.

Boots or shoes must fit well, so don't be rushed into buying a pair that only might do. Try to be certain. Following are some tips that apply mostly to boots.

- Before fitting, test the flex of the sole, it must bend where your foot does, at the ball of the foot. Allow for some initial stiffness of the sole.
- Pick the right socks. Wear the type of socks and sock liners that you will be using when you plan to use them, whenever you try on boots.
- If one foot is larger than the other (which is quite common), fit your larger foot first. You may need to use extra socks or an insert to take up extra space in the other boot. Slide your feet forward in the unlaced boots – one finger should fit behind the foot, but not two.
- Kick the feet back in the boots and lace up firmly. The 'ears' of the boot at the lace holes must be well separated.
- Do some deep knee bends. The heels should not rise in the boots more than about 3mm.
- Stand with the heels hooked on the edge of a step and your mass pushing your feet forward in the boots. Your toes must be free to wriggle and should not touch the front of the boots.
- Stand flat on the floor with someone holding the boots to restrain them from moving. Try to move the front of the feet sideways with the heel as the pivot. No side movement of the ball of the foot should be noticeable.

If your feet feel like they are "floating" inside the boots, try a pair half a size down. If your foot feels cramped or your toes make contact with the front or sides of the toe box, try the next size up. If the boots are a little tight sideways, remember that, they often stretch in width, but never change in length – the fitting of heels and toes is more important. New boots may feel a little stiff at first, but they should still be comfortable.

Most manufacturers design footwear for both men and women. Women's are usually distinguished by a narrower heel cup and foot-bed.

Important to note, feet often swell becoming longer and wider, with both walking and the carrying of a load. Your footwear may need to be larger than that usually worn.

Breaking in new boots

Shoes and hybrid lightweight boots usually need little breaking in. It is disastrous however, to start a trip with new leather boots that haven't been worn-in. All too often people buy boots a day or so before departure and the resultant blisters and discomfort ruin the whole trip. If you have not been walking regularly, you may also need to break in your feet. Even joggers can cause rubbing to tender feet on a long walk.

The process of breaking in boots involves getting them to soften and mold to your feet, instead of the factory's, and that basically involves wearing them. The following procedure will work, but it may take longer with tougher boots.

- Apply a waxed-based leather conditioner and warm the boots in the sunshine or a warm room so it soaks in.
- Put the boots on with your walking socks, lace them up and walk them in on generally level ground.
- Keep doing plenty of short walks before going overnight and always keep them laced firmly to prevent movement.

Boot care basics

Keep your boots and shoes clean between uses by brushing off dirt and mud (both can ruin leather over time). Most fabric boots/shoes can be washed on the outside with mild soap and water (not detergent).

If your boots get drenched, stuff them loosely with newspaper and dry them in a warm place. Never rush the drying process by placing them near a fire, heater or other heat source.

Boots, especially leather ones, should be conditioned from time to time to maintain their suppleness. This is true whether you hike in dry, hot conditions or wet, temperate ones.

words by Wild Earth

WHAT'S SO SPECIAL ABOUT SOCKS

words by Darren Edwards

Team the right socks to your footwear.

Most people understand that appropriate footwear is essential for a successful outdoor experience. While choosing the right boot/shoe is carefully considered, the need for suitable socks is quite often overlooked. Footwear will only show peak performance when teamed up with the right socks. A well-fitting sock system will keep your feet dry and comfortable and free of blisters and sores.

Your socks have three basic jobs: comfort, being tough, and protecting the skin from moisture. To do so, your socks should have a snug fit. They must be wide enough to allow circulation and toe movement but should not sag or bunch at the same time. To choose the best pair of socks you should keep in mind the type of shoes, you will be wearing and the weather conditions you may encounter.

The major types of socks are:

- Ultra-lightweight socks (prioritise breathability with minimal padding. They are much thinner than other sock weights and are often selected for fast paced hiking or trail running)
- Lightweight (cushioned, thinner more breathable upper, often used for hiking in warmer weather)
- Midweight (well-cushioned all-round socks for day hiking and backpacking)
- Heavyweight (maximum insulation for cold weather hiking and other winter sports)
- Liner socks (excellent moisture transfer, used as a protective inner layer to prevent your skin being moved by the outer sock)

Layering combines the liner sock (blister protection) with a specific outer sock designed for the task at hand (e.g. cushioning or insulation).
Socks are manufactured from natural fibres as well as synthetics. Synthetics or wool lead moisture away from your feet, much better than cotton does. It should be noted that wool is naturally odour-resistant. After a long day this can make a real difference.

If you wish to reduce the risk of blisters then layering, using liner socks in combination with any of the above, will really help a lot.

How Socks can Prevent Blisters when Hiking

- A dual sock arrangement ie liner sock and outer sock, allows slight slippage between the sock layers thus reducing the amount of sideways loading (shearing force) transferred to the skin layers while walking. A good liner sock thus has an outer surface with a low Coefficient of Friction (COF) which makes this slippage efficient.
- An effective liner sock also shifts moisture away from the skin to the outer sock thus keeping the skin surface drier and stronger.
- As well as reducing shear forces less friction between surfaces means there will be less damaging heat generated from sock friction transferred to the skin.
- Liner socks go over the entire foot thus taking the guesswork out of where hot spots may occur.
- As a tight fitting protective layer, potentially damaging grit or sand picked up on the hike or run can be kept away from directly contacting the skin surface. (nevertheless grit and sand should be removed as soon as possible)
- Liner socks maintain their effectiveness over long periods of wear whereas some other preventative measures such as tapes, patches and lubricants can lose their effectiveness over time especially when subjected to adverse situations such as immersion in water.
- When taking a break, liner socks can be simply removed, even washed, and be ready for easy reuse.
- Should a hotspot develop when wearing a liner sock, unlike tapes which can be difficult and distressing to remove a liner sock is easily removed to allow timely inspection and treatment.

Quality liner socks, in addition to providing the above benefits, are special in that they:

- Have an internal silicone layer which drives moisture away from the skin as well as keeping the liner sock firmly fixed on the foot
- Are contoured and have flat seams that maximise accurate and comfortable fit
- Are easily washed for repeat use

Try a pair of liner socks on your next hike. You will be amazed at how well they work to prevent blisters.

Hiking Poles Why?

The Benefits

International research over the last ten years has confirmed that the health and fitness benefits of hiking are substantially increased by the skilled use of trekking or hiking poles.

Informed health professionals and government agencies are now encouraging people to use poles when hiking to increase cardiovascular benefits. But there are many reasons to use trekking poles. They actually provide the skilled hiker with at least six significant benefits:

- avoid injuries
- reduce wear/damage to lower joints
- prevent back pain/injury
- increase exercise
- improve posture
- enhance the enjoyment of hiking

Just using poles with common sense will provide a few of these advantages, but some skill training is required to gain ALL of the available benefits.

1. Risk of Injury
Even minor injury can disrupt the pleasure of regular recreation and exercise. Hikers always avoided falls by grabbing a stick during steep descents or at a creek crossing. Trekking poles are strong, reliable, lightweight "sticks" that don't break at the critical moment and are always "on hand" for immediate use. Regular pole use develops skills that can almost eliminate the risk of injury from falls or stumbles.

2. Wear and Tear
Poles reduce impact loads on the legs by about 5 kg when hiking on level ground and about 8 kg when on an incline. This reduction in stresses on the lower

joints significantly reduces wear and risk of injury to the knees, feet, ankles and hips – common sites for the debilitating damage that (too often) forces otherwise fit people to give up their hiking.

3. Back Pain
Hikers tend to lean forward. The lean develops more with increasing fatigue. Carrying a backpack creates more lean to bring the load over the weight bearing forward leg. Weight is then being supported by a bent spine with the potential for back pain and injury. Trekking poles introduce a forward and lifting force from below and behind that balances things. Posture becomes more erect. The straight spine is more comfortably able to safely carry the load.

words by Helinox

4. Exercise Benefit
Regular hiking engages about 35% of the muscles in the hiker's body. That increases to 90% when hiking with poles. This results in a 20% increase in oxygen use and blood flow without increased exercise intensity. Increased blood flow is the main reason why hiking exercise reduces heart attack risk and helps avoid the onset of dementia in later life. Trekking poles make a good exercise 20% better. Engaging the upper body also broadens the exercise to add more to general fitness – upper body muscle tone, circulation, weight control, etc.

5. Posture
Trekking poles encourage a more upright stance to improve respiration and aspects of general health associated with better posture. The more erect bearing also seems to improve the hiker's general sense of well being.

6. Hiking Enjoyment
Poles ease leg muscle effort by sharing the workload with muscles in the upper body. The pain of leg muscle damage is significantly reduced. Pain is also reduced in the lower joints – the feet, ankles, knees and hips. By reducing injury risk from a fall or stumble, poles allow the Hiker to feel more relaxed, to engage better with the environment and to enjoy the social aspects of hiking more.

Hiking Poles How?

Using the Right Technique

Poles for stability
Trekking poles provide experienced hikers with a valuable aid to stability when negotiating steep descents and obstacles (creek crossings etc). Poles might engage the ground to the front, side or behind – together as a pair, or one at a time. Specific pole techniques in this mode are limited only by individual experience and imagination.

Poles for health & fitness
When poles aren't required for stability in the difficult sections, they can be engaged to help the hiking and to contribute to improved health and fitness. These techniques are much more specific and they need some explanation.

Two poles or one?
Hikers who use just one pole for some added stability get only that one benefit. Poles are used as a pair to receive the full health and fitness benefits. The new generation poles are very much lighter, quicker/easier to operate and much more compact when stowed. The old reasons for using just one pole no longer apply.

Hand Position – Important!
It's easy to overlook the wrist strap, but it's a very important part of the trekking pole. The strap takes all the weight and allows the hand to relax.

5 Steps to Correct Grip

Step One
With the pole in the normal vertical position and the wrist strap hanging normally from the grip (brand name out and untwisted), enter the cupped hand into the wrist strap loop from underneath.

Step Two
Pass the hand right through until the wrist strap loop makes contact with the start of the forearm.

Step Three
Now open the hand and bring it down to surround the grip normally. When you push down on the pole, you will feel the wrist strap supporting the lower edge of the hand close to the wrist.

Step Four
Adjust the length of the wrist strap to position the hand comfortably at the grip until the wrist strap feels supportive. The strap takes the load via the wrist/arm – not the hand grip via the fingers/hand.

Step Five
Relax the hand. Just bring thumb and forefinger tips together to lightly surround the grip. This practice helps avoid the common mistake of grasping the grip too firmly which can cause hand fatigue and interfere with good pole technique.

Hiking – Correct Technique

Start Position
With wrist straps engaged and lightly holding the grips, drop arms down by your sides allowing the pole tips to rest on the ground behind you.

Start Hiking
Now hike with the poles dragging along behind. Try to ignore the poles – just get into your natural hiking rhythm – just let the poles follow along.

Arm Swing
We all swing our arms in a natural balancing rhythm that doesn't change for pole hiking. Allow your arms to develop their normal swing rhythm with the poles still dragging along behind.

Load Up
Now begin to engage the poles by allowing the pole tips to dig in as they come forward and by pushing slightly back as each arm begins to swing backwards. Continue to maintain your natural rhythm. Gradually increase the push on the back swing until you feel the poles propelling you forward.

Don't load up excessively – just a little weight on each back swing will add to the effort.

If, at any time, you become overly conscious of the poles or feel slightly uncoordinated, just return to dragging the poles along behind you without loading them up. When the rhythm is right, start loading up again. When you are hiking with loaded up poles to your natural rhythm, you have the technique – it's that simple.

Isn't this Nordic Walking?

There are some similarities, but Nordic walking is a specific exercise technique with an exaggerated arm swing. The wrist strap is replaced by a "glove" that allows the hand to be opened on the backswing. The restrictive glove isn't appropriate for hiking where arm swing doesn't change much from the hiker's natural rhythm and style. Nordic walking is great exercise for urbanites.

Some Pointers

Keep the poles in. Don't extend your elbows out. Just allow your arms to swing comfortably close to your body allowing the rhythm of your own natural style to develop. Aim to forget you are even using poles. Relax your hands – just enough grip to keep contact with the pole as your arm swings forward. Ultra lightweight poles allow even lighter hand contact to enhance technique. Using poles this way adds propulsion and lift so that hiking becomes faster, smoother and easier. You may be tempted to immediately hike much further and faster. As with all exercise, it's better to build up gradually. If you decide to raise your level of fitness, take time to increase speed and distance. Upper body muscle soreness probably means that you're going too hard, too soon.

Maintenance

A simple wipe down is all that's needed. A quick wash with fresh water after a muddy expedition or a beach hike is a good idea, but no lubricants.

words by Helinox

SURVIVAL KITS & THE BIG 5 OF SURVIVAL

words by Darren Edwards

I personally carry and highly recommend that you always have a personal survival kit, even on day hikes. Your Survival Kit should contain all the necessary items for survival in the wilderness.

The '**Big 5**' priorities of survival are water, warmth, shelter, signals and food. With a well prepared and practical kit you will be better positioned to survive in the Australian wilderness until you walk out or assistance arrives.

Your kits should be packed in a compact, durable and lightweight container, small enough to fit into a large pocket and ideally should weigh less than 500 grams.

Items to include in your kit are:

- Duct Tape
- Safety Pins
- Heavy Duty Sewing Needle
- Heavy Duty Nylon Thread
- Compass
- Water sterilisation agents
- Water procurement bags
- Nylon Cord, Braided
- Safety Wire, Stainless Steel
- Knife or Scalpel Blade
- Signal Mirror or Flash
- Fish Hooks, Fishing Line, Sinkers and Swivels
- Firestarter or Flint
- Tinder
- Waterproof Paper
- Pencil
- Waterproof Survival Instructions
- Whistle
- Emergency blanket or bivvy
- Mini survival cards
- Tea Bag (so you relax while you think of a plan)

CARRY A FIRST AID KIT

words by Darren Edwards

Keep a First Aid Kit with you at all times. Even if you are going for a short hike, there is always a small possibility you could break a limb, cut yourself or get bitten by insects or snakes, so you need to be prepared for the worst.

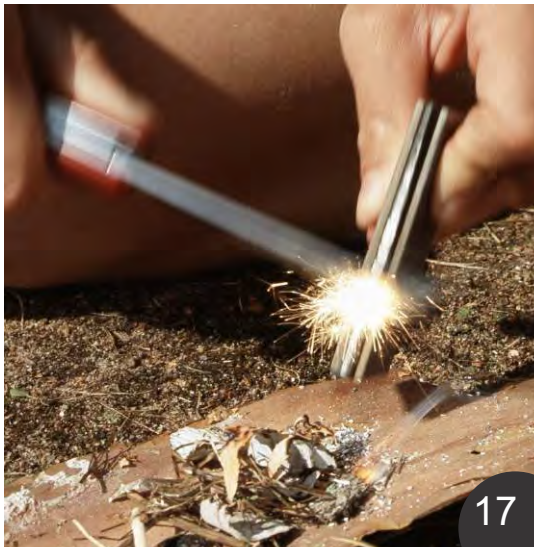
Most first aid kits are compact and contain all the essential items you'll need. Update your first aid kit. Inspect your emergency and first aid kits before each hike. Replace consumed items before you head out.

If you are building a First Aid Kit from scratch I recommend taking:

- Compact first aid manual
- Pressure immobilisation bandages
- Regular roller bandages
- Triangular bandage for breaks
- Gauze or cotton pads for wounds
- Assorted bandaids for blisters and cuts
- Moleskin and/or blister kit
- Ointment for insect bites
- Antiseptic cream
- Tweezers and splinter needles
- Soluble pain relievers
- Antihistamine
- Insect repellent
- Salt (for leeches)
- Matches and Flint
- Personal medications – with instructions
- Notepad and pencil

SAFETY TIP
KEEP DRY

Water is critical for staying alive, but it is also deadly when mixed with cold on the trail. Keep yourself and your gear dry. Keep Dry. Put items in zip-lock bags, sleeping bag in heavy-duty plastic garbage bag, clothes in waterproof bags. Carry and use rain-gear.



PREPARE FOR THE WORST & YOU MIGHT NEVER NEED RESCUING

words by Darren Edwards

ALWAYS LEAVE A TRAIL MAP

As part of your hike planning for remote and extended trips, prepare a trail map.

Include with this map, details of your group, levels of experience, intended route, exit points and emergency contacts. Make sure you leave a map or a copy of these documents in your vehicle at the trail head so that rescuers know your intended route and will have greater success at locating you if something goes wrong.

A copy of these documents should also be left with your reliable emergency contact and registered with emergency services and the Australian Maritime Services Authority. When you return, don't forget to let your contact and authorities know so that a full scale search is not launched.

PLBs

Do you regularly head out into the far reaches of the bush for a hiking adventure?

If you were to run into any trouble, you need a way for rescuers to be able to find you and take you to safety. Emergency Position-Indicating Radiobeacons (EPIRBs) and Personal Locator Beacons (PLBs) are the ideal companion for those who want peace of mind when heading out into any remote areas. As much as they are a great companion they are no substitute for thorough planning and always carrying a map and compass. Hundreds of hikes are rescued in Australia every year through poor planning and their 'she'll be right mate, I have a PLB' attitude.

What is the difference between an EPIRB, ELT and PLB?

EPIR
Emergency Position-Indicating Radiobeacons

EPIRBs are used in ships and boats and are designed to float upright using the water plane as a reflector to more efficiently get the signal to the satellite. For this reason they have ballast built in and need to be a certain minimum size to ensure they float correctly and their size and weight make them impractical for use by hikers.

EPIRBs are commonly confused with PLBs. Whilst they are both distress beacons they are intended for different purposes and EPIRBs are not suitable for hiking. AMSA has discussed with BWRS its wish for the correct terminology to be used for beacons, so please try to refer to the units suitable for hiking as "PLB".

ARE YOU PREPARED?

If you ever find yourself in a **life threatening** situation where two-way communication is unavailable, activate your distress beacon to alert search and rescue authorities. Never use them because you are simply tired, running behind schedule or it is getting dark, cold and you forgot your torch.

ELT
Emergency Locator Transmitters

ELTs are designed for aviation and are larger, generally fixed units in aircraft that are automatically activated when an aircraft crashes. Again they are not suitable for hikers as they are too large and heavy.

PLB
Personal Locator Beacon

PLBs for hiking use are called Personal Locator Beacons or PLB. These are small, lightweight units suitable for hiking use.

All 406MHz beacons should be registered.

Be aware that some overseas beacons are not compatible with the Australian system. The safest way to avoid this problem is to purchase your PLB from a reputable Australian retailer, but if you wish to purchase internationally you must ensure the unit you are purchasing is compatible with the Australian system.

See the Australian Maritime Services Authority website for a more detailed information about the system and how to use it. If you own a PLB ensure that is registered and on every remote trip.

WATER
KEEP YOURSELF HYDRATED

words by Darren Edwards

Water is YOUR most critical survival tool – whether in the wild or at home.

Water and Hydration Rule of 3:

You can live **3** minutes without air.

You can live **3** days without water. (they wont be very pleasant ones)

You can live **3** weeks without food.

You'll have air to breathe unless you're under water or in a cave-in. If you run out of food, you can struggle on for 150 miles if needed. But, if you run out of water, you have only a day or so to figure out a solution.

It consistently amazes me how many times I see people out for a walk or hike with nothing but the clothes they are wearing. Sure when you are walking around the suburbs you don't have to be too concerned about carrying water, snacks and basic medical supplies but when you venture into the bush even for as little as for a leisurely stroll you need to be prepared to come back alive.

That may sound a bit dramatic but I have read countless stories about people becoming lost and coming close to or meeting their demise on short walks into the great unknown.

Don't even think of starting on a hike that takes you more than a kilometre from the trail head without a bottle of water along. You should have at least one litre with you and consume 250ml every 30 to 45 minutes. Keep the water flowing into your body even if you don't feel thirsty. Do you realize that by the time you actually feel thirsty you are already dehydrated? If you are hiking, you are losing moisture and you need to replace it.

By the end of a 4-hour hike, you should have consumed two litres of water and you should be able to go to the toilet. Urine that is light yellow (straw colour) is a good indication that you're getting enough fluid. If you don't need to urinate then all the water you drank left your body as perspiration and you still need to drink more water to re-hydrate. Following a hike, you should drink additional water with electrolytes until you need to use the toilet. I don't mean scull it down, just drink half a cup every 5 minutes or so.

Water Purification

words by Darren Edwards

There are a handful of Water Purification methods available, and after reading this article, you'll understand the pros and cons of each method. But remember, you stake your life on your water sources, so never take chances that you can avoid, and always use the absolute best purification method available to you under the circumstances.

Boiling

Boiling is the easiest way to purify water, but it does have some drawbacks; it is usually the slowest method available, requires valuable firewood, gives away your position, and can't eliminate certain impurities, such as heavy metals or certain chemicals. Boiling the water kills microorganisms such as bacteria, viruses, or protozoans that can cause disease, making it microbiologically safe. You should bring it to a rolling boil in a suitably sized container, then let it cool before use.

Bleach

I'm not a big fan of ingesting chemicals, but you can use liquid household bleach, free of additives and scents, to disinfect your water. It should contain a hypochlorite solution of at least 5.25%. If the water is clear, add 8 drops of bleach (about ¼ teaspoon) per gallon of water; add twice that amount (16 drops, or ½ teaspoon) per gallon if the water is cloudy. After adding bleach, the water should be stirred and allowed to stand for at least 30 minutes before use.

Water purification tablets

We go back to the chemicals issue again, but if no other options are available, you'll just have to suck it up. Due to variations in manufacturing, rely on the instructions on the label. Also, pay close attention to the expiration date; the shelf life of purification tablets is ridiculously short.

Water filters

This is my go-to solution when possible. Commercial filters are available in a variety of sizes, styles, and capabilities. One of my personal favourites is the LifeStraw because it removes things that many others don't and will filter up to 1,000 litres of contaminated water. Katadyn manufactures an outstanding bottle purifier, and MSR produces a highly rated pump-style filter. During an extended emergency, though, it's important to know how to improvise your own water filter; it's surprisingly simple (expect a tutorial on that soon) and requires a container, some cloth, sand, and charcoal. A quality filter is one of only two methods that can remove nearly everything from contaminated water.

UV water purifier

I'm not sold on UV water purifiers for several reasons. 1.) They require batteries—I'm not willing to risk my ability to remain hydrated (and alive) on that. 2.) While the technology is well-established and utilized in commercial operations, these hand-held units can only treat small quantities of water. 3.) The device will only purify clear water, and since you're more likely to find cloudy or dirty water in an emergency, that makes it pretty much worthless. That being said, I wouldn't be against picking a few up as a backup purification method, but I certainly wouldn't rely on them.

SODIS

This is a method of disinfecting water using only sunlight and plastic PET bottles that is a free and effective. At a water temperature of about 30°C, about 5 hours of direct sunlight is required for this method to be effective. It's important to point out that with the exception of the batteries, the same weaknesses of the UV water purifier apply to SODIS.

Distillation

Without a doubt, the most effective means of purifying water is distillation, but it's certainly not the most convenient. It requires staying in a fixed area, and a bit of ingenuity. You could use the same type of still used for making alcohol to quickly produce a substantial amount of pure water in a short time but that requires specific hardware and a fire which may give away your position. Another option is a solar still in certain environments under certain circumstances. The biggest upside of distillation is that it eliminates everything; bacteria, viruses, protozoans, heavy metals, and other chemicals.

My Sawyer Mini Filtration System

UNDERSTANDING SHELTERS

words by Darren Edwards

My Big Sky Chinook 2P Four Season Tent

DID YOU KNOW?

Trail Hiking Australia is not a commercial initiative. I have personally funded and developed the website and eBooks and offer them FREE for the outdoor community.

Kind of my way of giving back.

Any support you can offer will be greatly appreciated. I would love to receive new hiking trails, tips, articles or financial donations; all which will help further develop these tools for you.

Darren Edwards

There are a range of shelters available for hiking including some "non-traditional" shelters for lightweight hikers.

ALWAYS CARRY A MAP AND COMPASS, ALWAYS

And know how to use them.

If you want to know how to get from point A to point B without getting lost (and your GPS is on the fritz), no need to ask for directions: just pull out your trusty (and probably dusty) map! Knowing how to read a map isn't difficult. The symbols, topography lines and direction helpers all might require a little understanding, but the answers are all right there! We'll show you how to find the key to finding your way!

For all hikes I undertake I actually use my smart phone and hand held GPX for a quick update on my current trail position but I always plan my hikes using a scaled topographical map and I always carry a map and compass in my pack.

Using a compass is a life saving skill – possibly your own life or someone in your group could be saved by your skill at reading a map and navigating your way to safety.

Read more about map and compass techniques under HIKE SAFETY at www.trailhiking.com.au

Most hiking shelters fall into one of four categories: Double-walled tents, single-walled tents, tarps, and hammocks (typically combined with a tarp). Ultimately it will be the style of hike, trail conditions and personal preference that will allow you to make a decision on what kind of shelter is best for you.

Double-Walled Tents

When most people think of a tent, this is most likely what they imagine. A double-walled tent is just that – a tent that has two walls. Typically this consists of an outer wall that acts as a rain-fly (which may cover the entire tent or only the upper half), and an inner wall that comes into contact with you and your gear while you are inside the tent.

Single-Walled Tents

Single-walled tents do away with the outer rain fly and just have one piece of fabric between you and the outside world. Because there is no rain fly, these tents can't have an open mesh top, and must rely on strategically placed vents to prevent the humid air you are producing from condensing on the inside of the tent. If you happen to have a single-walled tent that doesn't have proper vents, keeping the door partially unzipped is a good way to help keep things dry.

A "bivy" is a shelter that could be placed in the "single-wall" category. A bivy can most certainly be used as a stand along shelter. However, with lightweight backpacking, bivies are often used in conjunction with a tarp.

Tarps

Tarps are just that – a tarp! There is no floor to these shelters; you just set up the tarp to cover you and your gear. Typically the tarp has no poles – the hiker's trekking poles are used instead, thus saving even more on weight. (For those who don't use trekking poles, lightweight single poles can be purchased). These tarps are not your average tarp, however. These tarps are made of very light material, ranging from the silnylon used in many high-end double-walled tents, to cuben fiber – one of the lightest and strongest materials used in the outdoor industry today.

Hammocks

Hammocks are a fun and lightweight alternative to all of the shelters we have discussed so far. Using a hammock for backpacking will require two stout trees to anchor to. Tarps are set up over the hammock to offer rain protection. If trees are not available, hammocks may also be used as single-wall tents or as part of a tarp system.

Overview

Each style of hiking shelter comes with its own advantages and disadvantages. The "best" shelter is the shelter that allows you to be comfortable and enjoy your time hiking. While I would love to pack around a 115 gram cuben fiber tarp, it just doesn't suit our needs right now. My wife and I love the spaciousness and protection that our double-walled tent provides. Our tent is one of the lightest double-wall tents available. If you'd like to keep your traditional tent but still go lightweight, it can definitely be done. If you feel like experimenting with some even lighter options, give some of these other shelter styles a closer look!

My Big Sky Revolution 3P Three Season Tent

Your perfect tent provides you with the right weather protection and space at a low weight.

My Helinox Chair One

Understanding Shelters continued...

words by Darren Edwards

Your perfect tent provides you with the right weather protection and space at a low weight. This leads you to considering which weather conditions you expect and how many people you want to accommodate. Then you compare features and weight of the tents suitable to your needs. After all, a tent is more than a place to sleep – out in the wilderness, it soon becomes shelter, home, and security, so it's important to choose wisely!

Tent vs Conditions

Three-season tents stand out with good ventilation and are suitable for all weather conditions except snowfall and strong winds. Condensation-reducing and bug-proof features come in handy in hot conditions. Since they are light and compact, three-season tents are widely used by backpackers and cyclists.

Four-season tents offer protection in heavy weather. To withstand snow and high winds, the fabrics are heavier and the waterproof coating thicker. The tents also have a lower silhouette and usually more poles than other tents. The flipside of this added protection: more weight and less ventilation. Packing a tent of this size and weight therefore makes sense for snow activities like ski touring, winter camping, or mountaineering.

Tent sizes and shapes

Hoop tents - Showing a single hoop in the middle, these light tents compromise on inner space and rigidity.

Dome tents - Their very stable structure consists of at least two poles that cross in the apex. They allow for easy access.

Tunnel tents - These elongated tents are better suited to snow loading and extreme conditions. Many will have two openings and vestibules.

What tent size to choose?

Tents are usually classified according to their sleeping capacity. This refers to the number of people who can sleep in the inner part of the tent. Ratings go from one to four persons plus. The tent should also have room for the essential gear of its inhabitants, though some equipment might still have to be stored outside. Under a vestibule it should be safe from rain.

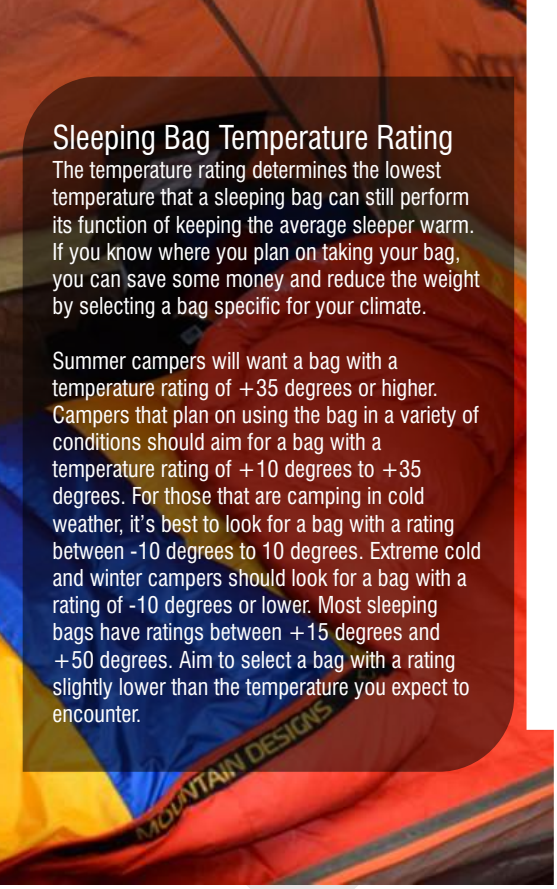
Consider a tent that is a good physical fit for you, then think about how you and everything else will fit in the tent. Know your height and use the dimensions of your sleeping mat to calculate how much space will be necessary. Then compare with the floor plans of tents in question and work out how you and possible companion(s) will fit in. You should get an impression on how much space you can expect. Keep in mind the angle of the tent walls - some part of the floor may only be usable as storage space (tunnel-shaped tents have elongated floor shapes, while dome-shaped tents provide steep walls with more useable floor space).

Weights and Features

In most cases you choose between weight and comfort. The longer you have to carry your gear, the lighter you want to travel. Not all gear is essential. With skill and experience you can still improvise convenient features at your campsite. If you don't have to carry the equipment (e.g. while kayaking), you might as well take things like optional vestibules with you.

Useful tent features:

- Vestibules – additional storage room, allows rain-protected changing of clothing or boots without the space restrictions of the tent
- Hooded vents – allow ventilation in all weather conditions
- Gear lofts – helpful when drying gear items
- Pole sleeves – fabric tubes adding stability by closely connecting pole and tent, a real treat when pitching a tent in dark or windy conditions
- Pole clips – another connection between tent and pole allowing ventilation, though plastic clips are prone to break in cold conditions, and test your patience when wearing gloves
- Colour coded poles make for easy pitching



Sleeping Bag Temperature Rating

The temperature rating determines the lowest temperature that a sleeping bag can still perform its function of keeping the average sleeper warm. If you know where you plan on taking your bag, you can save some money and reduce the weight by selecting a bag specific for your climate.

Summer campers will want a bag with a temperature rating of +35 degrees or higher. Campers that plan on using the bag in a variety of conditions should aim for a bag with a temperature rating of +10 degrees to +35 degrees. For those that are camping in cold weather, it's best to look for a bag with a rating between -10 degrees to 10 degrees. Extreme cold and winter campers should look for a bag with a rating of -10 degrees or lower. Most sleeping bags have ratings between +15 degrees and +50 degrees. Aim to select a bag with a rating slightly lower than the temperature you expect to encounter.

what to look for in a SLEEPING BAG

A sleeping bag is an important purchase since it can keep you warm in subzero temperatures and protect you from the elements. Weight, form, heat rating and reliability are all factors to consider when purchasing a bag. Understanding the basic features and getting a feel for how sleeping bag ratings work can help you select the right bag for your needs and keep you warm in the process. So how do you go about choosing the right sleeping bag?

Factors to consider when choosing a sleeping bag

Temperature range — in what kind of temperatures will you use the bag most often? Choose a bag that suits these conditions.

Weight — if you have to pack and carry the bag over long distances, you want it to be light and compact.

Your budget — bags with synthetic fillings are less expensive, but down fillings last longer.

Many factors can influence how warm your bag will feel: The day's diet, the day's activities, your metabolic rate, moisture levels in your bag, ground insulation quality, clothing you're wearing to bed, distribution of fill in your sleeping bag, etc. So which type of sleeping bag to choose? There are two main types of sleeping bags and they are Down fill (natural duck or goose feather), or Synthetic fill (polyester). Both have their advantages, so consider your activity, climate, and price range in your decision-making.

Down vs Synthetic

Pros for Down

- Better warmth for weight ratio
- More compact
- Lasts longer

Pros for Synthetic

- Less expensive
- Retains thermal properties when wet
- Good for asthmatics and allergies

Down Fills and Loft Ratings

Down is the only natural product that still cannot be replaced by synthetic fibres. Percentage of down/feather is one measurement of down quality; the higher the down percentage the greater the insulation. Mountain Designs uses minimum 85% down (maximum 15% down fibre, feathers and residual) in the majority of our down products.

Loft or "fill power" is the critical measurement when evaluating different downs, as it is used universally. It is the volume expressed in cubic inches, which one ounce (28.35g) of down occupies under laboratory conditions. The greater the volume, the better the loft, meaning less down is required for the same warmth, and thus the sleeping bag will be lighter. Mountain Designs fill power ratings are based upon tests completed after down and feathers have been sorted but before they are inserted into finished products. This will result in the maximum fill power for the down and is the basis for all labels, advertising and marketing of loft rating claims. After long term storage, compressed shipment and assembly into finished products, fill power drops. This is the reason Mountain Designs label and market our down products with a +/- 5% tolerance in relation to loft ratings. Fill power can be reinstated, but not always to its original value, by: adding warmth, moisture and air circulation through using the sleeping bag or jacket; or washing followed by tumble drying.

Synthetic Fills

Synthetic fills have come a long way in recent years. They still don't match down bags, especially in the warmth for weight ratio, as they are heavier and have a shorter life span. Yet, synthetic bags are considerably less expensive and can have an advantage in wet conditions. Mountain Designs has selected three types of fills for our range of synthetic bags.

Primaloft combines a unique blend of ultrafine multi-diameter hydrophobic fibres that provide exceptional loft, durability and water resistance. It is incredibly soft, durable, and warmer (wet or dry) than competitive insulation materials. Primaloft is the perfect combination of high performance insulation and value.

Microthermic is a 75gsm or 100gsm microfibre, that traps more air in a smaller volume than conventional polyester fills. Bags with this fibre are more expensive, but compress to a much smaller packed size.

Polyester Fibre is a dual helical fibre made up of short staple hollow fibres, giving cost effective warmth for an acceptable weight. We use three weights in various combinations: 100gsm, 150gsm and 200gsm.

Bag shapes

Because sleeping bags work by trapping" the air warmed by your body, the less air there is inside your sleeping bag, the less your body has to work to warm it. Therefore contoured bags such as the mummy-shaped Ascent Series, are more thermally efficient and the best choice for cold conditions. A good mummy-shaped bag will fit like a glove". Since they use less material, mummy bags pack smaller and weigh less than other bag shapes.

Tapered rectangular bags, like the Travelite Series, are cut roomier than mummy bags, especially through the foot. This makes changing sleeping positions easier while still providing good heat retention. Theses bags are popular with travellers and walkers not intending to use them in extreme conditions.

Bag construction

With our sleeping bags we use horizontal trapezoid baffles with differential spacing over different zones. For the Ascent bags, we add vertically oriented baffles in the chest area. Why? The answer is down control.

Baffles locate down in the areas where it is required and create a wall between the inner and outer bag (sewing through would create cold spots). Mountain Designs' Balanced Efficient Density is designed to ensure the correct amount of down is used in every compartment of your sleeping bag. Underfilling creates down movement and cold spots. Overfilling is a waste of expensive down. Each baffled compartment's optimum fill is therefore carefully measured and filled by hand.

Fabrics

The best down and efficient baffling mean nothing if the bag isn't made with fabrics that allow it to perform. We put a lot of work into this area, as a good fabric will allow the down to loft to its full potential. Fabrics must allow moisture vapour from perspiration to pass through, prevent down leakage and feel great against your skin.

Some sleeping bag manufacturers save costs by using fabric with lower thread counts, or use 40 and 50 denier yarns. The performance costs of this can be significant, aside from the obvious differences of a stiffer feel and rougher touch, the weight penalty is a factor bigger than how much extra the sleeping bag weighs in total – more significantly the extra weight is sitting on the down and restricts the down's ability to loft fully and give you the best insulation.

words by Mountain Designs

Caring For Your Sleeping Bag

With proper care of your sleeping bag you can improve the life of your bag and the warmth in colder conditions.

Tips:

1. Use a sleeping bag liner inside your bag, this will protect the down from perspiration, grime and body oils which can inhibit the lofting ability of your down.
Sleep in clean clothes.

2. Air your sleeping bag after every use. Don't leave the bag in direct sunlight for very long, as UV light slowly degrades the fabric.

3. Remove your sleeping bag from its stuff sack once you have set up camp, this will give the down time to loft before you hop into it.

4. Always use a self-inflating mat under your sleeping bag. The cold ground can steer warmth away from your sleeping bag.

5. Keep your sleeping bag dry. Your bag will lose much of its insulating properties when it becomes wet.

6. When packing up camp, always stuff your sleeping bag back into its stuff sack, never roll, this can damage the baffles (the internal walls which separate the insulation into panels). Make sure to take out of stuff sack when home.

Washing your sleeping bag

Any time you wash a sleeping bag you subject it to wear and tear and decrease the loft a little. Spot cleaning the shell with a damp cloth, mild laundry detergent, water or a toothbrush is advised before washing the whole thing.

Down

- For down sleeping bags hand washing in a bathtub works best.
- Undo zippers and soak the bag in a bath or large tub of lukewarm water.
- Hand wash using a non-detergent soap or one of the specially formulated down soaps. Gently knead the suds through the bag.
- If the bag is really grimy, leave it submerged in the soapy water for a few hours.
- Rinse with fresh water to remove all traces of soap.
- Let the bag sit for 15 minutes in the bath/tub and leave the water to drain. After 15 minutes gently squeeze out any remaining water.
- Carefully lift the soggy bag, placing your arms underneath it to support its entire weight, and place into a washing basket. Down is very heavy when wet and can cause damage to the internal baffles, so be very careful when moving the bag.
- Prepare a clean, dry area out of direct sunlight and carefully lay the bag out flat.
- Pat the down from both sides of the bag to help minimise down clumping.
- Your down bag may require several days to dry completely.
- It's also possible, (according to some bag manufacturers) to machine wash a down bag, as long as a front-loading washer is used. Never use an agitator-style machine as the motion can damage the stitching and insulation. Make sure to wash on the gentle cycle in cool water with one of the aforementioned down soaps.

Synthetic

- Synthetic bags can be washed in the same way as down sleeping bags. Hand-wash in a bathtub, or use a large, front-loading washer with no agitator. Use cool water and mild soap. Rinse several times to make sure all the soap is removed. An extra spin cycle or an extractor may be used to remove excess water.

Handy Hint

Dry cleaning is not appropriate for sleeping bags, especially down. Solvents used in dry cleaning can strip the natural oils from down that help it retain loft.

Storage

When you arrive home from a trip, first air out the bag inside-out to make sure it's dry. Then store loosely in a large mesh or cotton storage sack.

Do not store your bag compressed in its stuff sack as this will eventually damage the fill.

words by Mountain Designs

field TESTS & GEAR REVIEWS

When out on the trail, the equipment you have along is all you have to rely on until you get back to the comfort and safety of your home. It is up to you to determine the essential equipment you bring along to make your hike comfortable and safe. Failing to bring along the right gear may mean a miserable experience or worse.

As a field-testers, the reviews I have provided on my site are based on my own experiences and represent an unbiased account of the gear I use and trust.

Check out my Field Tests and Gear Reviews at **www.trailhiking.com.au** and feel free to leave your comments so that others can benefit from your experiences.

If you are a retailer or manufacturer and would like me to field-test your gear please drop me an email at explore@trailhiking.com.au

After experiencing a number of light-weight hiking chairs I am a huge fan of the Helinox Chair Zero. A huge fan!

It is my chair of choice for any day hike, pack carry or multi-day adventure. For me, this chair now takes pride of place in my pack, wherever I am hiking.

GET A GOOD NIGHTS SLEEP BY SELECTING THE RIGHT MAT

Why put a mat under your sleeping bag when sleeping outdoors? Sleeping mats cushion you, but more importantly, they block thermal transfer between you and the ground. Your sleeping bag, how advanced it may be, could not preserve all your body heat if it is in direct contact with a cold surface.

Your sleeping mat should prevent this. It consists of either closed cell foam or is inflatable to use air as an insulator. Both methods work, yet self-inflatable mats like our mountain mats offer better insulation. With die cut they are also lighter and more compact.

When choosing a sleeping mat, you have to consider your activity and what will be most important. A thicker mat will have a greater thermal resistance rating (it will be warmer!), but this also means you may have to compromise with extra weight. The most important things that will affect your choices are: R-rating (thermal resistance rating - the higher the number the warmer it is), packed volume, and weight.

Mat Construction

You take sleeping mats for two major reasons: cushioning hard ground and insulation against cold from below. But what size and shape do you need?

Length and width of your mat should be selected according to your body. On a standard mat you can rest your entire body. It will be more comfortable but heavier than a small mat. If saving weight is an important issue, ensure you at least fit your hips and shoulders onto a small mat.

If you tend to toss and turn in your sleep, you might experience a cold awakening - ending up beside your sleeping mat. A wider or mummy shaped mat will help solve this problem.

CHAIRS

My Helinox Ground Zero Chair

COOKING SYSTEMS 101

THERE ARE MANY THINGS TO CONSIDER WHEN CHOOSING A PORTABLE STOVE

words by Darren Edwards

I remember as a child, with fond memories, many camping trips where we cooked our evening meal over a bed of hot coals while camping beneath the stars. The smell, heat and crackle of the fire seemed to take me away from civilisation and had soothing effect on me. Then came the advent of fire restrictions along with increased environmental awareness and with them, the portable gas stove.

This seemed to impact heavily on my camping experience and the ambience created by the open fire as I was no longer able to collect firewood, build an awesome fire and sit, staring into the dancing flames as they warmed everyone around the camp site. It just wasn't the same as staring at the blue flame of a gas stove. Although they do offer a much cleaner, more efficient and more environmentally conscious solution to boiling water or cooking your evening meal.

Purchasing your hiking stove can present its challenges., There are so many options available that anyone can be excused for being confused. Before making a purchase it is important that you first consider where you will be hiking (temperatures), the types of hikes you will be doing and the style of meals you want to prepare. It is also important to consider how many people you will be preparing for and what fuel sources are available in the area you plan to hike. (example: you might have a gas stove but are flying to a country or region where gas canisters are not available).

Shape, size and design

All you need to do if walk into any hiking or outdoor adventure store to know that hiking stoves come in a wide range of shapes, sizes and designs. There are lightweight, highly portable micro-stoves that you can carry in your pocket to more complex two plate stoves that would fill your entire pack. Once you have determined the size of your group the size decision will become a lot clearer. If you are travelling in a large group I would personally recommend purchasing multiple stoves so that you have one for every 3-4 people. It will be a lot easier to pack and a lot easier to accommodate varying culinary tastes.

It is important to look at stove design from four functional aspects; reliability, usability, weight and space restrictions.

- How large is the stove? How many separate parts does it have? How easy is it to pack and store?
- How easy is the stove to assemble? Does it require assembly every time it is used? If so, is the assembly easy or complex?
- Is the stove sturdy? Is it stable on uneven ground? How hard is it to balance a pot on top? How durable will its parts be when being transported?
- If a gas canister is used, is it easy to attach and remove? Can it be detached before it is completely empty? How much gas per minute does it consume?
- How easy is the stove to light? Does it require priming? Does it have a piezo ignition or require an ignition source? Can it be primed with fuel from the stove itself?
- How easy is the stove to control? Can the heat output be adjusted easily? How easy is the stove to maintain in the field?

When planning to transport stoves in your pack you should also consider

- If the stove can be quickly and easily disconnected from its fuel supply
- If the stove can be disconnected from its external fuel supply for easier storage in your pack and less chance of breakage
- How well the stove collapses. The legs, base supports and pot-holder arms of many hiking stoves can be collapsed or folded for easier packing
- Whether it can fit inside your cookware. Some stoves are designed to fit inside popular cook sets. This is great as it allows you to keep your stove neatly packed together whilst offering an additional layer of protection from damage, dirt and fibres.

How stoves work

Most hiking stoves are fairly simply in terms of components. They will generally have two main parts; a fuel canister and a burner which can be combined in a single piece or connected by a short fuel line.

Gas stoves work just like a little propane tank or blow-torch. You screw your stove to your gas canister which holds the gas under pressure. On opening the valve, the liquid in the canister will vaporise as it escapes through small holes (jets) in the burner. Lighting the out-flowing gas, as it mixes with oxygen, produces a flame. You control the size of the flame by letting more or less gas escape.

Liquid stoves work more like a small engine. Liquid fuel is drawn out of a tank and pushed through a carburettor, which sprays the liquid into a gas toward the flame. First you connect the tank to the stove, then you pump the tank to create internal pressure. Open the valve to let the liquid fuel trickle out. The liquid will pass through the cold carburettor and squirt out like a fountain. When you light the liquid fuel, the entire apparatus heats up. This heat creates a suction, drawing more fuel out of the tank. Once the carburettor heats up, the liquid squirt will become a spray and you'll start to hear a hiss. At this point, the fireball of burning liquid fuel will become more like the flame of a blow-torch. Then you adjust the valve up and down to control the size of the flame.

In the case of gas stoves, heat isn't required to initiate this process as the fuel is already a vapour form by the time it leaves the canister.

Where the stove is being used

Where you intend on using your stove is an equally important consideration as the environment can have a substantial impact on both reliability and performance.

At higher altitudes, the surrounding air is less dense than at lower elevations, thereby limiting the oxygen available to the stove for combustion. This results in lower boiling temperatures and increased boiling times. The same rule applies when the external temperature decreases as pressure varies directly with temperature. With gas stoves, the gas condenses, lowering the internal pressure to the point where the gas doesn't want to come out. Liquid stoves work well in all weather as you have control over the internal pressure, making them a true four-season stove.

Another factor affecting stove performance is wind. Wind can decrease a stove's performance to an enormous extent depending on the specific conditions. The use of wind screens and heat exchangers and heat reflectors can contribute to decreasing the effects of wind on stove performance.

Cooking Systems 101 continued...

words by Darren Edwards

Fuel Types

Selecting the correct fuel source for your stove is one of the essential considerations. Take the time to determine which one will work best for you and the hikes you are going to undertake as this will help create a short-list from the available options.

The generic name for the most common fuels are butane, isobutane and propane. The stoves that utilise these fuels are, in my opinion, the easiest to use and certainly require the least maintenance. The fuel is contained, in liquid form, inside pressurised canisters. These are available in most parts of the industrialised worlds but may be impossible to find in some places so do your research as part of your hike plan.

Liquid Petroleum Gas (LPG)

Pro

- An excellent option for shorter trips where you don't have to worry about running out of fuel
- Convenient, clean burning and easy to ignite
- Burn hot immediately, cook food quickly
- Can be adjusted easily for simmering (on most stoves)
- Do not require priming
- Cannot be spilt
- LPG stoves are also much less susceptible to wind because the gas inside them is released under pressure.

Con

- More expensive than other fuel types
- You must carry and dispose of the fuel canisters
- Performance may decrease in temperatures below freezing and at altitude
- Fuel may not always be readily available

As mentioned earlier, LPG stoves will be more greatly affected by temperature and altitude than other fuel type stoves because you have no control over the internal pressure of the gas. Liquid butane vaporises in its canister, creating the pressure that pushes it through the fuel line. As the temperature drops outside, the pressure inside the canister also decreases. At sea level, normal butane stops vaporising at zero degrees. Butane/Propane and isobutane work to a much lower temperatures depending on the blend (ratio of butane to propane). As a result, they produce a more powerful flame at lower temperatures than other canister fuels. However, as this fuel vaporises, it cools its canister, and this evaporative cooling can reduce stove performance.

To counteract this, you can:

- Warm up your canister before attaching it to your stove by either storing it in your sleeping bag overnight, keeping it in your insulated jacket or warm it in your hands or stand the canister upright in 3-5cm of water
- Warm up at least two canisters, so that as one canister starts to chill and fade during use, you can swap it for a warm one and keep on cooking
- Placing a non-flammable barrier underneath your canister will keep it up off the cold earth and a little warmer while you're cooking
- Insulate the canister from the ground
- Turn it down a notch

My recommendation: Take gas stoves out on hikes in summer, spring and autumn and bank on their ease of use. Take an alternate liquid stove on winter hikes and bank on preparedness.

Liquid Gas and Multi-Fuel Stoves

(White Gas, Unleaded petrol, aviation fuel, solvent etc.)

Liquid gas stoves are possibly one of the most popular types of stoves around. They are the proven workhorses of domestic and international wilderness cooking and will perform equally well in every season of the year. The set-up is generally characterised by a fuel bottle with an integrated pump that connects remotely to a freestanding stove body via a fuel line. Unlike canister stove systems, this set-up requires some experience and a little practice to properly operate, and it requires occasional maintenance to ensure maximum performance. Although not as user-friendly or lightweight as a canister system, liquid gas stoves provide certain advantages to the remote wilderness hiker where other systems fall short.

Liquid gas stoves typically run on white gas which is also sold as Coleman fuel, camp fuel, naphtha, or lighter fuel and can be found in most outdoor stores, some service stations and hardware stores in Australia, New Zealand and North America. The scarcity of white gas in other parts of the world makes the multi-fuel option of these types of stoves a more important consideration.

Multi-fuel stoves add even more versatility to liquid fuel systems. As the name implies, multi-fuel stoves have the ability to run on a variety of liquid fuels. Many models can burn white gas, kerosene, diesel, unleaded gasoline, aviation fuel, and the list goes on. It's because of this incredible versatility that multi-fuel stoves are the preferred choice for international trips and extremely remote areas where a canister or white gas is hard to come by. Before running your stove on a fuel other than white gas, make sure the stove is properly jetted for the fuel you plan on using. Many models require you to first install the appropriate fuel adapter and jet before using certain fuels. While multi-fuel systems provide a range of fuel options, not all fuels provide an equal level of performance.

Generally, the use of fuels like automotive and aviation fuel, kerosene and the like are not recommended because the additives placed in some of these products, which can result in very dirty burns. This can not only release toxic fumes, but also leave a substantial amount of residue in fuel lines, your hiking gear and tents. These types of stoves are easy to operate and maintain, and are generally considered quite reliable. However, because of the volatility of the fuel, their use may not be suitable in all environments.

Unlike canister stoves which can be rendered useless by freezing temperatures, liquid gas systems are unaffected by winter weather, mainly because the pump allows you to create your own pressure and compensate for lower temperatures. The performance of a canister stove will also decrease as the amount of the gas in the canister drops. Once again, because you create your own pressure with a liquid fuel stove, you can maintain consistent performance throughout the entire fuel bottle.

White gas

Pros

- Inexpensive, easy to find throughout most industrialised countries
- Clean, easy to light
- Spilled fuel evaporates quickly

Cons

- Volatile (spilled fuel can ignite quickly)
- Priming is required (fuel from the stove can be used)
- Can be hard to find in some countries

Unleaded petrol, Aviation fuel, Solvent

Pros

- Very inexpensive, easy to find throughout the world

Cons

- Burns dirty/sooty
- Extremely volatile

These stoves are great overall performers and are perfect for travel around the world (including remote regions if you have a multi fuel option). They are suitable in almost all weather conditions and are generally reliable, inexpensive and efficient.

Methylated spirits, Denatured Alcohol and yellow Heet

Although not as powerful as a canister or liquid gas stove, alternative systems are quickly gaining popularity with the ultralight and minimalist hiking crowd. Methyl, denatured alcohol and yellow heet (a gas line anti-freeze, which is available at most petrol stations and auto parts stores) are extremely light and cheap. Fuel is widely available in most parts of the world. These are the only fuel types that do not require pressure for stove operation. Unfortunately, methyl alcohol does not burn at very high temperature and will produce about half the amount of heat as the same weight in gasoline or kerosene so it is not a very efficient fuel type to use.

Pros

- A renewable fuel resource available in most part of the world
- Low volatility
- Burns almost silently
- Alcohol-burning stoves tend to have fewer moving parts than other types, lowering the chance of breakdown.
- Will quickly evaporate if spilled
- No residual odour

Cons

- Fuel can be hard to find in many countries
- Lower heat output
- Longer cook times (7-10 minutes to boil water)
- Inability to raise or lower the heat output, making it difficult to do much cooking beyond boiling water.

While you can purchase an alcohol stove, most advocates prefer to build their own out of used drink cans, and DIY tutorials are widely available on the Internet. Unlike white gas, alcohol will quickly evaporate if spilled in your pack and won't leave any residual odour. These stoves offer an environmentally sensitive option for hikers who enjoy the quiet of these slow burning stoves and are not pushed for time on their travels.

Cooking Systems 101 continued...

words by Darren Edwards

Kerosene

Although kerosene is widely available, there is a noticeable odour when the stove is running and it doesn't burn quite as hot as white gas, resulting in longer cook times. Kerosene is also slow to evaporate, which creates a greater fire hazard if it's inadvertently spilled. Kerosene stoves also require the use of white gas, alcohol or priming paste as a separate priming agent in order to facilitate vaporisation.

Pros

- Inexpensive
- Easy to source in most areas of the world
- High heat output (although not as hot as white gas)
- Spilled fuel does not ignite easily
- Can be used in many of the multi-fuel stoves

Cons

- Somewhat messy (burns dirty, smelly)
- Increased fire hazard due to evaporation
- Priming is required (best if different priming fuel is used)
- Kerosene tends to gum up stove parts so more maintenance is required
- Longer cook times (than using white gas)
- Spilled fuel evaporates slowly.

Kerosene stoves offer a cheap and versatile fuel option for hikers that plan on travelling off the beaten track in less developed countries.

Priming

Priming is the process of igniting a small amount of stove fuel (or other flammable substance) at the base of the burner unit to warm up the fuel's path before the stove is lit. This process heats up the burner, the fuel line and the generator so that when the stove is first turned on, liquid fuel will come out of the jet already vaporised for easy lighting. It operates much the same was as a diesel engines glow plugs.

Priming is not necessary for stoves that use compressed gas fuels as the fuel is already has already vaporised into a gas when it reaches the burner. Some regular stove fuels (like white gas) can be used both for priming and regular stove operation. Others (like unleaded gas or kerosene) do not work well for priming. If you have trouble using your regular fuel for priming, carry a small container of priming paste or alcohol to use instead.

Stove Performance

There are so many fuel types and stove types available that it would be impossible to detail them all here. One of the best ways to compare performance is to review instore comparison charts or research any available stove literature online. Some of the more telling statistics, some of which will assist in understanding how much fuel you need to carry, are;

- Average boiling time – This measures how hot the stove burns
- Water boiled per unit of fuel – This measures how efficient the stove is and is a good indication of how much fuel you will use
- Burn time at maximum flame – This measures how long the stove will burn on a given supply of fuel before it has to be refilled.
- Weight, shape and size

Use and performance tips

- If your cook pot is larger than 2 litres or you often cook on uneven surfaces, buy a stove with wide pot supports and legs that provide a stable base
- Always cover the pot with a tight fitting lid. Covering foods during cooking will help hold in moisture, reduce your fuel consumption and time-to-boil. Don't bother boiling the water completely, unless you are treating it. You can't drink boiling water anyway
- Let pasta and rice soak. Boil for a few minutes then switch off your stove and let it soak with the lid on
- If you camp only in temperatures above freezing, choose a canister stove for faster cooking, maximum heat control, convenience, and ease of use.
- When you travel by plane to your hiking destinations, you have to buy fuel there or ship fuel canister separately. Some types are hard to find at local gear stores, but white gas is widely available in Australia
- Keep it light. Long-distance hikers should consider a liquid-fuel stove because of the fuel's weight savings and storage flexibility. This will all depend on your stoves consumption and how often you plan on using it
- Overseas travellers should invest in a multi-fuel stove that burns kerosene and unleaded petrol for increased versatility. Use a coffee filter or old t-shirt to filter all of your liquid fuel before use
- If you cook in freezing temperatures, buy a liquid-fuel stove, preferably one with controls that are easily manipulated while wearing gloves or mittens. It is worth noting that a lot of the canisters available on the market now use a blend to allow use below freezing
- Pre-soak Longer Cooking Foods in Water First
- Your cook pot size matters. Use a pot that is similar in size or slightly wider than the width of your backpacking stove. A tall and narrow pot may result in the flame spilling over the sides of the pot which will waste fuel. Broad bottomed, shallow cooking pots tend to be the most energy efficient
- Stir the food thoroughly before simmering or soaking
- The wind can blow the flame sideways and waste fuel. Maximize the thermal efficiency of your stove by enclosing it with a metallic shield, typically made from firm aluminium and fold-up for storage
- A good insulator can mean the difference between a hot meal and a warm meal, which is especially useful during winter. If the air is cold, add an insulator (cosy) around the pot to keep the food hot while it is soaking. If you cook on snow, get a base that fits your stove, or use an old metal plate. You can also use the sun or body heat to partially melt snow (rather than your stove) and a heat exchanger will improve fuel economy
- Insulate your fuel canister from the ground, especially in cold climates
- Use alcohol for priming (this will help keep your stove soot-free).
- Learn how to clean and maintain your stove properly and practice by taking your stove apart at home

Safety Tips

- Read all user and instruction manuals before use
- Give your stove a few dry runs at home before you head out on the trail. This will ensure that it works and that you know how to use it. It is also a good way to taste test some of the food you intend to eat
- Most hiking tents are highly flammable and cooking inside them or near them should be avoided
- Do not cook without adequate ventilation. Backpacking stoves generate carbon monoxide and if you cook in your tent you risk death by asphyxiation
- Only use a hiking stove on a level surface to avoid spilling liquid fuel on the surrounding area or yourself, and to avoid having your food fall on the ground and possibly burn you
- Be very careful if you are cooking while it is still daylight. The flames generated by certain fuels, particularly denatured alcohol, are very difficult to see in daylight and you can easily burn yourself or catch you clothes on fire if you are careless
- Let your stove cool after use and before you put it away. Otherwise you can burn yourself
- Avoid leaving your stove fuel in full sun because it could explode or expand into gas and become dangerous if you open it near an open flame or spark
- Carefully inspect all of the hoses on your stove (if it has them) to make sure that they are in good condition. If not replace or repair them
- Check the stove for leaks before use
- Be very careful when lighting a stove while wearing gloves since you will have less dexterity than normal
- Carry fuel in only the manufacturer's recommended containers
- Never open the fuel bottle or stove tank when the stove is in operation
- Regularly maintain your stove

FIELD TEST

Jetboil Flash Java Kit

words by Darren Edwards

After using my cooker for a few years I was sent a Jetboil Flash Java Kit to field test.

Out of the box and fully assembled I was really impressed by the weight of the complete system. Even with the insulating cozy the weight was comparable (in fact 5 grams lighter) than my original cooker and saucepan. When buying my first burner my only considerations were weight and size. I thought they were the most important aspects and for a two-day hike these factors might just be enough. When you are hiking for three days plus the other important consideration is gas consumption. I had never really thought about this before but was faced to while we were planning for our eight-day Overland Track adventure in Tasmania at the end of 2016.

I decided to fire up both cookers and run a comparison of the time it took to boil 500ml of water. I already knew that my cooker could boil water in 5-6 minutes and the Jetboil Flash, well the packaging claimed this could be done in 2 minutes. Yeah right. So I started the test with the burners on full (you can watch the video below). True to its claims, in 2 minutes the Jetboil's colour change indicator was glowing bright orange and we were done. That cut almost a third of the boiling time which would directly translate to gas consumption. After eight days on the trail we didn't even use one canister and I was boiling water just to pass the time.

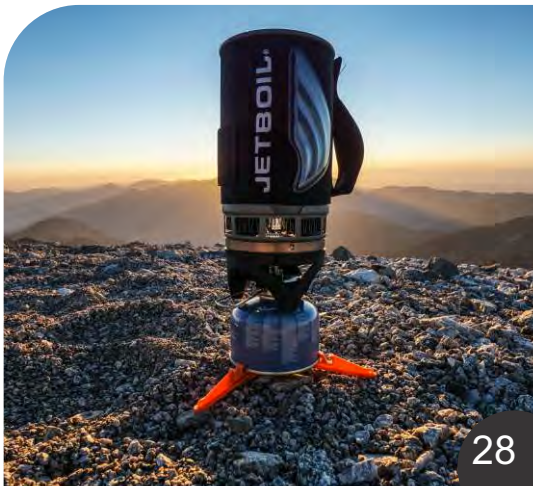
The Jetboil Flash comes complete with a Piezo ignition, insulating cozy with colour-changing heat indicator, patented FluxRing® for quicker boiling and reduced gas consumption, lid (with a pouring spout) to keep leaves etc out of the cooking cup. The cooking cup simply clips onto the burner, preventing accidental spills, and the fuel canister tripod ensures overall stability. If that doesn't excite you then for all your coffee lovers out there, the Jetboil Flash Java Kit comes complete with a gourmet coffee press. Now how cool is that.

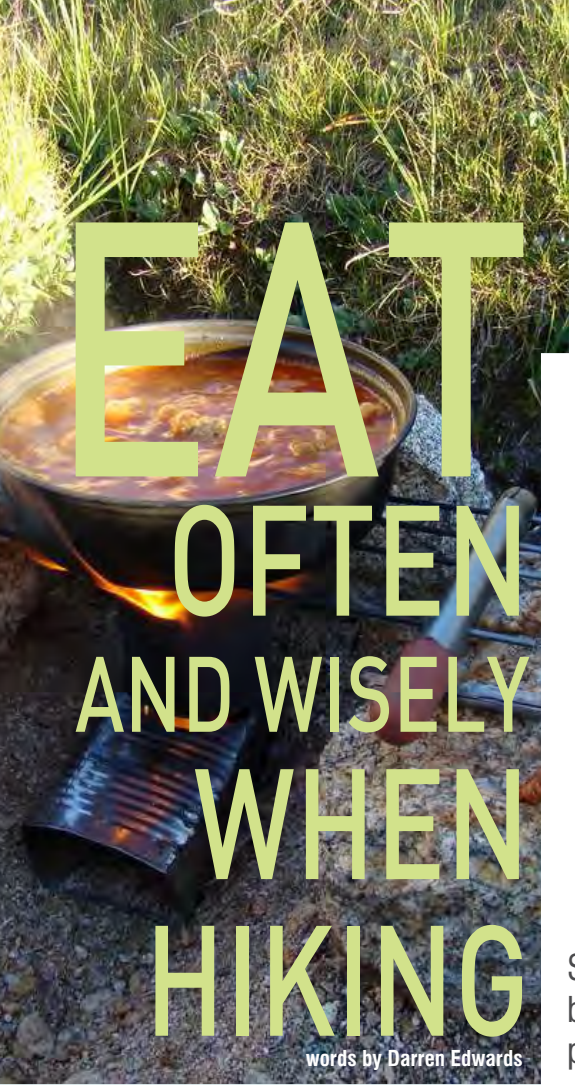
I did find the size of the boiling cup deceiving the first few times I used it. The cup hold one litre in volume but when you fill to the MAX line you really only have 500ml of water in the cup. This is certainly suitable for one or two people but in a group you would need to refill a few times. I felt a bit ripped off by this but quickly discovered the reason. When I filled the cup above the line the water boiled so rapidly that it bubbled over the top of the rim and out through the lid.

I have been using this cooker for several months now on both day and overnight hikes and it is simply brilliant. My poor old cooker has not seen the light of day since. The entire cooker, including canister fit inside the boiling cup for transport and all fit neatly into my day or overnight pack. In fact, it would be just as welcome in the glove box of my car. I love that the cozy has a built in handle as once your water is boiled you simply pick it up and pour the boiling water out, just as you would a jug or kettle. There I no need to dismantle anything until it cools. Cleaning is easy, just wipe it out like you would any other cook pot. Try to let it dry out before you put all the parts back in and sticking it back in your pack. Especially if it will be stored for a while.

Overall the Jetboil Flash met all of my expectations and preformed the way they said it would. I would highly recommend this stove to anyone.

Read my complete review at
www.trailhiking.com.au/jetboil-flash-java-kit/





EAT OFTEN AND WISELY WHEN HIKING

words by Darren Edwards

Since food is the main energy source for both exercise and maintaining body temperature, it is important to eat often and wisely when hiking, particularly on extended or physically demanding trips.

On overnight hikes, food and its preparation also contribute significantly to morale, providing a pleasant social end to a physically hard day.

A day spent hiking generally expends more energy than a typical one at home. So don't skip breakfast, eat a little more than usual and have frequent snacks of high energy, easily digestible food. On overnight hikes, have a generous serving of carbohydrates such as rice or pasta for the evening meal. Hot soup replaces lost salts and is an excellent starter to warm the tired body and the morale whilst preparing the main meal.

Popular quick acting high energy snacks include dried fruit, nuts and chocolate which, when mixed together, acquire the colourful hiking name of "scroggin". Simple but adequate lunches include bread or biscuits and cheese, with a little fresh fruit or salad vegetable.

Evening meals are generally prepared from dehydrated ingredients because of weight considerations. However, a little fresh capsicum, snow peas or bean shoots are also light and can add a certain edibility to the dish.

Although today there is a substantial range in price and variety of commercial dehydrated food on the market, there is an increasing number of overnight bushwalkers who enjoy the challenge of producing their own creations with home food dehydrators. You would be amazed at what you can actually dehydrate for your hikes.

For short hikes, food is more of a 'nice to have' rather than a necessity. But, on long hikes, an adequate food supply is critical to success and safety.

Food Requirements
Whether you are going on a 5km walk or a 500km long-distance trek, you should always have some food along. If for no other reason than just-in-case. Having a good idea about how much food will be required to provide the energy to complete the hike is part of good planning.

Food for Day Hikes
A day hike requires simple, tasty, cold snacks. Pausing for a rest, munching on a handful of fruit or trail mix, and then continuing your hike is all it takes. Food that packs well and tastes good is the goal.

Food for Trekking
Multi-day hikes require much more planning and preparation than a simple day hike. Planning food needs and a diverse menu is important to ensure adequate energy is available for your body. Running out of food 30km into a 70km trek is not a good thing.

Supply Options
Carrying all your food for shorter hikes makes sense, but as the distance increases the food weighs more. For long hikes, resupplying food along the way becomes a necessity. Depending on your style and discipline, there are many options for planning food along the way.

Cooking
Sure, you can live for days and weeks eating crackers and cheese and jerky, but at some point, you'll be ready to kill for a hot, steaming meal. On long-distance hikes, there are quite a few options for cooking your food so you can choose which works best for your trek.

Planning your Menu
Oatmeal for breakfast, peanut butter for lunch, and Mac-n-Cheese for dinner – now that's a good outdoors menu. But, not five days in a row. It's not that hard, and certainly not expensive, to create a tasty, easy, nutritious, diverse menu for any length hiking trip. Use this menu planner to plug in your food items, figure the calories, and even print a shopping list.

Field Test

Back Country Cuisine Freeze Dri Food

words by Darren Edwards

Every time I think of my first overnight hike I recall vividly how well prepared I was for my evening meal. I had prepared frozen chicken fillets, fresh broccoli and pasta, all ready to be cooked and consumed when we made camp. It seemed to make complete sense that I would take food that I would normally eat at home rather than eating all of that packaged stuff. While it was a great idea at the time, after several multi day hikes I soon realised this added unnecessary weight, was time consuming to prepare and cook and was completely impractical, particularly in warmer weather or after three days on the trail. I had to find another solution so headed off to my favourite outdoor shops to see what was on offer.

Back Country Cuisine Freeze Dri food comes in a wide variety of flavours and sizes for all appetites & dietary restrictions. Simple to use packages are light and filling. Simply add hot water, reseal bag, wait for re-hydration and enjoy.

Freeze Dri foods are ideal for hiking; they weigh less than fresh or canned food and maintain flavour, colour, aroma and nutritional value. The packaging is robust and is ideal for saving space. The zip lock top makes it is easy to re-seal whilst cooking, to save left-overs (if you want) and to avoid attracting wildlife. It also means that when you pack the rubbish out the food waste and liquid stays in the pouch.

Available in easy to pack in and pack out pouches, Back Country Cuisine carries a shelf life of two and a half years. Ice cream products have a 2-year shelf life. Make sure, of course, to keep packages unharmed and in a cool, dry area. Different sizes are also available if you need to share your meal between two people.

Preparation

Simply follow the instructions on the back of each package. In short, add boiling water, re-seal the pouch, wait 10 minutes and enjoy. Each product has different water requirements (i.e. 200ml for Beef Stroganoff, 250ml for honey chicken soy, 300ml for apple pie, 180ml for strawberry ice-cream, etc.). In extreme conditions room temperature or cold water will work, but you must double the wait time for re-hydration. We generally place the pouch in an insulated sleeve to assist with cooking and reducing the effects of the external environment.

The Back Country Cuisine packaging will heat up with the boiled water inside, but you may still hold the package from the bottom or from the very top. This may be difficult for some who eat right out of the bag so we usually stand the bag in a bowl to make it easier to handle.

I enjoy Back Country Cuisine Freeze Dri food on all of my multi-day hikes. I enjoy the taste, have a wide selection of meals to choose from and appreciate the convenience.

Features

- Flavourful freeze-dried food.
- Resealable packaging.
- Nutritional information & grams per serving.
- Lightweight & easy to pack in/out.

portable POWER

words by Darren Edwards

Trees, trails and waterfalls don't have USB ports, unfortunately. Still, we need to bring our devices — GPS, head-torch, mirrorless cameras, GoPros, plus-sized smartphones — when we venture outdoors. Before your next adventure, slip a portable power bank in your pack. They're packable and rugged, so they won't slow you down. There is an expanding range of portable power banks for hiking and backpacking. Some are waterproof, some are tiny. Others are in between or made for car camping. To help you choose I have outlined a few things to consider before making your purchase.

STAY CHARGED

How to Choose a Power Bank

Capacity
Most portable power banks are measured in mAh that's miliamp hours. Who cares about mAh? What you really want to know is how many charges can you get on your GPS or new phone from this power bank? I wont give you a science lesson here so best to check the manufacturers specifications for this information.

Generally, anything under 10000mAh will give about 3 smart phone charges. 20000mAh+ battery packs may provide 6-10 charges of a smart phone.

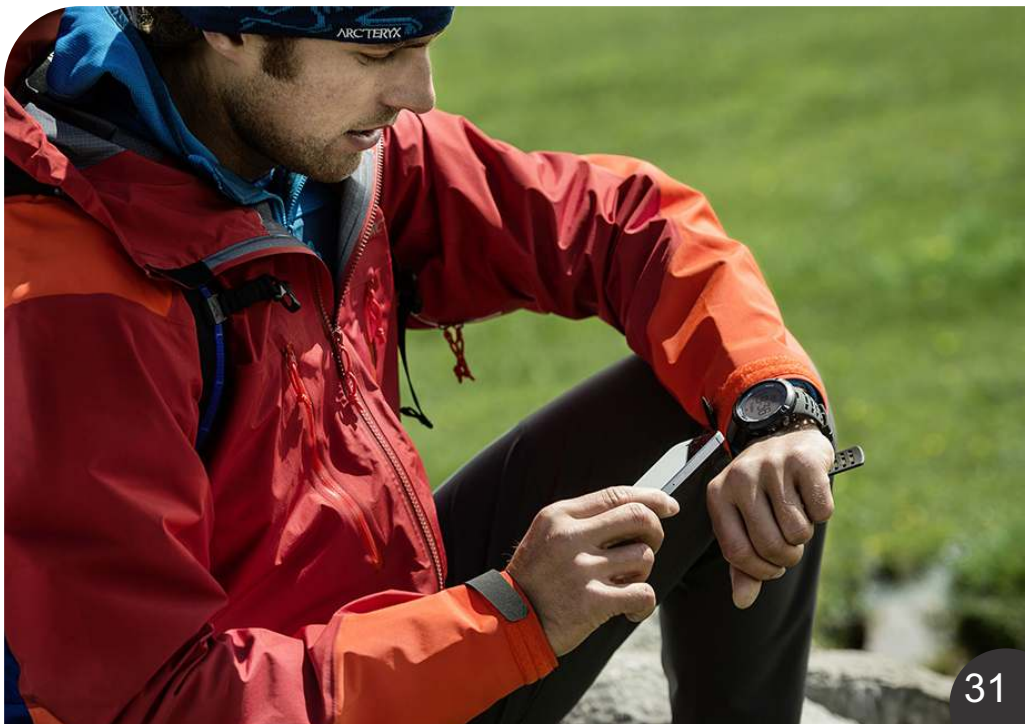
Size
Consider the bulk of your power bank. As capacity and number of charges increase, so does bulk. For car camping, canoeing, or use around the house this may not matter as much. If, however, you intend to hike or backpack with your portable power bank, considering size is critical.

Weight
Most power bank are powered by dense and heavy modern batteries. These provide great charging capacity in tiny packages. They can, however, be deceivingly heavy so check the manufacturer's specifications for weight before purchasing. High capacity chargers often weigh quite a bit, and it all adds up if you have to lug it around with you.

Charging Ports
When choosing a power bank consider the number of people and devices using the bank as well as the duration over which you will need the power bank to last. If you have your entire group plugged in to their devices all weekend on a hiking trip (get rid of the phones) then you may need multiple charging ports.

Most newer power banks come equipped with rapid charging ports for devices and rapid charging ports for the power bank itself. Some even come equipped with integrated solar panels to trickly charge the power bank while you hike or are sitting around your campsite (during sunlight hours of course). If you have a quick charging smart phone you may want to ensure you power bank has the appropriate output to keep up.

For avid hikers I would recommend lighter, smaller, and more compact systems but it all comes down to the factors mentioned above. These are all critical aspects to consider before purchasing.



Selecting the Right HIKING STOVE

Every hiking stove offers different benefits when it comes to versatility, size, weight, fuel efficiency and boil time. As a result, there is no one best stove when it comes to choosing a stove for your outdoor trips.

Many outdoor enthusiasts own several pots and stoves because there is often no combination of stove accessories that is the best option for every situation. If you're planning an upcoming trip, you want to make sure that you select the right stove for your needs.

How to select the best hiking stove for your needs

First, think about what you will be using the stove for. Do you enjoy multiday bushwalks in Tasmania's remote wilderness? Or do you prefer weekend hikes at Wilsons Prom? Will you be taking your stove mountaineering?

Depending on what you're using the hiking stove for, you can then decide which type of stove you might need. There are two basic types: gas or liquid fuel.

To help you decide which is the better option for your circumstances, we've explored a few scenarios below. For ease of comparison we have summarised the uses for various MSR products however, there are many stoves available on the market and you will need to determine which one best suits your needs. A specialist retailer can assist with this.

FOR BEGINNERS

Trangia StormCooker Stove

The best thing about the Trangia is that it's an all-in-one set. The StormCooker comes with two pots, a frypan, a handle, two windshields, a burner and a strap to hold it all together. That means you don't need to buy pots and such separately. These extra items also pack neatly into the stove, saving you space and making packing easier.

The second great drawcard for the Trangia, is that it's basically idiotproof. While many people struggle learning to use something like an MSR WhisperLite, a Trangia doesn't require any sort of skill.

It's also very hard to blow yourself up with a Trangia. It operates using methylated spirits. Less energy is stored in methylated spirits than in a fuel like Shellite. If you spill methylated spirits and then drop a match in it, the match will probably go out. For this safety aspect, Trangias are popular with school groups.

The main disadvantage of a Trangia is the time it takes to cook a meal. Something simple like frying onions could take a long 10 minutes. That's because a Trangia burns with a weak flame, so it never gets really hot.

Long cooking times mean it uses up a lot of fuel, which, in turn, means that you need to carry a lot of fuel. This is the reason you wouldn't take a Trangia on a seven-day hike in the bush.

SOLO COOKING

MSR Windburner Stove System 1LT

The most attractive drawcard of the MSR Windburner is its simplicity. The pot, burner and gas cannister all nest neatly and securely on top of each other. This makes it a compact cooking unit.

The burner's flame, when in use, is entirely enclosed by what's called a heat exchange – a shield fused to the bottom of the pot. This protects the heat from the elements, making the Windburner an extremely efficient stove to use in windy conditions.

It's also a good stove for coffees at the crag. It's the ideal set-up. The 'pot' comes with an insulated cozy and integrated handle. That allows you to eat (noodles?) or drink (coffee?) directly from the pot.

Also, because the stove's flame is so well protected from the wind, the Windburner burns fuel efficiently, making it cheaper to run and quicker to boil.

GENERAL TRAVEL

MSR WhisperLite International

Heading overseas? Consider the MSR WhisperLite International. Basically it's the MSR WhisperLite, except it runs on multiple types of fuel.

That means, if you find yourself in Sub-Saharan Africa needing fuel for your stove, you won't need to find a specialist store that stocks Shellite. The WhisperLite International can run on car fuel, so all you would need to do is find a petrol station.

This flexibility is a huge advantage if you are, say, cycletouring in Asia or hiking in Patagonia.

words by Bogong Equipment

OVERNIGHT HIKES

MSR Pocket Rocket

Advantages? It's quick, easy and intuitive to use. In fact, it's about as easy to use as a gas stove in a house. You turn the gas on, light it and adjust the flame. The stove itself is also lightweight and relatively cheap to buy.

Disadvantages: You have to use gas cannisters. Each one is a single-use steel cannister, which you then need to dispose of. These cannisters can also be quite heavy, especially if you need to carry a few of them. (Of course, this isn't going to be an issue if you're only camping for one or two nights.)

As you use the cannister, it also loses its pressure. By the time you've used two-thirds of the gas in the cannister, you'll notice a drop-off in performance.
Also, the colder the air temperature around you gets, the worse gas stoves perform. If you bring a gas stove somewhere cold, on a frosty morning you might find yourself cuddling your gas cannister, because you need it warm before you can turn it on to make your morning cup of tea.

Interestingly, though, this doesn't mean that gas stoves can't be used by mountaineers. At altitude (upwards of say 2000-4000 metres), the drop in air pressure changes the relative pressure between the surrounding air and the cannister. When this starts to happen, you'll notice that gas stoves actually start to work efficiently, even though it's cold. (However, 'mountains' in Australia aren't high enough to make a difference.)

Something else you need to be aware of is that gas stoves struggle in windy conditions. That's because wind blows heat away. And, you can't use a windshield with a gas stove. Heat reflects back onto the gas cannister, and that's an explosion risk.

You'll need to consider whether or not these drawbacks are going to affect your particular situation. For instance, if you're hiking somewhere that doesn't get too chilly, and you're going to be sheltered from wind when you camp, maybe this is the stove for you.

EXTENDED HIKES

MSR WhisperLite Stove

This stove is ideal for extended bushwalks for a number of reasons.

First, the WhisperLite runs on liquid fuel, which is cheap to buy. Liquid fuel also weighs less per unit of energy, which makes it an ideal fuel for multiday walks.
If you're hiking in an area where you're likely to encounter bad weather, the MSR WhisperLite is a good choice. This is because the WhisperLite still functions in windy, cold conditions. Even when the surrounding air temperature is cold, it works well because liquid fuel burns hot.
You can protect the flame using a windshield, too.

These advantages make the MSR WhisperLite the choice of many experienced hikers.

Its main disadvantage is that many people find it tricky to use. (There's a bit of an art to it.) Once you've got the knack, it's easy. But, there is a learning curve.

MOUNTAINEERING & COLD ENVIRONMENTS

MSR XGK Stove

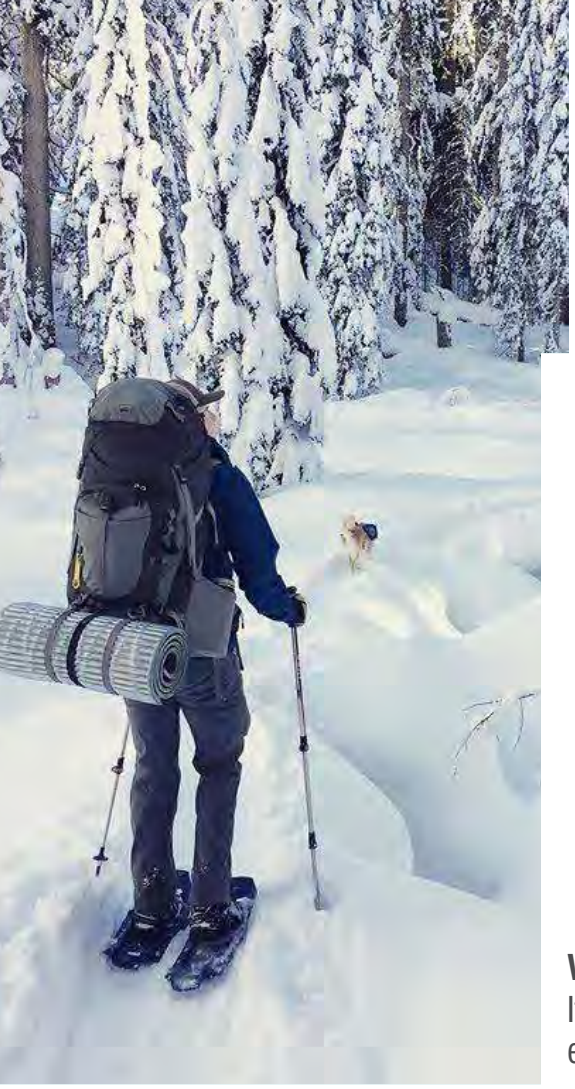
You've probably heard an MSR XGK in use. It sounds like an airplane taking off. But, if you're going up to 6000 metres, the XGK is the stove you want. It's built more solidly than other fuel stoves, which makes it a more robust unit for serious expeditions.

It's capable of running on various types of fuel, too. That's handy if you're in a situation, say, where you need to siphon fuel out of a helicopter.

In cold conditions, the XGK works very well. It has a fat fuel line and fat fuel jets, which allows it to release a lot of fuel. This means it's capable of burning very hot. And, when you're in a cold environment, you need a lot more heat to boil water.

Organisations like Bogong Equipment offers a full range of backpacking stoves and accessories. Check out their selection of hiking stoves online or visit in-store for help selecting the right stove for your needs.

words by Bogong Equipment



SNOWSHOES

FOR A MORE ENJOYABLE ALPINE HIKE

words by Bogong Equipment

Who should buy snowshoes?
If you want to enjoy backcountry alpine environments, snowshoes enable you to do it with no specialist motion based skills.

Cross-country skiing demands skills (particularly for multiday touring). Snowshoes, on the other hand, don't demand a specific skill set – beyond the ability to walk.

Of course, you can try bushwalking in the snow wearing regular hiking boots. However, you'll soon find that with every step, you're sinking into the snow making progress tiring and tedious.

Snowshoe Types

There's a variety of snowshoe types available. Principally, the differences between models are based on the terrain they're designed for.

Snowshoe types can be divided broadly into three main categories:
1. For flat ground or gentle slopes only.
2. For steeper ground and more challenging terrain.
3. For very technical terrain – that is, terrain that's close to warranting crampons in certain sections.

Bear in mind: a snowshoe designed for very technical terrain can also be used for flat ground. However, snowshoes designed for gentle terrain won't perform on more technical terrain.

Snowshoe Design Features

- **The Underside.** Snowshoes designed for more technical terrain have more aggressive and developed spikes and ridges in order to grip more types of terrain.
- **Heel Lifter.** Snowshoes either have them or they don't. Basically, it's a little contraption that clicks into position to reduce calf strain on steep slopes.
- **Weight.** More expensive models achieve performance at a low weight.

Sizing

Most snowshoe models are one-size-fits-most.

Generally, in Australia you can ignore 'length' and 'floatation' specifications. That's because in Australia, snow tends to be hard-packed, rather than deep and soft. Therefore, you need less floatation than you do in more powdery snow that you're more likely to encounter overseas.

When length and floatation specifications matter is when you intend to use your snowshoes overseas. Or, if you're a heavier person likely to be carrying a heavy pack. (Note: For these situations, you can also get floatation tails.)

When to use Snowshoes

Basically, once you reach the snow line, you can put your snowshoes on. (Using them below the snow line damages the underside, so it's not recommended.)

You can switch to crampons for icy ground at ski resorts, or bushwalks where you might encounter ice and snow.

Other Gear You'll Need

Snowshoes are used with hiking boots. No special boots are required – your normal hiking boots are what they're designed for. You can also wear snowboarding boots; but, for that, you'll need special straps or bindings.

Snowshoes need to be used with poles. That is, trekking poles with snow baskets or adjustable ski poles. Poles make snowshoes easier to use and improve your balance, too. Beyond that, all you'll need is basic winter hiking gear.

Snowshoe Maintenance

Snowshoes don't require any particular maintenance. (Unlike skis, you don't need to wax them, or anything like that.) Over time, straps may need to be replaced.

Summary

The beauty of snowshoes is that you don't need skis. That means, if you want to stand on the summit of Mt Feathertop in winter, you don't need hard-core skills and thousands of dollars' worth of ski gear. What's more, with snowshoes you won't need to learn a new sport to reach these breathtaking snowy landscapes.

Recommended Snowshoe Models

Because Bogong Equipment is a backcountry store, all our snowshoes are intended for use in challenging terrain. Still, here are a couple of suggestions:

- Good all-rounder: MSR Evo
- Deluxe model: MSR Revo™ Ascent (Note: MSR snowshoes with 'Ascent' in the name have a heel lift.)

www.bogong.com.au

CRAMPONS

If you are looking to undertake a snow hiking trip in winter and want to do it safely and in comfort you may well require additional equipment such as crampons, ice axe, gaiters and snowshoes. If you are hiking on trails that are covered with (slippery) frozen snow or ice, crampons are a must as they provide you with the necessary traction to minimize the chance of falls.

words by Darren Edwards

TECHNICAL TOOLS FOR SNOW AND ICE

The Crampon Anatomy

Crampons are manufactured from steel, stainless steel or aluminium and all have a reason for that. Crampons made of steel are much more durable than aluminium crampons but also heavier. Steel crampons are widely used for hiking and mountaineering. Aluminium crampons are mainly used in applications where the crampon is secondary to the main activity and will not be used much. For example where hiking or ski mountaineering is the main activity and the crampons will only be used for limited snow crossings. For this use light equipment is a priority. Stainless steel crampons offer enhanced corrosion resistance but little other advantage.

The Binding

Hybrid

Sometimes called mixed or semi-step crampons, hybrids feature a heel lever and toe strap. They require boots with a stiff sole plus a heel groove or welt to hold the heel lever. The toe strap, however, doesn't need a welt to fit securely. These are easy to put on with gloves since you don't need to clean out the toe welt and line it up—you just pull on the toe strap and throw the heel lever.

Step-In

In this system, a wire bail holds the toe in place while a heel cable with tension lever attaches the crampon to the heel. If the boot/crampon fit is right, this results in a very secure system. This is also the easiest style to put on with gloves and in snowy conditions. For a step-in binding, boots need to have rigid soles and at least a 9.5mm welt or groove on the heel and toe. An ankle strap is also typically part of the system. Another advantage of a step-in system is that you can move the front bail to adjust the length of front points according to the type of terrain. Step-in crampons are recommended for use with ski mountaineering and telemark boots.

Strap-On

This style usually features a pair of nylon webbing straps per crampon. The beauty of this system is that it can be used with virtually any boot or shoe you have (just make sure the center bar is compatible with the flex of your boot or shoe). While these take longer to attach than other styles, they can be fit tightly enough for moderate ice routes. They are a great choice if you'll be using multiple boots with the same crampon. Strap-on bindings, however, aren't quite as precise as step-ins—you can get a small amount of movement between boot and crampon.

Anti-Balling Plates

Anti-balling plates prevent the snow from balling up under the crampons as too much snow built up under the crampon can cause the crampons to lose traction.

Points

Points on a crampon provide you with traction in ice and snow. Most hill climbing crampons have 10 or 12 points. The forward-facing points allow bite when ascending directly up slopes. They tend to become longer and more aggressive on more technical crampons. I find that 10 points is more than adequate for general mountain use and personally I would only consider a 12 point crampon if I was moving into steep or vertical climbing.

Flexibility

C1 crampons offer reasonable flexibility and are therefore comfortable to walk with. Climbing crampons tend to be more rigid as they need to carry the weight of a climber on steep slopes when traction is only provided using the front-facing points. When wearing and using crampons you should always try to contact the ground with a flat foot to get traction from as many points as practically possible.

Adjustment

Adjustment should be easy with a sliding, flexible steel bar and spring-loaded locator allowing quick transfer from boot to boot. It also means that the crampon can slide together for compact transport.

ICE AXE

if you want to take things more seriously and head out on the depths of winter for a pure snow hike and camp? Then you will need to gear up accordingly. You will need an Ice Ace.

An ice axe is an essential safety tool for winter hiking. With proper instruction, it is easy to learn the basics and serves as a foundation for all subsequent winter hiking and mountaineering skills.

If you're new to winter hiking, the first thing you need to understand is the difference between a regular, or basic ice axe, and a technical ice axe. Technical ice axes are used almost exclusively for climbing high angle ice. They're much shorter than a regular ice axe, tend to have picks that are oriented at a much more acute angle, and are almost always used with leashes.

A basic ice axe is designed to be used as a balance and safety tool when hiking up or descending steep slopes, as a self-arrest tool for stopping an expected fall and down slope slide, a brake when glissading (sliding downhill on your butt), as a tool for creating steps, and as a retrievable snow anchor when you need to rappel down a pitch but don't have a good natural feature to tie onto. They differ from technical ice axes in the following ways: they are longer, may or may not be used with leashes, and have a much less acute angle between the pick and the axe handle.

If you are keen to brave the cold head on down to your outdoor specialist and ask them to fit you out with the right gear.

GEAR THAT I USE

The equipment you carry is all you have to rely on when hiking. It is up to you to determine the essential items that you take. Here is a quick overview of some of the gear that I use and trust. **Read my reviews at www.trailhiking.com.au**

Osprey Aether AG™ 70

This pack is well balanced, the fabric handles bumps and scrapes from rocks and branches without signs of any damage and considering the load I carry, it felt reasonably light and well balanced on my back.

Aarn Featherlite Freedom Pack

Ultimately the choice of pack comes down to fit, comfort and whether it meets the users requirements, for me when I put the Featherlite Freedom on, it fits, it is comfortable and I barely notice it being there.

Osprey Daylight 13 Pack

The Osprey Daylite can be utilised as either a simple daypack or as a removable backpack attachment. It's lightweight and versatile and holds 13 litres of storage. I use this pack for all my day hikes.

Kathmandu Alopex GORE-TEX® PRO

The Alopex is constructed with GORE-TEX® PRO fabric, which is rugged and durable, waterproof and windproof and does a great job of keeping the weather out and keeping out of your way (it's not bulky).

Mountain Designs Gore® WINDSTOPPER® Jacket

While many jackets I have worn offer some level of wind protection, WINDSTOPPER® provided complete windproofness with incredible breathability.

Icebreaker Base, Mid & Outer Layers

After all I have put them through, I still put them on day after day regardless of how long the hike is. 11 days on the trail with one shirt and noone complained. I have put them through enough use to be able to say these are top-end garments.

Sea to Summit Trek II Sleeping Bag

Excellent down bag for a variety of conditions. It's lightweight, packs down small, does better in wet weather than other down bags, and is very comfortable. One of the most notable points about this bag is how small it compacts.

Klymit Insulated Static V Lite

I haven't yet slept on every pad on the market, but from my early experiences this pad is certainly ranks among the best I have slept on and for the price is really is a great investment.

Big Sky Chinook 2P 4 Season Tent

The Chinook is light weight, flexible, durable, spacious, has large vestibules which are great for cooking, and packs down surprisingly small to fit neatly into your pack.

Helinox TL Series Hiking Poles

I love these poles and take them on every hike. They are so light and small that if you don't need to use them you won't even notice you have them in your pack. The other poles I own are the FL135 which in my opinion are a more durable overnight hiking pole.

ArmaSkin Dermal Protection Layer

I am really really happy to report that now that I wear ArmaSkim as a base layer on all of my hikes I have never had another blister and my ankles don't swell like they used to after hours on the trail.

Icebreaker Men's Hike Crew Socks

A great sock for hiking in colder weather, this sock has great cushioning for all-day comfort. Merino's natural ability to resist bacteria and odor and manage moisture even if it gets wet, meant I could go 11 days without changing them. Phew.

GEAR THAT I USE

Failing to bring along the right gear may mean a miserable experience or worse. As a field-tester, the reviews I have provided are based on my own experiences and represent an unbiased account of the gear I use and trust.

ASOLO Fugitive GTX Boot

A great all-round hiking boot. The Fugitive is lightweight, waterproof and comfortable, with a slightly wider fit. It is ideal for day hikes but offers enough support for longer hikes and carrying an overnight pack.

Grivel G1 Ice Axe

The Grivel G1 is best for general mountaineering applications and is suitable for early season backpacking or ski mountaineering. The G1 is excellent value considering its hot forged high quality pick and construction.

Grivel G10 Crampon

The crampon is well suited to general winter hiking and adjusts easily while still compacting neatly for carrying. The binding system is excellent – tolerant of different boot shapes and exceptionally easy to use even with freezing fingers.

Outdoor Research Gaiters

Or's Gaiters have the breathability to make wearing gaiters more comfortable. The fitted design, durability and waterproofing give you protection in most terrains. I'm happy wearing them in any environment, especially in the mountains.

Outdoor Research Arete Gloves™

Outdoor Research best sellers, the Arete Gloves are among the most versatile alpine gloves available, offering grip, dexterity and waterproof protection for extended backcountry adventures.

Sawyer Mini Water Filter

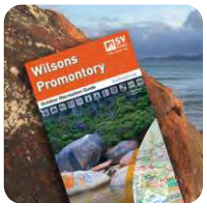
The Mini is an effective, small, lightweight, and versatile water filter that won't break the bank. If that doesn't do it for you, no filter will. I highly recommend you pick a Sawyer Mini today. You won't be disappointed.

Jetboil Flash

Overall the Jetboil Flash met all of my expectations and preformed the way they said it would. I would highly recommend this stove to anyone.

Helinox Chair Zero

After experiencing all three of the Helinox hiking chairs I am a huge fan of the new Helinox Chair Zero. A huge fan! It is my chair of choice for any pack carry or multi-day adventure.



SV Topographic Maps

I can say without question that my SV Topographic Maps provide me with the knowledge and confidence to get-it-right the first time and not spend hours in the bush trying to guess my way.

Proudly supporting the Trail Hiking Australia community initiative

Engaging Event Technology and Creative Services

Our mission is to enhance your events by providing the tools to create meaningful connections.

We understand that event planning requires a budget conscious approach with effective time management strategies as they are often steered by volunteers and committees.

Our products and services have been developed with this in mind in order to save you both time and money whilst still maintaining a professional presence.

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