



# SAS JUNGLE SURVIVAL

Barry Davies, BEM

- Crossing Rivers
- Avoiding Wild Animal Attacks
- Avoiding Quicksand
- Treating Malaria
- Building a Shelter
- And Much More!





# **SAS JUNGLE SURVIVAL**

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Skyhorse Publishing

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Medical Priorities

Survival Medicine

Jungle Shelter

Fire

Water

Tropical Food

Navigation

Survival Travel

Rescue





**When I was a young soldier, about to join the SAS, I read a book called *The Long Walk* by Slavomir Rawicz. It recounts the trials endured by six men and one woman who, after escaping from a Soviet prison camp in late 1939, walked from the Arctic Circle across the Gobi Desert and south all the way to India. After 4,000 miles and 18 months four of them, including one American, survived. Their story instilled in me a never-ending thirst for all matters relating to human powers of survival.**

The jungle is, perhaps, my favourite environment in which to practise survival techniques. Jungles are divided into two types: primary and secondary. When we think of jungles we imagine a densely forested area with almost impenetrable foliage; this is what is known as a primary jungle. But jungles can also include swamps, grasslands and cultivated areas. A primary jungle can be either a tropical rain forest or a deciduous forest, depending on the types of trees and plants found growing there.

**Tropical Rain Forest** This typically has very tall trees whose upper branches interlock to form canopies. Underneath the top canopy there may be two or three more canopies at different levels, depending on how much light can penetrate through. The lowest canopy may be only 10m (33ft) from the ground. The effect of these canopies is to stop any sunlight from reaching the jungle floor. Undergrowth is therefore extremely limited; there are, however, extensive buttress root systems and many species of hanging vine at these levels.

As its name suggests, the rain forest has a very high rainfall, and the tropical heat produces humidity levels which at times can be seriously exhausting.

The waterlogged ground all but rules out any off-road vehicular travel, so realistically the only way to travel through this type of jungle is on foot. Due to the lack of undergrowth this is fairly easy in a tropical rain forest, especially compared to other types of forest. However, it does present its own problems: due to the dense canopy, no search-and-rescue crew will be able to see you from the air. Ground visibility is also limited to about 50m (165ft), and it is extremely easy to get disorientated and lost.

**Deciduous Forest** This is found in semi-tropical regions. Here the weather tends to have a marked annual season of rainfall (usually called a monsoon) and a dry season, even a drought. During the heavy rains the trees produce leaves, and when it is drier the foliage tends to die back. Unlike the tropical rain forest the trees are not so densely packed together and sunlight is able to penetrate the canopy and reach the forest floor. This encourages the development of a thick layer of undergrowth.

Travelling through a deciduous forest in the dry season is reasonably easy, and visibility is relatively unhampered. However, during the wet season, when the trees are in full leaf and the undergrowth is at its thickest, movement is extremely slow and difficult, and visibility is hampered both from above and on the ground.

**Secondary Jungle** This occurs on the edge of primary jungles, and appears where forest has been cleared (frequently by man, using slash-and-burn methods) and then abandoned back



nature. Where the ground has had much exposure to sunlight certain types of plants take hold and grow vigorously. These are usually weeds, grasses, thorny shrubs, ferns and bamboo.

This sort of thick, difficult vegetation, often growing to a height of 2m (6.5ft), makes any movement on foot slow and difficult. Visibility is often no more than 2-3m (6-10ft), giving a feeling of claustrophobia. Often the only way to move through the impenetrable foliage is to slash your way through with a machete.





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**Anyone venturing into an uninhabited and potentially hostile area should carry a survival pack. The contents of the pack should be dictated by the type of terrain you are entering, and should provide the means to protect life in the event of a survival situation occurring.**

Escape and survival equipment is issued as a matter of course to military pilots and Special Forces units; but the development of specialist survival equipment for civilian use has also increased dramatically over the past decade. This equipment varies from the basic items supporting such 'global' techniques as making fire, constructing shelter, and navigation, to those varying items required for survival in specific terrain and climatic conditions.

An important factor is that every item included in a survival kit has to be of real use, and its usefulness must be judged against its size and weight. Ultimately, each item must increase your chances of survival in and rescue from situations in which you may initially have no other resources apart from the clothes you stand up in.

There are few places in the wild where you won't have to deal with bugs to some degree, but this is especially true in tropical, swampy or forested areas. Every survival kit should include extra insect repellent. Those based on a solid wax stick are the best for the jungle, and give effective, long-lasting coverage.

Also adjust your medical kit so that it caters for skin rashes, snakebite, etc. In a tropical environment, or anywhere else where biting insects present a serious problem, taking plenty of mosquito netting will greatly reduce the number of bites needing treatment. If the area is extremely bad you should consider using a head-net for protection; use the type that have two hoops, top and bottom, to keep the netting away from your face.

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## **Survival Kit**

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**A survival kit could save your life. Whenever you embark upon any journey or activity where a survival situation might occur, make sure that you have a survival kit with you – and, most importantly, that it is on your person.**

Each item must be evaluated for its usefulness and, ideally, its adaptability to different uses, make sure that the same purpose of one item is not duplicated by another. Once you have decided upon your final selection, pack the items neatly in an airtight and waterproof container such as a metal tobacco tin, a screw-top cylindrical metal container, a waterproof plastic box, or a resealable polythene bag inside a sturdy canvas pouch. Whichever container you choose, once it has been packed with the relevant selection of kit for the particular conditions you face it should not be opened until needed.

The components of your survival kit should not be regarded complacently, as guaranteeing your survival without further initiative, the kit should be seen rather as a catalyst which kicks your personal survival skills into action.



# Fire

**Candle** A candle will prolong the life of your matches by providing a constant flame (as long as you can protect it from wind and rain); it will help start a fire even when the tinder is damp. Additionally, a simple candle provides light and comfort to your surroundings. Choose a candle made from 100% stearine, or tallow (solidified animal fats) – this is edible and may therefore serve as an emergency food (do not try to eat candles made of paraffin wax). The candle wax can also be used as a multi-purpose lubricant.



*A flint and steel.*

**Flint & Steel** Matches, if not protected, are easily rendered useless by wet weather, while a flint and steel will enable you to light countless fires irrespective of the conditions. The flint and steel is a robust and reliable piece of apparatus, but its usefulness is vastly improved when combined with a block of magnesium. Sparks generated by the flint will readily ignite shavings scraped from the magnesium block onto kindling materials.

**Matches** Ordinary kitchen matches will not be of much use unless they are made waterproof. This can easily be done by covering them completely with melted wax, or coating them with hairspray. Special wind-proof and waterproof matches can also be purchased; each match is sealed with a protective varnish coating, and manufactured using chemicals which will burn for around 12 seconds in the foulest of weather.



*Wind and waterproof matches.*

**Tampon** Due to the fine cotton wool used in its manufacture, the tampon has proven to be the most efficient tinder and fire-lighting aid. It works best if the white surface is blackened with charcoal or dry dirt first, as it accepts the sparks and ignites more readily. British RAF and Special Forces packs contain two tampons as standard issue. The cotton wool can also be used in medical emergencies to clean wounds.

## Water

**Condoms** A non-lubricated, heavy duty condom makes an excellent water carrier when supported in a sock or shirtsleeve. The water must be poured in, rather than the condom being dipped into the water supply; shake the condom to stretch it as it fills up. Used in this way a condom can hold about 1.5 litres (2.6 pints). Condoms will also protect dry tinder in wet weather; and are strong enough to make a small catapult.



*Water bottle; the newer types on the market come fitted with a built-in filtration and purification system – you simply fill them, and drink from them.*

**Water Purification** The means of water purification come in a number of different forms, from tablets to pumping devices. For inclusion in a survival kit you are best advised to choose tablets (about 50), as they are light to carry and quick and convenient to use. One small tablet will purify about one litre (1.75 pints) of water, although it will leave a strong chlorine taste. Tablets cannot clean the water or remove dirt particles, but they do make it safe to drink.

## **Clothing & Shelter**

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**Needles & Pins** Several different sized safety pins should be included in any survival kit. They make good closures for makeshift clothing, or can be baited as large hooks to catch fish or birds. Large sailmaker's needles, such as a Chenille No 6, have a large eye which makes threading easier, especially if the hands are cold or if you are using thread improvised from sinew. They will also be able to cope with heavier materials such as canvas, shoe leather or rawhide. Another good use for a needle is as a pointer in a makeshift compass, although it will have to be magnetized first.

### **Jungle Clothing**

While heat and humidity are undisputed facts in the tropics, the reports of discomfort being 'unbearable' are often exaggerated. The heat would be a lot easier to bear if the moisture level was not so high; this causes constant sweating and damp clothing. This is an inconvenience, but one can learn to adapt; the jungle survivor must accept that his clothing will always be wet, either from sweat or from rain. However, problems can arise during late evening when jungle temperatures drop and damp clothing becomes chilly. It will be cold enough to warrant a fire or wrapping a blanket or some other form of covering around the body for protection.

Lightweight, loose-fitting clothes that completely cover the body are best for the jungle environment. If you arrived in your situation unexpectedly, scavenge for suitable clothing, search personal effects or improvise with any available material.

- Shirts should have long sleeves, and should button at the wrist and neck.
- Trouser bottoms should be gathered and tucked into the socks or boots.
- Secure all valuable survival items in pockets or around your neck on loops of string.
- Find or make a spare set of clothing for sleeping in.
- Wear a hat with a wide brim – it will help stop bits of the forest and its small inhabitants from dropping down your neck.



**Clean Clothing** Given that you will sweat constantly, your clothes will smell. Bits of jungle also get everywhere, and snagging vines are constantly ripping clothing. If you are forced to remain in the jungle for any length of time without a change of clothes then they will start to rot. The speed at which they do so will depend on how clean you keep them. If water is available then clothes should be washed every couple of days. Use any soap sparingly; a simple rinse in clean water is often enough to remove sweat and debris from the fabric. Do not beat your clothes against rocks, as this will damage buttons and zips, etc. Dry them by laying in direct sunlight; if none is available, then wring them out and wear them damp.

**Footwear** The best footwear is a pair of high, lace-up boots with water drainage, but these may not always be available. In this event the important factors are firmly fitting, comfortable footwear with a good sole, and a long pair of socks – with your trouser bottoms tucked inside the latter are to protect your ankles and legs from being bitten. If you are wearing anything other than proper jungle boots you might consider making several small holes in your footwear above the sole about midway along the foot, to release any water trapped inside.

**Selecting Equipment** You would be astounded at the amount of rubbish untrained soldiers carry into the jungle. Prior to any operation every SAS soldier will strip his equipment down to the bare bones and carry only what is absolutely necessary. There is little point in inviting exhaustion by carrying large loads in jungle terrain, and any equipment you need to carry should be carefully selected. Remember that the jungle will provide you with most of your basic needs such as food and shelter. What you really need are your machete, compass, survival and medical kit, plus a supply of drinking water. Apart from these you should deliberate on items such as a mosquito net, spare clothing, and signalling apparatus, especially radar-reflecting balloons.

**Getting Down from the Jungle Canopy** If your survival situation arises from a crash-landing or a parachute exit over the jungle, there is a good chance that you will become trapped high up in the forest canopy. Parachutes will obviously get entangled in the branches; but it is also more common than most people realize for aircraft to come to rest in the canopy, given that they will simply cushion most light fixed-wing types and helicopters. If this happens, and you are still alive, your problems have only just begun. The distance from the canopy to the jungle floor can be anything up to 30m (100ft) – a fall means certain severe injury or death. While



you could try climbing down, you will undoubtedly come to a point where there are no more branches yet you are still dangerously high above the ground. The only safe way is to lower yourself on a rope.

**Immediate Action** The ways of entering the jungle are fairly limited: either you walked or used a boat to get in, in which case you should be prepared – or your aircraft has made a forced landing. Military personnel who have been deliberately inserted into the jungle should have the means by which they can be extracted in an emergency. Whatever has caused your survival predicament, the same guidelines should be observed.

## Sleep in dry clothes

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**SAS soldiers have regularly operated in the world's jungles over nearly 50 years, since the Malayan Emergency campaign of the early 1950s. They have pioneered many techniques of jungle survival and warfare – methods of insertion and extraction, and long operational patrols – sometimes staying in the forest for months at a time. They have developed one completely undramatic practice which makes a big difference to comfort, and thus to efficiency.**

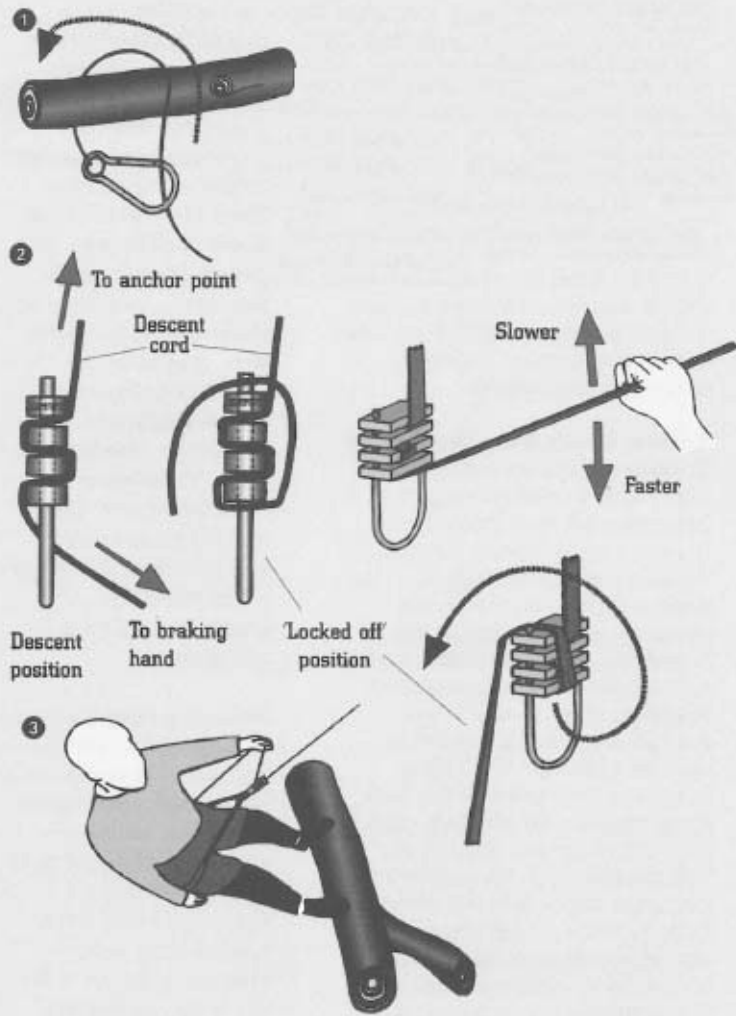
Although dedicated to travelling as light as possible, they carry two sets of clothing with them, one for daytime use and one for night. Just before they go to sleep they change out of their wet clothing, which is normally hung under the shelter or hammock to dry out. In the morning they change from their dry clothing back into the damp set. It is an uncomfortable change, but one that guarantees a good night's sleep in dry clothes.

The immediate actions to be taken in the jungle are much like the imperatives in any other terrain: first aid, position, rendezvous and contact. In the jungle first aid is particularly important, as the smallest cut or abrasion can quickly become infected. Fixing your position and rendezvousing with other survivors is also difficult due to the dense vegetation. Shouting and whistles will help at this stage. Only move when you are certain, and then move in the direction of the aircraft crash site or to a prominent feature specified by the pilot prior to jumping. Establishing communications before any emergency, or activating a personal locator beacon after the event, will greatly improve your chances of rescue. Finally, make sure that the rescue party, which will normally arrive in a helicopter, will have either a cleared landing zone or a suitable winching area.

## Lowering Methods

If escaping from an aircraft trapped in the canopy, remember to remove all serviceable items, survival packs, rations, tools etc, and drop them to the ground before you lower yourself.

- 1 Attach the lowering rope to a strong branch and drop it to the ground below.
- 2 Make sure the rope is correctly fitted so that it runs through the lowering device smoothly.
- 3 Hitch your body to the rope by means of the karabiner and figure-of-eight.
- 4 Wearing gloves if available, lower yourself slowly.



**Carry Equipment** Before leaving to walk out, decide what equipment is vital to your journey and what you can easily carry.



*'Paracord', a material with a score of uses in a survival situation; and hooked bungees for shelter construction.*

Do take spare parachutes, ropes, fire axes, medical and survival kits, and some container which will hold fresh water. Cut up seats and cargo webbing to make improvised packs, or use a pole to carry loads between two men.

**Parachute Cord** Parachute cord is an extremely strong alternative to plain string, having a breaking strain of about 250 kilogrammes (550 pounds). It can be used for lashing shelter frameworks and many other necessities; and the inner strands of thinner cord also make good thread for sewing or fishing lines. A survival kit should contain a minimum of 15 metres (50 feet).



*A stainless steel wire saw will cut through most materials, including steel.*

**Razor Blades** Hard-backed razor blades make useful cutting tools, for gutting fish, cutting

sinew, or when making a weapon. Despite its small size, if used with care the blade will continue to cut for up to a month. Its life can be prolonged by not trying to cut materials which are obviously beyond its capabilities.

**Wire Saw** A good saw, similar to those issued to the military, is made of eight strands of stainless steel wire; it is capable of cutting through wood, bone, plastics, even metal. A wire saw can be used when cutting timber to make a shelter, and to saw precise notches when constructing traps and snares. (Due to the friction a wire saw may overheat – saw slowly so as to avoid this.) The saw can even be used as a snare itself, by passing the smaller ring at one end through the larger ring at the other to form a running noose.

## Navigation & Signalling

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**Air Marker Panels** Air marker panels can be made from any lightweight fluorescent material although orange is the standard recognizable colour. It is advisable to carry a sheet two metres (at least six feet) square, which can either be folded into different shapes (see under Signalling, page 149), or split into three 30cm (12in) wide strips. Do not split the sheet until there is an absolute need to do so – e.g. you have spotted a search aircraft – as the whole sheet is useful for other functions such as a makeshift shelter.

**Compass** A compass provides the means to establish direction and position, the two vital elements if you are forced to travel or need to give your co-ordinates during rescue. A small button compass is designed primarily as an emergency escape and evasion tool for the military, its use being restricted to direction-finding only.

The liquid-filled 'Silva'-type compass is more commonly associated with navigation by map, and together these offer the means of precise position-finding.



*'Silva'- type compass.*

**Flares & Smoke** A wide variety of signal flares and smoke canisters are available on the market. If you decide to add them to your survival kit you would do best to choose a standard flare pack containing a launch pistol and nine different coloured flares. Although it is a good idea to know which colour is traditionally associated with which intended signal, firing any colour will attract attention. When firing the flares take great care that the launch pistol is aimed skywards. In a life-threatening emergency flares can be used to start a fire.

**Global Positioning System (GPS)** GPS is relatively new to the survival market, but its popularity is growing. This state-of-the-art instrument is a navigational aid capable of plotting your precise position on the surface of the Earth. This is obviously of particular value in the Arctic, where a normal compass can become erratic. However, GPS has certain drawbacks in most pure survival situations; away from any other power source it relies on batteries, making its usefulness short-lived.



*The Global Positioning system (GPS) utilizing the network of navigation satellite in Earth orbit is of limited value in most survival situations; although it may allow initial positioning, in the absence of a power source its batteries do not last long.*

**Heliograph** Modern heliographs are small, light, and easy to use. They operate by reflecting the sun's rays precisely towards aircraft or other rescuers. On a clear, sunny day their reflection can be spotted up to 30 kilometres (18.5 miles) away. It is a good idea to familiarize yourself with the operating instructions prior to any rescue attempt.

**Radar-Reflective Balloon** Radar-reflective balloons are not new to survival, but in recent years they have improved dramatically. The principle is to inflate a balloon made from a special foil which can be detected by search-and-rescue radar from ranges of up to 38 kilometres (24 miles). Some are tethered to a length of line and flown like a kite, while others are inflated by gas; the latter will stay aloft for up to five days even in strong winds.

**Strobe** Designed for military rescue situations, the strobe is a bright blue light which flashes with great intensity and can be seen many miles away. These are perfect for location at night or in the darkness of the Arctic winter. Although the strobe is waterproof, in cold conditions it

should be kept close to the body to preserve the battery strength. The strobe should only be operated when the sound of a rescue aircraft is positively identified.

**Survival Radio** Although there are a vast number of survival radios on the market, some are limited in range and capabilities. If your work or pastimes often take you into isolated areas then you are well advised to carry a radio telephone which is capable of world-wide communications. Many surviving parties have been successfully rescued by telephoning the emergency services directly. Mobile phones will only work where there is a network, but the introduction of global satellite phones will improve things.



**Watch** Although not a direct part of your survival kit, a watch can be an excellent navigational aid – providing that it is of the analogue type, i.e. not digital.

**Whistle** Modern survival whistles are compact and can have a range of up to 1000 metres (5/8mile) on a clear day. although this is of lesser benefit in the jungle where sound does not carry well.

## Food

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**Emergency Food** Food is plentiful in the jungle and is not an immediate requirement in a survival situation, as the body can do without solids for several weeks before it starts to deteriorate. Any food pack should be kept to the minimum: two fuel tablets, two tea or coffee sachets, sugar, etc.

Meat stock cubes contain salt and flavouring, making excellent hot drinks. They can add flavour to plants and food from the wild.



*All survival packs should contain basic fishing kit, which has a high usefulness-for-weight value.*

**Fishing Equipment** A survival fishing kit should consist of the following basic components: five hooks (size 14 or 16), approximately 30m (100ft) of line, 10 iron or brass weights, and swivels. A float can be made from a cork. If there is room, include a luminous lure, and small fishing net.

**Snares** Purpose-manufactured snares work best, but if you cannot get these then carry at least 5 metres (16.5 feet) of brass wire to make snares. Next to a rifle, snares are perhaps the most effective way of catching game. Brass wire can also be used for fishing traces, and when building shelters or improvised packs.

## Knife

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In the jungle a large knife or machete is essential, but if you have crash landed unprepared in a jungle area you must make do with whatever is to hand.

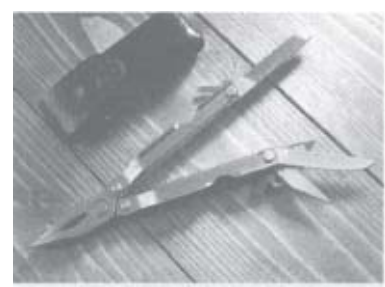
Along with your survival kit you should select a good knife. For many reasons this may be the most important item you carry.

**Pocket knives** range from the simplest single-bladed type to multi-bladed, multi-function knives. Whichever knife you choose, always carry it on your person. Single-bladed knives offer little more than a simple cutting tool. You will be better off with a multifunction, 'Swiss Army' type. This provides the survivor with a versatile range of tools, including scissors, saw and screwdriver.

**Survival knives** tend to be much larger than pocket knives and are usually carried in their own sheath. Most of the better knives have a sharpening stone in a pocket on the sheath, and many have a hollow handle or a pouch on the sheath in which a basic survival kit can be carried, although the nature and number of items in the kit will depend on the price.



*A multi-purpose 'Swiss Army' type knife.*



*The next step from the 'Swiss Army' knife is the multi-function tool such as the Leatherman or Gerber, whose increased size and length gives extra leverage and weight to its applications.*

## Keeping a Sharp Edge

**The knife is a vital survival aid; do not misuse it by throwing it into the ground or at trees. Keep it clean, and know where it is at all times.**

A knife with a blunt edge is nothing more than a useless piece of steel. Granite or dark, hard sandstone are best for sharpening a blade. Find a flat piece the size of an open palm,- rubbing two rocks together will produce an even surface. Wet the stone surface and work the blade edge over it with a smooth action, always working the blade away from you across the stone. At first use a clockwise circular motion over the surface, then an anticlockwise motion. Learning to sharpen a blade is a skill that can only be achieved through practice.

Grinding the blade at the correct angle will produce a long-lasting cutting edge. If your intended travel will involve a lot of cutting then you will be better off carrying a sharpening stone or steel with you.



**Multi-functional tools** serve endless applications, from shelter building to making improvised clothing and travel gear. In a survival situation the multi-function tool is likely to prove more productive than an ordinary knife. The better-known names such as Leatherman and Gerber are well made and should last a lifetime. Most types include pliers, wire cutters, cutting blades, saw, screwdrivers and files. Because of its importance the tool should be attached to the boot



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