



# WET & WILD



## How to reach the other bank with Plas y Brenin

**River crossings are not normally sought after experiences, but sometimes it becomes necessary to mix it up with the wet stuff. We're generally lucky in the UK, being well supplied by a network of bridges but in remote areas it can be difficult to avoid crossings. So what can you do?**

### Plan to avoid

Avoidance is always better than the cure and when heading to remote areas optimise your plans to keep the chance of river crossings to a minimum. Check the forecast – is it going to rain, and if so what's the likely duration and intensity of the rainfall? This is closely related to current water levels and ground condition; waterlogged ground will be unable to soak up any additional water, so further rainfall will run off into a myriad of small streams turning previously benign rivers into raging torrents. The gradient of the terrain will exacerbate this, as anyone who's pitched a tent in a dry hollow and woken up in a lake will testify. Hard packed ground (baked, frozen, or continuous rock) will also cause immediate run off. But perhaps the most dramatic changes are caused by melt water. In the Alps and further afield spring melt waters can produce enormously destructive torrents, and this can also occur in the UK, especially if combined with heavy rainfall and semi-frozen ground. Don't overlook human intervention either; if there's a hydro scheme in the area the releases will cause severe fluctuations in river level, so watch out for any signs or local warnings.

## Deciding whether to cross

But if the best laid plans fall apart and you come face to face with a river, don't dash in, first consider your options:

- Change the route plan – do you really have to cross it?
- Find a bridge! Consider even if it's a long walk
- Wait. Mountain streams can both rise and fall quickly. But make a note of present water levels and remember that there can be a time lag of several hours between rainfall and rivers rising.
- Look at the map. Check for braiding where the river divides into many shallow channels, narrow tributaries, easier gradients, lake inflows or outflows.

Think about these alternatives and consider if they are actually feasible. A long walk upstream at the end of day may be just too tiring.

## Hazards

Remember that crossing can be far from simple. When weighing it up in your head think about the hazards:

- Cold water - You lose body heat 25-30 times faster in water than in air.
- The riverbed is likely to be slippery and awkward increasing the chances of a fall and being swept away. If the water is cloudy you won't be able to see the bottom.
- Downstream obstacles; fallen trees, overhanging branches, boulder chokes, waterfalls - all manner of things to fall over or get trapped against.
- Water flow – it can be alarmingly fast and difficult to get out of, particularly near the banks where the current tends to push swimmers back in to the central flow.
- Mountaineering equipment is not designed with swift water in mind, and will severely impede swimming.

If things go wrong with a crossing there can be many problems to deal with, such as a split party with some members carried downstream, cold, wet, immersion, hypothermia, falling morale, loss of equipment and injury.

## Site Assessment

The bottom line is that it's important to choose a site with a safe run out should things go wrong and someone ends up swimming. The site should be:

- **Safe** - identify the downstream hazards.
- **Shallow** - anything above mid thigh can push you over, unless it is very slow moving.
- **Narrow** - means that you are at risk for less time, but beware it could be deep and fast
- **Slow** - reduces the chances of being knocked over and washed away. A cubic metre of water weighs a tonne!
- **Escapable** - make sure its possible to get out on the other side before committing yourself.

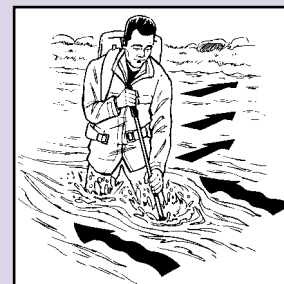
## Preparation

Once a decision has been made to cross, make sure everyone knows the score. If the method of crossing is complex, do a dry run. Rucksack straps should be loosened, chest and hip belts undone and tucked away. Ideally only one shoulder strap should be used. If someone does swim the rucksack is likely to float for a while, particularly if things are packed in poly bags. It will then become a useful flotation aid. Boots should usually be worn with socks so that they fit well, and wet socks can be rung out later. Loose trousers and over-trousers will hinder movement and should be removed, although gaiters can protect the lower leg. Ski poles are very useful, acting as stabilisers, but make sure they are secure and remove the baskets to reduce snagging.

## CROSSING TECHNIQUES

### Single Person

A single person can cross a stream on their own, this has the advantage that only one person is put at risk at any one time. However little support can be gained. Ski poles will help, you should face upstream, whilst leaning on the pole. Move one point at a time, and try to keep one foot behind the other moving along side ways like a crab. You may find it easier if you have your back slightly towards the bank to which you wish to go, giving a 'ferry glide' effect.



### Group Methods

Most people will opt to cross as a group. These group methods require an appointed leader to co-ordinate movement. In a formal leadership situation it may be appropriate for the leader to accompany each group, although this does have implications for the leaders return journey. A dry run ensures that everyone knows what they are expected to do.

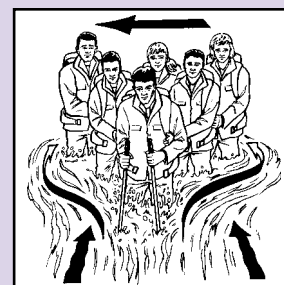
### Line Astern

The key to wading is to present as small as surface area to the current as possible. In this method the front person is supported by the people behind, who push downwards as well as supporting. This lessens the chances of the leaders feet being washed from under them. Other members are protected by the eddy created by the leader.



### The Group Wedge

This technique requires the biggest and the strongest people at the apex of the wedge, where they make a very effective eddy behind them. The rest of the group are protected from the main force of the current and can cross in relative ease. At least three people are needed.



### People Pivot

This strategy works well in bouldery rivers. Make a tripod facing each other, as one person gains a good footing they make a secure anchor whilst the other team members rotate around them until a secure position can be found by another person. Rotating around them in turn. A group member is vulnerable to the current of the river when they are facing downstream.



(LEFT TOP) Jaj Kang river crossing in Zanskar. Credit: Seb Mankelov. (LEFT BOTTOM) Al Powell crossing a feisty stream in the Indian Garhwhal Himalaya, with Pete Benson thinking about attempting to help him out. Credit: Ian Parnell. Note in both cases the facing upstream and use of ski poles.



## Roped Crossings

Only use a rope as a last resort since it provides a very effective way of drowning someone if used inappropriately. Climbing rope will sink and be affected by currents, so if the rope becomes slack the risk of entanglement is high. To reduce the risk avoid tying off the rope to an anchor, tying into the rope, or allowing it to drop into the water. Traditionally the Open Loop method was used to safeguard crossings, but this is rather complicated. A better method is the V-Lower, based on a white water rescue technique and taught and used in Scotland for a number of years with considerable success. The V-Lower is easy to explain to novices, has no knots to snag, and offers good support. It can be broken down into five stages (see right).

## Swimming

If someone ends up swimming it is vital that they keep their feet up and swim with their feet downstream, on their backs. This is termed defensive swimming. The aim is to minimise the risk of trapping a foot on the riverbed with fatal consequences - anybody who is knocked over with a trapped foot will find it very difficult or even impossible to lift their head out of the water. Try to swim passively when in tricky water then use a positive approach when swimming to the bank in an eddy or slow moving section.

## Find out more

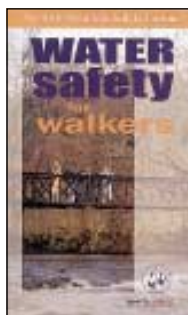
**Two new videos about the dangers of mountain streams and rivers are now available: Water Hazards in the Mountains and Water Safety for Walkers.**

The videos have been produced to raise awareness of the dangers of mountain streams and rivers and the information and skills provided include crossing in easy summer conditions, changes that occur in water levels after rain or snowmelt, pre-planning (studying maps and weather forecasts), choosing a safe place to cross while on the hill and when not to attempt crossing. Launched by the Duke of York, the videos feature volunteers from the mountaineering fraternity and a twenty minute narration by Cameron McNeish.



### Water Hazards in the Mountains

*This contains recognised methods of crossing rivers and fast flowing streams as recommended by the Mountain Training Boards and aims to help with the training of those on Mountain Leader courses as well as mountaineers and clubs operating in remote or serious terrain.*



### Water Safety for Walkers

*This video aims to help with the training of Duke of Edinburgh's expedition groups, youth groups on hill walks, school pupils undertaking adventure activities and walking group leaders in lower hill country.*

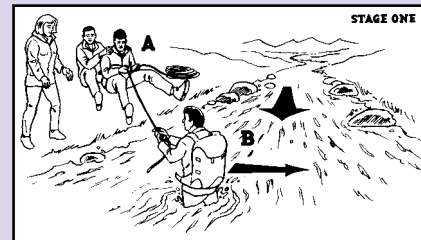
The videos cost £4.95 each (including p&p) and are available from The Mountaineering Council of Scotland, The Old

Granary, West Mill Street, Perth, PH1 5QP. Tel: 01738 638227, Web: [www.mountaineering-scotland.org.uk](http://www.mountaineering-scotland.org.uk)

## THE V-LOWER

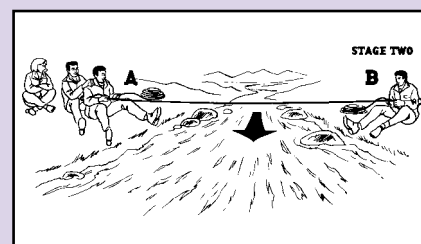
### Stage 1

**A** offers support to **B** during crossing using a waist belay with an additional person securing the Belayer. **A** and **B** are the first and last to cross and should therefore be the biggest, strongest and most competent. **B** holds the rope, which has a knot in the end to increase grip. An overhand knot is ideal but the loop formed should be small so that a hand cannot pass through it and risk entanglement.



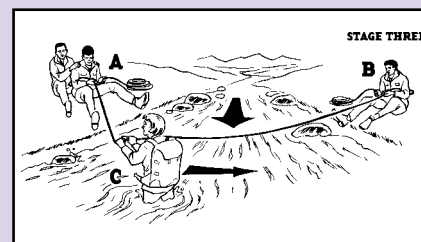
### Stage 2

**A** and **B** position themselves opposite each other and equalise the rope. It is recommended that **B** untie the knot from the end of the rope. **A** could tie a small, simple knot in the middle of the rope.



### Stage 3

Should **C** slip then **A** pays out more rope and **B** allows **C** to swing in to the bank. **B** should be aware that too much tension may lead to **C** being planed underwater. Gently paying out the rope as **C** swings in should reduce this from happening. The person in the water (**C**) can hold onto the rope in two ways:

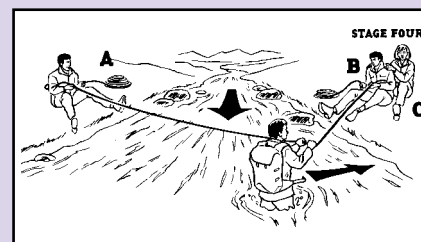


1) hold onto the downstream side. The greatest support will then shift from one bank to the other as **C** crosses. If in difficulty **C** can simply let go and swim for it if necessary. Again a small knot may help with grip.

2) Get inside the rope i.e. on the upstream side and have the rope running behind you. This offers more support and makes it slightly easier to swing someone in if they lose their footing. However it increases the risk of entanglement, as it may be difficult to duck under the loop, particularly when wearing a rucksack.

### Stage 4

As the party crosses, individuals should provide back-ups to the belayers and offer assistance to the person in the water as they get out onto the bank. They should also be ready to help if things go wrong.



### Stage 5

**A** is the last person and can reverse step one.