

# Whitewater Safety and Rescue Training Course Notes

## Course philosophy

The WWS&R training course is designed for all paddlers operating in a moderate to advanced white water environment in either kayak or canoe. In addition, the training is required for those seeking their 4 star leader (white water or open canoe) award.

The objective is to provide the underpinning knowledge and teach simple and safe practical skills that can be applied appropriately. By its nature the course is very 'hands on' and should not usually contain much classroom work. Any theory should be short riverside sessions, the duration of which will be naturally limited.

## Course aims

- To improve individuals awareness of safety skills in the river environment.
- To teach personal survival skills.
- To teach throwline rescue techniques.
- To understand the need for structure in an emergency situation
- To outline basic rescue protocols that prioritise the safety of the individual above all others.
- To introduce & develop the 'clean rope' principle.

## Course director requirements

Appointment as Course Director.

- Hold level 3 coach (old scheme or UKCC) white water/open canoe with 5 star.
- Attend 2-day training course (Delivered by Home Nation Trainer). An individual action plan will be agreed at the end of training. For those wishing to deliver training in a craft for which they do not hold a 5 star, the action plan will include an extra days training in that craft. In addition, the action plan will contain the requirement to prepare a written risk assessment, which will be provided to the national trainer. This risk assessment should form the basis of the risk disclosure that training directors will provide for their students. A British Canoeing template is available if the training director wishes to use it.
- Appointed as course director by Home Nation Trainer on fulfillment of action plan.

Remaining current as a course director

In order to ensure that course directors remain current they are required to deliver a minimum of 1 course per year and fulfil the updating requirement every 3 years.

People falling outside these requirements can apply to their Home Nation Coaching Officer for exclusion.

There are two avenues for updating.

1. Attend a 1-day update-training event delivered by a Home Nation Trainer.
2. Deliver a WWS&R course alongside a Home Nation Trainer.

Directors who have not delivered a course within a year will be required to observe the delivery of a course by a current director in order to revalidate.

Directors who are unable to do the above within 2 years will be considered as lapsed and will be required to attend the 2-day course directors training course in order to revalidate.

### **Prerequisites**

Due to the paddling environment and the boat control required the candidate should be:

- Confident in their ability to paddle on grade 2 water.
- Be confident swimming in normal canoe clothing suitable for a moving water environment.
- Be a minimum of 16 years of age

A first aid certificate is not a pre-requisite; however the holding of a first aid certificate is strongly recommended for all paddlers.

### **Equipment**

Techniques and concepts taught throughout the British Canoeing white water safety and rescue course call for the minimum of technical equipment.

The following equipment should be available for students to use on the training course.

- A range of throwlines.
- River Knife – sharp, safely stowed but easily accessible single-handed.
- Karabiners – Locking HMS pear shaped anodised alloy karabiners.
- An un-knotted 3 – 5m length of climbers tape webbing.
- Buoyancy aid with quick release chest harness
- Whistle

In addition, for Open Canoeists:

- Rescue/pruning saw
- Pulleys

### **Venue and duration**

The philosophy of the course is to provide realistic training on 'natural sites' of grade 2-3 white water. In line with this philosophy at least 50% of the course must be delivered on natural riverbed. The training will take place over two days and include a minimum of 10 hours teaching time.

### **Provider to student ratio**

Minimum 1:4 Maximum 1:6

### **Risk assessment and disclosure**

By its very nature, training in white water safety and rescue will involve students undertaking activities that they normally try and avoid in their normal paddling e.g swimming in white water. It is

essential that white water safety and rescue trainers are aware of the inherent risks involved and take steps to minimise any risks that students are exposed to.

Two key steps to this are site selection and risk assessment. Both of these need to be considered both in a planning stage but also dynamically during course delivery.

Selection of a suitable training site is essential. Issues such as water quality, depth of water for swimming, reliability of water levels and in water hazards all need to be considered. Once a site is identified it needs to be risk assessed. Whilst it may not be legal requirement to write down this risk assessment (depending upon size of training organisation) it is certainly good practice to record this risk assessment and to review it periodically.

When actually delivering courses, trainers need to undertake a continual dynamic risk assessment to ensure that the sites being used for particular sessions are suitable and do not present unacceptable levels of risk. If a site is well known and regularly used this may be achieved by visual inspection but it might also need such measures as the instructor checking the site via pre-swimming the section or shallow water inspection.

It must be remembered that even with good site selection and risk assessment there will always be inherent risk to this type of training. Use of qualified and experienced trainers, delivering agreed syllabus content to well briefed and equipped students within clearly defined training areas and group sizes are all key control measures to ensuring any residual risk is kept to an acceptable level.

## Programme Core Principles

The following core principles are good practice guidance and should be considered in this light as opposed to fixed rules.

### C.L.A.P:

#### Communication

- Signals should be agreed in advance.
- KISS (**Keep It Short and Simple**)

#### Line of Sight

- Of each other and where the river is going. Always endeavour to have your fellow paddlers in your line of sight.
- Ideally every paddler should have two attainable eddies between themselves and the river going out of sight.

#### Avoidance is better than cure.

- Create an atmosphere of mutual support within your group. If you want to walk, walk!
- Clean Rope
- Self, team, victim, equipment

- S-R-T-R-G

### Position of Maximum Usefulness

When protecting a rapid, paddlers should position themselves so as to cover the highest risk. This usually means covering the problems that are most likely to occur, rather than the most dangerous hazard.

The C.L.A.P. principles form the basis of a dynamic risk assessment process. This process of risk identification and appropriate controlling action should to be supported throughout the course.

### Clean rope and equipment principles

1. Throwlines: Remove any loops or knots from the end of you throwline. The loop in the 'bag end' needs to be small enough to prevent a hand or foot passing through it easily. Good flotation within the bag reduces the risk of snagging.
2. Systems: Favour hitches or wraps over knots in rope systems, hitches fall easily from the rope or tape whilst knots stay in position and can increase the risk of snagging. The exception is when joining ropes/tapes, use an overhand knot leaving minimum 6-inch tails (if the knot will experience rescue loads then another overhand knot should be tied in the 6-inch tails). This knot flattens well allowing it to fit through HMS karabiners and roll over rocks.
3. Ropes should be managed in a way that allows them to run freely. Avoid letting them swirl in eddies or tangle in undergrowth.

### Equipment principles

The clean principles equally apply to all paddling equipment; be aware of snagging possibilities from:

- Buoyancy aids
- Clothing
- Spray decks
- Inside and outside of boats
- If you carry a rope, carry a knife.

A 3-5m length of climbers tape is used to compliment many systems. Knots can be added and then consciously removed to create a closed loop. An over hand knot with long tails is sufficient to achieve this (if the knot will experience rescue loads then another overhand knot should be tied in the 6-inch tails).

Karabiners are used in many systems. Bent gate HMS, anodised snap links are not appropriate for the white water environment because they easily unclip and become accidentally clipped. Therefore screwgate or twistlock HMS Karabiners should be used.

The course content will cover the use of the following equipment:

- Throwlines – Floating high visibility rope, length between 15 & 25m, minimum diameter 8mm.
- River Knife – sharp, safely stowed but easily accessible single-handed.

- 2 x Karabiners – Locking HMS pear shaped anodised alloy karabiners.
- An un-knotted 3 – 5m length of climbers tape.
- Buoyancy aid with quick release chest harness
- Whistle

In addition, for open canoeists

- A rescue/pruning saw
- Pulleys

### Prioritising principles

Self - Team - Victim - Equipment

This principle for prioritisation in the rescue situation is useful in helping rescuers to remember that their first priority is to themselves, then to their team, then the victim and lastly to equipment.

Shout-Reach-Throw-Row-Go (S-R-T-R-G)



This principle encourages rescuers to consider the risk to themselves when deciding on what strategy to use when undertaking a rescue.

Options covered within this course:

- Shout instructions to encourage self rescue
- Paddle reach
- Throwline rescues
- Boat based rescues
- Live bait rescue

### Course Content

The following programme outline is designed to highlight specific sessions that need to be incorporated in the British Canoeing course. The delivery, timing and order of each session will differ to suit clients and conditions. It is important that the chosen progressions are logical and safe.

### Safe Paddling

This should be run as a group paddling session not a group leadership session.

- Introduce and ensure course participants understand long-term watersports health issues such as:
  - Leptospirosis
  - E-coli
  - Swimmers ear

- Eye damage due to reflected light
- Skin cancer
- Lower back damage due to posture and muscle development caused by activity and poor manual handling, especially safe lifting and carrying techniques.
- Introduce issues for outfitting of boats for white-water, such as;  
Kayak:
  - Suitable foot rest
  - Seat positioned for equal balance
  - Hip pads, back rest, thigh grips and back rest positioned and adjusted for effective connection with kayak, but also so as not to hinder exiting.
  - Correctly fitted and inflated air bags.
  - Throwline located in easily available position, but not hindering easy exit (neck of bag secure so rope cannot fall out of bag and become snag hazard).
  - Swim tail attached at stern grab handle.
  - Internal and external of kayak should be clean (as free of possible snags as possible).Open Canoe:
  - All outfitting well secured
  - End loops fitted
  - Air bags/blocks fitted
  - Secured throwline within reach of paddler
  - Swim tail attached
  - Appropriate swim line fitted for use in self rescue
- Introduce, and help people become proficient in, safe river running strategies based around the principles of C-L-A-P and introduce a repertoire of group river running approaches with a group of peers; such as:
  - Group run all together in their own time and their own route.
  - Group paddling together following a nominated leader.
  - Run in smaller groups (2 or 3) other group members not protecting rapid
  - Eddy hopping or leap frog approach
  - Run as individual or pair with other group members setting up pre- arranged protection
  - Portage
- Introduce a working model for signals, which may include hand, paddle or whistle signals.

## Recovery of a Swimmer

This section is presented here as a progression from low risk to high risk options for the recovery of a swimmer following the S.R.T.R.G. principle. In practice it may not be possible to deliver these sessions in this order, but this progression should be highlighted to the course participants.

It is recommended that everyone paddling in a white water environment attend an appropriate first aid course. While delivering this training course training directors should highlight the issues around drowning i.e.

- Current CPR protocols for drowning

- Anyone suspected of having aspirated water should attend hospital for monitoring.

### **Self-rescue (Swimming without equipment)**

The essence of self-rescue in white water is swimming. Swimming in moving water has its own unique challenges and requirements. For anyone that intends spending time in a moving water environment it is a skill worth practicing.

Content:

- Introduce moving water hydrology identifying wave features, eddies, eddy lines, flow direction and dealing with bends.
- Highlight the importance of clean kit and avoiding unnecessary snagging hazards (for swimming practice spray decks should be removed).
- Facilitate the learning of the defensive swimming position. Swimming on your back, feet down stream and kept high (in order to reduce the possibility of foot entrapment). Use this method to ferry glide and position for a short aggressive swim to the bank.
- Facilitate the learning of aggressive swimming. Head up front crawl swimming in direction you wish to travel.
- Facilitate the learning of transferring from defensive to aggressive swimming.
- Hand across the chest leading the roll from your back to your front.
- Facilitate the learning of swimming across eddy lines. Speed, and angle of attack similar to that used to cross eddy lines in a boat should be applied. Where there is difficulty crossing an eddy line with these methods, then an eddy line roll can be used. An eddy line roll can be an effective technique when crossing powerful eddy lines where the speed of the river or shallow water prevents the swimmer from being able to attack the eddy line in a front crawl position. From either the defensive or aggressive swimming position the swimmer sets in towards the eddy line. As the swimmer hits the eddy line they reach over the eddy line locking their hand into the eddy and complete a full body barrel roll while kicking hard with their legs.
- Facilitate the learning of fending of a fixed object (usually a rock). Defensive swimming position, absorb impact by bending legs then stretch legs and push away and to the side of the obstruction.
- Facilitate the learning of how to deal with a strainer. Strainers are best avoided when swimming, but if it is unavoidable, aggressively swim towards strainer swimming faster than the speed of the current. Assertively pull yourself over the obstruction with your arms while keeping feet on surface of water. This practice can be facilitated by holding a log or pole in a flow of current. The pole should be releasable. Allowing students to experience drifting onto the pole in defensive swimming position is valuable, but beware of the risk of shoulder injury as they lift their arm to release.
- Facilitate learning in strategies for swimming in a stopper (star position to stabilise, swimming along the stopper looking for weakness, body surfing and swimming upstream into green water attempting to be taken by the downward flowing water below the towback).

### Self-rescue (with swim line)

This, in theory, is the domain of the open canoeist, but it is a concept that kayakers may find valuable to understand.

Facilitate the learning of the use of a pre-fixed line attached to the bow or stern of a canoe. Following a capsize, the swimmer should right the boat, this will make it easier to find the line and will reduce snagging as the canoe is lined in. The swimmer swims for the bank taking the end of the swim line with them as they go. On reaching the beach they pendulum the boat into the eddy. It should be noted to students that they will experience significant loads at this time. They should avoid rapping the line around their hands.

### Shouting rescue

Introduce the concept of shouting and encouraging a swimmer to self-rescue. A rescuer either in a boat or on the bank can often see more than a swimmer in the water, encouraging them to carry out certain actions they may not be aware of.

A shouting rescue can be used where the emotional state of the swimmer means it is not safe for a rescuer to approach and offer assistance (panicking causing aggression or panicking causing passivity). Shouting instructions can encourage these swimmers to be more co-operative.

### Reaching rescue

Equipment:

- Paddle/pole
- Throwline used as a hand rail
- Tape

Content:

Explain benefits of a reaching rescue i.e. for short distance rescues the reach is placed accurately at the swimmer and can be held there until the swimmer arrives making it easier to pick up than a throwline and the pendulum can be much shorter and quicker.

Explain the limitation of the rescue is that the load comes on very quickly. Highlight the importance of shouting and getting eye contact with the swimmer.

- Facilitate the learning of the use of a paddle or a branch as a reaching rescue and where it can be used (assisting a self-rescuing swimmer the last few feet to the bank or pulling a swimmer out of the current and into an eddy)
- Introduce the use of a throwline as a handrail while using a reaching rescue. Place the handrail to provide support in the anticipated direction of pull.
- Introduce the idea of facing in the direction of the expected load (possibly downstream).



## Throwline based rescue

Content:

- Introduce different types of bags and line including colour, diameter and length.
- Explain clean principles as they apply to throw lines i.e. the rope should float, there should be no knot in the rope end, the loop at the bag should not be big enough to put a hand through and the bag should float.
- Explain issues about care and maintenance i.e. throwline should be stored dry and clean and away from exposure to UV light and ensuring they are not contaminated.
- Introduce the concept of using a throwline to recover a swimmer to the bank.
- Introduce the principle of how the flow of water will pendulum the swimmer to the shore and how this might be limited by eddy lines.
- Facilitate learning in throwing a throwline including under arm, round house, over arm (bent and straight arm).
- Facilitate learning in re-throws i.e. split coil.
- Facilitate learning in how to catch a throwline as a swimmer i.e. catch the line where it falls, roll into defensive swimming position and hold rope in front of chest.
- Facilitate learning in dynamic stance (facing anticipated direction of pull, arms and legs slightly bent, legs shoulder width apart and one leg in front of the other) and method for holding rope (hands held one in front of the other with fingers and thumbs pointing up, rope laid across gap between thumb and forefinger, grip the rope and twist hands forward forming a 'Z' shape in rope).

Highlight the importance of shouting at and getting eye contact with the swimmer before throwing. Encourage accuracy before increasing distance and explain throw line should be thrown at swimmer not up or down stream.

## Boat-based swimmer rescues (Kayak)

Facilitate learning in how to recover a swimmer and equipment:

- Discuss how to decide whether or not it is safe to pick up swimmer due to difficulty of water or emotional state of swimmer
- If picking up swimmer, approach from up stream (view of future water and easier to match speed of boat with that of swimmer). If there is an immediate eddy that is obvious pass downstream of swimmer and turn towards the eddy as the swimmer is picked up. Ferry glide into eddy to avoid the shock loads experienced when breaking out with a swimmer holding on (this can result in rescuer being pulled out of eddy or the rescuer and swimmer parting company). If there is no immediate eddy pick up swimmer and paddle with the swimmer positioned on the up stream end of boat. When an attainable eddy is spotted turn and ferry glide into eddy.
- Short/low volume boats should encourage swimmer to use swim tail and not climb on back deck. Higher volume boats can allow swimmer to climb up on back deck, but stay low.

- Explain the swimmers role in the rescue. The swimmer should see the rescuer as assistance and still be pro-active in their own rescue by swimming hard and, where possible, looking after their kit.
- Discuss tactics for when it is not safe to pick up swimmer. If the difficulty of the water dictates it is too hazardous, accompany swimmer giving instructions/warnings about hazards, provide moral support until safe to pick up swimmer or they have reached the bank. If emotional state of swimmer makes it too hazardous, accompany swimmer from a safe distance trying to calm them down until it is safe to pick them up or they have reached the bank.

Discuss the use and design of swim tails:

- Long tails on short/low volume boats so swimmers can be towed without climbing on back deck (reduces clean-ness of the boat)
- Use of floating rope as tail (reduce snagging possibilities and easier for swimmer to catch)
- Use of tape as tail (easier to hold under load)
- Ensure tail does not unreasonably contradict clean principles

### **Boat-based swimmer rescues (Canoe)**

A swimmer from an Open Canoe is more likely to self rescue themselves and their equipment than is the equivalent kayaker by the use of swim lines, but on occasion it may be necessary to use a boat based rescue for a swimmer from an open canoe.

Content:

- Discuss the use and design of swim tails.
- Floating line reaching the water is easier for swimmer to reach and reduces risk of capsize. The swim tail should be of a length to just reach the water when the canoe is empty – this will virtually eliminate snagging potential.
- Using end loops is harder for swimmer to catch hold of and has high risk of capsizing rescuer

Facilitate learning in how to recover a swimmer and equipment:

- Decide whether or not it is safe to recover swimmer due to difficulty of water or emotional state of swimmer
- If towing swimmer, approach from up stream (view of future water and easier to match speed of boat with that of swimmer). Decide if you are bringing swimmer inside boat or towing to bank. If towing and there is an immediate eddy that is obvious pick up the swimmer and cross the current in the direction of the eddy reducing the momentum of the canoe as the eddy is approached to avoid the shock loads experienced when breaking out with a swimmer holding on (this can result in rescuer being pulled out of eddy or the rescuer and swimmer parting company). Note that a swimmer will radically affect the trim – i.e. the end of the canoe the swimmer is holding will swing downstream unless the canoe has sufficient momentum to counteract this, in reality on larger rivers this means it is often easier to transport the swimmer by use of a reverse ferry glide.

- Explain the swimmers role in the rescue. The swimmer should see the rescuer as assistance and still be pro-active in their own rescue by swimming hard and, where possible, looking after their kit.
- Note add comment about putting swimmer in boat
- Discuss tactics for when it is not safe to recover swimmer. If the difficulty of the water dictates it is too hazardous, accompany swimmer giving instructions/warnings about hazards, provide moral support until safe to pick up swimmer or they have reached the bank. If emotional state of swimmer makes it too hazardous, accompany swimmer from a safe distance trying to calm them down until it is safe to pick them up or they have reached the bank.

### Live Bait Rescues

Live bait rescues as described here are used to recover a swimmer who is unable to contribute to their own recovery for a number of reasons.

Equipment:

- Buoyancy aid with releasable chest harness
- Throwline
- 3 – 5 metres length of climbers tape
- Lockable HMS pear shape karabiners

Content:

- Introduce the Chest Harness and its uses:
  - Securing a swimmer to a throwline allowing them to enter the current while being controlled from the bank.
  - Secure a belayer on the bank preventing them being pulled out of position (this allows them to hold greater loads than a dynamic stance).
- Compare and contrast different designs, pay particular attention to:
  - Arrangement of webbing in relation to the chest harness
  - Arrangement of quick release mechanisms
  - The metal back plate. Explain the purpose (to increase the load that the plastic quick release buckle is able to sustain before failing). Guidance on how to use this needs to be obtained from the individual manufacturers
  - The length of the chest harness tape when correctly fitted (approx 2 hands width only should have passed through the buckle, too much tape may tangle when quick releasing) Cutting should be carried out with a hot knife or electric rope cutter. The cut should be diagonal and the edges smoothed off to ensure they do not jam in operation.
  - Attachment points for chest harness and the possible ways in which this can be carried out incorrectly (karabiner being attached to buoyancy aid webbing by mistake, not clipped in the designated position).

- Explain the method for checking the harness has not been incorrectly clipped i.e. pulling on the throwline/cows tail connected to the attachment point with the release buckle partially open and ensuring that the chest harness runs through the buckle.
- Explain how the quick release system works
- Explain that when entering the water on a chest harness the bag end of the throwline should be attached (if the line is let go then the trailing end is clean)
- Explain that locking gate karabiners should be used in all situations
- Discuss the pros and cons of permanently attached cows tails:
  - Pros – easy to attach to a system yourself and you are surer the system is attached correctly to the harness.
  - Cons – When not in use it reduces the clean-ness of paddlers equipment (the end of a cows tail should be connected to an attachment that will fail under load if the cows tail snags) – when attaching a throwline for a live bait rescue the bag will be floating a short distance behind the rescuer instead of tucked close behind them reducing the clean-ness of the system.
- Facilitate an opportunity for all students to enter the current and be held on their chest harness in the flow and release their harness. This should be delivered using a releasable system in case the students fails to release their own harness.
- Facilitate learning in entering the water to recover a swimmer. Initially entry to the water should be wading and progressing to a swimming approach.
- Introduce that the belayer should sit and use a waist belay
- Introduce using anchors for the belayer (suitable trees, threads & spikes) ensuring they understand what will happen when the expected direction of pull is applied.

## Knots

As part of the above session a range of knots will need to be taught. The knots taught should be restricted to:

- Clove hitch
- Full strength tie off (no knot)
- Overhand knot (re-threaded, tape knot or on the bight)

Note: When tying off a length of tape to make a loop, for use under rescue loads, 2 overhand knots or a tape knot should be used.

Remember as part of the Clean Rope principles to highlight that hitches and wraps are preferable to knots when possible.

## Entrapment Rescues

Paddlers can become trapped in a number of situations. While still in their boat they can be vertically pinned, broached, caught in a strainer, retained or re-circulated in a stopper. A swimmer can be snagged by their kit, caught in a strainer, re-circulated in a stopper, foot entrapped (face up or face down, that is, still with their head above the surface or washed forward and unable to keep their head above the surface. If the water is deep enough a face up will probably become face down after a short time). Each of these possibilities should be discussed and understood by the students.

### Content

It should be explained that these are quite rare events, but the consequences are serious and immediate.

Explain that locating, stabilising and extricating are the priorities when dealing with an entrapment.

### Locate

This may seem straight forward, but with a head down foot entrapment in particular, but also with pinned or broached kayaks, finding a trapped paddler can be very difficult. Explain what to look for (colour below the surface) and where to look (sites that would cause an entrapment)

### Stabilise

- Strong physical approach. Enter the water (approaching from above casualty creates an eddy in which to pull casualty, but is a higher risk approach for the rescuer) using wading techniques (described below) and provide support.
- Facilitate learning in the use of a stabilising line and how to deploy it to offer support to a trapped paddler.
  - With access to both banks – a throwline is passed from one bank to the other down stream of the trapped paddler (above if it is an upstream broach). It is then walked up (down) the river until it reaches the trapped paddler; with their co-operation the rope is passed under their armpit. The rope is walked further up the bank until it offers enough support for the paddler to keep their head above the water. Raising the line at either end will improve the support. Quite a bit of effort will have to be applied to the rope to make this system effective.
  - With access to only 1 bank – throw a throwline for casualty to hold

### Extricate

- Facilitate learning in extrication methods i.e. once swimmer/paddler is stabilised the most likely outcome is that they will be able to extricate themselves. If that is not possible then there are a couple of options.
  - The person providing stabilisation physically removes casualty.
  - Increase the load on the stabilising line to pull the paddler/swimmer out of the obstruction

- Attach a throwline directly to the paddler's chest harness/cows tail (self attached or by rescuer). Pull the paddler out of obstruction.
- Introduce the idea of how to use a line across a river to recover a paddler/swimmer in a stopper i.e. join 2 throwlines together (join at bag ends with karabiner) and pass across as for a stabilising line down stream of the paddler/swimmer. Walk the line up stream with the bags lined up with the paddler/swimmer. The swimmer/paddler can lean on the line for support. To pull the paddler out feed the line across the current to pull them to a weakness in the stopper or walk down stream and pull them over the tow back, whichever is easier.
- Facilitate learning in getting a line across the river when it is not possible by throwing
  - Walk over a bridge
  - Paddling – Rope in hand – Rope through grab loop and held – rope attached to quick release chest harness – rope attached to sling over shoulder – rope attached through quick release knot to thwart (or held under knee). Wading – (Described below)
  - Wading
  - Swimming – Attach the bag end of a throwline to a chest harness and aggressively swim across the current.
- Facilitate learning in the use of Downstream diagonals - Secure a line at the bag end, transfer clean end to other bank at an angle of about 45 degrees to the current. The downstream end can be held by hand, letting it go will act as a quick release. Attach a karabiner and sling to the kayak and allow it to flow downstream/across the current. If 2 ropes have to be joined then an overhand knot should be used as this will be easier to pass, the bag should be removed from the second bag to maintain the clean-ness of the system and a large HMS karabiner should be used over the line. A downstream diagonal can also be used to transfer people in the same way as transferring a boat they hold on to a sling attached by a karabiner to the system and float in a defensive swimming or by using a chest harness.

When practising placing stabilising lines across a river upstream spotters should be used to ensure other water users are not put at risk by paddling into the system.

## Shallow Water Wading Techniques

Shallow water wading can be used in a number of rescues and to assist in recovering equipment and as such is a very useful skill. Like swimming, wading in moving water has its own unique challenges and requires practicing.

### Content

- Discuss the reasons for using wading such as;
  - Foot entrapment extrication
  - Attaching throwlines to recover equipment
  - Getting line across the river
  - Crossing shallow water channels

- Discuss assessment of appropriate depth for wading and its dependence on speed of water and river bed conditions. Once water at any speed comes above the waist floating will occur.
- Facilitate learning in the range of wading techniques.
  - Line astern and wedge
  - Use of hand rail
  - Use of paddle/pole for support.
  - Tethered by chest harness

## Recovery of Equipment

Equipment may need recovered for a number of reasons. The most common are:

- Recovering a boat/paddle floating down river following a capsize.
- Re-uniting boat and paddler following a capsize where paddler and boat have landed on different banks.
- Recovering a boat broached or pinned following a capsize.

## Content

- Facilitate learning in chase boating for kit (Kayak)
  - Chase boat in pairs when possible
  - Approach from up stream (better view of future water)
  - Throw paddle on to bank
  - Turn boat upright
  - Look for attainable eddy
  - Nudge boat towards eddy
  - When eddy is small you may wish for second chase boater to go ahead and get out in eddy to catch boat
- Facilitate learning in chase boating for kit (canoe) - Use same strategies as for kayak, but where possible pick up the swim line of upturned canoe. Paddle alongside the canoe until an attainable eddy becomes available. Paddle for the eddy and line the canoe in.
- Introduce strategies for re-uniting kit and paddler from opposite banks. It is normally preferable to take the kit to the paddler not the other way around.
  - Where suitable tow across river using a sling over shoulder (calm conditions only with minimum flow)
  - Attach throwline and pendulum across
  - Downstream diagonal
- Facilitate learning in methods for recovering trapped boats. Success is generally achieved by pulling in the right direction rather than creating lots of mechanical advantage
  - A basic progression that can be used is:
    - Attach bag end of line to trapped boat
    - Attempt to pull boat off
    - If this is not successful add more people to pull (if available)
    - Secure bank end of line to suitable anchor and hand tension rope

- Vector pull at 90 degrees to rope from as near the middle of rope as possible (this can then be sweated if it is effective)
- Remove knot from anchor and set up a simple 3:1 mechanical advantage system
- Another method of creating mechanical advantage is to attach line for 4:1 system (loop of rope attached to boat via karabiner or pulley. Rope taken to fixed point and looped through karabiner and back to karabiner or pulley on bag end of line. Rope pulled to tension system).

## Scenarios

This session is an opportunity to put together all of the skills learned on the training course. Some examples of possible scenarios are given below.

- A simple free swimmer, loose boat and lost paddle.
- Free swimmer pinned boat and retained paddle.
- A safe but marooned paddler, loose boat and paddle.
- Pinned boat and paddler with paddle.
- Paddler in stopper, in boat
- Unconscious swimmer
- Injured/marooned paddler, mid stream
- Swimmer/ boat on different banks
- Lost boat/paddle, swimmer far bank
- Retrieval of equipment/ no paddler
- Swimmer in stopper
- Double swimmers
- Head up entrapment, 1 or 2 bank

## Objective:

- To demonstrate the practical application of the techniques illustrated throughout the course.
- Show ability to make decisions based on the Self-Team-Victim-Equipment and S-R-T-R-G. protocols.

## Acknowledgements

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