

COACHING SAFETY SERIES



No. 10...
STICKY
SITUATIONS

In the tenth part of the paddler safety series we are focusing on understanding and dealing with some of the more serious issues that we might be faced with on the river. In the dynamic, moving water environment one situation that we are actively trying to avoid is being stuck in the river either as a swimmer or in a kayak or canoe. **By Chris Brain**



It is important to remember that there is no substitute for professional training in this area and this must be combined with experience to effectively use the ideas and techniques contained in this series. **This article is not intended to replace formal training.**

Our previous articles have focused on preparation, simple rescues, working together on the river and above all avoiding incidents happening in the first place. The topics covered in this article assume that you have read the previous chapters.

No. 1. Be prepared and stay safe:

<https://joom.ag/hdaQ/p50>

No. 2. Working as a team:

<https://joom.ag/jeqQ/p96>

No. 3. Swim, chase, throw:

<https://joom.ag/PdyQ/p38>

No. 4. Get the advantage:

<https://joom.ag/XfUQ/p42>

No. 5. What if...

<https://joom.ag/kLbW/p44>

No. 6. The chest harness

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No. 7. Shouting, reaching and wading

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AVOIDANCE

A key message that has been running through every single chapter of the safety series is avoidance. As a paddler we should be aware of our environment, the team we are paddling with and actively trying to avoid dealing with a situation in the first place. We do this through good planning and communication, choosing a river that matches the skill level of our group and using tactics that encourage safety and minimise risks. We can also do simple things like being aware of potential snagging hazards on the kit that we wear and storing equipment like slings in a zipped pocket or in storage that won't allow it to come free in a paddling or swimming situation to minimise the risk. Remember you are the most important person on the river, so don't cut corners when it comes to your own personal safety.

STOPPERS

Stoppers come in a variety of forms on the river. We can have everything from deep powerful recirculations that would most certainly hold boats, equipment and swimmers right through to weak, surface stoppers that will only just about hold you in your boat if you were sidesurfing. When it comes to judging stoppers and how 'grabby' they are, experience is key. Even the smallest weirs on low volume rivers can create potentially lethal recirculations, whereas high volume rivers can often have very large and intimidating stoppers and features, but in fact can be quite flushy and pose only a small issue to a paddler or swimmer.

Some clues as to how sticky a stopper may be would be to look at the angle of the feature that is creating the stopper; if the water is dropping in vertically to the stopper it may well be stickier than one with a much shallower angle. We also need to look at how far the water is travelling back to the seam of the hole from, if the 'towback' is fast, powerful and recirculating, then this will pose an issue for the paddler and almost certainly for the swimmer.

In addition, looking at how fast the water is moving after the stopper can sometimes be an indicator too. If the water entering the stopper and the water downstream of the stopper is at about the same pace, then it may not be recirculating that much, as clearly a large amount of water is still moving through. However, if the water downstream of the stopper is significantly slower, this can suggest that the stopper is deeper and more recirculating.

Finally, the noise of the stopper can give some indication as to whether it is a surface stopper or deep and recirculating. Surface stoppers tend to have lots of crashing water (potentially thrown up into the air) and are a bit noisier and higher pitched than the low quiet rumbling of the deep recirculating stopper. All of these are only clues and may not full show the full picture, such as the depth or additional hazards. Understanding the hydrology of stoppers and what that will do to a boat/swimmer is a really important skill for the whitewater paddler.

WHAT CAN A SWIMMER DO?

Once again if you haven't already guessed, the message should be to avoid swimming down it in the first place! If you can swim to an eddy before the stopper, or swim down the green flow or over a wave instead, that is almost certainly the better option. Your team on the water (or bank-based rescuers) may well be able to give you some guidance on where to swim and may be shouting instructions and pointing where they want you to go.

If swimming through the stopper is inevitable, firstly try and aim for the weakness if you can, look out for the green flow and the jets of water that are moving away from the stopper faster than the other water. As you approach the stopper make sure that you are on your back with your feet downstream making sure that you are on the surface of the water so that you minimise the risk of feet/hands being caught as you go over the drop. As you head over the drop bring your feet up to reduce the chance of your feet being caught if you go deeply in the water as you drop down into it. Some people like to bring their hands/arms to their face at this point too, which can be particularly useful to protect your face if there is debris in the drop or if you are following your boat into the stopper. All being well you will have caught the deeper green water and will quickly be downstream of the recirculation. Making your body a star shape when you resurface can also help you catch the water heading downstream too.

If you have not cleared the recirculation, those first few seconds can be critical in your mission to get out of the towback. Swim hard...swim like you really mean it, you might have resurfaced just on the edge of the recirculation and only need a little bit of extra effort to escape the water heading back towards the seam of the stopper.





GETTING OUT OF THERE

As a swimmer you have two main options for self-rescue now, going deep into the green water or finding a weakness in the stopper.

Unless the stopper is formed by a man-made feature (such as a weir) or is completely naturally uniform in shape (as some stoppers can be) most stoppers will have some area of weakness. This is a point where water is being released from the stopper at a different rate to the rest of the recirculation.

These can often be at the corners of the feature or at a point where the riverbed (or rock forming the stopper) changes shape slightly. Look out for the tongues of water at the feature, sometimes clearly pointing the way for the paddler to head through, but also to help a swimmer exit. Turn onto your front and swim along the line of the stopper to try to find this weakness, if you can break away from the most powerful part of the stopper you may well be able to swim to safety.

Alternatively going into the green water means turning onto your front and head straight towards the stopper. The idea being is that you will catch the green/dark water that is coming from upstream into the stopper; which will push you deep under the water and past the stopper and recirculation. In the moment that you reach the green water from above bring yourself back to the ball position again to make help yourself go deeper and to minimise being caught on the river bed.

BANK BASED RESCUE

If we have set up bank-based safety prior to our paddler ending up in the water; then we should have a rescue ready and have considered the options available to us already. However, if we are responding to an unforeseen situation then we need to react quickly as it won't be long before our paddler is tired, and the effectiveness of our rescue becomes less likely.

Using the throwbag techniques covered previously could work for stopper rescue too, we just need to consider where we are throwing from and where we will be pulling our swimmer to in a different way this time. If we stand at the side/level with the stopper then when we pull, our swimmer will move along the stopper, potentially to a where they can be flushed out or reached with a paddle/pole. If we stand downstream of the stopper, when we pull we will be pulling the swimmer against the towback which will be physically harder than pulling them along the line of the stopper but may help them break free of the recirculation. In both situations if we have the ability of changing our position mid-way through to make the rescue more effective, that may be a smart move. Quite often the riverbank and the access that we have to the stopper may well determine where we can throw and pull from.

There are some additional ideas can be used here if our throwbags are not proving effective because either the line cannot be seen, or it is sinking with the force of the recirculation. We can clip a paddle with a large snapgate karabiner (specifically designed to clip around the shaft of the paddle) and use this like a javelin to throw into the stopper. This may be easier to grab for the swimmer and potentially may float more too. Other options may be even clipping a throwline to an empty boat and sending that into the stopper; giving the paddler something bigger to grab. Whilst some of these techniques may be less conventional and not 100% clean, the outcome for the swimmer could be serious if we do not do something to get them out of there.

Finally, live bait has been used successfully in rescues for swimmers stuck in stoppers, however this of course creates a serious risk to the rescuer and shouldn't be undertaken by a team without real understanding of what they are doing. A live bait rescue in this context is exceptionally high risk and where possible lower risk options should be preferable to this. Remember, your safety is paramount.

STRAINERS

Strainers are fixed obstructions in the river that allow water to pass under (and/or over) them and pose serious risk to paddlers and swimmers. On most rivers, strainers are typically trees (or a collection of trees) that have fallen in and become wedged in the river; however they are a collective term for any similar hazard, so in fact could even be gates, fences or metalwork. For the paddler, avoidance is once again the main priority and many people have had near misses trying to paddle their boat over strainers even in weak and slow flow. This is because the strainer still has the full force of the water flowing under it rather than around it and creates strong suction underneath it. Steer well clear; if the strainer is river wide and at water level, avoid the risk and portage around it. Many strainers can be easily spotted during bank-based inspection so take the time to inspect even if you have paddled in that location recently.

For a swimmer a strainer poses a serious risk to life as the likelihood of being snagged on it is exceptionally high. Swimming away from a strainer should be seen as our first and only option. If it cannot be avoided we need to get up and over the strainer (or to climb onto it), going underneath the strainer could have serious consequences.

If a swimmer has to deal with a strainer they should roll onto their front and swim headfirst with speed towards it. They should then try to push themselves up and over it or climb onto it. If the swimmer lets their feet drop low into the water when they are pushing onto the strainer then their feet will be swept under and the swimmer will end up in a position where they are either stuck on the strainer or taken underneath.

SWIMMER ENTRAPMENT

This is potentially the worst position that a swimmer could get themselves into and also one of the most challenging situations for a team to deal with too.

Everything that we have covered so far in this series has been about avoiding entrapment in the river; we have looked at safe swimming techniques, low risk rescue options and using safe paddling strategies that help avoid a situation in the first place. When it comes to rescuing a stuck paddler, swift action is required but remembering that your own personal safety is of the utmost importance at all times.

RESCUE OPTIONS

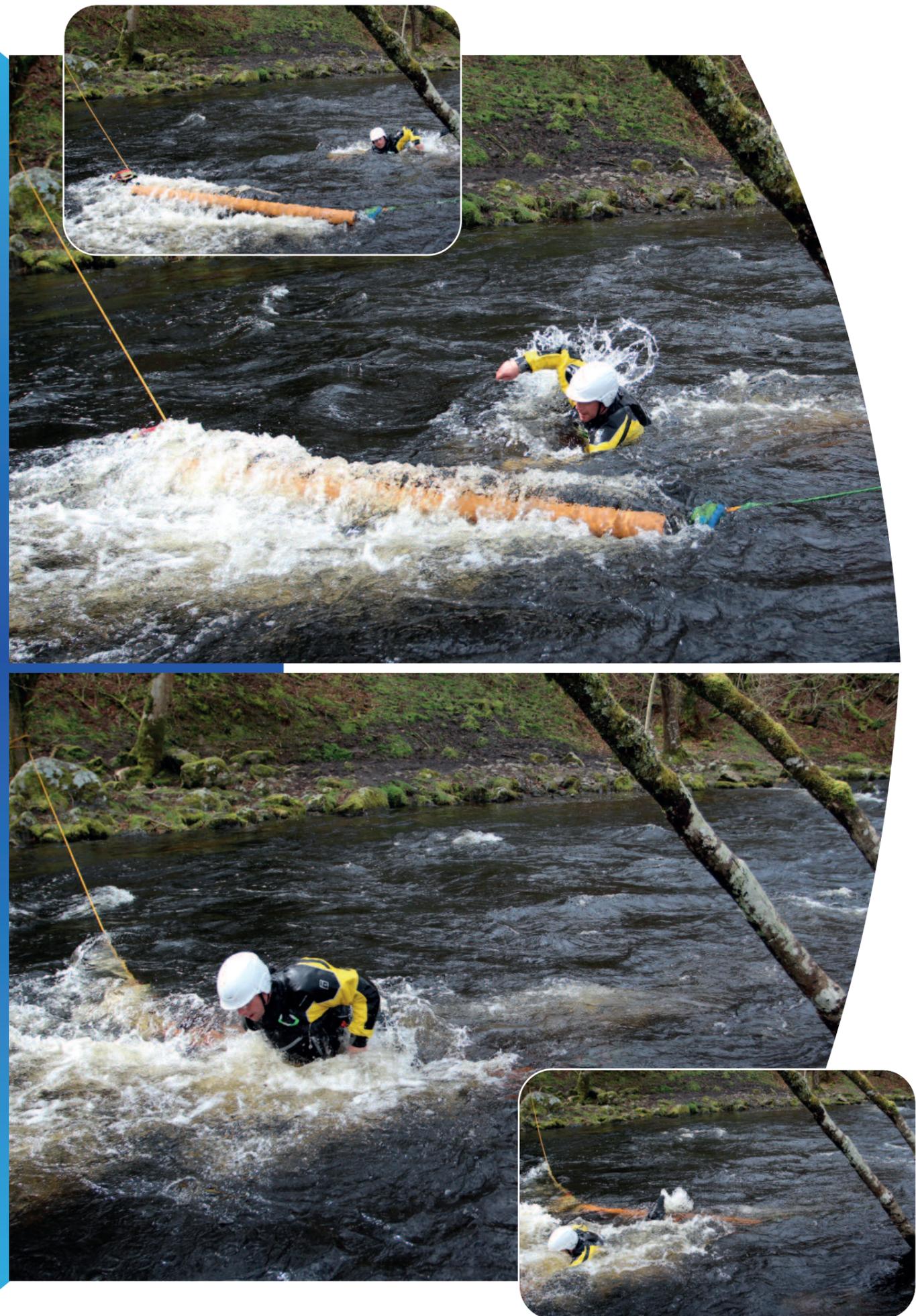
Every entrapment situation will be completely different so having a series of options available to use rather than a progression to work through is probably smarter here. Essentially, we want to help the paddler stabilise themselves, keep their head above the water and then let them free themselves or physically offer assistance to help remove them.

If the paddler has become entrapped with the force of the moving water pushing behind them, they may be in a position where they would actually be able to remove themselves if they could actually push backwards and reverse out of the situation. Entrapments can typically happen in shallower water so throwing a paddle (or a canoe pole) out to the stuck paddler could allow them to stabilise and extract themselves. This may also give you a bit more time to set up another rescue option if required too. Throwing a rope for the stuck paddler to hold (or even clip onto their own PFD) may be an option in this situation, this would allow the rescue team to pull on the line and give support to the paddler. The rescue team would want to pull from above the entrapped paddler as much as they can as this will offer more support, pulling from the side may not be helpful in this situation.

If we can get a rope across the river to another rescuer on the other side, the two rescuers can bring this rope from downstream up to the stuck paddler to help give them additional support for their body. The entrapped paddler can let the rope come up and under their arms to offer as much support as possible. Once again, the rescue team moving upstream as much as possible (creating a 'V' in the rope) will offer more support. It is possible to do this technique with access to just a single bank, but it can be trickier to set up as it involves sending a rope into the river around the entrapped paddler and retrieving it again so that both ends of the rope are on the same side of the river bank.

Another option would be for a member of the rescue team to actually enter the water to help free the stuck paddler. This may be by far the highest risk option for the rescuer, but also may be potentially one of the most effective. Typically, the rescuer would enter the water with support from the bank via a rope attached to their chest harness. This would allow the rescuer to assist in pulling the stuck paddler free, keeping their head above the water, or by attaching another line to them for the team to pull on. We could also use the ropes that we have set up to support the entrapped swimmer as a hand rail to allow a rescuer to enter the water to give assistance. These techniques should be used with extreme caution as it involves the rescuer being very close to the entrapment hazard and they risk being stuck too.

If the situation involves a stuck paddler with their head under the water, doing what we can to give them an open airway is a top priority. In this instance, physical assistance (if safe to do so) from another rescuer is likely to be the option with the most chance of success.





BOAT ENTRAPMENT

As boat design has improved, so have the construction materials and their safety features. Most river/creek kayaks are high volume, highly rockered and rounded at the ends to reduce the risk of the boat pinning when paddling. Modern kayaks are made out of super strong materials and are typically reinforced bow to stern with central pillars to help them hold their shape in a pin situation. They have large cockpits and also a step out pillar to help the paddler escape should they be in a vertical pin situation.

For the traditional canoeist, even though they may not be typically be paddling water where a vertical pin would be an issue, the risk of being trapped underneath a kneeling thwart or sliding forwards and being stuck underneath the yoke is still present. One option could be to install a releasable thwart/yoke allowing you to get free easily (however these systems should be tested before using for real). Either way carrying a saw and having it close to hand is certainly a must for a canoeist on whitewater. I carry one in my PFD all the time even when I am out in my kayak because it might be a canoeist from another group that I end up helping to rescue.

RESCUE

When it comes to a potential pinning situation, most paddlers will work to free themselves quickly and effectively before they actually become completely entrapped in their boat. This is usually by stepping up and out on their front pillar (from a vertical pin in a kayak) or by pulling their spraydeck and getting out, in the instance of a rock pin. If they are paddling a canoe they may well be able to step out or swim before the situation gets worst. If the paddler does become stuck in their boat and in the water, once again we need to act fast.

Just like with the swimmer entrapment situation a strong physical approach is likely to be needed here, with the rescuer either making direct contact or by assisting the paddler to stabilise and free themselves by using a rope or paddle. Acting quickly and instinctively to ensure that the trapped paddlers head is above the water is required, remembering that we must make our own safety the top priority at all times.

The same rescue options that we have looked at to rescue the entrapped swimmer can be adapted and used here for our paddler stuck in their boat. If they have lost their paddle, throwing a paddle to them to help them stabilise and extract themselves could be an option. If appropriate a stabilisation line (pulled into a 'V') could also work to give assistance but depending on the situation could be very difficult to set up. The pinning situation may also allow for the rescue team to gain close access to the stuck paddler; if for example they are pinned on a rock then it may be possible to paddle out, climb onto the rock and offer support quickly with the stuck paddler. Finally, a hands on approach may well be what is required to deal with the situation but of course poses serious risk here too.

FINAL THOUGHTS

All of the situations that we have covered here may be serious for the paddler and very difficult for the rescue team to deal with. It is really important to remember that there might only be so much that we can do without putting ourselves or others at serious risk of harm. Often in these situations our rescues are reactive, improvised and instinctive and we have to do what we can to help.

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