LET'S GO RIBBING!

There's nothing better than getting out on the water and having fun … but having fun is easier and safer if you have an idea of what to do, where to go, what the dangers are when boating and what kit to carry…

In this series of six articles we'll follow the RYA Powerboat Level 2 course, looking along the way at subjects like charts, tides, handling your RIB close to other craft, the 'ColRegs', higher-speed handling, and plenty of other areas too. The Level 2 course is the mainstay of the RYA powerboat courses and is aimed at those intending staying close inshore rather than those seeking to make long coastal passages. With this in mind, let's start by looking at the things to think about before you go boating.

Top tip: Keep a divers' 'slate' or a chinagraph pencil at the helm position to note details from VHF calls.

So, before starting a search, consider where they are likely to be in relation to the place where you first became aware they were missing:

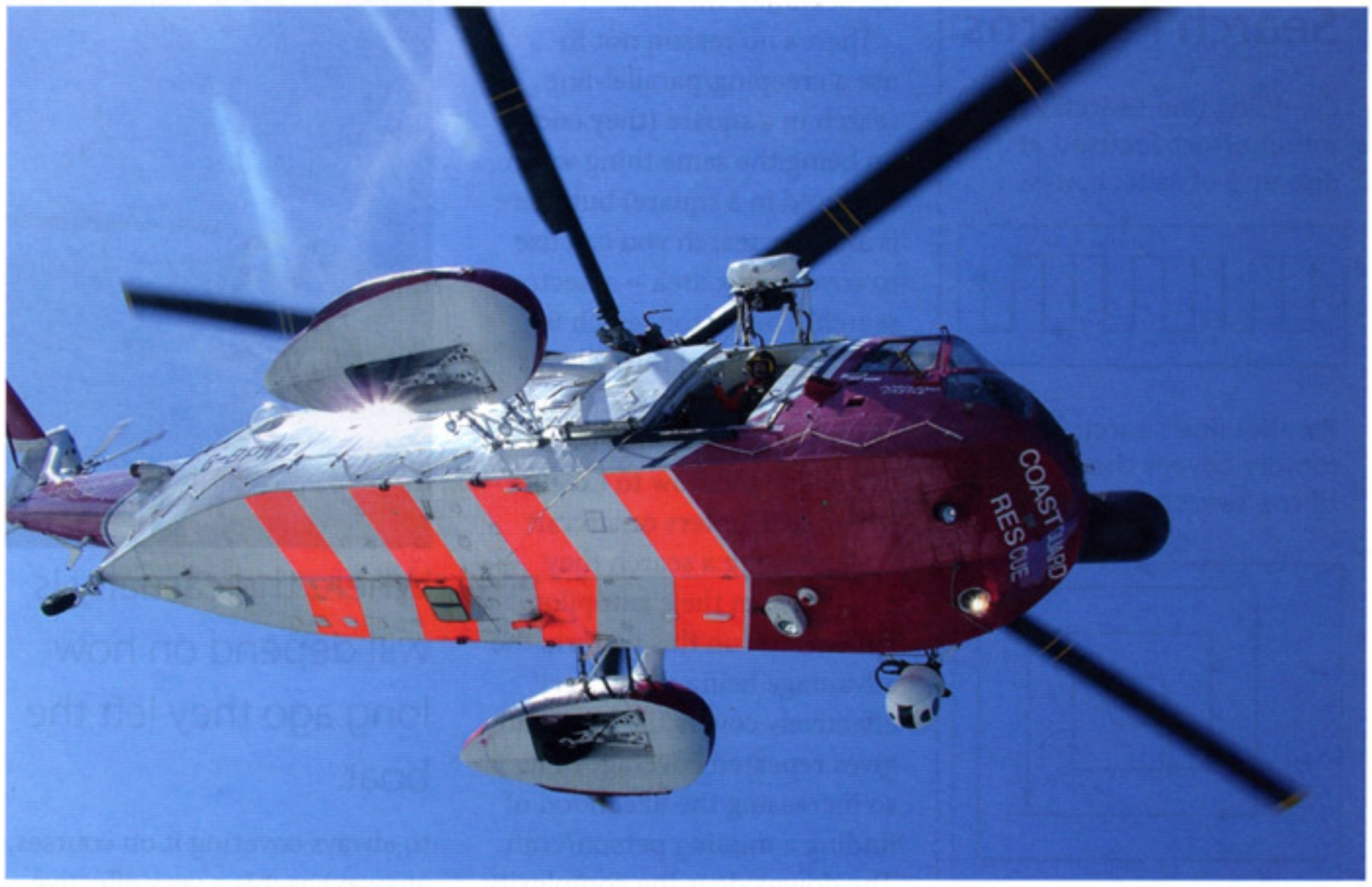
Both a boat and a person in the water are affected by tide equally, so the direction of tide may not influence where a casualty is in relation to a free-floating boat, but if they have fallen out of an anchored craft they will most probably be down tide.

A free-floating boat will be blown downwind, but a person is too low in the water (and has a big anchor below the waterline – their body) to be wind-affected, so they will probably be upwind of the boat.

Are there moorings, rocks, islands, etc that they could have climbed onto, thus eliminating the effects of wind and tide mentioned above?

Are you in open water (in which case the area you search will probably need to be a square shape) or is it a rectangular shape that needs searching (eg along a beach, in a bay etc)? In the case of an MOB from your own boat they will be somewhere either side of the route your craft has followed (a good reason to always keep the 'track' function running on your chartplotter), but the further back they were when they fell out the more likely they are to have drifted further away from this track. (Have you ever practised running back along your track, or 'snail trail'? It's a useful thing to try.)

Thinking through these points should lead you to a likely start point for your search (in the absence of detailed guidance from the coastguard just use some educated guesswork based on the above!) coupled to an idea of whether to search a square or a rectangle.



While you might find them by blatting around in a fairly unstructured way, it makes real sense to apply some thought to the situation and create a plan which you can then execute.

Searching a rectangle is best achieved by running either a parallel-line or a creeping-line search. As the images show, the difference is whether you run the length or width of the rectangle. Which you decide to do should be influenced by whether you feel there is a higher chance that the casualty is one end of the rectangle. Imagine searching along a beach or cliff: if you have no idea where they might be, then a parallel-line search seems more logical, whereas if it is more likely they are one end of a bay than the other, then a creeping-line search focused initially on one end makes sense.

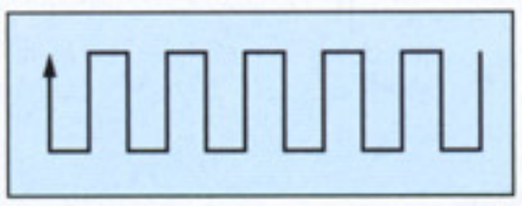
When running any search, thought needs to be given to how far you can realistically spot a casualty from. This is important because there is no point having a separation between your search lines so that a person could be between the lines and be 'lost' in the middle. A good way to judge this is to drop a weighted fender in the water (weighted so it won't be wind affected). Drive away from the fender; when you can only see the fender 50 per cent of the time (because it keeps disappearing in wave troughs), then this is known as the 'detection range'. By counting as you travel at a set speed the detection range becomes a time (eg 20 seconds). The detection range ('D') becomes your search track separation.

In open water the simplest search to cover a square is an 'expanding box'. This technique starts from the centre of the box and you head (usually) north, initially a distance of D, before turning 90° right, run a distance of D again, then 90° right, but this time run 2D. As you can see from the diagram you just keep adding D after two legs. While a simple search to execute, remember its limitation is that you never return to the centre of the box, so if you missed them first time round – tough!

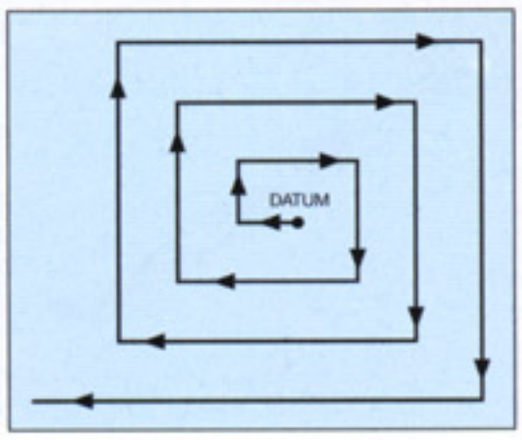
Top tip: When executing the search pattern it's easy to overlook the searching bit. Get your crew to keep their heads

Search Patterns

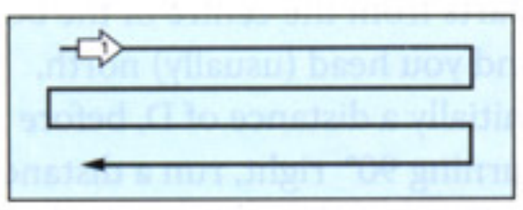
Creeping line search - initial effort focused at one end of search area



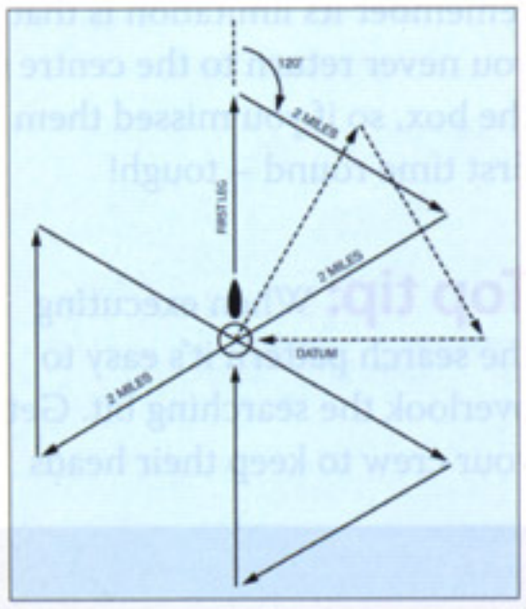
Parallel line search - rapidly covers the length of the search area



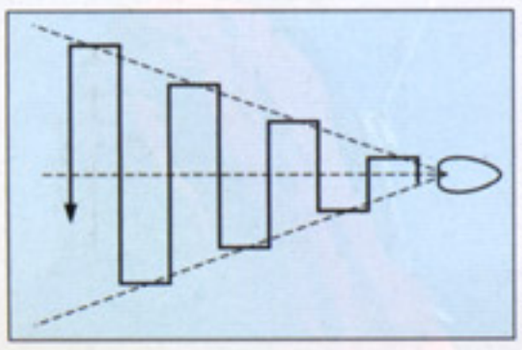
Expanding box search - covers a square, simple and effective



Sector search - more complex but very effectively covers the area repeatedly



Creeping line behind a boat - covers the area a MOB may be



up, scanning the area.

There's no reason not to use a creeping/parallel-line search in a square (they end up being the same thing when executed in a square) but there is another search you can use to cover a box area – a 'sector search'. The sector search is no longer part of the syllabus for the RYA Advanced Course but is a good search pattern to understand how to execute. When helicopters or aircraft are executing a search they can program their autopilot systems to run this pattern, the advantage being that it very effectively covers the area, and gives repeated coverage of it, so increasing the likelihood of finding a missing person/craft. The downside is the complexity of the pattern, and in the heat of a search it can be difficult to get everything right (which seemingly is why the RNLI dropped it as their preferred method some while ago).

To execute the search pattern, drop a weighted fender in the water (your 'datum') and head initially in the direction a casualty is likely to be; note the heading, hold this and work out the detection range. Multiply this by 3, and when at a distance of 3D turn to your 4 o'clock (which is plus 120° to starboard). Settle your heading and run 3D again. This will bring you round after the second turn to be heading back towards your datum. Reposition yourself to pass close by the datum, re-establishing your heading. As you can see from the diagram, keep running 3D, executing turns and realigning yourself. After the first 'circuit', offset your initial heading by 30° to starboard and continue the pattern in the same way.

Top tip: To avoid having to monitor your compass heading, if possible line up trees or buildings with your heading to create a transit and run this.

It is certainly worth practising the sector search (I must admit

Where the casualty is will depend on how long ago they left the boat.

to always covering it on courses, anyway) as it is a very effective search and a useful tool to have in your toolbox.

One of the scenarios we started out with was a crewmember from your RIB entering the water. As mentioned, ensuring the 'track' feature is permanently running on your GPS/chartplotter makes real sense, so your initial reaction will be to run back along this trail or your wake, if visible. Where the casualty is will depend on how long ago they left the boat. The greater amount of time that has passed, the further off the track they may have drifted due to wind and/or tide. Logically, therefore, you could start a search from the point you noticed they had gone (the datum), executing a creeping-line search that gets further and further off the track the further from the datum point you get.

Knowing how to execute a search is one thing but, of course, for your own crew avoid the need to do so in the first place by keeping them in the boat, with regular communication so you know they are okay. Any search leads to the sad possibility of a body being found rather than a more positive outcome, so avoid it in the first place.

Of course, you may not be alone on a search and there could be a few other boats around. In this case parallel-line-type searches with multiple boats running alongside each other can work well, or craft can each execute searches in dedicated areas. On a parallel search, of course, the separation between craft is going to be the detection range already discussed.

We started out mentioning the need to communicate with the coastguard and this communication will continue throughout the search. If possible, have a crewmember dedicated to comms and allocate other tasks around the boat. If you do locate the casualty, then once again tell the coastguard before attempting recovery (they will want a position) and don't just rush in blindly. Your first responsibility must be to your crew, so only ever consider a recovery if you are sure it is safe to do so and within your capabilities.

In summary, there are a few methods that can be used when you need to undertake a search. Try to understand and practise these methods, but before executing any of them take time to think about which will work most effectively given the situation you face.

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