Entry-level ribbing... Are we there yet?

Paul Glatzel discusses the matter of coastal navigation; a 'sea area' which can present the most significant challenges to the coxswain of a small RIB.

One of the great things about owning a boat is the way that you can get away from it all. Go afloat for a few hours and it feels like a day; go away for a weekend and it feels like you've had a week off. Where you go also makes a big difference; it's great exploring your regular beaches and bays but at some stage you'll want to go further afield. In this article we'll look at the things you need to consider when you undertake coastal passages, including how to plan the passage and the dangers that you may face along the way.

As we've discussed previously, the first step is to look at all the issues surrounding the passage. Things to consider include: Is your planned trip a realistic one? Is the boat capable of such a passage and does it carry the correct kit for such a journey? Are the crew experienced enough for the trip, are they fit enough and do they actually want to go? Once you've decided on a suitable destination you need to start to look at the detail.

If you are a planning a passage any more than a few days ahead then you can't consider the weather, although you will need to bear in mind that some passages are more affected by small changes in weather conditions than others, which might influence the time of year that you choose to go to certain locations. As we'll look at later, wind-against-tide situations can turn a relaxed passage into a dangerous epic so you'll want to know what you might face.

Other things to remember include ensuring that you check all of the kit on the boat, particularly the safety items such as flares, VHF and lifejackets. Open up the lifejackets and check that they haven't been fired already and that the cylinders are tight. If there is even the smallest chance you will be afloat at dusk then fit lights. Without going into the detail of every item you will check, just remember the '6 Ps' – 'proper planning & preparation prevent poor performance!'

The main focus of this article, though, looks at the aspects of the actual coastal passage, from the stage where you exit the harbour/marina and enter open water, to when you arrive at your destination. To get things moving with a plan, I prefer to lay a chart on the table and start to visualise the passage I'm going to make. The things I'm looking for include:

Shallow bits - are there shallow areas that either I need to skirt around or are likely to give rise to rough water when there's a bit of wind or tide? Are there any wrecks or isolated rocks that I'll need to plan to avoid? What about headlands? Wind and tide funnelling around headlands can create some seas that at best can be uncomfortable and at worst positively dangerous.

How far offshore - what is the prevailing wind direction? Is this likely to give rise to a situation where, if I have a problem on-board and I start to drift, then wind and/or tide will rapidly carry me into danger? Imagine a situation where you break down in the middle of a bay four to five miles across. Just a couple of knots of tide and a knot or two of leeway (the rate at which you drift because of the wind) could easily drift you onto rocks at the edge of the bay within 30 minutes - not very long! A bit further offshore might give you a bit more escape room in the event of an issue.

Depth - can I anchor? In a small RIB the depths in some places make it unfeasible to carry enough line to anchor - is it worth carrying a sea anchor to keep your bow into the wind should you have an issue?

Tide - what is the tide doing, not just in terms of depth, but also in respect of direction and rate of flow? As we'll look at later, you can use tidal diamonds from charts, and tidal-stream atlases, to predict the rate and direction of the tides. Getting this right can be massively beneficial on two counts. Firstly, if you can time your passage around a headland so that wind and tide are in the same direction, or there is no tidal flow at all, then this might mean the waters you face are comparatively

calm. The reason rough conditions arise around headlands is that the remnants of the headland create a ridge on the seabed and, as the tide funnels around the headland it has only one place to go - up - creating what can be a smallish area of rough water in what may otherwise appear to be calm seas. By calculating when this will happen you can time your passage to avoid its most pronounced effects. Secondly, with the price of fuel rising steadily, timing your passage so you run with 3 knots of tide rather than punching against it could actually save you a good amount of cash!

Using tidal diamonds

The small diamonds that appear on many charts refer to a table that you find in a corner of a chart or in some chart folios on the back of one of the sheets.

At the top of each table is a statement informing you which Standard Port the tidal information is referenced to. As you can see, in this example it is Plymouth. Consult your almanac to identify the time of high water at this port; for example, if you had thought about passing Portland early afternoon (say 13.30) on Thurs 7th Feb 08 then the relevant High Water figure is 5.1m at 18.20 GMT. You can then apply this time to the table and read the direction and rate of flow for the time you are interested in. In this example it is 5 hours before HW giving a direction of flow of 240° and a rate of either 7.0 knots or 3.5 knots.

The two numbers refer to the rate of flow at springs and neaps respectively - in this case 7th Feb is right on spring tides so we'll get 7 knots. If you are some way between neaps and springs then you can interpolate to roughly the right figure - if you are midway between neap and spring tides then you will experience midway between 7.0 and 3.5 knots of tide. If you're unsure whether it is neaps or springs then remember the almanac will tell you this by showing little full, new or half moons alongside the dates on the tidal information pages. Whichever direction you are travelling in, you'll want to stay well clear of Portland with so much tide running, and it would be prudent to plan for perhaps three or four hours later, when it is almost slack.

Tidal Stream Atlases

These are used in much the same way but are far more visual. They are found in the almanac, a special tidal stream atlas for the area, or sometimes on charts themselves. The process is the same; identify the time of High Water and the port the chartlets are referenced to, write the time of day against the HW chartlet and then against the chartlets for the five hours before and after HW, giving you a very visual indication of what the tide is doing.

Rate of flow is referred to in the same way, although some chartlets also vary the thickness of the arrows to indicate the rate.

Safe havens

Assess the various safe havens along your route and calculate if and when you will be able to enter them. Ensure you mark your almanac in some way so you can find the relevant pages quickly when you need to since, if you do find yourself having to enter one, it will probably be because something isn't quite right and speed may be essential.

Inevitably, given the reliability of modern electronics, these will form the backbone of your plan, and many will choose to input waypoints and a route to follow. Don't forget to look at the chart around your route too, and look for objects that are distinct and can act as a 'reasonableness check' to ensure that you are where you think you are. Piers, lighthouses and buoyage can all be added to your plan; for example, as you reach WPT 1 you've noted that you'd expect the Portland Lighthouse to appear about two miles off to starboard - if it isn't there then you might have an issue! It makes sense to ensure that you've marked your chart with the route you intend following and that the waypoints are added here too.

Other navigation techniques to consider
Whilst most boaters will tend to enter waypoints, form a route and follow that route, to use these to the exclusion of all other techniques could be short-sighted. There can be real advantages in using some more traditional techniques in conjunction with the chartplotter/GPS unit; the benefit typically being that they tend to lift a helm's vision from the chartplotter, making them focus on what is going on around them and generally improving vision. Equally these techniques act as a great backup/confirmation. Techniques include:

Transits

line up two charted objects to keep you on your intended track.

Clearing lines and bearings

Use clearing lines or clearing bearings to define areas of safety and danger. These are easy to use afloat once calculated.

Back bearings

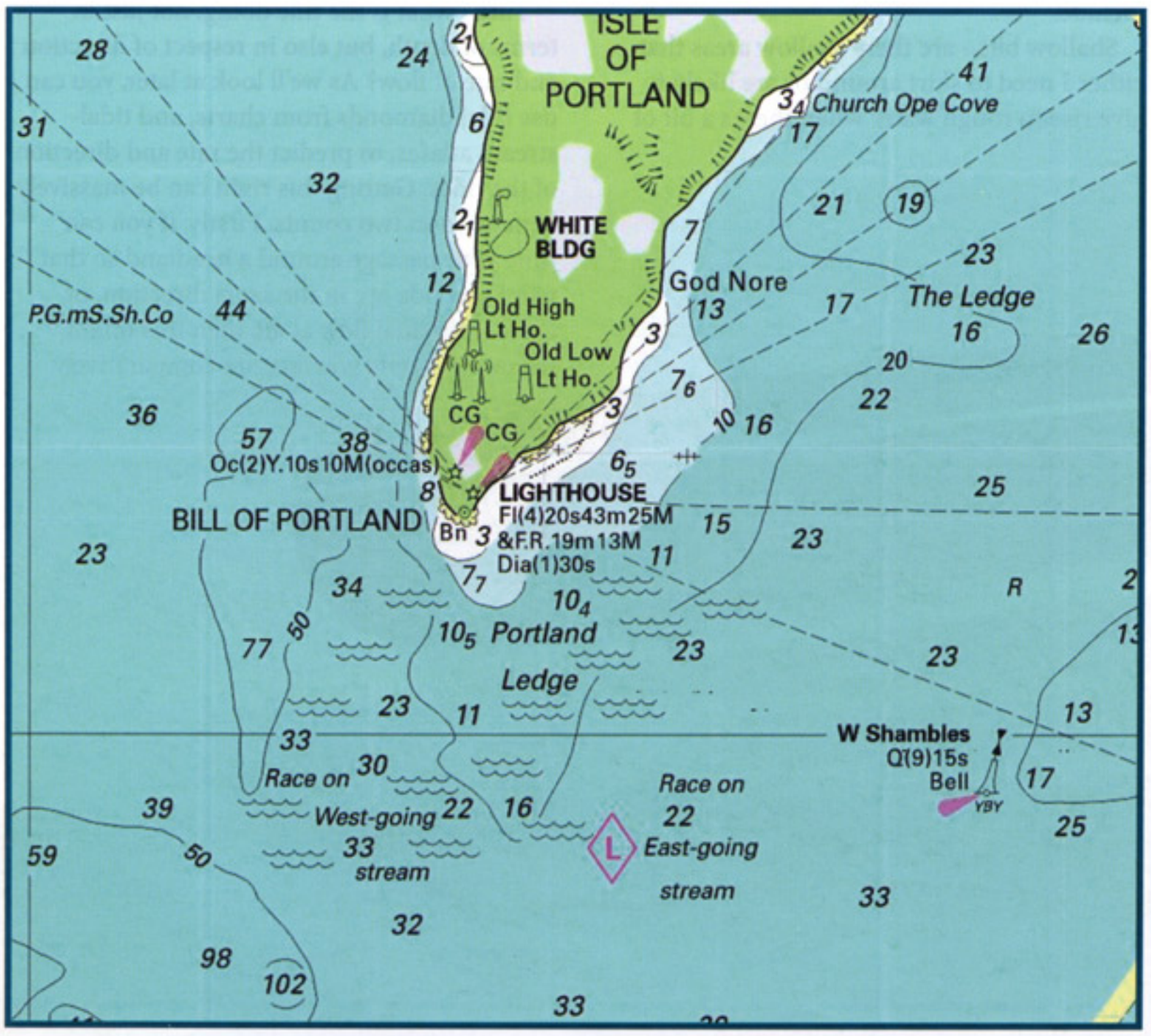
Calculate bearings to known objects, allowing you to steer away from a known object on a heading, checking the back bearing to ensure you remain on the track you want.

Turning points

Calculate turning points by reference to bearings to known objects or transits between two points.

APPROXIMATE DIRECTION AND RATE OF TIDAL STREAMS
Based upon High Water at PLYMOUTH

L 50° 29'.6N 2° 26'.6W	Hours before HW							Hours after HW						
	6	5	4	3	2	1	HW	1	2	3	4	5	6
Direction°	249	240	236	238	219	112	111	102	109	119	138	209	247
Rate in Springs	7.0	7.0	6.4	4.8	2.0	0.9	4.5	5.6	4.6	3.8	2.7	2.2	5.2
Knots Neaps	3.5	3.5	3.2	2.4	1.0	0.5	2.2	2.8	2.3	1.9	1.3	1.1	2.6



Depth and contour lines

knowing the depth you expect to see on your depth gauge gives you a good indication of whether you are in the area you expect to be. Calculate expected depth on contour lines and use these to navigate along or fix position with.

Keep a note

As you transit your route then don't forget that good skippers keep a note of where they were, and when. A scribbled note on a chart with a time is fine and, should you lose your electronics, will give you invaluable information to help you continue your passage and, if need be, call for assistance.

Most importantly, though, get out there, use your boat and have fun exploring wherever you go, whether it is to the beach or 30 miles along the coast.

Those keen to develop their skills in coastal-passage planning would do well to consider the RYA Intermediate Course which is aimed at this area. Schools that offer this course can be found via the RYA Training **website: www.ryatraining.org**

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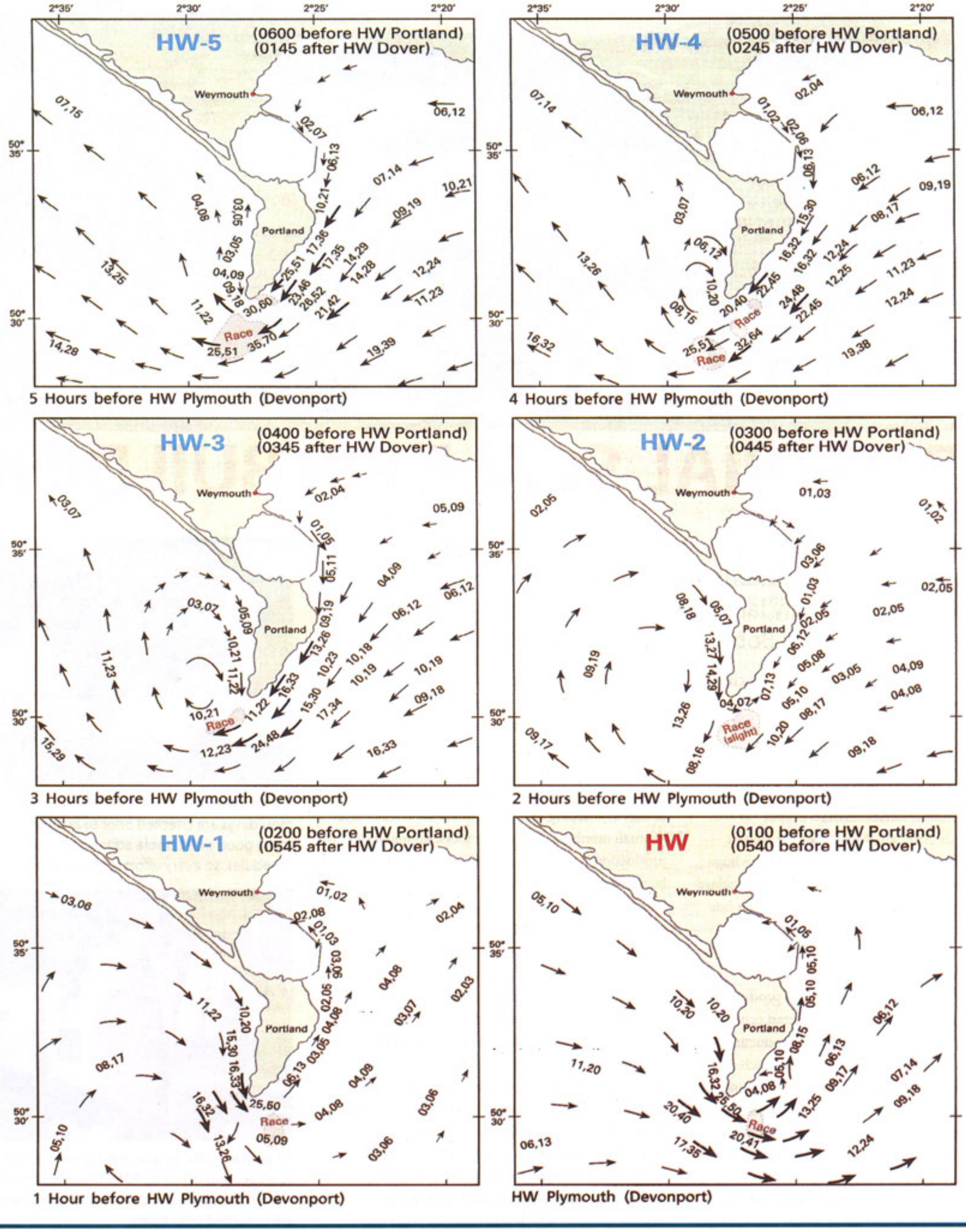
9.1.26 PORTLAND TIDAL STREAMS



5 Hours before HW Plymouth (Devonport)

4 Hours before HW Plymouth (Devonport)

3 Hours before HW Plymouth (Devonport)

2 Hours before HW Plymouth (Devonport)

1 Hour before HW Plymouth (Devonport)

HW Plymouth (Devonport)