Tudor Sailing Club

An introduction to Tides

Please note this is friendly advice, your safety is 100% in your hands, not anyone else's. The following is simplified for a beginner, particularly around slack times and there is no inclusion of information on the effect of wind and pressure. Please don't be put off sea rowing. Once you are a competent rower tides are an amazing natural power that give us different places to explore, different views, and can be very much harnessed to our advantage...but they need research and respect. Permission to reproduce has been given by the original author to the Rowing section TSC.

WHAT ARE TIDES?

The moon and the sun have their own gravitational fields, much like Earth. Whilst they won't pick us up and make us float off into space, they are powerful enough to move the oceans around the planet…literally pulling the sea towards them. Tides have run since the dawn of time, 24/7, and will do for eternity. As the moon and the sun and the Earth all do their spinny rotational thing, sometimes we find ourselves where the water is being pulled highest (high tide) and sometimes totally away from that spot (low tide).

WHEN ARE THEY HAPPENING?

Taking the south coast of the UK as an example, tides FLOOD (come in) from the Atlantic in the west, and flow along the coast from west to east. When they EBB (go out), the water turns around and flows from east to west. As a rough guide, in one place, if high tide (high water, or HW) was at 1200 (noon), then low water (LW) would be around six hours later, 1800. Then the next HW would be at midnight. In practice, the following day, that same HW would actually be around 1230, with everything else slipping back half an hour or so too. So that's why tides are never quite at the same time every day. You get two HWs and two LWs in a 24 hour period, and although the wind often switches off at night, the tides never do! As well as flowing up and down the middle of the English Channel, they are also filling up (or emptying) all the bays, harbours, rivers etc along our coastline.

WHAT DO THEY DO?

Tides have three components:
DIRECTION-which way are they flowing. They tend to go for 6 hours in one direction, turn around and go 6 hours the other direction. And repeat until the end of time. It's just a big conveyor belt, going 6 hours one way, 6 hours the other.
SPEED-When they have just turned direction, they don't go that fast, but slowly build up speed. 3 hours later, halfway between HW and LW, they are going at their fastest. They then slow down again as they get to the point that they are going to turn around and go the other way. Again, repeat until the end of time.

HEIGHT-As the tide floods, the water has to go somewhere, so it gets deeper. Simple!

SPRING TIDES-absolutely nothing whatsoever to do with seasons. Sometimes, the moon and the sun are aligned, and working together at pulling all that water in the same direction. So, HW is higher, and LW is lower. This is a SPRING TIDE, which has the biggest RANGE, which is the difference between HW and LW. The next day, the moon and the sun will be slightly out of alignment, so HW won't be as high, and LW won't be as low. The next day, even more out of alignment. Then, a week after the moon and sun were working together and giving those big SPRING TIDES, you get…

NEAP TIDES-the sun and moon are now working against each other as they are now totally misaligned in the sky. HW is much lower, and LW is higher. Therefore the RANGE is much smaller. Then, the moon and sun slowly start to come back into alignment, so the cycle then repeats the other way, so one week after NEAP TIDES you are back onto SPRING TIDES with a fully aligned moon and sun. So, there's a two week interval between SPRING TIDES.

SO WHAT? Well, if you are used to parking on a great slipway parking spot, but you've only ever done it on NEAPS, and this time you go for a paddle on SPRINGS, you are going to come back to a very wet car! Also, as there is more water being pulled around the planet on SPRINGS, but that water still only has the same 6 hour time to make its journey, it has to go faster. So, you might be able to row and make progress against the tide on the slower NEAPS, but on the faster SPRINGS, you are going backwards.

SOME GOTCHAS
1. LW - Don't get caught out at low tide. You might be rowing in Portsmouth Harbour and suddenly realise you are on the bottom. Most of Portsmouth harbour is chest deep, thick, sticky mud. Jumping out and just walking it to a deeper bit is not an option. If it's getting cold and dark, you might not float for 4 hours, this is suddenly not a good situation!
2. DIRECTION - Confusingly, wind and tide are forecasted/predicted differently. Wind is forecasted in the direction it's going to blow FROM. So a Westerly (the most common direction in the UK) blows FROM the west TO the east. Tides though, are reported in the direction in which they are HEADING. So don't think "today it's going to be a westerly wind, but an east-going tide, so the two will cancel each other out, so we should just float around off the beach". WRONG. They are both heading East, as will you, fast. If you do decide to row anyway, it's vital to head West first…go upwind, uptide, so when you are tired you can pretty much do nothing but still end up back where you started for almost no effort. Don't go east first or you might never make it back.
3. People often know when HW or LW is. Although you get some time with SLACK WATER where it's not going anywhere for a bit, bear in mind that HW and LW is the time where everything changes. That last scenario we looked at? Well, after HW or LW it's all different now as the tide is going the other way. If the tide is going to turn during your row, factor this in.
4. WIND OVER TIDE- And on that one, when the tide and the wind are going in the same direction, the sea will be calmer. But when the wind is going one way, and the

tide is going the opposite way, this is a WIND OVER TIDE situation and the sea will immediately get choppier as they are working against each other. There is a very fine line between playful waves, and waves that really hinder progress. Don't get caught out because the tide's changed.
5. SPEED - A newbie rower may row slower than the tide and tire quickly. 3 knots is about 4mph, or walking pace). There are countless places in the UK where the tide will flow faster than this, and you are literally at the mercy of the tide and along for the ride (6 hours in either direction, remember!) Tides flow fastest around headlands, and through narrow gaps. Whilst a pleasant paddle around East Head in Chichester Harbour, or round the back of Hayling Island Sailing Club might seem great, if you end up going out towards the harbour entrance you are in trouble on the ebb…some yachts can only just make it through there with the engine on full chat!
6. RIVERS – Tidal rivers flow much faster on the EBB than on the FLOOD. This is because on the ebb, you have both the tide, and the natural downhill flow of the river working together. So, always better to paddle upriver first and come back down on the ebb. Even better, time it so you go up on the flood (tide helping), turn around and come back down on the ebb (tide helping again!). This is called WORKING THE TIDES.
7. LOCAL DIFFERENCES – If you row out to Old Harry Rocks in Studland Bay, Dorset, you will be experiencing a generally sheltered piece of water, which has almost no tidal range or flow whatsoever. Turn to your right, and you'll see Peveril Ledge off Swanage. You can literally see the water flowing downhill here on a strong tide! Straight ahead is the Needles Channel off the Isle of Wight, one of the most dangerous and tidal stretches of water in the UK, and off to your left is the entrance to Poole Harbour, where tides flow so strong sailing vessels have been literally sucked straight under the chain ferry! Everywhere is different, do your research, speak to the locals, assume it's dangerous until you know otherwise.

*Credit to Iain Christie