



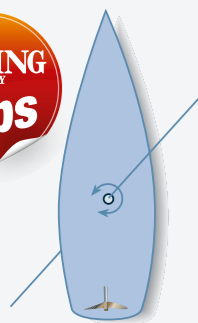
CROSS WINDS AHEAD

PART 1: STUCK ON! WIND ON BERTHS

THE BIG 5 PRINCIPLES OF BOAT HANDLING UNDER POWER

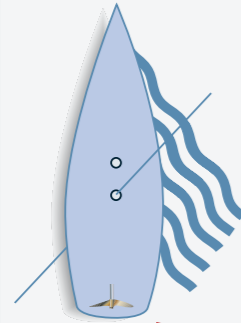
AS WE COVERED IN DETAIL IN *ST172* (AUGUST 2011) OUR BOAT'S BEHAVIOR IS GOVERNED BY FIVE BROAD PRINCIPLES:

1. Pivot Point



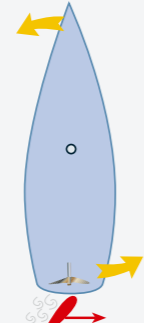
Our boat will rotate around the centre point of her underwater profile, just abaft her mast or the trailing edge of her keel if she's a fin keeler. If her bow is pushed to starboard her stern will move to port.

2. Windage



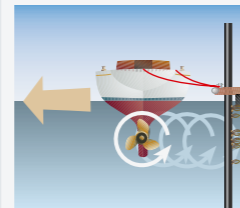
Most yachts have a centre of windage a little forward of her pivot point so her bow will be blown downwind more than her stern. With all power off she will ultimately assume a slightly bow first lateral drift.

3. Steerage



The greater the flow of water over the rudder, the better it turns the boat. A short blast of prop wash in forward (ahead) gear from the engine can be directed by the rudder to help a turn.

4. Prop Walk



Dependant on the design of boat, in astern gear the prop works as a paddlewheel turning the boat. We can guess the prop walk by looking at the moored wake with engine running in astern.

5. Slide



Due to centrifugal force and the liquid environment, our boat will slide outwards from a turn, so rather than thinking of our handling like a car, it's more like a shopping trolley on ice.



Sooner or later, whether we are planning an arrival or a departure, we're going to find a stiff breeze driving us onto a pontoon berth. Hamble School of Yachting's **James Pearson** goes over some of our wind on berthing options.

With autumn come the strong winds that can really test our mettle when it comes to boat handling under engine. With 26kn gusts across the deck of *Orinoco Flow*, HSY's relatively high windage Jeanneau 37 Sun Odyssey, and an average wind strength of 17kn, we were going to have to think hard about how we would safely move the boat onto or off this cross wind berth.

TIDE: KEY PRINCIPLE

We conducted this photoshoot an hour either side of low water, so tidal effects were so minimal we were able to disregard them. However, one key principle must be stated; wherever possible conduct all of these manoeuvres against the tide. It helps steerage by allowing us to achieve more water flow over our rudder without having to move quickly over the ground.

ARRIVING AT A WIND ON BERTH

In the scenario we have here, with a good Force 4 bang on the beam, assuming we stop our boat level with the berth we wish to be in, it's tempting to reason that our windage will push us into the berth, whereupon we can simply tie her up and adjourn to the pub. While that is partially true, and with enough fendering we can get away with a lot, it's worth thinking back to our Big 5 principles of boat handling (opposite). Here it's all about our windage, which we recall will push our bow downwind at a greater rate than our stern. Allied to the fact that we will

be slowing down as we berth the boat, it's clear that our boat will be inclined to go in bow first as we slow.

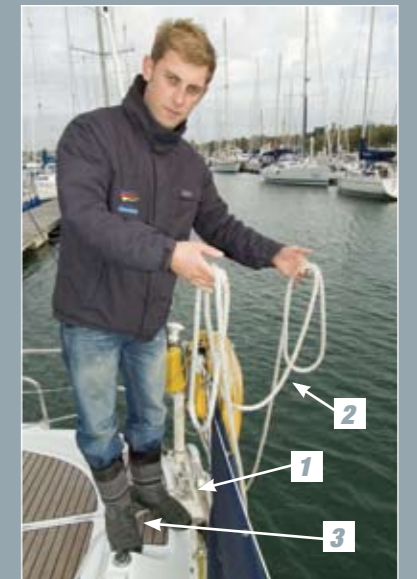
With this in mind, our crew should get the stern line on first. We experimented with a crew putting the bow line on first (picture top of opposite page). Our windage remains, when against a downwind pontoon, in fact our pivot point effect is even stronger as the boat levers against the solid object amidships provided by the pontoon. Aided also by the shape of the boat, we see that if we don't get the stern line on first, the boat will rapidly drift in until the flattish run of the bow is lying flat against the pontoon. In most conditions, when well fendered, this wouldn't create a major issue as the stern could be sweated or winched in fairly easily, but it's inelegant. Knowing that if there are any issues with getting the stern line on, the boat will roll her whole length along the pontoon quite rapidly we should ensure that she is well fendered from stern to bow.



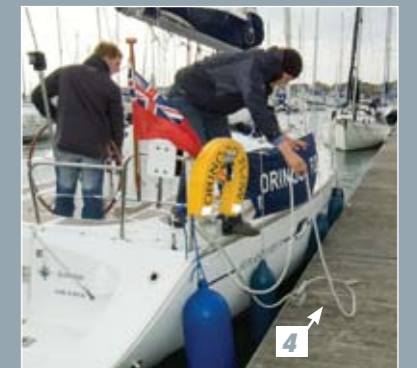
With this stiff breeze holding her on she'll stay put with a single stern line.

LASSING A CLEAT

If we are short handed coming into a wind on berth we can save time, look extremely competent and not have to leap ashore and OXO our cleat on the pontoon by lassoing the cleat.



1. OXO one end on the boat's cleat.
2. Take enough line to create a loop long enough to reach down to pontoon height with a coil or two spare in each hand.
3. Put a foot on the 'long end' while preparing and dropping – this makes it quicker to pull it in as it doesn't require uncleating first.
4. When close to the pontoon, drop the loop over the cleat. Don't aim for the cleat itself, we want to lay the rope around and behind the cleat.
5. Pull the loose end in and cleat off.

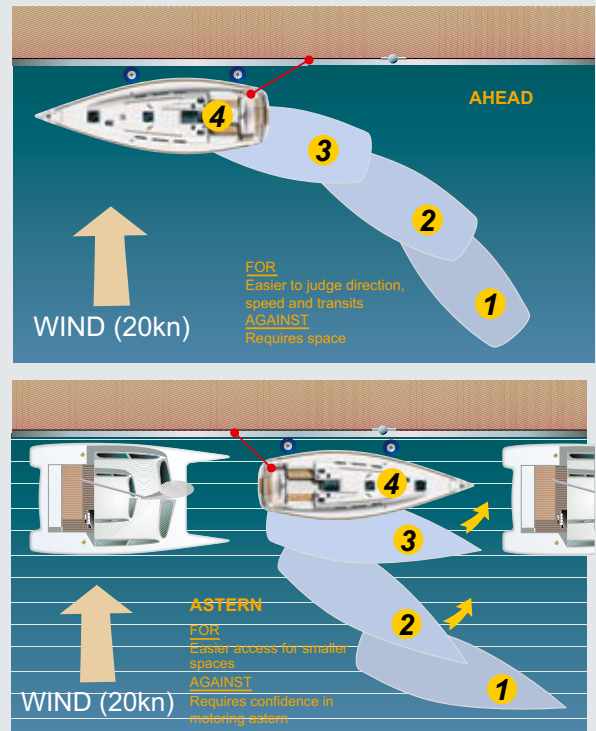


When we put our stern line on first it became clear that the boat was entirely and securely held, because the bow windage tensioned the stern line as the boat pivoted against it. This allowed us as much time as we wanted to attach the other mooring lines.

Our skipper's job is to turn smartly away from the pontoon to fight the likelihood of the bow going in too steeply. Our skipper should aim to over steer the boat (so that she has become slightly bow out from the pontoon) rather than under turn. We want the stern half of the boat to reach the pontoon first, so our crew can get that all important stern line on, so if our prop walk works in a direction that will drive the quarter in a little then so much the better. If it works to drive the stern away from the pontoon then we need to be gentle when we take the way off the boat with gear astern when berthing as it will exacerbate the windage effect. As we have learned it is important to get our stern line on fast, so lasooing the cleat without having to step ashore is a worthwhile skill to have in our armoury here. (See ST Tips box on previous page).

COMING IN ASTERN

Why do something backwards when you could do it forwards? Surely berthing our boat stern first is usually just an added complication? Well, given a long pontoon with lots of space upwind and along the length of it, most people would berth ahead on a downwind berth. Life though isn't always that easy. Consider, for example, a space only a couple of metres longer than our boat with expensive and beamy yachts both ahead and astern of our berth. With what we have learned about arriving going ahead, we know that if we get our stern quarter to the pontoon and a stern line on, the bow will hinge rapidly downwind with the inexorable reliability of a door closing, neatly berthing our



yacht in little more than her length. Of course, a good sized stern ball fender is required for this course of action.

GETTING HER OFF

Now that we have our boat securely snugged down, fenders straining to bursting point as 20kn of breeze pins her onto the pontoon, it's clearly time to go sailing. As we have already learnt, as long as the wind remains, our boat will stay put with just a single line; our stern line holding her. We are certainly not going to be undoing this crucial line until the load comes off it, but we can remove many of the rest to clear the decks for the forthcoming manoeuvre with no dramatic effects to our boat's position. In such wind strength, we are going to have to embrace the pleasing art of 'springing off' (right). In this, we attach a long stern spring from our aft mooring cleat, rigged as a slip to a cleat on the pontoon somewhere ahead of our shrouds. Applying power astern will then lever our bow out, so we can drive off from the pontoon upwind. As we will be hinging our boat against the pontoon by her stern quarter, again, a decent 'big boy' fender will be required here.

With the stern line still connected we run our spring. As we were running out of cleat space we ran the spring via the stern fairlead to a genoa sheet winch. It's important that this line comes aboard as close to the extreme corner of the boat as possible. With the spring in place and secured both ends we put the boat into gear astern and



A decent sized fender for the stern quarter is an absolute must for springing off.

slowly increase the revs while observing the effects. As the load comes onto the spring the bow will be levered out of the berth (right, top). Slack will then come onto the stern line, at which point the crew can undo it and remove it from the equation. Now, if we juggle with the revs and steering we can make the bow hinge outwards, back in again or hold it stationary. If we steer away from the pontoon and reduce power the bow will come in towards the pontoon. If we steer into the pontoon and increase power, our bow will move out. When we tried it, the wind

was coming through in strong gusts, so we had to let off on the power a little during the lulls and give it a bit more gas during gusts to ensure the bow came out in a controlled and progressive manner. Once the bow is well out, a good 45° to the pontoon, it's a reasonably straightforward task to motor slowly ahead, taking the strain off the spring. Our crew then has to work smartly to undo one end of this slipped spring and pull it through. As the line is long enough to be capable of going



through the prop, it has to be pulled through as quickly as possible. Communication between the crew and helmsman is key here. The crew needs to make it clear that the line is fully slipped once everything is on deck, because at this point our helmsman is wanting to hit the throttle fairly soon to get steerage way on the boat upwind before she starts getting blown too far back into her berth. In the event of the slip getting caught up, it is very important that the crew lets the helmsman know so they can take way off the boat and abort the manoeuvre. Even moving slow ahead, a line coming suddenly taught due to a tangle on the pontoon cleat or boat fairlead will generate easily enough force to rip a fitting out of the pontoon or boat and make quite an expensive mess.

It goes almost without saying that to prevent such problems the best lines for slipping are ones that slip well, so pick a line that is slippery and will reliably pull through

HOW ABOUT ASTERN?

As we are equally able to lever our boat out either ahead or astern in her own length, there is little advantage in terms of space needed to coming out astern. There may be times though when tidal effects dictate that we need to do it astern, as we always want to come out into the tide. There is some argument that the shape of the boat means that levering her off around the bow can sometimes give increased levering force out of the berth. For most boats the bow is more easily fendered, especially if you have a long overhung counter stern that won't let a ball fender rest peacefully there. There is also the advantage that the slipped line from the bow is less likely to go through the prop. The propensity of a yacht's stern

the pontoon cleat. One with a frayed end that someone has helpfully put a stopper knot in is a recipe for disaster.

Apart from this crucial ropework, the other main way people go wrong on springing off is in not getting the boat pointing far enough upwind to allow for the fact that she will blow back into the berth somewhat before reasonable steerage way ahead can be achieved.

When coming out of a berth with other boats to leeward of our path out this can mean we could get driven onto them if we

dally too long. Having a crew member with a roving fender on the leeward deck in such a manoeuvre is an eminently sensible insurance policy even if you do plan to perform slick ropework and helming.



to seek the wind, allied to all of the above mean that certain boats perhaps with high windage or somewhat underpowered, when very strongly pinned on, will only go out astern. The only downsides are that if you come out stern first there is a further delay before you are going ahead with adequate



steerage, plus, some sailors and boats really aren't as confident going astern.

CONCLUSIONS

For both arriving and departing a wind on berth, a 'Big Bertha' round fender earns it's place in a yacht's inventory. Many yachts

still do not carry one however.

As there are some advantages that may be gained from either entering or leaving a wind on berth astern, it is worth gaining

confidence in our boat while manoeuvring astern.

In a wind on berth our stern line is key. It is first on and last off before the spring.

ABOUT THE AUTHOR

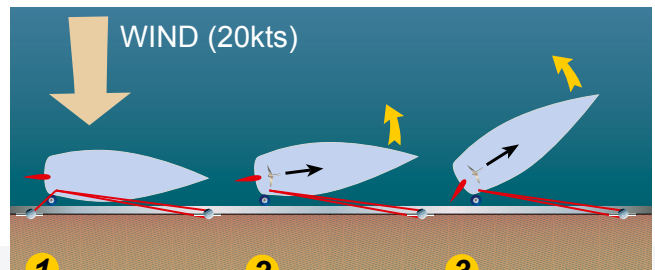
James Pearson is an RYA Yachtmaster Instructor and Chief Instructor at Hamble School of Yachting. He has been a keen sailor since the age of seven, sailing on a variety of craft ranging from racing dinghies to tall ships. He became a professional instructor at 18 and has sailed tens of thousands of miles since and taught hundreds of people at various levels through the RYA schemes.

HAMBLE SCHOOL OF YACHTING

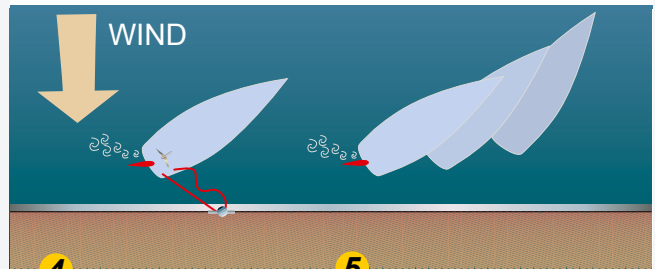


Hamble School of Yachting's friendly and experienced instructors have offered high standards of tuition for over 30 years. The school offers the full RYA training programme both ashore and afloat for all levels of experience as well as own boat tuition from one day covering sailors' own particular needs right through to a full RYA course. As demand has increased, the school has introduced many bespoke courses, such as yacht maintenance training, ISAF Offshore Safety Training and professional STCW qualifications. More recently, the School became the official training partner for the World Cruising Club, the organisers of the Annual Atlantic Rally for Cruisers (ARC).

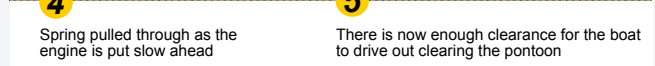
Contact: www.hamble.co.uk



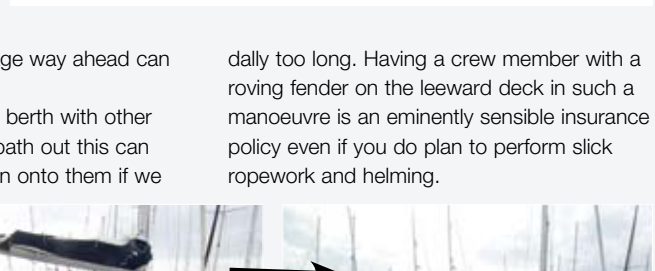
1 Sternline and spring set up as slips



2 Engine slow astern with stern line removed



3 By steering into the pontoon and increasing the power astern, the bow will swing out



4 Spring pulled through as the engine is put slow ahead



5 There is now enough clearance for the boat to drive out clearing the pontoon