

Otter's Escape in Storm Hector – June 2018

Dragging Our Anchors in a Force 10

Christopher Elliott

We were woken by a loud bang, just before 0300 in the early hours, as a violent gust slammed into *Otter*, our 33 foot Moody Eclipse, laying at anchor off Plockton in the Western Highlands of Scotland. She heeled over and sheered-off violently. Other gusts followed in rapid succession and a few things began to fall out of the cupboards, as *Otter* surged to the wind.

We looked out into the early grey dawn to take in what was happening; it was raining hard, the air was full of spume and a short, sharp sea was building. But we were unconcerned, because it was all as expected and we were very well anchored, close under the lee of the land. A Halberg Rassy 38 to starboard was holding well, although her keel became visible as she swooped away violently, and her dinghy was flying around at the end of its painter, completely airborne and spiralling madly. It provided a moment of black humour, which was to fade soon enough.

Suddenly, out of the mist and spume, we saw a large catamaran bearing down on us, before she slid away and rotated off to leeward. We asked ourselves if there was anything we could do to help her, before realising that we were dragging too. . .

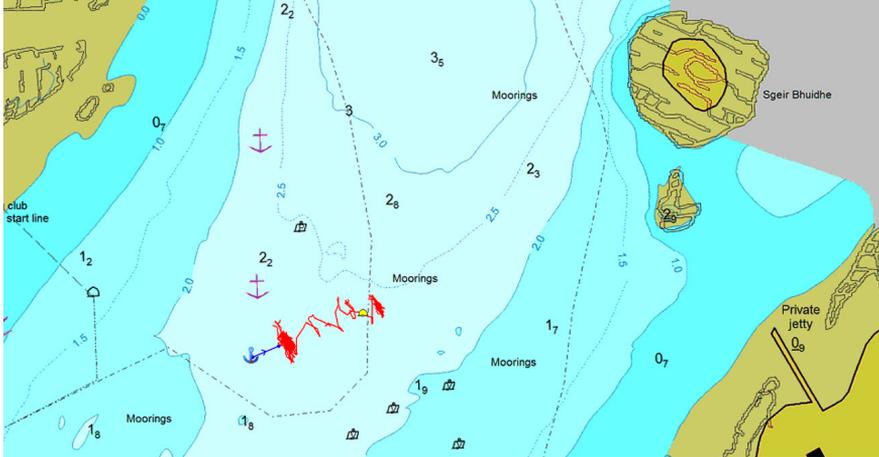
The summer of 2018 had been glorious as we cruised the length and breadth of the Western Isles for two months. Hector, with storm-force winds from the south and west, occurred in the middle of that cruise and the crew of myself, my wife Maggie (RCC) and Gillie Green (RCC) decided to ride out the storm at anchor in Plockton.

As Hector approached, the different weather forecasts had a merry debate about the likely top wind speed, with most predicting F7 gusting F8, whilst others settled in at F8 to F9. In the early evening a more sombre consensus began to emerge of prolonged gusts of Storm Force 10, so we laid out an additional Fortress anchor in a vee, 'just in case'. We had the kit prepared to lay our Spade and Rocna anchors in tandem on a single line, which at the time was the expert's preferred arrangement, but we didn't think the considerable effort of doing so was justified.

Once it sunk in that the impossible had happened and that we were dragging both our anchors, we gathered in the cockpit in foul weather kit and life jackets. The full fury of the wind was like standing up on a motorbike, driving unprotected at 70 mph into a violent rainstorm. It was noisy and very difficult to get bearings because we were sheering all over the place, with the

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air full of spray. As each blast hit, *Otter* yanked very violently at her anchors, then careered off, to be tugged back abruptly at the limit of the scope. Without



Trace showing the initial anchor pattern as a red smudge, then zig-zagging backwards as we dragged NE, until capturing a mooring buoy. We were heading for Sgeir Bhuidhe.

any nylon in the rode, apart from a short snubber, the anchor chain was rod-taught, with all the stress being transmitted down it to the anchor without relief. This galvanised us into having to do something.

First thoughts were to engage the engine, but it seemed to have little effect going against that wind; with no movement forwards to provide steerage it simply assisted in going out on the sheer. This came as a bitter surprise, for without some intervention, our trajectory was now directly backwards at a stately pace onto rocks 250m downwind.

Then we were very lucky. Through the mist and rain, we spied an unoccupied, private mooring buoy astern near the limit of our port sheer. Somehow we managed to lasso it as it came close and then to lead it forwards to the bow in the tempest, a story in itself. We were now safe because the short scope of our new friend was damping-down *Otter's* sheering considerably. It was all over and we put the kettle on.

Without that buoy, however, our situation would have been dire. We might have ended up on the rocks to our stern, or, been cast across Loch Carron onto an open, iron-bound shore 1.5 miles to the lee. Our crew, aged 70, 71 and 77 years, with several dodgy joints, would have been very hard pressed indeed to recover the main anchor in wind of F9 – 10, so that *Otter* was freed to manoeuvre. With the added difficulty of communicating from bow to helm in a storm, we would have had to cast off the anchors to gain control. And that would have been quite a decision.

When we lifted our anchors two days later, our main anchor was still solidly dug in and came up clean with little weed, showing that the forces on it had

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been strong enough to 'plough' it backwards through the bottom mud. Our second anchor had rather more weed on it and came out of the mud more easily, suggesting that it had never really set properly.

We also noticed that the two anchors had remained the same distance apart for 36 hours throughout the storm, signifying that they were acting independently, for if they had been working together they would have surely merged towards each other as they ploughed backwards. Instead, it is probable that they loaded individually as the yacht sheered across to each in turn. This demonstrated the limitations of the vee anchor technique, cautioned against in *Heavy Weather Sailing* and by Rocna designer Peter Smith in his articles on anchoring.

One very positive note throughout the drama was struck by *Otter's* crew.

Reflections

We had never been afloat in a small yacht in a storm of that ferocity before and, yes, whatever you read about storms, the wildness and sheer power of the wind came as a surprise. F10 is not just two notches up from F8; it has a completely different character. We had become very familiar with sorting out dragging anchors that had not set properly, or had been caught in kelp or were in poor holding, but what we had never seen before was the failure of a well-set anchor, in good holding in the lee of the land overpowered by the elements. And the possibility of two anchors dragging was very far from our thoughts indeed.

None of us on board were spring chickens, but the crew of Maggie and Gillie were utterly calm, alert and purposeful throughout, striking the pose of 'just another day at sea', whatever their inner demons. That calm competence was a major contribution to a safe outcome.

In a testing situation it is important to work out beforehand what is going to work and not waste time trying things that have little hope of success. We had the instinct beforehand that the engine would take over if the anchors dragged, which proved bitterly false. Studying the chart later showed that there was only one realistic alternative, a spot off to the starboard quarter where we could have cut and run to, driving the yacht into the mud if necessary. I should have realised that fact beforehand and started working towards it as soon as we starting dragging.

We had access to a number of weather forecasts beforehand, most of which were in conflict with each other to some degree, and we were ambushed by a worsening prediction just before dusk. The most pessimistic throughout, and most accurate in practice, was the Met Office Inshore Waters Forecast for twelve miles off shore, which in the past had consistently predicted higher wind speeds out to sea than ever materialised in the shadow of the land. Mentally taking a middle average of the several forecasts was mathematically

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elegant, but was a mistake, especially when the channelling potential of a glen directly to windward of the harbour was not given sufficient weight either.

There comes a time, say above F 8, when you might want to lay out a second anchor and there are good alternatives to the discredited vee arrangement that we had used above. First, you could lay anchors in tandem, one behind another, connected together by a chain, or perhaps Dyneema, of the same length as the yacht. Second, following a scheme published by Tom and Vicky Jackson, you could create a 'mooring' by laying the anchors against each other. To do the latter, the main anchor is laid as normal up to windward and a second anchor then laid 180° from it, both near the limit of their scopes. The line from the rear anchor is passed through a block attached to the main rode some metres below the bow. The rear anchor line is drawn in very tight, so as to set the two anchors firmly against each other and 'mooring' the yacht on a short scope. This might seem counter-intuitive, but it has the huge advantage of reducing the sheering of the yacht.

Knowing all that, we now have a simple formula. Imagine the worst and then plan for it, laying multiple anchors if required; work to the maximum possible wind speed, not the average; always use a rode of chain and rope together, doubling up the nylon part if you are worried about chafe; size for a bigger anchor in preference to up-sizing a chain; have an additional anchor ready 'just in case'. Five days after Storm Hector had passed, I made some of these modifications and sat out a full gale at anchor alone back in Plockton, completely unconcerned.

Finally, this is never going to happen to us again (!), is it? So it might be useful to pass on a few hard-won questions for others to consider if they find themselves in similar circumstances:

1. If you started to drag, could you re-anchor in the same area in the prevailing conditions? If not, where would be the safest locations for you to flee to? Could you get there? Would it make sense to leave the whole anchorage for the open sea, or not?

2. Once you had started to drag, where would be the worst places you could end up? If you were driven onto rocks, how would you save your crew? How much time would you have on the yacht before having to abandon it? (Following a similar experience, Jay Devonshire (RCC) suggests you probably have longer than you think.)

3. At what stage do you initiate a cry for help on the VHF: when you are dragging, or when you are on the rocks? In such circumstances, should humans be ashore or afloat before such a storm struck?

4. Does your engine/prop combination have the traction to drive you upwind in a storm? If it is an auxiliary, probably not enough. Your only escape then would be downwind or across the wind, so where would you head?

5. Before you can begin to manoeuvre a boat which is dragging backwards in such conditions, you would have to take-in or cut-free your anchors. If you

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were forced to cut your anchor(s) and you needed to re-anchor, what would you then use? (Answer: you do need more anchors than you think.)

6. Are there circumstances sufficiently threatening where you should no longer respect the private ownership of available moorings?

Further excellent advice on anchoring problems and their solutions can be found from Peter Smith in <https://www.petersmith.net.nz/boat-anchors> and Alain Fraysse at http://alain.fraysse.free.fr/sail/rode/rode_b.htm. The former has practical advice about laying tandem anchors and the latter has a good theoretical simulation of the increased stresses that build on an anchor as a yacht sheers and how the stresses progressively increase with each cycle. There is also much good advice to be found in the latest edition (seven) of *Heavy Weather Sailing*. Tom and Vicky Jackson produced an article about using two anchors to create a 'mooring' in *Yachting Monthly*, November 2007. They also describe the moor on their website at <http://www.sunstonesailing.com/tips/tipsb.html>.

Good luck!



Otter's barometer. The pointer was set at 1025 mb late on 14 June before the storm struck. Only 12 hours later, it had sunk by 45 mb.