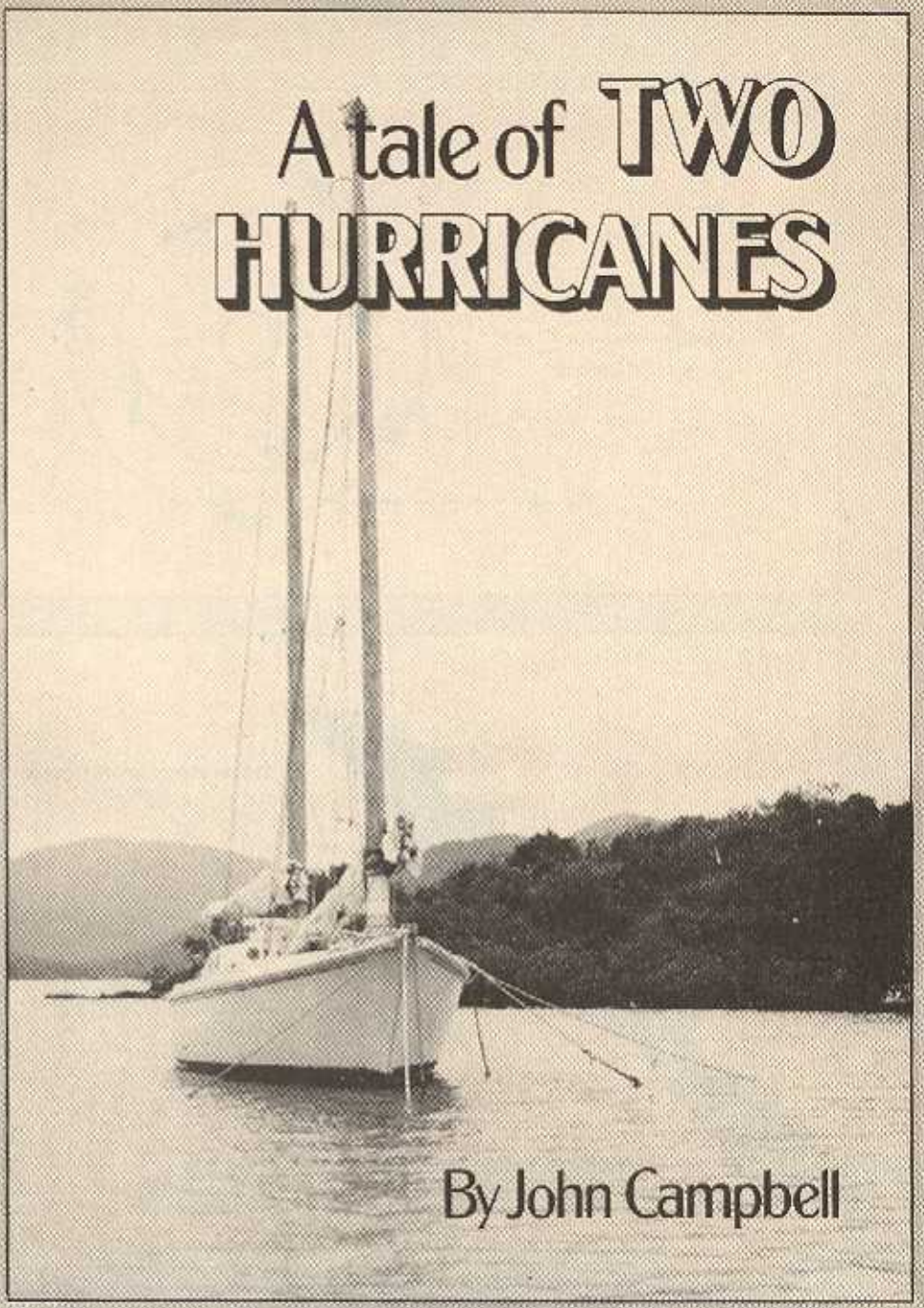
John Campbell's yacht **Papilio Rûga**, *a 35ft Chinese lugsail rigged schooner, lies at anchor in the Virgin Islands awaiting the onslaught of the two hurricanes David and Frederick*

A tale of TWO HURRICANES



By John Campbell

Misfortune comes in pairs, not threes, as JOHN CAMPBELL discovered when hit in succession by hurricanes David and Frederick, in the Caribbean last year

WE HAVE ALL READ lots of advice about how to cope with heavy weather at sea, but none of this was any use to us at all when we were suddenly faced with an approaching hurricane. The hurricane, named David, was said, by a rather glib announcer on the radio, to be perhaps the strongest ever to threaten the Caribbean. It was offering sustained winds of up to 150 knots. No way were we going to meet that out at sea; a good snug anchorage sounded a much safer bet.

Where to anchor? Indeed, how to anchor? What sort of conditions should we expect? We had a lot to learn, and not much time. The hurricane was only about 700 miles away, approaching us at 15 knots.

The first decision to be made is to select the anchorage. An ideal anchorage would obviously be one that offers good protection in all directions. Remember that in a severe hurricane, in addition to big seas, the tide could be forced up much higher than normal. A storm surge of 10ft would not be uncommon, and surges in excess of 20ft have been known. An anchorage behind a reef or low sandy spit, while excellent for all normal conditions, would become untenable under the extreme conditions that we are now considering.

Unfortunately, perfect hurricane anchorages are few and far between everywhere, but they seem to be in particularly short supply in the Virgin Islands. Those that there are tend to get filled up rapidly at the first mention on the radio of the word hurricane. We therefore began to consider the Grade 2, not quite perfect, category of anchorage, in the hope that we could find somewhere not too crowded. We tried to make the best choice with regard to the expected conditions.

I am not about to name the bay we chose, as we may want to use it again! I will however explain how and why the choice was made.

Let's go back to basics and take a brief look at the whys and wherefores of hurricanes. We do not need to know how or why they are formed, or even where they get their formidable energy from. All we are really interested in is what they are likely to do, and how they will affect us. Perhaps at this point I should qualify everything that I am going to say, by pointing out that the only predictable thing about a hurricane is that it will probably behave in an unpredictable manner.

What then is a hurricane? Mr Beaufort gives the term to any wind in excess of 64 knots. What we are concerned with, though, are the tropical revolving storms that plague most of the normally placid Trade Wind areas during the late summer and early autumn. In various parts of the world they have different names. Cyclones, typhoons, and willlwaws are all the same as the Atlantic hurricanes. They are, in fact, like enormous whirlpools in the air. In the northern hemisphere they revolve in an anti-clockwise direction (I would hate to have to explain why), and down under, they move clockwise.

The direction of rotation is the major factor in telling us the direction of the wind we will get. Looking at Figure 1, it will be obvious at once that if the storm centre passes south of us, if for example we were at Position A, then the winds we will get will be NE. As the storm passes, the wind will veer to the east before finally becoming SE. If the storm centre passes north of us, for example if we are at Position B, the first wind will be NW, and it will back through west to become SW finally. If the centre of the storm passes directly over us, such as at Position C, then the winds will be basically north, followed by a period of calm as the 'eye' passes over, then the wind will become southerly.

'Simple,' they cry, 'all that remains now is to plot the expected track and we're home and dry.' This is where the unpredictability bit really starts, however. The actual tracks of tropical storms are shown on pilot charts, routeing charts, and in the pilot books of the areas concerned. It is easy to see that they appear to pick almost any track they fancy. There are, however, general tendencies, and I will stick my neck out and point out these for the West Indies hurricanes, with which I am gaining an unwanted but increasing familiarity.

The hurricanes that threaten the Eastern Caribbean form out in the Atlantic, often quite close to the African coast. Once formed, they begin to move toward the west. As a sweeping generalisation, they tend to do one of three things. They can continue in a fairly straight line, usually a little north of west until they cross the Caribbean to reach Central America where they dissipate over the land.

More typically, they will move west-north-west for a while before suddenly turning toward the north-east. This turning phenomenon is called recurving.

The third choice, as it were, is that they recurve almost as soon as they are established, and head toward the north-east.

Within the confines of the tropics, the storms will very, very rarely (I almost wrote never!) move toward the south on their westward track. If a tropical storm is reported north and east of your position, and its track is anything north of west, it is a safe bet that the centre will pass to the north of you. It is extremely unlikely to curve toward the south, but there is a sporting chance it will recurve to the north or north-east before reaching you, and will not affect you at all.

Figure 1

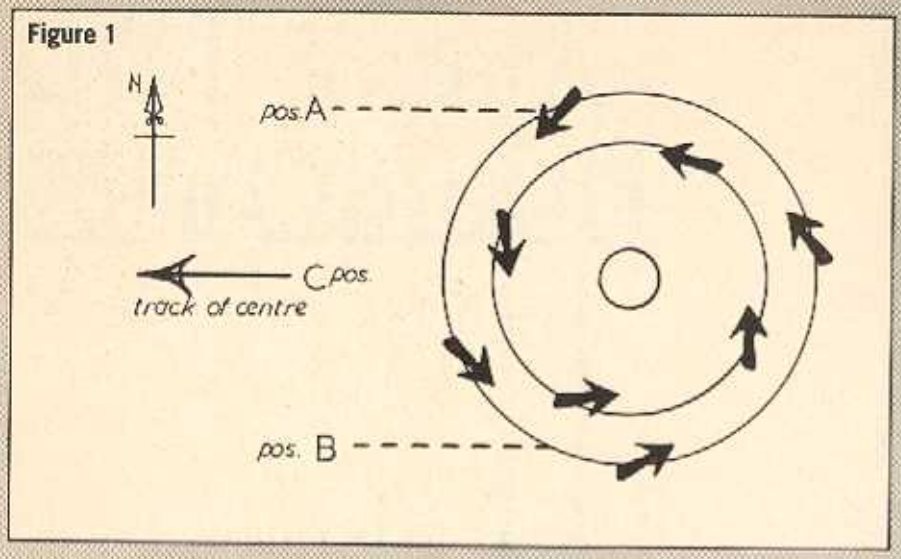
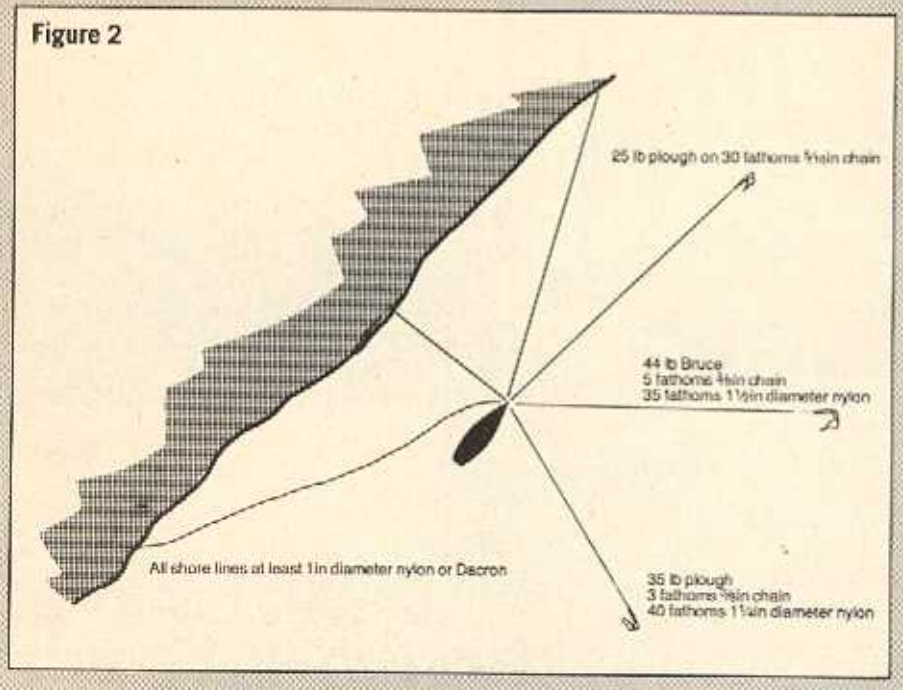


Figure 2



It was Tuesday when we decided to make a move. The radio reports put the centre of Hurricane David about 650 miles south-east of us, moving west-north-west at around 15 knots. If it continued on its present track, it would pass about 100 miles south of us in approximately 48 hours. That, as we have seen, would give us basically easterly winds. If it should start to recurve, and pass over us, or close east or west of us, the winds would be northerly or southerly. We felt it was unlikely to pass north of us, and we would be unlikely to get westerly winds.

On this basis we selected our anchorage. We chose a long narrow bay with its axis running north-east to south-west. The open end faced the south-west, the direction we hoped the wind was least likely to blow from. If the wind did blow from that direction, the sea would have a fetch of a mile and a half. Otherwise, the bay would give good protection.

The wind fell light, and we have no engine so progress became slow. Was this the proverbial calm before the storm? It was dark as we finally arrived off the entrance to the chosen bay. Through the binoculars we could see the vague shapes of other yachts in the bay. We decided that discretion was the better part of anchoring, and dropped the hook just inside the entrance.

It was a good job we did. Dawn displayed a veritable cat's cradle of lines running out from each yacht. Had we sailed further into the bay in the dark, I shudder to imagine the tangle we would have found ourselves in.

The sky was completely overcast and the dirty grey clouds were scudding rapidly overhead. We did not even wait for breakfast, but hoisted a little sail and raised the anchor. We chose a vacant spot part way along the northern shore of the bay and anchored about 25 yards off the mangrove trees, in 20ft of water.

We shackled our kedge anchor, a 25 lb plough, on to our normal main anchor's ¾in chain, and dropped that first. We let about 10 fathoms of chain out and lay to the single anchor for a few minutes to let it dig well in the muddy sand bottom. The wind was blowing from the north-east, down the length of the bay. It was then an easy matter to veer more chain and lay 30 fathoms of chain reasonably straight along the bottom, parallel to the shore. We laid the chain first, as it is almost impossible to lay an anchor on chain from a dinghy. Using the dinghy, we laid the other two anchors as shown in Figure 2, and rowed three lines ashore to the mangroves.

For the uninitiated, mangroves are trees that grow up out of the water. Their roots look like a tangle of thick rubber hosepipes, which twine around each other above and below the surface of the water. It is impossible to tell where the roots of one tree start and another finish, but such a tangle of these thick rubbery roots ensures a very firm anchorage for the trees, and for boats.

We found three substantial trees in the right sort of positions and tied our lines on low down, right among the tangle of roots. Care was taken to make sure that there was nothing that the lines could chafe on. All the lines were led to the bow of the boat and, with the exception of the shore line leading to the west, they were pulled taut. The one shore line was left with some slack in it so that the boat could swing to face the east, the most likely direction for the wind to come from. We decided that, as we had room, it was better to let the boat turn to face the wind, rather than risk having her anchored across the wind. Some of the others in the bay had, however, secured anchors and shore lines to both bow and stern.

On all the lines, we had enough to let more scope out should we experience a storm surge, and an excessively rising tide. All the lines were parcelled with canvas chafing gear where they passed through the fairleads and, as a final precaution, I donned diving gear and checked each of the anchors and rodes in turn. All that remained was to have a well-earned breakfast.

No sooner was breakfast over than a vicious rain squall struck. It blew 40-50 knots for several minutes and rained hard. This was but a foretaste of things to come, yet it claimed David's first victim in our area. Unbeknownst to us, a 54ft gaff ketch was motor-sailing towards our bay as the squall struck. The headsails and mizzen were set, but when a jib sheet found its way to the propeller, she was swept helplessly down on to the waiting reef in the sudden wind.

The squall passed as quickly as it had arrived, and our various anchors and lines had held securely. We eagerly awaited each 3-hourly update on the position of the storm, and carefully plotted its track.

By late afternoon, David was poised to devastate the island of Dominica some 250 miles south-east of us. On its present track, it looked as though it would pass about 100 miles south of us. Already, the easterly wind was strengthening, and as the last daylight disappeared, we saw endless dirty grey clouds racing low overhead, with the overcast sky showing an ominous yellow tinge.

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Soon after midnight, the wind really began to howl. The boat was quivering as each new blast of wind hit the masts. We checked over our safety equipment in case we should have to abandon the boat. We had ready face masks and snorkels, as possibly being the only way we would be able to see and breathe in the wind and torrential rain that was now beating down on the deck. Also ready were powerful, waterproof flashlights, together with heavy boots, thick jeans and waterproof jackets. Our jackets have harnesses built in, and our plan, should the need arise, was to take to the water and make our way along one of the lines leading into the mangroves. We could then harness ourselves among the roots, moving up if the tide rose abnormally.

John Campbell recovers one of the two plough anchors which, together with a 44 lb Bruce and three shore lines, kept **Papillo Rûga** *safe in her chosen anchorage*

but hopefully sheltered from the worst of the wind and any flying objects.

If this sounds melodramatic, let me point out that in Dominica, which caught the full fury of the storm, in some places the very bark was blown off the trees. No yacht, however well secured, could possibly survive such conditions.

We did not sleep much, but lay listening to the wind and the continuing reports on the radio. At dawn, there was a slight lull in the wind. It dropped to perhaps Force 8.

I took the chance to go forward to check the lines for chafe. I kept crouched low and held tight, but on my way back to the cockpit a gust almost blew me off the deck. A harness would have been a sensible precaution. All was well on deck. The chafing gear was all in place and the sail covers were still secure, held by the extra lashings we had put on. I went down below for breakfast, glancing at the dinghy astern, now completely waterlogged.

We had decided to leave the solid dinghy in the water, not because we expected to be able to use it in such a wind, but at least there could be no possibility of it blowing off the deck, and perhaps causing damage. We did have a 50 lb fisherman anchor in reserve for any unforseen panic. We intended to lay that out by using a Scuba tank, and walking along the bottom carrying the anchor to the desired position. That would be the only possible way to lay out another anchor in these conditions.

The lull had only been temporary. The wind soon returned to its former fury. Although the bay was only about 200 yards long, the wind had whipped up quite a big sea. As we watched, an even stronger gust blew, and we saw for the first time the surface of the water being picked up by the wind. It was not just the tops of the waves blowing off, but an area of water about 50 yards square was picked up and blown away as spray. It was like seeing iron filings being picked up by a magnet. That made us realise how hard it was blowing, perhaps 60 or 70 knots, yet we were now feeling quite secure on the boat. Daylight had made the whole thing less frightening. We could see that we were not dragging, and, our biggest worry, that nobody was dragging down on to us.

As the day progressed, our confidence grew, and the wind definitely began to ease. By evening we began to see various heads peering out of hatches, and a couple of very bedraggled-looking pelicans appeared among the mangrove roots. Everybody was fed up with the weather.

That Thursday night would have passed without anxiety, except that the radio reports told us that another depression had formed, and Hurricane Frederick was on its way. It was some 1,500 miles away, following a track a little north of David's. We never did hear what happened to the storm that got the letter 'E'.

Friday was a rainy, squally day. It was a thoroughly unpleasant day largely spent following, on the radio, the progress of Frederick towards us.

By Saturday the weather was starting to clear up, and some of the braver souls made dinghy expeditions ashore. By Sunday everything was calm enough even for us to venture ashore. This was the calm before the second storm.

The track we plotted showed that the storm centre was likely to pass very close to the south of us, or perhaps even over us. There was little else we could do, but check everything again for chafe, and wait. The waiting and the anticipation were the worst part although, as we had survived the first one, we had every reason to assume that we would survive the second.

As darkness fell on Sunday night, the wind began to pick up once more. The centre was headed right for us, but then the radio reports said it was being downgraded from a hurricane to a tropical storm. No sooner had we heard this welcome news, than it really began to blow hard. It blew much harder than at any time in the previous storm, and the boat was quivering continuously. Our newly-acquired confidence evaporated.

The rain became continuous, mingled with the flying spray. Overhead there was lightning. It was not just the occasional flashes that we have all seen. There was almost continual sheet lightning, lighting up the whole sky like some gigantic, flickering searchlight.

We eyed our safety gear once more and continued to listen to the reports on the radio. At the height of the storm, at about 0200, a drama began to unfold on the VHF radio. A 50ft yacht with a skipper and three inexperienced charterers aboard had dragged her anchors and had been swept out to sea. The anchorage they had chosen is well known for strong winds funnelling through — surely a place to avoid in a hurricane? They had first tried to motor into the wind, but found that impossible, so had tried to partly unfurl the roller jib.

In the excitement and the wind, the jib sheet got round the prop. Now, no headsail, no engine, she was in imminent danger of ending up on the same reef as the other ketch. It was impossible for any yacht to go to their assistance, and it was with great reluctance that the US Coast Guard cutter put out from St Thomas to go and rescue them.

Listening to the exchanges between the boats helped the night and the worst of the storm to pass. In the light of the dawn we could see again great areas of water being picked up. I held out our little hand-held anemometer, and it went straight off the scale, showing more than 60mph of wind at deck level. This is equivalent to 80mph at 10 metres above the surface, which is the height at which wind speed should be measured: 80mph is well into hurricane Force 12.

The wind slowly eased during the day but the rain continued to fall all the next day. The two storms had given us 38 inches of rain in 6 days. This was no problem to the boats, but caused many problems ashore.

On Wednesday, the wind eased more, and the squalls became less frequent, but we could still see a big sea running outside. We spent the afternoon recovering the various anchors and lines, but waited until the next day to sail.

As we sailed back to our anchorage in Road Town, we saw an amazing number of sea birds. Everywhere we looked, they were feeding in an absolute frenzy. It had obviously been a long 10 days for them as well. <>

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