



The Lohikari family (right) The Smith family (left) Lotta Dizengremel and Sara Mannerford (right) Alfie Moore (left)

15 FIXES AT SEA

Transatlantic sailors tell Ali Wood how they used their ingenuity –and sometimes bravery–to cope with emergencies on passage

Boats sailed 24 hours a day, seven days a week rarely remain intact; ask anyone who's crossed an ocean. Whether it's a jammed headsail, a failed autopilot or a line chafed to the core, every boat has a casualty.

Having covered the Atlantic Rally for Cruisers (ARC) for many years now, I've learned to ask not 'did anything fail?' but 'what failed and how did you fix it?' When help is a thousand miles away, crew have to dig deep for solutions.

1 Wear and tear

A passage from the Canary Islands to the Caribbean is the ultimate test of gear (see *PBO* March 2024), but no matter how new your kit, it can't stand up to wear and tear indefinitely.

"Like a shotgun going off," that's how one crewmember described the noise of the spinnaker pole crashing down on Moody 46 *Evangeline* when the rivets sheared. The sail "flapped all over the place," explained crewmember Graham

Wood. It was just one of several wear-and-tear issues, none of which stopped the crew from Derbyshire getting a podium position in ARC+ 22.

Graham gave me a tour of the boat in Grenada, pointing out where they'd lashed the spinnaker pole with rope and cut up a hose pipe to prevent sheets rubbing against the bottom of a shroud.

"We went through rope casing every four days," he said. "We kept having to cut off the end and tape it."

Worse still was where the lines were

Ali Wood

Old hose pipe protect the chafe on Ev

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The Lohikari family (right) The Smith family (left)

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The rope chafing on *Evangeline* was extreme

All Wood

Old hosepipe is used to protect the lines from chafe on *Evangeline*

rubbing on the cars and chafing on guardrails and shrouds.

"We had to think on our feet. In the end, we re-rigged the spinnaker and took the spinnaker lines back to the cockpit but not through the cars. You don't get this kind of issue when you're daysailing!"

2 Autopilot failure

Other casualties on board *Evangeline* included the genoa, which had torn where it fed into the furler, a leak in the rudder and failure of the autopilot's hydraulic ram.

"The autopilot is still moving but there's no power so it's not doing anything to the wheel," said Graham.

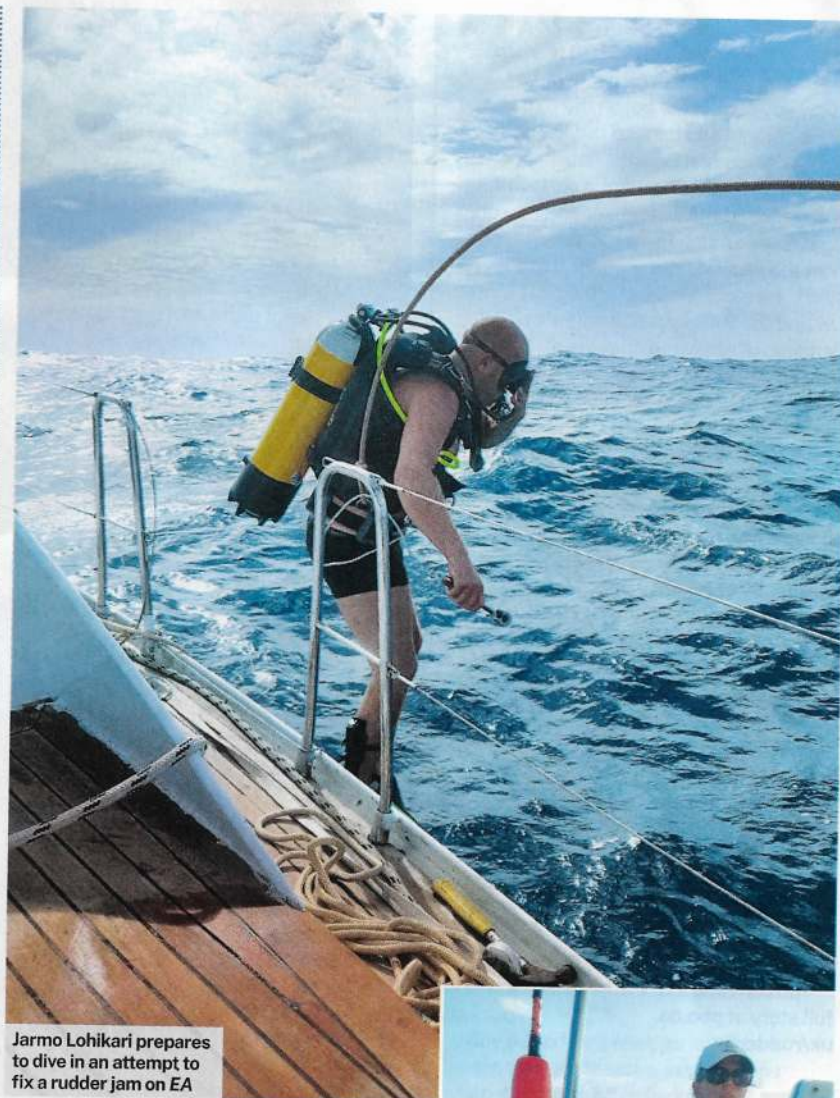
"The loads on it every second are immense. The jacks are very hot when you feel them. I wonder if at some stage that hydraulic fluid just gets hotter and hotter, especially with the swell and the rudder pushing against it? The seals go and the hydraulic fluid leaks out."

"It comes back to the same thing," he added. "These items are not designed to be pushed to the limit the way they are on an ocean passage."

For Stephen Heap, who did the ARC in 2018 on board *Nina*, an X-Yachts Xc 45, the 10-year-old autopilot was helpful, but in the end, they hand-steered.

"We had something wrong with the rudder bearings. It seemed the more we steered the hotter they got and the stiffer the helm. The autopilot was quite energetic," he said.

According to marine surveyor Ben Sutcliffe-Davies, rudder bearings often suffer from wear. Certain materials such

Jarmo Lohikari prepares to dive in an attempt to fix a rudder jam on *EA*

as nylon can swell, and other common rudder problems include water ingress into the rudder and crevice corrosion in stainless steel rudder stocks. Before an ocean crossing, thoroughly check your rudder for play and moisture.

3 Rudder failure

A hydraulic oil leak was the cause of autopilot failure for the Lohikari family on board 60ft Hans Groop, *EA* in 2019.

Fortunately skipper Jarmo, a plumber by trade, was able to fix it, as well as the hydraulic kicker which later failed.

For 10 days the boat sailed well, but when the autopilot broke again they resorted to hand-steering the last 600 miles... until the rudder jammed.

"We managed to get about 3.5 knots in the wrong direction. We could only sail to port, and were heading to Venezuela!" despaired Jarmo.


He took some photos with a GoPro camera attached to a boathook and saw that a 12mm bolt on the skeg shoe had come loose, preventing the rudder from turning freely.

The emergency tiller wouldn't work either, and as the swells built it was

Teija and Helmi at the helm of *EA*

impossible to steady the boat without steerage. Jarmo's wife, Teija, was seasick. Just when they thought things couldn't get any worse there was a huge bang as the rigging wire under the spreader snapped.

The quick-thinking crew used a spare halyard to secure the mast, and on realising they'd left the drogue behind, threw out a spinnaker sock and deflated dinghy to stabilise the boat. They then set about fixing the rudder.

Spurred on by six-year-old daughter 

Lotta Dizengremel and Sara Mannerford (right) Alfie Moore (left)

The Lohikari family

The Lohikari family

Helmi, Jarmo donned his diving kit and jumped overboard with a 7mm wrench. "Daddy you always fix my toys, so I know you can fix the boat!" she told him. He banged and banged but the bolt refused to budge. Bruised, battered, and covered in antifouling, Jarmo surfaced and swapped the wrench for an 8mm one. "It was so much harder to get under the boat the second time, with the increasing swell," he recalled. "I knew the boat was OK and the hull wasn't damaged or bending, which was a huge relief. This time I did it! The bolt went back up into the skeg allowing the rudder to finally turn underneath it."

When he surfaced splashing and screaming, Teija was terrified – she thought he'd hurt himself – but he was just "really, really happy".

"It was the best feeling I'd ever had, succeeding like that... It's funny, we'd been so disappointed we lost the autopilot but that became the least of our worries when the rudder failed. Now that we were back to being able to hand-steer, we were overjoyed."

You can read the full story at pbo.co.uk/rudderfix

The Smith Family



4. A torn yankee sail (right) on *Blue Pearl*, and (above) emergency repairs being carried out

4 Torn sails

Sailing downwind for three weeks puts a lot of strain on the sails. James Fiske, who did the ARC in 2018 on *Gitana* explained: "The shock loading on the genoa as you come out of the roll and it collapses and fills is huge, and it's repetitive."

For some yachts, such as the X-Yachts X-50 *SeaGoddess*, this strain proved too much in spite of the "perfect 15-20-knot winds". The crew woke one morning to find their mainsail ripped.

Their new high-tech fibre laminate sail was not the type they could simply patch or stitch.

"We had to sail the rest of the way reefed and with a storm jib – we were bored out of our minds," said co-owner Pip Zee.

Other skippers – such as James Dean on Xc 45 *Nina* – attempted to patch the sail but failed.

"We glued patches to where the sail touched the spreader but the glue didn't bond well to the new sail and it fell off," he said.

While sailing to the start of ARC+ 2023, the Smith family tore the yankee sail of their *Moody 54 Blue Pearl*. They were night sailing when skipper Neil looked up and saw stars through the sail.

Twice they dropped the sail and

attempted to hand-stitch it but found it almost impossible to match the layers together. When they got to Gran Canaria, they had a new yankee and mainsail made of 11oz Dacron.

Sailmaker Daryl Morgan explained that the carbon sail with a lightweight taffeta may have suffered from water ingress, flogging, fatigue and UV degradation.

"Dacron sails, such as those the Smith family have now fitted on *Blue Pearl*, will do everything they need to," he said, adding: "Dacron is a woven fabric, not laminated, so there are no layers to fall apart. A woven sailcloth will do the job all day long."

When I met the Smith family in Grenada I was pleased to learn the sails had performed well, other than some chafing on the sacrificial strip. What did break, however, was the genoa sheet. Neil's daughter Chloe explained: "There was a big bang and the sail started flapping, but we had an old mooring rope so we took the core out of it, threaded it through the sheet and

whipped it on which helped for a while. I had to go on deck and attach it. I had my legs hooked around the sail. My body really ached, and I remember Dad kept saying, 'Do you want a coffee or a Nutella sandwich?'"

5 User error

The RNLI cites human error among its top five reasons for call-outs, usually in incidents such as grounding or collisions, but sometimes it can be due to misuse of

equipment. In an amusing blog on the World Cruising Club's website, Michael Hutchinson, owner of *Oyster 53 Distraction*, describes just how

easy it is to make a mistake under pressure.

"Simple acts like navigating one's way around the chart plotter have caused untold havoc. Of course, it looks cool to have a touch-screen with no buttons... until you're bouncing around the chart table attempting to set the navigation to a

'Sailing downwind for three weeks puts a lot of strain on the sails'



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6. *Aqualuna* forestay; rig get to work the forestay *Aqualuna*

Claire Wallace

Claire Wallace

waypoint when the boat suddenly lurches (again) and you've hit 'disengage the pilot' instead. No big deal? Normally not, but in 3.5m of swell, 25 knots gusting 30, sailing wing-on-wing with a TWA of 160° it's a slightly different proposition. You have a split second to decide: do I find the waypoint and press re-engage pilot, or make a dash for the wheel before the boat gybes and takes the rig out?"

6 Halyard wrap

Claire and Malcolm Wallace learnt a tough lesson when using electric winches for the first time on passage. The couple have sailed for over 30 years with manual winches so hadn't realised how easy it was to apply too much force with electric ones.

They were taking part in ARC+ 23, and were 80 miles from Mindelo, Cape Verde, when the forestay snapped on their Discovery 58, *Aqualuna*. However, they didn't notice until they unfurled the genoa.

"Conditions were horrible – the wind was strong but it was the 5m waves coming from two directions at once that was tough," said Malcolm. "The boat was rocking around like a bucking bronco so in the end I just cut the halyard and the whole sail and forestay came crashing down onto the boat."

Malcolm told me it wasn't the genoa that had caused the strain on the forestay, but an earlier spinnaker wrap, which they'd failed to spot. They'd applied too much



6. *Aqualuna* lost her forestay; (right) riggers get to work repairing the forestay on *Aqualuna*

electric winch to release the sail and the force had caused the forestay wires to part below the swage and snap.

"We have a rule now that we stop using the winch when we meet any resistance and we use manual winches when getting towards the end of the task," said Claire.

Malcolm struggled to retrieve the genoa from the sea because it was trapped under the boat.

"I was looking at £10,000 worth of sail, and just pulling with brute force!" he said.

The autohelm couldn't cope so Claire had to hand-steer, leaving Malcolm on his own.

"The waves were quite big," she recalled. "Even hand-steering was difficult. The wind kept catching the boat and knocking us. We were there for an hour and a half – time just seems to vanish when you're doing things like that!"

Fortunately, the boat had a second forestay, reducing the chances of a dismasting, but even so Malcolm used the spinnaker halyards to further support the mast. Amazingly, he managed to haul the sail back on deck, but it was still a challenging journey to Mindelo, particularly when they hit the wind acceleration zone.

"The sail was attached to the foil so there was this great massive arc sticking out the side of the boat," said Malcolm. "Fortunately the wind died when we got into port, but even so we were trying to moor with a huge sail billowing!"



The damaged forestay from *Aqualuna*

Thanks to Starlink, the couple managed to alert other boats via WhatsApp, and the ARC team was waiting to help them moor. They'd even managed to put a call in to 'legend' John Eustace, a consultant for owners of Discovery yachts (the shipyard closed in 2021), who flew over with new parts. The 'incredible' boatyard in Mindelo then stripped down the rig, salvaged what they could and put it back together in time for the couple to do the second leg of the ARC+ rally to Grenada.

"It was stressful, a huge learning curve for us, but we were also aware there was a good likelihood something would happen at some point," said Claire. "You can't be prepared for this stuff, you just have to react to it."

She added that another important lesson was not to make assumptions when it came to fault-finding. ➔



Claire Wallace

Claire Wallace

Claire Wallace

"We'd had a problem previously with the genoa furler en-route to Las Palmas, so when it was a bit tight for a couple of days, we assumed it was the same issue," said Claire. "When we mentioned it on the WhatsApp group, though, the other cruisers told us to go and check!"

7 MOB and near-misses

Retrieving a sail mid-Atlantic must have been terrifying for Malcolm, especially when he wasn't clipped on. "The whole sail was right over the boat. I couldn't get to it so clipping wasn't an option," he said.

Claire added: "Sometimes doing something really difficult when you're clipped on isn't possible, you've got a line that's constantly getting snagged, that you've got to keep stepping over."

I was told the same thing by Maltese sailor, Borg Manduca, who crossed the Atlantic in a brand new Dufour 530 with partner Jackie and crewmember Sergio.

On hearing a loud bang, he saw that the bolts securing his Hydrovane self-steering gear had sheered off. As his Watt&Sea hydrogenerator was also attached to the Hydrovane, the whole lot was hanging off, and had taken chunks of glassfibre with it. Without thinking or clipping on, Borg Manduca leant right over the side to grab it.

"I almost went over with it – it weighed 120kg! Fortunately, my crew secured a rope around it and with the help of another crew, the three of us managed to lift it back into the boat."

Malcolm and Borg Manduca were lucky. Arguably ARC skipper Pierre De Saint Vincent was luckier still; he confided in me that he'd fallen overboard but been rescued. It was a sobering reminder that although rare, MOBs do happen.

"I don't leave anything to chance now," he told me, after taking line honours in ARC+ 2020. "Safety is everything."

Fortunately, the MOB didn't happen during the ARC but while Pierre and his wife were sailing off the French coast.

"It was a miracle my wife found me, as she wasn't experienced. I was doing a repair at the bow when I was projected 5m into the sky and into the water, I lost consciousness for a minute, and when I came round, the boat was 100m away. My wife circled back and got me."

Pierre De Saint Vincent was rescued by his wife when he fell overboard



8 New-boat snagging

Some sailors buy a brand new boat for the ARC, but it's not always a good idea, as you can spend the same amount again fitting it out and will be unlikely to get the money back when you sell it.

While the near-loss of the Hydrovane was bad luck for Borg Manduca, he reflected that the eight months he had to get the boat ready was not enough. He'd wanted longer but production was delayed due to Covid and other issues.

Borg Manduca had his inverter fixed in the Canaries, but when testing it blew the generator. As he had solar power and the engine, he left without a working generator.

Soon into the trip, the windows started leaking into the electronics, and every half-hour the crew had to mop up the water. Borg Manduca then noticed the rudder made a noise on turning.

"We don't know if it's a rudder bearing or that the casing inside needs to be strengthened," he said.

The biggest issue, however, was the gennaker which tore



8. Borg Manduca on his new Dufour; (right) the damaged bracket from the Hydrovane



free from the head of the sail 40 miles off Mindelo.

"We were so cross. It was a new sail, only six weeks old!" said Borg Manduca. It turned out that the sailmaker had made a mistake and finished the sail with polyester reel webbing instead of Dyneema.

Luckily Borg Manduca had invested in a Code 0 headsail. Though the first leg was windy, conditions on the second leg were much more favourable, allowing for some much-wanted rest and recuperation.

"Finally, it was an amazing sail, wing-on-wing with the genoa, dead downwind," said Borg Manduca.

9 Stuck up the mast

When a halyard wrap can't be freed, the last resort is to send a crewmember up the mast. However, getting stuck 60ft in the air must be one of the most frightening

experiences for any sailor.

When I met Yachtmaster Karen Parker in 2022 on her Oyster 56 she was

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Ali Wood

Karen Parker

lucky to have escaped with bruising. Having cut free the halyard at the top of the mast, Karen was blown free on her descent and repeatedly thrown against the shrouds. Her fall preventer became tangled and she made the brave decision to cut it.

"I was losing strength, I had to get down, no matter what. I wasn't going to die on that mast," she told me.

Over the howling wind, there was no way of communicating this to her husband below, who quite literally held his wife's life in his hands.

"I knew it was a really big risk, but I unhitched myself from that line. It was the only way to get down. I had total confidence in Chris."

Fortunately, the couple had familiarised themselves with the mast climbing equipment, and Chris – also a Yachtmaster – managed to slowly lower Karen down with the harness line wrapped around two winches.

Undeterred, the couple went on to take part in the World ARC 2023. For this, they invested in an attachment for the bosun's chair which makes the ascent much

slower, but stops it from swinging out any more than half a metre. Read the full story at pbo.co.uk/stuckupmast

10 Deck gear failure

Although mast climbing isn't common on the Atlantic Rally for Cruisers, during the latest ARC+ I met Spanish skipper David Dias, who climbed his mast three times. Like Borg, he had issues with his brand new boat, an Outremer 5X *Nuven Mágica*.

"There was a technical problem with the spinnaker jammers," he said. "They stopped working. We're talking to the brand about it because it seems like they were the wrong size."

The spinnaker wrapped around the forestay and the crew were unable to get it down.

"I had to put ropes on it to try and contain it because we had this huge bubble pushing against the forestay," said David. "I was scared of losing the forestay and my mast. Every day I was stressing about it, it was very dangerous."

Eventually, David decided to cut free the halyard, which meant losing the spinnaker. It was the experience of climbing the mast, however, that shook him the most.

"I had a few bruises for sure. It was very



9. Karen Parker climbs the mast of her Oyster 56; (left) Karen getting ready for the climb



Karen still smiling after her mast ordeal

exhausting. The boat was just swinging and I was holding on for my life.

"At one point I lost my grip and swung from the stay to the mast. I'm a rock climber, I'm used to swinging and tackling overhangs, but this wasn't for sport! We had 3-5m waves and the wind gusting 35 knots. I was 20m above the decks!"

As *Nuven Mágica* was a new boat, the lines ought to have been the correct size for the clutches. However, a common issue when people upgrade their running rigging is that the old deck gear is the wrong size.

Rigger Chris Evans of XP Rigging advises that clutches are designed to handle a nominal diameter of sheet and halyard, which will be written on the side.

"They're fairly forgiving," he said, "but over the years, with the evolution of fibres, ropes have generally got thinner.

"Check your new lines still fit your old hardware. If your clutches and cars are in need of replacement, do them at the same time as the running rigging."

11 Towing a vessel

Skippers are encouraged to think about being towed – maybe by a lifeboat or coastguard vessel – but there's not much advice available on how to tow another vessel, especially when you're in the middle of the Atlantic!

Ali Wood



Ceylan Moore

11. The crew on *Coco* found it tricky trying to get the correct length tow; (left) Alfie throws a line to the skipper of the dismasted yacht

When Alfie Moore came across a dismasted yacht during ARC+ 2020, he never anticipated it would be so dangerous to tow it to safety with his 40ft Fountaine Pajot catamaran *Coco*.

The distressed skipper, though clearly exhausted, refused to abandon his yacht, even though he had no working comms or propulsion. However, Alfie and his family weren't prepared to leave him for dead.

With the help of experienced delivery crew Stu Finch, they emptied the lockers and laid out every rope they could find, eventually rigging a bridle with fenders to keep the lines afloat and away from the prop.

"The bridle was right, but the length of the tow meant he was on the same wave as us and might hit us," said Stu.

They sailed through 40-knot squalls and twice the lines snapped before sunset. The 28ft French boat surfed down the waves faster than *Coco*. It was like a game of cat and mouse.

"He was getting to the bottom, the tow rope would get caught under the keel and turn him sideways to us," said Stu.

When night fell they lost sight of the vessel altogether but knew it was still attached by the smell of the skipper's cigarette smoke and the stop-start motion caused by the snatching tow lines.

Finally, Alfie found a rope 20m longer than the rest – an old halyard he'd kept when they changed the rigging.

This made all the difference. There was no longer any snatch, the sea state had calmed and there was a wave in between

the two boats allowing them to rise and surf together.

To their enormous relief, the Grenada coastguard took over the tow as *Coco* reached Port Louis, which was where I met them the following morning, thrilled to speak to *PBO* in spite of their ordeal. Alfie's mum Adele said:

"If someone says, 'We towed a boat,' you'd think it's just like towing a car. But it was nothing like it. It was constant. We couldn't take our eyes off the boat for a minute. Stu was working the engine – neutral, forward – if the boat was catching up he'd be trying to keep the tension. We were just exhausted!"

The main takeaways for Alfie and crew

were to experiment with tow length – they started with two 60m lines, which they later doubled – and to keep spares. The oldest rope on the boat turned out to be the strongest and longest.

When I asked the RYA's Richard Falk for advice, he added that there's no specific length for a tow, but the longer the better. The length should be equal multiples of the sea's wavelength. He also explained that both the tow line and the bridles for both vessels should be 'dynamic' – that is to say they should have good stretch properties. Finally, he advised, be prepared to cease the tow.

"As difficult as the decision may be, persisting with a situation that causes damage runs the risk of turning a single vessel casualty into two vessels in need of assistance," he said.

You can read Alfie's full story, including more tips from the RYA on how to tow a vessel at pbo.co.uk/atlantic_tow

EXPERT OPINION



Professional sailor Pete Goss on dismasting
Preparation and planning are essential to any passage but more so for an ocean crossing.

Consider all scenarios and have equipment and immediate actions in mind. Have your boat surveyed by professionals and if in doubt, do something. In the case of *Garuda* (see subheading Dismasting) the rigging should have been renewed with clevis pins that could be knocked out with a hammer and drive. Have spare steering cables, an emergency tiller and an oar.

Sit down with the crew and discuss potential disasters. Explore their strengths and allocate appropriate areas of responsibility. Make sure you have a good tool kit, spares and share their location. Have two methods of cutting the rigging including bi-metal blades. Go to a rigger and test them on offcuts.

Have an emergency VHF aerial that can be connected to the main VHF with enough cable to get it as high as possible on a jury rig. As an aside, we all have a responsibility to keep a good watch. For a yacht to pass so close [to *Garuda*] and not see them is shameful.

12 Dismasting

In 2018 I watched with astonishment as Russian yacht *Garuda* limped into St Lucia with a broken mast. It was a reminder that even rigs that have been recently inspected can fail.

The yacht's problems began early in the morning when the steering cable between the wheels and rudder snapped. The crew replaced it with some rope and were able to carry on steering, but not for long. When the wind increased it became difficult to helm and a gust forced them to turn to port causing the genoa to back. Five seconds later the port shroud snapped and immediately afterwards the mast cracked in two parts.

"The four of us watched as the mast and sails fell into the water, still attached to the boat," said crewmember Alejandro



12. *Garuda's* mast broke (left) as did that of *Hilma* (right)



Perez. "We lost control as there was so much rigging in the water... and we were 600 miles from St Lucia."

The crew spent six hours cutting free the rigging with a small saw and two hammers. "I was worried by how hard the rig was hitting the hull at the front. If it continued like this, there'd be damage. The waves were side-on," recalled Alejandro. "I still don't know how we did it – we broke every blade in the saw!"

They only had enough fuel for 24 hours' motoring so made a jury rig from the spinnaker pole, using six ropes they'd cut free from the rigging as stays. They used another rope as a halyard. Even though Alejandro spotted a boat about two miles away he was unable to raise them on the handheld VHF. The aerial for the ship's radio, of course, was lost. Fortunately, they were able to call the ARC office via satellite phone, which raised the alarm,

'The four of us watched as the mast and sails fell into the water'

and boats came to their aid with fuel.

"It was a good thing our satellite antenna was mounted on the stern," reflected Alejandro. "Though an emergency VHF antenna could have helped improve our range without the mast."

Although Alejandro would have liked to try a jury rig he pointed out that the

sails would have had to be cut to size – not an easy job!

"We did have to fix the steering system again. That rope worked for another 600 miles and the

autopilot did as well! Initially, we lost our navigation system because the cables were inside the mast, but *Kostia*, one of the crew, managed to fix it."

When I showed photos of the wire fracture to PBO's marine surveyor Ben Sutcliffe-Davies he spotted classic 'beaching' (successive tidemarks as the fault spreads) that had developed over a period of time.

"There would have been a microscopic hair line opening to one side that could have been caused by the twisting of the wire at the top of the bottle screw," he said. "It confirms why so many surveyors recommend proper rig checks and a programme of replacements on the rod head. Generally, the actual rod is very reliable and will last more than 15 years, but the formed head with a ball or, as in this case, onto the threaded bar needs to be carefully monitored.

The report that the mast folded in half also suggested the sail, on backing, overloaded the spreaders causing massive compression.

13 Cutting rigging

It's alarming how quickly a mast can break after a shroud or stay goes. For *Garuda*, it was 30 seconds, and for Swedish-flagged *Hilma* it was minute. The *Wauquiez 47PS* was 540 miles west of Cape Verde when the port shroud came loose and lashed about the boat. ➔

The top of the bottle screw head, where *Garuda's* rig failed



All Wood

Little Boatyard and Barn Manager (left)

All Wood

"During that minute, everything was in the balance," said skipper Henrik Linder. "We only had time to furl in the genoa before I heard a slow murmuring sound followed by a crash on deck."

You can find a full account of Henrik's experience at pbo.co.uk/dismasted. What I find striking, having interviewed *Garuda* and then *Hilma's* crew, is the difference in the time it took to cut through the rigging. While it was an arduous six hours for *Garuda*, Henrik reported that with an angle-grinder it took only 20 seconds to cut through the mast.

Although they had several batteries on charge they only required one for the mast, forestay and wire rigging. Henrik warned it was a dangerous job, though, as he had to remove the metal protector from the tool in order to fit a blade with a big enough radius.

Rigger David Barden of All Spars points out that a good quality battery grinder with a box of spare thin cutting blades is by far the best thing for cutting rod rigging. "It's exactly what we use in the workshops at All Spars, plus it can be a really great and versatile tool on an ocean cruising boat," he says. "I would also have a good quality hacksaw with bi-metal blades as they too make a big difference."

Ben Sutcliffe-Davies adds, "It's vital to remember that on a transatlantic the yacht is working so much harder than on a normal cruise. Prevention is always better than sitting there watching the rig go overboard. Make regular visual checks of the rig and ensure split pins etc are in place."

Indeed, eagled-eyed Chloe Smith of *Blue Pearl* may well have prevented such a disaster when she spotted bowing in the wires of the yacht's starboard stay.

"I felt it with my hand and the shape of the stay felt different," she said. "It wasn't perfectly round and I saw two strands were slightly out."

Chloe, together with dad Neil, used wire rope bulldog grips to secure an old forestay to the stay, providing further support for the mast. They looped the wire through the bottle screw and back up to a ratchet strap, one of four that they'd bought for this very purpose.

"They're very useful things; they'll take up to 5 tonnes and have a hook on either end so you can conceivably hook onto anything; you could wrap it round the mast - there are a lot of uses," said Neil. "We kept the halyard when we re-rigged the boat. It's flexible stainless steel so can be used for all sorts of things."



13. Chloe and Neil support the damaged shroud



Neil and his wife Helen attended ARC seminars and an Ocean Safety course at the Hamble School of Yachting to help them prepare for emergencies at sea.

"Funnily enough, the bulldog clips were the very last thing we bought in Gran Canaria

after the ARC rigging seminar," said Neil.

14 Water ingress

Leaky boats are common, especially on passage, so checking bilges should be a daily routine. Ocean racer Pip Hare keeps her bilges salt-free and dry. "It's worth wiping out even the tiniest pool of water to see if it comes back again," she says. "In warmer climates, I've used trails of crystallised salt to identify a small leak -

only possible because the rest of the surface was completely salt-free."

Malö 42 *Sea Candy* suffered a saltwater leak during the ARC+ 22 leg to Cape Verde. Skipper Chris Greenwood told me: "I noticed water collecting in one of the galley cupboards, which was a bit of a puzzle." He used sheets of tissue paper to work out where it was coming from and pinpointed the leak to the channel containing the gas pipe. This led back to the lazarette.

"The only wet place in the lazarette was where the rudder came through the hull," explained Chris. "That's when I saw that the boot that fits over the top of the rudder shaft had completely failed."

He kept an eye on the leak until they reached Mindelo at which point he found a novel solution: "I bought a car inner tube, which I glued into a conical structure, creating a new boot to fit over the top of the rudder shaft."

It worked perfectly, and Chris was pleased to report no more leaks on the second leg to Grenada.



Chris Greenwood (right) plans for redundant systems on *Rum Tr*

15 Co

Many yachts without seeing not to say they collision! During 2005, a family surface. Thirte described how was suspended dreading the n "It was the sca said. "And all b whale's path at 2023 I also diso inadvertently 'r

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It's not just wil to sailors. Neil S woken by a loud b Grenada.

Mark Thurlow (right) plans for redundan systems on *Rum Tr*



Henry Smith



Chris Greenwood was pleased to solve his leaky rudder with a DIY fix

15 Collisions

Many yachts complete a transatlantic without seeing another vessel, but that's not to say they won't experience a collision! During the first ARC I covered in 2005, a family hit something below the surface. Thirteen-year-old Emily on *Blasé* described how for four minutes the family was suspended on a 30ft sperm whale, dreading the moment when it submerged. "It was the scariest day of my life," she said. "And all because we were crossing a whale's path at the wrong time!" In ARC-2023 I also discovered a family had inadvertently 'ridden' a whale.

More alarming, however, was the experience of being targeted by orcas, which happened to the Collins family en-route to the ARC start last year. They were sailing their Oyster 55 off Gibraltar at night when they felt something bash the boat. They knew immediately it was orcas because they'd heard warnings issued over the VHF radio.

"One large and three small orcas played with us for 10 minutes," said skipper Will.

"Really, it was like overgrown boys in a bathtub, bored with a plastic toy and seeing what they could do with it."

Although the family didn't feel they were being attacked – it was only the rudder the orcas were interested in – the incident caused damage to the rudder and Hydrovane, resulting in costly repairs.

It's not just wildlife that can be a hazard to sailors. Neil Smith on *Blue Pearl* was woken by a loud bang while on passage to Grenada.

Mark Thurlow (right) plans for redundancy of systems on *Rum Truffle*



"At first we thought it was a stay, or something wrong with the rigging," he said. "But I'm pretty sure, in my daze, when I looked to astern I saw something float past which looked like a freezer!"

The family had wooden bungs at the ready, in case they sustained any hull damage, and checked the bilges every half hour looking for rising water levels. Fortunately, they were OK.

Redundancy

Breakages and accidents at sea are unavoidable, but you can go a long way towards preparing for them. Mark Thurlow, owner of *Moody 49 Rum Truffle*, told me he always thinks in terms of redundancy.

"We try to have a fallback for everything," he said. "We have navigation on an iPad and a plotter, and our cutter rig has an inner stay so we have a third sail we can use, and a trysail for storm conditions so as not to damage the main. Redundant power comes from a generator and solar panels. If the gas cooker stops we have an induction hob. As well as a watermaker, we have a Katadyn emergency handheld water generator that could go in the liferaft – though you have to practise using it, it's quite hard work. As well as a chart plotter, AIS and radar I have forward-looking sonar. It's particularly good for finding coral in an anchorage."

What if you're not practical?

Redundancy is important, and it's all very well being able to repair an autopilot or

rudder, but what if you're just not that practical? Many sailors retire from desk jobs and set off on an adventure of a lifetime,

having paid tradespeople to maintain and repair their boats. How do they acquire the skills to fix things at sea?

World Cruising Club director Paul Tetlow points out the importance of training and seminars but also the need for good communication. Increasingly sailors are using sat comm provider Starlink to join WhatsApp groups, making it easier than ever to share photos and video at sea.

"Help is more possible than before because you can send pictures to rally control," he said. "If you've got several angles, and can describe the issue, there's usually someone who can help."

Paul also highlighted the importance of crew selection. "Compatibility is essential – ideally you want a crew with mixed skill sets and different experiences that can help with problem-solving. An expert sailor

EXPERT OPINION



Marine surveyor Ben Sutcliffe-Davies on EA's rudder damage
With fatigue in aluminium or stainless steel rudder stocks – or

in the case of yacht *EA*, the fastenings for the skeg shoe – my advice is the old chestnut of preparation ashore. If there is any doubt, deal with it ashore and don't play roulette! When replacing any underwater fastenings always use new ones. The cost of them is insignificant against the cost of the loss of the vessel.

As is very common with offshore sailing, it can be a number of minor failures that create a domino-effect leading to a serious disaster. When preparing a yacht for a long distance passage, remember that help (if available at all) is a long way away.

When taking part in an event such as the ARC the participants have to demonstrate a level of preparation and safety as well as undergo an independent inspection. The problem with inspections, however, is how in-depth they go. Previously, I have suggested kit that at face value has been laughed at but I am regularly told has saved the craft. As a bare minimum, the crew should carry a good quality rechargeable drill and grinder with spare discs, cans of spray foam, silicone, duct tape, PVC sheet, rubble bags, bits of plywood and a saw.

Find expert advice on Ben's YouTube channel the Marine Surveyor Notebook and his website bensutcliffe.marine.co.uk

isn't necessarily the golden ticket."

While chafe, wear and tear are common on passage, when sailors reach their destination they frequently experience other liveaboard issues such as faulty fridges or air conditioning. Where there might not be the breadth of spares and specialists boat owners are used to, Paul points out the value of the internet in seeking help.

"Systems are definitely getting more sophisticated but product support is filtering through to new destinations," he says. "While you might not have the full amount of spares to repair a system you can gain sufficient knowledge to know what needs to be done, the level of expertise required and whether it's a good quality fix. Equipment manufacturers are also getting better at husbandry. While repairs used to be done with a thick manual, now you can access step-by-step videos via a QR code. With more sophisticated equipment comes more sophisticated help."