



None of Rupert's experiences were as bad as this, but there's a fine line between apparent safety and disaster

6 problems at sea and how to deal with them quickly

Rupert Holmes recalls some dicey moments from 85,000 miles at sea

If you spend enough time around boats, you're sure to encounter problems at some point. Here are a few that I wasn't expecting. All were solved relatively easily, yet the outcomes could have been very different. Equally, all were avoidable...

1. Sinking slowly

Waking up to the sound of running water is never good. Fortunately it's only happened to me once – at least so far. There weren't many clues to the severity of the problem, but it sounded like more of a trickle than a fountain and a quick glance into the saloon confirmed that the

floorboards weren't floating. Nevertheless the prospect of the Aegean slowly filling *Ammos*, my Discovery 3000, with water was not one that I'd wanted to start the day with.

A look into the engine compartment revealed a slow but steady stream of water from the raw water pump. At least that meant closing the seacock (not that easy as it's half-way down the bunk in the aft cabin) would stop the flow. There were only a couple of buckets of water in the bilge, so I'd clearly woken in good time and could have a coffee before investigating further.

I'd serviced the engine the day before.

This included taking the raw water pump off to replace the impeller – it's a Yanmar 2GM with the faceplate on the back of the pump, so it's easiest to remove the entire unit to do the job. At the same time I also changed a damaged hose clip. However, I'd clearly failed to make a careful inspection of the pipe work – the culprit was a slit in the flexible hose, exactly where it flexes on the end of the spigot.

Although the problem was easily fixed and no damage was done, the episode got me thinking. I've long been in the habit of closing all seacocks when leaving both *Ammos*, and *Zest* – our Rob Humphreys 36-footer in the UK – unattended for long

Tim Claxton/Stockimo/Alamy



LEFT How sure are you that your boat's systems won't unexpectedly suffer a chronic failure?

RIGHT The offending water pump and pipework that led to Rupert's leak

RIGHT Blue Guard's BG-Link can relay a bilge water alarm activation to your mobile phone



Robert Taylor/Alamy

periods. However, at sea in any kind of weather there's enough background noise for the gentle sound of running water not to be noticed until the level is well over the floorboards. And what then? It's much harder to diagnose a problem – not to mention properly frightening – when the boat's already half full of water.

On yachts the common practice is to fit electric bilge pumps with an automatic switch. However these have the potential to mask a developing problem. Commercial fishing boats are required to have bilge water level alarms, which have prevented a number of disasters.

An easy adaptation for a yacht would be to connect an alarm that's activated every time the float switch activates the electric bilge pump. That, of course, doesn't help when you're not on board, but nowadays it's not impossible to set one up that will ping you a text message.

TIP This incident brings home just how fine a line there can be between remaining happily afloat and a full-on emergency. Fit a bilge water level alarm, preferably one that will send an SMS message to your phone, plus an electric bilge pump.

2. Engine problem

This one didn't happen to me, but to my partner Kass Schmitt when sailing *Zest*, which we'd prepared for the OSTAR single-handed transatlantic race.

On starting the engine to charge batteries on the second morning the oil pressure alarm started to buzz within seconds, so Kass shut it down and took a look in the engine bay.

It didn't take long to figure out there was a load of oil in the bilge and not enough fresh oil on board to replace it. What to do next? Retire from the race? Divert to a port to make repairs? Or continue, as Richard Lett had done at the start of the 2013 edition of the OSTAR?

Zest is set up with a lot of redundancy of systems, so Kass chose the latter, rigging up an old-school towed generator

that was carried as a back up. This left me with the task of pondering the cause for 20 days before she reached port. Was it a critical failure that would require a full engine rebuild, or something that could be solved easily and without great expense?

Simply adding more oil didn't help – well not much – once it was half-way up the dipstick any extra that was added just flowed into the bilge. But figuring out where it was from was next to impossible. Eventually, using the video camera on my phone I traced it to a point under the oil filter that was also partially hidden by the engine bearers.

The sump was fitted with a pipe to which a pump could be attached for oil changes. However, since it was unsupported and therefore easily fractured we never used it for oil changes, sucking the fluid out through the dipstick instead. The problem was we promptly forgot about it, failing to remember it may have been mauled around for the previous 20 years. Having diagnosed the problem the repair was easy – a simple blanking plate using the existing bolts.

Later I was searching online about something else related to the engine and discovered this is a common problem on the Perkins 100/Perama and Volvo Penta MD series that have prematurely wrecked the engines of some boats.



TIP Do a Google search to look for common (and also unusual) problems with the engine on your boat – the experience of others might save you a lot of hassle and money.

3. Flat batteries, snow and the Thames Estuary

Delivering a boat that's new to you to your home port is a sure way to unearth any latent weaknesses in its systems. In this case it was a Westery GK29 that needed to be relocated from Ipswich to the Solent in the depths of winter.

This was more than 20 years ago, when medium range weather forecasts were less easily obtained and less accurate. But it was clear there'd be a viable window after a period of afternoon snow. We locked out of Ipswich docks in the late afternoon and headed off down the river as the visibility improved, sailing out of the estuary into big seas off the Cork Sand, with the reassurance that the wind was easing and conditions would steadily improve.

Initially we made great progress



ABOVE The engine pulpit culprit – a 4in length of unsupported pipe that caused loss of oil on *Zest*

LEFT *Zest* has plenty of redundancy for generating power, including a 100W solar panel and a towed generator



FAR LEFT Monitoring and logging battery state both improves reliability and significantly extends battery life

LEFT Holding decompression levers open – if your engine has them it will require far less electrical power to start

'Knowing what I know now, I'd have done many things differently before leaving port'

through the channels towards North Foreland, with the wind freeing as the night wore on and easing to a relatively gentle 10-12 knots. Well before dawn the breeze had dropped so much we were barely making three knots and there was a sharp frost that necessitated buckets of salt water thrown over the decks and cockpit to keep ice at bay.

It was clearly time for the engine, but the batteries had other ideas – on turning the key we were rewarded with only the dull click of the solenoid. Being young and energetic I immediately resorted to the starting handle. I'd previously hand-started many old-fashioned small diesels, with big heavy flywheels, which had proved remarkably easy. However, this newer engine lacked the hefty flywheel that enables you to build up adequate momentum to make starting easy.

After almost 30 minutes of exertion, and much huffing and puffing, I finally got the thing running. In different circumstances I'd have given up long before, but the prospect of drifting around in the Thames Estuary in sub-zero temperatures was a strong incentive.

I learnt there's no point in putting lots of effort in at the outset – the engine is easier to turn over after the first few revolutions... so go easy to start with, take a short breather and then spin it at as fast as you can, dropping one decompression lever as the handle passes the top of its swing.

TIP Knowing what I know now, I'd have done many things differently before leaving port, including a more thorough check of the battery condition and the boat's set up to confirm there was a separate starting battery. I'd also check approximate fuel tank capacity with a tape measure – on that boat it turned out to be less than the figure given by the broker. If faced with the same situation now I'd start by turning off all electrics (except for an LED tricolour light), then try the starter motor again 15 minutes later, with the decompression levers raised. It's

surprising how often this approach is successful and it can be used on more modern engines that have neither a starting handle nor decompression levers. I also now monitor battery state constantly, either via a battery monitor system, or an inexpensive digital voltmeter.

4. Molten battery terminal

This was another case of an engine failing to start due to an electrical problem, but one that's far more unusual. A cracked battery terminal clamp resulted in a lot of sparks arcing across the small gap when we tried to start the engine at the end of a passage.

As well as a failure to start, smoke started pouring out of the aft cabin. A quick inspection revealed that while there had clearly been a lot of heat generated

– enough to melt insulation on wiring and the battery terminal post – there was no further damage and the wiring was already cooling.

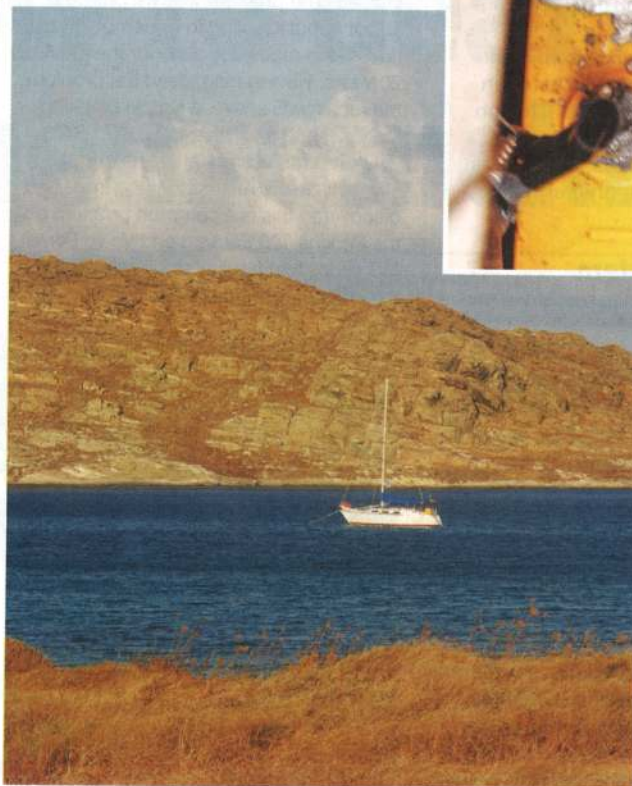
We had only a mile to windward to cover to reach our desired anchorage on the Aegean island of Paros. But there was a full Meltemi blowing, with gusts of 35 knots, and it was hard work to short-tack up towards the beach before anchoring under sail. And first we had to shorten sail – heave to, drop another reef in the main and change to a smaller hanked on jib.

Once safely anchored, more than an hour later, it was easy to diagnose the problem, but what to do about it? We weren't planning to stay long and there was nowhere to buy a spare battery on the island, short of getting one delivered



ABOVE Most of this battery terminal vanished into a puddle of molten metal due to a crack in the clamp

LEFT Ammos safely anchored in a well protected bay on Paros



at an unspecified future date. The temporary solution was to file a flat on the molten terminal, then drill a pilot hole for a large self-tapping screw that would hold the cable in place. As a precaution, until the battery was replaced we lifted the decompression levers when starting the engine, thus significantly reducing the current drawn from the battery.

TIP Inspect battery terminal clamps when carrying out routine engine checks and carry spares.

5. Wheel steering failure

It's very easy to be blasé about expecting a wheel to always turn the rudder. Marine systems, though, seem rarely as robust as those in our cars. The first time I experienced a failure was as a relatively new Yachtmaster Instructor, while practising man overboard, on the east side of Southampton Water in a south-westerly Force 7.

The first I knew of the problem was turning around to suggest to the Day Skipper on the helm that bearing away, rather than luffing up, was the thing to do at that moment. But he was already rapidly spinning the wheel, ashen-faced,

'Given we were close to a lee shore, and on a falling tide, it was imperative to take action'

and clearly had no influence on the direction in which the boat wanted to turn.

Given we were close to a lee shore, and on a falling tide, it was imperative to take action immediately. On a boat with a below-decks pilot connected to the rudder quadrant this is easy – engage the pilot and continue sailing. However, we didn't have that option. Fortunately the boat had good ground tackle, and dropping the



ABOVE When was the last time you looked at the emergency tiller arrangement for your boat?

RIGHT It's easy to forget that wheel steering is not 100% reliable



Keep a close eye on the condition of inflatables, including RIBs. PVC models may be more prone to problems in very hot weather than a Hypalon boat (above)

headsail and sheeting the main on hard, held the bows up towards the wind, enabling us to anchor on a long scope comfortably outside the 2m contour.

That bought one of the most valuable commodities for solving problems – time. So we started with a cup of tea to steady

would help the boat to maintain a straight course, while it could be pulled to either side to initiate a small course change.

The luxury of having five people on board meant larger course changes could be made by pulling sails partially up and down, providing this was carefully choreographed. A little mainsail to luff up, and mainsail down, and a few square feet of jib to bear away – the system worked perfectly.

TIP When sailing an unfamiliar boat don't settle for a quick explanation of how the emergency steering system works – ask for a demonstration. My experience is that close to 50% don't work as intended, often due to missing or corroded parts. Since this incident I've always given lee shores a wider berth, even in sheltered waters.

6. Disintegrating inflatable

Transferring from a dinghy to a yacht is one of the most dangerous activities on the water but the specific problem in this case caught me by surprise. While rowing back to the boat after a lunch ashore during a Greek heatwave, the glue used to bond the seams of the (admittedly elderly) PVC dinghy started melting.

It was not long before the floor started coming away. Then the starboard tube failed. Fortunately it proved surprisingly easy to sit astride the port tube and paddle it like a Canadian canoe.

In cold water and inclement weather the outcome might have been more serious.

TIP Keep a careful eye on the condition of dinghies and RIBs. I've seen whole tubes ripped off the latter, leaving a hull that's barely afloat. In particular, remember that the rate of wear observed over the previous few months is not always an accurate guide to future condition. Older Hypalon dinghies tend to fare better than PVC examples in this respect, as it's easier to glue a longer-lasting repair over any damage. 