

Yachting World

DÉE GLOBE

YOUNG UNS MASH RECORDS

SIMPLE KIT THAT
ED A SINKING BOAT

OUR LIFEJACKET
E-SAVER?
st 12 models

OLERS IN THE
THERN OCEAN
y cruising in an Open 40

NEW RACERS
ambault 27,
3, Sapphire

LEMAN'S CUTTER
rk of genius"

GET YACHTING WORLD
ON YOUR IPAD
yachtingworld.com/digital

MARCH 2013 £4.50

C\$12.50 US\$10.99 A\$10.95
NZ\$16.00 Holland €8.50 Spain €7.50



CONFESSIONS OF THE WORLD CRUISERS

The TRUE story of a circumnavigation

LUS: Hard hats for sailing • Advanced Yachts 66 on test • Cruising Norway's fjords

CRUISING

ELAINE BUNTING
COMMENTS



Equipped for any
emergency

We are forgoing the usual selection of cruising stories and snippets this month to focus on the rescue of a catamaran that was holed on a remote Pacific atoll, over 800 miles from the nearest boatyard or haul-out facility.

How the boat was saved is a fantastic example of group effort and ingenuity.

The equipment that saved the day is inexpensive, readily available and **very, very easy to use**. Yet I haven't heard anyone discuss it, nor have I ever seen this as part of any cruising boat's inventory.

It's not listed in any safety kit detailed in offshore race regulations, for example, which tend to favour hand-operated pumps. I don't fancy relying on a standard bilge pump or hand pump in a real emergency; they wouldn't get you far if you were holed.

In the past couple of years, I've covered a good handful of stories where boats were abandoned after a hull breach, most often rudder failure following a collision, but also including one boat gashed at the bow after a collision with a whale.



▲ Above: using Stay Afloat

From the details gleaned from those skippers, I speculate that there's a very good chance they could have limped to

the nearest land if they'd had this kit on board.

In the case we report this month, thank goodness for the presence of other nearby yachtsmen and their expertise. Whether or not you are in a rally, keeping in touch with other cruisers is invaluable. And another excellent case for carrying a special pump and sealant for flooding is that, while hopefully you will never need it, you are equipped to be the saviour of someone else who does.

“I haven't heard anyone discuss it, nor have I seen this as part of any cruising boat's inventory”

The kit that saved a boat

A few simple items of gear rescued and repaired a boat holed and sinking on a remote Pacific island. The repair was so effective the crew were able to sail 850 miles to the nearest haul-out. Elaine Bunting is astonished by the £500 kit that saved the day



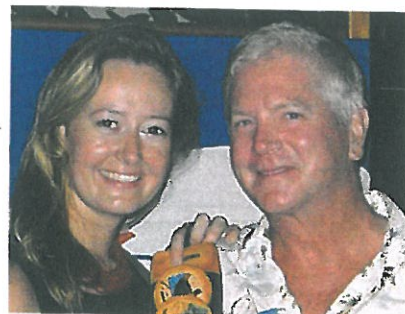
Photos: N Martin/WCC

This is one of the most important findings I've made since I've been at the magazine, and that's not some sort of writer's opening paragraph flourish. When I was reporting on the World ARC in January I was told about three items that could – and did – save a yacht from sinking.

I still can't believe I hadn't heard or really thought about any of these three, and had never read about them. One, a product named **Stay Afloat**, was completely new to me and is something **I will never go offshore without again in future**. It requires absolutely no technical knowledge or expertise and could save a boat in virtually any hands.

First, though, let me start at the beginning of this story so you can see what a serious catastrophe you could salvage with roughly £500 of equipment.

It starts with American sailor Ed Butt, who is sailing round the world with his wife, Zoe, and friends in his Bénéteau Oceanis 461, also named Zoe. Butt is an engineer, retired from an aerospace company that supplies NASA and the US Air Force with



▲ Top: the catamaran *Ensemble* and above, her crew Magali and David Waterhouse

space rockets and satellites. Before the rally he kept his boat at a marina at Cape Canaveral, Florida, and while there a motorboat opposite his berth sank and was raised by a salvage team.

Butt was interested in the techniques they'd used and asked them what he should take along in case of a major hull breach when he was sailing round the world. He says they were scornful of the standard



ED BUTT'S LIFESAVING ARMOURY

**SPECIAL
REPORT**



solution, softwood hull plugs, and demonstrated how easily they could blow out under pressure by placing one in a hose and turning the water on. The plug fired out.

In fact, we've run a couple of pieces in the past year about skippers who fixed broken through-hull fittings and plugged a broken rudder stock with hull plugs, but to do so had to engineer some kind of mechanical bracing to keep them in place, so it seems, as the salvage team suggested, they can only be relied on as part of a solution.

Instead, what they recommended was simple: a very high-capacity electric pump for use in emergencies and **Stay Afloat**. This mouldable, putty-like material comes in a tub (UK £16.99) and can be consolidated into a ball or rolled into a strand to fill a hole (such as a hull fitting) or smoothed into a crack. Once exposed to water it hardens somewhat to form a seal. Unlike underwater epoxy, however, it doesn't completely harden so it won't crack when flexed.

This product, which is available in many chandleries, is a bit of a secret lifesaver,

though I'm not sure why. It's one of the main tools of salvage experts as a get-you-home fix, and is used by the US Coast Guard.

I strongly urge you to watch the promotion video for it to see what it is and how easily it works (see panel on page 88). According to Ed Butt, it works exactly as you'll see.

This is one part of Butt's armoury. The other is a high-capacity Rule pump which handles 8,000gal per hour. This is made of two 4,000gph pumps harnessed together, and the benefit of it is that if one pump fails, the other will keep working.

To this, Butt added around 10m of cable with alligator clips at the end, so the pump could be clipped straight to boat batteries and used to rove almost anywhere on board. On the outlet he attached 3in collapsible hose, which makes it as powerful as a

▲ **Above: Butt's emergency kit:**

- 1. Rule 8000gph electric pump**
- 2. Stay Afloat**
- 3. A hand drill**
- 4. 10m of cable with alligator clips**
- 5. reel of 3in collapsible hose**

fireman's hose. "One of the beauties of it is that it shoots the water out, and it is rated for continuous use so it can run for days and doesn't get hot," he says.

This equipment had never been needed until last year, when the World ARC fleet was anchored in the remote Suvarrow atoll, part of the Cook Islands in the Pacific. More than 20 World ARC yachts were in the anchorage, including David and Magali Waterhouse from Sydney, cruising back to Australia from the Caribbean on their 46ft *Fontaine Pajot Ensemble* as part of their honeymoon.

The fleet was en route from Bora Bora to the island of Niue and was waiting for a well-forecast weather system to clear through. But when this arrived conditions were not what was expected and after dark one evening the wind shifted from the prevailing south-easterlies to the north-west and increased. The anchorage was now on a lee shore and, whipped up across the fetch of the atoll, waves began breaking on shore.

"It was the speed at which it happened and the strength of the

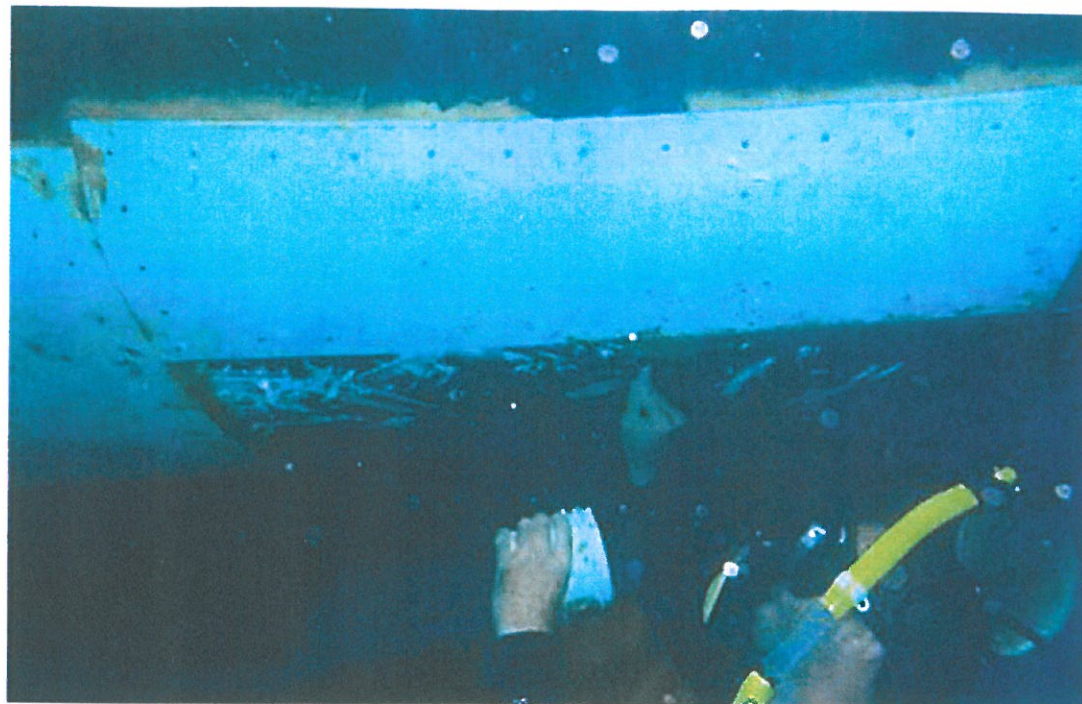
“One of the beauties of it is that it shoots the water out and it is rated for continuous use so it can run for days”

SEE THE VIDEO



To see the video showing how **Stay Afloat** works, scan the code above or go to the YouTube website and search for Stay Afloat

► **Right:** a team of six volunteer divers worked on *Ensemble's* hull, fixing boards prepared with **Stay Afloat** and glues



wind that was the problem," comments event manager Paul Tetlow, who was on one of the rally boats.

The anchorage was a scene of hasty activity as crews moved to re-anchor. Several had problems retrieving their anchor as cables had encircled coral heads.

"As this was happening Magali [Waterhouse] came over the VHF and said they were damaged. They had dragged and were unable to get their anchor up because it was round coral heads. They had released the chain and cut it away." In the process, the boat had been pushed sideways onto a reef. "David said there was a serious amount of water [coming in] and when we asked if he needed help he said yes."

The crew of another yacht, *Sapphire*, managed to help get the windlass operating to pull the bow of *Ensemble* round, according to Ed Butt, enough for the engines to lever the boat off the reef. As Magali Waterhouse motored *Ensemble* to deeper water David and another crewmember, Richard, assessed the damage. The boat was holed in several places along the edge of the starboard hull, but finding the holes was difficult because it was obscured by built-in furniture.

Other rally skippers came over to help, immediately starting to form a bucket chain. Crews discussed where the catamaran might safely be beached, but no one knew of a safe alternative at Suvarrow.

Despite a chain of 11 or 12 people continuously emptying full buckets they were not keeping up with the water ingress. From on board *Ensemble*, Paul Tetlow of World Cruising asked for more people and came to get Ed Butt's high-capacity pump,

plus one crewmember from *Zoe*. By this time, the people on *Ensemble* had been able to tear away at the furniture to see three or four long gashes in the hull below the waterline. They were mostly towards the bow and the longest was over 1m in length.

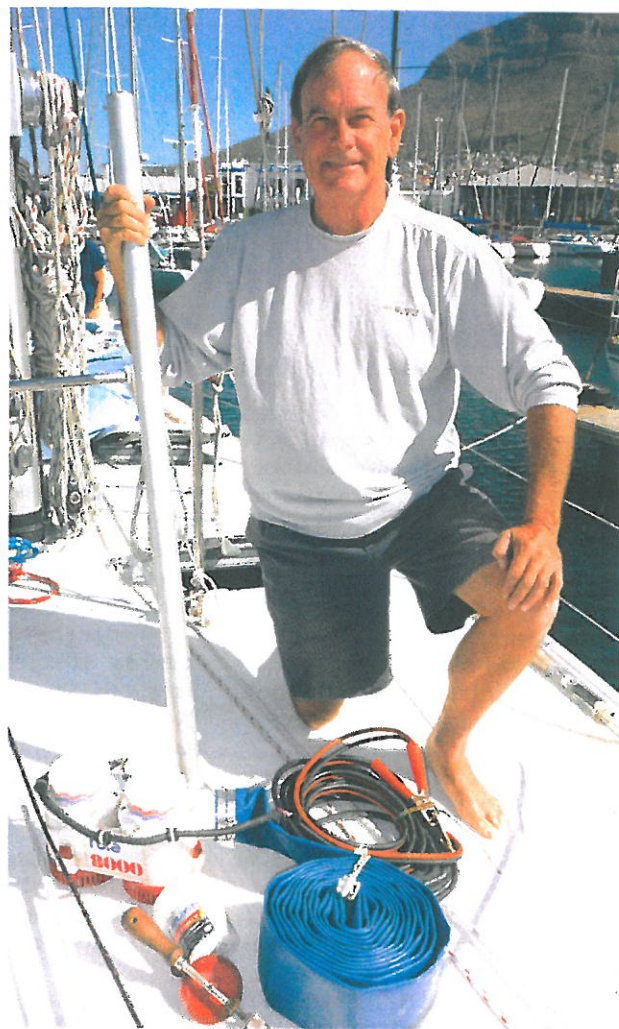
This, says Ed Butt, is typical damage. You should never expect a hole in glassfibre, no matter what the impact. "Even if you hit a rock, it wouldn't be a hole," he says, "it will be a gash." This is what makes hull damage so difficult to repair in an emergency.

When the big Rule pump arrived, the situation came under better control. "As

“Many compartments were stopping water up in the hull and there was some doubt as to whether we’d found all the holes”

soon as the pump was connected and working, you could visibly see the water going down," says Butt. Once the water level dropped it was easier to see the damaged areas and cushions were pushed against the gashes to stem the flow of water.

By this time it was dark. Paul Tetlow got back on the VHF and put out a call for a crash mat. This, a thick PVC canvas with strong straps at the corners, was put on the outside of the hull and taken up by lines. "Some effort went into getting the crash mat on because it needed a fair bit of tension. But that stopped the ingress and with the pump working well reducing water, that was impressive," says Tetlow.



▲ **Above:** Ed Butt is an engineer retired from an aerospace company based in Florida. He assembled his emergency kit after consulting a team of salvage experts before he left aboard *Zoe*



Investigations continued to check if all the holes had been found. "Many compartments were stopping water up in the hull and there was some doubt as to whether we had found all the holes." It was incredibly difficult, for example, to check around the heads as that area was a fixed moulded unit.

Other things got in the way of draining all the water. With the interior partly destroyed, furniture ripped up, shards of glass on the sole and locker contents spilling out, the drainage holes kept getting blocked.

With the gashes visible: "You could see the delamination and areas flapping in the water and flopping water in beneath the crash mat," Tetlow says.

By around 2200 volunteers were taking up the 5mm plastic boards underneath the bunks and beginning to cut them into rectangles to start to make repairs to the hull. Paul Tetlow asked the fleet for any other items they thought might help: boards, putty, glue and as many 1in screws as possible.

Preparations for the boards to fix to the outside of the hull went on throughout the night. By morning, the second part of the plan began. Anyone who had a dive compressor or divers on board volunteered and a team of six divers began fixing the boards to the hull.

Ed Butt was the only skipper in the fleet who had the essential item for working underwater: he had a hand drill.

It took a squad of divers because for every one trying to drill holes and screw the boards into the hull another had to push against them to give them enough leverage to operate the drill. The boards, prepared with **Stay Afloat** and glues, were fixed to the

outside, while the gashes were repaired on the inside with more **Stay Afloat**. In all, Ed Butt says about six tubs were used.

Dealing with the leak and making repairs took around 15 hours. The following day some of the fleet decided to sail on to Nuie, while around half a dozen others chose to accompany and escort *Ensemble* to American Samoa, some 850 miles away, the nearest haul-out facility.

The repair held very successfully, as you can see from these photos of the boat after being lifted out. David and Magali Waterhouse have since had their boat repaired and are back in Australia.

Get-you-home fix

Reflecting on the sinking, Ed Butt says: "You can repair from the outside with fibreglass or plywood panels and easily carry them under a bunk. The collision mats were not good on the outside. We couldn't make them adhere or stay in place so they weren't very effective. They are best as a temporary fix to get things stabilised."

As for the repairs, had it not been for a get-you-home fix for the long 850-mile voyage ahead Butt says "If you just wanted to float, the **Stay Afloat** would work." And he adds: "When they made the repairs in Samoa it took grinders to clean it off."

Of his high-capacity pump, he says: "This arrangement cost me about \$300 for the pump (sold in the UK for £334), about \$100 for the hose – that's a marine product and it needs to be collapsible or you can't store it – and about \$150 for the 10m of marine cable and clamps.

"One of the issues with this is that you have to have electrical power to use it, so

▲ Above, left: the gashes in *Ensemble's* starboard hull and, right, the repair made by willing helpers that held for 850 miles

once the batteries are covered you're down to mechanical means. And it doesn't have an inlet hose to dip into the bilge so you have to sit it in water, so it won't take the level down to zero." But as he points out, such a pump will buy you time to make repairs, and help keep batteries and engine out of the water – a normal bilge pump, hand-operated pump and even a bucket chain couldn't keep up with water coming in from this damage.

Could Ed Butt's pump perhaps have helped save another yacht later in the rally? Fellow World ARC double-handed crew Srecko and Olga Pust were nearing the end of a long passage from Indonesia to the remote Cocos (Keeling) Islands and only 40 miles from landfall when the rudder of their Sweden Yacht 45 *Ciao* was damaged and it began taking in water.

They did everything they could to save their yacht and only left in a liferaft to transfer to another rally boat as *Ciao* sank beneath them.

Ed Butt on *Zoe* was making best speed to *Ciao's* position with his high-capacity pump ready to transfer. He was only nine miles away as *Ciao's* bow disappeared beneath the water and she began to sink in 4,000m. You have to wonder what would have happened if *Ciao's* crew had motored towards his position rather than continuing towards the nearest land, but then who would be brave enough to take a chance that involved heading further out to sea?

Needless to say, after these incidents many of the World ARC skippers bought an additional, higher-capacity roving pump. If I were thinking about a big offshore passage, so would I. For around £500, including the **Stay Afloat**, safety kit like this is a bargain. Y

Useful websites:
8,000gph Rule
submersible pump:
www.safety-marine.co.uk
Stay Afloat www.rochemarine.co.uk