

Gear On Test



Duncan Kent, Jake Frith and Duncan Wells bring you a variety of gear installations and tests, from the sublime to the superfluous.

COPPER PLUS ANTI FOULING £450/35ft

We've all heard about these wonder products, the copper based antifouling that will last for years and years, but what's the truth?

I have a Hallberg Rassy 352 – *Dorothy Lee* – and we applied CopperPlus in 2004, so how has it performed, what has it cost and has it been cheaper than conventional antifouling?

I saw an advert for CopperPlus in a boating magazine a while back and bought the promise of hassle free antifouling straight away. See, advertising really does work. I liked the idea of putting it on and forgetting about it for the next 10 years. Think of the savings I'd make.

Before applying the CopperPlus we needed to strip the hull of the old antifouling and get back to the gel coat. I bought some of the recommended sodium hydroxide to assist and with a friend set about slapping this on. I don't know if it actually burnt any of the old antifouling away, but it certainly burnt us. We both had dreadfully scarred arms and hands for weeks afterwards. It was only later, in the manner of all men, that we read the instructions and discovered that we should have been wearing overalls, goggles, hats, gloves and boots and that we should have had water standing by to slosh over any burns to dilute the chemical. This sodium hydroxide was powerful stuff. I thought they'd got rid of anything that was powerful when the environmentally friendly lobby neutralised Nitromors, which nowadays couldn't strip the skin off a rice pudding. Now badly burnt, I gave up and asked the yard to sand blast



The hull after 14 months in the water with six year old CopperPlus.



A little weed plus the odd barnacle and worm.



Synpol polishing compound to abrade the CopperPlus.

Here's a list of the attention the CopperPlus has had since it was applied:

- Launched with CopperPlus – July 2004.
- Lifted December 2004 to have the teak deck re-caulked. Power washed, stored in shed for two weeks, then abraded with a sander before re-launch.
- Lifted and held in slings for an hour for RYA/MCA coding survey inspection. Power washed, re-launched.
- Lifted June 2006 and stored ashore (while I recovered from an accident). Power washed.
- Re-launched May 2007.
- Lifted August 2009 and held in slings over lunch to replace anode and grease prop. Power washed, re-launched.
- Lifted October 2010, stored ashore for rudder stuffing box repair for one month. Power washed and abraded with silicon and re-touched with CopperPlus and re-launched.

That's five power washes, one abrading with a sander and one proper abrading with Synpol as per the Reactive Resins' instructions and some re-touching of the CopperPlus in six years.

the antifouling off the hull and then to apply the CopperPlus for me. This cost £2000 in all, but saved a lot of hard work. Of course with the gel coat exposed this represented an ideal opportunity to apply a coat of epoxy to prevent osmosis, which is what we did. The yard – then Moody's, now Premier Swanwick – applied the Copper Plus beautifully and we launched in July 2004. Since then we have

been in and out of the water like a yo-yo, none of which has had anything to do with the CopperPlus.

COSTS

How does the money stack up? If you use your boat a lot, a hull coated with any antifouling, CopperPlus or conventional, will be relatively self-cleaning. It's just that CopperPlus wears away a lot slower than conventional antifouling. Of course, the more time the boat spends in her berth, the more the weed, barnacles and worm will build up. But I would reckon that with the amount of sailing we do, *Dorothy Lee* could remain in the water for a good two years with the CopperPlus before needing a lift and power wash. Our longest run was from May 2007 to August 2009 – two years and three months – and when she came out in August 2009 there wasn't that much weed on her and she cleaned up beautifully. Added to which, I can't say that there was any noticeable reduction in boat speed due to weed on the hull. *Dorothy Lee* was still slipping along nicely at 6kn or so come August 2009.

The cost comparison: CopperPlus versus conventional antifouling

Each lift, store ashore and re-launch costs me approximately £400 for *Dorothy Lee*. A lift and hold in the slings over lunch costs £270.

I am basing this comparison on a 35ft boat with a long fin keel and skeg hull configuration, which is clean and ready to take the antifouling. I have allowed for



The CopperPlus had worn away in a couple of places.



Plenty of the anode left after 14 months.

a lift and scrub every two years for CopperPlus, which would cost £270, and then a lift, time ashore and re-launch every four years for CopperPlus to apply the abrading and to touch up, which would cost £400 plus £50 for materials. I have also assumed that with my frequently sailed boat, using conventional antifouling we would have to come out once a year and would require a lift, time ashore

and a re-launch at £400. The antifouling I have chosen is International Micron. Force 4 had a special offer of £89.99 for a 2.5 litre tin. We would apply two coats, which will require two tins, so £180 each year. Also, we start in year one with both boats ashore for a £400 lift, store and re-launch and the application of their respective products at a cost for CopperPlus of £450 and for International Micron of £180.

Year	CopperPlus	Lift	Total	Int/Micron	Lift	Total
1	£450	£400	£850	£180	£400	£580
2			£850	£180	£400	£1160
3		£270	£1120	£180	£400	£1740
4			£1220	£180	£400	£2320
5	£50	£400	£1570	£180	£400	£2920
6			£1570	£180	£400	£3480
7		£270	£1840	£180	£400	£4060
8			£1840	£180	£400	£4640
9	£50	£400	£2290	£180	£400	£5220
10			£2290	£180	£400	£5800
11		£270	£2560	£180	£400	£6380
			£2560			£6380



At less than half the cost of conventional antifouling over the decade, CopperPlus makes sense to me. Added to which, we are always popping in and out of the water for one thing or another as you can see from the schedule for *Dorothy Lee*, so we are likely to be able to check the hull and have her power washed more frequently. You will notice also that I have assumed that we apply our own CopperPlus or antifouling. If employing someone else to do this, the expense of conventional antifouling would be astronomical in comparison to CopperPlus. The only thing to watch if you only come out of the water once every two years is: are your anodes managing to last this long? (See left for your answer.)

Finally, I asked the chaps at Swanwick who were power washing the hull what they thought of CopperPlus?

"It's terrible stuff," they said. "It only works for the first couple of years, then after that it's really hard to wash off the weed."

"Of course you know this CopperPlus has been on there for 6 years?" I said.

"Well, yes of course it's brilliant for the owners," came the reply. That says it all really. DW

WE LIKE

- Excellent performance
- Saving money

WE DON'T LIKE

- Stripping off my old eroding antifouling was painful

VERDICT ★★★★★

If you want to spend more time sailing and less on antifouling, then I would recommend applying a copper based antifouling system.

Contact: Richard Foster, Reactive Resins, 01208 264998 www.reactiveresins.com

SIX-10 EPOXY ADHESIVE £18.42 (190ml TUBE) EXTRA NOZZLES £2.53 FOR TWO

Over many years of boat ownership, including a WEST epoxy-sheathed plywood yacht, I have come to take the consistent properties of the WEST epoxy system very much for granted.

My only grumble with WEST epoxy has been the quantity of the product I've wasted over the years – either by not using it quickly enough or by not being able to buy a small enough quantity of it for the odd couple of small jobs.

Well now it appears that WEST has heard my grumbles, because a neat 190ml tube of WEST Six-10 thickened epoxy adhesive landed on my desk a couple of weeks ago.

The beauty of this tube of gap filling, epoxy adhesive is that it is two tubes in one. Rather like the twin syringes of two-part glue you can buy,



Tube and nozzle makes for easy, mess free application.

where you can squeeze equal amounts out in a long line without one part contaminating the other, this large tube of WEST is actually divided into two compartments inside – one for the adhesive, the other for the hardener. The material is applied using a standard caulking gun, but the clever bit is that the nozzle provided (WEST calls it a Static Mixer) has two channels running inside with a number of tiny baffles that forces the two

components to mix together in the nozzle itself – eventually arriving at the end as pre-mixed epoxy adhesive ready to apply. No more measuring exact quantities, mixing in powdery fillers and sticky stirrers adhering to your fingers.

The adhesive will stick wood, metal, GRP and even concrete and takes around 40 minutes to first cure, fully hardening in 5-6 hours. The nozzle makes it ideal for creating narrow fillets without drooping or running and

remains malleable once applied until gelling after half an hour.

VERDICT ★★★★★

Did exactly what it is supposed to do, although it took a little longer to go off, due to the low temperatures on the boat at the time of year. Handy package, but having one nozzle means that you can only use each one once – so you'll need to buy extra nozzles or squeeze the rest into a pot and mix with a stirrer or stick. *DK*

WE LIKE

- Convenient cartridge size
- No mixing required

WE DON'T LIKE

- Not cheap

Contact: WEST Systems

Tel: 01794 521111

Web: www.wessex-resins.com

SURVIVA JAK THERMAL BLANKET £9.99

As someone who has had to tape myself into a survival blanket to warm myself up aboard a small yacht after a hypothermically cold night in the Irish Sea (back in the heady days of *ST* issue 56), this product struck a chord immediately with me. It's simply a foil survival blanket with built in arms and a hood, which can be fastened up at the front. It's vacuum packed to keep it compact and aimed at all outdoor sports people. The entrepreneurs behind Surviva Jak appeared last year on BBC TV's *Dragons' Den* show, where smug tycoons patronise hapless inventors from behind a parapet of filthy lucre. This product though was one of the better ones, attracting investment from sour-faced



Joe in survival mode.

millionairess Deborah Meaden. When I had my survival blanket experience, I would have benefited from the Surviva Jak's arms, fastenings and hood, because the constant rolling

of the boat made it difficult to remain covered by my blanket, so I must have lost heat. According to the manufacturers, Surviva Jak reflects up to 90 per cent of radiant heat and is windproof and waterproof. There is all the usual marketing nonsense with the yellow sticky tape fastenings referred to as 'Visifast high visibility resealable fastenings', but it seems to do the trick, making you feel very warm, very quickly when you slip it on. I reckon it would be well worth putting one for each crew member into your emergency grab bag and hoping you never have to use them. At £9.99 you can't really complain if it's going to save lives. While a traditional foil blanket is cheaper, it is clearly inferior. We placed *ST*'s

Advertising Sales Executive into the blanket for 10 minutes for our 'test'. There were smiles all round when Joe survived, though our joy was tempered somewhat when he returned to full warmth and started coming up with more suspiciously advertorial feature ideas. *JF*

WE LIKE

- Compactly vacuum packed.
- Clear improvement over what is currently available.

WE DON'T LIKE

- Can't be repacked.

VERDICT ★★★★★

At a tenner this is a pretty good value insurance policy to have.

Contact: Surviva

Web: www.survivawear.com

Tel: 01792 414039

WHALE SUPERSUB SMART 650

£49.99

During this winter's upgrade of *Tinker*, my ageing Jaguar 27, I decided to fit an electric bilge pump, reasoning that, as I tend to cruise singlehanded these days, the last thing I want to be doing should the boat be filling with water, is cranking a manual pump handle rather than calling for help on the VHF and getting the liferaft ready to launch.

Tinker's bilge is rather smaller and shallower than I'd like, but it does provide a sump into which any incoming water collects. With just 165mm clearance it was important to find a low profile pump if it was to be the submersible type.

Looking around at the many available, virtually all were mounted in the vertical plane, which meant their clearance height was too high for my sole board unless I chose a really low capacity pump, which clearly I didn't want to do if possible.

During *Sailing Today*'s last bilge pump test, carried

out by James Turner in issue 148 (August 2009), he discovered the new Whale Supersub range of low-profile pumps from Irish manufacturer Munster Simms, to which he awarded our Premium Product label. I liked the clever design of the pump, the rotating/removable strainer and the in-built, float-free level-sensing circuitry. Furthermore, it has a reasonable output as well, compared to many other compact pumps. The name Supersub 650 stands for 650 US gals/hr – the equivalent of 40 ltr/min. That figure is quoted with no head of water or non-return valve and once installed in *Tinker*, with a head of 0.96m from pump to skin fitting and 2.15m of 3/4in piping, we measured it at a perfectly reasonable 32 ltr/min, while drawing 3.5A of current from the battery when in full flow. The 'Smart' part of the pump



Compact and easy to install, the Whale Supersub 650 shifts a healthy 32 litres per minute.



Simply twisting the body allows you to separate the pump motor.

is the sensor, which, unlike many other automatic pumps, does not have a mercury-based 'tilt switch' to activate it. Instead, Whale's Smart pumps sense the presence of water using an electric 'field sensor'. This mechanism, which has no moving parts, has a built in delay to avoid it being constantly triggered by a small, insignificant wave of water washing back and forth in the bilges. It is a three-wire device, so is intended for connection to a standard, two-way bilge switch for either automatic or manual operation.

Simply twisting the body to allow the pump motor to be separated from the mounting bracket and strainer made installation much easier and allowed us to align the pipe to exit at the preferred angle. Then it was a simple job to attach the bracket to the plinth with the screws provided and 'push 'n' twist' the pump body

back into place. The exit pipe has to exit either horizontally or vertically, not at any angle in between, which is fine if there's enough room to bend the pipe before exiting. In our case it meant ensuring there was just enough distance between the pump and sole board to enable the pipe to bend to the correct angle without pinching it. The unit works best with a non-return valve fitted, otherwise the contents of the pipe feed back into the bilge after the pump has stopped. We used a Whale non-return valve part no. LV1219 (£13.95), which, for the best effect, should be fitted close to the pump. As seen, it does appear to have a slight effect on output capacity, but very little.

The pump is provided with 6ft (1.83m) of cable, which is a rare bonus these days and means that it can be terminated well clear of any risk of bilge water contamination to the terminal

block. It would have been preferable, however, if the three wires had been in one single cable for improved neatness of installation.

The beauty of such a low profile pump is that it can be fitted in really tight spots, such as beneath the engine, where I have now terminated the manual pump. The reason for this is that I can pump the diesel and oil-contaminated water manually into a container, rather than directly overboard. Of course, in the event of us taking on serious water offshore, I can still divert its output overboard and pump for England. The pump comes with a year's warranty. *DK*

VERDICT ★★★★★

This is a neat, 'fit and forget' unit that is easy to install, clean and maintain. Does pretty much what it says on the tin and has a good output capacity for its size.

WE LIKE

- Compact and easy to install
- Long electrical cables
- Easy to clean

WE DON'T LIKE

- Separate wires rather than three-core cable are untidy

Contact: Whale Pumps

Tel: 028 9127 0531

Web: www.whalepumps.com

Gear On Test

JOBY GORILLAPOD

FROM £15

A photography accessory reviewed in a sailing magazine? Surely not. However, this simple tripod has been the most impressive 'sailing' accessory I've bought in the last few months, despite the fact that it isn't something you would find in any chandler that I have visited recently.

Virtually everyone I know who sails has a digital camera they take with them to record events, whether they are a budding *Sailing Today* contributor or just want to add to their own blog or collection of memories. I've always sailed short handed and struggled to get the shots I want, simply because there's nobody at hand to take them.

Tripod limitations

A conventional tripod cannot be used, because they tend to be flimsy and one puff of wind and the whole lot wants to go over the side. The Gorillapod is an articulated tripod with stiff, but moveable legs, which can grip onto an almost limitless variety of poles, stanchions, winches etc. Each of its 10 jointed leg parts has a rubber ring around it to aid grip on different surfaces, and it works amazingly well, especially with my camera, which has a remote infra red shutter release control.

The product comes in a variety of guises in quite a range of prices. The range relates to the weight of the camera and the related stiffness of the leg joints to keep it in position. The cheapest model (at £15), is only man enough for very small pocket digital cameras. The one I went for was the substantial SLR Zoom model at £39, because my SLR is a relatively heavy camera. If I'd ordered online and gone by their suggested weight capability



A sprayhood handle provides a stable support for the Gorillapod.



Tied in knots.

specs, I would have ended up with the slightly less stiff SLR model.

Flaccid supports

I'm glad to say I went to a shop and tested the various versions, because the SLR model, which in theory should have supported my camera, didn't appear to be stiff enough to keep it in position in the moving environment of a pitching boat and I think mine might struggle with the extra weight of a zoom lens. In this world of

shopping online, it seems that sometimes it's still necessary to go to a real shop.



One minor criticism is that the main difference between the entry level model costing £15 and mine, costing £39, is the stiffness of the joints. As, I'm guessing, this is just a different manufacturing process and almost certainly not a more expensive one, I can therefore only surmise that the only reason mine cost more than twice as much is for marketing reasons.

I've had the Gorillapod for a month now and used it quite heavily. One of my fears was that the friction in the joints would reduce with use and it would no longer hold the camera in difficult positions. I'm pleased to report

that I have seen no evidence of this occurring. JF

WE LIKE

- Simple, elegant solution
- Ideal for marine use

WE DON'T LIKE

- Joints could be stiffer

VERDICT ★★★★★

If you are serious about marine photography and want to star in some of your own photos, this is just the puppy – or gorilla.

Contact: Jessops
Tel: 08000833113
Web: www.jessops.com

ANCHORWITCH

£200

Fouled anchor? There is a magic solution. Anchorwitch.

That's the advertising slogan. The reality? Well we shall have to see.

It did work. I didn't think it would. I had enormous difficulty attaching the release clip to the anchor chain and getting it to hold onto the float wire, but in the end I got it all working and then actually retrieved the anchor three times with the Anchorwitch. And the water was so murky I couldn't see what was happening, so it was like magic.

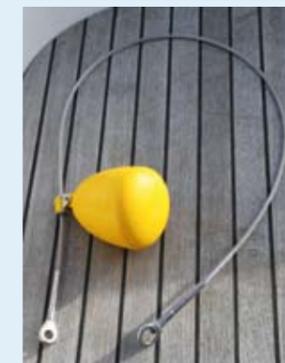
Setting up the Anchorwitch

The instructions came in the form of a very small exploded diagram (no words) and were an absolute nightmare. And as a result of a good deal of backwards and forwards on the email, the manufacturers have now re-written the instructions with people like me in mind – people who are reasonably bright, but who are not natural mechanics or engineers, people who do like some words to describe things in addition to some pictures.

With that problem solved, the next question was, what do you get and how does it work? Well, you get an assembly of a hook, some washers, a couple of arms and a U clip that attach to your anchor chain with a bolt and a nut (Pic 1). You get a wire with a fixed swaged eye on one end and an adjustable swaged eye on the other end and a yellow buoy, the float (Pic 2). You need to supply a shackle for the fixed swaged end of the wire that attaches to the tripping eye of your anchor, because the size and thickness of the tripping eye is different from one anchor to the next (Pic 4). The other end (adjustable swaged end) goes into the quick release clip assembly you attach to the chain (Pic 5). Now you are set up. You drop anchor and make



1: The quick release hook assembly.



2: The wire with swaged eyes and the float.



3: Be careful the wire and float do not foul the bow roller cheeks as you drop anchor.

sure the wire with its yellow float doesn't get caught in the bow roller cheeks or snag as the anchor and chain go over the roller. You dig your anchor in as you would normally. Then, if you subsequently find that your anchor is stuck fast, you employ the Anchorwitch. On board you have the rescue rig. Attach your own line to the



4: Wire attached with our shackle to the tripping eye.

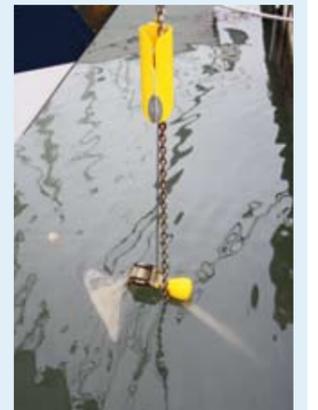


5: Quick release hook attached to chain and holding the wire.



6: You can see the float rising up the wire but not much below the surface.

shackle that they provide. Open out the rescue rig and place it over the chain and let it run down the anchor chain (Pic 6). When it goes slack you are at the bottom. Then it's just a question of jiggling it around a bit and raising it and lowering it until it grabs the line that the float will have offered up to it. We can't see a thing in English



8: It even worked with the line under the anchor.

waters over about six inches below the surface (Pic 8), but if you go to www.anchorwitch.com, there's an excellent video.

What happened?

I am on the bow looking down at the greyness thinking: "This is never going to work. I can't see what is happening." I pull on the line a second time and there is tension, much tension. I start to haul the line in and now I am thinking: "It's a pity I used such a thin line for this, because it's starting to cut through my hands." Then, after a bit of sweat, because lifting a 45lb CQR plus five metres of 3/8in chain with, what is effectively, string, is tiring, I got the anchor to the surface. And there the rescue rig had done exactly what it was supposed to do; it had slid past the float and grabbed the float wire, had released itself from the chain and had brought the anchor up to the surface by the wire attached to the tripping eye. It had worked. A fluke, I thought, which was apt given the circumstances. I settled the anchor back on board, re-attached the wire to the quick release clip on the chain and sent the anchor over again. On with the rescue rig, down to the bottom, jiggle a bit, once up, nothing, back down, then up again and tension and up she came again, only this

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...ANCHORWITCH £200

time the anchor had rolled over on the float wire and the wire was behind the anchor, but still pulling on the tripping eye. So even though the wire had been fouled, the float had risen up the wire sufficiently to allow the rescue rig to grab it and get the anchor out. I did this a third time and again success. I hadn't a clue what was happening down there, but something was definitely happening. Magic, perhaps? Probably not. The shape of the rescue rig and its weighted bottom have been designed so that it grabs that wire. As long as the float is floating it will offer up the wire to the rescue rig.

Would the Anchorwitch have problems with a lot of weed? I don't think so. When would you use it? Well there's certainly not much anchoring going on with boats in my marina, judging by the pristine state of the galvanised and stainless steel anchors I see on the bow rollers, but I would use it. I anchor a lot and if you sail in the Med you anchor a lot, so if you have the float wire attached to the tripping eye and the chain all the time, you are ready.

Trip rigging

During my product test a local man who used to help out with the fishermen south of the Isle of Wight when he was a 'nipper' told me of a system they used called 'trip rigging'. They would attach the anchor cable first to the tripping eye of the anchor and then they would tie it to end of the shank with fishing line with a set breaking strain so that if the anchor became stuck they would drive over it, break the fishing line and then haul the anchor out backwards by the tripping eye. Nice idea. And once you've worked out the breaking strains you require it would work well, but you

How it works

The float holds the wire clear and ready for the rescue rig to slide over. The rescue rig comes down over the wire, which runs up the slot. A jiggle and a pull gets the line caught in the slot with the spring clip. The ring in the end of the wire gets caught. The rescue rig then pulls off the chain and is free to lift the anchor from the tripping eye.



Ready to catch the wire when you pull the rescue rig up.



The wire has been caught.



As the end of the wire is lifted, so it releases from its clip.



The anchor is tripped.

would always be working with a breaking strain on the fishing line that was less than the potential breaking strain of the anchor and the cable, otherwise you'd never break the fishing line or cable tie and so your anchor would be under powered. This is not a problem for fishermen who are working, but this set up is not right for getting a restful night's sleep at anchor. I just couldn't be sure.

But if I had an Anchorwitch I'd know my anchor was working to full capacity and I could get it out if it got stuck. I've always said, if you are unsure of what's on the seabed, then anchor somewhere else, but this isn't always possible and even then you still can't be sure that there is not something down there that might ruin a clean getaway. The Anchorwitch is a clever piece of design and I think there is definitely a case for having one on board.

The Anchorwitch costs £200 delivered to the UK. The cost of a genuine CQR 45lb anchor is £700 plus delivery. The cost of 50m of galvanised 3/8in chain is £650 plus delivery.

The cost of a diving team*, £500 to £1000. As they say in the US: "You do the math!"

That said, £200, even by boating standards where most kit is custom made, for a piece of wire, two fittings, a float, a clip assembly, a piece of yellow drain with a split in it and some fancy weighting, however clever the design, is expensive. DW

***Andark on 01489 581755 says a one-off dive is likely to cost £1000. If they can schedule the pick-up with other work it could be as low as £500 – remember one requires a minimum of three divers, a boatman and a boat.**

WE LIKE

- Great idea, which worked well for me

WE DON'T LIKE

- Initial instructions were fiddly, now much improved
- Float rig can get in the way and tangle with bow roller
- Pricey

VERDICT ★★★★★

A neat piece of design that could provide an answer to an age old problem.

DIGITAL YACHT SC500 AIS COMBO £499.95

Being the first sensibly priced waterproof chart plotter to boast an integral, dual-channel AIS receiver, I could not resist fitting the 5in LCD SmarterChart (SC) 500 AIS Combo to my boat earlier in the year to give it an extensive test throughout the 2010 season.

The SC500 is available in one of three guises – Chart plotter, Chart plotter/AIS Combo and, for keen fishermen, the plotter can also be supplied with a full colour, 200/50kHz fish finder/sonar.

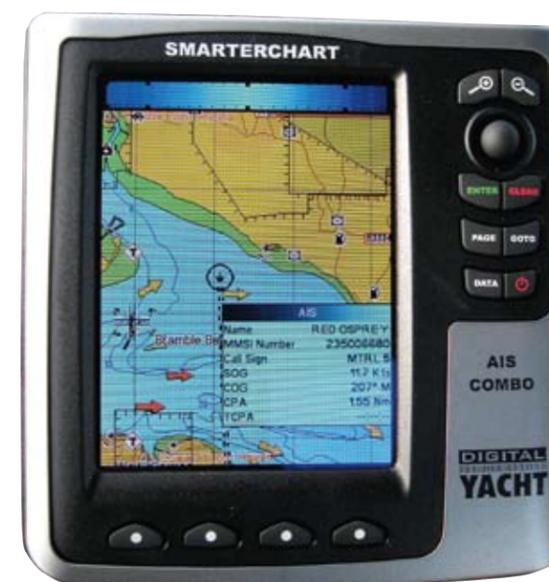
The chart plotter has a sunlight viewable, 320 x 240 pixel display and is supplied with a separate, stubby AIS/VHF antenna with a 10m cable that simply plugs into the BNC connector provided at the back of the display.

The plotter also has a built-in, high sensitivity, 50-channel GPS receiver with an integral antenna, for rapid and accurate position acquisition. For those that prefer to mount it below, a compatible external GPS antenna is also available, but I would be tempted to try it without at first, because the integral GPS still works well on my chart table.

A power/data cable is provided that enables it to be connected to 12V or 24Vdc, as well as attaching NMEA-compatible devices, such as an autopilot or external GPS, and output to an external alarm sounder. Wiring is straightforward, but the port settings must be made compatible with each device. In the setup pages you simply select from a drop down menu of NMEA types and baud (data transfer) rates.

Customising the unit's settings to suit your individual needs and speedy programming is greatly aided by the joystick-style cursor control and the four 'soft' keys at the bottom of the display that change function depending on what mode you're in.

The chart plotter uses the latest C-Map Max charts, which are supplied on one of C-Map's proprietary C-Cards. These can



Having a 50-channel GPS and a Class B AIS receiver built in saves extra expense and wiring.

also be used with the C-Map Chart Planner software at home on your PC, provided you also buy one of C-Map's proprietary C-Card readers.

Further 'blank' data storage C-Cards can be purchased to store your own user files, such as waypoint lists, routes etc, for safekeeping or to use with the PC Chart Planner.



The display of the SC500 is taller than it is wide, so you view the charts in 'portrait' mode. This can be a little limiting unless you choose to set the unit's orientation to 'Head Up' mode, when it will always give you the greatest portion of viewable chart ahead of your own vessel. If you were to go from east to west or vice versa in North Up mode, for instance, the amount of chart display visible ahead of your vessel is only 39mm/1.5in. Fortunately, it has an 'Offset' mode whereby your own vessel's icon is positioned with its stern at around a quarter of the distance up the screen, instead of in the centre of the display like some chart plotters.

The display isn't VGA resolution, but the picture is nevertheless very sharp and the contrast definitely good enough for viewing in sunlight.

In addition to the standard options you'd expect to find on any modern chart plotter, the SC500 also supports a number of quite advanced features, such as free downloadable weather overlays and forecasts (C-Weather), tidal heights and rates, 3D perspective chart view (whereby the chart is tilted forward to give you the sense of flying above it), port aerial photography and a 'Guardian Alarm', which checks your route and warns you of potential charted dangers along the way.

The C-Weather Service is Jeppesen Marine's forecasting system – the results of which can be overlaid in layers onto the C-Map charts. The weather data is held on a weather server, which can be accessed directly via a C-COM modem connected to the chart plotter or by

Gear On Test

...DIGITAL YACHT SC500 AIS COMBO £499.95

connecting via the PC Planner and saving the relevant weather forecast onto a data C-Card. Data includes wind speed and direction, wave height, temperature, humidity, visibility and weather type.

VERDICT ★★★★★

The chart plotter is easy to install and set up to your own preferences. The joystick style cursor control and four 'soft' keys make it easy to whiz through the numerous feature choices and tag the ones you want to use most frequently.

The display is readable in pretty much all light conditions and the C-Map cartography



There are several different page views you can select, depending on the data you want to view.

is good when zoomed into at the correct level – although some detail does mysteriously

disappear at certain chart scales for some reason.

The internal GPS has never failed to locate us almost instantly, although you might want to opt for the external GPS antenna should you wish to mount the plotter below, and the AIS has worked faultlessly all year.

Panning, zooming and redrawing are done quickly enough not to be a distraction and I particularly like the data box that gives you extra object information when you hold the cursor over an 'i' mark on the chart. The ability to return to our ship's position at any time by the simple press of the Clear key is also really useful. The same key

also takes you straight out of programming mode and back to the chart when you need to make quick changes while on the move. *DK*

WE LIKE

- Built in AIS with simple antenna socket means there's less wiring to do
- Clear, easy to view display, even in sunlight
- Easy to set up and intuitive to operate after just a few minutes

WE DON'T LIKE

- Special C-Cards required for data storage

Contact: Digital Yacht Ltd
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EASY RESCUE

£299.95

With AIS being the latest must have, it was never going to be long before someone came up with an AIS-compatible locator beacon. The Easy Rescue SART (Search and Rescue Transponder), from marine instrument supplier EchoPilot, is the first approved device of its kind available on the European market place.

Manufactured by German radio specialist Weatherdock (www.weatherdock.de), the Easy Rescue works by transmitting an AIS location, which will appear as a target on the display of any AIS receiver within VHF range, complete with the ID and GPS lat/long position of the SART.

The unit is designed to be carried on the person, but measuring (130H x 70W x 30D mm) it is a little bulky for anything other than a sailing jacket

cargo pocket. It does have a clip that allows it to be attached to a belt or lifejacket, but it will need to be removed and

held in the hand to release the antenna and activate it.

The Easy Rescue beacon is submersible, so should the person carrying it fall overboard, it will continue to work.

However, being a fairly simple VHF radio device it won't actually transmit under water. The unit has a clear plastic sliding guard on one side that allows you access to a Test button by just sliding the guard downwards until the button is revealed. To activate the SART the user must first break the small red 'safety catch' by pushing it hard in the upward direction. This allows the guard to be removed completely. Detaching the guard plate not only reveals the On button, but also

releases the antenna (similar to a metal measuring tape, only plastic-covered), which, until this moment, has remained neatly wrapped around the circumference of the unit.

The antenna springs out into a fully extended position, 310mm above the unit, but to transmit over a reasonable distance the unit must be held as high above the water as possible, where it is purported to be able to transmit its signal over a range of some 3-5nm. It can also be attached to the top of a liferaft using the bracket and lanyard supplied, which could increase its range to between 5-10nm.

The unit is activated by pressing the On button, but can be deactivated by pressing and holding both the On and Test buttons simultaneously for three seconds. An LED in the On button lights to indicate it is active and another on the front panel indicates when your GPS



To switch OFF press both buttons 3 sec.

To activate:
- extend antenna!
- press ON-Button!

location has been acquired and transmitted. The flashing white LED is also an additional aid to location in the dark.

In test mode, the device transmits eight AIS messages, before switching itself back off. A yellow LED in the Test button flashes every two seconds to indicate when it is operating and remains on continuously for five seconds at the end of the test to confirm all is well with both the transmission and battery voltage.

The Easy Rescue beacon is meant for local 'search and locate' purposes only, but is one step ahead of the more basic Bluetooth MOB alerting devices, where an onboard alarm is triggered when the crew member wearing the device goes out of range.

The most obvious additional benefits of the Easy Rescue are:

- Thanks to its in-built GPS, it will continue to indicate its position wherever the crew member holding it might be drifting.
- All active AIS receivers within range will be alerted to the MOB, so other nearby vessels can join in with the rescue.

The Easy Rescue uses the Class A AIS standard, so all Class A (Commercial) and Class B (leisure) vessels equipped with AIS will be able to receive its homing signal.

Each unit has a unique identification number, which is marked on the back and is transmitted along with the MOB message. Weatherdock holds a database on its website where you can register your personal and vessel details to help keep the SAR authorities fully informed at all times.

Specifications

- Minimum 1W transmission power
- Weight 250g
- Submersible
- Lithium batteries with 4-year storage life with 20 short tests
- Minimum battery life once activated 96hr
- Warranty 2yr



Being January, with a water temperature of just 6°C, we were reluctant to put a man in the water for any length of time, so we tested the beacon by attaching it to a floating Dan buoy – mounting it so it would simulate being held up by someone wearing a lifejacket and floating in the water a couple of feet above sea level.

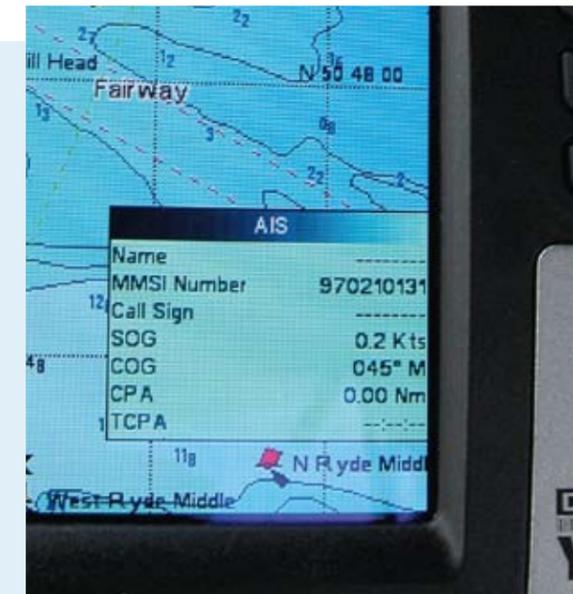


To activate the unit you push the safety guard hard upwards, which breaks off the locking tab.

Test results

At first we ran through the Test sequence just to assure ourselves all was well and that our chart plotter with AIS receiver would recognise the Easy Rescue SART. We were expecting the message 'SART test' and a target-style icon to appear on our chart plotter after the Test sequence had been activated, confirming both transmitter and receiver were indeed compatible.

However, although an AIS icon duly appeared on the display, it was almost indistinguishable from another AIS target, because it had



Only an MMSI starting with the figure 9 indicates it's a beacon.

the same icon as a vessel. Only the MMSI gave it away, because it began with a nine (indicating a rescue device) although apparently the name can be programmed with what you want by the supplier and future software updates for chart plotters will be able to differentiate between a ship and a SART by portraying it with a different icon.

Once activated, a 'SART Active' message was supposed to appear on our chart plotter display, but once again we just got a ship icon, MMSI and lat/long with no MOB identification. Also, we tested the SART in a near gale and found that the flat antenna blew horizontal when held flat side onto the wind – in exactly the same way a steel tape measure would.

VERDICT ★★★★★

The makers clearly state that it is not intended as a distress alerting device, only as a homing beacon.

Despite this, I'd like to see it transmit a more noticeable icon on an AIS display – preferably flashing – to indicate it isn't just another vessel, but a possible distress alert.

I would recommend you carry a PLB (Personal Locator Beacon) as well to alert the SAR authorities to your distress situation if your own crew, or that of a nearby boat, fails to

locate you using AIS within a reasonable period of time.

Of course, this begs the question 'When will someone start making a combined PLB and AIS SART device that can alert both locally and by satellite via the 406MHz distress frequency?' Contacts in the industry assure me this will happen within a couple of years, but in the meantime, as a 'belt and braces' option, you might want to carry both – if you can find somewhere to put them both. *DK*

(Please note, the Coastguard and local VTS were informed as to what we were doing, where and when, and a security warning given over VHF Ch16 to avoid any false distress procedures being initiated by passing traffic.)

WE LIKE

- Test facility
- Ability to switch it off after activation

WE DON'T LIKE

- Shows as vessel icon on most chart plotters
- Fiddly safety catch
- Antenna can collapse in strong winds
- Batteries not user-replaceable

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