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The problem of how to dispose of your out-of-date distress flares is a controversy that rages on in YM's readers' letters pages as well as Internet sailing chat forums. The Maritime and Coastguard Agency (MCA) isn't statutorily obliged to dispose of old flares but it still collects around 40,000 each year and passes them on to the Ministry of Defence, which destroys them. The disposal problem is an environmental and financial headache for the authorities. Merchant shipping regulations state that private vessels over 13.7m (44ft 9in) must carry four red hand flares, four white hand flares, two orange smoke flares and, if going more than three miles offshore, four parachute flares. Boats under 13.7m are not covered by any statutory requirements, but the RYA, RNLI and MCA all recommend leisure sailors should have flares aboard. A typical street price for an offshore flare pack from Pains Wessex is more than £200 – and in just four years they'll be out of date.

There's a growing debate over just how useful flares are in an emergency. The RYA told YM that other means of attracting attention, such as EPIRBs (electronic position indicating radio beacons) are more effective. The RNLI took a similar line, saying that a VHF radio or an EPIRB should be the first choice when alerting emergency services. Mobile phones have also proved very effective in many life-and-death rescue scenarios.

Apart from burning a hole in your pocket, distress flares can misfire, with deadly results, or fail to fire. In 2006, sailing instructor Duncan Wells was almost killed while demonstrating how to use a hand-held white Mk7 Pains Wessex hand flare. The steel flare tube backfired and blasted, handle first, through the left side of Duncan's abdomen and penetrated to the base of his spine, but, mercifully, didn't damage his spinal cord. He spent nine months in hospital, undergoing more than 20 operations. He lost his spleen, all but seven inches of his large intestine and a section of pancreas.

'I think flares are an anachronism, and highly dangerous,' said Duncan, who received a £1.3m payout. 'We're all terrified of gas aboard boats, but we're quite happy to lob flares in a canister and have them rattling around our bilges. What would happen if they were fired? And how many would be found to be faulty?'

Duncan's accident took place at a sea school ashore. If you were asked to fire a flare in a pitching sea with cold hands and panic coursing through your veins, it would soon become clear just how difficult they are to use. Any sailor would prefer some other method of attracting rescue.

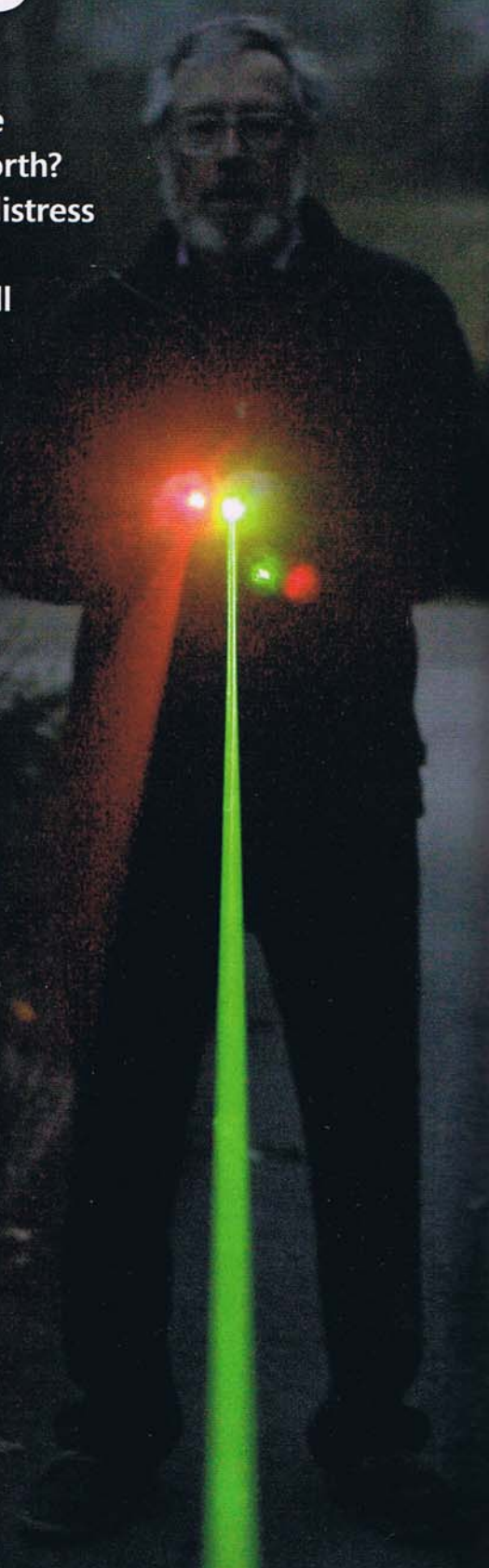
But international maritime authorities have found nothing that can replace flares to their satisfaction. Meanwhile, an American company, Greatland Laser, has developed the 'rescue laser'. At present, the MCA says lasers are not recognised by SOLAS regulations, the RYA has no official opinion on them but is monitoring the situation, and the RNLI says that a small test they carried out some years ago proved unsatisfactory.

We decided to carry out our own test.

21st century flares

Are distress flares more trouble than they're worth? We test a new type of distress signal – the laser beam 'flare'. Stewart Campbell reports on a hi-tech signal that costs from £68-£215 and will never expire

'The beam can be seen 30 miles away at night and between three and five miles away in the day'





This wide laser beam projected 2,500ft across a harbour in Alaska is from a similar laser signalling device made by American company Greatland Laser

THE TEST

We tested two laser beam flares which send a conventional beam through a special optic that creates an expanding 'fan' of light, instead of a focused dot like a laser pointer. If you're a *Star Wars* fan, you might be reminded of Luke Skywalker's light sabres. These lasers are designed to draw rescuers to your location and you can also use them, like a spotlight, to find a man overboard. They are not designed to replace parachute flares, but to make hand-held signalling flares redundant. We tested the Rescue Laser Flare Magnum (£78.29) and the more powerful Green Rescue Laser Flare (£215.31). The Magnum flare projects a red beam, which its maker claims can be seen 20 miles away at night and 1-3 miles away during the day. It takes two AA batteries, weighs just 177g and can operate continually for 72 hours. A similar product from Greatland, the Red Rescue Laser Light, delivers the same power of beam for £68.51.

It is claimed that the more powerful Green Rescue Laser Flare can be seen up to 30 miles away at night and three to five miles away during the day. It takes a single 3v lithium battery, weighs 177g and can operate continuously for five hours.

The laser flares are in tough aluminium cases waterproof up to 80ft. To turn them on, you simply twist the battery cap, then point them in the direction of the rescuer or sweep backwards and forwards slowly to attract attention. In a man-overboard situation, the lasers will pick up reflective strips on a lifejacket.

The laser beam gets wider, the further away



from it you are. At a distance of 16 miles, the beam will be visible to an aircraft at an altitude of 6,000ft as well as to shipping, says Greatland. Rescuers see a piercing flash as the beam sweeps across them.

During our test, the beams of both units were long but still incredibly bright and hard to look at directly from a distance of a quarter of a mile. Both passed the reflective strip test with flying colours, illuminating a lifejacket very brightly.

We tested the lasers at a distance of one and a quarter miles (2km), and tried the more expensive Green Rescue Laser Flare first. It was a hazy night and this emphasised the shaft of light incredibly well. When the beam was shone directly at our test team more than a mile away, the light was so bright they were almost forced to look away.

Even when pointed away from the target, the tester team could still see the beam, making it hard to imagine how, at this distance, anyone could miss spotting the flare being swept back and forth at night. The green laser failed, however, to pick up the reflective strips on our lifejacket at this distance.

The Rescue Laser Flare Magnum wasn't nearly as bright. It didn't have the same shaft of light, and

could only really be seen by the recording team when it was shone at them directly. It, too, failed to pick up the reflective strips of a lifejacket at the greater distance.

PROS AND CONS

Over a distance of one mile, our test showed the laser flares to be very effective, and Greatland's claim of a 30-mile range for the Green Rescue Laser Flare seemed credible. As a replacement for conventional hand-held distress flares, which last for seconds instead of hours, we believe laser flares will gain popularity over the coming years.

However, laser flares appear to be less effective in marking someone in the water than smoke flares. There are also questions to be answered over whether Search and Rescue helicopter pilots and crew would want piercing flashes of light aimed at them. But as part of a package of safety items, YM believes that laser flares have their place and are a good buy for yachtsmen. ▲

Many thanks to Emrhys Barrell for setting up this test.



Are laser flares a credible new distress signalling system?

PRICES

Prices Rescue Laser Flare Magnum: £78.29
Red Rescue Laser Light: £68.51
Green Rescue Laser Flare: £215.31

Contacts SPR Marine or Sea-Me

Tel 0800 197 9522 or 01963 34184

Website www.rescue-flares.co.uk or www.sea-me.co.uk

FOOTNOTE

The MCA pointed out to YM that laser flares are not officially recognised distress signals and that using them could cause confusion rather than assistance.

