
Electronic or pyrotechnic? Perhaps it's best to have both

Lighting the Way

Electronic "flares" are easier to stow and safer to use than traditional pyrotechnics, but are they a better deal for cruising sailors? **Duncan Kent** investigates

The United States Coast Guard requires that all boats operating in coastal waters or on the high seas carry a selection of visual distress signals. Almost invariably, such signals include the pyrotechnic type, either handheld or fired from a flare pistol, but surely there are better and safer ways to call for help than using such outdated technology?

With the majority of sea-going vessels, both commercial and leisure, now fitted with high-level technology such as radar, EPIRBs, SARTs, AIS and more, one might be persuaded to assume that electronic gadgetry is the only way to go. But often you hear of people being rescued after summoning help using the most basic of tools—bright lights! Second to the ubiquitous cell/satphone, sometimes there can be no better way to attract the attention of a passing ship, or people on the shore, than a very powerful light—especially one that flashes the universally understood SOS code.

WHY USE FLARES?

A pyrotechnic flare is a useful backup when everything else fails, but at a price. These flares are difficult to store and dangerous to use, particularly on a rolling boat in stormy seas. It's even worse at night when it's hard enough to read and understand the operating instructions, let alone safely discharge such hazardous devices. If they were used in laboratory conditions you'd need some serious training before even being allowed to handle them. And yet we expect anyone on board to be competent enough to set one off in a panic situation!

So, why not first try using one of the many electronic methods of putting out a distress call? Not everyone will have read the manual and rehearsed the use of all the electronic gizmos on board, but at least they won't be risking firing a bunch of burning phosphates into the boat—or worse, into themselves and their crewmates. Besides, it's easy to stick a boldly printed, bullet-pointed basic instruction list above each communication device, so that even an untrained passenger can have some idea of how to call for help.

Enough of the politics. Are the non-pyro devices better than the traditional flare? Well yes, and no. That is—they can be, if conditions are right, but they often aren't.

PROS AND CONS OF PYROTECHNIC FLARES

For: Traditional flares have two major pluses—the parachute versions can be shot high up into the sky and they all burn extremely brightly for a minute or so. The first extends their visible distance by many miles, the second hopefully gives the untrained eye ashore plenty of time for the meaning behind the flare to dawn on them.

Hand-held flares are very good at pinpointing a vessel's position up to three miles away and in the case of a helicopter rescue, the smoke can also indicate the wind strength and direction to the pilot above.

Against: Firstly, as an initial means of attracting attention, flares can be (and often are) easily confused with fireworks. Secondly, they need to be stored carefully so as not to let them get wet, which excludes carrying a few in your pockets when you're on watch on a rainy night. Finally, though rare, they occasionally prove unreliable and have even been known to explode in the user's hands—particularly if they are close to or beyond their use-by date.

Oh, and they're expensive, which only encourages sailors to keep the out-of-date ones on board. And then they're difficult to dispose of at the end of their life. All of which makes me feel it's time maritime law was updated to free us boat owners of the onerous task of carrying such volatile explosives on board our (extremely flammable) plastic or wooden boats.

THE ALTERNATIVES

I'm convinced that today most skippers would initially head for the VHF to report a problem—I know I certainly would. Modern DSC-enabled VHF radios allow even the most techno-phobic user to lift a cap and press a big red button for five seconds. Even if the rest of the distress info was omitted from the message, listeners would still receive the distress call and your GPS position (assuming you've had the good sense to connect the VHF to your GPS).

If I was offshore, I'd probably then go for an EPIRB if in imminent danger and ensure all my crew had their PLBs and LED beacons in their

pockets in the event we needed to abandon ship. At this point I'd get the grab-bag handy, along with the flare canister, but I wouldn't think of setting one off until the last resort, and certainly not until I had waited a reasonable time to see if anyone replied to my electronic distress signals.

Possibly, if I was sailing in sight of land and my boat was sinking to the point of the ship's batteries becoming overwhelmed, then I'd start thinking of other ways to attract attention, such as flares and torches.

ELECTRONIC FLARES

The early models of electronic flares were laser types which, though very bright, tended to emit a very fine beam. This meant they needed to be pointed at a specific target and could be hard to spot when moved or jerked about on a rolling vessel. Laser flashlights are also available, but personally I wouldn't want to risk blinding someone by pointing one of these at them—especially someone coming to rescue me.

More recently, high-powered LEDs have provided a better alternative to lasers as they can have multiple LEDs pointing in many different directions, more accurately simulating the light from a traditional flare.

Currently, only one LED flare replacement beacon has been approved by the US Coastguard—the single LED Weems and Plath SOS Distress Light (C-1001). It looks a little like a conventional MOB light and floats in a vertical position with a Fresnel lens on top that flashes a constant SOS signal in a brilliant white light. Powered by three regular alkaline C-cells, it is said to be visible up to 10nm away and will operate for up to 60 hours continuously. When carried along with the mandatory orange day-signal flag, it removes the legal requirement for US-registered leisure vessels to carry pyrotechnics on board. Orion, the well-known maker of pyrotechnic flares, has also developed an electronic flare that complies with USCG standards but is not yet USCG-approved. It also comes with an orange day-signal flag.

A typical selection of pyrotechnic flares, as carried on a cruising or racing yacht

There are other types of well-proven electronic flare available—the Ocean Signal RescueME EDF1, the Odeo Flare MkIII and the new Odeo Distress Flare for instance—but, as yet neither they, nor other LED/Laser devices are USCG approved, so owners still need to carry traditional pyros.

There are many high-powered LED flashlights available and some can be set to flash SOS continuously, but as with lasers they are uni-directional, few are genuinely waterproof and even fewer can float. Furthermore, most use rechargeable batteries only, which is hopeless if you're in a liferaft and are more than likely not going to be charged up when needed in a hurry.

Orion's SOS flare is fully USCG-compliant

PROS AND CONS OF E-FLARES

For: Unlike most pyros, electronic flares are waterproof and submersible and some even float. They can usually operate for several hours and can be switched off at any time. They're also easy to test, can be fixed to a rail or hung in the rigging while you get on with saving the boat and the smaller ones can be attached to a lifejacket or carried in a pocket in case you go overboard or are forced to abandon ship. After the initial purchase cost, you do not need to think about replacing them for years.

Against: E-flares are not as visible as pyros in daylight and at night they can easily be mistaken for navigation marks, ship's lights or illuminations on the shore.

At the end of the day, a good skipper should always take all reasonable precautions to ensure he and his crew have a varied selection of methods to call for help in an emergency. Speaking for myself, I would choose to rely on modern electronic devices before finally resorting to the pyrotechnics. S

RESOURCES

Ocean Signal oceansignal.com

Odeo odeoflare.com

Orion orionsignals.com

Weems & Plath weems-plath.com

An orange distress flag can be carried in lieu of a smoke canister for daytime signalling