Are flares dangerous, ineffectual, or both?

Experienced yachtsman Gilbert Park discusses modern distress signalling options and asks if it's time to abandon pyrotechnic flares?

Recommendations and laws for distress signalling in many countries are behind the times. VHF radio – some with the red distress button – mobile or satellite phones and electronic visual distress signals (EVDS) are available, waterproof, affordable and reliable. Yet pyrotechnic flares are still Safety of Life at Sea (SOLAS) requirements. They find their way into all sorts of boats, even for owners, like me, who fear them and believe them to be unsafe.

UK flagged leisure vessels less than 13.7m do not by law have to carry flares or any life-saving equipment. Vessels flagged in other countries may be legally required to carry flares. However, in some countries British-flagged boats may be fined for having out of date flares on board. All liferafts come with flares and it is a requirement for all coded vessels to carry flares. So the question is: are flares dangerous, ineffectual, or both?

Old technology?

The majority of UK boat owners are not required to carry flares, or indeed any distress equipment, yet the manufacturers still insist flares are 'essential'. The Maritime and Coastguard Agency (MCA) has recently stated that there is no downside to carrying flares on board, yet the Royal Yachting Association (RYA) is unable to get insurance to train leisure boaters in their use. All professional ship crew, at even the most basic level, get a chance to let off a flare during training.

The US Coast Guard has described the pyrotechnic flare as 'old technology' and now allows leisure boats to carry one EVDS and an orange flag instead of flares, using VHF radio as the primary source of summoning help.

Their research found fewer than 1% of rescues between 2001 and 2010 were initiated by someone seeing a flare. Nearly all flare sightings reported to the US Coast Guard were false alarms.

I believe there is sufficient kit on the market to cover all eventualities, without having to touch a flare. I have come up with sets of kit for three different kinds of water user: kayakers, leisure boat owners under 13.7m and leisure boat owners over 13.7m.

RIGHT Orange smoke flare test during the ARC safety demo at Las Palmas

James Mitchell/WCC

James Mitchell/WCC

LEFT Flare demonstrations for sailors taking part at the start of the Atlantic Rally for Cruisers (ARC) – but are flares an out-of-date safety requirement for mariners?

Communication is key

The golden rule to remember is that if you are in distress it's better to 'communicate' directly to the person who is going to arrange your rescue, rather than relying on a third person, such as a dog walker or any other kind of bystander, who has to recognise that you are in distress and know to telephone the coastguard.

Electronic signals from you will also tell the rescue services exactly where you are. Visual signals should be reserved for when the rescuers are nearby.

The next thing to remember is that in a stressful situation it's essential to have equipment you're familiar with, that is tested and known to be working.

Distress flares are single use; you can't practice and few leisure sailors will ever have fired one. Reading the instructions, finding heavy gloves and preferably eye protection at a time when your boat is sinking adds to the stress.

Despite the standards for manufacture being exceedingly high – an entire batch will be discarded if a single test sample misfires dangerously – there are many reports of users being injured during their use. The Royal National Lifeboat Institution (RNLI) has experienced misfires when using flares, but carries sufficient spares on board a lifeboat to overcome this.

RIGHT Boat flares laid out for the ARC safety inspection

World Cruising Club

ABOUT THE AUTHOR

Gilbert Park has been a keen sailor for the past 45 years. Before retirement he was an intensive care consultant in London, and a Director of Intensive Care. He held many other posts including non-executive director of Organ Donation and Transplantation, chairman of Drugs and Therapeutics and was also in the Royal Army Medical Corps where he treated patients in somewhat unfavourable environments (indeed it is soldiers who do get injured regularly with flares).

'Distress flares are single use; you can't practice and few leisure sailors will ever have fired one'

Flares are waterproof; indeed you cannot put a flare out using water if a person is injured. This may make the injury worse. Flares need to be kept readily available, but do you really want young fingers to find them and set them off?

What do I carry?

I kayak almost every day for an hour or two (when conditions allow) in the safe, sheltered waters of Chichester Harbour. In the last few weeks this includes kayaking after sunset when the moon rises, there's nobody around – a magical experience. So what do I take with me?

I always try to have two methods of contacting help, in case one doesn't work. I take a small, waterproof handheld VHF and a mobile phone in a waterproof bag. I know that the VHF works on Ch16 so I can speak directly to the coastguard. I have also checked phone reception so I can use that if necessary. In my buoyancy aid is a whistle and fluorescent sea dye so I can be identified from the air and sea as the person in trouble on a busy day.

What about my small motorboat? I use this mostly for coastal sailing, and plan to cross the Channel this year. Often I sail alone, but sometimes my wife crews or my grandchildren come along.

I have a fixed DSC (Digital Selective Calling) radio and a handheld VHF in the boat. In the grab bag I have a personal locator beacon (PLB) – in essence a small Emergency Position Indicating Beacon

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(EPIRB) that is registered to me, and not the boat. I also have an Odeo Mk3 EVDS LED distress ‘flare’ to use at night, along with a powerful torch with spare batteries. For daytime use I also have a dye marker, an old compact disc (CD) to use as a heliograph, strobe light and an orange distress flag. For noise I have a Trump horn. I will always have my phone with me, the boat is registered on the RYA SafeTrx app and my shore contact has the details.

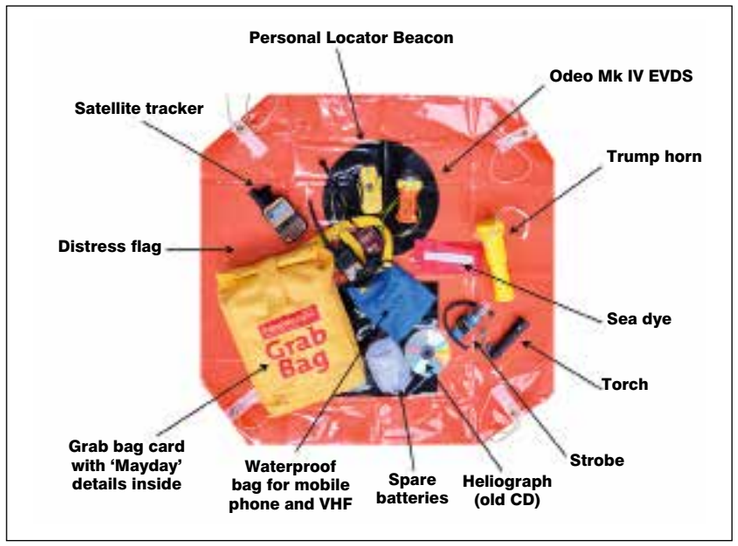
In my lifejacket I have a whistle, dye marker and torch and in addition an automatic identification system (AIS) beacon. When activated this sends off a message of distress to all nearby boats.

It’s important to note that all of the electronic aids – such as my chartplotter, have a self-test function – something you can’t find on flares. Near the throttles is an electronic man overboard marker that flashes red light-emitting diodes (LEDs) and has an inbuilt torch.

On a sailing boat I would also have a danbuoy marker.

Going flare-free

Having decided that I wanted a flare-free boat I had to decide on which LED EVDS to have. There are three on sale in the UK, all of which comply with SOLAS regulations by flashing SOS. Two of them were tested in *PBO* July 2016 along with other distress signals. Like the *PBO* article I found the Ocean Signal device too complicated to use, especially with cold wet hands. The conclusion in that article was almost spot on: “...carrying one of the LED flares and a powerful white torch should cover all other eventualities. They don’t go out of date, have a much longer burn time, and are much safer than pyrotechnics.”



Gilbert Park’s recommended kit for a coastal journey

Ocean Signal rescueME MOB1, a small AIS MOB device with integrated DSC

The eventuality in the conclusion was power failure, and perhaps carrying rocket flares was recommended. Even this is out of date advice. There are now EPIRBs, PLBs and satellite communicators that are much more likely to get you rescued. It is now possible to buy, for less than the cost of a mobile phone, a satellite communicator that will send a distress signal to the GEOS International Emergency Response Coordination Center in the United States. You will get a response within minutes (depending on satellite connectivity) and resources are mobilised within four to 11 minutes of receipt, on average. I have a SPOT X satellite tracker that looks like an overgrown Blackberry phone. It will send and receive text messages, as well as predefined messages and tracking. I use these features frequently, so I’m familiar with the device. The reason I chose this over the other brands is it has a QWERTY keyboard, so it is easy to use and, like all my devices, is independent of the skipper. I have been disabled once and my crew was able to use the emergency equipment.

Because the SPOT X is waterproof and less expensive than a mobile phone I sometimes take this kayaking instead. If you just want a device that will tell you when your message has been received, there is a new system for EPIRBs/PLBs that will notify you that your message has been received.

LEFT **Safety training aboard the Royal Navy’s Queen Elizabeth class aircraft carriers**

RIGHT **SPOT X provides reliable, two-way satellite communications so you can stay connected outside of terrestrial phone coverage**

RIGHT **Gilbert Park’s kayaking kit with handheld VHF and yellow SPOT X satellite tracker attached securely to his buoyancy vest**

My boat came with a non-ISO liferaft, and unfortunately it also contains flares. I am currently unable to have it serviced without the flares being replaced. Never mind the dangers described before, they have gone off when the liferaft was dropped! I have a Mk IV Odeo EVDS to go in it, when I can find a service station that will omit the flares. This is even simpler to use than the Mk 3; just turn it on and off using the big rotating collar. With spare batteries it will go on for hours – unlike flares that are finished after one to two minutes of burn time.

ABOVE **Grab bag with waterproof phone bag and the Odeo MkIV EVDS**

Bigger boats?

What about bigger boats, longer than 13.7m? I was tempted to buy one while writing this article and looked up the regulations. Had I bought one I’d have been mandated to have on board, as a minimum, lifejackets, a liferaft built to the ISO 9650-1 or SOLAS standards and three means of alerting distress from Annex 4 of ColRegs – one of which must be a radio appropriate for the area and one of which must be flares (four red hand flares and two orange smokes). I would add to that an EPIRB and all of the other equipment I have mentioned above. I didn’t buy the bigger boat.

Some readers may feel that flares in the way they boat still have a place and that may be. It is up to each reader to assess their risks and the equipment needed to cope with them, be it flares or not.

For me the only flares I plan to have in the future are the trousers hanging in my wardrobe. My wife wants me to get rid of them however – she reckons they’re out of date too!

Royal Yachting Association (RYA) stance

The RYA always recommends that recreational craft carry a means of distress alert and indication of their location should search and rescue services be required. However, we believe that modern technology provides reliable, accurate and timely distress alerting methods without the need for pyrotechnic signals.

Modern electronic distress alerting devices (EPIRB, PLB, VHF DSC, etc) are readily available at an affordable price and their use avoids the dangers associated with the operation of pyrotechnic flares and difficulties encountered in disposing of time-expired pyrotechnics. Above all, modern methods alert the search and rescue services directly to tell them that you need help and where you are without relying on a third party to take action on your behalf.

For those who are not required to carry pyrotechnic flares, the RYA has published guidance on the alternatives to indicate that you require assistance depending on the type of boat you have and where you use it. This has been endorsed by the MCA and the RNLI. That said, we continue to respect those who wish to carry pyrotechnic flares and we are not suggesting that their carriage should be prohibited.

Nevertheless, we are convinced that modern devices enhance distress alerting and ease the burden of disposal which is a significant factor for many boaters.

A Maritime and Coastguard Agency (MCA) spokesman said: “Flares are one method of attracting attention in a distress situation, but to ensure a distress signal is received by a Maritime Rescue Co-ordination Centre, it is recommended that a vessel user should also carry a correctly registered EPIRB and have a DSC-equipped radio.”