

Safety gear

HOW TO SET UP YOUR BOAT

What kit is essential on board? Rupert Holmes investigates...



WCC/James Mitchell

Safety is about much more than simply having shiny emergency kit to use when a situation gets out of hand.

It's just as true today as 30 or 40 years ago that this isn't achieved by simply completing a tick list. As with many other aspects of life, kitting a boat out with safety equipment is much more complex than in the past. There's now a plethora of choices and it's not always clear what the best options are, or even whether certain items are necessary.

Thirty years ago, many yachts carried little more than lifejackets, harnesses, a pack of (possibly ageing) flares, a VHF radio without DSC capability, plus a couple of lifebuoys and maybe a danbuoy.

Fortunately, much has changed since then. Lifejackets, for instance, are now much more comfortable than ever before, so are more likely to be worn, but the choice is bewildering. A look at one of the larger chandlery's websites revealed 87 different models on offer.

The basics

There's a certain level of equipment no one would want to be without, even for a short afternoon daysail in settled weather. Lifejackets for everyone on board are

Skippers test flares, an essential part of the preparations in the lead-up to the Atlantic Rally for Cruisers (ARC). See page 64 to meet some of this year's ARC crews

essential, as are effective forms of distress alerting, even if just a hand-held VHF radio and orange smoke flares. It's worth noting that if an unexpected problem is encountered during a day sail you may

not get back to port before dark, so equipping lifejackets with lights and carrying red flares makes sense.

A radar reflector is one of the few requirements for UK-flagged private



At least two fire extinguishers are essential



Check the security of lifeline attachments



Inspect and replace jackstays regularly

Photos by Rupert Holmes

pleasur
by the c
friends
fog hom
lights ar

While
so there
least tw
a fire bl
extingu
makes s

A dec
with a c
invisibl

a potent
of the al
make su

BS EN5
marine u
motorho

Ground



LEFT Manual bilge pumps should work with all cockpit seats in place and hatches shut

BELOW Bilge pump access is important for maintenance or if things go wrong



Photos by Rupert Holmes

'It's just as true now as 30 or 40 years ago that safety isn't achieved by simply completing a tick list'

pleasure boats (used for sport or pleasure by the owner or immediate family or friends of the owner) under 45ft, as is a fog horn. The same is true for navigation lights and a life-saving signals card.

While rare, fire can happen anywhere, so there's no excuse for not carrying at least two large capacity extinguishers and a fire blanket. An additional automatic extinguisher in the engine space also makes sense.

A decade ago few boats were equipped with a carbon monoxide alarm, but this invisible gas is now widely recognised as a potential silent killer. Given the low cost of the alarm, it makes sense to fit one, but make sure you get one that conforms to BS EN50291-2:2010, and is rated for marine use, rather than caravans and motorhomes.

Ground tackle is also a key element of

safety kit. There may come a time when this is all that's holding you off a lee shore before help arrives. Is the anchor big enough for your boat? Is the rode, including any shackles and swivels, in good condition? Is the bitter end properly attached to the boat?

Even if you don't plan to venture far offshore there may be conditions where it's prudent to clip on. It's therefore worth reassessing whether the boat has sufficient strong points for harness lines. Can you clip on before you venture out of the safety of the cabin? How old are the jackstays? These should be replaced at ten-year intervals as a maximum for boats kept in northern climates, and every five years for those that live in sunnier parts of the world.

Three point harness lines are designed so that you can always be clipped on,

even when transferring to a different strong point or jackstay. They are now cheaper than in the past and can make a significant difference to personal safety.

It's worth extending this type of questioning into a periodic audit of onboard safety equipment to check it reflects recent developments in technology and the type of sailing you plan.

Staying afloat

It's all too easy to take an 'out of sight, out of mind' attitude to through-hull skin fittings. Ideally pipework will be double clipped, with a tapered softwood plug of the correct size be tied to the skin



LEFT Secure essential items with lanyards

ABOVE Keep the right size wooden bungs close to all skin fittings

fitting. This level of detail may sound like overkill, but an unsecured plug could end up anywhere if the boat rolls in a heavy sea, or the bilge floods.

Equally, do the valves open and close smoothly? And what about the potential for dezincification? Most marine skin fittings are made from manganese bronze or dezincification resistant (DZR) brass. These are more resilient than most brasses, but the zinc content of the alloy will tend to erode over time, leaving a weakened structure with a high copper content. If the fitting is in good condition the distinctive yellow colour of the alloy will be quickly revealed after sanding away any surface oxidation. However, if a pink tinge remains the fitting must be regarded as suspect.

Leisure boats are rarely fitted with bilge water alarms, yet these simple devices have saved many a commercial fishing boat from foundering. At a basic level, it should be possible to operate the bilge pump with all cockpit seats, hatches and companionways shut. Electric bilge pumps can be a boon to those sailing short-handed, but don't over estimate their real-world output, which is often a fraction of the rated value.

It's also important to have a cockpit knife and a means of cutting standing rigging should the mast break. Standard bolt cutters can work well for wire of up to 6mm, but may not work with larger sizes. It's worth buying a couple of feet of wire that matches the largest size of your boat's rigging and use it to check your chosen tools work effectively.

Future plans

Any equipment you buy today also needs to be compatible with any future plans. It can be a mistake to go out and buy basic kit that's only suitable for day sailing in sheltered waters if, after a couple of seasons of local day sailing, you want to expand horizons with longer passages and maybe even some cross-Channel adventures.

On the other hand, if it might realistically be the best part of a decade before you're able to sail future afield, any kit bought now may be dated and potentially even nearing the end of its natural lifespan before it's actually needed.

After buying a boat

Few boats have a comprehensive and fully up-to-date set of safety gear when they change hands. Equally, it's rare for anyone to buy a boat without having a list of improvements to make, or new gear to add.

It also makes sense to make a systematic examination of the boat and all its systems at an early stage. While a survey and other inspections should have highlighted any major

RIGHT This lifebuoy light won't work because the black pin has been (accidentally) pulled out

BELOW Over time a throwing line's bag can deteriorate when exposed to the elements – ensure the contents are still in serviceable condition



Nevertheless, for many people it makes sense to have lifejackets equipped with lights, sprayhoods and possibly even personal AIS units. While these can be retrofitted to some models, that's by no means universally true, which may help to narrow down the options at the outset.

When venturing further afield an EPIRB makes a great deal of sense – indeed the RYA recommends this as an essential item if sailing out of the typical 30-40 mile range limits of VHF Coastal Radio Stations.

problems, there may still be more minor issues that only come to light after you've spent more time on the water. This process of checking out the boat and its systems in detail also puts you in good stead if problems do occur.

As well as applying for a new Ship's Radio licence in your name, don't forget to re-register EPIRBs and PLBs.

Fortunately prices have been consistently falling – I've recently seen GPS-enabled EPIRBs with a ten-year battery life advertised for little more than £300.

Choosing a model with a GPS makes sense as this significantly improves the speed at which the initial out-going message and position can be sent. If the budget will stretch to it, McMurdo's Fast Find AIS 8 also includes an AIS transmitter, so your position will be visible to other nearby vessels.

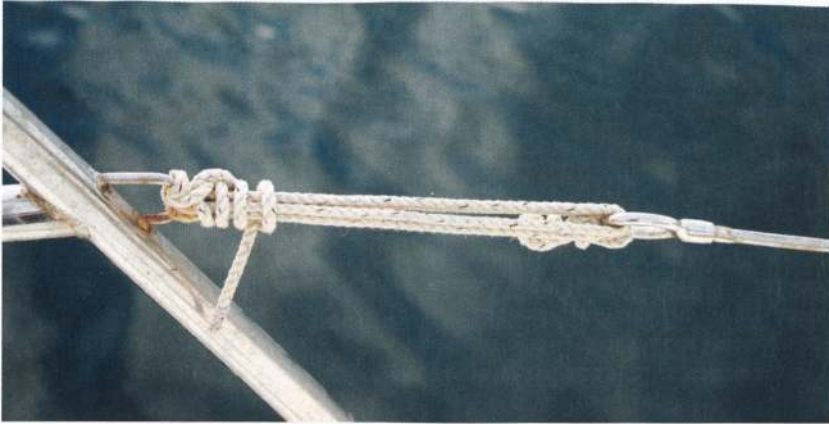
For many owners, who may venture offshore only for one or two mid-season holiday cruises, it can be more economical to hire a liferaft for a few weeks than to own one outright. This measure can also enable the correct size raft to be specified for the number of crew on each trip. Only liferafts packed in a canister are suitable for storing on deck – those in a valise need to be in a watertight locker.

Advice from the experts

Advice from the RYA and RNLI is clearly a good place to start when equipping any boat with safety gear. The RYA's listing of mandatory, recommended and discretionary equipment (bit.ly/pbo-rya-safety-list) is particularly useful in this respect. There's also more safety related material at:

rya.org.uk/go/safety.

The RNLI also offers a free Advice Onboard service provided by trained volunteers who will visit your boat to give you practical suggestions about how to improve the safety of the vessel and its



ABOVE Check guardwire lashings regularly



LEFT A first aid pack is essential, and needs to be more comprehensive the further away from land you sail

equipment. In addition the charity offers free lifejacket clinics that cover routine checks and servicing procedures.

Offshore Special Regs

Few organisations have put more thought into safety equipment for sailing yachts than World Sailing, responsible for ensuring racing boats are safe whether out for a mid-summer's evening race or crossing an ocean.

Six categories reflect different types of racing, from Categories 0 (unrestricted worldwide, including high latitudes) to 6, covering short inshore races in protected water with rescue boats provided by race organisers, see: sailing.org/specialregs.

Many of the fundamental requirements that apply across the offshore categories relate to the fact that (almost all) keelboats can sink, that it's possible for a boat to be knocked down even when close to shore, and that heavy items can move around and damage the vessel or crew. Yet few

boats as standard have floorboards that can be secured in place, or washboards secured by a lanyard so they can't be lost.

Again, it can be easy to think this is overkill, but there are many overfalls off headlands around the UK that have potential for waves that will lay even respectable ocean-going yachts on their beam ends and in some cases cause a full inversion.

On a more basic level, lifelines that are encased in plastic are banned on the premise that it's impossible to inspect the wire for damage. Equally, the lashings that connect lifelines to the pulpit need to be changed annually and must not be more than 2in in length. While it might be possible to argue annual replacement is unnecessary, I'm happy to bet there are many cruising yachts with lifeline lashings that are well into their second decade – a scary prospect for such a vital element of safety kit.

As technological advances produce ever more equipment that may save lives, the OSR's requirements have become →

Electronic flares

These have been available for some time and the latest LED models are extremely effective, with up to eight hours of operation time and user-replaceable batteries. As a result, the RYA says they 'provide a viable alternative' to conventional pyrotechnics for 'final mile' pinpointing of your exact location.



Waterproof cannister for pyrotechnic flares

Maintenance of safety gear

When I was a child, looking after safety gear seemed to consist of nothing more than drying lifejackets (the bulky foam/inflatable type) after use, making sure the bilge pump worked – it got plenty of use on my family's small pre-war keelboat – and checking the flares weren't embarrassingly out of date.

A huge amount has changed since those days. There are now so many items to keep track of, including flares, EPIRBs, PLBs, personal AIS, lifebuoy lights, liferafts, first aid kits, and so on that a separate log of safety equipment, or spreadsheet, listing all expiry dates and service schedules is essential.



Horseshoe buoy, liferaft cannister and bag of throwing line at a boat's stern



Always check a new throwing line – it'll need opening and repacking before use

Photos by Rupert Holmes

more onerous, although elements are dropped when better options become available. For instance, red parachute flares are no longer needed when offshore, although these boats need an EPIRB and an AIS transmitter.

The OSRs are reviewed annually and revised every two years. They can therefore also be a useful means to help stay updated with new thinking, new products and their availability.

Another useful place to look for advice is the MCA's Codes of Practice for Small Commercial Vessels. These are the regulations sea schools and British flagged bareboat charter yachts of less than 24m must abide by. It's perhaps no surprise that there are many shared elements with the Offshore Special Regulations, especially in terms of stability and structural engineering requirements.

'Safety is about much more than simply having shiny emergency kit'

However, there are other aspects in which they diverge, with the Code of Practice tending to be more onerous.

Attitude of mind

Everything I talked about so far is aimed at mitigating a disaster – these devices and products are the nautical equivalent of a car's seatbelts and airbags. You wouldn't want to leave home without them, but equally would never knowingly plan on being in a situation in which they have to be activated.

Another key to safety is therefore having a constant awareness of everything happening on board and around the boat, considering what's most likely to go wrong and how best to minimise the risks.

This approach helps to identify a potential problem at an early stage, while a good understanding of onboard equipment and systems can help to contain problems at a stage at which they're an inconvenience rather than a danger.

Nevertheless, it's worth backing this knowledge up with the essential drills for

All owners of well-found boats will want to ensure they have safety kit on board to cover every likely occurrence



Photos by Rupert Holmes

what to do if faced by potential disaster.

The RYA Sea Survival and Safety at Sea courses cover preparation for survival, safety equipment for small craft, lifejackets, search and rescue, plus a two-hour session in a swimming pool with a liferaft including righting a capsized raft and boarding one from the water.

Similarly, at least one person on board ought to have training. The one-day RYA First Aid at Sea course is ideal as it covers the basics of first aid afloat, including resuscitation, head injuries, treatment of cuts, burns, hypothermia and shock.

Is all this really necessary?

I've sailed without this kit in the past, especially when younger. I've sailed around the Solent, for instance, without

Passage plans

A passage plan should always include a check of weather and tides, plus a safety briefing so everyone knows where key equipment is and how it works. In addition, plan a port of refuge in case you're slower than expected or encounter problems en-route.

even a proper flare pack, across the Channel without a liferaft and so on. But just because people of a certain age survived a childhood in which they were ferried around in overloaded estate cars with the back seats folded down, doesn't make this something to recommend to the parents of today's youngsters. Road deaths have decreased by almost 75% in the past 40 years, despite millions more cars on the road. This is something that's easily forgotten.

Over the past 30 years boats have become immeasurably cheaper in real terms. In the late 1970s a 26ft Westery Centaur cost as much as a terraced house. Spending a bit of that saving on safety kit seems to me well worthwhile.

Even when cruising I've had occasion to be grateful for sailing a boat with full Category 1 (trans-ocean) safety and communication equipment.

LEFT Even coastal cruising in home waters demands a certain level of safety equipment



Rupert Holmes