

Liferaft guide
included inside

The OCEAN ISO Liferaft

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INSIDE!**

4 stars - "This raft was well made and much thought has been given to design to make it user-friendly.

We felt we could buy this with confidence."

Sailing Today December 2011 issue



LIFE SAVER...



We spend a fortune on them and for some their lives depend on them, but what do we actually know about our liferaft and what can we expect when we tentatively yank that painter to set it off? Duncan Kent and the doughty ST test team took six 4-man liferafts available on the UK market today and set them off in the sea to find out how they fared.

WHY HAVE A LIFERAFT?

It seems strange to even be discussing this question, but despite not being mandatory for small, private leisure craft in the UK, going to sea without a liferaft would surely be foolhardy to say the least. 'No liferaft, no life' is the wry comment made by Josh Jones, who, together with his wife and children, survived the sinking of their yacht in the Atlantic by taking to their liferaft for 18 hours until they were rescued.

I must say I was flabbergasted when, during our trials, some curious onlookers gathered to peer inside one of the inflated

rafts. 'We've never seen one of these inflated' the lady said, as she pushed her trolley full of gear down the pontoon. 'Do you have a liferaft yourself?' one of our test team asked. 'Oh no,' she said dismissively, 'ours is only a 30ft boat.' Can someone please explain to me the logic behind that comment?

I treat the liferaft as a vital piece of safety equipment – and not just as a 'final resort' in the event of a disaster. I have always told my wife or crew that, should someone fall overboard (especially me when sailing just with my petite wife) and you are unable to

get them safely back on board within a few minutes, launch the liferaft. A casualty who is in full oilskins and boots can be extremely heavy – we weighed one of our guys before and after being in the water with full oilies and his weight increased by 1½ stone (nearly 10kg) – so in my case that's 16½ stone (105kg) my 5ft/7-stone wife would be expected to heave back on board! Whereas, if she's launched the liferaft I have somewhere I can climb into myself to keep out of the wind and water until the rescue services arrive. What's a repack job when the alternative is possible hypothermia or worse!

PREPARATION

LIFERAFT PACK CONTENTS

One of the perpetual problems for liferaft manufacturers is the survival packs contained within the raft itself. These have to be pretty basic to avoid extra weight, but they must contain the bare essentials for survival and the ability to signal to a passing vessel or aircraft. The contents of these packs vary considerably and depend on what type of sailing you plan to do, or more importantly, how far you are likely to sail from help.

If you're only ever going to potter along or anchorage, then the pack contents of your raft can be minimalist. In fact the packs available for the ISO-approved liferaft we tested were all 'Under 24-hour', intended for inshore or coastal sailing – ie. when you

would be unlikely to have to spend more than 24 hours in the liferaft before being rescued. These contain a bailer, sponge, pair of paddles, whistle, torch, signalling mirror, seasickness pills, sick bags, 2 red parachute flares, 3 red hand flares, repair kit and a pump. 24-hour+ kits also contain two thermal blankets, a 1st Aid kit, a second torch, six hand flares, 1.5ltr freshwater per person and 10,000 kJ of food pp, although some or all of these extra items may be supplied in a separate, floating grab bag.

Equipment packs must be protected against water infiltration and easily accessible while wearing gloves.

All rafts must also have a floating safety knife

with lanyard mounted on the top tube near the entrance.

For those making extended offshore passages or planning to spend long periods on the ocean, well away from busy shipping lanes, are most likely want to buy one of the SOLAS offshore packs, which will contain extra water, flares, fishing equipment etc. Some manufacturers will pack whatever extras you deem appropriate, within reason, and provided it doesn't break any regulations or endanger the raft itself. However, most bluewater cruisers will carry one or more 'grab bags' for extra kit.



MOUNTING /STOWAGE

Picking up a slippery 35kg liferaft canister is no easy task to start with, but getting it to, up and over the rails is almost impossible for someone of a light build. So it's worth considering how you plan to launch it well in advance and devise some way that it can be done by anyone on board, safely and easily.

The most obvious answer is to fit it into a sturdy metal frame specifically designed



for your liferaft and mount it outboard of the stern rail so that it 'falls' overboard, rather than lifting and throwing. The downside to this type of mounting is that, in the event of a fire, you'll want to launch it on the windward side, whereas dropping it off the back might allow it to drift downwind.

A more common way of stowing it on a sailing yacht is by lashing it down to chocks on the coachroof. Although this might look ideal, you'll still need to heave it about before launching, unless you're brave enough to wait for it to float off! Also, the danger of the painter becoming entangled with the rigging and guardrail is greater this way, and besides, you might just

want to launch it in advance and keep it tied alongside for peace of mind while you continue to try to save your vessel.

It might sound blatantly obvious, but please don't put your liferaft into the bottom of a cockpit locker. You may think no one would be so silly, but I've seen it done a frightening number of times – especially with valise-type containers. I've even found one under a huge pile of other gear including an inflatable dinghy, outboard, spare fuel jerrycans and the like – imagine trying to move that lot when the spreaders are hitting the waves and your kids are looking to you as their saviour. Please don't do it!

Oh, and one last piece of advice that I'm sure you already know, but is always worth repeating – make sure the painter/trigger line is attached to the boat at all times.

LAUNCHING

When you've finally managed to get the beast in the water it is surprisingly hard to set it off pulling on the painter. Firstly, it will have a 10m-long line that has to all be pulled

out of the container before you get to the trigger point – indicated by a red mark on the line. Then it requires a good, sharp tug to fire it off. Some panic when they see all the line

coming out and think somehow it's become detached – it hasn't and is very unlikely to either, so persevere and do make sure the other end is attached to the boat.

STABILITY

INFLATION



When we started launching the rafts I was concerned about how long some of them took to inflate and sometimes the canopy didn't rise completely for a minute or so. Initially I thought this was quite worrying,

and might even be a fault, but raising the matter later with Chris from Ocean Safety, he told me that this was intentional, as you don't want the canopy fully raised up until the ballast bags have had a chance to at least

part fill. This makes a lot of sense – especially as the rafts inflate with their doors wide open to assist boarding, which creates a lot of windage and could easily blow the raft off downwind or invert it.

BALLAST BAGS

Since the Fastnet Race disaster in 1979, when many of the liferafts launched either blew away in the gale or sank, the design and manufacture of leisure craft liferafts has been improved enormously. The biggest single improvement to stability must be the ballast bags – large nylon (or similar) bags attached to the bottom of the raft that start to fill with water as soon as the raft is launched and stop it from flipping upside down in the wind and steep waves.

We noted in this test that not all manufacturers have gone down the same route on bag design, capacity or quantity. Some have chosen to have fewer bags but a greater capacity in each, others have more bags to spread the ballast across the raft. Either way, the two most significant elements we noted during these trials was the size of the water inlets and whether the bags were weighted or not. If the inlets are too small they take too long to fill, by which

time the raft might have blown a distance. Also, if they're not properly weighted, the bags tend to float up against the bottom of the raft, blocking the inlets and hence taking ages to fill. Some of these bags can take up to 60-litres of water – that's 60kg/132lb weight in each bag! Clearly, how they are attached to the raft is of the utmost importance and weak stitching, of the kind we later discovered in some boarding arrangements, would be disastrous as the ballast bags are the most important factor in the stability of the liferaft.

DROGUES

Another common problem with older designs of raft was the lack of a drogue – or sea anchor as it is sometimes called. These are like miniature parachutes – usually conical in shape with a small hole in the apex and attached to the raft with a long length (usually 30m or so) of line or webbing. The purpose of the drogue is to slow the drift rate of the raft so that you're not whisked away from the point at which you made your distress call and where the rescue services are likely to start searching.

Sometimes these drogues are packed on the outside of the raft, so that they deploy on launch. Others are inside for the occupants to launch manually when they deem fit. At first I thought the former was the obvious solution, but then when I thought about it and the chaos that might be happening all around in a wreck situation and decided that it would be better to have one less long line floating around whilst you're still close to the abandoned boat in case it catches up with something and takes the raft down as well.

There is also another good reason not to launch the drogue immediately – if the vessel you're abandoning is on fire you'll want to drift away as far and as fast as possible – especially if you're downwind of it and a target for burning airborne debris!

One other thing to note about drogues – in most cases they are attached to the back of the raft on the tubes in order to keep the entrance door pointing downwind and enabling you to look out without taking huge amounts of spray or waves on board.

UPSIDE-DOWN

During the last liferaft trials I carried out several of them inflated upside-down. This time none did, but we turned them over anyway (after emptying their ballast bags) to see how easily they could be righted. All the rafts have markings to indicate where you should climb onto it to right it, but if in doubt it is always the side on which the gas inflation canister is mounted. There will be a ring or line attached to the bottom for you to grab and pull the raft the right way up. Unfortunately, it almost always lands on top

of you when you do this, but we found them all to be easily righted if approached from the correct side. Mind you, these were only fairly lightweight 4-man rafts – the bigger rafts do require much more effort, so the correct approach is important.

We discovered that long strap or line right across the bottom is a lot easier to grab than



a small loop of webbing somewhere and I fail to see how you're going to even see it in the dark. Maybe this should be some sort of luminous line?

BOARDING

Having some form of raft entry system certainly makes it easier to board from the water when soaking wet and wearing a fully inflated lifejacket. Having just a couple of webbing steps doesn't really cut the mustard – especially if they're not particularly well weighted, when they will tend to float up underneath the liferaft.

It is also essential to have some type of handhold to grab and pull yourself up and

into the raft. Some we tried had a simple strap, which isn't the easiest to use when you're loaded down with water. Others had a stout webbing ladder, which was much better for getting in, but then rather restricted the available space inside until it was detached.

Those with a chute/ramp or inflatable step fared the best and, had the person in the water been close to exhaustion, would prove considerably easier for others to help them

up and into the raft without the casualty's own assistance.

We also found it important that the painter didn't obstruct the boarding area and was instead slightly offset. One raft we launched had a bridle that attached either side of the doorway, which proved almost impossible to get around and could cause someone to panic if they got their legs entwined with the double line.

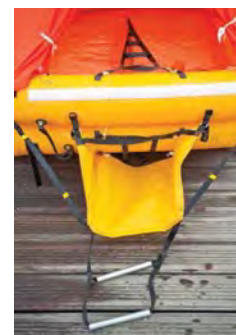
FLOORS

All the liferafts tested had reflective, insulated foam/foil floors. Most were sewn into or glued to the actual base material, others were attached with Velcro or similar. We quickly discovered that the loosely attached floors soon became crumpled into a heap under our feet as we scrambled to get in.

During my last trials most of the floors were inflatable, which had certain advantages. Firstly they keep you warm and provide excellent insulation from the cold raft bottom. Secondly, they allow any water in

the raft to 'disappear' around the edges so that you weren't sitting in a wet puddle all the time.

I believe that most of the ocean models still have this feature, but it's not considered necessary for the lower-spec rafts.



CANOPIES

Made from tough ripstop-type nylon, most of the canopies were attached firmly on three sides, with the fourth open to a degree for entry. Some have wide doors that zip closed, others are secured just by pulling an elasticated hem over the tube and held firm with Velcro pads. While the latter seemed

okay during our trial, I'm not so sure how well this would hold up in a gale with waves breaking over the door.

All the rafts had observation hatches and rainwater collection gulleys and all were topped with a flashing light of varying intensity – some LED, others standard bulbs.

One was seawater powered, but most had sealed dry-cell batteries so their life is limited. The exterior lights were dislodged on two out of the six tested, with one literally hanging off its mounting, making it virtually invisible from one side. Each had an interior light as well, which could be turned off to save power.

TUBES

The specification for these is laid down in the standard, which specifies the need for more than one chamber and ability to support four 75kg crew when flooded, without distorting. Most tubes are made from butyl rubber or a type of PVC fabric with a tough nylon

or polyurethane outer casing to withstand abrasion. Seams are welded or glued, either of which can be very strong.

Most had an integral tube to hold the canopy up, but one had a separate chamber joined to the upper tube by a plastic link.

It didn't appear to leak, but it looked very vulnerable and allowed the canopy to collapse very easily when leant against.

The top-up valves were different on each raft, but some looked little different to a standard inflatable dinghy valve.

REGULATIONS AND APPROVALS

The regulations concerning standards for liferaft manufacture have changed a lot over the past three decades and can appear quite confusing to the layman. UK leisure sailors can actually buy what they like with regard to safety kit and don't necessarily have to carry approved equipment on board. Saying that, we can't imagine anyone would take a risk with such an important part of the vessel's inventory, so we chose to only test liferafts carrying full ISO 9650 Type 1 approval.

ISO 9650

ISO 9650 is the latest EU liferaft type approval for leisure vessels under 24m LOA carrying up to 12 persons in open sea conditions. These are not SOLAS approved liferafts, which are mandatory equipment for commercial vessels.

There are two types of ISO 9650 liferaft –

ISO 9650 Type 1 for open ocean navigation and adapted for the risks associated with long voyages including high seas and heavy winds. ISO 9650 Type 2 rafts are for coastal and inshore waters and adapted for the risks associated with more sheltered waters where moderate conditions may be met.

Other names/acronyms you'll regularly hear mentioned with regard to liferaft approvals are ORC, RORC and ISAF. The first two organisations formed the earlier standards that they deemed the minimum when taking part in one of its offshore races and are not official IMO type approvals. The ORC was absorbed by ISAF in 2004 and, together with the MCA, RYA and several other notable authorities, were consulted heavily when ISO 9650 was being created.

ISO 9650 lays down a standard for construction and recommends a number of

essential features for any liferaft used on a small leisure craft. However, this standard is self-certified and there is no apparent inspection procedure for manufacturers claiming to build to this approval standard.

For instance, one of the points raised in the type approval is that there should be an easy boarding mechanism. Some have interpreted this as a simple webbing ladder, others incorporate a clever inflatable boarding ramp or chute. One factor that seems to have been accepted by most of the manufacturers, although not specifically covered in the standard, is not attaching the gas cylinder and firing mechanism to the front of the raft as it could obstruct entry and might be damaged when climbing aboard, causing a possible pressure leak. Only one maker of rafts in our trial appeared to have ignored this rational consensus.

COMMON ACRONYMS

ISO – International Standards Organisation

ISAF – International Sailing Federation

ORC – Ocean Racing Council

RORC – Royal Ocean Racing Club

RYA – Royal Yachting Association

MCA – Maritime and Coastguard Agency

IMO – International Maritime Organisation

– a UN agency subscribed to by 162

Governments that deals primarily with the safety of shipping.

SOLAS – Safety Of Lives At Sea – This is the International Convention for the Safety of

Lives at Sea and it provides strict standards for marine safety equipment including liferafts, which, though drafted with vessels of over 24m LOA in mind, includes very many sensible design features that are equally applicable to smaller craft, especially if these are ocean-going.

LIFERAFT TRIALS

SEAGO – ISO

This is the cheapest of the rafts we tested and is probably the most purchased liferaft in the UK at the moment. Certainly the three chandlers with whom I enquired all said they sell more Seagos than any other brand. Worryingly, this is probably more to do with price than anything else.

The test started well with the raft opening and its bright orange canopy and black tubes filling fairly slowly. It has a full-width door, which is secured well by zips and Velcro patches when closed, and an inflatable step. It all started going wrong when our team in the water tried to climb aboard. The inflatable step is not so easy to get your knees onto as a chute-style step and especially when there is no ladder to get up onto it. But what gave our boarders so much trouble, bearing in mind they were kitted out with a fully-inflated

lifejacket, was trying to negotiate their way around the ridiculous bridle on the end of the painter, which basically barred you from Approaching the entrance. Our guys struggled, pulling hard on the interior hand ladder, which again in the dark, promptly ripped away from the tubes both sides! This whole rigmarole would have been pretty terrifying had this happened in the dark on a stormy night with maybe young kids and a non-swimmer or two thrown in. A redesign is a must, I feel, or this could end in a disaster.

Apart from the boarding problem the rest of the construction looks a little on the weak side, with knots of varying types holding the lifelines to the tubes. Unlike the other rafts, the drogue is attached to the front of the raft, which means the doorway is held towards the wind/weather once it is deployed.

The three small LEDs in the exterior light also looked fairly dim, although we

didn't check it. On the plus side the foil floor was fixed down, the rainwater collector pipe had a bag supplied and the paddles were long enough to be useful.

Verdict

★ ★ ★ ★ ★

None of our testers said would be happy if they'd purchased one of these and most feared the weaknesses in the hand ladder and step webbing attachments might be repeated elsewhere in the raft.

Contact: Seago Yachting 01825 873567
www.seagoyachting.co.uk



PLASTIMO – TRANS

One of the lower cost rafts, the Plastimo is bright orange with two huge retro-reflective patches on the top. It has a very wide entrance, which, although it helps when boarding, is more likely to be breached by a large wave when first launched. The inflation canister is mounted below the door, which makes it vulnerable to damage when people scramble aboard using it as a step and furthermore this heavy steel bottle might also prove a risk to the person in the water.



Four large, weighted ballast bags hold it steady in the water and she is easy enough to right when upside down using the grab line provided. Boarding was not particularly easy thanks to the lack of a long ladder or line inside. So, though it does have weighted webbing steps on the outside and a single grab strop on the inside of the tube at the front, you have to stretch for the webbing lines around the inside of the tubes to pull yourself in. Once inside the large canopy is closed by hooking the elasticated hem around the upper tube and aligning the three Velcro patches. The

observation hatch is zipped, which is useful and there is a good light fitting inside that comes on automatically, but can be manually switched off to save the battery.

The Plastimo's

tubes are unusual in that they're double-skinned. The inner, inflated tube is made from polyurethane and it has an outer casing of 1100 Decitex PVC zipped up onto it, which is said to offer extreme resistance to abrasion. It probably works well in practice, but I would worry about the zip coming apart and sharp stuff touching the more fragile inner tube.

The canopy tube is separate to the main tubes and is attached by what looks to be a rather susceptible plastic connector, but worse – we discovered a small air leak when we unscrewed the cap of the top-up valve in the upper tube. Although the cap itself has an inner seal that was preventing the tube from deflating, it was quite worrying nevertheless.

Verdict

★ ★ ☆ ☆ ☆

This raft looked and felt like a budget model and we weren't too keen on the canopy support arrangement – or the leaking valve!

contact: Navimo Ltd www.navimo.com

CREWSAVER – OCEAN ISO

This is a brand new liferaft just launched by Survitec – an organisation formed by combining a number of different companies (Crewsaver, RFD, Beaufort & Cosalt to name a few) that have all been renowned for providing top-quality safety equipment in the past. Being so new it had no brand name (announced as Crewsaver Ocean ISO just before going to print) and it came in a makeshift, though fully operational, canister.

We were expecting something a little different with this raft, but surprisingly it had the looks of an older style model and wasn't highly visible in its plain red colour for both tubes and canopy. It did look quite tough, though, and we liked the way the canopy was firmly attached to the tubes.

The entrance is quite a small door, which we thought was actually a benefit and would keep the waves and spray out. It also has a double zip fastener, which is helpfully uncomplicated. Our guys in the water had no real trouble boarding, despite the ladder being attached with Velcro and it not being immediately obvious how to release it. The webbing steps are not weighted, surprisingly,

but there is a wide upper step and a grab strap attached to a rather thin line inside. A ladder would be better.

Underneath are just two ballast bags made from tough, heavy PVC, which is maybe why they're not weighted, and there's a webbing ladder across the bottom to aid righting it from the upside-down position.

The hole in the rain gutter was quite high up and the canvas reservoir tended to close it off anyway – not that you're likely to need it in a sub-24-hour raft! The paddles appeared to be unattached and very short, and the foil floor was loose, which rucked up into a mess the moment our two guys climbed on board.

This was the only raft in the test with a



self-deploying drogue.

Verdict

★ ★ ★ ☆ ☆

There were a lot of good points we liked about this raft, namely the tough construction and effective boarding system, but several further improvements could be made.

contact: Survitec
www.survitecgroup.com

LIFERAFT TRIALS

OCEAN SAFETY – OCEAN ISO

Ocean Safety supplies and services marine safety equipment throughout the UK, both for the leisure and commercial market so, as you would expect, its Ocean ISO liferaft is substantially constructed. It has four substantial 75ltr, weighted ballast bags that filled rapidly and its hi-vis orange canopy and bright yellow PU/nylon laminate tubes make it stand out well on the water. It was one of the easiest to board from the water, thanks to a simple chute-style entry, weighted step and full-length internal grab ladder. The door covers three-quarters of the front and has a single central zip with a Velcro seal strip at the bottom. The drogue has to be manually launched from inside and is attached to the rear of the raft to ensure the door is left facing downwind. All the grab lines and ladders are

substantially attached with reinforcing patches and the thermo-reflective floor is bonded down.

Verdict

★★★★☆

This raft was well made and much thought had been given to the design to make it user-friendly. We felt we could buy this with confidence.

contact:
Marinesafe Australia
07 3808 1988
www.marinesafe.com.au



SERVICING

At one time, before all the liferafts were vacuum packed, they used to have to be serviced every year, which was expensive and tedious. Nowadays most have extended the service interval to two years. In fact, the packing is so good these days that the only reason it requires a service at two years is to replace out of date flares. I have taken a vacuum sealed liferaft to be serviced after it was left on deck for eight years – and the raft itself was immaculate.

Although servicing can be expensive, I assure you it will seem cheap the day you need it in anger! There was some suggestion made in a web forum once that you might attempt to service your liferaft yourself. Apart from it being unlikely that you'd have a suitable machine and without it you'd find it impossible to get it back into the container. What's more your insurance would be

invalidated, along with any outstanding warranty on the raft.

If you get the chance to watch your liferaft being serviced, do grab the opportunity to familiarise yourself with it while you can. Alternatively, some manufacturers produce DVDs to show you what to expect should you have the misfortune to need it.

CONCLUSION

It is a big worry that we discovered such a difference between the best and worst of the half-dozen liferafts we tested and the only real conclusion we could come to was that you get what you pay for! I would venture to suggest that, if you can't take a look at one of the cheaper rafts you might be considering actually inflated, then don't buy it. The manufacturers that have nothing to hide will usually be pleased to let you inspect one of its products during services.

SPECIFICATIONS

	CREWSAVER	SEAGO	OCEAN SAFETY	PLASTIMO
PRICE (VALISE/CANNISTER)				
VALISE SIZE	78 x 28 39cm	73 x 47 x 35cm	67 x 42 x 24cm	74 x 46 x 27cm
VALISE WEIGHT	24kg	34kg	28kg	30kg
CANISTER SIZE	74 x 54 x 26cm	79 x 53 x 35cm	71 x 49 x 23cm	74 x 47.5 x 26.5cm
CANISTER WEIGHT	30kg	45kg	34kg	33.5kg
TUBE FABRIC	PU/nylon	Butyl rubber	PU/nylon	PU/nylon
SEAMS	Glued	Glued	Welded	Welded
DOOR FASTENING	Zip	Zip/Velcro	Zip/Velcro	elastic/Velcro
BALLAST BAGS	2 x 84ltr	4 x 55ltr	4 x 75ltr	4 x 55ltr
ENTRY SYSTEM	Chute/ladder	step/ladder	Chute/step	ladder
FLOOR	loose	fixed foam/foil	fixed foam/foil	fixed foam/foil
REFLECTIVE TAPES	4 strips	6 strips	8 strips	3 strips + 2 patches
LIGHT POWER	li-ion cell	li-ion cell	li-ion cell	li-ion cell
RAIN CATCHER	Y	Y	Y	Y
SERVICE INTERVAL	2yrs	2yrs	2yrs	2yrs
WARRANTY	12yrs	12yrs	12yrs	12yrs