

Part 3 – Leisure Craft



I have been a keen reader of the MAIB Safety Digest for a number of years. Its impartial appraisal of marine incidents provides valuable lessons for us all. The addition of the leisure section highlights areas which those of us whose work has significant overlaps with the leisure sailing world need to be aware of and can learn from.

Whilst I am a full-time professional seafarer, the only other permanent staff member on board Ocean Youth Trust South's 22-metre sail training vessel, *John Laing*, is a 21-year old bosun. Otherwise, I sail each week with an ever-changing cast of volunteer watchleaders plus a dozen crew members aged between 12 and 25. Most of our watchleaders come from a leisure sailing background – apart from those who have been promoted from amongst our young crew members and may have never sailed any other vessel. The young crew themselves are frequently completely new to sailing in any form; yet the ethos of the Ocean Youth Trust demands that we involve them in every aspect of sailing the vessel.

This means that I have to provide the training and support to enable every single person on board, right down to the smallest 12 year old, to take an appropriate share of responsibility for the safety of vessel and crew. The first mate must be able to get the vessel to a safe haven if I am ill or injured; but little Sam, who set foot on board for the first time only yesterday, must know how to fit and use a lifejacket and harness, and how to keep a good lookout and clearly report anything seen to a watchleader.

Establishing safe operating procedures and ensuring that correct routines are followed, preparing for emergencies, practising and briefing and training, and communicating with each other so that everyone is clear about what is happening and their role in it, are all essential to safety – as the case studies in this digest illustrate.

Keeping anchor watches and making certain that all those involved understand exactly what they are watching for is straightforward to organise. As a commercial vessel, alcohol use by anyone on board *John Laing* is restricted by the law, with possible criminal penalties; but even in purely leisure boating, mixing alcohol with any situation where the lives of yourself and others may depend upon your actions seems simply foolhardy. Correct use of all equipment, including killcords and lifejackets, can be taught, regularly reinforced, and enforced. And when the safety of vessel or persons is dependent on other people knowing where you are and what you are doing, it is not enough simply to communicate that information: you need to ensure that it has been received and understood by the people who need to know – whether this involves divers working in harbour or simply proper communication between a yacht's helmsman and the crew member preparing to take the bow line ashore. "I thought he knew what I meant!" is not much use once something has gone wrong. And very simple precautions, reliably followed, can prevent serious accidents: *John Laing's* sea staff know they must check with the skipper before starting the engine – and the bosun is required to remove the engine key before starting any work in the engine room.

Time spent on training, drills and reviews is never wasted, and the lessons learned can echo down the years. The RYA provides some excellent courses: for example, though my coastal skipper course was many years ago, the skills I learned then all contributed to making

me a safer sailor today, and I find myself passing on those tips and techniques to others.

The incidents reported in this edition reveal some salutary lessons. I recall when I first started skippering that I seemed to be learning about fourteen lessons a day; but I think the key at this stage is to be aware of your own capabilities and, while trying to stretch yourself and improve, always take the time to think through what could go wrong – or right – and consider various ways of dealing with different scenarios. Then, as you get more experienced, make sure you don't fall victim to complacency – there are always more lessons to be learned.

Reports like these encourage all of us who have ever had incidents or near accidents on board to evaluate and discuss them, debrief all those involved, and use the experience to improve our systems, procedures and training so that safety lessons are understood, remembered and acted upon – not just by the skipper, but by everyone on board.

Mark Todd

Mark Todd, Staff Skipper, Ocean Youth Trust South

Mark Todd started dinghy sailing at the age of 22 while working as a solicitor, and went on to crew in friends' yachts before obtaining an RYA Day Skipper practical certificate. Eventually, tired of working with the aim of being able to buy a yacht on retirement, he resigned, left the law and got a job as a bosun with the Ocean Youth Club (now Ocean Youth Trust). This led to a season as first mate with the OYT in the north west, and eventually he took command of OYT South's 22-metre steel ketch, *John Laing*, at the start of the 2001 season. Now approaching the end of his sixth season skippering on the south coast and in Tall Ships races, he is an RYA Yachtmaster Instructor, and with the aid of a Trinity House bursary, he obtained Master (Yachts 200gt) and Officer of the Watch (Yachts 3,000gt) certificates of competence. He is now studying for Master (Yachts 3,000gt). He welcomes anyone who sees *John Laing* to come on board and say hello!

Secure Anchorage Proves to be Anything But

Narrative

A 10.7m steel-hulled sailing yacht was being used for a 5-day training course on the west coast of Scotland. Strong winds were being forecast for the coming night so it was decided to find a sheltered anchorage.

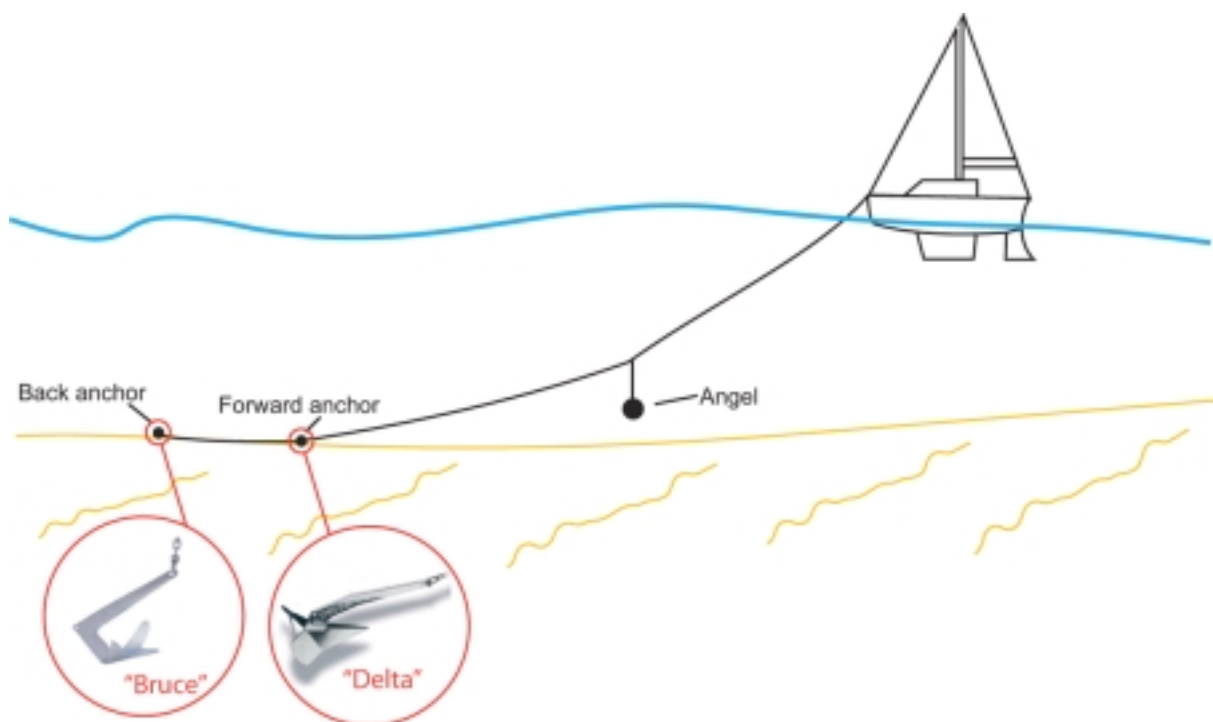
A bay was chosen that the skipper had used several times before and the yacht was anchored in 2.7m charted depth. A 16kg "Delta" anchor was prepared with chain and warp, and a 7.5kg "Bruce" type anchor was attached to the trip line eye of the "Delta" with 4 metres length and a trip line and float attached. These were deployed as one unit, smaller first. This is a technique known as 'tandem' anchoring. In addition, a 5kg 'angel' was rigged at 20m length of chain, and nylon warp increased the overall scope to 36m. The nature of the bottom was fine sand with some weed.

The anchors were set for a SW wind and were tested with the engine running astern while transits were observed. Everything appeared to be secure and the GPS alarm was set to 0.03

mile (about 55m). The barometer had been falling steadily all afternoon and, as the skipper and crew were turning in, was observed to be falling more rapidly. At this point the wind was observed to be SW force 6.

Just before midnight the GPS alarm woke the skipper. He jumped out of his berth and saw that they were 0.04 mile out of position. He started the engine and donned a lifejacket, telling his crew of four to do likewise. By the time he was on deck, the depth sounder was showing minimal depth, and almost immediately the keel touched the bottom. Attempts to motor off failed and the yacht soon listed by 20° to starboard, with the wind and sea on the port bow. A "Pan Pan" was sent and acknowledged by the local coastguard. The local lifeboat was dispatched to the scene but had some distance to travel.

It was soon established that the yacht was on a reef and was being driven on by the weather. The angle of heel increased to 30°. The crew managed to recover the anchors during this time so that they could be deployed again when necessary.



By the time the lifeboat arrived, the skipper had established that the tide was on the rise and that the depth would be sufficient for them to float off. After more movement and

pounding, they eventually came clear and were able to motor north to safely re-anchor. The yacht was lifted out to inspect for damage, but was found to be unscathed.

The Lessons

1. On the night of the accident, a vigorous depression was passing across the north of the British Isles. The inshore waters forecast, issued by the Met Office at 1700, gave south force 5 to 7, increasing force 7 to 9, then veering west force 5 to 6. Weather records from the nearest weather station confirm that this forecast was accurate, with southerly wind speeds peaking between midnight and 0300 at force 7 with gusts of force 9. By 0400, the wind had veered west and had moderated. Setting the tandem anchors for a south-westerly made sense earlier in the afternoon when that wind-direction was observed. However, the veering loads produced when the wind backed and freshened, might have reduced the effectiveness of this anchoring arrangement.
2. However unappealing the setting of an anchor watch might be, a forecast giving high winds and changes of wind direction through 90° overnight might have given pause for thought in what was a relatively tight anchorage. GPS alarms are a useful aid, but in this case did not give the skipper enough time to react. Alarms have to be set to a range sufficient for them not to trigger every time the boat veers normally, but to sound when 'serious' movement has taken place.
3. Tandem anchoring is a recognised technique for improving holding power on a single chain. However, there is a risk that when veering loads are applied, the forward anchor is at risk of rolling out of its set.
4. It was fortunate that the yacht grounded on a reef with safe water to leeward. If they had been driven onto a rocky lee shore, the outcome would most likely have been different.

Divers at Work in Port – Ensure Everyone is Fully Aware Before Signing the Permit

Narrative

A team of divers was working in a Scottish port, inspecting steel pile facings. They had already been engaged on the contract, in various areas of the port, for 4 weeks when an incident occurred.

On the morning of the incident, the harbourmaster met with the dive supervisor to discuss the planned operation. It was agreed that the divers would undertake inspections of the main fish quay and that the harbourmaster would inform the vessels using the quayside accordingly.

Two fishing vessels were alongside the quay at the time. The harbourmaster boarded one of

them and advised the skipper of the planned diving operations. The skipper then elected to move his vessel to another berth. The harbourmaster notified the agent of the second vessel, a 46m stern trawler, of the diving operations and asked her to inform the skipper.

Unfortunately, when the agent boarded the vessel, she was unable to locate anyone, and decided to leave a note advising of the diving operation on the chart table. She then departed the vessel.

Later, the divers began their inspections and entered the water ahead of the vessel, unaware that no-one onboard had been advised of the operation.

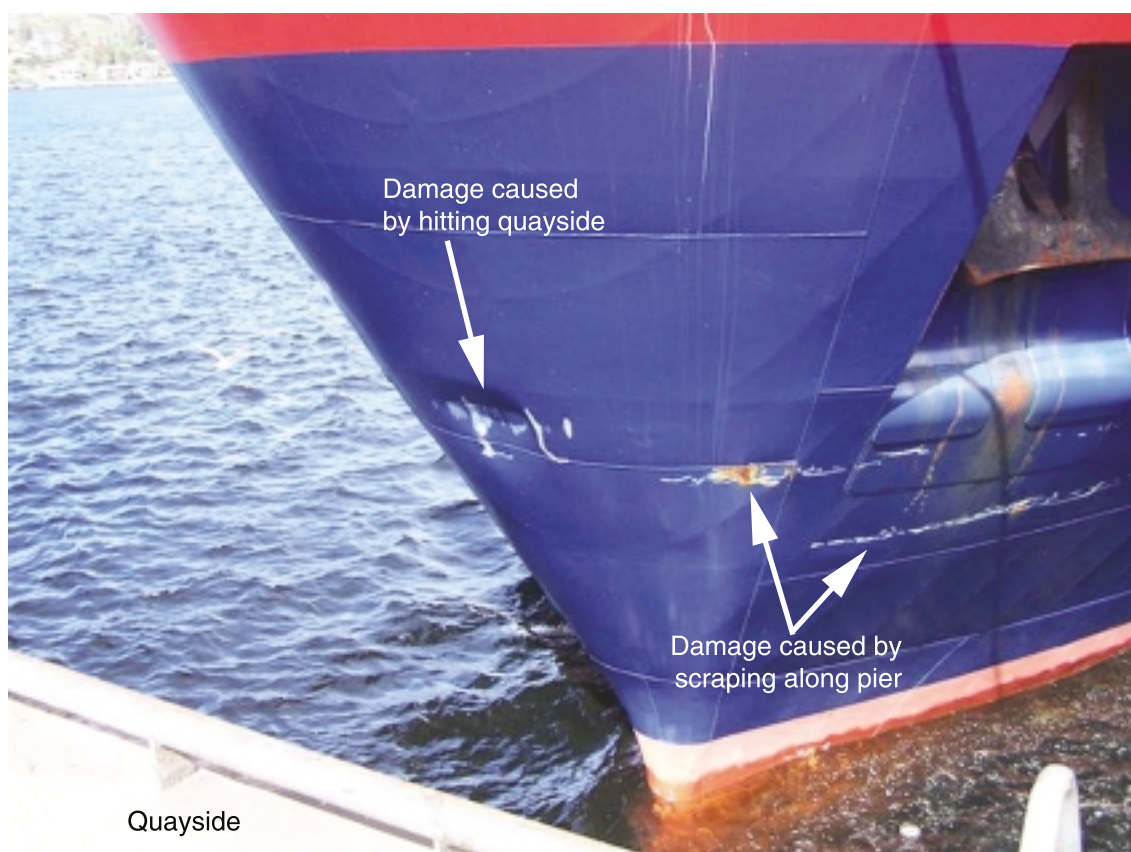


Figure 1



Figure 2

On board the vessel, the engineers began preparations for sailing: they started the main engine and clutched in the drive shaft, even though the bridge was not manned. The vessel was fitted with a controllable pitch propeller, and pitch control was normally transferred to the bridge once the shaft was at full operating revolutions. However, on this occasion, due to a mechanical fault, pitch was applied and the vessel moved slowly ahead. The engineers were unaware of this until they felt the vessel make contact with the quayside. At this time, the skipper had rushed to the bridge, but he was unable to stop the propeller because the control was still in the engine room.

As the vessel moved ahead, she passed through the area in which the divers were working and severed the air supply of one of them. Fortunately, the divers were unharmed because the vessel came off the quayside as it moved ahead, and this provided the divers with a relatively safe area close to the quay wall.

The vessel was subsequently brought under control and a fault was identified in her propeller pitch control system. It was also noted that the vessel had not been properly secured because some of the mooring lines had paid out when she moved ahead.

The Lessons

1. It is essential that a positive reporting process is in place when divers are working in a port area and that everyone is fully aware of the operation. The harbour authority and the dive supervisor must ensure this before signing the permit to work.

Notwithstanding the shortcomings on the vessel, no-one on board was aware that diving operations were taking place close ahead.

2. A ship's engineer should never permit the propeller shaft to be turned without the express permission of a responsible person on the bridge.

Kill Cords Save Lives, When Used Properly

Narrative

It was a lovely sunny, calm day in spring, just right for taking a boat out for a spin. This boat was a rigid-hulled inflatable boat (RIB) with a 225hp outboard engine. The owner and a friend planned to take it out for an hour or so and then stop off for a meal before returning to a local boatyard where they could leave the RIB for the night.

In the early afternoon, they stopped off at a marina, and after a lengthy meal with wine started the return journey. The boat was well maintained. As they set off, both occupants were wearing flotation devices and the driver had looped the engine kill cord around his wrist. The boat left the harbour and initially steered a straight course, but the RIB unexpectedly swerved to port, throwing the two people into the water.

It is thought likely that the driver had seen an object in the water close in front of the

boat, and his instinctive reaction had been to turn to avoid it. This had occurred at high speed and at a time when the passenger had momentarily released his grip on the steadying grab handles to retrieve an object from the floor of the boat. While the boat heeled in the sudden turn, the driver reached across the controls to try to steady his friend. This left neither the driver nor the passenger holding on tightly, and resulted in both men being tipped from the boat. In reaching to steady his friend, the kill cord had become entangled with the throttle controls, and despite the cord being stretched as the driver entered the water, it slipped off his wrist before it acted to stop the engine.

The RIB continued at high speed, constantly turning in a spiral and, fortunately, moving away from the people in the water. It grounded at speed and climbed to eventually come to rest on a footpath on top of a sea wall (see photograph).



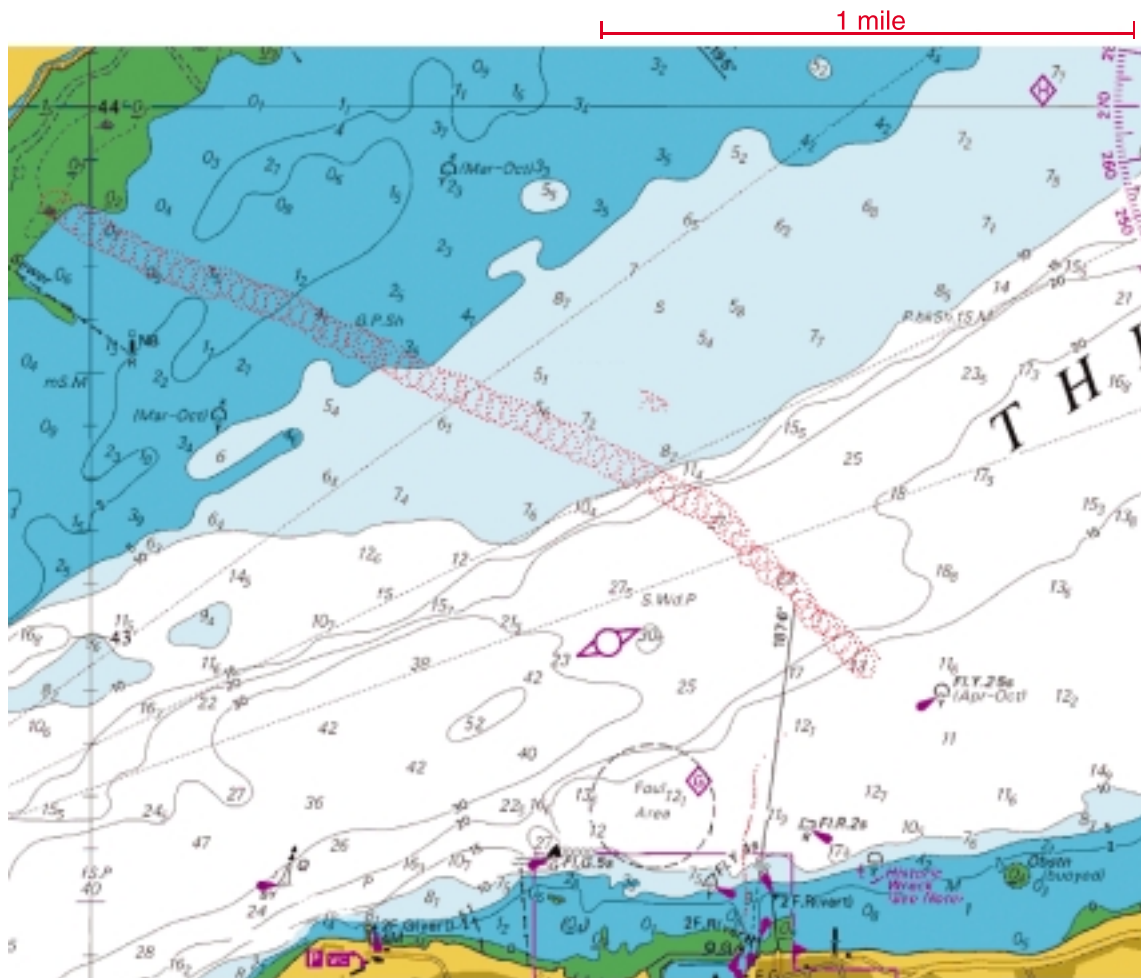
RIB photographed after accident

CASE 24



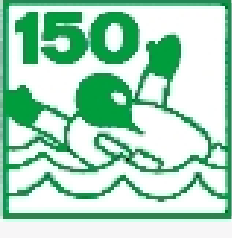

At first, the two friends spoke to each other in the water, but soon, the driver stopped talking and the two drifted apart. The passenger was not a strong swimmer and only had a 50N buoyancy aid on. The driver had been wearing a manually inflatable 150N lifejacket which, for some unknown reason, he did not inflate. After about 30 minutes, they were seen from a passing ferry, which used its rescue boat to

pull them from the water. The passenger was unhurt, but suffering from the cold. Unfortunately, it was not possible to revive the driver.

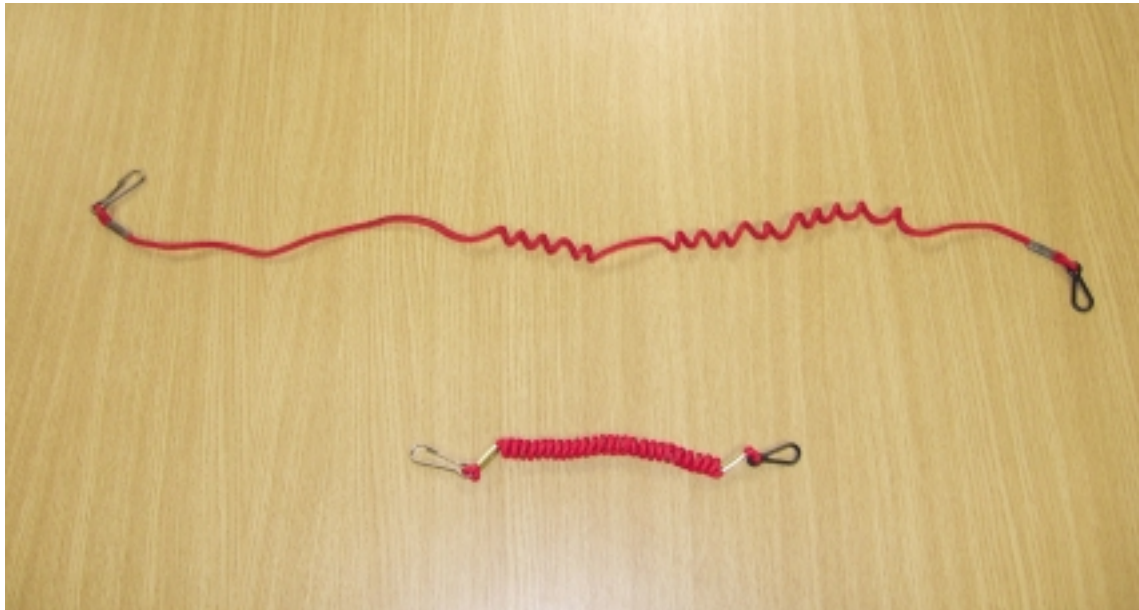
The postmortem report on the driver confirmed that, at the time of the accident, he had been almost twice the legal alcohol limit for driving cars on British roads.



Vessel's actual GPS track after incident

	<p>Buoyancy aid 50</p> <p><u>Standard Application</u> Swimmers only, sheltered waters Help at hand</p> <p>Warning: This is not a lifejacket</p> <p>Relevant European Standard EN393:1993</p>
	<p>Lifejacket 100</p> <p><u>Standard Application</u> Sheltered waters Children under 40kg</p> <p>Relevant European Standard EN395:1993</p>
	<p>Lifejacket 150</p> <p><u>Standard Application</u> Offshore Foul weather clothing</p> <p>Relevant European Standard EN396:1993</p>
	<p>Lifejacket 275</p> <p><u>Standard Application</u> Offshore, extreme conditions Heavy protective clothing</p> <p>Relevant European Standard EN399:1993</p>

Information derived from European Standards for lifejackets and personal buoyancy aids



Stretched kill cord in comparison with new item

The Lessons

A number of factors to this accident have also been contributory in other recent leisure craft accidents. Most are obvious, and they include:

1. Don't drink alcohol and then take a high speed boat onto the water. You never know when you may need quick reactions and all your wits to save your own or someone else's life. Furthermore, if you do end up in the water for any reason, your survival time will be significantly reduced if you have alcohol in your blood stream.
2. The engine kill cord should be connected to the driver's leg or lifejacket harness. Had the kill cord operated correctly in this case, the boat would have remained in the immediate vicinity to provide a possible lifesaving platform. If neither man had been hurt, they might even have been able to reboard the boat and restart the engine. It is also worth noting that the consequences in this case could have been even worse had the boat circled, as a number have done in the past, and then run over the people in the water.
3. A boat should be equipped with safety equipment that is appropriate for the area of intended operation. In this case, the use of buoyancy aids during an offshore passage is not advised; they are only designed for use "by those who can swim and are close to help". When you purchase any flotation device, check it is up to the task you are going to use it for and that it is approved to CE standards. There should always be a picture or written information which identifies its intended use (see figure). If in doubt, discuss what you are going to use it for with the vendor.
4. It is so easy to underestimate the reaction this type of performance vessel will have to a high speed turn. Get to know the limitations and capabilities of your craft, preferably through an approved familiarisation course.