

# Part 3 – Leisure Craft



This Safety Digest contains two accounts of modifications to pleasure craft, and two of accidental (or uncontrolled) gybes. All resulted in tragedies which could so easily have been prevented but

for a momentary lack of attention or want of knowledge or experience. Experience can only be gained by going to sea, watching, listening and learning, and building up a 'database' from which we can draw when things start going wrong or we are faced with a situation which demands quick, decisive actions to bring the situation under control. There is no short cut, and no qualifications or classroom work can substitute for time spent underway.

Knowledge, on the other hand, can be acquired ashore, and there is no lack of courses and facilities available where one can learn and brush up on the theory. For example, we should all acquire an instinctive working knowledge of the Collision Regulations before venturing afloat. A dark, wet and windy night is no time to start looking in books to find out what lights a VLCC displays when constrained by her draught or what red-white-red shown vertically might signify!

Occasionally genuine accidents do happen. Despite the most rigorous checks, rigging and engines do fail unexpectedly, the weather does sometimes defy the forecasters, and semi-submerged containers do get in the way. In these circumstances we can only do our best

to mitigate the damage and, if necessary, call for help.

Most 'accidents', though, can be prevented by thorough maintenance, careful preparation and a continuously critical eye on the boat, the weather, the crew – and yourself. A tired skipper is unlikely to be an effective skipper, especially when he or she needs to take charge of an anxious crew facing a difficult situation. Any skipper – whether of a dinghy, sailing yacht or power boat – should ask the question 'What if...?' for all conceivable eventualities: What if the engine dies? What if someone falls overboard? What if that tanker 3 miles on the port bow doesn't give way? What if the visibility reduces? What if the forecast gale arrives 'soon' rather than 'later'? What if ...? What if ...? As Sir John Harvey-Jones once said: *"Planning is an unnatural process, it is much more fun to do something. The best thing about not planning is that failure comes as a complete surprise rather than being preceded by a period of worry and doubt."* Substitute 'preparation' (or 'preparing') for 'planning' and it is a quote worth framing and reciting several times a day.

The vast majority of leisure sailors are sensible, knowledgeable people who go to sea well prepared to meet the challenges which make boating so enjoyable and worthwhile. Statistics show that sailing is extraordinarily safe – apparently even safer than playing golf – and so far going to sea in small craft is largely unregulated. I believe it is in our interests to keep it that way, and we should all heed the advice of the MAIB, RYA, RNLI and others following analyses of accidents. If we don't, we run the risk of being made to do so by force of law.

One of the cases in this Digest concerns a man overboard following an uncontrolled gybe in wind Force 5-6 and rough seas. In these conditions all the crew should have been wearing properly fitted lifejackets. If they had been, the man overboard might have been saved. However, this case also illustrates just how difficult it is to recover a crew member from the water, and no amount of MOB drills with a fender can prepare you for the real thing. Unless you are extremely lucky and the weather is benign, the chances of recovering a cold, semi-conscious or heavy person are very slight indeed. The disastrous Fastnet Race of 1979 showed that it is far safer to remain with

the yacht (so long as she is not actually sinking under you) rather than take to a liferaft. The same applies to involuntarily falling over the side; a lifejacket only comes into its own when you are in the water. A well adjusted harness (often an integral part of the lifejacket) securely clipped on to the boat will keep you onboard. If we all did that, we might reduce some of the awful incidents which the MAIB investigates so thoroughly.

*Andy Du Port*

### **Andy Du Port**

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# Uncontrolled Gybe Leads to Avoidable Death in the Baltic



Rear of the vessel

## Narrative

A restored 11.6m gaff-rigged wooden sailing yacht was on passage between two German ports in the Baltic, with four people on board. They were broad reaching on starboard tack in wind force 5-6 and a wave height of between 1.5 and 2m.

Needing to make a course alteration the crew prepared for a gybe. Two crew members were required to pull in the mainsheet so that the boom was close to the centreline. The sheet was then made off on a cleat. At that point, the gaff gybed across to the starboard side and the force of this caused the sheet to break free, and the boom swung violently to starboard. As a result of this, one crew member was swept over the side.

The engine was already running, so the skipper turned the yacht to starboard. After a few minutes they were able to get close to the man in the water, but after repeated attempts with a throwing line, and then a boathook, they were unable to retrieve him. The crew member was now face-down with arms outstretched, and shortly after this the yacht lost contact with him altogether.

In a state of shock, the skipper set course for a nearby port and did not report the missing person to anyone for an hour after their search had been called off.

The body of the lost crew member was washed ashore 5 weeks later.

## **The Lessons**

- 1. This accident highlighted the importance of being able to carry out a manoverboard recovery manoeuvre under a variety of conditions. The attempts to recover the man who was lost were hampered by the fact that the approaches were made too fast for a line or a boathook to be used properly. When the casualty was still conscious he caught hold of the line that was thrown, but he let go of it under load.**
- 2. The crew were relatively inexperienced and no proper safety briefing had taken place before sailing. Neither the skipper, nor his three crew were wearing lifejackets at the time of the accident. This additional buoyancy would have helped the casualty to keep his**
- head clear of the water, thus substantially increasing his likely survival time. He would also have been able to conserve more strength to assist with his recovery.**
- 3. Safety equipment will only be of any use if it can be deployed immediately. Tragically, this yacht carried a manoverboard retrieval system comprising a rescue harness on a heaving line, but it was stowed below decks under a berth. Had it been fitted as was designed to be, on deck, the crew would have had a better chance of saving the crew member's life.**
- 4. A "Mayday" call should be made as soon as a manoverboard takes place. The yacht was close to shore-based rescue facilities, which might have been able to assist.**

## Blank Off Ventilation at Your Peril



### Narrative

A couple were living on board a 1980s built, 4 berth, 8.2 metre inland waterway cruiser which was moored on a canal. It was winter. The 11kW (15hp) outboard engine was mounted on the transom stern, which was partially enclosed by the structure of the vessel. The engine space was separated from the cockpit above by removable wooden panels, which were not gas tight. The canopy over the cockpit was closed. A large fender had been secured across the vessel's stern and immediately aft of the outboard engine space.

Following concern that the couple had not been seen or heard for some time, police officers entered the boat and found their bodies in the cabin. The post-mortem examinations showed that they had been dead for about a week and had died of carbon monoxide poisoning.

An examination of the boat found the following:

- The three cabin roof plastic mushroom type ventilators had been sealed off with masking tape; only the stainless steel ventilator was found to be open.
- The ventilators at the bottom of the two doors that led from the cockpit to the cabin had been covered with masking tape on the inside.
- The heater and the cooker had been switched off. However, the gas supply to the cooker was leaking.
- The 12 Volt battery, which provided power to the cabin lights through the vessel's electrical system, gave a reading of just over 1 Volt.
- The outboard engine drove a small alternator which provided a trickle charge to the battery.

- The outboard engine's fuel tank was empty.
- The outboard engine's combined throttle and gear change lever was in the neutral position, i.e the engine was being used purely to charge the battery.
- When a fully charged battery was connected to the electrical system, the cabin lights illuminated, so they were on at the time of the deaths.

It would seem that the outboard engine had been left running to charge the battery, due to its poor state. The cabin ventilation had

probably been blanked off to prevent cold draughts during the winter period.

On running the outboard engine, gas detection probes indicated that it was producing carbon monoxide, which permeated into the cockpit and cabin. It is probable that the combination of wind direction, the ventilation of the engine space being substantially limited by the fender and blanked off cabin ventilators, allowed dangerous levels of carbon monoxide to build up in the cabin from the continuously running engine.

## The Lessons

1. British Waterways has recorded 20 fatal or serious injury carbon monoxide poisonings on inland waterways' boats over the past 10 years. The Boat Safety Scheme leaflet, *Avoiding the silent threat – Carbon Monoxide*, covers the following main topics:

- what is carbon monoxide, why it is prevalent on boats and how it is a threat to life;
- the symptoms of carbon monoxide poisoning;
- how to stay safe by being aware of wrongly installed, poorly maintained or faulty appliances, and of poor ventilation, blocked or damaged flues and flue terminals;
- the prevention of engine exhaust gases in the living space;
- points on how to prevent the build up of carbon monoxide;
- what to do if carbon monoxide poisoning is suspected;

- who is more prone to carbon monoxide poisoning than others;
- the fitting of carbon monoxide detectors; and
- references for further reading.

The leaflet can be found on [www.boatsafetyscheme.com](http://www.boatsafetyscheme.com).

2. Taping over high and low level ventilators prevents air from circulating freely in cabin spaces, and could allow inadvertent leakage of carbon monoxide and/or domestic bottled gas to accumulate to dangerous levels. Minimum ventilation requirements are set out in the Boat Safety Scheme Standards.
3. Careful thought should be given to the prevailing conditions when running an engine continuously. Exhaust fumes should be allowed to ventilate freely to atmosphere and be prevented, so far as is reasonably practicable, from permeating into living and/or working spaces.

## Short Sailing Trip Ends in Tragedy



Figure 1: 5.5m open sailing boat

### Narrative

The owner of a 5.5m open sailing boat intended to sail along the local coast with a friend acting as crew. Preparations for the trip included the testing of the outboard at home and the production of a passage plan. The plan was to sail close to shore from north to south between two local harbours, roughly 10nm apart. The weather forecast predicted east or north-east force 4-5 occasionally 6 for the day of the trip, a wind direction predominantly off the land.

The owner had altered the vessel during his ownership, fitting a small forward locker and some instrumentation. With the aim of making the vessel more stable, he had also added sand bags as ballast and modified the dagger-board to make it heavier.

The boat was towed to a local public slipway and launched at roughly 1100. The sea and wind conditions at the time did not cause any due concern to the two sailors and, with high water due in half an hour, they anticipated a quick passage with the wind and ebb tide behind them. They motored a little offshore

and then turned into the wind to hoist the lug sail.

The boat headed south. The wind backed and probably increased a little from that experienced at the launching point. Within 1-2 nm of the departure point the boat capsized and both crew were thrown into the water. Both men were wearing personal buoyancy but, unfortunately, their mobile telephone had been stowed in the forward locker and they were unable to transmit a distress message.

The alarm was raised later that day when the boat, with its two man crew, was overdue. The air and sea search found nothing on the day of the accident. Sadly, the body of the owner was recovered the following day and the other crewman 2 days later. The inverted boat, rudder, tiller and outboard were found over the 2 weeks following the accident.

When the boat was recovered, a line was found secured over the dagger-board slot, indicating the dagger-board, which remains missing, probably dropped out of the bottom of the boat prior to its capsizing.



Figure 2: Recovered vessel

## The Lessons

1. Take great care and seek professional advice when making alterations to your craft. Although adding ballast to improve stability may appear very sensible, the knock on effects on freeboard and structural strength must be considered.
2. The age of this boat was unable to be determined, and there was no documentation or builder's plate. If you purchase a boat second-hand, make sure you receive this information, if available, so that you can determine the maximum loading and sea conditions for which the boat is intended.
3. This accident demonstrates the need to carry a means of raising the alarm in the event of an emergency. For coastal passages, flares should be considered the minimum requirement. Additionally, a portable, waterproof VHF radio would assist in alerting the emergency services and enable rescue helicopters or lifeboats to locate your position. If a mobile telephone is your only option, at least store it in a waterproof case on your person.
4. Consider the weather and sea conditions carefully in conjunction with your own experience before setting out on a voyage. Plan escape routes and ports of refuge if the weather deteriorates, and be prepared for the weather to be worse than forecast.

## Crash Gybe Claims a Life



Figure 1

### Narrative

An Elan 333, 10-metre cruiser racer (Figure 1) had been chartered through a yacht club for a week of sailing along the south coast of England. Strong northerly winds had been blowing in the preceding days, and were again forecast for the coming day when the yacht set sail to the east.

The skipper was a qualified RYA Day Skipper, and another member of the crew, who was acting as mate, also had a good deal of experience coupled with an RYA Competent Crew certificate. The four other crew members had very little sailing experience.

As the boat approached a headland, it was close reaching, on a port tack. Until then, it had been a fairly wet and gusty sail. The skipper, who had been overseeing one of the

inexperienced crew on the helm for the previous hour or so, needed to go below. An instruction was given to the helm to steer a little further off the headland, onto what was considered to be a safer beam/broad reach. The novice helm had had to contend with a number of gusts up to that point which had meant that the mate, who was the mainsail trimmer, was kept busy 'dumping' the main when the yacht became overpowered. The skipper and mate had an understanding between them that when one was down below, the other was in charge on deck. However, there were no formal discussions about the skipper's sailing intentions before he went below.

A few minutes later the yacht, which was about 2 miles off the coast, featuring at this point high cliffs and surrounding hills and valleys, was hit by a strong gust that caused her to

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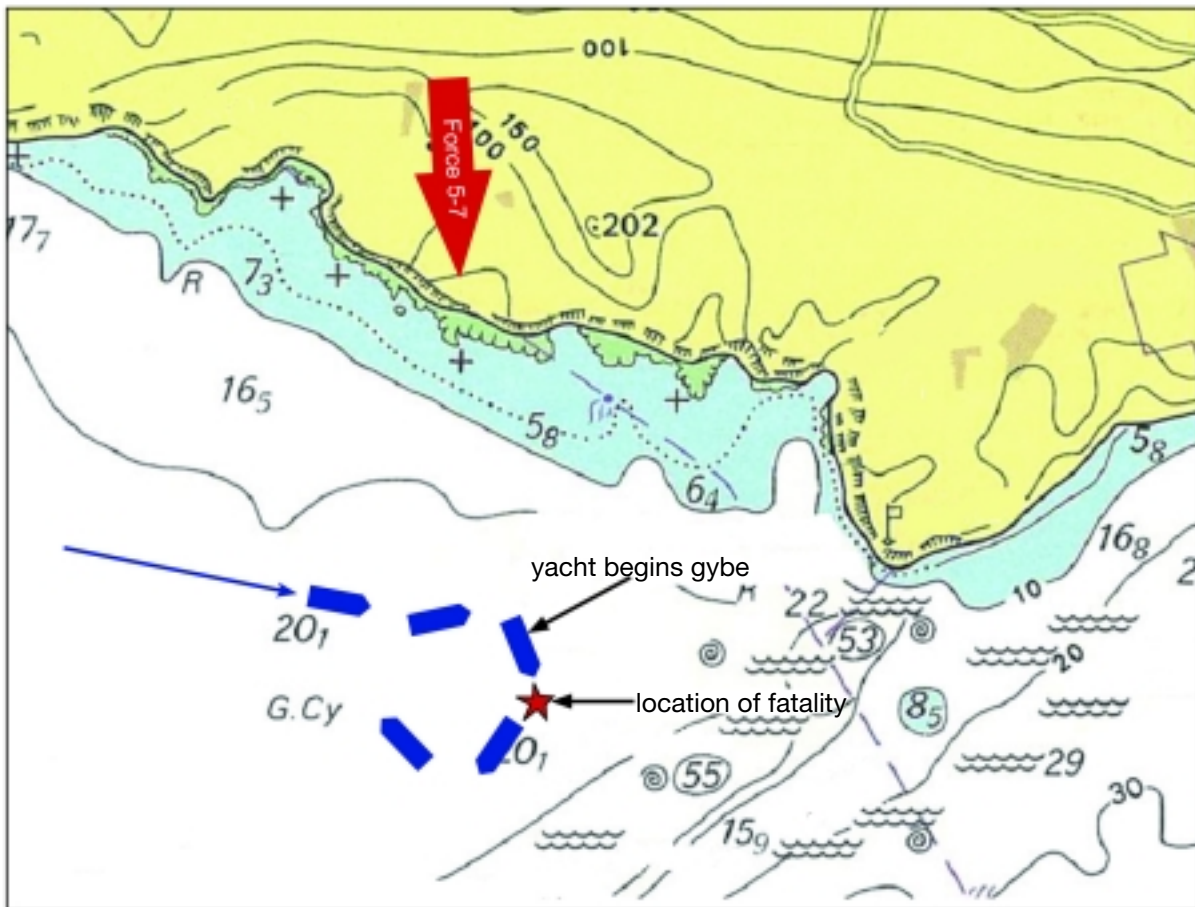


Figure 2: Movement of the vessel through the gybe

broach to windward. The helm was put hard over to starboard to counteract this until it was on full-lock. The rudder stalled and the boat failed to respond to the helm. After a short time the gust subsided, but with the helm still hard over, the yacht quickly came round to starboard and continued into a rapid and uncontrolled gybe until the boat settled close to head to wind (Figure 2).

As the boom crashed across, the sheets caught the mate, who was sitting in the cockpit just aft of the traveller (Figure 3) and threw him forward, against the top edge of the coachroof. He sustained fatal head injuries.

Having felt the attitude of the boat change, and on hearing the commotion on deck, the skipper quickly returned on deck and took control. Immediately after stabilising the situation a “Mayday” was put out on VHF channel 16, and first-aid was administered to the casualty, who was unconscious and bleeding profusely.

A short time later, the casualty was evacuated to hospital by coastguard helicopter, but he never regained consciousness. He died the following day.



Figure 3: Location of casualty when caught by the sheet

## The Lessons

This tragic accident serves to remind those who go to sea in positions of responsibility of the need to consider carefully the experience of crews and their ability to cope safely with the prevailing weather conditions. The importance of conveying the passage plan and taking adequate precautions to supervise inexperienced crew on transferring temporary charge of the deck and navigation cannot be over emphasized.

1. In this case, the skipper assessed the risk of going below, with a novice on the helm and, after changing the point of sail, was comfortable with it. However, there were no direct discussions between the skipper and mate with regard to the skipper's intentions. Had there been, the mate might well have suggested that he leave the mainsheet operation to another crew member so that he could adopt a more effective oversight of the

inexperienced crew, and in particular the helmsman.

2. When the gust hit, the helmsman was not fully aware of what was happening to the yacht, or the consequences of leaving full starboard helm on after the gust had passed. An uncontrolled gybe in these conditions unleashes huge forces, and, unfortunately in this case, the forces proved to be fatal. The only person who could have controlled the situation was the mate, but he was pre-occupied with managing the sails in the gusty conditions.
3. As well as avoiding being hit by the more obvious hazard of the boom itself during a gybe, crews need to maintain an awareness of the risk of injury from being hit by the mainsheet, and the mainsheet fine tuning blocks where these are fitted.

