

Marine Accident Investigation Branch (MAIB) - Safety Digest - Fishing 2002

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Chief Inspector's Foreword

When the definitive history of the British fishing industry comes to be written, it would cover the rise and fall of fish stocks and the evolution of fishing vessels from the small beach launched craft of pre-harbour days to the large ocean going pelagic trawlers of the 21st Century. It would touch on the many dramas of the seas, of fine seamen and their families, and the many hardships endured. It would also, sadly, reflect on the disasters that have befallen the fishing industry over the years. Even today people talk about events such as the great gales of the 1840s when hundreds of fishermen from Wick, Peterhead, Fraserburgh, Fife and Eyemouth lost their lives.

There would also be references to names well known to us today such as *Gaul, Trident, Pescado, Ocean Hound, Wilhelmina J, Antares, Gorah Lass, Westhaven, Sapphire, Margaritha Maria, Silvery Sea*, and, most recently, *Solway Harvester* and *Tullaghmurry Lass*. And there are hundreds of other vessels whose names are forever engraved on people's memories where people have lost their lives to leave families, friends and communities grieving.

Some accidents are caused by external factors but most happen because of something that happens much closer to home. The loss of any fishing vessel, even without anyone being injured or killed, is a traumatic event but, when lives are lost, the effects can be devastating.

For centuries the hazards of fishing have been well known and accepted. For hundreds of years, the design of fishing vessels has steadily improved and losses from, particularly, bad weather have gradually reduced. The number of accidents has also, thankfully, been dropping but the statistics still show that far too many vessels sink and fishermen lose their lives. The year 2000 was a particularly bad one; 40 vessels foundered and 32 fishermen were killed. Last year 33 vessels were lost and 9 fishermen died. Every one of these is one too many, and each death means a family somewhere is left to grieve the loss of a loved one.

Whenever an accident happens, questions are asked. What happened, why did it happen and could it have been prevented? They are fair questions and are, occasionally, difficult or even embarrassing to answer: nobody likes to admit they might have got something wrong. Some of the most penetrating questions come from victims' families, and MAIB inspectors are often asked if the accident could have been prevented. There are few things more heartrending than meeting a young widow, children, or grieving parents of a dead fisherman and trying to explain to them what happened and why.

In days gone by, it was all too easy to dismiss accidents as 'one of those things,' or an occupational hazard or caused by a freak wave or bad weather. Whenever a serious accident happens there is a natural instinct to blame it on something over which the fisherman has no control but, in most instances, the causes are preventable by those on board.

Since the MAIB was formed in 1989, it has spent an increasing amount of its time finding out what happened when things go wrong and, more importantly, why. We recruited a fishing vessel skipper to help us understand more fully some of the implications of what we were discovering. Underlying all our work is the thought that if we can identify the real, rather than the convenient reasons for the accidents, we can do something to prevent the same thing happening again. It is our sole aim. The Branch does not apportion blame, nor does it prosecute people and we work independently of the insurance companies and the Maritime and Coastguard Agency.

Our reports are published with one specific objective: the prevention of further accidents. The reports come in various forms, from detailed investigations with recommendations, to much briefer versions that identify lessons to be learned. The latter are published three times a year in the MAIB's *Safety Digest* and, in addition, we produce one fishing industry edition to come out at the same time as the annual Fishing Exhibition in Glasgow. This *Safety Digest* is the 2002 edition, and largely reproduces articles that have already appeared.

Each *Safety Digest* article briefly describes an accident and then identifies the lessons. They are written for the person at sea and many fishermen tell us they find them useful. They are also free and, if you would like to receive them, you need do no more than let us know, or, alternatively, you can access them on our website www.maib.gov.uk.

The MAIB is not only concerned with identifying specific causes of accidents, but also in detecting common factors and trends. If people can learn from the things that go wrong there is every prospect that similar problems can be identified elsewhere and put right before they, too, contribute to a tragedy. Preventing accidents is infinitely better than trying to cope with flooding in the engine room, a severed arm or losing a colleague overboard.

One of the most striking discoveries when analysing an accident is that, no matter how big or small, it is rarely caused by a single event. Accidents are invariably the result of several little things going wrong in turn. It only needs one of them to go right to interrupt the causal chain. It therefore follows that accident prevention is all about identifying problems at the time, and putting them right before it is too late.

'Problems' come in different guises and could be anything from sailing with a known defect, to having an out of date liferaft lashed down so it cannot break free. It could be putting to sea short handed, or asking a young lad to do something for which he has not been trained such as keeping a watch on his own with no knowledge of navigation or Rule of the Road. Every time a blind eye is turned to a known problem, or someone deliberately takes a short cut, 'because it is quick', could well be the trigger that causes an accident. Many of the known problems have been highlighted in past *Safety Digests* and have included findings such as sailing with a malfunctioning automatic bilge alarm. To do so means you are denied the one means available to give timely warning of flooding. Without it you may have insufficient notice that water is flooding into the engine room to the extent that, eventually, the vessel sinks.

Fishing vessels of 12m and above are supplied with stability books. Several fishermen have told us that although these books are carried on board, they are never looked at from one end of the year to another. Many do not appear to understand them and argue they aren't as good as hard won experience and intuitive feel. This reluctance to refer to the stability book, or follow what it says, is often found to be a major factor in foundering. Stability books provide essential information about such things as the amount of fish that can be carried, and the importance of keeping weathertight doors and hatches shut at sea when not in use. Skippers who ignore what is said run the risk of losing their vessels and crew.

When on passage, everyone on board is totally reliant on the watchkeeper maintaining a good lookout, navigating safely and understanding the Rule of the Road. The MAIB knows that in some vessels this ideal combination of knowledge, experience and reliability is, to put it mildly, distinctly suspect. Leaving the wheelhouse unattended for a while, or allowing oneself to be distracted can have unfortunate consequences. If your inattention leads to a collision or grounding your colleagues could well lose their lives.

Injuries occur from a number of reasons, but among the more common are situations where something jams, very often when recovering fishing gear. Someone then attempts to free it without thinking through the consequences. A freed wire suddenly springs back, a net is suddenly pulled over the side or heavy gear starts to swing freely. Somebody is in the way and unable to prevent the potentially damaging consequences. People lose limbs and sometimes their lives as a result.

This *Safety Digest* contains a number of recent incidents together with useful lessons to be learned. It is so much easier, and infinitely cheaper, to read about other people's misfortunes and absorb the lessons. By doing so you may well save your vessel, and the lives of everyone else on board.

Of course accidents can happen, but the development of a safety culture is all about preventing them in the first place.

John Lang
Chief Inspector of Marine Accidents

Case 1

Take Your Lifejacket and Phone with you

Narrative

The 5.8m Orkney fast liner open fishing vessel, *Northern Kiwi*, which was powered by a 37.2kW (50 HP) outboard, was being operated single handedly. The skipper was hauling crab pots, and had twelve on board when the line tightened on the hauler. A pot or line had snagged on the rocky bottom in a depth of 46 metres. A northerly force 3 wind was blowing, and the sea was slight with a chop and a southerly ebbing tide.

The normal practice in such situations was to throw the recovered pots back overboard, and then start the recovery from the opposite end of the string. The skipper began this process, but having payed out 2 fathoms of rope, found it had caught in the outboard's propeller. Moments later, the rope came bar tight and the engine cut out. The skipper tried to raise the outboard, but the load on the rope prevented this.

The boat was, in effect, anchored. It was also lying with the stern so low that water had started to come inboard over the transom. The skipper attempted to lighten the boat by ditching some of the embarked pots, but this made little difference. He thought of diving down to cut the rope, but with the tide running, thought better of it and chose instead to contact the coastguard on VHF via a local vessel.

Meanwhile, water continued to be shipped over the stern. The skipper was wearing a lifejacket and, once in the water, began to recall the advice he had received in survival training. It served him well. About 10 minutes later he was recovered by another fishing vessel.

The Lessons

This incident could have turned out so very differently. The skipper owes his life to following the advice so frequently put out by the MAIB:

1. Wear a lifejacket at all times.
2. Let people know if you are in trouble before it is too late.
3. Don't make matters worse by diving in, cutting the rope and then, perhaps, watching your craft drift gently away before you can re-board it.
4. Carry a VHF radio and make sure it works. If battery-operated, ensure the batteries are fully charged, or are connected to a suitable power source such as the boat's batteries.

When looking back on his experiences afterwards, the skipper discussed the advantages of carrying a liferaft for use in such emergencies. As with many similar craft, there was very little room onboard as the pots took up most of the available space.

There is no doubt that when the chips are down, and there is every prospect of your vessel foundering, the existence of a liferaft could well make the difference between life and death. Skippers of small craft must make the choice. Take up commercially useful space or give yourself a

good chance of survival. Friends, family and next-of-kin may have uncompromising views about which choice to make. Ask them.

Case 2

Near Misses Involving Fishing Vessels

Narrative 1

Having landed her catch, a fishing vessel was returning to the fishing grounds. It was dark, visibility was good, the sea moderate, and the wind south-southwest force 5. On leaving harbour, she was steering 135° at a speed of 7 knots and displaying sidelights, stern light and a masthead light.

When still within 2 miles of her port of departure, the skipper detected a radar contact 2 miles on his port bow, and shortly afterwards sighted masthead and starboard sidelights along the same bearing. He estimated this vessel, a general cargo ship, was on a southerly course at about 8.5 knots, and that a risk of collision existed.

By the time the two vessels closed to within 1 mile, the cargo vessel had failed to take any action as the give-way vessel.

This prompted the skipper to call her on VHF radio, channel 16. Unable to get a response, he altered to starboard and eventually took all way off to prevent a collision. Radio contact was finally established when the vessels were very close and the merchant vessel's OOW felt it was too late for him to alter course or stop. The OOW, who was alone on the bridge, had been working a 6 hour watch routine, and did not detect the fishing vessel by radar, or see her visually, until she was at close range.

Narrative 2

A stern trawler was south of Plymouth, towing her gear on a course of 180° at about 3 knots. She was displaying an appropriate shape to indicate that she was fishing. It was a clear sunny day, visibility was good and the sea was slight. There was little wind. A tanker was sighted about 6 miles on the port beam, on a westerly course and making good about 13 knots. She was on a steady bearing.

As the tanker closed, the trawler's skipper became increasingly concerned and, when the range had closed to about 1 mile, tried calling her on VHF channel 16. There was no reply, and the skipper was forced to increase to maximum speed to pass ahead of the tanker, leaving it very close astern. Her OOW, who was alone on the bridge at the time, did not recollect being in a close-quarters situation, or hearing any calls on VHF radio.

The Lessons

Both instances will be familiar to anyone with extensive experience of watchkeeping. You find yourself the stand-on vessel, and detect another vessel on your port bow or beam closing on a steady bearing. You ask yourself 'has he seen me?' and 'is he going to give way?' Too often the answer to the first question is "No" because a proper lookout is not being kept and "No" to the second because he is unaware of your presence.

Keeping a good lookout and complying with the Rules of the Road pays dividends. Had both fishing vessel skippers not maintained a proper lookout, or manoeuvred to prevent a collision, the MAIB would probably be investigating two serious accidents rather than near misses.

To maintain a proper and effective lookout watchkeepers must be alert, look out of the windows, use binoculars, monitor the radar on an appropriate range scale, and listen for sound signals and to the VHF radio. Too often watchkeepers will spend a seemingly quiet period doing something other than keeping an efficient watch. It could be anything from progressing paperwork to reading a magazine. He might be distracted by monitoring GMDSS or making a lengthy telephone call. There is also the tendency for either a tired or very bored watchkeeper to fall asleep. Any of these could endanger people's lives.

If you feel you are under pressure to do something that will prevent you keeping an efficient lookout, or you are too tired to do it properly, tell someone. The MAIB receives a number of reports from people in such a predicament, and each one is treated in total confidence. It provides the Branch with the ammunition to do something about it.

When the OOW is busy, a dedicated visual lookout is an invaluable safety net. When all is quiet, he is a second pair of eyes and ears, and helps to keep a tired OOW alert. You are required to have a dedicated lookout at night.

VHF radio is convenient, but it relies on the watchkeeper in the "other" vessel monitoring the appropriate channel, understanding what is being said, and bothering to reply. Not surprisingly, many calls go unanswered. But there are real dangers to using VHF when the identity of the other vessel is unknown. There are a number of recorded incidents when either the misidentification of the 'other' ship, or a lack of understanding, has contributed to the subsequent collision or incident.

If the situation allows, and you need to make your presence known to the "other" vessel use the 'wake up' signal by whistle or horn, and by flashing light. The signal is required by the Rules of the Road and, although an inattentive OOW may not see or hear it, somebody else on board the other vessel might.

Navigation lights are no different to car headlights. An occasional wipe does wonders to improve their effectiveness.

Case 3

Lone Skipper Trapped in Winch for Several Hours

Narrative

The 9.98m wooden fishing vessel *Wakil II* was fishing off the Cumbrian coast, when her skipper, operating on his own, became caught in a winch.

Wakil II was trawling for prawns. The skipper was hauling for the second time that day and, for ease in handling and grading, had laid out six empty fish boxes on the small working deck aft. Because the size of prawns varied so much, this was three more than he normally had. These additional boxes cluttered the deck and made movement difficult.

The skipper normally squared up the deck before hauling but, because he hadn't finished grading the previous catch, the six boxes were left in place. He continued to haul at the same time as grading the prawns.

He was standing near the port winch barrel when he lost his footing and fell onto the port trawl warp as it was being heaved up. He fell awkwardly and the sleeve of his oilskin jacket caught on a shackle. He found himself being dragged onto the barrel of the winch. Unable to free himself he became pinned to the deck beneath the winch barrel by the sleeve of his jacket becoming trapped from the cuff to the neck. The winch was not fitted with a dead-mans handle. The winch did, however, stop. The resistance of the skipper being trapped proved too much for the small diesel engine providing power to the winch, and it cut out. Injured and in a lot of pain, he lay trapped beneath the winch for about 9 hours. It began to get dark and the navigation lights were not switched on. He became very worried that he might not be found and realised his vessel was in danger of drifting onto the rocks at St Bees Head and breaking up. Concerned that by remaining trapped he might drown, he put as much effort as he could into freeing himself. He eventually managed to rip his oilskin jacket from the arm up to the neck, freeing first his head and then the rest of his body. He managed to make his way to the wheelhouse and raise the alarm. He was also suffering from mild hypothermia and switched on the heaters.

St Bees inshore lifeboat, and the Workington lifeboat with a doctor onboard, were launched and tasked to the scene. The skipper was transferred to hospital suffering from shoulder, facial and rib injuries. He made a full recovery.

The Lessons

1. Single-handed operations carry additional risks. If anything goes wrong, you are on your own and there is nobody to help or raise the alarm. There are obvious safety advantages to having two people on board, but if circumstances dictate that you have to operate on your own then additional care has to be taken. The temptation to take a short cut or do something that is inherently unsafe must be resisted.
2. Always clear the working deck of any tripping hazards before hauling or shooting. The MCA has produced a very useful leaflet called *Fishermen and Safety* which is worth reading. It is free!
3. There is no evidence to indicate this skipper suffered from shock in this particular accident, but anyone in such a situation may well be affected. Never underestimate its effects. Until you have experienced it, you cannot imagine how it constrains your ability to do things you might normally

find straightforward. Double your efforts not to take an unnecessary risk. Prevention is so much better than cure.

4. Dead-man's handles fitted to winches make sense. It means the winch can not be operated without applying pressure to the control lever. Had such a device been fitted in this instance, the accident is unlikely to have happened.

5. Even if you do operate your vessel single-handedly, it is still advisable to carry out a risk assessment, if only in a simplified form. The risks taken by the skipper in this case could have been identified and addressed, thus preventing the accident from happening.

Case 4 Low Freeboard Causes Two Fatalities

Narrative 1

Donna M, an 8.8m decked vessel, was fishing for lobsters and crabs about a mile south of the Island of Sanday in the Orkney Islands. The vessel was shooting and recovering pots in fine weather one afternoon at the end of August. The skipper had only just purchased her, and this was his first trip carrying 50 lobster/crab pots.

The previous owner had used the boat mainly for prawn potting, but had occasionally fished for lobsters and crabs with just 30 pots. Prawn pots weigh much less than lobster/crab pots.

Donna M's freeboard was very low at the aft end. Her skipper assumed the previous owner had carried a similar load of 50 pots, and that the low freeboard was normal. He was unaware that by carrying this many pots he had reduced the freeboard to an unsafe level.

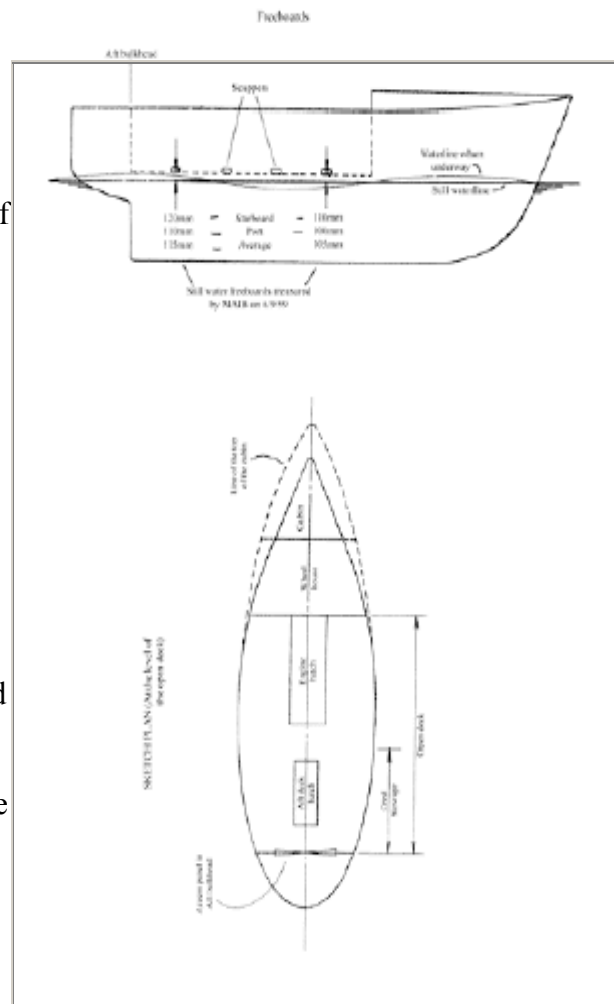
When underway on the day of the accident, water flowed on to the aft deck through the freeing ports. The crew might not have been aware of this development because the pots were stowed aft, and prevented anyone from seeing what was happening.

There was a non-watertight hatch in the aft bulkhead with a low lip at the bottom edge. The water lying on the aft deck would have lapped over this lip as the vessel pitched and rolled. This water would have settled in the bilges.

This floodwater then built up to such an extent that it penetrated the wiring to the electric bilge pump. The wiring was in poor condition, and the effect was that it disabled the bilge pump.

It is possible the crew were unaware that the pump was disabled to start with and, when they switched it on, might have assumed there was no water in the bilges. They must have realised something was wrong eventually because they tried to rig the deck wash pump to pump out the bilges. Before this could be achieved, however, sufficient water had flooded into the vessel and *Donna M* capsized.

The two-man father and son crew were both lost; neither was wearing a lifejacket.



The Lessons

1. Skippers should ensure that their vessels have adequate freeboard when loaded. There are no statutory requirements regarding freeboard for fishing vessels under 12m, but the formula in the Workboat Code published by the MCA is a good guide.
2. A relatively high percentage of accidents occur in vessels that have just changed owners. New owners or skippers should, so far as possible, do their best to establish how the previous users operated the vessel, paying particular regard to stability considerations and weights embarked.
3. Lifejackets should be worn. Comfortable self-inflating lifejackets, suitable for constant use, are readily available. Further guidance is shown in MGN 155(F), provided free by the MCA.
4. Bilge pumping systems should be regularly inspected to ensure they are reliable. Further guidance is shown in MGN 49(F), provided free by the MCA.

Case 5

Saturated Buoyancy Causes Dory to Capsize

Narrative

At midday in late August, the 8m long GRP dory *Fisher Lad* was fishing in Scapa Flow in the Orkney Islands. The wind was force 4 to 5 and the sea was choppy.

While deploying a string of pots, the back rope snagged the threads of a bolt protruding below the rack in the port aft corner. When the next large wave came along, the stern failed to rise because it was now firmly anchored by the back rope tethered to the pots. The wave swamped the open deck, and because the hatch to the engine room was not watertight and there was no protective coaming around it, water flooded into the engine space below. The weight of the floodwater, together with an estimated 300kg catch onboard, caused the freeing ports to dip below the waterline. This, in turn, led to progressive flooding. The bilge pump in the engine room was unable to cope and *Fisher Lad* capsized.

The crew had insufficient time to either don lifejackets, or send a distress message on the VHF radio. They were, however, rescued by the crew of a nearby fishing vessel, and *Fisher Lad* was recovered back to Stromness where she was later salvaged intact.

Fisher Lad was constructed of an outer GRP hull moulding, into which was laid an inner deck moulding. The space between the two was partially filled with foam, which, over a period of time had absorbed a quantity of water. This progressively reduced the vessel's freeboard, making her less stable and more vulnerable to capsize.

Footnote

The MAIB has investigated several accidents involving dories similar to the one described here, where water has penetrated one or both mouldings, and the foam-filled void has, over time, absorbed a great deal of water.

Boat builders have ceased production of this particular design partly because of the problems associated with water ingress into the void.

The MAIB regularly recommends that fishermen wear lifejackets. At the same time the Branch is well aware that many who have tried to do so find that they soon become damaged, become covered in fish oil, or have a tendency to catch on things. Despite the best intentions, even the most determined fishermen will become disillusioned in such circumstances, and be tempted to abandon the endeavour as a waste of money and effort. There is another approach. Talk to the manufacturers, or get your association to represent you. The people who design and make lifejackets will listen to your concerns, and will do their best to overcome the problems. Unless they have practical feedback from sea, they are unlikely to get it right first time. The manufacturer would like nothing better than to hear that fishermen approved their product.

The Lessons

1. Owners of GRP dories should investigate any change in freeboard, as this might be the result of water entering the void.

2. If there is reason to believe that water is present in the void space, seek expert advice before attempting to use the craft.
3. Water in the void should be cleared, and any damage to the hull and decks carefully checked and repaired. Particular attention should be paid where it is known that a dory has capsized before.
4. Flush hatches in open decks should be watertight. If it is necessary to have non-watertight hatches, the opening should be protected with an adequate coaming.
5. Always wear a lifejacket. Although it is obviously impractical to wear survival suits when fishing, consider having them readily to hand. In other parts of the world many fishermen have cause to be grateful for having them on board. Assuming there is time to put them on, they have been found to be a very effective protection against the cold of seawater immersion, and ensured the survival of people who would otherwise have lost their lives.

Case 6

For Appearance's Sake

Narrative

Atlantic Princess is a large, 92.04m stern trawler, with a crew of 34. At 2015 on 23 November 2000, and following a 12 hour search for fish, she prepared to shoot her nets in the English Channel, about 17 miles south of the Isle of Wight.

Four of her deck crew went aft to shoot the nets under the control of the fishing skipper who was in the wheelhouse. He was positioned at the winch controls overlooking the aft working deck. Shooting began. Two of the crew attached the head line transponder and then moved to two small pound areas at the stern from where they were to attach towing wires to the net's wings.

The man on the port side attached his wire, but then noticed his colleague was not where he had expected to see him, in the starboard pound. Thinking he had gone to the toilet, he moved across to starboard to attach the towing wire. At almost the same time the fishing skipper also noticed the man was missing. He went aft to investigate.

When they failed to find the missing crewman they realised he must have gone overboard. It was dark and the wind was force 4 to 5.

A "Pan Pan" message was broadcast, and the Solent Coastguard initiated a search and rescue operation. *Atlantic Princess* recovered her nets and joined the search. A helicopter, a lifeboat and several merchant and fishing vessels also took part. The crewman was not found, but his self-inflating lifejacket was recovered. This was found inflated with its light illuminated and the buckle on its harness fastened.

Nobody saw him go over the side, but the circumstances suggest he was standing in the starboard pound to connect the towing wire to the net. A feature of the pound is its proximity to the stern roller, which rotates as the nets are paid out. It is impossible to say what happened, but the possibility exists that he was somehow taken overboard by the rotating roller.

The crewman had been wearing ordinary clothing: a hard hat and the inflatable lifejacket. Only the lifejacket was found and recovered. Once again, it is impossible to reconstruct exactly what happened, but a properly secured lifejacket should not have become detached. The evidence suggests it was not being worn correctly, and it is likely the victim slipped the lifejacket over his head without passing the harness around his waist. When he entered the water the lifejacket slipped off. The particularly sad feature was the relative ease with which the lifejacket was subsequently seen, but nothing was found of the man.

The Lessons

1. The aft boundary of the two stern pounds is the stern roller. Because this is able to rotate freely it cannot serve the same purpose as a guardrail or bulwark. Without a barrier between the pound and the roller, crew can easily come into contact with the roller. If it is turning, it might then drag them overboard. Stern rollers should be viewed in the same way as any rotating machinery. They are dangerous and must be guarded if personnel are likely to be very close by.

2. *Atlantic Princess*'s crew generally recognised the importance of wearing a lifejacket while working on deck. The victim, however, apparently failed to don his properly, and did no more than slip it over his head. Perhaps he thought it was unnecessary as he was only expecting to be on deck for a few minutes. To the casual onlooker it would appear as if he was wearing one.

3. The value of a lifejacket is entirely dependent on it being worn properly and secured correctly. A snug fitting model is both comfortable - and a life saver.

Accidents are no respecter of time. Dangers exist no matter how brief the stay on deck.

Case 7

Fatal Accident while Shooting Pots

Narrative

The 11.19m potting vessel *Dunan Star* was shooting for dog whelks 1.5 miles southwest of the Isle of Arran, when one of the two people on board became entangled in the back rope of a fleet of pots and was dragged over the side. He was not wearing a lifejacket.

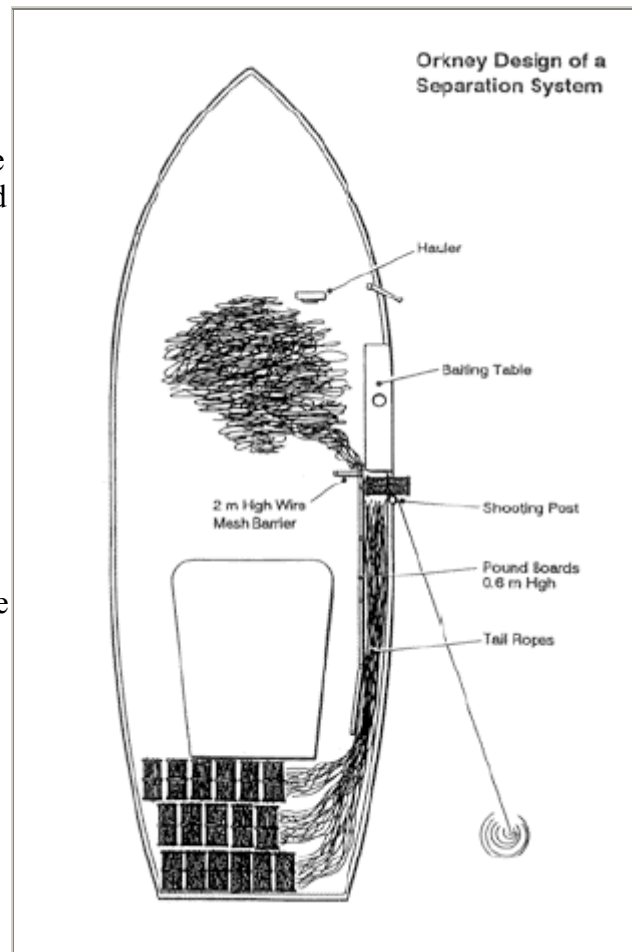
The other man on board, the skipper, heard his colleague's shouts and rushed forward to put the engines full astern in an attempt to reduce the weight on the back rope. He also grabbed a knife, but by this time the crewman had been dragged over the side and was nowhere to be seen. The weight of the fishing gear had pulled him under the water.

The skipper then grabbed the next pot, jammed it under the gunwale and cut it from the back rope. This created more slack, and enabled him to get the backrope into the hauler and start heaving.

He then managed to heave the crewman back to the surface; still caught up in the backrope. He cut away a pot that was roped against the crewman's leg, but this led to more weight coming on to pull him back under the water.

Once again the skipper heaved on the hauler until the crewman reappeared, but by now the boat had drifted through the effects of the wind and tide and the victim was being pulled away from the boat. He also had some of the back rope around his chest and arms. The skipper, who could not reach the bight of rope around the crewman's leg, cut some of the rope around his chest in an effort to relieve the strain on his upper body. Having done so, however, the skipper was left holding the rope that led to the hauler. The deckhand was dragged underwater once again. He was not seen alive again.

The skipper contacted the coastguard immediately. A helicopter and lifeboat were tasked, and a short time later, with the help of the lifeboat crew the body of the deckhand was recovered. He was still entangled in the fleet of pots.



The Lessons

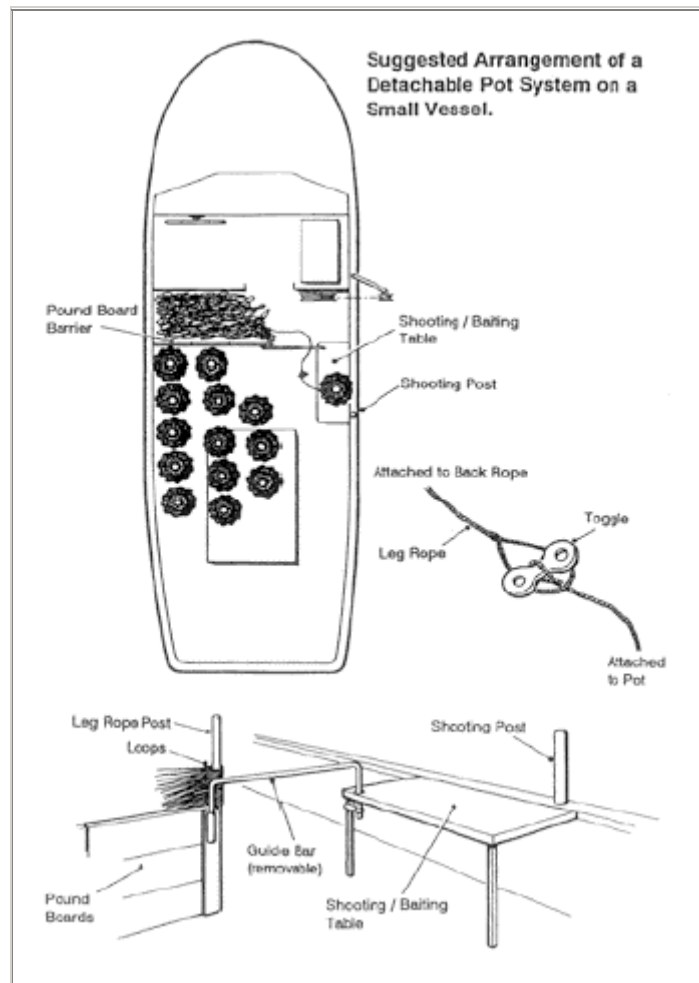
1. This is a horrific situation that no fisherman would ever wish to be in. The majority of potting vessel crews are well aware of the hazards involved when shooting pots, and take care to avoid them. Too often, however, accidents happen. By far the most common occurs when shooting pots, and involves somebody getting caught in a bight of back rope. Pay particular attention to keeping your feet out of the bights of back rope.

2. If the deck space allows, try adopting an alternative system whereby the back rope is detached from the pots and stored independently. When shooting, the rope is then physically separated from the crew. Information on the system is available from the Sea Fish Industry Authority (SFIA).

3. There is no means of telling whether a lifejacket would have helped save a life in this situation. What can be said with confidence is that his chances of survival, however slim, would have increased had he been wearing one. Always wear a working-type lifejacket when on deck. You never know when you might depend on it.

4. Seeing a colleague being dragged over the side is a nightmare scenario. Several things have to happen at once, including taking the way off the boat. With the passing of each second the victim's chances of survival diminish. The greatest effort must be to free, almost certainly by cutting, the rope outboard of the body. This frees the weight pulling the body down, but before it can even be contemplated, it is essential to reverse the shooting process and start hauling.

5. If, as must be hoped, the victim is back on the surface and still alive, an altogether new problem emerges. How do you get him back on board? Every skipper should ask himself that particular question - and answer it!



Case 8

Upside Down Louvres

Narrative

At about 0100 on 8 October 2000, the 29m, July 2000-built, fishing vessel *Crystal River* was fishing about 85 miles west of Bergen, Norway. A gale force 8 was blowing; the sea was moderate to rough. The gear had just been shot with the crew working the fish when there was a sudden total loss of electrical power. On entering the engine room, one of the crew found the switchboard on fire. Grabbing the adjacent fire extinguisher he managed to put it out. The resultant damage to the switchboard prevented main electrical power being restored. All propulsive power was lost.

Without propulsion, *Crystal River* lay with the wind and weather on the quarter. Water, which had collected at the stern, ran forward into the fish hopper area. Without hydraulic power, the crew was unable to close the stern trawl doors tightly enough to prevent further seas coming inboard.

With water slowly building up on the fish deck, it started to slosh about on deck and she took on a list to port. Realising the potential danger, the skipper instructed the crew to cut away the fishing gear. The situation deteriorated further as the water on the fish deck found its way through the hatch into the fish room below. To add to the confusion, fish bins broke loose and started to roll about on deck.

With the gear cut away, the amount of water coming through the trawl doors reduced. At the same time the vessel's motion eased as the water on deck downflooded into the fish room below. This made it much easier for the crew to move about. Although a small portable generator and a salvage pump were carried, the volume of water sloshing about on deck was beyond its capacity to cope.

The skipper contacted the oil rig *Paul B Lloyd Jr*, whose watchkeepers contacted the coastguard. A Norwegian coastguard cutter stood by until the fishing vessel *Fertile* arrived to take *Crystal River* in tow to Lerwick, where she arrived at 0745 the following morning.

Although it was the fire on the main switchboard that started this unfortunate chain of events, the initiating cause was water leaking into the internals of the board, causing a short-circuit between adjacent busbars. The source of the water was thought to be from the engine room ventilation fans, which were found to have their inlet vent louvres fixed upside down. This allowed water to feed into the fan. Not only did this permit unwanted moisture to pass into the engine room, but also allowed water to drip on to the switchboard. The shaft generator was also found to be wet from salt water.

Footnote

Under ideal design conditions, ventilation trunking and piping systems should be routed well away from switchboards. If space restrictions make this unavoidable, NO joints in either system must be positioned above the switchboard.

Switchboards should not be installed close to, or under, hatches or other openings through which water might come.

The Lessons

1. Check the fitting of fan louvres to see they are preventing, rather than encouraging, water to pass through them.
2. Always ensure the switchboard is fitted with a sufficiently large top cover to prevent water entering from above. It should also be capable of deflecting it away from any electrical equipment or connections.
3. Check that all watertight hatches and doors can be securely closed, not only when hydraulic power is available, but also by hand hydraulic methods.
4. Free surface effects brought about by loose water sloshing around on deck can rapidly change an uncomfortable situation into a highly dangerous one. Water will enter fish decks at some point, and adequate deck drainage arrangements must be fitted to cope with this ingress.
5. Equipment fitted on the fish deck, and indeed in all spaces, **MUST** be securely fixed to the deck or the structure. If it has to be portable, then make sure that in rough weather it can be anchored securely to part of the structure. Loose items of equipment can cause injury or worse.
6. The installation of an emergency generator, capable of providing sufficient power to run necessary main engine auxiliary plant under emergency conditions, would have enabled the vessel to regain some control of the situation. Engine-driven stand-by pumps avoid this problem.
7. *Crystal River's* skipper was well aware of the dangerous effects of free surface water and the need to get rid of both top weight, and water, sloshing around in the hold.

Case 9

Attention to Safety Saves Lives

Narrative

Penrose, an 8.94m (29.5ft) long wooden vessel was fishing for pilchards near St Michael's Mount in Cornwall on the night of 16 December 1999. The wind was force 4 to 5 and, although it was overcast, visibility was 20 miles.

The fishing was good and *Penrose* was heavily loaded. The weather worsened, and the vessel was swamped by a couple of waves which wouldn't clear the deck. It is possible flooding of the lower spaces took place. The skipper advised the coastguard by VHF radio that he was taking on water. Although no flooding could be identified, the vessel started to list shortly after the radio call was made. By now the radio had stopped working, so the skipper used a mobile phone to call his agent, who relayed their distress to the coastguard.

Although the vessel was not required to have a liferaft, one was fitted. It was deployed manually, and the crew of three evacuated. Distress flares were activated, and were seen by a coastguard officer in Penzance. Some members of the public also saw the flares, but did not think they were of any importance. The Penlee lifeboat rescued the crew.

Penrose capsized and foundered.

The three fishermen had all attended the basic survival at sea course, and found this training to be a great help.

Footnote

The Fishing Vessel Code of Practice for the Safety of Small Fishing Vessels under 12m in length, came into force on 1 April 2001. Because of the colour of the paper it is printed on (pink), it is known as 'The Pink Code' and has a single aim: to raise the safety awareness of those involved with the construction, operation and maintenance of fishing vessels with a registered length of less than 12m.

If you take the Code seriously and comply with the various requirements, there is every prospect you will never need to put its lifesaving components to the test. And if the worst comes to the worst and something does go badly wrong, there is every chance you will survive - just like the crew of *Penrose*.

The Lessons

1. Although the boat was lost, readers of the narrative will notice that every item of safety equipment worked when needed. This is as it should be.
2. The owner of the vessel paid particular attention to safety. Although *Penrose* was not required to carry a liferaft, one was carried and it might well have saved the lives of three men. Had one not been carried, the crew would almost certainly have found themselves in a rough sea on a winter's night. Survival times in such conditions are measured in minutes.

3. All fishermen should attend the three basic safety training courses. The training that this crew received on the sea survival course paid dividends during this incident. Other accidents have shown that training in first-aid and fire-fighting can also save lives.

4. Flares are required, so make sure they are carried on board. Anyone who sees a flare should report it to the coastguard.

5. If you get into difficulties, follow this skipper's example - tell the coastguard. It is there to help you and the more information you can pass, the better able it is to assist.

6. A mobile phone is acceptable as a backup means of communication. If you have one, take it with you when you go fishing.

Under normal circumstances distress messages should always be transmitted by radio but, should this not prove possible, a mobile phone call may well be the difference between life and death.

Case 10

Engine Room Flooding Leads to Loss of Vessel

Narrative

The 21.09m Banff-registered fishing vessel *Annandale* was fishing 16 miles NNE of the Shetland Islands when her engine room started to flood.

It was not discovered in the early stages; both skipper and crew were busy working on deck clearing the gear that had become foul. When the skipper eventually returned to the wheelhouse he was alerted to a problem by a gearbox low oil warning light.

On entering the engine room he discovered it had flooded to about 1.7m above the bilge level and was already half way up the main engine casing. The engine room bilge alarm had failed to operate.

The skipper attempted to close the seacocks, but was unsure whether his actions had been successful. In the event, it seems he failed to reduce the ingress of water. No attempt was made to use the auxiliary or the hand bilge pump.

The mate, who had already organised the crew in preparing a liferaft, managed to contact a nearby fishing vessel and request assistance. In response, the other vessel began to haul her gear.

Shetland Coastguard also intercepted the call and offered assistance by arranging pumps to be flown out. It was estimated they could be on scene within 20-25 minutes. The offer was, however, rejected on the grounds that it would be too late to prevent her from sinking before the rescue services could arrive on scene.

Because he was worried that *Annandale* might sink before help arrived, her skipper started to head towards the other vessel about four miles away.

For the second time Shetland Coastguard offered to assist by flying out pumps but, once again, the skipper refused on the same grounds as before.

When *Annandale* was still about one mile from the other vessel her main engine stopped. The water level had now reached the top of the main engine casing and was beginning to enter the aft cabin space. The other vessel closed her, and the decision was made to transfer *Annandale's* crew. Before executing the transfer, a previously made up towline was passed across.

Once the crew was safely on board the rescuer, *Annandale* was taken in tow. About 30 minutes later, and some 2 hours after the flooding was first discovered, she sank.

The Lessons

1. As so often happens, the precise cause of the flooding cannot be determined. It is an all too familiar story, and there could be any number of explanations. The main lessons in this instance are not so much to learn from initiating causes, but with what happened after the flooding started.

2. One of the main reasons why *Annandale* sank is that it took so long for the flooding to be discovered. Had those on board been aware of what was happening in the first few minutes, there is every prospect the sinking could have been averted. Fishing boats are designed, and maintained, to

keep water out. If this fails, the crew's overriding responsibility is to detect flooding with the minimum of delay and contain it.

3. There are various reasons why the flooding wasn't detected for so long (post-event calculations point to it having been in the order of three hours before anyone realised what was happening). There was, for instance, nobody in the wheelhouse for some three hours. Leaving it unattended for such long periods is bad practice. Quite apart from the obligations to maintain a good lookout, it meant nobody was in a position to respond rapidly to any alarm; no matter how triggered.

4. The bilge alarm failed. Once again it is not known why, but the number of times the MAIB receives reports of flooding in vessels where the high-level bilge alarm did not function is very worrying indeed. The most common reasons are a lack of inspection and inadequate maintenance. The lessons are all too obvious: always ensure high-level bilge alarms are easily accessible, are inspected and maintained on a regular basis, tested regularly and switched on.

5. Once flooding has started, skippers face a major damage control predicament. Several things need to happen more or less simultaneously: identify the source, isolate it if at all possible, start the pumps, alert the authorities, initiate damage control procedures and anticipate having to use the lifesaving equipment. All this is much easier to achieve if the crew have anticipated such a possibility and been trained to cope with it. The chances of a successful recovery are greatly increased if the rate of water ingress can be stemmed. Remember that the further below the waterline the point of entry, the faster the water comes in.

6. Get the auxiliary and hand bilge pumps and, indeed, any other pump, into use as soon as possible. The deeper the vessel settles, the greater the rate of ingress.

7. Seek, but don't necessarily rely on, outside help. The rescue services will do what they can to provide high capacity salvage pumps and, unless there are exceptional circumstances to do otherwise, accept the offers of help.

8. Listen to coastguard advice. While your flooding incident may be the first you have encountered, coastguards accumulate wide experience in reacting to such predicaments.

9. You never know when you might have to use your lifesaving equipment. Make sure you are confident in your ability to use it.

10. By far and away the best way of avoiding such a situation is to prevent it happening in the first place. Many flooding incidents occur because of faulty pipework. Don't let it happen to you. Time, effort and resources spent on maintaining sea water service pipework and associated valves will greatly reduce the need for you to put some of these lessons to the test.

Case 11

Defective Bilge Alarms Lead to the Loss of two Large Vessels

Narrative

Case 1:

Wistaria II, a 22.04m (72ft) long wooden vessel was trawling about 4 miles to the south east of the island of Barra on the morning of 26 October 2000. The wind was about force 6 with a 3 to 4 metre swell.

The first indication that something was wrong, was when the electrics cut out. The man on watch went into the engine room and discovered floodwater about 0.5m (1.5ft) above the floor plates. The bilge alarm in the engine room had not activated.

The skipper was called whereupon he instructed the crew to prepare to abandon ship. He alerted a nearby fishing vessel, which relayed their distress to the coastguard. The skipper then entered the engine room and started a bilge pump. Because the floodwater was too deep he was unable to shut the seacocks. By now the rest of the crew had already taken to the liferafts. The floodwater continued to build up, and when the deck edge started to dip below the waterline, the crew urged the skipper to evacuate. He did so.

The fishing vessel *Three Sisters* and the Barra lifeboat rescued the crew. *Wistaria II* sank during the afternoon.

Case 2:

Esha Ness, a 24.31m (80ft) long steel vessel was trawling about 60 miles south east of the Sumburgh Head on the morning of 4 November 2000. The wind was about force 4 with a slight swell.

Floodwater was first found in the cabin. The skipper thought this had probably come from the engine room, so he opened the door to this space and found it was half full of water. The engine room bilge alarm had not sounded.

The skipper went to the wheelhouse and sent a distress message to Shetland Coastguard, before returning to the engine room to try and see what was wrong. The seacocks were all submerged by that time, so couldn't be turned off. The vessel was fitted with electric bilge pumps, but these couldn't be used as the floodwater had disabled the electrics.

The skipper asked the coastguard for a helicopter to bring portable pumps to *Esha Ness*, but the helicopter could not get there in time. Three crew evacuated the sinking vessel by climbing into a liferaft and were picked up by the fishing vessel *Evening Star*. A little later *Evening Star* came alongside to take off the skipper and mate. *Esha Ness* sank soon afterwards.

The Lessons

1. These vessels were lost because their engine rooms flooded. Both skippers thought that the most likely source of this flooding was a burst pipe. No warning was provided by the bilge alarms fitted in these spaces.

2. Fishing vessel crews should be particularly vigilant about pipe corrosion, as this has been the main cause of flooding incidents. If a piece of pipe shows signs of corrosion it **MUST** be replaced. It should only be repaired as a temporary measure. Once a pipe has corroded through in one place it is probably about to do the same in other places as well.

3. Seacocks should be readily accessible. Extended spindles should be fitted so that these valves can be closed in the event of flooding. This provides some insurance against burst pipes, because it enables the water to be cut off at source.

4. Bilge alarms are one thing; working bilge alarms are another. Had they worked on these vessels, it is likely that there would have been sufficient time to identify the source of the flooding, and make emergency repairs. Bilge alarms are inexpensive in relation to the cost of a large fishing vessel; fit good quality units, which are connected to wiring fitted inside protective conduit.

5. All the bilge alarms should be tested regularly. They are usually fitted in the engine room and the fish hold and, sometimes, in other spaces as well. As a minimum, testing should be undertaken before each fishing trip.

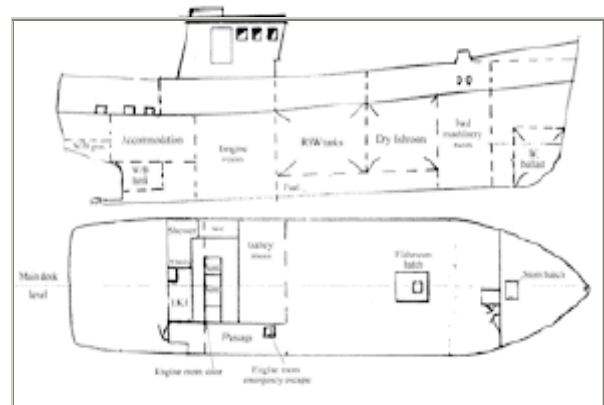
Case 12

The Invisible Killer

Narrative

During the afternoon of 10 June 2000, preparations were being made for the 29m fishing vessel, *Mariama K* FR242, to leave Douarnenez, France.

One crewman was ashore, the skipper was resting and the engineer was, among other things, pumping out the engine room bilges using a portable petrol-driven pump within the engine room. Its engine exhausted directly into it. Hoses on the pump led into the bilge for suction, and up through the engine room emergency escape hatch, for discharge. This pump was being used because the vessel's own power-driven bilge pumps were defective.



The pump had been running for well over an hour, without ventilation fans or any other machinery running, when the crewman returned from ashore. He went looking for the engineer 20 minutes later, and found him in the engine room, unconscious and slumped over the portable pump which was still running.

After stopping the pump and briefly attempting to revive the engineer, he called the skipper who also made similar efforts. These too were unsuccessful, and the emergency services were alerted from a telephone ashore.

The fire service, police and a doctor arrived, but none was able to revive the engineer. In their efforts a number of the emergency service personnel were seriously affected by the fumes in the engine room, as were the skipper and crewman.

The engineer was found to have been poisoned by carbon monoxide.

The Lessons

1. Portable pumps may be very useful; particularly in an emergency. This is shown by the number of incidents where these pumps are supplied by the coastguard to vessels having flooding problems. However, they should always be used with their engine exhausting into a well-ventilated area.
2. Petrol gives off highly flammable fumes that are heavier than air. Therefore, using a petrol engine within an engine room runs the risk of explosive fumes accumulating in the bilges; particularly if ventilation is poor.
3. Carbon monoxide gas can be produced by any system which burns a fuel such as petrol or diesel. As it has no smell, it is a notoriously difficult gas to detect without instrumentation, and yet it is extremely poisonous. In this incident, even trained fire officers were unable to detect the presence of the gas without a meter.

4. Portable engine-driven pumps must be seen as for use in emergency conditions only. They should not be seen as a replacement for the vessel's own power pumps.

Case 13

Heavy Weather Damage in Sea Areas Rockall and Hebrides

Narrative

A number of fishing vessels have suffered heavy weather damage while fishing to the west of Scotland. Three such cases are the accidents involving *Aurora*, *Solstice II*, and *Audacious*, all of which are large well-found vessels.

Case 1:

Aurora, a 23.71m (78ft) long steel vessel was trawling to the south of Rockall on the afternoon of 4 May 1997. The weather was worsening with the wind increasing from force 7, to 9 or 10.

There had been a problem with the trawls, and the gear took longer to haul than normal. The vessel was beam on to the weather during this operation. Just before the port net was hauled, the skipper noticed a huge wave approaching. He was able to warn his crew, and three of them were able to hold on. The fourth could not, and was washed overboard.

The wave knocked *Aurora* on to her beam-ends, pushed in a bridge window and caused flooding. Some of the bridge equipment was damaged, and the vessel lost steerage. This made it impossible to come round and recover the man in the water. He wasn't wearing a lifejacket and was lost.

The wave also broke a sidescuttle in the mess on the starboard side. Additional flooding was caused by this broken glass, and also by water ingress through the open fish hatch. The crew was eventually able to restore power and steerage, and subsequently made it back to port, escorted by the fishing vessel *John Scott*.

Case 2:

Solstice II, a 40m (131ft) long steel trawler was to the north of the Hebrides on the afternoon of 30 November 1999. The wind was south westerly force 8 or 9 and the swell was about 10m.

She was steaming west towards the fishing grounds when she encountered a huge wave, which broke against the bridge front, breaching two windows. The skipper was knocked out of his chair and, once he had recovered, found himself waist deep in water, which he saw was draining down into the accommodation space. He managed to initiate a turn to take the vessel before the wind. During the turn the engine control failed, shutting down the main engine. This was caused by the floodwater, which had got into the electrics.

While the engineer tried to restart the engine, other crew members boarded up the two broken windows. After about 2 hours, the engine was restarted and the vessel was able to steam to Lochinver. However, *Solstice II* had to be escorted back to port, because the electrical failure had affected communication and navigation equipment. Initially the escort was provided by the fishing vessel *Claude Monier*, and then later by the coastguard vessel *Anglian Prince*.

Case 3:

Audacious, a 33.95m (111ft) long steel vessel was trawling to the north of Rockall early on the morning of 29 January 2000. The wind was westerly force 9 and the swell was about 4m.

The nets were being hauled while the vessel was steered into wind, making way at about 1 knot. The skipper was facing aft, overseeing the hauling operation, when he heard a cracking noise. Almost immediately the bridge filled with water. He assumed a wave had hit the front of the vessel, smashing all seven bridge front windows.

This wave also initiated a large pitching motion, which caused *Audacious* to take water over her stern ramp, forcing the crew on deck to take cover behind the net drums. The water in the bridge downflooded to the accommodation. Just as the skipper was recovering himself the main engine stopped, and the lights went out. Shortly after, the emergency lights came on. After gathering the crew together the skipper issued instructions for boarding up the broken bridge windows. A distress was broadcast via Inmarsat and the EPIRB was activated, which summoned a Nimrod rescue aircraft. Communication was then established using a portable VHF radio. The Nimrod was able to contact other fishing vessels in the area. The main engine was restarted, but there was no way of properly steering *Audacious*. It was also found that most of her electrics had been disabled by the floodwater.

The fishing vessel *Grove* initially provided a tow, but after a while the fishing vessel *Solstice II* took over. The towrope to *Solstice II* parted twice, but *Audacious* eventually made it back to port.

The Lessons

1. Although there are no definite trends, it does appear that there are fewer quieter spells of weather, and strong westerly winds are becoming more predominant. Vessels like those above, which work the fishing grounds off Rockall, are particularly vulnerable to these winds.
2. If dedicated storm covers are not provided, materials that can be used to board up broken bridge windows should be available.
3. Skippers who fish near Rockall should be aware that the search and rescue helicopter based at Stornoway, will be operating at its extreme range if a rescue is required. In some cases, for instance if a large crew has to be evacuated, a helicopter rescue may not be possible. Rockall is a long way out into the Atlantic, if you fish out there take extra care.
4. A careful lookout should be kept at all times, especially in heavy weather conditions.

Case 14

Corrosion Causes a Serious Flooding Incident

Narrative

Friendship, a 20 year old, 35m beam trawler, was fishing in the North Sea, some 180 miles north-north-west of the Netherlands port of Den Helder.

The fish-handling system installed on board consists of a gutting trough forward under the whaleback, a conveyor system for handling the dirt and waste, a waste collecting tank underneath, and an overboard discharge trunk. Either side of the conveyor and gutting trough, are fish pounds, into which the contents of the cod ends are emptied. During the gutting operation, the deck wash sprays water over the fish pounds and the conveyor, to both clean the fish and to wash the debris overboard.

During the early morning of December 1, the cod ends had been swung inboard and the catch released into the pounds. With the deck wash operating, the crew started gutting. The fish waste was carried away as usual by the water from the deck wash. This process had been underway for some time when the crew discovered that the fish room had flooded.

The cause was found to be the accumulation of water in the conveyor system, which had leaked through the underside plating of the discharge trunk. This leakage was entirely due to heavy corrosion in the plating; it had allowed water to flood into the fish room rather than discharge overboard.

The amount of water in the fish room had reduced the freeboard to such an extent that the discharge trunk from the waste tank was submerged. This allowed backflooding to occur. Fortunately, the fish room bulkheads were, and remained, watertight. The vessel's bilge pumping system was unable to cope, so the coastguards were informed at 0845 UTC, and were asked to arrange the delivery of a salvage pump.

A rescue helicopter from RAF Boulmer delivered a pump at about 1020 UTC, but the crew could not clear the fish room with this pump running as well as its own. Two larger pumps were obtained from the Netherlands and flown out to the vessel from Den Helder, arriving on board at 1630 UTC. By this time her sister vessel, *Enterprise* had closed and both vessels started to make slow progress towards the Netherlands at about 2 knots. Despite the assistance, *Friendship* was still unable to reduce the level of water in the fish hold.

By 0517 UTC on December 3, the salvage tug Walker was alongside and escorting *Friendship* at about 4.5 knots towards Delfzyl, where she arrived at 2145 UTC. Pumping remained ineffective until a diver sealed the overboard discharge trunk from the waste tank. Once the trunk had been sealed, the water was pumped out. This raised the level of the trunk above the waterline. Only then could repairs to the trunk be started.

The Lessons

1. This incident graphically illustrates the importance of watertight bulkheads. Without them, this vessel would have been lost.

2. This was yet another incident when the bilge alarm in the fish room was not working. Had it been, this incident would not have developed into such a serious situation. Safety devices are fitted to save your life, check that they work correctly all the time. If they don't, both vessel and crew might be lost.

3. Although this discharge trunk is normally above the waterline, it had no isolating valve fitted. Once the vessel's freeboard had been reduced, there was no way the inlet could be sealed. Look at your own vessel and see if similar hull openings exist. If so, think what you could, or should do to prevent something similar happening.

4. This problem stemmed from excess corrosion in the discharge trunk. The next time it happens, the crew may not be so lucky. Learn from this experience; test the overboard discharge trunk to ensure its thickness has not been reduced by corrosion. If it has, do something about it before going to sea.

Case 15

Container Ship and Fishing Vessel Meet in Fog!

Narrative 1

The fishing vessel *Carhelmar* was beam trawling. *Gulf Bridge*, a 29,872gt container ship was on passage, making good a course and speed of 065° and 18.7 knots respectively.

Carhelmar trawled in an easterly direction initially, and then turned southerly. The visibility was reasonable and the sea was slight. It was dark, and the skipper saw the masthead lights and port sidelight of *Gulf Bridge* about 2 miles to the west. While he remained visible to the oncoming ship, the skipper decided to turn to starboard with the tide and continue around to the north, assessing that his substantial manoeuvre would make his intentions clear.

Immediately before, or during, the turning manoeuvre, *Carhelmar* crossed ahead of *Gulf Bridge*. Having settled on a northerly heading, the fishing vessel's skipper looked at the radar display, and assessed from the echo trail of *Gulf Bridge* that she would pass clear astern of him. He then switched on the deck lights and started hauling the main warps. By this time dense fog had closed in. *Carhelmar* maintained her northerly heading and speed of about 2.5 knots. The skipper continued to monitor the echo trail of the oncoming ship and, realising the bearing remained steady, became increasingly concerned.

The same sentiments were being echoed on board *Gulf Bridge*. When it became evident from the radars on board the container ship the fishing vessel had turned around and that a collision was imminent, avoiding action was taken by altering course to starboard first, and then to port, in an attempt to clear the fishing vessel's stern.

As *Carhelmar's* skipper was about to activate the crew alarm, the bow of *Gulf Bridge* carried away the starboard warp, with consequential damage to both vessel and gear.

Following the accident, *Carhelmar* informed the coastguard that she had been struck, and damaged, by another vessel. *Gulf Bridge* denied striking the fishing vessel, but admitted passing very close to her.

The Lessons

1. This accident resulted primarily from assumptions made on both vessels:

- *Gulf Bridge* assumed *Carhelmar* would maintain her original course and speed.
- *Carhelmar's* skipper assumed his manoeuvre had been seen by *Gulf Bridge* and that his intentions had been clearly conveyed.
- *Carhelmar's* skipper assumed from his initial observation of the other vessel's lights that she would pass clear to the south.
- Until immediately before the encounter, *Carhelmar's* skipper assumed, from his monitoring of the other vessel's radar echo trail, that she would continue to pass to the south.

Rule 7(c) of the Collision Regulations is particularly relevant in stating:

Assumptions shall not be made on the basis of scanty information, especially scanty radar information.

2. Rules 5, 6, 7 and 19 of the Collision Regulations are also relevant in that:

- *Gulf Bridge* should have systematically monitored the radar echo of *Carhelmar* and adjusted her speed to the extent that she could reduce it to a minimum when it became apparent that a close quarters situation could not be avoided.
- *Carhelmar's* skipper should have plotted the radar echo of *Gulf Bridge* so as to make a full appraisal of the situation, and of the risk of collision before turning his vessel around and, again, before starting to haul his gear. He was unaware that his vessel had crossed *Gulf Bridge's* bow.

3. On sighting or detecting another vessel at sea, watchkeepers can do one of two things: they can either make a careful assessment about what the 'other vessel' does until she is past and clear, or they can assume it. The common denominator with virtually all collisions is that the person in charge of at least one of, if not both, the ships involved has made assumptions about what the other is either doing, or is going to do. Whenever the word 'assume' features in your calculations, the warning bell has started to toll. Heed it.

Case 16

Another Lone Fisherman Tragically Lost Overboard

Narrative

One day in November 2000 the 6.24m St Abbs potting boat, *Girl Alice*, set out for a normal day's work. The only person on board was her skipper. When she failed to return to harbour the alarm was raised and a search initiated. She was found by another fishing boat and the Eyemouth lifeboat 1.5 miles south-east of Burnmouth. There was nobody on board.

There was a slight sea and swell at the time, and the wind was 10 knots from the west with good visibility. The boat was found with the engine engaged, 17 pots outboard and 3 inboard, one of which was jammed in the gunwale. Only a small catch of crabs was found, which indicates that whatever happened, occurred early in the day. All the indications suggested that the sole occupant had somehow gone over the side. The emergency services carried out a detailed search using four lifeboats, a coastguard helicopter and 15 local fishing boats, but no trace of the victim was ever found. The fisherman had over 17 years experience, and is not thought to have been wearing any form of lifejacket or buoyancy aid.

Footnote

This incident was the subject of a full MAIB investigation. A comprehensive report, giving details of the causes, an analysis, and recommendations was published in May 2001. It can be obtained free of charge by writing to the MAIB.

This tragic accident again highlights the dangers involved in single-handed fishing vessels.

The Lessons

1. One can only imagine what the victim's thoughts were as he went over the side. He was on his own and, if he was following his usual custom, was not wearing a lifejacket. He would have had little means of keeping his head above water. Fishing is, at the best of times, a risky venture but the risks multiply if you fish alone; there is nobody on hand to assist or raise the alarm should anything go wrong.
2. If you do put to sea single-handed always wear a lifejacket or buoyancy aid, and consider carrying mini flares and a personal locator beacon. At least it gives you a chance of being rescued should you go over the side. If you die, you leave behind people who will be devastated by your death, and wanting to know why you considered it so wrong to take the basic precautions that an increasing number of fishermen are now finding acceptable.
3. Always let someone know your movements. Keep in regular contact with other fishing vessels while at sea. This way the alarm can be raised if your expected movements or call are overdue.
4. Consider installing engine and steering controls local to the working position, ie near the hauling winch. In the event of a leg being caught in a bight of rope it gives you the chance to stop the boat before you are pulled over the side.

Case 17

Grounding in Restricted Visibility

Narrative

The Spanish owned and registered fishing vessel *Horizonte Claro*, sailed from Lochinver on the west coast of Scotland at about midnight on 20 October 2000, to return to the fishing grounds. The Spanish skipper was in the wheelhouse accompanied by two lookouts. He adjusted the autopilot to follow the departure track shown on a video plotter which was designed for fishing purposes and could only display a latitude and longitude grid, not electronic charts. Positional information was fed to the video plotter from DGPS and GPS receivers and was verified by the skipper using visual and radar references. An appropriate chart of the area was available but not used.

About 10 minutes after sailing, the vessel entered an intense squall with the wind gusting up to 35 knots in heavy rain.

Visibility dropped and the radar picture became degraded. The skipper tried to improve the picture quality on his radar displays but was unable to do so and, in the absence of either visual or radar references, continued to follow the track displayed on the video plotter. At 0019 the skipper told the two lookouts to leave the wheelhouse and keep a lookout from the open deck. One went forward to the bow and saw land close by and directly ahead. He shouted to the skipper to go astern, but it was too late. The vessel grounded to the east of Soyea Island at 0020.

Unable to speak English, the skipper had to inform the coastguard through someone who could. He contacted the vessel's Spanish-speaking agent in Lochinver by VHF radio, who called the coastguard. The skipper then checked the vessel to ensure her watertight integrity had not been breached.

The check was made, but several scuttles were left open, none of the crew donned lifejackets and the liferafts, which were lashed down on the wheelhouse roof, were not made ready.

The Lochinver lifeboat arrived on the scene at 0048 with a Spanish-speaking representative of the vessel's agent embarked. The fishing vessel's crew were recovered into the lifeboat and taken back to Lochinver where several required assistance to disembark. There are conflicting reports as to whether or not some of the crew were under the influence of alcohol. *Horizonte Claro* was later refloated by the coastguard tug *Anglian Prince* and towed to Stornoway for survey and repair.

The Lessons

The following lessons are by no means new, but warrant careful study so they can be relearned. The opportunity is taken to extend the lessons beyond those that might have applied in this particular incident.

1. Video plotters are convenient and easy to use. In many people's eyes they are the answer to the watchkeeper's problem by relieving him of the need to draw a track on charts, to plot fixes, or to transfer GPS positions. Reliance on video plotters frequently ends in disaster. When used in isolation, they are rarely sufficiently accurate for safe navigation in very confined water. By all means use them, but only trust them when their accuracy can be checked by comparison with other navigation aids such as radar, charts, GPS receivers, echo sounders and the mark one eyeball. Even

in reduced visibility with no radar, their accuracy can be checked periodically by plotting GPS positions on to an appropriate chart.

2. Lookouts should always be maintained from where they can be of greatest use. Had these two moved outside the wheelhouse as soon as the heavy rain reduced the visibility, and degraded the radar picture, it is possible Soyea Island might have been sighted sooner, and allowed effective avoiding action to be taken. Depending on the nature of the restricted visibility and the proximity of navigational dangers and shipping, more can frequently be seen from an open deck. Although few crew enjoy this task, it is better than being rescued and having to look for work elsewhere.

3. A liferaft lashed down is as useful as a getaway car with a wheel-clamp. After grounding on rocks, a vessel is totally at the mercy of the elements and fortunes can turn very quickly, especially on a small fishing vessel. In such circumstances it is essential the crew are prepared to abandon the vessel at short notice. It may be too late to start looking for lifejackets and be preparing liferafts once the vessel begins to list heavily. Survival equipment is there to be used, and liferafts should be made ready for deployment, regardless of whether or not help is on its way.

4. Drinking alcohol before sailing or when at sea is fraught with dangers. A quick drink, or even a couple of 'very small ones' can have unwelcome repercussions.

5. Alcohol makes you even sleepier, it slows down the thinking process and performing simple tasks can be very difficult. And if you have an accident and someone is injured or even killed, you could be answering a few very difficult questions afterwards. There are ways of sobering up fast; this is not one to be recommended.

6. There are times to enjoy a drink, but just before sailing at midnight is not one of them. You may think the 'no drinking' advice doesn't apply to you, as there was no question of you doing anything other than turn-in once on board. But emergencies can happen at any time. Groundings, collisions, floods, and fires can occur when least expected. Few of us are saints, but the effects of alcohol are unpredictable, and can render people incapable of performing the most basic tasks, let alone fighting fires, launching liferafts or giving first-aid. They not only jeopardise their own lives, but also the lives of all on board. And those of the rescue services.

Case 18

Vessel Sinks After Hitting Wreckage

Narrative

Audentia, a 17.44m long wooden vessel, was fishing to the west of the Isle of Man one night in February. While trawling, she collided with some wreckage and was holed. The wind was force 3 to 4 from the south-west, and the sea was slight to moderate.

The bilge alarms indicated that there was flooding, and this was confirmed by visual inspection. The bilge pumps were started, but the level of the floodwater continued to rise. Although the bulkheads both delayed the flooding, and gave the crew more time, three compartments were filling. The fishing gear was hauled so as not to impede the rescue services, and the decision was taken to make towards Peel. It was thought that beaching was the best option available.

A "Mayday" was broadcast and was acknowledged. The Peel and Donaghadee lifeboats were dispatched but, before they could reach the casualty, another fishing vessel, *Bain Loyal*, which had also responded to the distress call had arrived on scene and had taken off the crew. When the Peel lifeboat arrived the vessel was listing to port, leading to the conclusion that the main part of the damage was underwater on this side. Inspection of the other side revealed that the vessel was holed above the waterline on the starboard bow.

Audentia sank about two hours after being holed. The lifeboats recovered the EPIRB and the liferaft.

Following the accident, the coastguard received reports of floating wreckage in the area.

The Lessons

1. Wreckage, either flotsam or jetsam, is one of the hazards which users of relatively small boats (and fishing vessels are included in this category) have to contend with. Wreckage shows no lights, doesn't keep a lookout, and pays no attention whatsoever to the Rule of the Road. And it is singularly uncooperative when it comes to assisting accident investigators. Wreckage is not the only thing floating around the oceans of the world these days. The semi-submerged container is a popular candidate for blame, as are tree trunks, whales, dunnage, oil drums and the very occasional hulk. Some have the potential to inflict significant damage. The MAIB has no magic formula for avoiding them, but the best defence against hitting any of them is to maintain a very good lookout. They are very unlikely to show up on radar, except in very calm conditions.
2. If wreckage, a container, or other floating objects likely to be a hazard to safe navigation are ever sighted, tell the coastguard so that others can be alerted to their presence. And if you are carrying containers and lose some of them overboard, inform the appropriate authorities without delay.
3. There are additional lessons for the victims of such encounters. Always keep your bilge alarms in good working order, and regularly check they work. In this case they provided early warning of flooding, and gave the crew time to deal with the emergency.
4. If your vessel is fitted with watertight bulkheads, make sure they are just that. Holes, gaps, unplugged glands, and open doors make a mockery of the expression 'watertight.' Your life, and the safe return of your livelihood, could well depend on the watertight bulkhead being watertight.

5. Check that your bilge pumping arrangements are adequate. The further below the waterline the source of the damage, or the hole through which water is coming, the faster the rate of flooding. The greater the pumping capacity, the greater the chances of survival. If you don't know the capacity of your present system, this is a good moment to check. Now work out the rate of flooding that could occur, and see if it is greater than the pumping rate. If it is more, then you have a problem that needs to be addressed.

Case 19

Man Overboard During Hauling Operation

Narrative

The 58m fishing vessel *Pathway* had hauled her gear and, using her fish pump, had just taken the catch aboard from the net.

On recovering the fish pump pipes, which were suspended from a crane, the vessel rolled and the crane knocked one of the crewmen against the rails and then dragged him overboard. He was wearing oilskins and an inflatable lifejacket.

The weather conditions were not good. There was a force 6 to 7 wind, with a moderate to rough swell, and it wasn't long before he drifted out of range for a lifebuoy to be thrown to him. Fortunately he managed to grab hold of a rope which was trailing from the vessel, and this enabled his colleagues to drag him closer to the vessel's side.

Several unsuccessful attempts were made to recover him on board, but hypothermia was beginning to set in and he lapsed into unconsciousness. He began drifting away again. Realising what was happening, the second engineer, who was wearing a survival suit, dived into the water and managed to get him back alongside. The crewman was eventually lifted back on board. He had been in the water for approximately 15 minutes.

Once on board he was treated for hypothermia and was in a stable condition within 30 minutes.

Footnote

Advice on working type lifejackets for fishermen can be found in Marine Guidance Note MGN 155(F) entitled Buoyancy Equipment for Fishermen at Work, available from the MCA.

The Lessons

1. The first, and obvious lesson is to make sure that everything possible is done to prevent people going overboard in the first place. There is a great temptation to accept everyday practices just because 'it is always done that way'. Anything that swings freely is a potential danger. When added to a constantly moving deck, any equipment or machinery left free to move only has to hit someone to create the sort of situation seen here. Take the necessary precautions before it is too late.
2. A key feature in this incident was that the victim was wearing a lifejacket. Had he not been doing so he might well have lost his life; it kept him afloat when he lost consciousness. Lifejackets save lives. Join the steadily growing number of fishermen who routinely wear them nowadays.
3. Recovering someone who has fallen overboard is extremely difficult because of the weight of waterlogged clothing and the casualty's inability to help himself. Body temperature falls fast, and even the fittest person becomes exhausted within minutes if not seconds. Speed of recovery is essential, as is keeping an eye on the person in the water.
4. Practice recovering someone from the sea. ('Someone' in this context should be a heavy weight of the approximate shape and size of a man!) Every skipper should work out his own system in his

own boat, but it is essential he can answer two questions: how is he going to secure the man, and how is he going to lift him inboard? Manoverboard drills should be carried out on a regular basis.

5. The action of the crewman who went into the water to aid the casualty, was commendable. However, always remember not to aggravate any rescue situation by going into the water yourself unless it is absolutely essential to do so, and then only with the aid of a safety line and a survival suit. The last thing you want is two casualties.

Case 20

How to Handle a Flooding Incident

Narrative

Past Safety Digests have often reported flooding incidents where mistakes were made while trying to save the vessel and her crew. This is a case where all the right actions were taken once the flooding had been discovered, and the crew can take credit for how things were handled.

Aranatha, an 8.63m long GRP vessel, was trawling to the south of Milford Haven on a January evening with two crew on board. The wind was from the north-west force 3 to 4, and the sea was slight. The skipper was alerted to flooding in the engine room when the bilge alarm activated and the main engine started to misfire. The skipper switched the bilge pump on immediately, and called the coastguard to advise them of the situation. While the skipper was talking to the coastguard, the crewman located the source of the flooding; a pipe that had come off the water pump to the engine. It was refitted and temporarily secured.

The main engine kept running, and with the Angle lifeboat in company they were able to return to Milford Haven docks safely.

The bulkheads each side of the engine room were watertight, and limited the flooding. The valves on the sea inlets were used to stop the flow of floodwater until the pipe was refitted to the water pump. All pipe connections have since been refitted with heavy-duty clamps.

The Lessons

1. This is one of the few occasions when the bilge alarm gave the crew ample warning of flooding. The MAIB is frequently informed of cases where the bilge alarms do not work because of poor maintenance, they are switched off, or they have been landed for repair. Bilge alarms should be in good condition, and should be checked regularly to ensure that they are working.
2. The crew contacted the coastguard at an early stage. By doing so, they alerted them in good time to provide assistance, or rescue them had it become necessary. Always call the coastguard if flooding is suspected; they would rather be informed at an early stage, than later when the incident could have become much more serious. By calling the coastguard you are not automatically summoning a helicopter or lifeboat, merely giving them time to think and take whatever steps they judge appropriate. They can be relied upon to take the appropriate action, while you do your best to resolve the problem at sea.
3. The bulkheads were watertight, the stopcocks were accessible and could be operated, and the bilge pump worked and was very effective in clearing the floodwater. All these factors helped to save the situation.

Case 21

Fishing Vessel Grounds While Leaving Harbour

Narrative

The 24.36m fishing vessel *Keila* docked at Aberdeen in the early hours and landed her catch for that morning's market.

During the day, the crew worked on board in preparation for sailing that evening. The engineer had been busy working on the main engine and, while doing so, had disconnected the auto-start for its cooling pump.

Keila sailed from Aberdeen that evening as planned. The skipper was in the wheelhouse, two crewmen were on deck tending the ropes and the other two crewmen, one of whom was the engineer, were asleep below.

As she left harbour the alarm for the main engine cooling water temperature sounded. The skipper put the wheel amidships and nipped below to the engine room to find out what was wrong. He discovered the main engine cooling pump was not functioning and switched it on; the engineer had forgotten to reconnect the auto start. The skipper was just returning to the wheelhouse when he heard a loud rumbling noise. *Keila* had grounded on a rocky ledge outside the channel.

He stopped the main engine, called the crew and reported the incident to Aberdeen harbour control.

Keila was hard aground on her starboard side, and as the tide ebbed she fell over on her starboard bilge keel. Fortunately there was little damage sustained and she was refloated on the following tide.

The Lessons

1. No matter how great the temptation, never leave the wheelhouse unattended in confined waters. Even the 'nippiest' visit to the engine room has a habit of taking longer than expected. In this case the skipper could have instructed one of the deckhands to call the engineer who could have rectified the problem. There was no need for the skipper to leave the wheelhouse.
2. Whenever entering or leaving port, there is much to be said for having two people in the wheelhouse. Had an additional person been present, the grounding could have been prevented.
3. Ensure there is an adequate management system in place when maintaining and testing the main engine and ancillary equipment. The phrase 'management system' might appear to be a pretty good example of gobbledegook, but in plain seafaring language it means having a system in place to ensure that things are properly connected up after maintenance or repairs. Had someone checked, and discovered the pump auto-start had not been reconnected before sailing, this accident (and the embarrassment) would not have occurred.

Case 22

Use the Correct Caulking Compound

Narrative

Fin-Ar-Bed, a 13.98m long wooden vessel, was fishing to the north of Cromer in East Anglia early one September morning. A crew of five and a dog were on board. The wind was from the north-west at 15 to 20 knots, and the sea was moderate with a swell from the north-west. The vessel had been punching its way through the swell to reach the fishing grounds.

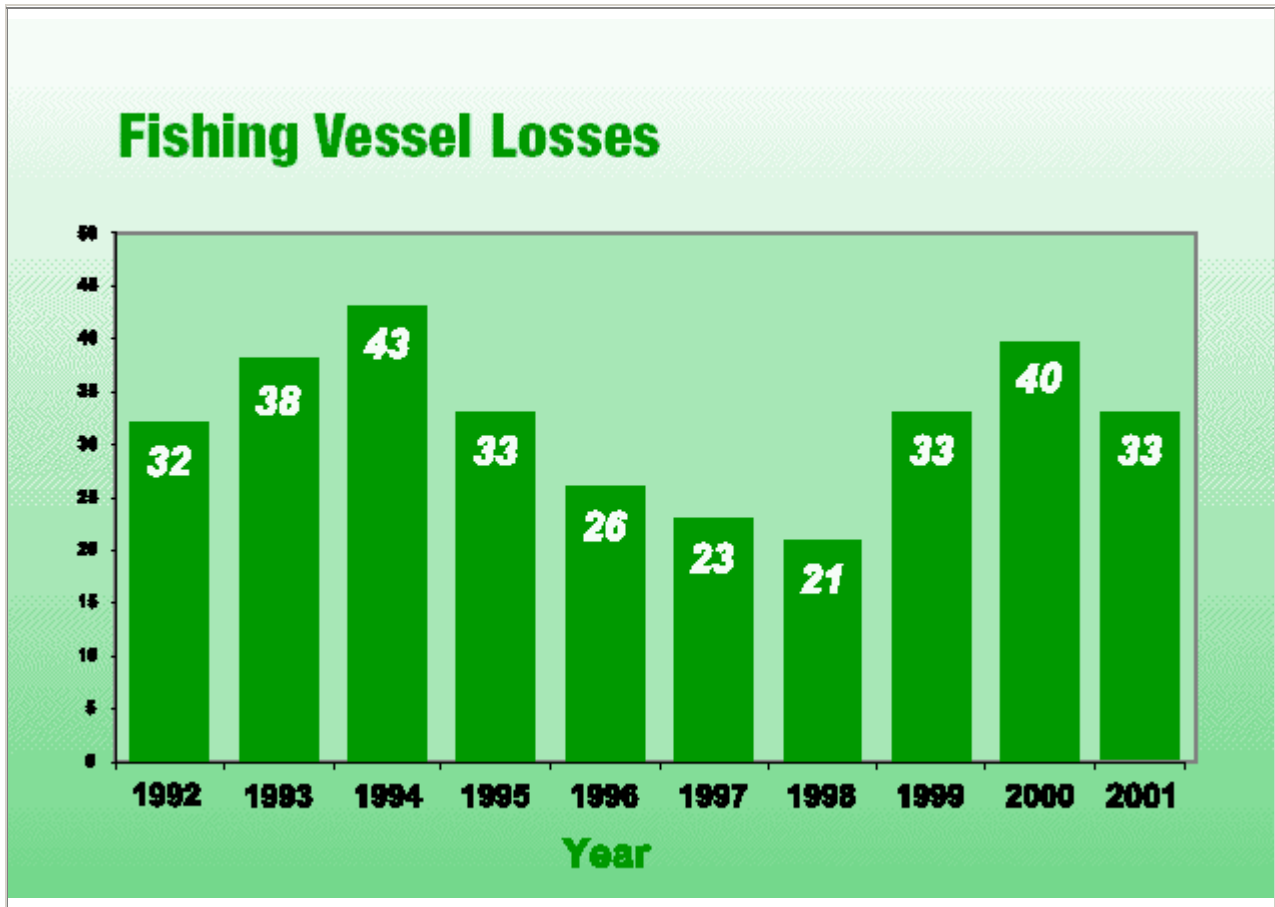
The skipper was alerted to flooding in the engine room by the bilge alarm sounding. The main engine stopped. The skipper called the coastguard, and used the bilge pumps to try to contain the floodwater. A rescue helicopter put another pump on board, and later an inshore lifeboat put a crewman on board to assist. When the Cromer lifeboat arrived, a further pump was put on board, and *Fin-Ar-Bed* was taken in tow. The two vessels later arrived safely at Lowestoft.

The cause of the flooding was not initially apparent, but when the vessel was slipped, some of the caulking was found to be in a very poor state. This was surprising as these seams had been sealed with synthetic sealant only about three months previously. The vessel was of carvel construction, using oak planks. The defective seams have since been recaulked, and extra bilge pumps have been fitted.

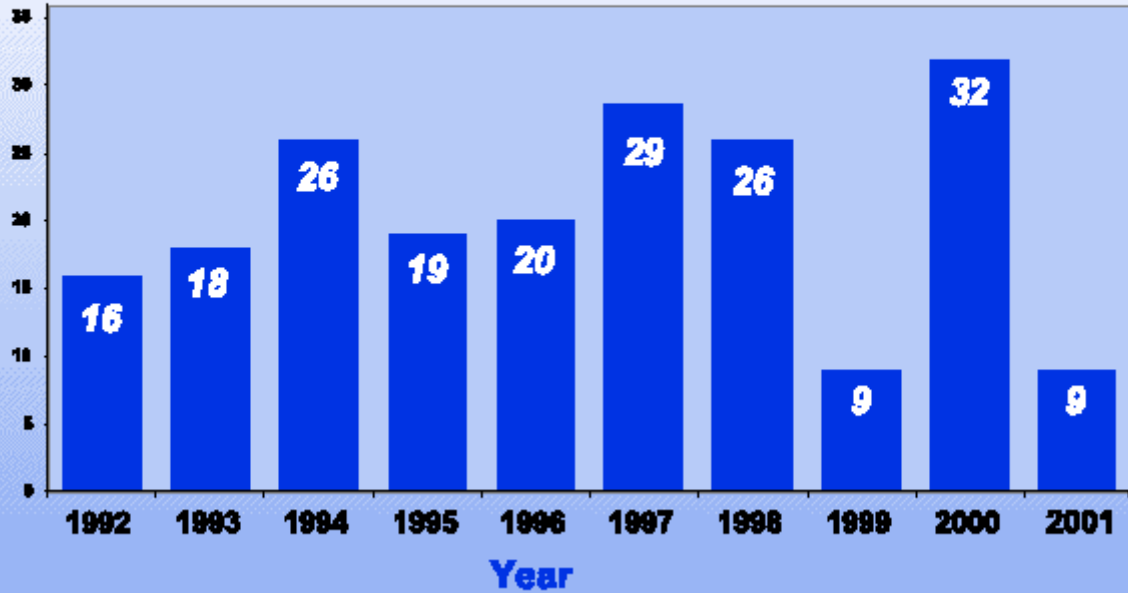
The Lessons

1. Underwater seams of wooden vessels are best sealed with caulking cotton or oakum. The main advantage of these two methods is that they can be compressed into the gap between the planks. A sealant, such as synthetic rubber, can be applied to finish the seam, as this will provide a smooth surface and help to protect the caulking cotton/oakum. Pitch can also be used to finish seams. For seams facing up the pitch can be poured, for seams facing down the pitch should be brushed on.
2. Some sealant manufacturers claim that you can use their products without caulking cotton or oakum. It may be possible to achieve good results this way provided the manufacturer's instructions are followed for the use of primers etc. You can't get compression in the seam by just using a synthetic sealant. Silicone sealants react with seawater, and are not suitable for caulking seams on sea boats.
3. Oak planking is unusual. It has the advantage that it is strong and resistant to rot, but it expands and contracts more than usual, so particular attention is necessary for the seams. Oak contains tannic acid, which may react with some sealants.

Statistics



Deaths



Fishing Vessel Accident Statistics 1990 - 2001

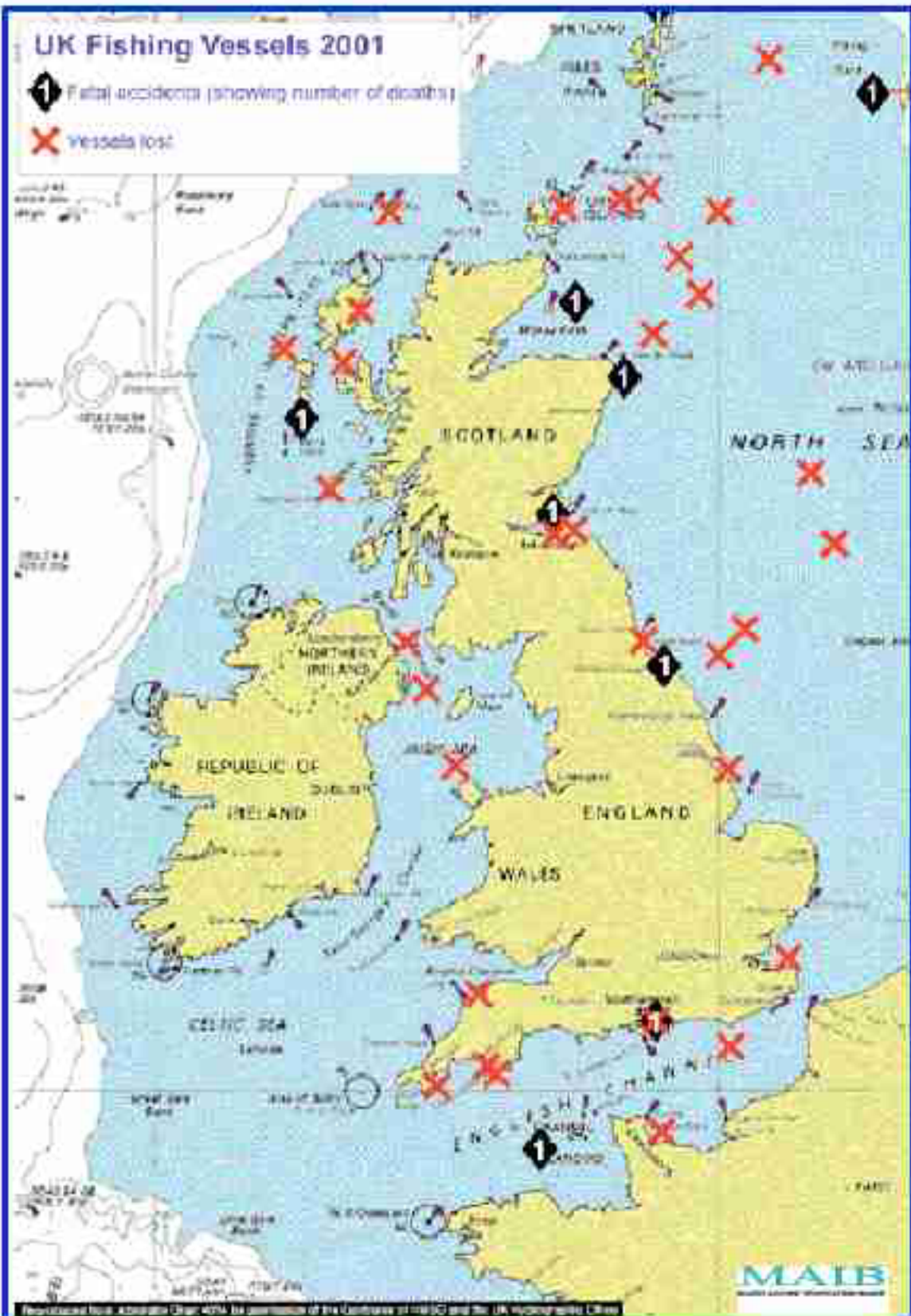
YEAR	LOSS OF LIFE					PERSONAL ACCIDENTS	VESSELS LOST
	Lost with vessel	Fell overboard	Involved Machinery	Onboard Accidents	Total		
1990	22	4	4	0	30	128	17
1991	25	5	0	2	32	165	41
1992	7	4	3	2	16	133	32
1993	9	7	0	2	18	115	38
1994	16	5	0	5	26	155	43
1995	10	8	1	0	19	108	33
1996	9	4	1	6	20	97	26
1997	16	7	0	6	29	138	23
1998	18	5	0	3	26	112	21
1999	3	4	0	2	9	89	33
2000	21	6	2	3	32	104	40
2001	0	6	0	3	9	81	33

TOTAL	156	65	11	34	266	1425	380
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Chart
Major Accident Locations
(provisional figures)

UK Fishing Vessels 2001

-  Fatal accidents (showing number of deaths)
-  Vessels lost



Reproduced from Maritime Chart 4074 in possession of the Controller of HM Coastguard and the UK Hydrographic Office

MAIB
MARITIME ACCIDENT INVESTIGATION BOARD

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Alma C - report on death of Michael John Beedie a fisherman from the fv Alma C on Turbot Bank about 55 miles west-by-south of Thyboron in Denmark on 25 January 2001

Amber Rose - foundering of fishing vessel with loss of one life off the Isle of Man on 15 October 1998

Angela - capsized and foundering of fishing vessel in North Sea on 6 February 2000

Annandale - flooding and foundering of fishing vessel 16 miles NNE of the Shetland Islands on 23 March 2000

Arosa - grounding and total loss of UK fishing vessel on Doonguddle rock off the west coast of Ireland with the loss of 12 crew members 3 October 2000

Astra II - loss of two crewmen attempting to board the vessel while berthed at Carbost pier, Loch Harport, Isle of Skye on 2 April 2000

Atlantic Princess - man overboard incident from vessel in the English Channel on 23 November 2000

Be Ready - fire on board the fishing vessel while fishing 30 miles north-west of the Orkney Islands on 22 January 2000

Betty James - grounding and subsequent loss of fishing vessel off Isle of Rhum on 10 July 2000

Beverley Ann II - collision between vessels on 9 March 1999 Cypress Pass

Blue Hooker - loss of the fishing vessel with two lives off Blackchurch Rock, North Devon on 12 November 1998

Catrina - capsized of the UK registered fishing vessel south of Newhaven on 13 October 1998

Celtic King/De Bounty - collision between UK registered feeder container ship Celtic King and Belgian registered fishing vessel De Bounty vessels to the south of The Smalls traffic separation scheme off the south-west coast of Wales on 19 March 2000

Christine Nielsen - flooding and foundering of fishing vessel 120 miles north-east of River Tyne on 18 March 2001

Constancy - sinking of fishing vessel on 30 July 1998 with loss of one life

Crimond II - loss of fishing vessel 30 miles north-east of Scarborough on 24 April 2001

De Kaper - fire on board trawler off Hanstholm, Denmark on 12 February 1999

Donna M - capsized of fishing vessel off the Orkney Islands with loss of two lives on 31 August 1999

Dunan Star - fatal accident on board fishing vessel 1.5 miles south-west of the Isle of Arran on 10 August 2000

European Tideway and Vrouw Grietje - collision between vessels in North Sea 16 October 2000

Fleur de Lys - explosion on board vessel which then foundered 18 miles south-east of Portland Bill on 16 April 2000

Fraoch Ban - capsized of fishing vessel off coast of Shetland Islands 15 August 1999

Geeske - death of one person while fishing off Beachy Head on 9 December 1998

Girl Alice - loss of skipper from vessel 1.5 miles southeast of Burnmouth 19 November 2000

Gradeley - manoverboard fatality off the west coast of the Island of Mull on 28 October 1999

Harbour Lights - loss of fishing vessel off Polperro, Cornwall on 8 January 2000 with loss of one life

Horizonte Claro - grounding of fv vessel on Soyea Island, Loch Inver, 21 October 2000

Lomur - grounding of Lomur in the approaches to Scalloway, Shetland Islands 14 June 2001

Luc and Toisa Puffin - collision between the two vessels 8.5 miles due east of the river Tyne on 13 June 1999

Mariama K - carbon monoxide poisoning on vessel in Douarnenez, France 10 June 2000 - one fatality

Opportune - man overboard fatality from mfv Opportune 35 miles east of Wick on 23 February 2000

Our Sarah Jayne/Thelisis - collision between ro-ro cargo vessel Thelisis and fishing vessel Our Sarah Jayne in the Thames Estuary 20 June 2001

Pescalanza - sinking of the fishing vessel with the loss of six lives on 2 November 1998

Philomena - fatal accident on board vessel in the Moray Firth on 6 March 2001

Purdy - man overboard fatality from angling boat at Shipwash Bank off Harwich, on 17 July 1999

Purbeck II - injury of crew member on board on 7 June 1999

Rachel Harvey - grounding and loss of fishing vessel off Peninnis Head on 1 October 1999

Radiant Star III - foundering of fishing vessel 60 miles north-east of Fraserburgh on 6 August 1999

Random Harvest - flooding of fishing vessel southwest of Brighton on 3 July 1999

Rebecca Kay - loss of fishing vessel Rebecca Kay on 20 April 2001 off Bideford Bar Buoy

Ross Alcedo - fire on board vessel while underway about 32 miles north-west of the Isles of Scilly on 16 January 2000

Saint Jacques II and Gudermes - collision between vessels in the Dover Strait on 23 April 2001

Sally Jane - capsize alongside in Shoreham Harbour on 27 July 1998

Sharona - flooding and foundering of fishing vessel 80 miles north-east of Peterhead on 3 August 1999

Silvery Sea/Merkur - collision between Merkur/Silvery Sea which then foundered about 35 miles west of Esbjerg, Denmark with the loss of five lives 14 June 1998

Solstice II - investigation of a fatal accident to a crew member, 25 miles south-west of Rockall 13 May 2000

mfv Suzanne/mv Elm - near miss incident on 11 February 1999

Union Arbo/Philomena - collision between Bahamian cargo ship Union Arbo and UK fishing vessel Philomena about 10 miles south of Newlyn, Cornwall on 2 September 1999

Van Dijck - loss overboard of a fisherman from fishing vessel while fishing 30 miles south-west of Guernsey on 16 April 2001

Wakil II - investigation of an accident to skipper of fishing vessel 3.5 miles south-west of St Bees Head on 10 April 2000

SAFETY DIGEST

MAIB Safety Digest 1/2001 - Published April 2001

MAIB Safety Digest 2/2001 - Published August 2001

MAIB Safety Digest 3/2001 - Published December 2001

Copies of the Safety Digest publication can be obtained, free of charge, on application to the Marine Accident Investigation Branch (Mrs J Blackbourn (023 8039 5509)).

Glossary of abbreviations

DGPS	-	Differential Global Positioning System
EPIRB	-	Emergency Position Indicating Radio Beacon
GPS	-	Global Positioning System
GRP	-	Glass Reinforced Plastic
GT	-	Gross tons
kW	-	kilowatt
m	-	metre
"Mayday"	-	Spoken distress signal
MCA	-	Maritime and Coastguard Agency
MGN	-	Marine Guidance Notice
RSW	-	Refrigerated Sea Water
SFIA	-	Sea Fish Industry Authority
UTC	-	Universal Co-ordinated Time
VHF	-	Very High Frequency

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 3. Lone Skipper Trapped in Winch for Several Hours (*Adobe Acrobat 281Kb*)
 4. Low Freeboard Causes Two Fatalities (*Adobe Acrobat 311Kb*)
 5. Saturated Buoyancy Causes Dory to Capsize (*Adobe Acrobat 208Kb*)
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 14. Corrosion Causes a Serious Flooding Incident (*Adobe Acrobat 224Kb*)
 15. Container Ship and Fishing Vessel Meet in Fog! (*Adobe Acrobat 226Kb*)
 16. Another Lone Fisherman Tragically Lost Overboard (*Adobe Acrobat 223Kb*)
 17. Grounding in Restricted Visibility (*Adobe Acrobat 204Kb*)
 18. Vessel Sinks After Hitting Wreckage (*Adobe Acrobat 223Kb*)
 19. Man Overboard During Hauling Operation (*Adobe Acrobat 221Kb*)
 20. How to Handle a Flooding Incident (*Adobe Acrobat 210Kb*)
 21. Fishing Vessel Grounds While Leaving Harbour (*Adobe Acrobat 210Kb*)
 22. Use the Correct Caulking Compound (*Adobe Acrobat 218Kb*)
- Fishing Vessel Accident Statistics (*Adobe Acrobat 544Kb*)

Chart - Major Accident Locations (*Adobe Acrobat 256Kb*)

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