

# Marine Accident Investigation Branch (MAIB) - Safety Digest - Fishing 2001

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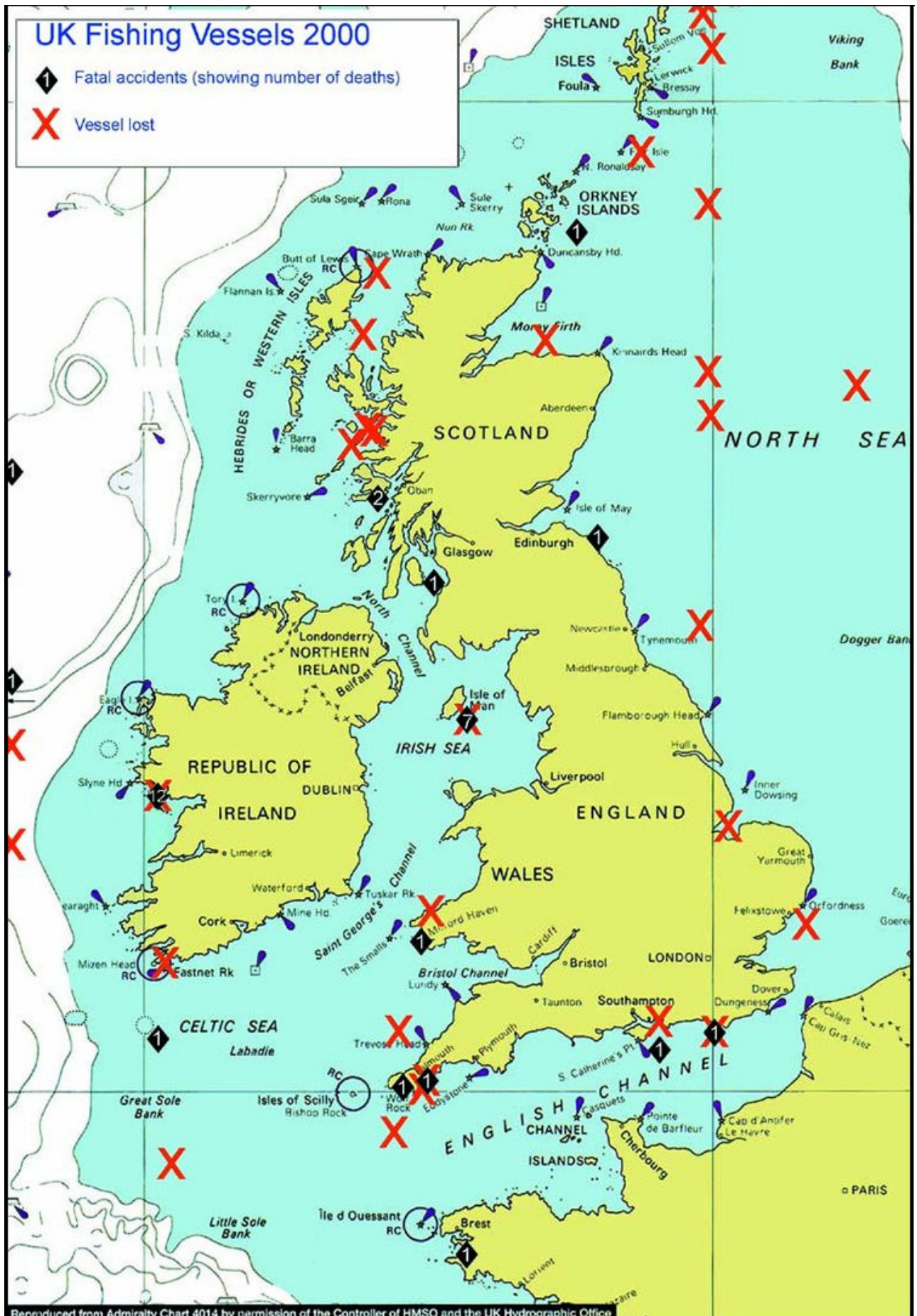
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# UK Fishing Vessels 2000

◆ Fatal accidents (showing number of deaths)

✗ Vessel lost



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## **Introduction**

Accidents hurt. They are an unwelcome component in the often tough business of fishing.

At one end of the spectrum they are inconvenient. Damage needs to be repaired or equipment has to be replaced. Additional costs are involved, and it might be necessary to spend extra time in harbour instead of being at sea fishing. Injuries cause pain to individuals, or constrain their ability to work in some way.

The more serious accidents can have a major effect on earning power, or leave people seriously injured and even unable to work. They not only hurt, but also can be very costly.

When a vessel sinks with loss of life, the effect on families, communities and the entire industry can be devastating.

Attitudes to safety and the prevention of accidents vary. Some people are confident in their ability to go about their business without worrying unduly; the accident will not happen to them. Others recognise that accidents are possible, but are prepared to take risks. And a growing number realise that nearly every accident is preventable, and are taking steps to do all they possibly can to prevent them happening in the first place.

It is probably fair to say, however, that most fishermen are at least aware that accidents can occur, but do not necessarily have safety foremost in their mind while carrying out the often repetitious process of catching and handling fish in a wet and constantly moving environment. It will come as no surprise to them that fishing is currently the most dangerous industrial occupation of any in the United Kingdom.

Preventing accidents is not the most exciting activity. To some it conjures up images of expensive equipment to satisfy some new regulation that has either no practical value whatsoever, or gets in the way of catching fish. To others who adopt the traditionally fatalistic approach it is irrelevant; if it is going to happen, it is going to happen. These stereotyped images of attitudes to safety are unhelpful, and belie the very great concern that many do have about the awful, and ongoing, record of fishing vessel accidents that occur every year without any real sign of improvement.

The MAIBs task is straightforward: to investigate a number of accidents to bring home the lessons to others so they can learn from them. It does not prosecute, apportion blame or point the accusing finger at anyone. It does not pretend to know everything about the industry, despite having a fishing vessel skipper on its staff, and a steady accumulation of experience in determining the causes of so many accidents. But the Branch does have a unique insight into how counter productive some attitudes to improving safety are, and shares with many fishermen the view that much can, and should, be done to improve things.

We often talk about the need for the industry to improve the safety culture. This attracts mixed responses, from unqualified agreement to total scorn. In the end it doesn't really matter what the MAIB says, thinks or does; it is how the fisherman himself reacts, or more importantly, what his family thinks. MAIB inspectors spend much of their time talking to the next of kin and families of accident victims, and see at first hand the distress, anguish, and misery that accidents cause. The sadness, uncertainty and loss created is incentive enough to try, and try again, to persuade those

who go fishing that even if they are relaxed about the risks involved, there are others at home who would be completely devastated if they were to find out that whatever caused the accident could have been very easily prevented had greater care been exercised.

This *Safety Digest* repeats a formula adopted a year ago, to bring together a number of lessons from past accident investigations so that others can benefit from them. They are designed to attract the interest of those who go fishing, to provoke discussion, to get people thinking about safety. If it manages to persuade people to check that the liferaft HRUs are correctly rigged, or to make sure the automatic bilge pump is working properly, in addition to learning from the many other lessons, then the exercise will have been worthwhile.

A safety culture is strangely elusive to many fishermen. The reasons are complex, not least of which is that it is one of the oldest occupations in existence, and life at sea is often dictated by the most powerful and unforgiving environment known to man, the weather.

Fishing is one of the harshest and most difficult of all industries. Politics, bureaucracy, diminishing stocks, quota reductions, unstable prices conservation measures, competition, escalating fuel costs, real money difficulties and the practical difficulties of catching fish all vie with each other to complicate the life of people who argue that all they seek is a fair return for their endeavours.

Some fishing vessels are well run, with conscientious and successful skippers. They rarely have accidents. Others are less fortunate, and those operating them may argue that to stay in business they have to push their luck with the weather, or say they cannot afford to carry out essential maintenance. Others will cut corners to catch more fish in the easiest possible way, and ignore accepted safe practices to achieve this. They also wish to carry out their business with as little interference as possible from others who, they will argue, know little about what it means to be out there in all weathers, carrying out an extremely repetitive job with precious few rewards.

Many will argue that more money is the answer, and pin their hopes on this being provided. Others believe the solution lies in more effective enforcement of the rules. Better training would undoubtedly reap benefits. Any of these solutions would make a contribution to reducing the number of accidents, but the danger is that while everyone argues about the merits of one solution over another, and accusations fly in every direction as people take sides, the tragic reality is that the accidents continue. The year 2000 was one of the worst years for the number of fatal accidents. The MAIB does not pretend to have all the solutions, but strongly believes there is a need to improve the safety culture. Much of the stimulus for this approach comes from the industry itself, from the individual fishermen who write to us in confidence, and the growing body of people within a handful of fishing communities who are working so hard to change attitudes.

A safety culture involves everyone. Officials, the fishing press, local communities, owners, skippers, mates, the crews and, most especially, the families. It is the families who suffer most when things go wrong and, when all is said and done, they are the ones who have to pick up the pieces when everyone else has gone back to work.

A safety culture requires a basic understanding of what is meant by preventing accidents. It not only means having properly designed and built vessels, but ones that are operated safely within the designed limits. A soundly-built vessel should be able to withstand all that the sea can throw at it. But as a study of some of the articles in this, and other *Safety Digests* will show, there are too many fishermen who still do not realise how easy it is to make a vessel unstable. There is too much evidence to show that some do not understand that by adding permanent top weight without

professional advice, or who leave weather tight hatches and doors open at sea, are running real risks of capsizing and sinking rapidly. Others appear to have no concept of the very real dangers that exist by having just a few inches of water sloshing around in the fish hold: free surface effect can cause a very serious accident. And any of these situations can be aggravated if those who go to sea do so in the knowledge that the automatic bilge alarm doesn't work.

It can be very easy to blame the MAIB for these shortcomings, to claim that its team of inspectors does not understand the business of fishing, or that the examples given are not representative of what really happens. But whatever people might say, the MAIB sees an abundance of evidence to show that all these things are happening. We don't have a magic wand to cure all that is wrong, but we can hope that by hearing about what happens whenever there is an accident, others will learn from it, and take whatever measures are necessary to stop it happening again.

A safety culture involves having an instinctive feel about what to do if, despite all the precautions, things go wrong. It is well known that when trouble strikes, there is rarely time to take stock of what needs to be done. In times of crisis, or in an emergency, people will often revert to their original training. When no such training has been undertaken, or if no previous thought had been given to how a particular situation might be handled, the average person will revert to instinct or self-preservation. If for instance flooding occurs, will those on board know how to deal with it using the available resources? If fire breaks will they know how to prevent it spreading further and fight it?

A safety culture means knowing what to do when faced with the ultimate consequence of an accident, survival. It means knowing how to ensure a liferaft is capable of being used. It means wearing a lifejacket whenever working in an exposed position or working alone. It means having an EPIRB that is properly registered and capable of floating free. It means having immersion suits on board, and knowing how to put them on.

It means thinking safety today, tomorrow and the day after.

Safety can be improved by a number of means. Fishermen are confronted by them daily: new regulations, calls for more safety equipment, better training and by formal safety assessments. Each has a part to play. But the cheapest, the most effective, and ultimately the most successful, is a change in attitude to safety and the adoption of a positive safety culture. Many fishermen tell us they do this already. The evidence shows that many do not.

This *Safety Digest* does nothing more than draw fishermen's attention to what has gone wrong at sea with the hope that it gets them thinking, talking and, ultimately, doing something to reduce the number of accidents and improve safety.

John Lang  
Chief Inspector of Marine Accidents

## Case 1. Fires Love Open Doors

### Narrative

*Be Ready*, a 24m fishing vessel operating out of Scalloway, Shetland, left port on Monday 17 January 2000 with a crew of four for the fishing grounds 60 miles west of Shetlands. She returned briefly on Thursday, to embark a new set of trawl boards and an additional deckhand, before returning to the same area and re-start trawling.

At about 0215 on Saturday morning, the vessel was slowly trawling in a southerly direction, when the mate, who was on watch, discovered a fire in the galley. The skipper and crew were called and gathered in the wheelhouse, passing the galley on their way. With the galley door secured in the open position, all saw the fire but nobody attempted to shut the door. A short abortive attempt was made to fight the fire but, by this time, the accommodation itself was starting to burn. The skipper called the coastguard on the VHF to tell them of the fire, but lost direct contact. He attempted to stop the main engine, but the controls failed to respond. Kirkwall lifeboat was launched and a rescue helicopter was airborne at 0219. Using a "Mayday" relay, local contact was made with fishing vessels in the area and contact re-established with the casualty.

*Be Ready's* crew, having realised that the fire was beyond their control, launched both liferafts. With the vessel still going ahead slowly, both liferafts became entangled with the trawl wires aft, and were lost. Lifejackets had to be retrieved from the accommodation using the emergency escape hatch. The crew of five then moved forward and waited for the rescue vessels, maintaining contact via a hand-held VHF set. Weather conditions were force 8, rough seas with wintry showers.

The fishing vessel *Mizpah* was first on scene, followed by the helicopter. The helicopter tried twice to get a Hi-line aboard, but conditions were too bad. *Mizpah* then made two close passes, bow to bow, managing on the second attempt to pass a line connected to a liferaft to the casualty. Once the liferaft was alongside the bow, the crew entered the liferaft using a rope ladder over the starboard side. With all five aboard, they moved away from the burning vessel and were then lifted into the helicopter and taken to Lerwick hospital for a check up. Apart from minor burns and bruises, there were no injuries.

The galley fire is thought to have started due to a combination of a hot heating element on the cooker and items of clothing/drying cloths above or close to the hot plate. Once alight, and fanned by a strong draught from an open window on the starboard side shelter deck, and an open door on the port side, the fire rapidly gained strength and entered the accommodation.

After the fire had burnt itself out, *Be Ready* was towed to Lerwick for repair and/or re-sale.





## The Lessons

1. When nobody is in the galley ALWAYS close and KEEP CLOSED the galley door. If a fire breaks out, this not only contains the fire within a protected space, but it also gives the crew valuable time to organise what course of action should be taken. Never tie or secure a fire door in the permanently open position. By doing so, you encourage the fire to spread, and then it can become too dangerous to risk closing the door.
2. Always turn off all hotplate elements and cookers after use. Never leave them on in an unattended galley. Leaving them on may save a few minutes in getting up to working temperature but it can also be the cause of a fire, or a bad burn as a result from a moments inattention by a fellow crew member.
3. Never leave drying cloths or clothes over, or close to, hotplate elements which are switched on.
4. In all cases of fire close all sources of ventilation to slow its progress SHUT all doors and windows to the space.
5. Once a fire such as this is found, the main engine throttles should be pulled back immediately to reduce the wind effect from forward ship movement on the fire.
6. The installation of a smoke or heat detector in the galley area would have detected this fire before it became well established, and allowed it to be tackled using the vessels fire extinguishers.



## **Case 2. Explosion aboard Fishing Vessel causes Injury**

### **Narrative**

An explosion occurred in the 24m long stern trawler *Egalite* during repair work to insulation in the fish room. One of the crew suffered burns to his face and right hand.

The repair work involved applying expanding foam from an aerosol can. The crew had not appreciated that the gases from an aerosol can be inflammable and will slowly build up in a confined space. It then only needs a spark to ignite it and cause an explosion. This occurred when a cigarette lighter fell from someones pocket as the owner bent down to pick up a can. Without warning the gases ignited and the explosion occurred.

### **The Lessons**

1. Ensure good ventilation of spaces where spray application maintenance work is being carried out.
2. In circumstances where danger of explosion might occur, all potential sources of ignition should be removed. Any aerosol can which contains a flammable warning on the label (a black flame on a yellow/orange background) being used in a confined space, is a potential hazard.
3. A conscious appraisal should be made of what constitutes a possible source of ignition. Some are obvious, such as smoking, an open flame, or hot spots in a machinery space. Others are less so: matches, an electrical switch being made, or a cigarette lighter that falls out of someones pocket.

## **Case 3. Liferaft - a Godsend, after Small Fishing Vessel Sinks**

### **Narrative**

*Sea Plough*, an 8m single-handed fishing vessel left Southwold Harbour early in the morning. She arrived on the fishing grounds 25 miles east of Felixstowe about 2 hours later, and began hauling her long lines, having shot them earlier that day.

The skipper continued hauling throughout the day until late afternoon, when he had to suspend the operation due to the strength of the tidal stream. Everything had gone as normal and the skipper had no reason for concern.

When the tide began to ease, the skipper started to haul his lines again. Half-an-hour later and while still hauling, he noticed the bow was unusually low in the water.

He stopped hauling immediately. On seeing water on the fore deck around the hold hatch he inspected the engine space, where he found water flooding aft through the non-watertight bulkhead. This water was level with the engine sump. Although the electrical bilge pump was running, it could not cope with the quantity of floodwater.

The skipper called for assistance, then used a bucket to bail out water. It soon became apparent that his efforts were having no effect, and that his vessel was sinking. He then shut down the engine, closed both seacocks, and went to the wheelhouse. Using the VHF radio he notified other vessels in the area that he was abandoning the vessel.

Back on deck, he just had sufficient time to throw the liferaft overboard, heave on the secured painter and board the liferaft before *Sea Plough* sank.

A relatively short time afterwards he was rescued by one of several other vessels in the area. He eventually transferred to another Southwold fishing vessel and was taken ashore.

### **The Lessons**

1. By spotting something was seriously amiss (the vessel was well down by the bow), the skipper had just enough time to take appropriate action before it was too late.
2. The cause of the flooding is unknown, but it happened very rapidly. The lack of a bilge alarm, insufficient bilge pumping capacity, and the absence of a watertight bulkhead between the forward hold and the engine room were contributory factors to the rapid flooding and the loss of the vessel. Had these safety measures been in place, *Sea Plough*, might well still be afloat.
3. Statistics clearly show that liferafts save lives. As an under 12m registered fishing vessel, *Sea Plough*, was not required by law to carry a liferaft. Despite this, the MCA strongly recommends that they do. In this instance the skipper may well owe his life to the fact that one was carried and was rigged correctly.
4. Liferafts of the type *Sea Plough*, was carrying, a four man raft contained in a portable valise or container, can be hired from several manufacturers and agents throughout the country for a small annual charge. It is a small price to pay for saving a life. Your life.



## **Case 4. Wear and Tear!**

### **Narrative 1**

*Girl Irene II*, a 9.81m vessel, was fishing in the North Sea off Coquet Island, when the skipper found she was not responding to the helm. On investigating, he found the hydraulic rams controlling the movement of the rudder had failed. Wear on the oil seals had developed to such an extent that they were no longer effective, and all the oil in the cylinder had spilled out. With no means of steering, he called the coastguard, and the Amble lifeboat was launched to tow the vessel back to harbour.

The repairs consisted of overhauling the hydraulic ram, fitting new seals and re-charging the system.

### **Narrative 2**

*Fin-Ar-Bed*, a 13.98m fishing vessel with a five-man crew, was off Troon harbour entrance when she suffered gearbox trouble. The coastguard was told at 0542, and arranged for the Troon lifeboat to be launched to tow the vessel into harbour. In the meantime the skipper attempted to anchor to prevent his vessel drifting ashore. The lifeboat arrived within 15 minutes and took the fishing vessel in tow. Within 50 minutes of informing the coastguard *Fin-Ar-Bed* was back in Troon.

The cause of the failure was a worn out gearbox oil pump. Repairs consisted of fitting a new oil pump.

### **Narrative 3**

The 23.76m vessel *Arkh-Angell* with a six-man crew, was fishing off the Shetland Islands, when she suffered an engine breakdown at 1714. On investigating the engine failure, the crew found that the fuel pump was no longer working. The flexible coupling linking the engine drive shaft to the fuel pump had collapsed as a result of the coupling plates being worn out. With no engine, the skipper called the coastguard and the Lerwick lifeboat was launched to effect a tow. At 0112 the following morning, both vessels arrived safely back in Lerwick.

Repairs consisted of fitting new coupling plates to the fuel pump drive.

### **The Lessons**

1. Fortunately, the weather was good in all three cases, allowing the vessels to be towed safely back to harbour. The lesson here is that if qualified and experienced personnel had followed good maintenance practices, with regular inspection of the machinery, all three of these breakdowns could have been avoided.
2. Not only was the RNLI involved in three avoidable accidents, but each crew lost money by suffering a breakdown. Repair and replacement costs will be the same whether done now or next week, but by next week the weather may have turned ugly, and the outcome may well be very different.
3. DO maintain your machinery regularly and USE qualified and experienced people.



## **Case 5. Fishing Vessel Grounds due to Over-Reliance on the use of Navigational Aids**

### **Narrative**

The 16.25m long fishing vessel *Rachel Harvey*, was approaching the eastern end of St Marys Sound, Isles of Scilly when she grounded in poor weather. It was dark and a south-westerly force 7 was causing moderate to rough seas. She had six people on board.

The sole watchkeeper was navigating using a track control system. The system interfaced a Global Positioning System (GPS) navigator with the autopilot and enabled it to steer so as to maintain the vessel on a selected track. The skipper had set the system up to steer to a waypoint at the eastern end of St Marys Sound.

The video plotter was not being used for navigation, and neither the intended track, nor the vessels position, were plotted on the chart. The watchkeeper, who did not understand how the interface between the GPS and autopilot functioned, tried to alter course using the autopilots course-setting knob while the interface was connected.

The vessel grounded on Peninnis Head and foundered within two to three minutes. One of the crew lost his life.

Due to a lack of substantive evidence, it is impossible to come to a firm conclusion on the reasons why use of the track control system failed to ensure the vessel remained in safe water. However, irrespective of the reason why she did not track as planned, the fact that the position of the vessel was not closely monitored, by plotting on the chart or by use of the video plotter, meant that the fault went undiscovered. This fundamental shortfall in basic navigation was the principal reason why she ran aground.

### **The Lessons**

1. Skippers must ensure that all watchkeepers are fully aware of how wheelhouse electronic equipment functions. If the equipment is too complicated for a watchkeeper to understand, it should not be used.
2. Skippers must ensure that all watchkeepers know how to switch from automatic to manual steering, and how best to alter course if necessary.
3. The watchkeeper must always monitor the progress of the vessel along a required track, and be ready to correct the course to maintain the track.
4. Skippers and watchkeepers must never rely totally on one piece of navigational equipment alone.
5. Do not use track control equipment in confined waters where a fault with the equipment, if undetected, could very quickly result in a collision or grounding.
6. All watchkeepers should be aware of fundamental navigational techniques and be able to plot the vessels position on a chart.



## **Case 6. Fishing Vessel Grounds after Skipper Falls Asleep**

### **Narrative**

After 4 days of none too successful fishing around wrecks, a steel-hulled 15m gill netter was returning to harbour ahead of schedule. The sea was calm with a slight swell, and visibility was poor, due to mist. The vessel was steaming at reduced speed with the skipper alone on watch.

About 3 miles from the harbour entrance, the skipper sat down and promptly fell asleep. The next thing he remembered was being woken when his vessel ran aground. By the time he realised what had happened, the rest of the crew had arrived in the wheelhouse. The engine was put astern and she came free of the ground. The crew, meanwhile, had donned lifejackets and were preparing the liferaft. Two went forward and found that the fish hold was flooding. Pumping had little effect, and the skipper decided to make for shallower water so that he could beach his vessel before she foundered. An RNLI lifeboat transferred salvage pumps to her, and these successfully contained the flooding sufficiently for her to make harbour. Since the accident, the skipper has fitted a new autopilot with a watch alarm. It sounds both in the wheelhouse and in the cabin. He has also equipped the vessel with two more salvage pumps, and has taken on additional crew to reduce work loads and increase rest periods.

### **The Lessons**

1. There can be few skippers who do not relate to at least part of this narrative. During the two days before the accident, the skipper had slept for no more than a total of 5 hours. Some people think they can manage on this and still remain alert. But you cant. Your senses are dulled, rational thought becomes elusive, and you make mistakes. To deprive yourself of so much sleep invites trouble. It might only take seconds to fall asleep, and in so doing you betray the trust of those others onboard who look to having an alert watchkeeper to ensure a safe passage home. Fatigue is one of the greatest enemies of safe fishing.
2. This skipper has learned from his experience. He has recognised the need for adequate rest periods, and has fitted a watch alarm, which sounds not only in the wheelhouse, but also just as importantly, in the cabin. Other skippers should heed the lessons, and take appropriate action before they too take the ground or, worse still, hit another vessel.
3. There is however a cautionary note to sound. Fitting watch alarms only goes part way to solving a problem. It does nothing to relieve fatigue. The MAIB has several instances on record where very tired fishermen have slept through even the loudest and most ear-piercing alarms. Fatigue can kill. Make sure the operating cycle allows time for adequate rest.

## Case 7. Loss of Fisherman Results in Lifejacket Campaign

### Narrative

*Harbour Lights*, a 7.2m long vessel, was gill netting off the south coast of Cornwall late one afternoon in January. The wind was force 4. The sea was moderate with a slight swell, and visibility was good.

The experienced young skipper was operating the vessel on his own and, while deploying the last net, he appears to have fallen overboard. The vessel, steered by autopilot, continued on its way until it hit rocks and broke up just east of Polperro.

An extensive search operation began shortly after *Harbour Lights*, became overdue. While flotsam and wreckage from the vessel was recovered, the skipper's body has never been found.

Like many single-handed operators, the skipper did not normally wear a lifejacket. Had he done so, his chances of survival would have increased substantially through being so close to the shore. The non-wearing of lifejackets is a persistent feature when analysing the reasons why so many fishermen are lost at sea. This tragic accident spurred the harbourmaster of Polperro, and the skipper's father, to organise a lifejacket campaign in the area. It was so successful that the local chandler sold out of lifejackets.



### The Lessons

The attitude to lifejackets adopted by the fishermen of Polperro and the surrounding area should be followed throughout the country. Comfortable and compact lifejackets, suitable for constant wearing are readily available, and cost only £50-£100. A cheap price to pay to save your life, and prevent the heartbreak of your family. Fishing communities should accept that wearing lifejackets is necessary, without being reminded of it by a tragic accident.

If you still have complaints about a lifejacket's suitability for use in a fishing vessel, draw the problems to the attention of the manufacturers. They will be only too pleased to listen to you.



## Case 8. Deckhand Struck by Port Fishing Gear

### Narrative

The twin beam scalloper *Geeske* was fishing in the English Channel in moderate weather conditions early one winters morning. During the final haul, a deckhand was struck by the port fishing gear as it was dropped on to the deck. He was badly injured, and despite valiant efforts by the crew to save him, he subsequently died. Three crew were involved, led by the mate in the wheelhouse who was in charge of the winch controls. Two deckhands were tending the fishing gear.

The skippers instructions for hauling operations were not being followed. When the port gear was hauled inboard, one deckhand should have been on the starboard whipping drum, hauling the pulling-in rope for the port gear. The other deckhand should have been in a protected position under the whaleback, where he could see the entire dropping zone for the port gear.

The starboard gear had just been brought inboard, and the winch operator thought that the deckhand had finished using the port whipping drum, and was stowing the pulling-in rope for the starboard gear in front of the wheelhouse, which is just inboard from the dropping zone of the port gear. The winch operator did not wait for the deckhand to move to the protected position under the whaleback. The port gear was dropped, but instead of the deckhand being just clear of the gear, he was under it.

In mitigation, the view from the wheelhouse was poor, especially for the mate who was quite short. An upturned fish box was fitted as a standing platform for the winch operator, but even with this aid the aft parts of the dropping zones could not be seen.



### The Lessons

1. For dangerous operations, it is essential that the proper procedures are followed. If the hauling inboard had been conducted correctly, the winch operator would have been able to see that both

deckhands were clear before the port gear was dropped. One would have been in a protected position under the whaleback, and the other would have been standing just forward of the whipping drum on the starboard side.

2. To reinforce the proper procedure, a professional safety audit is to be carried out on the hauling operation, which will lead to the production of a set of written instructions for this dangerous exercise.

3. The accident would almost certainly not have happened if the winch operator had been able to see the whole of the dropping zone. Mirrors have now been installed to achieve this; owners of similar vessels have used closed circuit television for the same purpose. Also, a permanent standing platform has been built instead of the fish box.

4. Provision of a formal set of safety instructions for the hauling operation, and clear vision of the whole of the dropping zone on both sides by the winch operator, should prevent a similar accident in the future.

## Case 9. Expect the Unexpected

### Narrative

Two fishing vessels, *Marabelle* and *Ripple* were returning to their home port of Stornoway. It was dark, and the weather was calm with good visibility.

On the approach to *Stornoway* Harbour, *Ripple* overtook *Marabelle* and, after entering the harbour about 30 minutes later, stopped to dump a large boulder she had picked up in the trawl earlier in the day. She was displaying her steaming lights, and her deck lights were also on. The skipper and his crewman saw *Marabelle* entering the harbour behind them. The skipper interpreted from the course of *Marabelle* that a collision would not occur, and he assumed she would keep out of the way. During the dumping operation the skipper and his crewman stood under the shelter deck to protect themselves. When they looked back at *Marabelle*, she was almost on top of them. There was no time to take avoiding action, and a collision followed.

On entering the harbour, *Marabelle* skipper checked his radar display, which showed some clutter. He noticed a green light ahead, and opened the starboard wheelhouse window to get a better view. Realising the green light was a starboard sidelight, he turned the wheel hard to starboard and reduced speed in an attempt to avoid a collision. He was too late.

### The Lessons

1. All vessels must maintain a proper lookout at all times. Neither vessel was keeping a proper lookout immediately before the accident.

Contributory factors were:

- the perceived need to dump the boulder in the harbour;
- the unexpected presence of *Ripple* immediately ahead of *Marabelle*, having been overtaken by her on the approach to Stornoway; and
- the possible presence of background light on the shore which may have impaired the detection of *Ripples* lights until the last moment.

2. It should *never* be assumed that an approaching vessel is keeping a proper lookout and will keep out of the way. To increase the chance of detection, it would have been wise for *Ripples* skipper to have given a visual or audible warning.

3. Too many accidents are caused by someone assuming another vessel is going to do something. Never assume anything. Watch the other man like a hawk.

## Case 10. Beamer Capsizes

### Narrative

At 1630 on 11 November 1997, the 21.54m twin beam trawler *Margaretha Maria*, left her home port of Newlyn with a crew of four and headed for fishing grounds in the western approaches to the English Channel. Apart from a telephone call that evening, there was no further contact with the vessel.

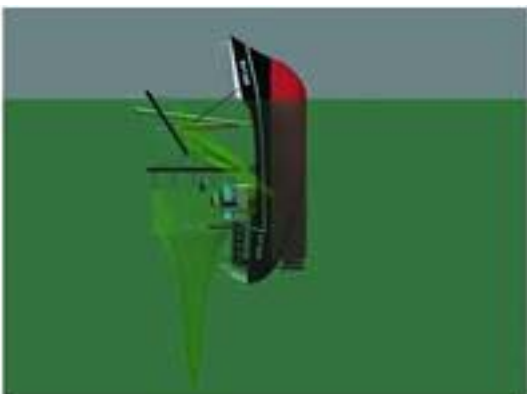
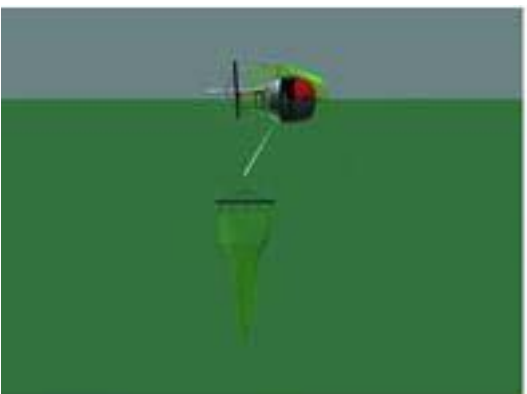
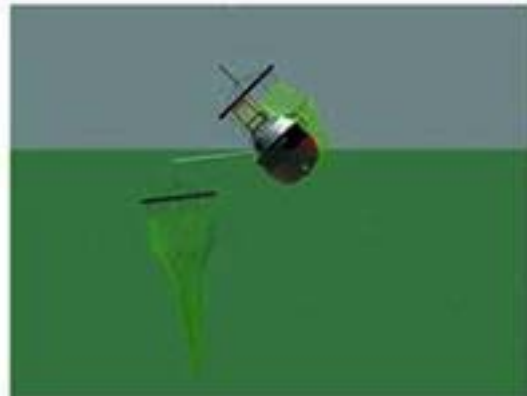
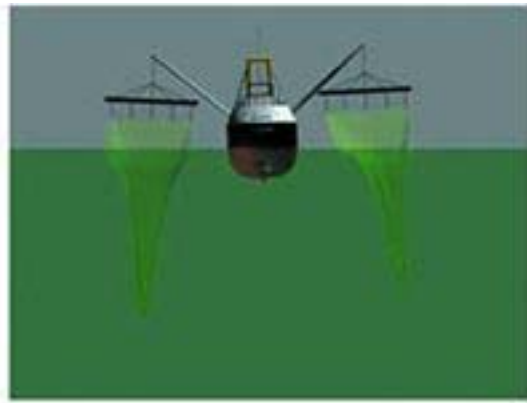
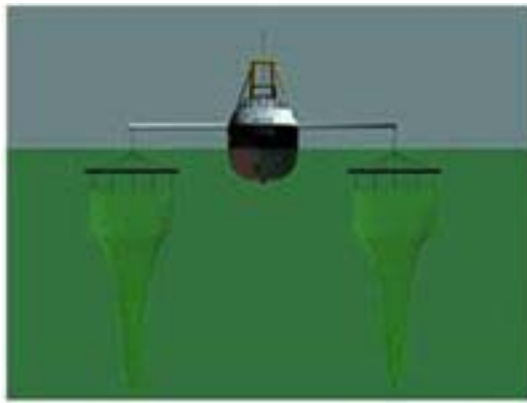
Several days later, concern for the vessel began to develop when the owners were unable to contact her. The coastguard made its own unsuccessful efforts to contact the vessel, as did the French authorities. The incident was raised to a "Mayday" and a full-scale search and rescue operation began. Aircraft and surface vessels covered over 2500 square miles of the western channel. No signs of *Margaretha Maria* and her crew were found, and the search was called off after two days.

The skipper's body was recovered in the Western Channel during February 1998. Sonar searches of the area by Royal Navy vessels located and identified the wreck of *Margaretha Maria* in 120m of water.

The wreck was surveyed using remotely operated vehicles (ROVs). She was found with her derricks partly topped, her beams at the derrick ends, and a large quantity of shells and sand in the cod end of one net. The other cod end was badly damaged. It was concluded that she had hauled her nets to the surface with a large amount of sand and shells in each cod end. Both derricks were then topped, but the unusually large weights in her nets, acting on the derrick ends, seriously reduced her stability. In this state she was unable to resist even small heeling forces and she rolled to port, was unable to recover due to lack of stability, and sank by the stern.

As she went down by the stern, her liferafts, which had been stowed on the aft shelter, floated free. Unfortunately they floated forward and became fouled on the derricks and netting, resulting in neither being able to float to the surface. The emergency position indicating radio beacon (EPIRB) probably suffered a similar fate, because it too had been stowed on the shelter, quite close to the liferafts.







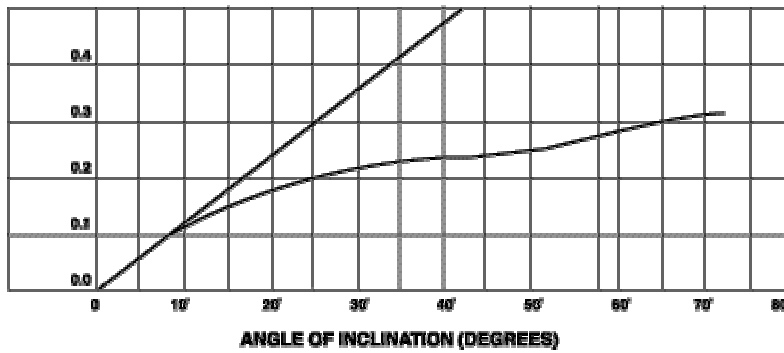
## The Lessons

1. Skippers and crews will know that it is more difficult to accurately assess the weight of any debris while the gear is still on the bottom. This is particularly so if the winchs capacity is large. With little idea of the weights in the nets, it is impossible to assess the effect on the vessels stability of bringing gear to the surface, and handling these weights at the derricks heads.
2. During the MAIBs investigation, the stability of *Margaretha Maria* was examined under various conditions. Some of these were operational conditions, which occur daily on most twin beam trawlers, but are not required to be considered when assessing stability for a UKFV survey. In particular, the condition where the weights of both sets of gear are suspended from topped derricks, but with empty nets, caused some concern. The effect on her stability was marked and, although beam trawlers are required to have 20% greater stability than other fishing vessels, her stability in this condition was significantly less than that required of any fishing vessel over 12m long. Thus, more than the mandatory 20% stability margin was lost due to the effects of normal topping of derricks and gear, without any additional weight of sand and shells in the nets.
3. Fishermen are well aware of the effect of hanging weights from derrick ends. However, fishing vessels do not usually have stability data on board which attempts to place any figures on just how much stability is affected by this type of operation. The following diagrams illustrate the size of this effect on *Margaretha Maria*.

Other beam trawlers might be affected to a similar degree, depending on the weight of their gear and geometry of their derricks. The MAIB has therefore recommended that the Maritime and Coastguard Agency (MCA) makes a study of this effect on operational beam trawlers, with a view to amending stability requirements of this type of vessel.

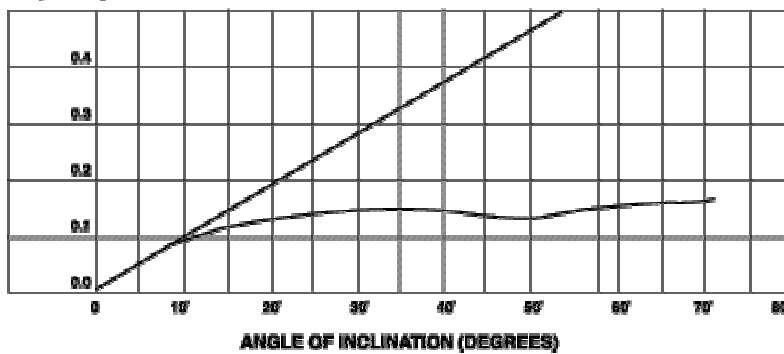


GZ (metres)



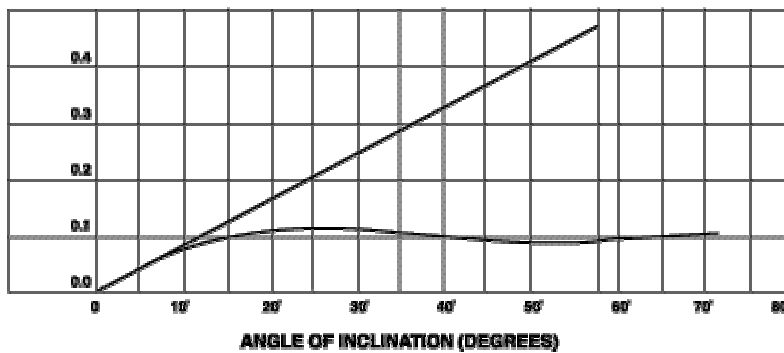
Curve (1) is with derricks horizontal and with weight of beams at their ends. Vessel complied with all stability criteria for twin beam trawlers.

GZ (metres)



Curve (2) is with derricks 30° above the horizontal with weight of beams at their ends. Vessel did not satisfy four of the six criteria for twin beam trawlers, or the lesser standards of non-beam trawlers.

GZ (metres)



Curve (3) is with derricks 45° above the horizontal with weight of beams at their ends. Vessel did not satisfy four of the six criteria for twin beam trawlers, or the lesser standards of non-beam trawlers.

## **Case 11. Know How Much Catch you can Load on your Vessel**

### **Narrative**

*Fraoch Ban*, a 15.12m long vessel, was fishing for sand eels to the east of the Shetland Islands in August. The trip had started in the morning and the fishing was good. Throughout the day the catch was loaded into the fish hold in bulk where pound boards had been arranged to reduce free surface. Most of these were, however, ineffective because gaps between the lowest boards and the deck allowed the catch to spread freely throughout the hold.

The certificated skipper had undertaken some stability training. He had also looked briefly at the stability book when he purchased the vessel three years previously, but was unable to make much sense of it. It showed that the bulk stowage of fish in the fish hold was not approved, and that such catches should be loaded into fish boxes.

The day passed, the weather was calm and by early evening the hold was just over half full with about 25 tonnes of sand eels. Another haul was made and a further 1 tonne of eels was released into the hold. No sooner had this been done than the vessel began listing to port. Within about 5 minutes she had capsized and, shortly after this, she foundered. There was just enough time for the skipper to radio for assistance.

The cause of the loss was the erosion of *Fraoch Bans* stability by the free surface effect of the catch, with enough of it sliding to one side to capsize her.

The crew managed to release the liferaft manually, but their problems were by no means over. Because the painter had not been secured to a strong point at the inboard end, the liferaft started to drift away and the crew were forced to swim to it. In doing so, one man became unconscious and had to be pulled to the liferaft, where he was hauled onboard by his colleagues and successfully resuscitated.

The survivors were eventually rescued by another fishing vessel and transferred to the Lerwick lifeboat. The man who had passed out was airlifted to hospital by a coastguard helicopter.

### **The Lessons**

1. Among the several documents provided with a vessel of this size, the Stability Book is crucial, and must be carefully read. It provides important information on loading and weight distribution and, if ignored, could lead to the vessel foundering with loss of life.
2. If, for any reason, the skipper has difficulty in understanding the Stability Book, he should seek advice. To disregard its contents could well lead to disaster.
3. The liferaft saved the lives of the crew, but it was a close run thing. Failing to ensure the painter was correctly rigged was very nearly an oversight too many. To be effective, liferafts must be stowed and secured correctly, and every fisherman should be capable of looking at a liferaft and knowing instinctively whether it is or not. If not it will be useless when needed most.
4. The only way to appreciate the mechanics of a liferaft securing arrangement is to spend time consciously looking at the HRU, either with the instructions to hand or, better still, by getting someone to explain it to you.

Although manufacturers of HRUs provide diagrams that show correct installation, the MAIB is aware that many people have difficulty following them. Some may be unaware that the MCA produces a useful guidance note on the subject. An extract is reproduced here. Read it.

## **Case 12. Fatal Crushing of Fisherman in Power Block**

### **Narrative**

A 52m purse seiner, operated by a crew of eleven, was in the process of hauling her net on board. The net was being passed through the three powered rollers of a triplex block, then on to a net chute, over two other power blocks, and into the net bin aft.

The triplex block was mounted over the starboard bulwark, and its controls were fitted to the outside of the wheelhouse structure. The distance between the rollers of the triplex block and its controls was about 3 metres. The mate was in charge of the triplex block, and the total operation was under the supervision of the skipper in the wheelhouse.

The mate was guiding the last section of the net into the triplex block and was heard to call out "stop the block". Before the hydraulic power supply to the block could be stopped from inside the wheelhouse, he was dragged between the first two rollers of the block and crushed. The bulk of his body, in addition to that of the net, brought the rollers to a halt.

Other crewmen reversed the blocks rollers and the mates body fell into the sea. Efforts to recover him failed.

The blocks rollers were allowed to run under power, with the mate guiding the net on to the rollers, but without anyone attending the controls of the block. At the time of this accident, a fisherman was on the forward deck performing a task, which was not essential to the net recovery operation. He could have been employed to stand by the blocks controls. Although several years previously the spare deckhand had been used for this purpose, recently it was less usual for him to do so. It is not clear why this operational procedure had been changed.

In his working position guiding the net into the block, the mate could not reach the blocks controls, or any stop button. Although the skipper was standing adjacent to the power shut-off push-button in the wheelhouse he, naturally, had tasks to occupy his mind in addition to monitoring the activities of the mate working the triplex block. In the instant between the skipper hearing the mate call "stop the block", and his being able to move to the push-button, the mate had already been pulled into the block.

Everyone on this vessel had been supplied with "Crewsaver" inflatable lifejackets. Inexplicably the mate had elected not to wear his on this occasion, and this certainly contributed to the difficulties that were experienced in attempting to recover his body.

### **The Lessons**

1. The vessel involved in this accident was very well equipped, and manned by a highly professional and well-qualified crew. In particular, the crew were noted as having an excellent attitude to safety related matters.

2. Clear and sensible advice is contained in Merchant Shipping Notice No M.1561 on the safe operation of deck machinery and fishing gear. In particular this notice advises fishermen not to leave capstan or winch controls unattended when hauling or shooting gear.

3. It must also be recognised that unless an emergency stop button is in reach of the person operating the machinery, it may be of little value.

4. If it is essential for crew to manhandle gear which is being controlled by a powered block or winch, another person *must* be standing by the machines controls ready to stop it. This second person should have no other duties to distract him.

## **Case 13. Three People Washed Overboard**

### **Narrative**

A 20m fishing vessel, with a skipper and three crew members on board, left port in the early morning bound for fishing grounds 18 miles away. By late afternoon they had made three hauls. The skipper decided not to shoot the net for a fourth time, but instead to return to harbour as the tide was about to turn and he wanted to avoid the steep seas that would be caused by the southerly wind against the southerly flowing flood tide.

During the passage back to port the vessel encountered moderate seas and a force 5 to 6 wind, and spray was taken frequently over the port quarter. The crew sorted the catch forward and then went to the after deck to mend nets and secure one of the otter boards. When they were about 4 miles from harbour, the vessel was hit by two unexpected high waves. The first wave washed one crew member across the after deck. Before the water could be freed from the deck, a second, steeper wave broke over the vessel and the three crew members were washed overboard.

The vessel had been slewed to port by the waves and was then head to wind. The skipper, who was in the wheelhouse and had not seen the accident, noticed one of the nets trailing astern and two men in the water. He was able to manoeuvre the vessel and drifted down towards the men. Meanwhile he alerted the coastguard, and another fishing vessel which was in the vicinity.

The vessel drifted down to the first man and a lifebuoy was thrown. He was floating unconscious, and although the skipper shouted to him, there was no response. The skipper realised there was nothing he could do for him, so turned his attention to the second man who was about 6 metres away. The second man was able to grasp another lifebuoy, which was thrown towards him. Then, as the vessel got closer to him, the man was able to hold on to the net, which was still trailing astern. The skipper, using the power block and crane, was able to lift him on board.

The other fishing vessel, rescue helicopters, cargo and warships were involved in a search for the other crew members, but they were not found.

Their bodies were later recovered by other fishing vessels.

### **The Lessons**

1. It is common sense to carry out non-essential deck work in protected waters, or harbour, when the sea condition is marginal. In this particular case, the vessel was returning to port, so the nets could have been mended there.
2. Had the crew been instructed to wear lifejackets while working on deck, their chances of survival when they went over the side would have increased substantially.
3. The owner and skippers of fishing vessels have a responsibility for the safety of their crew, which includes making sure they have attended all the safety courses. They should also carry out work place risk assessment, and introduce safety procedures once a risk has been identified.

## **Case 14. The Dangers of Standing on the Gunwale at Sea**

### **Narrative**

The incident happened in the North Sea in May. The weather at the time was fine with a north-westerly wind of about force 3, an air temperature of 13°C and a sea temperature of 8°C. It was daylight and the visibility was good.

The 15.63m registered length trawler, was on passage towards a port on the east coast of England. The skipper, who was in the cabin, was called by a crew member and told that a deckhand was missing and had probably fallen overboard. The skipper raced to the wheelhouse and turned the vessel. He estimated that they had only travelled 4.5 miles since the deckhand had last been seen on board. He notified the coastguard, and using information from the satellite navigator and video plotter began retracing the vessels track. On returning to the position at which the missing deckhand had last been seen, and not finding him, the skipper turned the vessel again and steered to make a second search track parallel to, and slightly to the north of, the one just searched. By this time an RAF rescue helicopter had reached the position and had begun its own search. Soon after starting on their second track, the skipper and crew of the trawler saw the deckhand in the water. The trawler was brought alongside, he was thrown a lifebuoy and subsequently airlifted to hospital by helicopter. The deckhand had been in the water for nearly an hour. He was cold but conscious and otherwise uninjured.

The deckhand had been standing on the gunwale washing the wheelhouse side. He was alone, and nobody else was aware of what he was doing. Unexpectedly the vessel rolled, causing him to overbalance and fall overboard. He was not using a safety harness.

Since the incident, the skipper has prohibited anyone from either standing on the gunwale while the vessel is at sea, or working out on deck unless someone else is aware of what he is doing and is looking out for his safety.

### **The Lessons**

1. Fishermen and Safety, a booklet issued free of charge by the Maritime and Coastguard Agency, contains the following advice, "Don't sit on the bulwark rails or walk along them". Had this advice been heeded, this accident could have been avoided.
2. Always wear a buoyancy aid when working on deck. If you do go over the side inadvertently, your chances of survival will be greatly enhanced with, rather than without, one. There are now many different types of constant wear buoyancy equipment (CWBE) on the market, and the majority of these are quite comfortable to work in. [\[\\*\]](#)
3. Although the basic rules of safety are well known, and are based on common sense, the over enthusiastic or inexperienced fisherman sometimes ignores them. In this case, the deckhand was very fortunate indeed not to lose his life.
4. The safety lessons introduced by the skipper, prohibiting others from standing on the gunwales at sea, or working on deck unless a lookout is available, should prevent a similar accident in the future.



[\*] More information on the use, and types, of constant wear buoyancy equipment (CWBE) can be found in *Marine Guidance Notice MGN 155 (F), entitled Buoyancy Equipment for Fishermen at Work*, published by the Maritime and Coastguard Agency.

## Case 15. Wheelhouse Exhaust Fires!

### Narrative 1

*Stephanie*, an 11.9m fishing vessel, was bottom trawling 5 miles off the north Devon coast when her crew of three smelled smoke in the wheelhouse. At about the same time, the smoke alarm sounded. The crew checked the galley but found nothing, so opened the deck hatch to look into the engine room. They found it full of smoke and the deckhead on fire.

With the vessel anchored to the seabed by her trawl, the crew fought the fire using the engine room fixed Halon system, together with hand foam and CO<sub>2</sub> extinguishers. The coastguard, who had been alerted to the fire by the skipper, sent a helicopter, a lifeboat and the MOD salvage vessel *Salmaster* to the scene.

By the time *Salmaster* arrived, the fire appeared to be out, but a team wearing breathing apparatus was nevertheless sent aboard to confirm this. The crew then entered the engine room and re-started the systems. The trawl was recovered, and she made her way safely and slowly back to port. The damage consisted of burnt wood facing panels, wiring and electrical fittings, together with the effects of smoke.

The cause of the fire was never properly identified, but it is possible that diesel oil leaks from the injector fuel system had soaked the lagging on the engine exhaust pipe that led up behind the wheelhouse to the open air. There was no electrical wiring in the area where the fire probably started, and it is thought oil fumes from the hot oil soaked lagging had flashed off near the deckhead.

To prevent a recurrence the diesel oil pipe leak was rectified, the exhaust pipe lagging renewed with double thickness, and the area around it faced with rockwool in a steel sandwich.

### Narrative 2

The 10.88m fishing vessel *Rosses Fisher* was trawling off Brixham, with her crew of three, when the engine room deckhead beneath the wheelhouse was found to have caught fire. With the trawl anchoring her to the seabed, the crew fought the fire using portable fire extinguishers. The engine room vents and hatches were sealed.

A helicopter and pilot boat came to *Rosses Fishers* assistance, and shortly after the pilot boat had come alongside, another fire broke out beneath the wheelhouse console. With no extinguishers left, the wheelhouse was sealed and the crew disembarked to the pilot boat. The local lifeboat arrived, and the fishing vessels skipper transferred to her to update the lifeboat crew on the situation. Together with some of the lifeboat crew, he reboarded the burning vessel with a salvage water pump. Once this was operating, a wheelhouse window was broken, and water was sprayed inside until the fire was extinguished. The fishing gear was buoyed and the vessel was towed into Brixham harbour, where the local fire brigade carried out an examination alongside and confirmed the fire was out. Following this fire, it was necessary to replace electrical wiring, navigational equipment, the console, and the damaged laminated surfaces completely. The smoke damaged engine room and accommodation also needed to be cleaned and repainted. One engine room beam had to be replaced.

Once again the cause was not completely identified. The fire was believed to have started on the engine room deckhead where the engine exhaust pipe led up behind the wheelhouse. Restrictions found in the exhaust pipework under the wheelhouse were thought to have caused local overheating, which, in turn, led to ignition.

Measures taken to prevent a similar fire breaking out included running the main engine exhaust outside, and to the rear of, the wheelhouse. Steps were also taken to ensure that a qualified electrician checked the electrical systems.

Both these incidents involved fires which started either at the engine room deckhead, or under the wheelhouse flooring. Both involved the main engine exhaust.

Although in both cases the original *cause* of the fire is unclear, the source of ignition *was*. The hot exhaust pipe.

Any opening at the top of an engine room will, over a period of time, become impregnated with diesel and/or lub oil fumes and oil-soaked dust. These areas provide a ready conduit for flash fires, and will support a smouldering fire for some time.

### **The Lessons**

1. Always ensure that the exhaust pipe is fully and completely lagged.
2. Lagging must not become impregnated with either fuel or lub oil.
3. The exhaust pipe should be well supported throughout, and well clear of any surrounding structure.
4. Regularly clean all surfaces of oil-impregnated dust and debris. And make sure you repair all fuel/oil leaks and, most importantly, clean up afterwards!
5. Main Engine exhausts in the Wheelhouse are at risk - if possible run them outside.

## **Case 16. Major Facial Injury While Shooting Nets**

### **Narrative**

A 24m stern trawler was shooting her gear while proceeding in an easterly direction. The wind was southerly force 6 to 7. The starboard bridle chain parted, and the shooting operation was temporarily suspended to carry out a repair. The repair took approximately 20 minutes, during which time the effect of the prevailing weather caused the trawl gear to act as a drogue and resulted in the vessel swinging to port and taking up a northerly heading.

On completion of the repair, the skipper attempted to return the vessel to an easterly heading by applying starboard helm. This resulted in both bridles leading to starboard across the top of the stern bulwark. The port bridle became twisted. A crewman, who was stationed on the aft deck, then undertook his usual task of manually untwisting the bridle using a length of steel pipe, which he inserted into the outboard eye of the bridle swivel. The motion of the vessel in the seaway caused the steel pipe to rise out of his reach and move towards the port side. It then dropped back down on to the stern bulwark, and fell out of sight down the port side of the vessel. The vessel rolled to starboard and the port bridle, which was still leading to starboard, sprang over the top of the port bulwark and caused the steel pipe to strike the crewmans face.

Both the skipper and the crewman were very experienced fishermen.

The shooting operation was normally conducted with the vessel maintaining a steady course and speed. This enabled any twists in the bridles to be removed manually in full view of the skipper in the wheelhouse, without danger of the bridles springing across the stern. An intercom provided an available means of verbal communication between the wheelhouse and the aft deck.

### **The Lessons**

1. Both the skipper and the crewman failed to recognise the potential danger of the bridle wire springing across the stern as it rose above the port bulwark top.
2. Although the skipper had some misgivings about the crewman trying to untwist the bridle in the prevailing circumstances, he took no action to stop him.
3. It was unnecessary for the crewman to undertake this task at that time, and it would have been prudent for him to have kept well clear of the gear until the manoeuvre had been completed, with the bridles leading astern. Appropriate advice regarding the dangers of fishing is provided in *Fishermen and Safety*, published free of charge by the MCA.

## Case 17. Fishing Vessel Struck by Unidentified Coaster

### Narrative

A fishing vessel was on passage from Cherbourg to Kingswear, Devon, making good about 8 knots. It was night and the skipper was alone on watch in the wheelhouse. There was a slight south-westerly sea and the range of visibility was between 6 and 8 miles.

The autopilot was steering a magnetic course of approximately 290°, the VHF radio was monitoring Channel 16 and the radar was operating on the 3-mile range scale. The vessel was exhibiting appropriate navigation lights for a power-driven vessel under way.

The skipper became aware of an overtaking vessel on the port quarter at a range of about 2.5 miles. He expected the overtaking vessel to keep out of the way by altering course around his vessel's stern. The skipper then left the wheelhouse to call the next watchkeeper. When he returned, the overtaking vessel was at a range of 2 miles. He left the wheelhouse again to call his relief a second time. As he was returning to the wheelhouse, the overtaking vessel collided with the port side of the fishing vessel and continued moving ahead without stopping. The skipper thought the colliding vessel was a coaster.

While the crew assessed the extent of damage, the skipper called the unknown vessel on Channel 16 but received no reply. The fishing vessel started to take water and the skipper broadcast a request for additional pumps. This was acknowledged. The pumps were supplied by RNLI lifeboats that then stood by for the rest of the passage to Kingswear.

### The Lessons

This is yet another case of a merchant vessel colliding with a fishing vessel at night. Because the coaster was never identified it is not possible to establish why she collided and what factors led to the accident.

1. The evidence indicates that a careful lookout was not being kept on the merchant vessel; still the single most common reason why collisions of this nature occur. The stark lesson to arise from this accident, and so many of its kind throughout the maritime world, is that those entrusted with lookout responsibilities should not be distracted from this supremely important task and should remain alert at all times.

2. The evidence also indicates poor watchkeeping standards in the fishing vessel. Although the skipper eventually became aware of the overtaking vessel, his first mistake was a failure to ascertain whether risk of collision existed. The second was his *assumption* that the overtaking vessel would keep out of his way (which as an overtaking vessel she should have done), and finally he abrogated all responsibility by leaving the wheelhouse at a time when collision was, at least, possible.

3. Had the skipper remained on watch and established that risk of collision existed, he would have had various options. He could have used the sound signal required in Rule 34(d) of the *Collision Regulations* to indicate his doubt (ie give at least five short and rapid blasts on the whistle which may be supplemented by a light signal of at least five short and rapid flashes). Furthermore he could have taken action as permitted by Rule 17(a)(ii) and should have taken action as required by Rule 17(b).

4. There is a tendency for watchkeepers in all vessels, and most especially in those where bridge or wheelhouse visibility astern is restricted, to focus most attention on what is happening ahead. Those in low-powered or relatively slow ships such as the smaller fishing vessels, must be constantly alert to the faster vessel coming up astern, particularly if in, or obliquely crossing, a shipping lane. Experience indicates that in vessels not equipped with ARPA, radar echoes appearing abaft the beam often remain unnoticed until the range is very close. This is especially true when the radar display is maintained with the ships head up. All watchkeepers should make a conscious decision to look astern as well as ahead. A good all round visual look is not only a matter of good seamanship but is also a clear requirement of the *Collision Regulations*.

5. Sounding five or more short blasts as a means of communicating concern is relatively common in pilotage waters. It is less so in the open sea but can be effective. It cannot feature as an option unless the means of giving such signals is available. Masters and skippers should ensure that whistles can be sounded at short notice and a working directional light is provided for the watchkeeper to use.

6. Neither a "Mayday" nor a "Pan Pan" message was broadcast by the fishing vessel until at least half an hour after the incident.

Determining the causes of hit and run collisions between merchant vessels and small vessels such as fishing boats and yachts is often frustrated by having too little information about the "other" vessel, the alleged culprit. Although probably not the first priority of skippers or watchkeepers who have either been run down or experienced a near miss, they can help MAIB investigators by reporting the event as rapidly as possible and giving as much information as they can about the other vessel. The time and position of the collision, the estimated course and speed, size, colour, type, general layout and, most important of all, the name and port of registry of the other vessel, will greatly assist the conduct of an investigation.

## Case 18. Loss of Trawler Due to Engine Room Flooding

### Narrative

*Sharona*, was a 19.72m twin rig trawler, constructed of wood and had a crew of five.

The vessel was fishing 80 miles north-east of Peterhead, and about to haul her nets, when her crew realised there was flooding in the engine room bilges. Water was found to be coming from the main engine cooling water overboard discharge pipe, which had fractured. The engine room bilge alarm had failed to operate.

The main engine-driven bilge pump was engaged, but was unable to cope with the flooding. The skipper then eased back on the main engine and began to haul the fishing gear.

After further ingress of water, the coastguard was contacted and towing assistance requested. The portable salvage pump carried on board was started and reduced the water level. At about this time all onboard electrical power was lost.

The fishing gear was run off on to the seabed in preparation for accepting a tow from the newly arrived *Maersk Challenger*. The tow was successfully established, and three of the crew were transferred. Unfortunately, being towed pulled *Sharona* bow so that her stern was raised to cause further flooding of the engine room from the aft bilges. Around this time sparking and a strong smell of smoke were noticed in the engine room, and CO2 smothering was instigated. The remaining two crew were transferred to *Maersk Challenger*, and the tow recommenced.

After an hour, the tow parted and two of the crew reboarded *Sharona* to find the water level in the engine room bilges had risen above the main engine casing. A portable pump was used from *Maersk Challenger*, and this temporarily stopped the water level rising. Both crew were transferred back to *Maersk Challenger* and the tow resumed.

*Sharona's* freeboard was seen to be reducing, and eventually she took a list to port and her gunwales became immersed. The towline was released and the vessel sank.

*Sharona's* loss was caused by uncontrolled flooding in the engine room through a fractured main engine cooling water pipe. The fracture occurred because the copper pipe had eroded/corroded or had become work hardened.

Contributory causes were: the decision to haul the fishing gear which meant, in turn, that the engine was not stopped immediately to prevent further flooding; the failure of the engine room bilge alarm; and, above all, the failure of anyone to detect defective pipework.

There had been a previous flooding incident on board *Sharona* due to failure of the main engine cooling pipework by the inter-cooler.





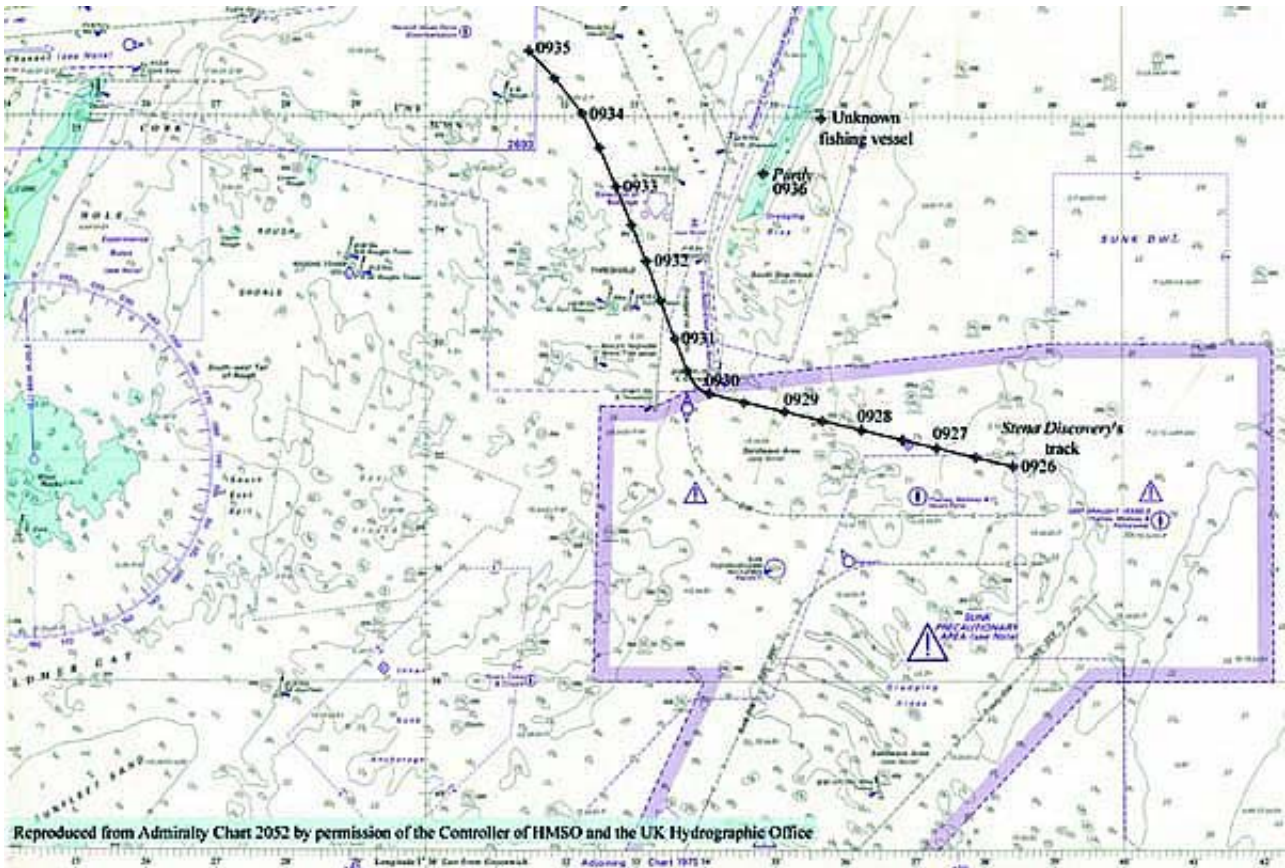
## Case 19. Fisherman Swept Overboard by the Wash from a High-Speed Ferry

### Narrative



*Purdy*, a 10m long, Aquabelle angling boat with the skipper and one other person on board, was preparing to anchor and begin fishing on a shallow sandbank off the East Anglian coast when HSS Stena Discovery passed inbound for the port of Harwich. *Purdy's* skipper turned his boat towards the wash from the high-speed ferry. The conditions were fine, with a southerly wind of force 3, good visibility and a slight sea. As the first wash waves approached *Purdy*, they grew in height to 4 metres and began to break. The first wave crashed over *Purdy's* bow, swamping the vessel and washing the person, who had been sitting on the engine casing aft, overboard.

The skipper threw a lifebuoy towards the man in the water and tried to manoeuvre the boat towards him. The man disappeared from view. Despite extensive searches carried out by the skipper and the rescue services, his body was not recovered until 12 days after the accident. He had been wearing heavy leather boots and, crucially, no lifejacket.



## The Lessons

1. Even when the weather conditions appear benign it is always sensible to wear a lifejacket on the open deck of any small boat or vessel.
2. Large high-speed, high-powered vessels are capable of producing high-energy wash waves under certain critical conditions of speed and water depth.
3. Wash waves, which may have little or no effect on other vessels in deep water, can, when entering shallow water, grow dangerously high.
4. The wash producing capabilities of high-speed craft are not fully understood and, despite the operator's best attempts to minimise wash production, large waves can be produced inadvertently.
5. Small craft should stay clear of very shallow water when, and just after, a high-speed ferry passes.

## Case 20. Morse Cable Problems

### Narrative 1

*Fv Argosy*, a 22.5m fishing vessel, was heading towards the harbour entrance, when a combination of wind and tide started to offset her to one side. The skipper tried to take the way off by putting the engine astern, but found he could not move the controls. With the vessel still going ahead at 3/4 speed and also, by then, without any steering, the bow struck the breakwater. Both breakwater and vessel were damaged, but fortunately nobody was hurt.

The subsequent investigation found that the inner cable of the morse control would not, while extended, retract into the outer sheath when the engine control was moved. This prevented the skipper from controlling the engine speed or engaging the astern gear.

The soft nose of the fishing vessel was knocked back about 2 metres, but fortunately the collision bulkhead was not affected. The forecastle deck, some frames, the stem bar, and the whaleback were all damaged to varying degrees. The damage to the breakwater was not recorded.

### The Lessons

1. Carry out regular visual checks to morse cables.
2. Ensure that the morse outer cable is properly secured.
3. Ensure that the cable sealing cap is in place and undamaged.

### Narrative 2

The 16.35m fishing vessel *Nighean Donn* with a crew of three, was trawling off the north of Skye. The skipper had heard a noise intermittently since leaving harbour a number of hours previously, but had been unable to discover what was causing it. He thought the gearbox clutch was developing a "creep" and would need attention on his return to harbour.

As the vessel continued to trawl, the skipper noticed from the wheelhouse gauges that the starting battery voltage was dropping. This, he assumed, was due to a failure of the engine-driven alternator something else to get fixed on arrival back in harbour. To prevent the battery voltage dropping any further, he switched the output from the main transmotor to feed both the starting and lighting batteries.

Shortly after this, a fire broke out in the engine space, causing a loss of electrical power and control. The skipper shut down the engine immediately, sealed the engine space and operated the Halon fire-extinguishing system. This put out the fire. The coastguards, who had been told of the fire at the start, were then advised that the fire was out, and that, although the vessel was unable to use her own engine, she would be towed back to harbour by another fishing vessel which was to hand. There were no injuries to the crew.

On investigating the engine after the fire, it was found that the intermittent noise heard by the skipper was the morse cable to the gearbox chaffing against the starter. This had caused the plastic covering of the morse cable to wear away until there was metal to metal contact between the starter

cable and the metal sheath of the morse cable. The subsequent short caused the fire in the engine space and, subsequently, the need to use the Halon system.

The damage extended to the new starter, batteries, fuse board and wiring. There was also minor smoke damage to the space.

To prevent any similar incident arising, new morse cable was fitted under deck and was secured well clear of engine or any other machinery. An inspection regime was set up to ensure clips are tight and in place at all times.

### **The Lessons**

1. Both these incidents involved a morse cable. One because of misalignment, and the other due to a lack of securing devices.
2. When installing morse cables, follow the manufacturers instructions on the minimum radius of curvature to avoid operating difficulties. Make sure that the correct length of cable is selected and fitted.
3. Regular attention to the condition of the sealing caps on the ends of the morse cable is important. Entry of water through the caps into the interior of the cable leads to corrosion, and the build-up of debris is likely to cause difficulties in the free movement of the inner cable, forcing results in over-stressing, cable stretch and eventually cable failure.
4. Always secure the cables firmly to the structure and equipment that it is connected to, with the securing clips spaced at intervals recommended by the manufacturer. Lack of proper clips, or too large distances between clipping points allows vibration to create chaffing and wear on the cable.
5. The essential lessons here are:
  - Fit the right size, and install it as recommended by the manufacturer;
  - Ensure that the cable end caps are in place and in good condition;
  - Check the cable throughout its length at regular intervals.
6. One of the most telling indicators of impending trouble on board any vessel is an unexplained noise. If you hear something that cannot be explained satisfactorily, check it out. It might just be something that is about to give way and spoil your entire day.

## **Case 21. Overloading, Disregard of Stability, and Flooding Results in Loss of Vessel and Skipper**

### **Narrative**

The 23m long fishing vessel, *Amber Rose*, was trawling for herring with a partner vessel in the Irish Sea to the east of the Isle of Man.

It had been a successful trip and her crew decided to load the last catch in *Amber Rose* and then head for Ardglass to land it. After filling all three RSW tanks to capacity, some of the catch had to be dumped into the sea.

The vessels stability book, carried on board, stipulated that the volume within the hatch coamings had to be left empty and that there should be an ullage of 500mm in the centre tank to ensure adequate stability. The crew, keen to get as many fish on board as possible, ignored this restriction.

With the catch on board, *Amber Rose* set course for Ardglass. The mate took the watch and the rest of the crew turned in. During the passage everything appeared normal until the mate altered course just south of the Chicken Rocks to put the prevailing weather on her port side. Moments later, and without any warning, *Amber Rose* capsized. There was no time to send a distress message.

Five crewmembers managed to escape, but sadly the skipper became trapped in the accommodation. As the vessel sank, the liferafts released automatically and inflated. The five survivors were able to reach and board the rafts. They were eventually recovered by the search and rescue team.

The MAIB investigation found that the skipper had increased the capacity of the RSW tanks without informing the MCA. It was further revealed that *Amber Rose* had recently undergone a refit, which affected her stability to such an extent that she did not meet the minimum stability standard for fishing vessels. The skipper had ignored requests by the MCA to have the vessels stability remeasured.

Model tests to identify the cause of the capsize showed that internal flooding further reduced the vessels stability. It was concluded that the direct cause of the loss was undetected flooding to the forward spaces. One contributory cause was the poor initial stability of the vessel following successive alterations and overloading. The bilge alarm, fitted in the forward spaces, failed to operate.

### **The Lessons**

1. Whenever any alteration is made to a vessels permanent structure that affects her displacement, the MCA should be informed so, if necessary, new stability data can be produced. Failure to do so can lead to vessels sailing in potentially dangerous conditions. Because *Amber Roses* stability had fallen below the required standard, she became vulnerable to capsize and did so.

2. When there is a good catch, the temptation to overload should be resisted. To overload will adversely affect stability, and could lead to the vessel capsizing and loss of life.

3. Always consult the stability booklet; it is there for your safety. If you do not understand it, consult someone who does. Never load the vessel above its safe carrying capacity; the consequences can be fatal.

4. The failure of high-level bilge alarms is all too common in the fishing industry. Had the bilge alarm been fully operational, the crew would have had early warning of flooding and the outcome might have been very different.

Apply the "family test" for bilge alarms. If you know it isn't working in your vessel, tell a lady friend or relative. It is very likely she will tell you to make sure it is before you sail. It is good advice; take it.

## Case 22. Grounding and Loss of Fishing Vessel

### Narrative

*Betty James* landed her catch in Mallaig on an evening in July. Before sailing to return to the fishing grounds that night, the crew went to an hotel bar close to the harbour for a drink. She sailed shortly after midnight and about an hour later at 0115, the skipper handed over the watch to a deckhand. *Betty James* was, at the time, south of Sleat, steering about 250° in autopilot and making good 7 knots. Safe navigation was reliant upon a video plotter and radar.

After taking the watch, the deckhand left the wheelhouse to make a sandwich. When he returned at about 0125, he turned on the wheelhouse lighting, reduced the volume of the radio and sat down in the wheelhouse chair to read the Sunday newspapers. Between 0135 and 0145 he fell asleep. *Betty James* was due to make a course alteration at 0205 but this was missed. At 0230 she grounded on rocks on the south-east coast of the Isle of Rhum.

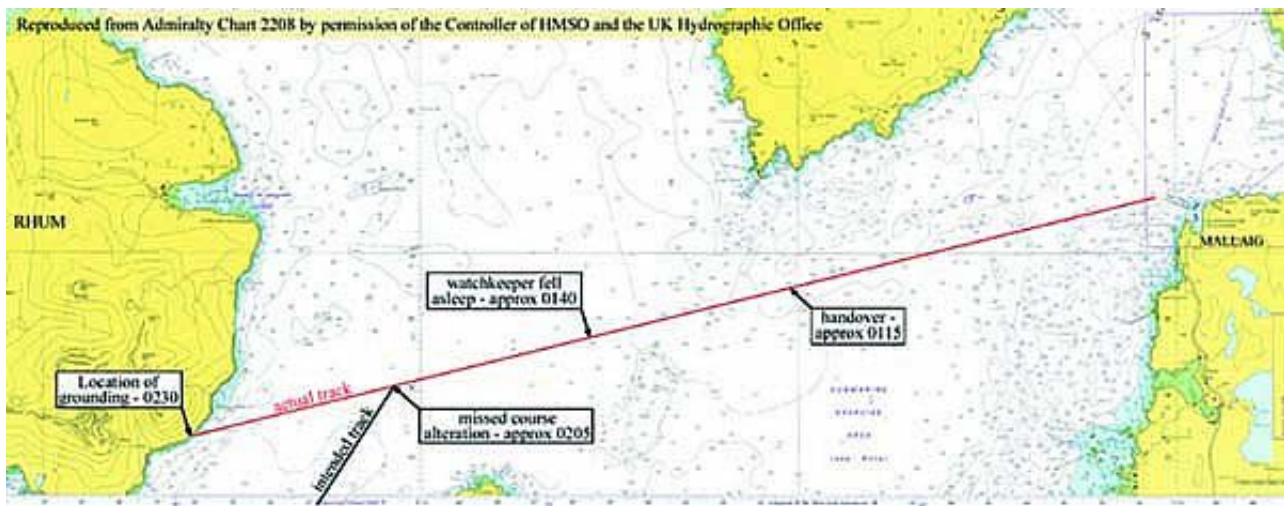
Awoken by the impact, the skipper went straight to the wheelhouse where he found the deckhand looking shocked, the vessel listing about 20° to starboard, the watch alarm sounding continuously, and the propeller still driving ahead. The skipper took the propeller out of gear immediately and alerted *Arnisdale*, a fishing vessel nearby, and the coastguard.

Attempts to refloat the vessel, using engines and rudder, failed and, as the vessels list and motion became increasingly unsafe, the skipper decided to abandon ship. The four crew disembarked into a liferaft and, rather than head for the nearby shore, paddled towards *Arnisdale* lying some 500 metres away. When abandoning ship, two deckhands donned personal survival suits but no lifejackets while the skipper donned a lifejacket but not his survival suit. The remaining deckhand, who had not completed a sea survival course, did neither. The crew were safely recovered and, other than suffering from shock, were unscathed. There were no injuries.

Further attempts to refloat *Betty James* were unsuccessful and she eventually became a total loss.







## The Lessons

1. Disrupted sleep, which leads to fatigue, is an unavoidable aspect of a fisherman's life at sea, and every opportunity to catch up on lost sleep should be taken, especially when the interval between landing and sailing is as short as an hour or two.
2. Even a modest amount of alcohol can have a detrimental effect when trying to keep alert late at night. The situation is aggravated when you are already tired.
3. After having consumed several beers and a sandwich, the deckhand spent his watch, in the middle of the night, reading a newspaper in a comfortable chair with the lights turned up and the radio on. A fishing vessel was lost and four fishermen got wet. Next time, it could be worse, far worse, and lives may be lost. Somebody will then have to tell the families what happened and will find it impossible to explain why a loved one died simply because bad watchkeeping habits have been allowed to become an accepted way of life.
4. To many, the existence of a watchkeeping alarm is the solution to the problem. The alarm will sound, the argument goes, the watchkeeper will wake up and the problem will go away. But even when he wakes up to cancel the alarm, the watchkeeper is just as likely to be very tired and incapable of performing to the best of his ability and, secondly, some are so tired that they sleep through even the loudest alarm. If you have an alarm, make sure it sounds in the accommodation area as well as the wheelhouse. It may waken somebody who will do something about it.
5. Crews in vessels that founder or go aground often have only moments to prepare for the worst but donning lifejackets and, if carried, survival suits, should be an instinctive priority. Having them readily available will do much to ensure this can be done.
6. In an emergency even the most experienced people will react out of character. It is even more evident when people are suddenly plunged into cold water. Research has repeatedly shown that in such conditions an individual will instinctively revert to whatever training he has received in the past; which is why survival training is so important. Training in basic sea survival is mandatory for all fishermen born on or after 1 March 1954. It is significant that the one deckhand who had not completed a sea survival course was the only one not to don a lifejacket or put on a survival suit.



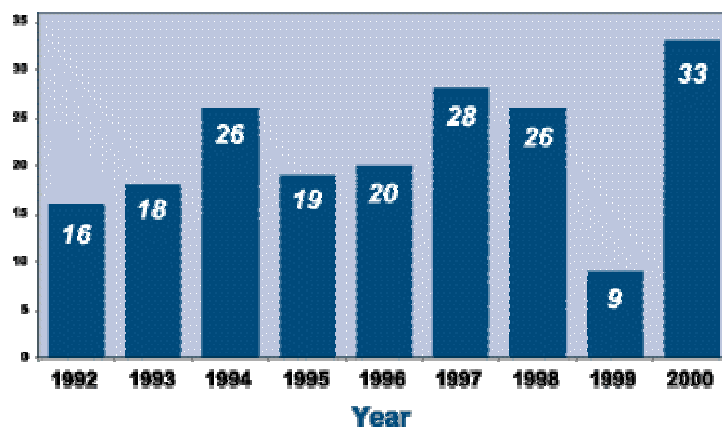
7. The decision by the skipper not to head for the shore but to paddle for the *Arnisdale*, which was considerably further away, was prudent. It would have been difficult to control the liferaft in the surf on a rocky shore, and serious injuries may well have resulted.

## Statistics

### Fishing Vessel Losses



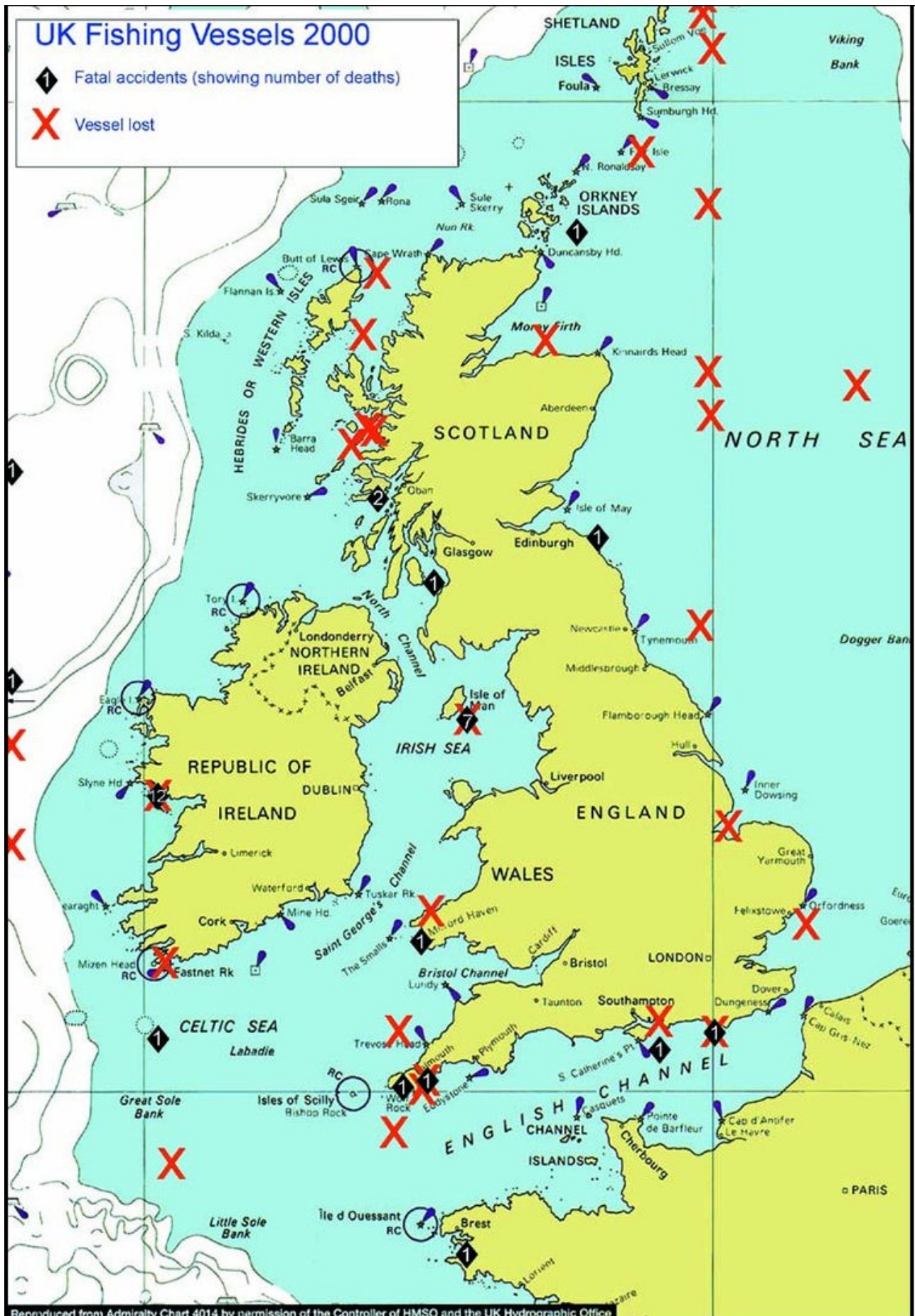
### Deaths



## Major Accident Locations

# UK Fishing Vessels 2000

- ◆ Fatal accidents (showing number of deaths)
- ✗ Vessel lost





## Published Reports

### MAIB Published Reports Available free of charge from MAIB

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

**mv ELM/mfv SUZANNE** -  
near miss incident on 11  
February 1999

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

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

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

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

**Betty James** grounding  
and subsequent loss of fv  
off the Isle of Rhum on  
10 July

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

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

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

**Gradeley** - man overboard  
fatality off the west coast of  
the Island of Mull on 28  
October 1999

**Random Harvest** -  
flooding of fv south-west of  
Brighton on 3 July 1999

**Fv Beverley Ann II**  
/Cypress Pass - collision  
on 9 March 1999

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

**Sally Jane** - capsized  
alongside in Shoreham  
Harbour on 27 July 1998

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

**Jasper III** - foundering of  
vessel 90 miles north-east of  
Fraserburgh on 10  
September 1999

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

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

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

**DE Kaper** - fire on  
board trawler off  
Hanstholm Denmark on

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

**Unio Arbo/Philomena** -  
collision between  
Bahamian cargo ship Unio

12 February 1999

2000

Arbo and UK fv Philomena  
about 10 miles south of  
Newlyn, Cornwall on 2  
September 1999

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

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

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

**Dunan Star** - fatal  
accident on board fv 1.5  
miles south-west of the  
Isle of Arran on 10  
August 1999

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

## **SAFETY DIGEST**

### **MAIB Safety Digest 1/2000**

Published April 2000

### **MAIB Safety Digest 2/2000**

Published August 2000

### **MAIB Safety Digest 3/2000**

Published December 2000

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 terms and abbreviations /**

**ARPA** - Automatic Radar Plotting Aid

**CWBE** - Constant wear buoyancy equipment

**EPIRB** - Emergency Position Indicating Radio Beacon

**GPS** - Global positioning system

**GRP** - Glass reinforced plastic

**HRU** - Hydrostatic release unit

**MCA** - Maritime and Coastguard Agency MoD - Ministry of Defence

**RNLI** - Royal National Lifeboat Institution

**ROV** - Remotely operated vehicle

**RSW** - Refrigerated sea water

**UKFV** - United Kingdom fishing vessel

**VHF** - Very high frequency

### **Picture Credits**

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