MARINE ACCIDENT

INVESTIGATION BRANCH

Summary of Investigations No 2/91

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This summary contains facts which have been determined up to the time of issue. This information is published to inform the shipping industry and the public of the general circumstances of accidents and must necessarily be regarded as tentative and subject to alteration or correction if additional evidence becomes available.

INTRODUCTION

In this edition, there are more summaries concerning accidents to fishing vessels than in previous editions. This is not surprising when it is remembered that the UK fishing vessel fleet is considerably greater in numbers than the merchant fleet, and the accident rate for fishing vessels is higher. However, what is important, irrespective of whether the summary relates to a fishing vessel or a merchant vessel, is the lesson to be learnt. In many cases that lesson applies to all seafarers irrespective of the type of vessel they are serving on.

From talking to various people, both within the shipping community and outside, many seem to think that MAIB only investigate major accidents. The types of accident they have in mind are those where there has been a considerable loss of life; where vessels are lost in unusual circumstances; and particularly those which the media consider worthy of a lot of attention. This of course is not the case: marine accidents of various types and magnitudes are investigated, and it is from many of the smaller, less publicised, accidents that some of the most useful lessons can be learnt.

The majority of those lessons are not earth-shattering revelations requiring major revisions of marine legislation or ship design; however they are earth-shattering in the sense that they make one wonder how those accidents could possibly happen in the first place. So many of the accidents reported to and investigated by MAIB would not have occurred if those involved had used some commonsense.

One should perhaps reflect on the number of times in everyday life that things happen to us which are avoidable and afterwards we say to ourselves, "if only". If only we had looked where we were going; if only we had not been there at that specific time; if only we had checked the equipment before we had used it; if only we had read the manufacturers instructions. The "if onlys" in everyday life are so many and varied; the same can be said about marine accidents. Many of those accidents, some of which have had disastrous consequences, would not have occurred if only commonsense had been used.

Commonsense, or to be more precise a lack of commonsense, is a theme in many of the accident investigations included in this latest edition of summaries. When preparing these summaries and drafting the "Comment" section, it is noteworthy that many of them could be replaced by a single remark to the effect that commonsense was absent. Nevertheless, we hope that readers will be able to decide for themselves as to when some commonsense would have prevented the accident described in this edition and in turn relate this to the work they are doing and consider the consequences to themselves and others they work with. Perhaps then they will avoid despairingly saying to themselves at some later date, "if only I had used my commonsense".

Chief Inspector of Marine Accidents
October 1991

INDEX

1. CARBON MONOXIDE POISONING

Narrative

The annual survey of safety equipment was carried out on a small general cargo vessel whilst she was berthed alongside. The test run of the fire pump revealed that the extended spindle to the sea suction valve at the bottom of a full fore peak tank was disconnected. To carry out a repair it was decided to pump out the tank using a limited lift salvage pump driven by a petrol engine. This pump was initially sited on the forecastle deck until suction was lost, then lowered into the forecastle store and pumping restarted. Suction was again lost and so the Chief Engineer and Chief Officer entered the forecastle store, with the Chief Engineer descending into the fore peak tank to adjust the suction pipe. Although he was immediately affected by fumes, he managed to re-enter the store space but collapsed across the operating engine before gaining the open deck. The Chief Officer raised the alarm but by this time was also affected by the fumes. Fortunately a number of the crew were nearby and pulled both men to safety as well as shutting down the engine.

The tank was eventually drained down via small holes drilled in the collision bulkhead, the sea suction valve spindles modified, reconnected and the pump successfully tested. Both men recovered although the Chief Engineer was off work for some time due to burns suffered after collapsing over the pump engine.

Observations

1. The use of a portable internal combustion engine in a confined space without adequate ventilation or an extension of the exhaust to the open deck positively ensured that a build-up of poisonous gas would occur.

2. Despite the Chief Officer being the Safety Officer for the vessel, no safety procedures were followed either prior to commencing the tank discharge or afterwards.

Comment

This serious incident could and should have been avoided had the advice in Merchant Shipping Notice No M.1345 concerning entry into confined spaces been followed by both Officers.

2. ENGINE ROOM FIRE IN A GENERAL CARGO VESSEL

Narrative

A 1,596 gross registered tonnage general cargo vessel was on passage with a cargo of coal when a fire broke out in the engine room. At the time of the incident the main engine was on bridge control, and the Master and Chief Engineer were both on the bridge. Heavy smoke was seen issuing from the funnel housing so the main engine control was put to stop. The Chief Engineer entered the engine room, wearing a fireman's outfit and smoke hood, found the workshop floor plates red hot and attempted to establish the seat of the fire by descending the port side engine room ladder to the generator flat. It was confirmed the fire was at this lower level, at the forward end of the engine room, but due to the restricted movement allowed by the smoke hood no actual fire fighting could be carried out.

On his return to the deck and it having been first checked that all crew were accounted for, the engine room was sealed and the fixed carbon dioxide gas total flooding system was operated at 1040 hours. By this time all the engine room emergency stops and fuel trips had been operated. After a cooling-off period the engine room was again entered at 1150 hours at which time the fire was confirmed as being out. The space was then vented and an inspection of the damage carried out at 1500 hours. Due to the apparent severe damage to the forward main engine turbo blower and electrical cables in the area, the Owners were informed that the vessel would be unable to resume her voyage and that a tug would be required.

The vessel was towed into port for repair.

Observations

It is thought that securing bolts on the main engine fuel oil filters failed, allowing fuel to spray on to the nearby exhaust trunking and/or forward turbo charger casing. The subsequent fire destroyed deckhead electrical cables and main engine equipment.

Comment

1. The failure of these bolts has not been satisfactorily explained as normally they would not be under any significant stress. The effect of vibration may have been a contributory cause (one bolt was found to be missing after the fire) but only if they had been inadequately tightened in the first place.

2. The crew took all measures necessary so that the carbon dioxide total flooding system was used to good effect. The early decision to use it prevented a more serious fire.

3. INJURY TO DECK RATING DURING MOORING OPERATIONS

Narrative

A rating was stationed forward and handling the polypropylene backspring during the berthing of a ro-ro ferry. In order to hold the vessel alongside during the mooring operations, lateral thrust was applied by the directional propellers. This trapped the backspring between the berth and the ship's belting.

As the rating looked over the top of the bulwark the mechanical thrust was decreased and the ship moved away from the berth, releasing the tensioned rope. The rope recoiled hitting the rating on the forehead resulting in him needing three stitches to a cut above his right eye. He also suffered probable "eye trauma".

Observations

The Master and Chief Officer when berthing the vessel were able to observe the mooring operation from the bridge wing. From this position, they had communications with the mooring party and direct control of the propellers.

Comment

1. Before tensioning mooring ropes, the mooring party should check that they are clear of obstructions.

2. Personnel on the bridge should be attentive to deck operations, particularly when holding a vessel alongside using main engines.

3. Shore rope handlers should inform the ship's staff immediately when they observe a problem with trapped or snagged ropes.

4. FLOODING AND BEACHING OF A DREDGER

Narrative

A 530 gross registered tonnage sand dredger, having discharged her cargo, was returning down a small river estuary to the sea. It was early evening and close to high water. The navigable channel, which dries at low water, is bordered on each side by training walls built up from small blocks of copper slag and surmounted by posts. The width of channel between the training walls is 75 metres.

The ship's bridge was manned by the Mate, who was steering by magnetic compass, and a seaman. The engine was building up to full speed. As the estuary widened, the dredger encountered an unexpected short, steep swell and started to pitch. As the bows rose and the stern fell, a heavy thump was felt and water started to spurt into the engine room (which was aft) through a hole on the port side, below the waterline. The space rapidly flooded and the water level soon reached the generators.

The machinery had to be shut down and the engine room abandoned. Fortunately a launch was in the vicinity and was able to assist the dredger out of the channel and in beaching her. As the tide fell, the engine room drained, and it was possible to plug the hole temporarily. The vessel was refloated on a later tide and taken to a drydock for permanent repairs.

Observations

It was initially thought that the sudden pitching motion had led to the stern landing on an obstruction on the bed of the channel. This was discounted as the after draft was less than half the depth of water; the channel bed was inspected at low water and no obstruction which could have caused this holing was found.

It was fortunate that the engine room was manned at the time, enabling the bridge to be quickly notified of the situation. There was therefore time to beach the vessel before she sank in the channel and closed the port.

The Master had handed over to the Mate and left the bridge shortly before the accident. Both he and the Mate held valid pilotage exemption certificates for the port.

Comment

The bridge was not properly manned and the vessel was not being properly navigated. The Mate should have been conning the vessel along the narrow channel by visual pilotage and the seaman should have been on the wheel and steering to the Mate's orders. It is most likely that the vessel, although she may well have been on the correct compass course, was too near the port hand training wall. When the ship pitched, the stern landed on one of the blocks on the inside of the wall.

5. COLLISION BETWEEN A CARGO SHIP AND A STANDBY VESSEL

Narrative

This collision took place off the entrance to a large estuary. A 1,570 gross registered tonnage (grt) cargo ship was in-bound whilst a 320 grt oil rig standby vessel was proceeding outwards to take up standby duties.

The weather was good, with a light breeze, a slight sea and good visibility.

The vessels were crossing with the cargo ship about ten degrees on the starboard bow of the standby vessel. When they were about four cables apart the cargo ship, seeing no avoiding action being taken by the standby vessel and receiving no response to either VHF or whistle signals, put her helm hard to starboard.

At about the same time, for navigational reasons, the standby vessel's course was altered about 45° to port. Despite the clear weather, the cargo ship had still not been seen. After this alteration, the Officer, who was alone on the bridge of the standby vessel, started to engage the auto-pilot. As part of this operation he had to kneel on the wheelhouse deck and use a spanner to operate valves on the hydraulic steering system. When he stood up from this task he saw the cargo vessel. He immediately put the engine control to full astern, but despite an instant engine response there was contact between the starboard bow of the standby vessel and the port quarter of the cargo ship.

While there was only slight damage to the cargo ship, the standby vessel had to return to port for repairs which took about a week.

Observations

1. The standby vessel was fitted with two radars, which were both operational.

2. Until just before the course alteration there had been two Officers on the bridge of the standby vessel, though one had been engaged in steering.

3. The Officers of the standby vessel had many years experience sailing in and out of this estuary.

Comment

1. The cause of the collision was gross failure of look-out.

2. Familiarity with a particular sea passage does not reduce the need for proper lookout and responsible watchkeeping.

6. ENGINE ROOM FIRE IN A RO-RO CARGO VESSEL

Narrative

A 2,644 gross registered tonnage ro-ro cargo vessel loaded with vehicle trailers, was negotiating the lock entrance at the arrival port when she suffered an engine room fire in the area of Number 4 port forward generator. As a result of the fire all electrical power was lost. The vessel was temporarily secured in the dock entrance until she could be moved later the same day to her normal berth.

The engine room was fully manned at the time of the incident, with the main engine under bridge control and all four generators connected to the switchboard. The vessel is not equipped for unmanned operation although there is a separate engine control room.

Noticing the fire, the Chief Engineer shut down the affected generator and informed the bridge. The Second Engineer and other crewmen attempted to put the fire out using portable extinguishers but were unable to do so before being driven back by thick black smoke. (No breathing apparatus was being used). The Chief Engineer ordered the evacuation of the engine room, operated the emergency trips for all fuel oil valves and stopped the engine room fans. The engine room vents were not closed nor was consideration given to the use of the fixed Carbon Dioxide extinguishing system.

All the main generators stopped and the emergency battery powered lighting came on. No attempt was made to start the emergency generator situated in the Port funnel casing. The fire lasted for about 10 minutes after which the Chief Engineer, without the benefit of breathing apparatus, entered the engine room to assess the situation.

At that time the Fire Brigade arrived and cooled the area down with water. The brigade remained on site for about half an hour and confirmed that the fire was out before leaving. Engineer officers re-entered the engine room and started up Numbers 1,2 and 3 generators restoring electrical power to the vessel. A subsequent inspection revealed that in addition to fire damage, Number 6 piston on Number 4 generator had seized and broken up.

Observations

The fire probably occurred due to Number 6 piston seizing, breaking up and causing over-pressurization in the crankcase of Number 4 generator. The release of oil laden vapour through the crankcase breather pipe, the presence of fuel oil residue from leaks and the adjacent exposed hot surface of the exhaust lines to the turbo charger were thought to be the source of ignition and subsequent fire.

Inspection revealed that in addition to smoke and water damage, electrical cable and equipment on and above Number 4 generator had been destroyed and the turbo charger induction lines were damaged. Many deficiencies were identified which indicated poor operational standards and maintenance:

1. The engine room bilge wells were full and overflowing with a large oil content.

2. Significant fuel leaks at entablature level existed on Numbers 1 and 2 generators.

3. Sections of lagging were missing on the exhaust trunking of Numbers 1 and 3 generators.

4. The electrically driven emergency fire pump was inoperative due to a burnt out motor.

5. The Carbon Dioxide Gas release alarms for the engine room and main and lower vehicle decks were inoperative.

6. Number 1 generator had a cracked cylinder liner allowing water into the crankcase.

These defects were reported to the Flag State Authorities and limited repair work was carried out under the supervision of the Classification Society. The vessel eventually sailed with a temporary generator unit fitted on deck and wired into the ship to shore connection circuit.

Comment

1. The crew's initial actions were correct but the failure to close the engine room vents or to use the Carbon Dioxide extinguisher system could have resulted in a serious fire. Failure to ensure that the emergency fire pump was in a state of readiness was a breach of International Regulations and could have placed the vessel in some danger in the event of a serious fire.

2. The positioning of the emergency generator within the funnel casing with all switchboard cabling exiting directly into the engine room space made the cabling very vulnerable in the event of an engine room fire.

7. LOSS OF A BEAM TRAWLER

Narrative

A 23 metre beam trawler capsized and sank whilst trying to retrieve her lost fishing gear. There was only a slight sea with no swell at the time. A light breeze was blowing from North North East, and the visibility was good. Prior to the accident the vessel had been fishing the bottom for scallops, when the starboard gear snagged causing the towing warp to part at the vessel's derrick head. A creep or anchor was attached to the end of the port warp and the retrieval operation began. During this operation the Skipper and a member of the crew were in the wheelhouse and the remainder of the crew were in the accommodation. Some time later the creep came fast making the Skipper think that they had located the lost gear. During the hauling process the vessel heeled violently and continued heeling until it capsized and eventually sank. All the crew managed to scramble off the vessel and into the water, inflated a life-raft and got aboard. A passing yacht saw their distress signals and came to their assistance.

Observations

1. None of the crew members were called out from the accommodation to assist when the hauling operation began.

2. This accident came very close to causing loss of life, as three of the crew were asleep in the bunks in the aft cabin. They were thrown out of their bunks, but were unable to get on deck via the main ladderway as sea water was flooding down. Fortunately, they managed to find the emergency hatch in the dark and make their exit up and then into the sea.

Comment

1. When creeping or dragging the bottom for lost gear, the warp with the creep or anchor on the end should be led through a block at the side of the vessel, not at the derrick end. This reduces the heeling moment on the vessel and therefore the possibility of capsize should the gear become snagged on a seabed obstruction.

2. During a hauling operation to retrieve lost gear someone should be appointed to keep a continuous watch on the quantity of warp out, its direction and angle. If the load on the warp becomes excessive and the vessel starts to take a heel, then the hauling operation should be stopped and the warp slackened. The operation to retrieve the lost gear then needs to be reconsidered.

3. This accident emphasizes the value of emergency escapes from the crews' space aft.

8. ELECTRICAL POWER FAILURE FOLLOWED BY GROUNDING

Narrative

A 35.26 metre United Kingdom-registered steel hulled beam trawler was carried ashore and beached by a combination of wind and tide after an electrical power failure. The crew were rescued safely without injury but the damage caused by the grounding required the vessel to be dry docked. Repairs and survey were conducted under supervision of a Classification Society Surveyor.

The electrical power loss which was accompanied by loss of propulsion occurred at approximately 2130 hours. The vessel drifted ashore around 0800 hours the following day on the Norfolk coast. Attempts were made to repair the electrical fault on the main engine cooling water pump circuit breaker which had seized causing a short circuit across the main switchboard conductors (bus bars). Although the Skipper was in constant radio touch with the manager of the vessel, Coastguard were not informed of the incident until the vessel had beached, and at no time was an Urgency or MAYDAY signal transmitted.

Observations

1. In the time period between the breakdown and stranding the vessel would have drifted to the North West/South East with successive tides. However, strong to near gale force winds from the north drove her towards the southern lee shore.

2. The crew were unable to let go the single anchor because the devils claw (bottle screw) had seized and the cable apparently jammed in the spurling pipe/chain locker.

3. The Skipper had plenty of time to make a PAN PAN message thereby alerting nearby shipping that the vessel was in difficulties. An assisting vessel could then have made for the scene of the casualty. It must be borne in mind that there are many tug/supply boats operating out of Great Yarmouth and Lowestoft.

4. Even when it should have been apparent that stranding was imminent, the Skipper made neither a MAYDAY distress call nor an Urgency signal.

Comment

1. The incident emphasises the vital need to maintain ground tackle in good condition, in all vessels.

2. It is almost incredible that for some $10\frac{1}{2}$ hours this vessel was drifting towards a lee shore in quite bad weather with no attempt being made to obtain assistance. It must have been clear long before stranding took place that the breakdown was probably beyond rectification by the ship's personnel.

9. SINKING OF A SMALL FISHING VESSEL

Narrative

A steel hulled fishing vessel of just less than 12 metres was fishing off the west coast of Scotland when the Skipper realised she was rather low in the water. On investigation it was found that there was about half a metre of water in the fish hold and the engine room. The pumps were operated but did not reduce the water level in the vessel. Another fishing vessel sent a MAYDAY for them, as the Skipper thought that the vessel's battery may have been affected by seawater.

The crew took to the life-raft and shortly afterwards the vessel sank. A helicopter rescued the crew from the life-raft about twenty minutes later.

Observations

1. The bilge alarm did not operate.

2. The engine room was for'd of midships, with the fish hold abaft the engine room.

3. It appears that the engine cooling water had been diverted to fill the ballast tank. The ballast tank vented into the fish hold and flooded the hold when it overflowed. The bulkhead between the fish hold and the engine room was not watertight in way of the shaft tunnel. This arrangement is clearly an accident waiting to happen.

Comment

1. The vent or overflow from the ballast tank should have been to the atmosphere, not to another space within the vessel.

2. Had the vessel been 12 metres or over she would have been required to be surveyed by a Department surveyor who would not have accepted this vent arrangement.

3. The Skipper, fortunately for himself and his crew, had a life-raft onboard which was put to good use. Though the fitting of life-rafts on vessels under 12 metres in length is not a mandatory requirement, the Department do strongly recommend that they are fitted.

4. Yet again, the advice of Merchant Shipping Notice No M.1327 on checking bilge high level alarms was ignored.

10. LOSS OF A SMALL FISHING VESSEL WITH HER CREW

Narrative

A steel hulled fishing vessel, less than 10.0 metres in length was lost while trawling about 3 miles off the coast, probably after snagging her net. There was a slight swell with a gentle easterly breeze. When the vessel was reported overdue, a full-scale search was immediately organised. A wreck was located but no survivors were found.

The wreck was raised, and the body of one of the crew was found in the wheelhouse. The body of the other crew member has not been recovered.

Observations

When the wreck was raised it could be seen that this small boat was fitted with a large high aft gantry. The engine control was in the astern position, the trawl winch brake on the starboard barrel was off, and the port barrel brake on. The engine room hatch was fitted with a very low coaming, and the hatch cover was in the open position. It was also seen that there was no means of securing the hatch shut.

It was concluded that after the trawl gear became snagged, the engine was put astern and one crew member left the wheelhouse through the starboard door and released the starboard brake. The total load would then have been transferred to the high point on the port side of the gantry. Before the crewman could release the brake on the port barrel, the vessel heeled over and took water into the engine room through the open hatch, and quickly sank.

Comment

1. The gantry was too high for this size of boat, leading to asymmetric heeling moments which could be large enough to capsize this boat. In other words, the boat was not sufficiently stable.

2. Any openings which can result in flooding should have means of closure. In this case a much higher coaming and means of securing the hatch should have been fitted to the engine room hatch.

3. This accident, like many to small fishing vessels, would not have happened if the advice of Merchant Shipping Notice No M.989 had been followed. There is much sound guidance in that Notice, including:-

   - "Stability should be properly assessed by a person having appropriate professional experience.....
   - Alterations should not be made to the structures, fishing gear or ballast without checking that the standard of stability and seaworthiness is not thereby reduced.....
   - There is the obvious need to provide efficient means of closing all openings through which water could enter the hull....."

11. GROUNDING OF A FISHING VESSEL

Narrative

An 11 metre steel hulled fishing vessel was engaged in trawling off the south coast of England. At about midnight she picked up debris in her net, reportedly including a large steel plate.

The vessel was about three-quarters of a mile off the shore so the Skipper headed the vessel out to sea at slow speed and engaged the auto-pilot. He then went to assist the other two crew members to clear the net. The weather at the time of the incident was a moderate southerly breeze with moderate sea. It was a dark night and raining.

Some time later it was noticed that the deck lights were dimming. The Skipper returned to the wheelhouse; as he increased engine speed to obtain more electrical charge the vessel grounded.

The vessel took a heavy list and, thinking that she was holed, the crew took to the life-raft. They were able to reach the shore without injury. The vessel had in fact suffered no damage, and was subsequently refloated and towed to port by an RNLI lifeboat.

Observations

1. An electronic magnetic compass (fluxgate compass) was provided, which was sited in the wheelhouse. The vessel was of all-steel construction, including the wheelhouse. The manufacturers of the compass do not recommend it being fitted in an all-steel boat.

2. Electronic magnetic compasses are very sensitive to ferrous metals and care must be taken in their siting. Even metal food cans can cause deviation.

Comment

1. Whilst the crew were clearing the net only occasional visits were made to the wheelhouse. The vessel was fitted with radar which was operational but this was not used to assess the position of the vessel. It was assumed that the vessel was on course because this is what was shown on the electronic display of the auto-pilot. In fact this display only showed the course requested and not the actual course the vessel was steering.

2. This incident highlights the need to keep a proper look-out and to navigate in a proper manner to avoid the danger of either collision or stranding, no matter what the size of the vessel.

3. Merchant Shipping Notice Nos M.1020 and M.1190 explain the basic principles of keeping a safe navigational watch on a fishing vessel and warn about the dangers of poor look-out and incorrect use of navigation equipment.

4. The deviation off course was possibly due to incorrect siting of the electronic compass and possibly to the presence of the steel plate in the trawl net. A properly compensated magnetic compass fitted with a course detector would give more reliable transmitted heading information. Merchant Shipping Notice No M.1219 provides guidance for magnetic compass operation and maintenance. Merchant Shipping Notice No M.1463 (issued since the accident) refers to fluxgate compasses and warns against their being fitted within a steel wheelhouse.

12. CAPSIZE OF A SMALL FISHING VESSEL

Narrative

The vessel was of a "classic" 32 foot (9.9 metres) glass fibre hulled design, many of which have been built and used successfully world-wide. She had a fish room aft, engine space amidships and accommodation space forward along with the wheelhouse. The bulkhead between the fish room and the engine space was not watertight and there were no bilge alarms fitted in either of these rooms.

At the time of the accident the boat was being used for lobster fishing and the entire deck space was covered with lobster pots stacked three high. Before proceeding to sea the crew were aware that the fish room was taking water either through the stern gland or rudder trunking. The water level was being kept down by continuous pumping of the fish room bilge.

Before reaching the fishing ground it was noted that the vessel was stern down in the water. When checked, it was found that the bilge pump had no suction and it was assumed that the fish room strum had become blocked. The bilge pump then failed.

Water was then in the fish room and the engine room and the deck became awash. This coupled with the top weight of the lobster pots made the vessel unstable and she capsized and sank.

During the capsize the crew were able to launch the life-raft even though it was lashed down on the wheelhouse roof. They had some difficulty freeing the raft painter from the vessel but did so eventually by using the knife in the life-raft.

The weather at the time was a light breeze with slight sea and swell. Visibility was good.

Observations

1. The loading of the lobster pots prevented access to the fish room into which there was a known leak, therefore it was not possible to enter the fish room through the deck hatch to clear the strum.

2. Fortunately the vessel was fitted with a life-raft although this was not required under the Fishing Vessels (Safety Provisions) Rules 1975.

3. The flooding would have been better contained if the bulkhead between the fish room and the engine room had been made watertight.

Comment

1. Merchant Shipping Notice No M.1327 gives information on losses due to flooding of fishing vessels, in particular the need to keep fish-hold bilges clear and rubbish free. Also the need to regularly check any spaces that do not have bilge alarms fitted.

2. Only one means of bilge pumping was provided. A secondary means should have been available. Guidance is given in Merchant Shipping Notice No M.1327 where it is recommended that a hand bilge pump be provided as well as a powered pump.

3. The dangers of going to sea when there is known leakage into a space are obvious and are made worse if access to that space is blocked off and no bilge alarms are fitted. Merchant Shipping Notice No M.989 draws the attention of Owners and Skippers to the fact that they have a duty in common law to take all reasonable actions to ensure that a vessel proceeds to sea in a seaworthy condition.

4. Merchant Shipping Notice No M.1017 gives information on the carriage of life-rafts on fishing vessels of less than 12 metres. It is recommended that these are stowed in such positions that they can be easily and quickly launched on either side of the vessel. Hydrostatic releases could be fitted but if these are impractical then other quick release fastenings are available.

5. The effects of flooding and free-surface can be reduced by the provision of watertight bulkheads between compartments. There are means to penetrate a bulkhead and yet maintain watertight integrity.

13. COLLISION BETWEEN TWO FISHING VESSELS

Narrative

A 32 metre steel hulled fishing vessel was beam trawling about 70 miles off the east coast of England. In the same area an 18 metre wooden hulled fishing vessel was proceeding from one wreck to another to undertake gill-net fishing. The vessels were on converging courses with the beam trawler being overtaken to starboard by the other vessel, on a steady bearing.

The Skipper of the gill-netter started a sonar search for the wreck he intended to fish. The sonar developed a fault, and even though his vessel was closing the trawler, the Skipper decided to fix it there and then and he sat on the wheelhouse deck to do so. Before doing this he altered the auto-pilot course a couple of points to starboard assuming this would put him clear of the beam trawler. There was a look-out in the wheelhouse and he was instructed to keep an eye on the beam trawler.

However, the two vessels were now very close together, and as the beam trawler started to haul her nets, she swung to starboard, towards the gill-netter.

The gill-netter's Skipper, alerted by the look-out, jumped up and put the engine full astern. In his haste he switched the steering from auto to off. Though he did correct this, his vessel collided with the end of the beamer's starboard boom.

The damage was only to the gill-netter, whose masts and radio aerials were brought down. She returned to port whilst the beamer continued fishing.

Observations

1. No assistance was required by either vessel, so the collision was not reported to anyone ashore. This meant that there was no communication with the damaged vessel for about nine hours until she made contact using a mobile phone, to arrange entry into port.

2. By the nature of their work, fishing vessels sometimes need to approach one another closely, but it should be recognized that this leaves very little room for error. The practice should therefore not be followed unless it is necessary, and never without a full and careful watch being kept.

Comment

1. The Collision Regulations require that vessels including fishing vessels which are not at the time fishing shall keep out of the way of vessels which are engaged in fishing; and that always an overtaking vessel shall keep out of the way of the overtaken vessel.

2. If action is taken to avoid a collision this should be monitored to ensure that it is effective and does avoid a close quarter situation.

3. Assumptions that the other vessel will keep her course and speed are dangerous and should be avoided.

4. It is a sensible precaution to inform Coastguard of any accident even if assistance is not thought to be required, for there have been many cases where an apparently minor incident has developed into an emergency.

5. Reporting an accident to HM Coastguard is one of the ways of complying with the requirements of Regulation 5 of The Merchant Shipping (Accident Investigation) Regulations 1989. Merchant Shipping Notice No M.1383 advises on the requirements and procedures for reporting accidents.

14. LOSS OF A FISHING VESSEL BY FLOODING

Narrative

A fishing vessel and her crew of five were fishing in fairly calm conditions, when the bilge alarm alerted the crew to flooding in the engine room. The bilge pump was engaged but after a short time it was quite obvious to the crew that the water level in the engine room was not reducing. At this stage the Coastguard were informed, and asked to send a portable bilge pump by helicopter. The helicopter arrived on the scene within half an hour, but by then the vessel had a heavy trim by the stern and was listing to starboard. It was correctly considered that the vessel was unstable and should be abandoned. This was done without incident and the complete crew were brought ashore safe and well. The vessel gradually sank by the stern and about half an hour after the crew abandoned her she sank in a depth of about 36 fathoms (66m) of water.

Observations

The cause of the flooding cannot be categorically stated, however the most probable cause was narrowed down to a disused toilet disposal pipe. If this pipe had corroded in any area, it would have been free to flood the engine room. The 28 year old pipe having a diameter of 110mm was not fitted with a ship's side valve, and had a long tortuous route through the engine room, from the capped off end above the engine to the outlet well aft. This meant the pipe would contain seawater for most of its length.

Comment

The pipe system should have been drained down and the outlet in the ship's side blanked off when the system became disused.

If there is a disused pipe on your vessel ensure that it is blanked off at the ship's side.

15. FAILURE OF BILGE ALARM ON A FISHING VESSEL

Narrative

A 24 metre long fishing vessel with a crew of six was fishing some 120 miles off the east coast of Scotland. All of the crew had been employed in the fishing operations for the whole day in good weather conditions. Shortly after sunset, whilst all the crew were still engaged on deck, the vessel's lights failed causing the Engineer to visit the engine room where he discovered water up to the floor plate level. There had been no warning given by the high level bilge alarm. Use of the vessel's own pumps, including the attempted use of a petrol driven portable pump which proved to be defective, failed to prevent the water level rising further. Responding to the Skipper's MAYDAY call, a rescue helicopter lowered a portable pump to the vessel and transferred portable pumps from other vessels. No great impression could be made on the rate of flooding and the vessel sank early the following morning. There were no injuries or lives lost.

Observations

The vessel had a history of similar, but less dramatic, flooding incidents in view of which, more frequent inspections of the engine room should have been carried out. In spite of the need for all hands to assist in the essential commercial activity of fishing, Skippers must be aware of the need for regular inspections of machinery spaces.

Comment

Merchant Shipping Notice No M.1327 covers the point of this incident very well and emphasises the importance of testing and maintaining bilge high level alarms. Fishing Vessel Regulations require that bilge alarms are fitted to vessels of this size. Regulations which are designed to improve the standards of safety cannot achieve their aim if equipment is neglected.

16. ACCIDENTS INVOLVING FISHING FOR CRABS AND LOBSTERS.

Narrative

There have been many accidents over the last year involving vessels fishing for crabs and lobsters, known in some areas as 'creel fishing'. It has been recorded that a number of lives have been lost as well as injuries to fishermen and loss of vessels.

To illustrate this a few cases are set out below:-

Case 1 — A 6.7 metre open creel boat sank with the loss of her two crew while the sea was only slight and a gentle breeze was blowing. The boat was a converted ship's lifeboat, having had a wheelhouse, foredeck, heavy mast and guardrails, together with a large hydraulic pot hauler fitted for fishing.

Case 2 — A 5.2 metre open creel boat sank with the loss of her two crew, only a short distance from the coast in a moderate sea and with a strong breeze blowing. The following day, police divers located the boat entangled in her own creel ropes.

Case 3 — A fisherman was dragged overboard by the ropes connecting the pots, which had become looped around his body whilst he was dropping the pots. The other crew member was able to winch him back to the surface; he had lost consciousness but was revived and, very fortunately he sustained no other injury apart from rope burns to his neck.

Case 4 — A fisherman was dragged overboard when his foot became entrapped by the creel rope. He managed to free himself and only sustained an injury to his foot.

Case 5 — As in case 4, a fisherman was dragged overboard and down to a depth of about 9 metres, before he was winched back to the surface. Apart from severe fright he was unscathed.

Case 6 — An 8.6 metre crabber was setting fleets of pots, the Skipper shooting the fleets while his mate was steering and controlling the engine. The boat was steaming at 2 - 3 knots, with the tide; there was a following breeze of force 3 - 4. The Skipper's leg became caught in the gear, and although the helmsman saw what was happening and went astern, the Skipper was dragged overside. He was recovered with great difficulty after about 10 minutes, but he was unconscious and although quickly evacuated to hospital by helicopter, he was dead on arrival.

Case 7 A creel fisherman was operating on his own from a 4.9 metre fibreglass dinghy, engaged in taking prawn creels out to the fishing grounds in calm clear weather conditions. It appears that the outboard motor ran out of fuel. It is likely that whilst attempting to lift the oars from underneath the creels he fell overboard and was unable to climb back on board, and drowned. He was not wearing a life-jacket or buoyancy aid although a life-jacket was in a locker on the boat.

Observations

Case 1 Even though the crew were very experienced fishermen they may not have realised that the pot hauler was oversized for their boat. Also, the extensive conversion had reduced the stability and the ability of the boat to right itself when heeled over. The engine driven hydraulic system was not fitted with a relief valve; had one been fitted it could have been adjusted so that it would not pull the gunwale edge under should the line become snagged.

Case 2 This small open boat was fishing in conditions outside a sensible safety margin for the vessel. Exactly what happened is not known - the boat may have been swamped if the line became snagged and she took even a slight list for she had very little freeboard.

Cases 3 - 7 These boats do become cluttered with pots and ropes. In at least 4 of the accidents a fisherman was dragged overboard through becoming entangled in the lines joining the pots. The circumstances of Case 7 are less clear as the accident was not witnessed, but it is highly probable that the creels and lines contributed to it.

Comment

1. The most vulnerable time for boats and crew is when the creels/pots are being hauled or lowered either mechanically or by hand. The number of creels used should be restricted to allow an area in which the crew can safely operate without fear of becoming entangled with the ropes.

2. Boats can pull themselves over when they snag their lines using their own hauling machinery if it is not correctly selected and installed. In the case of boats being operated by one person only, the probability of loss of life resulting from an accident must be much higher.

3. Once again these accidents point to the desirability of fishermen wearing some form of buoyancy garment when working.

It is clear from some of these accident reports that crews on board fishing vessels under 12 metres in length are not aware of the mandatory requirements to carry life-saving equipment. The equipment to be carried is as follows:-

1. LIFE-JACKETS for each crewman on board.

2. LIFE-BUOYS at least equal to half the total number of persons on board and in no case less than two life-buoys.

3. A BUOYANT HEAVING LINE at least 18 metres in length shall be attached to a life-buoy.

4. Not less than six red star DISTRESS SIGNALS.

INVESTIGATIONS COMMENCED IN THE PERIOD 1.1.91 - 30.9.91

DATE OF ACCIDENT	NAME OF VESSEL	TYPE OF VESSEL	FLAG	SIZE	TYPE OF ACCIDENT
15.12.89	PACIFIC SWAN	Nuclear Fuel Carrier	UK	4527 grt	Machinery Failure
14.12.90	ST LOUIS	Offshore Support	UK	596 grt	Accident to Person
18.12.90	PRIDE OF SANDWICH	Ro-Ro	UK	12503 grt	Electrical Failure
25.12.90	VULCAN SERVICE	Offshore Support	UK	1366 grt	Collision
27.12.90	MAERSK YARE	Ro-Ro Cargo	UK	1117 grt	Grounding
04 & 10.01.91	ST HELENA	Passenger/Cargo	UK	6767 grt	Machinery Failure
05.01.91	OMAGH	Refrigerated Cargo	Panama	1236 grt	Grounding
06.01.91	KIMYA	Tanker	Malta	985 grt	Capsized
10.01.91	ST MARTIN	Offshore Support	UK	234 grt	Foundering/Sinking
13.01.91	TOR DANIA	Ro-Ro Cargo	Sweden	5052 grt	Machinery Failure
22.01.91	PACIFIC CRANE	Nuclear Fuel Carrier	UK	4555 grt	Machinery Failure
23.01.91	SPARKLING LINE	FV	UK	15.9m	Grounding
03.02.91	PACIFIC CRANE	Nuclear Fuel Carrier	UK	4555 grt	Fall of Life-boat
05.02.91	FAIRWEATHER 5	FV	UK	28.25m	Grounding/Sinking
11.02.91	STENA CAMBRIA	Ro-Ro	UK	7405 grt	Contact
19.02.91	ROYAL PRINCESS	Passenger	UK	44348 grt	Machinery Damage
24.02.91	BREYDON MERCHANT	Cargo	UK	425 grt	Fire
24.02.91	FIRETHORN	Cargo	UK	1041 grt	Accident to Person
25.02.91 approx	PESCADO	FV	UK	21.55m	Foundering/Sinking
27.02.91	SAND TERN	Dredger	UK	535 grt	Contact
27.02.91	SEABOARD IMPLACABLE	Offshore Support	UK	1447 grt	Machinery Failure
04.03.91	LADY SYLVIA	FV	UK	11.28m	Sinking
04.03.91	STELLA ORION	FV	UK	42.63m	Accident to Person
05.03.91	ST ROGNVALD	Ro-Ro/Cargo	UK	2645 grt	Power Failure
12.03.91	NOORDSTER	FV	Belgium	18.68m	Explosion
13.03.91	VALKYRIE	FV	UK	22.52m	Grounding/Sinking
23.03.91	EUROSUN	Passenger Ro-Ro	Bermuda	12343 grt	Fire
10.04.91	WILHELMINA J/ ZULFIKAR	FV Cargo	UK Cyprus	24.35m 8714 grt	Collision & Sinking
13.04.91	Un-named FV	FV	Unreg	5.2m	Capsized
19.04.91	HELMSMAN	Tanker	IOM	3704 grt	Machinery Failure

INVESTIGATIONS COMMENCED IN THE PERIOD 1.1.91 - 30.9.91 (Cont)

DATE OF ACCIDENT	NAME OF VESSEL	TYPE OF VESSEL	FLAG	SIZE	TYPE OF ACCIDENT
04.05.91	NORDIC PRIDE	Ro-Ro	Sweden	2988 grt	Loss of Cargo
08.05.91	HAFNIA	Bulk Carrier	Bahamas	7170 grt	Fatal Accident
11.05.91	RENFREW ROSE	Ferry	UK	65 grt	Accident to Person
14.05.91	HEART OF GOLD	FV	UK	8.6m	Fatal Accident
15.05.91	ARTILLERYMAN 2	Sea Angling	UK	10.73m	Flooding
17.05.91	ANNAMONE/ ISABELL	FV/ Tanker	UK/ Sweden	13.4m 7494 grt	Collision
19.05.91	BACCARA/ REGINA MARIS/ BIEJAN EYHRE	FV FV FV	France UK UK	- 11.53m 11.12m	Near Miss
23.05.91	LUMINENCE	Cargo	UK	1596 grt	Fire
28.05.91	YARD NO. 992 (New)	Cargo	UK	2230 grt	Machinery Failure
12.06.91	BECKENHAM	Tanker	UK	825 grt	Machinery Failure
17.06.91	AUTOSTRADA	Vehicle Carrier	UK	610 grt	Fire
20.06.91	CERDIC FERRY	Ro-Ro	UK	8579 grt	Fatal Accident
25.06.91	LIZANNE	FV	UK	11.12m	Sinking
28.06.91	ESSO FREEPORT	Tanker	Bahamas	122967 grt	Oil Spillage
30.06.91	SEA VIPER	Tug	UK	28m	Grounding
30.06.91	OCEAN CRUSADER	FV	UK	19.66m	Accident to Person
30.06.91	OUR LADY PAMELA/ TS MARTIN	Ferry/ Sailing Vessel	UK/ -	313 grt 13m	Collision
02.07.91	VETERAN WARRIOR	Ex M.T.B.	UK	-	Sinking
04.07.91	ROHOY	Cargo Barge	UK	172 grt	Sinking
05.07.91	CAEDMON/ GOLONDRINA	Ro-Ro Ferry/ Yacht	UK -	761 grt -	Contact
07.07.91	CENRED/ PAMELA MAY	Ro-Ro Ferry/ Yacht	UK -	761 grt -	Contact
07.07.91	ARDMORE	FV	UK	20.26m	Grounding
14.07.91	DONA OURANIA/ HAVIS	Tanker/ Liquid Gas Carrier	Greece/ Norway	17596 grt 146.77m	Collision
18.07.91	DAVID JOHN	FV	UK	23.9m	Fire/Sinking
19.07.91	MATCO AVON	Tanker	UK	43622 grt	Fire
19.07.91	LADY OF CAMELOT	Class V Passenger Launch	UK	21m	Accident to Person
24.07.91	DOROTHY HACKWORTH/ LISBET KOSAN	Yacht/ Gas Carrier	- Denmark	11m 1367 grt	Collision
24.07.91	VALULLA	Class V Passenger Launch	UK	112.06 grt	Fire
24.07.91	PRIDE OF BALTIMORE II	Sailing Ship	USA	97 grt	Grounding

INVESTIGATIONS COMMENCED IN THE PERIOD 1.1.91 - 30.9.91 (Cont)

DATE OF ACCIDENT	NAME OF VESSEL	TYPE OF VESSEL	FLAG	SIZE	TYPE OF ACCIDENT
28.07.91	SOUTHERN COMFORT	CLASS V Passenger	UK	-	Accident to Person
29.07.91	LOCH MARAVAIG/ AMITY	FV/ FV	UK/ UK	12.59m/ 20.68m	Collision
30.07.91	LARISSA/ REBIS	FV/ FV	UK/ DANISH	37m -	Collision
30.07.91	JUBILENCE	Cargo	UK	475 grt	Accident to Person
31.07.91	THOMAS WILLIAM	FV	UK	9.75m	Capsize/Sinking
01.08.91	GEESTCAPE	Refrigerated Cargo	UK	8030 grt	Fire
05.08.91	KEDAROST	FV	UK	23.41m	Fire
05.08.91	EMERALD	Cargo	IOM	1583 grt	Fire
12.08.91	OCEAN HOUND	FV	UK	21.40m	Sinking
17.08.91	FIDELITY	FV	UK	14.33m	Grounding
22.08.91	AUTOBAHN	Vehicle Carrier	UK	499 grt	Machinery Failure
25.08.91	UN-NAMED POWER BOATS	Power Boats	Various	Various	Grounding
28.08.91	CALBY QUEEN/ UN-NAMED TENDER	Passenger/ Tender	- -	- -	Collision
02.09.91	OCEAN CREST	FV	UK	24.34m	Accident to Person
04.09.91	ESSO MERSEY	Tanker	UK	11898 grt	Explosion
05.09.91	MARGARET & WILLIAM II/ JACOBUS BROERE	FV/ Tanker	UK Netherlands	10.90m 3693 grt	Collision/Sinking
12.09.91	CPC GALLIA	Cargo	Antigua	6500 grt	Grounding
18.09.91	ARRAN LASS	FV	UK	15.24m	Fire
19.09.91	MOUNTWOOD	Passenger Ferry	UK	464 grt	Contact
26.09.91	BRUMMI/ NORINA	Cargo/ FV	St Vincent/ UK	423 grt 39.25m	Collision
26.09.91	DIAMOND	Bulk Carrier	Norway	35873 grt	Explosion
29.09.91	MARGA CORTES	Cargo	Honduras	499 grt	Stranding