

MARINE ACCIDENT INVESTIGATION BRANCH

Summary of Investigations No 3/94

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INTRODUCTION

It is hoped that all concerned will be aware of the new Merchant Shipping (Accident Reporting and Investigation) Regulations which came into force at the end of August. At the same time a Merchant Shipping Notice, No M.1584, was published which explains the new regulations and particularly sets out the reporting procedures in a simple tabulated form.

The main purpose behind the new regulations is to combine the various requirements which were included in the Merchant Shipping (Accident Investigation) Regulations 1989, the Merchant Shipping (Safety Officials and Reporting of Accidents and Dangerous Occurrences) Regulations 1982 and the Fishing Vessels (Reporting of Accidents) Regulations 1985 into the one single enactment. In addition, some revision has been made to the various requirements, chiefly for clarification.

The changes do mean that there is a bit more work to do in the event of an accident. For example fishing vessel skippers now have to report dangerous occurrences in addition to accidents to their vessels and people; they are also required to carry out their own onboard investigations but are not expected to be full time investigators. All they are required to do is look into the circumstances of these types of incident and recommend action which could be taken to prevent recurrence. It is believed that in doing this conscientiously it is likely that a skipper would have a keener awareness of safety in general and apply this knowledge. Self knowledge is worth volumes of written guidance or well intentioned advice and is more likely to be put into practice.

To give effect to the change in reporting philosophy, the need for a radical review of the existing report forms was necessary. Instead of having three separate forms, the WRE1 for reporting accidents to vessels, the ARF1 for accidents to people and dangerous occurrences on merchant ships and the ARF2 for accidents to fishermen, there is now one single form, the Incident Report Form (IRF). The new form has moved away, to some extent, from the "tick box" system which made up a large proportion of the ARF1 and ARF2 forms. Instead it requires more narrative and helps focus the mind of the person who is completing the form on how the incident happened.

Changes are not always welcome, but it is hoped the changes that have been made to the regulations and the reporting system will result in seafarers developing a greater awareness of what they can do to prevent accidents recurring.

Chief Inspector of Marine Accidents
December 1994

1. HAZARDOUS INCIDENT WHILST MOORING A LARGE TANKER

Narrative

A large tanker (260 metres in length) was mooring at a jetty and running lines out to dolphins with the help of "rope runner" boats. She already had one spring, two breastlines and one headline fast. One of the boats was called to come in and pick up a second headline. The headlines consisted of large wires with rope tails. The coxswain and crew member on the mooring boat made the rope tail fast to the boat and motored away from the tanker's bow, towing the mooring wire towards the dolphin. She had gone about 10 metres when she suddenly came to a halt and began being pulled astern, back towards the tanker. Soon afterwards the boat struck the bow of the tanker heavily. The crew of the boat were thrown off balance because of the violence of the impact. They were unable to operate the quick release gear because of the tension in the rope tail. Fortunately the rope tail parted before the mooring boat was overturned and the boat was able to pull away from the tanker's side. The tanker's bow thruster was operating at the time.

Observations

This incident happened in daylight and in good weather. It appears that it was caused by the tanker's crew paying out the mooring line too quickly. The combined effect of the weight of the bight of wire in the water and the drag of the bow thrust on that bight of wire pulled the boat back towards the tanker.

The evidence from the boat's crew indicated that nobody on the forecastle of the tanker was watching the boat as the wire was fed out.

Comment

Officers and ratings on large ships should be aware that paying out a mooring line too quickly can put the mooring boat and its crew in a dangerous position. They should carefully monitor the situation overside during such operations.

In addition, Masters and officers should be aware that the operation of bow or stern thrusters during berthing operations can cause serious dangers for mooring boats and their crews, as well as providing the more obvious risk that mooring lines, heaving lines or messengers may be dragged into thruster intakes. Good communication of the relevant information between mooring positions and the bridge is essential to avoid such dangers.

2. TWO LIVES LOST INSIDE A CARGO HOLD ACCESS TRUNKWAY

Narrative

A single-hold general cargo vessel of 996 gross registered tonnage was alongside in port and had commenced discharging her cargo of timber. The timber consisted of approximately 3 metre length cut hard wood logs of up to 30 cm in diameter with bark attached. The logs were loaded inside the cargo hold up to the level of the hatch coaming and also as deck cargo on top of the closed hatch covers.

Prior to opening the hatch covers, it was normal practice for the crew to sweep up any remaining debris on top of the hatch covers upon completion of the deck cargo discharge. In preparation for this task, the Mate instructed one of his crew to fetch some brooms, which were stored both in the forward storerooms and also at the bottom of the cargo hold aft access trunkway.

A few minutes later, the attention of the Mate was drawn to the crew member, who was now lying at the bottom of the aft access trunkway. While assistance was being summoned, the Mate entered the trunkway and was subsequently found lying on top of the first crew member. Another crew member entered the trunkway but, after experiencing difficulty in breathing, climbed back out. A shore worker then attempted to enter the trunkway but was prevented from doing so by another member of the crew.

After being alerted to the emergency, the Master started the cargo hold fan and then entered the trunkway wearing a self-contained breathing apparatus set. Both men were removed from the trunkway using a block and tackle but subsequent attempts to revive them failed.

Observations

1. The cargo hold and access trunkways had not been ventilated since the logs were loaded approximately 6 days before the accident.
2. Although the vessel carried gas detection equipment, no means were provided for remote detection.
3. Brooms were stored at the bottom of the trunkway for the purpose of sweeping the cargo hold upon completion of discharge.
4. In order to confirm the probable condition of the atmosphere inside the trunkway at the time of the accident, atmospheric tests were conducted under similar conditions upon the vessel's next arrival at the port. The test results included a minimum oxygen reading of 1.9% and a maximum carbon dioxide reading of 10.5%.

Comment

1. The two men died when they entered a dangerous enclosed space, which was deficient in oxygen and contained gas products of the timber cargo.
2. The Merchant Shipping (Entry into Dangerous Spaces) Regulations 1988 (as amended) apply to UK vessels and to non-UK vessels when in a UK port. They require that entrances to unattended dangerous spaces should be secured against entry and that procedures for safe entry should be laid down and enforced. A conscientious regard for the training of crew and for the strict enforcement of clearly understood procedures would probably have prevented this accident.
3. Although it is generally known that a depletion of oxygen may occur in cargo spaces filled with certain types of wood cargoes, the danger associated with the carriage of logs requires increased attention.

3. INCIDENTS TO HYDRAULICALLY ACTUATED VEHICLE DECKS/RAMPS ON RO-RO VESSELS

Narrative

Two similar incidents occurred, on separate Ro-Ro vessels, which involved involuntary movement of hydraulically actuated vehicle decks or ramps. Although the vessels were not "sister ships", the ramps, hydraulics and control systems were similar.

In preparation for unloading the vehicle decks, drivers and passengers had made their way to their vehicles. The main vehicle deck was then unloaded and ship's staff stood by the control panels which served the upper decks and their respective ramps.

On both vessels it proved impossible to move the required ramps using only the control panels; mechanical operation of the solenoid operated hydraulic control valves being also necessary. Suitable extra persons were made available to manually actuate the solenoid valves and act as signallers.

These personnel arranged themselves so that one person operated the control panel, one operated the solenoid valves and one acted as signaller between the other two. The lowering of a part of the vehicle deck commenced. Unfortunately, the incorrect solenoid valves were operated causing a part of the vehicle deck to rise which was out of sight of all three persons.

On one vessel several vehicles were damaged due to contact with the deckhead of the vehicle space. In neither incident was there any injury but, naturally, the occupants of several vehicles were shocked.

Observations

1. It was impossible for the person at the control panel to see the person operating the solenoid valves, or for the person operating the solenoid valves to see the ramp he was attempting to move.
2. The identification labels on the solenoid valves were in a language which was not the mother tongue of the person delegated to operate these valves.
3. Blocking safety devices, normally functional when the control panels were employed, were overridden by local operation of the solenoid valves.

Comment

1. The systems should be correctly maintained in order that operation can be performed from the proper control panels thus maintaining the integrity of the system's safety blocking arrangements.
2. The labelling of ramp control equipment should be clear and precise and in a language which is clearly understood by the operators.
3. It is advisable that passengers should be kept clear of ramps when local operation of the solenoid valves is necessary.

4. UNSAFE PRACTICE IN LIFEBOAT LAUNCHING PREPARATION

Narrative

A large high sided passenger Ro-Ro ferry, equipped with large partially-enclosed lifeboats, was alongside its normal berth. The opportunity was taken to have a lifeboat launching training session for a group of ratings.

The lifeboat selected for the exercise was lowered to the embarkation deck. With the boat being held in to the side of the ship by the tricing pennants several of the ratings boarded, two of them climbing onto the boat's aft canopy. In preparation for swinging out the boat one of the ratings on the aft canopy removed the safety pin on the tricing pennant release gear. Shortly afterwards the gear released completely, allowing the aft end of the boat to swing away from the side of the ship.

This sudden movement caused both men on the aft canopy to lose their balance. One fell from the canopy into the water, the other managed to grasp the tricing pennant and was quickly recovered by the crew on the embarkation deck of the ship. The rating who fell into the water swam to a nearby ladder built into the dock wall and climbed ashore.

Observations

1. The men tasked to release the tricing pennants were standing on the boat's canopy rather than leaning through the access hatch provided.
2. The launching procedure being adopted on this occasion bypassed the bowsing in of the boat, using bowsing tackle, before release of the tricing pennants.
3. The two men who fell from the aft canopy of the boat were fortunate to suffer no apparent injury.

Comment

1. Failure to employ bowsing tackles to pull the boat hard in to the side of the ship in order to unload the tricing pennants will, when the tricing pennants are slipped, result in a sudden transfer of load from the tricing pennants to the fall wires. In a boat fully laden with people this shock loading may be great enough to cause damage to the davits, or even their failure.
2. The strength of tricing pennants is usually such that they are not designed to take the loads which may be imposed on them by fully loaded lifeboats. It is thus possible for them to fail whilst embarking people.
3. The importance of performing training drills using tricing and bowsing gear in the correct fashion cannot be overemphasised.

5. OBSTRUCTION AT TIDAL BERTH CAUSES POLLUTION

Narrative

A 60 metre coastal tanker arrived at a tidal berth to load 1176 tonnes of light crude oil. Loading was completed in the afternoon and it was then necessary to wait for the next tide and sufficient water for the tanker to sail. Low water occurred in the early evening, during which time the vessel took the ground.

Shortly before midnight, about an hour before high water, the crew turned out to prepare for sailing. It was then noticed there was crude oil on the water surface around the vessel. A report was made to the harbour authority and the Department of Transport Marine Pollution Control Unit was notified. While the source of the leak was being investigated, the crew deployed the buoyant mooring ropes as an emergency containment measure. Oil booms were placed downstream of the berth to prevent pollution of other parts of the harbour. At about 0100 hours it was established that the oil had leaked from No 4 starboard cargo tank. The shore hose was connected and discharge of No 4 tank was commenced. This was completed at about 0400 hours.

The tank was opened up and water was seen to be leaking in to it, evidently through a hole in the bottom. The remainder of the cargo was transferred ashore, this being completed by about 1000 hours. After gas freeing No 4 starboard tank, an internal inspection of it revealed a rounded and cracked indentation in the bottom plating. The ship was moved to a nearby slip for repairs.

Observations

1. Fortunately the pollution was not serious: it was calculated that less than two tonnes of the cargo was lost and it was all successfully contained in the vicinity of the berth. Much of it was recovered by skimming equipment.
2. A search was made off the berth during the following low water. A large lump of concrete about one metre square with a length of steel rail protruding from it was found (see photographs). This was without doubt the cause of the holing and consequent pollution. Although there had been dredging off the berth about a year before, it had since been in frequent use, with vessels usually taking the ground at low water. The source of the piece of concrete could not be traced.

Comment

There are many tidal berths in United Kingdom ports and it is common for coastal vessels using them to take the ground at low water, as was the case here. However, extremely careful consideration needs to be given before allowing a loaded vessel to take the ground. Excessive stresses will be exerted on the hull if the ground is irregular or fouled and a dangerous loss of stability can happen in certain circumstances. So far as coastal tankers are concerned, in particular those carrying dangerous and polluting cargoes, the cargo operations should be planned so that when loaded the vessel remains afloat at all times.

6. POTENTIAL DANGERS IN THE USE OF PORTABLE HIGH PRESSURE WATER WASHER

Narrative

A team of seamen were employed cleaning a cargo space with a portable high pressure washer. The washer was a diesel driven unit capable of producing high pressure hot water at 180bar and 155°C. After starting the unit a small leak in the flexible hose was discovered. In order to prevent the water from this leak impinging on an area sensitive to water, one of the crewmen placed his foot over the leak.

The crewman's safety boot was cut by the leaking water and his foot was scalded.

Observations

1. The high pressure washer unit was just over 6 months old and had been serviced by the manufacturer shortly before this incident. The service covered only the engine, pump and heater units; the flexible hose was not serviced at that time. However, the external surface of the hose appeared to be in good condition, with only a few small abrasions and cuts which had given the operators no cause for concern.
2. The operators had received training in the safe use of the equipment.

Comment

1. The 6 monthly servicing specification for this washer unit is now to include an inspection of the flexible hose by the manufacturer's agent.
2. Operators of this type of equipment must recognise that high pressure water jets have the ability to cut many non-metallic materials. This is so, no matter whether the jet issues from the normal cleaning nozzle or from any other orifice under high pressure. It is thus vital to keep personnel clear of all leaks from these machines.
3. Regular servicing and inspection of the equipment should reduce the chances of leaks occurring, but all operators should be aware of the potential dangers of high pressure leaks and shut down the equipment when any are discovered.



7. ACCIDENTAL RELEASE OF HALON INTO ENGINE ROOM

Narrative

A hopper/dredger was alongside undergoing repairs when at 0636 hours, the engine room alarm sounded. Although a fire patrol consisting of an engineer and one seaman was on duty they were in the crew messroom at the time and failed to hear the alarm. As the alarm was not accepted within the prescribed time limit, the "no response" alarm sounded in the engineers' cabins. The Chief and Second Engineers responded and went straight to the engine room, noting on entry a "sulphurous" or noxious smell at tweendeck level. Entering the engine control room they identified the alarm as a "Halon Leakage".

The repairs currently in hand involved the re-seating of the main generator using "Chockfast", a semi-liquid plastic substance that solidifies and cures under the action of gentle heat. This heat was being supplied using a combination of two 140,000 BThu portable propane heaters and four 8.8 kW electric fan heaters on the bottom platform. To aid the curing process, the ventilation to the engine room had been shut off.

Both the propane and electric heaters were turned off, the ventilation fans started and the space evacuated - a "No Entry" sign being placed at the engine room entrance.

Observations

1. The cause of the halon release was the operation of the "bursting disc" brought about by the high internal gas pressure which resulted from the temperature in the engine room. The high temperature was necessary for the correct curing of the "Chockfast".
2. The Chief Engineer and the two other engineers were sent to hospital for a health check as a precaution due to a reported "burning of eyes and throat". All were passed fit after an examination.

Comment

1. The engine alarm system was subsequently modified such that the particular alarm panel could be identified from the engine room entrance. An extension of the alarm system to include an alarm bell in the crew messroom would also have been a prudent decision.
2. Any repair work to be undertaken within an enclosed space needs to be carefully thought out and planned. The raising of the ambient temperature to 50°C in a vessel designed for Northern Hemisphere temperatures will effect any pressure vessel in the space and appropriate measures need to be taken to prevent damage to the pressure vessel or release of its contents.
3. The use of halon as a fire extinguishing medium is outlined in the Merchant Shipping Notice No M.1439. It should be noted however that halon is to be phased out by the year 2000 except for agreed essential uses.

8. THE SUDDEN CAPSIZE OF A FISH FARM WORKBOAT

Narrative

The accident happened in calm weather. The vessel, a 5 year old 12 metre landing craft type workboat, was carrying 10 pallets of fish feed, each approximately 1 tonne in weight. One of the crew went to move the forwardmost pallet along the deck to reduce the stern trim. A small wheeled trolley was fitted under the pallet. Once on the trolley wheels the pallet rolled over to the extreme port side of the vessel causing the vessel to list to port. To bring the vessel back upright the side mounted hydraulic crane was rotated so that its arm extended outboard over the starboard side. The pallet immediately rolled straight across to the extreme starboard side. The vessel heeled sharply to starboard and capsized. She remained floating upside down.

The two members of her crew were thrown into the water. They managed to swim to the nearby fish cages and pull themselves out of the water. They were retrieved and taken ashore by another of the farm's workboats. Neither was found to have suffered any harm.

Observations

1. It is believed that the transverse stability of the vessel was significantly reduced because the full width void space below the weather/cargo deck was partially full of water.
2. The owners have taken the following measures to ensure that a similar accident is not repeated:
 - a reduction in the amount of deck cargo carried
 - all cargo pallets to be secured while in transit
 - void spaces to be checked for water and kept dry
3. Since the vessel did not at that time proceed to sea she was not governed by the requirements of the Merchant Shipping Load Line Regulations.

Comment

1. The fitting of bilge alarms would have alerted the crew to the fact that there was water leaking into the void space before it had a detrimental effect upon the stability.
2. The fact that a vessel is not covered by the Merchant Shipping Load Line Regulations does not absolve owners from their responsibility to ensure that the vessel is seaworthy and that operations are conducted in a safe manner. In this case the owners should have engaged a qualified naval architect at the outset to determine the maximum deck load which the vessel could safely carry, and to produce an operations manual for the guidance of crews in the loading, unloading and safe operation of the vessel with regard to transverse stability.

Narrative

A 24 metre long fishing vessel with a maximum draught of 3.2 metres left Oban Harbour soon after midnight. It was low water and she was bound for fishing grounds off the east coast of Scotland. On clearing the harbour, course was set to pass between Lady's Rock lighthouse and Lismore lighthouse at the southern end of the Sound of Mull, a distance to go of about 4 miles (see chart extract). The Skipper entered the course on the video plotter and engaged the automatic steering which worked from the magnetic compass. The radar was set on the 6 mile range. The weather at this time was fine and clear, wind southerly Force 4 - 5.

The watch was handed over temporarily to one of the deckhands with the instruction to keep the vessel on the track using the video plotter in order to pass midway between the lighthouses which were clearly visible at the time. The deckhand was to call the Skipper when the vessel was about a mile from the lighthouses. The Skipper then went below.

Soon after the Skipper left the wheelhouse the visibility deteriorated in heavy rain showers. This badly affected the radar picture but the lights apparently remained visible. As the vessel proceeded towards the entrance to the Sound the deckhand, using the video plotter, discovered that the vessel was being set to port and so course was altered to starboard to compensate for this. The Skipper was called when the vessel was just under one mile off Lady's Rock and again when the vessel was less than half a mile off it. When the Skipper reached the wheelhouse he realised that the vessel was to the south-west of the intended track and very close to Lady's Rock. He attempted to alter course to starboard but was unable to avoid a stranding.

The Coastguard was informed and assistance was requested. Oban Lifeboat and another fishing vessel proceeded to and assisted at the scene. The vessel was eventually refloated on the rising tide and towed into Oban without further incident.

There were no deaths, injuries or pollution as a result of the incident.

Observations

1. The deckhand had 10 years experience at sea but had only joined this vessel a few hours before sailing from Oban. He had no training in navigation and no instruction in the use of the equipment on board. In addition his fishing experience had been almost entirely in the North Sea.
2. The safe passage between Lady's Rock and Eilean Musdile is only about 3 cables wide at low water and, although it is well marked, it does call for accurate navigation in order to avoid the rocks which extend offshore. It is noted that the passage to the west of Lady's Rock is 9 cables wide with no outlying dangers.
3. The tidal streams, which are a particular danger in the area, were not strong at the time and did not significantly influence the vessel.

1. The incident highlights the Skipper's responsibility to ensure that watchkeeping arrangements are adequate for maintaining a safe navigational watch. In particular the person in charge of the watch should have full knowledge of the operation of all navigational equipment and its limitations. Merchant Shipping Notice No M.1020 draws attention to these requirements.
2. It was the Skipper's intention to return to the wheelhouse in time to take the vessel through the narrow channel between Eilean Musdile and Lady's Rock. He had left the watch in charge of an inexperienced man and his arrangements for ensuring that he returned to the wheelhouse before the vessel was placed in danger were not sufficient.

10. MAN LOST OVERBOARD FROM FISHING VESSEL

Narrative

A 21 metre pair trawler was fishing some 70 miles from the coast of Norway with a crew of six on board. The sea was calm and the visibility was good.

The vessel was constructed with a gutting shelter which extended forward and either side of the wheelhouse. Beneath this shelter to the starboard side of the wheelhouse was the fish hopper and part of the gutting machine. The equivalent area to the port of the wheelhouse, although not fitted with similar machinery, was obstructed to the full width and height of the shelter with empty fish boxes.

Four of the crew were working beneath the gutting shelter, another man was in the fish hold and the Skipper was in the wheelhouse. In the early hours of the morning, and whilst still dark, the man left the hold telling the other crewmen that he was going aft to the toilet. After going aft he was not seen again until his body was recovered from the sea by another vessel about two hours later.

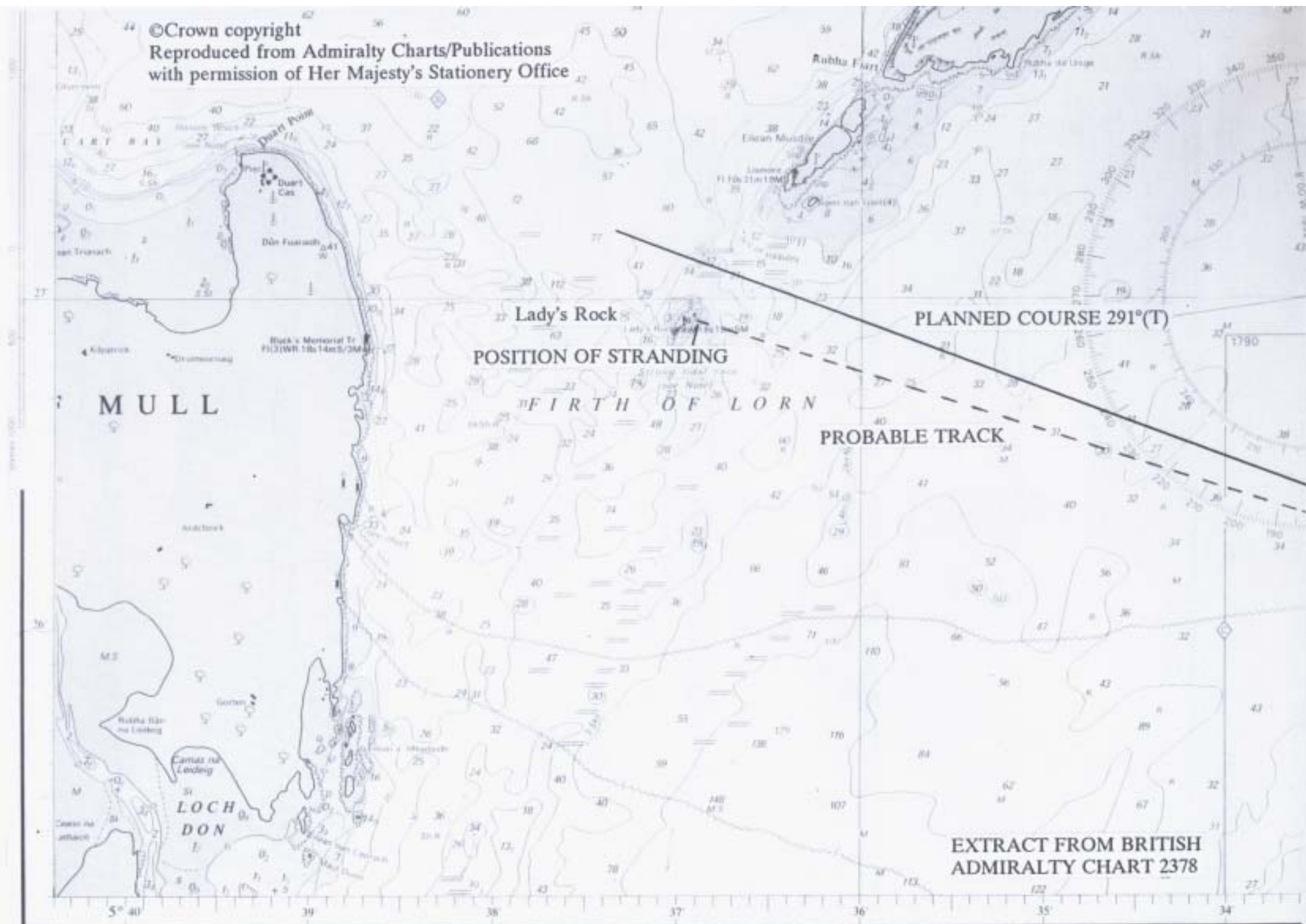
Observations

To get to the toilet, which was aft, the man would have passed through the shelter alongside the wheelhouse. However, on the port side the passageway was blocked by fish boxes and on the starboard side it was restricted by the hopper and gutting machine, making access difficult. On returning forward, he may have attempted to pass outboard of the shelter.

Comment

1. Although it has proved impossible to establish the true cause of this man being lost overboard, it is possible that he attempted to return forward along the outboard ledge formed by the bulwark and shelter, using the guardrails around the shelter as hand holds. He was known to have used this route very occasionally in the past. Because the port side access route was blocked by fish boxes and the starboard side was restricted by the fish hopper, this would have been an understandable temptation. To have slipped whilst attempting to take this route is equally understandable.
2. This case demonstrates the importance of keeping access routes as clear as possible and of not using 'short cuts' when moving about a boat. It should also be noted that the Skipper has a responsibility to ensure that safe movement about his vessel is possible and that unsafe access routes are not employed by the crew, especially at sea.

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PLANNED COURSE 291°(T)

Lady's Rock
POSITION OF STRANDING

PROBABLE TRACK

EXTRACT FROM BRITISH
ADMIRALTY CHART 2378

11. FISHERMAN CARRIED OVERBOARD AND SERIOUSLY INJURED

Narrative

A 14 metre, wooden vessel was working creels about 1 mile offshore. The weather was fine and calm. For the creels to be shot deckhand A took each creel as it was passed to him by deckhand B and held it on the bulwark until the rope pulled tight and swept it over the side. He faced aft during this operation with his back to the main coil of creel ropes lying on the deck. The Skipper was in the wheelhouse steering the vessel.

After about 10 creels in the current rope had gone over the side, deckhand A became aware that a cluster of rope had taken a grip on his left leg. Knowing that the creels were going to pull him over the side he jumped up onto the bulwark rail. When deckhand B turned around with the next creel and saw him standing on the bulwark rail he shouted a warning. The Skipper immediately put the engine full astern. Deckhand A was pulled down into the water with the creels when the rope went taut. Unfortunately his right leg caught on the guardrails just aft of where he had been standing and this caused him to receive serious internal injuries.

Deckhand B jammed one of the later creels in the sequence under the bulwark rail and this eventually took the strain on the rope and stopped any more creels being taken over the side. They then set about hauling deckhand A back to the surface. He was lifted out of the water, laid on the baiting table next to the line hauler but he was unconscious. Deckhand B gave him the kiss of life. He came around spewing up water and was carried into the wheelhouse, wrapped in a duvet and seated by the exhaust trunking for warmth.

The Skipper radioed the Coastguard for help and he put the vessel on a course for the nearest port which lay only about 10 minutes steaming time away. The casualty received medical treatment from a doctor and was then flown to hospital by air ambulance. Because his injuries were extensive and serious, he had to spend some three months in hospital.

Observations

1. Deckhand A owes his life to the quick action and first aid knowledge of the other crew members, both of whom had attended the basic first aid course for fishermen.
2. In common with the majority of fishing vessels of this type there were no safety features on the vessel specifically to prevent accidents of this kind from occurring.
3. The casualty had his back turned on the main coil of creel ropes during the shooting operation. This left him particularly vulnerable since he would be unaware of any ropes which might come off the coil and pose a particular danger to him until it was too late.

Comment

- 1a. The casualty was also found to be suffering from hypothermia when he reached hospital. However he was seriously injured and divesting him of his wet clothes in the wheelhouse might well have accentuated his serious and extensive injuries, caused profound shock and led to a fatal outcome.
 - b. Where there is a casualty with hypothermia and potential serious injuries on board and the vessel is within minutes of an ambulance or a helicopter evacuation, the correct procedure is to leave the wet clothes on and to wrap the patient in plenty of insulation and to get the patient to hospital as soon as possible. Removing clothes invariably increases the chill factor and can exacerbate serious underlying injuries.
 - c. Where a vessel is some distance from ambulance/helicopter facilities and where there is heated cabin accommodation and adequate space, the casualty's clothing should be removed very carefully, and then he should be dried and put in a bunk with an ambient air temperature in excess of 20°C and his body covered with blankets or duvets.
2. Discussions with those immediately involved with the accident identified a series of safety measures by which a similar accident could be avoided. These had originally been devised by another local owner who had implemented them following a similar, but fatal accident on his vessel some six years before. Operating experience over this time has shown them to be effective. It is believed that the adoption of these safety measures on any creel/potting vessel would result in a significant, positive improvement to crew safety.

These safety measures are described below.

Measures to improve Crew safety during the shooting of Creels

Photographs of the protective arrangements which have been fitted to two vessels are shown opposite. These show how the creel ropes are confined to a narrow area along the side of the boat by a simple barrier made from pound boards. On vessel B the crewman who holds the creels on the bulwark rail during shooting stands, for additional protection, behind the steel framed barrier shown. This is to prevent any rope from the main coil by the hauler catching the crewman from behind.

12. FOULED PROPELLER LEADS TO FISHING VESSEL SINKING

Narrative

A 10 metre, 44 year old, wooden fishing vessel was in the process of hauling the stern trawl when the net fouled the propeller and disabled the vessel. Weather conditions at the time were wind westerly Force 5 with rough seas. The vessel was 2 miles south of a reef of rocks and a strengthening tidal current of about 0.3 to 0.4 knots was carrying the vessel towards the reef. The depth of water was about 18 metres. The anchor was dropped but it did not hold in the sandy bottom and the boat kept drifting. The Coastguard were alerted.

One of the pair of trawl doors was used as a second, makeshift anchor. This was thrown into the water over the stern attached to some 90 - 140 metres of trawl warp. It held and the drift of the vessel was halted close in to the reef. Unfortunately the warp to the trawl door then parted and the vessel was swept over the reef causing the hull to be holed in the process. She flooded rapidly and an automatic electrical submersible bilge pump and the engine driven bilge pump were overwhelmed.

The crew put on their survival suits and life-jackets and by this time a lifeboat and helicopter were in close attendance. The vessel then sank rapidly forcing the crew to take to the water but the helicopter winched them immediately out of the water and to safety.

Observations

When asked how a similar accident might be avoided the Skipper said that he thought that they were trying to do too much: that they were fishing in conditions which were really too severe for that size of vessel.

Comment

1. The vessel did not carry a liferaft. Merchant Shipping Notice No M.1467 strongly recommends that all fishing vessels under 12 metres in length which go to sea should carry a suitable liferaft for all persons on board.
2. The crew were equipped with survival suits, which whilst not providing them with the same chance of survival as a liferaft, would have provided excellent short term protection against hypothermia.

13. UNATTENDED WINCH RESULTS IN AN ACCIDENT TO DECKHAND

Narrative

A 23.9 metres long side trawler was lying beam on to a heavy swell while hauling its net. The deckhand was hauling in the lazy deckie, attached to the cod end, using the starboard whipping drum. The other three members of the crew, including the Skipper, were manhandling the net in over the starboard side.

As the deckhand hauled in on the lazy deckie he noticed that it had taken a riding turn. He stepped around the winch to get to the control lever with the intention of stopping it. Unfortunately he stepped into a bight in the rope and was carried around the whipping drum. The other crew members came to his aid and stopped the winch but he had broken his lower leg in two places and was airlifted to hospital.

Observations

1. There was a local control lever within reach of the deckhand. However, this lever could not be operated since it was linked to a central lever which had been tied back to allow the winch to run unattended.
2. The vessel had a crew of four, including the Skipper. It is clear from this accident that a crew of four was too small to enable the vessel to be operated safely.

Comment

The injury to the deckhand would almost certainly have been avoided if there had been a crewman controlling the winch. The practice in use on this vessel was contrary to all the current safety advice given in Merchant Shipping Notice No M.1561, the booklet "Fishermen & Safety" and the leaflet "Make it Your Business to Make it Safer".

14. RAPID FLOODING OF FISHING VESSEL

Narrative

A fishing vessel of 22 metres registered length was engaged in pair seining in the North Sea. The high-level bilge alarm sounded in the wheelhouse. Upon investigation, bilge water was found to be level with the engine room floor plates and the fish hold was also taking water. The two powered bilge pumps were then set to discharge overboard from the engine room and use was made of the manually operated engine room bilge pump. An attempt was made to identify the source of flooding without success.

The Skipper transmitted a MAYDAY and the power block was used to lower the two inflatable liferafts from their stowage position, on top of the accommodation housing, to the weather deck. One of the liferafts was put into the water and inflated and boarded by three crew members. It was then pulled across to the other vessel of the pair. The two remaining crew members inflated the second liferaft which turned upside down. The power block was used to haul the painter in an attempt to righten the liferaft without anyone having to enter the water but as the liferaft came up against the power block, the painter parted and the liferaft blew away.

A rescue helicopter then arrived on scene with two pumps on board. However, the extent of flooding was such that it was decided to abandon the vessel and the remaining crew members were airlifted to safety. The vessel subsequently sank.

Observations

1. The vessel was of wooden construction and was 30 years old.
2. There was a Force 6 - 7 head wind which was causing the vessel to pitch heavily and to ship light seas across her weather deck.
3. The rate of flooding was rapid but its cause was not identified.
4. The vessel carried an additional portable pump which was found to be inoperable at the time of the incident. The sea suction valves for both of the powered bilge pumps were left partially open.

Comment

1. An increased rate of pumping could have been achieved had the manual pump for the fish room bilge been utilised, the portable pump been operable and the sea suction valves for the powered bilge pumps been completely shut. Appropriate advice on these matters is provided in Merchant Shipping Notice No M.1327.

2. The liferaft stowage position on top of the accommodation housing was sufficiently obstructed and remote from either side of the vessel so as to cause doubt about whether the liferafts could be successfully launched by hand without initially transferring them to the weather deck. Appropriate advice on the stowage of such liferafts is provided in Merchant Shipping Notices Nos M.1400 and M.1505.

15. LOSS OF A SMALL FISHING VESSEL

Narrative

This case concerns an open boat of 6.4 metres length, the operation of which had been taken over by the Skipper shortly before this incident. Although he had been a regular fisherman with several years experience of the local inshore fishing grounds the Skipper had used this boat on only a few occasions.

The boat was seen to leave its berth, and proceed to sea, in the mid-morning with only the Skipper on board. At that time the boat was observed as having a significant list, apparently due to large amounts of gear being stowed on one side. The weather conditions were wind Force 5 - 6 giving waves of up to 1.2 metres and a moderate swell. The weather forecast for that day had been wind Force 4 - 5 increasing to 6.

Approximately mid-afternoon the boat was reported as overdue and SAR operations were initiated. This resulted in the wreck of the boat being found on the sea bed about one mile from its berth and half a mile from land. The body of the Skipper was washed ashore one week later.

Observations

1. Operation of this boat as a gill netter had been on a single handed basis by this and its previous Skipper.
2. The boat had on board most of the life saving appliances required by a vessel of this size; it was deficient of one lifebuoy.

Comment

To proceed to sea in an open boat which has gear stowed in such a way as to cause a significant list is very poor practice. To do so in poor weather conditions, which had been well forecast, verges on folly.

16. ANGLING VESSELS - THE SAFETY CODE PROVES ITS WORTH

The two contrasting angling vessel accidents reported in this section illustrate the increased safety which results if the vessel complies with the safety requirements of "The Safety of Small Commercial Motor Vessels, A Code of Practice".

Case 1

Narrative

An 8 metre, grp angling vessel was lost some three miles offshore. At the time she had a party of eight anglers and two crew on board.

Some three and a half hours after leaving port the Skipper became aware that the vessel felt heavy in the water and on investigation he found that water was half way up the engine. Within minutes the vessel had sunk completely throwing all on board into the water, nine of them without life-jackets. Fortunately, there was one other angling vessel close-by and it had been alerted to the distress by a red hand held flare and immediately headed for the scene to pick up the survivors.

All were saved but one person was unconscious and had to be airlifted to hospital.

Observations

1. The most likely cause of the flooding was the failure of a seacock, stern gland or some other underwater hull fitting.
2. The vessel did not carry sufficient life-jackets for all who were on board at that time. Life-jackets which were carried were not readily to hand when it was realised that the vessel was going to sink. The Skipper only managed to issue one or two before the vessel went down and only one of the survivors was actually wearing a life-jacket when they were rescued.
3. The vessel did not carry any lifebuoys.
4. The vessel did not carry a liferaft.

Case 2

Narrative

A 10 metre, commercial angling boat with nine anglers on board was anchored 15 miles offshore. Within five minutes of anchoring, the bilge alarm sounded and on investigation water was found to be pouring in through the stern gland and there was a smell of burning. An electrical bilge pump was started but this broke down after a few minutes. Manual bilge pumps were then put into use and the Skipper radioed the Coastguard. As a precaution life-jackets were issued to all on board.

The manual bilge pumps controlled the flooding and the vessel was towed back to port by the local lifeboat.

Observations

1. The cause of the flooding was somewhat unusual: a piece of the sacrificial anode from inside the engine cooling water header tank had passed into the gearbox oil cooler and blocked the cooling/lubricating water take-off to the stern gland. The stern gland overheated and the damaged packing could no longer provide a seal against water ingress.
2. This accident was potentially very serious but fortunately the vessel was well equipped and the situation was controlled. The bilge alarm provided the early warning of flooding that was absolutely vital in this circumstance.

Comment

Case 1

1. It is almost certain that if another vessel had not been in the immediate vicinity this accident would have resulted in a number of fatalities.
2. If the vessel had been fitted with a bilge alarm it is possible that the leak could have been found and plugged early on, saving the vessel and preventing the occupants from being exposed to an extremely dangerous situation.
3. If the vessel had been equipped and operated to the minimum standard specified in "The Safety of Small Commercial Motor Vessels - A Code of Practice" a bilge alarm would have been fitted, a liferaft would have been carried and sufficient life-jackets for all on board would have been readily to hand. Thus the danger to the lives of the occupants would have been significantly reduced.

Case 2

1. The vessel has a certificate of compliance with "The Safety of Small Commercial Motor Vessels - A Code of Practice". This incident clearly illustrates that compliance with the requirements of the Code can have a marked beneficial effect upon the safety of angling parties.

General Comment

The organisers of sea angling trips should be aware of the potential dangers inherent in such trips. These dangers can be minimised if they charter properly manned and equipped vessels. Vessels which are not certificated or licensed should be avoided.

17. ENGINE SUCCESSFULLY REPAIRED AT SEA IN ADVERSE CIRCUMSTANCES

Narrative

A 51.52 metre sophisticated, refrigerated stern trawler was dodging in poor weather in the Denmark Strait between Greenland and Iceland. Wind was Force 10 with Force 12 at times. One particularly large sea broke over the vessel's bows and caused some minor damage leading to ingress of water into the accommodation. In order to assess this damage the Skipper turned the stern of the vessel into the wind and sea.

Whilst in this situation another large sea broke over the stern above gantry height. The main engine exhausted from the top of the gantry. Sea water passed down this exhaust and, as the engine was a port controlled two stroke, into one cylinder of the engine. Consequential damage consisted of a smashed piston and liner forcing the crew to stop the engine. Due to the appalling weather, and the vessel's position, there was little hope of receiving assistance in less than a few days. The vessel's Chief Engineer thus decided to attempt a repair.

The damaged components were removed and the spare liner and piston installed. However, due to the bottom end bearing being damaged and having no serviceable spare on board, the piston was hung within the liner by a stud passing through the fuel valve orifice in the cylinder head with the piston being positioned so as to blank off the air and exhaust ports. The connecting rod was lashed to an oil pipe in the crankcase in order to be clear of the crankshaft. Also the oil supply drilling in the crank pin was blanked off with a length of studding, passed through the pin, with washers and nuts on each end. (See diagram opposite)

After repeated attempts to achieve water and gas tight joints on the cylinder head the engine was started and ran on the five remaining cylinders. The vessel arrived in Iceland about two days later. The temporary repair took some 50 hours of work on the part of the Chief and Second Engineers.

Comment

1. Although the techniques used in this temporary repair were those recommended by the engine's manufacturers this, and the brief description above, can give little true indication of the problems which these two Engineers encountered in performing this work. Handling and guiding heavy components, such as the piston/connecting rod assembly and the liner, with lifting tackle, while the vessel was rolling to 45° or more either way and over a period of 2 days and nights would have generated many problems which would have been compounded by physical and mental exhaustion.
2. This is the type of repair which most Marine Engineers encounter only in text books during their training. If faced with a similar situation they might consider it impossible to carry out the repair at sea. That this vessel's Engineers undertook, persisted with and successfully completed this task under the most appalling conditions is to their professional credit.

18. TWO COCKLE DREDGER VESSELS CAPSIZE IN SEPARATE INCIDENTS

Narrative

Case 1

This 10 metres long, steel vessel was loaded with a deck cargo of approximately 3 tonnes of cockles and the crew of two were in the process of retrieving the dredge. The weather and sea were calm. As the warp on the dredge was hauled in the vessel began to heel. The Skipper thought that the dredge had dug into the sand and that it would pull clear if they kept hauling. Suddenly one of the cockle bags on the centre-line slid over to the starboard bulwark, causing the vessel's heel to increase dramatically. Almost immediately a second bag from the port side of the vessel slid across. Capsize was inevitable.

The vessel settled on the bottom on her starboard side in about 2 metres of water while the port side remained above water. The crew clambered onto the top of the wheelhouse, where they remained until rescued a short while later by another vessel in the fleet.

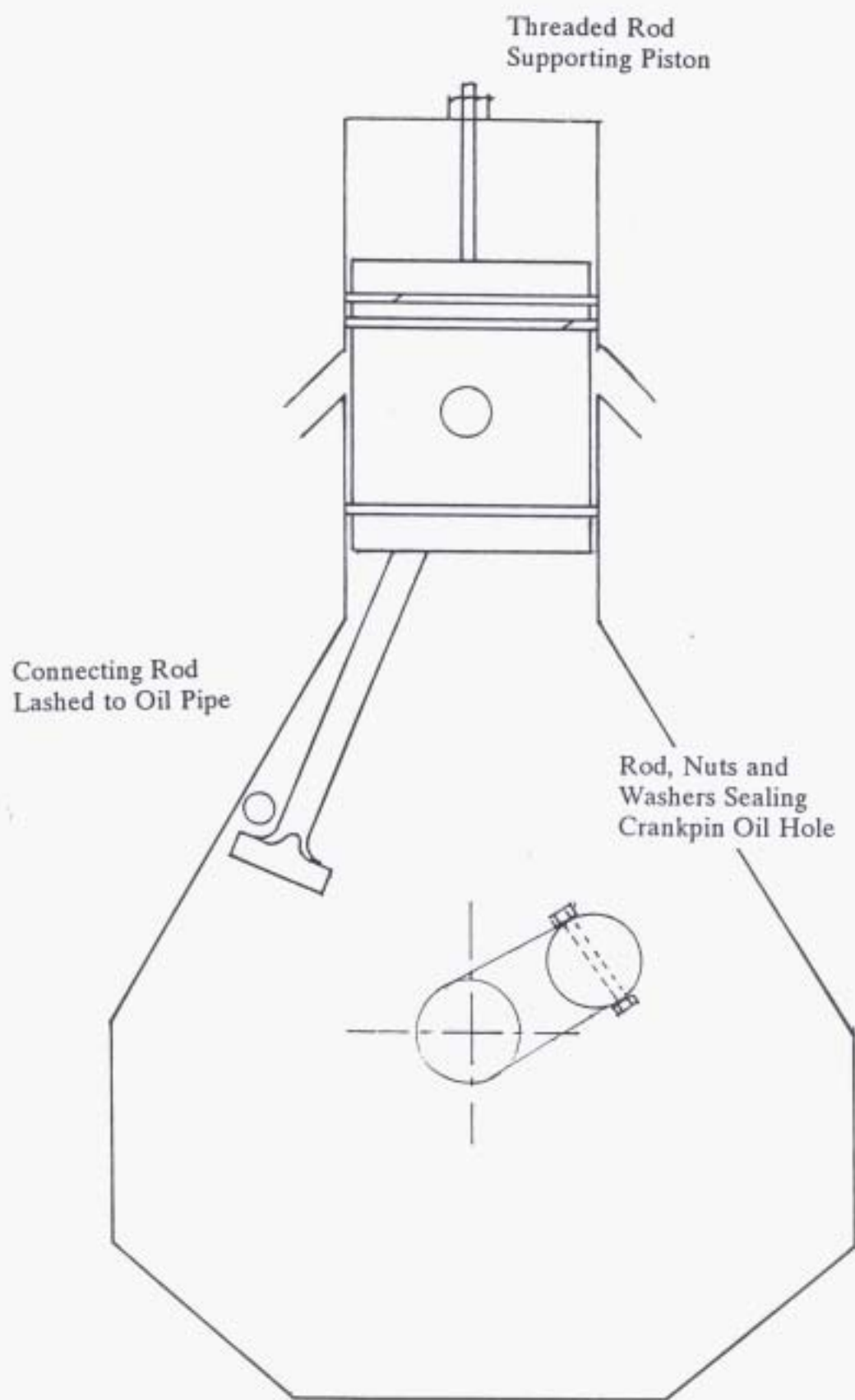
Case 2

This 11.7 metres long, steel vessel was loaded with a cargo of approximately 8 tonnes of cockles, 4 tonnes of which was on the weather deck in bags. The weather and sea were calm. The vessel had completed fishing and lay across the tide as the crew hauled in on the dredge. As the dredge came clear of the water the vessel began to heel to starboard. Instead of the dredge hanging vertically from the davit it was angled out to starboard: the towing chain was clearly caught around an underwater obstruction. The Skipper let the brakes off the winch in order to release the dredge and suction pipe, but the vessel continued to capsize to starboard.

The vessel settled on her side in about 2 metres of water. The two crew climbed up onto the port side which was still clear of the water and were rescued by another vessel in the fleet.

Observations

1. The crews of both vessels were very experienced and obviously conscious of the limited stability of their vessels - the towing points for the dredges were as low as possible, out through the freeing ports.
2. There are several similarities between the two accidents: both vessels were heavily laden, both were carrying deck cargoes, and in both cases it was the snagging of the dredge gear on the seabed which initiated the sequence of events which led to both capsizes.



DIAGRAMMATIC SECTION THROUGH NO 5 UNIT AFTER TEMPORARY REPAIR

3. The stability and the freeboard of both vessels had never been assessed by a suitably qualified person.
4. It is probable that both the stability and freeboard of the vessels is insufficient to allow a deck cargo of cockle bags to be carried.
5. There are currently no statutory stability or freeboard requirements which an under 12 metre fishing vessel has to satisfy.

Comment

The safety of small fishing vessels and the lives of those on board is mainly in the hands of the people concerned with their construction, operation and maintenance. Reference is to be made to Merchant Shipping Notice No M.989 which states ".....the stability should be properly assessed by a person having appropriate professional experience. The assessment should have regard to the intended type of fishing and service.....there must be sufficient freeboard all round to ensure that the boat is still stable and seaworthy in all likely weather conditions, even with an unusually heavy weight of catch and the weight of the gear being hauled".

19. SINGLE MAN OPERATED STERN TRAWLER FLOODS AND SINKS

Narrative

This 9.95 metre, steel, stern trawler left port in the early hours of the morning for the fishing grounds. The vessel was being operated single handed by the Skipper and the weather was good with light winds and a calm sea. When she was about 2 or 3 miles out the Skipper noticed a small quantity of water in the fish room although the engine room was dry. He removed a bung in the engine room/fish room bulkhead to allow this water to flow into the engine room from where it could be pumped overboard. The vessel continued to the fishing grounds, some 5 or 6 miles out, and shot away the gear.

When he checked the fish room some hours later it was found that the water level was higher and it was also high in the engine room. The bilge pump was not pumping and was leaking water badly. He sent out a MAYDAY and abandoned ship into a liferaft from which another fishing vessel picked him up about 20 minutes later.

The vessel sank in some 55 metres of water.

Observations

1. The exact cause of the flooding and foundering has not been determined. The evidence suggests that the source of the initial flooding was the bilge pumping/deckwash system. The failure of the pump seals appears to have allowed rapid flooding towards the end.
2. The bilge pumping/deckwash system had been installed by the owner. It had caused flooding of the vessel twice in the past.
3. A lack of watertight bulkheads allowed unrestricted flooding throughout the vessel. There were originally two steel watertight bulkheads in the vessel but these had lost their integrity because of the numerous holes cut in them for pipe and cable runs.
4. The bilge alarm sounded continuously for several hours. It was ignored by the Skipper who believed that the pump was coping with the flooding.
5. This accident illustrates the inherent hazard of singlehanded trawling: an emergency situation cannot be dealt with adequately, abandoning the vessel becomes the only viable course of action.

Comment

Merchant Shipping Notice No M.1327 which addresses losses of fishing vessels through flooding provides the following relevant advice:

- Do close the sea suction on the bilge pump after the pump is primed and operating.
- Do keep a watch when pumping bilges

20. HULL WEAKNESSES LEAD TO THE LOSS OF TWO FISHING VESSELS

Narrative

Case 1

This 22 year old wooden pair trawler, with a crew of six, had stopped fishing due to the weather conditions and it was decided to return to port. The course for home lay directly into the weather and the vessel was pounding quite a bit. The Skipper inspected the fish hold, found it was dry and then inspected it again three hours later. On opening the hatch he discovered that the hold was about half full of water. The overboard discharge from the bilge pump was just a dribble indicating that the bilge pick-up in the fish hold was blocked. Since this was now underwater it could not be cleared.

The Skipper reduced the vessel's speed and sent out a MAYDAY. A helicopter arrived with a portable pump and this was lowered to the vessel. The portable pump kept choking on the debris floating around the fish hold, and the attempt to pump out the fish hold was abandoned. The crew were evacuated by the helicopter and the vessel was left to sink.

Observations

1. The most likely cause of the flooding is thought to have been a failure of the hull planking, or caulking, in the fish hold.
2. In order to keep the vessel dry the bilge pump ran continuously on the fish room suction.
3. The vessel was fitted with a bilge alarm but it was faulty.
4. The partner vessel stood by the casualty until she sank. This occurred some 16 hours after the flooding had first been discovered.
5. That the abandoned vessel survived so long in such appalling weather conditions, gusts of 60 knots (Force 11) were recorded, was due to the fact that the bulkhead between the engine room and the fish room was watertight. In better conditions she would undoubtedly have been saved.
6. The side valves in the engine room had not been closed when the vessel was abandoned. This may have provided a route for the continued flooding of the vessel.

Case 2

This 20 year old wooden fishing vessel with a crew of six left port for the fishing grounds. The winds were Force 4 to 5 and the sea conditions were moderate. Some six hours into the voyage the engine was heard to mis-fire so the fuel filters were changed over. About half an hour later the engine was mis-firing again.

This time it was found that the engine room was flooded up to the floor plates. The engine driven bilge pump and the auxiliary driven bilge pump were started but could not cope with the rate of flooding. The fish hold bilge alarm activated and on inspection this space was also found to be flooded above the floors.

A PAN PAN was broadcast and a helicopter arrived over the vessel with a portable pump. Unfortunately, the helicopter developed engine trouble and had to abort before the pump was transferred.

The Skipper instructed three of the crew to abandon ship in one of the liferafts. He and two others stayed on board to try and save the vessel but after about 30 minutes they gave up the attempt and abandoned ship in the second liferaft. A skilful operation by the Masters of three offshore supply vessels rescued the occupants of both liferafts.

Observations

1. The most likely cause of the flooding is thought to have been a failure of the hull planking, or caulking, in the fish hold. It was reported that the vessel had taken a 'bash' on her topsides in this area which may have strained and weakened the structure.
2. The bulkhead between the engine room and the fish hold was not watertight and she sank within five hours of the flooding first being discovered.
3. The bulkhead between the fish hold and the engine room was steel and had originally been of watertight construction. However, over the years numerous holes for pipes and access routes had been cut in it thus destroying its integrity.

Comment

1. Skippers of older wooden vessels should take particular care on their inspections before putting to sea to ensure that the hull is undamaged and watertight.
2. It is irresponsible, and unnecessarily jeopardises the lives of the crew, to take a vessel to sea which is reliant upon the continuous running of her bilge pump to keep her dry.
3. The value of watertight bulkheads is demonstrated by these two accidents. The vessel with the watertight bulkhead survived for 16 hours in appalling sea conditions whilst the other was lost after only five hours in moderate conditions.
4. Merchant Shipping Notice No M.1327 which addresses losses of fishing vessels through flooding offers the following relevant advice:
 - Do close all sea valves (and other valves controlling the inlet and outlet of water through the hull) when the cause of the flooding is not known or cannot be controlled.

APPENDIX A

INVESTIGATIONS COMMENCED IN THE PERIOD 01/08/94 - 31/11/94

DATE OF ACCIDENT	NAME OF VESSEL	TYPE OF VESSEL	FLAG	SIZE	TYPE OF ACCIDENT
30/07/94	PURBECK GEM	Small Commercial Motor Vessel	UK	16.45m	Grounding
31/07/94	JULIE ANNE II	Fishing Vessel	UK	7.77m	Foundering
08/08/94	HOO BEECH	Gen Cargo - Single Deck	UK	794.00 grt	Stranding
09/08/94	SALLY STAR	Ro-Ro Passenger	Bahamas	9,120.00 grt	Hazardous Incident
13/08/94	VENTUROUS	Fishing Vessel	UK	23.41m	Accident to Personnel
14/08/94	AN MORDROS	Fishing Vessel	UK	9.34 grt	Foundering
16/08/94	CHARLIE ANGEL	Pleasure Craft	UK	4.00m	Accident to Personnel
18/08/94	MAYFLOWER	Pleasure Craft	UK	13.07m	Machinery
22/08/94	MORAY EXPLORER	Fishing Vessel	UK	20.68m	Accident to Personnel
23/08/94	ANNA SOFIE	Fishing Vessel	UK	18.35m	Fire
25/08/94	SALLY STAR	Ro-Ro Passenger	Bahamas	9,120.00 grt	Fire
30/08/94	SCORPIO	Fishing Vessel	UK	8.10m	Capsizing
01/09/94	SJOBORGIN	Fishing Vessel	Denmark	18.36m	Foundering
12/09/94	WARRIOR	Fishing Vessel	UK	4.96m	Capsizing
17/09/94	SARAH THINNESEN	Fishing Vessel	UK	21.98m	Heavy Weather Damage
20/09/94	ISLAND PRINCESS	Cruise	UK	20,186.00 grt	Accident to Personnel
21/09/94	TAKLIFT 4	Dry Cargo Barge	Netherlands	4,854.00 grt	Contact
23/09/94	OPPORTUNITY	Fishing Vessel	UK	12.77m	Fire
25/09/94	PRIDE OF HAMPSHIRE	Ro-Ro Passenger	UK	14,760.00 grt	Machinery
30/09/94	WATCHFUL	Fishing Vessel	UK	17.08m	Foundering
09/10/94	SMOLNNY	Fish Processing	Russia	2,333.00 grt	Grounding
13/10/94	CLARA GWYNNE	Fishing Vessel	UK	15.12m	Foundering
14/10/94	RISNES	Bulk Carrier	Cyprus	3,890.00 grt	Fire
16/10/94	SEAWARD QUEST	Fishing Vessel	UK	24.32m	Foundering
17/10/94	SEKI PINE	Ro-Ro Cargo	Panama	12,086.00 grt	Accident to Personnel
24/10/94	MYTILUS	Other Structure	UK	15m	Dangerous Occurrence
27/10/94	SAMARIA/ MERCHANT BRAVERY	Fishing Vessel/ Ro-Ro Cargo	UK Bahamas	11.68m 9,368.00 grt	Collision
31/10/94	PIONERSK	Fish Processing	Russia	13,639.00 grt	Grounding
04/11/94	MORNING DAWN	Fishing Vessel	UK	24.11m	Foundering
07/11/94	LARISSA/ HERO	Fishing Vessel/ Bulk Carrier	UK Malta	37.04m 11,356.00 grt	Collision
07/11/94	VAGULA	Fish Catching	Estonia	3,017.00 grt	Grounding
18/11/94	RYAN H	Other	Unreg	12m (approx)	Explosion

Cont.

INVESTIGATIONS COMMENCED IN THE PERIOD 01/08/94 - 31/11/94

DATE OF ACCIDENT	NAME OF VESSEL	TYPE OF VESSEL	FLAG	SIZE	TYPE OF ACCIDENT
20/11/94	RUNDALE	Oil Tanker	Latvia	13,704.00 grt	Fire
23/11/94	B BOUNTY	Fishing Vessel	UK	18.66m	Accident to Personnel
23/11/94	CHRISANDE	Fishing Vessel	UK	17.16m	Foundering