MARINE ACCIDENT

INVESTIGATION BRANCH

Summary of Investigations No 1/91

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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.

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INTRODUCTION

From the contents page of this latest edition of Summary of Investigations, it will be noted that it contains a number of the type of accidents we have come to expect, such as collisions, fires and floodings. It also contains some of those infrequent accidents, the type that thankfully do not happen very often; the emission of gas from a fumigated grain cargo, a battery explosion and an accident involving pyrotechnics. In all these cases information was available which if it had been followed would have prevented the accidents taking place. Even the simplest and most mundane tasks can present hazards unless they are carried out properly and with forethought. It is hoped that by including accidents of these types in the Summary they will become even more infrequent.

A year has passed since the first Summary of Investigations was published. In that year three editions were published which contained a total of 49 summaries. If one goes back through those editions it will soon be apparent that a number of the investigations for which we have published details concern accidents which have a common thread. This latest edition is no exception, it also includes investigations which have that same common thread: poor management.

One dictionary definition of management is "The act or manner of managing", and to manage is "To control or handle something properly or successfully". In many accidents control of the situation was lost or the situation was not handled properly.

It goes without saying that if those situations had been handled successfully there would not have been any accidents. It is left to the reader to decide for himself which accidents in this edition had a contributory cause of poor management.

Proper and effective management is the best way to prevent accidents. The responsibility for proper management lies with everybody concerned in shipping. At sea, it rests not only with Masters, Skippers and senior officers, but also with all seafarers in that every job needs to be "controlled and handled properly" by whoever is carrying it out. Ashore, it is the responsibility of the various office organisations, pilots and shipping agents to name just a few. Publication of these summaries can also be viewed as proper management because in bringing out the lessons to be learnt from accidents and making them known to the shipping community we are handling the situation in a way which should prevent them recurring.

The Merchant Shipping Notice on Good Ship Management which was issued in 1986 has recently been revised and issued as Merchant Shipping Notice No M.1424. This puts the whole subject in perspective and forms the basis of sound management in shipping. It should be read and taken to heart by those to whom it is addressed.

Chief Inspector of Marine Accidents
February 1991

1. PHOSPHINE GAS EMISSIONS FROM A FUMIGATED GRAIN CARGO

Narrative

A 1,935 gross registered tonnage general cargo vessel loaded a cargo of grain in bulk. On completion of loading and shortly before departure, aluminium phosphide tablets were added to the cargo. The intention was that emission from these tablets during the de-composition process would fumigate the cargo during the seven day voyage.

The vessel duly berthed at the discharge port and the hatches were opened. Tests were undertaken by a representative of the consignee for the presence of noxious gas in the cargo holds. The results of these tests were declared to be satisfactory and discharge of the cargo commenced.

During the discharge, shore employees who were working in the vicinity of the discharged grain suffered the effects of exposure to phosphine gas. Cargo operations were suspended and the open holds were left to ventilate. During this time more employees were taken ill with similar symptoms. All were taken to hospital for observation and treatment as necessary.

Observations

1. All the employees eventually recovered from the effects of the gas, but some had to be detained overnight before release from hospital.

2. Neither the vessel's Master and Officers nor the fumigators at the loading port complied with the recommended procedures listed in the IMO publication "Recommendations on the Safe Use of Pesticides in Ships".

3. The representative of the consignee was familiar with neither the correct method of determining gas concentration levels, nor with the recognised exposure limits for phosphine gas.

Comment

The fumigant tablets had not fully decomposed within the bulk grain and phosphine gas was still being generated at the time of discharge. If the fumigant tablets had been contained in, for example, retrievable 'socks', then all of the remaining powdery residue from the tablets could have been removed from the holds on arrival at the discharge port. Such a method would have ensured that no further phosphine gas would have been generated within the holds.

2. COLLISION BETWEEN TWO GENERAL CARGO VESSELS ON A RIVER PASSAGE

Narrative

Two motor vessels each of about 500 gross registered tonnage were proceeding down river with qualified pilots aboard. It was a still night with visibility of between a half and one mile. The tide was high water slack.

The vessels were in a gradual overtaking situation, there being little difference between the two speeds. As they approached a bend in the river, the pilots spoke to each other on the VHF radio. The slower vessel then left the channel on the inside of the bend whilst the faster vessel remained in the channel. The recorded VHF conversations showed that there was confusion as to which vessel would be ahead once the bend was rounded. Once round the bend the vessels were only about a ship's length apart, the slower vessel still ahead and to starboard of the faster vessel.

The pilot of the slower vessel, who had been steering, then handed over to the Mate. It would appear that the Mate misunderstood the course, which was not given to him as a course to steer but only as an order to steer "steady-so". The slower vessel altered course to port, crossing ahead of the overtaking vessel. By this time a third vessel was overtaking the two ships, on their starboard sides.

The slower vessel could not therefore alter course to starboard because of this third vessel and the action of the vessel astern of her was not sufficient to avoid collision.

Observations

1. The transcripts of the VHF conversations showed them to be very informal and lacking in proper procedures.

2. Both pilots involved in the collision acted contrary to what was regarded as normal local practice, namely that the overtaking vessel would leave the channel and that they would not normally attempt to overtake on a bend.

Comment

1. VHF, if used correctly, can be an aid to navigation but care must be taken to ensure that the agreed action is clearly understood by all parties. Merchant Shipping Notice No M.1026 advises on VHF communication procedure and Merchant Shipping Notice No M.845 refers to the use of VHF in collision avoidance.

2. Rule 13 of the Collision Regulations clearly states that the responsibility of an overtaking vessel is to keep out of the way of the overtaken vessel.

3. The helmsman should be given clear instructions by the pilot, which should be monitored by the Officer of the Watch to ensure that they are understood and that the correct course is being steered. Merchant Shipping Notice No M.1102 refers to this procedure.

3. COLLISION BETWEEN TWO TANKERS

Narrative

A tanker of 26,974 gross registered tonnage (grt) was bound for the River Humber with a cargo of some 52,000 tonnes of crude oil. As her berth was not immediately available it was decided to anchor north of the Humber Light-Float; this is a common anchorage for vessels awaiting entry to the River. Among ships already there, was another tanker, of 28,709 grt laden with some 46,500 tonnes of fuel oil. The Master of the in-bound ship decided to anchor about a mile to the north of this vessel. (See Figure 1).

The ship was making her approach from the north. The tide was setting southerly, at 2-3 knots. It was early morning and still dark, the weather being clear with occasional drizzle and a westerly breeze, force 3-4. The Master was conning the vessel; the Chief Officer and the Officer of the Watch were also on the bridge. The vessel was in hand steering and two radars were in use. Speed was being controlled from the bridge, by adjusting the propeller pitch.

In order to stem the tide it was necessary to turn through about 180° before anchoring. The manoeuvre was commenced, by altering course to starboard, when the anchored vessel was some 14 cables distant. Once the anchored vessel was well on the port bow the helm was put hard aport, the object being to complete the swing ahead - therefore up-tide - of that vessel. Unfortunately, insufficient allowance had been made for the tide and the ship set down on to the vessel at anchor so that collision occurred.

The impact ruptured the in-bound vessel's slop tank, and the heat which was generated as a result set oil escaping from that tank on fire. The fire spread to both vessels; that on the ship at anchor was extinguished by her crew, but the fire on the other ship became extensive and was only put out with the aid of fire-fighting tugs from the Humber and two off-shore support vessels which were in the vicinity. Despite this, no serious personal injury resulted from the accident. There was some oil pollution but it was quickly dealt with.

Observations

1. The collision occurred about three hours before high water and at spring tide. It is clearly shown on the Admiralty Chart (in use on board the in-bound vessel) that at such a time a southerly set of some 2.3 knots is to be expected. Moreover, the tide on the day in question was one of the highest of the year, and evidence suggests that the actual rate was more than 2.5 knots. However, the Officer of the Watch estimated the rate at less than 1 knot. It appears clear that the vessel's progress as the anchorage was being approached was not accurately monitored, for if it had been, the true rate of tide would have been appreciated.

2. Although the Master had two well-qualified officers on the bridge with him, he made little use of the assistance which they could have provided.

3. A proper watch was being kept on board the anchored vessel, and danger was apprehended when the other ship was seen to be altering course across the bow. An attempt was made to call her by VHF radio, but without response. No whistle signal was sounded.

4. Fire-fighting on the in-bound tanker was gravely hampered because the foam generator was disabled in the collision, and the emergency switchboard was put out of action by the fire.

5. Fire-fighting tugs were quickly on the scene. This was a matter of good fortune, for the tugs might have been working anywhere on the River at the time, including within the enclosed dock system. There was a very good response from other vessels in the area, some 16 ships taking some part in the emergency operation.

Comment

1. This collision would not have taken place if the in-bound vessel's approach to the anchorage had been properly planned and carefully monitored.

2. The collision might have been avoided if the bridge team had been better organised so that full use was made of the Chief Officer and the Officer of the Watch.

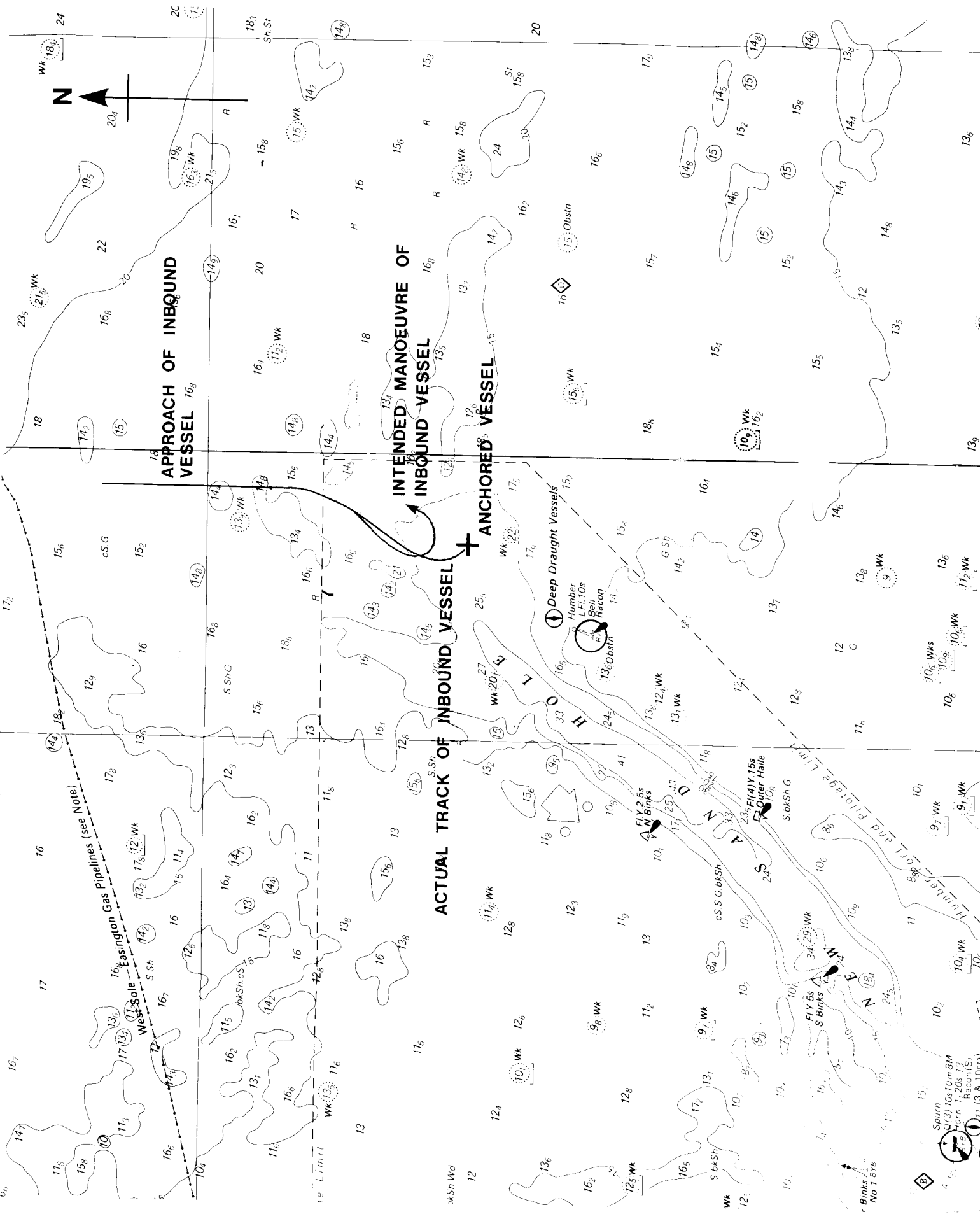
3. The fire might have been extinguished more quickly if the ship's own fire-fighting capability had not been largely destroyed. It is disturbing that all the ship's emergency services were knocked out by a fire which initially was confined to a relatively small area.

4. It is probable that by the time the anchored vessel recognised danger, the in-bound ship was committed and collision could not have been avoided. Nonetheless, it would have been sensible to have sounded the whistle as well as making a VHF call, especially as the identity of the other ship was not known. The whistle, at close range, remains an excellent alerting device.

5. The response of the local emergency services and of other ships was most commendable. The point made at observation 5 above about the fire-fighting tugs has been considered locally: the Humber is an extremely busy waterway and arrangements to ensure that the fire-fighting tugs are so stationed and employed that at least one is readily available in the Estuary at all times have now been put into effect.

Extract from Admiralty Chart No. 107

Figure 1



4. BATTERY EXPLOSION

Narrative

A Fifth Engineer Officer, having been asked to change the emergency generator batteries switched off the charging circuit and proceeded to disconnect the battery leads. Whilst he was undoing the last bolt, the spanner slipped and made direct contact between two adjacent terminals. The subsequent short circuit ignited gases which were present in the space. This caused an explosion with the result that sulphuric acid splashed on to the Engineer's face and chest.

Comment

1. The shipping company concerned had issued safety bulletins on the need for care when working with batteries, and drawing particular attention to the need for proper supervision and safety procedures including reference to the "Code of Safe Working Practices for Merchant Seamen".

2. In the Code, Chapter 24 paragraph 1.1 refers to the dangerous nature of the gases generated by batteries and the need for adequate ventilation, while paragraph 1.7 refers particularly to the dangers of a short circuit producing a spark leading to an explosion.

5. COLLISION BETWEEN A DINGHY AND A FERRY

Narrative

A small passenger/ro-ro ferry was berthed in a river, heading inwards, the jetty being at an angle to the shore. A dinghy with two persons aboard was secured with a single rope alongside another vessel berthed immediately upstream of the ferry and parallel to the shore.

It was a fine day with a light breeze and good visibility. The tide was ebbing and approaching maximum strength.

The Master of the ferry had visually checked both upstream and downstream from his position on the bridge before commencing the departure manoeuvre. The ferry was turned as it moved astern. At the same time the rope securing the dinghy was inadvertently let go by those on board.

The dinghy was carried downstream by the current and forced under the starboard bow of the ferry, causing the dinghy to capsize, and throwing the occupants into the water, one of whom suffered a heart attack and died.

Observations

1. The dinghy was initially secured in a position which was visually obscured from the bridge of the ferry when berthed.

2. The Master of the ferry was unaware of the exact extent to which his visually obscured sectors had been checked by other members of the crew prior to departure.

3. A crew member stationed aft visually checked the area which he thought would be obscured from the bridge. This in fact did not include the area in which the dinghy was initially positioned.

4. The river in the immediate vicinity of the starboard side of the ferry, towards which the dinghy was carried, was not visually monitored by any members of the crew during the departure manoeuvre prior to the accident.

5. The persons aboard the dinghy were unable to control the progress of the dinghy once it was adrift and so could not prevent it from colliding with the ferry, because there was a strong ebb current and they had lost an oar.

Comment

1. All of the sectors visually obscured from the bridge in the immediate vicinity of the ferry should have been properly checked and positively reported upon by members of the crew.

2. There were several small craft near the ferry at the time and measures should have been taken to ensure that a proper lookout, appropriate to the prevailing circumstances, was maintained aboard the ferry during the departure manoeuvre after it had been positively verified that it was safe for the manoeuvre to commence.

3. The dinghy should have been sufficiently equipped with an adequate means of control in the prevailing tidal conditions.

6. DANGEROUS OCCURRENCE WITH A PAINTING STAGE

Narrative

A painting stage was suspended against the bridge front of a 10,000 gross registered tonnage cargo ship. The second of its two gantlines was being made fast at the upper end and a seaman was standing on the stage waiting for this to be done. Without warning, the gantline began to strand. The seaman, who had been holding the gantline for support, had just sufficient time to get off the stage before the gantline parted under his weight.

Observations

1. When out of use, the gantlines had always been stowed in a compartment separate from paints, oils and chemicals. However, examination of the fibres in way of the stranding showed them to be brittle, indicating contamination by some chemical substance.

2. Further investigation revealed that the painting stage and gantlines had last been used by shore contractors, about three weeks previously. They had painted overside in way of the anchors and had used rust stain remover while preparing the surfaces. It is therefore probable that some of the rust remover had spilt on to the gantlines, causing rapid deterioration of the fibres.

3. On the advice of the ship's Safety Officer, all cordage which had been used by the shore contractors was cut up for other uses, such as rope yarns.

Comment

1. Fortunately the seaman on the stage had followed the "Code of Safe Working Practices for Merchant Seamen" and was wearing a safety harness secured to an independent safety line.

2. This accident shows the need for extreme care to be taken when using chemicals in the vicinity of cordage. Chapters 14 and 15 of the Code address this subject and it will be seen from the table in Chapter 15 that ropes made of natural and artificial fibres have widely different levels of resistance to contamination by rust remover.

3. Chapter 15 of the Code also emphasizes the need to load test gantlines before use to four to five times the loads they will be expected to carry.

7. ENGINE ROOM FIRE SUCCESSFULLY CONTROLLED

Narrative

A 1,600 gross registered tonnage offshore support vessel was on passage with her engine room under UMS control when an engine room smoke detector was activated. The main engines were stopped, the emergency stops for the fuel system and ventilation fans operated, and the fire flaps closed. The Chief Engineer and one of the crew entered the engine room wearing breathing apparatus and found that the seat of the fire was at the turbo blower of No 3 Main Engine. The fire was smothered using a combination of dry powder and CO_2 portable extinguishers. The engine room was sealed, boundary cooling applied on the main deck above the seat of the fire by means of the emergency fire pump and the space allowed to cool. Two hours after the alarm was activated the engine room was re-entered, the undamaged No 1 and 4 Main Engines re-started and the vessel proceeded into harbour.

Observations

The cause of the fire was traced to a loose flange connecting the low pressure fuel pipe to the fuel pump of No 8 unit allowing fuel to spray on to the adjacent turbo-charger casing. Engine and/or vessel vibrations during normal operation were thought to be the reason for the slackening back of the flange securing bolts.

Comment

1. This type of incident is identified in Merchant Shipping Notice No M.1229 where it is recommended that suitable screening arrangements should be provided to deflect any leakage to a safe place.

2. The effect of vibration and the need for adequate securing arrangements should also be borne in mind, particularly so in the case of machinery spaces which are unmanned.

3. The management company have now modified their planned maintenance system to incorporate a periodic check on the tightness of fuel oil pressure pipes, and are investigating a suitable locking device for the securing of bolts.

8. OIL OVERFLOW LEADING TO ENGINE ROOM FIRE

Narrative

A 3,335 gross registered tonnage ro-ro freight/passenger ferry was on passage when fire broke out in the engine room. Prior to the fire the engine room was manned by the Second Engineer Officer, the Electrical Officer and a rating. During the taking of the engine room log, the Second Engineer Officer started transferring the contents of the purifier sludge tank to the dirty oil/ sludge tank, leaving the pump running whilst he continued taking the log.

On returning to the area to take a tank sounding, both the Second Engineer Officer and the rating noticed hot fuel oil dripping down from the port uptake space and a small fire on the exhaust uptake lagging. The bridge was informed, the fire alarm rung and the port main engine stopped. The Chief Engineer Officer stopped the engine room ventilation, inspected the area, sighted the dripping fuel oil and, realising the probable source, instructed that all fuel oil transfer pumps should be stopped. Once this had been carried out, the fuel oil ceased to flow and the fire died out of its own accord. During the subsequent clean up, some of the cleaning fluid ignited but this was quickly extinguished by means of a small water hose.

Observations

1. The amount of material in the dirty oil/sludge tank could only be determined by means of soundings and with a large build up of solids on the tank bottom, a false reading was obtained leading to the tank being pressurised and the contents being forced up the overflow and/or air pipe. This discharged into the port uptake space, and dripped down on to the hot exhaust pipes from the main engine and ignited.

2. During the transfer operation, the pump was unattended and the receiving tank was not monitored. Cleaning solvents were in use in an area of hot exhaust pipes: any spillage was therefore almost certain to ignite, causing further danger.

Comment

1. Instructions relating to the transfer of oil and/or sludge should have been covered in the Chief Engineer Officer's or Company Standing Orders. Within those instructions should have been a directive concerning the gauging of tank contents and the need to continually monitor the flow. The management company subsequently fitted a high level alarm to the tank to prevent a recurrence.

2. The need for adequate overflow arrangements to avoid the discharge of fuel oil into machinery spaces where there is a risk of fire is referred to in Merchant Shipping Notice No M.1229.

3. A planned maintenance programme which ensured that dirty oil/sludge tanks were cleaned at regular intervals would greatly reduce the likelihood of false soundings.

9. FALLING LOAD CAUSES INJURY

Narrative

An electric motor was to be lowered through an upper deck hatch opening with the intention of landing it on the main deck level in the engine room using the deck gantry crane. The motor was slung using a synthetic rope strop fitted with an eye at each end, one eye being passed over the lifting hook.

When the motor was in the process of being moved and lowered, it rested momentarily on the guard rail fitted around the hatch opening. With the weight suddenly taken off the strop, the eye came off the hook, and the motor fell to the main deck level injuring a crew member in the process.

Observations

1. The gantry crane was operated from a position at the upper deck opening using a wandering lead control.

2. An assistant was moving to the intended stowage position on the main deck level when the accident occurred.

3. The guard rail located around the main deck opening was permanently fixed in position.

4. The crew member struck by the load had been working directly below the lifting operation.

5. The intended stowage position was such that the load had to be swung over the permanent guard rail located around the main deck opening.

Comment

1. Lifting operations should not be carried out over persons working in the vicinity.

2. With the crane operator not having a clear view of the designated landing area, an assistant should have taken up a position at the upper deck guard rail to guide the operator.

3. The owners have subsequently provided a lifting hook fitted with a spring loaded safety clip to prevent the eye slipping off.

4. Merchant Shipping Notice No M.1347 and Chapter 27 of the "Code of Safe Working Practice for Merchant Seamen" give guidance which is particularly relevant to this accident.

10. DAMAGE WHEN BERTHING A TANKER

Narrative

A 33,000 deadweight tons tanker in ballast with superstructure aft and a single controllable pitch propeller was approaching an oil jetty, which was parallel with the channel and on the ship's port hand. It was a fine clear day with a force 3 wind on the starboard quarter. The tide was slack. An authorised pilot was on board and two tugs were already fast. The head tug was secured by its towing hook to the ship's bow through the centre lead and was towing ahead and to port towards the jetty. The after tug was alongside the ship at about the 2/3 aft position, on the starboard side. It was secured by two wires from its bow; one led forward and the other, a shorter lead, led aft. Initially, the after tug was running with the ship, which was to berth port side alongside.

The ship was steered towards the jetty, making an angle of about 20° with it. As the bow got closer, astern pitch was ordered and the head tug started to manoeuvre across to starboard, in readiness for pulling the bow round as it neared the jetty. The ship was still moving ahead and in order to re-position itself it was necessary for the head tug (a conventional single-screw type) to use ahead power. The effect of this was to increase the forward component of force on the towing wire which tended to negate the decelerating effect of the ship's propeller. At the same time the lateral movement of the head tug, combined with the effect of the after tug (now starting to push), made the ship swing too quickly to starboard. The stern closed rapidly with the jetty. The after tug was now ordered to pull off to starboard. Although it had twin screws, the after tug was also a conventional type and, constrained by the two wires, it took some time to manoeuvre to an effective pull off position. Meanwhile, the ship's port quarter landed heavily alongside the jetty then, continuing to move ahead at a fast walking pace (partly under the towing effect of the head tug), the ship's superstructure contacted and extensively damaged the jetty loading gantry. The ship was taken to an anchorage so that damage could be fully assessed.

Observations

1. The damage to the oil jetty effectively put it out of action. Fortunately there were no injuries and there was no oil pollution.

2. The usual practice when berthing tankers at slack water was to stop the ship parallel to but clear of the jetty, then push her alongside using the tugs.

3. The way the after tug was secured was a common practice. It enabled the tug to provide decelerating effect and then push with the bow, without having to re-position the two wires.

4. The slowest ahead manoeuvring speed of the tanker was 4 knots - about a fast walking pace.

Comment

1. A clear berthing plan had not been agreed before arrival off the jetty. Doubt existed as to the precise manoeuvres to be carried out.

2. The speed of the vessel as she approached the jetty was excessive and the line of approach was too close.

3. When it was apparent that the stern was canting towards the jetty faster than intended, action using port helm and ahead propeller pitch was not taken to counteract it.

4. It was not appreciated that the after tug was secured in such a way that full pull-off effect, if needed, could not be readily effected.

5. There was a poor level of communication and understanding between the ship and the tugs.

11. DANGER OF OUT-OF-DATE PYROTECHNICS

Narrative

Whilst at sea, the Skipper of a fishing vessel attempted to dispose of an out-of-date distress flare. In doing so, the flare accidentally discharged and he sustained severe burn injuries to his hand. As a result of the injuries it was necessary for the Skipper to be transferred by an RAF rescue helicopter to hospital for treatment .

Comment

1. This accident demonstrates that care is necessary when handling out-of-date pyrotechnics.

2. Out-of-date pyrotechnics must now be landed ashore as soon as possible after their date of expiry. Merchant Shipping Notice No M.1418 gives further advice on disposal.

12. LOSS OF AN ANGLING PARTY

Narrative

A fishing vessel of some 11.5 metres in length was lost, with no survivors, in bad weather in the Firth of Clyde. The vessel though principally employed in commercial prawn fishing, was at weekends often hired out to sea anglers; she was being used by a sea angling party at the time of her loss.

The boat had a ferro-concrete hull and a wood deck with a wheelhouse and cabin forward. The propeller shaft ran through a compartment under the deck in which various items of equipment were stowed; the shaft was not boxed in and there was nothing to prevent these items coming into contact with it.

The boat left Greenock in the morning with her regular Skipper and a party of five anglers. The second hand who was normally on board when the boat was fishing commercially did not sail when she was being hired out as an angling boat and so was not aboard. After fishing in the Firth, they moored at Strone for lunch, sailing again at about 1530 hours. As they were letting go the ropes, the Skipper fell overboard and though he was quickly recovered he must have been extremely cold as well as wet: there was a strong to gale force easterly wind blowing with rain and intermittent snow and sleet, and the Skipper was not wearing oilskins. Nevertheless, the boat set out across the Firth heading towards Gourock.

There were various sightings of the vessel on passage, the last at about 1615 hours (see Figure 2). During the evening, next-of-kin became concerned and a search and rescue operation was mounted, but it was not until the following morning that the vessel was located lying on the sea-bed about 1.5 cables off the Gourock shore. Inspection of the wreck showed a hole in the hull. A length of chain was found to have become foul of the propeller shaft and it is believed that this chain originally had secured to it a heavy item of fishing gear, known as a Kelly's Eye. It appeared that with the shaft turning the Kelly's Eye had acted as a flail and had driven the hole in the ferro-concrete hull.

Observations

1. After he fell in the water the Skipper must, in the bitterly cold conditions, have very soon been suffering from hypothermia and can have played little, if any, useful part in the subsequent passage.

2. As the Skipper was the only mariner in the party, this meant that the boat set out into a near-gale in what - for a vessel of her size - were relatively open waters with no experienced person in active control.

3. The boat had no licence from the local authority to operate as a sea angling boat, nor was she insured.

4. The boat must have sunk quickly but it is difficult to believe that there was no warning of peril; yet although the boat carried life-jackets, none were found on the three persons on board whose bodies were later recovered. No MAYDAY signal was sent, nor was a distress flare used.

5. Two of the bodies recovered were found to have substantial quantities of alcohol in their blood.

Comment

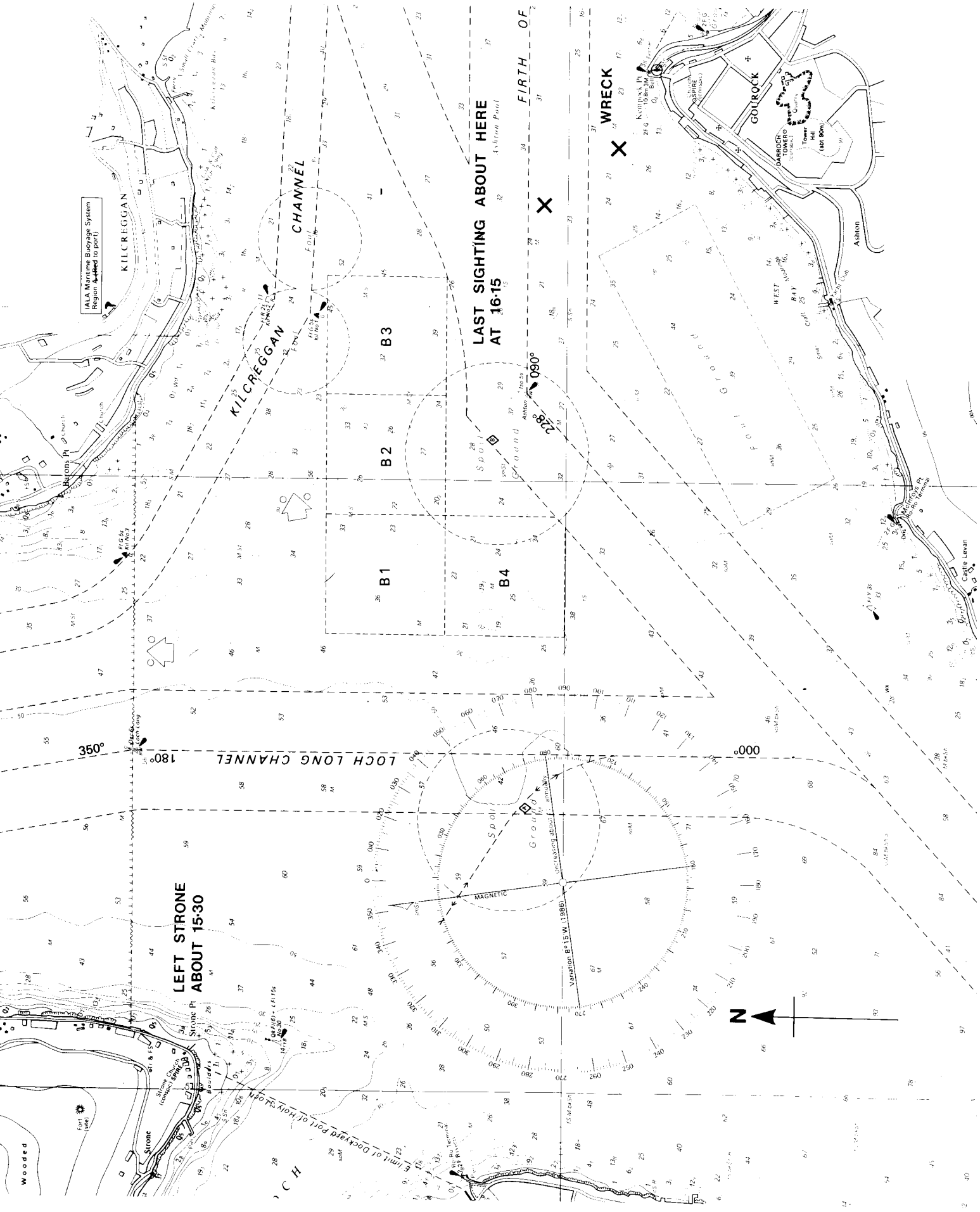
This very serious accident was fully investigated by an MAIB Inspector and was also the subject of a Fatal Accident Inquiry presided over by the Sheriff. The Sheriff's Determination is available at a cost of £4.25 from:

The Sheriff Clerk's Office
Sheriff Court
Greenock PA15 1TR

It contains a full account of the circumstances of the accident, and makes a number of recommendations, and study of it by those concerned with the operation of sea angling and small fishing vessels is commended. Requests for copies should refer to "Drowning Accident off Gourock on 16 December 1989".

Extract from Admiralty Chart No. 1994

Figure 2



13. COLLISION BETWEEN A GENERAL CARGO VESSEL AND A FISHING VESSEL

Narrative

A 16 metre wooden hulled trawler was fishing about six miles off the north east coast of England. She was heading north at about one knot with the trawl deployed from the starboard side. Approaching from the opposite direction on a course of about south by east, was a general cargo vessel of about 490 gross registered tonnage making a speed of 10.5 knots. It was daylight but visibility was restricted by fog, the sea was calm and there was no wind.

The cargo vessel detected the presence of the fishing vessel by radar at a distance of 4.5 miles and 5° on her starboard bow, the visibility by then being less than one mile. The cargo vessel attempted to call the fishing vessel on Channel 16 VHF but the fishing vessel's VHF radio was inoperative.

When the vessels were 3 miles apart, the course of the cargo vessel was altered to starboard. No radar plotting had been carried out and the vessel was not fitted with an ARPA. The action was taken after observing the radar picture on a ship's head-up, non gyro-stabilized display. The assumption was made that the fishing vessel would pass down the cargo vessel's port side. The latter vessel sounded a fog signal and reduced speed. The fishing vessel took no action.

However, the alteration of course resulted in the cargo vessel passing down the starboard side of the fishing vessel, so close that the trawl wires were caught over her bulbous bow. The fishing vessel was thus dragged alongside the cargo vessel's side and received damage to her starboard quarter. The cargo vessel incurred no damage.

By this time the visibility had deteriorated to less than 50 metres so that both vessels quickly lost sight of each other. After the collision the fishing vessel reported the incident to the Coastguard by MF radio, recovered her gear and then returned safely to port. The cargo vessel resumed her passage.

Observations

1. The fishing vessel was not sounding the appropriate fog signal required by Rule 35 of the Collision Regulations, neither was she keeping a proper lookout and making proper use of her radar equipment as required by Rules 5 and 7.

2. The cargo vessel neither reported the incident to any shore authority nor attempted any other means of communication to find out what damage the fishing vessel had suffered.

Comment

1. Rule 7(b) of the Collision Regulations specifically deals with the proper use of radar in restricted visibility and part (c) of that Rule states that assumptions should not be made on scanty radar information.

2. Merchant Shipping Notice No M.845 gives warning of the dangers of the use of VHF radio in collision avoidance.

3. Rule 35(c) of the Collision Regulations states that a vessel engaged in fishing in reduced visibility shall sound at intervals of not more than 2 minutes, three blasts in succession, namely one prolonged followed by two short blasts.

4. Section 422 of the 1894 Merchant Shipping Act sets out the duty of one vessel to assist the other in the event of collision. In this particular case the cargo vessel was not registered in the United Kingdom.

5. It is important to remember that Rule 19(d) of the Collision Regulations which deals with action by vessels not in sight of one another in restricted visibility, applies to vessels engaged in fishing. Action under this part must be borne in mind by fishing vessels towing trawls at slow speed.

14. ENGINE ROOM FIRE FOLLOWED BY SINKING

Narrative

A 19 metre wooden hulled fishing vessel was engaged in fishing. Whilst recovering the trawl gear, smoke was observed coming from the engine room access hatch and vent. This was followed by a sheet of flame. The Skipper, who was in the wheelhouse, declutched the propulsive drive and attempted, unsuccessfully, to stop the main engine. He then re-engaged the clutch and the engine slowed and finally stopped. A VHF MAYDAY signal was sent and the engine room ventilator fire flaps were closed. The life-raft was prepared for boarding and life-jackets were issued to the crew members.

A coaster in the area responded to the MAYDAY signal and proceeded to the scene and rescued the crew from the burning fishing vessel. Attempts were made by the coaster at boundary cooling assisted by an RNLI lifeboat which also responded to the MAYDAY signal.

An attempt was made to tow the still burning vessel to the nearest port, 34 miles distant but this was unsuccessful and the vessel sank.

Observations

1. The fuel header tank in the engine room was being filled at the time of the incident.

2. No attempt was made at boundary cooling until after the arrival of the coaster.

3. No attempt was made to use the engine room sprinkler system.

4. It is probable that the cause of the fire was a leakage of fuel oil from an unknown source which sprayed oil on to the main engine exhaust manifold.

5. The outbreak of fire occurred when the engine room was unattended and there was no operational fire detection equipment.

Comment

Early warning of the fire might have enabled the crew to utilize the fire-fighting equipment on board to extinguish the fire at an early stage and so prevent the loss of the vessel.

15. ENGINE ROOM FIRE

Narrative

As a 22 metre wooden hulled fishing vessel entered a west coast of Scotland bay, a fire alarm from the engine room was activated in the wheelhouse. Thinking that the alarm was false, the Skipper tapped the fire detector control unit and the illuminated alarm went out. A few seconds later the fire alarm came on again and a seaman then discovered smoke coming from the engine room hatch.

The Skipper released halon gas into the engine room but made no attempt to shut down the fuel supply to the main engine. He radioed for help and an RNLI lifeboat came alongside and escorted the vessel to the quay. The waiting fire brigade extinguished the fire on board.

Observations

1. It is possible that the fire was caused by heat from a failed shaft tunnel bearing which weakened a rubber fuel pipe. This burst, spraying fuel oil on to the hot bearing.

2. The rubber fuel oil pipe was not clipped into position, so it was easy for the pipe to come in to contact with the overheated bearing.

3. The timber floors in the tunnel, and the hold above this space, had only limited fire damage, owing to the cooling effect of the substantial bilge water in each of the spaces.

Comment

1. Alarms should never be assumed false but should always be investigated immediately.

2. The engine should have been stopped and the fuel oil and ventilation systems closed down before halon gas was released into the engine room.

3. It was fortunate that the vessel could be assisted alongside and that the shore fire brigade was on hand to extinguish the fire.

4. The fuel oil pipe should not have been made of rubber. It was subsequently replaced by one made of steel and copper.

16. FLOODING AND SINKING OF A FISHING VESSEL

Narrative

An old 16.7 metre beam trawler was on route to the fishing grounds to retrieve her gear, which had previously been abandoned, when the bilge alarm alerted the Skipper to flooding in the engine room.

The Engineer went below and found a substantial quantity of sea water in the engine room with the water level rising. As a result, it was impossible to gain access to close the vessel's side valves. The Skipper contacted the Coastguard on the VHF radio to inform them of the situation, but because his transmission was very poor, the communications were completed using a portable telephone. At this time no distress call was made.

However, within about ten minutes the vessel developed a list to port and became slow to recover from the outward roll. The Skipper instructed the crew to evacuate into the inflatable life- raft, which was wrongly removed from its container before being put in the sea and inflated. A MAYDAY message was made from the life-raft with the portable telephone used earlier. The trawler sank within thirty minutes of the Skipper instructing the crew to evacuate the vessel.

Due to the fact that the Skipper had given the wrong position of their whereabouts to the Coastguard, it was about one and a half hours before the life-raft was spotted by another fishing vessel who informed the Coastguard. A Royal Navy helicopter airlifted the crew to hospital where it was confirmed that the survivors had no injuries.

Observations

1. Flooding in the engine room is a common type of accident. Failure of the seawater piping system is often the cause, and is considered most likely to have been responsible for this accident.

2. The position of the vessel given by the crew to the Coastguard on the portable telephone was later found to be inaccurate. Had communications been carried out on the VHF radio, the Coastguard, who continuously monitor Channel 16, could have accurately positioned the vessel using their direction finding equipment. As VHF reception was usually good in that particular area, the transmission problem encountered is considered to have been due to a fault with the transmitter on board.

3. The crew had problems launching the life-raft, which should not have been removed from its container before being put over the bulwark into the sea and inflated.

Comment

1. The Skipper and crew were neither qualified nor experienced in the operation of this type and size of vessel.

2. This accident illustrates the importance of carrying out regular and thorough inspections of the seawater piping, including areas where the piping is inclined to be less accessible. Rubber vibration joints should also be regularly inspected.

3. The positioning of bilge alarms is important; in this case, by the time the alarm was activated there was a large volume of water in the engine room. Merchant Shipping Notice No M.1327 requires that the position of the bilge level alarm should be sufficiently low so that the crew have as much time as possible to take action in an emergency should flooding occur.

4. The mistake when launching the life-raft, would probably not have been made if the crew had attended a survival course. Merchant Shipping Notice No M.1367 explains the requirement for fishermen to undertake safety training while Merchant Shipping Notice No M.1139 details more fully the Basic Sea Survival courses and where they are held.

5. Distress call transmissions should be made on VHF Channel 16 followed by the correct Distress Message Transmission which can be found in Merchant Shipping Notice No M.1119, "Radiotelephone Distress Procedure", or the Fisherman's Nautical Almanack. The rescue service would not then have had a problem locating the life-raft, and in turn the crew would have been rescued much more quickly.

6. The incident emphasizes the importance both of proper maintenance of VHF equipment and of keeping a continual check on position, so that in an emergency the vessel's whereabouts can quickly and accurately be transmitted by the most efficient means.

APPENDIX

INVESTIGATIONS COMMENCED IN THE PERIOD 1.07.90 - 31.12.90

DATE OF ACCIDENT	NAME OF VESSEL	TYPE OF VESSEL	FLAG	SIZE	TYPE OF ACCIDENT
03.03.90	LUMINENCE	Cargo	U.K.	1596grt	Fire
23.04.90	IBERIAN OCEAN	Cargo	Bahamas	954 grt	Contact
29.04.90	WESTTRA	F.V.	U.K.	20.70m	Accident to Person
05.07.90	ST CATHERINE/ HMS NORTON	Passenger Minehunter	U.K. U.K.	2036 grt -	Near Miss
07.07.90	SUCCESS	F.V.	U.K.	24.86 grt	Fire
16.07.90	VELSHEDA	Yacht	U.K.	123 grt	Grounding
19.07.90	SUNLIT WATERS/ BERACHAH	F.V. F.V.	U.K. U.K.	21.31m 19.57m	Collision
19.07.90	ROCQUAINE	Cargo	Bahamas	985 grt	Fire
21.07.90	EUROPEAN ENDEAVOUR	Ro - Ro	U.K.	3367 grt	Collision
22.07.90	INTREPID	Offshore Support	Panama	918 grt	Collision
24.07.90	MAERSK ROVER	Offshore Support	U.K.	1593 grt	Collision
25.07.90	WENDY LOUISE	F.V.	U.K.	9.91m	Sinking
25.07.90	KENTISH LADY II/ CASTEL BIANCO	Passenger Motor Yacht	- -	- -	Collision
27.07.90	HAVELET	Ro - Ro	Bahamas	3382 grt	Accident to Person
30.07.90	EBENEZER	F.V.	U.K.	16.15m	Grounding
03.08.90	ANNA JONES	F.V.	U.K.	11.79m	Sinking
05.08.90	FAIRMORN/ TRIUMPH II	F.V. F.V.	U.K. U.K.	6.50m 15.33m	Collision & Sinking
06.08.90	ST MARK/ VIKING BANK	Offshore Support Tug	U.K. Netherlands	42.62m -	Collision
07.08.90	NORRIS CASTLE/ UN-NAMED DINGHY	Ro - Ro Dinghy	U.K. -	922 grt -	Collision
16.08.90	LOFOTEN	F.V.	U.K.	32m	Grounding
17.08.90	CAMBRAE	Dredger	U.K.	3896 grt	Flooding
20.08.90	DUNLIN	F.V.	U.K.	11.77m	Grounding
21.08.90	CONDOR 9	Catamaran Ferry	Guernsey	752 grt	Heavy Weather Damage
23.08.90	BROMLEY PEARL	Cargo	U.K.	1299 grt	Accident to Person
26.08.90	VEERMAN/ COMMODORE GOODWILL	F.V. Cargo	Belgium Guernsey	21m 1,598 grt	Collision