MARINE ACCIDENT

INVESTIGATION BRANCH

Summary of Investigations No 2/92

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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 shippingy 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

Before embarking upon the theme of this Introduction, it is worth highlighting that in this edition only three of the summaries concern fishing vessels; all involve vessels less than 12 metres and the incidents are very similar. The reason for including such a collection in one edition is to bring home the message that, unless proper thought is given to the job in hand, there can be tragic results: seven fishermen set sail; only two returned home.

Turning to less harrowing circumstances, everyone of us must have at some time had an unsettling experience when things go wrong with what we were doing and admitted "that it was a near thing". Joining a main road only to have an oncoming car screech to a halt inches away, or perhaps just starting to clean an electric lawn mower when the cutter blades suddenly move into action, are two random examples. It is unlikely that we bother to analyse the incident to prevent it happening again. It is equally unlikely that it has been discussed with others so that they can learn from our own unsettling experience. Perhaps the reason is that one would not want to be exposed to ridicule by friends and colleagues. Who likes to admit for example failing to check for oncoming traffic or, in the other example, ensuring that the electric mower was unplugged from the socket.

There are a number of ways, some impolite, to describe the two examples just given, but perhaps the most common is a "near miss". Another, and probably more apt term, is a "hazardous incident". In the Merchant Shipping (Accident Investigation) Regulations, a hazardous incident is defined as "any incident or event not being an accident by which the safety of a ship or any person on board is imperilled, or as a result of which serious damage to any ship or structure or damage to the environment might be caused". Taking the two examples and applying them to sea-going activities we have the scenario of the near collision between two vessels when one of them is entering a traffic separation scheme and the engineer who very nearly loses his fingers in an electric motor because he did not isolate it electrically before starting maintenance on the motor. Clearly hazardous incidents are not confined to two vessels almost having a collision; they include all incidents which if they had progressed one stage further would have resulted in an accident taking place or would have the potential to lead to an accident.

There is no requirement for hazardous incidents to be reported; however, owners and masters are strongly urged to report them voluntarily since useful lessons can be learnt. As observed earlier, many people do not like to discuss hazardous incidents which have occurred to them because they feel it might make them look silly in the eyes of others, especially when it involves an element of human failure. This simple fact of life is appreciated, and for this reason it has been agreed that as far as it is possible reports of hazardous incidents will be treated in confidence if the person making the report wishes it to be so. It is worth mentioning that the aviation industry has a Confidential Human Factor Incident Reporting Programme, known as CHIRP, which is highly successful.

Many people appreciate the benefits which are obtained by sharing their experiences with others. Although MAIB receives quite a number of hazardous incident reports (206 in 1991) it is probable that many more incidents actually take place. In some cases there might be a reluctance on the part of seafarers to voluntarily report incidents to Government bodies such as MAIB. The non-Governmental organisations who share our concern over hazardous incidents include the Nautical Institute and the newly formed Sea Safety Group. Both these organisations have recently initiated hazardous incident reporting schemes of their own, and each is unique in the way that they are administered. Seafarers might feel more inclined to report their experiences to such independent bodies rather than MAIB. MAIB recognise the value of both these schemes because they serve the same ends as our own, namely that any useful lesson which can be learnt and which could conceivably prevent an accident occurring in the future should be promulgated as widely as possible. We all need to work together in accident prevention.

Details of how to report hazardous incidents to MAIB and what we would wish to see reported are contained in Merchant Shipping Notice number M.1383. Please help us in our endeavours to improve safety of life at sea.

Chief Inspector of Marine Accidents

August 1992

1. COLLISION BETWEEN A RO-RO VESSEL AND A SEA ANGLING BOAT

Narrative

An in-bound 42,000 gross registered tonnage ro-ro cargo vessel was approaching the Sunk light vessel from an east-south-easterly direction. She was proceeding at slow speed and steering to pass to the east and then the north of the light vessel to embark her pilot.

Several small boats engaged in sea angling were anchored a few cables south-east of the light vessel. It was daylight with visibility about 1 mile. There was little wind and the sea was nearly calm. The tide was flooding at about 1.5 knots in a south-westerly direction.

As the cargo vessel approached the light vessel the tide set her on to one of the anchored boats and her port side collided with the boat's bow. The angling boat sustained only minor damage and continued fishing. The cargo vessel was undamaged and there were no injuries.

Observations

1. At the time of the collision those on the bridge of the cargo vessel were unaware she had collided with another vessel, the Master and the Officer of the Watch being on the starboard bridge wing.

2. As the cargo vessel slowed down the effect of the tide on her increased.

3. The boatman took no action to avoid the collision.

4. Another small boat anchored further to the north cut her anchor warp and so avoided collision with the cargo vessel.

Comment

1. With a south-westerly set, the preferred manoeuvre for the cargo vessel would have been to pass to the south of the light vessel. However this option was precluded by the small boats at anchor.

2. Manoeuvring to pick up a pilot does not relieve a vessel of the requirement to maintain a proper lookout contained in rule 5 (Look-Out) of the Collision Regulations. Equally, vessels at anchor should maintain an efficient lookout at all times and particularly in busy waters or restricted visibility.

3. Clearly the cargo vessel had an obligation to keep out of the way of a vessel at anchor by the ordinary practice of seamen; however, where the circumstances permit, a vessel at anchor should take some action to avoid the collision, for example by slipping her anchor and attempting to get underway.

4. The Sunk light vessel is a busy pilot station handling the largest of vessels. Unnecessary anchoring close to the station is un-seamanlike and presents a needless hazard for large vessels manoeuvring to pick up a pilot, particularly in reduced visibility and with strong tides. It is also un-seamanlike to anchor close to a light vessel, or to any navigational mark.

2. ACCIDENT WITH A SHIP'S SIDE CARGO RAMP

Narrative

This incident took place on a palletised cargo vessel which was alongside a conventional berth. The vessel was to discharge pallets of food stuffs, using forklift trucks by way of the two side cargo doorways of the ship.

The doors when open formed the ramps for vehicles to enter the holds, one door forward and one aft. The holds had two levels and the ramps could be raised or lowered to the required height. The ramps were moved by two single part wires at the inboard ends whilst the outboard ends were supported by two further single part wires; these were also used to pull the doors into the closed position. When the ramps were in use, the outboard ends rested on the quay.

Before commencing discharge, two forklift trucks were to be put on board on the upper deck level. This was to be achieved by driving the forklift trucks on to one of the ramps and then raising it to the required level - a distance of about 3 metres. The forklift trucks each weighed about 3 tonnes and the ramp when static was rated for a load of 18 tonnes.

The forklift trucks were driven on to the inboard end of the ramp and parked side by side, off centre towards the aft side of the ramp. The ramp was then raised and when it had travelled about 1.5 metres the aft lifting wire parted. The ramp tilted and the two forklifts toppled over. The two drivers had been sitting on their machines. One was thrown off the ramp and fell on to a pontoon fender between the ship's side and the quay, luckily he only suffered severe bruising; the other driver fell between the forklifts, but he was not injured.

Observations

1. The ramps were not designed to lift loads. The vessel was provided with 3 tonnes SWL hoists to move weights between decks.

2. According to the ship's Lifting Gear Register the ramp wires and other equipment had been inspected annually. The ramp had also been statically load tested six months previous to the accident.

3. Inspection of the failed wire rope at a specialist ropeworks showed that there was a high percentage of broken wires and evidence of corrosion, rust, external abrasion and flattening of strands.

4. The construction of the doors allowed part of the inboard operating wires to be exposed to the effects of sea water when the doors were in the closed position.

Comment

1. The ramp should not have been used for lifting the forklift trucks.

2. Moving the forklifts with their drivers riding on the machines is a dangerous practice.

3. Equipment which is used frequently or in arduous conditions should be given thorough examinations at more frequent intervals than an annual inspection. The manufacturer's maintenance instructions should be followed. In this case they recommended that the wires be inspected and preservative and lubricant applied as necessary, every month.

4. The "Code of Safe Working Practices for Merchant Seamen", Chapter 17 gives clear guidance on the use of lifting plant.

3. ENGINE ROOM FIRE

Narrative

A 1,583 gross registered tonnage bulk carrier/general cargo vessel was outward bound in ballast after its annual drydock and repair period. Considerable main engine work had been carried out including the conversion of the fuel system from diesel oil operation to heavy fuel operation.

Amongst the requirements for this conversion was the changing of the main engine fuel injectors from uncooled nozzles to water cooled nozzles. A reputable local firm undertook this work, and not being able to get the replacement nozzles from its normal supplier, obtained a supply from another source. The re-built injector assemblies were successfully pressure tested, (including spares), and then returned to the vessel for installation.

During dockside engine trials, fuel oil was found to have contaminated the cooling water in the fuel valve cooling header tank. The cooling system was drained down, refilled and all main engine fuel injectors re-tested. Two injectors were found to be defective; leaks occurring between the fuel and water sides of the injector assembly. The injectors were replaced, engine trials completed and the vessel sailed later that evening. The following morning, the fuel valve cooling system low pressure alarm sounded. A low water level in the header tank gauge glass suggested lack of water in the system.

The fresh water filling line was opened, but the header tank overflowed almost immediately showering a mixture of oil and water down over the main engine exhaust trunking and indicating further trouble with the fuel injectors. A check of the header tank gauge glass valves showed them to be shut.

The main engine was stopped at 1048 hours for repairs and the testing of fuel injectors. During this work, water was seen leaking from the fuel inlet pipe indicating a leak between the water and fuel sides of an injector. Repair work continued on the main engine for about one hour when suddenly flames appeared in the region of the main engine exhaust lagging at engine top level. The fire and smoke spread rapidly causing the Chief, Second and Third Engineers to hurriedly leave the engine room.

The crew were mustered, all the engine room vents closed, and the remote fuel pump stops and fuel tank valve trips operated. Carbon dioxide was released into the sealed engine room at 1155 hours. The emergency generator cut in automatically and provided lighting and power for the emergency fire pump. Access doors were checked for overheating and boundary cooling carried out on local hot spots. Coastguards and Owners were informed of the situation. At 1400 hours two crewmen wearing breathing apparatus and protective clothing re-entered the engine room and reported that the fire appeared to be out although the space was still full of smoke and very hot. The space was monitored at hourly intervals by the crew wearing breathing apparatus and protective clothing. At 1700 hours it was confirmed that the space was cooling down, smoke was slowly dissipating and there was no further risk of re-ignition.

At 1815 hours a tug took the vessel in tow arriving off the port at 0800 hours and alongside at 1318 hours the following day.

Observations

1. The cause of the fire was the impregnation of the main engine exhaust lagging with fuel oil resulting from the overflow of the fuel valve cooling water header tank situated immediately above the exhaust line. Residual heat in the main engine exhaust system led to spontaneous ignition, despite the engine having being shut down one hour earlier.

2. The actions of the crew on the outbreak of fire, the methods adopted to contain and extinguish the fire, and the monitoring of the situation prevented the incident developing into a serious engine room fire; and the damage was limited to the effects of heavy smoke, heat damage to electrical wiring and various items of control equipment. The failure of the engineering staff to check the gauge glass valves before topping up the header tank indicates a basic lack of attention to detail.

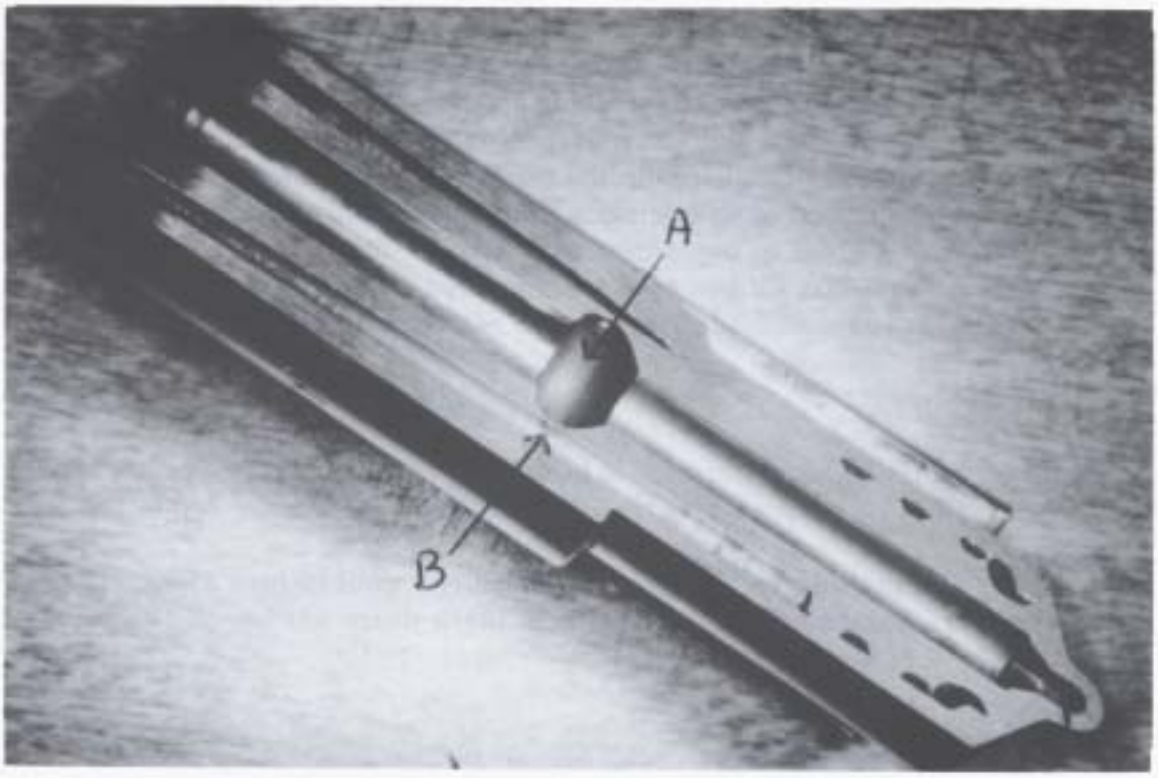
3. The sensible use of both the self-contained breathing apparatus and the smoke helmet enabled the state of the engine room to be monitored without unnecessary risk despite the presence of carbon dioxide and smoke.

4. The initial testing of the fuel injectors was carried out by a reputable firm following accepted pressure testing procedures which would normally identify faulty components and/or assemblies. The action taken by the engineering staff on the discovery of fuel oil in the header tank during engine trials was correct. All defective fuel valve injectors were replaced and the cooling water within the system changed.

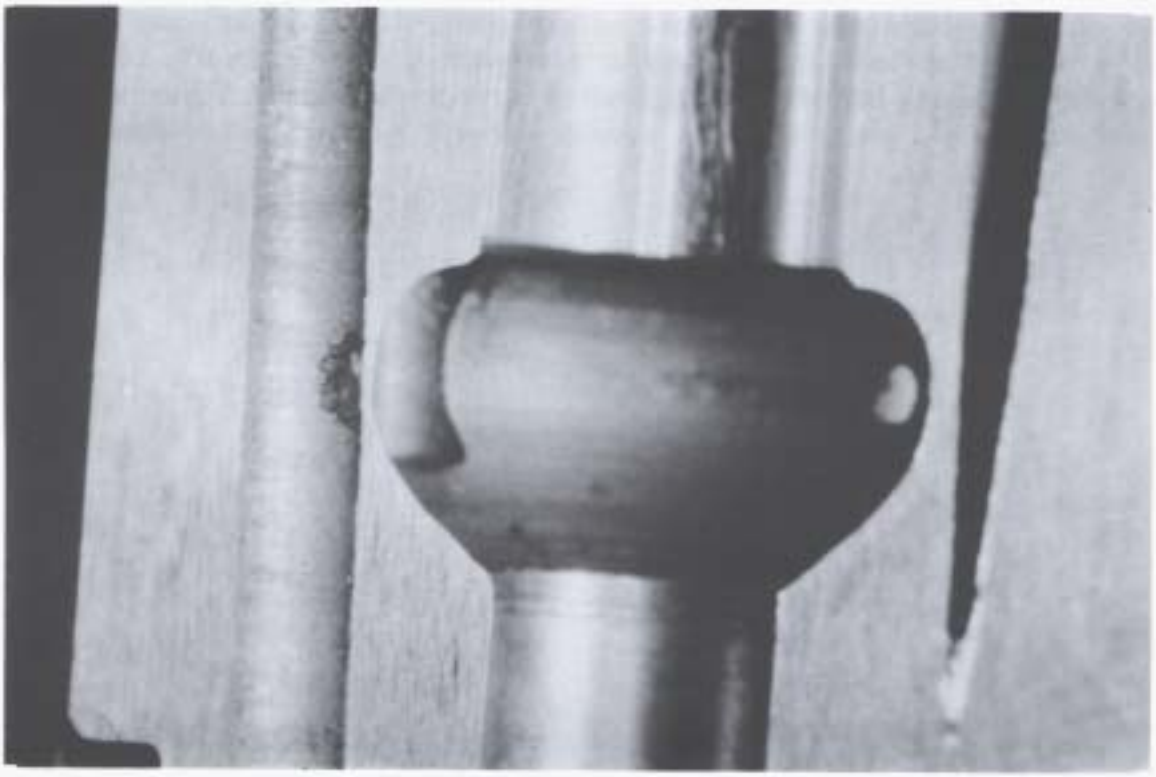
Comment

1. The failure of engineering staff to clean up the spillage of fuel oil and water, albeit a small quantity, resulted in an engine room fire and disablement of the vessel. This emphasises the essential need for sea staff to maintain safe working practices at all times.

2. Although the new water cooled nozzles were stated to have been manufactured to the required specifications, when sectioned longitudinally through the middle, it was seen that incorrect drilling of the water passages had produced a very thin wall thickness between the high pressure fuel oil side and the low pressure water side. Subsequent usage of the injector in the engine with its normal cyclic hydraulic pressure stresses, caused a fatigue failure in the separation wall and contamination of the water cooling system. This manufacturing defect would not be detectable by normal testing procedures and illustrates the importance of quality control during the manufacturing process. Furthermore, in as much as the choice was dictated by spare part delivery times, it demonstrates the importance of good forward planning and advisability of using only genuine manufacturers items.



Longitudinal section of fuel valve nozzle showing central fuel chamber "A" and outer cooling water space "B"



Close-up view of perforation into water cooling space at side "B"

3. This incident is a positive illustration of the importance of training in fire fighting including the use of breathing apparatus. Given the complexity of the modern engine room and the reduction in crew levels, it is essential that all crew members are familiar with the fire fighting equipment onboard and with the correct method of its operation.

4. DEATH OF A CREWMAN WHILE LOADING ARTICULATED LORRIES ON TO A RO-RO FERRY

Narrative

A ro-ro cargo ferry, fitted only with stern doors, was loading trailers by reversing them on to the lower vehicle deck. The tractor units were lorry based chassis which required the driver to look over his shoulder during reversing operations. After several years of practice the drivers had become very skilled at reversing the articulated tractor/trailer units and were able reverse at high speed with great precision. However, during the reversing of one of these trailers a member of the ferry's crew was struck by the wheels of the trailer, causing him injuries from which he died.

Observations

The deceased crew member was properly dressed for his duties with hard hat, ear defenders, safety shoes and high visibility clothing. He also had a proper and legitimate reason to be on the vehicle deck as part of his duties. Nobody was acting as a signaller to the drivers. The trailer was being reversed at high speed and it is probable that at the time of impact the crewmember was obscured from the driver by the body of the trailer.

Comment

The recently published "Code of Practice for Roll-on/Roll-off Ships Stowage and Securing of Vehicles", Section 2 gives some guidance on avoiding the dangers which may be encountered on vehicle decks. In this case all of the cargo work was being carried out by stevedores under the supervision of their own foreman, although a deck officer was in overall charge. Masters and crews must be aware of the need for extreme care when on vehicle decks during cargo operations.

5. COLLISION WITH QUAY CAUSED BY INTERACTION

Narrative

A general cargo vessel of 4,000 gross registered tonnage was proceeding in an easterly direction under pilotage within a narrow channel. The bow of the vessel was observed to swing towards the north bank of the channel. Starboard helm was applied as a result of which the bow of the vessel started to swing rapidly towards the south bank. Full port helm was then applied in an unsuccessful attempt to halt the starboard swing. The engine was put astern, the bowthruster was directed to port and the sternthruster was directed to starboard. The action taken was unsuccessful in preventing a collision between the bow and a quay located on the south bank of the channel.

Observations

1. The prevailing wind was southerly force 6.

2. The vessel was in a laden condition with a stern trim of 0.5 metre and a maximum draft of 6.5 metres.

3. The tide was approaching low water and the underkeel clearance of the vessel was 2.5 metres.

Comment

1. The bow of the vessel was pushed by the effect of the wind towards the north bank of the channel. Interaction between the bow of the vessel and the bank, in conjuction with the application of starboard helm, caused the bow to rapidly swing to starboard.

2. The effect of the interaction was amplified by the comparatively shallow depth of water in relation to the draft of the vessel.

3. When starboard helm was initially applied, insufficient regard was paid to the likelihood of an amplified effect of interaction between the bow of the vessel and the north bank of the channel in the prevailing tidal condition.

4. Appendix 2 of Merchant Shipping Notice No M.930 summarises the conclusions of laboratory work carried out on the combined effect of hydrodynamic interaction and shallow water.

6. FATAL ACCIDENT WHILST MAKING A TUG FAST

Narrative

A car carrier, preparing to enter dock, was in the process of making fast a tug through the centre fairlead at the bow. The ship's winch was being used to heave the towline on board by means of a messenger. As the towline was being heaved up to the forecastle, the relative position of the tug and ship changed causing the tow line to lead under the stern of the tug. The tug manoeuvred to clear the towline. The two vessels moved further apart and as the line cleared the stern the messenger quickly became taut.

The Chief Officer of the car carrier was standing between the centre fairlead and the bitts. The load put on the messenger caused it to part where it was attached to the towline. The resulting whiplash of the rope hit the Chief Officer on the neck, fatally injuring him. A seaman standing at the winch was also hit and sustained minor injuries.

Observations

1. The winch controls were not manned.

2. It appears that no one in the forecastle mooring party was watching the towline overside.

Comment

1. The "Code of Safe Working Practices for Seamen", Chapter 16 and Merchant Shipping Notice No M.718 include advice on towing operations.

2. A tug may not always maintain its position relative to the ship it is assisting. When taking a towline on board it is vital that the progress of the towline from the tug to the ship is monitored continually by a responsible person at the mooring station. Excessive weight on the messenger or towline can then be anticipated and the winch stopped, reversed or the turns reduced in time to prevent its parting.

3. Care should be taken to keep clear, as far as possible, of a potential whiplash area.

4. Winch contols should always be manned when the winch is in use.

7. INJURY TO SHORE OFFICIAL

Narrative

A shore official was carrying out a search on the outside deck area of the accommodation block of a cargo vessel during the hours of darkness. Shortly after passing through an open gate in some fencing he fell into an empty swimming pool. He sustained a broken arm and bruising.

Observations

The swimming pool and surrounding area was unlit because the fixed lighting in this area had not been switched on. The open gate formed part of the fencing surrounding the swimming pool. The depth of the pool was approximately 3 metres.

Comment

1. This fall could have resulted in fatal injuries to the man concerned.

2. The Merchant Shipping (Safe Movement on Board Ship) Regulations 1988 and International Labour Organisation (I.L.O.) Conventions require that any opening into which a person may fall is protected by adequate fencing and that transit areas are adequately lit. The "Code of Safe Working Practices for Merchant Seamen", Chapter 9 explain and expand on these requirements.

3. In order to maintain the integrity of the fencing around the swimming pool the gate should have been kept closed when the pool was not in use.

4. Walking in any unlit or poorly lit areas on board ship is dangerous. If necessary additional portable lighting should be rigged and hand lamps carried.

5. It is a sensible precaution to cover an empty swimming pool with a safety net.

8. COLLISION BETWEEN A GAS CARRIER AND AN ANCHORED OIL TANKER

Narrative

An oil tanker of 17,596 gross registered tonnage (grt) had been anchored one mile south east of the Humber Light buoy for approximately two days awaiting a berth for discharge of her cargo of fuel oil. A liquid gas carrier of 10,605 grt was on passage from Brunsbuttel to Immingham with a cargo of ammonia. This vessel had been told to anchor to await a berth and was approaching the anchorage on a course of approximately 250°T. The weather was fine with good visibility and it was full daylight. The tides were spring tides and from the information on the chart, the tidal stream was setting south at a rate of about 2.5 knots.

The Master of the gas carrier was able to see two vessels at anchor; the oil tanker to the south-east of the Humber Light float, and another vessel to the east. They were approximately 4 cables apart. He decided to pass between these vessels and turn to starboard in order to stem the tide before anchoring (see sketch).

At a distance of approximately 1.5 miles from the anchorage, the Master sent the Chief Officer forward to anchor stations leaving the Master and the helmsman on the bridge. The speed of the vessel had been reduced and she was moving very slowly through the water. As the approach continued, the Master became aware that the vessel was drifting to the south. He went into the chartroom to check the course on the satellite navigator. When he returned to the wheelhouse, he could see that collision with the oil tanker was imminent. His initial action was to turn to starboard and then hard to port. His actions were unsuccessful, and his vessel's port quarter contacted the starboard bow of the anchored vessel. Minor damage was sustained by both vessels. No pollution occurred.

Observations

1. The Master of the gas carrier had been in command for six weeks, although previously he had served onboard that ship for five years as Chief Officer.

2. The navigation of the gas carrier during the approach to the anchor position was casual, and this was exacerbated by the reduced manning of the bridge during the manoeuvre.

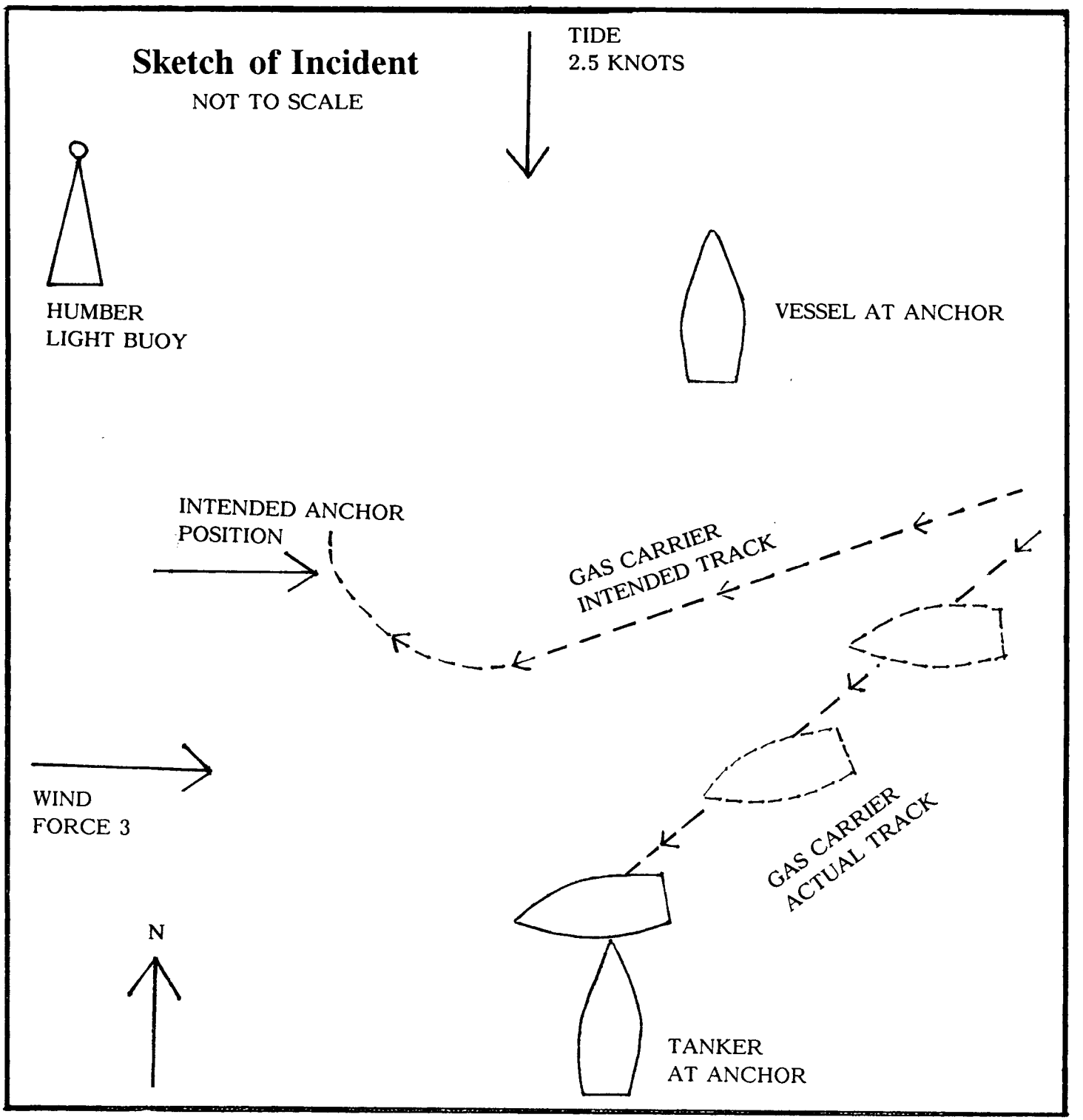
3. Insufficient allowance was made for the effect of the spring tides on the tidal rates.

Comment

1. The Master should not have had to leave the wheelhouse at a critical time when the vessel needed to be under his close control. Another officer should have relieved the Chief Officer, to monitor the navigational watch and check the approach.

2. A passage plan to an anchorage should be prepared, followed and properly monitored. It is of vital importance to be aware of the state of the tide and to make proper allowance for it.

3. It is fortunate that only minor damage was sustained in this incident. Such an incident could have involved serious pollution, fire and loss of life.



9. MACHINE TOOL FAILURE

Narrative

A twin screw tug/supply vessel built in 1986, propelled by two marine diesels was involved in a supply run to an oil platform some 240 miles east of the coast. The vessel arrived off the platform at 2200 hours and hove to to await discharge in the morning. The weather at this time was west-south-westerly Beaufort force 8, and moderate to heavy swell with the vessel rolling and pitching. The Chief Engineer, who was on watch alone in the engine room, decided to continue repair work on a cooling water pipe line just below plate deck level. The damaged section of the pipe had been cut away but the pipe end required bevelling prior to a new section being welded into place.

The Chief Engineer, after informing the bridge of his intentions, commenced work using a hand held disc angle grinder. Shortly after starting work, the grinding disc disintegrated with part of the disc striking him on the head. Fortunately he did not lose consciousness and managed to get to the control room and call the bridge.

The Chief Officer went to the control room and found the Chief Engineer sitting in a chair, covered in blood and in a state of shock. A cut was found across the upper forehead and crown of his head. The wound was dressed, the platform informed of the situation and medical advice sought from the resident medic. After a discussion between the vessel, the platform and shoreside marine control, it was decided that the vessel would proceed back to port to enable full medical treatment to be given.

Observations

1. The Chief Engineer, who was working alone in the engine room, carried out the correct safety procedure prior to starting work by informing the bridge of his intentions.

2. The lighting was good in the area and the Chief Engineer was wearing protective ear muffs and goggles at the time of the accident.

3. Upon investigation, it was found that the disc angle grinder was rated for operation at 110 volts whereas the machine had been connected to a 220 volt supply. The effect of this was to cause the grinder to run at 17,000 rpm rather than its maximum stated speed of 12,000 rpm. This excess speed led rapidly to high rotational forces and the eventual bursting of the disc.

Comment

1. Differing voltage distribution systems supplying socket outlets should be of such a design that incorrect voltage plugs cannot be wrongly connected. Reference is made to Merchant Shipping Notice No M.1133; Merchant Shipping (Cargo Ship Construction and Survey) Regulations 1984 and the requirement that electrical equipment and installations shall comply with the

1972 Institution of Electrical Engineers Regulations, plus amendments, and the Recommended Practice for their implementation. (See Section 19 - ACCESSORIES - 19.4 Socket-outlets and plugs, para (3).)

2. Further reference should also be made to Merchant Shipping Notice No M.686 the "Code of Safe Working Practices for Merchant Seamen", Chapter 12.

3. It should also be noted that in accordance with the Abrasive Industries Association, the maximum permissible speed of the grinding wheel is marked on the wheel specification disc.

10. SEAMAN CARRIED AROUND ROTATING WINCH DRUM

Narrative

A mooring rope was being transferred from a position on the upper deck to the forecastle store using a winch. A seaman was engaged in feeding the rope on to the winch drum. His glove became caught in the rope and his arm then became trapped causing him to be carried around the drum before the winch was stopped.

Observations

1. Another seaman had been positioned at the winch control but had then moved to the forecastle store in order to coil down the rope.

2. The winch control lever was held in the operational position by a retaining pin which allowed the winch drum to rotate without attendance at the control.

Comment

1. The "Code of Safe Working Practices for Merchant Seaman", Chapter 16 states: "An experienced seaman should be at the winch controls throughout the whole time of the mooring operation". It is considered this advice is relevant to the mooring rope transfer operation in progress at the time of the incident.

2. Although winch control levers can be kept in the operational position by various methods it is a dangerous practice to use the winch when it is unattended. This incident serves to highlight the potential danger of ignoring established safe working practices in favour of reducing manpower allocation.

11. FAILURE TO KEEP TO STANDING ORDERS

Narrative

A passenger ro-ro cargo vessel was in port between trips when the Radio Officer obtained permission from the Master to enter the bow visor compartment for camera maintenance. The Chief Officer was advised and requested to leave the visor shut whilst the maintenance was carried out. In the process of carrying out this maintenance, the visor suddenly started to lift causing the Radio Officer to hurriedly leap from the moving visor to the top deck, fortunately without injury.

On investigating it was found that the visor had been opened without authority, to clear the lower deck of fumes. No permission had been sought, nor was the person concerned apparently aware that the vessel's Standing Orders required him to obtain the Chief Officer's permission before any action could be taken.

Observations

1. The operation of the bow visor machinery without any prior consideration of the potential for accidents shows that **ALL** crew need to be reminded of Standing Orders at suitable intervals, particularly in circumstances when there are frequent crew changes due to the nature of the service.

2. Notwithstanding the existence of Standing Orders, unrestricted access to the visor controls invites unauthorised use and the possibility of creating a hazardous situation. The operation of any equipment or machinery which would have an effect on the safety of the vessel and/or its passengers and crew needs to be strictly controlled.

Comment

1. As a result of this incident the Company has now amended the control procedure so that both the bow and stern door control panels are secured with dedicated padlocks.

2. The duty Deck Officer holds the padlock keys and operation of the visor is under the direction of the Loading Officer.

3. The eradication of such operational weaknesses as described above lie within the remit of the onboard safety committee and, as described in the "Code of Safe Working Practices for Merchant Seamen", Chapter 4, they should be encouraged to identify any potentially unsafe procedures so that corrective action may be taken.

12. INJURY TO A FERRY PASSENGER IN HEAVY WEATHER

Narrative

A passenger was seated in a public room aboard a ferry. The vessel rolled heavily causing her chair to slide across the deck. The passenger fell from the chair against a fixed table and injured her lower back.

Observation

Some of the chairs in the public room were portable without any means of securing them in heavy weather.

Comment

The potential danger of unsecured chairs and furniture has been demonstrated in other accidents, and is not confined to heavy weather; in one collision involving a small passenger vessel in fine weather, chairs and tables shifted and obstructed exit from the passenger space. All such items should be secured against movement while the vessel is in service.

13. COLLISION BETWEEN A BUNKER BARGE AND A SEISMIC SURVEY VESSEL

Narrative

A small survey vessel was carrying out an oceanographic survey within a large river estuary using seismic equipment. Appropriate day signals for a vessel restricted in her ability to manoeuvre were being displayed, as she was towing high voltage cables astern. Her course was westerly at 2.5 knots. A bunker barge was inbound to the port, having transferred her cargo of fuel oil to a ship. Her course was north-north-westerly at approximately 6 knots and she was to port of the survey vessel. Visibility was good and the skies were overcast, with a south easterly wind of force 2.

The survey vessel observed the bunker barge on her port side at a distance of approximately one mile. The Masters of the two vessels made contact by VHF radio. The Master of the survey vessel did not think that the bunker barge would clear her bows. The Master of the bunker barge disagreed. As the situation developed, the survey vessel took all way off and commenced recovery of the cables. As it became clear that collision was imminent, the survey vessel operated astern propulsion even though the cables were still deployed, and the bunker barge went hard to port. There was a glancing contact between the port bow of the survey vessel and the starboard quarter of the bunker barge. Damage was slight.

Observations

1. Sounds signals required by the International Regulations for the Prevention of Collisions at Sea were not made by either vessel.

2. A local Notice to Mariners was issued by the survey company. It concerned the positioning of a mooring for current meters and thermistor chain, which was to be marked and lit in accordance with IALA regulations. The Notice did not refer to the survey vessel that was to be deployed in the area and which was restricted in her ability to manoeuvre.

Comment

1. Local Notices to Mariners should be checked by Harbour Authorities prior to issue to ensure that they contain all relevant information. Such information should be explicit.

2. Vessels navigating in harbour areas should be particularly aware of lights and shapes displayed by other vessels, especially those shown by survey vessels.

3. Even Masters of relatively small vessels, such as bunker barges, should be aware of the risk of pollution that their vessels may cause in a collision or grounding. Fortunately this did not occur in this particular case.

14. TRAINEE'S HAND CRUSHED DURING CARGO HATCH COVER OPENING PROCEDURE

Narrative

A hydraulic oil leak was being investigated inside a cargo hold. In order to identify the position of the leak, the cargo hatch cover opening procedure was commenced. The leak was quickly found. A deck trainee was instructed to proceed from the hold on to the deck and to tell the hatch cover operator to stop the opening procedure and to shut down the hydraulic pump. He climbed out of the hold access hatch and then placed his right hand on the cargo hatch coaming at a time when hydraulically operated cell guides were being moved into position as part of the normal cargo hatch cover opening process. His hand was crushed between the cargo hatch coaming and one of the cell guides as a result.

Observations

1. The trainee intended to communicate with the hatch cover operator by raising his head above the cargo hatch coaming. This involved him having to stand on the hold access hatch coaming and a stiffener positioned alongside the cargo hatch coaming.

2. From the hatch cover operating position, the operator was unable to observe the trainee.

Comment

1. The entire hatch cover opening procedure should have been properly supervised. The operator was the sole supervisor but, from his position, he was unable to ascertain whether or not the area was clear of all persons and items which might foul the hatch covers or cell guides.

2. It is considered that full compliance with the recommendations contained in the "Code of Safe Working Practices for Merchant Seamen", Chapter 18 will prevent a similar occurrence.

15. LOSS OF A SMALL FISHING VESSEL WITH HER CREW

Narrative

A steel fishing vessel of less than 10 metres in length, was being operated as an inshore trawler with a crew of two. The Skipper, although a very experienced fishermen, had not previously operated a bottom trawling vessel. The other crew member had no significant fishing experience. The trawling gear towing warps passed from the winch to sheaves on the wheelhouse and then to blocks on a stern gantry at points about 1.6 metres above the deck. From these blocks the warps passed over the stern to the trawl boards and net. During a daylight fishing trip in a major river estuary, with a vigorous tide running, the fishing gear became fouled on the sea bed causing the vessel to capsize and sink. The vessel carried no liferaft, only a few out of date flares and three lifejackets which were in poor condition. Both members of the crew drowned.

Observations

The Skipper's lack of experience with bottom trawling methods caused him to underestimate the capsizing moment which could be generated by fouled towing gear. The rather high towing point on the stern gantry would have magnified this effect.

Comment

Advice on the dangers of fouled towing gear are set out in Merchant Shipping Notice No M.967. Similarly, advice on the carriage of liferafts on fishing vessels of less than 12 metres length is offered in Merchant Shipping Notice No M.1467. Advice on the dangers of towing from such a high point had also been given to the Skipper by other local fishermen. Unfortunately all advice had been ignored, and this led to the loss of two lives.

16. LOSS OF TWO SMALL FISHING VESSELS - LIFERAFTS INCORRECTLY STOWED

Narrative

Two very similar incidents involving the loss of under 12 metres registered length fishing vessels occurred within a period of six months. Each vessel was operating about 1 mile from shore, had a crew of two persons and was towing gear over the sea bed during daylight hours. Both vessels suffered from their gear becoming fouled causing them to capsize and sink before a distress call could be broadcast or a flare released. One vessel had been fishing within sight of several other boats who were able to recover the two crewmen from the water within a few minutes of the incident. However, the other vessel had been fishing alone and the alarm was not raised until she was reported overdue by relatives of the crew; these two men drowned.

Observations

Both vessels carried liferafts but in neither case did the liferaft inflate or float free as they were lashed to their cradles. The Owners/Skippers of both boats were experienced men who were well aware of safety matters. Unfortunately they thought that they would always have time to release the lashings of their liferafts in the event of an emergency.

Comment

Although the Department of Transport does not require small fishing vessels to carry liferafts it does strongly recommend that they are carried and that they are fitted with suitable 'float free' arrangements. This advice, together with other recommendations and requirements for safety equipment, is set out in Merchant Shipping Notice No M.1467.

17. LOSS OF A SMALL FISHING VESSEL WHILST WORKING ALONE

Narrative

A steel hulled, fishing vessel of less than 10 metres in length was lost whilst fishing for scallops approximately 1.5 miles off the coast, probably in the process of trying to retrieve her snagged scallop dredger. The weather was good with a light north-easterly wind, slight swell and clear visibility. When the vessel was reported overdue, a full scale search was immediately organised. Unfortunately neither the vessel nor her one man crew were found, although some debris and oil patches were discovered.

The wreck was subsequently located and positively identified, but the body of the fisherman has not been recovered.

Observations

1. The wreck was inspected by divers, but was not disturbed. It was discovered that the winch wire was of a length about equal to the depth of water, that the scallop dredger was stuck in rocks, and that the roller guide from the after end of the vessel had broken free and was a short distance from the wreck. The winch brake was found to be on.

2. It is possible that the scallop dredger had become stuck in rocks, the fisherman had winched in the wire until his vessel was almost directly over the snagging, engaged the brake and attempted to pull the dredge free using the vessel's main engine. In the process, the roller guide may have broken free, allowing the winch wire to swing around to starboard and causing the vessel to heel; she would then have capsized, quickly filled with water and sank.

Comment

During a hauling operation to retrieve lost gear, ideally a member of the crew should be appointed to keep a continuous watch on the direction and angle of the deployed warp. In this case the fisherman was working alone, and attempting therefore to both operate the main engines and monitor the winch wire unaided. It is likely that the vessel had begun to drift in the time between the winch brake being applied and the main engine engaged, so that he may not have noticed if the winch wire had begun pulling to one side of the vessel. When the roller guide broke away, he could not react quickly enough to release the winch brake, and thus prevent the vessel from being pulled under.

APPENDIX A

INVESTIGATIONS COMMENCED IN THE PERIOD 01.04.92 - 30.06.92

DATE OF ACCIDENT	NAME OF VESSEL	TYPE OF VESSEL	FLAG	SIZE	TYPE OF ACCIDENT
10.02.92	GRAMPIAN PRINCE	FV	UK	35.33m	Accident to Person
31.03.92	ISLE OF ARRAN	Ro-Ro Passenger	UK	3,296 grt	Accident to Person
02.04.92	KAVA SOUND	Gen Cargo	UK	470 grt	Standing and Grounding
08.04.92	KASAN	FV	UK	17.52m	Fire and Explosion
10.04.92	AMBIENCE/ NORSEA	Gen Cargo Ro-Ro Passenger	UK UK	49.97 grt 179.41 grt	Collision and Contact
17.04.92	DUMNONIA/ SANDPIPER	FV Oil Tanker	UK Bahamas	2.93m 1,301 grt	Collision and Contact
20.04.92	QUEST	FV	UK	4.95m	Foundering and Flooding
29.04.92	ETOILE DU MARIN	FV	UK	12.65m	Foundering and Flooding
01.05.92	SPES MELIOR V	FV	UK	24.38m	Foundering and Flooding
07.05.92	KHOMS	Gen Cargo	Turkey	5,157 grt	Accident to Person
11.05.92	AMARYLISS	FV	UK	15.94m	Listing/Capsizing
12.05.92	NORRISIA	Oil Tanker	UK	65,179 grt	Foundering and Flooding
13.05.92	VALIANT	FV	UK	20.73m	Foundering and Flooding
15.05.92	GRAMPIAN OTTER	Supply Vessel	UK	652 grt	Fire and Explosion
21.05.92	ARDMORE	FV	UK	21.59m	Stranding and Grounding
25.05.92	WILHELMINA MARIA	FV	UK	22.49m	Listing/Capsizing
26.05.92	RIPARIAN/ REDSHANK	Dredger Pleasure Craft	UK UK	21m 21m	Hazardous Incident
28.05.92	TOR ANGLIA	Ro-Ro Other Cargo	Sweden	13,652 grt	Fire and Explosion
02.06.92	RADNES/ OPPORTUNE	Bulk Carrier Submersible	Panama UK	3,843 grt	Collision and Contact
03.06.92	BOWKNIGHT/ SMIT MANTA	Dredger Misc Non-Trading	UK Bahamas	2,965 grt 1,896 grt	Hazardous Incident
05.06.92	STENA CALEDONIA/ SEACAT SCOTLAND	Ro-Ro Passenger Ro-Ro Passenger	UK Bahamas	7,196 grt 3,103 grt	Hazardous Incident
06.06.92	LADY MOIRA	Tug	UK	348 grt	Listing/Capsizing
08.06.92	EUROPEAN SEAWAY/ SOL DO BRAZIL	Ro-Ro Passenger -	UK Liberia	22,986 grt 7,990 grt	Collision and Contact
11.06.92	CORK SAND	Dry Cargo Barge	Panama	955 grt	Accident to Person
13.06.92	CAROLA	Pleasure Craft	UK	21m	Accident to Person
14.06.92	EUROPEAN SEAWAY	Ro-Ro Passenger	UK	22,986 grt	Dangerous Occurrence
18.06.92	RESIDU	Gen Cargo	Honduras	399 grt	Foundering and Flooding
21.06.92	SIBON	FV	UK	33.66m	Fire and Explosion