MARINE ACCIDENT

INVESTIGATION BRANCH

Summary of Investigations No 2/90

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INTRODUCTION

The general reaction to the first Summary of Investigations has been very encouraging for us at the Marine Accident Investigation Branch (MAIB). Not only has it received favourable publicity in the shipping press, but more importantly there have been many requests for additional copies. This may have increased the Branch's postage bill quite considerably, but it is considered a small price to pay if the messages contained in the Summaries receive wide circulation in the shipping industry and particularly on board ships where the accidents happen. It would be nice to know that the Summaries are also being considered by the management of the shipping companies - those who make the policy decisions concerning the ships for which they are responsible. Preventing accidents cannot, and should not, just be left to those in the front line, the ship's staff; the lead in the drive to prevent accidents must come from the top, the policy makers.

However, the true success of the Summaries will take some time to be apparent; that will be when we begin to see a drop in the number of accidents that occur. This point was made by a well known writer in the shipping press, who when writing a review of the first edition of the Summaries, said "This really sums up what this publication is all about. If this or any other of these examples actually prevents an accident, or perhaps even causes someone to sharpen his awareness at a crucial moment, then its publication will be worthwhile."

This second edition of the Summaries contains a further selection of investigations from which there are useful lessons to be learnt. As before, a number of them are not really new, they could almost be called "old hat": some of us will probably have come across them ourselves at sea. But did we do enough to prevent them happening again? Perhaps we did on the ship we were on at the time but how many times were we able to tell the details to other seafarers on different ships so that they could learn the lessons? Probably not very often.

In this collection of investigations one of the most useful lessons to be learnt is for the fishing industry, and that is that life can be saved if survival equipment is carried and used properly. How many more lives could be saved if those who work on fishing vessels, especially the smaller vessels, thought a bit more about their own well-being and not just the catch they were taking? A life lost is a very expensive way to make a good catch.

To some extent accidents can be seasonal. At this time of the year in European waters we can expect gales and bad weather with associated accidents. A number of these lead to shifting of cargo, and in some cases result in the loss of the ship. The importance of proper stowage and securing of the cargo cannot be over emphasised. Let us hope this winter will not be remembered as one where ships and lives were lost because the basics of good seamanship were neglected or forgotten.

1. ENTRY INTO DANGEROUS SPACES

Narrative

After a bulk carrier had completed discharge of a cargo of coal, the terminal authorities tested the atmosphere of a hold for carbon dioxide and oxygen concentration prior to permitting entry for cleaning purposes. The tests indicated that the atmosphere was safe. The construction of the vessel was such that the access from the deck to the hold could only be gained through an access trunk. Two dockers entered the trunk, where they became unconscious and subsequently died.

Observations

It was mistakenly assumed that the hold access space would have a similar atmosphere to that of the hold itself. The space was, therefore, not tested prior to entry. The terminal authorities subsequently recognised that their procedures for permitting entry into dangerous spaces were inadequate and reviewed them to ensure that:-

- 1. Personnel are prevented from entering any hold or hold access space until the atmosphere has been tested and recorded as satisfactory.
- 2. Safety equipment used for entry into dangerous spaces is reliable and available for use on board every vessel engaged in a discharging operation.
- 3. Terminal staff undergo refresher courses concerning the dangers of confined spaces and the use of breathing apparatus.

Ships' crews also need to understand and observe the correct procedures for entry into dangerous spaces on board ships.

Comment

This accident illustrates the importance of laying down and observing the correct procedures for entry into dangerous spaces; these are addressed in the Merchant Shipping (Entry into Dangerous Spaces) Regulations 1988, and Merchant Shipping Notice No M.1345.

2. COLLISION ON A RIVER BETWEEN A COASTER AND A TANKER BARGE

Narrative

A 459 gross registered tonnage (grt) coaster, in ballast, left a river berth to proceed to sea. A 295 grt tanker barge, loaded with heavy fuel oil was on her way up the same river. It was a clear night with a light wind and the tide was flooding.

Just after the coaster cleared her berth, the lights of another vessel were seen coming upriver, fine on the port bow and showing 'green'. As the other vessel closed in range, her relative bearing changed to fine on the starboard bow, still showing 'green'. Although the other vessel was now close, the bearing seemed to be continuing to open to starboard, so the coaster turned to port, to give more room for a 'green to green' passing. At about the same time the other vessel turned to starboard.

It had been the intention of the tanker barge to enter a lock on the port side of the river. As the lock was approached, the tanker barge reduced speed and turned slightly across the channel to bring the lock fine to port. At this time, the lights of another vessel coming downriver were seen. The other vessel was showing both sidelights and appeared to be near the middle of the river. The tanker barge altered course to starboard, anticipating that the passing would be 'red to red' and then called on VHF a number of times to confirm this. There was no reply and by now the other ship was close and appeared to have turned to port, as her red light was lost to view. The two vessels collided.

Observations

- 1. Time was lost in waiting for a reply on VHF, the use of which in such situations is discouraged by Merchant Shipping Notice No M.845.
- 2. The use of sound signals, in partnership with 'early and substantial action' by both vessels would have avoided this collision.

Comment

Fortunately both vessels had little way on when the collision occurred. Nevertheless, the tanker barge was holed and about 20 tonnes of oil were released into the river. The collision resulted from unjustified assumptions, on each vessel, as to the other's intended action.

3. LOSS OF A SAILING VESSEL

Narrative

A traditional sailing craft was lost with both her crew, while on what should have been a short coastal passage. The vessel was wooden built, 12.2 metres in length, and reputed to have been about 140 years old. She was rigged as a gaff cutter with a single mast and had been fitted with a 75 horse-power diesel engine.

When the vessel began the passage, there was a southerly wind, force 5-6 with intermittent heavy rain. The forecast was for the wind to veer and later decrease to force 4. The general course for the intended passage was northerly

The vessel was sighted by fishing vessels at least three times, apparently in no difficulty. However, some four and a half hours after she had sailed, she broadcast a MAYDAY as a result of which Coastguards initiated search and rescue action. Nothing was found until the following day, when the body of one of the crew was recovered, and also some small items of wreckage. The other member of the crew was not found.

Observations

- 1. It appeared that a weather front, with an associated severe squall, crossed the area where the vessel must have been at about the time the MAYDAY was heard. These frontal conditions were not specifically predicted in the weather forecast given to the vessel, but they should have been recognised as possible in association with the existing winds at the start of the passage and the predicted wind shift.
- 2. The vessel's design, with the large open cockpit, made her vulnerable to flooding. It is probable that she was struck by a squall, knocked down and flooded very quickly.
- 3. It was known that the vessel had carried little, if any, life-saving appliances.

Comment

This accident emphasises the importance of owners and skippers of small yachts:-

- 1. Paying great heed to both actual weather and to forecasts.
- 2. Carrying life-saving appliances, including a life-raft.

4. FIRE IN A COFFERDAM OF A CHEMICAL TANKER

Narrative

During tank cleaning operations on a chemical tanker of 1259 gross registered tonnage, a small fracture was detected in a bulkhead between the cargo tank and the adjacent cofferdam. The fracture was in a weld and approximately 5 cms above the tank bottom. The tanker had previously discharged a cargo of vinyl acetate monomer and was at anchor. The leaking liquid had an acetate smell.

It was decided to flush fresh water into the cofférdam from hoses and then educt the cofferdam. The educting was terminated when the leak into the cargo tank was seen to have stopped. At this stage a sounding of the cofferdam indicated 5 cms of water. After a zero reading had been obtained by testing the atmosphere in the space with a portable gas indicator, ventilation of the space was continued overnight.

The following morning ship staff commenced repairing the fractured weld from within the cargo tank. While grinding out the weld, water again started seeping into the tank so further educting of the cofferdam took place. When the leak stopped, preparation for welding of the fracture resumed. Welding was started but after only a few minutes it was detected that the bulkhead in the immediate vicinity of the weld was extremely hot and a fire was seen within the cofferdam. Fire hoses were brought to bear into the cofferdam and within a short period flames could no longer be seen but smoke continued to come from the cofferdam. Boundary cooling was initiated from within the cargo tank, but there was concern that this was not having the desired effect. The vessel had just left the anchorage to enter port and permission was granted for the vessel to continue in. The local fire brigade met the vessel on arrival and after consultations it was decided to flood the cofferdam. The space was duly flooded and the fire was extinguished.

Repairs were eventually made to the fracture after pumping out the cofferdam and inerting it with nitrogen.

Observations

- 1. Due to the construction of the vessel and restricted access to the cofferdam, it was difficult to mount a fire watch in that space. During welding operations in the adjacent cargo tank greater attention should have been paid to providing an alternative safe system of work.
- 2. As the previous cargo had been vinyl acetate monomer, and liquid leaking from the cofferdam smelt of acetate, greater care should have been taken when educting the cofferdam to ensure that any residual liquid was only water.
- 3. Consideration should have been given to the fact that the cofferdams were painted and these coatings could catch fire from the heat generated by welding.

Comment

The managers of the vessel have subsequently issued "Notices to Masters" emphasising:-

- 1. The importance of taking appropriate fire precautions during repairs.
- 2. Procedures for entry into enclosed or confined spaces.
- 3. The need for maintaining cofferdams in an empty and dry condition.

5. IMPACT DAMAGE WHILST UN-BERTHING

Narrative

An 80,000 deadweight tonne tanker was leaving a United Kingdom port, assisted by three tugs. The vessel was berthed starboard side to, heading inwards, and it was therefore necessary to swing through 180 degrees once clear of the jetty. The tanker was in ballast; it was daylight with good visibility, a light breeze on the port bow (as the vessel lay alongside) and an ebb tide of about 1 knot.

Two of the assisting tugs were made fast, one forward and one aft, and the third was initially pushing amidships. When the tanker let go her mooring lines the third tug lay off and moved aft, the intention being that she would assist the swing as soon as the tanker was well off the berth by pushing just forward of the bridge. Soon after the tug made contact in order to carry this out, oil was seen to be escaping from a hole in the tanker's side, at the point of impact.

The oil came from the port bunker tank; action was quickly taken by plugging the hole from the outside and transferring the oil out of the tank, but just under 90 tonnes nonetheless escaped. Examination showed a fracture some 30 cms in length at the centre of the plating which was indented to a depth of 5 cms, with a deep score beginning 30 cms from the fracture and extending about 23 cms further aft. Apart from this damage, the plating was in good condition.

Observations

- 1. The tug had bow fendering made up of 9 lengths of 12 cms thick rubber tubing, held in place by vertical steel pins. The pins extended some 17 cms above the top of the rubber and each pin was rivetted into its own steel lug, this whole assembly being attached to the fender steel support structure. In elevation, the forward top corner of the lug presented a sharp edge, which was unprotected: see Figures 1 and 2.
- 2. Ordinarily, this did not matter when the tug was pushing against the vertical ship's side, for the impact was taken by the rubber fendering. In this instance, however, the point of contact between the tug and the ship was abaft the vertical side, so that the retaining lugs came into direct contact with the hull before the rubber fenders could cushion the blow. Moreover, for the same reason impact was concentrated on a much smaller area of contact than would be normal.

Comment

This accident would have been avoided if protection had been provided for the projecting part of the support assembly, by fitting additional rubber fendering. When this is not done, tugs with similar fender arrangements to that described above should be restricted to pushing only the vertical side of the ship being assisted.



Figure 1



Extract from Admiralty Chart No. 1994

6. INJURY TO COACH PASSENGER ON A PASSENGER RO-RO FERRY

Narrative

A passenger suffered leg injuries when attempting to re-board a coach during the discharge of a passenger ro-ro ferry. The accident occurred on the upper vehicle deck of the ferry at a time when discharge operations on that deck were being controlled by the Second Officer and three seamen.

A double-decker coach had been stowed on one side of the deck adjacent to an access door to the accommodation. The passenger door of the coach, in this position, was at mid-length on the inboard side. A lorry towing a trailer had been stowed next to the coach, facing the same way, at a distance of about 50 to 70 cms from the coach.

Two elderly passengers had been delayed in returning to the coach and discharge operations had commenced before their arrival at the vehicle deck. The coach passenger door started to close as the couple, both carrying hand baggage, approached it to re- board. At this time, the adjacent lorry and trailer started to move and both passengers lost their balance and fell.

One passenger's right leg was crushed and badly broken by the wheels of the freight vehicle.

Observations

- 1. The Second Officer and the three seamen did not observe the two elderly passengers walking along the vehicle deck in order to re-board their coach.
- 2. The coach driver and his assistant were not fully aware of how many passengers were still to come and they did not direct or assist their passengers in boarding the coach.
- 3. The coach should have been stowed with the passenger door to the bulkhead and greater space allowed between the vehicles for the free passage of the passengers.

- 1. Greater space should be allowed between passenger vehicles and adjacent vehicles.
- 2. Discharge of freight vehicles should not commence whilst passengers are joining coaches or cars on the same deck.
- 3. Late arrival passengers should be held at the deck entrances and then escorted ashore when safe to do so.
- 4. Ship staff directing traffic should move down the deck as discharge progresses so as to enable them to spot potential danger more easily.
- 5. Those in charge of coaches in transit on ferries should supervise their passengers at the time of boarding and leaving their vehicle, to assist in ensuring their safety on the vehicle deck.

7. LOSS OF SMALL CARGO SHIP

Narrative

A 392 gross registered tonnage single hold cargo ship loaded 450 tonnes of bagged cement and a small amount of general cargo, then sailed for several discharge ports in the north of Scotland.

While on passage, the ship encountered a rapid veering of the wind onto her beam and an increase in strength to force 7/8, which opposed the tidal current thus causing a very rough sea. The ship rolled to port into a steep sided trough, heeling over to approximately 35 degrees. As the ship did not fully recover from this heel, but took a permanent list of about 25 degrees, the Master altered course into the wind and a MAYDAY was sent. Ships in the area responded and the Coastguard arranged for an RAF helicopter to air lift the crew to safety.

Subsequently, the ship's trim by the stern increased, as did her list. Some four hours later the ship sank by the stern in 70 metres of water.

Observations

- 1. The cargo was stowed to the satisfaction of the ship's officers.
- 2. Investigation established that there must have been various void spaces within the hold after loading.
- 3. The cargo consisted of:-
 - 3.1 200 x (30 x 50 Kilogram) bags of cement which were shrunk-wrapped, using plastic, onto wooden pallets.
 - 3.2 97 x 1.5 tonne bags of cement contained within a polyester outer bag with an inner plastic liner, the liner being sealed by tying the open end into a knot.
 - 3.3 A kit-form farm building plus three pallets of briquette coal with a total weight of 46 tonnes.
- 4. No **positive** securing of the cargo was undertaken during loading.
- 5. All the ballast tanks except the aft peak had been pumped out before the cargo was loaded, but no soundings of the tanks were taken to confirm that they were "dry".
- 6. It is essential that all ballast water tanks are confirmed as either empty or full, after pumping has been completed. The free surface effect of any slack water will adversely affect a ship's stability characteristics.

Comment

- 1. It was concluded that the dynamic forces generated as a result of the ship rolling into a wave trough caused an instantaneous and substantial shift of cargo which, in turn, resulted in an excessive list and progressive flooding in the aft area of the ship.
- 2. This accident emphasises the message that all cargoes should be stowed and secured so as to minimise the risk of shifting.

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- 3. Cargoes packaged using plastic or polyester materials should be suitably dunnaged to assist cohesion at the interfaces.
- 4. Pallets and bags should be individually secure before being loaded, and secured in the "overall stow" sense.
- 5. Awkwardly shaped and/or heavy individual units of cargo should be tommed off to suitable points of the ship's structure.

1

8. COLLISION BETWEEN A HOPPER AND A SLUDGE CARRIER

Narrative

Two loaded vessels were on passage down a river in good visibility. They were a 980 gross registered tonnage (grt) hopper followed some way astern by a 2,800 grt sludge carrier. At her speed of 9 knots, the sludge carrier was a knot or two faster than the hopper and, subsequently, decided to overtake.

The hopper was, at this time, navigating near the starboard limit of the dredged channel which was about 150 metres wide with open shallow water to starboard, and the river bank - fronted by quays and industrial works - to port.

As the sludge carrier drew abreast of the port side of the hopper, there was a gap of about 10 metres between the two ships. A little later, when the bridge of the sludge carrier (which was aft) was about opposite the bow of the hopper, the latter took a sheer to port and, despite full starboard rudder, collided with the starboard side of the sludge carrier. The starboard engine of the hopper was then stopped and put astern, but it was to be a further three minutes or so (during which time the hopper's bow scraped down the side of the sludge carrier) before the hopper finally fell away astern. Structural damage was incurred by both vessels. There had been no sound signals or communication between the vessels.

Observations

This accident was the result of the effects of interaction between the two ships and between the hopper and the bank. There was a flow of surface water around each quarter of the larger ship, tending to fill the 'void' left astern as she moved ahead. Since the hopper's bow was too close to the quarter, it was affected by this flow and pushed to port. The hopper, navigating close to the starboard bank, was already influenced by a comparatively high pressure of water between the bow and the bank, tending also to push the bow to port. The two effects, therefore, combined to make the sheer to port and the consequent collision almost inevitable.

- 1. The sludge carrier should have given the hopper a much wider berth and the hopper should have realised the danger and indicated her doubt to the other vessel by giving the appropriate sound signal, as required by the Collision Regulations.
- 2. The effects of interaction are explained in Merchant Shipping Notice No M.930. In general, they can be minimised by both vessels proceeding at slow speeds during overtaking and keeping as far apart as practicable.

9. CARGO HOLD FIRE

Narrative

There was an outbreak of fire in the cargo hold of a 494 gross registered tonnage refrigerated cargo ship. In preparation for painting the hold, the crew were using a propane gas operated hot air blower to dry the surfaces when the unprotected foam insulation, which lined the bottom of the hold, ignited. The hot air blower was not designed for this purpose, but to seal plastic coverings over palletised cargo.

The fire quickly produced dense, acrid smoke, but the crew were able to escape without injury. The fire was extinguished by the hold's fixed carbon dioxide fire extinguishing system. The ship was able to complete the voyage and damage was confined to electrical and cargo handling equipment within the hold.

Observations

An ignition test was made on a clean sample of hold insulation which it was not possible to ignite. It was concluded that dirt and grease, absorbed by the foam, had produced a combustible material.

- 1. Merchant Shipping Notice No M.782 warns of the dangers of polyurethane foam lined cargo holds when exposed to fire or intense heat.
- 2. Although the hold insulation on this vessel was not polyurethane foam, a similar danger exists when other types of insulation become contaminated with accumulated dirt and grease.
- 3. To prevent recurrence, the owners subsequently issued orders that the hot air blower should not be used for drying out holds.

10. STRANDING OF A NEW FERRY

Narrative

A recently built passenger/cargo ro-ro ferry, which was inward bound in the hours of darkness, stranded five cables south of a fairway buoy whilst carrying out a 180 degree alteration of course. There was a westerly wind force 4/5 with a spring tide at half ebb.

The fairway buoy was situated to the east of the buoyed channel which marked the approaches to the port. To the south of the buoy, with approximately four cables of sufficient depth of water for the ferry, lay an extensive sand bank.

At the time of the accident the Chief Officer had the con, with the Master on the bridge waiting to take over for the navigation of the channel and berthing manoeuvres. Both the Master and Chief Officer had arrived at and departed from the port on numerous occasions, having been on this particular ferry service for a number of years. They both held pilot exemption certificates.

On approaching from the east, the ferry was requested by the Port Control not to enter the channel until an outbound tanker was clear. Under the local Bye-laws, two ships were not allowed to pass one another in the channel during the hours of darkness. However, the ferry arrived at the fairway buoy, despite having reduced speed, before the channel was clear, and in order to give more time, it was decided to return to the east. The manoeuvre was carried out by rounding the buoy anticlockwise, with the helm put over 10 degrees to port. When the ferry was to the south of the buoy, the Master thought that they were close to the bank but not unduly so. At this time the sea water cooling pressure alarm sounded on both main engines. The port side seawater intakes were being used and the Engineer immediately changed over to the starboard intakes. Only a slightly higher pressure was attained for a short period, despite the pumps being put on to high speed.

The Chief Engineer decided to change the cooling intake over to a ballast tank, which was dedicated for that purpose when the ship was alongside a berth in a tidal river. However, the procedure to change over to "Dock Operation" involved operating several valves and would therefore, have taken some time. The Chief Engineer informed the Master of these actions. Before this procedure had been completed the auxiliary and main engines closed down due to high cylinder cooling water temperatures. This left the ship without power. The ship lost all way and became stranded on the bank on a falling tide. There was no damage to the ship, no resulting pollution and no injuries to the passengers and crew.

While the vessel was stranded, the sea water chests were opened up and the filters cleared of the sand and mussels which had caused the sea water cooling pressure to fall. The ship refloated on the next high tide, and with the assistance of a tug, reached deeper water, started her engines and berthed without further mishap.

Observations

- 1. The decision to round the buoy was reasonable, in that there were four cables of safe water to the south and the ship had a high degree of manouevrability.
- 2. The rudder angle of 10 degrees was insufficient, allowing the ship to close the bank with the result that sand and mussels were sucked into the cooling water intakes.
- 3. It is noted that the transfer of the cooling system to "Dock Operations" was cumbersome.
- 4. If the vessel had been fitted with high level sea suction intakes, the accident may have been prevented.

- 1. This accident emphasises the importance of regular monitoring of the position of the ship.
- 2. It also demonstrates the danger of over familiarity with an area, because of the Master's and Chief Officer's long service on a particular route.

11. FISH FARM DINGHY ACCIDENT

Narrative

In force 9 winds three fish farm workers rowed in a 3 metre dinghy, from their work boat moored about 60 metres offshore towards the mainland. During this short passage the wind and waves combined to overturn the dinghy. The three workers were thrown into the water where their automatic life-jackets inflated. The dinghy was swept away. In the prevailing conditions of wind and current, the men were swept past the nearest island. They were in the water for some 45 minutes before eventually landing on another island. The men were subsequently rescued unharmed.

Observations

Some 7 hours elapsed from the time the men were thrown into the water until they were rescued. For the first 45 minutes of this time they were in the water.

Comment

This accident again demonstrates that lives can be saved through the wearing of buoyancy aids, in this case automatic inflating lifejackets.

12. SERIOUS INJURIES SUSTAINED USING A CAPSTAN WHILST PURSE-SEINING

Narrative

During pursing operations in calm weather conditions a deckhand, undergoing training, was heaving the Dan Rope on board using a capstan. Another deckhand was operating the capstan controls. The 64mm diameter plaited rope was being heaved over the starboard rail and was led to the top of the warping drum of the capstan. Three full turns were applied and the rope was taken off the bottom turn and then coiled on deck. The calm conditions necessitated the use of the vessel's bow thruster to keep the vessel off the net. The deckhand who was at the capstan controls, fearing the possibility of net entanglement with the thruster propeller, left his position and went forward in order to observe the relative locations of the thruster and net. His view of the trainee deckhand was then obscured and it was at this time that the clothing of the trainee became caught up in the top turn of the rope on the warping drum. The trainee was then taken around the capstan before being thrown clear.

Observations

- 1. Due to the calm weather conditions, the hauling part of the rope became slack from time to time which caused the top turn on the warping drum to ride up and over the top of the capstan. This necessitated the trainee deckhand having to approach the warping drum in order to replace the top turn.
- 2. The heaving arrangements for the Dan Rope necessitated the hauling part of the rope having to be led to the top, as opposed to the bottom, of the warping drum.
- 3. The trainee deckhand was inexperienced with the task he had been allocated.
- 4. The other deckhand acted unwisely and unsafely in leaving the capstan controls while the capstan was in operation and then proceeding forward so that both the controls and the person heaving on the rope were obscured from his vision.

- 1. The owners agreed to consider how a more satisfactory heaving arrangement could be achieved such that the hauling part of the Dan Rope would form the bottom turn on the warping drum. Such an arrangement would prevent the top turn from riding up and over the top of the capstan in calm weather conditions.
- 2. The owners have been advised of the importance of both owners and their employees being familiar with the contents of the "Fishermen and Safety" booklet produced by the Department of Transport in 1986 and of all Merchant Shipping Notices pertaining to fishing vessels.

13. CAPSIZE AND FOUNDERING OF A SMALL FISHING LAUNCH

Narrative

A 5.6 metre fishing launch was anchored one mile offshore for fishing. The launch had a large open cockpit, a two-berth cabin forward and was powered by a 60 horse-power outboard engine.

There was a northerly setting tide with an offshore south- westerly wind force 4. The anchor rope, which was led through a fairlead on the foredeck, had a secondary rope attached to it. The secondary rope, which ran to the starboard side of the cockpit, was used to recover the anchor, instead of directly from the foredeck. On completion of their fishing, the owner began to pull in the anchor by using the secondary rope. However, the anchor fouled on the sea bed and the slack bight of the anchor rope became entangled around the outboard engine. Before being able to cut the rope from the engine, the boat swung round stern into tide and the transom was dragged down, resulting in rapid flooding of the cockpit. Almost instantly, the boat capsized, throwing the two men into the sea. The owner who was not wearing a buoyancy aid, managed to cling onto the still floating bow section. He called to his crew member to swim ashore and raise the alarm, knowing that he was a strong swimmer and wearing a flotation suit.

Approximately two hours later, the crew member was sighted, due to the bright orange colour of the suit, and picked up unconcious, by a passing dredger, some two miles north east of the accident. He was taken to hospital, where he recovered. The owner, despite an extensive search by rescue services and local fishermen was never found. The boat was subsequently located on the sea bed, refloated and towed back into port.

Observations

- 1. The practice of recovering an anchor by means of a secondary rope can be unsafe, if the slack bight of the anchor rope is not controlled.
- 2. The wearing of a flotation suit was a major factor in the saving of the crew member's life. The bright orange suit was in one piece (similar to a pair of overalls) and had built in flotation foam (thus needing no inflation by air bags), fasteners to prevent excessive cold water entering, and a hood. The design allowed personal freedom of movement; had good thermal properties; was easy to keep clean and was made of strong materials to resist against wear and tear.

- 1. This incident is one of many in which professional and amateur seafarers particularly from small boats and fishing vessels, have found themselves accidentally in the sea and as a result have lost their lives.
- 2. In many of these cases their lives might not have been lost had they been wearing a flotation suit or buoyancy aid.
- 3. In incidents such as this, life-buoys which can readily be carried in small boats may prove to be an essential piece of life-saving equipment.

14. SINKING OF A SMALL FISHING VESSEL

Narrative

A 7.9 metre vessel was fishing for mussels in good weather: the approximate depth of water was 4 metres. The method of fishing involved pulling a dredge box behind the vessel at a speed of approximately 1 1/2 knots; this dredge was in turn connected by a rope over a goal post mast at the aft end of the boat to an hydraulic winch.

The dredge became caught on an obstacle on the sea bed and stuck fast. At that time the vessel was in gear, moving forward, and the winch recovering the dredge. The winch operator had moved away from the controls and, before he could return to his station, the action of the vessel's forward movement together with the winch pulling in the dredge, caused the vessel to broach. The gunwhale was pulled below the water surface and being an open boat, she sank very quickly. Both the crew members - who were wearing life-jackets - were picked up by another fishing vessel in the immediate vicinity. The vessel was later refloated.

Observations

- 1. The winch operator should have remained at the winch control position when the winch was in use.
- 2. Ready accessibility to life-jackets can save lives.

- 1. The owners subsequently issued instructions emphasising that the winch operator should remain at the winch controls whenever the winch was in operation.
- 2. The wearing of some form of buoyancy, for example, a buoyancy jacket or a flotation suit, while working on fishing vessels often results in survival rather than loss at sea.

15. DANGER FROM MINES: SINKING OF A FISHING VESSEL

Narrative

A fishing vessel engaged in bottom trawling recovered a large metallic object in her net. The contents of the net were landed on deck, including this object, which the Skipper and crew thought was probably a bomb. The Skipper reported to the Coastguards, who said they would contact the Naval Authorities for advice; in the meantime he resumed fishing, having secured the object on deck.

After discussion with the Naval Authorities, the Coastguards asked the Skipper for further details, on the basis of which it was decided that the object was probably a practice mine; the vessel made for port and soon after arrival the Royal Navy mine disposal team boarded. When they examined the object they identified it as a live World War II mine, and the vessel with the mine on board was taken to a remote bay where the disposal team intended to carry out a controlled explosion. On arrival, after the necessary preparations for detonation, the mine was lowered to the sea bed and the fishing vessel steamed clear. However, no explosion occurred, so the vessel returned to the site and after waiting for the prescribed "soak" time the disposal team renewed the detonator and fuse.

For a second time the vessel steamed away, but on this occasion an explosion did take place, prematurely, with the fishing vessel only about three quarters of a cable distant. She sustained damage, as a result of which she was beached, and after the crew had been taken off she slid into deeper water and sank. Fortunately, there were no serious injuries to personnel.

Comment

This incident illustrates the serious potential danger presented by old mines and emphasises the vital need for fishermen and all seamen to treat such objects with the very greatest care. Annual Notice to Mariners No. 6 of each year sets out clear advice, particularly in paragraph 3 which is reproduced in full below: this advice should be meticulously followed by all concerned.

6. FORMER MINE DANGER AREAS; SWEPT ROUTES AND INSTRUCTIONS REGARDING EXPLOSIVES PICKED UP AT SEA.

- (3) Mines, torpedoes, depth charges, bombs and other explosive missiles are sometimes picked up in trawls, often in waters comparatively distant from where they were laid or dropped. Explosive weapons are dangerous even if they have been in the water for many years, and the following guidance is given in dealing with them:
 - (a) A suspected explosive weapon should not be landed on deck if it has been observed while the trawl is still outboard. The trawl should be lowered and where possible towed clear of regular fishing grounds before cutting away the net as necessary. The position and depth of water where the mine was cut away should be passed to the Naval Authorities via the Coastguard, Ship's Agent or Fishery Officer. The eventual disposal of the mine will be greatly facilitated if the depth of water is no greater than 35 metres, the position very accurately plotted and, whenever possible, marked.
 - (b) In the event of the weapon not being detected until the contents of the trawl have been discharged on deck, the Skipper of the fishing vessel must decide whether to rid his ship of the weapon by passing it over the side or to make for the nearest port informing the Naval Authority by radio without delay. His decision will depend on the circumstances, but he should be guided by the following points:

- (i) Great care should be taken to avoid bumping the weapon.
- (ii) If retained onboard it should be stowed on deck, away from heat and vibration, firmly chocked and lashed to prevent movement.
- (iii) IT SHOULD BE KEPT COVERED UP AND DAMPED DOWN. (This is important because any explosive which may have become exposed to the atmosphere is likely to become very sensitive to shock if allowed to dry out).
- (iv) The weapon should be kept onboard for as short a time as possible.
- (v) If within two or three hours steaming of the coastline the safest measure will generally be to run towards the nearest port and lie a safe distance off shore to await the arrival of a Naval Explosive Ordnance Disposal Unit. <u>Under no</u> circumstances should the vessel bring the mine or weapon into harbour.
- (c) Under no circumstances should attempts be made to clean the weapon for identification purposes, open it or tamper with it in any way.
- (d) A ship with an explosive weapon on board, or in her gear, should warn other ships in the vicinity giving her position and, if applicable, intended position of jettisoning.

(Re-printed from Annual Admiralty Notice to Mariners No.6 of 1990, published by the Hydrographic Dept.)

APPENDIX

INVESTIGATIONS COMMENCED IN THE PERIOD 1.1.90-31.3.90

DATE OF	NAME OF	TYPE OF	FLAG	SIZE	TYPE OF
ACCIDENT	VESSEL	VESSEL			ACCIDENT
10.10.89	KIRKELLA/	F.V	U.K	58.82M	Near Miss
	STERDEN VABRO	F.V	U.K	17.67M	
13.11.89	SCOTIA	F.V	U.K	21.33M	Collision
31.12.89	JOHN BISCOE	Research Vessel	U.K	67M	Equipment failure
02.1.90	MARGARETS	F.V.	U.K.	63M	Grounding
02.1.90	DAWN SHORE	Off Shore	U.K.	499 grt	Accident to
		support			person
10.1.90	WICKED LADY	F.V	U. K .	5.79M	Accident to
					person
10.1.90	SOUND OF SEIL	Ferry	U.K.	363 ort	Fire
13.1.90	CHURCHILL	Container	U.K.	22635 grt	Fire
15 1 90	OLAU HOLLANDIA	Ro-Ro	W.Germany	14981 grt	Grounding
17 1 90	BREAKSEA	Tanker	U.K.	992 ort	Engine failure
17.1.90	SWIFTWOOD/	Cargo	UK	199 ort	Collision
17.1.20	MAYFLOWER	Pleasure Launch	UK	-	completi
	GARDEN	Tiousuro Luunon	0		
19 1 90	SAINT SIMON	ΕV	UК	32M	Listing
19 1 90	SWIFTWOOD/	Cargo	UK	199 ort	Collision
17.1.70	VITIS	Oil Barge	UK	-	complete
25 1 90	CHARTRES	Ro-Ro	France	4590 ort	Engine failure
26.1.90	IMPLILSION	Τυσ	UK	18M	Capsized
29.1.90	FLAG THEOFANO	Cargo	Greece	1184 ort	Foundering / Sinking
30 1 90	NUESTRA SENORA	F V	UK	34M	Flooding
50.1.70	DE GARDOTZA		0		riooding
31.1.90	ST COLUMBIA	Ro-Ro	ПΚ	7836 grt	Fire
08 2 90	LORALEY	FV	U.K.	21M	Flooding
14 2 90	CAVENDISH	Liquified Gas Carrier	Hong Kong	26802 grt	Contact
15.2.90	AALTIL MARGRIET	F V	UK	86 grt	Accident to person
15.2.90	I ENA SORENSEN	F V	11 K	17M	Grounding
15.2.90	SANDGULL	Dredger / Sandcarrier	U K	534 ort	Contact
19.2.90	BALTIC PROGRESS/	Ro-Ro	U K	4665 grt	Collision
17.2.70	ALPHA LADY	Chemical Tanker	Cyprus	1445 grt	combion
20.2.90	OKBA BNOU NAFIA/	Cargo	Morocco	3085 grt	Collision
20.2.20	TROCADERA	Cabin Cruiser	W Germany	11M	complete
20.2.90	EMMA THOMPSON	F.V.	U.K.	26M	Grounding
22 2 90	AMY M	Open Boat	_	6M	Foundering
23 2 90	CHRISTOPHER C	Cargo	Panama	497 ort	Grounding
23.2.90	MATELY B/	Cobble	UK	-	Collision
20.2.70	BETTY A	Cobble	UK	IOM	comston
26.2.90	NORSEA	Ro-Ro	UK	31785 ort	Engine failure
28.2.90	IOHN HARRIOT	Riverbus	UK	12 49M	Engine failure
05 3 90	I 'FXPLORATEUR	F V	U.K.	15.49M	Flooding / Sinking
06 3 90	ISLAND SWALLOW	Cargo	U K	499 ort	Grounding
213.90	CHRISTINE H/	FV	U K	18 3M	Collision
	THIFRMAN	Tanker	Isle of Man	7307 art	Combion
26.3.90	DEERSOUND	Cargo		57 51M	Contact
23.3.90	FREEDOM	F V	U.K.	11.22M	Contact
	I NELLOOM	* * * *	U.IX.		Connect