MCIB
Marine Casualty Investigation Board

REPORT OF THE INVESTIGATION INTO THE SINKING OF THE IRISH FISHING VESSEL "RISING SUN" IN THE VICINITY OF THE SALTEE ISLANDS, CO. WEXFORD, ON 29th NOVEMBER 2005

The Marine Casualty Investigation Board was established on the 25th March, 2003 under The Merchant Shipping (Investigation of Marine Casualties) Act 2000

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1. SYNOPSIS

1.1 On 29th November 2005 the fishing vessel "Rising Sun" was underway, with three crew onboard, in fishing grounds off the Co. Wexford coast in the vicinity of the Saltees Islands, when the vessel suddenly capsized and subsequently sank. One crewman lost his life, one survived and the third crewman, the skipper, is still missing. On 1st December 2005 a local diver was tragically killed whilst carrying out an underwater search for the missing skipper.

1.2 This report concerns the events relevant to the sinking of the "Rising Sun" only. The circumstances surrounding the death of the diver are not within the scope of this report.

2. FACTUAL INFORMATION

2.1 Principal Particulars of the fishing vessel "RISING SUN"

Length (Overall)	8.29 metres
Breadth	3.41 metres
Depth	1.37 metres
Gross Tonnage	5.64
Port of Registry	Wexford
Fishing Number	WD 209
Year of Build	1998
Where Built	Guernsey, Channel Islands.
Main Engine	4 Cylinder Daewoo diesel engine (Previously Ford Sabre)
Registered Power	37.3 kW. (relevant to previous Ford Sabre engine, actual power of Daewoo engine not declared.)
Speed	6 knots
Owner.	Mr. Patrick Colfer
Address	New Ross, Co. Wexford.

2.2 Description and History of Vessel.
The "Rising Sun" is a "Kingfisher 26", GRP decked fishing vessel with a forward wheelhouse. She was built by her previous owner in Guernsey and was purchased and brought to Ireland in 2003 by Mr. Patrick Colfer. She was subsequently registered as an Irish Fishing Vessel and was licensed as a commercial sea fishing boat by the Department of Communications, Marine and Natural Resources.

The vessel was photographed during the days immediately prior to the incident, see Appendix 9.1. There is a winch fitted on the watertight working deck aft of the wheelhouse and a gantry fitted over the stern. A further net drum is fitted on a platform on this gantry. A pot hauler is fitted on the starboard side behind the wheelhouse.

2.3 Safety - History of Regulatory Compliance.
The safety equipment of the vessel was inspected by the Marine Survey Office (MSO) on 4th February 2004 and found to comply with the relevant requirements of the Merchant Shipping (Life-Saving Appliances) Rules 1967, as amended and the Merchant Shipping (Fire Equipment) Rules 1967, as amended. On 18th February 2004 the radio installation of the "Rising Sun" was surveyed by the Marine Radio Affairs Unit of the MSO and found to comply with the requirements of the Merchant Shipping (Fishing Vessel) (Radio Installations) Regulations 1998. A Fishing Vessel Safety Radio Certificate was subsequently issued to the vessel, valid until 17th February 2006.
Following the introduction of the Code of Practice for Small Fishing Vessels of Less than 15 metres in length in terms of Design, Construction and Equipment, the vessel underwent survey by Promara Ltd, who are approved to carry out

such surveys by the Maritime Safety Directorate of the Department of Transport. This survey was successfully completed on 18th October 2004 and a Declaration of Compliance was issued, see Appendix 9.2.

2.4 Lifesaving Appliances. (At time of Declaration of Compliance Survey)
Liferaft: One four-person Zodiac "Racing Super Four" inflatable liferaft. Serial No. XDC3CB29E797.
Date of Manufacture: 11/06/97
Last Serviced: 03/04.
Approval: Conform to O.R.C. (Offshore Racing Council).
Stowed on the wheelhouse top. No hydrostatic release fitted.
Lifebuoys 2
Lifejackets 2
Pyrotechnics 6 Red Star
Radio Beacon (EPIRB) One (406 MHz)
Personal Flotation Device 2. (3 onboard on day of incident)

2.5 Fire fighting Appliances
4 Portable Fire Extinguishers.

2.6 Other (Relevant to incident)
One Electric Bilge pump
One Manual Bilge Pump

2.7 Navigational/Radio Equipment
Magnetic Compass
Two GPS (Furono Navigator)
Video Plotter
Video Sounder
Autopilot
Radar (Furuno)
VHF Radio (ICOM)

2.8 Crew of "Rising Sun"
The following persons made up the crew of the vessel on the day of the incident.

Mr. Patrick Colfer. - Skipper
Mr. Jimmy Myler - Crewmember
Mr. Ian Tierney - Crewmember

3. EVENTS PRIOR TO THE INCIDENT

3.1 At approximately 07.30 hours on the morning of 29th November 2005, the "Rising Sun" left Duncannon, Co. Wexford. The intended purpose of the trip was to harvest and reset pots in the area from the Conningbeg lightship to the Saltees Islands. The weather was fair, winds initially West to Southwest force 4 to 5, patchy drizzle fell in the afternoon. Sea state was slight to moderate. See Met Eireann weather report at Appendix 9.3. It took the "Rising Sun" approximately 1.5 hours to reach the Conningbeg.

3.2 The crab pots were on a string of approximately 25 per "train", equipped with a Dan buoy or footballs in a net to mark the ends. There was a bundle of chain (approximately 3 stone in weight) at each end of the train so as to keep the pots in position under the water. There were eleven "trains" to attend to during the day.

3.3 It would appear that it was normal for the "Rising Sun" to carry three "trains" aboard at any time but depending on the weather and sea conditions four "trains" of pots could be aboard.

4. THE INCIDENT

4.1 At approximately 15.00 hours the vessel had three "trains" of pots onboard and was underway heading to shoot the "trains" onto fresh fishing grounds. Mr Tierney sat on the stb'd gunwale by the pot hauler and Jimmy Myler sat on the pots facing him. Pat Colfer was in the wheelhouse at the helm.

4.2 There were about nine boxes of crabs onboard stowed to stb'd on the main deck, stacked two or three high. The three pot trains were spread across the deck to the port side and stacked three high. Jimmy Myler called out a warning "she's listing" and the skipper disengaged the engine and came out of the wheelhouse. The vessel was listing to port and the crew grabbed a few pots and threw them over to the stb'd side in an effort to right the vessel. After they had moved about four pots, Mr. Myler shouted a further warning "get off, she's going" and he grabbed two inflatable personal flotation devices (PFD's) that were hanging just inside the wheelhouse door and handed one to Mr. Colfer. Mr. Tierney already had his PFD on.

4.3 Mr. Tierney grabbed hold of the pot hauler and managed to climb out to starboard as the vessel capsized to port and he was able to stay dry by climbing onto the hull as the vessel completely rolled over. Mr. Tierney recalled seeing both Jimmy Myler and Pat Colfer in the vicinity of the wheelhouse as the vessel capsized, both men had their PFD's over their arms. Mr. Tierney next saw Mr. Myler in the water and he helped him up onto the upturned hull. Pat Colfer was nowhere to be seen in the water.

5. EVENTS FOLLOWING THE INCIDENT

5.1 The two crewmembers were on the upturned hull for about four hours. "Rising Sun" slowly sank, stern first, and by about 19.00hours they could no longer remain on the hull and had to enter the water. They had their PFD's on and inflated and they tied rope between themselves and used some buoyant balls from the nets as extra buoyancy.
The liferaft did not deploy or surface during this time.

5.2 Meanwhile at 17.54 hours the Kilmore Quay Lifeboat station informed the Marine Rescue Coordination Centre (MRCC) of the Irish Coast Guard at Dublin that the "Rising Sun" was overdue. Attempts were made to contact the vessel by VHF radio and by mobile phone but no response was received. At 18.02 hours the rescue helicopter at Waterford was tasked and a PAN was broadcast at 18.08 hours. The Kilmore Quay, Rosslare and Fethard Lifeboats, the Naval Service vessel L.E. Orla and a number of other vessels responded to the search. The PAN was upgraded to a MAYDAY at 18.41hours and a full search and rescue mission commenced concentrating on an area around the last sighting of the vessel approximately 2.5 miles south of the Great Saltees Island.

5.3 At approximately 21.34 hours, the two crewmembers were spotted in the water and taken onboard by the fishing vessel "Napier" and were subsequently transferred to the Kilmore Quay Lifeboat. Both crewmembers were taken to Kilmore Quay and then transferred to Wexford hospital by ambulance, but Mr. Myler, whose condition was described as serious when taken from the water, did not recover from the ordeal and he sadly lost his life. Mr Tierney was treated in hospital and was able to return home to his family on the following day.

5.4 The search for the missing skipper, Pat Colfer continued through the night and for several days thereafter, but the skipper was not found. The position of the wreck in the vicinity of 52° 05.5 N 006° 34.56 W was signalled by the appearance of a slick and debris on the morning of the 30th November and was confirmed by the Naval Service Diving Unit later that day. (see Fig 9.7)

5.5 Tragically a local diver Mr. Billy O'Connor lost his life during a diving accident whilst searching for Pat Colfer on the afternoon of 1st December 2005. Mr. O'Connor was an experienced diver who had previously assisted in numerous underwater search operations including the "Pisces" tragedy in 2002. On 6th/7th February 2006, the "Rising Sun" was recovered from the sea following a salvage operation undertaken by contractors engaged by the Irish Coast Guard. The vessel was subsequently brought to Rosslare Europort and put into storage pending an investigation by the Marine Casualty Investigation Board.

6. FINDINGS

(a) In relation to the Capsize of the vessel.

The "Rising Sun" was inspected ashore following her salvage. Mr. Tierney and other persons with knowledge of the vessel and its operation were also able to provide information to the investigation.

The vessel did not suffer any form of collision or grounding nor was there any incident relating to the fishing gear prior to or during the incident. The hull was seen to be in generally good condition upon salvage. Both bilge keels and the area of the hull in way of the attachment of the starboard bilge keel were however damaged and water was seen to be leaking out of the flooded hull. This damage is likely to have been caused whilst the vessel was on the seabed after the sinking, due to the strong prevailing currents which were constantly rolling the vessel from side to side as she sat on the bottom. It is not considered that this damage was present before the vessel sank and it is not relevant to the cause of the tragedy.

Mr. Colfer had changed the main engine installed onboard "Rising Sun" in the previous year, replacing the original Ford Sabre with a Daewoo model. This change should have been notified to the survey and regulatory authorities but this does not appear to have been done. It appears that the vessel operated efficiently with the new engine. The propeller was changed at some time to match the new engine characteristics. The propeller and rudder were intact and there was no evidence to suggest the vessel flooded through any hull penetration. The vessel had originally been fitted with a propeller nozzle but this had been removed shortly after Mr. Colfer purchased the vessel. The seawater/exhaust outlet from the vessel was tested by the investigator by means of a pressurised water hose and no leakage could be identified from any pipe within the vessel.

There was evidence that the connection of the "wet" exhaust outlet at the hull had been leaking, as there are brown leakage stains on the inside of the hull under this fitting. It is considered that this leakage would have been of a minor nature. The vessel has a grease lubricated stern gland. It is common for small leakages of water to enter into vessels through this type of fitting during navigation. The skipper was said to be diligent in carrying out regular checks in the machinery space during fishing trips.

In view of the above it was considered that the likely cause of the vessel capsizing may have been linked to the stability of the vessel and in particular the condition applying as she made her way between the fishing grounds on the afternoon of 29th November 2005. The rationale in exploring this possible cause for the tragedy was further supported in view of certain changes that were known to have been made to the vessel since the time of the survey carried out by Promara in October 2004.

The survey for the Declaration of Compliance carried out by Promara in October 2004 included the completion of a procedure known as a "Roll Test." This test involves creating a rolling motion of the vessel and then measuring the "roll

period" time. From this information a reasonably accurate picture of the stability characteristics of a vessel can be ascertained. Although the "Rising Sun" passed the criteria for the test, the results showed that it was only a marginal pass. The attending surveyor recalled informing Mr. Colfer that it was not good practice to store fish boxes up high on the gantry. At this time the vessel was rigged for potting operations only and there was no net drum fitted on the platform of the aft gantry. See appendix 9.4.

At some time after the above survey, Mr. Colfer had extra equipment installed and which included a net drum installed on the aft gantry of the vessel. This was in connection with the vessels intended future dual use as a trawler and potter. The addition of this and other relatively heavy pieces of machinery high up on the vessel had a serious negative affect on the stability of the vessel. Although the vessel operated for a considerable period of time without mishap with this machinery fitted, there were other contributory factors affecting the stability of the vessel on 29th November 2005.

In the days immediately prior to the incident, the "Rising Sun" had been involved in trawling operations in the Waterford area and was therefore carrying nets and associated trawl gear, doors etc. onboard during these fishing trips. On the day of the tragedy the vessel departed Duncannon with all of the trawl gear still onboard, including the net on the drum on the aft gantry. There were also some boxes containing lengths of chain carried onboard in elevated positions.

Given the above it was decided to conduct a stability analysis of the vessel to try and establish the nature of the stability condition on 29th November 2005. In order to accommodate this process it was necessary to establish the exact shape of the outside of the hull and the "Lines Plan" supplied by Kingfisher Boats Ltd. provided this information. This enabled a theoretical analysis to be produced. In order to further verify this theoretical analysis it was decided to attempt to return the damaged vessel to as near as practical her condition on the day of the sinking. Therefore a contractor was engaged to reinstate the damaged gantry and other equipment onboard and to attempt to seal the damaged hull in way of the starboard bilge keel. It was then intended to return the vessel to the water in order to ascertain the following:-

- The manner in which the vessel floated, e.g. depth forward and aft.
- The waterline of the vessel.
- The distance from the deck edge to the waterline (freeboard).

This information would enable data to be determined in relation to the displacement (weight) of the vessel. In order to actually determine the stability characteristics of the vessel when afloat in this condition it is necessary to conduct a further test known as an "inclining experiment". In this test known weights are moved from side to side on the vessel and the angles of heel (the tilt) that these weight movements produce is measured. The above tests would enable a full stability analysis to be produced. It was also intended to conduct a "roll test" and compare the result to the previous test undertaken in 2004.

Mr. Colfer had ordered a delivery of fuel for the vessel in the days prior to the incident and this order had not been delivered when she departed on the 29th November 2005. The fuel delivery company were able to advise that on previous occasions if their road tanker was in a harbour carrying out other deliveries and if "Rising Sun" was also in the port, then Mr. Colfer would often request a top up of his fuel tanks "on the spot" by the tanker and which would normally be relatively small deliveries. When Mr. Colfer had previously contacted the firm in advance to order fuel, then he had taken delivery of larger amounts of fuel. Given that Mr. Colfer had placed an order for a delivery on this occasion it is reasonable to assume that his tanks were at a lower level and for the purposes of the stability analysis were taken as 25% full.

The vessel was made ready and returned to the water in Rosslare port on 31st May 2006. Unfortunately, the repairs made to the hull were not effective and water entered the hull during the tests. As a result the inclining experiment could not be completed but the partial results (see fig 9.5) have enabled certain conclusions to be drawn:-

- The vessels displacement at the time of the incident was considerably greater than the indicated design displacement.
- The stability assessment has shown that the vessel had a very poor stability profile at the time of the incident. When compared with accepted stability criteria for a seagoing vessel, she failed to meet the minimum standard in five out of the six criteria specified.

N.B. The stability analysis was assessed on the basis of still water due to the absence of reliable wave length data. Wave action or capsize moments induced by the vessel turning in a seaway were not considered. These factors would have a further detrimental affect on the stability of the vessel.

BILGE ALARM and BILGE PUMPS

The "Rising Sun" was equipped with a Rule 2000, submersible electric bilge pump with a three-position "rocker" switch fitted at the console in the wheelhouse to control the pump. The three positions of the switch corresponded to "Off", "On" and "Automatic". The terminal connections of the switch corresponding to its automatic function were not connected and therefore the pump would only operate upon manual activation.

There was a bilge level sensor fitted in the machinery space of the "Rising Sun" at the time of the inspection in 2004. An audible alarm was located in the wheelhouse and which would have activated if a high bilge level condition occurred. These type of sensors can also be arranged to automatically start an electrically powered bilge pump to clear water from within the vessel, but as stated above this was not utilised on "Rising Sun".

The inspection of the vessel after the vessel was salvaged revealed that the bilge level alarm had been disconnected. The "Rising Sun" is also equipped with a manual bilge pump on the outside deck on the port side of the wheelhouse. This pump takes suction from two positions in the vessel, controlled by a selector valve under the wheelhouse. One suction being under the wheelhouse

and the other in the engine room, though it should be noted that there is no watertight subdivision between these spaces. The selector switch was noted as being in the engine room position. The pump was tested during the MCIB inspection but did not produce any suction. The adjacent fire pump, which is of the same type, was tested and operated satisfactorily and so this pump was temporarily connected to the bilge suction pipe and tested. No water could be pumped due to blockages in the suction pipes. The two suction pipes are not fitted with strainers at their open ends and had become blocked by debris, rags etc.

(b) Radio and Lifesaving Equipment.

The "Rising Sun" complied with the applicable requirements of the regulations. The lifesaving and radio equipment carried onboard was of an adequate nature to both raise the alarm and protect the crew in the event of an abandon ship incident, but only if the crew had the time to manually operate the equipment.

(i) Emergency Position Indicating Beacon (EPIRB)

The onboard EPIRB was stowed in the wheelhouse and was rigged for manual operation only. (i.e. it did not have a hydrostatic release unit) [This was in compliance with the Merchant Shipping (Fishing Vessel) Radio Installations) Regulations 1998]. The skipper and crew did not have time to operate this piece of equipment as the vessel capsized. After the vessel was salvaged, the EPIRB was still in its bracket in the wheelhouse and had not been operated.

(ii) Liferaft

The vessel had a four-person Zodiac inflatable liferaft stowed on the wheelhouse top. Marine Notice No. 8 of 2005 (see fig 9.6) refers to the fitting of these liferafts on small fishing vessels and the Zodiac model is mentioned as being acceptable for such purpose. The liferaft was rigged for manual operation only, (i.e. it did not have a hydrostatic release unit) but was in compliance with the Regulations. The Code of Practice recommends carriage of a liferaft for vessels with fewer than four persons onboard operating within five miles of a safe haven.

The skipper and crew did not have time to operate the liferaft. If the liferaft had been operated then the crewmembers would have had access to a dry environment and emergency equipment. The liferaft was accidentally operated during the salvage operation and inflated properly.

(iii) Personnel Flotation Devices

Mr. Tierney was wearing a personnel flotation device at the time of the incident and even though he did not initially have to enter the water, his positive attitude to his own safety is to be commended. Although the skipper and Jimmy Myler had their PFD's to hand they did not have time to don them during the capsize. The Fishing Vessel (Personnel Flotation Devices) Regulation 2002 require that fishermen engaged in work on outside decks must wear a personnel flotation device.

One of the primary advantages in wearing an automatic PFD is that it provides the wearer with immediate buoyancy should he or she be knocked unconscious on entering the water.

7. CONCLUSIONS

7.1 The cause of the capsize and subsequent loss of the "Rising Sun" was due to a combination of factors: -

(a) Overloading of the vessel. This was due to the presence onboard of heavy winch machinery, nets, trawling equipment, a large number of pots and the catch, on the day of the incident. This reduced the freeboard of the vessel. (i.e. The distance from the waterline up to the deck of the vessel).

(b) The stability assessment has shown that the vessel had a very poor stability profile at the time of the incident. The righting levers (i.e. the forces acting to keep the vessel upright) were too small and the range in which they acted as the vessel heeled was too small. They were at a maximum at a heel of only 10° and had reduced to zero at 22°. Beyond this angle of heel the vessel had no positive righting lever and was liable to capsize. It is an accepted standard that sea-going vessels should experience their maximum righting lever at an angle of heel no less than 25°.

(c) The crew did not detect any water accumulating in the machinery space as a result of operational leakages as the bilge alarm had been disconnected.

7.2 Although the vessel had a Document of Compliance with the Code of Practice, the fact that certain alterations had been made to the vessel and to its use since the time of the survey and which were not notified to the surveying authority resulted in a potentially hazardous stability condition existing.

7.3 The vessel rapidly capsized and there was no time to send a radio distress message, operate the EPIRB or to launch the liferaft.

7.4 The plight of the two crewmembers on the upturned hull was made worse because no immediate distress message was transmitted due to the rapid capsize and the fact that the EPIRB was not arranged for automatic release and activation. If the EPIRB had operated, the resultant radio distress alert would have been picked up within a few minutes and a Search and Rescue operation would have commenced immediately

7.5 All of the crew should have been wearing a Personnel Flotation Device.

7.6 The liferaft onboard "Rising Sun" was not fitted with a hydrostatic release unit (HRU) which would have automatically deployed the liferaft as the vessel sank. Mr. Tierney and Mr. Myler had to enter the water some four hours after the capsize occurred, because there was no liferaft available. Had the liferaft deployed, Mr. Myler may have survived the ordeal.

8. RECOMMENDATIONS

8.1 The Maritime Safety Directorate of the Department of Transport should consider amending the Code of Practice for small fishing vessels so that all new vessels are inclined and the elements of stability are determined and included in information to be supplied to the skipper of the vessel in a clear and understandable format and before a Declaration of Compliance is issued. The Maritime Safety Directorate should consider initialising a programme to include existing vessels in this respect based on a risk analysis of individual vessel operating modes and characteristics. An equivalent level of safety should be attained for small open fishing boats.

8.2 It should be made clear to owners of fishing vessels at the time of the survey of their vessels that any future alterations in equipment or structure or the intended use of the vessel must be immediately notified to the surveying authority.

8.3 The Declaration of Compliance should include a report of the type of fishing equipment fitted at the time of survey and the intended purpose of the vessel. This report should be forwarded to the Sea Fisheries Administration (SFA) of the Department of Communications, Marine and Natural Resources so that they may consider whether a vessel is suitable for any particular type of fishing operation before a commercial licence is issued. SFA should be made aware that at the time of the Code of Practice survey, a vessel was rigged for a specific mode of fishing. Therefore if the licensee seeks to change the mode of fishing, SFA can refer the vessel back to the Code of Practice surveyor for re-appraisal and for re-inspection before approval.

8.4 The Maritime Safety Directorate of the Department of Transport should issue a Marine Notice highlighting the hazards involved for vessels involved in two or more different modes of fishing in relation to stability and overloading.

8.5 Owners and skippers should be reminded of the importance of maintaining bilge pumping systems and alarms in good working order at all times.

8.6 The Maritime Safety Directorate should consider amending the Code of Practice so as to ensure that all fishing vessels that are required to carry an EPIRB must have arrangements fitted so that the EPIRB is released and activates automatically in the event of the vessel sinking. (i.e. the fitting of a hydrostatic release unit). Personal devices can and do get left ashore when vessels proceed to sea. It should be possible to fit an EPIRB to any vessel given a little thought as to any necessary enclosure and location onboard.

8.7 The Maritime Safety Directorate should consider amending the Code of Practice/Licensing System so that liferafts are fitted to all fishing vessels of less than 15 metres and are arranged so as to be float free and inflate in the event of the vessel sinking. It is noted that there is no minimum size for a vessel in the Code of Practice, which should be a consideration for future reviews of the Code.

9. LIST OF APPENDICES

9.1. Photograph of Rising Sun before incident.

9.2. Code of Practice – Declaration Of Compliance. October 2004

9.3. Weather Forecast from Met Eireann

9.4. View of the vessel in 2004 before addition of Net Drum on aft gantry.

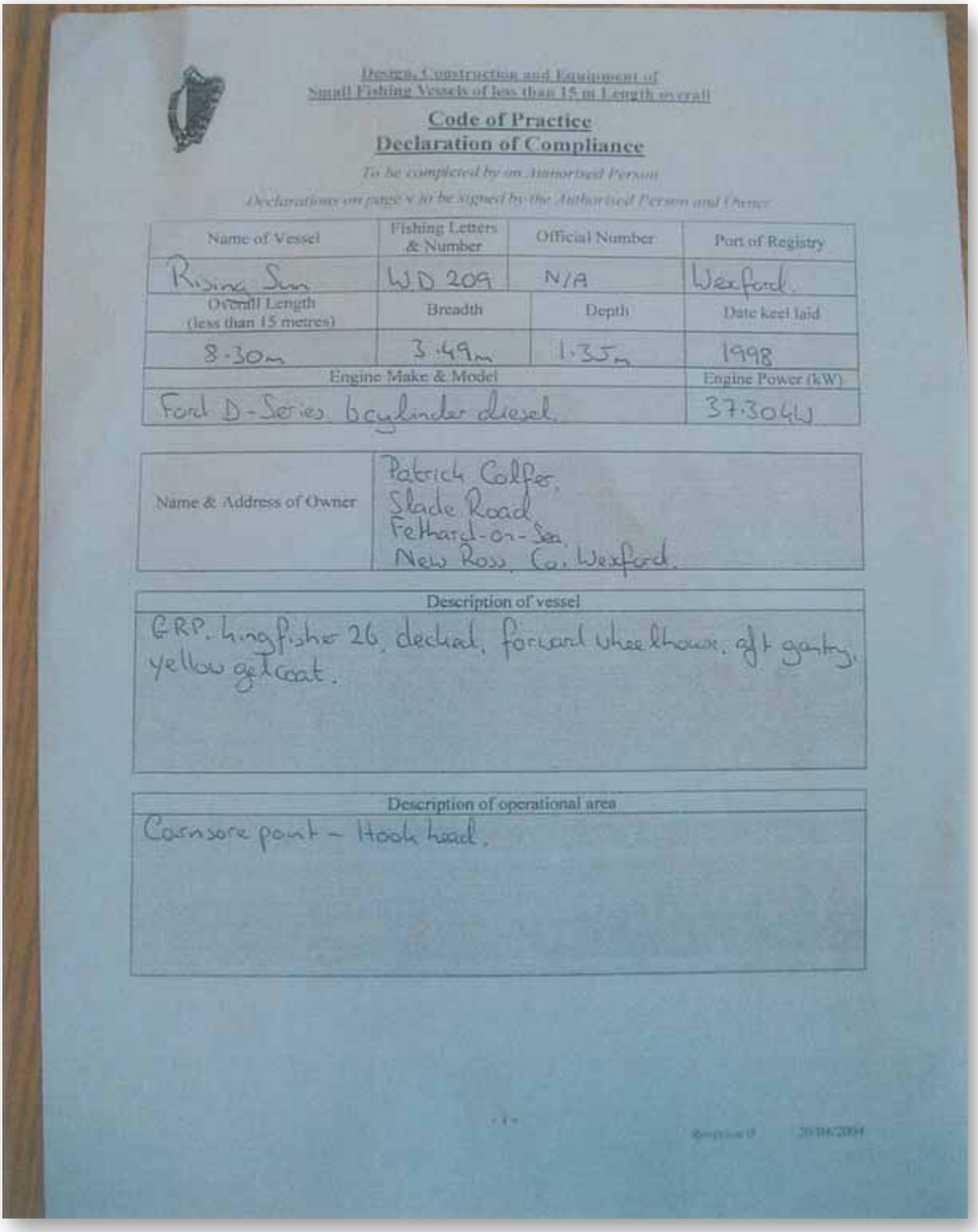
9.5. Results of stability analysis

9.6. Marine Notice No. 8 of 2005

9.7 Chart Extract showing the position of the wreck

Appendix 9.1 Photograph of Rising Sun before incident. Notnet drum, booms and other trawl equipment fitted.

Appendix 9.2 Code of Practice – Declaration Of Compliance. October 2004



Design, Construction and Equipment of
Small Fishing Vessels of less than 15 m Length overall

Code of Practice
Declaration of Compliance

To be completed by an Authorised Person

Declarations on page v to be signed by the Authorised Person and Owner

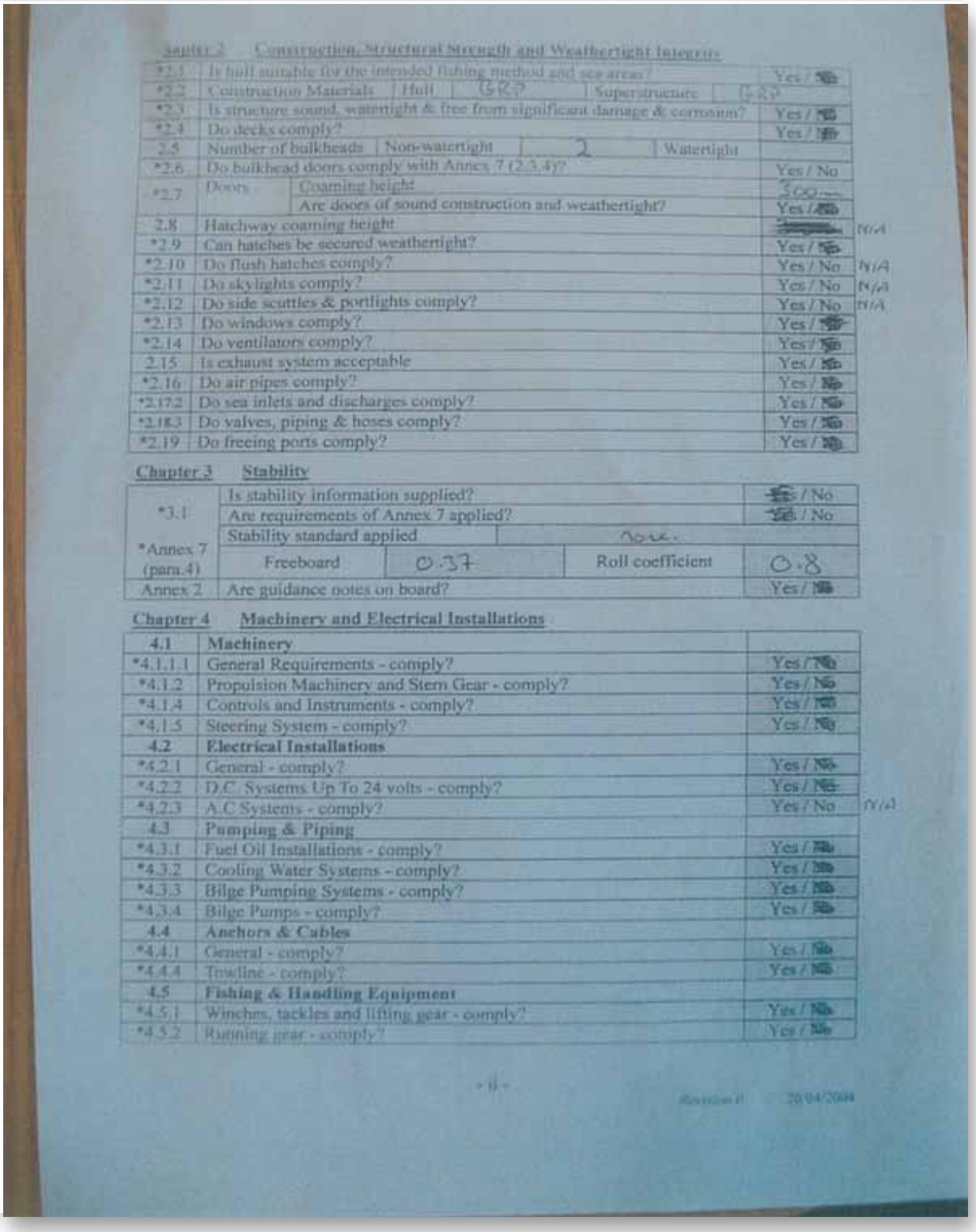
Name of Vessel	Fishing Letters & Number	Official Number	Port of Registry
Rising Sun	WD 209	N/A	Wexford.
Overall Length (less than 15 metres)	Breadth	Depth	Date keel laid
8·30m	3·49m	1·35m	1998
Engine Make & Model			Engine Power (kW)
Ford D-Series 6cylinder diesel.			37·304kJ

Name & Address of Owner	Patrick Colfer. Slade Road Fethard-on-Sea. New Ross, Co. Wexford.

Description of vessel
GRP. Kingfisher 26. decked, forward wheelhouse, aft gantry. yellow getcoat.

Description of operational area
Carnsore point – Hook head.

Appendix 9.2 cont Code of Practice – Declaration Of Compliance. October 2004



Chapter 2 Construction, Structural Strength and Weathertight Integrity

*2.1	Is hull suitable for the intended fishing method and sea areas?				Yes / No
*2.2	Construction Materials	Hull	GRP	Superstructure	GRP
*2.3	Is structure sound, watertight & free from significant damage & corrosion?				Yes / No
*2.4	Do decks comply?				Yes / No
2.5	Number of bulkheads	Non-watertight	2	Watertight	
*2.6	Do bulkhead doors comply with Annex 7 (2.3.4)?				Yes / No
*2.7	Doors	Coaming height			300mm
		Are doors of sound construction and weathertight?			Yes / No
2.8	Hatchway coaming height				[redacted] N/A
*2.9	Can hatches be secured weathertight?				Yes / No
*2.10	Do flush hatches comply?				Yes / No N/A
*2.11	Do skylights comply?				Yes / No N/A
*2.12	Do side scuttles & portlights comply?				Yes / No N/A
*2.13	Do windows comply?				Yes / No
*2.14	Do ventilators comply?				Yes / No
2.15	Is exhaust system acceptable				Yes / No
*2.16	Do air pipes comply?				Yes / No
*2.17.2	Do sea inlets and discharges comply?				Yes / No
*2.18.3	Do valves, piping & hoses comply?				Yes / No
*2.19	Do freeing ports comply?				Yes / No

Chapter 3 Stability

*3.1	Is stability information supplied?			[redacted] / No
	Are requirements of Annex 7 applied?			[redacted] / No
*Annex 7 (para.4)	Stability standard applied	None.		
	Freeboard	0.37	Roll coefficient	0.8
Annex 2	Are guidance notes on board?			Yes / No

Chapter 4 Machinery and Electrical Installations

4.1	**Machinery**	
*4.1.1.1	General Requirements - comply?	Yes / No
*4.1.2	Propulsion Machinery and Stern Gear - comply?	Yes / No
*4.1.4	Controls and Instruments - comply?	Yes / No
*4.1.5	Steering System - comply?	Yes / No
4.2	**Electrical Installations**	
*4.2.1	General - comply?	Yes / No
*4.2.2	D.C. Systems Up To 24 volts - comply?	Yes / No
*4.2.3	A.C Systems - comply?	Yes / No N/A
4.3	**Pumping & Piping**	
*4.3.1	Fuel Oil Installations - comply?	Yes / No
*4.3.2	Cooling Water Systems - comply?	Yes / No
*4.3.3	Bilge Pumping Systems - comply?	Yes / No
*4.3.4	Bilge Pumps - comply?	Yes / No
4.4	**Anchors & Cables**	
*4.4.1	General - comply?	Yes / No
*4.4.4	Towline - comply?	Yes / No
4.5	**Fishing & Handling Equipment**	
*4.5.1	Winches, tackles and lifting gear - comply?	Yes / No
*4.5.2	Running gear - comply?	Yes / No

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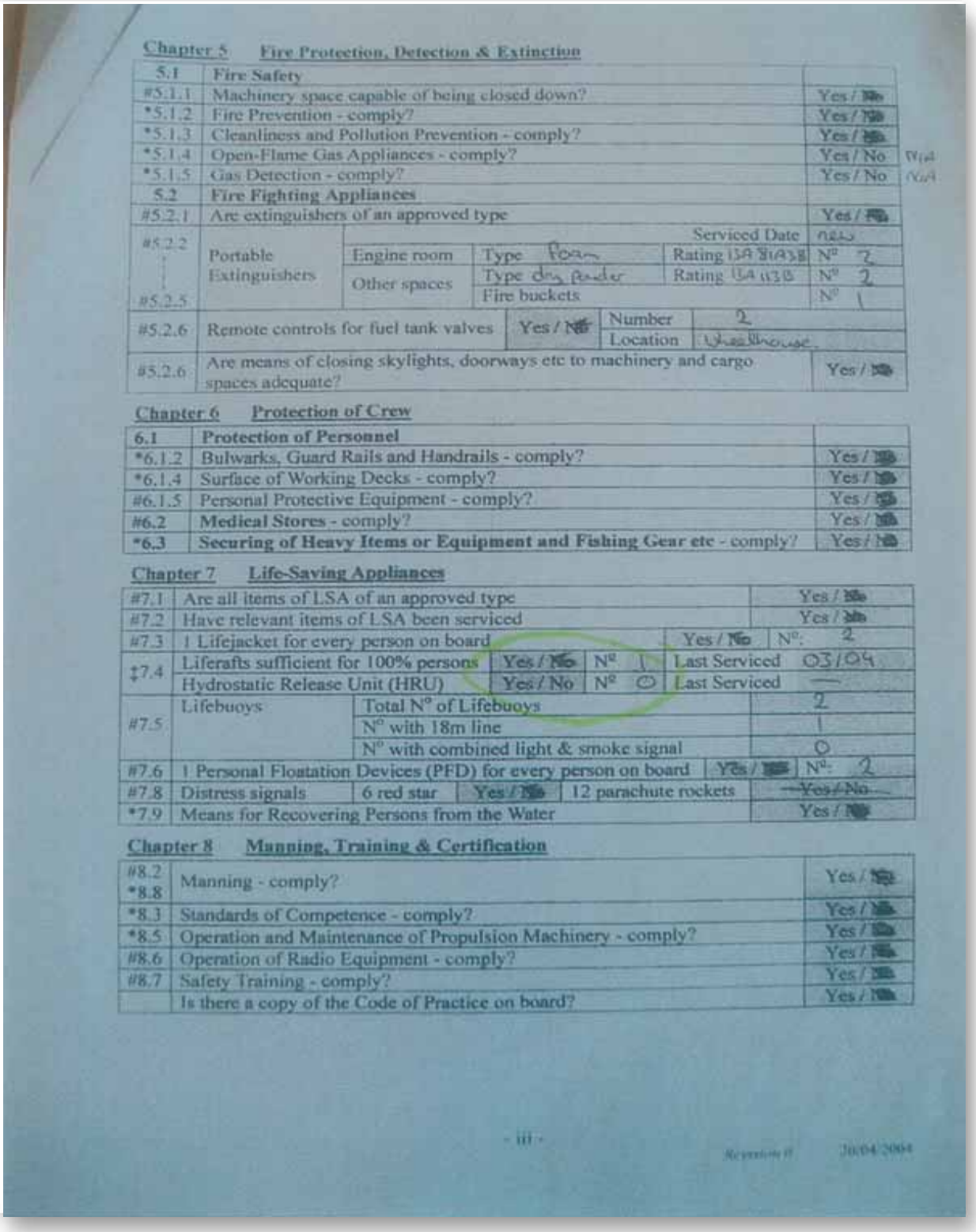
Appendix 9.2 cont Code of Practice – Declaration Of Compliance. October 2004



Chapter 5 Fire Protection, Detection & Extinction

5.1	**Fire Safety**				
#5.1.1	Machinery space capable of being closed down?				Yes / ~~No~~
*5.1.2	Fire Prevention - comply?				Yes / ~~No~~
*5.1.3	Cleanliness and Pollution Prevention - comply?				Yes / ~~No~~
*5.1.4	Open-Flame Gas Appliances - comply?				Yes / No N/A
*5.1.5	Gas Detection - comply?				Yes / No N/A
5.2	**Fire Fighting Appliances**				
#5.2.1	Are extinguishers of an approved type				Yes / ~~No~~
#5.2.2 – #5.2.5	Portable Extinguishers			Serviced Date	n/a
		Engine room	Type Foam	Rating 13A 113B	N° 2
		Other spaces	Type dry powder	Rating 13A 113B	N° 2
			Fire buckets		N° 1
#5.2.6	Remote controls for fuel tank valves	Yes / ~~No~~	Number	2	
			Location	Wheelhouse	
#5.2.6	Are means of closing skylights, doorways etc to machinery and cargo spaces adequate?				Yes / ~~No~~

Chapter 6 Protection of Crew

6.1	**Protection of Personnel**	
*6.1.2	Bulwarks, Guard Rails and Handrails - comply?	Yes / ~~No~~
*6.1.4	Surface of Working Decks - comply?	Yes / ~~No~~
#6.1.5	Personal Protective Equipment - comply?	Yes / ~~No~~
#6.2	**Medical Stores** - comply?	Yes / ~~No~~
*6.3	**Securing of Heavy Items or Equipment and Fishing Gear etc** - comply?	Yes / ~~No~~

Chapter 7 Life-Saving Appliances

#7.1	Are all items of LSA of an approved type				Yes / ~~No~~
#7.2	Have relevant items of LSA been serviced				Yes / ~~No~~
#7.3	1 Lifejacket for every person on board			Yes / ~~No~~	N°: 2
‡7.4	Liferafts sufficient for 100% persons	Yes / ~~No~~	N° 1	Last Serviced	03/04
	Hydrostatic Release Unit (HRU)	Yes / No	N° 0	Last Serviced	—
#7.5	Lifebuoys	Total N° of Lifebuoys			2
		N° with 18m line			1
		N° with combined light & smoke signal			0
#7.6	1 Personal Floatation Devices (PFD) for every person on board			Yes / ~~No~~	N°: 2
#7.8	Distress signals	6 red star	Yes / ~~No~~	12 parachute rockets	~~Yes / No~~
*7.9	Means for Recovering Persons from the Water				Yes / ~~No~~

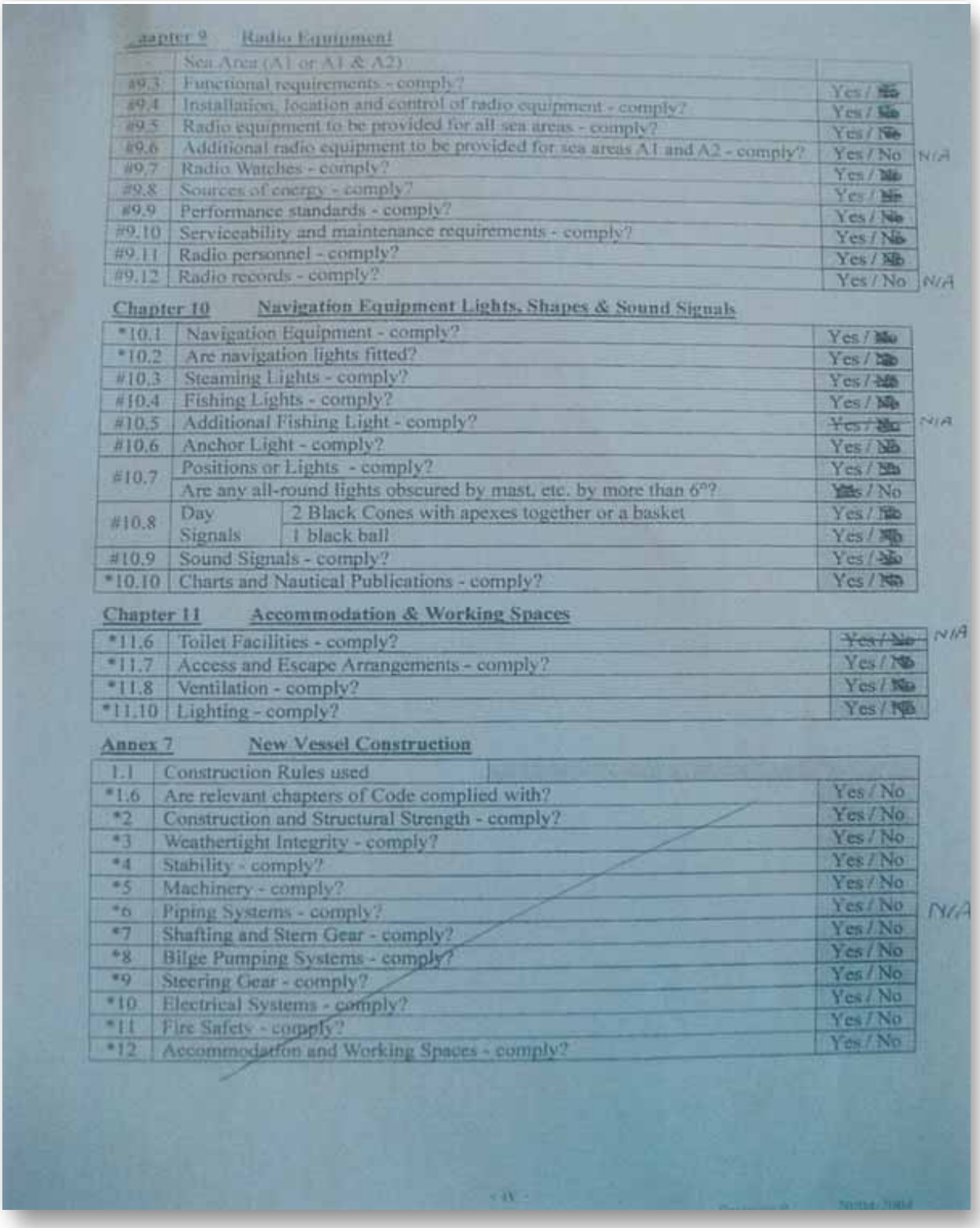
Chapter 8 Manning, Training & Certification

#8.2 *8.8	Manning - comply?	Yes / ~~No~~
*8.3	Standards of Competence - comply?	Yes / ~~No~~
*8.5	Operation and Maintenance of Propulsion Machinery - comply?	Yes / ~~No~~
#8.6	Operation of Radio Equipment - comply?	Yes / ~~No~~
#8.7	Safety Training - comply?	Yes / ~~No~~
	Is there a copy of the Code of Practice on board?	Yes / ~~No~~

- iii -

Revision 0 30/04/2004

Appendix 9.2 cont Code of Practice – Declaration Of Compliance. October 2004



apter 9 Radio Equipment

	Sea Area (A1 or A1 & A2)	
#9.3	Functional requirements - comply?	Yes / No
#9.4	Installation, location and control of radio equipment - comply?	Yes / No
#9.5	Radio equipment to be provided for all sea areas - comply?	Yes / No
#9.6	Additional radio equipment to be provided for sea areas A1 and A2 - comply?	Yes / No N/A
#9.7	Radio Watches - comply?	Yes / No
#9.8	Sources of energy - comply?	Yes / No
#9.9	Performance standards - comply?	Yes / No
#9.10	Serviceability and maintenance requirements - comply?	Yes / No
#9.11	Radio personnel - comply?	Yes / No
#9.12	Radio records - comply?	Yes / No N/A

Chapter 10 Navigation Equipment Lights, Shapes & Sound Signals

*10.1	Navigation Equipment - comply?		Yes / No
*10.2	Are navigation lights fitted?		Yes / No
#10.3	Steaming Lights - comply?		Yes / No
#10.4	Fishing Lights - comply?		Yes / No
#10.5	Additional Fishing Light - comply?		Yes / No N/A
#10.6	Anchor Light - comply?		Yes / No
#10.7	Positions or Lights - comply?		Yes / No
	Are any all-round lights obscured by mast, etc. by more than 6°?		Yes / No
#10.8	Day Signals	2 Black Cones with apexes together or a basket	Yes / No
		1 black ball	Yes / No
#10.9	Sound Signals - comply?		Yes / No
*10.10	Charts and Nautical Publications - comply?		Yes / No

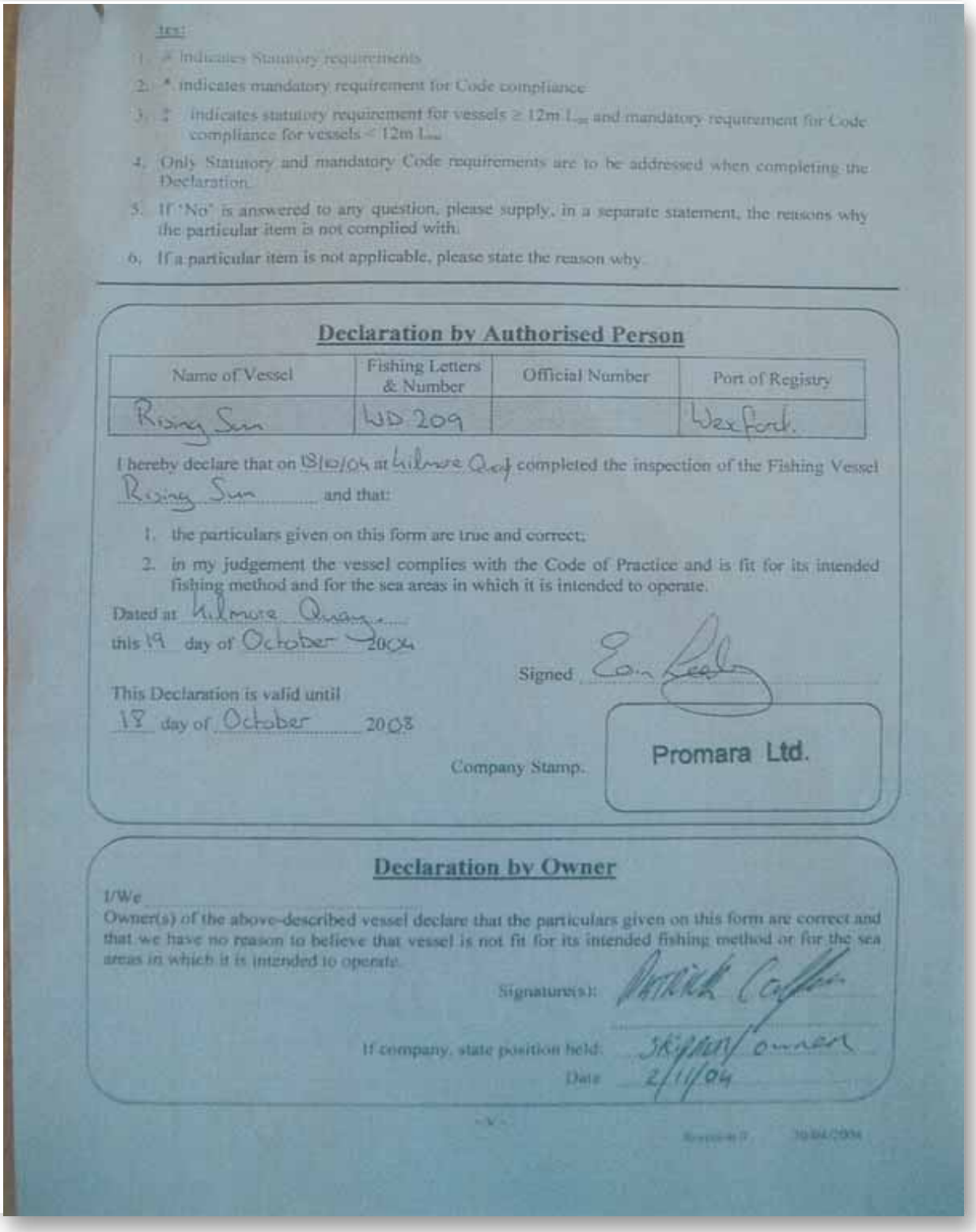
Chapter 11 Accommodation & Working Spaces

*11.6	Toilet Facilities - comply?	Yes / No N/A
*11.7	Access and Escape Arrangements - comply?	Yes / No
*11.8	Ventilation - comply?	Yes / No
*11.10	Lighting - comply?	Yes / No

Annex 7 New Vessel Construction

1.1	Construction Rules used	
*1.6	Are relevant chapters of Code complied with?	Yes / No
*2	Construction and Structural Strength - comply?	Yes / No
*3	Weathertight Integrity - comply?	Yes / No
*4	Stability - comply?	Yes / No
*5	Machinery - comply?	Yes / No
*6	Piping Systems - comply?	Yes / No N/A
*7	Shafting and Stern Gear - comply?	Yes / No
*8	Bilge Pumping Systems - comply?	Yes / No
*9	Steering Gear - comply?	Yes / No
*10	Electrical Systems - comply?	Yes / No
*11	Fire Safety - comply?	Yes / No
*12	Accommodation and Working Spaces - comply?	Yes / No

Appendix 9.2 cont Code of Practice – Declaration Of Compliance. October 2004



Key:

1. ✓ indicates Statutory requirements
2. * indicates mandatory requirement for Code compliance
3. ✓* indicates statutory requirement for vessels ≥ 12m L_{oa} and mandatory requirement for Code compliance for vessels < 12m L_{oa}
4. Only Statutory and mandatory Code requirements are to be addressed when completing the Declaration.
5. If 'No' is answered to any question, please supply, in a separate statement, the reasons why the particular item is not complied with.
6. If a particular item is not applicable, please state the reason why.

Declaration by Authorised Person

Name of Vessel	Fishing Letters & Number	Official Number	Port of Registry
Rising Sun	WD 209		Wexford.

I hereby declare that on 18/10/04 at Kilmore Quay completed the inspection of the Fishing Vessel Rising Sun and that:

1. the particulars given on this form are true and correct;
2. in my judgement the vessel complies with the Code of Practice and is fit for its intended fishing method and for the sea areas in which it is intended to operate.

Dated at Kilmore Quay.

this 19 day of October 2004

Signed E. Lee

This Declaration is valid until

18 day of October 2008

Company Stamp. Promara Ltd.

Declaration by Owner

I/We

Owner(s) of the above-described vessel declare that the particulars given on this form are correct and that we have no reason to believe that vessel is not fit for its intended fishing method or for the sea areas in which it is intended to operate.

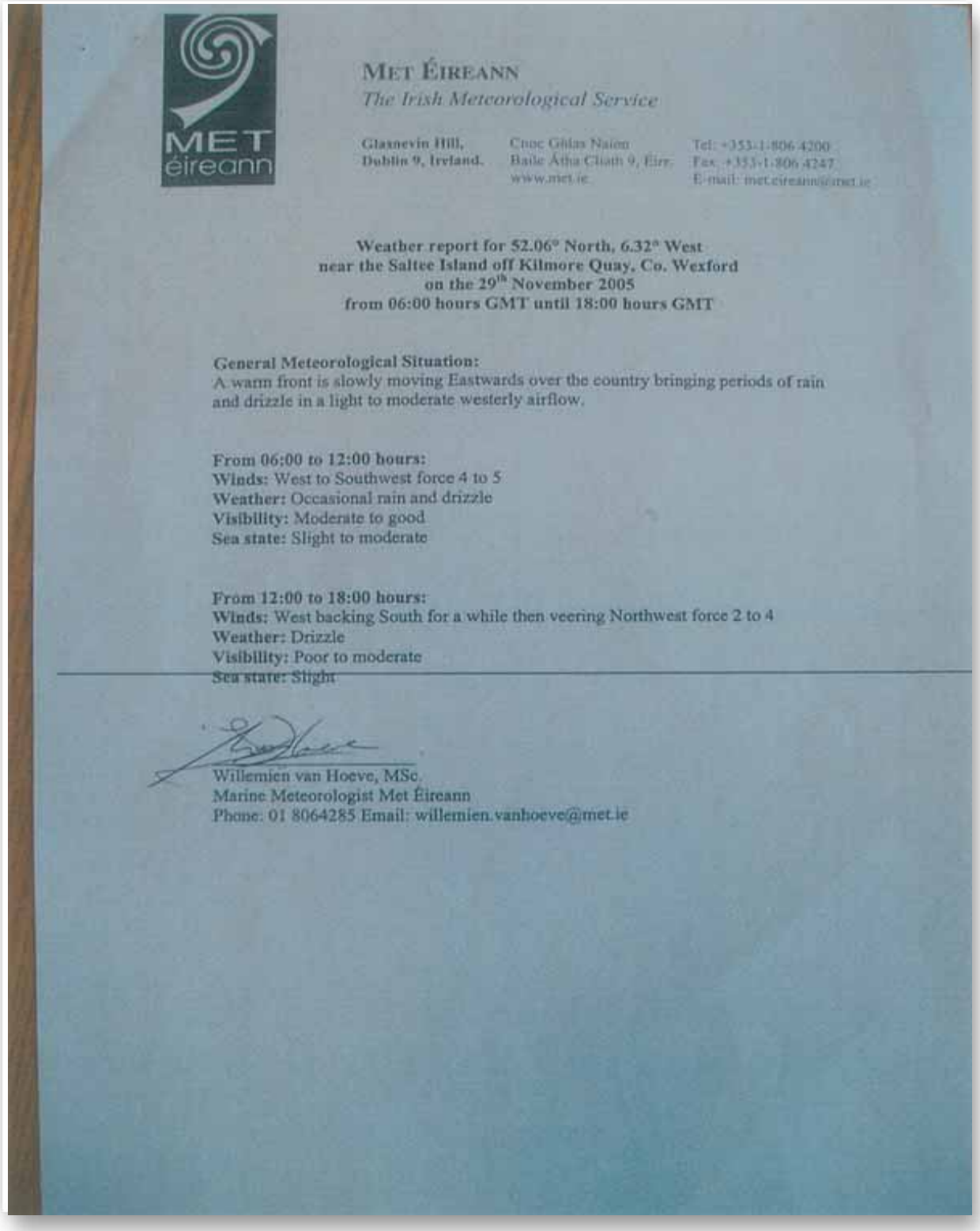
Signature(s): Patrick Coffey

If company, state position held: Skipper/owner

Date 2/11/04

APPENDIX 9.3

Appendix 9.3 Weather Forecast from Met Eireann



MET ÉIREANN
The Irish Meteorological Service

Glasnevin Hill, Dublin 9, Ireland. | Cnoc Gléas Naíon, Baile Átha Cliath 9, Éire. | Tel: +353-1-806 4200, Fax: +353-1-806 4247, E-mail: met.eireann@met.ie, www.met.ie

Weather report for 52.06° North, 6.32° West
near the Saltee Island off Kilmore Quay, Co. Wexford
on the 29th November 2005
from 06:00 hours GMT until 18:00 hours GMT

General Meteorological Situation:
A warm front is slowly moving Eastwards over the country bringing periods of rain and drizzle in a light to moderate westerly airflow.

From 06:00 to 12:00 hours:
Winds: West to Southwest force 4 to 5
Weather: Occasional rain and drizzle
Visibility: Moderate to good
Sea state: Slight to moderate

From 12:00 to 18:00 hours:
Winds: West backing South for a while then veering Northwest force 2 to 4
Weather: Drizzle
Visibility: Poor to moderate
Sea state: Slight

Willemien van Hoeve, MSc.
Marine Meteorologist Met Éireann
Phone: 01 8064285 Email: willemien.vanhoeve@met.ie

Photographs courtesy of the RNLI at Padstow.

Appendix 9.4 View of the vessel in 2004 before addition of Net Drum on aft gantry and other trawling equipment.

Appendix 9.5 Results of stability analysis

Results of stability analysis.

Displacement: 15.10 tonnes

L.C.G: 3.320 m

V.C.G: 1.820 m

Freeboard (Amidships): 180 mm

Range of positive stability: 22°

No.	Criterion	Minimum	Actual
1	Area under GZ Curve up to 30° (mRads)	0.055	0.014
2	Area under GZ Curve up to 40° (mRads)	0.090	0.014
3	Area under GZ Curve from 30° to 40° (mRads)	0.030	0.000
4	Righting arm (GZ) at 30° or greater (mm)	200	57
5	Angle of maximum righting arm (GZ)	25	10
6	Metacentric height (mm)	150	455

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Appendix 9.6 Marine Notice No. 8 of 2005

DEPARTMENT OF COMMUNICATIONS, MARINE AND NATURAL RESOURCES

Marine Notice No. 8 of 2005

To all Fishing Vessel Owners, Agents, Skippers, Fishing Vessel Crew Members, Fishermen, and Chandlers.

CARRIAGE OF NON-SOLAS INFLATABLE LIFERAFTS ON-BOARD SMALL FISHING VESSELS

The Department of Communications, Marine and Natural Resources wishes to remind skippers and those working on board fishing vessels that inflatable liferafts, carried on board fishing vessels of 40 feet or more in length, must be of an approved type and comply with the Marine Equipment Directive (MED) and SOLAS Convention.

In addition, for compliance with the Code of Practice for the Design, Construction and Equipment of Small Fishing Vessels of less than 15m Length overall (L_{oa}), the requirements for the carriage of liferafts are:

L_{oa} 12m(40ft) or more	Carrying more than 4 persons	Carrying 4 persons or less
More than 5 miles from safe haven	SOLAS / MED approved	SOLAS / MED approved
Less than 5 miles from safe haven	SOLAS / MED approved	SOLAS / MED approved

L_{oa} less than 12m(40ft)	Carrying more than 4 persons	Carrying 4 persons or less
More than 5 miles from safe haven	SOLAS / MED approved	Non - SOLAS / MED
Less than 5 miles from safe haven	SOLAS / MED approved	Recommended Non - SOLAS / MED

The Department recognises that small fishing vessels of length overall less than 40 feet are not required by statute to carry inflatable liferafts and that the smallest approved MED/SOLAS inflatable liferafts are for six persons. To facilitate compliance with the Code of Practice and to encourage the voluntary carriage of inflatable liferafts the Department has accepted the following non-SOLAS / non-MED inflatable liferafts. Only these liferafts listed will be accepted on fishing vessels, which are either:

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Appendix 9.6 cont Marine Notice No. 8 of 2005

(a) not required to carry a SOLAS / MED approved liferaft or
(b) recommended to carry a liferaft.

The liferaft is to be fitted with a Hydrostatic Release Unit and stowed, if practicable, in such a position that it can be easily and quickly launched on either side of the vessel. The liferaft is to be serviced at an approved liferaft servicing station at intervals not exceeding 12 months.

Accepted non-SOLAS / non-MED inflatable liferafts

- DSB 4 Person Inflatable Liferaft with "SOLAS B Pack"
- RFD Surviva 4 Person Inflatable Liferaft with "SOLAS B Pack"
- RFD SEASAVA PRO ISO 9650 4 Person Inflatable Liferaft with "SOLAS B Pack"
- Viking DK 4 Person Inflatable Liferaft with "SOLAS B Pack"
- Zodiac 4 Person Inflatable Liferaft with "SOLAS B Pack"
- EUROVINIL ISO/DIS 9650 4 Person Inflatable Liferaft with "SOLAS B Pack"

The Department will keep this list under review and the current list will be published on the Department's website http://www.dcmnr.gov.ie/Marine/

This Marine Notice supersedes Marine Notice No 2 of 2003.

Director General
Maritime Safety Directorate
Department of Communications,
Marine and Natural Resources
Dublin 2.

7th March 2005

For any technical assistance in relation to this Marine Notice please contact the Marine Survey Office, Leeson Lane, Dublin 2 at 01-678 3400.
For general enquiries please contact the Maritime Safety Division at 01-678 3418
Any enquiries concerning Marine Notices should be addressed to:
Maritime Safety Directorate, Leeson Lane, Dublin 2
Email: marine.notices@dcmnr.gov.ie

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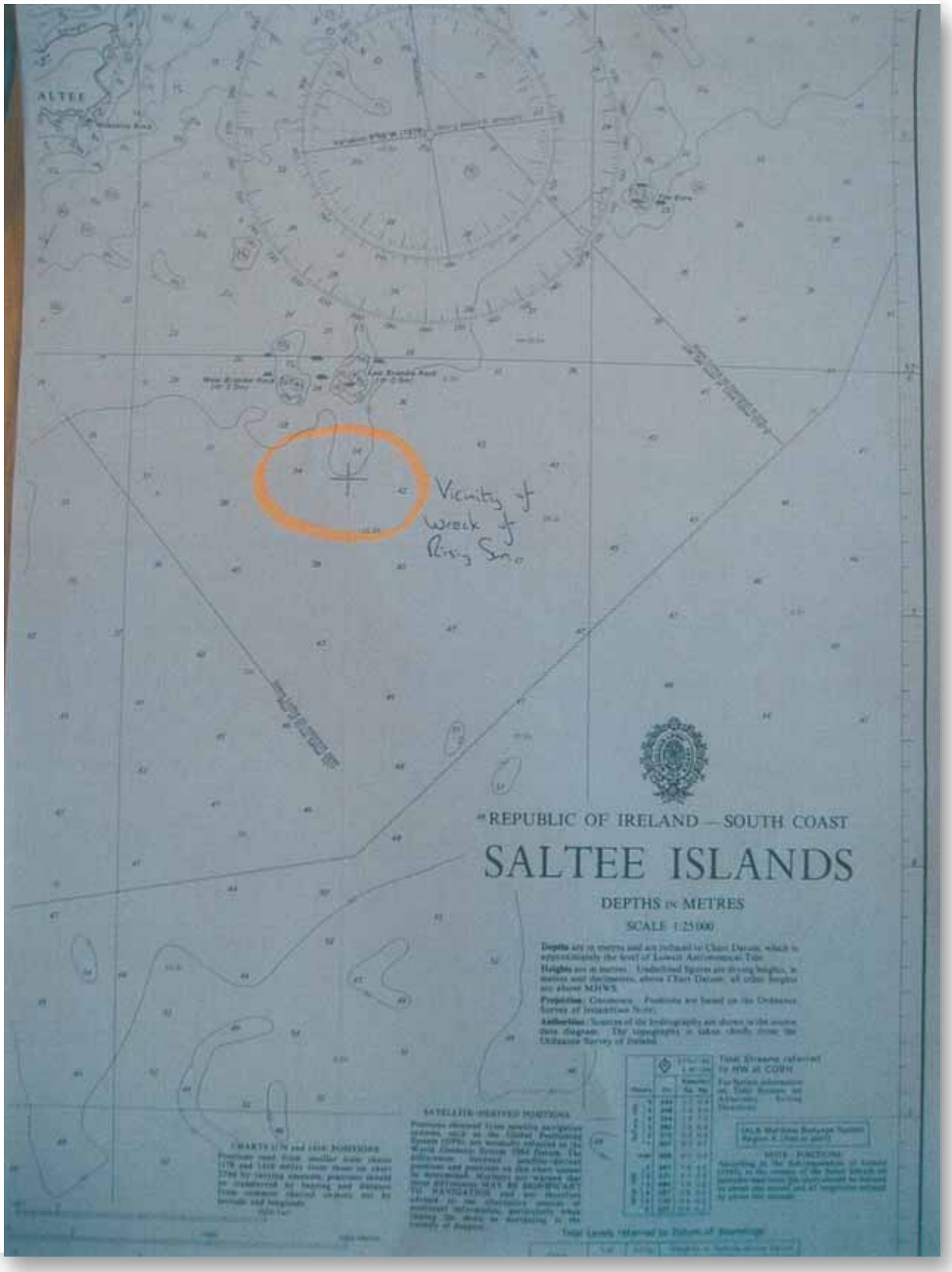
Appendix 9.7 Chart Extract showing the position of the wreck



9. LIST OF CORRESPONDENCE RECEIVED

9. CORESPONDENCE RECEIVED

Promara
Professional Marine Services

3 Castlecourt
St Josephs Rd
Mallow, Co.Cork
Ireland.
Tel +353 87 3435666
Fax +353 22 22467
sales@promara.ie

Ms. Bridie Cullinane
Secretary MCIB
Leeson Lane
Dublin 2
16th November 2006.

Re: MFV Rising Sun

Dear Board Members,

We hereby respond to the draft report of the investigation into the sinking of the Irish fishing vessel "Rising Sun" in the vicinity of the Saltees Islands, Co.Wexford, on 29th November 2005. The loss of these three lives is a tragedy for their families, friends, colleagues and our sympathies lye with those who were close to them.

We must learn from the events that took place. The Rising Sun was in good condition with regular maintenance, upgrade and investment. At the time of initial survey for the Code of Practice Pat Colfer accepted and implemented all recommendations. The bilge pumping equipment, mentioned in the draft report, was fully compliant with the Code of Practice when surveyed. She had a hand bilge pump, and electric bilge pump and a bilge high level alarm. These all worked correctly at that time. Pat Colfer was later wrong in his expectations of the capabilities of the vessel to carry so much fishing gear.

Report Recommendations

(1) The recommendation to incline **all** new fishing vessels may not be practical as this would include punts and small open boats. Inclining these boats will be of limited value to owners. The programme mentioned in this recommendation is welcome.

(2) .

(3) We agree that the Code of Practice survey should involve the fishing equipment to be fitted aboard and that this equipment should be recorded in some way. While Sea Fisheries Administration may have an interest in the equipment used aboard they are not in a position to decide on the suitability of a vessel to carry that equipment. That view must be taken by the independent surveyor in consultation with the MSO.

(4) .

(5) .

9. CORESPONDENCE RECEIVED

(6) All licensed fishing vessels are required to carry an EPIRB. This requirement extends to very small punts. It will be impractical to fit an EPIRB in a float free case to these boats. We suggest that there be two options allowed: a float free EPIRB or a personal EPIRB (PLB) which can be carried in the pocket and would remain with a sole operator in the event of a vessel sinking or falling overboard.

(7) The carriage of life rafts on very small vessels and punts is not possible because of weight and size. Small vessels are currently required to carry two life rings and these, combined with life jackets provide floatation in the event of sinking. We agree that the requirement should be considered for all larger vessels.

We would hope that the recommended review will be carried out on the stability aspects of small vessels. The MSO is the most appropriate body to carry out such a review but we would hope to be involved closely in the process. The questions to be answered would include

(a) Should all vessels over a set size or length be inclined, particularly those fitted with fishing equipment above deck level

(b) Should all vessels fitted with trawling equipment or other top weight be inclined

(c) Explore how a means of assessing the stability of smaller boats could be developed

(d) How could a clear and simple means of presenting this stability information to skipper be developed

(e) What notes, photographs etc should be retained or presented as part of the COP survey

We would also suggest a wider review of the Code of Practice be carried out as provided for its text.

Yours sincerely

Eoin Leahy & Noel O'Regan
Promara Ltd

**MCIB RESPONSE TO LETTER RECEIVED FROM PROMARA LTD.
ON THE 21st NOVEMBER 2006.**

The MCIB has considered the points of response and have amended the report as necessary.

(1) Recommendation has been amended.

(3) Recommendation has been amended.

(6) The MCIB notes this and recommends that the MSO gives due consideration to these issues.

(7) Recommendation has been amended.

Points (a) – (e)

The issues raised could be incorporated into the Code of Practice.

9. CORESPONDENCE RECEIVED

Revenue

www.revenue.ie

Office of the Revenue Commissioners
East & South East Region
Wexford District
Government Offices
Anne Street
Wexford
Ireland

Oifig na gCoimisinéirí Ioncaim
Réigiún an Oirthir agus an Oirdheiscirt
Ceantar Loch Garman
Oifigí an Rialtais
Sráid Áine
Loch Garman
Éire

Bridie Cullinane,
Marine Casualty Investigation Board,
Leeson Lane,
Dublin 2.

7th November, 2006.

Re Draft Report on MFV RISING SUN.

Dear Ms Cullinane,

I wish to acknowledge receipt of Draft Report into the sinking of the above vessel and to advise you that I have no observations to make on the report.

Yours faithfully,

Herbie Honohan,
Receiver of Wreck,
Wexford.
Tel: 053-9149452

MARINE CASUALTY INVESTIGATION BOARD
IRELAND
Date Received
10 NOV 2006
EIRE

MCIB Response

The MCIB notes the contents of this letter

9. CORESPONDENCE RECEIVED

Glorryglas,
Churchtown ,
Fethard/on/sea
New ross,
Co/Wexford.

Dear Miss Cullinane,

We have received the draft report on the sinking of "Rising Sun"and thank you for same.We would also like to thank you for your condolences.We also wish to make a submission of our own to the report ,with some comments, observations, possible conclusions and three recommendations.

1.
When we asked for the boat to be lifted it was to put beyond doubth in a safe environment if Pat was there. Also to maybe find out what happened.
Before we go on one aspect of this report not mentioned is the fact these three men were amoung the most experienced in the entire Irish Commercial Fisheries fleet.
In the findings section(a) we having been privey to R.O.V footage of the Rising Sun, believe that the damage to the boat was caused when being winched to the surface by the "Granuaile".
2.
The test done by Promara showed the boat to have only a margainal pass to go as a pot boat, but when Pat purched the vessel it was rigged as a trawler carring net drums ,winches and net, and did so quiet efficiently. A fish box weigh approximately 5kilos,no more than 10 of these would fit on the gantry ,always empty. On several occasions previously ,all this gear 75 pots ,winch ,catch ,net and net drum all aboard operated with out and safety worries. Why on this fateful day did things change?
3.
The bilge alarm according to the report was found to be disconnected and both suction pipes from manual and automatic pumps blocked by rags and debris.
The bilge alarm sounded a few times on the day of the Tuesday by Mr Tierneys accounts, so how could it be disconnected. We believe when the boat capsized something fell on there connections and disconnected them.
It was often commented that the bilge of the Rising Sun was cleaner than the sink at home.
We believe when the vessel capsized there rags and debris siffeled into the pipes,thus blocking them.
Conclusion;

On the 28th of November 2005 while trawling for herring in the mouth of the Waterford Harbour,Pat decieded to move his lobster pot the following day. This being his fatal decision was to move his pots and go back herring fishing. He had previously ordered a refuel of diesel for Duncannon harbour but changed it to Kilmore for Tuesday on 29th November 2005.Trawling comsumes more diesel,but as he was going potting the next day he used less fuel,he thought he would have enough until Tuesday evening. The "Rising Sun "tanks contains a maximum 200 gallons and were nowonly 20 % full.
We believe this attempt to move pots was an error in judgement as to the capabilities of his boat ,is the cause of instability and ultimate capsizing.
Recommendations;

9. CORESPONDENCE RECEIVED

1.All fishermen (especially commercial)must by law wear a personal floatation device. A fine of at least €1000 for anyone who does not.
2.Code of practice amended to make all commercial vessels, be fitted and have placed on wheelhouse roof an epirbe with Hydrostatic release.

These are our observations conclusions and recommendations. (We wish for this to be added to the appendix of the full report)

Yours truly,

The Colfer Family.

(Eamonn Colfer)

MCIB RESPONSE TO LETTER RECEIVED FROM THE COLFER FAMILY ON THE 14th NOVEMBER 2006

The MCIB notes the above letter and makes the following comments:

1. The MCIB did not request that the vessel be lifted for the purpose of the investigation. The DVD, supplied to the MCIB investigator by the diving contractor, confirms that the vessel was subject to substantial movement / rocking action whilst on the sea bed and which is thought to have caused the damage to the bilge keels. It is possible that further damage to these areas was experienced during the salvage operation, but this is not relevant to the cause of the incident.

   The investigator would have no objection to the report mentioning that the three crew members were very experienced.

2. At the time of the Promara Code of Practice survey in October 2004 the Net Drum on the aft gantry was not fitted and various other trawl equipment was not onboard. It should be an important message of the report that heavy equipment fitted onboard fishing vessels subsequent to a Code of Practice survey, will invalidate the compliance of the vessel and could be extremely dangerous, especially if the equipment is fitted high up in the vessel.

   The report identifies several factors, which came together on the day of the incident, including a dangerous stability condition, which may or may not have occurred in the past. Owners / skippers of fishing vessels that operate their vessels in marginal or dangerous stability conditions are likely to suffer an accident at some time and especially when other factors such as sea conditions and free surface of liquids within the vessel also become contributory factors.

3. In the statement made by Mr. Tierney to the MCIB investigator, when asked about the bilge alarm, he stated that "it sounded a buzzer in the wheelhouse" and that "I don't recall hearing the buzzer that day" (referring to the 29/11/05). The above statement was taken before the investigator found the alarm system had been disconnected. The investigator requested a further interview with Mr. Tierney on numerous occasions up to the completion of the draft report, however no interview took place.

   The MCIB do not agree with the Colfer family that the connections to the bilge alarm were dislodged during the sinking and recovery. This is extremely unlikely as two separate wiring connections were found to be disconnected in different locations. One of these was a screwed connection into a terminal, which was located inside a terminal box. The cover of this box was undamaged after the retrieval of the vessel and it is most unlikely therefore the sinking and salvage could have affected anything within the box.

   As regards the blockages in the bilge pipes, the MCIB agrees with the likely scenario that the debris entered the pipes during the incident and sinking.

   The point seems to have been lost however, that bilge suctions should be protected by strainers to prevent debris getting into the pipes.

   As regards the comment on the error of judgement by Mr. Pat Colfer, the MCIB generally agrees that the low fuel load was a contributory factor.

RECOMMENDATIONS

1. It is already the law that fishermen wear Personal Flotation Devices (S.I. 586 of 2001). The penalties are directed at the owner and skipper rather than the crewmembers and are currently a maximum of IR£1000 and / or a 6-month term of imprisonment. [Sect 19 (5) MS Act 1992]. It might be useful to consider a fixed penalty fine for individuals in the same way as is currently in place for leisure craft.
2. The MCIB has recommended this at point 6 of the recommendations.