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**REPORT OF THE INVESTIGATION
INTO THE FIRE AND SINKING OF
FV “KINGFISHER”
ON
25th NOVEMBER 2012**

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**REPORT No. MCIB/228
(No.15 of 2013)**



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1. SUMMARY

a. (Note: All times are in UTC)

- 1.1 The FV *“Kingfisher”* a 10.67m L.O.A. Irish registered fishing vessel departed Dunmore East between 04:30hrs and 05:00hrs on the 25th November 2012 with a Skipper and one crewmember onboard, to go pair trawling for herring, with partner vessel FV *“Mystical Rose”*.
- 1.2 The fishing gear was shot away and during the hauling operations at approximately 07:30hrs on the 25th November 2012, a fire was discovered on board, vessel’s position was 5nm south of Dunmore East. The vessel’s crew were unable to fight the fire due to thick acrid smoke and eventually abandoned the vessel and boarded a liferaft. They were rescued by the FV *“Defiance”* and there were no injuries. FV *“Kingfisher”* subsequently sank. No pollution has been reported.

2. FACTUAL INFORMATION

2.1 Particulars of the Vessel

Name of Vessel:	FV <i>“Kingfisher”</i>
Builder:	Cygnus
Year of Build:	1979
Overall Length:	10.67m
Breadth:	4.15m
Depth:	1.34m
Engine:	Gardner 6LXB, six cylinder four stroke, diesel engine of 94.75 KW Capacity.
General Description of Craft:	<p>Traditionally built craft of fibre reinforced plastic, of carvel form, with a raked stem and transom stern. Craft was of decked design (raised foredeck, open sealed aft deck with freeing ports).</p> <p>Craft powered by a Gardner 6LXB, six cylinder four stroke, diesel engine of 94.75 KW Capacity.</p> <p>A wheelhouse fitted at the forward end of the vessel, with engine room under the wheelhouse. Access to the engine room is provided by a flush hatch on the portside of the wheelhouse floor.</p>
Code of Practice:	Code of Practice, Declaration of Compliance for the FV <i>“Kingfisher”</i> was carried out on the 12th June 2012 and was valid until 12th June 2016.

2.2 Crew Particulars

The Skipper has been a fisherman all his working life and has owned small fishing vessels for 10 years and owned the FV *“Kingfisher”* for the last five years since 2007. He had attended the mandatory fire-fighting, sea survival and first-aid courses. He holds a Radio Operators Short Range Radio Certificate.

The other crewmember had attended the mandatory fire-fighting, sea survival and first-aid courses and holds a Second Hands Certificate of Competency.

2.3 Engine Room

The vessel was fitted with a Gardner 6LXB, six cylinder four stroke, diesel engine of 94.75KW capacity, driving a fixed pitch propeller driving through a reversing, reduction gearbox. A clutched deck machinery hydraulic pump was driven off the main engine front end.

The hydraulic flexible pipes from the hydraulic pump passed down the starboard side of the engine room passing through the deck to winch and controls at the aft end of the wheelhouse. The hydraulic oil header tank of approximately 60 litres capacity was situated at the forward end of the engine room mounted on the bulkhead.

A 20 litre drum of oil was also stowed at the forward end of the engine room.

The engine starting batteries and ship's load batteries were situated on the port side of the wheelhouse, the cables passing through the wheelhouse floor to the starter and alternators fitted to the main engine.

2.4 Fuel Tanks

The vessel was fitted with two fuel tanks situated in the fish hold immediately abaft of the engine room, each tank of approximately 600 litres capacity. At the time of the casualty approximately 800 litres of fuel were onboard the boat.

The engine fuel supply pipes and spill return pipes passed through the engine room aft bulkhead to the main engine. The construction of pipes was a combination of rubber flexible pipes, armoured flexible pipes and solid material pipes.

3. NARRATIVE

- 3.1 The FV *“Kingfisher”* a 10.67m L.O.A. Irish registered fishing vessel departed Dunmore East between 04:30hrs and 05:00hrs on the 25th November 2012 with a Skipper and one crewmember onboard to go pair trawling for herring, with a partner vessel FV *“Mystical Rose”*.
- 3.2 Both boats steamed around for approximately one hour before both marked fish on their sounders. The weather at the time was very calm, force 2 winds with no swell, both boats were approximately 5 miles South of Dunmore East when fish were located.
- 3.3 Fishing gear was shot away the net being used was from the FV *“Mystical Rose”*, the FV *“Kingfisher”* had no nets on board, the net was towed for approximately 15 minutes. It was then agreed to haul the nets, the hydraulic pump was clutched in and driven from the front end PTO on the FV *“Kingfisher”* and both boats commenced to haul the gear.
- 3.4 During the hauling operation the Skipper of the FV *“Kingfisher”* was navigating from the wheelhouse and the crewmember was on deck operating the winch.
- 3.5 Coming towards the end of the hauling operation, the Skipper went out onto the deck and noticed that there was smoke coming from the top of the protection pipe housing around the dry exhaust pipe. The exhaust pipe was fitted in the middle of the vessel at the back of the wheelhouse.
- 3.6 The Skipper then returned to the wheelhouse and lifted the engine room hatch situated on the port side of the wheelhouse floor. A lot of thick black acrid smoke came billowing out of the hatch.
- 3.7 The Skipper went on deck and made the crewman aware of the situation, he was in the process of passing the net bridles to the FV *“Mystical Rose”* which was very close to the FV *“Kingfisher”*.
- 3.8 The engine room hatch was still open and the smoke was getting thicker all the time. The Skipper picked up a fire extinguisher at the wheelhouse door, but the smoke coming from the engine room hatch was too thick and acrid, making the area untenable and he could not get near to use the extinguisher. He did not have a chance to raise the alarm on the VHF radio, as the smoke in the wheelhouse was too thick. The engine was still running but was knocked out of gear; the hydraulic pump driven off the front end of the engine was engaged.
- 3.9 Because the vessel was not fitted with an operational smoke/fire detection system in the engine room, there was no prior warning, and therefore there was no chance to fight the fire in the early stages.

- 3.10 The Skipper went back out on to the deck, by which time the fishing gear had been passed over and the FV *“Kingfisher”* was detached from the partner vessel FV *“Mystical Rose”*. The Skipper of the FV *“Mystical Rose”* raised the alarm with Coast Guard timed at 07:42hrs.
- 3.11 Unclear of the extent of the fire, the Skipper believed it to be beyond his control. He ordered the vessel to be abandoned. The Skipper and crewmember of the FV *“Kingfisher”* launched the liferaft, which was situated on top of the wheelhouse roof; the raft was launched on the port side of the FV *“Kingfisher”*, both crewmembers embarking safely into it.
- 3.12 They pushed away from the FV *“Kingfisher”* and were picked up at 07:53hrs by the FV *“Defiance”* a boat operating in the same area. The FV *“Mystical Rose”* could not come to the aid of the FV *“Kingfisher”* as they were still handling the fishing gear.
- 3.13 The FV *“Mystical Rose”* slipped the fishing gear and went alongside the FV *“Defiance”* and transferred the two survivors across to the FV *“Mystical Rose”*, subsequently landing them back into Dunmore East.
- 3.14 The Dunmore East Lifeboat arrived on the scene at 08:18hrs and attempted to extinguish the fire by playing a fire hose on the casualty vessel. They were assisted in this by SAR helicopter R117 who, by using an infrared camera, were able to pinpoint the hot spots of the fire. The fire spread below deck, and kept re-igniting despite the best efforts of the crew of the Lifeboat. (See Appendix 7.1 Photos of boat burning during incident).
- 3.15 The casualty vessel was deemed to be beyond safe recovery and the Lifeboat was stood down at 10:07hrs and returned to Dunmore East.
- 3.16 At 10:43hrs sight of the vessel was lost from ashore and it was assumed to have foundered at position 52.04.17N : 06.59W. A search of the area was undertaken by helicopter R117 at 11:39hrs, no vessel or pollution was sighted. (See Appendix 7.2 Position of sinking).

4. ANALYSIS

The purpose of the analysis is to determine the contributory causes and circumstances of the incident as a basis for making recommendations to prevent similar incidents occurring in the future.

4.1 Fire Source And Smoke Spread

- 4.1.1 The source of the fire is unknown. However, in view of the speed at which the fire and its associated smoke spread, it is almost certain that the fire was already well established with a good supply of fuel when the Skipper became aware of the fire.
- 4.1.2 The onset of thick black smoke indicates that the fire was predominantly oil-based, suggesting it could be diesel oil, lubricating oil or hydraulic oil.
- 4.1.3 Given that smoke was being emitted from the exhaust trunking when the Skipper first arrived on the deck, and that smoke emitted from the engine room hatch when opened, it is most probable that the fire started in the engine room, possibly as a result of leaking oil coming into contact with one of the several potential heat sources available. Alternatively it is possible that a fire could have commenced in the engine room possibly from an electrical source, the fire then melting either a hydraulic hose or fuel hose giving a fuel supply to the fire.
- 4.1.4 Once an oil-based fire was established in the engine room, it would spread rapidly through the vessel assisted by the airflow through the engine room hatch situated in the wheelhouse. In view of the intensity of the fire, the vessel's fibre reinforced plastic construction and notwithstanding the best efforts of the lifeboat crew to extinguish the fire, FV "Kingfisher" continued to burn until foundering.

4.2 Fire Detection

- 4.2.1 The first indication that a fire had broken out was when the Skipper sighted smoke when he came out onto deck from the wheelhouse.
- 4.2.2 When the fire was discovered it was already well advanced.
- 4.2.3 Had smoke detection equipment been fitted, it is possible that an attempt could have been made to extinguish the fire before it got out of hand preventing entry into the engine room.
- 4.2.4 The vessel was not required to be fitted with fire/smoke detection equipment.
- 4.2.5 The Design, Construction and Equipment of Small Fishing Vessels of less than 15m Length overall, Code of Practice section 5.1.7 states:

“**Smoke Detection** In a decked vessel an efficient smoke detector system should be fitted in the machinery space.”

There is no requirement that a smoke detector system shall be fitted, however it would be desirable that regulations require a smoke detector system to be fitted.

4.3 Structural Fire Protection Standards

- 4.3.1 Regulations applicable to this vessel do not require the bulkheads, deckheads or piping systems to have any fire resistant properties, or for bulkheads to be gas tight.
- 4.3.2 It would clearly be desirable to have bulkheads separating engine rooms from navigation spaces and where fuel oil is stored. If fitted they should be constructed from “B15” standard material that would withstand fire temperatures enabling it to remain intact and limit heat transfer for 15 minutes.
- 4.3.3 Regulations applicable to this vessel do not require flexible fuel or hydraulic hoses passing through the engine room to be of fire resistant material. It would clearly be desirable to have flexible fuel and hydraulic pipes, where passing through an engine room, constructed of armoured fire resistant material or be fitted with fire sleeves.

The Design, Construction and Equipment of Small Fishing Vessels of less than 15m Length overall, Code of Practice section 4.3.1.2 states:

“Piping systems should be of sound construction, in a good state of repair and suitable for the service intended. Flexible connections **should** be of an appropriate armoured fire-resistant metallic hose with screwed fittings, and kept as short as practicable.”

4.4 Actions of Crew

4.4.1 Discovery of Fire

The initial actions taken by the Skipper once the smoke had been sighted were broadly correct.

Leaving the engine room access hatch from the wheelhouse open, after opening to investigate the cause of fire, allowed the wheelhouse to continually fill with smoke, forcing the Skipper to abandon the space and denying him the use of the VHF radio. Fortunately he was able to make his partner vessel aware of the situation, which then raised the alarm.

The main engine was left running after the discovery of the fire, albeit not engaged in gear. The primary reason the engine was left running was to power the hydraulic pump to enable gear to be hauled in order to disconnect from

partner vessel which the FV “*Kingfisher*” was tethered to, creating a possible navigational hazard.

If it had been possible to shut down the engine it may have stopped high-pressure fuel or hydraulic oil feeding the fire.

4.4.2 Vessel Abandonment

The decision to launch the liferaft in preparation for the possibility of abandoning the vessel was a sensible precaution. The Skipper judged the situation to be beyond his control and took the safest action by ordering the crew to abandon the vessel and enter the liferaft.

5. CONCLUSIONS

- 5.1 The exact source of the fire is unknown, but it probably started in the engine room.
- 5.2 When the fire was discovered it is almost certain that the fire was already well established with a good supply of fuel.
- 5.3 By the time the crew became aware of the fire, they were unable to take emergency response actions, such as utilising the vessel's sprinkler system.
- 5.4 There was no fire/smoke detection system fitted in the vessel nor is it a current requirement under the Code of Practice.
- 5.5 Equipment such as a fire detection system is the vessel's first line of defence and is critical to its safety. If the FV "*Kingfisher*" had been fitted with a fire detection system the vessel's crew may have been able to tackle the fire in its infancy, and the abandonment and loss of the vessel may have been avoided.
- 5.6 The fuel and hydraulic oil pipes contained within the engine room were not constructed of fire resistant material nor is it a current requirement under the Code of Practice.

6. SAFETY RECOMMENDATIONS

- 6.1 It is recommended that the Minister for Transport, Tourism and Sport amend the Code of Practice making it a mandatory requirement for fishing vessels less than 15m in length to be fitted with smoke/fire detection system in engine rooms and for fuel and hydraulic oil pipes be constructed out of fire resistant material.

7. LIST OF APPENDICES

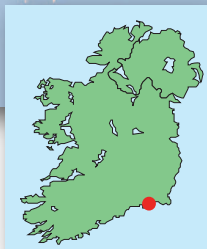
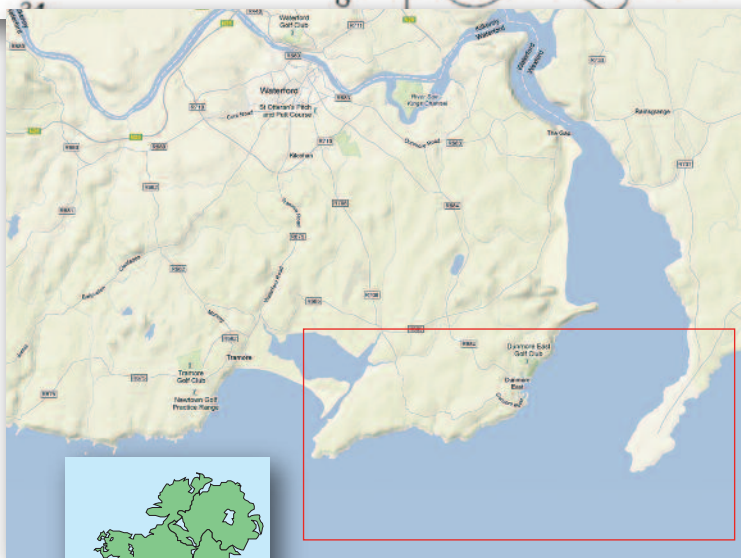
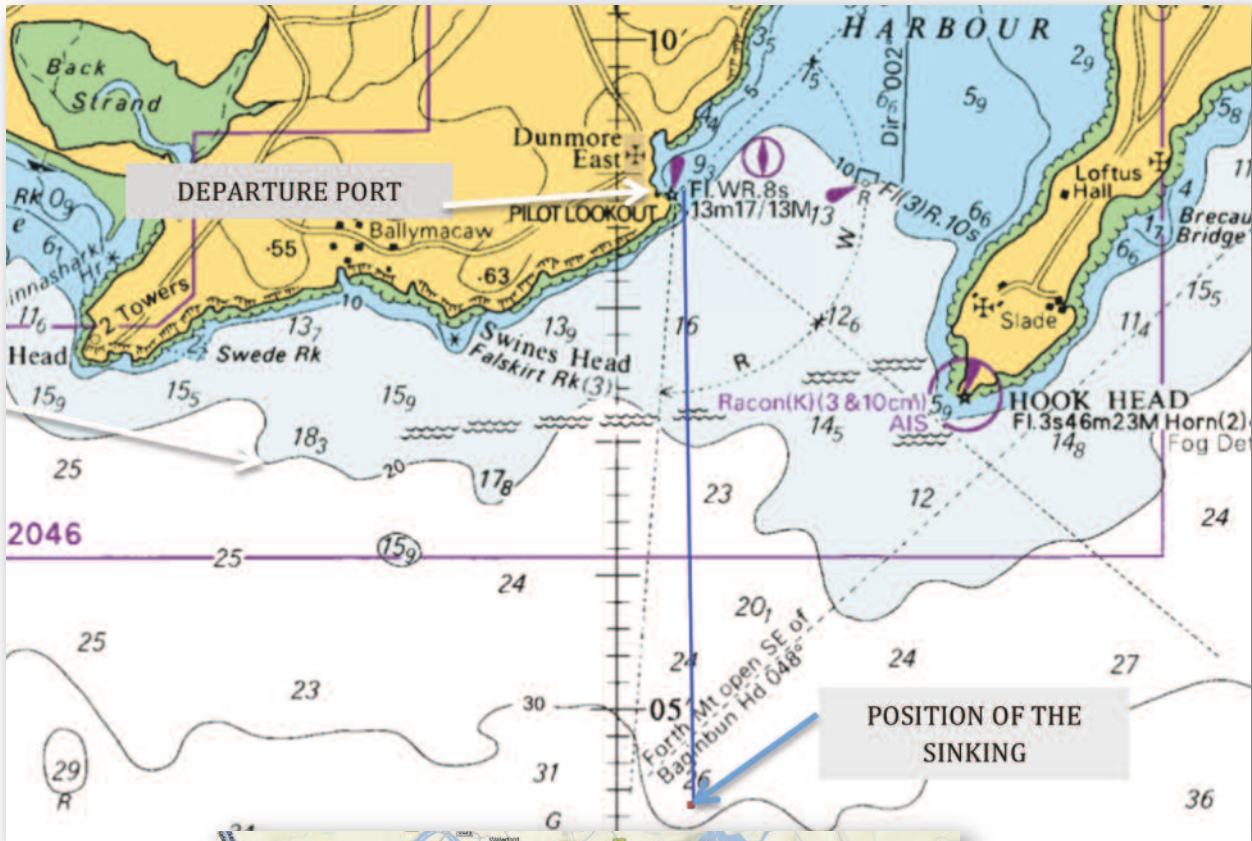
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Appendix 7.1 Photos of Boat Burning.



APPENDIX 7.2

Appendix 7.2 Position of the Sinking.



8. CORRESPONDENCE RECEIVED

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CORRESPONDENCE 8.1

Correspondence 8.1 RNLI and MCIB Response.



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Ms. Cliona Cassidy BL
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16th April 2013

Dear Ms. Cassidy

DRAFT REPORT INTO THE FIRE AND SINKING OF F/V KINGFISHER 25TH NOVEMBER 2012

Reference: MCIB 12/228

Thank you for inviting the RNLI to comment on the report into the incident that resulted in the loss of F/V Kingfisher. The RNLI has nothing to add to the report.

Kindest regards



Martyn Smith
RNLI Regional Operations Manager
(Ireland and the Isle of Man)

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MCIB RESPONSE:
The MCIB notes the contents of this correspondence.

- AIS:** Automatic Identification System
- ALB:** RNLI All-Weather Boat
- ARPA:** Automatic Radar Plotting Aid
- DSC:** Digital Selective Calling
- ECDIS:** Electronic Chart Display and Information System
- EPIRB:** Emergency Position Indicating Radio Beacon (signal contains Vessel Identification details)
- ETA:** Estimated Time of Arrival
- Freeboard:** Height of lowest deck above the waterline
- GMDSS:** Global Maritime Distress and Safety System
- GPS:** Global Positioning System
- Grounding:** Stranding: any prolonged contact between a ship's hull and sea/river bed.
- HW:** High water
- IMO:** International Maritime Organization
- IMO Number:** This is a unique number allocated to each merchant ship throughout the world by the IMO.
- IRCG:** Irish Coast Guard
- LOM:** RNLI - Lifeboat Operations Manager
- LSA:** Life Saving Appliances
- LW:** Low water
- Master:** Captain of a vessel, whom decisions concerning the actual navigation and manoeuvring of the vessel remains with.
- Mayday:** International radio distress signal used by vessels calling for help
- MMSI:** Maritime Mobile Service Identity
- MRCC:** Marine Rescue Coordination Centre
- MRSC:** Marine Rescue Sub Centre
- nm:** Nautical Miles
- OSC:** On Scene Coordinator
- PAN PAN:** International distress call via VHF broadcast where there is no threat to life or imminent danger to the vessel but a state of urgency exists
- PFD:** Personal Flotation device
- PLB:** Personal Locator Beacon
- Pilotage:** A voluntary or compulsory service to provide a Master with Assistance in manoeuvring his vessel, in communication with Ship/shore, based on local knowledge
- POB:** People on Board
- Rating:** A general operative grade or position of a seafarer on board ship.
- RIB:** Rigid Inflatable Boat
- RNW:** Radio Navigation Warning
- SAR:** Search and Rescue
- SART:** Search and Rescue Transponder
- Transom:** Stern of craft
- TSS:** Traffic Separation Scheme
- UTC:** Coordinated Universal Time
- VHF:** Very High frequency
- VMS:** Vessel Monitoring System