MCIB
Marine Casualty Investigation Board
Bord Imscrúdú Taismí Muirí

REPORT OF AN INVESTIGATION INTO THE FIRE AND LOSS OF *"FV HORIZON"* OFF THE OLD HEAD OF KINSALE, CO. CORK 14 MAY 2021

REPORT NO. MCIB/309
(No.3 OF 2022)

The Marine Casualty Investigation Board (MCIB) examines and investigates all types of marine casualties to, or onboard, Irish registered vessels worldwide and other vessels in Irish territorial waters and inland waterways.

The MCIB objective in investigating a marine casualty is to determine its circumstances and its causes with a view to making recommendations to the Minister of Transport - for the avoidance of similar marine casualties in the future, thereby improving the safety of life at sea and inland waterways.

The MCIB is a non-prosecutorial body. We do not enforce laws or carry out prosecutions. It is not the purpose of an investigation carried out by the MCIB to apportion blame or fault.

The legislative framework for the operation of the MCIB, the reporting and investigating of marine casualties and the powers of MCIB investigators is set out in the Merchant Shipping (Investigation of Marine Casualties) Act, 2000.

In carrying out its functions the MCIB complies with the provisions of the International Maritime Organisation's Casualty Investigation Code and EU Directive 2009/18/EC governing the investigation of accidents in the maritime transport sector.

MCIB
Marine Casualty Investigation Board

Leeson Lane, Dublin 2.
Telephone: 01-678 3485/86.
email: info@mcib.ie
www.mcib.ie

REPORT OF AN INVESTIGATION INTO THE FIRE AND LOSS OF *"FV HORIZON"* OFF THE OLD HEAD OF KINSALE, CO. CORK 14 MAY 2021

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

REPORT NO. MCIB/309
(NO.3 OF 2022)

Glossary of Abbreviations and Acronyms

AC	Alternating Current
ALB	All Weather Lifeboat
BIM	Bord Iascaigh Mhara
C	Celsius
CGR	Coast Guard Radio
CGU	Coast Guard Unit
CoC	Certificate of Competency
DC	Direct Current
DSC	Digital Select Calling
EPIRB	Emergency Position Indicating Radio Beacon
ETA	Estimated Time of Arrival
FRC	Fast Rescue Craft
FSS	Fire Safety Systems
FV	Fishing Vessel
FVSC	Fishing Vessel Safety Certificate
GMDSS	Global Maritime Distress and Safety System
IMA	Irish Maritime Administration
IMD	Irish Maritime Directorate
IRCG	Irish Coast Guard
IRCS	International Radio Call Sign
ISO	International Organisation for Standardisation
LED	Light Emitting Diode
LPG	Liquid Petroleum Gas
MCIB	Marine Casualty Investigation Board
MMSI	Maritime Mobile Service Identity
MRSC	Marine Rescue Sub-Centre
MSO	Marine Survey Office
ROC	Restricted Operators Certificate
SART	Search and Rescue Radar Transponder
SITREP	Situation Report
S.I.	Statutory Instrument
UTC	Co-ordinated Universal Time
VHF	Very High Frequency

Gal	gallon
Kilovolts	kV
Litres	(lts)
Metres	m
Nautical miles	NM
Volt	V

Report MCIB/309 published by the Marine Casualty Investigation Board.

19th April 2022.

CONTENTS

1. SUMMARY

1.1 Shortly before 02.00 hours (hrs) on the morning of Thursday 14 May 2021 the fishing vessel (FV) *"Horizon"* was fishing with four crew onboard, approximately 20 nautical miles (NM) off the Old Head of Kinsale, County Cork, when the Skipper noticed large amounts of smoke coming from the accommodation of the vessel. Despite the crew's firefighting efforts, the fire took hold and spread. The Skipper broadcast a 'MAYDAY' distress call by Very High Frequency (VHF) radio and the crew took to a life raft. The crew were recovered from their life raft by the offshore supply ship *"Pathfinder"*, but despite efforts to fight the fire by a responding offshore supply ship *"Maersk Maker"*, the fishing vessel sank at approximately 07.00 hrs, close to the position where it initially caught fire. There was some sea surface oil pollution reported which appears to have dissipated naturally.

1.2 Weather and sea conditions at the time were good with light winds and a moderate sea. The crew were subsequently transferred to the Courtmacsherry Lifeboat and brought ashore. There were no injuries suffered by the crew.

See Appendix 7.1 Photograph No. 1 - *"FV Horizon"*.

Note: Times are local time = UTC +1 (Co-ordinated Universal Time +1).

2. FACTUAL INFORMATION

2. FACTUAL INFORMATION

"FV Horizon" was a fishing trawler (15–24 metres (m)). The vessel was reportedly constructed in Norway (date and location unknown), imported into Scotland in 1989, then imported to Ireland in 2002 and fishing from the home port of Union Hall, Co. Cork. The vessel was sold in 2007 and continued fishing from Union Hall for the next 11 years. The present Owner/Skipper bought the vessel in May 2018. He operated the vessel as a trawler until 2020 when the vessel was converted for gill netting and several major equipment modifications were carried out to the vessel in November of 2020.

2.1 Vessel Details:

Name:	*"FV Horizon"*.
Type:	Fishing trawler.
Flag State:	Irish.
Port of Registry:	Skibbereen, Co. Cork.
Registration:	S329.
Maritime Mobile Service Identity (MMSI) Number:	250001151.
Radio Call Sign (IRCS):	EICZ4.
Beam:	5.4 m.
Gross Tonnage:	81 tonne.
Length Overall:	17.48 m.
Draft:	3.81 m.
Designer:	Not known.
Builder and Yard:	Not known but reported to be Norwegian.
Keel laid:	Not known.
Classification Society:	Not known.
Construction:	Hull - Norwegian pine double-layered carvel hull, timber frames, with aluminium upperworks and shelter deck.

Machinery: Main engine with shaft generator, hydraulic pump, refrigeration plant and harbour generator in the engine room.

2.1.1 Fuel type and quantity onboard: Approximately 1,800 to 2,000 litres (lts) contained in three fuel tanks, i.e. two fuel tanks in the forward part of the fish hold and one fuel tank in the engine room.

2.1.2 There was an emergency fire pump located forward of the fish hold but separate from the engine room.

2.1.3 Lubricating oil and hydraulic oil quantity onboard: The quantity of lubricating oil onboard was estimated as being approximately 50 gallons (gal). The quantity of hydraulic oil onboard was unknown. The gill net hauler hydraulic pump was in the engine room and its oil header tank was located forward of the engine room while spare drums of hydraulic oil were kept in the deck store, starboard side on the main deck, under the wheelhouse.

2.1.4 Spare gear and lifesaving equipment, survival suits, life jackets etc. were kept in a deck store starboard side on the main deck, under the wheelhouse.

2.1.5 The galley cooker propane (liquid petroleum gas (LPG)) gas bottles were stowed outside the hull on the shelter deck connected to the galley via an automatic gas shut-off valve activated by the galley gas alarm. The galley cooker was fitted with a flame failure shut-off device.

2.1.6 *"FV Horizon"* was purchased by the owner in May 2018. The vessel was fitted out for trawling. The trawler system was converted to gill netting in November 2020. The conversion required removal of the trawl gear and equipment including winches, net drums, trawl nets, doors and wires. The conversion to gill netting system required a hydraulic powered net hauler which was installed midships on the starboard side with gill net stowage bins/pounds on the after-deck with a capacity for six strings of gill nets. The aluminium shelter deck was extended towards the stern and around the wheelhouse with a small deck store compartment starboard of the wheelhouse for tools, safety and survival equipment.

2.1.7 The layout of the compartments remained unchanged by the conversion. In the midships was a fish hold. The fish hold was adjoined by the engine room (located at the bows, behind the forward bulkhead) and the accommodation cabin in the stern section behind the aft bulkhead. Two diesel fuel tanks were located in the forward part of the fish hold adjacent to the engine room bulkhead. The fish hold bulkheads and deckheads were insulated by a wooden slat construction with insulation material behind. The Skipper was not sure of the insulation material but recounted that the material had the appearance of polystyrene. The sides of the fish hold comprised the vessel's wooden hull, port and starboard sides and was not insulated. Refrigeration of the fish catch was by stored ice, supplemented by

a sea water cooled refrigeration plant located in the engine room. The Skipper recounted that there was a small amount of fish onboard but the hold mainly contained empty plastic fish boxes.

2.1.8 Forward of the fish hold was the engine room extending into the bows, containing the main engine and gearbox and engine driven generator and the main electrical inverter. A small harbour generator and a refrigeration unit and the hydraulic power pack were in the engine room space. The main engine, harbour generator and refrigeration unit had seawater cooling pipe connections to ship side valves; all being below the waterline and incorporating reinforced plastic hoses in the piped cooling systems all approximately of one inch diameter bores.

2.1.9 Aft of the fish hold was a small accommodation flat or cabin. Access to the cabin from deck was via the galley through a doorway opening to a hatch with a descending vertical ladder. The accommodation cabin contained six bunk berths; two each fitted to the port and starboard sides with two berths end-on across the aft bulkhead. Crew personal effects and bedding were kept in the cabin. Furniture was wooden. Lighting was provided by two 24 volt (V) direct current (DC) light emitting diode (LED) deckhead mounted light fittings with a 240V alternating current (AC) double socket normally used for powering a de-humidifier when in port. There were electric sockets provided at the bunks which may have been 24V DC or 240V AC but the Skipper reported that there was no power to them and they were disconnected. Heating was from a radiator piped to the main engine. There was also a magnetic compass in the space. Behind the accommodation flat was a small steering compartment.

2.1.10 The galley/crew dining area was on a lower half deck, port side aft of the wheelhouse, accessible from there via a door on the wheelhouse aft bulkhead with three descending steps directly into the galley flat. Cooking in the galley was by gas cooker with propane LPG gas supplied from bottles stowed outside on the shelter deck.

2.1.11 Electrical power was 24V DC using two inverters to power 240V AC electrical appliances. The inverters were normally active and located in the engine room and the wheelhouse. The galley domestic refrigerator was a 240V AC appliance. There were four smoke fire alarms fitted, one each in the wheelhouse, accommodation cabin, galley and engine room.

See Appendix 7.2 General Arrangement *"FV Horizon"*.

See Appendix 7.3 General Arrangement Profile Showing Accommodation and Galley.

2.2 Vessel Safety Details:

2.2.1 Marine Survey Office (MSO) Safety Inspections: *"FV Horizon"* had a full Fishing Vessel Safety Certificate (FVSC) issued by the MSO in 2018. On 6 October 2020 the vessel was subject to an MSO Statutory Intermediate Survey and Safety Inspection for a FVSC (15–24m), in accordance with Regulation 7 of the Merchant Shipping (Safety of Fishing Vessels) Regulations 2007. The MSO report of the Intermediate Survey/Inspection attached to the 6 October 2020 FVSC indicated the following areas were inspected:

- Accommodation.
- Steering/Engine Room.
- Safety Equipment.
- Navigation Equipment.
- Cargo Hold(s)/Tank(s).
- Emergency Steering.

There were 22 deficiencies noted on the FVSC Intermediate Survey Report, some of which related to the firefighting capability of the equipment onboard. The firefighting deficiencies carried the following descriptions and required remedial actions as follows:

- Item No. 4 - Vessel has no means of connecting a fire hose to the powered pump – replace missing fire hose connection to the manifold starboard side and attend leaks from various connections to the manifold pipework.
- Item No. 5 - Petrol Emergency Fire pump (petrol) not permitted – to remove from vessel.
- Item No. 6 - Engine room fire damper flap not closing fully – to repair/renew.
- Item No. 7 - Fire extinguishers to service.

See Appendix 7.4 Marine Survey Office Survey Report 6 October 2020.

2.2.2 *"FV Horizon"* was again subject to an MSO Survey on 25 November 2020 in accordance with the regulations regarding the vessel's change of purpose to gill netting which had required substantial modification work to the fishing equipment. At this time the authorised MSO surveyor checked the deficiencies found on 6 October 2020 survey and reported that all deficiencies noted from the previous interim survey had been addressed. A stability check was carried out by a qualified naval architect on the vessel in November 2020 and passed as satisfactory on 1 December 2020. The MSO was informed, and a revised Stability Book was issued to the MSO for approval.

See Appendix 7.5 Marine Survey Office Survey Report 25 November 2020.

2.2.3 During FVSC inspections it would be normal to inspect electrical and gas (LPG) appliances and systems according to the requirements of the Merchant Shipping (Safety of Fishing Vessels) Regulations 2007.

2.2.4 Electrical Distribution systems: The Merchant Shipping (Safety of Fishing Vessels) Regulations 2007, Part 4, Machinery and Electrical Installations. Regulation 67 - Distribution systems states:

"Systems shall comply with the requirements of the "IEC 60092 —Electrical Installations in Ships" or "ISO Standard 13297:2000 Small craft electrical systems — alternating current systems".

Regulation 68 - Cables, states:

"The design and installation of cables shall comply with the requirements of the "IEC 60092 - Electrical Installations in Ships"".

IEC 60092 – Electrical installations in ships, provides a complete current capacity sizing calculations for power cables concerning electrical installations in seagoing ships and fixed or mobile offshore units for cables with voltages up to and including 15 kilovolts (kV). ISO 13297:2000 Small craft electrical systems – alternating current systems, is an international standard which specifies the requirements for the design, construction and installation of low-voltage alternating current electrical systems which operate at nominal voltages of less than 250V single phase on small craft of hull length up to 24 m.

See Appendix 7.6 - Regulation 67 Distribution Systems and 68 Cables, of Part 4, Merchant Shipping (Safety of Fishing Vessels) Regulations 2007.

2.2.5 LPG appliances and systems: Part 5 of the Merchant Shipping (Safety of Fishing Vessels) Regulations 2007, Fire Protection, Fire Detection, Fire Extinction and Fire Fighting, Regulation 88 Liquefied petroleum gas installations (cooking ranges and heating appliances) states:

"Installations using liquefied petroleum gas shall comply with Marine Notice No. 1 of 2002 entitled "Use of liquefied petroleum gas (LPG) installations and systems on merchant vessels, fishing vessels, pleasure craft and other marine craft" and any subsequent amendments".

MN No.1 of 2002 was subsequently replaced by MN No.37 of 2017 "Use of liquefied petroleum gas (LPG) installations and systems on merchant vessels, fishing vessels, pleasure craft and other marine craft" in which it states:

"LPG systems; such systems should be installed at least in accordance with International Standard ISO 10239:20 14 (Small craft liquefied petroleum gas (LPG) systems and with the Appendix to this Marine Notice which includes the main points of ISO 10239:2014".

In short, ISO 10239:2014 covers the installation of permanently installed LPG systems and LPG burning appliances on small craft of up to 24 m length of hull. It covers storage of all LPG cylinders but is not intended to regulate the technical requirements for such cylinders that are subject to national regulations.

The Skipper stated that copper pipe was fitted between the galley cooker to the LPG bottles (located on top of the shelter deck) and that there was a gas monitor alarm fitted connected to an LPG shut-off valve if the gas monitor activated. There were no deficiencies reported in the vessel's LPG installation in the 6 October 2021 FVSC survey with regard to the Merchant Shipping (Safety of Fishing Vessels) Regulations 2007, Chapter 5, Regulation 88 Fire Protection, Fire Detection, Fire Extinction and Fire Fighting.

See Appendix 7.7 Marine Notice 37 of 2017.

2.2.6 The Skipper stated there was a "No Smoking Below Decks" policy onboard the vessel and that those crew who smoked were only allowed to smoke whilst on the main deck in the open air. He also stated that there had been no cooking in the galley for several hours before the outbreak of the fire.

2.3 Crew Details

Skipper/Owner:	Irish national and owner of *"FV Horizon"*. Experienced fisher. Skipper's 2nd Hand Full Certificate of Competency (CoC) since 2012. Holder of Global Maritime Distress and Safety System (GMDSS) Restricted Operators Certificate (ROC) and had completed the Bord Iascaigh Mhara (BIM) Basic Safety Training course. He had skippered *"FV Horizon"* since purchasing the vessel in May 2018.
Crewmember A:	Irish national. Experienced fisher. Completed BIM Basic Safety Training 2018.
Crewmember B:	EU national (Lithuania). Experienced fisher. No records on BIM safety training system.
Crewmember C:	EU national (Romania). Experienced fisher. No records on BIM safety training system.

2.4 Voyage Particulars

2.4.1 The vessel departed the homeport of Union Hall, Co. Cork at approximately 02.00 hrs local time, on 11 May 2021 for a fishing trip approximately 30 to 50 NM south and southwest of Union Hall. The Skipper of the vessel intended to return to homeport on or about 18 May 2021.

See Appendix 7.8 Chart No.1 - Incident Location.

See Appendix 7.9 Chart No.2 - AIS Track *"FV Horizon"*.

2.5 Incident Type

This was a very serious marine casualty resulting in the sinking of a fishing vessel.

2.6 Marine Incident Information

2.6.1 Weather

The weather conditions during the times of the incident were as follows (source - Irish Coast Guard (IRCG) Situation Reports):

Weather on Scene at 00.55 hrs 14 May 2021:

Wind:	4 (Beaufort force 4 (moderate breeze), NW (North westerly).
Sea:	Moderate.
Swell:	Low wave.
Air temp:	10.5° Celsius (C).
	Water temp:10.2° C.
Visibility:	Good.
Cloud cover:	Clear sky.

Weather on scene at 01.51 hrs 14 May 2021:

Wind:	4, NW.
Sea:	Moderate.
Swell:	Low wave.
Air temp:	10° C.

Weather on scene at 03.40 hrs 14 May 2021:

Wind:	4, NW.
Sea:	Moderate.
Swell:	Low wave.
Air temp:	10° C.
Cloud cover:	Clear sky.

Weather on scene at 14.38 hrs 14 May 2021:

Wind: 4, S.

Sea: Moderate.

Swell: Low wave.

Air temp: 11° C.

Cloud cover: Overcast.

2.6.2 Emergency Services Response:

A series of incident reports issued by the IRCG from the Marine Rescue Sub-Centre (MRSC) Valentia to MRSC Valentia SitRep Group, starting on 14 May 2021 identified by their chronological entry date (Day Time Group) gives a timeline of the incident as it developed:

Note: All times are stated in UTC (local time + 1hour).

00.40 hrs *"FV Horizon"* transmitted a "MAYDAY" distress call that it was on fire in position 51° 19.00'N 008° 17.00'W and there were four crew onboard and abandoning vessel. The distress call was received by MRSC Valentia and other vessels in the area.

00.43 hrs Courtmacsherry Lifeboat was tasked to respond by IRCG.

00.46 hrs Ships in the vicinity of the incident *"Pathfinder", "Maersk Maker"* responded to the MAYDAY and were proceeding to the incident position.

00.50 hrs *"FV Buddy M"* responded to the MAYDAY and was proceeding to the incident position, ETA, 35 mins.

00.52 hrs Vessel *"Pathfinder"* notified that the vessel's Fast Rescue Craft was launched.

00.55 hrs IRCG issue UIINO843/21 – SitRep (Situation Report) One indicating the following taskings to respond had been initiated: Coastguard Helicopter R117, Courtmacsherry Lifeboat, Fishing vessels in the vicinity, Naval Patrol Vessel *"L.E. George Bernard Shaw"* (at anchor in Ballycotton).

00.56 hrs *"FV Horizon"* EPIRB activated.

00.57 hrs Courtmacsherry Lifeboat launched, ETA to the casualty position 70 mins.

01.05 hrs *"L.E George Bernard Shaw"* indicated that it would assist in the Search and Rescue operation.

01.15 hrs Vessel *"Pathfinder"* Fast Rescue Craft was approaching a life raft in the vicinity of the incident.

01.19 hrs Vessel *"Pathfinder"* Fast Rescue Craft had taken onboard four persons from the Life raft and was returning to Vessel *"Pathfinder"*. Courtmacsherry Lifeboat was requested to proceed to Vessel "Pathfinder" to take aboard the fishing vessel's crew.

01.30 hrs Vessel *"Maersk Maker"* was on scene and attempting to extinguish the fire onboard the casualty vessel.

01.45 hrs Coastguard Helicopter R117 reported it was airborne.

01.51 hrs Helicopter R117 reported it was at the scene of the incident.

01.52 hrs Vessel *"Pathfinder"* advised that all SAR equipment, including an EPIRB, was onboard.

01.53 hrs Vessel *"Maersk Maker"* advised that the fire was extinguished, and the casualty vessel was afloat and cooling.

01.55 hrs *"FV Horizon"* EPIRB switched off and de-activated.

02.14 hrs Courtmacsherry Lifeboat was on scene with vessel *"Pathfinder"*.

02.28 hrs Helicopter R117 advised that the 4 crew of the fishing vessel were transferred to the Courtmacsherry Lifeboat. Helicopter R117 was stood down and returned to base.

02.30 hrs Courtmacsherry Lifeboat reported that the fishing vessel crew were onboard and it was proceeding back to Courtmacsherry. No medical assistance was required. Vessel *"Pathfinder"* was released from the SAR operation. Vessel "Maersk Maker" reported the fishing vessel was on fire at its after end.

02.58 hrs Vessel *"Maersk Maker"* reported the fishing vessel was still on fire at its after end.

03.08 hrs Coastguard Helicopter R117 returned to Base.

03.40 hrs Vessel *"Maersk Maker"* advises fire extinguished. Remaining on scene and liaising with naval patrol *"L.E. George Bernard Shaw"*.

04.37 hrs Courtmacsherry Lifeboat (LB) advises that all four crewmembers were ashore and the LB was returning to Base.

05.05 hrs "*L.E. George Bernard Shaw*" assessment of the FV is that it is extensively damaged from the fire.

05.59 hrs Vessel *"Maersk Maker"* reported that fishing vessel had sunk.

Incident closed.

12.25 hrs Helicopter R117 was tasked to the casualty site 18 nm south southeast (SSE) of the Old Head of Kinsale to monitor for pollution.

14.50 hrs Helicopter R117 reported oil spill pollution, spill area approximately 1–2 square NM.

See Appendix 7.10 IRCG SitRep One.

See Appendix 7.11 IRCG SitRep Two.

See Appendix 7.12 IRCG SitRep Three.

See Appendix 7.13 IRCG SitRep Pollution Monitoring

2.7 Environmental Pollution

2.7.1 IRCG Helicopter R117 reported oil spill pollution at the location of the incident approximately nine hours after the vessel was reported as having sunk. The oil pollution extended in an area approximately 1–2 square NM.

3. NARRATIVE

3.1 On 11 May 2021 at approximately 02.00 hrs a fishing vessel departed Union Hall, Co. Cork for a gill net fishing trip 30 to 50 NM south of Union Hall. There were four crew onboard and the boat was stocked with food and ice for a seven day trip. The fishing trip was uneventful, and the Skipper reported that there were no problems onboard until the time of the incident. On the evening of 13 May 2021, the vessel was fishing approximately 30 NM south southeast of the Old Head of Kinsale. There were four strings of gill nets deployed in the sea. The crew were resting in their accommodation cabin until the Skipper called them at approximately 20.50 hrs to haul the nets. The crew got up, had tea in the galley and started hauling the nets shortly after 21.00 hrs. This activity continued for approximately three hours during which all crew were employed on deck, and no one visited the accommodation cabin or galley. At approximately 01.20 hrs the crew had just finished hauling the nets and were removing and boxing the catch. There were four nets onboard, two of which were to be deployed as soon as the vessel moved its new fishing location approximately ten to 15 minutes steaming time away. The crew sorted and boxed up the catch while the Skipper moved the boat. The Skipper briefly left the wheelhouse to tie on some fishing buoys to the outgoing net. When he returned to the wheelhouse, he noticed smoke around the accommodation cabin door in the galley. The door was just visible across the galley flat through the aft door of the wheelhouse.

See Appendix 7.3 General Arrangement Profile Showing Accommodation and Galley.

3.2 The Skipper descended the three steps down into the galley flat and grabbed an extinguisher. He could see down into the accommodation cabin where there was thick smoke and tried to enter the accommodation flat via the access ladder to investigate the source of the smoke. He was able to descend a few rungs of the ladder but unable to enter the cabin or seek out the source of the fire as he was beaten back by smoke. As the Skipper withdrew from the access ladder hatchway, he closed up the accommodation door before running out to the main deck and alerting the crew. The Skipper stated that the smoke detector/fire alarm located in the deckhead of the accommodation cabin did not go off but that the smoke alarm in the galley sounded off when the smoke entered the galley space.

3.3 The Skipper directed two of the crew to release and launch the life raft and the other crewmember to gather the survival suits and emergency gear from the wheelhouse deck store and muster on the top deck while he again attempted to tackle the source of the smoke with fire extinguishers. When he opened the accommodation door he was immediately beaten back, choking with smoke which he described as dark but not with a burned “plasticky”

smell. He sensed a lot of heat and could hear the crackle of a fire below in the cabin. Overcome with the smoke the Skipper ran onto deck. He saw the life raft launched and tied its painter to the rail. The Skipper realised at this point that the fire was serious and beyond the ability of the crew to extinguish with the equipment he had onboard. He went back into the wheelhouse and made a distress 'MAYDAY' broadcast from the marine VHF radio. The time was 01.40 hrs and the broadcast was received by Valentia Coastguard radio who re-broadcast the 'MAYDAY' distress call to all ships in the vicinity.

3.4 The fire continued to grow and take hold and smoke was coming out of the galley. The Skipper had not shut down the engine although he had disengaged the clutch and the vessel was drifting. The main engine powered a deck wash sweater pump with a 1 ½ inch diameter deck wash hose which was charged, and he brought this into the wheelhouse and directed the water jet directly across the galley and down the accommodation cabin access hatchway. The Skipper recounted that he increased the main engine speed to power up the deck wash pump to its maximum operating pressure. However, fire extinguishers and the deck wash water jet were ineffectual at fighting the fire. After a couple of minutes fighting the fire and directing the water jet the Skipper again became overcome with the effects of smoke so he closed and attempted to seal the wheelhouse door leading to the galley to retard the spread of the conflagration. He estimated the time was approximately 01.50 hrs.

3.5 The Skipper recounted that the spread of the fire was "shockingly" rapid. The vessel filled with smoke, and he could see the flames of the fire quickly gaining strength. Realising the fire had spread to the galley and the firefighting water jet had proved to be ineffectual the Skipper made the decision to abandon ship and told the crew to board the life raft.

3.6 The Skipper brought with him the Emergency Position Indicating Radio Beacon (EPIRB), Search and Rescue Radar Transponder (SART) and handheld VHF radio into the life raft. The fire had by now broken out onto the after-deck area which was now ablaze and fuelled by the plastic nets stowed onboard in the net pound and the stored gas in the LPG systems in and around the galley at the stern of the vessel. The crew manoeuvred the life raft away from the burning vessel.

3.7 The Skipper recounted that despite the vessel being ablaze, the vessel was stable and relatively upright with no visible list. The fire was melting the aluminium shelter deck and travelling along the rigging and cordage from the wheelhouse. Plastic fish boxes and floats were also on fire and the heat was intense.

3.8 The Fast Rescue Craft (FRC) from the ship *"Pathfinder"* arrived at 02.19 hrs. The crew were taken from the life raft onto the FRC which immediately returned to the parent ship. Once onboard the ship *"Pathfinder"* the crew were medically checked and found to have suffered no lasting ill effects from their experience. At 03.28 hrs the crew were transferred to the Courtmacsherry Lifeboat which

immediately proceeded back to Courtmacsherry to land ashore the four crewmembers. The ship *"Maersk Maker"* with onboard firefighting capabilities arrived on scene at 02.30 hrs and attempted to extinguish the fire onboard the vessel. However, despite initially reducing the fire the ship reported at 02.58 hrs that the fire continued in the vessel's after end. The ship *"Maersk Maker"* reported the fire was extinguished at 03.40 hrs. The vessel was monitored by the IRCG helicopter, the ship *"Maersk Maker"* and the naval patrol vessel *"L.E. George Bernard Shaw"* and reported sunk shortly before 06.49 hrs close to the position where it initially caught fire.

See Appendix 7.14 Photograph No. 2 - *"FV Horizon"* Awash.
See Appendix 7.15 Photograph No. 3 - *"FV Horizon"* Sinking.

4. ANALYSIS

4.1 Condition of the Vessel: The vessel was surveyed and gained its full FVSC in 2018. An Interim FVSC survey was carried out by the MSO in October 2020 and the vessel approved for its Interim FVSC. The vessel was again surveyed on 25 November 2020 and a vessel stability check was carried out satisfactorily at that time. The fishing vessel was approved by the MSO to continue its fishing activities. There had been no major changes or modifications to the vessel in the intervening time up to the time of the incident. It would be reasonable to deduce that the vessel was materially fit for purpose and in a stable condition immediately prior to the incident and the vessel's condition was not a factor in the fire and loss of the fishing vessel.

4.2 The fire: The fire was central to the incident and ultimately led to the sinking and loss of the vessel. The vessel had been fishing the three previous days and the Skipper reported that there were no problems onboard prior to the incident. When the Skipper first noticed the smoke issuing out from the accommodation cabin, he attempted to seek out the source of the fire and was able to descend halfway down the accommodation access ladder before being beaten back by smoke. It can therefore be deduced that the fire started in the accommodation cabin. The accommodation cabin was safeguarded against fire by having a smoke detector alarm fitted. The Skipper stated that the alarm failed to operate. Whether the fire detection system smoke alarm did sound but was not heard or whether it failed to operate is not known with any certainty. Although the fire alarm system was inspected in order to pass its FVSC process in October 2020 the accommodation flat smoke detector alarm was not heard by the Skipper when he first noticed smoke, which indicates that the smoke alarm did not function correctly and this was likely due to either; a recent defect arising in the alarm system, the component was damaged by the fire itself before it could sound, or, there was a longer standing defect that should have been revealed during the regular monthly testing check of the fire detection system. The Skipper stated that the monthly checks were done but there is no record as to when the system was last tested as the vessel's onboard records were lost in the incident. Regulation S.I. 640 of 2007 states the following:

"Inspections.
131. (a) Inspections of the life-saving equipment and fire appliances shall be made at intervals of not more than one month.
(b) A report of the inspection shall be entered in the logbook."

It may be deduced that the routine for checking the fire detector smoke alarms operation was inadequate in that the faulty operation of the smoke alarm remained undetected until the outbreak of the fire. If the smoke detector alarm in the accommodation had operated correctly the Skipper and crew may have been able to extinguish the fire before it spread and developed into a conflagration. The time delay (in fighting the fire) caused by the failure of the smoke detector alarm allowed the fire to take hold and spread before being

spotted by the Skipper when he returned to the wheelhouse. The failure of the smoke detector alarm was a causative factor to the spread of the fire onboard the vessel.

4.3 Fire Detection System: The vessel's fire detection system was ineffectual in that the smoke detector alarm located in the accommodation cabin failed to operate. The smoke detector alarm in the galley operated, but by then the fire had taken hold and was rapidly spreading. Had the fire detection system been more in-line with the more stringent requirements of the International Fire Safety Systems (FSS) Code which requires the fire detection system to include both audible and visual fault signals, the fire in the accommodation cabin would likely have been detected earlier. The vessel was an "existing vessel" in 2007 when S.I. 640 of 2007 was promulgated. Therefore, the previous requirements of Regulation 80(17) of S.I. 640 of 2007 applied to the fire detection system on *"FV Horizon"* and only audible smoke detector alarms were required and fitted. The less modern requirements of Regulation 80(17) of S.I. 640 of 2007 which applied to the fire detection system on *"FV Horizon"* was considered a contributory factor in the late or untimely detection of the fire in the accommodation cabin.

"80(17) The Minister will accept the fire protection, detection and extinguishing arrangements on existing vessels providing they comply with and are maintained in accordance with previous requirements under the Merchant Shipping (Fire Appliance) Rules 1967 (S.I. No. 100 of 1967) and continue to remain efficient in service."

4.4 Source of Ignition of the Fire: The Skipper stated that he was unable to see or detect the source of the fire in the cabin but that there was no reason to think that spontaneous combustion of any of the cabin contents was the cause of the fire. Therefore, it may be deduced that the only other possible source of an ignition in the unattended cabin would be by an electrical defect. There were electrical circuits and devices in the cabin, and it was surmised that the fire may have been initiated by an electrical problem either in the circuits or an electrical device or a combination of both.

4.4.1 The cabin was wired with two electrical circuits. A 24V DC circuit for the cabin lights and magnetic compass repeater and a 240V AC circuit supplying the electrical sockets. The Skipper stated that the bunk electrical sockets were disconnected previously and out of commission. The cabin was lit by two 24V DC LED light devices. LED by their nature do not generate significant amounts of heat and therefore do not carry a great fire risk. The magnetic compass repeater was also low power 24V DC and did not use a lot of power or generate any great amount of heat. Therefore, it may reasonably be deduced that the 24V DC LED lights or compass repeater light could be discounted as being the source of ignition for this fire and was not a factor in this incident.

There were no deficiencies reported in the vessel's electrical installation in the 6 October 2021 FVSC survey with regard to the Merchant Shipping (Safety of Fishing Vessels) Regulations 2007, Part 4, Regulation 67, electrical distribution and Regulation 68, cables which had been passed for certification purposes. Therefore, it can reasonably be deduced that the electrical installation onboard *"FV Horizon"* was compliant with the regulation at the time of the FVSC inspection in October 2020. The Skipper stated to the Marine Casualty Investigation Board (MCIB) that there had been no changes made to the electrical system in the intervening period of time up to the incident on 14 May 2021. Therefore, it can reasonably be deduced that a fault in the electrical circuits did not provide a source of ignition for the fire in the accommodation and was not a factor in this incident.

4.4.2 The crew each had mobile phones. These electronic devices contain lithium batteries and require re-charging, usually from a 240V AC electrical power socket and there was a 240V AC circuit in the cabin with sockets. It was probable that electronic devices were in the cabin as the vessel was 30 NM offshore (and likely out of mobile phone coverage) and therefore not in use by the crew. Lithium batteries are commonly damaged when overcharged and become prone to overheating and even igniting in some instances. Electronic device battery chargers also carry a risk of overheating and igniting and should not be operated near combustible materials or left unattended. The galley and accommodation cabin 240V AC sockets were regularly used by the crew for charging the batteries of their electronic devices. It is surmised that one or more of these devices were in the accommodation cabin and may have been plugged into the 240V AC sockets, unattended, while the crew were working on deck. It would be reasonable to deduce that an unattended mobile phone or other similar electronic device in the process of being charged and/or an electronic device battery charger may have been the source of ignition for this fire and may therefore, present a causative factor for the fire onboard the vessel.

See Appendix 7.16 Image No. 1 - Electronic Device Battery Charger Fire Damage.
See Appendix 7.17 Image No. 2 - Lithium Battery Fire Damage.

4.4.3 The crew statements indicated they were all on deck attending the nets for fishing at the time of the discovery of the fire. The Skipper stated that there was no one in the galley for some time before the fire. The gas installation onboard *"FV Horizon"* was compliant with the regulation at the time of the FVSC inspection in October 2020. The Skipper stated to the MCIB that there had been no changes made to the gas system in the intervening period of time up to the incident on 14 May 2021. Therefore, it can reasonably be deduced the gas installation was not the source of the ignition of the fire and not a factor in the loss of the vessel.

4.5 Spread of the Fire: On his second attempt to re-enter the accommodation cabin the smoke was denser, and the Skipper was unable to attempt to descend the

ladder to extinguish the fire. At that time, he stated he felt heat and heard a crackling noise (presumably from the fire) before he closed the access door. The fire took hold and spread, and it likely burned through the bulkheads separating the accommodation cabin from the galley and fish hold. Despite using the water jet from the deck wash system, the fire continued un-abated. Various other combustible materials became exposed to the fire, plastic containers of diesel fuel and hydraulic oil being the main sources of combustion material. The Skipper stated that there were also pyrotechnics stored in the wheelhouse. The propane gas bottles were located outside the galley on the main deck and within reach of the fire after it broke out of the accommodation cabin and into the galley, wheelhouse and after-deck. The Skipper stated that he heard the gas bottles exploding and saw the fire travelling along the rigging forward to the shelter deck. The fire burned through the wood bulkhead between the accommodation cabin and fish hold where the wooden battens, plastic insulation materials, plastic fish boxes, two diesel oil fuel tanks and wooden deck construction provided sufficient amount of readily combustible materials to fuel and accelerate the conflagration below decks. Likewise, the fire reached the engine room by way of the wooden bulkhead between the fish hold and the engine room. The engine room was bounded by a wooden construction in the bulkheads, deck head and hull sides. The compartment also contained large amounts of fuel, lubricants, greases and plastics. The combustible materials commonly used onboard the *"FV Horizon"* (a wood constructed fishing vessel), particularly the amounts of stored LPG, plastic and oil onboard, provided adequate fuel for the fire to enable it to rapidly spread through the vessel and is considered a causative factor to the proliferation and extent of the fire onboard the *"FV Horizon"*.

4.6 Cause of the Sinking: When the fire reached and burned through into the engineroom, all plastic components in the engineroom machinery, engineroom equipment and associated systems, and oil contained in the oil tanks and oil systems, provided fuel to accelerate the fire.

4.6.1 The Skipper's early attempts to extinguish the fire using the vessel's deck wash hose and the fire extinguishing attempts by the crew of *"Maersk Maker"* put an unknown amount of water onto the burning *"FV Horizon"*. The amount of seawater put onboard by both firefighting attempts was unlikely to have singularly caused the vessel to sink as the vessel remained afloat for approximately two and a quarter hours after firefighting attempts had finished. The extent of the fire damage to the vessel was extensive; the engine room was burned out and the vessel was likely taking in water through its seawater cooling hull valves which eventually proved to be fatal to the vessel's watertight integrity as the vessel sank shortly before 07.00 hrs approximately six hours after the outbreak of the fire. Firefighting efforts by the Skipper and the crew of the ship *"Maersk Maker"* are not considered to be causative or contributory factors in the sinking of *"FV Horizon"*.

4.6.2 The Skipper stated that the main engine and the fish hold refrigeration system were cooled each with seawater drawn directly through two separate pipe systems from the sea through the vessel's hull mounted seawater inlet valves located on the hull beneath the vessel's water line. These systems had sections of reinforced flexible plastic hoses connecting the pipework from the seawater valves to the machinery cooling systems. These hoses, when exposed to fire, melt and fail allowing an uninterrupted flow of seawater into the engine room compartment. The seawater flowing into the engine room would fill into the adjoining compartments as the bulkheads were burned through and eventually the water would fill the vessel which would sink. It can therefore be deduced that the fire was a causative factor in the sinking of the *"FV Horizon"* in that the intense heat of the fire melted the plastic components of the vessel's machinery cooling systems which lost their watertight integrity allowing seawater into the vessel to the extent that *"FV Horizon"* filled with seawater and sunk.

4.6.3 For the same reasons outlined in paragraph 4.5 it can also be deduced that the absence of fire proofing materials in the flexible hose components of the vessel's machinery cooling systems (connecting the cooling systems to the sea through the hull mounted sea valves), caused these to melt. It is deduced that, as the hoses melted, the sea was allowed to flood into the vessel through the cooling systems hull mounted sea valves and was a causative factor in the sinking of the vessel.

4.7 Crew Training and Competence: The efforts by the crew of *"FV Horizon"* in fighting the fire and preparing the emergency equipment prior to leaving the burning vessel in the life raft without injuries was assisted by a number of converging factors:

- The crew being at one location and above the lower decks enabled, firstly a rapid response to the developing emergency and secondly, timely deployment of the crew's survival equipment and vessel's life raft.

- The weather conditions at the time of the incident were good which greatly aided the subsequent search and rescue operation.

- The crew successfully launched the life raft and abandoned the burning vessel with no difficulties or injuries.

This demonstrates the effectiveness of the emergency procedures training provided through the BIM Safety Training scheme to the Skipper and one of the crew members. However, it must be noted that the other two crewmembers did not have the required BIM safety training courses completed. All fishing vessel crewmembers are required to undergo basic safety training as per S.I. 587 of

2001 – Fishing Vessel (Basic Safety Training) Regulations which states:

"Basic Safety Training
4. (1) Every crew member of a fishing vessel shall undertake basic safety training as set out in this regulation.
(2) Basic safety training shall consist of the following 3 training units-
(a) personal survival techniques, including man overboard techniques,
(b) elementary first aid, and
(c) fire prevention, health and safety training,
and shall be held in such establishments, to such standards, under such conditions and for such duration as BIM may approve and determine.
(3) The dates by which basic safety training must have been completed by each crew member are specified in the Table to this Regulation.
(4) A crew member who has not successfully completed basic safety training by the date specified in the Table shall not work onboard a fishing vessel."

If the crew dispositions at the outbreak of the fire and the weather conditions during the incident were not so favourable, then the absence of basic safety training for the two crewmembers could have led to a more negative outcome to this incident. However, the lack of crew training and competency was not a factor in the fire or sinking of *"FV Horizon"*.

See Appendix 7.18 Statutory Instrument No. 587 of 2001 Fishing Vessel (Basic Safety Training) Regulations.

4.8 Maritime Safety: The Irish Government's Maritime Safety Strategy published by the Minister for Transport, Tourism and Sport in 2015 recognised the need for improved safety standards in fishing vessels of similar size and type to the *"FV Horizon"*. The Irish Maritime Administration (IMA) in pursuit of their strategic objective were to carry out a number of actions, to improve safety standards in the Irish fishing fleet. Two in particular:

'Action 9. The standards for fishing vessels less than 24 metres in length will be updated, incorporating relevant MCIB recommendations. (Start 2015).'
And
'Action 29. An enhanced flag state inspection regime on fishing vessels will be implemented to promote adherence to maritime safety requirement in the sector. (Start 2016).'

See https://www.gov.ie/en/publication/d00485-maritime-safety-strategy/ - for the April 2015 Maritime Safety Strategy.

A review of the effectiveness of the implementation of 'Action 9' and 'Action 29' of the Maritime Safety Strategy may be required as safety issues relating to

vessel stability awareness for fisher crew, vessel undermanning, undocumented foreign nationals working in the fishing industry, lack of safety training and certification among non-national fisher crew are some of the issues identified in MCIB investigations. Relevant recommendations to the respective responsible government bodies have been made in previous MCIB investigation reports. The MCIB's "Report into the Fire and Loss of MFV Suzanne II east of Arklow on 2 May 2019" (MCIB/291 (No. 1 of 2020)) indicated significant parallels to the incident resulting in the loss of *"FV Horizon"*. 'Action 9' and 'Action 29' mentioned in paragraph 4.8 were relevant to the *"MFV Suzanne II"* incident and are also relevant to the issues raised in this report.

The recently published Irish Maritime Directorate (IMD) Strategy 2021-2025 (https://www.gov.ie/transport (issued February 2021 by Department of Transport)) states in its 'Vision' and 'Core Objectives' sections that its Goal 1.6 for the IMD's Maritime Safety Policy Divisions is as follows:

"9. Develop a maritime safety policy and plan focussing on the wider aspect of maritime safety."

This policy statement and plan seems to follow on from the policies and plans contained in the 2015 Maritime Safety Strategy and provides a platform from which to continue improving safety in Ireland's maritime domain.

5. CONCLUSIONS

5.1 The vessel was materially fit for purpose and in a stable condition immediately prior to the incident and the vessel's condition was not a factor in the fire and loss of *"FV Horizon"*.

5.2 The ignition source for the outbreak of the fire in the *"FV Horizon"* is not known with any certainty but it is reasonably deduced that an unattended mobile phone or other similar electronic device in the process of being charged and/or an electronic device battery charger into a 240V AC circuit in the crew accommodation cabin may have been the source of ignition for this fire and was a causative factor for the fire onboard the vessel. Reference paragraph 4.4.2.

5.3 The time delay (in fighting the fire) caused by the failure of the smoke detector alarm allowed the fire to take hold and spread before being spotted by the Skipper when he returned to the wheelhouse. The failure of the cabin smoke detector alarm was a causative factor in the spread of the fire onboard the vessel. Reference paragraph 4.2.

5.4 The combustible materials commonly used onboard *"FV Horizon"* (a wood constructed fishing vessel), particularly the amounts of LPG, oils and plastic onboard, provided adequate fuel for the fire. This enabled the fire to rapidly spread through the vessel and was a causative factor in the proliferation and extent of the fire onboard *"FV Horizon"*. Reference paragraph 4.5.

5.5 The exposure of the flexible plastic hose components of the vessel's machinery cooling systems to the fire in the engine room, allowing them to melt and lose their watertight integrity, thereby allowing seawater into the vessel to the extent that *"FV Horizon"* filled with seawater and sunk. That was a causative factor in the sinking. Reference paragraph 4.6.2.

5.6 The absence of fire proofing materials in the flexible hose components of the vessel's machinery cooling systems connecting to the through hull shipside valves allowed seawater to enter the vessel when the flexible hoses melted in the intense heat of the engine room fire. This allowed seawater to flood the vessel and was a causative factor in the sinking of *"FV Horizon"*. Reference paragraph 4.6.3.

5.7 Had the fire detection system onboard *"FV Horizon"* been more in-line with the more stringent requirements of the International FSS Code which requires the fire detection system to include both audible and visual fault signals, the fire in the accommodation cabin would likely have been detected earlier. However, *"FV Horizon"* was an "existing' vessel" in 2007 when S.I. 640 of 2007 was promulgated. Therefore, the lesser requirements of Regulation 80(17) of S.I. 640

of 2007 applied to the fire detection system on the *"FV Horizon"* and only audible smoke detector alarms were fitted. The less stringent requirements of Regulation 80(17) of S.I. 640 of 2007 which applied to the vessel's fire detection system was considered a contributory factor in the late or untimely detection of the fire in the accommodation cabin. Reference paragraph 4.3.

5.8 Two of the vessel's crew did not have the required BIM safety training courses completed. All fishing vessel crewmembers are required to undergo basic safety training as per S.I. 587 of 2001 which is required for any crew who have radio communication duties onboard vessels fitted with GMDSS equipment. GMDSS Radio Operators Certificate is a marine radio ROC. Reference paragraph 4.7.

6. SAFETY RECOMMENDATIONS

6.1 The Minister for Transport should prepare and issue a Marine Notice reminding owners, skippers, officers and crewmembers of fishing vessels of the requirement for all crewmembers of fishing vessels to have basic safety training in accordance with S.I. 587 of 2001.

6.2 The Minister for Transport should prepare and issue a Marine Notice reminding owners, skippers, officers and crewmembers of fishing vessels of the requirements for all crewmembers of fishing vessels in accordance with S.I. 640 of 2007 with the emphasis on ensuring that fire detection systems and alarms are regularly tested and maintained in an operational condition. The Marine Notice should include guidance on the inspection and testing of fire detection systems onboard fishing vessels of 15–24 metres in length.

6.3 The Minister for Transport should amend the 'Irish Maritime Directorate Strategy 2021 – 2025' policy document in order to incorporate Actions No.9 and No. 29 of the Maritime Safety Strategy (2015), Goal 1.6, paragraph 9 to "Develop a maritime safety policy and plan focussing on the wider aspect of maritime safety". i.e.,

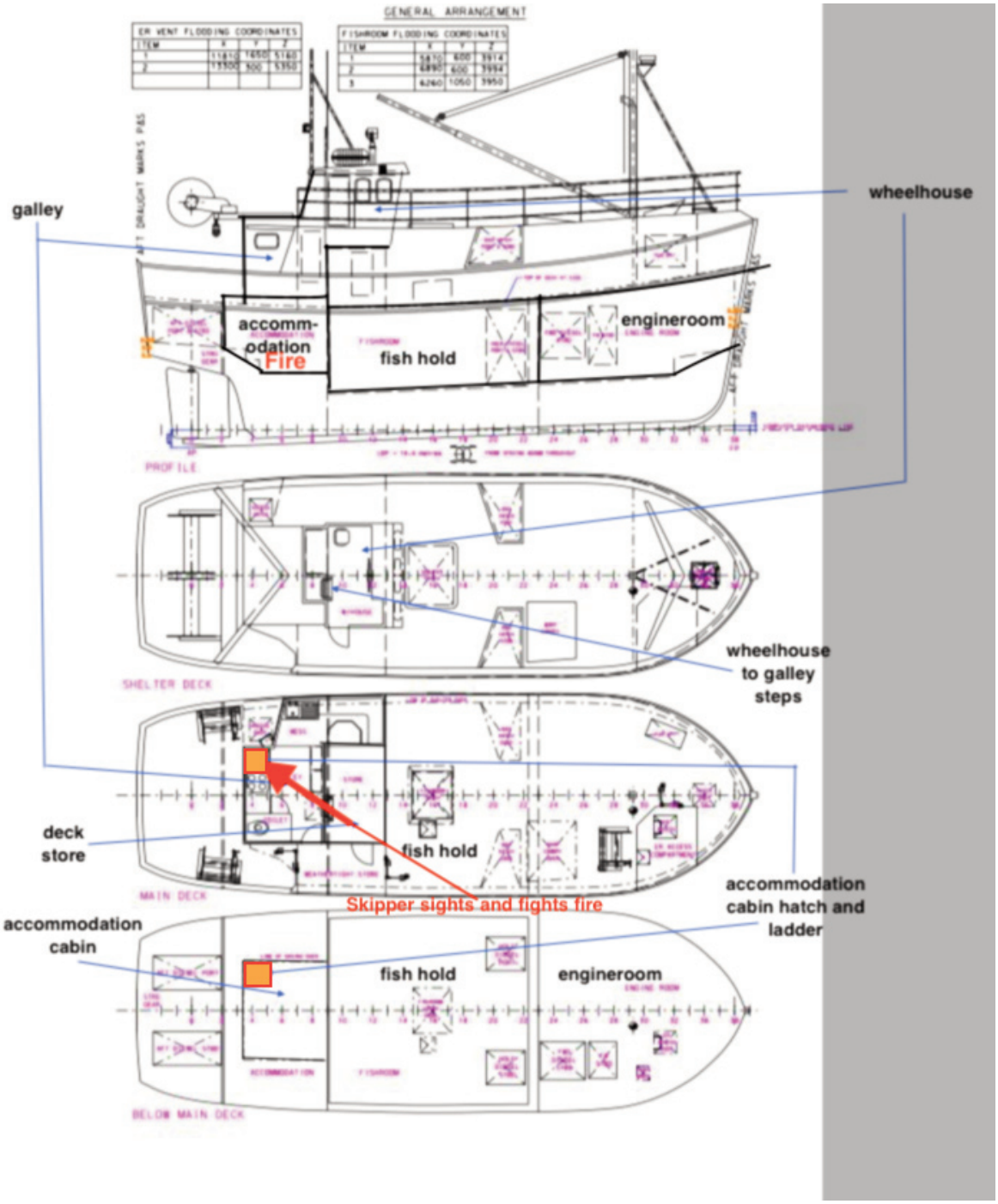
'Action 9. The standards for fishing vessels less than 24 metres in length will be updated, incorporating relevant MCIB recommendations. (Start 2015).'
And
'Action 29. An enhanced flag state inspection regime on fishing vessels will be implemented to promote adherence to maritime safety requirement in the sector. (Start 2016).'

See https://www.gov.ie/en/publication/d00485-maritime-safety-strategy/ for the April 2015 Maritime Safety Strategy.

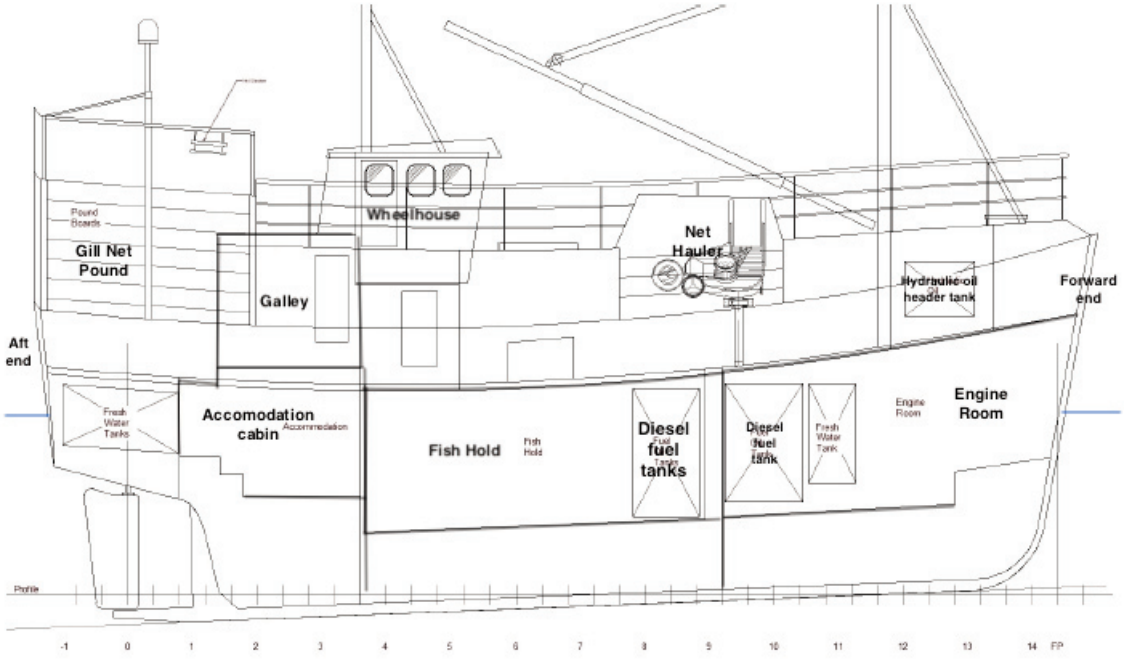
7. APPENDICES

Appendix 7.1 Photograph No. 1 - *"FV Horizon"*

Appendix 7.2 General Arrangement *"FV Horizon"*



Appendix 7.3 General Arrangement Profile Showing Accommodation and Galley



FV 'Horizon' profile - compartment arrangement

Appendix 7.4 Marine Survey Office Survey Report 6 October 2020

(v0.1)

Dept. of Transport, Tourism & Sport Marine Survey Office Leeson Lane Dublin 2		Phone: +353 (0)1 6783400 Email: FirstNameLastName@dttas.ie Web: www.dttas.ie

Report of Survey/ Inspection

TMS No:

Name of Vessel:	Horizon	ON/IMO:	
Type of Vessel:	15-24M Fishing Vessel	Port of Registry:	Skibbereen
Date of Survey:	06/10/2020	Place of Inspection:	Union Hall
Surveyor:	[redacted]	Activity:	{select inspection type}
Office:	Cork	Deficiencies:	Yes

Hull Modifications	☐	Exemptions / Equivalencies	☐

Inspection Operations

(Please tick the relevant areas inspected)

Hull Out of Water Survey	☐	Sea Valves & Skin Fitting	☐	Internal Void Space & Ballast Tank(s) Opened & Inspected	☐
Decks	☐	Steering / Engine Room	☒	Cargo Hold(s) / Tank(s)	☒
Accommodation	☒	Passenger Spaces	☐	Propeller Shaft & Rudder Removal	☐
Shell Plating U/T Inspection	☐	Safety Equipment	☒	Emergency Steering	☒
Sea Trials & Crew Drills	☐	Navigational Equipment	☒	MLC	☐
Radio Equipment	☐				
Other: Fire Pumps, Bilge alarms, Bilge pumping, fan and machinery stops tested					

Comments

FSVC Intermediate survey - Drills not undertaken due to social distancing limitations

Signature [redacted]

Appendix 7.4 Marine Survey Office Survey Report 6 October 2020

SUR 2500 Rev 2.00 (04/16)

Dept. of Transport, Tourism & Sport
Marine Survey Office
Leeson Lane
Dublin 2

Phone: +353 (0)1 6783400
Email: FirstNameLastName@dttas.ie
Web: www.dttas.ie

Deficiencies

Item No.	Nature of Deficiency	Legislation Reference (if detained)	Action Taken
1	All hydraulic controls to be labelled		16
2	Engine Bilge alarm panel – lights not working and buzzer erratic for low level alarm – to repair		17
3	Access ladder to fish hold – one securing lug on top of ladder sheared – to repair		16
4	Vessel has no means of connecting a fire hose to the powered pump – replace missing fire hose connection on the manifold Starboard side and attend to leaks from various connections on the manifold pipework		17
5	Petrol Emergency Fire pump not permitted – to remove from vessel		17
6	Engine room fire damper flap not closing fully - to repair/renew		17
7	Fire extinguishers to service		16
8	Weather door and hatch closing dogs – significant number noted as stiff or seized – all to be overhauled and operational		16
9	Fuel shut of signage to position adjacent to actual location. Mark up individual stops., all fuel stops to be connected and operational including day tank		17
10	Vessel failed its emergency battery discharge test – batteries to renew		17
11	Oil sample to take from Main Engine for analysis report to forward to MSO		16
12	Remote means of stopping engine room fans to provide from main deck		16
13	Emergency steering gear deck fitting – fit a suitable bronze plug for quick access		16

00	No Action Taken	18	ISM Non-Conformities: rectify before departure
10	Deficiency Rectified	19	ISM Non-Conformities: rectify within 3 months
12	All Deficiencies Rectified	30	Grounds for Detention
15	Rectify Deficiency at Next Port	35	Ship allowed to sail after detention
16	Rectify Deficiency within 14 days	70	Classification Society informed
17	Master instructed to rectify deficiency before departure	99	Other (Specify in Clear Text)

This report must be retained on board for a period of two years and must be available for consultation by a Department of Transport, Tourism & Sport Surveyor at all times. This inspection is based on random samples and therefore deficiencies may exist which may not have been identified.

Appendix 7.4 Marine Survey Office Survey Report 6 October 2020

Dept. of Transport, Tourism & Sport
Marine Survey Office
Leeson Lane
Dublin 2

Phone: +353 (0)1 6783400
Email: FirstNameLastName@dttas.ie
Web: www.dttas.ie

Deficiencies

Item No.	Nature of Deficiency	Legislation Reference (if detained)	Action Taken
14	Steelwork in Steering room - paint system failing corrosion set in – to clean back and apply suitable protective paint system		16
15	Deck access panel in crew accommodation moving underfoot – to investigate and secure		16
16	Type B First aid kit to stow in secure location – all expiry dates to confirm, and contents to be labelled for ready use. Vessel requires suitable O2 bottle and regulator to be provided		16
17	Official log book has not been returned to MMO as required – to undertaken and commence new agreement/logbook from 01/07/2020		17
18	Nautical Publications out of date – to renew		16
19	Deviation card for Compass to provide		16
20	Muster list to provide in wheelhouse		17
21	Training manual to provide		16
22	Vessels Risk H&S risk assessment to review and update		16

00	No Action Taken	18	ISM Non-Conformities: rectify before departure
10	Deficiency Rectified	19	ISM Non-Conformities: rectify within 3 months
12	All Deficiencies Rectified	30	Grounds for Detention
15	Rectify Deficiency at Next Port	35	Ship allowed to sail after detention
16	Rectify Deficiency within 14 days	70	Classification Society informed
17	Master instructed to rectify deficiency before departure	99	Other (Specify in Clear Text)

This report must be retained on board for a period of two years and must be available for consultation by a Department of Transport, Tourism & Sport Surveyor at all times. This inspection is based on random samples and therefore deficiencies may exist which may not have been identified.

Appendix 7.5 Marine Survey Office Survey Report 25 November 2020

(v0.1)

Dept. of Transport, Tourism & Sport
Marine Survey Office
Leeson Lane
Dublin 2

Phone: +353 (0)1 6783400
Email: FirstNameLastName@dttas.ie
Web: www.dttas.ie

Report of Survey/ Inspection

TMS No:

Name of Vessel:	MFV Horizon	ON/IMO:	
Type of Vessel:	15-24M Fishing Vessel	Port of Registry:	Skibbereen
Date of Survey:	25/11/2020	Place of Inspection:	Union Hall
Surveyor:	[redacted]	Activity:	Enforcement
Office:	Cork	Deficiencies:	Yes

Hull Modifications	☐	Exemptions / Equivalencies	☐

Inspection Operations

(Please tick the relevant areas inspected)

Hull Out of Water Survey	☐	Sea Valves & Skin Fitting	☐	Internal Void Space & Ballast Tank(s) Opened & Inspected	☐
Decks	☐	Steering / Engine Room	☐	Cargo Hold(s) / Tank(s)	☐
Accommodation	☐	Passenger Spaces	☐	Propeller Shaft & Rudder Removal	☒
Shell Plating U/T Inspection	☐	Safety Equipment	☐	Emergency Steering	☐
Sea Trials & Crew Drills	☐	Navigational Equipment	☐	MLC	☐
Radio Equipment	☐				

Inspection of vessel following unannounced conversion from trawler to Gill netting configuration. All winch drums, Gantry and towing gear removed and replaced with net bins aft and large Spenser Carter hauling winch stbd Fwd, with modifications to shelterdeck stabd to allow control of hauler from wheelhouse

Comments

Deficiencies

Item No.	Nature of Deficiency	Legislation Reference	Action Taken
	[redacted]		

Signatu

Appendix 7.5 Marine Survey Office Survey Report 25 November 2020

Dept. of Transport, Tourism & Sport
Marine Survey Office
Leeson Lane
Dublin 2

Phone: +353 (0)1 6783400
Email: FirstNameLastName@dttas.ie
Web: www.dttas.ie

		(if detained)	
1	Owner has not informed MSO of changes, did not produce drawing of new arrangements, nor undertake a review of vessels stability following major alterations – Owner instructed vessel is NOT to proceed to sea until: • Structural drawing forwarded to MSO for approval • Vessel to have Stability reviewed by a Naval Architect and report made to MSO, with provision for new inclining test, Vessels Stability Booklet to be re approved by MSO • Life raft has been relocated to top of wheelhouse where it will not float free in the event of vessel sinking – to relocate to a suitable location on shelter deck • All new hydraulic controls to be labelled • Vessel to be re inspected by MSO prior to proceeding to sea		
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			

00	No Action Taken	18	ISM Non Conformities: rectify before departure
10	Deficiency Rectified	19	ISM Non-Conformities: rectify within 3 months
12	All Deficiencies Rectified	30	Grounds for Detention
15	Rectify Deficiency at Next Port	35	Ship allowed to sail after detention
16	Rectify Deficiency within 14 days	70	Classification Society informed
17	Master instructed to rectify deficiency before departure	99	Other (Specify in Clear Text)

This report must be retained on board for a period of two years and must be available for consultation by a Department of Transport, Tourism & Sport Surveyor at all times. This inspection is based on random samples and therefore deficiencies may exist which may not have been identified.

Appendix 7.5 Marine Survey Office Survey Report 25 November 2020

SUR 2500 Rev 2.00 (04/16)

Dept. of Transport, Tourism & Sport
Marine Survey Office
Leeson Lane
Dublin 2

Phone: +353 (0)1 6783400
Email: FirstNameLastName@dttas.ie
Web: www.dttas.ie

12

Deficiencies

Item No.	Nature of Deficiency	Legislation Reference (if detained)	Action Taken
13			
14			
15			
16			
17			
18			
19			
20			
21			

00	No Action Taken	18	ISM Non Conformities: rectify before departure
10	Deficiency Rectified	19	ISM Non-Conformities: rectify within 3 months
12	All Deficiencies Rectified	30	Grounds for Detention
15	Rectify Deficiency at Next Port	35	Ship allowed to sail after detention
16	Rectify Deficiency within 14 days	70	Classification Society informed
17	Master instructed to rectify deficiency before departure	99	Other (Specify in Clear Text)

This report must be retained on board for a period of two years and must be available for consultation by a Department of Transport, Tourism & Sport Surveyor at all times. This inspection is based on random samples and therefore deficiencies may exist which may not have been identified.

Appendix 7.5 Marine Survey Office Survey Report 25 November 2020

SUR 2500 Rev 2.00 (04/16)

Dept. of Transport, Tourism & Sport
Marine Survey Office
Leeson Lane
Dublin 2

Phone: +353 (0)1 6783400
Email: FirstNameLastName@dttas.ie
Web: www.dttas.ie

Item No.	Nature of Deficiency	Legislation Reference (if detained)	Action Taken
22			
23			
24			

00	No Action Taken	18	ISM Non Conformities: rectify before departure
10	Deficiency Rectified	19	ISM Non-Conformities: rectify within 3 months
12	All Deficiencies Rectified	30	Grounds for Detention
15	Rectify Deficiency at Next Port	35	Ship allowed to sail after detention
16	Rectify Deficiency within 14 days	70	Classification Society informed
17	Master instructed to rectify deficiency before departure	99	Other (Specify in Clear Text)

This report must be retained on board for a period of two years and must be available for consultation by a Department of Transport, Tourism & Sport Surveyor at all times. This inspection is based on random samples and therefore deficiencies may exist which may not have been identified.

Appendix 7.6 Regulation 67 Distribution Systems and 68 Cables, of Part 4, Merchant Shipping (Safety of Fishing Vessels) Regulations 2007

Distribution systems.

67. Electrical distribution systems shall comply with the requirements of the "IEC 60092 —Electrical Installations in Ships" or "ISO Standard 13297:2000 Small craft electrical systems — alternating current systems".

Cables.

68. The design and installation of cables shall comply with the requirements of the "IEC 60092 — Electrical Installations in Ships".

Appendix 7.7 Marine Notice No. 37 of 2017

An Roinn Iompair Turasóireachta agus Spóirt
Department of Transport, Tourism and Sport

Marine Notice No. 37 of 2017

Notice to all shipbuilders, ship repairers, owners, masters, skippers, officers, ratings and crew of merchant ships, fishing vessels, pleasure craft and other users of marine craft.

Use of liquefied petroleum gas (LPG) installations and systems on merchant vessels, fishing vessels, pleasure craft and other marine craft.

This Marine Notice supersedes Marine Notice No. 1 of 2002.

In response to Marine Casualty Investigation Board recommendations, this Marine Notice replaces, restates and updates the content of Marine Notice No. 1 of 2002 regarding the use of LPG installations and systems on vessels.

Preamble

Whilst the Department of Transport, Tourism and Sport recognises that when handled and used correctly, LPG is a cost effective and versatile fuel for use on marine craft, it urges vessel owners, operators, masters and skippers to consider the use of other fuels such as electricity or gas oil for end appliances.

Dangers and Best Practice Guidance

Due to the continuing use of LPG systems on smaller cargo ships, fishing vessels, pleasure craft and other marine craft, the Irish Maritime Administration of the Department of Transport, Tourism and Sport wishes to draw attention to the dangers which may accompany the use of such systems, and to provide advice and guidance on the fitting and use of LPG installations and systems.

When handled incorrectly, the dangers associated with LPG systems include fire, explosion, burns and asphyxiation due to gas leakage from the system or accumulation of gas following flame failure in an appliance. Such incidents have caused loss of life and material damage.

Installation and Testing: To help prevent accidents with LPG systems, such systems should be installed at least in accordance with the **International Standard ISO 10239:2014 (Small craft – Liquefied petroleum gas (LPG) systems)** and with the **Appendix to this Marine Notice**, which includes the main points of ISO 10239:2014.

The Department of Transport, Tourism and Sport wishes to stress the importance of obtaining expert advice regarding the installation of LPG systems. It recommends that an inspection and test of such systems and associated alarm systems be carried out at least monthly to ensure their correct operation.

Appendix 7.7 Marine Notice No. 37 of 2017

Ventilation: As with any open flame type appliance, there is risk of asphyxiation due to oxygen depletion of the atmosphere and carbon monoxide poisoning where an open flame LPG appliance is operated in an area with inadequate ventilation, or where combustion is incomplete.

It is dangerous to sleep in spaces where open flame type appliances are operated. Heaters without flues should not be sited in sleeping quarters, adjoining spaces or in any unventilated spaces.

Marking and Storage: LPG is supplied in pressurised cylinders and is usually propane, butane or a mixture of the two gases. Cylinders must be clearly marked with their contents. LPG has a stenching agent added to enable the presence of gas to be detected by smell, even when its concentration in air is below its lower explosive limit. Butane systems operate at final pressure of 28 mbar and propane systems at 37 mbar. Appliances should be checked to verify which gas they consume. **Natural gas appliances are not suitable for use with LPG.**

Propane cylinders should be stored outside in a cylinder housing, whilst butane cylinders may be located in a cylinder housing or a cylinder locker. All cylinders must be stored and used upright. LPG systems draw off the vapour phase of the gas from the top of the cylinder whilst the liquid phase remains in the bottom of the cylinder.

LPG is heavier than air and any leakage will tend to fall to the bottom of a compartment. Gas may travel some distance like this and may form an explosive mixture with the air in the compartment. A spark as small as the static discharge from clothing may ignite such a mixture.

Gas detection and alarm system: In conjunction with any LPG system, the provision of an automatic gas detection and alarm system of a reliable type is strongly recommended and is required when a LPG appliance is installed in spaces below decks. It is essential that any electrical equipment associated with the gas detection alarm and shutoff system is not a potential source of ignition and is ignition protected in accordance with ISO 8846.

Any enquiries concerning this Marine Notice should be addressed to:

Marine Survey Office, Irish Maritime Administration
Department of Transport, Tourism and Sport
Leeson Lane
Dublin, D02 TR60
Phone: +353 (0)1 678 3400 **Email:** mso@dttas.ie

Irish Maritime Administration
Department of Transport, Tourism and Sport
Leeson Lane, Dublin, D02 TR60, Ireland.

23 August 2017

Appendix 7.7 Marine Notice No. 37 of 2017

Appendix to Marine Notice No. 37 of 2017

LPG Gas Systems – Main Points

Stowage of gas cylinders

Gas cylinders must be stowed in a cylinder housing or a cylinder locker such that any gas leakage may disperse rapidly.

Cylinders must be restrained against movement and stored upright.

On multiple cylinder systems, a non-return valve is to be placed in the supply line near the top of each cylinder. If a change over device is used, it must be provided with non-return valves to isolate any empty cylinders. Where more than one cylinder can supply a system, it shall not be put into use with a cylinder removed.

Containers not in use, whether empty or full, shall have the protective cap in place over the cylinder valve.

Cylinders shall never be lifted by the cylinder valve.

Safety Devices

Each LPG system shall be provided with **a pressure reduction system**, located within the cylinder housing or locker, designed to provide a fixed working pressure suitable for the consuming appliances.

Pressure regulators shall not be capable of external manual adjustment.

LPG systems should have **an automatic safety gas cut-off device** fitted in the low pressure supply line, located within the cylinder housing or locker, which will shut off the supply of gas in the event of a loss of pressure in the supply line, e.g. should a connecting pipe fracture. This device should be of the manual resetting type .

Each LPG system shall:

- have **an over pressure device**, located within the cylinder housing or locker, to prevent uncontrolled pressure in the low-pressure side;
- be fitted with a readily accessible manually operated **shut off valve in the supply pressure side**, located within the cylinder housing or locker and which may be the cylinder valve.

Each LPG appliance shall have a readily accessible **shut-off valve located close to the appliance** but it shall not be necessary to reach over the top of an appliance to access the valve. If there is only one appliance in the system and the main shut-off valve at the cylinder is readily accessible from the appliance, the low-pressure side shut-off valve need not be fitted.

Appendix 7.7 Marine Notice No. 37 of 2017

All shut-off valves are to be clearly marked to indicate their function and the open and closed positions.

Gas detectors should be provided in each compartment containing a LPG appliance. Gas detectors should be positioned and secured in the lower part of the compartment containing the appliance and be of a type that will be actuated promptly and automatically by the presence of gas concentration in air of not more than 0.5%.

Gas detectors should incorporate an audible and visual alarm. All electrical connections should be ignition protected in accordance with ISO 8846. The alarm unit/indicating panel should be located outside the compartment containing the appliance and the cylinder housing or locker, but be visible and audible from within the vicinity of the appliance. Gas detectors should be arranged to automatically cut off the supply of gas from within the cylinder housing or locker in the event of gas leakage being detected.

Carbon monoxide detectors should be provided in each compartment containing LPG appliances.

Smoke and/or heat detectors should be provided in each compartment containing LPG appliances.

Appliances

All LPG appliances fed from a LPG system shall be designed for use at the same working pressure.

Only appliances designated by the manufacturer for use with LPG in a marine environment shall be installed in the system. All appliances shall be fitted strictly in accordance with the manufacturer's instructions.

Each LPG appliance shall:

- be securely fixed to the craft. Gimballed appliances shall have the supporting structure securely attached to the craft. Gimballed appliances shall not have their free movement obstructed;
- have flame supervision devices that shut off the supply off gas to the burner in the event of flame failure;
- be clearly marked with the type of fuel gas to be used.

All unattended appliances shall be of the room sealed type, with air intake and flue for outgoing products of combustion terminating outside the craft and with the combustion chamber contained in a totally enclosed shield.

Appendix 7.7 Marine Notice No. 37 of 2017

Portable heaters, which contain a LPG cylinder inside the heater cabinet, are not suitable for marine craft and should never be used on board vessels of any type.

Cooking appliances shall have the following notice prominently displayed on or adjacent to the appliance:

> **'DANGER – Avoid asphyxiation. Provide ventilation when the stove is in use. Do not use for space heating. Do not cover. Do not use unattended.'**

Appliances shall be installed away from flammable materials and having regard to inadvertent contact of persons and materials with hot surfaces.

Stove tops shall have fiddles fitted to prevent cooking utensils from sliding off or across the top. These shall be effective to at least 15° pitch angle and 30° roll angle for single hull sailing craft and 15° angles of pitch and roll for motor craft and multi-hull sailing craft.

Fittings and pipe work

Pipe lines for LPG systems are, as far as practicable, to be of a single continuous length of solid drawn copper piping or drawn stainless steel piping from the cylinder housing or locker to the appliance or the shut-off valve. Thereafter, the piping is to be a further continuous length of solid drawn copper piping or drawn stainless steel piping to the appliance.

The **minimum wall thickness for piping** shall be 0.6mm for O.D. (outside diameter) less than or equal to 12mm and 0.9mm for piping greater than 12mm.

Piping shall not be of steel, aluminium, lead, plastic or other materials susceptible to either heat and/or corrosion.

In the case of gimballed appliances, a short length of flexible tubing is acceptable. Hoses assemblies shall be designed to be suitable for LPG and to withstand the stresses and exposure found in the marine environment. Hose assemblies shall have permanently attached end fittings such as swaged sleeve or sleeve and threaded insert.

All connections in a LPG pipeline are to be readily accessible, i.e. capable of being reached quickly and safely for maintenance or effective use under emergency conditions without the use of tools.

Piping should not pass through machinery spaces. Where this is unavoidable, it shall be protected by metallic conduit or trunking.

Fittings for joints to piping shall be metallic, galvanically compatible with the piping and of the following types:

Appendix 7.7 Marine Notice No. 37 of 2017

- Hard soldered
- Cutting ring fittings
- Compression fittings of copper alloy with solid or thick walled copper rings on copper piping
- Stainless steel rings on stainless steel piping.

Joints shall be made without jointing compound on flared or compression fittings.

Ventilation

Compartments containing a LPG appliance should not have access doors or openings to accommodation spaces or their passageways. Where this is impractical, mechanical exhaust ventilation should be trunked to within 300 mm of the deck or floor adjacent to the appliance and adequate inlet ventilation should be provided.

Mechanical ventilation should be designed and installed to eliminate incendive sparking due to friction or impact of the impeller with the fan casing. Electric motors driving fans should be located outside the space, preferably outside the trunking and clear of the outlet. Motors should be ignition protected in accordance with ISO 8846 where this cannot be achieved. Ventilation outlets should be separate from ventilation provided for cylinder housings and lockers, and located away from any intakes and sources of ignition.

Compartments containing a LPG appliance, which are situated on an open deck with direct access to the open deck and no opening direct to accommodation spaces or their passageways, should also be adequately ventilated, preferably by mechanical means.

In small craft where it is impracticable to provide mechanical ventilation as described above, all compartments containing LPG appliances should have adequate natural ventilation, which will prevent a dangerous accumulation of gas. Notwithstanding the need on some craft to be able to close ventilators against the ingress of water in bad weather, ventilation provided for LPG systems should never be closed. If it is necessary to close ventilation provided for LPG systems, the systems should be turned off and the gas supply isolated.

Natural ventilation provided for LPG systems should provide for the extraction of any gas leakage from the system and for the supply of fresh air. LPG is heavier than air and therefore exhaust trunking should be led from the lowest point in a compartment to the open air. Natural exhaust ventilation may be enhanced by the use of self-trimming cowls or rotary exhauster heads.

Ventilation, mechanical or natural, should not interfere with the flame pattern of a LPG appliance such that it may extinguish the flame or cause incomplete combustion of the gas.

The importance of adequate ventilation for LPG appliances cannot be over emphasised. On no account is a ventilation system to be interfered with to prevent it functioning correctly. To do so may put persons at risk of carbon monoxide poisoning, asphyxiation or explosion. Notices should be posted on or adjacent to ventilators advising officers and crew that they should not be closed or blocked.

Flues

Flue components, including ductwork and terminals, shall be installed in accordance with the manufacturer's instructions for small craft installations.

Flues shall be routed and sized to ensure complete discharge of the products of combustion outside the craft, including outside any areas which can be enclosed by canopies, and so as not to be obstructed by an accumulation of water. The flue system and air intake duct system shall each be continuous and sealed to be vapour tight, both between the air intake outside the craft and the appliance, and from the appliance to its terminal outside the craft. Dampers (shut-off valves) shall not be installed in flue systems.

Installation and Servicing

Only competent installers using the correct materials, tools and equipment should install LPG systems. On completion, the entire system should be tested and commissioned by a competent person prior to first use.

LPG systems should be installed in accordance with ISO 10239:2014 and this Marine Notice. Many references are made in ISO 10239:2014 to other ISO standards relevant to LPG systems. Installers should familiarise themselves with these standards.

LPG systems should be checked for leakage, general condition and correct operation at least monthly.

Ventilation systems should be checked for leakage, general condition, obstructions and correct operation at least monthly.

LPG leakage alarms, carbon monoxide alarms and smoke detectors should be tested for correct operation at least monthly.

LPG systems should be serviced by a competent person at least annually. The servicing should be such as to ensure that the system maintains compliance with the provisions and advice of this Marine Notice and ISO 10239:2014.

Appendix 7.7 Marine Notice No. 37 of 2017

The following installation tightness test (from ISO 10239:2014) should be carried out after installation of a LPG system:

- The LPG supply line and fittings shall be tested with air. This test shall be performed after installation of the system and appliance(s) as follows:

  a. open every branch of the distribution system from the regulating device connection point to the appliance(s);
  b. connect the test equipment and pressurize to not less than three times the operating pressure of the pressure regulation device, but not more than 15 kPa;
  c. allow a period of 5 minutes for pressure equilibrium;
  d. check that the pressure remains constant for not less than an additional 5 minutes.

  If any leakage is indicated by a drop in pressure, check the entire LPG system with a suitable leak detection solution to locate the leak while the system is under the test pressure.

  Test solutions shall be non-corrosive and non-toxic.

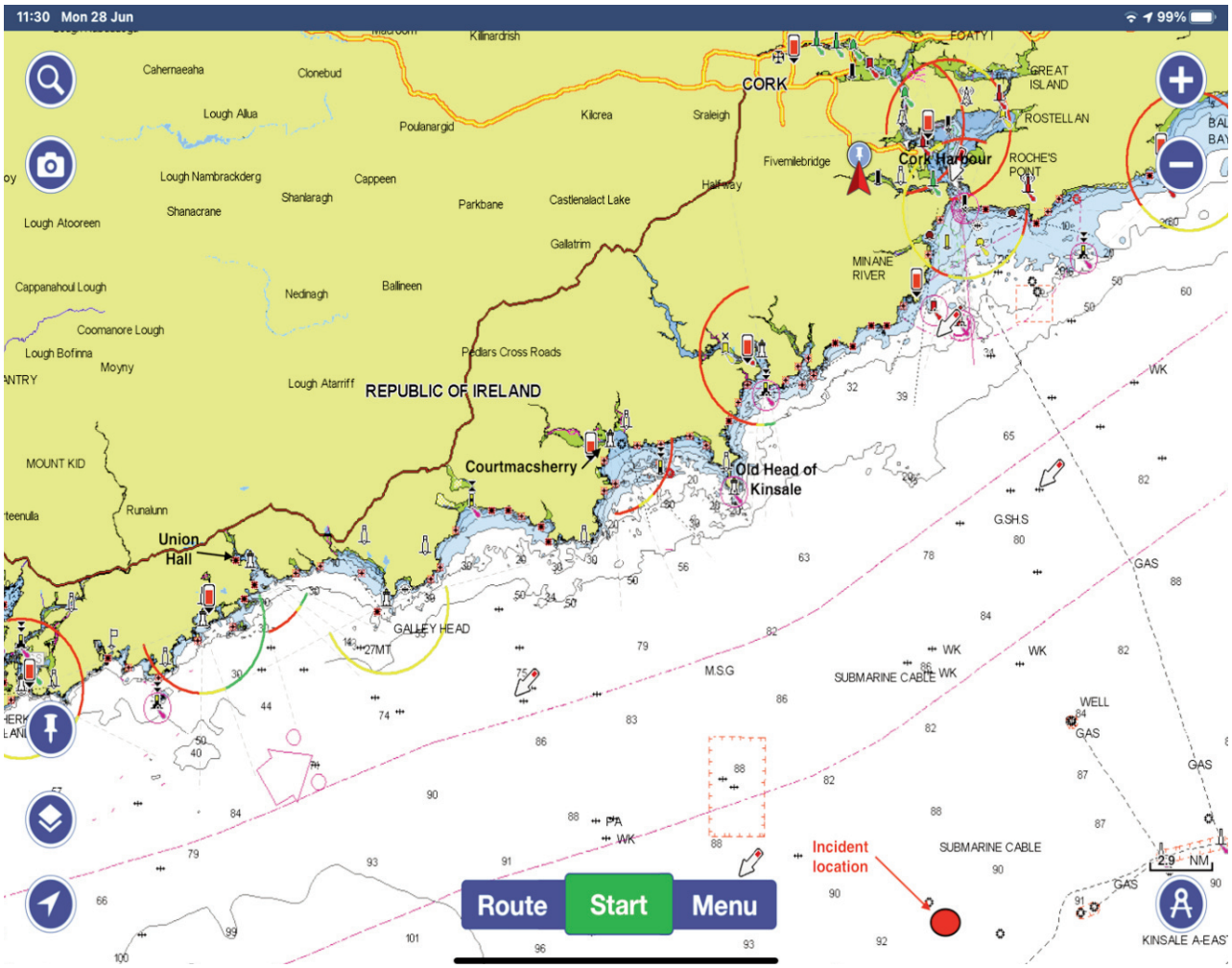
- Caution – ammonia, which is present in some soaps and detergents, attacks brass fittings. Although damage is undetectable at first, brass fittings may crack and leak in a matter of months after contact with ammonia.

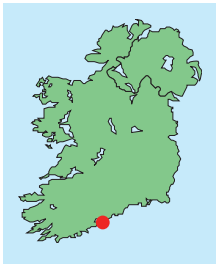
Emergency Action

A notice detailing the action to be taken when a gas leak is detected, or a fault with the system is discovered, should be prominently displayed on board the vessel. The notice should include at least the following:

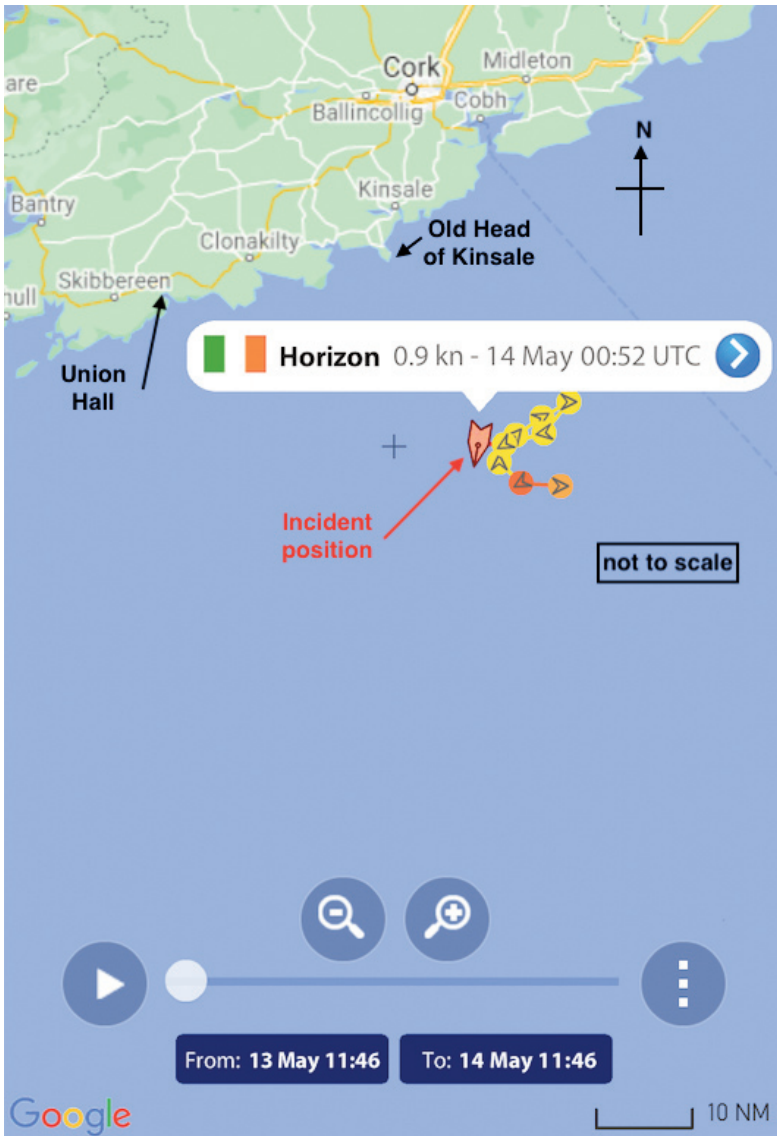
- The need to be alert for gas leakage.
- The action to be taken in the event of gas leakage being discovered.
- The use and location of fire extinguishing equipment on board the vessel.
- Any appliance instructions relating to the safe operation of appliances.
- The location of shut-off valves.
- The need to extinguish all flames, cigarettes and not to operate any electrical or other equipment which may induce a spark.

Appendix 7.8 Chart No.1 - Incident Location





Appendix 7.9 Chart No.2 - AIS Track *"FV Horizon"*



Appendix 7.10 IRCG SitRep One

ROUTINE
14 0055Z MAY 21
FROM MRSC VALENTIA
TO MRSC VALENTIA SITREP GROUP

BT
FV HORIZON ON FIRE/ABANDONING VL
UIIN0843/21
SAR SITREP ONE

A - IDENTITY OF CASUALTY:	F/V HORIZON
B - POSITION	51°19.00'N 008°17.00'W
C - SITUATION	FV HORIZON ON FIRE
D - NUMBER OF PERSONS	4
E - ASSISTANCE REQUIRED	SAR
F - COORDINATING RCC	MRSC VALENTIA
G - DESCRIPTION OF CASUALTY	UNKNOWN

H - WEATHER ON SCENE
WIND: 4, NW / SEA: MODERATE / SWELL: LOW WAVE / AIR TEMP: 10.5°C / WATER TEMP: 10.2°C / VIS: GOOD / CLOUD COV: CLEAR SKY / P [*]

J - INITIAL ACTIONS TAKEN	TASK R117,C/M/SHERRY LB,F/VLS,GB SHAW
K - SEARCH AREA	51 19N00817W
L - COORDINATING INSTRUCTIONS	SAR
M - FUTURE PLANS	N/A

N - ADDITIONAL INFORMATION
0040.FV HORIZON TX FIRE ONBOARD,4 POB,POS 51 19N00817W,ABANDONING VL.R117 TASKED
0042,MAYDAY RELAY X 3
0043,C/M/SHERRY LB TASAKED
0046,V/PATHFINDER,MEARSK MAKER REPLY TO MAYDAY RELAY,PROCEEDING TO SCENE
0050,FV BUDDY M PROCEED,ETA 35 MINS
0052,V/PATH F.R.V LAUNCHED
0055,G.B SHAW ADV ANCHOR B/COTTON
PASSED SITREP,REQ ASSIST,REVERT
0057.C/M/LB LAUNCHED.ETA 70 MINS
0105,G.B.SHAW WILL ASSIST
0115,VOS F.R.C ON SCENE,APPROCH L/RAFT
0119,VOS F.R.C 4 PERSONS ONBOARD FROM L/RAFT,ALL OK,PROCEED TO VOS PATHFINDER,C/M/LB ADV T0 PROCEED TO VOS P/FINDER TO REMOVE FV CREW [*]

BT

[* MSG TRUNCATED TO 2000 CHARS]

Appendix 7.11 IRCG SitRep Two

ROUTINE
14 0151Z MAY 21
FROM NMOC DUBLIN
TO MRSC VALENTIA SITREP GROUP

BT
FV HORIZON ON FIRE/ABANDONING VL
UIIN0843/21
SAR SITREP TWO

A - IDENTITY OF CASUALTY:	F/V HORIZON
B - POSITION	51°19.00'N 008°17.00'W
C - SITUATION	FV HORIZON ON FIRE
D - NUMBER OF PERSONS	4
E - ASSISTANCE REQUIRED	SAR
F - COORDINATING RCC	MRSC VALENTIA
G - DESCRIPTION OF CASUALTY	FV HORIZON,4 POB

H - WEATHER ON SCENE
WIND: 4, NW / SEA: MODERATE / SWELL: LOW WAVE / AIR TEMP: 10°C / WATER T [*]

J - INITIAL ACTIONS TAKEN	TASK R117,C/M/SHERRY LB,ST/BY VLS.F/VLS,GB SHAW
K - SEARCH AREA	51 19N00817W
L - COORDINATING INSTRUCTIONS	SAR
M - FUTURE PLANS	MONITOR

N - ADDITIONAL INFORMATION
0130,MSK MAKER ON SCENE, ATTEMPT TO EXTINGUISH FIRE.
0145,MNOC ADV R117 A/BRN,
0151,R117 ON SCENE
0152,V/P/FINDER ADV ALL SAR EQUIP ONBOARD,INCLUDING EPIRB
0153,M/MAKER ADV FIRE EXTINGUISHED,VL AFLOAT,COOLING
0158,L/B ETA P/FINDER 15MINS,WX FAVOURABLE TO T/FER CASUALTES TO L/B
0210,G.B.SHAW ETA 50 MINS
0214,C/M/SHERRY LB ONSCENE,P/FINDER
0228,R117 ADV 4 CASUALTIES T/FER TO L/B, R117 ST/DOWN.RTB
0230,C/M/S LB ADV CREW T/FERRED,RTB,ETA 70MINS,NO MEDICAL ASSIST REQ,P/FINDER RELEASED ,M/MAKER ST/BY FV HORIZON
0237,CANCEL MAYDAY RELAY
0258,M/MAKER ADV VL STILL ON FIRE,AFT
0308,R117 RTB [*]

REGARDS

[redacted]

MRSC VALENTIA

[* MSG TRUNCATED TO 2000 CHARS]

Appendix 7.12 IRCG SitRep Three

ROUTINE
14 0340Z MAY 21
FROM MRSC VALENTIA
TO MRSC VALENTIA SITREP GROUP

BT
FV HORIZON ON FIRE/ABANDONING VL
UIIN0843/21
SAR SITREP THREE AND FINAL

A - IDENTITY OF CASUALTY:	F/V HORIZON
B - POSITION	51°19.00'N 008°17.00'W
C - SITUATION	FV HORIZON ON FIRE
D - NUMBER OF PERSONS	4
E - ASSISTANCE REQUIRED	SEARCH AND RESCUE
F - COORDINATING RCC	MRSC VALENTIA
G - DESCRIPTION OF CASUALTY	FISHING VESSEL

H - WEATHER ON SCENE
WIND: 4, NW / SEA: MODERATE / SWELL: LOW WAVE / AIR TEMP: 10°C / WATER TEMP: 11°C / CLOUD COV: CLEAR SKY / SITREP WEATHER-TIME: 14 0340Z MAY 21

J - INITIAL ACTIONS TAKEN	MAYDAY RELAY BROADCAST. TASKED R117, COURTMACSHERRY ALB. TASKED L.E. GEORGE BERNARD SHAW.
K - SEARCH AREA	18 NM SSE OF OLD HEAD OF KINSALE.
L - COORDINATING INSTRUCTIONS	L.E. GB SHAW TO ASSESS VESSEL AT FIRST LIGHT
M - FUTURE PLANS	INCIDENT CLOSED.

N - ADDITIONAL INFORMATION
0340 MAERSK MAKER ADV FIRE EXTINGUISHED, REMAINING ONSCENE IF REQ'D, LIAISING WITH LE GB SHAW.
0437 C/MAC ALB ADVISES ALL 4 CASUALTIES SAFELY ASHORE, RTB AND CLOSING.
0505 INITIAL ASSESSMENT FROM GB SHAW, F/V EXTENSIVELY DAMAGED FROM FIRE.
0559 MV MAERSK MAKER CONFIRMS F/V HORIZON HAS SUNK. MAERSK MAKER AND L.E. GB SHAW RELEASED, MRCC ADVISED. ON CALL ADVISED.

INCIDENT CLOSED.
BT

Appendix 7.13 IRCG SitRep Pollution Monitoring

Subject: FV Horizon Pollution Monitoring POL 22/21 (UIIN0845/21) - SITREP Two

ROUTINE
14 1438Z MAY 21
FROM MRCC DUBLIN
TO MRCC DUBLIN SITREP GROUP

BT
FV HORIZON POLLUTION MONITORING POL 22/21
UIIN0845/21
SAR SITREP TWO

A - IDENTITY OF CASUALTY:	F/V HORIZON
B - POSITION	51°19.04'N 008°14.85'W
C - SITUATION SSE OF OLD HEAD KINSALE	POLLUTION MONITORING FOR FV HORIZON THAT SANK APPROX 18NM
D - NUMBER OF PERSONS	UNKNOWN
E - ASSISTANCE REQUIRED	MONITOR
F - COORDINATING RCC	NMOC DUBLIN
G - DESCRIPTION OF CASUALTY	FISHING VESSEL 2000 LITRES OF DIESEL 50 GALLONS OF LUBRICATION OIL ON BOARD.
H - WEATHER ON SCENE	WIND: 4, S / SEA: MODERATE / SWELL: LOW WAVE / AIR TEMP: 11°C / WATER TEMP: 11°C / CLOUD COV: OVERCAST / SITREP WEATHER-TIME: 14 1438Z MAY 21
J - INITIAL ACTIONS TAKEN	MONITOR.
K - SEARCH AREA	18NM SSE OF OLD HEAD OF KINSALE
L - COORDINATING INSTRUCTIONS	UNKNOWN
M - FUTURE PLANS	MONITOR

N - ADDITIONAL INFORMATION
14TH MAY 2021
1225Z: R117 TASKED TO CASUALTY SITE FOR POLLUTION OVERSIGHT
1401Z: R117 PROCEEDING
1432Z: R117 ONSCENE
1450Z: R117 RELEASED. REPORTED SPILL AREA APPROX 1-2 SQ NM. DIGITAL IMAGERY TAKEN OF SCENE. AWAITING FOOTAGE TO BE UPLOADED.

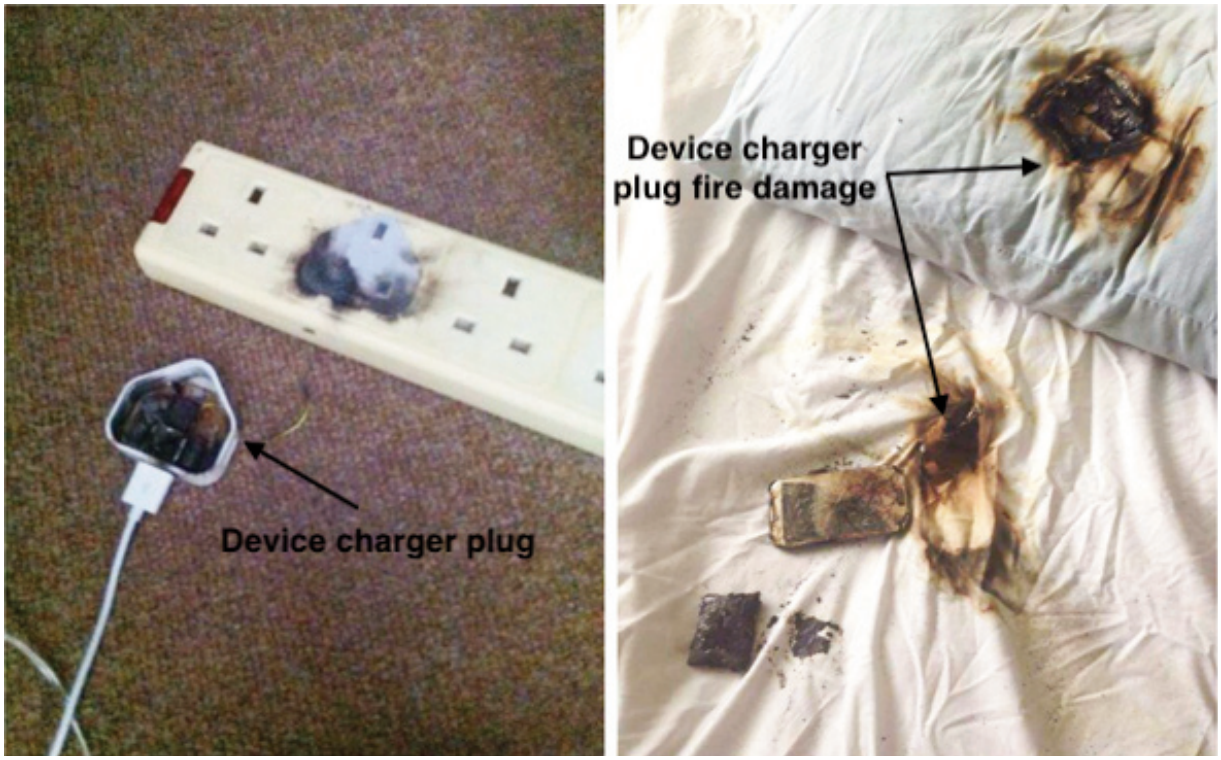
Appendix 7.14 Photograph No. 2 - *"FV Horizon"* Awash

Courtesy of Vessel *"Maersk Maker"* and IRCG

Appendix 7.15 Photograph No. 3 - *"FV Horizon"* Sinking

Courtesy of Vessel *"Maersk Maker"* and IRCG

Appendix 7.16 Image No. 1 - Electronic Device Battery Charger Fire Damage



Appendix 7.17 Image No. 2 - Lithium Battery Fire Damage

Appendix 7.18 Statutory Instrument No. 587 of 2001 Fishing Vessel (Basic Safety Training) Regulations

Basic Safety Training

4. (1) Every crew member of a fishing vessel shall undertake basic safety training as set out in this Regulation.

(2) Basic safety training shall consist of the following 3 training units-

(a) personal survival techniques, including man overboard techniques,

(b) elementary first aid, and

(c) fire prevention, health and safety training,

and shall be held in such establishments, to such standards, under such conditions and for such duration as BIM may approve and determine.

(3) The dates by which basic safety training must have been completed by each crew member are specified in the Table to this Regulation.

(4) A crew member who has not successfully completed basic safety training by the date specified in the Table shall not work on board a fishing vessel.

SECTION 36 PROCESS

Section 36 of the Merchant Shipping (Investigation of Marine Casualties) Act, 2000

It is a requirement under Section 36 that:

(1) Before publishing a report, the Board shall send a draft of the report or sections of the draft report to any person who, in its opinion, is likely to be adversely affected by the publishing of the report or sections or, if that person be deceased, then such person as appears to the Board best to represent that person's interest.

(2) A person to whom the Board sends a draft in accordance with subsection (1) may, within a period of 28 days commencing on the date on which the draft is sent to the person, or such further period not exceeding 28 days, as the Board in its absolute discretion thinks fit, submit to the Board in writing his or her observations on the draft.

(3) A person to whom a draft has been sent in accordance with subsection (1) may apply to the Board for an extension, in accordance with subsection (2), of the period in which to submit his or her observations on the draft.

(4) Observations submitted to the Board in accordance with subsection (2) shall be included in an appendix to the published report, unless the person submitting the observations requests in writing that the observations be not published.

(5) Where observations are submitted to the Board in accordance with subsection (2), the Board may, at its discretion -

(a) alter the draft before publication or decide not to do so, or

(b) include in the published report such comments on the observations as it thinks fit.'

The Board reviews and considers all observations received whether published or not published in the final report. When the Board considers an observation requires amendments to the report, those amendments are made. When the Board is satisfied that the report has adequately addressed the issue in the observation, then no amendment is made to the report. The Board may also make comments on observations in the report.

Response(s) received following circulation of the draft report (excluding those where the Board has agreed to a request not to publish) are included in the following section.

The Board has noted the contents of all observations, and amendments have been made to the report where required.

8. MSA 2000 – SECTION 36 OBSERVATIONS RECEIVED

No correspondence was received on the draft of this report.

Leeson Lane, Dublin 2.
Telephone: 01-678 3485/86.
email: info@mcib.ie
www.mcib.ie