



REPUBLIC OF THE MARSHALL ISLANDS

Maritime Administrator

PORTHOS AND ZHE FENG YU 1302 MARINE SAFETY INVESTIGATION REPORT

Collision

East China Sea | 16 December 2022

Official Number: 3518

IMO Number: 9408267



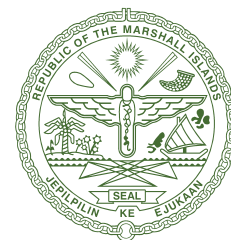
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AUTHORITY

An investigation, under the authority of the Republic of the Marshall Islands laws and regulations, including all international instruments to which the Republic of the Marshall Islands is a Party, was conducted to determine the cause of the casualty.



Maritime Administrator

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LIST OF ABBREVIATIONS AND ACRONYMS

2/O	Second Officer
3/O	Third Officer
AIS	Automatic Identification System
ARPA	Automatic Radar Plotting Aid
ASD	Able Seafarer Deck
China MSA	People's Republic of China Maritime Safety Administration
China FAB	People's Republic of China, Ministry of Agriculture and Rural Affairs, Fisheries Administration Bureau
C/O	Chief Officer
CPA	Closest Point of Approach
DWT	Deadweight Tonnage
EBL	Electronic Bearing Line
ECDIS	Electronic Chart Display and Information System
GNSS	Global Navigation Satellite System
kn	Knots
m	Meters
MMSI	Maritime Mobile Service Identity
MN	Marine Notice
MSA	Marine Safety Advisory
MRCC	Maritime Rescue Coordination Center
MSMC	Minimum Safe Manning Certificate
MT	Metric Tons
NM	Nautical Miles
No.	Number
OICNW	Officer in Charge of a Navigational Watch
OOW	Officer of the Watch
OS	Ordinary Seafarer
SMS	Safety Management System
T	True
TCPA	Time to Closest Point of Approach

LIST OF ABBREVIATIONS AND ACRONYMS (CONTINUED)

VDR	Voyage Data Recorder
VHF.....	Very High Frequency
VRM.....	Variable Range Marker

DOCUMENTS CITED

COLREGs.....	Convention on the International Regulations for Preventing Collisions at Sea, 1972
IMO Resolution A.1047(27).....	Principles of Minimum Safe Manning
ISM Code	International Management Code for the Safe Operation of Ships and for Pollution Prevention
MLC, 2006	Maritime Labour Convention, 2006
MN 7-038-02	Minimum Safe Manning Requirements for Vessels
SOLAS	International Convention for the Safety of Life at Sea, 1974
STCW Code	Seafarers' Training, Certification and Watchkeeping Code



PART 1: EXECUTIVE SUMMARY

At approximately 0416¹ on 16 December 2022, the Republic of the Marshall Islands-registered bulk carrier PORTHOS and the People’s Republic of China (hereinafter “China”) registered fishing vessel ZHE FENG YU 13028 collided while in a crossing situation. PORTHOS was the give-way vessel and ZHE FENG YU 13028, which was not engaged in fishing, was the stand-on vessel. The weather was good with visibility more than 5 NM.

The OOW was alone on PORTHOS’ Bridge. A designated Lookout had not been posted so that the deck ratings would be fully rested before undertaking the replacement of a running wire for the ship’s No. 3 deck crane. ZHE FENG YU 13028’s Captain was on watch and the Mate was also in the wheelhouse assisting with maintaining a proper lookout.

PORTHOS did not make any sound or light signals until the collision was imminent, at which time the OOW made a single blast of the ship’s whistle. ZHE FENG YU 13028 did not make any sound signals, but the Captain did attempt to attract attention by shining a laser pointer at PORTHOS.

¹ Unless stated otherwise, all times are ship’s local time (UTC +8).

The collision occurred soon after ZHE FENG YU 13028 turned toward PORTHOS when the fishing vessel was less than 0.7 NM off the bulk carrier's starboard bow. At the time, PORTHOS' OOW was using the autopilot to turn the ship to starboard.

Approximately three hours after the collision, the ZHE FENG YU 13028 sank. All six of the crewmembers who had been on board were rescued by another fishing vessel before ZHE FENG YU 13028 sank. PORTHOS' OOW did not inform the ship's Master of the collision or assist in the recovery and rescue of the crewmembers from ZHE FENG YU 13028 and continued on the ship's planned voyage.

The Republic of the Marshall Islands Maritime Administrator's (the "Administrator's") marine safety investigation determined that neither vessel made effective use of all available means to assess the risk of the collision as the two vessels approached each other. It was also determined that PORTHOS, which was the give-way vessel, did not take early and substantial action to keep clear of ZHE FENG YU 13028. Similarly, ZHE FENG YU 13028, which was the stand-on vessel, did not take any action to avoid collision until the vessels were in a close quarters situation and then turned toward PORTHOS contrary to COLREGs. Other factors that contributed to the collision included the fact that PORTHOS' OOW was alone on the Bridge and that he used the autopilot to maneuver the ship while in a close quarters situation.

The marine safety investigation further determined that the white deck lights on board ZHE FENG YU 13028 interfered with the ability of PORTHOS' OOW to see the navigation lights that were exhibited by the fishing vessel and of the fishing vessel's Captain to see the navigation lights exhibited by PORTHOS.

The following lessons learned were identified:

- The risk of collision is significantly increased when COLREGs is not adequately applied as two vessels are approaching each other.
- Maintaining a proper lookout must be prioritized over shipboard maintenance tasks.
- Navigation watchstanders need to make effective use of all available means to assess the risk of collision and to take early and substantial action when it is determined that there is a risk of collision.
- Autopilot should not be used when large alterations of course are required to resolve a developing situation with another vessel. An additional watchstander should be called to the Bridge in ample time so that the changeover from autopilot to manual steering can be made before a close quarters situation exists and so that the continuity of the lookout is not broken.
- Navigational watchstanders need to use extra caution when navigating in the vicinity of fishing vessels.
- Laser pointers should not be used to attract another vessel's attention.

PART 2: FACTUAL INFORMATION

The following factual information is based on the information obtained during the Administrator’s marine safety investigation.

PORTHOS ship particulars at the time of the incident: *see* chart to right.

ZHE FENG YU 13028 vessel particulars at the time of the incident: *see* chart on page 11.

PORTHOS

At the time of the collision, PORTHOS was a five hatch, geared bulk carrier registered in the Republic of the Marshall Islands (*see Figure 1*). The ship was managed by V.Ships Limited (the “Company”).

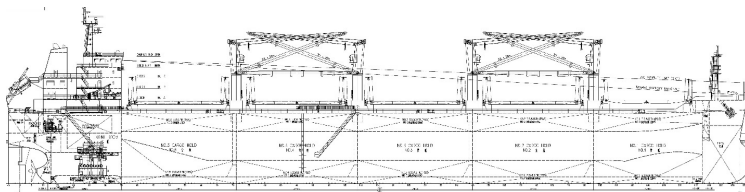


Figure 1: PORTHOS’ General Arrangement.

PORTHOS’ navigation and communications equipment included X-Band and S-Band² radars with integrated ARPA, two ECDIS, two VHF radios, and an AIS unit.

PORTHOS had a complement of 22 crewmembers. All of the ship’s crewmembers held valid Republic of the Marshall Islands seafarer documentation required for their position on board.

The Administrator did not observe any indication that PORTHOS’ Master or C/O had failed to receive the amount of rest mandated by the STCW Code, Section A-VIII/1, paragraphs 2 and 3, and MLC, 2006, Regulation 2.3.

Company’s SMS and Master’s Standing and Night Orders

The Company’s SMS included procedures for shipboard tasks, including navigational watchkeeping on board ships in the Company-managed fleet. Based on these procedures, the primary responsibility

² The S-Band radar was not connected to the VDR.

PORTHOS SHIP PARTICULARS

Vessel Name
PORTHOS

Registered Owner
Mistral Shipholding Co.

ISM Ship Management
V.Ships Limited

Flag State
Republic of the Marshall Islands

IMO No. 9408267	Official No. 3518	Call Sign V7RJ3
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Year of Build 2010	Gross Tonnage 33,044
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Net Tonnage 19,231	Deadweight Tonnage 56,825
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Length x Breadth x Depth
185.6 x 32.3 x 18 m

Ship Type
Bulk Carrier

Document of Compliance
Recognized Organization
Lloyd’s Register

Safety Management Certificate
Recognized Organization
Lloyd’s Register

Classification Society
Bureau Veritas

Persons on Board
22

of the OOW is the safe navigation of the ship. Further, the Company's SMS required that the OOW comply with COLREGs at all times and to provide all traffic "a wide and safe berth." These procedures also required that OOWs call the Master "when an alteration of speed or course does not eliminate a close quarters situation with another vessel." The Company defined a close quarters situation during an ocean passage as existing if the CPA is less than 1 NM with a TCPA of 10 minutes.

When underway at night on the open sea, the Company required that the bridge team, at a minimum, consist of an OOW, a Lookout, and, when required by the Master, a Helmsman. The Company's SMS also stated that the duties of the Lookout and Helmsman are separate, and that the Helmsman may not be considered to be the Lookout when steering. The Company's SMS also stated that "a look out **must be on the bridge** during the hours of darkness."³

The procedures in the Company's SMS that addressed the use of the autopilot included a statement that when the autopilot was engaged, "it is highly dangerous to allow a situation to develop where the OOW must break the continuity of the lookout in order to take emergency action. The OOW must consider the need to station a helmsman and engage manual steering to allow any potentially hazardous situation to be dealt with in a safe manner."

PORTHOS' Master issued Standing Orders that stated that OOWs were obliged to comply with COLREGs and that they were to maintain a safe navigational watch. The Master's Standing Orders also required OOWs to call the Master "if traffic conditions or the movements of other ships are causing concern" or "if in any doubt."

PORTHOS' Master's Night Orders for 16 December 2022 included requirements for the ship's OOWs to comply with COLREGs, keep a sharp look out, maintain a minimum CPA of 1 NM and TCPA of 20 minutes with other vessels, and to call immediately if in doubt or if heavy fishing vessel traffic was encountered. The Master's Night Orders did not include any instructions regarding the composition of the navigational watch.

Each of the OICNWs on board PORTHOS had signed the Master's Standing Orders and Night Orders for 16 December 2022.

ZHE FENG YU 13028

ZHE FENG YU 13028 was a 36.6 m, steel hull fishing vessel registered in China (see Figure 2).

ZHE FENG YU 13028 VESSEL PARTICULARS

Vessel Name

ZHE FENG YU 13028

Registered Owner

Li Bihang

Flag State

People's Republic of China

Gross Tonnage

223

Net Tonnage

78

Length x Breadth x Depth

36.6 x 6.6 x 3.6 m

Year of Build

2013

Ship Type

Fishing Vessel

Persons on Board

6

³ Emphasis in the original text.



Figure 2: ZHE FENG YU 13028 when launched in 2013 (Source: China MSA).

ZHE FENG YU 13028's navigation and communications equipment included an X-Band radar, a GNSS receiver, two VHF radios, and an AIS unit.

ZHE FENG YU 13028 had a crew complement of six persons on board, including the Captain and a Mate. The fishing vessel's crew did not include an assistant engineer and a mechanic as required by the minimum standards for ocean-going fishing vessels established by the China FAB. The fishing vessel's crewmembers who were on board all held certificates issued by the relevant national authority required for their position on board.

Narrative

At midnight on 16 December 2022, PORTHOS' 2/O relieved the ship's 3/O as the OOW. The ship was being steered by autopilot. At the time, the ship was underway in the East China Sea approximately 40 NM east of Zhongkuai Island, China on a northerly heading at a speed of 12.5 kn. The ship was laden with 25,674 MT of manganese ore on a voyage from Qinzhou, China to Tianjin, China, where it was due to arrive on 18 December 2022. The ship's drafts were 8.5 m forward and 9.6 m aft.

The ship's navigation and communication equipment, the main engine, auxiliary engines, and steering gear were all reported to be operational and working properly. The VHF radios were set on Channel 16. Additionally, it was reported that the lights required by COLREGs for a power-driven vessel of 50 m or more in length were being exhibited.⁴

⁴ When underway, PORTHOS was required by COLREGs Rule 23 to exhibit a white masthead light fore and aft, a red sidelight on the port side, a green sidelight on the starboard side, and a white sternlight.

The 2/O stated that AIS information was displayed on the X-Band radar⁵ and the two ECDIS units. The 2/O also reported that the ARPA was set for manual target acquisition and that the CPA limit was set to 1 NM but that neither the visual nor audible alerts for the ARPA on the X-Band radar and the S-Band radar were enabled. Based on the images recorded by PORTHOS' VDR when the 2/O relieved the 3/O as the OOW at midnight, the X-Band radar was on the 6 NM scale with the relative motion display with "own ship offset" selected. The CPA limit was set at 0.1 NM, the TCPA was set at 6 minutes, EBL1 was at 022.9° T, and VRM1 was at 0.53 NM (see Figure 3).⁶

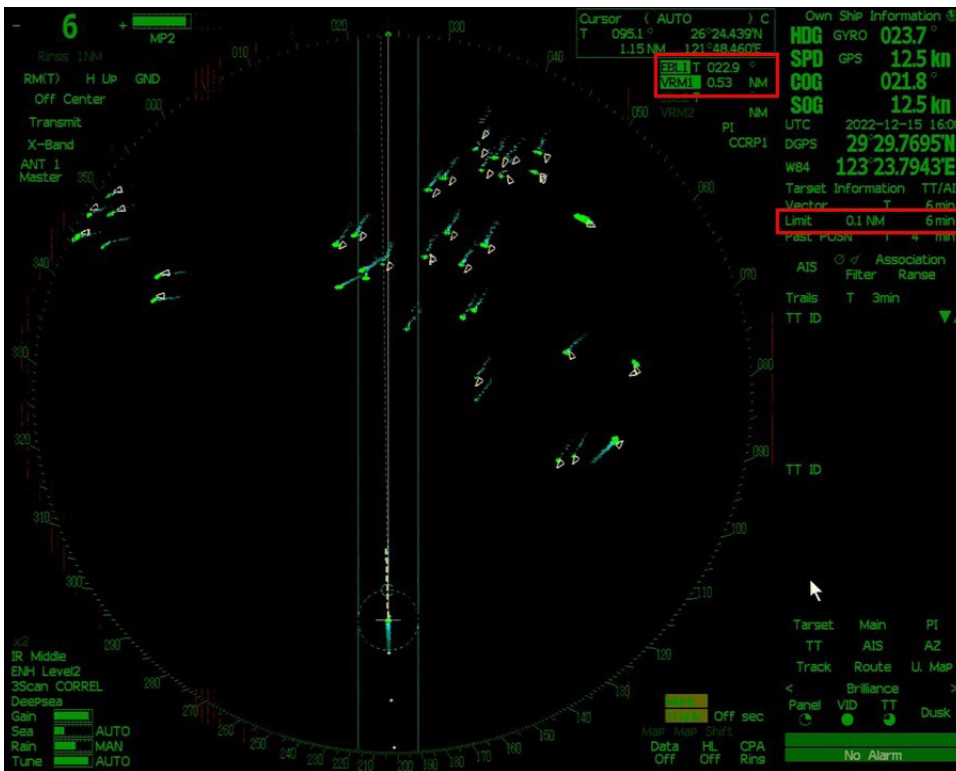


Figure 3: Image of PORTHOS' X-Band radar at midnight on 16 December 2022. The settings of the CPA and TCPA limits, EBL1, and VRM1 are highlighted in red.

Based on PORTHOS' drafts after departing Qinzhou, the obstructed view of the sea was approximately 260 m or 0.14 NM. When looking forward from the conning position, the deck cranes created a blind sector of 4.55° directly ahead of the ship.⁷

At the same time, the China registered fishing vessels ZHE FENG YU 13028 and ZHE LIN YU 21921 were underway on a west southwesterly heading at a speed of approximately 7 kn en route from the fishing grounds to Zhoushan, China. Neither was engaged in fishing. ZHE FENG YU 13028's Mate was the navigation watchstander until 0300, when he was relieved by the fishing vessel's Captain. The Mate remained on the Bridge after being relieved by the Captain to rest and to also assist with maintaining a look out.

⁵ AIS information could also be displayed on the S-Band radar, but that function had not been activated by the OOW.

⁶ Based on a review of the images of the X-Band radar that were recorded by PORTHOS' VDR from 2200 on 15 December 2022, which were the earliest images included in the VDR information for the collision of PORTHOS and ZHE FENG YU 13028, the limits for the CPA alarm were the same as they had been while the ship's 3/O had been on watch. Similarly, the limits for the CPA alarm for the X-Band radar's ARPA had not been changed by the time the VDR information for the collision was saved at approximately 1025 on 16 December 2022.

⁷ Per SOLAS regulation V/22.1.2, the view from PORTHOS' conning position of the sea surface directly ahead of the ship to 10° on either side was required to not be obstructed by more than 379.98 m. Further, no individual blind sector was permitted to exceed 5°.

ZHE FENG YU 13028's navigation and communication equipment, the main engine, auxiliary engines, and steering gear were all reported to be operational and working properly. One of the VHF radios on the Bridge was set to Channel 16. The fishing vessel was reported to have been displaying the lights required by COLREGs for a power-driven vessel of less than 50 m in length. It was also reported that the fishing vessel had six white deck lights on, two forward, and four aft.

The weather was reported as overcast skies with visibility of more than 5 NM. The winds were Beaufort Force 6 from the northeast. The seas were moderate with waves of 2 m and a swell of 2 m from the northeast. Nautical twilight began at 0538. Sunrise was at 0635.

PORTHOS' 2/O reported that vessel traffic had been light throughout his watch, but that the ship had encountered some fishing vessels that had been passed without incident.

At approximately 0340, the 2/O started turning PORTHOS from 015° T to the next planned course of 357° T. At the time, there were three fishing vessels passing down the ship's port side with a CPA of 0.75-1 NM and two other fishing vessels crossing ahead of the ship at a range of approximately 1.5 NM.⁸ At the same time, ZHE FENG YU 13028 and ZHE LIN YU 21921 were becoming visible on the ship's radar at approximately 7 NM off the ship's starboard bow (see Figure 4). All of the fishing vessels were on a west southwesterly heading.

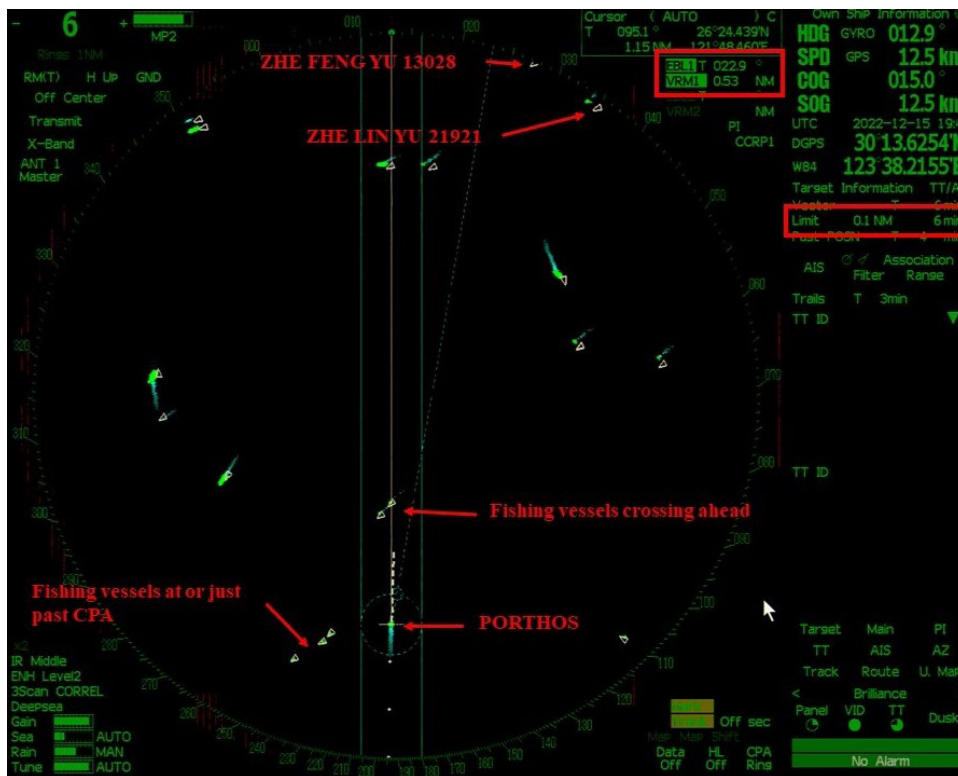


Figure 4: PORTHOS' X-Band radar at 0340. Note that the settings of the CPA and TCPA limits, EBL1, and VRM1 (marked in red) were the same as when the 2/O assumed the watch at midnight.

⁸ By 0347 these two fishing vessels had passed down the ship's port side with a CPA of approximately 0.5-0.6 NM as PORTHOS was turning to port.

At approximately 0350, PORTHOS' 2/O called the C/O to wake him for the next watch. The C/O arrived on the Bridge a few minutes later and conducted the watch handover with the 2/O. The C/O reported that during the watch handover he had checked the ship's navigational equipment and that he and the 2/O also reviewed the vessel traffic in the area. At the time the ship was being steered by autopilot and was steady on a course of 357° T at a speed of 12.5 kn.

The C/O stated that when he assumed the watch, the CPA alarms for the ARPA on both radars were set at 1 NM and that both the visual and audible alerts were enabled.⁹ He did not report the TCPA setting. Based on the images of the X-Band radar recorded by the PORTHOS' VDR, the limits for the CPA alarm were still set at 0.1 NM and 6 minutes (see Figure 5). The VHF radios were set on Channel 16. The watch handover was completed at approximately 0400 and the 2/O left the Bridge a few minutes later.

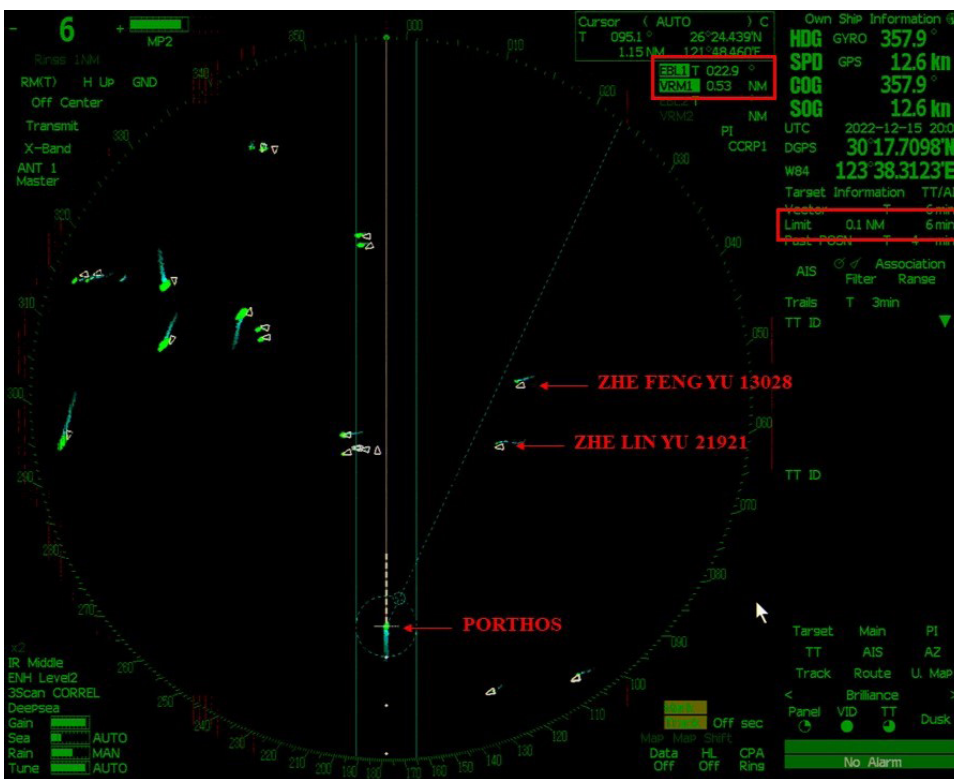


Figure 5: Image of PORTHOS' X-Band radar at 0400. Note that the settings for the CPA alarm, EBL1, and VRMI (marked in red) are the same as they were when the 2/O went on watch at midnight.

PORTHOS' C/O reported there were several fishing vessels approximately 2 NM off PORTHOS' port bow and two fishing vessels on a west southwesterly heading that were approximately 2-3 NM off PORTHOS' starboard bow when he started his watch. The closest of the two fishing vessels that were off the ship's starboard side was ZHE LIN YU 21921. The second fishing vessel was ZHE FENG YU 13028 (see Figure 5). The C/O stated that the 2/O had previously acquired them on the S-Band radar's ARPA while he was on watch.¹⁰ Other vessel traffic in the area

⁹ Whether the visual and audible alerts for the CPA alarm for the ARPA on the X-Band radar were enabled cannot be verified since this information is not included as part of the radar display.

¹⁰ As previously noted, the S-Band radar was not connected to the ship's VDR so this could not be verified.

included several merchant ships. The C/O also stated the fishing vessels had bright white deck lights and that he was unable to see any of the lights prescribed by COLREGs on either fishing vessel.

The relative bearing to ZHE LIN YU 21921 and ZHE FENG YU 13028 had not changed significantly since they were initially detected on radar (see Figures 3 and 4).

PORTHOS' C/O stated that after being on watch for a couple of minutes and observing the vessel traffic in the area visually and on radar, he determined the fishing vessels that were off PORTHOS' port bow would pass down the ship's port side. He also determined that ZHE LIN YU 21921 would pass ahead of PORTHOS and that the ship would then pass ahead of ZHE FENG YU 13028, but that the CPA with both fishing vessels would be "very close." He then decided to turn to starboard to increase the CPA with ZHE LIN YU 21921 and ZHE FENG YU 13028 to more than 1 NM while passing astern of the two fishing vessels. The C/O said he decided to not call the ship's Master since he was taking action so that the CPA with the two fishing vessels would be more than 1 NM.

Based on Bridge audio recorded by PORTHOS' VDR, between 0400–0407 there were six automated messages on VHF Channel 16 advising a ship it was near fishing boats and to navigate with caution. The ship was identified based on its call sign only. The letters and numbers that could be understood did not include any that were part of PORTHOS' call sign. The automated messages did not include the identity of the fishing vessel from which they were being broadcast.¹¹

At 0407, the Captain of ZHE FENG YU 13028 reported observing PORTHOS off the port bow on the fishing vessel's AIS display. He then checked the radar and determined the ship was heading north and was 3 NM away.

At 0408, the C/O stated he used the autopilot to turn PORTHOS to starboard. By this time ZHE LIN YU 21921 was 1–1.2 NM and ZHE FENG YU 13028 was approximately 2 NM off the ship's starboard bow (see Figure 5). The bearing to the fishing vessels had not changed appreciably since 0340 (see Figures 4–6). The C/O stated the CPA alarm on the S-Band radar activated and that he had acknowledged it. This could not be confirmed based on the Bridge audio recorded by the ship's VDR.

At 0410, ZHE LIN YU 21921 was crossing ahead of PORTHOS' bow at a range of approximately 0.6–0.7 NM and ZHE FENG YU 13028 was 1–1.2 NM off the ship's starboard bow at approximately the same bearing as it had been at 0400 and 0408. By this time, PORTHOS, whose heading had reached 007° T, started turning back to port (see Figure 6). The C/O stated he had not intended to turn back to port and that it was caused by the autopilot turning the ship back to the set course (357° T). The ship continued turning to port for almost 1.5 minutes before the C/O again used the autopilot to turn the ship back to starboard.

¹¹ Some Class-B AIS units manufactured in China include the capability of broadcasting automatic warning messages in English using a computer-generated voice. The messages typically include either the call sign or MMSI number of the vessel to which the message is addressed and a bearing and range from the position of that vessel. They also include a general warning that there are fishing vessels nearby and that the other vessel should navigate with caution. The operator of a vessel equipped with one of these devices can set the range at which the automatic messages are activated and how frequently they are repeated. These messages do not include the name, call sign, or MMSI number of the vessel from which they are transmitted.

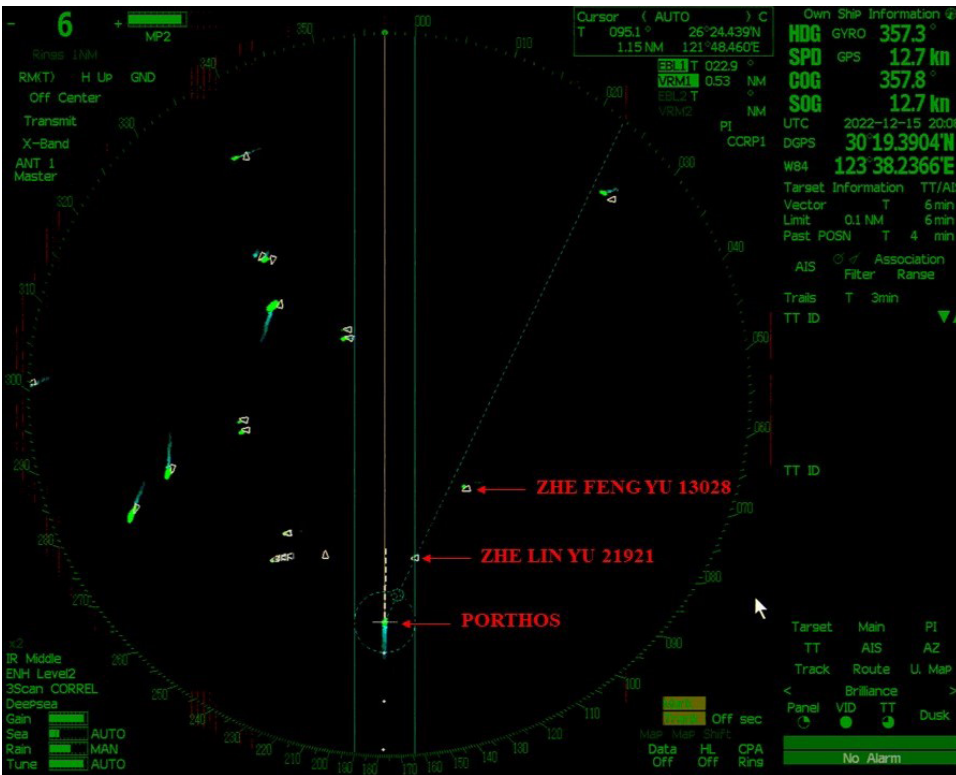


Figure 6: Image of PORTHOS' X-Band radar at 0408.

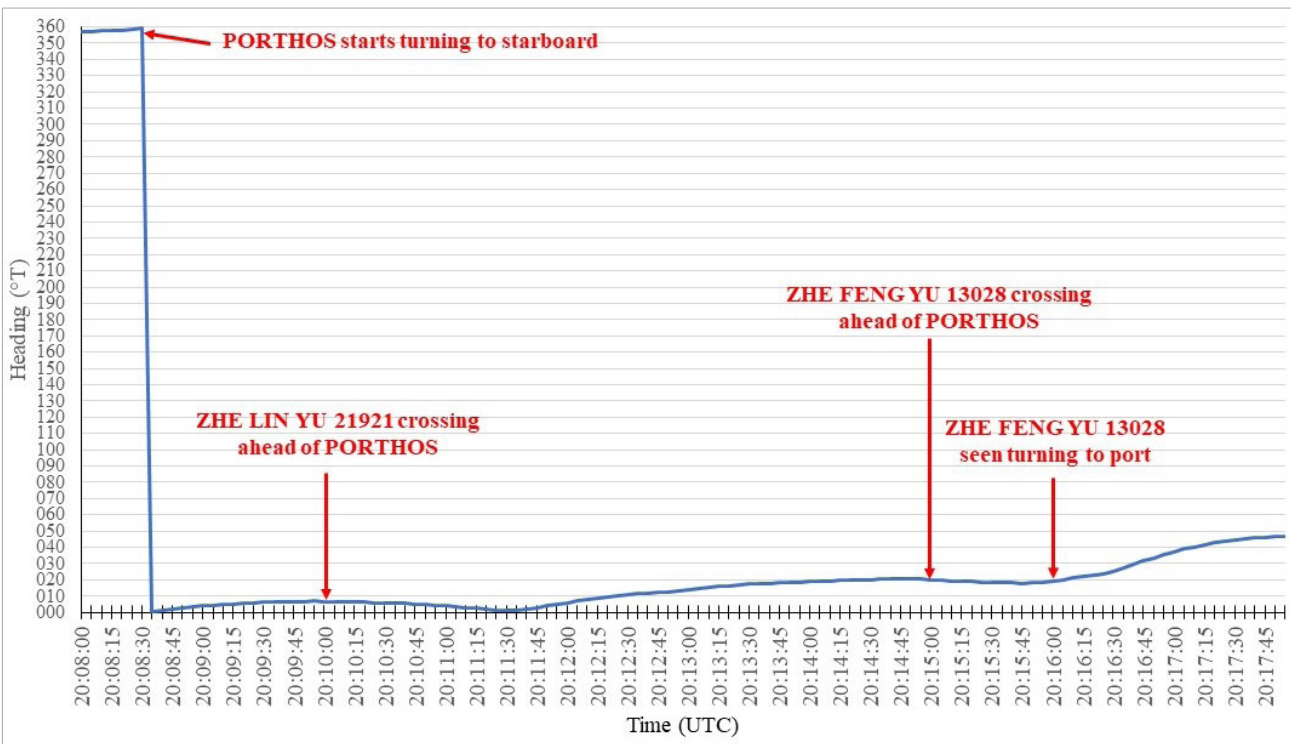


Figure 7: Plot of PORTHOS' heading from 0408–0418 as ZHE LIN YU 21921 and ZHE FENG YU 13028 crossed ahead of the ship's bow.

As ZHE LIN YU 21921 was crossing ahead of PORTHOS, a seventh automated message was heard on PORTHOS' VHF radio on Channel 16 that was addressed to the same ship as the messages heard between 0400–0407.

At about the same time that ZHE LIN YU 21921 was crossing ahead of PORTHOS' bow, ZHE FENG YU 13028's Captain shined a laser pointer at PORTHOS. The Captain of ZHE FENG YU 13028 said that he thought PORTHOS, which based on the fishing vessel's radar was 2 NM away, would pass astern of the fishing vessel. PORTHOS' C/O did not report seeing the laser.

At 0413, an automated message addressed to a ship whose call sign included the letters V, R, and J was heard over PORTHOS' VHF radio on Channel 16. The remaining letters and numbers were not clearly understandable. This message indicated that there were fishing boats at a bearing of 27° at 1.23 NM from the ship's position. This bearing and range was consistent with that of ZHE FENG YU 13028 from PORTHOS at that time. PORTHOS' C/O stated he heard this message and recognized that it included part of his ship's call sign. He also stated he did not give it any attention since he was already maneuvering to avoid ZHE LIN YU 21921 and ZHE FENG YU 13028.

By 0414–0415, as ZHE FENG YU 13028 appeared to be crossing ahead of PORTHOS' bow at a range of 0.7 NM, the ship, whose heading was 020° T, started turning back to port. PORTHOS' C/O reported that the CPA alarm on the S-Band radar had activated and that he had acknowledged it just before this. This could not be verified based on the Bridge audio recorded by the ship's VDR. The ship continued turning to port for just under a minute before the C/O used the autopilot to turn back to starboard (*see Figure 6*).

ZHE FENG YU 13028's Captain stated that at 0414 it appeared that PORTHOS would cross ahead of his vessel's bow. He then turned ZHE FENG YU 13028 hard to port to avoid a collision with PORTHOS.

At 0416, there was a second automated message addressed to a ship whose call sign included V, R, and J. The contents of this message were similar to the content of the message that was heard at 0413. The bearing from the vessel to which the message was addressed could not be heard because the C/O was yelling. The range included in the message was 0.4 NM. The C/O stated he saw ZHE FENG YU 13028 turn to port toward PORTHOS' bow (*see Figure 8*) as this message was being received. He also reported that he lost sight of the fishing vessel after seeing it turn to port and that he then sounded one short blast of the ship's whistle, which can be heard on the Bridge audio recorded by PORTHOS' VDR. The C/O then ran out on the starboard bridge wing. PORTHOS continued to turn to starboard as this occurred (*see Figure 7*).

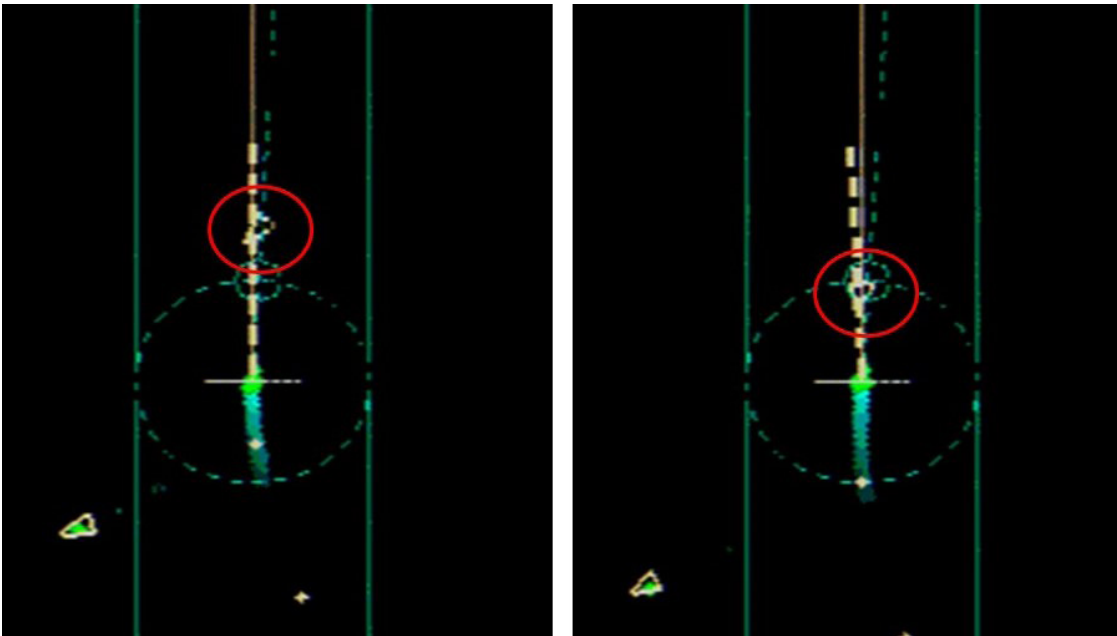


Figure 8: Images of PORTHOS' X-Band radar at 0415 (on left) and 0416 (on right) as the ship was turning to starboard. The radar display was set to relative motion. ZHE FENG YU 13028's turn to port as PORTHOS was turning to starboard is shown by the change of orientation of the AIS contact (circled in red). The AIS contact of PORTHOS' port quarter is ZHE LIN YU 21921.

The Captain of ZHE FENG YU 13028 stated that the collision occurred when PORTHOS' bow struck ZHE FENG YU 13028's hull on the starboard side in way of the fishing vessel's Engine Room, causing it to flood.

At 0418, there was a third automated message heard on the Bridge audio recorded by PORTHOS' VDR that was addressed to a ship whose call sign included the characters V, R, and J. This transmission included only the call sign before it stopped.

Post-collision

Immediately after the collision, ZHE FENG YU 13028's Captain directed the fishing vessel's crewmembers to put on lifejackets and to prepare a life raft for launching. He then transmitted a distress message on China Fishery VHF Channel 10000 before reporting the collision to the relevant regional office of the China FAB by mobile phone, which in turn informed MRCC Shanghai. The fishing vessel's Captain stated that he also tried calling PORTHOS on VHF Channel 16. Based on the Bridge audio recorded by PORTHOS' VDR, the transmission on Channel 16 was not heard on board PORTHOS.¹²

The C/O stated he could not see any damage to ZHE FENG YU 13028 as the fishing vessel passed down PORTHOS' starboard side due to darkness. He also stated that he did not consider trying to call the fishing vessel since he did not think the crew could speak English. The C/O decided to continue on the ship's planned voyage and to not call the Master since the fishing vessel appeared to be stable, was without a list or excessive trim by either the bow or stern, its lights were

¹² Information received from the flag States of the other merchant ships and the ISM managers of two Republic of the Marshall Islands-registered ships that were within approximately 25 NM of the position where the collision occurred indicated that the reported transmission from ZHE FENG YU 13028 to PORTHOS was not heard on the bridges of these ships.

still on, he had not heard any distress messages or calls to PORTHOS, and he did not think that there was any contact with PORTHOS. He did state that he continued to monitor ZHE FENG YU 13028 as the ship proceeded on its voyage and that he observed on radar and ECDIS that another fishing vessel remained near ZHE FENG YU 13028. He also stated that both vessels appeared to not be making way.

There were no entries in PORTHOS' Deck Log Book for the 0400–0800 watch other than for when the C/O handed the watch over to the 3/O at 0800.

At approximately 0900, the PORTHOS' agent in Tianjin, China called the ship. He informed the Master that PORTHOS had collided with a fishing vessel that had sunk. The agent also told the Master that China MSA had directed PORTHOS to divert to the anchorage off Xiushandong, China for an investigation. After receiving this call, the Master spoke with the C/O who told him that the ship had passed a fishing vessel very closely while he was on watch. The Master then went forward and observed a dent on the starboard side of the bulbous bow.

Consequences of Collision

ZHE FENG YU 13028's Engine Room was flooded due to damage to the hull when the fishing vessel and PORTHOS collided. The fishing vessel's crewmembers were not able to pump the water out of the Engine Room and at 0437 the Captain and five crewmembers safely transferred to ZHE FENG YU 26007.

At 0710, ZHE FENG YU 13028 was reported to sink in position 30° 19.9' N, 123° 38.0' E.

PORTHOS incurred minor damage to the ship's bulbous bow.

PORTHOS Navigational Watch

There was not a designated Lookout on duty as part of PORTHOS' navigational watch for the 2000–2400 watch on 15 December 2022 or for either the 0000–0400 or 0400–0800 watches on 16 December 2022. A designated Lookout had not been on duty because the Master and C/O had decided to let the ship's deck ratings sleep so they would be rested prior to replacing the running wire for the No. 3 deck crane later that day. The wire needed to be replaced so that the crane would be operational on arrival at Tianjin. The job had been scheduled to be completed on 15 December 2022 following the ship's departure from Qinzhou but could not be completed due to the weather.

The ship's Master, C/O, 2/O, and 3/O, who were on board when the collision occurred, reported that there had been multiple occasions when a designated Lookout had not been on duty for the 2000–2400, 0000–0400, or 0400–0800 navigational watches when all the deck ratings were needed to complete a heavy or time critical task, including hold cleaning.

The Company's SMS required that the minimum bridge team at night consist of an OOW and a Lookout. The bridge team could also include a Helmsman when required by the ship's Master. Based on PORTHOS' scheduled work arrangements, one of the three OICNWs and one of the three ASDs that were required to be on board by the MSMC issued by the Administrator were assigned to each of the three night (i.e., 2000–2400, 0000–0400, and 0400–0800) navigational watches. Neither of the two OSs required by the ship's MSMC or the Bosun were designated to be on

call in the event that an additional navigational watchstander was required to be on the Bridge during any of the three night navigational watches.

PORTHOS' Autopilot

PORTHOS was equipped with a Yokogawa Denshikiki Co. Ltd. PB343 auto steering unit (or autopilot) (see Figure 9). The autopilot was located on the console directly forward of the ship's wheel. Based on the user's manual for PORTHOS' autopilot, the set course could be changed while the autopilot was engaged by:

- (a) pressing down on and then turning the course setting dial until the display showed the new course; or
- (b) pressing either of the course setting buttons until the display showed the new course.

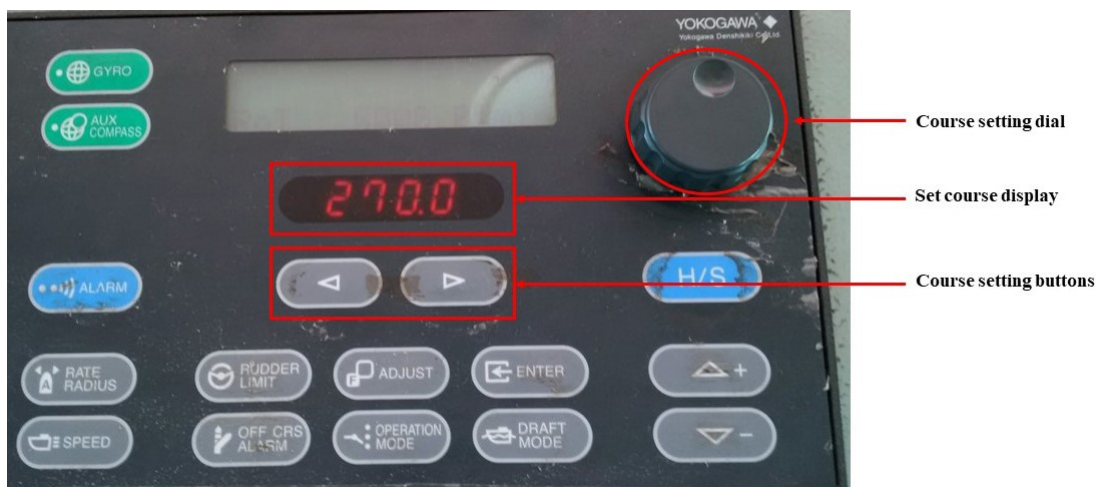


Figure 9: The autopilot on board PORTHOS showing the course setting dial, set course display, and the course setting buttons. The ship could be turned to port or starboard by turning the course setting dial to either the left or right or by pressing the left or right arrow course setting button.

The autopilot could not be overridden by turning the ship's wheel or by using the non-continuous follow-up switches without first changing the mode of steering using the selector switch, which was also located on the console next to the ship's wheel.

The user's manual for the autopilot included a warning that hand steering should be used when maneuvering around vessel traffic.

PART 3: ANALYSIS

The following Analysis is based on the above Factual Information.

Collision

PORTHOS, which was underway on a northerly heading, and ZHE FENG YU 13028, which was underway on a west southwesterly heading and was not engaged in fishing, collided while in a crossing situation, as defined by COLREGs

Rule 15, on the high seas approximately 40 NM off the coast of China. The collision occurred when ZHE FENG YU 13028, which was the stand-on vessel, turned to port, as PORTHOS, which was the give-way vessel, was turning to starboard to pass astern of ZHE FENG YU 13028. ZHE FENG YU 13028 contacted PORTHOS' starboard side.

ZHE FENG YU 13028's Engine Room flooded as a result of damage sustained when the collision occurred. The fishing vessel sank almost three hours after the collision. The Captain and five crewmembers who had been on board transferred safely to ZHE LIN YU 21921 before ZHE FENG YU 13028 sank. None of the fishing vessel's crewmembers were reported to have been injured as a result of the collision.

PORTHOS sustained only minor damage. There were no reported injuries on board the ship due to the collision.

Lookout

PORTHOS and ZHE FENG YU 13028 were both required by COLREGs Rule 5 to maintain "a proper look-out by sight and hearing as well as by all available means appropriate to the prevailing circumstances and conditions so as to make a full appraisal of the situation and the risk of collision."

The decision of PORTHOS' Master, which was made in consultation with the C/O, to not require that a designated Lookout be on the Bridge during the 2000–2400 navigational watch on 15 December 2022 and the 0000–0400 and 0400–0800 navigational watches on 16 December 2022 was contrary to the principles for navigational watches in the STCW Code that permit an OOW to serve as a ship's Lookout only during daylight.¹³ It was also contrary to the Company's SMS requirement that a designated Lookout be on the Bridge during hours of darkness.

ZHE FENG YU 13028's Captain had been on duty as the vessel's navigational watchstander from 0300 onward on 16 December 2022 after he relieved the vessel's Mate. The Mate remained on the Bridge but was also reported to have been serving as the vessel's Lookout.

Other means that were available to both PORTHOS' C/O and ZHE FENG YU 13028's Captain for maintaining a lookout included radar, AIS information, and radio transmissions from other vessels. The information that is available to the Administrator indicates that they both made use of radar and AIS information to detect other vessels.

Risk of Collision

Both PORTHOS and ZHE FENG YU 13028 were required by COLREGs Rule 7(a) to use all available means appropriate to the prevailing circumstances and conditions to determine if there was a risk of the two ships colliding. Further, since both vessels were equipped with operational radar, they were also both required by COLREGs Rule 7(b) to make proper use of the radar equipment to obtain early warning of the risk of collision. This includes radar plotting or equivalent systematic observation of detected objects. Per Rule 7(d), the risk of collision "shall be deemed to exist if the compass bearing of an approaching vessel does not appreciably change," and "such risk may sometimes exist even when an appreciable bearing change is evident...when approaching a vessel at close range." The intent of this rule is to determine if there is a risk of collision with another vessel early enough so that action can be taken as required by COLREGs Rule 8.

¹³ See STCW Code, Section A-VIII/2, part 4-1, paragraph 16.

The bearing from PORTHOS to ZHE LIN YU 21921 and ZHE FENG YU 13028 remained nearly constant while the distance between the vessels decreased from the time both fishing vessels could be seen on PORTHOS' X-Band radar at 0340 (see Figures 4–6). This should have made it apparent that there was a risk of PORTHOS colliding with one of these two fishing vessels before the C/O assumed the watch at 0400. Although it was reported that the 2/O had acquired ZHE LIN YU 21921 and ZHE FENG YU 13028 on the S-Band radar's ARPA, there is no indication that he made systematic observations of the fishing vessels visually or by radar, or that he had recognized that there was a risk of PORTHOS colliding with either of these fishing vessels.

Within a few minutes of assuming the watch, the C/O determined, based on his visual and radar observations of ZHE LIN YU 21921 and ZHE FENG YU 13028, that PORTHOS would pass between the two fishing vessels but that the CPA would be very close.

The C/O reported that the CPA alarm on the S-Band radar did not activate until approximately 0414–0415, when the distance between PORTHOS and ZHE FENG YU 13028 was less than 1 NM.¹⁴ This was less than 2–3 minutes before the collision occurred. This indicates that if the CPA alarm on the S-Band radar was set to activate at 1 NM as reported, the TCPA limit was set for less than the minimum TCPA of 10 minutes in the Company's SMS or he minimum TCPA of 20 minutes in the Master's Night Orders.

ZHE FENG YU 13028's Captain stated he first became aware of PORTHOS at 0407. At the time ZHE FENG YU 13028 was approximately 3 NM off PORTHOS' starboard bow. The fishing vessel's Captain maintained his vessel's course and speed based on his assessment that the ship would cross ahead of the fishing vessel. Based on the available information it is not known how the Captain made this determination or if he was aware that PORTHOS had started turning to starboard at 0408. Further, there is no information indicating he made systematic observations of PORTHOS either visually or by radar. The available information does indicate that ZHE FENG YU 13028's Captain had not recognized that there was a risk of a collision with PORTHOS until the range between the two vessels was 0.7 NM or less.

Action to Avoid Collision

COLREGs Rule 8 required both PORTHOS and ZHE FENG YU 13028 to take action to avoid collision. Further, COLREGs Rule 8(a) required that any action taken to avoid collision "shall, if the circumstances of the case admit, be positive, made in ample time and with due regard to the observance of good seamanship." Since PORTHOS and ZHE FENG YU 13028 were in sight of one another and were in a crossing situation as defined by COLREGs Rule 15, any actions taken by either vessel were required to be made in accordance with COLREGs Rules 15-18. Similarly, PORTHOS had also been in a crossing situation with ZHE LIN YU 21921.¹⁵

Because ZHE FENG YU 13028 was to starboard and forward of PORTHOS' beam, PORTHOS was the give-way vessel and was required to keep out of the way and, if possible, avoid crossing ahead of ZHE FENG YU 13028, which was the stand-on vessel.

¹⁴ As previously stated, the limits for the CPA alarm on the X-Band radar were set for 0.1 NM and six minutes.

¹⁵ PORTHOS remained the give-way vessel between ZHE LIN YU 21921 and ZHE FENG YU 13028 during both crossing situations.

The risk of PORTHOS colliding with either ZHE LIN YU 21921 and ZHE FENG YU 13028 should have been apparent before the C/O assumed the watch at approximately 0400 based on the fact that the bearing between the ship and these two fishing vessels had not changed appreciably from the time they were both first visible on PORTHOS' radar (see Figures 4–6). However, no action was taken to avoid a potential collision until 0408 when the C/O started turning the ship to starboard. By this time, the range to ZHE LIN YU 21921 was 1–1.2 NM and the range to ZHE FENG YU 13028 was approximately 2 NM. Both fishing vessels were off the ship's starboard bow (see Figure 6).

As the stand-on vessel, ZHE FENG YU 13028 was required by COLREGs Rule 17 to maintain its course and speed. However, per COLREGs Rule 17(a)(ii), ZHE FENG YU 13028 was permitted to maneuver to avoid collision “as soon as it becomes apparent to her that the vessel required to keep out of the way is not taking appropriate action in compliance with these Rules.” COLREGs Rule 17(c) also states that when a power-driven vessel in a crossing situation takes action to avoid collision, it “shall, if the circumstances of the case admit, not alter course to port for a vessel on her own port side.”

After sighting PORTHOS, ZHE FENG YU 13028's Captain maintained his vessel's course and speed until the fishing vessel was almost ahead of PORTHOS at a range of no more than 0.7 NM. He then turned to port, or toward PORTHOS, to try to avoid a collision. Not only was ZHE FENG YU 13028's Captain's decision to turn to port contrary to COLREGs, but considering the fishing vessel's position forward of PORTHOS, it was also not made in sufficient time to avoid a collision. Based on the available information, there is no indication that ZHE FENG YU 13028's Captain was aware that PORTHOS was turning to starboard when he decided to turn the fishing vessel to port.

Sound and Light Signals

COLREGs Rule 34(d) requires that “when vessels in sight of one another are approaching each other and from any cause either vessel fails to understand the intentions or actions of the other, or is in doubt whether sufficient action is being taken by the other to avoid collision, the vessel in doubt shall immediately indicate such doubt by giving at least five short and rapid blasts on the whistle. Such signal may be supplemented by a light signal of at least five short and rapid flashes.” Additionally, COLREGs Rule 36 permits the use of sound or light signals “that cannot be mistaken for any signal authorized elsewhere in these Rules.” This rule further states that “for the purpose of this Rule the use of high intensity intermittent or revolving lights, such as strobe lights, shall be avoided.” It is noted that the signal prescribed by COLREGs Rule 34(d) is mandatory, whereas signals permitted by COLREGs Rule 36 are optional.

PORTHOS' OOW sounded one short blast on the ship's whistle to signal ZHE FENG YU 13028 rather than the required “at least five short and rapid blasts.”¹⁶ Further, he did not sound the signal until after he observed the fishing vessel turn to port, or towards PORTHOS, and the collision was imminent. It is also noted that one short blast is prescribed by COLREGs Rule 34(a) to mean “I am altering my course to starboard” and per COLREGs Rule 36 should not have been used as a signal to attract attention.

There is no indication that ZHE FENG YU 13028's Captain used the fishing vessel's whistle or maneuvering light to signal PORTHOS before the collision. Prior to the collision he used a laser pointer in an attempt to attract the attention of PORTHOS' OOW.

¹⁶ When interviewed, the C/O confirmed that the signal was intended to attract the attention of ZHE FENG YU 13028 and not to signal, as prescribed by COLREGs Rule 34(a), to indicate that the ship was turning to starboard.

Lasers, which include handheld laser pointers, produce an intense, directional beam of light that have the potential to cause temporary blindness when pointed toward a person. Although lasers are not addressed by COLREGs Rule 36, they have the potential to interfere with the navigation of another vessel by temporarily blinding a navigational watchstander.¹⁷ Given their potential negative impact on safe navigation, they should not be used to attract the attention of another vessel.¹⁸

Navigation Lights

COLREGs Rule 20(b) allows the use of working lights by vessels engaged in fishing provided they, or any other lights, do not impair the visibility or distinctive character of lights required by COLREGs.

PORTHOS' C/O stated he could only see the white deck lights and not any of the lights prescribed by COLREGs on ZHE LIN YU 21921, ZHE FENG YU 13028, or any of the other fishing vessels that were in the area. As a result, the C/O was not able to visually determine the fishing vessel's aspect in order to accurately determine its heading.

Given the reported weather conditions and their height above the sea, PORTHOS' masthead lights would have been visible by the navigational watchstanders on ZHE LIN YU 21921 and ZHE FENG YU 13028 when the ship was at least 6 NM away from the two fishing vessels.¹⁹ However, ZHE FENG YU 13028's Captain stated he first became aware of PORTHOS when he observed the ship on the fishing vessel's AIS unit. At this time, the distance between the two vessels was 3 NM. Although it cannot be confirmed with certainty, the white deck lights on ZHE LIN YU 21921 and ZHE FENG YU 13028 may have interfered with the ability of ZHE FENG YU 13028's Captain to visually see PORTHOS at 6 NM. However, all other means required by COLREGs Rule 5 should have enabled the Captain to sight PORTHOS at a range greater than 3 NM.

PORTHOS Navigation Watchstanding

The Company's SMS established clear requirements regarding the OOW's responsibility for the safety of the ship and compliance with COLREGs, including maintaining a proper lookout using all available means. Similarly, the Standing Orders issued by PORTHOS' Master also provided clear guidance regarding maintaining a lookout and collision avoidance. These requirements were not fully implemented. Not only did the Master decide to not have a designated Lookout posted during the 2000–2400 navigational watch on 15 December 2022, and the 0000–0400 and 0400–0800 navigational watches on 16 December 2022, but the 2/O and C/O also did not take sufficient action to avoid close quarter situations with fishing vessels that were encountered while they were on watch. Additionally, the available information indicates that the CPA alarms on the X-Band and S-Band radars were likely not set as required by the Master's Standing Orders.

The 2/O's handover of the duty as OOW to the C/O was in accordance with the Company's procedures. However, the available information indicates that the watch handover between the 2/O and C/O was perfunctory. Although the 2/O and the C/O reportedly reviewed the vessel traffic in the area, there is no indication that the 2/O provided any indication

¹⁷ Due to the potential safety risks associated with lasers, some coastal States have enacted legislation making it illegal to point a laser at aircraft. Some coastal States have also made it illegal to point a laser at a vessel or other form of transport.

¹⁸ The Administrator issued Laser Pointers and COLREG Light Signals (MSA 15-23) on 29 September 2023 based on this marine safety investigation and another collision involving a different Republic of the Marshall Islands-registered ship.

¹⁹ The masthead lights on PORTHOS were required by COLREGs Rule 22(a) to have been visible from at least 6 NM away.

that there was a risk of collision with any of these vessels. Similarly, there is no indication that the C/O asked the 2/O if there was a risk of collision with any of the vessels in the area. In addition, it does not appear that the C/O recognized that the CPA alarm on the X-Band radar was set to 0.1 NM rather than 1 NM or that he verified that the CPA alarms on the X-Band or S-Band radars were configured so that both the audible and visual alarms would activate.

The Company's SMS and Master's Standing Orders both contained clear expectations for when the OOW should call the Master. Neither the 2/O nor the C/O called the Master when the ship encountered fishing vessels with CPAs of less than 1 NM or when an alteration of the ship's course did not eliminate a close quarters situation.²⁰ Further, the C/O did not call the Master after the close quarters situation with ZHE LIN YU 21921.

Use of Autopilot

The C/O stated that PORTHOS started turning back to port after ZHE LIN YU 21921 crossed ahead of the ship and again as ZHE FENG YU 13028 crossed ahead (see *Figure 6*) was due to the autopilot automatically turning the ship back to the previously set course (357° T). This is not consistent with how the ship's course could be changed when the autopilot was engaged. This indicates that the turns back to port were due to the C/O using either the course setting dial or course setting button (see *Figure 9*) to turn the ship back to port.

The C/O's use of the autopilot rather than changing to hand steering to maneuver PORTHOS as a close quarters situation was developing with both ZHE LIN YU 21921 and ZHE FENG YU 13028 was not consistent with the guidance in the Company's SMS regarding the use of the autopilot or the principles for navigational watches in the STCW Code. These principles require that OOWs take into account the need "to station a person to steer the ship and to put the steering into manual control in good time to allow any potentially hazardous situation to be dealt with in a safe manner."²¹

Consistent with the navigational principles in the STCW Code, the Administrator's requirements for minimum safe manning mandate that for navigational watches, "a routine for providing additional assistance without delay must be established," and that "standby personnel must be identified and immediately contactable."²² As stated previously, the working arrangements on board PORTHOS did not designate either of the two required OSs as being on call in the event that additional navigational watchstanders were required to be on the Bridge during any of the three night watches.

Actions After Collision

PORTHOS' C/O decided to continue on the ship's planned voyage without calling the Master, and did not turn back to determine if ZHE FENG YU 13028 needed assistance based on the fact that he observed the fishing vessel still afloat and he did not observe a clear indication that a collision had occurred. Although the C/O did monitor ZHE FENG YU 13028 and ZHE LIN YU 21921 on radar and ECDIS and noticed that neither of the two fishing vessels appeared to be making way, he continued PORTHOS' planned voyage. The C/O's decision to not determine if ZHE FENG YU 13028 required assistance was not consistent with the requirements of SOLAS regulation V/33.

²⁰ As previously stated, the Company defined a close quarters situation as existing when the CPA was less than 1 NM.

²¹ STCW Code, Section A-VIII/2, part 4-1, paragraph 35.1.

²² MN 7-038-2, paragraph 1.2.5. The reference is to revision Sep/2021, which was in effect on 16 December 2022. This requirement is unchanged in the Sep/2023 revision of this MN.

Automatic Messages

As previously noted, some Class-B AIS units manufactured in China include the capability of broadcasting automatic warning messages in English using a computer-generated voice on VHF Channel 16. These messages do not include the identity of the vessel from which the message is being sent. This can make it difficult for a navigational watchstander on other vessels to use AIS information to confirm the identity and position of the vessel transmitting the message, confirm that the risk of collision might exist, and then take action to avoid collision. This can reduce the potential benefit of these messages. The mechanical pronunciation of the computer-generated voice can make it difficult to recognize all of the letters and numbers of a radio call sign or numbers of an MMSI number. This can also reduce the potential effectiveness of these messages if a member of the navigational watch on board the vessel to which the message is addressed does not recognize the radio call sign or MMSI number included in the message. Although there is no indication that this occurred in the case of the automated messages that were transmitted in the minutes preceding the collision of PORTHOS and ZHE FENG YU 13028, these messages, particularly if repeated frequently, have the potential to interfere with other safety critical communications from other vessels that are within radio range of a vessel from which the automatic messages are being transmitted.

The three OICNWs on board PORTHOS were not in agreement as to whether they found these automatic messages useful or if they were a distraction. However, there was agreement among them that they are difficult to understand and that radio call signs are more likely to be recognized by navigational watchstanders than MMSI numbers.

PART 4: CONCLUSIONS

The following Conclusions are based on the above Factual Information and Analysis and shall in no way create a presumption of blame or apportion liability.

1. Factors that contributed to this very serious marine casualty include:
 - (a) ineffective navigational watchstanding on board PORTHOS in that:
 - (i) neither the 2/O nor the C/O made effective use of all available means, including visual bearings and the ship's ARPA, to properly assess the risk of collision with ZHE FENG YU 13028 or other fishing vessels that were encountered while on watch;
 - (ii) when maneuvering to avoid potential collisions with fishing vessels, the C/O did not make large enough changes of course to provide a CPA of at least 1 NM as required by the Company's SMS and the Master's Standing Orders;
 - (iii) the C/O used the autopilot rather than hand steering when maneuvering to avoid collision with ZHE LIN YU 21921 and ZHE FENG YU 13028; and
 - (iv) the C/O did not use sound or light signals until collision with ZHE FENG YU 13028 was imminent and then only sounded one short blast of the ship's whistle rather than at least five short rapid blasts as required by COLREGs Rule 34(d).

- (b) ineffective navigation watchstanding on board ZHE FENG YU 13028 in that the Captain:
 - (i) did not make effective use of all available means, including visual bearings, to assess the risk of collision with PORTHOS;
 - (ii) did not use sound signals or other approved means in an attempt to ascertain the intentions or actions of PORTHOS;
 - (iii) did not maneuver in sufficient time to avoid collision as permitted by COLREGs Rule 15(b); and
 - (iv) maneuvered contrary to COLREGs Rule 17(c).
- 2. Additional factors that may have contributed to this very serious marine casualty include the:
 - (a) decision of PORTHOS' Master to not require that a designed Lookout be posted;
 - (b) inadequate handover of the navigational watch on board PORTHOS from the 2/O to the C/O; and
 - (c) white deck lights on board ZHE FENG YU 13028 that may have interfered with the ability of the navigation watchstander on board PORTHOS to see the navigation lights exhibited by the fishing vessel and the ability of the fishing vessel's Captain to visually identify PORTHOS.
- 3. Additional issues that were identified but that did not contribute to this very serious marine casualty include:
 - (a) the working arrangements on board PORTHOS did not identify crewmembers to be on standby in case an additional navigational watchstander was required during night watches;
 - (b) the decision of PORTHOS' C/O to not determine if ZHE FENG YU 13028 was in distress and to continue on the ship's planned voyage;
 - (c) PORTHOS' C/O's apparent lack of familiarity with the operation of the ship's autopilot;
 - (d) ZHE FENG YU 13028 not being manned as per national requirements; and
 - (e) the use of a laser pointer by the Captain of ZHE FENG YU 13028, in an attempt to attract the attention of PORTHOS, had the potential to temporarily blind the ship's OOW.

PART 5: PREVENTIVE ACTIONS

In response to this very serious marine casualty, the Company has taken the following Preventive Actions:

1. A remote and onboard navigational audit was conducted to assess navigational watchstanding on board PORTHOS.
2. Bridge Team Management training was conducted on board PORTHOS based on the lessons learned during the Company's investigation.
3. A case study based on the collision of PORTHOS and ZHE FENG YU 13028:
 - (a) was reviewed as part of Bridge Team Management training on board all ships in the Company-managed fleet;
 - (b) will be reviewed as part of the pre-joining briefing for senior officers; and
 - (c) will be used for training during officer conferences.

3. The C/O was required to complete refresher Bridge Team Management simulator training.
4. The Administrator has issued:
 - (a) Laser Pointers and COLREGs Light Signals (MSA No. 15-23); and
 - (b) Navigation Watchstanding – Observations and Lessons Learned (MSA No. 16-23).

PART 6: RECOMMENDATIONS

The following Recommendations are based on the above Conclusions and in consideration of the Preventive Actions taken.

1. It is recommended that the Company:
 - (a) review and, as necessary, revise its procedures for:
 - (i) assessing the onboard implementation of its navigation watchstanding requirements on board ships in the Company-managed fleet;
 - (ii) assessing the competence of navigational watchstanders on board ships in the Company-managed fleet;
 - (iii) establishing onboard working arrangements for ships in the Company-managed fleet to require the designation of crewmembers to be on standby and immediately contactable as required by MN 7-038-2, paragraph 1.2.5 in case an additional navigational watchstander is required during night watches; and
 - (iv) ensure that OICNWs working on board Company-managed ships are aware of the Master's responsibility to render assistance.
2. It is recommended that the China FAB consider:
 - (a) undertaking a campaign directed toward the operators of China-flagged fishing vessels to:
 - (i) remind them of the requirements and application of COLREGs; and
 - (ii) make them aware that the use of laser pointers to attract the attention of another vessel can cause temporary blindness and interfere with safe navigation; and
 - (b) informing manufacturers of Class-B AIS units that have the capability of transmitting automatic messages that the potential usefulness of these messages can be reduced due to:
 - (i) not including the identity of the vessel from which they are transmitted;
 - (ii) the computer-generated voice can be difficult for navigational watchstanders to understand; and
 - (iii) a navigation watchstander not recognizing MMSI numbers as quickly as a vessel name or radio call sign.

The Administrator's marine safety investigation is closed. It will be reopened if additional information is received that warrants further review.