

MA2016-3

**MARINE ACCIDENT  
INVESTIGATION REPORT**

**March 31, 2016**



The objective of the investigation conducted by the Japan Transport Safety Board in accordance with the Act for Establishment of the Japan Transport Safety Board is to determine the causes of an accident and damage incidental to such an accident, thereby preventing future accidents and reducing damage. It is not the purpose of the investigation to apportion blame or liability.

Kazuhiro Nakahashi  
Chairman,  
Japan Transport Safety Board

Note:

This report is a translation of the Japanese original investigation report. The text in Japanese shall prevail in the interpretation of the report.

# MARINE ACCIDENT INVESTIGATION REPORT

Vessel type and name: Cargo ship, FUKUKAWA

IMO number 8808135

Gross tonnage: 1,451 tons

Vessel type and name: Fishing vessel, TSUNOMINE MARU

Fishing vessel registration number: FO3-29975

Gross tonnage: 4.79 tons

Accident type: Collision

Date and time of occurrence: Around 02:04 on June 15, 2013

Occurrence location: The north off coast of Genkai Shima Island, Fukuoka City, Fukuoka Prefecture  
Around 359° true, 9.5 nautical miles from the Genkaishima Lighthouse  
(Approximately 33° 51.0'N, 130° 14.0'E)

February 25, 2016

Adopted by the Japan Transport Safety Board

Chairman Norihiro Goto

Member Kuniaki Shoji

Member Satoshi Kosuda

Member Toshiyuki Ishikawa

Member Mina Nemoto

# SYNOPSIS

## <Summary of the Marine Accident>

While the cargo ship FUKUKAWA, on which the Master and nine other people crew were on board, was in its way in the north-east direction toward Hanshin Port Osaka District in the Sea of Genkai, and while the fishing vessel TSUNOMIME-MARU, on which the Skipper alone was on board, was in its way in the south-southeast direction toward Hakata Port, Fukuoka City, Fukuoka Prefecture, both collided in north off coast of Genkai Shima Island, Fukuoka City, at around 02:04 on June 15, 2013.

TSUNOMIME MARU, the Skipper died, caused damage to the bow section and capsized.

FUKUKAWA produced an abrasions on the port bow section, but there were no death and casualties.

## <Probable Causes>

It is probable that this accident occurred, at night, when it became a restricted visibility state due to fog in the north offshore of the Genkai Shima Island, while FUKUKAWA was navigating in north-eastward and TSUNOMIME MARU was navigating in south-southeastward, because both ships maintained the course and speed in the same degree, they had collided together.

The reason for FUKUKAWA continued navigation maintaining the course and speed was that the third officer, while recognizing that TSUNOMIME MARU was coming towards FUKUKAWA, expected to be able to avoid TSUNOMIME MARU even by turning the direction after TSUNOMIME MARU approached nearer.

## <Safety Actions>

In order to prevent recurrence of the same accident and to reduce the damage, the Master, crew members and the ship management company are required to take the following measures.

- (1) A person on duty of the bridge watch, when it became a restricted visibility condition, shall take measures including reporting to Master, blowing of the fog signal sound, reducing the speed, and switching-over to the manual steering, and stopping of the vessel if necessary.
- (2) A person on duty of the bridge watch, if a collision occurred, so that search and rescue of human and vessel can be appropriately performed, shall record the time and place of the occurrence of the accident.
- (3) Master, if a collision occurred, shall carry-out notification to the search and rescue agencies of the coastal state and ship managing company, return to the accident place, appropriately carry-out the search and rescue.
- (4) As to the above (1) through (3), for the master and crew members of a ship owned or managed, education shall be strengthened by using the case of this accident, and it shall be thoroughly communicated.

## <Safety Recommendations>

The Japan Transport Safety Board, based on the results of the accident investigation, against the TIAN CHEN INT'L SHIPPING MANAGEMENT CO., LIMITED, recommend the following actions to be taken.

- (1) To the masters and crew members, captain and crew, when it became a restricted visibility condition, it shall be thoroughly instructed to comply with the Safety Management Manual.

- (2) To the masters and crew members it shall be thoroughly instructed to comply with the Urgent Procedure Book.
- (3) To the masters, if a collision occurred, it shall be thoroughly instructed to carry-out notification to the search and rescue agencies of the coastal state and the TIAN CHEN INT'L SHIPPING MANAGEMENT CO., LIMITED, and return to the accident place, appropriately carry-out the search and rescue.
- (4) As to the above (1) through (3), for the master and crew members of a ship owned or managed, education shall be strengthened by using the case of this accident, and it shall be thoroughly familiarized.

# 1. PROCESS AND PROGRESS OF THE INVESTIGATION

## 1.1 Summary of the Marine Accident

While the cargo ship FUKUKAWA, on which the Master and nine other people crew were on board, was in its way in the north-east direction toward Hanshin Port Osaka District in the Sea of Genkai, and while the fishing vessel TSUNOMIME-MARU, on which the Skipper alone was on board, was in its way in the south-southeast direction toward Hakata Port, Fukuoka City, Fukuoka Prefecture, both collided in north off coast of Genkai Shima Island, Fukuoka City, at around 02:04 on June 15, 2013.

TSUNOMIME MARU, the Skipper died, caused damage to the bow section and capsized.

FUKUKAWA produced an abrasions on the port bow section, but there were no death and casualties.

## 1.2 Outline of the Accident Investigation

### 1.2.1 Set up of the Investigation

The Japan Transport Safety Board appointed an investigator-in-charge and other two accident investigators to investigate this accident on June 17, 2013.

In addition, the investigation of this accident, was joined by one of the regional accident investigator from Moji office.

### 1.2.2 Collection of Evidence

On-site investigation and oral hearing: June 17, 2013; June 20 through 22, 2013; July 8th and 10th, 2013; November 19th, 2014; and December 4th, 2014.

Written response received: February 11, 2015

### 1.2.3 Comments from Parties Relevant to the Cause

Comments on the draft report were invited from parties relevant to the cause of accident.

### 1.2.4 Comments from Flag State

Comments on the draft report were invited from the flag State of FUKUKAWA.

# 2. FACTUAL INFORMATION

## 2.1 Events Leading to the Accident

### 2.1.1 Navigation progress of FUKUKAWA by the Automatic Identification System

According to the information recording of FUKUKAWA (hereinafter referred to as "Ship A") received by a private company via the AIS\*<sup>1</sup> (Automatic Identification System)

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\*1 "AIS: Automatic Identification System" refers to a device for automatically sending and receiving and exchanging the information, including identification code, type, ship name, ship position, course, speed, destination of the ships, between the relevant ships and navigational aid facilities on the land stations.

(hereinafter referred to as “AIS record”) the navigation progress and the course of Ship A between 00:30:21 hours and 03:36:42 hours on June 15, 2013 was as shown in Table 2.1.

Table 2.1 AIS Records (Extract)

Time (Hours:Minutes: Seconds)	Ship position*		Course over the ground* (°)	Heading * (°)	Speed over the ground (Knots(kn))
	North latitude (°-')	East longitude (°-')			
00:30:21	33-42.01698	129-56.83800	059.1	061	10.5
01:00:03	33-44.45700	130-02.42232	054.2	056	10.6
1:30:02	33-47.56878	130-07.72140	058.6	060	10.6
1:40:03	33-48.50970	130-09.56250	057.7	061	10.8
1:50:01	33-49.51770	130-11.36832	051.5	055	10.9
1:53:21	33-49.88922	130-11.94990	056.7	061	11.1
1:54:01	33-49.95510	130-12.07482	058.9	061	11.1
1:55:01	33-50.05458	130-12.26232	058.3	061	11.1
1:56:01	33-50.15118	130-12.45198	057.8	061	11.1
1:57:12	33-50.26818	130-12.00510	059.8	061	11.1
1:58:02	33-50.35122	130-12.83298	058.8	063	11.2
1:59:02	33-50.44680	130-13.02378	060.3	063	11.1
2:00:03	33-50.54250	130-13.21428	055.0	059	11.1
2:01:21	33-50.67438	130-13.45722	057.8	059	11.1
2:02:02	33-50.74830	130-13.58592	054.1	058	11.0
2:02:12	33-50.76702	130-13.61598	053.7	058	11.2
2:02:21	33-50.78088	130-13.64070	053.9	058	11.2
2:02:32	33-50.80362	130-13.67628	054.3	058	11.2
2:02:41	33-50.81832	130-13.70058	054.5	058	11.1
2:03:02	33-50.85582	130-13.76580	054.9	059	11.2
2:04:02	33-50.95992	130-13.95138	053.1	059	11.1
2:04:22	33-50.99148	130-14.01462	067.2	067	10.9
2:04:36	33-51.00942	130-14.05932	061.3	062	10.1
2:04:52	33-51.03282	130-14.10552	057.5	059	9.2
2:05:12	33-51.05868	130-14.15340	054.5	057	8.2
2:05:42	33-51.09480	130-14.21190	052.0	055	7.0
2:06:01	33-51.11772	130-14.24712	050.8	055	6.3

2:07:02	33-51.17670	130-14.32860	038.4	027	4.7
2:30:02	33-51.38892	130-14.12160	189.8	186	0.3
3:00:22	33-51.35628	130-14.24100	132.1	146	0.2
3:12:02	33-51.31068	130-14.30880	106.6	073	2.3
3:13:02	33-51.33240	130-14.36940	055.3	054	4.6
3:20:42	33-51.69852	130-14.86320	049.2	028	4.9
3:21:16	33-51.73320	130-14.89140	019.9	352	4.4
3:23:01	33-51.81402	130-14.85480	283.7	249	2.5
3:29:01	33-51.55248	130-14.29320	211.9	241	3.6
3:30:41	33-51.54900	130-14.19480	309.4	357	3.3
3:32:01	33-51.61392	130-14.20620	058.5	071	3.1
3:36:42	33-51.90408	130-14.71680	054.3	060	6.2

※ The ship position is the position of the GPS antenna installed on the top of the bridge. In addition, heading and course over the ground are in true bearings (hereinafter, the same).

## 2.1.2 Process of the Accident by the Statement of the Crew

### (1) Ship A

According to the statements of the Master of Ship A (hereinafter referred to as "Master A") and the third officer (hereinafter referred to as "Officer A"), the state was as follows.

Ship A, on which Master A, Officer A and other 8 people were on board, departed a Ningbo port in the People's Republic of China in ballast ship at around 01:55 hours on June 13, 2013 (Japan Standard Time, the same shall be applicable below), and sailed towards the Hanshin Port Osaka District.

Ship A advanced in the northeast direction by the autopilot at around 10.5 kn (by Speed over the ground, same shall be applicable below), on which officer A took over the navigation watch by letting an ordinary seaman ("Ordinary Seaman A", hereinafter) watch in place, at around 00:30 hours on June 15th after passing the IKI SUIDO Channel located between the western part of Kyushu north-shore and IKI SHIMA Islands, Nagasaki Prefecture, by receiving an instruction from Master A to exercise caution because the rain.

Officer A, although recognizing that it has become the restricted visibility state that is defined by the Vessel Synthesis Management Manual as the visibility distance is less than about 2 miles (M) due to the fog and rain, did not report to that effect to the Master A, thinking that the Master A should have been tired as it was immediately after the duty of watch.

Officer A, while underway without transmitting the acoustic signal (hereinafter referred to as "the fog signal") in the restricted visibility state, had detected the existence of TSUNOMINE MARU (hereinafter referred to as "Ship B") by the radar



which had been set-up at 3M range in the head up\*<sup>2</sup> display, near port bow 25° 2M at the set radar to 3M range (hereinafter referred to as "Ship B"), however, he could not find Ship B by the binoculars.

Officer A, while recognizing that Ship B was coming towards Ship A, thought that it might be possible to avoid Ship B if turned in the near sighted distance after it had approached, continued the sailing by holding the course and speed, but at the time when he looked at the radar the image of Ship B came near, he saw the port bow side and found a white light, with which he felt the danger of collision, and immediately after turning the course setting dial of the autopilot to the right the impact was felt, he stopped the engine because he thought that Ship A had collided with Ship B.

Master A, receiving the report from the Officer A that there was a collision with Ship B, went-up the bridge and convened the crew members to make the damage survey of the hull, but there was no clear damage found.

Master A, after sailing Ship A for about 1 hour and 30 minutes around the accident site intending to search Ship B, however, as Ship B was not found, thought that it was not a severe collision and Ship B had already left the collision site, therefore, he did not make any report to Japan Coast Guard and the TIAN CHEN INT'L SHIPPING MANAGEMENT CO., LIMITED (hereinafter referred to "Company A", except for Chapter 6), the management company of Ship A about the accident.

Ship A, while sailing towards the destination, anchored in the offshore of He Saki Kitakyushu City, Fukuoka Prefecture at around 12:25 hours by the instruction of the Japan Coast Guard and received a hearing by the said agency.

## (2) Ship B

According to the statement of the Skipper (hereinafter referred to as "Skipper C") consorting with ship B (hereinafter referred to as "Ship C") and an acquaintance of the Skipper of the Ship B (hereinafter referred to as "Skipper B") the states were as follows. Ship B, being on board by Skipper B only, had departed Fukuoka basin, Hakata Port, Fukuoka City, Fukuoka Prefecture together with Ship C and another colleague ship around 14:30 hours on June 14, anchored in the fishing ground of the north offshore of the Fukuoka Genkai Shima Island and started fishing operations after waiting for the sunset.

Skipper C, around 02:30 hours on the 15th, tried to send a radio contact to Skipper B who had been operating in the north of Ship C that Skipper C would finish the operation and voyage to return to the port. However, since there was no response from Ship B and could not see the fishing lights of Ship B, Skipper C started to navigate for returning to the port thinking that Ship B might have already returned to the port earlier.

An acquaintance of Skipper B, as Ship B did not return to the port even after 04:00 hours, the estimated arrival time to the port, reported to the Japan Coast Guard around 08:00 hours.

A pleasure boat being sailed discovered Ship B in a capsized state around 09:06 hours and report to that effect to the Japan Coast Guard, while Skipper B, after being

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\*<sup>2</sup> "Head up" refers to a display method in which the direction on the bow of the ship is the top direction of the radar display (relative bearing indication).

rescued from inside of the ship by the diver of the Japan Coast Guard, who was transported to a hospital in Fukuoka city but the death had been confirmed.

Ship B had been towed to the offshore of the Nata fishing port, Fukuoka City, by a ship acquaintance of Skipper B had arranged, then after being pulled on to the barge, it was landed on the Hakata Port Susaki Pier.

Date and time of occurrence of the accident was at around 02:04 hours on June 15, 2013, the occurrence location was vicinity of 359° (true bearing, the same hereinafter), 9.5M from the Genkaishima Lighthouse.

(See Figure 1: Track of Ship A. Figure 2: Estimated navigation routes. Figure 3: Track of Ship A after the collision)

## 2.2 Information on the Death and Injury to Person

### (1) Ship A

According to the statement of Master A, there were no deaths and casualties.

### (2) Ship B

According to the postmortem certificate, the cause of death of Skipper B was drowning.

## 2.3 Information about the damage to vessel

### (1) Ship A

Abrasions on the port bow and port center were caused and white paint had adhered to the port bow.

(See Photo 2.3 - 1)

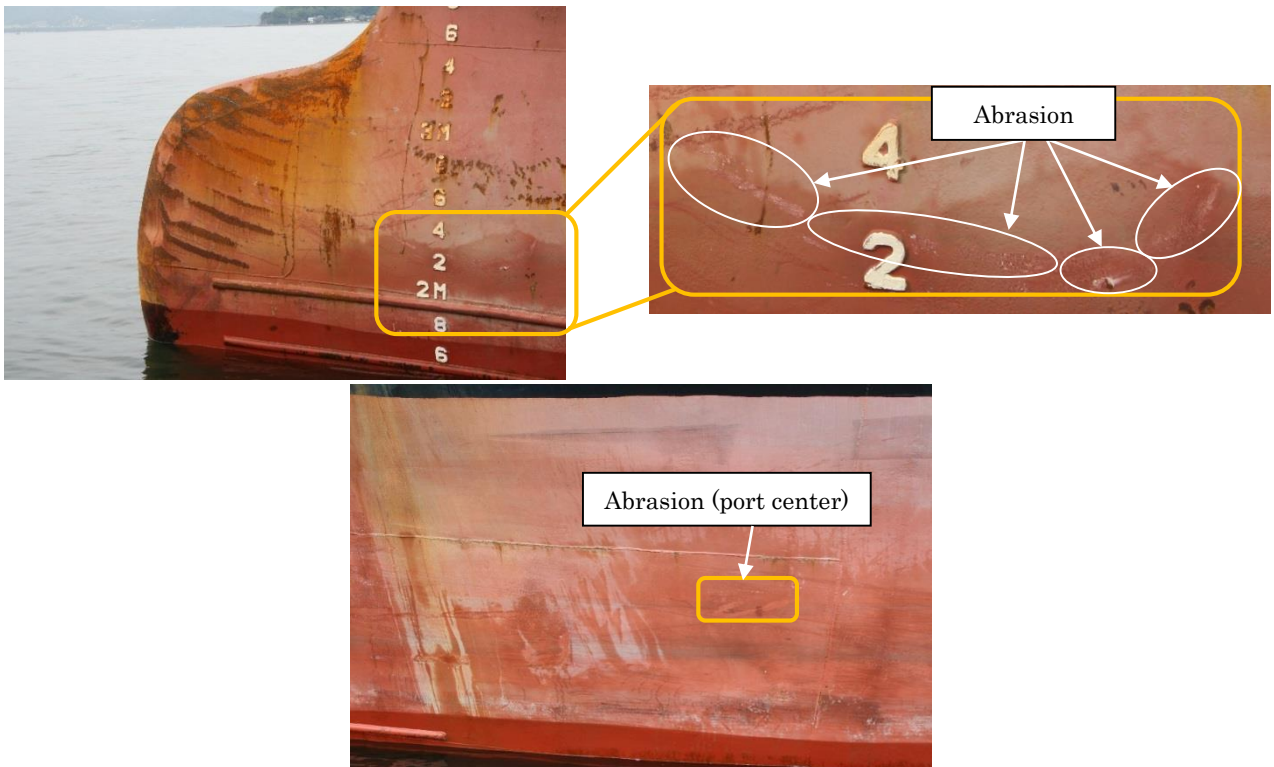


Photo 2.3 - 1 Damage situation to Ship A

(2) Ship B

Damage was caused to the bow, and it parted from the hull during the lifting. Red paint had adhered to the starboard fender.

(See Photo 2.3 - 2)

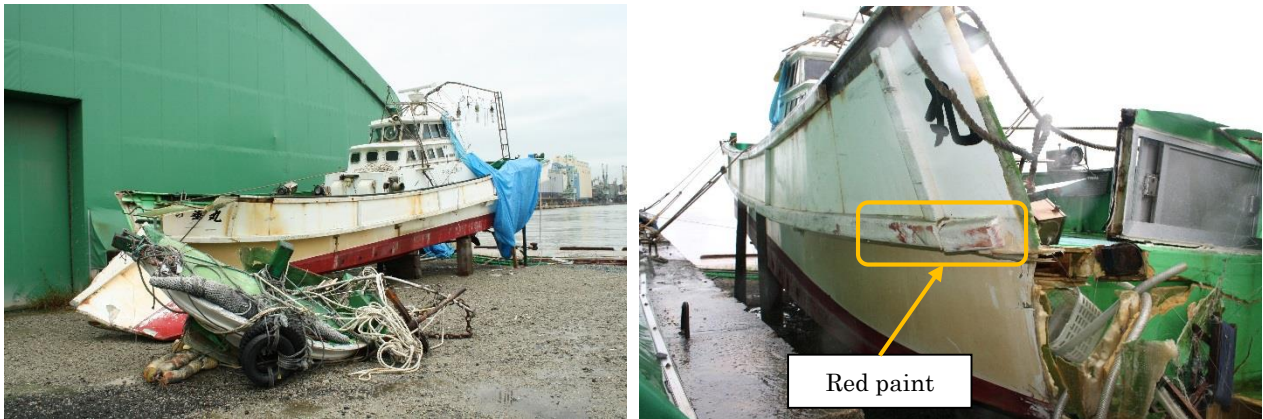


Photo 2.3 - 2 Damage situation of Ship B

## 2.4 Crew Information

(1) Gender, Age, and Certificate of Competency, etc.

Master A: Male; 49 years old; Nationality: People's Republic of China

Endorsement attesting the recognition of certificate under STCW regulation: Master (Kingdom of Cambodia)

Date of issue: December 06, 2012

(Valid until December 31, 2016)

Officer A: Male; 28 years old; Nationality: People's Republic of China

Endorsement attesting the recognition of certificate under STCW regulation: Officer (Kingdom of Cambodia)

Date of issue: February 07, 2013

(Valid until March 08, 2016)

Ordinary Seaman A: Male; 56 years old; Nationality: People's Republic of China

Skipper B: Male; 80 years old

First class boat's operator/Personal water craft operator with passenger service license

Date of issue: June 20, 1975

Date of revalidation: October 13, 2009

(Valid until November 01, 2014)

(2) The main seagoing experiences

(i) Master A:

According to the statements of Master A, he has the history of 31 years as a sailor, he had been on board as a Master of Ship A since November 2012.

(ii) Officer A:

According to the statements of Officer A, after graduating from the school, he had been on board as the ordinary seaman of the ships managed by Company A, and had been on board as the third officer of Ship A since December 2012.

At the time of this accident, his health condition was good.

(iii) Ordinary Seaman A:

According to the statements of Ordinary Seaman A, he had been on board 14 years as the ordinary Seaman of the ships managed by Company A, and had been on board as the ordinary seaman of Ship A since June 2013.

At the time of this accident, his health condition was good.

(iv) Skipper B

According to the statements of Skipper C, Skipper B had been operating by alone usually, and he had used to be operating on the fishing ground off coast of Goto Islands to Genkai nada channel, but recently, he was operating in Genkai nada Channel only.

## 2.5 Information

### 2.5.1 Particulars of the Vessels

#### (1) Ship A

IMO number: 8808135

Port of registry: Phnom Penh (Kingdom of Cambodia)

Owner: HUAN YU SHIPPING CO., Ltd. (Belize)

Management company: Company A (People's Republic of China Hong Kong Special Administrative Regions)

Classification society: UNION BUREAU OF SHIPPING (People's Republic of China)

Gross tonnage: 1,451 tons

L×B×D: 74.53m ×11.70m×7.23m

Hull material: Steel

Engine: One diesel engine

Output: 1,029.7kW

Propulsion: One fixed pitch propeller

Year of built: 1988

Capacity of persons on board: 10 people (People's Republic of China)

(See Photo 2.5 - 1)



Photo 2.5 - 1 Ship A

#### (2) Ship B

Fishing vessel registration number: FO3-29975

Base port: Fukuoka City, Fukuoka Prefecture

Owner: Privately owned  
Gross tonnage: 4.79 tons  
Lr×B×D: 11.60m ×2.55m×0.74m  
Hull material: Fiber Reinforced Plastics (FRP)  
Engine: One diesel engine  
Output: Fishing vessel method horsepower number 80  
Propulsion: One fixed pitch propeller  
Date of launch: July 20, 1981  
Capacity of persons on board: One person

## 2.5.2 Other Relevant Vessel Information

### (1) Ship A

#### (i) Navigational equipment, etc.

On the bridge front, in the order from the port side, two radars, the steering stand, GPS indicator, main engine remote control system, and international VHF radio telephone equipment and the like were installed.

(See Photo 2.5 - 2)

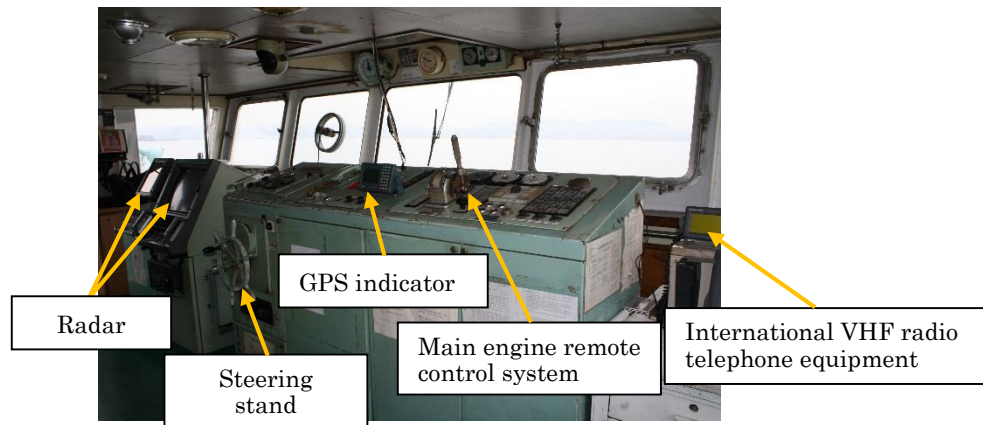


Photo 2.5 -2 Photograph of the ship bridge

In the rear bridge, the ship bridge integral control panel, AIS and chart table were installed.

#### (ii) View from the ship bridge

View from the bridge to the port bow direction was good. (See Photo 2.5-3)



Photo 2.5 -3 View from the ship bridge

(iii) Usage state and function of the radar

According to the statements of Officer A, out of the two radar systems installed, the right one was not in use because it was outdated, but the left one to which the manual plotting function was equipped was used on a routine basis, because Automatic Radar Plotting Aids (ARPA)<sup>\*3</sup> was not installed.

(iv) Maneuverability of the ship

According to the results of the turning test<sup>\*4</sup> it was as follows:

Steering direction	Left	Right
Speed over the water	13.27 kn	13.27 kn
Rudder angle	35°	35°
Maximum transfer	233m	232m
Maximum advance	248m	238m
Time required for turning by 90 degree	50.0 seconds	49.9 seconds
Time required for turning by 360 degree	3 minutes 08.1seconds	3 minutes 06.7 seconds

(v) Others

According to the statements of Officer A, at the time of the accident, there was no failure or malfunctions in the hull, the engine and the equipment.

(2) Ship B

(i) Wheelhouse, etc.

Ship B was a squid pole and line fishery of the cuttlefish whose wheelhouse was placed in the rear of the hull, and in the wheelhouse the steering stand in the center, the radar and navigation light switch on the port side, and the remote control apparatus of the main engine on the starboard side were installed, respectively. No GPS plotter was installed.

(ii) State of each device and anchor after the vessel landed

On the remote control device of the main engine, the clutch lever was set to the forward side, the throttle lever was at a position near the slow ahead.

(See Photo 2.5 - 4)

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<sup>\*3</sup> "Automatic Radar Plotting Aids (ARPA)" refer to a device having a function of issuing an alarm to automatically process the change in the computer images of other vessels that were detected by radar, the other ship course, speed, time to closest point of approach, closest point of approach, and also displays the predicted position or the like in the future, if a risk of collision is predicted by the approach of other vessels.

<sup>\*4</sup> "Turning test" refers to a test for confirming the turning performance of a vessel, after navigating forward at the full speed and the definite course has been confirmed, to steer by 35°degree to the starboard or port side and keep steering until it turns to 360°from the steering center, and to measure the time required maximum transfer, the maximum advance and turning.



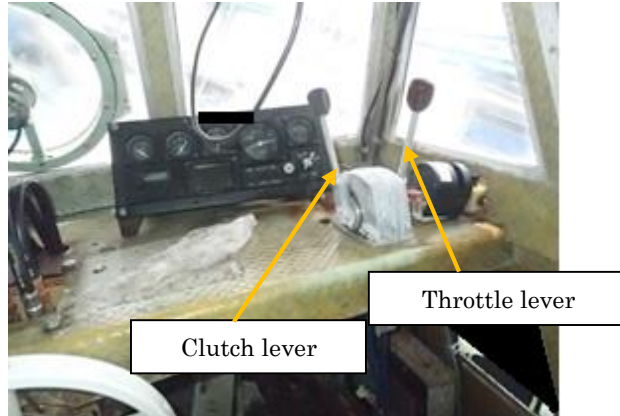


Photo 2.5 -4 State of the remote control apparatus of the main engine

The positioning state of the rudder blade was at the rudder center.

As to the navigation light switch, masthead lights, both sidelights and sternlight were in the state of "ON", the all-round light switch was in the state of "OFF".

The anchor was in a state that has been stored in the anchor bed of the port bow.

## 2.6 Information about the Navigation of Ship B

According to the statements of Skipper C, the navigation state was as follows.

(1) Ship B had been usually navigated as follows.

- (i) After departing the port at around 14:30 hours and anchoring in the fishing grounds and waiting for the sunset, started operation of the squid pole and line fishery of the cuttlefish using the fishing light, then returned to the original port at around 04:00 hours on the following day.
- (ii) He used to be navigated between the Fukuoka basins and fishing grounds at around 19 to 20 kn, faster than the speed of Ship C which sailed around 17 to 18 kn.
- (iii) When returning to the original port from the fishing grounds, he used to be navigating in the course passing through the vicinity of the intermediate point between the Genkaishima lighthouse and the Myojinhana, Shika Shima, same as in Ship C.

(2) Ship B, at the time of the accident, set the fishing grounds at 0.7 miles north to that of Ship C.

## 2.7 Weather and Sea Conditions

### 2.7.1 Weather data

Observation value in Munakata regional meteorological observatory which is located in the east of 23.3 km to the accident site, was as follows.

June 15th

At 02:00 hours, wind direction west, wind speed 0.9 m/s

At 02:10 hours, wind direction west by southwest, wind speed 1.1m/s

### 2.7.2 Observation by the crews

According to the statements of Officer A, the weather was in the fog, the east wind blows, not much waves, visibility at the time of the accident was about 200m.

According to the statements of the Skipper C, when he was in the fishing operation, the fishing light of Ship B which was located 0.7 M north to Ship C was invisible due to fog, however, at round 02 : 30 hours when he tried to contact Skipper B although it was raining the fog had thinned.

### 2.7.3 Weather warnings and advisories

Fukuoka Local Meteorological Observatory, at 03:18 hours on June 14, announced the dense fog advisory in Fukuoka region, and it was continued at the time of the accident.

## 2.8 Information about the safety management of the vessel

According to the statements of Master A and Officer A, the Night Order Book\*<sup>5</sup> of Ship A, the Vessel Synthesis Management Manual, and the System Procedure Document both prepared by Company A, the information about the safety management of the vessel was as follows.

- (1) Master A had regularly instructed the officers to report to the master when it is determined that it was in the restricted visibility state, and had described to that effect even in the Night Order Book.
- (2) In the Vessel Synthesis Management Manual, for measures in the restricted visibility state, the following rules had been prescribed.
  - (i) Visibility less than 2 natural miles is deemed as restricted visibility.
  - (ii) To comply strictly with the relevant fog navigation in the International regulations for preventing collisions at sea, 1972.

In addition, Article 19 of the same regulations sets forth as follows.

*"---- which cannot avoid a close quarters situation with another vessel forward of her beam, shall reduce her speed to the minimum at which she can be kept on her course. She shall if necessary take all her way off and in any event navigate with extreme caution until danger of collision is over."*
  - (iii) When becoming that it was in the restricted visibility state, it must be reported to the Master and the Master shall climb to the bridge and to take the leadership.
  - (iv) In the restricted visibility state, the fog signal shall be blew, and the vessel must be decelerated and sailed by the manual steering.
- (3) In the System Procedure Document the measures in emergency situations, including the collision, had been defined as follows.
  - (i) When emergency occurring on the ship, necessary measures should be taken immediately and report to the master by effective methods.
  - (ii) When an emergency occurs grasp the location and other items.

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\*<sup>5</sup> "The Night Order Book" refers to a book for a master to give the officer on watch the attention of the phenomenon that the course, speed, the night instructions and abnormality concerned that might happen. The "Bridge Resource Management" (Akira Hiroswawa, Seizando Publishing Co., Ltd., published in March, 2011)



- (iii) When a collisions occurs grasp the names of the both vessels, angle of collision, part of collision, condition of damage, any danger of flooding and sinking, human injuries and fatalities.
- (iv) Master should report to Company A, as soon as possible by the best effective method, keep this communication in smooth, if necessary, report to the coastal search and rescue organization where necessary.
- (4) Company A, by carrying-out the vessel safety, had done the corresponding guidance in the restricted visibility state.
- (5) Officer A, although he had been instructed to make a report to the master in a restricted visibility state, had no knowledge about the measures in the restricted visibility state and other measures on an emergency including a collision that are prescribed in the System Procedure Document.

## 2.9 Information about the Search and Rescue of Ship A

- (1) According to the statements of Master A, although Master A had received a report that the vessel collided with Ship B, he did not make a notification of an accident occurred neither to Japan Coast Guard nor Company A.
- (2) According to the statements of Officer A, Officer A, thinking that the vessel had collided with Ship B, although he stopped the engine and reported to Master A to that effect, did not perform the recording of time and the accident location.
- (3) The International Convention for the Safety of Life and Sea, Annex Chapter V, Article 33, that the Kingdom of Cambodia, the flag state of Ship A, has ratified, prescribes about the obligations to rescue a victim of a shipwreck and to report to search and rescue organization of the coastal state upon receipt of an information that a person met with a sea accident.

## 2.10 Information about the Component Analysis of Paint Chips

According to the statements of the Japan Coast Guard personnel, the results were obtained that appraisal referred to as a component of the paint coating film piece attached to Ship A and the paint of Ship B, and a component of the paint coating film pieces that have adhered to Ship B and the paint of Ship A mutually matched.

# 3. ANALYSIS

## 3.1 Situation of the Accident Occurrence

### 3.1.1 Date, Time and Location of the Accident

According to 2.1, it is probable that the situation was as follow.

- (1) As Ship A, at around 02:04 hours, heading direction in the AIS record changed to the starboard side and the decrease of speed began, date and time of the occurrence of this accident happened at around 02:04 hours on June 15, 2013.

- (2) The place of occurrence of this accident was, from the ship's position from the AIS record at around 02:04 hours, it was positioned at 33° 51.0'N, 130°14.0'E, (359°and 9.5 M from the Genkaishima lighthouse.

### 3.1.2 Course and Speed of Ship A and Detection of Ship B

According to 2.1.1 and 2.1.2 (1), the situation was as follow.

- (1) It is highly probable that Ship A was sailing at around between 01:56 hours and 02:04 hours, heading about 060°at the speed around 11.0kn.
- (2) It is probable that Ship A detected Ship B by the radar on the port bow 25°and 2M.

### 3.1.3 Analysis on the Course of Ship B

It is probable, from 2.6 and 3.1.1 (2), that Ship B was sailing on the course at about 170° connecting the intermediate point between the Genkaishima Lighthouse and Myojinhana, Shika Shima.

### 3.1.4 Analysis on the Time at which the Speed of Ship B and when Ship A detected Ship B with the Radar

According to 3.1.1(2), 3.1.2 and 3.1.3, it is probable that the situation was as follow.

- (1) The speed of Ship B was at about 6.6kn.
- (2) As the time between the occasion that Ship A had detected Ship B and Ship A collided to Ship B was about 8:12 minutes, the time that Ship A detected Ship B was around 01:56 hours.

(See Figure 4: Position relationship diagram of the both ships until the collision)

### 3.1.5 Situation of Damage

According to 2.3 and 2.10, it is probable that the port bow of Ship A and the bow section of Ship B collided, Ship A caused scratches on the port bow and port center, Ship B resulted in damage to the bow section.

### 3.1.6 The progress lead to the Accident Outbreak

According to 2.1, 2.5.2(2), and 3.1.1 through 3.1.5, it is probable that the situation was as follow.

#### (1) Ship A

- (i) Ship A, at around 00:30 hours on June 15, 2013, was sailing by the auto-pilot system at the speed of 10.5kn, on the course 061°, Officer A and Ordinary Seaman A being on navigation watch.
- (ii) Ship A was sailing at around between 01:53 hours and 02:04 hours, heading about 060°at the speed around 11.0kn.
- (iii) At around 02:04 hours, the port bow section of Ship A and Ship B collided.

#### (2) Ship B

- (i) Ship B had departed the Fukuoka basin at around 14:30 hours on June 14, and operated in the fishing grounds of north offshore of the Genkai Shima Island.

- (ii) Ship B, after finishing the fishing operations, sailed heading at about 170° and at speed 6.6 kn, by displaying the masthead lights, the sidelights and the sternlight.
- (iii) The bow section of Ship B and Ship A had collided.

### 3.1.7 Situation of the Casualties

According to 2.2, the situation was as follows.

- (1) There were no casualties or dead on Ship A.
- (2) In Ship B, Skipper died by drowning.

## 3.2 Analysis of the Accident Factor

### 3.2.1 Casual factor of the Crew

According to 2.2 through 2.4, the situation was as follows.

- (1) Officer A held the lawful and valid Endorsement attesting the recognition of certificate under STCW regulation.

It is probable that the health status of Officer A was good.

- (2) It is probable that the health status of Ordinary Seaman A was good.
- (3) Skipper B had a legal and valid operating license.

Health condition of the Skipper B, since the Skipper B died, could not be clarified.

### 3.2.2 Situation of the Ships

According to 2.2 through 2.5.2 the situation was as follows.

- (1) As to ship A, it is probable that the view from the bridge to the port bow direction was good, also, at the time of the accident, there were no failure or malfunctions in the ship hull, the engine and the equipment.
- (2) As to Ship B, at the time of the accident the ship hull, the engine, and the equipment, of Ship B, since the Skipper B died, could not be clarified.

### 3.2.3 Situation of Weather, etc.

According to 2.1.2 and 2.7, it is probable that at the time of the accident, the weather was in fog, east wind blowing, visibility was at about 200m and it was in the restricted visibility state.

### 3.2.4 Situation of Lookout and Maneuvering

According to 2.1.2 and 2.5.2 (2), the situation was as follows.

- (1) It is probable that officer A continued the navigation when it became in the restricted visibility state without performing the report to Master A, blowing of the fog signal sound, reducing the speed, and switching-over to the manual steering.
- (2) It is probable that officer A detected with the radar set-up in the head-up display and 3M range, at around 01:56 hours Ship B at the port bow 25° 2M.
- (3) It is probable that officer A, while recognizing that Ship B was coming towards Ship A, continued the navigation by holding the course and speed as he expected to be able to avoid Ship B even by turning the direction after it approached nearer.

- (4) It is probable that officer A was thought to have turned the autopilot system to the right, while he was watching the radar screen he saw the image of Ship B approaching and noticed a white light on the port bow side where he looked it directly and felt a danger of collision.
- (5) It is probable that Ship B sailed by holding the heading in the same direction since the rudder plate position had been kept in the central.
- (6) As to Ship B, the lookout and maneuvering situations of Skipper B, since the Skipper B died, could not be clarified.

### 3.2.5 Application of the Conduct of the Vessel

According to 2.8(2) (ii), 3.1.2, 3.1.4 and 3.2.3, it is probable that the situation was as follow.

To Ship A, while sailing the sea area where it was in the restricted visibility state because of fog and rain, as it had detected Ship B towards a vessel abeam to forward of the vessel with the radar alone, each provisions of Article 19 (Conduct of vessels in restricted visibility) of the Prevention of Collision at Sea Act (hereinafter referred to as "Prevention Act") shall be applicable.

- (1) Act on preventing collision at sea Article 19, Paragraph 4

*A vessel which detects by radar alone the presence of another vessel shall determine if a close-quarters situation is developing and/or risk of collision exists. If so, she shall take avoiding action in ample time.*

- (2) Prevention Act Article 19, Paragraph 6

*Except where it has been determined that a risk of collision does not exist, every vessel which hears forward of her beam the fog signal of another vessel pursuant to the provisions of Article 35 or which cannot avoid a close quarters situation with another vessel forward of her beam shall reduce her speed to the minimum at which she can be kept on her course, she shall halt if necessary, any event navigate with extreme caution until danger of collision is over.*

In addition, compliance to navigation law in the accident by Ship A was as follows.

Ship A, although having detected the presence of Ship B about 8 minutes prior to the collision only with the radar alone, and there was no change in the bearing of Ship B and it had been in a situation that both ships were threatened to come remarkably close where there was a risk of collision, but Ship A did not comply with the regulations to reduce her speed to the minimum at which she could be kept on her course and she should halt if necessary.

### 3.2.6 Analysis on the Safety Management of Ship A

According to 2.1.2, 2.8 and 3.2.4, Company A had defined the measures to be taken in the restricted visibility state in the Safety Management Manual and had conducted guidance through the ship safety conference, Officer A had not understood the contents of the Safety Management Manual, thus at the time of the accident, he continued the navigation without taking measures, including to report the master, to blow the fog signal sounding, to reduce

the speed, to switch-over to manual steering, or to stop the vessel if necessary, it is probable that the Safety Management Manual had not been complied with.

Master A had regularly instructed the Officers to report to Master A when it became in the restricted visibility state, also had described to that effect in the Night Orderly Book, however, Officer A, at the time of the accident, he did not make a report to Master A, it is therefore that he did not comply with the instructions of Master A.

It is somewhat likely that if Officer A had been in compliance with the Safety Management Manual and the instructions of Master A, measures including reporting to Master A, blowing of the fog signal sound, reducing the speed, switching-over to manual steering, and stopping of the vessel if necessary could had been taken, the occurrence of the accident could be avoided.

### 3.2.7 Analysis on the Search and Rescue of Ship A

According to 2.1, 2.8 (3) and 2.9, it is probable that Ship A, after the collision with Ship B, although Officer A made a report to that effect to Master A, he did not record the time and place of the occurrence of the accident.

It is probable that Master A did not make report to Japan Coast Guard and Company A on the occurrence of this accident, and made the vessel turning and inversion near the accident occurrence place, but he did not return to the accident location and made appropriate search and rescue.

It is somewhat likely that if Officer A had recorded the time and the accident location, and Master A had reported the occurrence of the accident to the Japan Coast Guard and Company A, and the Ship A had returned back to the accident location and executed appropriate search and rescue, Ship B and Skipper B was found earlier.

### 3.2.8 Analysis on the Accident Outbreak

According to 2.1.2, 3.1.6, and 3.2.4, the situation was as follow.

#### (1) Ship A

- (i) It is probable that Ship A, while underway in the direction of north-east in the north offshore of the Genkai Shima Island, Officer A continued the navigation when it became in the restricted visibility state without performing the report to Master A, blowing of the fog signal sound, reducing the speed, and switching-over to the manual steering.
- (ii) It is probable that Officer A, while recognizing that Ship B was coming towards Ship A, continued the navigation by holding the course and speed as he was expected to be able to avoid Ship B even by turning the direction after it approached nearer.
- (iii) It is probable that Officer A turned the automatic steering autopilot system to the right, while he was watching the radar screen he saw the image of Ship B approaching and noticed a white light on the port bow side where he looked it directly and felt a danger of collision, but immediately after, it collided with Ship B.

(2) Ship B

- (i) It is probable that Ship B, in the northern offshore of the Genkai Shima Island, after finishing the fishing operations, navigated in the direction of south-by-southeast by displaying the masthead lights and other lights.
- (ii) It is probable that Ship B was thought to have navigated by holding the course and speed.
- (iii) It is probable that Ship B, while underway, collided with Ship A.

## 4. CONCLUSIONS

### 4.1. Probable Causes

It is probable that this accident occurred, at night, when it became a restricted visibility state due to fog in the north offshore of the Genkai Shima Island, while Ship A was navigating in north-eastward and Ship B was navigating in south-southeastward, because both ships maintained the course and speed in the same degree, they had collided together.

The reason for Ship A continued navigation maintaining the course and speed was that Officer A, while recognizing that Ship B was coming towards Ship A, expected to be able to avoid Ship B even by turning the direction after Ship B approached nearer.

### 4.2 Other Identified Safety Issue

It is probable that Officer A, at the time of the accident, continued the navigation when it became in the restricted visibility state without performing the report to Master A, blowing of the fog signal sound, reducing the speed, and switching-over to the manual steering, therefore he was not complied with the Safety Management Manual and the instructions of Master A.

It is somewhat likely that if Officer A had been in compliance with the Safety Management Manual and the instructions of Master A, measures including reporting to Master A, blowing of the fog signal sound, reducing the speed, switching-over to manual steering, and stopping of the vessel if necessary could had been taken, the occurrence of the accident could be avoided.

It is probable that Officer A, although he made a report to Master A about the collision with Ship B, did not record the time and place of the occurrence of the accident, and Master A, did not make report to Japan Coast Guard and Company A on the occurrence of this accident, but he did not return to the accident location and made appropriate search and rescue.

It is somewhat likely that, as to Ship A, if Officer had recorded the time and the accident location, and Master A had reported the occurrence of the accident to the Japan Coast Guard and Company A, and the Ship A had returned back to the accident location and executed appropriate search and rescue, Ship B and Skipper B was found earlier.

## 5. SAFETY ACTIONS

In order to prevent recurrence of the same accident and to reduce the damage, the Master, crew members and the ship management company are required to take the following measures.

- (1) A person on duty of the bridge watch, when it became a restricted visibility condition, shall take measures including reporting to Master, blowing of the fog signal sound, reducing the speed, and switching-over to the manual steering, and stopping of the vessel if necessary.
- (2) A person on duty of the bridge watch, if a collision occurred, so that search and rescue of human and vessel can be appropriately performed, shall record the time and place of the occurrence of the accident.
- (3) Master, if a collision occurred, shall carry-out notification to the search and rescue agencies of the coastal state and ship managing company, return to the accident place, appropriately carry-out the search and rescue.
- (4) As to the above (1) through (3), for the master and crew members of a ship owned or managed, education shall be strengthened by using the case of this accident, and it shall be thoroughly communicated.

## 6. SAFETY RECOMMENDATIONS

The Japan Transport Safety Board, based on the results of the accident investigation, against the TIAN CHEN INT'L SHIPPING MANAGEMENT CO., LIMITED, recommend the following actions to be taken.

- (1) To the masters and crew members, captain and crew, when it became a restricted visibility condition, it shall be thoroughly instructed to comply with the Safety Management Manual.
- (2) To the masters and crew members it shall be thoroughly instructed to comply with the Urgent Procedure Book.
- (3) To the masters, if a collision occurred, it shall be thoroughly instructed to carry-out notification to the search and rescue agencies of the coastal state and the TIAN CHEN INT'L SHIPPING MANAGEMENT CO., LIMITED, and return to the accident place, appropriately carry-out the search and rescue.
- (4) As to the above (1) through (3), for the master and crew members of a ship owned or managed, education shall be strengthened by using the case of this accident, and it shall be thoroughly familiarized.

Figure 1 Track of Ship A

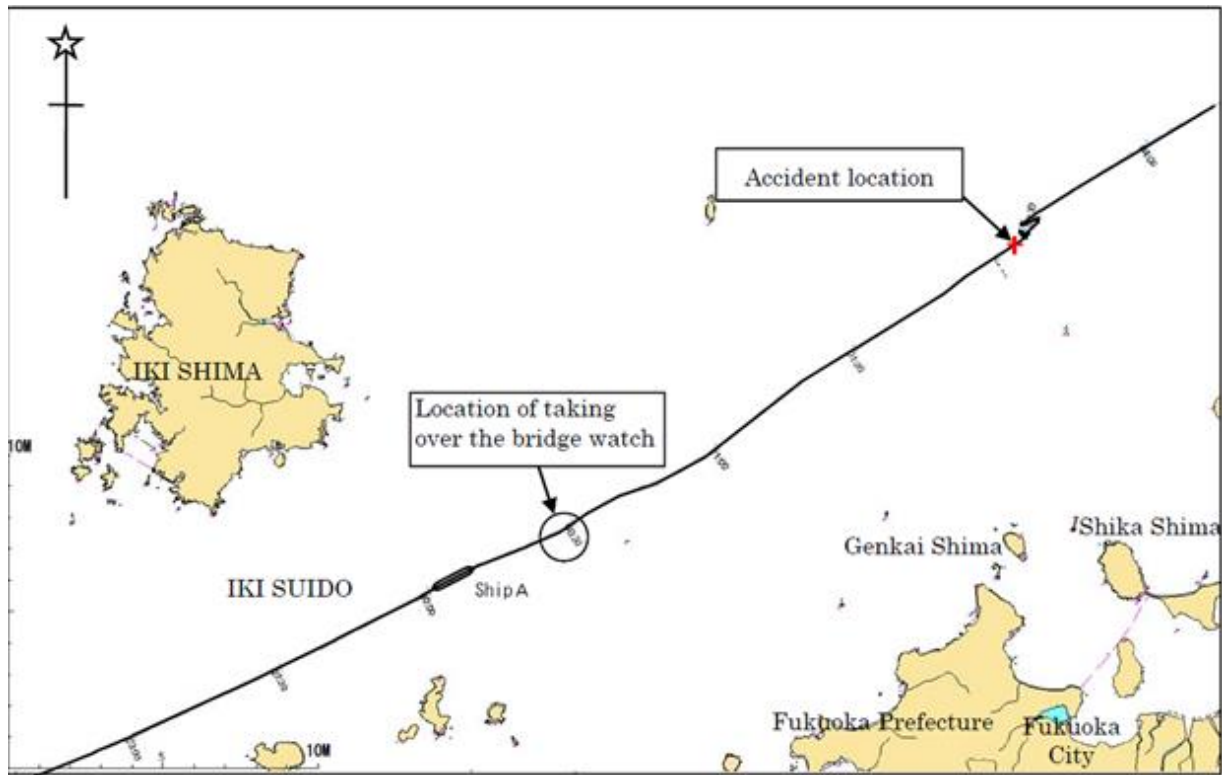




Figure 2 Estimated navigation routes

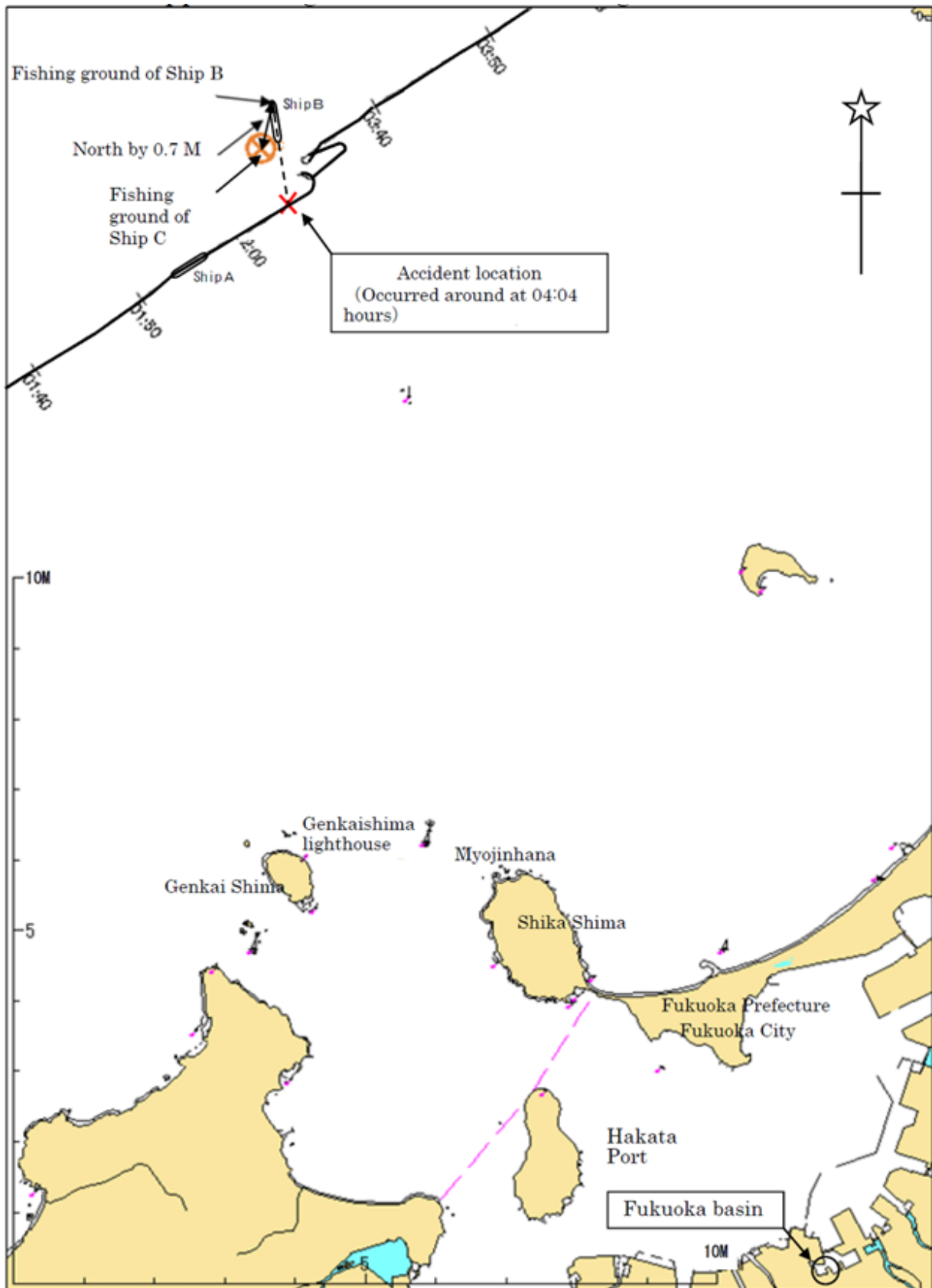


Figure 3 Track of ship A after the collision

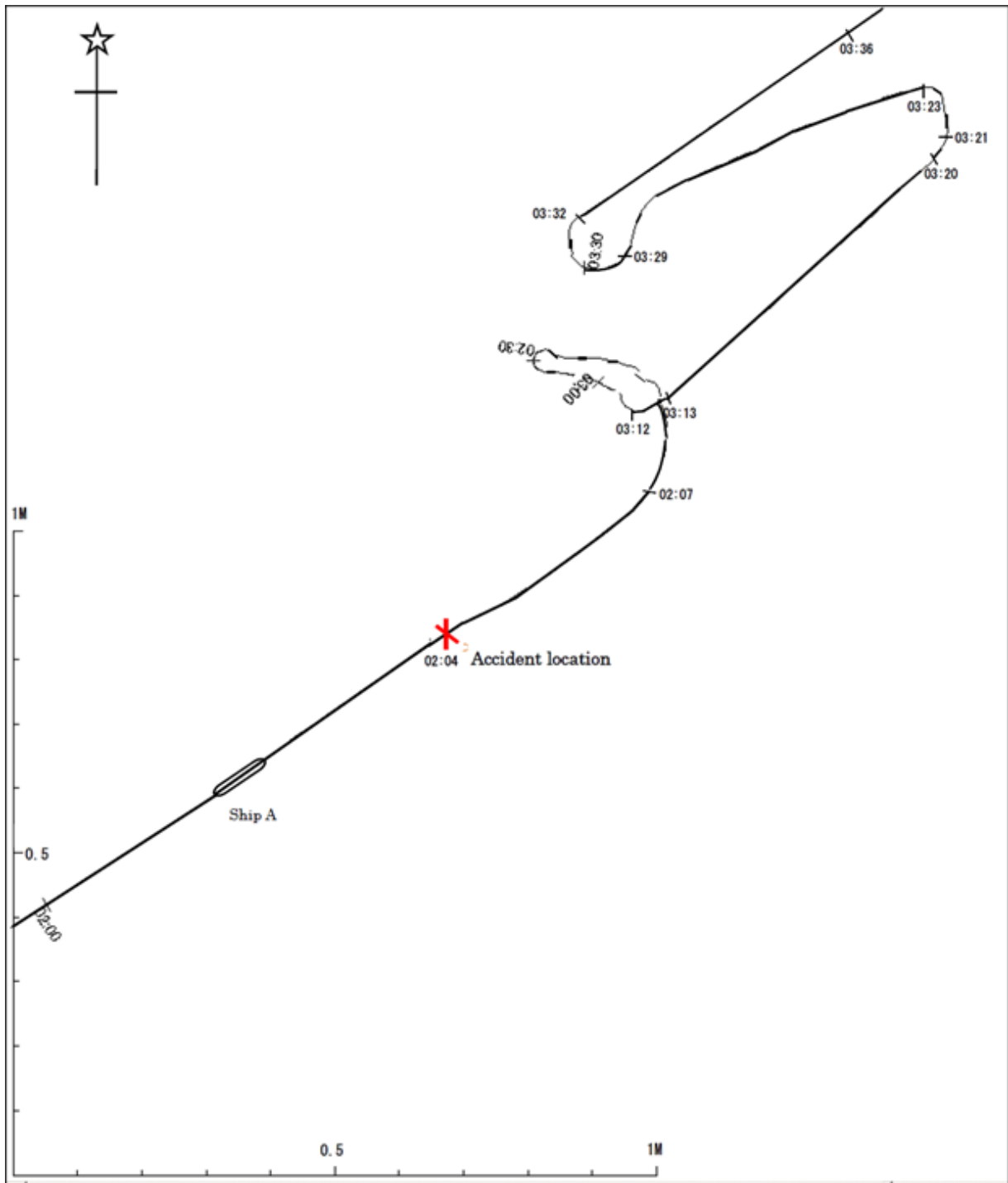


Figure 4 Position relationship diagram of the both ships until the collision

