

Case 4

Collision between an inbound vessel and an outbound vessel whose courses intersected at Kurushima Kaikyo Traffic Route west entrance during southward current

Summary: Vessel A, manned with the Master A and 5 crew members, was proceeding northeastward off the northern coast of Kajitorino Hana at Kurushima Kaikyo Traffic Route west entrance, and Vessel B, manned with the Master B and 3 crew members, was proceeding southwestward in the same area. The two vessels collided with each other at around 00:10:30, June 16, 2010.

Vessel A sustained dents and other damage to her starboard bow, and the bow of the Vessel B was cracked and breached, but no fatalities or injuries were caused on both vessels.

Events Leading to the Accident

Vessel A (container ship)

Gross tonnage : 748tons
L×B×D : 91.35m×14.00m×4.50m
Hull material : Steel
Engine : Diesel engine
Output : 1,838kW

In order to navigate the Kurushima Kaikyo Traffic Route Naka Suido, Vessel A sailed toward the north side of the Kurushima Kaikyo Traffic Route west entrance, to the southwest of the Aki Nada south passage No.4 light buoy, with a heading of approximately 040° and at a speed of approximately 13.0 kn.

Around 00:00

Vessel A sailed with a heading of approximately 036° and at a speed of approximately 13.0 kn, and then continued sailing while repeatedly making turns to starboard.

Officer A first saw the radar images of Vessel C proceeding westward near the Kurushima Kaikyo Traffic Route west entrance, and Vessel B on the same course near her.

Since Vessel B had turned to port after setting out from the Kurushima Kaikyo Traffic Route west entrance, Deck Officer A believed that Vessel B was proceeding southwestward, and that Vessel A could pass by Vessel B on her starboard side.

Since Vessel C had turned to starboard after setting out from the Kurushima Kaikyo Traffic Route west entrance, Officer A focused his attention on the passage of Vessel C on the bow of Vessel A, and sailed while maintaining speed, not keeping a lookout for Vessel B using the radar.

No fog signals were sounded and communications with Vessel B by VHF radio were not being performed.

Officer A saw the mast lights of Vessel B on the starboard bow and immediately stopped the main engine.

Around 00:10:30

Collision

Vessel B (chemical tanker)

Gross tonnage : 198tonnage
Lr×B×D : 44.01m×8.00m×3.45m
Hull material : Steel
Engine : Diesel engine
Output : 625kW

Vessel B navigated the Kurushima Kaikyo Traffic Route Nishi Suido, and proceeded westward with the main engine at full ahead, toward the Kurushima Kaikyo Traffic Route west entrance.

When setting out from the Kurushima Kaikyo Traffic Route, Vessel B proceeded southwestward toward the area off the southern coast of Itsuki Shima.

Officer B saw the radar image of Vessel A near 2M on the port bow and identified that Vessel A was proceeding northeastward.

Officer B started to see the radar image of Vessel A at the starboard side of the heading marker on the radar display.

Officer B steered to starboard, intending to pass by Vessel A on Vessel B's port side while Vessel A was sailing in the opposite direction.

Officer B recognized that Vessel A had approached on the port bow, and after that even though Vessel A continued to approach from the port bow direction, Officer B continued to turn to starboard while maintaining speed.

No fog signals were sounded and communications with Vessel A by VHF radio were not being performed.

Officer B saw the mast lights of Vessel A on the port bow, and immediately engaged the main engine to full astern.



Damage to Vessel A

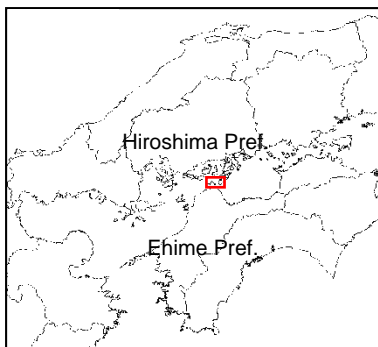
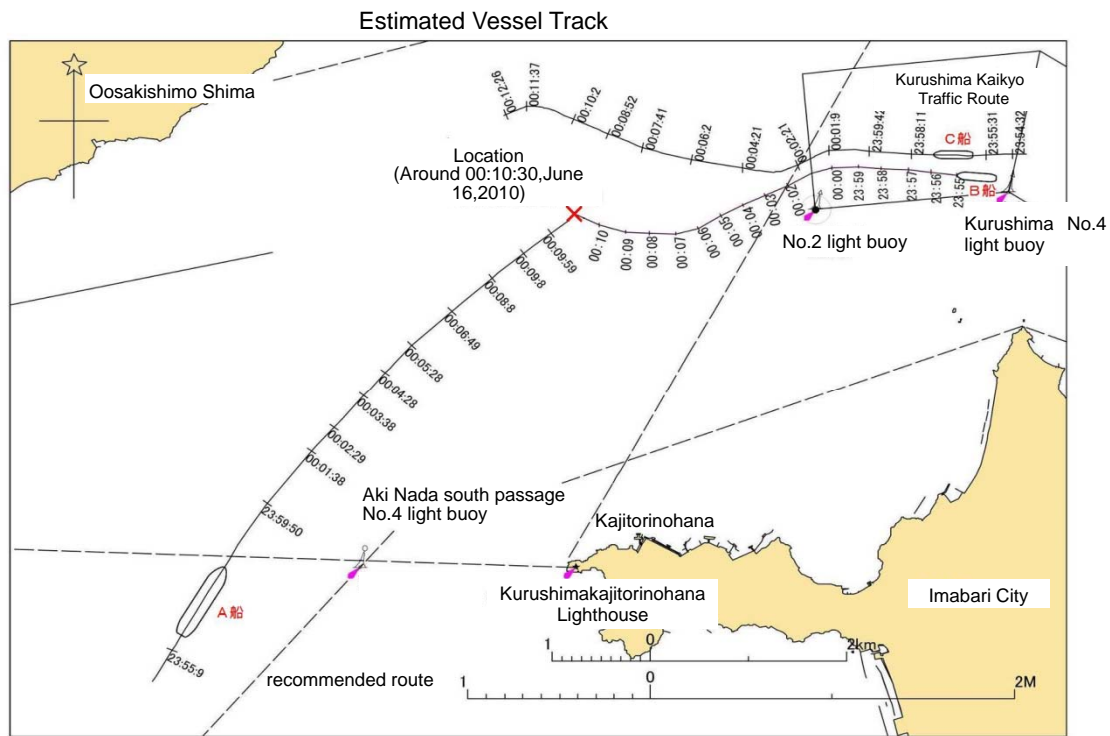
Weather and sea conditions

Weather: Dense fog Winds direction: WSW
Wind force: 1
Visibility: about 0.2 - 0.5M Tide: the time of high tide
Current near the accident location: northeastward current about 2.2kn

Kurushima Kaikyo Traffic Route: southward current



Damage to Vessel B



Reports to the master and VHF communications between both vessels under restricted-visibility conditions

- The Safety Management Manual of Company A specifies that the Master should take appropriate measures such as reducing speed if visibility was restricted during underway.

Moreover, Master A had instructed the bridge crew on watch to provide him with a report when the visibility worsened to 1M and to operate the engine or whistle without hesitation.

Since Officer A had heard from Master A that the fog had begun to lift, he believed that it would clear in a short time. Then, he sailed maintaining the speed without reporting to Master A.

It is somewhat likely that if Master A had received a report, he would have been able to take measures such as reducing to a safe speed.

- In the Special Operation Procedures of the Safety Management Manual for Company B, procedures were specified for cases of encountering restricted-visibility conditions.

When visibility was restricted, Officer B did not take any measures such as reporting to Master B, sounding fog signals, standing by the engine, or reducing speed.

It is somewhat likely that if Officer B had followed the procedures under restricted-visibility conditions, instructions from Master B could have been received and measures such as reducing speed could have been taken.

- Vessel A and Vessel B did not confirm each other's intention, etc. using VHF radio.

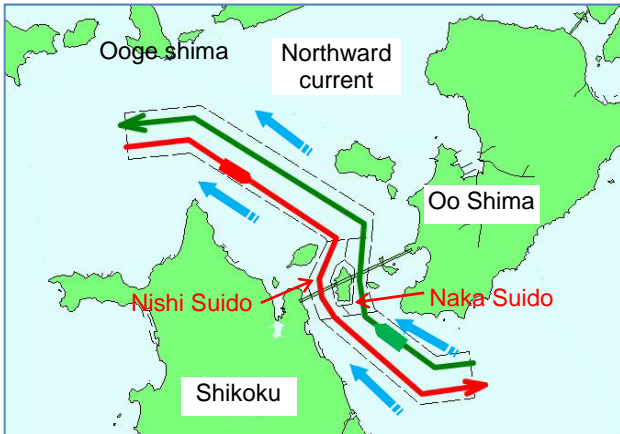
It is somewhat likely that with confirmation, the vessels could have known the other's course, etc. and ensured safe navigation.

Navigation rules for the Kurushima Kaikyo Traffic Route

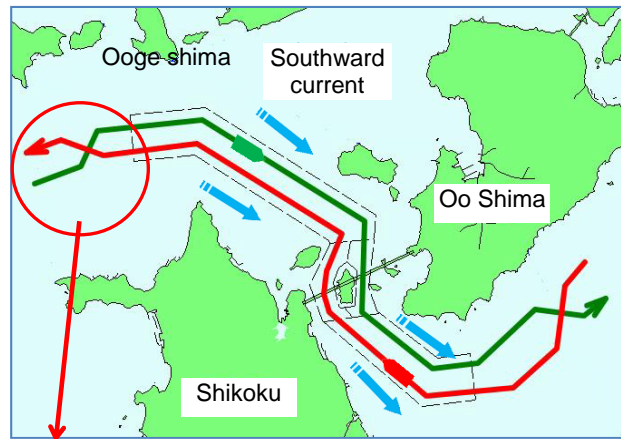
“Sail Naka Suido along with the tidal current, sail Nishi Suido against the tidal current” rule

In the case of following current (when the tidal current is the same as a vessel's direction of navigation), a vessel should sail the Naka Suido; on the other hand, in the case of reverse current (when the tidal current is reverse to a vessel's direction of navigation), a vessel should sail the Nishi Suido (Article 20 of the Maritime Traffic Safety Act).

Keep-to-the-right rule



Keep-to-the-left rule



Tidal current and navigation at the accident location

When the tidal current of the Kurushima Kaikyo Traffic Route is **flowing southward**, vessels navigating that route must follow a **“Keep-to-the-left rule”**, which differs from the “Keep-to-the-right rule”, the general rule for marine traffic. In that case, vessels should pay more attention because they need to change to the “Keep-to-the-left rule” and the **courses of vessels sailing in opposite directions intersect each other near the west entrance of the route**.

Vessel A and Vessel B were sailing in areas with conditions of restricted visibility. In such areas there is a need to keep a proper lookout by radar, using radar plotting and other systematic observation methods for other vessels detected on radar sailing in the opposite direction, while also making careful judgments on their approach, following the navigation rules for vessels in restricted-visibility conditions provided in Article 19 of the Act on Preventing Collision at Sea, and taking action to avoid situations such as those with the risk of collision during periods when there is ample time to do so. It is also desired to consider confirming the intention of other vessels by VHF radio as valuable for making judgments on the approach of those vessels.

Probable Causes : It is probable that in visibility restricted by fog at night, when the tidal stream was flowing southward through the Kurushima Kaikyo Traffic Route, Vessel A was sailing northeastward in waters off to the north of Kajitorinohana on the north side of the center line of Aki Nada(*8) toward the north side of the western entrance to the Kurushima Kaikyo Traffic Route and Vessel B was sailing southwestward toward waters located to the south of Itsuki Shima; when they detected each other ahead by radar, Officer A of Vessel A, who assumed that he would pass Vessel B on his starboard side, maintained his speed, without monitoring her movement by radar thereafter; on the other hand, Officer B of Vessel B came to observe Vessel A which had been initially detected on his port bow on the starboard side of the heading marker on the radar scope; considering it necessary to pass Vessel A on his portside, he turned his vessel to starboard; although the distance to Vessel A continuously closed on his port bow, he continued turning to starboard while maintaining his speed; as a result, the two vessels collided with each other.

(*8 The line connecting the all light buoys set up on the recommended route in the southern part of Aki Nada. In general, vessels sailing along the recommended route sail on the right side.)

In order to Prevent Recurrence

Both Company A and Company B should take following measures:

- Instruct their crewmen more specifically on the points that should be followed when visibility is restricted (reporting to the master, etc.).
- Instruct their crewmen to confirm the intention, etc. of the other vessel using VHF radio when they find a vessel sailing in the opposite direction under restricted-visibility conditions because when the tidal current of the Kurushima Kaikyo Traffic Route is flowing southward, there may be conditions where the courses of vessels entering the Kurushima Kaikyo Traffic Route and vessels leaving it intersect northeastward in waters off to the north of Kajitorinohana.

The investigation report of this case is published on the Board's website (issued on March 29, 2013).

http://www.mlit.go.jp/jtsb/ship/rep-acci/2013/MA2013-3-52_2010hs0095.pdf

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