

MA2020-6

**MARINE ACCIDENT  
INVESTIGATION REPORT**

July 30, 2020



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.

TAKEDA Nobuo  
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

July 1, 2020

Adopted by the Japan Transport Safety Board

Chairman TAKEDA Nobuo

Member SATO Yuji

Member TAMURA Kenkichi

Member KAKISHIMA Yoshiko

Member OKAMOTO Makiko

<b>Accident type</b>	Collision
<b>Date and time</b>	Around 4:22 on September 2, 2019 (local time, UTC+9 hours)
<b>Location</b>	Akashi Kaikyo Traffic Route Around 019° true bearing, 1.3 nautical miles (M) from Esaki Lighthouse (approximately 34°37.6'N, 135°00.0'E)
<b>Summary of the Accident</b>	<p>The car carrier GLOVIS COMPANION was proceeding west in the Akashi-Kaikyo Traffic Route and the fishing vessel HIGASHIDA MARU was proceeding southeast and attempting to cross the Akashi-Kaikyo Traffic Route when both vessels collided in the Akashi-Kaikyo Traffic Route.</p> <p>The master of HIGASHIDA MARU was injured, and her bow sustained crushing and other damage, while GLOVIS COMPANION sustained abrasions on her starboard- side shell plating.</p>
<b>Process and Progress of the Investigation</b>	<p>(1) Set up of the Investigation The Japan Transport Safety Board (hereinafter referred to as “JTSB”) appointed an investigator-in-charge and two other marine accident investigators to investigate this accident on September 2, 2019.</p> <p>(2) Collection of Evidence September 3 to 5, December 9 and 10, 2019: On-site investigations and Interviews October 7, and 16, 2019: Collection of questionnaires March 16, 2020: Interviews</p> <p>(3) Comments from Parties Relevant to the Cause Comments on the draft report were invited from parties relevant to the cause of accident.</p> <p>(4) Comments from the Flag State Comments on the draft report were invited from the Flag State of GLOVIS COMPANION.</p>

<p><b>Factual Information</b></p> <p>Vessel type and name Gross tonnage Vessel number Owner Management Company Class L×B×D, Hull material Engine, Output Date of launch, etc.</p>	<p>Vessel A</p> <p>Car carrier GLOVIS COMPANION (Republic of the Marshall Islands registry), 60,213 tons 9460899 (IMO number) NOCC SHIPOWNING AS (Owner) WALLEM SHIPMANAGEMENT LTD (Management company) NK 199.99 m x 32.26 m x 34.52 m, Steel Diesel engine, 14,315 kW December 10, 2008 (laid keel)</p> <p>Vessel B</p> <p>Fishing vessel HIGASHIDA MARU 3.7 tons HG3-26769 (fishing vessel registration number), private owner 10.97 m x 2.79 m x 0.94 m, Fiber Reinforced Plastic Diesel engine, 51 kW April 30, 1999 No. 260-39770 (Ship Inspection. Completion Slip. Number )</p>
<p><b>Crew Information</b></p>	<p>Vessel A</p> <p>Pilot A, male, 73 years old 1st Grade Inlandsea Pilot Certificate Date of issue: February 18, 2002 Date of revalidation: January 22, 2018 Date of expiry: February 17, 2021 Master A (Nationality: India), male, 57 years old Endorsement attesting the recognition of certificate Certificate of Master (issued by the Republic of the Marshall Islands) Date of issue: March 30, 2016 (valid until March 23, 2021) Navigation Officer A (Nationality: Democratic Socialist Republic of Sri Lanka), male, 34 years old Endorsement attesting the recognition of certificate Certificate of Master (issued by the Republic of the Marshall Islands) Date of issue: November 16, 2016 (valid until June 19, 2021)</p> <p>Vessel B</p> <p>Master B, male, 78 years old First class boat's operator, personal watercraft operator, with passenger service license Date of issue: October 21, 1975 Date of revalidation: August 11, 2014 (valid until July 7, 2020)</p>
<p><b>Injuries to Persons</b></p>	<p>Vessel A: None</p>

	Vessel B: Minor injuries to one person (Master B)
Damage to Vessel	Vessel A: Abrasions on starboard side plating shell (bow-side) Vessel B: Crushed bow, bent awning supports, damage to awning
Weather and Sea Conditions	Weather: Weather -Fine, Wind direction - southeast, Wind force 2 Sea conditions: Sea surface - calm, Current - east-southeast current of about 3 to 4 knots (kn) Sunrise: Around 05:32
Events Leading to the Accident	<p>Vessel A, with Master A, Navigation Officer A, and 19 other crew members (four nationals of India, three nationals of the People’s Republic of Bangladesh, one national of Ukraine, and eleven nationals of the Republic of the Philippines) aboard, was navigating from Pyeongtaek Port, Republic of South Korea, to Higashiharima Port, Hyogo Prefecture, via Osaka Bay.</p> <p>At around 03:25 on September 2, 2019, Pilot A boarded Vessel A near the East Light Buoy of Akashi Kaikyo Traffic Route (hereinafter, when a light buoy starts with “Akashi-Kaikyo Traffic Route,” this portion shall be omitted) and exchange information on piloting operations with Master A using a pilot card, etc.</p> <p>Vessel A proceeded toward Akashi-Kaikyo Traffic Route (hereinafter referred to as “the Traffic Route”) with navigation lights on and under Pilot A’s pilotage, with Master A conning the vessel and stationing Navigation Officer A to monitor the radar and also stationing a able seaman and apprentice navigation officer.</p> <p>At around 03:33, Pilot A notified Osaka Wan Vessel Traffic Service Center (hereinafter referred to as “Osaka MARTIS”) of Vessel A’s schedule time to enter the Traffic Route by VHF radio telephone (hereinafter referred to as “VHF”).</p> <p>At around 04:05, Vessel A passed No. 3 Buoy and entered the Traffic Route and proceeded northwest along the Traffic Route at a speed of approximately 10 kn (speed over the ground; hereinafter the same).</p> <p>Pilot A was giving course instructions with the intention of maintaining a certain distance from No. 2 Buoy as Vessel A approached a bend in the Traffic Route when, at around 04:21, there was a call to Vessel A by VHF from Osaka MARTIS and Pilot A received a communication to watch for a vessel approaching from the direction of Akashi.</p> <p>Master A and Navigation Officer A did not understand the content of the call because the conversation by VHF was in Japanese.</p> <p>Pilot A observed the navigation lights of Vessel B, which was approaching from the starboard side, for the first time and flashed a daylight signal that he had ready at Vessel B several times but then lost sight of Vessel B, and Vessel A collided with Vessel B at around 04:22.</p>

	<p>Pilot A notified Osaka MARTIS of the accident and reported that Vessel B was moving away from Vessel A's starboard stern.</p> <p>At around 04:05, Vessel B, with Master B being the only crew member aboard, departed her moorage at Akashi Port, Akashi City, Hyogo Prefecture, with navigation lights on for fishing grounds to the east of Awaji-shima Island for the purpose of conducting pole-and-line fishing of Japanese Spanish mackerel.</p> <p>At around 04:16, Master B passed Akashi Port's breakwater, sat on a chair in the wheelhouse, and performed ship maneuvering by manual steering.</p> <p>Vessel B proceeded southeast at a speed of about 10 kn, with Master B thinking that there were no vessels proceeding west from the direction of Akashi-Kaikyo Bridge at the time he set the south pier of Akashi-Kaikyo Bridge as his heading mark.</p> <p>Master B was observing several vessels proceeding east in the Traffic Route and was considering which of the vessels to pass by their sterns when crossing the route.</p> <p>Vessel B entered the Traffic Route from the north side of the route at around 04:21 and, as Master B was observing the movements of vessels proceeding east, she collided with Vessel A at around 04:22.</p> <p>Master B's forehead, etc., struck a clear view screen in the collision, and after he returned to Akashi Port under his own power without knowing what he had collided with, he was diagnosed at a hospital as having a forehead bruise, lacerations, and chest fracture. (See Attached Figure 1 "Outline Map of the Course of the Accident Events")</p>
Other Matters	<p>(1) Circumstances of visual sighting, etc., from Vessel A's wheelhouse</p> <p>According to the reply to the questionnaire by Master A, the wheelhouse is approximately 30 m above the ocean's surface, and the visible area from the wheelhouse was the ocean's surface beyond approximately 125 m directly abeam and forward at horizontal distance.</p> <p>According to Vessel A's general arrangement plan, the navigation lights were at a height of approximately 27 m or higher from the ocean's surface.</p> <p>(Attached Figure 2)</p> <p>(2) Circumstances, etc., of Vessel B's navigation lights</p> <p>(a) An awning was installed from the bow to the stern, and a masthead light and a bi-colored light were installed above the awning and below the awning, respectively.</p> <p>(b) The angles from the bi-colored light to the awning at the bow's end and both sides were approximately 10° upward in the direction of the bow and approximately 20° upward directly</p>

abeam.

(c) The bi-colored light and the wheelhouse were adjacent.

(d) The condition of the light of the bi-colored light was such that light would reach a target at a height of approximately 30 m above the ocean's surface when the target was at a horizontal distance from Vessel B of approximately 160 m or more in the direction of the bow and approximately 75 m or more directly abeam.

(Attached Figure 3)

(3) Circumstances of the approach of Vessel A and Vessel B

According to the images provided by Osaka MARTIS and 3 M-range radar images recorded by Vessel A's VDR, the situation was as follows.

- Vessel B proceeded southeast from Akashi Port and entered the route and, after approaching to approximately 200 m at 330° (true bearing; hereinafter the same) from Vessel A, proceeded south-southwest until just prior to the collision.
- From between around 04:16 and 04:22, passage in the Traffic Route was displayed as being one vessel proceeding west (Vessel A) and four vessels proceeding east.

(Attached Figure 4 and Attached Figure 5)

(4) Maneuverability characteristics of Vessel A

When in ballast, Vessel A's advance,<sup>\*1</sup> transfer,<sup>\*2</sup> shortest stopping distance, and required time for each when making a starboard turn and port turn with a rudder angle of 35° are as shown in the following table (see Table 1).

Table 1 Maneuverability characteristics of Vessel A

Starboard turn	Advance 660 m	1 min 40 sec
	Transfer 370 m	
Port turn	Advance 650 m	1 min 30 sec
	Transfer 360 m	
Shortest stopping distance 2,250 m		7 min 30 sec

(5) Matters to be observed based on Company A's management regulations

When a pilot comes aboard, the master, the officer of the watch, a lookout, and a helmsman shall be stationed in the wheelhouse,

\*1 "Advance" refers to the distance advanced by a vessel's center of gravity in the direction of the original course when the vessel turns by 90° from the position of its center of gravity at the time of steering.

\*2 "Transfer" refers to the sideways distance a vessel's center of gravity moves from the original course when the vessel turns by 90° from the position of its center of gravity at the time of steering.

and the master shall have the pilot engage in pilotage as the overall person in charge.

According to the masters' instructions, matters to be observed were as follows.

- The officer of the watch has responsibility for the vessel's safe navigation and must continue lookout.
- The officer of the watch is not exempt from lookout duty even when the master or pilot is on the bridge.
- The officer of the watch must report necessary information to the pilot and continue the vessel's safe navigation.

(6) Matters to be confirmed concerning piloting operations

According to the checklist Pilot A presented to Master A, matters to be confirmed with the master concerning piloting operations were as follows.

- Conduct lookout and monitor the movements of other vessels.
- Check the vessel's position and report to the pilot at appropriate times.

(7) Circumstances of lookout of Vessel A and Vessel B

Although, when the accident occurred, it was a time of day when fishing vessels leave Akashi Port, Pilot A did not make any specific requests for lookout giving attention to the situation outside of the Traffic Route, etc., to Master A.

Pilot A had experienced encountering fishing boats that approached vessels navigating in the Traffic Route as they were crossing the route, and he thought that, even if fishing vessels approached, they would navigate by giving way.

After he began pilotage, Pilot A thought that reporting on surrounding conditions by Vessel A's crew was being done appropriately.

When he felt uncertain about the avoiding actions of fishing vessels in the Traffic Route, Pilot A intended to first issue light signals and, if still there was no distinct change in movement, issue whistle signals.

During Pilot A's pilotage, Master A checked whether the able seaman was steering in accordance with Pilot A's course instructions and issued instructions to the apprentice navigation officer.

Navigation Officer A was watching the radar images and keeping lookout of the surroundings while also checking the



	<p>vessel's position; however, after the accident, he thought that he had missed Vessel B.</p> <p>After Pilot A communicated by VHF and then hurried to the starboard side and used the daylight signal, Master A and Navigation Officer headed to the starboard wing to follow but heard a loud sound at the starboard bow before they could exit the wheelhouse.</p> <p>Vessel B was not equipped with VHF or radar.  (See Attached Figure 2 "Vessel A," Attached Figure 3 "Vessel B," Attached Figure 4 "Radar Images, etc., from Vessel A's VDR," Attached Figure 5 "Situation from the Time Pilot A Noticed Vessel B until the Collision," Attached Table 1 "AIS Record of Vessel A (Excerpt)," Attached Table 2 "Information on Voice Communication, etc., Recorded by Vessel A's VDR (Excerpt)," and Attached Table 3 "Table of Events Leading to the Accident")</p>
<p><b>Analysis</b></p> <p>Involvement of crew members</p> <p>Involvement of vessel, engine, etc.</p> <p>Involvement of weather and sea conditions</p> <p>Analysis of the findings</p>	<p>A: Applicable            B: Applicable</p> <p>A: Not Applicable,    B: Not Applicable</p> <p>A: Not Applicable ,    B: Not Applicable</p> <p>(1) Circumstances of visual sighting of Vessel A and Vessel B</p> <p>Vessel B's image was displayed continuously on Vessel A's radar after first being displayed at a distance of approximately 3,500 m directly ahead at 04:16:54, and therefore it is highly probable that Vessel A could observe Vessel B.</p> <p>Looking at the conditions of visual sighting of Vessel A and Vessel B, if it is assumed from the adjacent position of Vessel B's bi-colored light and wheelhouse that the bi-colored light's reach and visibility from the wheelhouse were roughly the same, then it is somewhat likely that Vessel A's navigation lights were visible from Vessel B's wheelhouse and Vessel B's bi-colored light was visible from Vessel A's wheelhouse.</p> <p>(2) Circumstances of the approach of Vessel A and Vessel B</p> <p>It is highly probable that, with Master A stationing crew members in the wheelhouse as the person conning the vessel, Vessel A was proceeding west under Pilot A's pilotage in the Traffic Route at a speed of 10.5 kn after changing course at the No. 2 Buoy.</p> <p>It is highly probable that Vessel A collided with Vessel B at its starboard bow after Vessel A received an alert from Osaka MARTIS and approximately 20 seconds Pilot A first observed</p>

Vessel B.

It is probable that, when Pilot A noticed Vessel B, Vessel A could not evade Vessel B, which had approached to approximately 200 m, by her own action alone.

It is probable that Vessel B was proceeding southeast at a speed of approximately 10 kn after leaving Akashi Port, with Master B alone aboard.

It is probable that, because Vessel B was proceeding south-southwest after entering the Traffic Route and collided with Vessel A, Master B turned the rudder to starboard with the intention of passing the sterns of vessels that were proceeding east.

It is highly probable that Vessel A and Vessel B did not possess means of mutual communication, such as VHF, etc.

(3) Circumstances of lookout of Vessel A and Vessel B

It is probable that, although he knew that, at the time of the accident, it was a time of day when fishing vessels leave port, Pilot A continued to navigate by directing his attention to maintaining Vessel A's path within the Traffic Route and did not make any specific requests for lookout giving attention to the situation outside of the Traffic Route to Master A because he thought that fishing vessels would navigate by giving way to Vessel A and he had not received a report of Vessel B's approach.

It is probable that Pilot A used the daylight signal to alert the approaching fishing boat just prior to the accident but was unable to arouse Master B's attention.

It is probable that Master A and Navigation Officer A did not notice Vessel B's approach until Pilot A used the daylight signal and did not report Vessel B's approach to Pilot A.

It is probable that Master A was giving instructions to crew members but his instructions to Navigation Officer A to provide lookout of the situation outside of the Traffic Route were incomplete.

It is probable that Master B was not sufficiently checking the Traffic Route's situation after setting the south pier of Akashi-Kaikyo Bridge as his heading mark.

It is somewhat likely that, at the time of the accident, there were several vessels proceeding eastbound Vessel B's west and Master B was directing his attention to the vessels proceeding east and did not notice Vessel A proceeding west because he was considering which of the vessels to pass by their sterns.

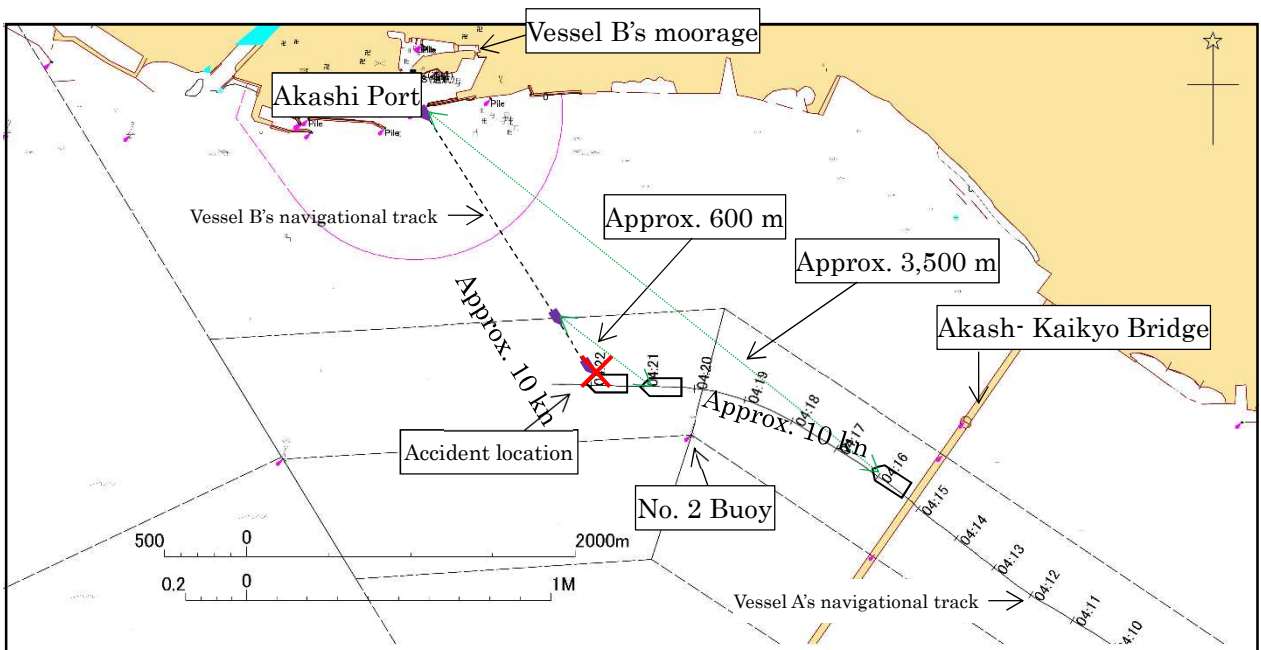
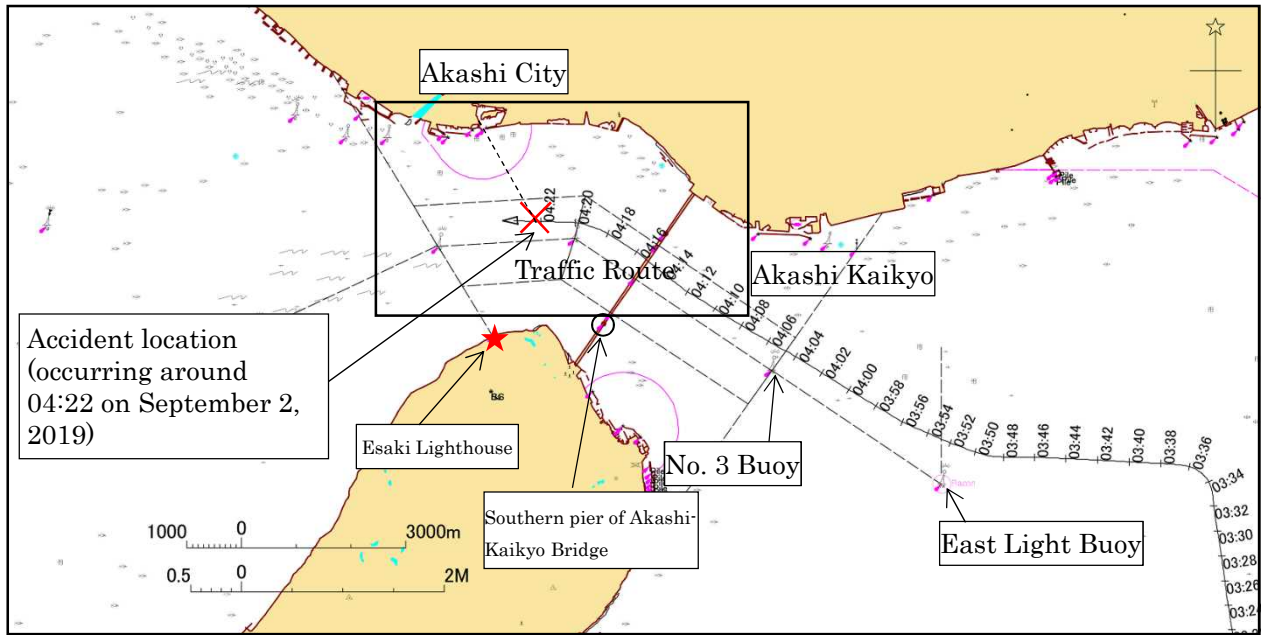
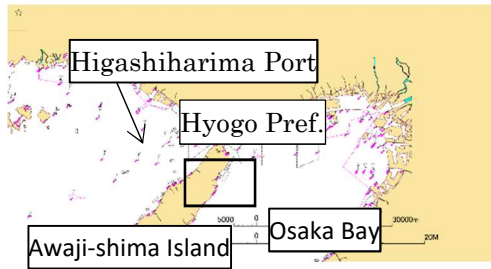
It is probable that, after entering the Traffic Route from the north, Master B continued crossing the route with his attention directed at the vessels proceeding east.

It is highly probable that Master B was required to give way to

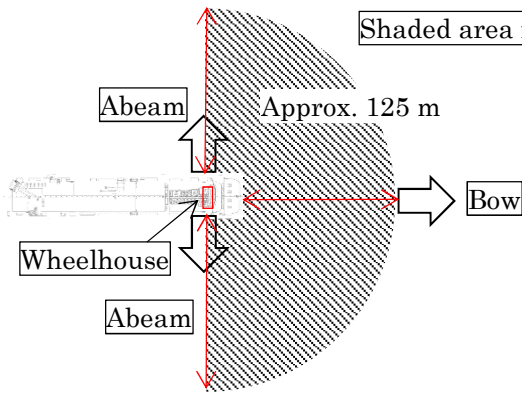
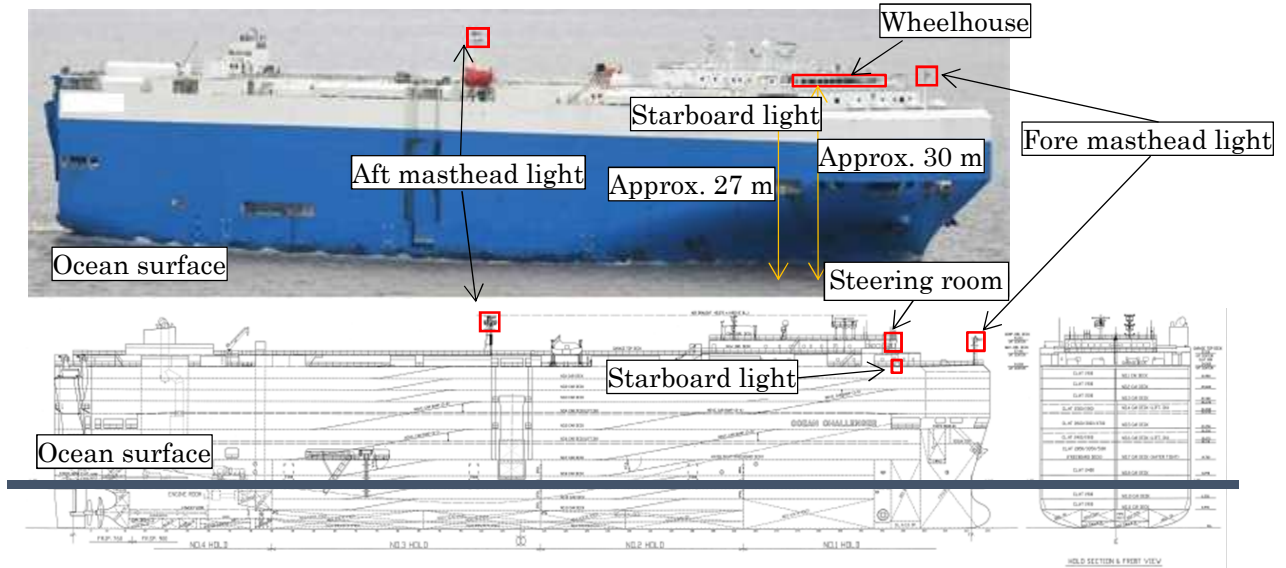
	Vessel A's path after entering the Traffic Route.
<b>Probable Causes</b>	<p>It is probable that the accident occurred when, as Vessel A was proceeding west under Pilot A's pilotage and Vessel B was proceeding southeast in the Traffic Route at night, both vessels collided because Pilot A continued navigating with his attention directed to maintaining Vessel A's path within the Traffic Route and Vessel B continued proceeding south-southwest and crossing the Traffic Route after entering the route with his attention on vessels that were proceeding east in the Traffic Route.</p> <p>It is somewhat likely that Master B proceeded south-southwest and continued crossing the Traffic Route after entering the route for the reason that, at the time of the accident, there were several vessels proceeding east to Vessel B's west and Master B was directing his attention to the vessels proceeding east and did not notice Vessel A proceeding west because he was considering which of the vessels to pass by their sterns.</p> <p>It is probable that Pilot A continued navigating with his attention directed to maintaining Vessel B's path within the route because he did not personally notice Vessel A's approach and there was no report of Vessel B's approach from Master A or Navigation Officer A.</p> <p>It is probable that the situation whereby Pilot A did not make any specific requests for lookout giving attention to the situation outside of the Traffic Route to Master A despite knowing that, at the time of the accident, it was a time of day when fishing vessels leave port contributed to the accident's occurrence.</p>
<b>Safety Actions</b>	<p>It is probable that the following actions will be useful in preventing the reoccurrence of a similar accident.</p> <ul style="list-style-type: none"> <li>▪ Vessels crossing a traffic route enter the route after fully ascertaining the passage of other vessels navigating in the route prior to entry.</li> <li>▪ Vessels entering a traffic route from outside the route give way to vessels navigating along the route.</li> <li>▪ Vessels navigating in a traffic route conduct lookout for vessels outside the route due to the possibility that fishing vessels, etc., may cross the route, and conduct lookout for fishing vessels, etc., present near the traffic route particularly when altering course.</li> <li>▪ Vessels navigating in a traffic route, and particularly large vessels, issue warning signals consisting of at least five short blasts to fishing vessels, etc., approaching from outside the route so that the masters of those vessels quickly and certainly</li> </ul>

	<p>notice the navigating vessel's presence, giving consideration to the possibility that blind spots from the wheelhouse exist and that means for communicating with fishing vessels, etc., are unavailable.</p> <ul style="list-style-type: none"><li>▪ Pilots make specific requests for lookout in accordance with the local situation to masters, giving consideration to the season, time of day, topography, current, conditions of vessel passage, operating conditions of fishing vessels, conditions of maritime construction work, etc.</li><li>▪ Pilots proactively apply BRM to ensure communication and sharing of information with masters and crew members.</li></ul>
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Attached Figure 1 Outline Map of the Course of the Accident Events



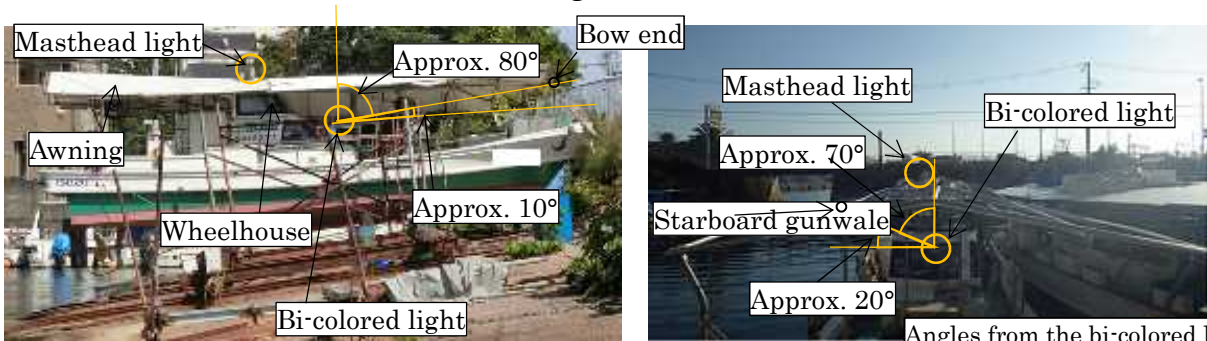
Attached Figure 2 Vessel A



Shaded area indicates area that cannot be seen from the wheelhouse.

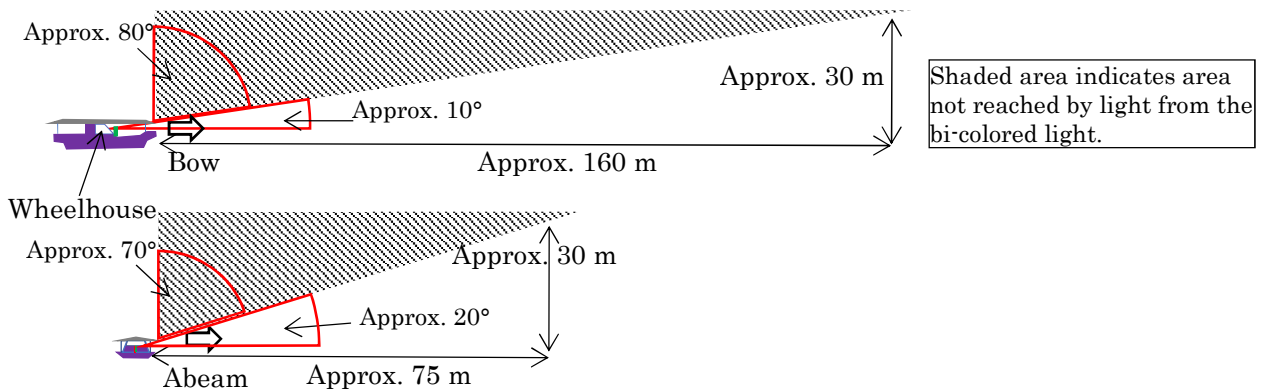
Area visible from the wheelhouse  
The ocean surface beyond 125 m (horizontal distance) ahead and abeam can be seen from Vessel A.

Attached Figure 3 Vessel B



Reach of light from the bi-colored light at a target 30-m above the ocean's surface

Angles from the bi-colored light to the bow end and both sides of the awning  
Approx. 10° upward toward bow  
Approx. 20° upward directly abeam

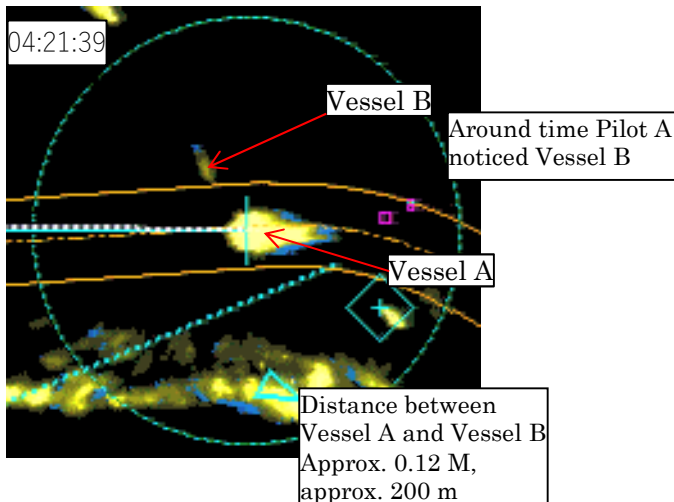
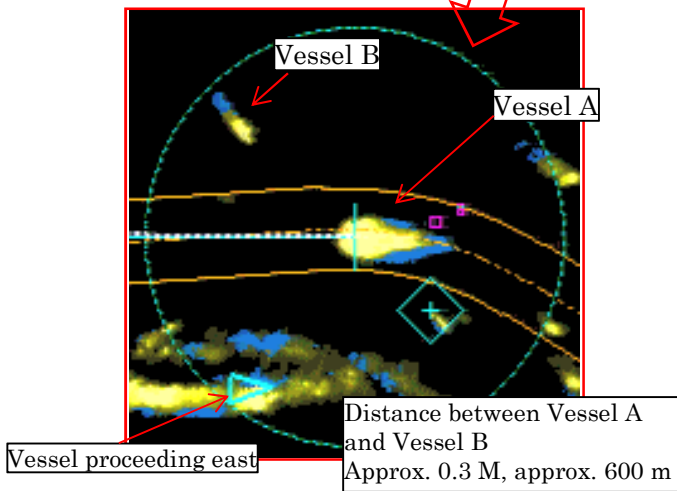
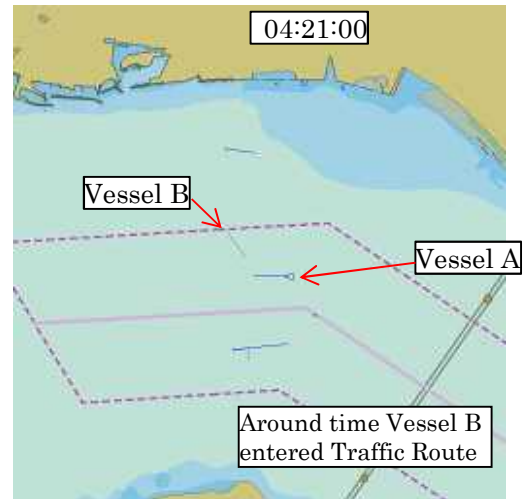
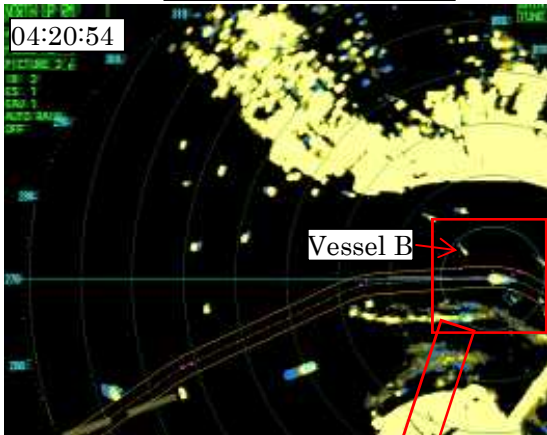
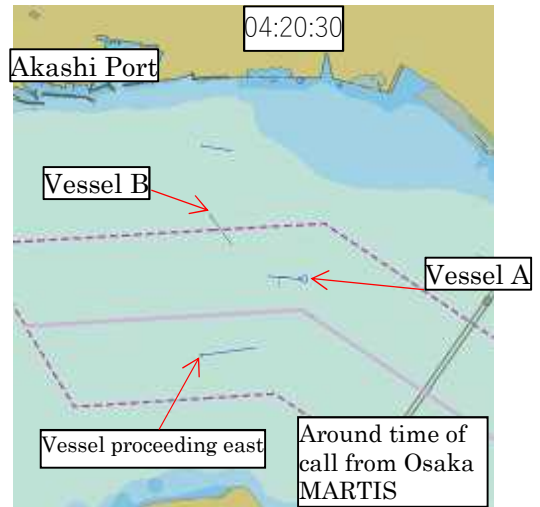
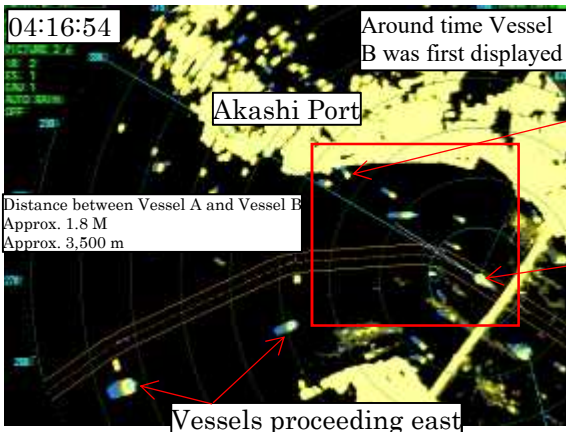


Shaded area indicates area not reached by light from the bi-colored light.

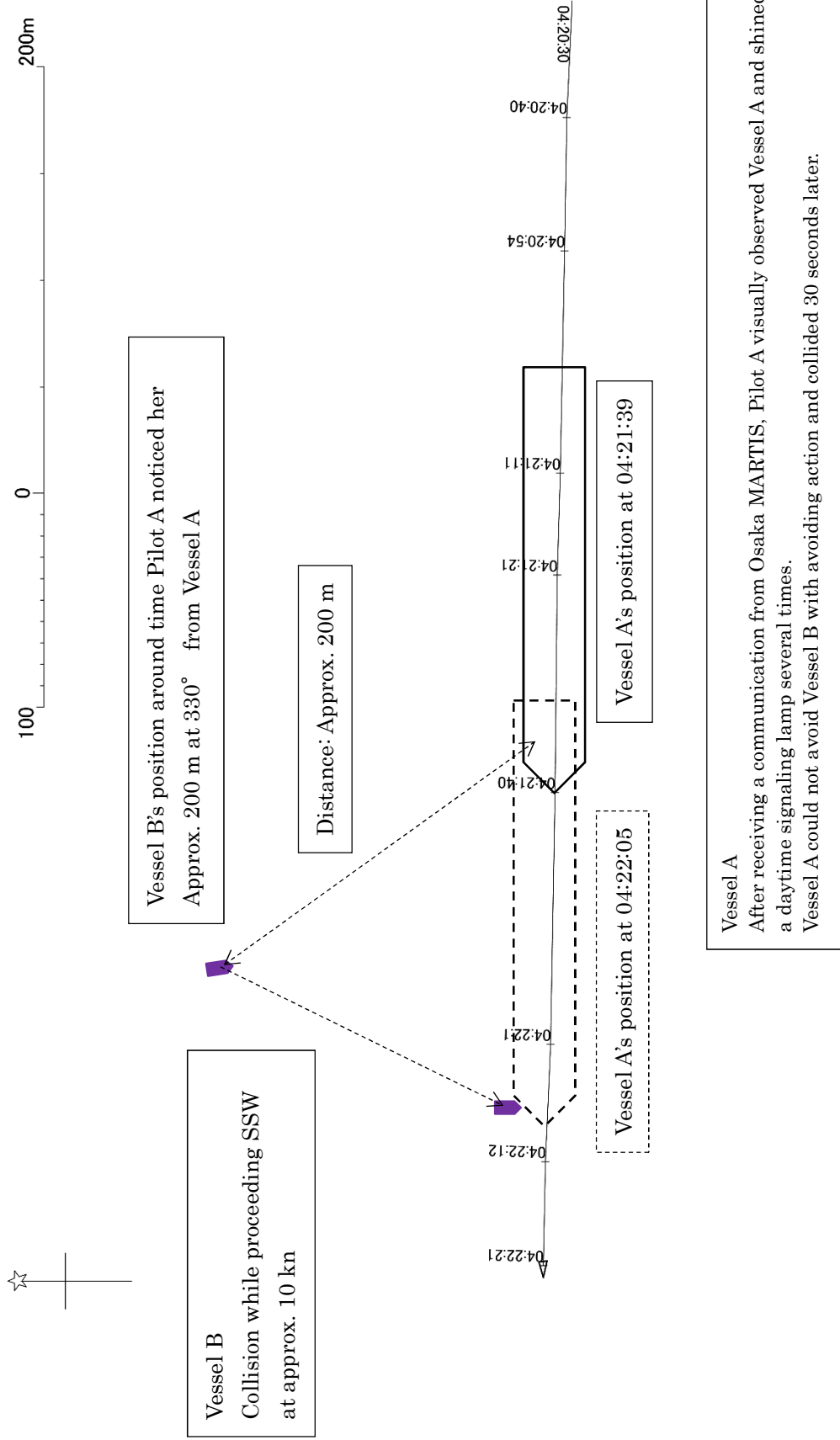
Attached Figure 4 Radar Images, etc., from Vessel A's VDR

○ Radar images from Vessel A's VDR

○ Image provided by Osaka MARTIS  
The ends of vectors indicating vessel course and speed show predicted vessel position after one minute.



Attached Figure 5 Situation from the Time Pilot A Noticed Vessel B until the Collision





Attached Table 1 AIS Record of Vessel A (Excerpt)

Time (HH:MM:SS)	Ship's position*		Course Over the Ground* ( °)	Heading* ( °)	Speed Over the Ground (knots [kn])
	Latitude (N) (°-'-")	Longitude (E) (°-'-")			
03:44:00	34-35-13.8	135-06-24.5	272.6	274	9.4
03:50:01	34-35-17.7	135-05-19.3	288.7	289	8.1
04:00:00	34-35-54.8	135-03-48.8	301.7	299	9.3
04:05:00	34-36-18.8	135-03-01.0	298.1	299	9.2
04:14:00	34-37-04.0	135-01-35.3	308.1	305	9.5
04:15:00	34-37-09.9	135-01-26.1	308.5	305	9.8
04:16:00	34-37-16.3	135-01-16.6	306.8	303	9.9
04:17:00	34-37-21.7	135-01-06.5	303.2	300	10.0
04:18:00	34-37-27.1	135-00-56.0	300.2	297	10.2
04:19:00	34-37-31.2	135-00-44.8	289.9	286	10.2
04:20:01	34-37-33.6	135-00-32.7	278.7	275	10.0
04:21:01	34-37-34.1	135-00-20.6	271.4	270	10.2
04:22:01	34-37-34.3	135-00-08.0	271.7	270	10.5
04:23:02	34-37-34.6	134-59-55.0	272.4	270	10.9

\*: The vessel position indicates the position of the GPS antenna installed above the bridge, and the courses over the ground and headings indicated in true bearings.

Attached Table 2 Information on Voice Communication, etc., Recorded by Vessel A's VDR (Excerpt)

	Vessel A	Osaka MARTIS
03:33:38 to 03:35:20	<p>Pilot A : Osaka MARTIS, Osaka MARTIS, This is GLOVIS COMPANION. Do you read me?</p> <p>Pilot A : Good morning. We will head to Akashi Kaikyo now. We request entry into the route as scheduled at 04:10. Over.</p> <p>Pilot A : Roger. Good-bye.</p>	<p>Yes, GLOVIS COMPANION, this is Osaka MARTIS. Proceed with notice. Over.</p> <p>Roger. Zero-four-one-zero, understood. Here is current information on the situation in the traffic route. There is no conspicuous fishing vessel activity up to the traffic route in your direction and inside the traffic route at the present time. Current is east-going at 4.8 knots and subsiding. Over.</p> <p>Thank you for your notice. Good-bye.</p>
04:20:45 to 04:21:41	<p>Pilot A : This is GLOVIS COMPANION. Did you call? Over.</p> <p>Pilot A : Roger. Thank you. We will proceed with caution. Thank you very much.</p>	<p>GLOVIS COMPANION, GLOVIS COMPANION, this is Osaka MARTIS.</p> <p>Yes. There is currently one vessel approaching your vessel's forward starboard side from the direction of Akashi. Use caution. Over.</p>

		Very good. Returning to Channel 16. Good-bye.
04:21:50	Sound: Click, click, click, click	
04:22:05	Sound: Bang	
04:22:51 to 04:24:08	<p>Pilot A : Osaka MARTIS, Osaka MARTIS, this is GLOVIS COMPANION. It appears we struck the fishing vessel. Over.</p> <p>Pilot A : She is drifting away from us, but does not appear to be sinking or experiencing particular difficulty.</p> <p>Pilot A : Roger.</p>	<p>This is Osaka MARTIS. Understood. What is the fishing vessel's current condition? Over.</p> <p>Roger. Understand that the fishing boat has not sunk. Stand by on Channel 16. Over.</p>

Attached Table 3 Table of Events Leading to the Accident

	Vessel A	Pilot A or Vessel A crew member	Vessel B	Master B
Around 03:25	Pilot A comes aboard at a position east of the East Light Buoy.	Pilot A and Master A exchange information on piloting operations using a pilot card, etc. Pilot A notifies Osaka MARTIS of the scheduled entry time into the traffic route.		
Around 04:05	Passes No. 3 Buoy.		Departs moorage at Akashi Port.	
Around 04:15	Passes Akashi-Kaikyo Bridge.			
Around 04:16	Vessel B appears on radar at approx. 1.8 M (3,500 m).  Proceeding NW		Passes Akashi Port's breakwater.  Proceeding SE	Navigates with the Akashi-Kaikyo Bridge's southern pier as a target.
Around 04:18	Begins to alter course along traffic route.			
Around 04:21	Receives VHF call from Osaka MARTIS to alert that Vessel B is approaching.  Proceeding W	After the call, Pilot A notices Vessel B, which had approached to approximately 200 m. Pilot A shines the daylight signal.	Enters the Traffic Route.  Proceeding SSW	Does not notice Vessel A. Observes the movements of vessels proceeding east in the route from the west and considers which vessels to pass by their sterns.
Around 04:22	Collision	Pilot A and Vessel A crew members hear the sound of a collision.	Collision	Does not know what he hit.

Around 04:23	Pilot A notifies Osaka MARTIS that an accident has occurred.		
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