Chapter 4 Marine accident and incident investigations

1 Marine accidents and incidents to be investigated

<Marine accidents to be investigated>

◎Paragraph 5, Article 2 of the Act for Establishment of the Japan Transport Safety Board

(Definition of marine accident)

The term "Marine Accident" as used in this Act shall mean as follows:

1 Damage to a ship or facilities other than a ship related to the operations of a ship.

2 Death or injury of the people concerned with the construction, equipment or operation of a ship.

<Marine incidents to be investigated>

◎Item 2, paragraph 6, Article 2 of the Act for Establishment of the Japan Transport Safety Board (Definition of marine incident)

A situation, prescribed by Ordinance of Ministry of Land, Infrastructure, Transport and Tourism, where deemed to bear a risk of Marine Accident occurring.

◎Article 3 of Ordinance for Enforcement of the Act for Establishment of the Japan Transport Safety Board

(A situation, prescribed by Ordinance of the Ministry of Land, Infrastructure, Transport and Tourism, stipulated in item 2, paragraph 6, Article 2 of the Act for Establishment of the Japan Transport Safety Board)

1 The situation wherein a ship became a loss of control due to any of the following reasons:
(a) navigational equipment failure;
(b) listing of a ship; or
(c) short of fuel or fresh water required for engine operation.

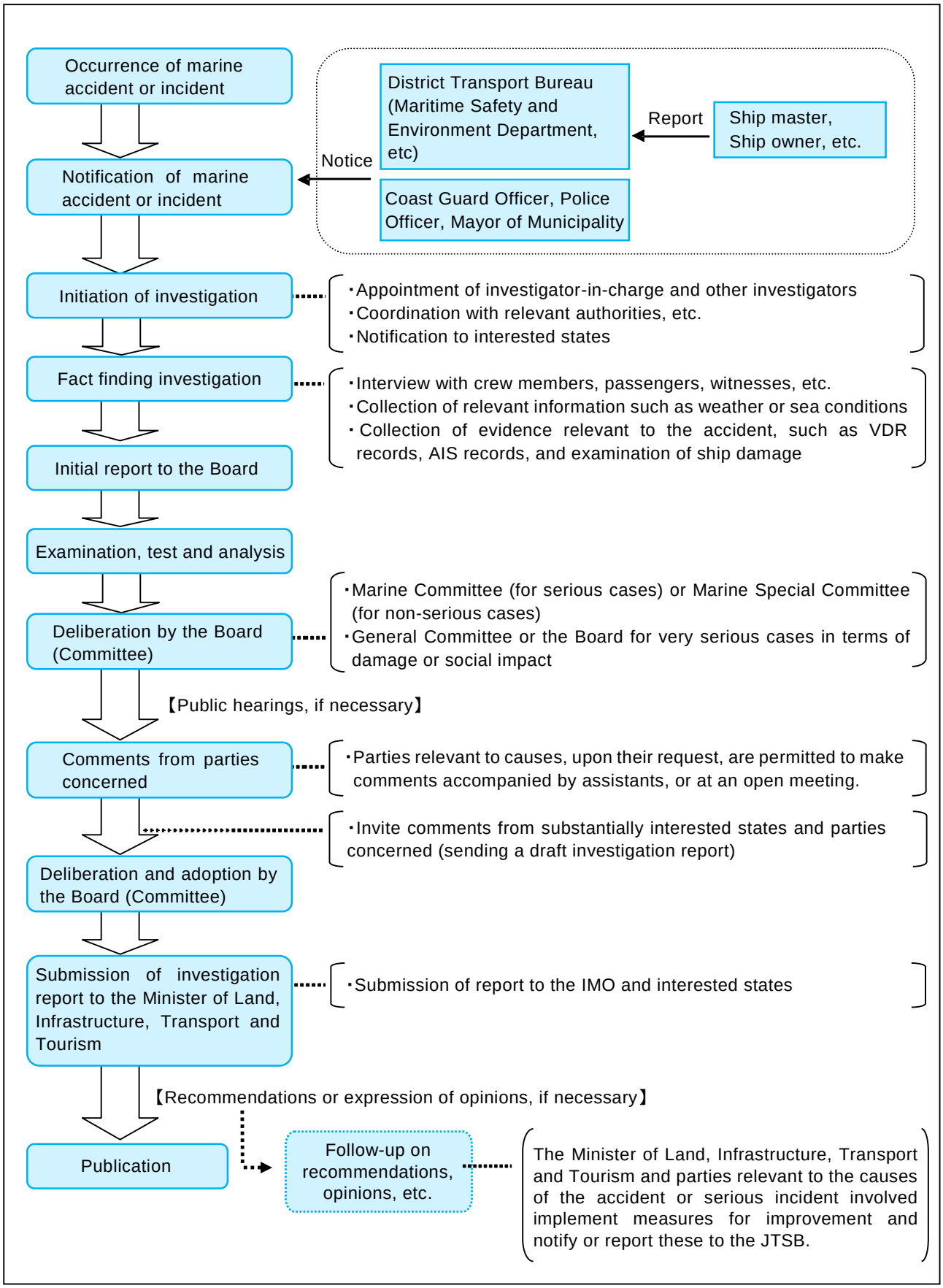
2 The situation where a ship grounded without any damage to the hull; and

3 In addition to what is provided for in the preceding two items, the situation where safety or navigation of a ship was obstructed.

<Category of marine accident and incident>

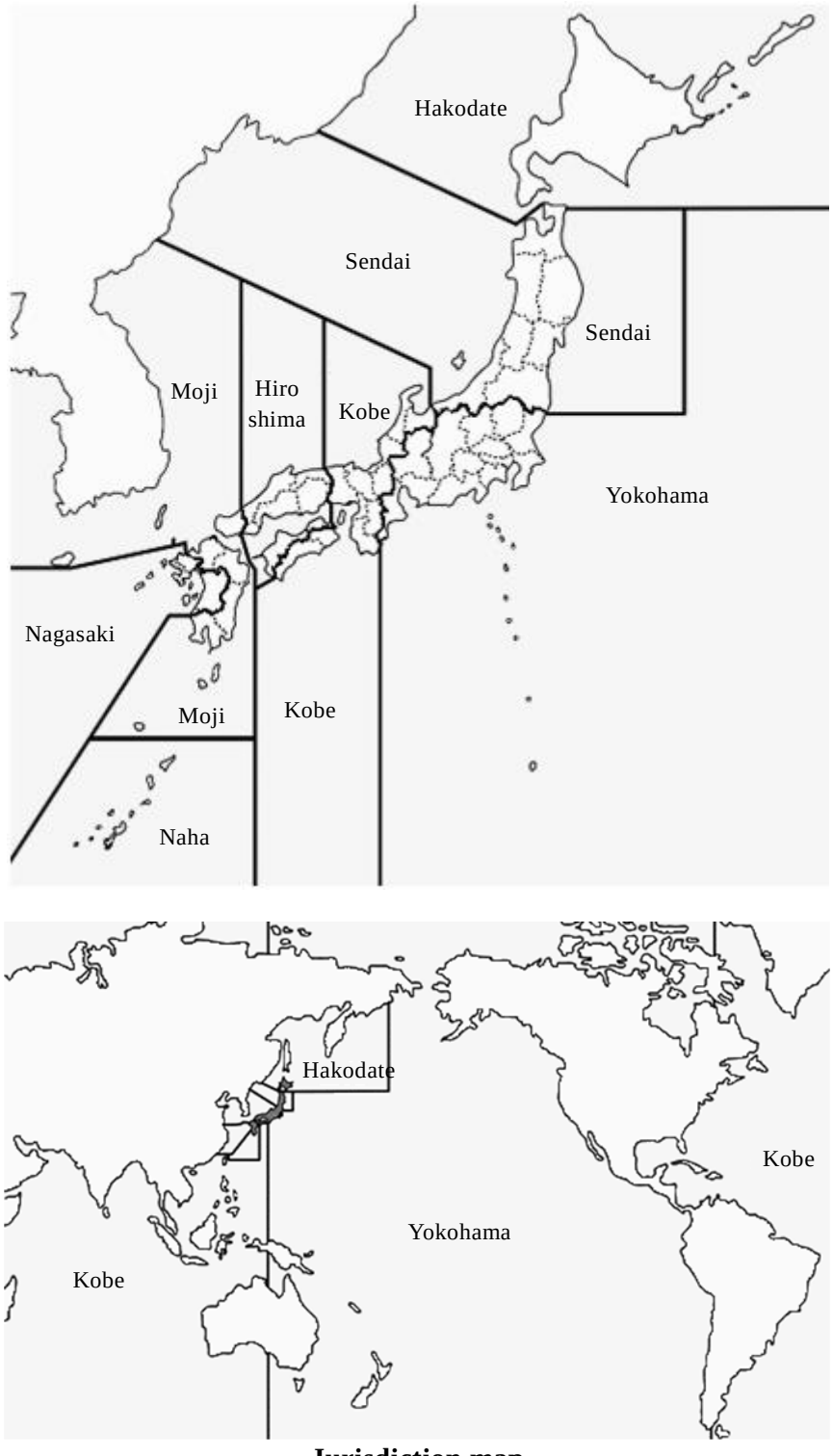
Marine accident and incident to be investigated		Type of marine accident and incident
Marine accident	Damage to ships or other facilities involved in ship operation	Collision, Grounding, Sinking, Flooding, Capsizing, Fire, Explosion, Missing, Damage to facilities
	Casualty related to ship structures, equipment or operations	Death, Death and injury, Missing person, Injury
Marine incident	Navigational equipment failure	Loss of control (engine failure, propeller failure, rudder failure)
	Listing of ship	Loss of control (extraordinary listing)
	Short of fuel or fresh water required for engine operation	Loss of control (fuel shortage, fresh water shortage)
	Grounding without hull damage	Stranded
	Obstruction of ship safety or navigation	Safety obstruction, Navigation obstruction

2 Procedure of marine accident/incident investigation



3 Jurisdiction of the Offices over marine accidents and incidents

For the investigation of marine accidents and incidents regional investigators are stationed in the regional offices (eight offices). Our jurisdiction covers marine accidents and incidents in the waters around the world, including rivers and lakes in Japan. The regional offices are in charge of investigations in the respective areas shown in the following map. Marine accident investigators in the Tokyo Office (Headquarters) are in charge of serious marine accidents and incidents.



Jurisdiction map

4 Role of the Offices and Committees according to category of accident and incident

Serious marine accidents and incidents are investigated by the marine accident investigators in the Headquarters, and are deliberated in the Marine Committee.

Non-serious marine accidents and incidents are investigated by regional investigators stationed in the eight regional offices, and deliberated in the Marine Special Committee.

<table>
<tr><td>Serious marine accidents and incidents</td><td>Office in charge of investigation: Marine accident investigators in the Headquarters
Committee in charge of deliberation and adoption: Marine Committee</td></tr>
<tr><td colspan="2">Definition of ”serious marine accidents and incidents”
•Cases where a passenger died or went missing, or two or more passengers were severely injured.
•Cases where five or more persons died or went missing.
•Cases involved a vessel engaged on international voyages where the vessel was a total loss, or a person on the vessel died or went missing.
•Cases of spills of oil or other substances where the environment was severely damaged.
•Cases where unprecedented damage occurred following a marine accident or incident.
•Cases which made a significant social impact.
•Cases where identification of the causes is expected to be significantly difficult.
•Cases where essential lessons for the mitigation of damage are expected to be learned.</td></tr>
<tr><td>Non-serious marine accidents and incidents</td><td>Office in charge of investigation: Regional investigators in the regional offices
Committee in charge of deliberation and adoption: Marine Special Committee</td></tr>
</table>

5 Statistics of investigations of marine accidents and incidents (As of end of February 2015)

The JTSB carried out investigations of marine accidents and incidents in 2014 as follows:

Investigations into 743 accidents had been carried over from 2013, and 931 accident investigations newly launched in 2014. Investigation reports on 980 accidents were published, and thereby 689 accident investigations were carried over to 2015.

Investigations into 100 incidents had been carried over from 2013, and 127 incident investigations newly launched in 2014. Investigation reports on 138 incidents were published, and thereby 86 incident investigations were carried over to 2015.

Among the 1,191 reports published in 2014, six were issued with recommendations.

Furthermore, due to numerous occurrences of similar accidents, investigation reports that had been published in the past were analyzed, and one opinion was issued.

Investigations of marine accidents and incidents in 2013

(Cases)

Category	Carried over from 2013	Launched in 2014	Not applicable	Transferred to Tokyo Office	Total	Publication of investigation report	Recommendations	Safety recommendations	Opinions	Carried over to 2015	Interim report
Marine accident	743	931	△5	0	1,669	980	(0)	(6)	(1)	689	(0)
Tokyo Office (Serious cases)	36	15	△1	4	54	30		(6)	(1)	24	
Regional Offices (Non-serious cases)	707	916	△4	△4	1,615	950				665	
Marine incident	100	127	△2	0	225	139	(0)	(0)	(0)	86	(0)
Tokyo Office (Serious cases)	1			1	2	2				0	
Regional Offices (Non-serious cases)	99	127	△2	△1	223	137				86	
Total	843	1,058	△7	0	1,894	1,119	(0)	(6)	(1)	775	(0)

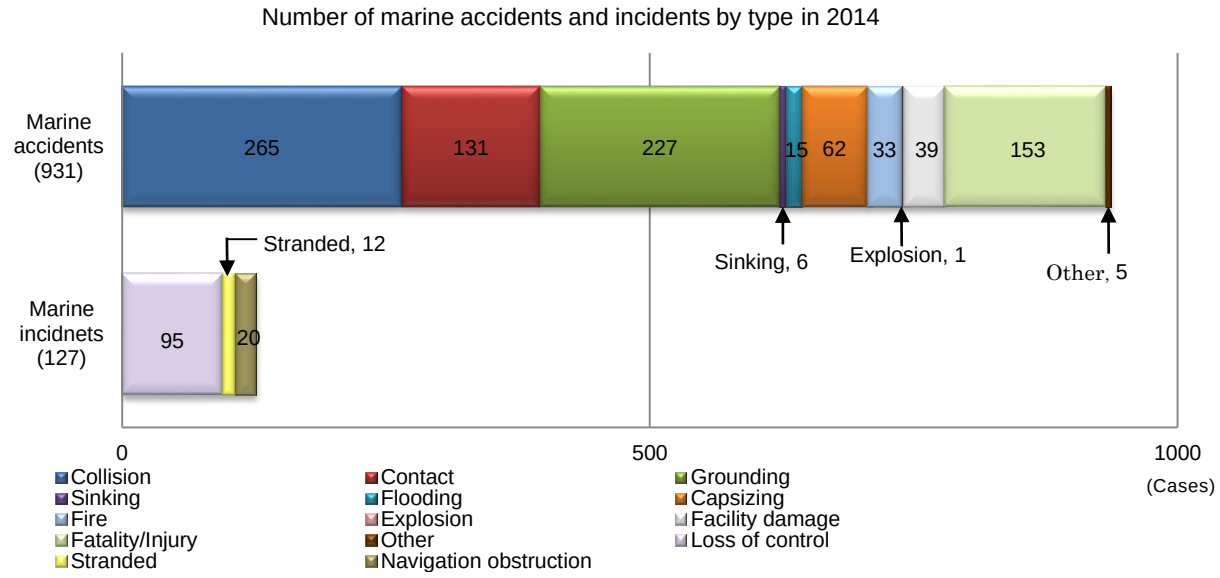
Note 1: The column “Not applicable” shows the number of cases which did not come under the category of accident or incident as defined in Article 2 of the Act for Establishment of the Japan Transport Safety Board.

Note 2: The column “Transferred to Tokyo Office” shows the number of cases where the investigation found out that it was serious and the jurisdiction was transferred from the regional office to the Tokyo Office.

6 Statistics of investigations launched in 2014 (As of end of February 2015)

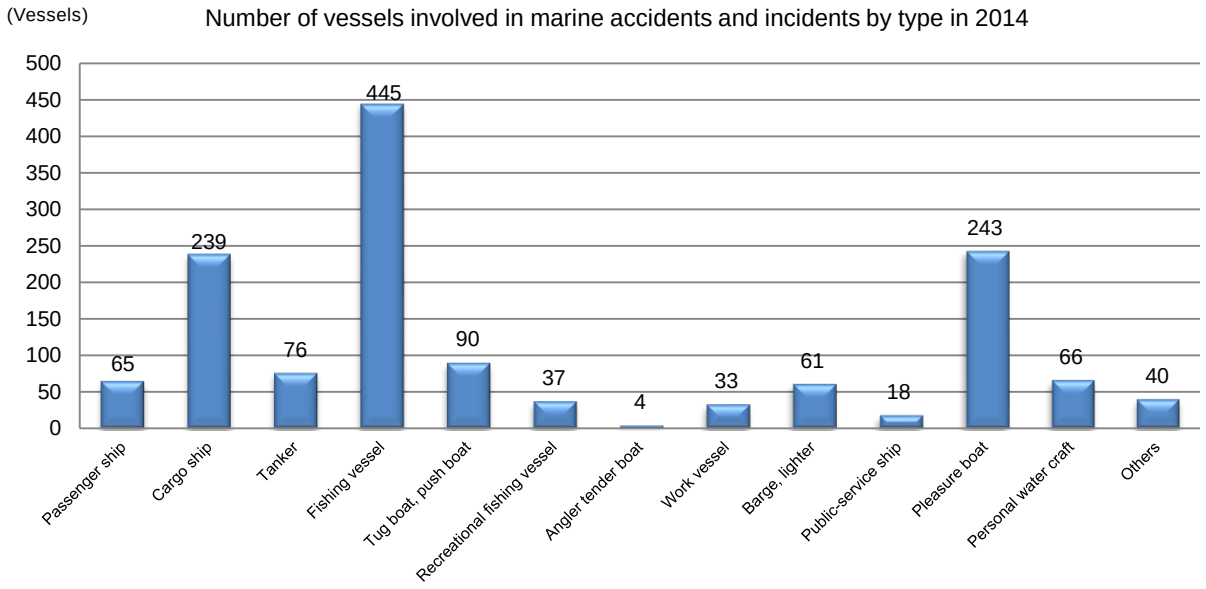
(1) Types of accidents and incidents

The 1,058 investigations launched in 2014 are classified by types as follows: With regard to marine accidents, there were 265 cases of collision, 227 cases of grounding, 153 cases of fatality/injury (not involved in other types of accidents), and 131 cases of contact. With regard to marine incidents, there were 95 cases of loss of control, 20 cases of navigation obstruction, and 12 cases of stranded. The objects of contact were quays in 30 cases, breakwaters in 23 cases, and piers in 11 cases.



(2) Types of vessels

The number of vessels involved in marine accidents and incidents is 1,417. Those vessels are classified by type as follows: 445 fishing vessels, 243 pleasure boats, 239 cargo ships, 90 tug boats and push boats, and 76 tankers.



The number of foreign-registered vessels involved in marine accidents and incidents was 97, and they were classified by accident type as follows: 54 vessels in collision, 16 vessels in grounding, and 13 vessels in contact. As for the flag of vessels, 26 vessels were registered in Panama, 14 vessels in Cambodia and South Korea, eight vessels in China, and six in Hong Kong. The number of vessels registered in Asian countries or regions was accounting for a half of the accidents and incidents.

Number of foreign-registered vessels by flag

(Vessels)

Panama	26	Hong Kong	6	Marshall Islands	3
Cambodia	14	Belize	4	Mongolia	3
South Korea	14	Liberia	4	Netherlands	2
China	8	Kiribati	3	Others	10

(3) Number of casualties

The number of casualties was 444, consisting of 118 deaths, 33 missing persons, and 293 injured persons. By type of vessel, 173 persons in fishing vessels and 102 persons in pleasure boats. By type of accident, 159 persons in casualties, 151 persons in collision, 38 persons in contact, 36 persons in grounding, and 36 persons in capsizing.

With regard to persons dead or missing, 91 persons were involved in fishing vessel accidents, 22 persons in pleasure-boat accidents, indicating dead or missing cases occurred frequently in fishing vessels.

Number of casualties (marine accident)

(Persons)

2014										
Vessel type	Dead			Missing			Injured			Total
	Crew	Passengers	Others	Crew	Passengers	Others	Crew	Passengers	Others	
Passenger ship	0	0	0	0	0	0	3	24	1	28
Cargo ship	7	0	1	8	0	0	9	0	0	25
Tanker	3	0	1	0	0	0	11	0	0	15
Fishing vessel	69	0	1	21	0	0	82	0	0	173
Tug boat, push boat	1	0	0	0	0	0	8	0	2	11
Recreational fishing vessel	0	1	0	0	0	0	2	10	0	13
Angler tender boat	0	1	0	0	0	0	0	1	0	2
Work vessel	2	0	0	0	0	0	1	0	1	4
Barge, lighter	0	0	5	0	0	2	1	0	3	11
Public-service ship	0	0	0	0	0	0	1	0	0	1
Pleasure boat	16	0	4	2	0	0	27	1	52	102
Personal water craft	3	0	2	0	0	0	16	0	31	52
Others	1	0	0	0	0	0	3	0	1	5
Total	102	2	14	31	0	2	164	38	91	444
	118			33			293			

7 Summaries of serious marine accidents and incidents which occurred in 2014

The serious marine accidents which occurred in 2014 are summarized as follows: The summaries are based on information available at the initial stage of the investigations and therefore, may change depending on the course of investigations and deliberations.

(Marine accident)

1	Date and location of accident	Vessel type and name, accident type
	January 15, 2014 Off the eastern coast of Atata Island, Otake City, Hiroshima Prefecture	Tank landing ship OSUMI (Ship A) Pleasure boat TOBIUO (Ship B) Collision
	Summary	Ship A, with the master, chief navigator, and 120 crew members onboard, was proceeding southward from Kure Port, Kure City in Hiroshima Prefecture toward Tamano City in Okayama Prefecture. Ship B, with the skipper and three acquaintances of skipper onboard, was proceeding south-south-west from Hiroshima City, Hiroshima Prefecture, toward the coast of Kabuto Island, located south of Atata Island, Otake City, Hiroshima Prefecture. The two ships collided off the eastern coast of Atata Island. For Ship B, the skipper and one passenger died, and one other passenger sustained injuries. In addition, there were abrasions and other damage to the starboard side of the ship, and the ship capsized. For Ship A, there were abrasions extending from the center part of the port side to the stern, but there were no fatalities.
2	Date and location of accident	Vessel type and name, accident type
	March 2, 2014 Off the southern coast of Murotomisaki, Kochi Prefecture	Fishing vessel KAISEIMARU No. 8 Fire
	Summary	The ship, with the skipper, chief engineer and five crew members onboard, became uncontactable off the southern coast of Murotomisaki, Muroto City in Kochi Prefecture. A consort ship then made contact with the Fifth Regional Coast Guard Headquarters via a fishery radio station. The ship was discovered to be on fire. Thereafter, four persons were rescued onto the consort ship, while three persons were confirmed to be dead. Three other persons and the ship went missing.
3	Date and location of accident	Vessel type and name, accident type
	March 9, 2014 Hotokezaki, Nagasaki City, Nagasaki Prefecture	Angler tender boat TSURISHIOMARU Fatality of fishing passenger
	Summary	Refer to “8. Publication of Investigation Reports” (p. 102, No. 25).
4	Date and location of accident	Name of accident
	March 18, 2014 Off the coast of Miura Peninsula, Kanagawa Prefecture	Cargo ship BEAGLEⅢ(Ship A, Panama) Container ship PEGASUS PRIME (Ship B, Korea) Collision
	Summary	Ship A, with the master and 19 crew members onboard, had departed from the Uraga Suido Traffic Route and was proceeding southward. Ship B, with the master and 13 crew members onboard, was following the same route and was heading northward. The two ships collided off the southeastern coast of Miura Peninsular in Kanagawa Prefecture. Ship A foundered, while the bow part of ship B was crushed and developed cracks and other damage. One crew member on Ship A died and eight crew members went missing, while three crew members on Ship B sustained injuries during the rescue operations.

5	Date and location of accident	Vessel type and name, accident type
	March 30, 2014 Building construction site for mooring facilities for Okinotorishima Harbor, Metropolitan Tokyo	Fatality and injury of construction workers at Okinotorishima Harbor
	Summary	While pulling out the pier from the barge at the building construction site for mooring facilities for Okinotorishima Harbor, the pier collapsed and overturned. Five persons died, and two persons went missing.
	Status	As a result of the investigations, the maneuvering of the towboat was not the direct cause of this accident. Therefore, this was not regarded as a marine accident that should be handled by the Japan Transport Safety Board.
6	Date and location of accident	Vessel type and name, accident type
	April 11, 2014 Off the northern coast of the Izumo-Nagaogahana Lighthouse located in Izumo City, Shimane Prefecture	Recreational fishing vessel FUJIMARU Fatality of fishing passenger
	Summary	The ship, with the skipper and three fishing passengers onboard, was being towed by a consort ship to return to port off Koizu fishing port in Izumo City, Shimane Prefecture, when the port side was hit by waves and the hull listed toward the starboard side. One fishing passenger fell into the water and died. 
7	Date and location of accident	Vessel type and name, accident type
	May 29, 2014 Approximately 5km off the southern coast of Hirohata, Himeji City, Hyogo Prefecture	Oil tanker SHOKOMARU Explosion
	Summary	The ship was carrying eight crew members. On the waters off the southern coast of Himeji Port in Himeji City, Hyogo Prefecture, five crew members were working on the deck when the hull exploded. One person died, and four persons sustained serious injuries.
8	Date and location of accident	Vessel type and name, accident type
	June 5, 2014 Off the northwestern coast of Saku Island, Nishio City, Aichi Prefecture	Passenger ship HAMAKAZE Injury of passengers
	Summary	The ship, with the skipper and one crew member, as well as nine passengers onboard, was navigating toward the West Port of Saku Island in Nishio City, Aichi Prefecture, when the hull was hit by high waves. Passengers were thrown onto the floor, and three passengers sustained fractures and other serious injuries.
9	Date and location of accident	Vessel type and name, accident type
	July 18, 2014 Near the area about 3 nautical miles off the eastern coast of Tokushima Komatsushima Port	Ferry OCEAN EAST Grounding
	Summary	The ship, with the master and 20 crew members, as well as 43 passengers onboard, was grounded in shallow waters after leaving Tokushima Komatsushima Port, but managed to get out of these shallow waters. The bottom part of the starboard side broke, but there were no fatalities or injuries, and the ship returned to Tokushima Komatsushima Port on its own.
10	Date and location of accident	Name of accident
	September 1, 2014 Kashima Port, Kamisu City, Ibaraki Prefecture	Cargo ship CAMPANULA (Panama) Fatality of worker
	Summary	The ship was unloading timber at the aforementioned port when the timber hit a Japanese worker. The worker was sent to hospital, but died after that.
11	Date and location of accident	Vessel type and name, accident type
	November 15, 2014 Nakagusuku New Port, Okinawa Prefecture	Cargo ship YONG SHENG Ⅶ(Ship A, Panama) Sand collecting ship HOKUEI No. 18 (Ship B) Collision
	Summary	Ship A, with 14 crew members onboard, and Ship B, with five crew members onboard, collided at the Nakagusuku New Port in Okinawa Prefecture. Ship B overturned on its side.

12	Date and location of accident	Vessel type and name, accident type
	December 20, 2014 Naka Suido channel of the Kurushima Strait	Cargo ship MIGHTY ROYAL (Bangladesh) Grounding
	Summary	The ship was navigating the Naka Suido channel of the Kurushima Strait when the bottom of the ship struck shallow waters at the east coast of Umashima Island in Imabari City, Ehime Prefecture.
13	Date and location of accident	Vessel type and name, accident type
	December 24, 2014 Sea of Japan approximately 25M off the coast of Hamada City, Shimane Prefecture	Fishing vessel GENPUKUMARU No. 1 Foundering
	Summary	The ship foundered off the coast of Hamada City, Shimane Prefecture.
14	Date and location of accident	Vessel type and name, accident type
	December 26, 2014 Off the coast of Ajigasawa Town, Aomori Prefecture	Cargo ship MING GUANG (Cambodia) Foundering
	Summary	Water ingressed into the ship, and it foundered off the coast of Ajigasawa Town, Aomori.

(Marine incident)

No marine incident occurred in 2014.

Column

High-speed passenger ship accidents that cause passenger injury

Marine Accident Investigator

Every year, several cases of accidents occur where high-speed passenger ships encounter stormy weather while on passage, and the violent movements of the ship causes passengers sitting on chairs in the passenger cabins sustain injuries to their lumbar and thoracic spines as a result.

The Japan Transport Safety Board had stated its opinions to the Minister of Land, Infrastructure, Transport and Tourism with regard to policies and measures for such accidents in the past. At the same time, recommendations have been made to ship operators. However, the current situation is such that similar accidents continue to occur even today.

When a ship begins to move increasingly violently, getting passengers to fasten their seatbelts or move to the stern where the movements are less violent are considered to be effective measures. However, there are also cases where passengers forget to fasten their seatbelts or leave the seatbelts stored in the seats, or where there are no empty seats even when they move to the stern of the ship, or where the movements of the ship are still violent at the stern side of the ship, thereby resulting in injuries.

Based on recent findings*, regardless of where passengers are seated, when acceleration exceeding 1G (acceleration due to gravity) arises in a downward direction while on passage, the body will be lifted from the seat. When the body is slammed back into the seat, the lumbar spine, thoracic spine, and cervical spine sustain injuries. Based on these findings, it is now possible to calculate the relationship between the speed of the ship and wave heights exceeding 1G for each seat position.

Example: Guidelines for maximum speed (kn)

Seat position from the front	Wave height			
	0.5m	1.0m	1.5m	2.0m
First row	Standard speed	10.6	Below 5kn	Below 5kn
Second row	Standard speed	13.7	5.6	5.6
Third row	Standard speed	16.5	7.5	7.5
Fourth row	Standard speed	18.9	9.2	9.1
Fifth row	Standard speed	21.4	11.9	11.1
Sixth row	Standard speed	Standard speed	15.2	13.8

If ship operators organize the data in a way similar to the chart shown above, it would be possible to reduce speed significantly, or decide to return to port, corresponding with the height of the waves at each point in time, in order to prevent causing injury to passengers. However, in order to make full use of this chart, it is vital to observe and predict wind and wave height accurately in the same way as always. Hence, the master of the passenger ship has to check before departure and while on passage if the situation meets the criteria for cancelling the operation by constantly observing the wave situation around the ship and checking the weather forecast as well as marine warnings and advisories for the waters in the navigation plan.

Furthermore, in order to ensure the effectiveness of this stance of observing the weather and sea conditions so as to assess when to cancel the operation, it is important to develop an integrated ship and shore system led by the top management, and which includes the master, the safety manager, and the operation manager. That also represents the spirit of transport safety management, but in the course of accident investigation, cases have been found whereby such systems were not established thoroughly.

Passenger ships serve as a means of transportation for commuting to school and work, as well as a means of transportation for passengers enjoying a tour or cruise. While it is important to ensure that such ships operate punctually without cancellations, the ship operator and crew members should gain a renewed recognition of the role they play in ensuring safety for many lives, and to take steps to check their safety management systems.

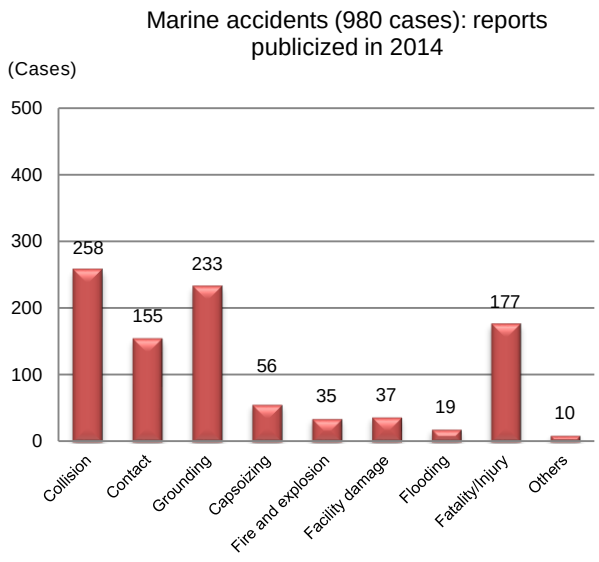
*"Report on Investigations and Research into the Safety of Passengers in Small High-Speed Passenger Ships Navigating Through Waves" (December 2014, Japan Craft Inspection Organization)

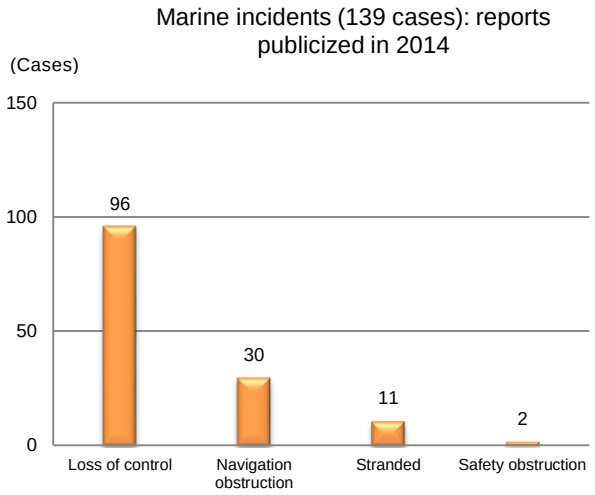
8 Publication of investigation reports

The number of investigation reports of marine accidents and incidents published in 2014 was 1,119 composed of 980 marine accidents (among them, 30 were serious) and 139 marine incidents (among them, two were serious).

Looking those accidents and incidents by type, there were 258 cases of collision, 233 cases of grounding, 177 cases of fatality/injury, and 155 cases of contact in marine accidents. Whereas in marine incidents, there were 96 cases of losses of control, (including 86 cases of navigational equipment failure and seven cases of out-of-fuel), 30 cases of navigation obstruction, and 11 cases of stranded.

As for the objects of contact, 46 were quays, 25 were breakwaters, and 16 were light buoys.





The number of vessels involved in marine accidents and incidents was 1,507. Looking at those vessels by type, the vessels involved in marine accidents were 418 fishing vessels, 241 cargo ships, 231 pleasure boats, and 102 tug boats and push boats. The vessels involved in marine incidents were 49 fishing vessels, 27 cargo ships, 24 pleasure boats, and 19 passenger ships.

Number of vessels by type involved in marine accidents and incidents for which reports were publicized in 2014

(Vessels)

Classification	Passenger ship	Cargo ship	Tanker	Fishing vessel	Tug boat, push boat	Recreational fishing vessel	Angler tender boat	Work vessel	Barge, lighter	Public-service ship	Pleasure boat	Personal water craft	Others	Total
Marine accident	56	241	65	418	102	36	7	34	73	22	231	62	16	1,363
Marine incident	19	27	7	49	7	1	0	2	3	3	24	2	0	144
Total	75	268	72	467	109	37	7	36	76	25	255	64	16	1,507
%	5.0	17.8	4.8	31.0	7.2	2.5	0.5	2.4	5.0	1.7	16.9	4.2	1.0	100.0

An overview of the published investigation reports on serious marine accidents and incidents in 2014 is as follows.

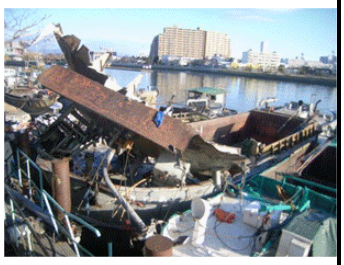
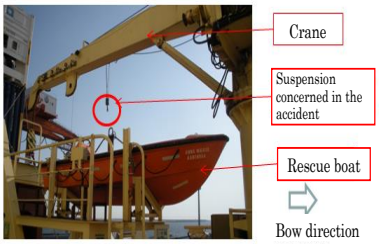
List of published investigation reports on serious marine accidents (2014)

1	Date of Publication	Date and location	Vessel type and name, accident type
	January 31, 2014	August 19, 2011 The Sea Wall on the northern side of the Akashi Kaikyo Bridge, Kobe City, Hyogo Prefecture, Japan	Container ship FLEVODIJK (Netherlands) Collision (Sea Wall)
	Summary	The container ship FLEVODIJK, with the master, the second officer and 13 other crew members on board, while she was proceeding north-eastward on the Harima Nada Sea off the western coast of the Awajishima Island, Hyogo Prefecture, collided with the Sea Wall on the northern side of the Akashi Kaikyo Bridge at around 0439 hrs. The FLEVODIJK was damaged on its bulbous bow and along with some recesses and broken holes, and she broke part of the Sea Wall at the same time, but there were no casualties. 	
	Probable Causes	It is probable that the accident occurred because the second officer who was on the sole look-out on the bridge had fallen asleep, while the Ship was proceeding north-eastward through the Harima Nada Sea toward the west entrance of the Akashi Strait with the autopilot steering at night, and the Ship proceeded toward the Sea Wall and collided with it. As to why the second officer had fallen asleep, is probable that he was sitting on the Chair without his drowsiness relieved, even though he began to feel drowsy and walked around in the bridge to relieve his drowsiness.	
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2013tk0009e.pdf	
2	Date of Publication	Date and location	Vessel type and name, accident type
	January 31, 2014	January 11, 2012 Katsunan District, Chiba Port, Chiba Prefecture	Cargo ship GUANG DA (Panama) Fatality during mooring operation
	Summary	While the cargo ship GUANG DA, with the master and 11 other crew members on board, was berthing at the south berth of the Keiyo Food Industrial Complex in Katsunan District, Chiba Port, Chiba Prefecture, a stand roller on the forecastle deck came off the deck. Subsequently, the stand roller or the associated mooring line hit an ordinary seaman who was on the deck at that time. The seaman died.	
	Probable Causes	It is probable that in this accident, while the GUANG DA was berthing at the south berth of the Keiyo Food Industrial Complex in Chiba Port, the master put the engine astern in an attempt to bring the stern closer to the berth and that when the first headline, which had been secured onto the berth, became taut, the stand roller in the center of the forecastle deck, on which the line had been engaged, came off the deck, causing either the stand roller or the headline to hit the ordinary seaman. It is probable that the stand roller in the center of the forecastle deck came off the deck because the weld between the doubling plate and the deck developed brittle fracture, causing the weld to break at or below the breaking strength of the first headline. It is somewhat likely that improper ship management by HK LIWEIDA SHIPPING MANAGEMENT LIMITED, not having the stand roller in the center of the forecastle deck surveyed and approved by ISTHMUS BUREAU OF SHIPPING, contributed to the occurrence of the accident.	
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2012tk0001e.pdf	
3	Date of publication	Date and location	Vessel type and name, accident type
	January 31, 2014	March 4, 2012 Off the northwest coast of Sunosaki, Tateyama City, Chiba Prefecture	Fishing vessel OURAMARU (Ship A) Recreational fishing vessel IKUMARU No. 5 (Ship B) Collision

	Summary	Ship A, with the skipper and two crew members onboard, had departed from the fishing grounds off the southern coast of Sunosaki in Tateyama City, Chiba Prefecture, and was heading north to return to the port. Ship B, crewed by the skipper alone and carrying six fishing passengers, had been drifting and fishing off the northwestern coast of Sunosaki, when the two ships collided. On Ship B, one fishing passenger died, and the skipper sustained injuries. In addition, the stern on the starboard side sustained damage, while the toilet at the stern, the spanker mast, and the top part of the wheelhouse fell off. For Ship A, the handrails on the bow on the ports side were bent and damaged, the front part of the mast broke off, the bottom section of the ship was broken and sustained abrasions.
	Probable Causes	It is somewhat likely that the two ships collided because the two skippers were not keeping a proper lookout while Ship A was proceeding north and Ship B was drifting and fishing off the northwestern coast of Sunosaki. It is probable that the skipper of Ship A was not keeping a proper lookout because the radar screen with a range scale of 1.5M did not show any ships that may hinder navigation and he thought that there were no ships that may hinder navigation as he was keeping a lookout by depending on the radar while sitting on a chair on the port side of the wheelhouse resulting in a blind spot on the bow side.
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-1-1_2012tk0006.pdf

4	Date of Publication	Date and location	Vessel type and name, accident type
	January 31, 2014	April 15, 2012 Off the north-northeast coast of Rokkosaki in Suzu City, Ishikawa Prefecture	Container ship YONG CAI (Ship A Saint Vincent and the Grenadines) Fishing vessel SHINYOMARU No.2 (Ship B) Collision
	Summary	Ship A was proceeding west-northwest toward Port of Busan in the Republic of Korea with the master and 17 other crew members onboard, Ship B was proceeding south-southwest toward the Noroshi Fishing Port in Suzu City with the skipper and a crew member onboard. Both vessels collided with each other at off the North-northeast coast of Rokkosaki. The skipper on Ship B was killed and a crew member went missing. The bow section of the vessel was crushed, and she was capsized. Ship B suffered scratch to the bulbous bow on the starboard side.	
	Probable Causes	It is somewhat likely that this accident occurred while Ship A was proceeding west-northwest and Ship B was proceeding south-southwest off the north-northeastern coast of Rokkosaki at night due to the two vessels colliding with each other due to the facts that the third officer of Ship A did not appropriately keep watch on the starboard side and that Skipper of the Ship B noticed Ship A only when it approached very closely. It is probable that Ship A collided with Ship B due to the fact that the third officer of Ship A was not appropriately keeping watch on the starboard side, not noticing Ship B coming close. Therefore, it is probable that appropriate watch must be kept at all times with vision, hearing, and all other means appropriate for the situation so that bridge watch keeper can make judgments on the surrounding situation and possibility of collision with other vessels.	
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2012tk0023e.pdf	

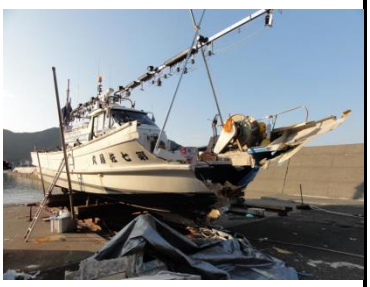
5	Date of publication	Date and location	Vessel type and name, accident type
	January 31, 2014	December 11, 2012 Ship mooring facility on the right bank of Okawa, located in Kita-ku, Osaka City, Osaka	Gravel carrier SEIWAMARU Explosion
	Summary	While mooring at the aforementioned ship mooring facility, an explosion occurred in the store compartment below the deck on the bow side of the ship. The seaman died, a worker sustained serious injuries, and the master sustained minor	

		injuries. There was damage to the deck on the bow side and other parts of the ship. Workers on the other ship sustained minor injuries, and there was damage to the surrounding facilities.
	Probable Causes	 It is somewhat likely that this accident occurred because gases ignited and exploded when a worker on the ship attempted to light a stove burner with a torch lighter as liquefied petroleum gas composed mainly of propane had leaked from the stove burner placed in the store comnpartment below the deck on the bow side of the ship and mixed with the air to produce mixed gases resulting in accumulation of combustible mixed gases that had reached the concentration within the explosive range in the store compartment while the ship was mooring at the aforementioned ship mooring facility. It is somewhat likely that liquefied petroleum gas composed mainly of propane had leaked from the stove burner because the valve of the container had been left opened from the day before the accident, and the appliance valve of this stove burner had been left opened after the stove was used the day before this accident occurred. It is considered probable that liquefied petroleum gas composed mainly of propane had mixed with the air to form mixed gases, and these combustible mixed gases had built up inside the store compartment below the deck on the bow side to reach explosive range, because this store compartment could only be ventilated by natural ventilation from the ventilation tube and the entrance hatch. The hatch had been closed on the day before this accident occurred, therefore making it even more difficult to ventilate the compartment.
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-1-5_2012tk0047.pdf
6	Date of Publication	Date and location / Vessel type and name, accident type
	February 28, 2014	March 27, 2012 Rokko Island Container Berth 5, Kobe Ku of Hanshin Port Container Ship ANNA MAERSK (Denmark) Fatality and injury of crew members
	Summary	The ship, with the master and 25 crew members onboard, had berthed alongside the aforementioned berth and was carrying out cargo handling work, while a rescue boat launching training was being conducted on the ship. The rescue boat, which had been suspended away from the side of the ship, fell on the surface of the sea. As a result, the able seaman who was on the rescue boat died, while the chief officer sustained serious injuries.
	Probable Causes	 It is probable that the ship was berthing alongside Rokko Island Container Berth 5 in Kobe Ku of Hanshin Port and during the rescue boat launching training, the chief officer and the able seaman boarded the rescue boat lowered to the level of the boat deck, and at that time the split pin in the shackle pin of the shackle part of the swivel of the Suspension was shear fractured; therefore, the shackle pin came off and the hook slipped out of the shackle part; consequently, the rescue boat dropped to the sea surface 18m below, and thus this accident occurred.
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2012tk0018e.pdf
7	Date of publication	Date and location / Vessel type and name, accident type
	February 28, 2014	November 14, 2012 Off the southeast coast of Nasake Island, Suo-Oshima Town, Yamaguchi Prefecture Passenger ship GINGA Grounding
	Summary	The ship, with the master and five crew members, as well as 162 passengers and three hall staff onboard, grounded on Nenashisho, located off the southeast coast of Nasake Island, Suo-Oshima Town in Yamaguchi Prefecture, while it was heading west off the northwest coast of Futagami Island in Matsuyama City, Ehime Prefecture. The ship sustained dents alongside with breakage on the bottom shell of the ship, as well as damage to the propeller blades on the port side propeller. However, there were no fatalities or

		injuries. The 162 passengers were rescued by the consort ship of the ship as well as the Japan Coast Guard patrol boat that had come to the aid of the ship.
	Probable Causes	 It is probable that this accident occurred while the ship was proceeding west toward the northern coast of Nenashisho because the seaman who was on watch duty on the bridge continued navigating believing that the ship could pass by the northern coast of Nenashisho, and the ship came within close quarters of Nenashisho and consequently went aground as this ship began to take course over the ground toward Nenashisho. It is probable that the seaman continued navigating believing that the ship could pass by the northern coast of Nenashisho because although he was aware that the ship was being pushed in a southerly direction due to the northwest wind and southwest current, the bow was heading toward Nasake Island Lighthouse, north from the passage route between Ihota Port and Matsuyama Port, and the ship was proceeding as the light beacon for Nenashisho was visible on the port bow. It is somewhat likely that Setonaikaikisen Inc.'s non-compliance with safety management manual, such as the fact that the company did not draw up operation plans, including the navigation route between Ihota Port and Matsuyama Port, in accordance with the procedures under the safety management manual, when establishing the navigation route between Ihota Port and Matsuyama Port, which was a navigation route of non-scheduled ferry service, contributed to the occurrence of this accident.
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-2-3_2012tk0046.pdf

8	Date of publication	Date and location	Vessel type and name, accident type
	February 28, 2014	June 26, 2013 Oniike Port, Amakusa City, Kumamoto Prefecture	Passenger ferry FERRY AMAKUSA Injury of passengers
	Summary	The ship, with the master and five crew members, as well as 85 passengers and 19 vehicles onboard, had been carrying out berthing work at Prefectural No. 2 Shallow Draft Quay at the aforementioned Oniike Port, when the starboard side of the bow came into contact with the quay wall. Three passengers sustained minor injuries. The hull of the ship on the starboard side of the bow was dented, and cracks emerged in the base section of the fender system on Prefectural No. 2 Shallow Draft Quay.	
	Probable Causes	 It is probable that this accident occurred as follows: Under conditions where advisories had been issued for strong wind and waves, the ship was berthing head in along Prefectual No. 2 Shallow Draft Quay at Oniike Port on her starboard side; The master set the course of the ship to be parallel with the quay wall, while two passengers were in the toilet and one passenger was in the vehicle deck; As the ship had approached the quay with a horizontal distance of about 6 – 7m between the quay wall and the starboard side, the west-south-west wind coming at a wind speed (relative) of about 16m/s from the port side of the bow pushed the bow leeward (starboard side), causing the starboard side of the bow to hit Prefectural No. 2 Shallow Draft Quay; Consequently, one passenger in the toilet sustained a bruise on the little finger of the right hand, and the other passenger in the toilet sustained a cervical spine sprain; The passenger in the vehicle deck suffered from a lumbar bruise. It is probable that the master of the ship had approached Prefectural No. 2 Shallow Draft Quay at a distance of about 6 – 7m from the starboard side because, based on the wind from the port side of the bow at a wind speed (relative) of more than 10m/s, as well as the fact that the horizontal distance between Prefectural No. 2 Shallow Draft Quay and the starboard side was more than double the usual distance at about 6 – 7m, and that he had berthed at this same quay many times before, he believed that he would be able to berth safely if he maintained a horizontal distance of about 6 – 7m between the quay wall and the starboard side as he had done in previous times when the wind from the port side of the bow had been more than 10m/s (relative wind speed). It is probable that two passengers had been in the toilet and one passenger had been on the	

		vehicle deck because the ship did not take thorough precautions to ensure that passengers remain in their seats and the ship had not been compliant with the provisions of the safety management manual and work standards, such as preventing passengers from entering the vehicle deck (area) until the ship is berthed.	
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-2-2_2013tk0028.pdf	
9	Date of publication	Date and location	Vessel type and name, accident type
	March 28, 2014	October 12, 2012 Shishi Komagasaki, Hirado City, Nagasaki Prefecture	Angler tender boat SHOEIMARU No. 18 Grounding
	Summary	The ship, crewed by the skipper alone, and carrying five fishing passengers, was proceeding north-north-west along Hiradoseto toward Yokoshima Island in Hirado City, Nagasaki Prefecture, when the engine stopped and the ship was pushed by the wind, and eventually grounded on a rocky area at Shishi Komagasaki.  One fishing passenger died, while two fishing passengers and the skipper sustained injuries. The ship sustained severe damage.	
	Probable Causes	It is probable that while proceeding north-north-west along Hiradoseto, the ship had run out of fuel supply to the fuel injection pump, causing the engine to stop and the ship to be pushed by the north-north-east ~ north-east wind, eventually resulting in its grounding on a rocky area at Shishi Komagasaki.	
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-3-3_2012tk0041.pdf	
10	Date of publication	Date and location	Vessel type and name, accident type
	March 28, 2014	May 27, 2013 Off the eastern coast of Oishinohana, Sumoto City, Hyogo Prefecture	Push boat 38 SANKYOMARU Capsize
	Summary	The boat, with the skipper and two seamen onboard, had been navigating toward Osaka of Hanshin Port from Tokushima Komatsushima Port, Tokushima Prefecture, when it capsized off the eastern coast of Oishinohana, Sumoto City, Hyogo Prefecture. The two seamen died, and the boat foundered while it was being towed by a tug boat toward Shimotsu Port in Wakayama, Wakayama Prefecture.	
	Probable Causes	It is somewhat likely that this accident occurred because the boat listed to port side so that the top end of the bulwark submerged and the boat lost its stability after turning the rudder above 4.7° to starboard and consequently overturned to the port side by the impact from waves while the boat was proceeding off the eastern coast of Oishinohama, Awaji Island toward Osaka of Hanshin Port at a speed of about 9kn with waves of height of about 2 – 3m and period of about 5 seconds hitting the starboard side under conditions where advisories had been issued for strong winds and waves in the Tokushima and Naruto areas, and gale warning had been issued for the Seto Inland Sea 	
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-3-4_2013tk0015.pdf	
11	Date of publication	Date and location	Vessel type and name, accident type
	March 28, 2014	August 14, 2013 Rocky area at the northeastern end of Oshima Island, Sakai City, Fukui Prefecture	Recreational fishing vessel HOSHINMARU No. 5 Grounding
	Summary	The ship, with the skipper and one crew member, as well as three fishing passengers onboard, was returning to port after a recreational fishing trip, when it grounded on the rocky area at the northeastern end of Oshima Island of Sakai City, Fukui Prefecture. All members on the ship, including the three fishing passengers, sustained minor to serious injuries.	

	Probable Causes	It is probable that this accident occurred as follows: While the ship was sailing toward the Mikuni district of Fukui Port at night, the skipper was navigating by using the lights of a fishing boat as the head mark, and was approaching toward Oshima Island; However, when it came within close quarters of the boat and attempted to avoid it, the skipper sighted several fishing boats with their fishing lamps lit at the starboard side of the bow and turned to port; When checking the course, he realized that the ship was on a course to come into close quarters with the shore and turned to starboard instead, therefore heading toward the rocky area on the northeastern side of Oshima Island, consequently grounding the ship on this rocky area. 
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-3-5_2013tk0021.pdf
12	Date of publication	Date and location / Vessel type and name, accident type
	March 28, 2014	September 22, 2013 Rocky area off the coast of Yashiro Bay, Obama City, Fukui Prefecture Recreational fishing vessel SATOMARU No. 7 Collision (Rocky area)
	Summary	The ship, crewed by the skipper alone and carrying six fishing passengers, had departed from the Inukuma district of the Uchitomi Port of Obama City, Fukui Prefecture, and was navigating along the coast of Yashiro Bay of Obama City when it collided into a rocky area of the same bay (Okinoishi). Six fishing passengers and the skipper sustained injuries, while the bow of the ship was severely damaged.
	Probable Causes	It is probable that this accident occurred because the skipper was not able to keep a proper lookout, and did not realize that the ship was navigating toward a rocky area (Okinoishi), resulting in the collision into the rocky area (Okinoishi) while the ship was proceeding northwest off the coast of Yashiro Bay at night, deviating from its usual course. It is probable that the skipper was not able to keep a proper lookout because: the work lamps installed on the outer walls in front of the wheelhouse had been lit, resulting in high intensity brightness for a part of the field of view on the bow side; The glare arising from the light of these work lamps reduced visibility, making it difficult to see on the bow side of the ship; In addition, the yield of the fishing trip at midnight had been poor, giving rise to concerns about fishing grounds and fishing methods, reducing the number of times that the skipper looked at the radar and GPS plotter screens; At the same time, he had probably forgotten to switch the range scale of the radar and GPS plotter from a range scale used in the port, to a range scale for outside the port. 
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-3-2_2013tk0025.pdf
13	Date of publication	Date and location / Vessel type and name, accident type
	March 28, 2014	July 15, 2013 Off the western coast of Fukaura Port, Fukaura Town, Aomori Prefecture Tug boat SHIMAFUJI (Ship A) Work vessel MIYABI (Ship B) Fishing vessel HISAYOSHIMARU No. 88 (Ship C) Collision
	Summary	Ship A, with the skipper and two crew members onboard, was towing Ship B and proceeding north-north-east. Ship C, with the skipper and one crew member onboard, was proceeding west toward the fishing grounds off the west coast of Henashizaki in Fukaura Town, Aomori Prefecture, when it collided with Ship B off the western coast of Fukaura Port in Fukaura Town. The outer shell of the central part of the starboard of Ship B suffered breakage. Cracks emerged on the bulbous bow of Ship C. No one on the ships had fatalities or injuries.

	Probable Causes	It is probably that this accident occurred because the seaman of Ship A did not realize that the ship was coming into close quarters with Ship C and the skipper of Ship C had received a call from his family and was crouching on the floor in the wheelhouse taking notes, and consequently Ship B and Ship C collided, while Ship A was proceeding north-north-east towing Ship B forming a row of ships with total length of about 300m and Ship C was proceeding west. It is probable that the seaman of Ship A did not realized that the ship was coming into close quarters with Ship C because: when he sighted four fishing vessels that had departed from Fukaura Port, he believed that Ship C was on a course that would allow it to pass by the stern of Ship A; The other three fishing vessels passed by the bow of the ship; and he was watching the gravel carrier on the starboard bow believing that there were any fishing vessels posing danger to the ship as the ship was sailing near the coast. It is probable that the skipper of Ship C had received a call from his family and had been taking notes while crouching on the floor in the wheelhouse, because he was paying attention to checking the situation of the two squid fishing vessels in front, and did not notice the the row of ships. 
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-3-1_2014tk0002.pdf
14	Date of Publication	Date and location / Vessel type and name, accident type
	April 25, 2014	May 10, 2011 Public Wharf, Hibi Port, Tamano City, Okayama Prefecture Cargo ship SCSC WEALTH (Hong Kong) Fatality of a stevedore
	Summary	While the cargo ship SCSC WEALTH was loading copper slag at the Public Wharf in Hibi Port, Tamano City, Okayama Prefecture, tween deck hatch covers that were placed on the inner bottom plating*2 in No.2 cargo hold moved, leading to a stevedore being caught between the hatch covers and a forward bulkhead, resulting in his death.
	Probable Causes	It is probable that this accident occurred for the following reasons: Five tween deck hatch covers were stacked up on the bow side of the inner bottom plating in No.2 cargo hold, during the loading of copper slag onto the SCSC WEALTH at the Public Wharf in Hibi Port; however, the safety bolts for the lowermost and second lowermost hatch covers were not inserted into the insertion holes in the inner hull plating. Due to this fact, the situation was such that it was impossible to prevent horizontal movement of the hatch covers. Furthermore, a driver entered No.2 cargo hold through a forward companionway to the inner bottom plating of No.2 cargo hold; and when the driver was passing through the space between the hatch covers and the forward bulkhead, the hatch covers moved in the direction of the bow after being pushed by the cargo, resulting in the driver being caught between the hatch covers and the forward bulkhead. It is probable that the reason why it was impossible to prevent horizontal movement of the hatch covers is that when the hatch covers were stacked up on the bow side of the inner bottom plating in No.2 cargo hold on the SCSC WEALTH, they were not secured as specified in the hatch cover operating manual. It is probable that the reason why the driver entered No.2 cargo hold through the forward companionway to the inner bottom plating of No.2 cargo hold is that the instructions to use the designated passage route were not heeded. 
	Safety Recommendations	**Safety Recommendation to the SHANGHAI CSC Line Co., Ltd. (April 25, 2014)** The company should provide instructions to crew members to ensure that they comply with the hatch cover operating manual and appropriate measures to prevent movement of open hatch covers are taken.
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2011tk0012e.pdf Refer to case studies (p. 142).

<table>
<tr><td rowspan="4">15</td><td>Date of Publication</td><td>Date and location</td><td>Vessel type and name, accident type</td></tr>
<tr><td>May 30, 2014</td><td>February 7, 2012
Port of Niigata Higashi Ku, Niigata City, Niigata Prefecture</td><td>Container ship KOTA DUTA (Ship A Singapore)
Cargo ship TANYA KARPINSKAYA (Ship B Russia)
Collision</td></tr>
<tr><td>Summary</td><td colspan="2">Ship A was leaving West Wharf No.3 Quay in Port of Niigata Higashi Ku, Niigata City, Niigata Prefecture with a master and 24 crew members onboard, while Ship B was navigating toward the South Wharf within the same section after leaving the Central Wharf East Quay within the same section with a master and 16 crew members onboard (Although there were 18 crew members total, one of the crew members was driving to the South Wharf with the personnel in charge of the ship’s agent for handling lines), when Ship A's bow and Ship B's forward starboard side collided where the passages crossed.
Although Ship B foundered, all of the crew members were rescued.
Ship A suffered damage to the bow, but there were no casualties.</td></tr>
<tr><td>Probable Causes</td><td colspan="2">It is probable that this accident occurred because the vessels collided with each other due to the facts that the master of Ship A and the master of Ship B agreed to the conduct of vessel for both vessels to alter to port to pass on the starboard side via VHF, that the vessels continued to navigate after the master of Ship A put the helm hard to port and the master of Ship B put the helm to port at 15° in an attempt to execute the agreement, and that they kept approaching each other in the situation that was different from the agreed conduct of vessel without being able to recognize any change in the heading when the vessels approached each other in the situation in which their courses would cross where the Dredged Passages crossed while Ship A was proceeding northeast after leaving the West Wharf No.3 Quay and while Ship B was proceeding south-southeast from the Central Wharf East Quay toward the South Wharf in Port of Niigata Higashi Ku.
It is probable that the reason the master of Ship A agreed to the conduct of vessel for both vessels to turn to port to pass on the starboard side via VHF was that the master of Ship A was convinced that Ship B was going to pass on the starboard side due to the facts that the master of Ship B re-confirmed to pass on the starboard side, that Ship B was strongly stating “starboard to starboard” via VHF, that he felt that the report by the former master of Ship A had a strong tone, saying “starboard to starboard,” and that the former master of Ship A, who was on board to hand over the master position, and the master of Ship B were stating “starboard to starboard.”
It is probable that the reason the master of Ship B agreed to the conduct of vessel for both vessels to alter to port to pass on the starboard side via VHF was that the master of Ship B offered the conduct of vessel to pass on the starboard side due to the facts that there was no enough distance and time to judge the conduct of vessel when they were called by Ship A via VHF to inquire about Ship B’s name in Russian, that it was easy for Ship B to alter to port due to the large area of waters on the port side of Ship B, and that he believed it would be safer if the two vessels’ courses did not cross in order to avoid collision because he could not anticipate where in the passage crossing Ship A would turn to port.
It is somewhat likely that the fact it took approximately 20 seconds to agree on the conduct of vessel contributed to the occurrence of this accident due to the facts that the master of Ship A and the master of Ship B took approximately 20 seconds to agree on the conduct of vessel, that the vessels had approached each other to the distance of approximately 600m, and that they had no time to take actions to avoid collision when the vessels further approached each other in the situation that was different from the agreed conduct of vessel in which they could not recognize any change in the other vessel’s heading when they tried to take actions to execute this agreement.
 
</td></tr>
<tr><td rowspan="2">Safety Recommendations</td><td colspan="2">Safety Recommendations for PACIFIC INTERNATIONAL LINES LIMITED (May 30, 2014)</td></tr>
<tr><td colspan="2">(1) Consider that supernumeraries are part of the bridge team if they are practically involved in maneuvering.
(2) Instruct crew members of vessels belonging to PACIFIC INTERNATIONAL LINES</td></tr>
</table>

		LIMITED and vessels under their management to conduct BRM education and training by learning from this accident case so that those on watch on the bridge can collect safety-related information on radar and other equipment and proactively provide it to the person conning the vessel. (3) Instruct officers of vessels belonging to PACIFIC INTERNATIONAL LINES LIMITED and vessels under their management to prepare for departure and keep look-out while correctly understanding items necessary to ensure safety navigation, such as detecting information on nearby vessels underway as early as possible by changing the radar range scale and conduct education by learning from this accident case when visiting the vessels. (4) Have masters of vessels belonging to PACIFIC INTERNATIONAL LINES LIMITED and vessels under their management re-acknowledge the following risks of using VHF by using this accident case and promote awareness by establishing items to reconfirm the risks of using VHF in a checklist to be used to navigate in narrow channels and congested waters. (i) It is possible that two vessels approach each other and have no time to take actions to avoid collision in case the agreement is not executed if those persons conning the two vessels take time to agree on the conduct of vessel and the vessels navigate in the original course at the original speed during that time. (ii) It is possible that those persons conning the vessels would believe that the other vessel would execute the contents to which they had agreed via VHF even if there is a difference between the anticipated actions of the other vessel according to the person conning the vessel and the actual actions after agreeing on the conduct of vessel and lose the opportunity to take actions to avoid collision.
		Safety Recommendation to the EAST WAY LLC. (May 30, 2014)
		(1) Instruct masters and deck officers of vessels belonging to EAST WAY LLC. and vessels under their management to carefully observe radar displays while underway to commence systematic analysis and conduct education by learning from this accident case when visiting the vessels. (2) Notify masters and deck officers of vessels belonging to EAST WAY LLC. and vessels under their management to recognize the following risks of using VHF by learning from this accident case. In addition, if they have checklists used to navigate in narrow channels and congested waters, promote awareness by establishing items to reconfirm the risks of using VHF. (i) It is possible that two vessels approach each other and have no time to take actions to avoid collision in case the agreement is not executed if those persons conning the two vessels take time to agree on the conduct of vessel and the vessels underway in the original course at the original speed during that time. (ii) It is possible that those persons conning the vessels would believe that the other vessel would execute the contents to which they had agreed via VHF even if there is a difference between the anticipated actions of the other vessel according to the person conning the vessel and the actual actions after agreeing on the conduct of vessel and lose the opportunity to take actions to avoid collision.
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2012tk0003e.pdf Refer to case studies (p. 143).

16	Date of Publication	Date and location	Vessel type and name, accident type
	June 27, 2014	July 2, 2012 Heigun-suido Channel, Yamaguchi Prefecture	Chemical tanker CHEM HANA (Korea) Fatality of crew members
	Summary	The ship, with the master, the chief officer, and the able seaman A, as well as seven other crew members onboard, had departed from Kanmon Port and was heading toward Matsuyama Port. While on passage, the able seaman A was found collapsed in the tank, through the manhole in No. 1 cargo tank (port), and the chief officer who went into the same tank also collapsed. The chief officer was sent to hospital in an ambulance, while the able seaman A was sent to hospital in a doctor's helicopter. However, the death of both members was confirmed.	

	Probable Causes	It is somewhat likely that this accident occurred when the able seaman A and the chief officer inhaled an oxygen deficient air, because oxygen concentration was not measured before entering the cargo tank and they entered the cargo tank wearing canistertype gas masks which they were not permitted to use, when the cargo tank cleaning work was implemented for the loading of a different cargo after unloading acetone, while the ship was proceeding in the Heigun-suido Channel.
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2012tk0032e.pdf
17	Date of Publication	Date and location / Vessel type and name, accident type
	June 27, 2014	September 24, 2012 Around 930 km, Off the East of Kinkazan, Ishinomaki City, Miyagi Prefecture Bulk Carrier NIKKEI TIGER (Ship A, Panama) Fishing Vessel HORIEI-MARU (Ship B) Collision
	Summary	Ship A, with a master and 20 crew members, departing Shibushi Port, Shibushi City, Kagoshima Prefecture, was proceeding northeast on the North Pacific toward Vancouver, Canada. Ship B, with a master and 21 crew members, was proceeding south-southwest, for the purpose of avoiding a low pressure system, on the North Pacific. At around 930 km east of Kinkazan, Ishinomaki City, Miyagi Prefecture, NIKKEI TIGER's bow and HORIEI-MARU's port side collided with each other. Nine crew members onboard HORIEI-MARU were rescued by HORIEI-MARU's consort, but the others went missing, and the vessel sank. NIKKEI TIGER had no casualties and received no significant damage to its hull. 
	Probable Causes	It is probable that the accident of collision between Vessel A and Vessel B occurred at night at around 930 km east of Kinkazan while Vessel A was proceeding northeast and Vessel B was proceeding south-southwest, because Vessel A altered its course to port and Vessel B altered its course to starboard in a situation where the vessels came close to each other sailing on intersecting courses. It is probable that Vessel A altered its course to port for the purpose of widening the passing distance to Vessel B which was crossing ahead of Vessel A.
	Comments	**【Reference】 Opinions to the Minister of Land, Infrastructure, Transport and Tourism (November 25, 2013 Time of Interim Report)** (1) The Minister of Land, Infrastructure, Transport and Tourism should consider the necessary measures for further informing ship owners and others of the effectiveness of AISs for the prevention of collision accidents, and the necessary measures for promptly promoting the deployment of AISs on fishing vessels that, at present, are not equipped with AISs (including Simplified AISs, the same shall apply hereinafter), for example, the fishing vessels operating or navigating in the open sea (the second class fishing vessels designated by the Ship Safety Act). (2) It is necessary that, for the purpose of preventing collision accidents, the Minister of Land, Infrastructure, Transport and Tourism should guide shipping business operators to collect and utilize the information on the situations of fishing vessel operations in their ship's navigation areas, using public information including information provided by the industry associations related to fisheries or the Japan-Marine Accident Risk and Safety Information System by the Japan Transport Safety Board. **【Reference】 Opinions to the Director General of the Fisheries Agency (November 25, 2013 Time of Interim Report)** (1) The Director General of the Fisheries Agency, with regard to the fishing vessels that, at present, are not equipped with AISs, for example the fishing vessel engaged in operations or navigation in the open sea (the second-class fishing vessels designated by the Ship Safety Act), should inform the shipowners and others of the effectiveness of AIS for the prevention of collision accidents, and consider the necessary measures for promptly promoting the deployment of AISs. (2) It is necessary that the Director General of the Fisheries Agency should guide fishing vessel owners to collect and utilize the information on the situations of accident occurrences and the information on commercial vessel's voyage routes using public information, including

		the Japan-Marine Accident Risk and Safety Information System by the Japan Transport Safety Board.
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2012tk0037e.pdf http://www.mlit.go.jp/jtsb/ship/p-pdf/MA2014-6-5-p.pdf（Explanatory material） http://www.mlit.go.jp/jtsb/ship/p-pdf/MA2014-6-5-p2.pdf（Reference material） Refer to case studies (page 145)

18	Date of publication	Date and location	Vessel type and name, accident type
	June 27, 2014	January 3, 2013 Lake Yamanaka, Yamanakako Village, Yamanashi Prefecture	Recreational fishing vessel LAKE FLOWER Injury to fishing passengers
	Summary	The ship, with the skipper and two crew members as well as 26 fishing passengers onboard, was at the fishing grounds on Lake Yamanaka in Yamanakako Village, Yamanashi Prefecture. The ship was anchored, and fishing passengers in the cabin was fishing for smelt when one fishing passenger suffered from carbon monoxide poisoning, after which two other fishing passengers suffered from carbon monoxide poisoning.	
	Probable Causes	 It is probable that carbon monoxide contained in the exhaust discharged from the outboard motor into the water had built up in the open U-shaped space on the stern of either side of the ship's hull, and three fishing passengers suffered from carbon monoxide poisoning inhaling carbon monoxide which leaked from this space into the passengers' cabin through the openings in the floor of the cabin used for smelt fishing while the ship was anchored at the fishing ground in Lake Yamanaka and fishing passengers in the cabin was fishing for smelt. It is probable that carbon monoxide had built up in the open U-shaped space on the stern of either side of the ship's hull because when the outboard motor was moving the ship astern, the exhaust discharged into the water had flowed into the open U-shaped gap on the stern of either side of the ship's hull under the water on the bow side, together with the flow of the water, and this exhaust had then surfaced into these spaces. It is probable that carbon monoxide had leaked into the passengers' cabin through the openings in the floor of the cabin used for smelt-fishing, from the open U-shaped space on the stern of either side of the ship's hull, because carbon monoxide is lighter than air (its ratio to air is 0.967).	
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-6-1_2014tk0008.pdf	

19	Date of publication	Date and location	Vessel type and name, accident type
	June 27, 2014	January 8, 2013 Off the west-north-west coast of Katsumoto Port, Iki City, Nagasaki Prefecture	Recreational fishing vessel SHINKAI Injury of fishing passengers
	Summary	 The ship, crewed by the skipper alone and carrying five fishing passengers, was drifting off the west-north-west coast of Katsumoto Port in Iki City, Nagasaki Prefecture, on a recreational fishing trip. The skipeer sighted a flock of birds moving to the bow side of the ship, and was proceeding northeast to position the ship to the northern side of the flock of birds, when the ship was impacted by consecutive swells from the north. While the bow of the ship was moving up and down due to the swells, one fishing passenger standing on the port side of the deck at the bow was lifted into the air and then fell onto the deck at the bow, sustaining injuries. Other fishing passengers were uninjured, and the ship was not damaged.	
	Probable Causes	It is probable that this accident occurred as follows: The ship was proceeding northeast off the west-north-west coast of Katsumoto Port, when the skipper sighted consecutive swells with a height of about 1.5 – 2m coming from the north; After receiving the first wave diagonally, the skipper turned off the clutch on the engine and attempted to meet the second swell directly on the bow; However, as he sighted the swell right before his eyes, he was unable to warn the	

		fishing passengers of the swells; Consequently, one fishing passenger on the deck at the bow saw the wave right before his eyes, and lost his balance through the upward and downward movement of the bow due to the first swell; When the bow moved up and down as a result of the second wave, his body was lifted into the air and fell onto the deck at the bow after that, and he suffered from a burst fracture of the 12th thoracic vertebra.	
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-6-4_2014tk0003.pdf	
20	Date of Publication	Date and location	Vessel type and name, accident type
	June 26, 2014	May 16, 2013 At the west pier of Tenpoku No.2 Wharf in the port of Wakkanai, Wakkanai City, Hokkaido	Cargo ship TAIGAN (Cambodia) Fire
	Summary	While mooring at the west pier of Tenpoku No.2 Wharf in the port of Wakkanai, Wakkanai City, Hokkaido, cargo ship TAIGAN, with the master and 22 crew members on board, caught fire. The fire on TAIGAN was extinguished at about 13:00 by a fire brigade, leaving six crew members dead and three people injured. Besides, the bridge deck, the poop deck, and the upper deck were burned out.	
	Probable Causes	It is somewhat likely that while the Vessel moored at the Pier of Tenpoku No.2 Wharf in the port of Wakkanai at night, the Ref/E smoked on the bed in the Cabin, and then his bedclothes caught fire; hence, the fire spread to surrounding flammable materials.	
	Safety Recommendations	**JTSB Safety Recommendation to the MEGANOM SHIPPING LTD.(as the management company of the vessel) (June 27, 2014)**	
		The company is recommended to ensure the onboard smoking policy in observed and to instruct the vessel to provide new crew members with training, just after they joined the vessel, on how to act in the event of a fire, which includes information about the escape routes and the location of fire extinguishers.	
		JTSB Safety Recommendation to the MEGANOM SHIPPING LTD.(as the owner of the vessel) (June 27, 2014)	
		The company is recommended to try to secure escape routes regardless where a fire breaks out, for example, by having one on the fore side and another on the aft side.	
		JTSB Safety Recommendation to the authorities of the Kingdom of Cambodia (June 27, 2014)	
		It is recommended that the authorities of the Kingdom of Cambodia should provide adequate instructions to the management companies and owners that are operating similar ships to the vessel. The management company of the vessels recommended to ensure the onboard smoking policy in observed and to instruct the vessel to provide new crew members with training, just after they joined the vessel, on how to act in the event of a fire, which includes information about the escape routes and the location of fire extinguishers. The owner of the vessel is recommended to try to secure escape routes regardless where a fire breaks out, for example, by having one on the fore side and another on the aft side.	
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2013tk0014e.pdf Refer to case studies (page 144)	
21	Date of Publication	Date and location	Vessel type and name, accident type
	August 29, 2014	July 17, 2011 Port Island North Wharf External Trade Berth R, Kobe District, Hanshin Port	Cargo Ship YUSHO SEVEN (Panama) Fatality of a stevedore
	Summary	while the cargo ship YUSHO SEVEN was loading pipes and other cargo at the Port Island North Wharf External Trade Berth R, Kobe District, Hanshin Port, pipes stacked on the starboard side of the lower deck of No. 1 cargo hold collapsed and a worker, who was on the pipes, fell to the deck with the pipes and was killed.	

	Probable Causes	It is probable that the accident occurred because while YUSHO SEVEN was loading pipes and other cargo at the Port Island North Wharf External Trade Berth R in Kobe District, Hanshin Port, a bundle of two wrapped pipes and other wrapped pipes stacked from the fifth to the seventh tier near the sidewall started sliding athwartships, and a lasher, who was on the wrapped pipes on the sixth tier, fell to the lower deck with the wrapped pipes, which fell on top of him.  It is probable that the bundle of two wrapped pipes and other wrapped pipes stacked from the fifth to the seventh tier near the sidewall started sliding athwartships due to the following facts: (i) two stevedores inserted a turnbuckle between the starboard sidewall and the bundle of two wrapped pipes stacked on the seventh tier near the sidewall, and moved the turnbuckle to create a clearance gap, (ii) YUSHO SEVEN listed to the port side at an angle of about 2.8° when YUSHO SEVEN hoisted coils from the cargo ship moored alongside the port side of YUSHO SEVEN using the aft crane, (iii) the height was not adjusted from the fifth tier and only three lines of dunnage were laid out to the fore, middle, and aft because each tier consisted of wrapped pipes and was almost even, (iv) the pipes were not lashed down because they were due to be lashed after all the pipes had been stacked on the starboard side, (v) no wedges were inserted. It is probable that two stevedores tried to create a clearance gap between the sidewall and the bundle of two wrapped pipes stacked on the seventh tier near the sidewall using a turnbuckle because No. 1 cargo hold supervisor, who heard from the leader of the lashing operation that the wire lashing rope could not be pulled out since the height of the dunnage that was put against the sidewall was so short that the bundle of pipes came into contact with the sidewall when the bundle was pushed in using the fork of a forklift truck, thought that creating a clearance gap would allow the wire lashing rope to be pulled out, and instructed two stevedores to try to move the bundle of pipes.
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2011tk0018e.pdf

22	Date of publication	Date and location	Vessel type and name, accident type
	August 29, 2014	May 15, 2012 Near the quay wall of Bandaijima Wharf of Niigata Port, Niigata City, Niigata Prefecture	Passenger ferry OSADOMARU Fatality of passenger
	Summary	The ship, with the master and 24 crew members onboard, was berthed at Bandaijima Wharf of Niigata Port and unloading vehicles, when a passenger was ran over by a vehicle on the starboard side of the center section of the vehicle deck, and died.	
	Probable Causes	It is probable that this accident occurred because Passenger A, who was suspected of suffering from Alzheimer's dementia, had entered the vehicle deck during the unloading of vehicles while the ship was berthed at Bandaijima Wharf of Niigata Port, went under the third vehicle from the stern on the starboard side, and was consequently ran over by the vehicle. 	
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-8-2_2012tk0025.pdf	

23	Date of Publication	Date and location	Vessel type and name, accident type
	August 29, 2014	January 23, 2013 On a true bearing of approximately 116º and at a distance of 11.4 nautical miles from the Katsuura Lighthouse, Katsuura City, Chiba Prefecture	Container ship BAI CHAY BRIDGE (Ship A, Panama) Fishing vessel SEIHOU MARU No. 18 (Ship B)
	Summary	Ship A with the master, third officer and 21 other crewmembers on board was proceeding	

		southwestward to Keihin Port, and Ship B with the skipper and five other crewmembers on board was proceeding north-northeastward to Choshi Port. The two vessels collided with each other east-southeast off Katsuura Port in Katsuura City, Chiba Prefecture. All crewmembers on the Ship B, four of whom were slightly injured, were rescued by the Ship A, and the fishing vessel broke apart at around the middle of the hull and sank. No one on the Ship A was injured or killed, and the vessel sustained scratches on the bow.
	Probable Causes	It is probable that in this accident, while Ship A was proceeding southwestward and Vessel B north-northeastward, east-southeast off Katsuura Port during nighttime, The officer of Ship A was not keeping a proper look-out on the radar while the skipper of Ship B was not properly monitoring the maneuvers of Ship A and, thinking that there was a risk of collision with Ship A, turned the rudder to starboard, resulting in a collision. It is probable that the officer of Ship A was not keeping a proper look-out on the radar because he was chatting with the helmsman of ship A and listening to communications between other vessels. It is probable that the skipper of Ship B did not properly monitor the maneuvers of Ship A because instead of using the radar cursor or other means to monitor changes in Ship A's bearing, he just kept a look-out of Ship A by sight even though its navigation lights were difficult to see. It is probable that the skipper of Ship B had the rudder turned to starboard thinking that there was a risk of collision with Ship A because he believed that passing port-to-port was the norm. 
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2013tk0002e.pdf http://www.mlit.go.jp/jtsb/ship/p-pdf/MA2014-8-5-p.pdf (Explanatory material)
24	Date of Publication	Date and location / Vessel type and name, accident type
	August 29, 2014	August 13, 2013 Funabashi Chuo Wharf South B Berth in Katsunan District, Port of Chiba in Chiba Prefecture Cargo ship WELLINGTON STAR (Bahamas) Fatality of a stevedore
	Summary	On the ship, one of the stevedores on the upper deck deceased after being caught between a container and a sludge shore connector steel box while they were loading containers with a deck crane at Funabashi Chuo Wharf South B Berth in Katsunan District, Port of Chiba.
	Probable Causes	It is probable that this accident occurred when the stevedore was caught between the container and the steel box when the container swung toward the stern side while he was involved with the work to control the swinging of the container by holding the swing-prevention rope due to the facts that there was the steel box behind him and that he was toward the stern side of where the container was being moved while they were loading containers with a deck crane on the vessel at Funabashi Chuo Wharf South B Quay in Katsunan District, Port of Chiba. It is probable that the stevedore had the steel box behind him and was toward the stern side of where the container was being moved because the foreman had not given instructions on areas to avoid, etc. It is somewhat likely that the fact that the company had not stipulated a work plan to conduct safe work involving loading/unloading of containers affected the occurrence of this accident. 
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2013tk0022e.pdf
25	Date of publication	Date and location / Vessel type and name, accident type
	August 29, 2014	March 9, 2014 Near Hotokebana in Nagasaki City, Nagasaki Prefecture, approximately 2,300m, true bearing of 338° from the Nose Light Beacon located in Nagasaki City Angler tender boat TSURISHIOMARU Fatality of fishing passenger

	Summary	The ship was crewed by the operator alone. Fishing passengers were in the process of crossing from the rocky area of Butsubana in Nagasaki City, Nagasaki Prefecture, to the ship, when one fishing passenger who was crossing from the rocky area to the ship, fell from the gangplank into the water and died.
	Probable Causes	It is probable that this accident occurred as follows: While fishing passengers was crossing from the rocky area of Butsubana onto the ship, a regular fishing passenger on the ship attempted to cross the gangplank fitted onto the bow onto the ship while both hands were occupied with fishing equipment and other items; His left hand, holding the fishing rod, bait box, and other items, struck the handrail on the left, and he lost his balance toward the left direction; Hence, his right hand let go of the cooler box and temporarily grabbed hold of the handrail on the left, but could not support his body and he fell into the water. 
	Report	http://www.mlit.go.jp/jtsb/ship/rep-acci/2014/MA2014-8-1_2014tk0006.pdf
26	Date of Publication	Date and location / Vessel type and name, accident type
	September 25, 2014	March 26, 2013 Liner Berth No. 13, Central Wharf of Port Island, Section II of the Kobe Area, Hanshin Port Cargo vessel, JURONG (Panama) Death and injury of workers
	Summary	While the vessel with the master and 20 other crew members onboard was engaged in cargo loading operations at Liner Berth No. 13, Central Wharf of Port Island, Section II of the Kobe Area, Hanshin Port, large tires that had been temporarily placed on the tween deck of the vessel's No. 1 cargo hold fell down, killing one stevedore and injuring another, both of whom were carrying out their duties at the time.
	Probable Causes	It is probable that the accident occurred because the Tire, which was one of four large tires temporarily placed in an upright position on the Deck during stevedoring on the Vessel at the Berth located in Section II of the Kobe Area in Hanshin Port, fell down and caused Stevedore A to become trapped underneath the Tire and Stevedore B to be hit on his left ankle and thrown down by the Tire. It is probable that the Tire fell down because it was temporarily placed in an upright position and was not provided with any means against falling sideways. Nichiei Unyu Kabushiki Kaisha did not indicate hazardous areas involving the risk of large tires falling and did not make sure no stevedore entered such hazardous areas. It is somewhat likely that not implementing these safety measures contributed to the occurrence of the accident. 
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2013tk0008e.pdf
27	Date of Publication	Date and location / Vessel type and name, accident type
	October 30, 2014	February 7, 2013 In the area around Mariyama Minami Quay A in Tsuruga Port, Tsuruga City, Fukui Prefecture Container ship PANCON SUCCESS (Korea) Fatality of a crew member
	Summary	While the ship with the master, chief officer and 14 other crew members onboard and loaded with 128 containers (approximately 1,500 tons in weight) was moored at Mariyama Minami Quay A in Tsuruga Port, Tsuruga City, Fukui Prefecture, one of the ship's mooring lines was severed and subsequently struck the chief officer, who died from his injuries.

	Probable Causes	It is probable that while the ship was moored at Mariyama Minami Quay A in Tsuruga Port at night, this accident occurred when one of the ship's mooring lines was severed and struck the chief officer. It is probable that the mooring line was severed as a result of the longitudinal and lateral motions of the ship caused by secondary undulation present at that time in Tsuruga Port. It is probable that the severed mooring line struck the chief officer because he was in the mooring winch operating area, which was within the snap-back danger zone. It is somewhat likely that the ship remained moored at Mariyama Minami Quay A because the master had no knowledge of secondary undulation. 	
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2013tk0003e.pdf	
28	Date of Publication	Date and location	Vessel type and name, accident type
	November 27, 2014	April 30, 2013 Around 196° in true bearing, approximately 0.85 nautical miles (M) from Senboku Otsu East Breakwater Lighthouse, Izumiotsu City, Osaka Prefecture	Cargo ship FAVOR SAILING (Cambodia) Foundering
	Summary	The ship, with a master and eight other crew members on board, which listed over and foundered while moored at Shiomi Quay 4, Sakai Senboku-Ku,Hanshin Port. There were no injuries to the crew.	
	Probable Causes	It is probable that, in this accident, the Vessel, which listed to port while moored at Sukematsu Warf in Hanshin Port, Sakai Senboku-Ku and loading scraps, and, although listed to starboard while the chief officer ballasted seawater into the ballast tanks under the instructions of the master and ballast operation was undergoing, continued ballast operation and caused port list soon after leaving the wharf, and, by ballast operation after anchoring, caused starboard list and, by ballast operation after mooring to Shiomi Quay, caused port list. It is probable that, despite of continued ballast operation, as the amount of free water in the cargo hold increased by the ballast operation that had been done, port list continued to increase, seawater came into the cargo hold and accommodation space, and the Vessel listed over and foundered. It is probable that, free water occurred in the cargo load because, as the chief officer, in the recognition that the loading was started from lighter scraps, ballasted seawater in the ballast tank to prevent reduction in stability due to an increase in the height of the center of gravity of the Vessel, and there were holes on the bottom plate of the store room and the cargo hold, seawater came into the cargo hold and collect on the cargo hold floor, overflowed from bilge wells, and was retained at the bottom of the cargo hold. It is probable that, the chief officer continued ballast operation because, although the master and chief officer were aware of the bilge (free water) in the cargo hold, they did not know of the effect of free water on the stability of the ship, and because the master repeatedly instructed to reduce the list. 	
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2013tk0013e.pdf	
29	Date of Publication	Date and location	Vessel type and name, accident type
	December 18, 2014	January 30, 2013 Off the East of Yokohama District of Keihin Port Around 320° true bearing, 1,950 m from Kisarazuko Offing Light Beacon loacated in Kisarazu City Chiba Prefecture	LNG tanker PUTERI NILAM SATU (Ship A, Malaysia) LPG tanker SAKURA HARMONY (Ship B,Panama) Collision

	Summary	Ship A, with 31 crew members in addition to the master, under the pilotage of two pilots, was proceeding west-southwest toward the west marine area of Nakanose off the east of Yokohama district of Keihin port, with two escort tugboats preceded. Ship B, with 13 crew members in addition to the master, departed through Nakanose Traffic Route and was proceeding north toward a pilot station located in the vicinity of the entry of Tsurumi Passage in Yokohama district of Keihin port. Both tankers collided at around 12:19:27. Ship A received some dents and cracks on its hull around the center of the portside, and Ship B received crushes on its hull of the bow and some dents on the bulbous bow, while there were no casualties among the crew members on both tankers.
	Probable Causes	 It is probable that this accident occurred as follows: Ship A was proceeding west-southwest off the east of Yokohama district of Keihin port, piloted by 2 Pilots and led by the escort boat and others, while Ship B was proceeding north departing Nakanose Traffic Route. Ship A was proceeding, maintaining the course and speed because Pilots A1 and A2 believed that Ship B would pass astern of Ship A. Master B was proceeding in a situation to approach the bow of Ship A. It is probable that the reason why Pilots A1 and A2 kept proceeding, maintaining the course and speed and believing that Ship B would pass astern of Ship A was that they received a report from the escort boat that the speed of Ship B at about the exit of Nakanose Traffic Route was 8.5 kn and believed that Ship B would decelerate at about the exit of Nakanose Traffic Route because the speed of Ship B was slower than the speed limit of other equivalent Ships on Nakanose Traffic Route. It is probable that the reason why Master B was proceeding in a situation to approach the bow of Ship A was that Ship B, though its planned course after departing Nakanose Traffic Route was 338°, increased the speed at a heading of 006° to 349° because it had given way to Ships E and F, changed the course to about 000° at about 12:16, and proceeded, maintaining the course and speed. It is somewhat likely that the speed of Ship A was about 16 kn about 3 minutes before occurrence of the accident was involved in occurrence of the accident because, at that speed, it was difficult for Ship A to let Ships C and D go ahead to take actions to avoid collision, such as urging Ship B to turn right.
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2013tk0001e.pdf

30	Date of Publication	Date and location	Vessel type and name, accident type
	December 18, 2014	April 9, 2013 Off Fukui #4 Berth, Hamada Port, Hamada City, Shimane Prefecture Around 070º true bearing, 600m from Hamada Port West Breakwater Lighthouse	Container ship MERRY STAR (Ship A, Korea) Work boat KOUN MARU No.58 (Ship B) Capsize
	Summary	During its service to help unberth Ship A at Hamada Port, Hamada City, Shimane Prefecture, Ship B, with a captain and one worker on board, capsized. The captain died.	
	Probable Causes	It is probable that this accident occurred as follows. When unberthing from the quay to depart from Hamada Port, Ship A veered out its mooring line as a tow line to Ship B, now positioned in the port bow direction, and had Ship B tow Ship A to the port beam direction. When the master of Ship A increased speed to prevent Ship A from being drifted toward Ship C, Ship B moved to the stern direction of Ship A. Ship A tried to cast off the tow line but could not, and as a result, Ship B was pulled abeam by Ship A and capsized. It is probable that Ship A pulled abeam Ship B, because the master of Ship A did not inform Ship B that Ship A would be increasing its speed, and because after increasing its speed, the master paid more attention to preventing Ship A from being drifted toward Ship C, without checking the status of the ship.	
	Report	http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2013tk0010e.pdf http://www.mlit.go.jp/jtsb/ship/p-pdf/MA2014-8-5-p.pdf（Explanatory material）	

List of published investigation reports on serious marine incidents (2014)

1	Date of publication	Date and location	Vessel type and name, accident type
	June 27, 2014	November 1, 2012 Off the eastern coast of Inubosaki, Choshi City, Chiba Prefecture	Fishing vessel KOTOKUMARU No.18 Loss of control (Engine damage)
	Summary	The ship, with the skipper, the chief engineer, and four crew members onboard, was proceeding north to reach the fishing grounds off the eastern coast of Inubosaki of Choshi City, Chiba Prefecture, when abnormal noises and vibrations emerged from the engine room. The main engine then failed to work, and the ship lost its control. The ship was towed by a consort ship that came to its assistance, and entered Katsuura Fishing Port in Katsuura City, Chiba Prefecture. The ship sustained damage to the piston and cylinder liner of cylinder No. 5 in the main engine, but no fatalities or injuries resulted from this incident.	
	Probable Causes	It is somewhat likely that this incident occurred as follows: The ship was proceeding north off the eastern coast of Inubosaki at night, when the cooling nozzle of the piston of cylinder No. 5 of the main engine became blocked; This reduced the volume of injector oil from this nozzle, and caused a decline in the cooling function of piston No. 5; Hence, this piston had overheated and expanded, and the lubrication between the piston and the cylinder liner had become obstructed; Consequently, the piston and the cylinder liner were burnt and became damaged, leading to the failure in the operation of the main engine.	
	Report	http://www.mlit.go.jp/jtsb/ship/rep-inci/2014/MI2014-6-1_2014tk0007.pdf	
2	Date of publication	Date and location	Vessel type and name, accident type
	October 30, 2014	June 11, 2013 Off the eastern coast of Mutsure Island, Kanmon Passage, Kanmon Port	Car carrier AUTO BANNER (Ship A, Panama) Training ship SHIMAYUKI (Ship B) Safety obstruction
	Summary	 Ship A, with the master and 23 crew members onboard, with the pilot engaged in the piloting of the ship, and proceeding south along the Kanmon Passage of Kanmon Port toward Sakaisenboku of Hanshin Port. Ship B, with the master and 153 crew members onboard, was proceeding north-north-east along the same passage toward Sasebo Port in Nagasaki Prefecture. When they met on reciprocal courses in the Kanmon Passage off the eastern coast of Mutsure Island in Shimonoseki City, Yamaguchi Prefecture, Ship B was sailing the left side of the passage by turning to port, navigating in a way that went against the provisions of the Act on Port Regulations by entering into the path of Ship A. It continued to approach Ship A. Ship A, sensing the risk of collision, turned to port to sail on the left of the passage. The two ships came within close quarters of one another at a distance of about 250m, passing by starboard side to starboard side, thereby obstructing safety.	
	Probable Causes	It is probable that this incident occurred as follows: Ship A was proceeding south toward the Sakaisenboku district of Hanshin Port, while Ship B was heading north-north-east toward Sasebo Port, in the Kanmon Passage off the eastern coast of Mutsure Island at night; When the two ships met on reciprocal courses, Ship A turned to starboard following the course on the right side of the passage, while Ship B on the starboard bow navigated close to the center of the passage, and turned to port just in front of the planned waypoint in order to head toward the next course, and began navigating on the left side of the passage; At the same time, it was showing the sidelights toward Ship A, and entered into the path of Ship A in a way that went against the provision of the Act on Port Regulations; It continued to approach Ship A, and Ship A navigated on the left of the passage in order to avoid a collision with Ship B. The two ships came within close quarters of one another starboard-to-starboard. It is considered probable that Ship B had navigated close to the center of the Kanmon Passage, and turned to port just in front of the planned waypoint in order to head toward the next course, because of the reasons listed in (1) and (2) below. (1) Ship B navigated close to the center of the passage as its course line had been established toward the center of the Kanmon Passage, and it had been pushed toward the center of	

		Kanmon Channel by the wind and currents. The chief navigator of Ship B was not aware that the ship was navigating close to the center of the passage, and approached the next waypoint without altering the course. As the master of Ship B granted approval for changing the course of the ship at the next waypoint, the ship maintained its course and continued to navigate. (2) The chief navigator of Ship B received reports on the change of course from the crew, and believed that the ship had arrived at the waypoint. In addition, he felt that the ship was close to the line connecting No. 5 light buoy and No. 3 light buoy, which was close to the waypoint.
	Report	http://www.mlit.go.jp/jtsb/ship/rep-inci/2014/MI2014-10-1_2013tk0016.pdf http://www.mlit.go.jp/jtsb/ship/p-pdf/MI2014-10-1-p.pdf (Explanatory material) Refer to case studies (p. 146).

9 Summaries of recommendations and opinions

The recommendations and opinions for 2014 are summarized below.

① Fatality of a stevedore on the cargo ship SCSC WEALTH

(Safety recommendation issued on April 25, 2014)

○Summary of the accident, probable causes and safety recommendations

Refer to “8 Publication of investigation reports” (No.14, page 114)

② Collision between the container ship KOTA DUTA and the cargo ship TANYA KARPINSKAYA (Ship B Russia)

(Safety recommendations issued on May 30, 2014)

○Summary of the accident, probable causes and safety recommendations

Refer to “8 Publication of investigation reports” (No.15, page 115)

③ Fire on the cargo ship TAIGAN

(Safety recommendations issued on June 27, 2014)

○Summary of the accident, probable causes and safety recommendations

Refer to “8 Publication of investigation reports” (No.20, page 119)

④ Opinions on preventing the grounding and contact with breakwater or other facility involving recreational fishing vessels and angler tender boats

(Opinions issued on March 28, 2014)

Grounding accident that occurred on August 14, 2013

○Summary of the accident

In August and September 2013, three cases of recreational fishing vessels grounding on rocky areas, colliding into breakwaters, and other such serious marine accidents occurred one after another, and 15 people including passengers sustained minor to serious injuries. Furthermore, after October the same year, three cases of similar accidents continued to occur.

The number of accidents of grounding by recreational fishing vessels and angler tender boats (hereafter, "recreational fishing vessels, etc."), collisions into breakwaters, etc., and accidents causing damage to aquaculture facilities, etc., that had been identified from October 2008 to February 2014, exceeded 63 cases. By the end of March, reports had been published about 56 cases of marine accidents.

In the analysis of these cases, the majority of the accidents had frequently resulted from failure to check the ship's position, not keeping careful lookout, or mistaken perceptions, etc. at waters that the ships were accustomed to navigating, such as routes into and out of the docking spot, or fishing points with a high frequency of use. Even in such frequented waters, it is desirable to check and obtain information on areas that are recognized as being particularly dangerous spots.

Hence, it is considered to be necessary to provide guidance to the operators of recreational fishing vessels, etc. as part of the necessary measures to be taken to ensure that ships obtain information on areas that are recognized as being particularly dangerous spots in water that they are accustomed to navigating, and to ensure the safe navigation of ships in these dangerous areas.

○Description of opinions toward the Director-General of the Fisheries Agency

The grounding of recreational fishing vessels, etc. carrying fishing passengers, and collisions into breakwaters, are giving rise to a large number of injuries. Hence, in order to raise awareness of the following matters among the operators of recreational fishing vessels, etc. or those who are responsible for carrying out work on recreational fishing vessels, etc. so as to ensure the safety of the users of recreational fishing vessels, etc., recommendations should be made to prefectural governors and other persons, and methods reviewed for the definite implementation of these matters.

It is desirable that the operators of recreational fishing vessels should examine the rocky areas, shallows, breakwaters, aquaculture facilities, etc. that are located between the boarding and alighting points of users and fishing grounds, or between two fishing grounds, and conduct risk assessments. For areas that have been identified as particularly dangerous areas, they should establish routes that enable safe navigation or safety clearance lines, check the ship's position while on passage using GPS plotter and other equipment, and navigate safely based on established routes and safety clearance lines.

10 Actions taken in response to recommendations in 2014 (Marine accidents, etc.)

The summary of actions taken in response to recommendations reported in 2014 is as follows.

① Marine accident related to the fire on the cargo ship TAIGAN

(Safety recommendations issued on June 27, 2014)

The Japan Transport Safety Board conducted an investigation into the fire on the cargo ship TAIGAN that occurred in Wakkanai Port in Hokkaido on May 16, 2013, and published the accident investigation report on June 27, 2014, as well as offered safety recommendations to the authorities of the Kingdom of Cambodia, which was the country that the ship was registered under. It received the following report on actions taken in response to the recommendations.

○Summary of the accident, probable causes, and safety recommendations given

Refer to “8. Publication of investigation reports” (p. 119, No. 20).

○Actions taken in response to safety recommendations

Actions taken by the authorities of the Kingdom of Cambodia

This Administration will instruct that the management company and the owner should take the following measures to prevent not only recurrence of similar accidents but also damage caused by them.

(1) The Management Company should ensure the onboard smoking policy is observed.

(2) The Management Company should provide new crew members with training, just after they joined the vessel, on what to do in the event of a fire, which includes information about the escape routes and the location of fire extinguishers.

(3) To avoid the situation where there is no emergency escape route available depending on where a fire breaks out, it is desirable that the ship owner should secure at least two escape routes, for example, one on the fore side and the other on the aft side.

*The original report issued by the authorities of the Kingdom of Cambodia is published on the JTSB website.

http://www.mlit.go.jp/jtsb/shiphoukoku/ship-anzenkankoku14cre_20140801.pdf

② Opinions on preventing the grounding of recreational fishing vessels and angler tender boats, and collision accidents at breakwaters, etc.

(Opinions issued on March 28, 2014)

The Japan Transport Safety Board analyzed the cases of grounding by recreational fishing vessels and angler tender boats, collisions into breakwaters, etc., and accidents causing damage to

aquaculture facilities, etc. identified from October 2008 to February 2014, expressed its opinions to the Director-General of the Fisheries Agency on March 28, 2014, and received the following report on actions taken in response to the opinions.

○Summary of the accident

Refer to "9. Summaries of recommendations and opinions" (p. 126, ④).

○Actions taken by the Director-General of the Fisheries Agency in response to the opinions

According to 25-Suikan No. 2775 dated March 31, 2014, in order to ensure that definite measures are put in place to secure the safety of the users of recreational fishing vessels, operational rules were revised and recommendations offered to the prefectural governors. In addition, the following requests were made to ensure the thorough dissemination of measures for preventing accidents to those who are responsible for conducting safety seminars for operations of recreational fishing vessels, etc. as part of the assistance projects organized by the Fisheries Agency, and to those who are responsible for conducting educational seminars for the operators of recreational fishing vessels.

It is desirable that the operators of recreational fishing vessels should examine the rocky areas, shallows, breakwaters, aquaculture facilities, etc. that are located between the boarding and alighting points of users and fishing grounds, or between two fishing grounds, and conduct risk assessments. For areas that have been identified as particularly dangerous areas, they should establish routes that enable safe navigation or safety clearance lines, check the ship's position while on passage using GPS plotter and other equipment, and navigate safely based on established routes and safety clearance lines.

*The contents of the report, including materials, etc., are published on the JTSB website.
http://www.mlit.go.jp/jtsb/shiphoukoku/ship-iken12re_20140423.pdf

③ Marine accident involving the fatality of a crew member of the chemical tanker KYOKUHO MARU No. 2

(Recommendations issued on April 26, 2013)

The Japan Transport Safety Board conducted an investigation into the fatality of a crew member of the chemical tanker KYOKUHO MARU No. 2 that occurred at the seventh district of Sakaisenboku of Hanshin Port on February 7, 2012, and published the accident investigation report on April 26, 2013, as well as offered recommendations to the Minister of Land, Infrastructure, Transport and Tourism and AST Inc. as one of the parties relevant to the cause of the accident. It received the following report on measures and actions taken in response to the recommendations.

○Summary of the Accident

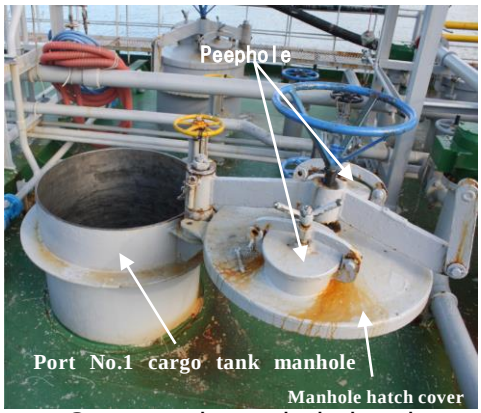
The chemical tanker KYOKUHO MARU No.2 left Komatsu Wharf, Izumi-otsu Port, Izumi-otsu City, Osaka Prefecture, with the master, the second officer and other three crewmembers onboard. On her way northward to the Umemachi Terminal in the Section 1 of Hanshin Port, at about 12:29 on February 7, 2012, the chief engineer found the second officer collapsed in the port No.1 cargo tank.

The Ship

The second officer was rescued but had been disabled to breathe by the inhaled gas, and died in oxygen deficiency.

○Probable Causes

It is probable that this accident occurred as the second officer entered the port No.1 cargo tank, where the wash water had remained with a smell of gas, and inhaled the chloroform gas when checking the inside of the tanks while the chemical tanker was heading north to the Umemachi Terminal, because AST Inc. had not made the crew well accustomed to taking careful actions when entering the cargo tank, including measurement of oxygen and other gas concentration, and also because the company had not manifestly established tank cleaning procedures in case of wash water found remaining in the cargo tank.



Cargo tank manhole hatch

○Recommendations to the Minister of Land, Infrastructure, Transport and Tourism

The Minister should give directions to coastal chemical tanker operators to ensure that they

take the following measures:

1) give their tanker crew instructions in the measurement of oxygen and other gas concentration when entering in enclosed spaces so as to make sure they implement it, and regularly visit their tankers to check that the measurement of oxygen and other gas concentration is carried out without fail;

2) instruct their masters to keep record of the measurement of oxygen and other gas concentration and, if a gas detector is used in the gas measurement, also keep record of the number of detector tubes purchased, used, and remaining, and regularly visit their tankers to check the record of gas concentration measurement and the detector tubes to ensure that the measurement and the recording are carried out without fail;

3) develop, in a simple form easy for their crew to understand, specific tank cleaning procedures, including check of wash water remains, removal of the remainder by stripping, and drying and gas-freeing operation as stated in the coastal tanker safety guidelines and P&A manual, and post them at places easy to see on work site; and

4) being aware of the importance of avoiding taking actions impulsively or on the crewmember's own judgment in an emergency, provide education and training to their crew regularly in responding to accidents and other emergencies.

In addition, the Minister should, when inspecting tankers, give their crew necessary instructions concerning 1) through 4) above and check their detector tube record to see if the measurement of oxygen and other gas concentration is properly performed, and make sure, by auditing the operators, that they have been active in the effort of assuring transportation safety and improving shipping operations.

○ Actions taken by the Minister of Land, Infrastructure, Transport and Tourism in response to the recommendations

1. The Maritime Bureau of the Ministry of Land, Infrastructure, Transport and Tourism issued the "Thorough Safety Measures for the Operation of Chemical Tankers" (Kokukaikan No. 6, Kokukaiun No. 24, Kokukaian No. 17, Kokukaisa No. 41) dated April 26, 2013, to provide guidance for the operators of chemical tankers (hereafter, "operators, etc.") on putting in place thorough safety measures when transporting toxic cargo for which guidance was called for in the recommendations to the Chairman of the Japan Coastal Tanker Association.

In response to this, the Japan Coastal Tanker Association established the Coastal Chemical Tanker Safety Measures Working Group that the Ministry of Land, Infrastructure, Transport and Tourism is also a member of. This working group compiled the following measures that should be taken by operators, etc. in light of the recommendations offered, and took steps to ensure that all chemical tankers put in place the necessary measures by March 31, 2014. The Maritime Bureau of the Ministry of Land, Infrastructure, Transport and Tourism also held a briefing session for operators, etc. about the safety measures to be taken when transporting toxic cargo.

(1) Visit the ship at least once a year, and instruct the Master and crew members on matters

such as measuring the concentration of gases when entering dangerous zones, complying with labor safety and health regulations for ship crew, and the usage methods for gas detection devices. At the same time, ensure that this is thoroughly disseminated, check the records for (3), (4), and (6) below, and draw up records indicating that these items have been checked.

(2) Display matters to be complied with when entering dangerous zones near to the dangerous zones and highly visible areas on the ship, have the Master provide guidance on these matters to crew members and ensure that they comply.

(3) Provide the Masters of ships with information pertaining to the risks of cargo, permitted concentration, types of detection device that can measure the concentration of gases, etc. Ensure that this information is thoroughly disseminated by the Masters to the crew members, and record the results of the measurement of gas concentration. Based on labor safety and health regulations for ship crew, as well as the provisions of regulations on the transportation and storage of dangerous cargo, ensure that ships are equipped with effective detection equipment corresponding to the type of cargo they carry.

(4) When using detection equipment, ensure that the Master of the ship keeps records of the number of detection tubes available for each gas that can be detected, the storage location, expiration date, date of usage, working hours in the dangerous zone, and number of tubes used.

(5) In cases where a toxic gas exceeding the baseline value is detected, restrict entry into the dangerous zone immediately, and ventilate the area, undertake tank cleaning work or take other measures to eliminate the cause for the generation of the toxic gas until the concentration of the gas has fallen below the baseline value.

(6) Display the response in the event of an accident near to the dangerous zones and highly visible areas on the ship, have the Master provide guidance on these matters to crew members and ensure that they comply. Conduct training and provide education about response in the event of an accident, and keep records on the situation of training and education.

(7) Take into consideration the time that is required to carry out tank cleaning and gas removal work safely and properly, and allocate vessels accordingly within reason.

2. In light of the aforementioned measures, the Maritime Bureau of the Ministry of Land, Infrastructure, Transport and Tourism issued the “Thorough Safety Measures for Chemical Tankers that Transport Toxic Cargo” (Kokukaian No. 117, Kokukaiin No. 188, Kokukaisa No. 399) dated January 31, 2014, and will conduct site inspections of all chemical tankers between April 1, 2014 and March 31, 2019. It will provide guidance and check the following items, relating to the status of implementation of safety measures.

(1) Conduct accurate revisions and development of safety management manuals, internal regulations, procedure manuals, etc.

(2) Ensure thorough dissemination of on-board guidance, laws and regulations, etc. every year through ship owners and operators, check records of detection and measurement, and verify

the situation of compliance with labor safety and health regulations for ship crew.

(3) Display matters to be complied with when entering dangerous zones, and ensure that crew members are guided and comply with these matters.

(4) Disseminate information about the risks of cargo, permitted concentration, etc., gain the understanding of the Masters, ensure that the Masters check safety data sheets on cargo, and disseminate information to the crew members and gain their understanding on the same.

(5) Equip ships with detection equipment based on labor safety and health regulations for ship crew, as well as the provisions of regulations on the transportation and storage of dangerous cargo.

(6) Understand matters such as how to handle detection equipment, record the results of detection and measurement, and record information pertaining to detection tubes.

(7) Response in the event of an accident

(8) Display/Guidance on response during an emergency, implementation of response training during an emergency, and maintenance of records

3. Furthermore, the "Implementation of Courses on Safety Measures for Chemical Tankers" (Kokukaiin No. 2015), dated February 13, 2014, was issued to registered training institutes that conduct courses for those responsible for handling dangerous substances, and guidance was provided to ensure that the proper education is provided for these persons on safety measures to be taken when transporting toxic cargo.

○Recommendations to AST Inc.

AST Inc. should take the following measures for the prevention of similar accidents:1) give their tanker crew instructions in the measurement of oxygen and other gas concentration when entering in enclosed spaces so as to make sure they implement it, and regularly visit their tankers to check that the measurement of oxygen and other gas concentration is carried out without fail;

2) instruct their masters to keep record of the measurement of oxygen and other gas concentration and, if a gas detector is used in the gas measurement, also keep record of the number of detector tubes purchased, used, and remaining, and regularly visit their tankers to check the record of gas concentration measurement and the detector tubes to ensure that the measurement and the recording are carried out without fail;

3) develop, in a simple form easy for their crew to understand, specific tank cleaning procedures, including check of wash water remains, removal of the remainder by stripping, and drying and gas-freeing operation as stated in the coastal tanker safety guidelines and P&A manual, and post them at places easy to see on work site; and

4) being aware of the importance of avoiding taking actions impulsively or on the crewmember's own judgment in an emergency, provide education and training to their crew regularly in responding to accidents and other emergencies.

○Actions taken by AST Inc. in response to the recommendations

Recommendation (1)

① Providing thorough guidance to crew members

During the ship embarkation training, the docking safety training, and the onboard training conducted once to twice during each ship month, guidance was provided on the need to measure oxygen and gas concentrations. Furthermore, of the items transported by AST Inc., for ships that transport chloroform, dichloromethane, and carbon tetrachloride, before entering tanks and pump rooms that have been cleaned, in addition to taking measurements of oxygen concentration, measurements were taken of residual gas using the detection tubes for the item in question and Kitagawa gas detection equipment, and records were kept. All of these measures were put in place by September 2013.

Based on the results of reviews conduced by the Coastal Chemical Tanker Safety Measures Working Group, in addition to the three items mentioned above (chloroform, dichloromethane, and carbon tetrachloride), measurements were taken for toxic cargo using gas detection tubes or ultra-sensitive PID gas detection equipment for chemical tankers (hereafter, gas detection equipment).

All relevant ships were equipped with gas detection equipment by March 5, 2014, and education was provided on the usage methods for the equipment.

② Checking on the implementation of oxygen and gas concentration measurement

In the checklist for recording safety and health quality activities in ships that has been used for ship visits, among items that check the measurement records of oxygen concentration and residual gas concentration, items that check the "Gas Detection Tube Management Table," which contains records of the number of gas detection tubes received, used, and remaining were newly added, and the status of implementation was checked during the ship visits carried out once to twice a month. All of these measures were put in place by September 2013.

Based on the results of reviews conducted by the Coastal Chemical Tanker Safety Measures Working Group, after equipping ships with gas detection equipment, detection work is carried out on toxic cargo using gas detection tubes or gas detection equipment. Hence, alongside with the measurement records for oxygen concentration, the status of implementation was checked during the ship visits carried out once to twice a month.

With regard to the record format, corresponding with the results of reviews conducted by the Working Group, the Gas Detection Tube Management Table was changed to the Gas Detection Tube Inventory Record Table, while the Oxygen Concentration Measurement/Residual Gas Detection Record Table was changed to the Gas Detection Record Sheet.

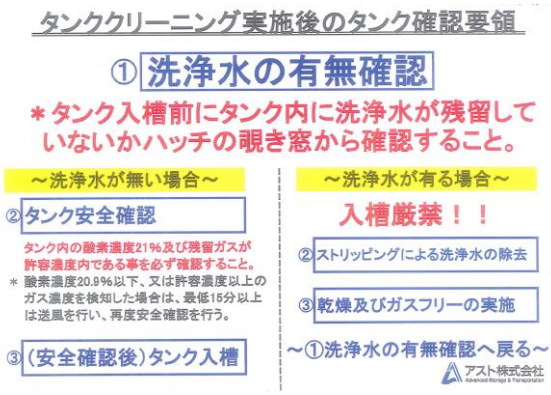
Recommendation (2)

① Recording the status of implementation for measuring oxygen and gas concentration

Of the items transported by AST Inc., with regard to the toxic gases chloroform, dichloromethane, and carbon tetrachloride, in addition to taking measurements of oxygen

concentration before entering tanks and pump rooms that have been cleaned, measurements were also taken of residual gas using the detection tubes for the item in question and Kitagawa gas detection equipment, and records were kept. All of these measures were put in place by September 2013.

The Masters of the ships were required to record measurement results in the Oxygen Concentration Measurement/Residual Gas Detection Record Table, and provided guidance on recording information pertaining to the date of receipt, number of tubes received, date of usage, number of tubes used, and number of tubes remaining, in the Gas Detection Tube Management Table.



Guidelines for Checking Tanks After Tank Cleaning

Based on the results of reviews conducted by the Coastal Chemical Tanker Safety Measures Working Group, after equipping ships with gas detection equipment, detection work is carried out on toxic cargo using gas detection tubes or gas detection equipment, and records are kept on the implementation status for measurement work in the Gas Detection Record Sheet. At the same time, guidance was provided for keeping records for ships that use gas detection tubes in the Gas Detection Inventory Record Table.

All relevant ships were equipped with gas detection equipment by March 5, 2014, and education was provided on the usage methods for the equipment.

② Checking on the implementation status, and investigating and checking records on detection tubes

During ship visits carried out once to twice a month, the aforementioned Oxygen Concentration Measurement/Residual Gas Detection Record Table and Gas Detection Tube Management Table were investigated and checked, and the results of these were recorded in the checklist.

Based on the results of reviews conducted by the Coastal Chemical Tanker Safety Measures Working Group, after equipping ships with gas detection equipment, alongside with measuring and recording oxygen concentration during ship visits conducted once to twice a month, the implementation status was checked for the Gas Detection Record Sheet and the Gas Detection Inventory Record Table for ships that use gas detection tubes.

Recommendation (3)

① Displays, and locations of displays

The "Guidelines for Checking Tanks After Tank Cleaning," which provides a simple

summary on the procedures of checking for the presence of washing water, and in the case that there is washing water, of removal through stripping, drying, and gas removal, was displayed at the entrances to pump rooms and in salons by September 2013. In addition, the "Matters for Compliance When Entering Dangerous Zones" was also displayed at the entrances to pump rooms and in salons.

② Checking of work procedures

During the meetings held prior to carrying out washing work,guidance was provided on the checking of work procedures for tank cleaning using the Guidelines on Cleaning Ships, such as checking for the presence of washing water, and in the case that there is washing water, of removal through stripping, drying, and gas removal by September 2013.

Recommendation (4)

① Measures with regard to facilities

After the occurrence of this accident, before the verification of safety and confirmation of oxygen concentration and the absence of residual gas, tiger mooring ropes were placed over the manhole hatch of the cargo tank as a precautionary warning.

② Implementation of education and training

With regard to methods for responding to an emergency such as an accident, the “Points to Note During an Emergency Such as an Accident in a Dangerous Zone,” which summarizes information such as not taking rash action, not acting on one’s individual discretion, reporting immediately to the bridge, and waiting for assistance before the necessary rescue personnel arrive, was displayed in the entrances of pump rooms and in salons. Education and training was also conducted. All of these measures were put in place by September 2013.

These education sessions were conducted as part of the ship embarkation training, safety during docking education, and on-board training. The training sessions were attended by all crew members when the ships were docked, and once a year on the ships.

*The implementation plans, including materials, are published on the JTSB website.

http://www.mlit.go.jp/jtsb/shiphoukoku/ship-kankoku13re-1_20130809.pdf

④ Marine accident involving a collision accident between the cargo ship NIKKEI TIGER and fishing vessel HORIEI MARU

(Opinions in the interim report on October 25, 2013)

With regard to the collision accident between the Panama cargo ship NIKKEI TIGER, and the fishing vessel HORIEI MARU, which occurred about 930km off the eastern coast of Kinkasan in Miyagi Prefecture on September 24, 2012, in light of the serious damage caused by this accident

and its significant social impact, and from the perspective of preventing similar marine accidents from occurring, the process of the investigation of this accident was reported and published. In addition, based on the facts established to date, opinions were offered to the Minister of Land, Infrastructure, Transport and Tourism and the Director-General of the Fisheries Agency on October 25, 2013, and a report was received on the actions taken in response to these opinions.

○Summary of the accident, probable causes, and safety recommendations given

Refer to “8. Publication of investigation reports” (p. 98, No. 20).

○Opinions to the Minister of Land, Infrastructure, Transport and Tourism

(i) The Minister of Land, Infrastructure, Transport and Tourism should consider the necessary measures for further informing ship owners and others of the effectiveness of AISs for the prevention of collision accidents, and the necessary measures for promptly promoting the deployment of AISs on fishing vessels that, at present, are not equipped with AISs (including Simplified AISs, the same shall apply hereinafter), for example, the fishing vessels operating or navigating in the open sea (the second class fishing vessels designated by the Ship Safety Act).

(ii) It is necessary that, for the purpose of preventing collision accidents, the Minister of Land, Infrastructure, Transport and Tourism should guide shipping business operators to collect and utilize the information on the situations of fishing vessel operations in their ship’s navigation areas, using public information including information provided by the industry associations related to fisheries or the Japan-Marine Accident Risk and Safety Information System by the Japan Transport Safety Board.

○Safety Actions Taken by the Ministry of Land, Infrastructure, Transport and Tourism

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(1) Establishment of the liaison committee of the four ministries and agencies for the promotion of the deployment of AIS on fishing vessels The Ministry of Land, Infrastructure, Transport and Tourism, upon receiving the opinions of the Japan Transport Safety Board, immediately called upon the Fisheries Agency, the Ministry of Internal Affairs and Communications, and the Japan Coast Guard, and established “The Liaison Committee of the Related Ministries and Agencies on the Promotion of the Deployment of AISs on Fishing Vessels” (administered by the Maritime Bureau of the Ministry of Land, Infrastructure, Transport and Tourism). At present, the committee has been discussing the specific measures for the promotion of AISs.

(2) Guidance to the related parties

The Maritime Bureau of the Ministry of Land, Infrastructure, Transport and Tourism issued its notice, dated October 25, 2013, to the maritime industry associations (Japanese Shipowners’ Association and Japan Federation of Coastal Shipping Associations), requiring shipping business operators to collect and utilize the information on the situations of fishing vessel’s operations in the navigation areas of their vessels using the Japan-Marine Accident Risk and Safety Information System by the Japan Transport Safety Board. The Maritime Bureau directed each of

the District Transport Bureaus to inform such shipping business operators of the notice and its points using the seminars and other means related to safety.

In addition, the Maritime Bureau directed the District Transport Bureaus to conduct safety enlightenment campaigns for installation of AISs on board.

○Opinions to the Director General of the Fisheries Agency

(i) The Director General of the Fisheries Agency, with regard to the fishing vessels that, at present, are not equipped with AISs, for example the fishing vessel engaged in operations or navigation in the open sea (the second-class fishing vessels designated by the Ship Safety Act), should inform the shipowners and others of the effectiveness of AIS for the prevention of collision accidents, and consider the necessary measures for promptly promoting the deployment of AISs.

(ii) It is necessary that the Director General of the Fisheries Agency should guide fishing vessel owners to collect and utilize the information on the situations of accident occurrences and the information on commercial vessel's voyage routes using public information, including the Japan-Marine Accident Risk and Safety Information System by the Japan Transport Safety Board.

○Safety Actions Taken by the Ministry of the Fisheries Agency.

(1) Establishment of the liaison committee of the four ministries and agencies for the promotion of the deployment of AIS on fishing vessels The Ministry of Land, Infrastructure, Transport and Tourism, upon receiving the opinions of the Japan Transport Safety Board, immediately called upon the Fisheries Agency, the Ministry of Internal Affairs and Communications, and the Japan Coast Guard, and established "The Liaison Committee of the Related Ministries and Agencies on the Promotion of the Deployment of AISs on Fishing Vessels" (administered by the Maritime Bureau of the Ministry of Land, Infrastructure, Transport and Tourism). At present, the committee has been discussing the specific measures for the promotion of AISs.

(2) Guidance to the related parties

The Fisheries Agency issued its notice, dated October 25, 2013, to the fisheries industry associations (JF Zengyoren (the nationwide federation of Japan Fisheries Cooperatives), Japan Fisheries Association, and Center for Employment Promotion and Training of Fishermen) and Prefectural Governors, requiring the recipients of the notice to promote the deployment of AISs to fishing vessels and guide fishing business

operators to collect the situation of accident occurrences using the Japan-Marine Accident Risk and Safety Information System by the Japan Transport Safety Board.

In addition, the Fisheries Agency established the financing support system for the costs of installation of the AISs, which is virtually interest-free loan in April 2014.

*The implementation plans, including materials, are published on the JTSB website.

http://www.mlit.go.jp/jtsb/shiphoukoku/ship-iken11re.pdf

11 Provision of factual information in 2014 (Marine accidents/incidents)

The JTSB provided factual information on one case (marine accident) to relevant administrative organs in 2014. The contents are as follows.

① Collision accident involving ships with limited visibility on the bow side while on passage

(Information provided on January 31, 2014)

Based on marine accident investigation reports that were published between October 2008 and the end of October 2013, the Japan Transport Safety Board analyzed the conditions of the occurrence of collision accidents (hereafter, "accidents caused by limited visibility on the bow side") involving ships with limited visibility on the bow side, such as fishing vessels and recreational fishing vessels (hereafter, "ships with limited visibility"). The following information was provided to the Ministry of Land, Infrastructure, Transport and Tourism, and the Fisheries Agency.

(Factual information)

1. Occurrence of the accidents, etc.

(1) 68 cases of accidents caused by limited visibility on the bow side have occurred. In these accidents, five people died, while 53 people sustained injuries.

(2) The scope of limited visibility on the bow side due to factors such as an uplifted bow was about 10° to 30° in many cases, and extended to 60° and 90° in some cases.

(3) In about 90% of the accidents caused by limited visibility on the bow side, the ships with limited visibility collided with other ships on the bow side under conditions of little movement, such as during anchoring or while roving.

(4) In about 60% of the accidents caused by limited visibility on the bow side, although the person operating the ship with limited visibility was keeping a lookout on the bow side, such as keeping watch before navigating and waving the bow side while on passage, he or she would believe that there were no other ships at the bow side because other ships were not sighted during these lookouts. After that, lookouts were not carried out properly.

With regard to the factors causing limited visibility in the bow side for small fishing vessels, etc., many of these ships have a planing form, and until the ship enters the planing phase, the bow side would be lifted, thereby limiting visibility on the bow side. At the same time, depending on the fishing vessel, fishing related equipment, etc. may have been installed on the deck, further limiting the visibility on the bow side.

In addition, some of the existing ships face restrictions with regard to seaworthiness, stability, and gross tonnage. Hence, there are cases where it is difficult to completely eliminate the limitations in visibility.

2. Measures to prevent recurrence

The measures described in (1) and (2) below are measures for preventing the recurrence of accidents caused by limited visibility on the bow side.

(1) In the design and construction of new ships, as far as possible, pay attention to ensuring adequate visibility on the bow side.

(2) For ships with limited visibility, put in place measures to make up for the limited visibility on the bow side, such as ship maneuvering methods.

*Details on this provision of information are published on the JTSB website.

http://www.mlit.go.jp/jtsb/iken-teikyo/s-teikyo8_20140131.pdf

Column Collision accidents and "suspicious ships"

Marine Accident Investigator

When we speak of "suspicious ships," ships that are found near territorial waters in the night, and ships of unknown nationality or names that sometimes enter territorial waters and act suspiciously, come to mind. However, in the case of collision accidents, crew members of the ship that caused the accident often sense that the other ship is acting in a suspicious manner toward their own ship.

For example, in suspicious actions such as "Although the other vessel should be avoiding us, they are continuing to sail in the same course," "Although they can continue on and pass ahead of us, they are deliberately decelerating, turning the rudder, and coming close," and "Although we have agreed on a manner of passing each other through VHF radio, they are taking completely different actions," various reasons can be given. These include dozing off, engaging in other work and not noticing the other ship, and believing that the other ship would avoid their own ship.

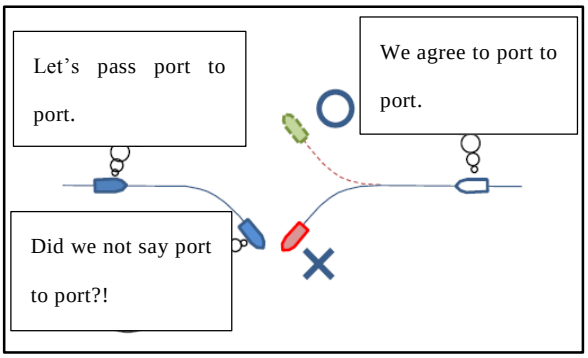
When investigating the causes of accidents, investigators conducting accident investigations reconstruct the steps leading up to the accident based on statements given by persons involved and objective data such as VDR. However, there are many times when it is impossible to understand the reasons behind why crew members undertook suspicious actions.

While there are cases where it is impossible to uncover these reasons, the reasons for being regarded as a "suspicious ship" can be summarized in the following examples: "The other ship is not aware of our presence," "The other ship is not keeping watch on our actions," "The other ship does not understand our intentions," or "Our ship is unable to move freely due to malfunction or breakdown." Specifically, these are situations where crew members had dozed off, were not keeping a lookout, failed to capture the other ship on the radar, or unable to communicate the intentions through VHF radio.

To avoid acting suspiciously, it is important to first keep proper lookout, sight the other ship, and monitor it. Next, it is important to make the other ship realize the presence of one's own ship, and act early and clearly to avoid the other ship in a way that is easy for the other ship to understand. It is also important to communicate the ship maneuvering intentions to one another. While these may seem to be obvious, they had not been carried out in many of the cases that resulted in a collision accident.

Recently, collisions between ships of significantly different sizes, such as ocean-going cargo ships and small pleasure boats, have been on the rise. These collisions had been the result of actions that appeared suspicious to one another, as these ships had failed to recognize the blind spots and maneuvering characteristics of one another, and had no means of communicating with one another such as through radio.

There is a need to put in place measures, such as having small ships avoid approaching large ships as far as possible, and to avoid crossing the route of large ships while on passage. On the other hand, large ships should monitor the movements of small ships carefully, and issue warning signals at an early stage.



In order to prevent collisions, it is important to alert the other ship to the presence and maneuvering intentions of one's own ship before the other ship beings to act suspiciously, and to recognize suspicious actions at an early stage and take the appropriate action.

12 Summaries of major marine accident investigation reports (Case studies)

Movement of hatch cover placed over inner bottom plating of the cargo hold trapped worker, resulting in the death of the worker

Fatality of worker on cargo ship SCSC WEALTH

Summary: At about 14:20 on May 10, 2011, while the cargo ship SCSC WEALTH (the ship, gross tonnage: 6,550tons) was loading copper slag at the Public Wharf in Hibi Port, Tamano City, Okayama Prefecture, tween deck hatch covers that were placed on the inner bottom plating in No.2 cargo hold moved, leading to a stevedore being caught between the hatch covers and a forward bulkhead, resulting in his death.

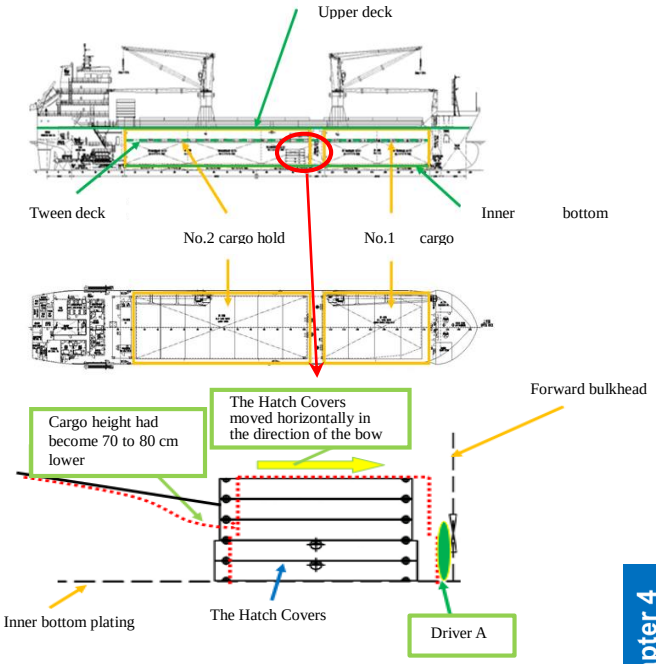
Events leading up to the accident

The ship was berthed alongside the Public Wharf in Hibi Port at about 07:45 on May 9, and commenced cargo loading work at about 10:40.
On the ship, the hatch covers were stacked up on the bow side of the inner bottom plating in No.2 cargo hold, and the safety bolts for the lowermost and the second lowermost hatch covers had not been inserted into the insertion holes in the inner hull plating.
(They were not secured as specified in the hatch cover operating manual.)

Cargo loading work was resumed at about 08:20 on May 10.
Using a bulldozer, Drivers A, B, and C were leveling the copper slag that had dropped into the cargo hold in shifts lasting about two hours.

At about 14:00, Driver C saw Driver A moving aft on the upper deck passageway on the port side of No. 1 cargo hold.
After that, Driver A used the forward companionway to No. 2 cargo hold to enter the cargo hold, and was passing between the hatch covers and the forward bulkhead.
(The work leader had instructed the workers to use the aft companionway, but the instructions were not followed.)

At about 14:20 on May 10, the hatch covers were pushed by cargo, and Driver A was caught between the hatch covers and the forward bulkhead.



Probable Causes: It is probable that this accident occurred for the following reasons: Five tween deck hatch covers were stacked up on the bow side of the inner bottom plating in No.2 cargo hold, during the loading of copper slag onto the ship at the Public Wharf in Hibi Port; however, the safety bolts for the lowermost and second lowermost hatch covers were not inserted into the insertion holes in the inner hull plating. Due to this fact, the situation was such that it was impossible to prevent horizontal movement of the hatch covers. Furthermore, a driver entered No.2 cargo hold through a forward companionway to the inner bottom plating of No.2 cargo hold; and when the driver was passing through the space between the hatch covers and the forward bulkhead, the hatch covers moved in the direction of the bow after being pushed by the cargo, resulting in the driver being caught between the hatch covers and the forward bulkhead.
It is probable that the reason why it was impossible to prevent horizontal movement of the hatch covers is that when the hatch covers were stacked up on the bow side of the inner bottom plating in No.2 cargo hold on the sihp, they were not secured as specified in the hatch cover operating manual.
It is probable that the reason why the driver entered No.2 cargo hold through the forward companionway to the inner bottom plating of No.2 cargo hold is that the instructions to use the designated passage route were not heeded.

For details, please refer to the investigation report. (Published on April 25, 2014)
http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2011tk0012e.pdf

Collision between cargo ships at the intersection of a dredged passage in the port

Collision between container ship KOTA DUTA and cargo ship TANYA KARPINSKAYA

Summary : Container ship KOTA DUTA (Ship A, gross tonnage: 6,245 tons) was leaving West Wharf No.3 Quay in Port of Niigata Higashi Ku, Niigata City, Niigata Prefecture with a master and 24 crew members onboard, while cargo ship TANYA KARPINSKAYA (Ship B, gross tonnage: 2,163 tons) was navigating toward the South Wharf within the same section after leaving the Central Wharf East Quay within the same section with a master and 16 crew members onboard , when Ship A's bow and Ship B's forward starboard side collided at approximately 16:22 on February 7, 2012, where the passages crossed.
Although Ship B foundered, all of the crew members were rescued. Ship A suffered damage to the bow, but there were no casualties.

Ship A had left the wharf and was proceeding northeast, when the master of Ship A recognized the radar image of another ship, and learned that it was Ship B at 16:18:37. (Speed at the time was 5.3 – 5.5kn).

At 16:18:51, the ship put the engine on slow ahead and put the rudder to midships. At 16:18:57, it was proceeding at a speed of 4.5kn heading 057°.

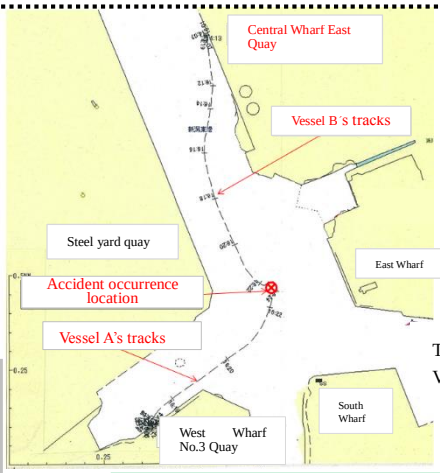
Based on an offer from Ship B and reports from the ex-master, the master of Ship A was convinced that ship B was going to pass on the starboard side, deciding not to pass on the port side.

At **16:19:58**, he communicated with Ship B via radio (VHF) to **agree** to the conduct of vessel to pass on the starboard side.
(Distance between the two ships was about 600m)

Put the rudder hard to port at 16:19:59.

It took about 20s to agree on the conduct of vessel.

The master of Ship A felt that there was a danger of colliding, and ordered to put the bow thruster full to port at 16:20:42, stop the engine at 16:20:45, and put the engine full astern at 16:21:07.



Tracks of Vessel A and Vessel B (AIS record)

Ship B had left the wharf and was proceeding south-south-east, when the master of Ship B sighted Ship A.

At **16:19:35**, the master of Ship B **offered** the conduct of vessel to pass on the starboard side via VHF to Ship A. (Speed at the time was 4kn)

The port side of Ship B was a large area of waters, and the master of Ship B was unable to anticipate where Ship A would turn to port. In order to avoid a collision, he believed that it would be safer if the two ships' courses did not cross.

After agreeing on the conduct of vessel with Ship A, he put the rudder 15° to port.

The master of Ship B believed that the heading of Ship A was not changing to port, and inquired with Ship A about the maneuvering situation using VHF at 16:20:28. He ordered to stop the engine and put the engine full astern

Collision (about 16:22)

Probable causes (excerpt): It is probable that this accident occurred because the vessels collided with each other due to the facts that Master A and Master B agreed to the conduct of vessel for both vessels to alter to port to pass on the starboard side via VHF, that the vessels continued to navigate after Master A put the helm hard to port and Master B put the helm to port at 15° in an attempt to execute the agreement, and that they kept approaching each other in the situation that was different from the agreed conduct of vessel without being able to recognize any change in the heading when the vessels approached each other in the situation in which their courses would cross where the Dredged Passages crossed while Ship A was proceeding northeast after leaving the West Wharf No.3 Quay and while Ship B was proceeding southsoutheast from the Central Wharf East Quay toward the South Wharf in Port of Niigata Higashi Ku.

For details, please refer to the investigation report. (Published on May 30, 2014)
http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2012tk0003e.pdf

Spread of fire from bedding in the cabin, believed to be caused by smoking

Fire on cargo ship TAIGAN

Summary: While mooring at the west pier of Tenpoku No.2 Wharf in the port of Wakkanai, Wakkanai City, Hokkaido, the cargo ship TAIBAN (the ship, gross tonnage: 497 tons), with the master and 22 crew members on board, caught fire at around 01:30 to 01:40, May 16, 2013. The fire on the ship was extinguished at about 13:00 by a fire brigade, leaving six crew members dead and three people injured. Besides, the bridge deck, the poop deck, and the upper deck

Events leading up to the accident

The ship, with the master, refrigeration engineer (Ref/E), and chief radio officer, as well as 15 crew members on board, berthed at the pier at 08:35 on May 14, and carried out cargo discharge work (scheduled to depart on May 16).

At about 20:00 on May 15, five crew members who were scheduled to embark boarded the ship. Of these, four stayed in their cabins, and one returned to an accommodation facility in town. The master was not present on the ship.

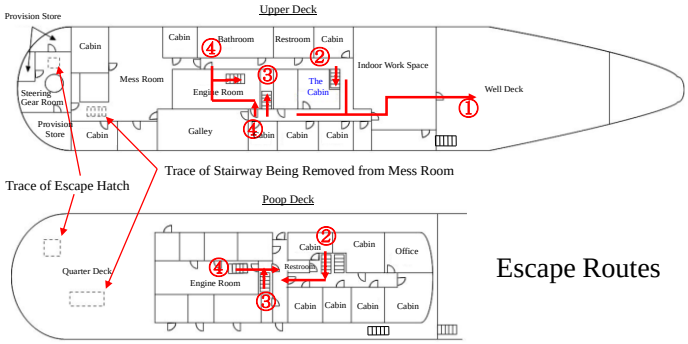
(Four out of the six crew members who died in this accident had just joined the ship, and they had not been provided with training and instruction on how to act in the event of fire, which included information about the escape routes and location of fire extinguishers.)

The chief radio officer, who was sleeping on the starboard side bed in the cabin, was awakened by the smell of smoke and breathing difficulties. He saw the Ref/E on the bed on the port side sitting up and attempting to put out the fire near his feet with both hands.

(With the exception of the indoor work space, smoking was prohibited on the ship.)

Ordinary Seaman A and some others heard the fire alarm go off past 01:30 on May 16, and Ordinary Seaman B notified the person-in-charge at the shipping agent of the fire via the shipper on mobile phone at about 01:40.

Some of the crew members took action to put out the fire, but it was not successful. The fire was eventually put out at about 13:00 on May 16 by firemen who had been activated after receiving a report from the shipping agent.



Escape Routes

Bed Location

Around Bed of Ref/E

Metal Ashtray

Ashtray Found under Stairway

When the ship was constructed in Japan in 1976, an escape hatch to the poop deck had been installed on the port side of the steering gear room. However, after the ship was sold overseas after that, the hatch became welded shut at some point, making it impossible to escape from the stern.

Full View of the Vessel

Welded Escape Hatch on Upper Deck Ceiling

Probable Causes: It is somewhat likely that while the ship moored at the Pier of Tenpoku No.2 Wharf in the port of Wakkanai at night, the Ref/E smoked on the bed in the Cabin, and then his bedclothes caught fire; hence, the fire spread to surrounding flammable materials.

For details, please refer to the investigation report. (Published on June 27, 2014)
http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2013tk0014e.pdf

Collision through close-quarters approach as the other ship was not found on radar screen on a rainy night

Collision between bulk carrier NIKKEI TIGER and fishing vessel HORIEI-MARU

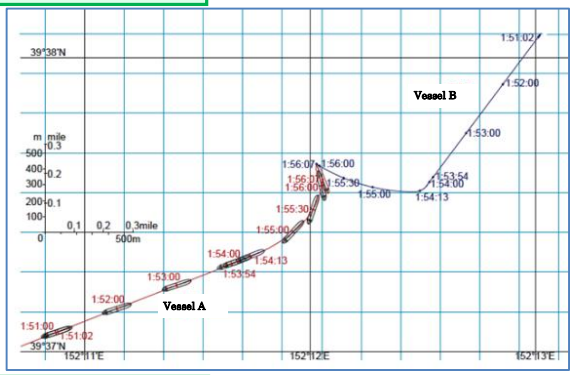
Summary: The bulk carrier NIKKEI TIGER (Ship A, gross tonnage: 25,074 tons), with a master and 20 crew members, departing Shibushi Port, Shibushi City, Kagoshima Prefecture, was proceeding northeast on the North Pacific toward Vancouver, Canada. The fishing vessel HORIEI-MARU (Ship B, gross tonnage: 119 tons), with a master and 21 crew members, was proceeding south-southwest, for the purpose of avoiding a low pressure system, on the North Pacific.
At around 01:56, September 24, 2012 (local time UTC+9), at around 930 km east of Kinkazan, Ishinomaki City, Miyagi Prefecture, Ship A's bow and Ship B's port side collided with each other.
Nine crew members onboard Ship B were rescued by Ship B's consort, but the others went missing, and the ship sank. Ship A had no casualties and received no significant damage to its hull.

Weather and sea conditions
- Weather: Rain
- Visibility: About 2M
- Wind direction: East-south-east
- Wind force: 7
- Wave height: About 3m

Ship A had departed from Shibushi Port for Vancouver, Canada, heading northeast on the North Pacific.

Ship B was heading south-south-west to avoid the low pressure system.

Estimates of ship tracks



The helmsman sighted the mast lights of Ship B at 01:51:02 on the port bow, and reported to the officer.
The officer attempted to obtain information and images of Ship B on the radar and AIS (Automatic Identification System), but could not find it.

Contributing factors: no AIS installed on Ship B; rain, waves; and Ship B's size.

The officer sighted the green light of Ship B at 01:52:12, and recognized that Ship B was crossing Ship A's course at 01:53:44. At 01:53:54, he ordered to put the rudder 10° to port, and after that ordered to put the rudder 20° to port.

At 01:54:13, when Ship B was at 0.53M on Ship A's bow (0° to less than 5° on the starboard bow), it is somewhat likely that Ship B turned to starboard to avoid a collision. However, it was not possible to determine what the intention was.

The officer received a report from the helmsman at 01:54:13 and sighted the red light of Ship B. He ordered to put the rudder hard to port, and after that, continued to flash its daylight signal lights.

The chief fisherman felt the impact of a collision when communicating with the chief fisherman of the consort ship via radio.

Collision

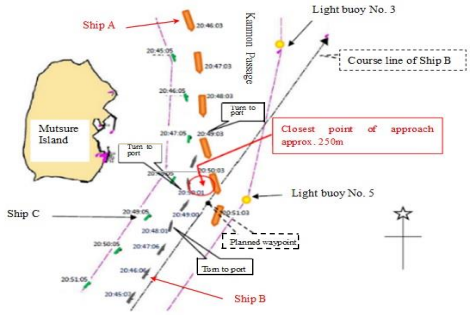
Probable causes: It is probable that the accident of collision between Ship A and Ship B occurred at night at around 930 km east of Kinkazan while Ship A was proceeding northeast and Ship B was proceeding south-southwest, because Ship A altered its course to port and Ship B altered its course to starboard in a situation where the vessels came close to each other sailing on intersecting courses.
It is probable that Ship A altered its course to port for the purpose of widening the passing distance to Ship B, which was crossing ahead of Ship A.

For details, please refer to the investigation report. (Published on June 27, 2014)
http://www.mlit.go.jp/jtsb/eng-mar_report/2014/2012tk0037e.pdf

While sailing on the left side of Kanmon Passage, came into close quarters of about 250m with a ship on a reciprocal course

Safety obstruction by car carrier AUTO BANNER and training ship SHIMAYUKI

Summary: Car carrier AUTO BANNER (Ship A, gross tonnage: 52,422 tons), with the master and 23 crew members on board, was being piloted and proceeding south along Kanmon Passage of Kanmon Port toward Sakaisenboku of Hanshin Port. Training ship SHIMAYUKI (Ship B, standard displacement of 3,050 tons), with the master and 153 crew members on board, was proceeding north-north-east along the same passage toward Sasebo Port in Nagasaki Prefecture. At about 20:48 on June 11, 2013, the two ships met on reciprocal courses in the Kanmon Passage off the east coast of Mutsure Island in Shimonoseki City, Yamaguchi Prefecture. Ship B was sailing the left side of the passage by turning to port, navigating in a way that went against the provisions of the Act on Port Regulations by entering into the path of Ship A. It continued to approach Ship A. Ship A, sensing the risk of a collision, turned to port to sail on the left side of the passage. At about 20:50, the two ships came within close quarters of one another at a distance of about 250m, passing by starboard side to starboard side, thereby obstructing safety.



About 20:40

While Ship A was navigating off the northern coast of Mutsure Island, the pilot checked the situation of Ship B on a reciprocal course based on information obtained through the radar and AIS (Automatic Identification System).

Ship B was navigating along the Kanmon Passage when its crew spotted the presence of Ship A through information obtained from the AIS and radar. This was reported to the master and the chief navigator.

About 20:43 – 20:44

The pilot recognized that Ship B was sailing close to the center of the Kanmon Passage.

Although it was sailing close to the center of Kanmon Passage, the chief navigator was not aware of that, and gained the approval of the master to change course at the next waypoint. Hence, it continued to sail maintaining the same course.

About 20:47 – 20:48

Ship A continued to turn to starboard, heading toward No. 6 light buoy in the Kanmon Passage. However, it appeared to the pilot that Ship B was turning to port through the perspective of Ship B's side lights, and became doubtful.

The chief navigator, upon receiving report on changing course from the crew, ordered to put the rudder 10° to port. However, the master assessed that it was too early to turn to port, and ordered the chief navigator to put the rudder 10° to starboard.
The course alteration was carried out about 500m before the planned waypoint.

About 20:48 – 20:49

The pilot sighted the two side lights of Ship B, and put the rudder hard to port, while sounding two short blasts on the whistle. He ordered the master to activate the emergency engine stop, and put the rudder back a little from hard to port.

The master heard the two short whistle blasts from Ship A, and believed that Ship A was attempting to pass by starboard to starboard. Hence, he ordered the chief navigator to put the rudder 30° to port and sound two short blasts.

At about 20:50, the two ships came within close quarters at about 250m starboard side to starboard side.

Probable causes (abstract): It is probable that this incident occurred as follows: Ship A was proceeding south toward Sakaisenboku of Hanshin Port, along the Kanmon Passage off the eastern coast of Mutsure Island of Kanmon Port at night; Ship B was proceeding north-north-east toward Sasebo Port in the same passage; When the two ships met on reciprocal courses, Ship A turned to starboard to follow the passage route on the right, while Ship B on the starboard bow of Ship A was sailing close to the center of the passage; Furthermore, as it turned to port before the planned waypoint in an attempt to head toward the next course, it ended up sailing on the left side of the passage; At the same time, upon showing its two side lights to Ship A, it navigated in a way that went against the provisions stipulated under the Act on Port Regulations by entering the path of Ship A; It continued to approach Ship A; in order to avoid a collision with Ship B, Ship A then navigated on the left side of the passage; The two ships came within close quarters starboard side to starboard side.

For details, please refer to the incident investigation report. (Published in Japanese on October 30, 2014)
http://www.mlit.go.jp/jtsb/ship/rep-inci/2014/MI2014-10-1_2013tk0016.pdf