

Chapter 5 Marine accident and incident investigations

1 Marine accidents and incidents to be investigated

<Marine accidents to be investigated>

◎Article 2, paragraph (5), 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>

◎Article 2, paragraph (6), item (ii) 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 4 of the Ordinance for Enforcement of the Act for Establishment of the Japan Transport Safety Board

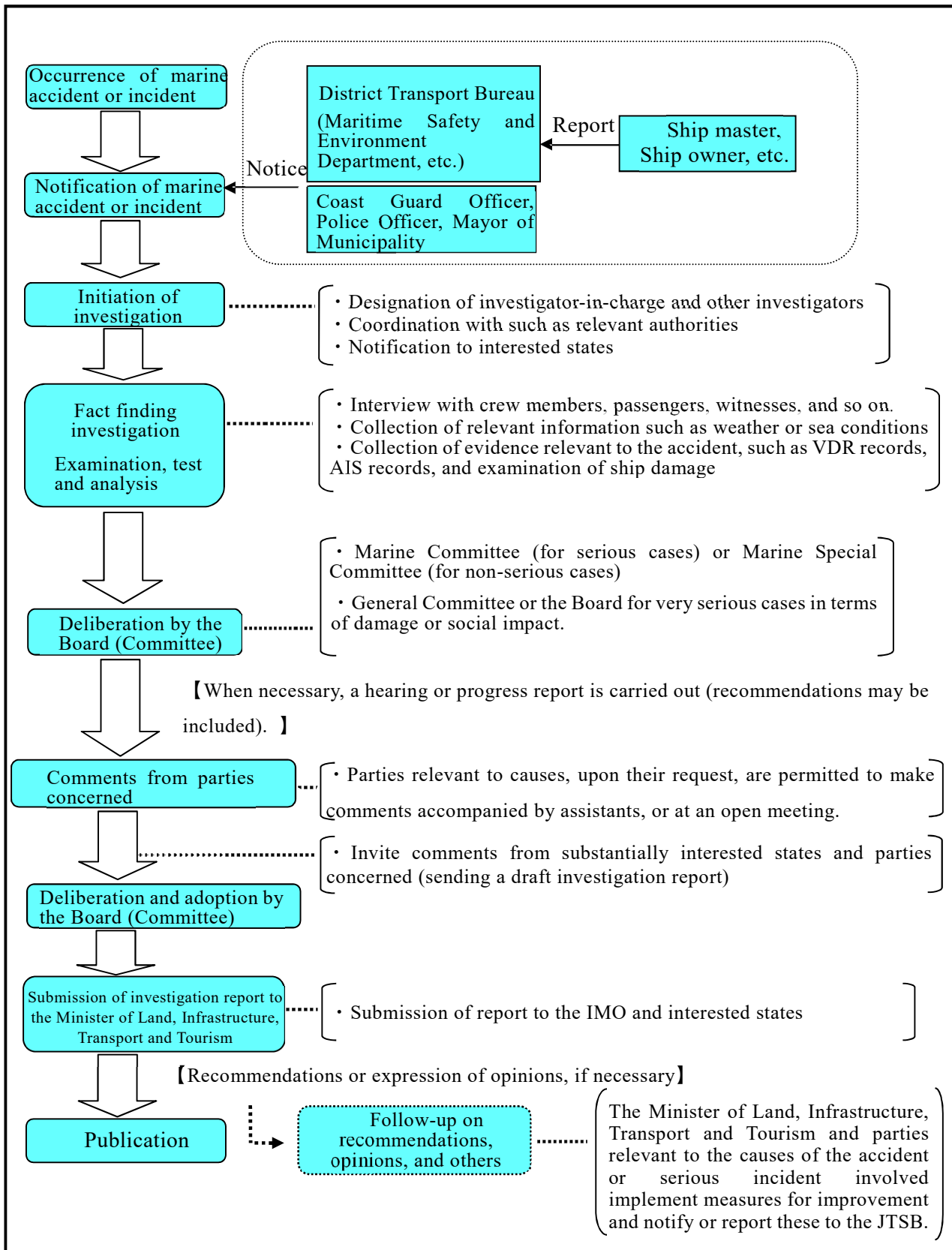
(A situation, prescribed by Ordinance of the Ministry of Land, Infrastructure, Transport and Tourism, stipulated in Article 2, paragraph (6), item (ii) of the Act for Establishment of the Japan Transport Safety Board)

- 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	Fatality, Fatality 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

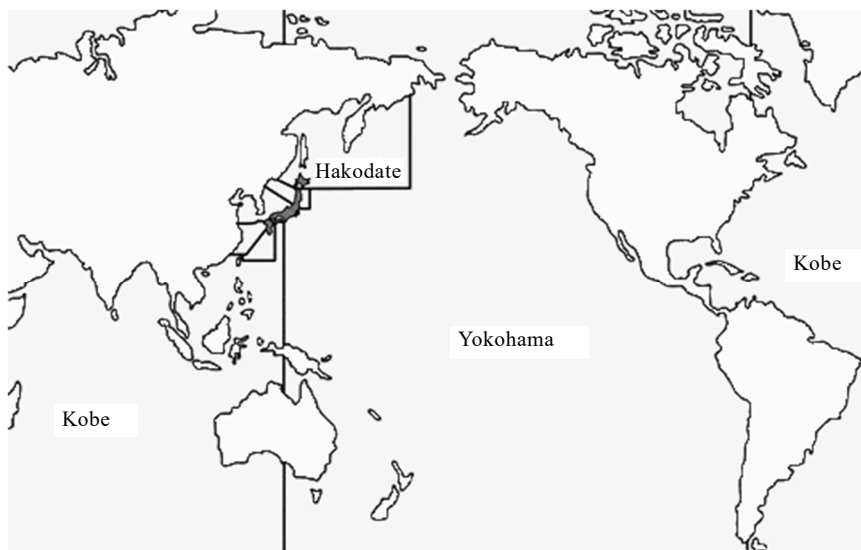
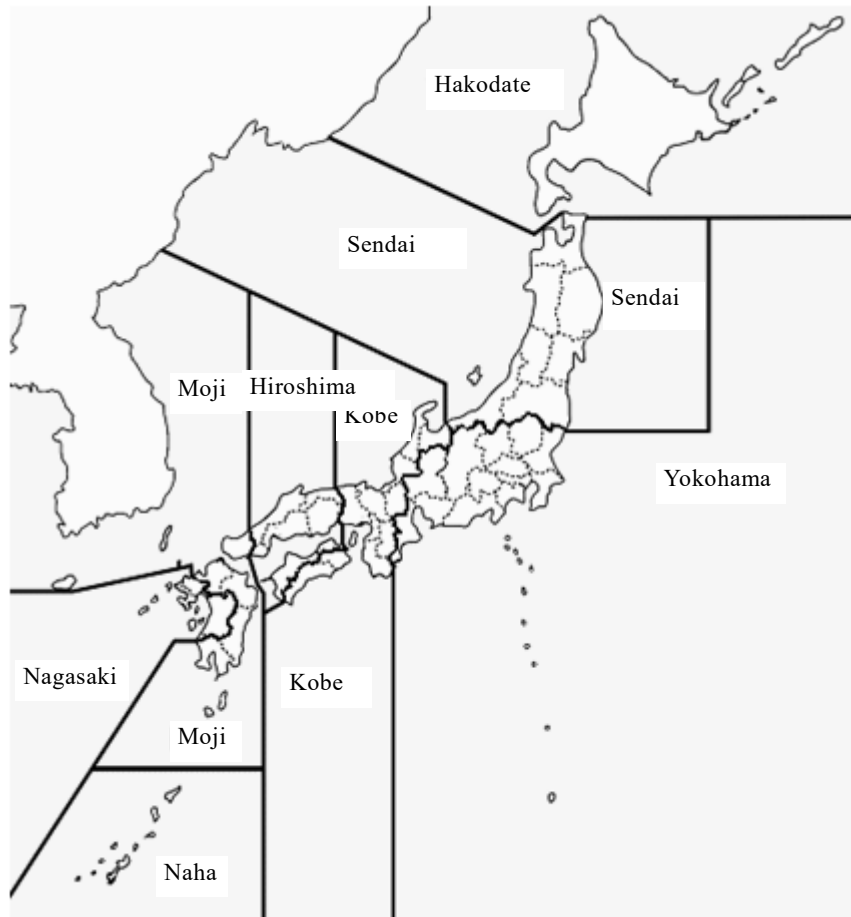
2 Procedure of marine accident/incident investigation



* Opinions may be expressed in a flow chart (as above) or whenever and however necessary to prevent accidents or incidents or mitigate damage thereof.

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 marine serious accidents and incidents.



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

Marine serious accidents and incidents are investigated by the marine accident investigators in the Headquarters, and are deliberated in the Marine Committee. However, particularly serious accidents are deliberated in the General Committee, and extremely serious accidents are deliberated in the Board.

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

<p>Marine serious accidents and incidents</p>	<p>Office in charge of investigation: Marine accident investigators in the Headquarters</p> <p>Committee in charge of deliberation and adoption: Marine Committee</p>
<p>Definition of “marine serious accidents and incidents”</p> <ul style="list-style-type: none"> • 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 	
<p>Marine non-serious accidents and incidents</p>	<p>Office in charge of investigation: Regional investigators in the regional offices</p> <p>Committee in charge of deliberation and adoption: Marine Special Committee</p>

Jurisdiction map

5 Statistics of investigations of marine accidents and incidents

(As of end of December 2021)

The JTSB carried out investigations of marine accidents and incidents in 2021 as follows:

In 2020, 612 accident investigations had been carried over from 2020, and 736 accident investigations were newly launched. Besides, 673 investigation reports were published in 2021, and thereby 666 accident investigations were carried over to 2022.

Moreover, 134 incident investigations were carried over from 2020, and 153 incident investigations were newly launched in 2021. Furthermore, 156 investigation reports were published in 2021 and thereby 130 incident investigations were carried over to 2022.

Among the 829 investigation reports published, two were issued with recommendations, zero with safety recommendation and none was issued with opinions.

Investigations of marine accidents and incidents in 2021

(Cases)

Category	Carried over from 2020	Launched in 2021	Not applicable	Transferred to Tokyo Office	Total	Published investigation reports	(Recommendations)	(Safety recommendations)	(Opinions)	Carried over to 2022	(Interim report)
Marine accident	612	736	-9	0	1,339	673	(2)	(3)	(0)	666	(11)
Tokyo Office (Serious cases)	23	7	0	2	32	11	(2)	(3)	(0)	21	(11)
Regional Offices (Non-serious cases)	589	729	-9	-2	1,307	662	(0)	(0)	(0)	645	(0)
Marine incident	134	153	-1	0	286	156	(0)	(0)	(0)	130	(0)
Tokyo Office (Serious cases)	1	0	0	0	1	1	(0)	(0)	(0)	0	(0)
Regional Offices (Non-serious cases)	133	153	-1	0	285	155	(0)	(0)	(0)	130	(0)
Total	746	889	-10	0	1,625	829	(2)	(3)	(0)	796	(11)

Note 1: The figures for “Launched in 2021” includes cases which occurred in 2020 or earlier, and which the JTSB was notified of in 2021 as subjects of investigation.

Note 2: 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 3: 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.

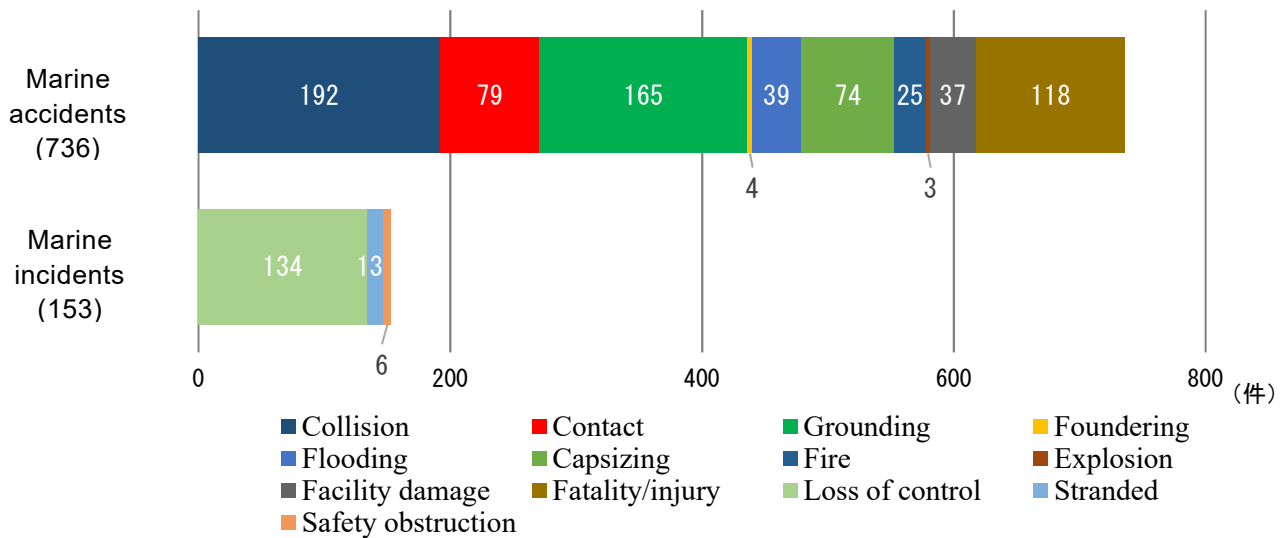
6 Statistics of investigated marine accidents and incidents

(As of end of December 2021)

(1) Types of accidents and incidents

The breakdown of the 889 investigations launched in 2021 by type of accidents and incidents is as follows: The marine accidents included 192 cases of collision, 165 cases of grounding, 118 cases of fatality/injury (not involved in other types of accidents), and 79 cases of contact. The marine incidents included 134 cases of loss of control, 13 cases of stranded, and six cases of navigation obstructions. Objects that collided with ships included quays in 23 cases, breakwaters in 13 cases, and buoys in nine cases.

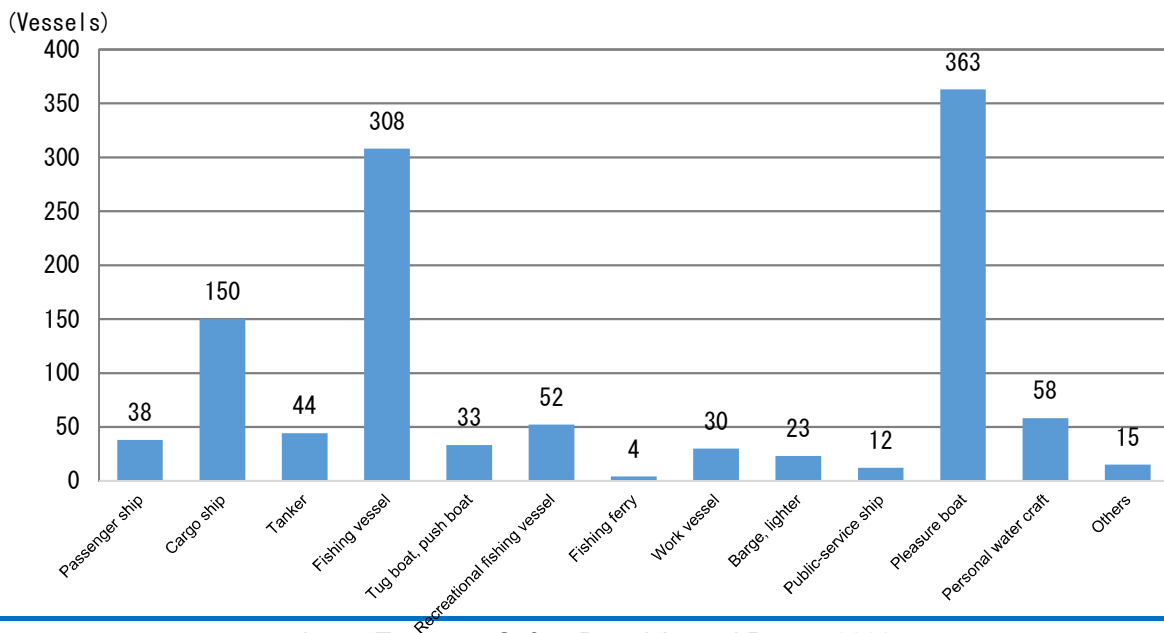
Number of investigated marine accidents and incidents by type in 2021



(2) Types of vessels

The number of vessels involved in marine accidents and incidents was 1,130. By type of vessel, they included 363 pleasure boats, 308 fishing vessels, 150 cargo ships, 58 personal water craft and 52 recreational fishing vessels.

Number of vessels involved in marine accidents and incidents by type in 2021



The number of foreign-registered vessels involved in marine accidents and incidents was 51, and they were classified by accident type as follows: 29 vessels in collision, 12 vessels in grounding, and seven vessels in contact. As for the flag of vessels, 18 vessels were registered in Panama, nine vessels in Republic of Korea, four vessels in Marshall Islands, three vessels in Liberia, and three vessels in Sierra Leone.

Number of foreign-registered vessels by flag

(Vessels)

Panama	18	Republic of Korea	9	Marshall Islands	4
Liberia	3	Sierra Leone	3	Others	14

(3) Number of casualties

The number of casualties was 338, consisting of 76 deaths, 21 missing persons, and 241 injured persons. By type of vessel, 114 persons in pleasure boats, 99 persons in fishing vessels and 44 persons in personal water craft. By type of accident, 125 persons in collision, 119 persons in fatality/injury, 29 persons in contact, 29 persons in grounding, and 27 persons in capsizing.

With regard to the number of person's dead or missing, 55 persons were involved in fishing vessel accidents, 26 persons in pleasure boat accidents, five persons in personal water craft, indicating dead or missing cases occurred frequently in fishing vessels.

Number of casualties (marine accident)

(Persons)

2021										
Vessel type	Dead			Missing			Injured			Total
	Crew	Passengers	Others	Crew	Passengers	Others	Crew	Passengers	Others	
Passenger ship	0	0	0	1	0	0	3	5	0	9
Cargo ship	2	0	0	2	0	0	5	0	2	11
Tanker	1	0	0	0	0	0	3	0	0	4
Fishing vessel	43	0	0	12	0	0	44	0	0	99
Tug boat, push boat	0	0	0	0	0	0	1	0	0	1
Recreational fishing vessel	0	1	0	0	0	0	4	28	0	33
Fishing ferry	0	0	0	0	0	0	0	1	1	2
Work vessel	2	0	0	0	0	0	8	0	2	12
Barge, lighter	0	0	0	0	0	0	1	0	0	1
Public-service ship	0	0	0	1	0	0	3	0	2	6
Pleasure boat	15	0	6	4	0	1	32	0	56	114
Personal water craft	3	0	2	0	0	0	9	0	30	44
Others	0	0	1	0	0	0	0	0	1	2
Total	66	1	9	20	0	1	113	34	94	338
	76			21			241			

※ The figures above include accidents under investigation and therefore are subject to change depending on the course of investigations and deliberations.

7 Summaries of Marine serious accidents and incidents which occurred in 2021

The marine serious accidents which occurred in 2021 are summarized as follows. The summaries are based on information available at the start of the investigations and therefore are subject to change depending on the course of investigations and deliberations.

(Marine accident)

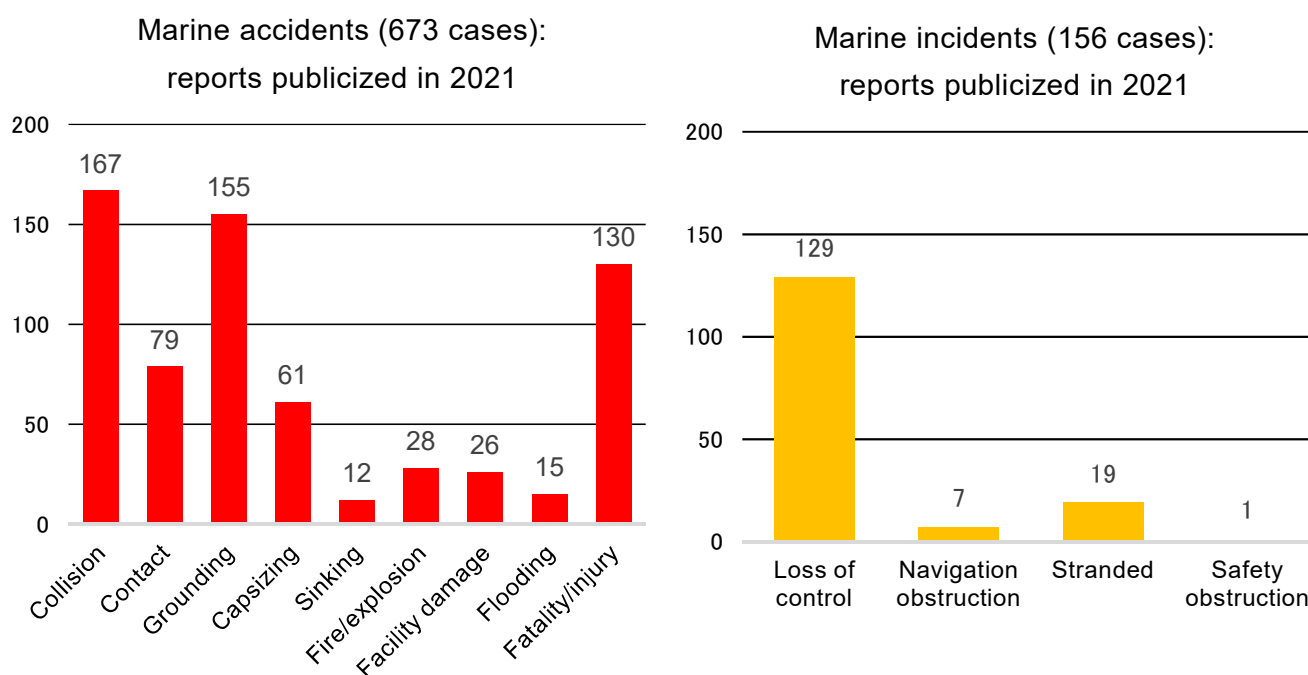
1	Date and location	Vessel type and name, accident type
	February 8, 2021 Off the south-southeast of Cape Ashizuri, Tosashimizu City, Kochi Prefecture	Cargo ship OCEAN ARTEMIS (Vessel A, Hong Kong) Submarine SORYU (Vessel B) Collision
	Summary	Vessel A collided with Vessel B at the south-southeast of Cape Ashizuri, Tosashimizu City, Kochi Prefecture For Vessel B, its three crewmembers were injured, and its diving plane on the starboard was bent and damaged. For Vessel A, its bulbous bow's shell on the starboard was cracked.
2	Date and location	Vessel type and name, accident type
	February 23, 2021 At sea 25 km southeast off Katagai Port, Kujukuri, Sambu District, Chiba Prefecture	Cargo Ship ASAHI MARU (Vessel A) Recreational Fishing Vessel SANSHOICHIMARU (Vessel B) Collision
	Summary	Vessel A collided with Vessel B at sea approx. 25 km southeast off Katagai Port, Kujukuri, Sambu District, Chiba Prefecture.
3	Date and location	Vessel type and name, accident type
	April 27, 2021 Motobu Port in Motobu Town, Kunigami District, Okinawa Prefecture (Toguchi District)	Pleasure Boat KUMASAN 007 Explosion
	Summary	The vessel exploded at Motobu Port in Motobu Town, Kunigami District, Okinawa Prefecture (Toguchi District).
4	Date and location	Vessel type and name, accident type
	May 20, 2021 At sea approx. 9,200 m east off Isumi City, Chiba Prefecture	Recreational Fishing Vessel AMAMASA MARU (Vessel A) Recreational Fishing Vessel HANABUSA MARU (Vessel B) Collision
	Summary	Vessel A collided with Vessel B at sea approx. 9,200 m east off Isumi City, Chiba Prefecture, and one passenger in Vessel B died.
5	Date and location	Vessel type and name, accident type
	May 27, 2021 West end of Kurushima Strait	Cargo Ship BYAKKO (Vessel A) Chemical Tanker ULSAN PIONEER (Vessel B, Marshall Islands) Collision
	Summary	Vessel A collided with Vessel B at the west end of Kurushima Strait Traffic Route. One crewmember in Vessel A died and two went missing.
6	Date and location	Vessel type and name, accident type
	August 11, 2021 Hachinohe Port, Hachinohe City, Aomori Prefecture	Cargo Ship CRIMSON POLARIS (Panama) Grounding
	Summary	The vessel ran aground at Hachinohe Port, Hachinohe City, Aomori Prefecture.
7	Date and location	Vessel type and name, accident type
	September 5, 2021 At sea approx. 4,900 m off Hakotsukuri, Hannan City, Osaka Prefecture	Fishing Vessel UNOHIMARU (Vessel A) Recreational Fishing Vessel SAKAE MARU (Vessel B) Collision
	Summary	Vessel A collided with Vessel B at sea approx. 4,900 m off Hakotsukuri, Hannan City, Osaka Prefecture. One crewmember in Vessel A and one crewmember and five passengers in Vessel B were injured.

8 Publication of investigation reports

The number of investigation reports of marine accidents and incidents published in 2021 were 829, consisting of 673 marine accidents (among them, 11 were serious) and 156 marine incidents (among them, one was serious).

Breaking them down by type, the marine accidents included 167 cases of collision, 155 cases of grounding, 130 cases of fatality/injury, and 79 cases of contact. The marine incidents included 129 cases of losses of control, (118 cases of navigational equipment failure, 11 cases of fuel shortages, etc.), 19 cases of stranded, and seven cases of navigation obstruction.

As for the objects of contact, 17 were quays, 11 were buoys, and 10 were breakwaters.



The number of vessels involved in marine accidents and incidents was 1,054. Breaking them down by type, the marine accidents involved 280 fishing vessels, 224 pleasure boats, 148 cargo ships, 47 personal water craft, and 37 recreational fishing vessel. The marine incidents involved 84 pleasure boats, 25 cargo ships, 25 fishing vessels, and six tankers.



Number of vessels by type involved in marine accidents and incidents for which reports were publicized in 2021

(Vessels)

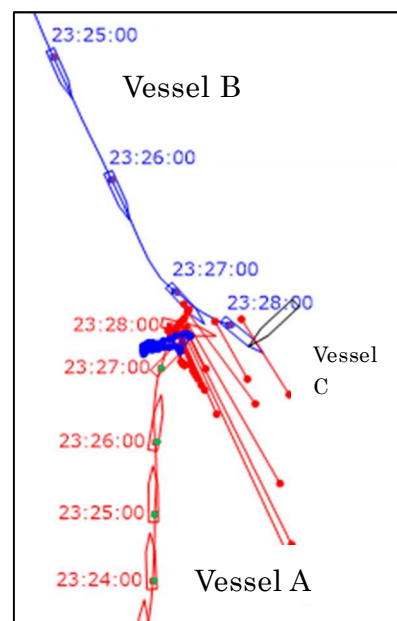
Classification	Passenger ship	Cargo ship	Tanker	Fishing vessel	Tug boat, push boat	Recreational fishing vessel	Fishing ferry	Work vessel	Barge, lighter	Public-service ship	Pleasure boat	Personal water craft	Others	Others
Marine accident	36	148	32	280	27	37	4	18	18	8	224	47	18	897
Marine incident	5	25	6	25	1	3	0	1	0	0	84	5	2	157
Total	41	173	38	305	28	40	4	19	18	8	308	52	20	1,054
Composition ratio %	3.9	16.4	3.6	28.9	2.7	3.8	0.4	1.8	1.7	0.8	29.2	4.9	1.9	100.0

The marine accidents and serious incidents which occurred in 2021 are summarized as follows:


Marine serious accident reports published in 2021

1	Date of publication	Date and location	Vessel type and name, accident type
	January 21, 2021	December 21, 2018 Off the east of Sumoto Port, Sumoto City, Hyogo Prefecture	Cargo ship CAPE VERDE (Vessel A, Singapore) Fishing vessel MUNEYOSHI MARU (Vessel B) Collision (Fishing gear)
	Summary of the Accident	<p>Vessel A, with a master and 23 crewmembers on board, proceeded northeast to Fukuyama Port in Fukuyama City, Hiroshima Prefecture on pilotage by a pilot and Vessel B, with a skipper and a crewmember, proceeded northeast while pulling the fishing net. Vessel A collided with the fishing gear of Vessel B near the Sumoto Offing Light Buoy.</p> <p>In Vessel B, the crewmember drowned, the hull capsized and the fishing gear was damaged. Vessel A had scratches on the rudder, but there were no casualties.</p>	
	Probable Causes	<p>It is probable that the accident occurred when, while Vessel A was proceeding northeast under pilotage by Pilot A and Vessel B was proceeding northeast while pulling the fishing net off the east of Sumoto Port under circumstances of heavy traffic and many ships, Vessel A collided with the fishing gear of Vessel B because Vessel A turned to starboard close to the stern of Vessel B.</p> <p>It is probable that Vessel A turned to starboard close to the stern of Vessel B because Pilot A noticed that it was difficult to carry out the originally planned idea of passing between Fishing Vessel on the port bow and Fishing Vessel on the bow and believed that, considering the visually measured distance of about 1 M from Vessel B operating on the starboard bow, it would be safe to pass over the fishing gear of Vessel B.</p> <p>It is somewhat likely that the situation that Master A left the bridge, leaving Pilot A alone to make decisions about ship maneuvering contributed to the occurrence of this accident.</p>	
			
	Safety Actions	<p>Safety Actions Taken by the Vessel A Management Company</p> <p>Together with a summary of the accident, the Vessel A management company informed the managing vessels of measures to prevent any recurrence of such accidents, including: Sharing detailed information with the pilot, including information on fishing vessels; challenging the doubtful intention of the pilot in order to change the maneuvering method, etc.; entrusting navigation to the pilot taking the traffic density, etc. into consideration and giving due consideration in the number of bridge team members during pilotage by a pilot.</p> <p>In addition, it conducted internal audits and on-board education and training on voyage, ship maneuvering and risk analysis for the crew of Vessel A.</p> <p>Safety Actions Taken by the Pilots' Association of Osaka Bay Pilot District</p> <p>The Pilots' Association of Osaka Bay Pilot District took the following measures after the accident:</p> <ol style="list-style-type: none"> (1) A Marine Accident Response Headquarters was established and inform members of the occurrence and summary of the accident. (2) Study meetings for members were held regarding the operation state of fishing vessels in Osaka Bay by inviting fishery-related persons. 	
	Report	https://www.mlit.go.jp/jtsb/eng-mar_report/2021/2018tk0024e.pdf	
2	Date of publication	Date and location	Vessel type and name, accident type
	February 18, 2021	March 21, 2019 Anchorage YL4, Yokohama Section 5, Keihin Port	Container Ship APL GUAM (Vessel A, U.S.) Container Ship MARCLIFF (Vessel B, Antigua and Barbuda)

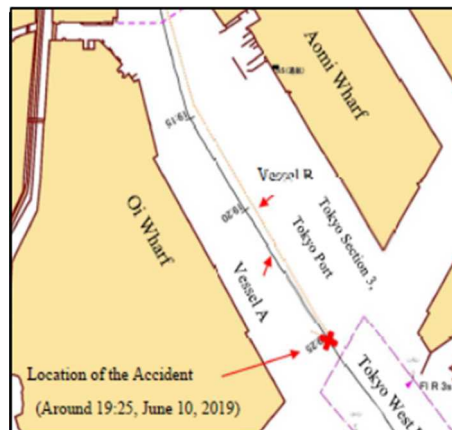
		Container Ship HANSA STEINBURG (Vessel C, Liberia) Collision
Summary of the Accident	<p>Vessel A, with a master and 20 other crew members on board, was proceeding north toward her planned anchorage within Anchorage YL4 of Yokohama Section 5, Keihin Port, under the pilotage of a pilot, and while Vessel B, with a master and 15 other crew members on board, was proceeding south-southeast toward Nagoya Port, Aichi Prefecture, both vessels collided in Anchorage YL4. Vessel B subsequently collided with the anchored container ship Vessel C, which had a master and 19 other crew members on board.</p> <p>Vessel A sustained dents and other damage with a hole to her bow's plating shell, Vessel B sustained dents and other damage to her bow's plating shell and starboard side bow's plating shell, and Vessel C sustained dents and other damage with a hole to her starboard bow's plating shell. However, there were no casualties on any of the vessels involved.</p>	
Probable Causes	<p>It is probable that the accident occurred when, as Vessel A was proceeding north toward her planned anchorage and Vessel B was proceeding south-southeast toward the sea area west of Nakanose in Tokyo Bay at night within an anchorage of the Keihin Port Yokohama 5th District that had become confined with the presence of anchored vessels, and under conditions in which the courses of Vessel A and Vessel B intersected between anchored Vessel C and another anchored vessel, and the danger of collision was rising, Vessel A and Vessel B collided and then Vessel B turned to port and proceeded southeast with headway and collided with Vessel C because both vessels maintained course and speed until they approached each other, as master and pilot of Vessel A intended to pass Vessel B port-to-port and master of Vessel B intended to pass Vessel A starboard-to-starboard.</p> <p>It is probable that master and pilot of Vessel A maintained course and speed until Vessel A approached Vessel B with the intention of passing Vessel B port-to-port because they predicted that Vessel B, which had turned to starboard, would turn to starboard again and pass Vessel A port-to-port rather than navigating in the narrow sea area between Vessel A and Vessel C.</p> <p>It is probable that master of Vessel B maintained course and speed until Vessel B approached Vessel A with the intention of passing Vessel A starboard-to-starboard because he predicted that MARCLIFF would safely pass Vessel A starboard-to-starboard if Vessel A maintained her course and speed.</p> <p>It is probable that, under conditions in which the course of each vessel intersected the course of the other and the danger of collision was rising, Vessel A and Vessel B could have taken measures to avoid a collision, such as confirming each other's maneuvering intentions and promptly reducing speed, by communicating early by international VHF radio telephone (VHF), and therefore it is probable that both vessels' continued navigation without communicating by VHF contributed to the accident's occurrence.</p>	
Safety Actions	<p>Safety Actions Taken by the Vessel A Management Company</p> <p>The Vessel A management company documented the accident in Company A's Safety Management System for full transparency and took the following measures after the accident.</p> <ol style="list-style-type: none"> (1) A reminder on Bridge Team Management (BTM) *1 protocols was sent to entire Fleet. (2) Entire Fleet were informed that they should always prepare their own escape plans in case other vessels fail to comply with the law or behave unexpectedly. (3) Reviewed policies with deck officers regarding increased vigilance necessary when anchoring and with pilot onboard. (4) The accident is routinely reviewed and discussed at annual Senior Officer's Conferences and at training seminars. <p>Safety Actions Taken by the Pilots' Association of Tokyo Bay Pilot District</p> <p>The Pilots' Association made the following points known to its member pilots.</p>	



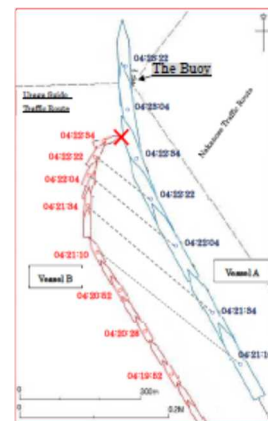
		<p>(1) When letting go anchor, make every effort to avoid situations in which encounters with other vessels will occur in a confined anchorage where anchored vessels are present, and when such a situation is anticipated, reduce speed or change course prior to entering the anchorage and avoid coming into a relationship that could result in a collision.</p> <p>(2) When letting go anchor in an anchorage near a passage entrance, check whether ships will be entering or leaving the passage by communicating with the port radio, etc., beforehand, and if entering/leaving ships are present and may come near, communicate with them by VHF and confirm their maneuvering intentions.</p> <p>(3) When navigating near anchored vessels at night, be aware that own vessel may be difficult to see from other vessels due to the presence of the anchor lights of anchored vessels, etc.</p> <p>(4) When having doubts about the movements of another vessel, proactively issue warnings using a daytime signaling lamp if it is night and take measures to avoid hazardous relationship.</p> <p>(5) When sensing the danger of a collision, etc., do not hesitate to take such measures as immediately turning the rudder hard over or setting the engine to full astern.</p> <p>*1 “Bridge Team Management (BTM)” refers to a practical management method by which team members on the bridge utilize all the resources on the bridge and systematically achieve safe navigation under clear standards.</p>	
	Report	https://www.mlit.go.jp/jtsb/eng-mar_report/2021/2019tk0012e.pdf	
	Reference	Major activities in the past year (Page 7), Chapter 2 (Page 25), Chapter 7 (Page 142)	
3	Date of publication	Date and location	Vessel type and name, accident type
	February 18, 2021	October 12, 2019 Higashi-Ogi Island offing to the south-east, Kawasaki City, Kanagawa Prefecture	Cargo vessel JIA DE (Panama) Foundering
	Summary of the Accident	<p>When the vessel, manned with a master and eleven crewmembers, left a wharf of Keihin Port, and was anchoring at K1 anchorage point of Keihin Port on the way to proceed to Song Dang Port, the Socialist Republic of Vietnam, then the vessel received winds and waves that had increased due to the typhoon No.19 approaching and heeled to the starboard side, and subsequently rolled over and was flooded due to taking on sea water into the interior of the cargo holds, and thereby foundered around the anchorage.</p> <p>The master and three crewmembers were rescued, but eight crewmembers died.</p>	
	Probable Causes	<p>It is probable that the accident occurred because the Vessel foundered due to the fact that sea water which was being retained due to wave uprush on the upper deck (hereafter referred to as “the Retained Water”) began flooding due to taking on sea water in the interior of the cargo holds, and then her steering was uncontrollable and she was receiving winds and wave uprush from the port fore side to port side, and furthermore her hull greatly heeled to the starboard side and she continued to be flooded due to taking on sea water in the interior of the cargo holds, and she subsequently rolled over due to her stability having been decreasing and flooding due to taking on sea water into the interior of the cargo holds progressed, with the result being that she foundered. This situation began while the Vessel was anchoring in the nighttime under conditions of rolling due to receiving winds and waves that had increased due to the typhoon No. 19 approaching the area of K1 anchorage point of Keihin Port.</p> <p>It is probable that the Retained Water on the deck began flooding due to taking on sea water in the interior of the cargo holds because the lids for opening parts of the ventilation cylinders of the cargo holds were in an open condition, and the water receiver railings at the connection parts between the panels of the hatch covers of the cargo holds had a number of broken holes and some parts of the panels were deformed, and thereby the hatch covers were not securely weather-tight. In addition, it is considered probable that wave uprush on the deck further increased because her dry draft had been decreasing due to ingress water into the interior of the cargo holds and the Retained Water.</p> <p>It is probable that JIA DE was in a state in which her steering was uncontrollable because ingress water that infiltrated into the marine diesel oil (MDO) tank interior through air vents on the upper deck was supplied to the diesel generator engines with MDO through the fuel oil supply line of the diesel generator engines, and then the diesel generator engines experienced combustion failure or misfiring, and subsequently stopped, and thereby the blackout occurred.</p>	

		<p>It is probable that after the steering of the Vessel was uncontrollable and she was receiving further increased winds and wave uprush from the port fore side to port side, she heeled to the starboard side due to receiving winds and waves and came to roll on that angle, and then heeling to the starboard side gradually increased due to receiving strong wind and heavy waves due to the typhoon No. 19. It is probable that after she attained the angle of stability in maximum condition, and subsequently the lateral heeling angle increased due to continuous waves, because this thereby led to the lateral heeling angle attaining the angle of loss of residual stability and she rolled over to the starboard side.</p>	
	Report	https://www.mlit.go.jp/jtsb/eng-mar_report/2021/2019tk0023e.pdf	
	Reference	Chapter 2 (Page 25)	
4	Date of publication	Date and location	Vessel type and name, accident type
	February 18, 2021	November 16, 2019 Wakayama Shimotsu Port, Wakayama Prefecture	Cargo ship ORANGE PHOENIX (Panama) Fatality of a crew member
	Summary of the Accident	<p>While the vessel with the master and 20 crew members aboard was anchoring at Wakayama Shimotsu Port, Wakayama Prefecture, a crew member died of a fall from a lifeboat to the deck when engaging in the lifting and recovery of the lifeboat in an abandon ship drill.</p>	
	Probable Causes	<p>It is probable that the accident occurred in a manner that, when the Vessel was doing the lifting and recovery work of the lifeboat in the abandon ship drill while anchoring at Wakayama Shimotsu Port, Navigation Officer B lost his balance and fell to the deck because he was taking photographs in a bent-over posture at the doorway at the stern of the lifeboat without wearing the safety belt, and the hook of the release system was released from the ring of the boat davit and the lifeboat moved downward along the guide rail.</p> <p>It is probable that the hook of the release system was released from the ring of the boat davit because it is likely that the lock piece was not hooked in the appropriate place.</p>	
	Safety Actions	<p>Safety Actions Taken by the Company managing the Vessel</p> <p>The company managing the vessel issued a document concerning the accident to gain the attention of all the vessels it manages and also implemented the following measures following the accident.</p> <ul style="list-style-type: none"> - The master and the chief officer provide the crew members with on-site education concerning the release system restoration procedures using an actual lifeboat on a regular basis. - The master provides the crew members with on-site education concerning appropriate equipment, such as a safety belt, for work in a high place - The master holds a meeting before an abandon ship drill and provides explanation to the crew members concerning the prediction of danger, thereby having each crew member become aware of safe work. - Before conducting a lifeboat lifting and recovery work, the chief officer confirms and thoroughly ensures the following key points of the work: the hook of the release system is hooked on the ring of the boat davit; the hoisting wire is not released until the hook is completely fixed; the reset position of the hook is confirmed by the green paint of the lock piece; the hook is surely fixed with the safety pin lock by inserting the safety pin. - Each vessel holds an onboard safety meeting and gives explanation about the details of the accident, and reports the record of implementation of on-site education to Company A. - The company's supervisor visits the vessels Company A manages and confirms that the release system is actually operated in an appropriate manner. 	
	Report	https://www.mlit.go.jp/jtsb/eng-mar_report/2021/2019tk0026e.pdf	
5	Date of publication	Date and location	Vessel type and name, accident type
	March 25, 2021	June 10, 2019 Keihin Port, Tokyo Section 3	Roll-on/Roll-off Cargo Ship PANSTAR GENIE (Vessel A, Republic of Korea)

	Around the Tokyo West Breakwater Lighthouse	Tugboat DAITOUMARU (Vessel B) Collision
Summary of the Accident	<p>Vessel A, with her master and 16 other crew members on board (seven nationals of the Republic of Korea and nine nationals of the Republic of the Philippines), left the Shinagawa Wharf, Tokyo Section 2, Keihin Port, and was proceeding southeast to Nagoya Port, Aichi Prefecture, while Vessel B, with her captain alone, was proceeding southeast toward Daikoku Wharf, Yokohama Section, Keihin Port after she departed from Shibaura Landing Stage, Tokyo Section 2, Keihin Port. The two vessels collided in the vicinity of the northern end of the Tokyo West Passage, Tokyo Section 3, Keihin Port.</p> <p>Vessel A suffered abrasions on her port and starboard bow's shell plating and Vessel B suffered fractures and other damages on her mast, but there were no casualties on either vessel.</p>	
Probable Causes	<p>It is probable that the accident occurred when Vessel A and Vessel B were both proceeding southeast, Vessel A approached from the stern, gradually sped up, and continued to navigate parallel without noticing Vessel B navigating near her bow at twilight after sunset in Tokyo Section 3 at Tokyo Port under the condition whereby it became dark and difficult to see in the surroundings due to heavy rain. It is probable that both vessels collided because Vessel B also continued navigating at a constant speed without noticing that Vessel A was proceeding southeast after she departed</p> <p>It is probable that Vessel A continued her navigation without noticing Vessel B because the surroundings were dark and the visibility was poor due to the influence of heavy rain. On top of that, Vessel B was a small vessel approaching Vessel A from her stern, and after she navigated within the minimum detection distance of Vessel A's radar, she navigated inside the blind spot from Vessel A's wheelhouse.</p> <p>It is probable that the fact that Vessel A dismissed her crew members from departure stations and began proceeding southeast under the condition of poor visibility due to the influence of heavy rain, might have contributed to Vessel A not being able to notice Vessel B.</p> <p>It is probable that the reason why Master B did not monitor Vessel A's movements and continued with the navigation was, from the first time he noticed Vessel A, he assumed that she was an incoming vessel mooring at the Shinagawa Wharf, Tokyo Section 2, Keihin Port.</p> <p>It is probable that the noise from Vessel B's main engine and the sound of rainfall at the time of the accident might have caused Master B not to notice that Vessel A was approaching.</p>	
Safety Actions	<p>Safety Actions Taken by the Vessel A Management Company and Vessel A</p> <p>After this accident, as a safety measure to prevent the recurrence of similar accidents, the following steps were taken by the Vessel A management company.</p> <ol style="list-style-type: none"> (1) Issued warnings to prevent the recurrence of similar accidents and provided non-conforming information about this accident to vessels under their management. (2) Make sure that the crew members know that they should remain on their departure station when departing the Shinagawa Wharf, Tokyo Section 2, Keihin Port until they reach the vicinity of the Oi Container Wharf. <p>Safety Actions Taken by the Vessel B Operator</p> <p>The Vessel B Operator shared the information on the sequence of events, conditions, and causes of the accident with the crew members employed by Company B. Moreover, Company B also retrained their crew members regarding the safe navigation precautions for large vessel navigation based on the "Navigational Safety Instruction Manual for Construction Vessels in Tokyo Port (3rd Edition)" published by the Bureau of Port and Harbor, Tokyo Metropolitan Government. Furthermore, in accordance with Article 18 of the Act on Port Regulations, they were instructed to navigate far enough from large vessels while navigating within the port.</p>	
Report	https://www.mlit.go.jp/itsb/eng-mar_report/2021/2019tk0014e.pdf	
6	Date of publication	Date and location Vessel type and name, accident type




<p>March 25, 2021</p>	<p>R1.10.15 Uraga Suido Traffic Route, off the northeast of Yokosuka Port, Yokosuka City, Kanagawa Prefecture</p>	<p>Container ship APL PUSAN (Vessel A, Singapore) Cargo ship SHOUTOKUMARU (Vessel B) Collision</p>
<p>Summary of the Accident</p>	<p>Vessel A, with a master and 22 other crew members aboard, was proceeding to Section 2 in Keihin Port under the pilotage of a pilot, while Vessel B, with a master, an officer, and 2 other crew members aboard, was proceeding for anchorage Y1 at Yokohama Section in Keihin Port. While both vessels were proceeding northwest bound in Uraga Suido Traffic Route, both vessels collided on the Traffic Route, and Vessel A collided with a light buoy after that.</p> <p>Vessel A suffered a dent on her port bow, Vessel B's bulwark bow suffered damages, etc. while the light buoy's guard frame suffered a dent, but there were no casualties on either vessel.</p>	
<p>Probable Causes</p>	<p>It is probable that in this accident, when both Vessel A and Vessel B were proceeding northwestward in the vicinity of the north exit of the Uraga Suido Traffic Route at night, the pilot of Vessel A, thinking that he could safely overtake Vessel B even if he did not inform Vessel B of his intention to overtake on the starboard side by the International VHF Radio Telephone equipment (VHF), etc., continued to navigate in a manner to overtake Vessel B, and when the officer of Vessel B received information from Japan Coast Guard TOKYO WAN Vessel Traffic Service Center (Tokyo MARTIS) that she was obliged to navigate the Nakanose Traffic Route, he turned to starboard toward the Nakanose Traffic Route without knowing the existence of Vessel A on the starboard quarter, so both vessels collided, and then the starboard bow of Vessel A collided with the Uraga Suido Traffic Route light buoy No. 8 (the Buoy)</p> <p>It is probable that the pilot of Vessel A thought that he could overtake Vessel B safely without informing Vessel B of his intention to overtake starboard side of Vessel B by VHF or other means because Vessel B, after proceeding toward the center of the Uraga Suido Traffic Route, did not turn to starboard toward Nakanose Traffic Route even after passing through the southwest of Daini Kaiho, and continued proceeding northwestward toward the north exit of the Uraga Suido Traffic Route.</p> <p>It is probable that the officer of Vessel B turned to starboard toward Nakanose Traffic Route without knowing the existence of Vessel A on the starboard quarter because he thought that the speed difference of vessels navigating the Uraga Suido Traffic Route with speed limitation was small and that Vessel B would not be overtaken, and when he received information from the Tokyo MARTIS to the effect that she was obliged to navigate the Nakanose Traffic Route immediately because he thought it was an instruction, and thought that he would not be able to enter the Nakanose Traffic Route by turning in front of the Buoy on the starboard bow unless he turned to starboard immediately, and was proceeding paying attention to turning to starboard toward the Nakanose Traffic Route while paying attention to other vessels on her bow.</p> <p>It is probable that the following factors contributed to the occurrence of the accident: the master of Vessel B entrusted the officer with the bridge watch on Uraga Suido Traffic Route; Vessel B was on bridge watch by the officer while the master and the officer did not properly share information necessary for navigation such as navigation plans; the officer communicated to Tokyo MARTIS the location different from the scheduled anchorage without knowing that the name of the scheduled anchorage was anchorage Y1, and continued the navigation without hearing the information concerning Vessel A provided by VHF from Tokyo MARTIS.</p>	




Safety Actions	<p>Safety Actions Taken by Tokyo Bay Licensed PILOTS' Association</p> <p>After this accident, as a safety measure to prevent the recurrence of similar accidents, Tokyo Bay Licensed PILOTS' Association made Pilot A took a ship maneuvering training on a ship maneuvering simulator under the conditions at the time of the accident and made the following matters known to the members.</p> <ol style="list-style-type: none"> (1) Not overtaking another vessel until the other's vessel movements and safety can be confirmed. (2) When there is a risk of another vessel approaching, communicate on the VHF at an early stage to make sure of her maneuvering intention, and If necessary, give a whistle signal such as an alert signal. (3) Avoid approaching other vessels in the vicinity of a Passage entrance or the point where a vessel is altering her course. <p>Safety Actions Taken by the Vessel B management company and operator</p> <p>After this accident, as a safety measure to prevent the recurrence of similar accidents, the Vessel B management company and operator instructed all the crew members to strictly conduct a lookout with their vision and the radar, they also would regularly conduct training based on this accident and retrained their crew members regarding the following issues.</p> <ol style="list-style-type: none"> (1) Matters concerning laws and regulations such as the Maritime Traffic Safety Act (2) Matters concerning the sea area, etc. sea area where the captain should command as prescribed in the Safety Management Regulation 		
	Report	https://www.mlit.go.jp/jtsb/eng-mar_report/2021/2020tk0011e.pdf	
7	Date of publication	Date and location	Vessel type and name, accident type
	April 22, 2021	July 22, 2019 Shallows on the western side of Nakato Shima, Imabari City, Ehime Prefecture	Cargo Ship AZUL CHALLENGE (Panama) Grounding
	Summary of the Accident	<p>The vessel, with a master and 20 other crew members as well as a pilot aboard, proceeded east in the Seto Inland Sea and then was proceeding south in the Kurushima Kaikyo Naka Suido off of Uma Shima, Imabari City, Ehime Prefecture, for Fukuyama Port, Hiroshima Prefecture, when she ran aground on shallows on the western side of Nakato Shima, Imabari City.</p> <p>The vessel sustained dents to the port-side plating shell of her No. 1 to 7 ballast tanks and other damage. However, there were no fatalities or injuries.</p>	
Probable Causes	<p>It is probable that the accident occurred when, as the Vessel made a turn to starboard toward the Naka Suido after the tide turned to the south in the Kurushima Kaikyo Traffic Route, which is the most difficult point encountered when navigating the strait, the Vessel's turn slowed and, consequently, she was pushed by the current, crossed the eastern edge of the traffic route and went outside the traffic route, approached the west side of Nakato Shima with her starboard turn still slowing, and ran aground on shallows on the west side of Nakato Shima.</p> <p>It is probable that the Vessel's turn slowed because, in maneuvering away from Uma Shima, Pilot A decided to execute course indication-based ship maneuvering that differed from rudder angle indication-based ship maneuvering guidelines.</p> <p>It is probable that the Vessel approached the west side of Nakato Shima in a starboard turn that continued to slow because, even after the Vessel went outside the traffic route, Pilot A continued to engage in ship maneuvering by giving course indications while checking the Vessel's position by visual means only, and because Quartermaster A did not set large rudder angles for the reason that he was given course indications.</p> <p>It is somewhat likely that Master A's thinking that he had no choice but to trust Pilot A's piloting abilities and entrust ship maneuvering to him, as it was Master A's first time navigating through the Kurushima Kaikyo's Naka Suido, where unique tidal currents exist, in the eastbound direction, and that Master A's not quickly giving ship maneuvering advice to Pilot A and not taking over conning the Vessel without hesitation as specified in the Safety Management System Manual even after the Vessel left the traffic route contributed to the accident's occurrence.</p>		





	Safety Actions	<p>Measures Taken by the Vessel Management Company</p> <p>(1) The vessel management company instructed masters that navigate in the Kurushima Kaikyo Traffic Route to send information on the planned channel of navigation and tide information to the company by email after sharing this information with pilots.</p> <p>(2) The company sent information on the accident to the vessels it manages and called their attention to preventing the recurrence of similar accidents.</p> <p>(3) The company confirmed with masters and crew members that they should make maximum use of the cooperative “bridge team” system, with the master exchanging information with the pilot quickly and without hesitation when the pilot’s ship maneuvering becomes dangerous, and that Company A will give advice to the pilot on the master’s behalf if the pilot remains uncooperative.</p> <p>Measures Taken by the Vessel's Operator</p> <p>The vessel's operator made information on the accident involving the company managing the vessel known to the vessels it manages and called their attention to preventing the recurrence of similar accidents.</p> <p>Measures taken by the Licensed Inland Sea Pilots' Association</p> <p>(1) Established a marine accident response headquarters to respond to accidents and gave association members an outline of it.</p> <p>(2) Reminded association pilots of the ship maneuvering guidelines and urged them to fully follow the guidelines.</p> <p>(3) Established an accident response committee to investigate the accident’s cause and compile preventative measures that included the following items, and made the measures known to association pilots.</p> <p>i) Carry out ship maneuvering in accordance with the “Navigation Directions for the Kurushima Kaikyo Traffic Route” noted in operational reference materials of the Licensed Inland Sea Pilots’ Association.</p> <p>ii) Refer to the “Kurushima Kaikyo Navigation Reference Map.”</p> <p>iii) When navigating in a narrow channel, check position using conspicuous targets and the like, effectively use electronic devices (e.g., ECDIS*1, PPU*2, and so on.), and reconfirm own vessel’s position, conditions of driving currents, etc.</p> <p>iv) As a means of contributing to the consistent practice of BRM*3 on the Vessel, strive to maintain an effective communication environment so that information on ship’s position and surroundings can be provided by crew members continuously by, for example, indicating the specific planned course beforehand</p> <p>*1 ECDIS: Electronic Chart Display and Information System.</p> <p>*2 A portable pilot unit (PPU) is an electronic device that consists of a locational information receiver and laptop that has electronic charts and displays information necessary for pilotage.</p> <p>*3 Bridge resource management (BRM) is to effectively manage all kinds of resources available in a bridge for safe navigation of the vessel, including crew, equipment, and information. In this concept, with the assumption that human beings have a tendency to make errors (including speech error, mishearing, misreading, misunderstanding, and operating error), they should work well as a team (such as by cross-checking data) to nip errors before they bud and cause a tragedy.</p>	
		Report	https://www.mlit.go.jp/jtsb/eng-mar_report/2021/2019tk0017e.pdf
8	Date of publication	Date and location	Vessel type and name, accident type
	June 24, 2021	September 9, 2019 Kita Wharf, Maizuru Port, Maizuru City, Kyoto	Cargo Vessel FIRST AI (Republic of Korea) Fatality of a crew member
	Summary of the Accident	While the cargo vessel FIRST AI was mooring, a boatswain died as his head was trapped in a hatch cover panel when performing hatch cover closing duty.	
	Probable Causes	It is probable that the accident occurred due to the following situation. As the boatswain received instruction from Officer A, he stopped winding up the drum for the closing of the hatch cover after the Vessel had unloaded the cargo. Afterward, the boatswain passed through the space between the hatch cover panel winding drum and the hatch coaming (hereinafter referred to as "the Space"),	

	<p>and the hinge plate (hereinafter referred to as "the Hinge Plate") attached with arms for connecting the port side panel between panel No. 11 and No. 10 of the stern side's hatch cover (hereinafter referred to as "the Arm") bent outward horizontally, the Key Plate flaked off, and the Arm Pin, which was no longer restrained, fell off, causing panel No. 11 of the hatch cover to fall. As a result, his head was caught between panel No. 11 and panel No. 7, which was already stored in the drum.</p> <p>The reason why the boatswain passed through the Space, although he had been warned not to do so before the accident, could not be clarified.</p> <p>It is probable that the bent of the Hinge Plate occurred because the hatch cover was opened and closed after the temporary repair took place on the Vessel without taking account of the residual stress.</p>							
Report	https://www.mlit.go.jp/jtsb/eng-mar_report/2021/2019tk0021e.pdf							
Reference	Chapter 2 (Page 27)							
9	<table border="1"> <thead> <tr> <th>Date of publication</th> <th>Date and location</th> <th>Vessel type and name, accident type</th> </tr> </thead> <tbody> <tr> <td>July 29, 2021</td> <td>June 16, 2020 Osanbashi Pier D of Yokohama Section 1, Keihin Port</td> <td>Passenger Ship ASUKA II Fire</td> </tr> </tbody> </table>	Date of publication	Date and location	Vessel type and name, accident type	July 29, 2021	June 16, 2020 Osanbashi Pier D of Yokohama Section 1, Keihin Port	Passenger Ship ASUKA II Fire	
Date of publication	Date and location	Vessel type and name, accident type						
July 29, 2021	June 16, 2020 Osanbashi Pier D of Yokohama Section 1, Keihin Port	Passenger Ship ASUKA II Fire						
Summary	<p>When the vessel, with a master and 152 other people on board, was at its mooring at Osanbashi Pier D of Yokohama Section 1, Keihin Port, a fire occurred at an upholstery shop in Deck 12, where repair materials and other items were stored. There were burn damage at the shop, but no fatalities or injuries.</p>							
Probable causes	<p>It is probable that the accident occurred when the vessel was at its mooring at Osanbashi Pier D of Yokohama Section 1, Keihin Port. During repair work (the "Work") in which corroded steel floorboards (the "Floorboards") in the vent space of Deck 12 (the "Vent Space") was cut and replaced with new steel plate, safety measures relating to the work and set forth in the safety management system (SMS) manuals were not observed. When this work was performed, the Floorboards were gas-cut in the Vent Space adjacent to an upholstery shop. Before crew members realized it, heat was transferred to the wall on the starboard side between the upholstery shop and the Vent Space (the "Wall"), causing fire from flammables near the Wall in the upholstery shop and spreading it to other flammables.</p> <p>-It is probable that safety measures set forth in the SMS manuals relating to the Work were not observed, because when an engineer who supervised the repair work under instructions for the repair work (the "Engineer") checked the safety measures, he or she thought that only downward direction should be checked for work involving fire as the Floorboards of the Vent Space is replaced and did not consider the upholstery shop as a target adjacent area. Further, a section chief who ordered the repair work to the engineer who supervised the Work did not share information on the Work with the engineer, and entrust the check of the safety measures to the engineer.</p> <p>It is likely that the reason heat was transmitted to the Wall, and flammable materials located near the Wall of the upholstery room ignited and spread to other combustible materials was that cardboard boxes, located near the lower side of the Wall of the upholstery room, continued to be heated due to the high-temperature heat conducted to the wall, reached its ignition point and caused fire, which spread to scraps of cloth for repair, etc. in the cardboard boxes and rolled cloth stored in upper shelves.</p>							
Safety Actions	<p>Measures taken by the vessel owner and vessel management company to prevent accidents</p> <p>After the accident, the vessel owner and the vessel management company set up an accident investigation committee to confirm facts related to the accident and how the vessel was damaged and identify problems. The committee decided to implement short- and long-term measures to prevent recurrence of the accident, including ensuring and educating the safety of hot work, inspecting fire-fighting equipment, reviewing fire-fighting systems, and improving safety management systems.</p> <p>The main measures to prevent a recurrence of the fire are as follows. The company ordered the</p>							

		<p>vessel to stop the hot work outside the designated hot work location in the engine room until the following measures have been completed, and took measures by October 2020.</p> <ol style="list-style-type: none"> (1) Clarify adjacent areas for hot work. (2) Make work sites, work details, and results of inspections in adjacent areas visible in drawings and photographs when issuing a hot work permission. Review the format of the hot work permission and add a signature field for a person who actually confirmed safety measures at the work site. (3) Establish a method for sharing information using billboards, etc., so that a master and duty officer can know the time and location of hot work carried out on the vessel. (4) Ensure that fire patrols witness hot work *1 at the start and end of it. (5) Carry out training on hot work involving welding for crew in August and October 2020, and introduced it into the training system from April, 2021. (6) Carry out risk assessment *2 at the time of the implementation of Hot Work, and necessitate approval from the company regardless of the result of the risk management when passengers go abroad. <p>*1 "Fire Patrol" means crew members who, for the purpose of safety and security, are on duty to patrol the vessel for 24 hours to check for fire and other abnormal conditions.</p> <p>*2 "Risk Assessment" means overall processes to identify, analyze, and evaluate risks. Companies must decide risk reduction measures, and take appropriate measures based on the results.</p>
	Report	<p>https://www.mlit.go.jp/jtsb/ship/rep-acci/2021/MA2021-7-1_2020tk0004.pdf (Japanese only)</p> <p>https://www.mlit.go.jp/jtsb/ship/p-pdf/MA2021-7-1-p.pdf (Explanatory material (Japanese only))</p>

10	Date of publication	Date and location	Vessel type and name, accident type
	August 26, 2021	September 19, 2019 At sea north off Mikurahan Island, Towada City, Aomori Prefecture (East of Towada Lake)	Pleasure Boat GURILAND 900 Passenger injury
	Summary	While the vessel, with its master and 12 passengers on board, proceeded east in the east of Towada Lake, Towada City, Aomori Prefecture and rode on continuous waves, the vessel was struck against the sea surface continuously and was subject to impact several times, injuring one passenger.	
	Probable causes	<p>The west-northwest wind gradually getting stronger with a strong wind warning announced, the captain of the vessel continued to navigate at the speed unchanged while proceeding east at approximately 18 knots in the vicinity of the north side of the Ogura Peninsula in the east area of the Towada Lake with a wave height of approximately 50cm. For this reason, the boat rode on the first wave with a wave height of approximately 50cm and then hit the surface of the water, repeating the same situation on the second and subsequent waves. Therefore, the injury of a passenger who sat on the front seat of the starboard side was probably caused by receiving multiple impacts on their buttocks by rising and falling onto the seat's surface.</p> <p>It is probable that the reason the vessel continued its voyage at a speed of about 18 kn is that, even though the master understood the risk of front seats in heavy seas and it was supposed to stop standard voyage and reduce speed in accordance with safety management rules and navigation standards, the master had not experienced this kind of accident since he was appointed a tramp route operator, safety supervisor and navigation manager (the "navigation operator") as a master, and thought that he did not have to reduce speed in order to soften impact on the vessel.</p> <p>It is probable that the reason the injured passenger kept seated on the front seat was that, even though the master orally told all passengers to half rise from the seats, the passenger would not hear the instruction due to the noise of wind, engine, and so on.</p> 	
	Safety Actions	<p>Measures taken by the Ministry of Land, Infrastructure, Transport and Tourism</p> <p>After the accident, the Tohoku Regional Transportation Bureau got a navigation supervisor to conduct a local audit but did not confirm violation of safety management rules. Nevertheless, the supervisor verbally instructed the navigation operator on the following matters.</p> <ol style="list-style-type: none"> (1) Continue giving precautions for preventing injury of passengers at the reception desks, taking care to ensure that they are communicated to all passengers. (2) Masters will give precautions for explaining the characteristics of the vessel and preventing injury when passengers are on board. Allow the cancellation of the ride on the spot. (3) Do not allow the use of front seats depending on the characteristic of the passenger, such as age. (4) Display precautions for preventing injury of passengers on the website for inviting passengers. <p>Measures taken by the navigation operator</p> <p>The navigation operator sold the vessel after the accident, but took the following measures to prevent the recurrence of the accident on similar rigidhulled inflatable boats.</p> <ol style="list-style-type: none"> (1) If there is sufficient seating capacity, the front seats should be avoided, and if it is inevitable that passengers are seated in front seats, the master should carefully control the vessel and repeatedly call attention to passengers, depending on the navigation environment. (2) When a vessel is subject to the impact of waves while sailing, the vessel should slow down and the master should call attention to passengers from time to time. (3) The website for inviting passengers will display precautions for tour with rigid hulled inflatable boats. 	
	Report	https://www.mlit.go.jp/jtsb/ship/rep-acci/2021/MA2021-8-1_2021tk0003.pdf (Japanese only)	
	Reference	Chapter 2 (Page 21)	

11	Date of publication	Date and location	Vessel type and name, accident type
	December 16, 2021	May 26, 2019 At sea south off Inubosaki, Choshi City, Chiba Prefecture	Cargo Ship SENSHO MARU (Vessel A) Cargo Ship SUMIHO MARU (Vessel B) Collision
	Summary	<p>Vessel A collided with Vessel B when Vessel A, with a master and four other people on board, was navigating southwest to Hanshin Port at sea south off Inubosaki, Choshi City, Chiba Prefecture with limited visibility due to dense fog, and Vessel B, with a master and three other people on board, was navigating northeast to Shiogama Port, Sendai, Miyagi Prefecture.</p> <p>For Vessel A, the master was rescued but four crew members died, and Vessel B suffered dented the shell plate on port fore side but there were no casualties.</p>	
	Probable causes	<p>The probable causes of this collision accident is that during the night, off the southern coast of the Cape Inubo under limited visibility caused by a dense fog, while Vessel A was navigating southwest and Vessel B was navigating northeast, both ships were approaching dead ahead. In that situation, while Vessel A was approaching up to about 1,600 meters to Vessel B, Vessel A turned right keeping the speed to navigate by port side to port side, and while Vessel B was approaching up to about two nautical miles to Vessel A, Vessel B changed its course slightly to the left to navigate by starboard side to starboard side and navigated visually keeping the course and the speed. Therefore, they were too late to notice that they were approaching each other, resulting in collision.</p> <p>It is possible that Vessel A turned right to navigate by portside to portside with Vessel B because the Duty Officer A turned the vessel right in accordance with how to navigate a vessel when visibility is limited. However, the officer's intention is unknown since he or she died in this accident.</p> <p>It is probable that vessel B slightly turned left to navigate by starboardside to starboardside with Vessel A thinking that Vessel A would turn left too and kept the course and speed under visual observation, possibly because Vessel A on the radar was traveling southwest slightly on the right of Vessel B's stem line and the Duty Officer B turned the course to the left by 2 degrees to expand the closest approach distance and felt safe.</p> <p>It is probable that in this accident, if Duty Officer A and Duty Officer B confirmed the movement of the other vessel mutually on the radar screen when the both vessels get close to each other in a straight line under limited visibility, and also used acoustic signals or communicated each other through VHF earlier, it is probable that they could have taken measures to avoid the collision by decelerating, etc. while confirming mutual movements and operational intentions.</p> <p>It is likely that if Duty Officer A and Duty Officer B changed their courses drastically under limited visibility, they could have noticed the other's navigation intention and avoided the accident.</p> <p>It is probable that in addition, if the masters were notified by their navigation duty officer the situation under the condition of the limited visibility, and reinforced the watch system pursuant to the safety management manual and the navigation standard, it is probable that they could have confirmed mutual movements and operational intentions, leading to the avoidance of the occurrence of this accident, such as by reducing the speed of vessels to avoid collision.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p data-bbox="391 1615 525 1675">Vessel A</p>  </div> <div style="text-align: center;"> <p data-bbox="938 1615 1072 1675">Vessel B</p>  </div> </div>	
	Safety Actions	<p>Measures Taken by the Vessel A's Operator</p> <p>(1) Vessel A's operator have informed its operating vessels to arrange life jackets to vessel bridges.</p> <p>(2) Vessel A's operator visited its operating vessels and instructed masters by providing them with documents that contain the following information on how to prevent marine accidents under dense fog.</p> <p>i) Make the most effective use of navigation instruments such as radar and electronic sea maps and</p>	

- ensure early detection and avoidance and continuous monitoring of related vessels.
- ii) Masters shall give clear instructions to duty officers via a night order book regarding the limited conditions, such as calling the master.
 - iii) In this case, the officer did not call the master even though there was a risk (limited visibility). If there is a risk of danger, officers should always call a master, and the master should take control of the vessel at the bridge. (Article 10 of the Crew Act: Command on the Deck / Strengthening the duty system when safety management visibility is 3 miles or less)
 - iv) Actively send out fog signals and maneuvering signals to avoid danger even at night.
 - v) If the intention of the other ship is unclear, use VHF to communicate with the other ship early.
 - vi) Allow immediate operation of an engine. (Safe speed)
 - vii) Taking into account that the other ship may turn the course to the left despite limited visibility, and change the course drastically so that the other vessel can acknowledge the change of the course.
 - viii) Seek to obtain information on fog, etc.

Measures Taken by the Vessel B's Owner

- (1) The Vessel B's owner installed AIS*1 on Vessel B in order to use VHF and acoustic signals for better communication.
- (2) The Vessel B's owner conducted a commercial embarkation diagnosis and safety education to prevent the recurrence of similar incidents, and confirmed the following points in the embarkation diagnosis.
 - i) When visibility is limited, it is necessary to "determine the risk of collision (radar plotting)", "not to turn left", "continue monitoring the radar", "decelerate or stop the vessel".
 - ii) In accordance with the provisions of the Crew Act, the master must take control of the vessel if it is in a dangerous situation.
 - iii) Turning performance and speed standard must be available in the bridge.

Measures Taken by the Vessel B's Operator

- (1) The Vessel B's operator shared information on this accident with the vessel owner, and informed its managed vessels of the overview of the accident.
- (2) The Vessel B's operator shared information on this accident with the owner of the vessel, and installed AIS on the Vessel B and conducted commercial embarkation inspection and safety lectures with the vessel owner.

*1 AIS (Automatic Identification System) means a system that automatically sends and receives vessels' identification codes, types, names, positions, courses, speed, destinations and navigation status to and from vessels, and exchanges the information with other vessels or navigation aid stations on the land.

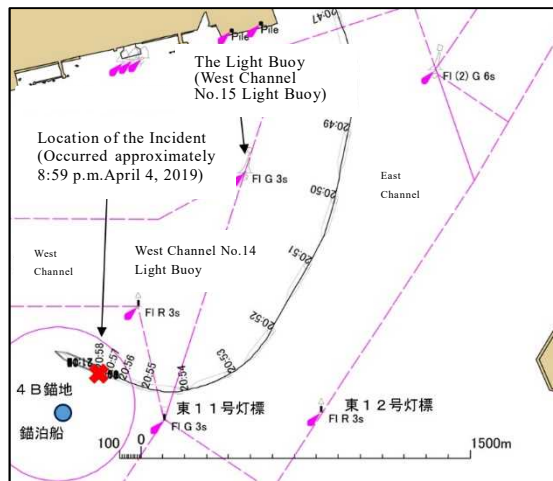
Report https://www.mlit.go.jp/jtsb/ship/rep-acci/2021/MA2021-12-1_2019tk0013.pdf (Japanese only)

Reference Chapter 2 (Page 22)

Marine serious incident investigation report published in 2021

1	Date of publication	Date and location	Incident name
	December 16, 2021	April 4, 2019 4B Anchorage, Nagoya Port, Aichi Prefecture Near No.11 Light Beacon, Nagoya Port East Channel	Container ship WAN HAI 316 (Singapore) Grounding
	Summary of the Incident	<p>The vessel, with its master and 20 other crew members, was navigated under escort by two pilots on board, ran aground at the 4B Anchorage, Nagoya Port, Aichi Prefecture which was at a water depth of approximately 6 meters, while turning to the starboard with a draft of approximately 8.5 meters at the bow and 9.6 meters at the stern at approximately 770 meters to the eastward offing of Port Island, Nagoya Port.</p>	
	Probable Causes	<p>It is considered probable that this incident occurred, while the Vessel was proceeding the south in the East Channel of Nagoya Port for Yokkaichi Port in the nighttime, a pilot trainee (hereinafter referred to as "Pilot A") was conducting pilotage operation as part of practical training for new pilot under guidance and evaluation of a supervising pilot (hereinafter referred to as "Pilot B"), Pilot A passed and continued the Vessel to proceed the south without noticing the Nagoya Port West Channel No.15 Light Buoy (hereinafter referred to as "the Light Buoy"), which was the bearing target to turn to the starboard for the West Channel of Nagoya Port, and then Pilot A instructed the rudder angle of starboard 15° without confirming the Vessel position due to being urged to the starboard turn by Pilot B when the Vessel was at the east offing of the West Channel No. 14 Light Beacon, Nagoya Port (hereinafter referred to as the "West 14 Light Beacon"), and furthermore Pilot B instructed the rudder angle of hard to starboard because, the Vessel was turning to the starboard and proceeded 4B Anchorage, with the result that the Vessel ran aground at 4B Anchorage.</p> <p>It is considered probable that Pilot A passed the Light Buoy and continued to proceed the south without noticing the Light Buoy, because it might be that the speed of Vessel was a little higher at approximately 8 knot when he passed the southeast end of Tobishima Wharf and turned to the starboard, and moreover he paid attention to the East 12 Light Beacon as the next bearing target in situation of increasing the ship speed, and then after noticing the Vessel passing the Light Buoy, and subsequently he did not determine immediately whether he would be able to make the starboard turn in time for the West Channel or not.</p> <p>It is considered probable that Pilot A instructed the rudder angle of starboard turn 15° without confirming the Vessel position due to urging to take the starboard turn by Pilot B, because he thought that the evaluation operation had been suspended and Pilot B had maneuvering command of the Vessel.</p> <p>It is considered likely that Pilot B urged Pilot A to turn to the starboard strongly and furthermore instructed the rudder angle of hard to starboard, because the Vessel passed the Light Buoy, and then Pilot B had suspicion about the situation of proceeding the south in a state of no instruction of the starboard turn by Pilot A, because even though Pilot B urged Pilot A to turn to the starboard, Pilot A did not instruct the starboard turn, and then Pilot B felt concerned that they would lose the opportunity to turn to the starboard, and subsequently, Pilot B decided to be able to turn to the starboard by eye-estimation of the distance to the West 14 Light Beacon.</p> <p>It is considered probable that the Master did not conduct to maneuver the Vessel himself even though he had suspicion about maneuvering the Vessel by Pilot A and pilot B, because Pilot B with a lot of experience of pilotage operation conducted to instruct Pilot A in Japanese and there was no problem to keep navigating to the south in the East Channel in this situation, and moreover, Pilot B knew that the distance to the West 14 Beacon was 0.4 M when he began to take to turn to the starboard by the rudder angle of hard to starboard, and subsequently, he began to decelerate ship speed at the similar moment, and therefore, he thought that the Vessel would successfully turn to starboard for the West Channel.</p>	

	<p>It is considered likely that he was aware that he should maneuver the Vessel himself to secure safety navigation for her at adequate timing when he had suspicion about maneuvering the Vessel by Pilot A, Pilot B did not clearly inform Pilot A and the Master that the evaluation operation of Pilot A's was suspended at adequate timing, and subsequently, Pilot B did not conduct to take safety measures by maneuvering the Vessel himself at an early stage in accordance with Training Rules of the Pilots' Association.</p> <p>It is considered probable that it was involved in the occurrence of an incident that Pilot A and Pilot B did not have communication with the crew members in the bridge sufficiently.</p>
<p style="text-align: center;">Safety Actions</p>	<p>Safety Actions Taken by the Pilots' Association of Ise Mikawa Bay</p> <p>(1) Enhancement of Education and Training System for Pilot Trainee</p> <p>i) Formulation of detailed navigation plans</p> <p>ii) Recommendation and saturation of promoting usage appropriately regarding PPU (Portable Pilot Unit : pilotage operation support system)</p> <p>(2) Clarification of Supervising Pilot Responsibilities</p> <p>i) Re-recognition of supervising pilot responsibilities</p> <p>ii) Provision of information to supervising pilots regarding evaluation summary, etc. in past training.</p>
<p style="text-align: center;">Report</p>	<p>https://www.mlit.go.jp/jtsb/eng-mar_report/2021/2019tk0011e.pdf</p>



9 Actions taken in response to recommendations and opinions in 2021

Measures taken in response to recommendations in 2021 are summarized as follows:

Accident involving passenger ship NANKYU No. 10, which resulted in passenger injuries

(Recommendations on November 26, 2020)

For the investigation of the accident resulted in passengers injuries involving passenger ship NANKYU No. 10 which occurred outside Nejime Port, Minamiosumi-cho, Kagoshima Prefecture on December 2, 2019, Japan Transport Safety Board published the incident investigation report and made recommendations for the Minister of Land, Infrastructure, Transport and Tourism on November 26, 2020 and received reports on measures taken on the basis of the recommendations on March 31, 2021.

(See the JTSB website at the following URL for the summary and probable causes of the accident:

<https://jtsb.mlit.go.jp/jtsb/ship/detail.php?id=12044>)

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

It is probable that this accident occurred because Nankyu No. 10 departed from Nejime Port despite weather and hydrographic conditions that had reached the standards for departure and navigation cancellation conditions specified by the safety management manual of Nankyu-Dock Co., Ltd and

continued operations taking a north-northwest course (further north from the standard route), at about 12 knots outside the port. The ship was struck and lifted by oncoming tidal waves, which in turn caused passengers to be lifted above their seats and be slammed down, resulting in injuries.

It is probable that the ship continued navigating at 12 knots in the north-northwest direction, which was further north than the standard route, because the captain believed that, despite the up-and-down motions, the ship could safely avoid the oncoming waves by making a series of left turns and navigating at a slower pace than that specified by the navigation standard table and although he knew that taking the north-northwest course would subject the ship to the oncoming wind and waves, he thought that the course would prevent the ship from drifting toward the aquaculture facilities located to the west from the breakwater and lighthouse of Nejime Port.

It is probable that the captain considered the course to be safe probably because he did not consider the possibility of passengers being tossed violently upward from their seats and subsequently falling back down with such force that lumbar fractures would ensue.

Among accidents published in the accident investigation reports of the JTSB from 2008 to October 2020, 15 involved small passenger ships (excluding hydrofoil boats) that navigated solo and their passengers suffered spinal injuries similar to those described above. In 11 of these accidents, the vessels were traveling at less than 22 knots.

It is probable that operators of small high-speed ships (excluding those of less than 20 tons in total tonnage and which attain speeds of 22 knots or more in service speed navigating only in horizontal areas) have been instructed by the Minister of Land, Infrastructure, Transport and Tourism to develop written protocols for navigation under wild weather and thoroughly implement accident prevention measures. However, instructions obligating measures for preventing similar accidents are also deemed necessary for passenger transportation business operators (referred to as “transportation business operators”) operating small passenger ships other than small high-speed ships.

Therefore, on the basis of the investigation results of the above accident and to ensure passenger transport safety, the JTSB recommends the following pursuant to the provision of Article 26, Paragraph 1 of the Act for Establishment of the Japan Transport Safety Board:

It is recommended that the Minister of Land, Infrastructure, Transport and Tourism should instruct transportation business operators to take the following measures:

1. 1. Transportation business operators shall provide the following instructions to captains and relevant crew members:

- i) When a ship oscillates due to wave impact, the operator shall decelerate to a speed that is adequate to prevent the passenger injuries.
- ii) When significant up-and-down motions of a ship are anticipated with a strong wind and highseas warning issued, the captain and relevant crew members shall guide passengers to take the suitable seats (e.g. rear seats in cases in which a ship’s center of gravity is located in its rear section) beforehand so that risks of being ejected from the seats and suffering violent impacts are minimal.

2. 2. Transportation business operators shall recheck the possibility of topographical, tidal, tidal

waves or heavy swell effects for standard routes, departure and arrival ports and share such information with captains and relevant crew members.

3. 3. Transportation business operators shall regularly instruct captains and crew members to ensure compliance with the standards judgement as to whether departure and standard navigation are possible as specified by safety management manual.

○ Measures taken by the Minister of Land, Infrastructure, Transport and Tourism in accordance with Recommendations

On the basis of the recommendations of November 26, 2020, the Maritime Bureau of the Ministry of Land, Infrastructure, Transport and Tourism issued the document "Thorough Observation of Safety Measures for Small Passenger Ships Based on Recommendations from Japan Transport Safety Board" to Minister of Land, Infrastructure, Transport and Tourism" on the same day to Regional Transportation Bureaus, Kobe District Transport Bureau, and the Okinawa General Bureau of the Cabinet Office (hereinafter referred to as the "Regional Transportation Bureaus, etc.") and ordered the Regional Transportation Bureaus, etc. to direct companies who operate passenger ships of less than 20 gross tons that exclude small high-speed vessels (vessels with less than 20 gross tons and navigation speed of 22 kn or more, which do not travel only inland water areas) under the jurisdiction of Regional Transportation Bureaus, etc. (hereinafter referred to as "small passenger ships") to create manuals for safety navigation at the time of heavy weather and comply with them.

This time, Regional Transportation Bureaus, etc. conducted a series of instructions regarding the preparation of the manual for companies that operate small passenger ships, for which the manuals must be created.

Regional Transportation Bureaus, etc. will continue to ensure safety for small passenger ships, by checking how the manuals are made and providing instructions.

* Notifications (original) from the Minister of Land, Infrastructure, Transport and Tourism are available on the JTSA website.

https://www.mlit.go.jp/jtsb/shiphoukoku/ship-kankoku21re_20201126.pdf

10 Provision of factual information in 2021 (marine accidents and incidents)

The JTSB provided factual information on one case (marine accidents) to relevant administrative organs in 2021. The details are as follows.

Information provided by JTSB regarding accident with the passenger injury including a fall from an opening in a passenger ship

(Information provided on August 4, 2021)

The Japan Transport Safety Board provided the following information to the Ministry of Land, Infrastructure, Transport and Tourism and the Japan Passenger Boat Association.

1. Summary of the accident

(1) Occurrence Date: April 3, 2021

(2) Occurrence Location: An offshore area east from the Shimonoseki Sotohama Breakwater Lighthouse in Shimonoseki Section, Kanmon Port

(3) Description of the accident

A passenger ship GANRIU ("the Vessel"), with a master, one crew member, and 33 passengers on board, departed from Moji Ward, Kanmon Port bounding for Shimonoseki Ward, Kanmon Port at around 09:50, April 3, 2021 and was traveling in an offshore area east from the Shimonoseki Sotohama Breakwater Lighthouse in Shimonoseki Section, Kanmon Port, when one passenger fell from the engine room entrance, which was left open, at the passenger room corridor on the near side into the engine room and got injured.

2. Factual information

The facts revealed through investigation thus far are as follows:

(1) Information on the Vessel

Gross tonnage: 19 tons

Maximum capacity: 122 persons (120 passengers and 2 crew members)

Route Shimonoseki to Moji

(2) Layout of passenger rooms, etc.

The Vessel had rooms at the front and rear of the upper deck, and chair seat at promenade deck on the upper side of the rear passenger rooms. The entrance of the engine room was near the center of the rear-side passenger room corridor and was usually closed with a hatch. Passengers were traveling over the hatch when they got on and off the Vessel.

3. Past similar accidents

Five accidents similar to this one have occurred since 2016, including cases of injuries caused by passengers' fall from an opening on a deck, and accident investigation reports have been published for four of them.

These four accidents occurred because crew members forgot that they opened a hatch for supporting passengers, or left a hatch open thinking that passengers would not get on soon or that

they would come back soon.

Measures to prevent recurrences include putting fences around the openings to prevent passengers from approaching a hatch, or immediately close them after work. Each accident is summarized in the attachment below.

Attachment

April 20, 2016 (4/20/2016)	Passenger Ship GREEN AUKLET (19 tons)	Slight injury One person	The vessel was moored at a fishing port in Ogawa Island, Karatsu City, Saga Prefecture. A crew member thought that passengers would not get on the vessel soon, and left the hatch for the engine room open while inspecting the engine. A passenger fell from the hatch into the engine room when he or she was walking on the passenger room corridor and got injured.	<ul style="list-style-type: none"> If a crew member inspects an engine while leaving the floor hatch for the engine room open, staff on the platform must warn passengers, or close the platform if such staff is not available.
Report URL: https://www.mlit.go.jp/jtsb/ship/rep-acci/2016/keibi2016-10-28_2016ns0039.pdf				
July 22, 2018 (7/22/2018)	Passenger Ship YUKIHIME (19 tons)	Injured One person	The vessel was moored at Pier 3 of Itsukushima Port, Hatsukaichi City, Hiroshima Prefecture. The master thought that all passengers had got off the vessel for sightseeing and would not return soon, so left the hatch open. When a passenger returned to the vessel for his baggage, he fell from the hatch into the bottom of the hold and got injured.	<ul style="list-style-type: none"> A master must immediately close the opening after finishing their work. Passengers must tell a master when they will return to their rooms after disembarking.
Report URL: https://www.mlit.go.jp/jtsb/ship/rep-acci/2019/MA2019-6-18_2018hs0168.pdf				
April 22, 2019 (4/22/2019)	Passenger Ship KONPIRA MARU 5 (19 tons)	Injured One person	The vessel was moored near the floating bridge at the platform of Iwai Island, Kaminoseki Town, Yamaguchi Prefecture. The master left the hatch at the rear side of a passenger room corridor open when there were no passengers in the passenger rooms. When a passenger returned to a passenger room, she fell from the hatch into the floor of the engine room. The master let the passenger room unattended with the hatch left open, because he thought it would be fine if he went to get tiger rope and return immediately.	<ul style="list-style-type: none"> The master made it possible to display signs indicating that entry after this accident is prohibited when the hatch is open. The master must inform a reception desk not to tell passengers to get on the vessel until safety confirmation is complete in the vessel. Necessary safety measures must be taken when carrying out work.
Report URL: https://www.mlit.go.jp/jtsb/ship/rep-acci/2019/MA2019-10-21_2019hs0050.pdf				
July 13, 2020 (7/13/2020)	Passenger Ship HAYABUSA 2 (68 tons)	Serious injury One person	The ship was moored in Shinojima Port, Aichi Prefecture. The chief engineer forgot that he left the engine room hatch in a passenger room open. When passengers started to get on the vessel, one passenger's left limb fell into the hatch and got injured. The engineer chief was in a rush to respond to passengers when they get on the vessel in Shinojima Port, and forgot about the engine room hatch until he saw the fallen passenger. Port staff let passengers get on the vessel because it was five minutes before departure.	<ul style="list-style-type: none"> When the engineer chief will open the engine room hatch or other entrances, he must put fences or other objects around the hatch for preventing passengers from falling. The master must carry out pre-departure inspection and ensure safety in passenger rooms before passengers get on the vessel. Port staff must not let passengers get on the vessel until directed by a vessel operation leader. The passenger transport carrier must ensure that crew complies with safety management rules.
Report URL: https://www.mlit.go.jp/jtsb/ship/rep-acci/2021/MA2021-7-23_2020yh0089.pdf				

* The relevant information is posted on the JTSCB website.

https://www.mlit.go.jp/jtsb/iken-teikyo/s-teikyo19_20210804.pdf

Column**Accident Investigation Conducted by the Marine Accident Investigators****Marine Accident Investigators**

On August 11 2021, an accident occurred which involved a Panama registered cargo ship operated by a Japanese shipping company running aground within the Hachinohe Port (outside of the breakwater) in Aomori Prefecture. Following the day of the accident, on August 12, the hull of the cargo ship broke in two, spilling its fuel which caused oil pollution with the fuel oil drifting to the east coast of Aomori Prefecture. The following is information regarding the accident investigation conducted by the marine accident investigators.

The main team of marine accident investigators in charge of the investigation usually consists of three people. Before proceeding with an on-site investigation, the investigation schedule is adjusted to conduct ship crew member interviews and gather information for the ship hull investigation while contacting and enquiring about the accident with the coast guard within the jurisdiction of the sea area where the accident occurred and the vessel's shipping company. In addition to clarifying beforehand what to confirm with the ship crew members and what to be aware of when conducting the ship hull investigation, digital cameras, IC recorders and other necessary equipment that will be used during the on-site investigation is prepared.

For this accident the usual amount of three marine accident investigators were sent to the site of the accident. Investigations including interviews with the crew members and investigation on parts of the cargo ship which drifted and ended up near the harbor were conducted. The interviews with the crew members were conducted in a large, well-ventilated conference room to prevent the spread of COVID-19.

Furthermore, this accident was accompanied by the ship hull broken and its fuel spilled. Therefore, with oil pollution being part of recent social issues, we have also received on-the-move interview from a lot of media such as local TV stations and newspaper reporters during the investigations on site. As a result, the current situation of the the ship hull investigation and a part of the planned investigations such as regarding the analysis of a broken-off piece of the hull's surface, are brought up in certain media including local news broadcasts and local newspapers articles.

Although the investigation of the tail of the ship hull broken in two by this accident has been proven not easy as of now due to the bridge of the ship being under water making investigations aboard the ship and retrieval of documents on board of the ship difficult, we plan to conduct further investigations as the salvage operation progresses. We are also continuing to conduct necessary investigations such as collecting information about the cargo ship and enquiring the ship management company about the vessel. Upon analyzing the information retrieved from these investigations so far, we are planning to investigate the cause of the accident.



A picture of the cargo ship's hull broken in two taken on August 12. The picture was provided by the 2nd Regional Coast Guard Headquarters.