

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.

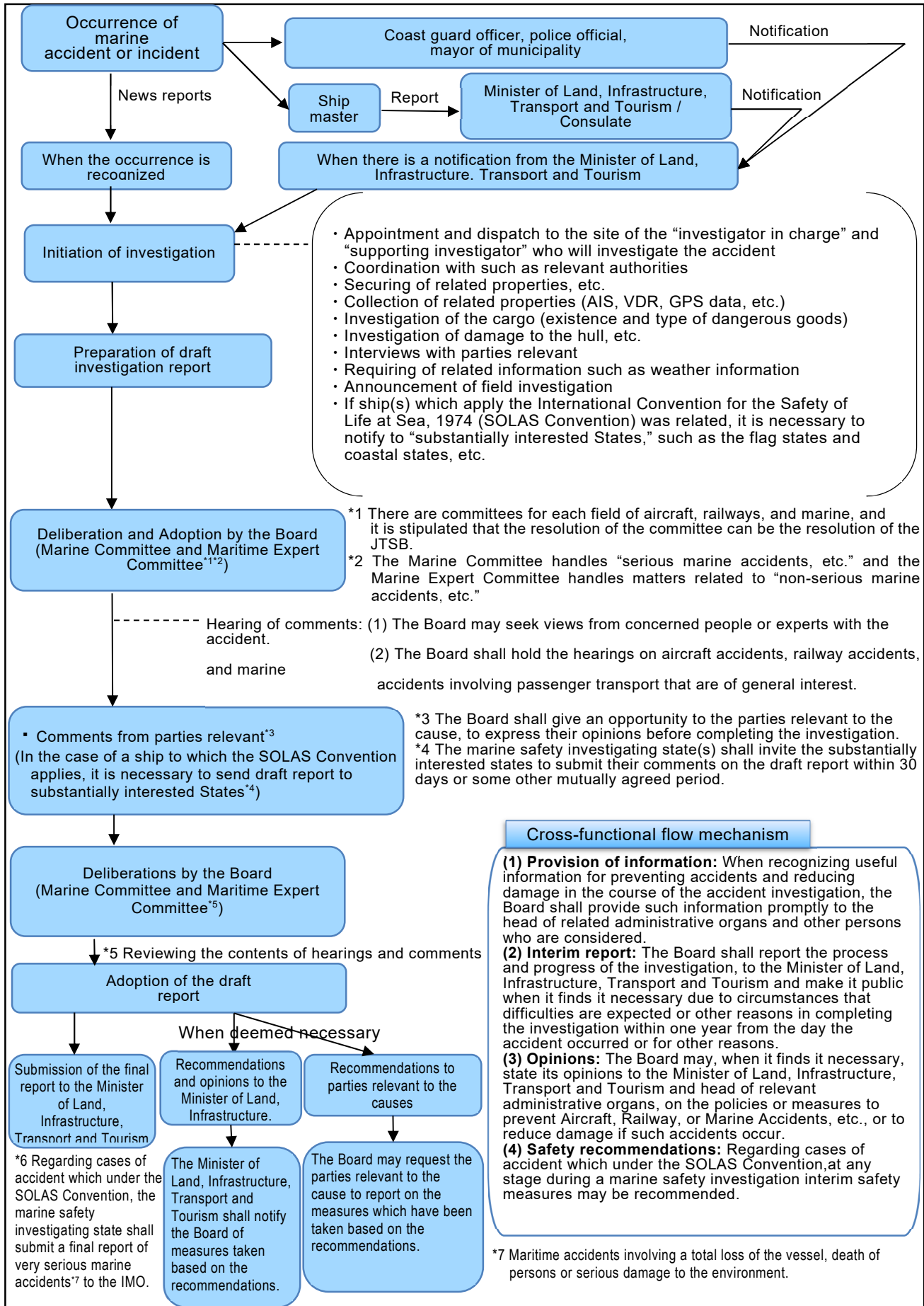
○ Article 5 of the Ordinance for Enforcement of the Act for Establishment of the Japan Transport Safety Board

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, Foundering, 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



3 Organizations, Committees, etc., in charge of investigations by category of accidents and incidents

“Serious marine accidents and incidents” are investigated by marine accident investigators of the secretariat in Tokyo, and deliberations are conducted at the Marine Sub-Committee. Incidentally, “Particularly Serious Accident*1” and “Very Serious Accidents*2” are deliberated at the General Committee, etc.

“Marine accidents and incidents” are investigated by local accident investigators at local offices located in eight locations across Japan, and deliberations are conducted at the Maritime Expert Committee.

*1 The General Committee is responsible for matters related to the following particularly serious accidents (aircraft accidents, railway accidents, and marine accidents, excluding those deliberated by the Aircraft Committee, the Railway Committee, the Marine Committee, and the Maritime Expert Committee) and matters deemed necessary by the Board*2 (Paragraph 2, Article 1, of the Rules of Management of the Japan Transport Safety Board).

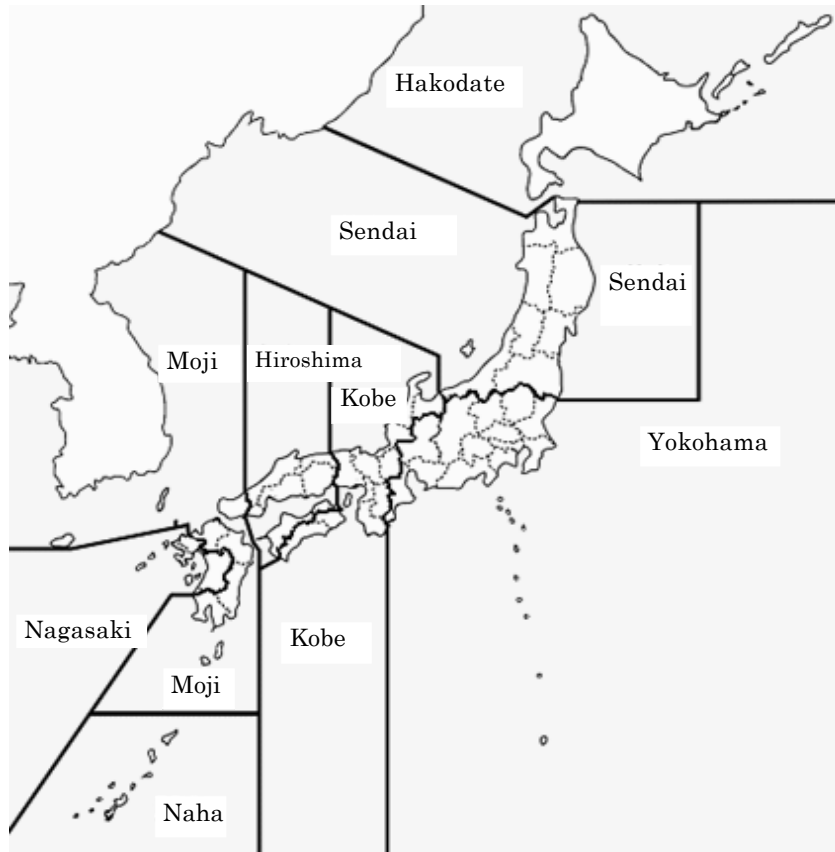
- ① Accident in which 10 or more people were killed or missing
(In the case of aviation accidents and marine accidents, only those involving aircraft or ships used for business that transports passengers. The same shall apply to (2).)
- ② Accident in which 20 or more people were killed, missing or seriously injured.

*2 The resolution on very serious accidents recognized by the Board and on matters deemed necessary by the Board shall be taken at the Board in consideration of the occurrence situation of damage, social influence and other circumstances (Paragraph 5, Article 2, of the Rules of Management of the Japan Transport Safety Board).

Serious marine accidents and incidents	Office in charge of investigation: Marine accident investigators in the Headquarters Committee in charge of deliberation and adoption: Marine Committee
<p>Definition of “serious marine accidents and incidents” (Article 9, Ordinance on Organization of Secretariat of the Japan Transport Safety Board)</p> <ul style="list-style-type: none"> • an accident involving two or more passengers killed, missing or seriously injured • an accident involving five or more persons killed or missing • a marine accident of a ship*2 engaged in international voyage*1, in which caused total loss of the ship, or which resulted in the death or disappearance of any person. <p>*1 meaning voyage between a port of one state and a port of another state. *2 excluding vessels used for the business of transportation of goods with a gross tonnage of less than 500 gross tonnage to be used to be used for shipping service of the goods, and also excluding all fishing vessels.</p> <ul style="list-style-type: none"> • an accident which caused a serious impact on environment by spilling of oil, etc. • a marine accident, etc. or a marine accident as a result of which any unprecedented damage has arisen • in addition to what is listed in the preceding items, the accident determined by the Board to fall under any the following items (a) to (c) inclusive <ul style="list-style-type: none"> a) an accident which had particularly serious influence on the society b) an accident the identification of the cause of which is extremely difficult; and c) an accident which would teach an important lesson for prevention of marine accident, etc. and for alleviating damage in the cases where marine accident takes place. 	
Marine accidents and incidents	Office in charge of investigation: Regional investigators in the regional offices Committee in charge of deliberation and adoption: Maritime Expert Committee

4 Jurisdiction of the Offices over Marine Accidents and Incidents

Our jurisdiction covers marine accidents and incidents in the water areas around the world, including rivers and lakes in Japan, and regional accident investigators placed in local offices (8) are in charge of marine accidents other than serious accidents. Marine accident investigators in the Tokyo Office (Headquarters) are in charge of marine serious accidents and incidents.



Local Office Jurisdiction Map

5 Statistics of investigations of marine accidents and incidents

(As of end of December 2022)

The JTSB carried out investigations of marine accidents and incidents in 2022 as follows:

In 2022, 669 accident investigations had been carried over from 2021, and 714 accident investigations were newly launched. Besides, 728 investigation reports were published in 2022, and thereby 638 accident investigations were carried over to 2023.

Moreover, 127 incident investigations were carried over from 2021, and 192 incident investigations were newly launched in 2022. Furthermore, 129 investigation reports were published in 2022 and thereby 179 incident investigations were carried over to 2023.

Among the 857 investigation reports published, one was issued with recommendations, and one was issued with opinions.

Investigations of marine accidents and incidents in 2022

(Cases)

Category	Carried over from 2021	Launched in 2022	Not applicable	Transferred to Tokyo Office	Total	Published investigation reports	(Recommendations)	(Safety recommendations)	(Opinions)	Carried over to 2022	(Interim report)
Marine accident	669	714	-17	0	1,366	728	(1)	(0)	(1)	638	(9)
Tokyo Office (Serious cases)	21	3	0	1	25	7	(0)	(0)	(1)	18	(9)
Regional Offices (Non-serious cases)	648	711	-17	-1	1,341	721	(1)	(0)	(0)	620	(0)
Marine incident	127	192	-11	0	308	129	(0)	(0)	(0)	179	(0)
Tokyo Office (Serious cases)	0	0	0	0	0	0	(0)	(0)	(0)	0	(0)
Regional Offices (Non-serious cases)	127	192	-11	0	308	129	(0)	(0)	(0)	179	(0)
Total	796	906	-28	0	1,674	857	(1)	(0)	(1)	817	(9)

Note 1: The figures for “Launched in 2022” includes cases which occurred in 2021 or earlier, and which the JTSB was notified of in 2022 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.

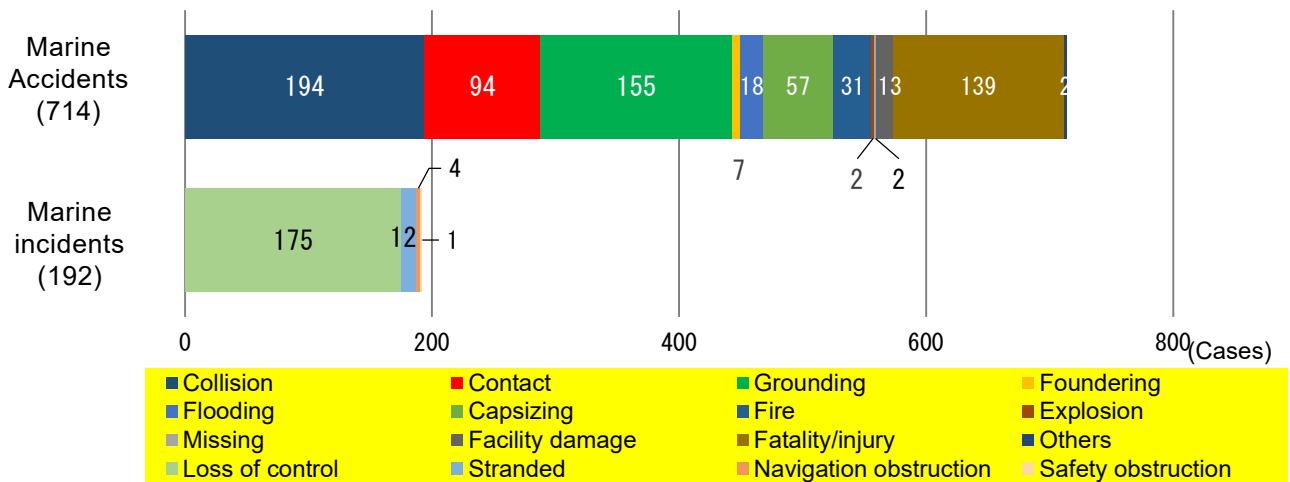
6 Statistics of investigated marine accidents and incidents

(As of end of December 2022)

(1) Types of accidents and incidents

The breakdown of the 906 investigations launched in 2022 by type of accidents and incidents is as follows: The marine accidents included 194 cases of collision, 155 cases of grounding, 139 cases of fatality/injury (not involved in other types of accidents), and 94 cases of contact. The marine incidents included 175 cases of loss of control, 12 cases of stranded, four cases of navigation obstructions, and one case of safety obstruction. Objects that contacted with ships included quays in 28 cases, breakwaters in 15 cases, and piers in 10 cases.

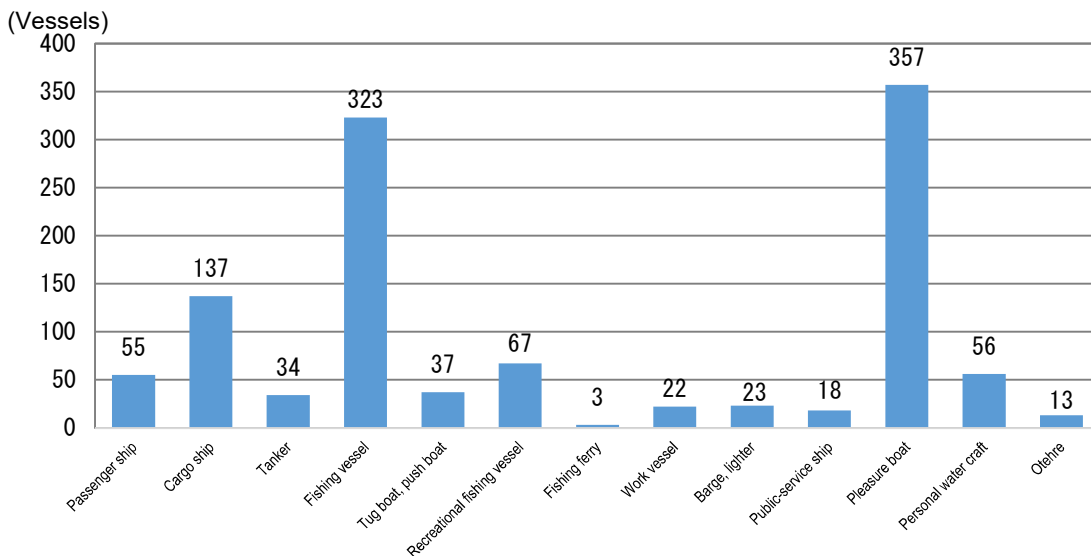
Number of investigated marine accidents and incidents by type in 2022



(2) Types of vessels

The number of vessels involved in marine accidents and incidents was 1,145. By type of vessel, they included 357 pleasure boats, 323 fishing vessels, 137 cargo ships, 67 recreational fishing vessels, and 56 personal water craft.

Number of vessels involved in marine accidents and incidents by type in 2022



The number of foreign-registered vessels involved in marine accidents and incidents was 32, and they

were classified by accident type as follows: 20 vessels in collision, five vessels in contact, and four vessels in grounding. As for the flag of vessels, 14 vessels were registered in Panama, seven vessels in Republic of Korea, three vessels in Belize.

Number of foreign-registered vessels by flag

(Vessels)

Panama	14	Republic of Korea	7	Belize	3
Hong Kong	3	Others	5		

(3) Number of casualties

The number of casualties was 351, consisting of 78 deaths, 15 missing persons, and 258 injured persons. By type of vessel, 114 persons in fishing vessels, 74 persons in pleasure boats, and 51 persons in passenger ships. By type of accident, 139 persons in fatality/injury, 85 persons in collision, 35 persons in contact, 29 persons in flooding, and 26 persons in capsizing.

With regard to the number of person's dead or missing, 40 persons were involved in fishing vessel accidents, 26 persons in passenger ship accidents 15 persons in pleasure boat accidents, indicating dead or missing cases occurred frequently in fishing vessels.

Number of casualties (marine accident)

(Persons)

2022										
Vessel type	Dead			Missing			Injured			Total
	Crew	Passengers	Others	Crew	Passengers	Others	Crew	Passengers	Others	
Passenger ship	2	18	0	0	6	0	5	19	1	51
Cargo ship	2	0	0	0	0	0	5	0	0	7
Tanker	1	0	0	0	0	0	0	0	0	1
Fishing vessel	33	0	1	6	0	0	73	0	1	114
Tug boat, push boat	1	0	0	0	0	0	2	0	0	3
Recreational fishing vessel	0	0	0	0	0	0	4	32	0	36
Fishing ferry	0	0	0	0	0	0	0	13	0	13
Work vessel	2	0	0	0	0	0	4	0	1	7
Barge, lighter	0	0	0	0	0	0	1	0	0	1
Public-service ship	1	0	0	0	0	0	2	0	0	3
Pleasure boat	10	0	2	2	0	1	27	0	32	74
Personal water craft	0	0	0	0	0	0	10	0	23	33
Others	2	0	3	0	0	0	1	0	2	8
Total	54	18	6	8	6	1	134	64	60	351
	78			15			258			

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

7 Summaries of serious marine accidents and incidents which occurred in 2022

The serious marine accidents which occurred in 2022 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	
	March 21, 2022 Approximately 185 km southeast of Tanegashima Island, Kagoshima Prefecture		Fishing vessel No.51 YUJIN MARU Fire	
	Summary	The fishing vessel caught fire on the sea approximately 185 km southeast of Tanegashima Island, Kagoshima Prefecture.		
2	Date and location		Vessel type and name, accident type	
	April 23, 2022 Off the coast of Kashuni Falls on the western side of Cape Shiretoko, Hokkaido Prefecture		Passenger ship KAZU I Flooding	
	Summary	When Passenger ship KAZU I with the master and one deckhand carrying 24 passengers on board was sailing southwest off the coast of Kashuni Falls on the west side of the Shiretoko Peninsula, the ship was flooded and sank in a short time off the Falls. 18 passengers, the master and the ordinary seaman died and six passengers were missing. (As of the end of December 2022)		
3	Date and location		Vessel type and name, accident type	
	June 5, 2022 Near Jinoshima Island, Wakayama City, Wakayama Prefecture		Recreational fishing boat EBISU MARU No.2 Fatality	
	Summary	While the ship was sailing, one angler went missing, and although he was found by another ship, he was confirmed dead at the hospital.		

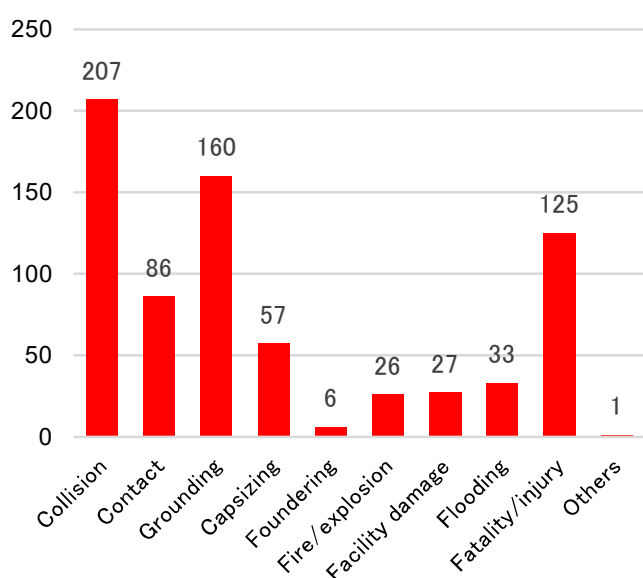
8 Publication of investigation reports

The number of investigation reports of marine accidents and incidents published in 2022 was 857, consisting of 728 marine accidents (among them, seven were serious) and 129 marine incidents.

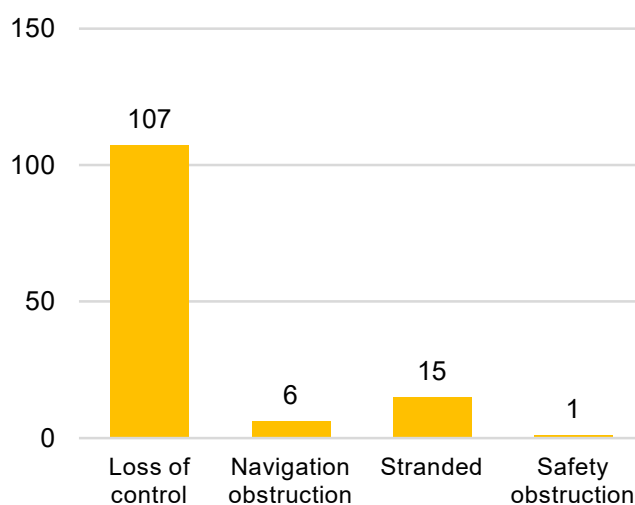
Breaking them down by type, the marine accidents included 207 cases of collision, 160 cases of grounding, 125 cases of fatality/injury, and 86 cases of contact. The marine incidents included 107 cases of losses of control, (98 cases of navigational equipment failure, nine cases of fuel shortages, etc.), 15 cases of stranded, six cases of navigation obstruction, and one case of safety obstruction.

As for the objects of contact, 26 were quays, eight were buoys, and eight were pier.

Marine accidents (728 cases):
reports publicized in 2022



Marine incidents (129 cases):
reports publicized in 2022



The number of vessels involved in marine accidents and incidents was 1,124. Breaking them down by type, the marine accidents involved 282 fishing vessels, 262 pleasure boats, 153 cargo ships, 48 recreational fishing vessels, and 47 personal water crafts. The marine incidents involved 79 pleasure boats, 22 fishing vessels, seven passenger ships, and six cargo ships.

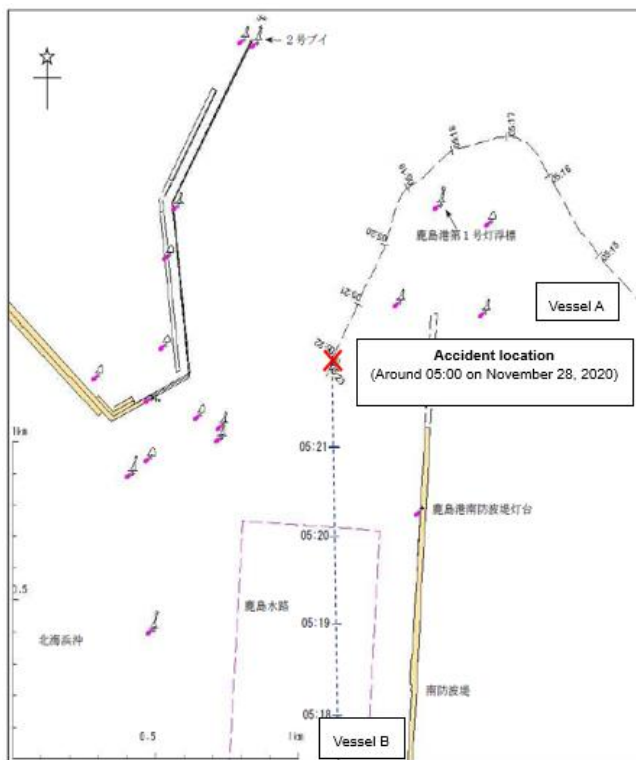
Number of vessels by type involved in marine accidents and incidents for which reports were publicized in 2022

Classification	(Vessels)													Total
	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	
Marine accident	37	153	41	282	45	48	3	25	27	17	262	47	7	994
Marine incident	7	6	5	22	1	5	1	2	0	0	79	1	1	130
Total	44	159	46	301	46	53	4	27	27	17	341	48	8	1,124
Composition ratio %	3.9	14.2	4.1	27.0	4.1	4.7	0.4	2.4	2.4	1.5	30.3	4.3	0.7	100.0

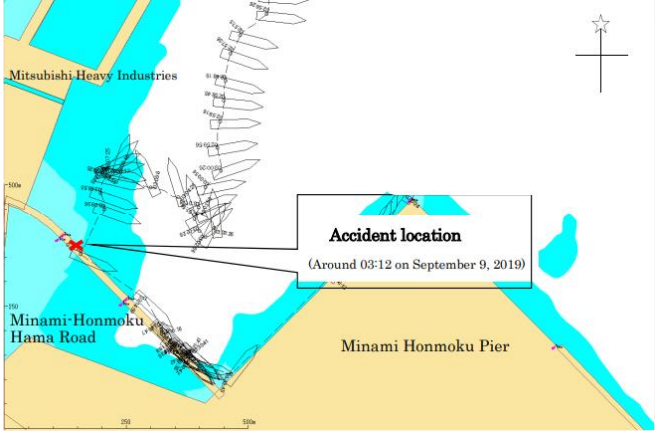
The marine accidents and serious incidents which occurred in 2022 are summarized as follows:

Marine serious accident reports published in 2022

1	Date of publication	Date and location	Vessel type and name, accident type
	February 17, 2022	November 28, 2022 Kashima Port, Ibaraki Prefecture	Cargo ship HAYATO (Vessel A) Recreational fishing vessel No. 5 FUDOMARU (Vessel B) Collision
Summary	<p>While Vessel A with the master and four crew members on board was sailing south-southwest and Vessel B with the master and one crew member carrying 10 visiting anglers on board was sailing north, they collided with each other at Kashima Port, Ibaraki Prefecture.</p> <p>Not only one angler died and the master and seven anglers were injured on board Vessel B, but also Vessel B sustained a crack in the center of her starboard side, while Vessel A suffered scratches at the end of the bulbous bow.</p>		
Probable causes	<p>It is probable that the accident occurred because while Vessel A was proceeding south-southwest toward the anchorage in the waters in front of the North Seashore of Kashima Port and Vessel B was proceeding north toward a fishing spot off the coast of Oarai Town at night near the mouth of Kashima Port, the master of Vessel A continued to sail in the same course at the same speed believing that Vessel B would avoid her course, and the master of Vessel B continued to sail with the focus on the course toward the vicinity of the No. 2 Light Buoy of Kashima Port which served as the target course to the fishing spot by believing that Vessel A would sail south toward the Kashima Waterway and pass on the starboard side of Vessel B, resulting in the collision of both vessels.</p> <p>It is probable that the reason why the master of Vessel A continued to sail in the same speed believing that Vessel B would avoid her course was because he thought that an approaching small ship would avoid the course of own ship inside the port according to his past experience and conviction that small ships avoid the course of other ships at specified ports in accordance with the Port Regulations Act.</p> <p>It is probable that the reason why the master of Vessel B believed that Vessel A would sail south toward the Kashima Waterway and pass on the starboard side of Vessel B was due to the fact that he had seldom seen a cargo ship sailing toward the waters in front of the north seashore of Kashima Port and that he had believed that his own ship was on the left side (west side) of the Kashima Waterway.</p> <p>It is probable that the reason why the master of Vessel B had selected the course going toward the vicinity of No. 2 Light Buoy of Kashima Port was due to the fact that he had little experience as a master of a recreational fishing vessel and had little experience navigating at night, that the consort ship on which he had relied for navigation was out of the range of the radar and its image could not be confirmed, and that he had been told by the master of the consort ship during the ship maneuvering training that it was the target course when heading for the fishing spot off the coast of Oarai Town.</p> <p>It is likely that the reason why the master of Vessel B did not notice the situation where Vessel A was approaching and did not become aware of Vessel A until she was very close to his own ship was due to the fact that in addition to that he had little experience as a captain of a recreational fishing vessel and in navigation at night, he was not only used to the work before departure and had little time to spare for preparing the ship for recreational fishing, but also he was unable to check the movements of other ships through AIS information, and he felt uneasy and upset for operating Vessel B to which he was not used in terms of her maneuvering and operation of equipment, which caused him to operate the ship not in the right frame of mind.</p>		



Safety Actions	<p>Measures taken by the owner of Vessel A</p> <p>After the accident, the owner of Vessel A held a safety meeting with her crew members and disseminated information on the accident to his owned ships.</p> <p>Measures taken by the operator of Vessel A</p> <p>After the accident, the operating company of Vessel A did not only distribute a document to draw attention to the prevention of collision with small ships to the masters of operating ships and ship owners, but also provided guidance on safety to the master and four crew members of Vessel A by holding a safety meeting to look back on the accident and explain accident cases.</p> <p>Measures taken by the operator of Vessel B</p> <p>The operator of Vessel B compiled safety measures and decided to provide periodic guidance to crew members, not only on the compliance with the matters (1) to (3), safety verification in accordance with the check list (inspection of the recreational fishing vessel at the time of leaving the port), prevention of injuries or accidents due to falls or falling overboard, handling of a marine accident and the selection of a fishing spot or the restriction of fishing to oblige them to acquire knowledge of safety response during angling and enhance their awareness, but also on conducting 5 activities consisting of tidying up, ordering, cleaning, grooming and discipline).</p> <p>(1) Keeping a proper lookout at all times while sailing to and from the fishing points and moving between them.</p> <p>(2) Keeping a lookout even while drifting or anchoring, and performing give-way if necessary.</p> <p>(3) Endeavoring to ensure the safety of users by abiding by the contents of the business rules based on the understanding of the characteristics of collision accidents, in addition to (1) and (2).</p> <p>Measures taken by the Fisheries Policy Division, Agriculture, Forestry and Fisheries Department, Ibaraki Prefecture</p> <p>In the wake of this accident, the Fisheries Policy Division, Agriculture, Forestry and Fisheries Department, Ibaraki Prefecture, issued a document entitled “Regarding the enlightenment of safety related to the prevention of accidents of recreational fishing vessels (Notice)” to the presidents of fisheries cooperatives under its jurisdiction and a document entitled “Ensuring the safety of recreational fishing ships (Notice)” to the president of the Recreational Fishing Ship Council on December 12, 2020, respectively, to enlighten safety for accident prevention and ensure the safety of the uses of recreational fishing vessels.</p>		
	Report	<p>https://www.mlit.go.jp/jtsb/ship/rep-acci/2022/MA2022-2-1_2020tk0013.pdf</p> <p>https://www.mlit.go.jp/jtsb/ship/p-pdf/MA2022-2-1-p.pdf (Explanatory material, in Japanese only)</p>	
2	Date of publication	Date and location	Vessel type and name, accident type
	April 28, 2022	September 9, 2019 Minami-Honmoku Hama Road at the Keihin Port	Cargo ship BUNGO PRINCESS (Panama) Contact (with a bridge)
	Summary	<p>The vessel, with a master and 16 other crew members aboard, was at anchor off of Honmoku Pier in the Yokohama district of Keihin Port under conditions in which Typhoon No.15 of 2019 (Faxai) was approaching and a typhoon warning had been issued for the Northern Sea off Kanto, including Tokyo Bay, when she dragged anchor under intensifying wind and waves from the approaching typhoon, was pushed to the south, and collided with the Minami-Honmoku Hama Road (bridge).</p> <p>The vessel sustained crushing damage and other damage to her hull’s starboard side plating and shell and bulbous bow, and the Minami Honmoku Hama Road Bridge sustained crushing, cracking and other damage. There were no fatalities or injuries among the crew members.</p>	

<p>Probable causes</p>	<p>It is probable that this accident occurred when, as the vessel was anchored in nearly ballast condition at night in the Anchorage to take sheklter under conditions in which Typhoon No.15 was approaching and a typhoon warning had been issued for the Northern Sea off Kanto, including Tokyo Bay, she dragged anchor and, despite setting her main engine to full ahead, she was pushed without being able to control her hull's attitude and collided with the Bridge because she continued riding at single anchor when the wind and waves intesified due to the typhoon.</p> <p>It is probable that the vessel continued to riding at single anchor because the master had no personal experience using a multiple anchors at the same time during anchoring, and was aware that problems could occur when using multiple anchors, such as the possibility of tangled anchors and reduce freedom of maneuvering, and, additionally, because the master assumed that the effects of the typhoon would not exceed his previous experience and thought that the vessel would be able to withstand the wind and waves by letting out eight shackles of anchor chain for storm anchoring in preparation for the typhoon.</p> <p>It is probable that the hull's attitude could not be controlled despite main engine's being set to full ahead because sufficient forward propulsion could not be obtained, as propulsive power was lost when the hull moved backward under the effects of the wind and waves and the propeller blades lost thrust .</p> 
<p>Safety Actions</p>	<p>Measures taken by the Japan Coast Guard, etc.</p> <ol style="list-style-type: none"> (1) Following anchor dragging accident caused by the effect of Typhoon No. 15, and with Typhoon No.19 approaching, the Japan Coast Guard recognized the need to implement additional, readily practical measures to prevent anchoring accidents and therefore provided strong guidance to maritime offices to, among other actions, issue a public awareness statement recommending moving outside of Tokyo Bay and sheltering outside of the bay. Additionally, harbor masters and the Tokyo Wan Vessel Traffic Service Center joined to take measures that included making prior fonfirmations of anchoring methods for vessels prone to anchor dragging accidents, providing guidance concerning self-restraint in anchoring, and issuing incremental and multiple recommendations on shifting anchorage and heaving to*1 in the early stages of anchoring. The additional measures to prevent anchor dragging accidents functioned effectively and no collisions of vessels dragging anchor occurred as a result. (2) In response to the collision of oil tanker with the Kansai International Airport's access bridge caused by Typhoon No. 21 in September 2018, and from the standpoint of ensuring the sefety of marine traffic, the Japan Coast Guard began applying new regulations based on the Maritime Traffic Safety Act in the sea areas around the airport as from January 31, 2019. Moreover in addition to the sea area around the that airport, JCG but also selected 40 locations as important facilities (i.e., facilities such as transport facilities and essential utilities that would bring detrimental if interrupted or for which alternative means are nonexistence) in the sea areas of Japan in April 2019 and implementing stormy weather anchoring restrictions in those sea areas.. In response to the accident, JCG decided to newly designata the Minami-Honmoku Hama Road as an important facility and to manage an area with a 2-M radius (excluding some sea areas) centered on the over-sea bridge section of said road in an integral manner with the existing Reinforced Dragging Anchor Prevention Area. (3) In June 2020, the Study Committee prepared a report (Regarding countermeasures against accidents caused by anchor dragging during stormy weather in Tokyo Bay) that included the basic items of measures to prevent anchor dragging accidents, measures to prevent anchor dragging accidents for facilities and sea areas trageted for priority study, and verification of measures to prevent anchor dragging accidents during the typhoon season in 2019. The Study Committee also made recommendations for promoting sheltering outside of Tokyo Bay, measures concerning shipboard responses, and measures concerning operational management and measures by facility managers. <p>In particular, recognized the necessity of providing ship operators (including masters) with a board range of knowledge and skills concerning measures to prevent anchor dragging accidents, the Study Committee is working with the public and private sectors to raise awareness so that such knowledge and skills will be consistently conveyed to ship operators by sending out guidelines (“Guidelines for Preventing Anchor Dragging Accidents”) and leaflets (“Guide to Harborage in Tokyo Bay During Stormy Weather.” etc.) and organizing training courses as measures relating to shipboard response.</p>


	<p>(4) Taking into account the aforementioned recommendations of the Study Committee concerning current systems and measures to be taken, the Council of Transport Policy began a study in July 2020 on the expansion and reinforcement of new maritime traffic safety infrastructure to appropriately respond to accidents caused by anchor dragging and other phenomena due to the increasingly frequent and severe occurrence of abnormal weather of recent years. On January 28, 2021, the Council submitted a report titled “Regarding the expansion and reinforcement of maritime traffic safety infrastructure to respond to increasingly frequent and severe natural disasters and other new traffic environments” to the Minister of Land, Infrastructure, Transport and Tourism.</p> <p>(5) In response to the developments described in (4) above, the Japan Coast Guard submitted a “Bill for partial amendment of the Maritime Traffic Safety Act” (creation of a system for issuing recommendations and orders to shelter outside of Japan’s three major bays (Tokyo Bay, Ise Bay, and Osaka Bay, etc.), to better ensure the safety of navigation by preventing hazards to maritime traffic caused by abnormal weather, etc., and ensuring the prompt restoration of and other navigation aids managed by JCG. The amendment was approved by the Cabinet on March 2, 2021, enacted on May 25, and entered into force on July 1.</p> <p>This amendment makes it possible to recommend to large high freeboard vessels, vessels carrying hazardous cargoes, and other vessels that they leave Tokyo Bay when a typhoon is approaching, thereby relieving congestion in the bay.</p> <p>It is therefore anticipated that recommendations to shelter outside a port or Tokyo Bay and other advisories will be issued according to the anchor dragging risk and seaworthiness of each vessel, and that this will reduce congestion throughout the bay, including its ports, and help prevent anchor dragging accidents.</p> <p>(6) In light of the oil tanker collision with the Kansai International Airport’s access bridge that was caused by Typhoon No. 21 in September 2018, and other incidents, the Ministry of Land, Infrastructure, Transport and Tourism has been implementing comprehensive measures to prevent recurrence of accidents in which vessels are pushed by strong wind during typhoons and other stormy weather, and collide with other vessels or shore facilities (I.e., anchor dragging accidents). As one of such measures, the Maritime Bureau developed a “Risk Assessment Application for Dragging Anchor System” (nicknamed “IKARI-ing”) that helps mariners determine the anchor dragging risk of their vessel’s dragging and then take measures to prevent an anchor dragging accident according to that risk (for example, by changing the anchorage or anchoring method). The system was made available to the public on July 1, 2021 (the English version was released on August 6).</p> <p>Measures taken by the ship management company of the Vessel</p> <p>(1) Drew attention to the accident by providing information on the accident to all masters of the vessels it manages and distributing a summary of the events of the accident with comments (including cautionary points and lessons learned) by email.</p> <p>(2) Issued General Instructions to the vessels it manages titled “Anchoring when approaching Typhoon or Rough weather is expected,” and issued instructions on countermeasures for preventing similar anchor dragging accidents and a summary of the accident.</p> <p>(3) Revised and made additions to the section on “Procedures for Anchoring” in the SMS Manual. The following points were added.</p> <p>1) Endeavor to detect anchor drag quickly by conducting anchor drag detection work at least once an hour.</p> <p>2) Maintain a safe distance from onshore facilities and structures in the procedure for anchor watch during stormy weather.</p> <p>3) Take into account the time required to weigh anchor in the procedure for anchor watch during stormy weather.</p> <p>(4) Changed its anchor watch checklist.</p> <p>(5) Alerted the vessels it manages of the possibility of anchor dragging accidents when stormy weather is anticipated</p> <p>*1 “Heaving to” is a method of ship maneuvering for keeping a vessel in place by using enough forward propulsion from the engine to maintain the rudder’s effectiveness during stormy weather and catching the wind and waves at slight angle to the bow.</p>						
Report	<p>https://www.mlit.go.jp/jtsb/ship/rep-acci/2022/MA2022-4-1_2019tk0020.pdf https://www.mlit.go.jp/jtsb/eng-mar_report/2022/2019tk0020e.pdf</p>						
3	<table border="1"> <thead> <tr> <th data-bbox="343 1951 502 1995">Date of publication</th> <th data-bbox="502 1951 815 1995">Date and location</th> <th data-bbox="815 1951 1442 1995">Vessel type and name, accident type</th> </tr> </thead> <tbody> <tr> <td data-bbox="343 1995 502 2045">June 30, 2022</td> <td data-bbox="502 1995 815 2045">October 24, 2019 Shimizu Port, Shizuoka City, Shizuoka Prefecture</td> <td data-bbox="815 1995 1442 2045">Container ship SITC BANGKOK (Vessel A, Hong Kong) Container ship RESURGENCE (Vessel B, Bahamas) Collision</td> </tr> </tbody> </table>	Date of publication	Date and location	Vessel type and name, accident type	June 30, 2022	October 24, 2019 Shimizu Port, Shizuoka City, Shizuoka Prefecture	Container ship SITC BANGKOK (Vessel A, Hong Kong) Container ship RESURGENCE (Vessel B, Bahamas) Collision
Date of publication	Date and location	Vessel type and name, accident type					
June 30, 2022	October 24, 2019 Shimizu Port, Shizuoka City, Shizuoka Prefecture	Container ship SITC BANGKOK (Vessel A, Hong Kong) Container ship RESURGENCE (Vessel B, Bahamas) Collision					

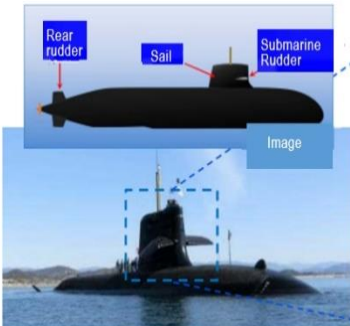

<p>Summary</p>	<p>Vessel A, with her master and 18 crew members aboard, was entering the Shimizu Port, Shizuoka City, Shizuoka Prefecture, navigating the passage of the port toward the Shimizu Port Sodeshi No.1 Wharf under the pilotage of a pilot, while Vessel B, with her master and 16 crew members aboard, left that wharf and was departing the port toward the Busan port, the Republic of Korea. Both vessels collided near the breakwater entrance between the Outer Breakwater and the Miho Breakwater.</p> <p>Vessel A sustained a hole in her bow plating, while Ship B suffered dents on the plating of her starboard bow. There were no casualties on either ship.</p>
<p>Probable causes</p>	<p>It is probable that during the nighttime in the Shimizu Port while Vessel A was entering the port toward the Sodeshi No. 1 Wharf and Vessel B left the wharf and was departing toward outside of the port, the master and the pilot of Vessel A continued to enter the port, believing that Vessel A would be able to pass Vessel B port-side to port-side within the passage of the Shimizu Port, whereas the master of Vessel B made Vessel B turn to port toward the Breakwater Entrance at a delaying timing, causing Vessel B to deviate from the passage to the south and approach the Miho breakwater, and then master of Vessel B put the helm hard to port in order to avoid collision with the breakwater, taking a sharp turn toward the north, after which Vessel B sailed out of the port by crossing the passage to the north-northeast, and consequently Vessel A and Vessel B collided with each other.</p> <p>It is probable that the master and the pilot of Vessel A continued to enter the port, believing that Vessel A would be able to pass Vessel B port-side to port-side within the passage, because they believed that Vessel B would sail out by using the passage, and would not sail out by crossing the passage to the north-northeast.</p> <p>It is probable that the master of Vessel B made Vessel B turn to port toward the Breakwater Entrance at a delayed timing, due to believing that if Vessel B turned to port toward the Breakwater Entrance, Vessel B would approach the tugboat sailing on the bow of the Vessel A in a manner that her starboard stern would collide with the tugboat, and the master continued to con the vessel while focusing attention on the tugboat's movements.</p> <p>The fact that reconfirmation of the order of entry and departure was not made when Vessel A started to enter the port by using the passage were likely involved in the occurrence of the accident.</p> <div data-bbox="671 819 1430 1176" data-label="Image"> </div>
<p>Safety Actions</p>	<p>Actions taken by the Shimizu Pilot District Pilot's Association</p> <p>After the accident, the Shimizu Pilot District Pilot's Association to which the pilot of Vessel A is a member informed all members of the following safety actions and ensured thorough implementation of those actions.</p> <ol style="list-style-type: none"> (1) If risky meeting is expected to occur between entering and departing vessels, etc., advance confirmation on the intention of the other vessel and the expected passing time, etc. is to be made between those vessels or through the Shimizu Shipping Information Center, by using VHF communication. (2) If a vessel has a risk of meeting another vessel, particularly one without a pilot aboard, in the vicinity of the port entrance, the vessel is to adjust her course and speed so as to be able to pass the other vessel port-side to port-side while keeping a safe distance outside the port, and enter the port after confirming that the other vessel has passed the breakwater entrance. (3) The Shimizu Shipping Information Center is to ensure navigation time adjustment that allows for sufficient time, based on the Guidelines for Traffic Organization of Shimizu Port, and to reinforce its framework for communicating and sharing that information. <p>In addition, the Shimizu Pilot District Pilot's Association took the following actions against the pilot of Vessel A.</p> <ol style="list-style-type: none"> (1) After the day following the occurrence of the accident, all pilotage operations were suspended for 10 days for the purpose of dealing with the accident. (2) It was decided that a safety training program sponsored by the Japan Federation of Pilot's Association was to be held at their own expense in order to rebuild their awareness of safe operation.

	<p>Measures taken by Shimizu Shipping Information Center</p> <p>In response to this accident, the Shimizu Shipping Information Center decided to contact the pilot in the control of vessel directly in case of emergency.</p>	
Report	<p>https://www.mlit.go.jp/jtsb/ship/rep-acci/2022/MA2022-6-1_2019tk0024.pdf https://www.mlit.go.jp/jtsb/eng-mar_report/2022/2019tk0024e.pdf</p>	
4	<p>Date of publication</p> <p>July 28, 2022</p>	<p>Date and location</p> <p>August 7, 2020 East Berth, Keiyo Sea Berth, Chiba Port, Chiba Prefecture</p> <p>Vessel type and name, accident type</p> <p>Tanker KAIMON MARU Contact (with a pier)</p>
Summary	<p>A vessel, with the master and 21 crew members, a pilot and a berth master*¹ aboard, was pushed to the northwest to contact with the pier, while working to dock the vessel at the berth for unloading.</p> <p>The vessel sustained a dent with a crack on the port bow, while the pier was partially damaged.</p> <p>*1 The “berth master,” as a person responsible for the berthing, supervises the acceptance and cargo handling of tankers entering the berth, and although he is not directly involved in ship operation, he does not only give pilots and masters information on berthing and unberthing operations, but also declares their suspension when it is judged that the weather conditions such as strong winds do not allow a safe operation.</p>	
Probable causes	<p>It is probable that this accident occurred because when, in the situation in which the current speed of the tidal current heading for the pier was about 30 to 52 cm/s, the pilot who had expected that the actual current speed would drop below 30cm/s which was his rough indication to stop the docking operation by ignoring the measured value of the fixed tidal current meter started to maneuver the vessel in Chiba Port allowing her to be pushed towards the pier from the planned stopping position and collided with the pier.</p> <p>It is probable that since the pilot was distrustful of the current speed of the fixed tidal current meter because its second current speed value had decreased and the current speed value measured by the patrol boat was less than 20cm/s, he who had expected that the actual current speed would drop below 30cm/s which was his rough indication to stop the docking operation started to maneuver the vessel to dock to the pier.</p> <p>It is probable that since the pilot was veteran, the master and the berth master who had entrusted him with the ship maneuvering and had not obtained the tidal current information sequentially were late in canceling or declaring to cancel the docking operation.</p>	
Safety Actions	<p>Actions taken by the Tokyo Bay Licensed Pilot Association</p> <p>After the accident, the Tokyo Bay Licensed Pilots Association did not only make known an outline of the accident to its members, but also disseminated the following as the recurrence prevention measures.</p> <ul style="list-style-type: none"> • In Tokyo Bay, abnormal tidal currents are sometimes observed in the spring tide period in summer. Therefore, when abnormal tidal currents are observed, it shall be determined early to cancel the docking operation in consultation with parties concerned. • When the draft is shallow and there is a sufficient sea area in front of the berth as in this case at the time when there is a strong tidal current, the appropriateness of the docking operation shall be determined by temporarily stopping the ship with a sufficient distance from the pier and checking the effect of the tug towing. • Although it depends on the situation when it was determined to cancel the docking operation, since it reduces the force of the tug to move forward at low speed to pass the pier while receiving pressurized flow due to strong tidal currents, it would have been an appropriate decision to turn back by going astern after reducing the speed to zero and securing a sufficient distance from the berth. <p>Measures taken by the ship owner</p> <p>After the accident, the ship owner did not only make known an outline of the accident to the masters of the ships under its management, but also took the following improvement measures as the measures to prevent recurrence.</p> <ul style="list-style-type: none"> • Clearly state “the compliance with the terminal standards” in the in-house standards. 	



	<ul style="list-style-type: none"> Clearly state “that when there is a doubt about the application of the terminal standards, stricter standards shall be adopted” in the in-house standards. The past accident cases shall be documented in the system, including horizontal deployment of this incident to all ships under its management and presentation thereof at the training sessions for the masters. <p>Actions taken by the berth management company</p> <p>After the accident, the management company of the berth did not only notify all shipping companies that use the berth through agents to provide guidance to the masters entering the port to maneuver the ship by monitoring the effect of the external force during the ship at all times, but also took the following improvement measures as the recurrence prevention measures.</p> <ul style="list-style-type: none"> Thorough observance of the “compliance with the ship berth maneuvering chart” Clarification of the standard flow velocity value for 120,000 DWT (dead weight tonnage) ship class in the berthing and unberthing operation standards described in the “Request for Approved Wharf Designated for Loading or Discharging Dangerous Goods*2.” <p>*2 “Request for Approved Wharf Designated for Loading or Discharging Dangerous Goods” is defined as a “a wharf designated for handling dangerous goods” called “D Wharf” designed for loading or discharging a large quantity of specific dangerous goods, which is distinguished from wharfs and piers to handle general cargo and the cargo handling can be started only with the approval of the port master, where it is necessary not only to provide facilities such as a wharf and a pier in line with the cargo ship, but also establish a cargo handling safety management system that assigns people with knowledge and experience, arrange disaster prevention materials and equipment according to the dangerous goods to be handled in order to ensure the safety of ships navigating the port and local residents.</p>															
	<p>Report</p> <p>https://www.mlit.go.jp/jtsb/ship/rep-acci/2022/MA2022-7-2_2020tk0007.pdf (Japanese only)</p>															
5	<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 28, 2022</td> <td>September 23, 2020 Mitsushima, Tsushima City, Nagasaki Prefecture</td> <td>The cargo vessel CHANG SHUN I Grounding</td> </tr> <tr> <td>Summary</td> <td colspan="2"> <p>The vessel adrift in the west channel of the Tsushima Strait with the main engine stopped. Since the main engine failed to start, the vessel was pushed by wind and waves and grounded on shallows on the north side of Mitsushima.</p> <p>The master of Vessel was injured and the vessel sank after the hull was split into several blocks.</p> </td> </tr> <tr> <td>Probable causes</td> <td colspan="2"> <p>The cause of this accident is probable the vessel with both anchors disabled, having left port at night for the purpose of avoiding the typhoons, was unable to start the main engine while drifting in the west channel of the Tsushima Strait for the purpose of waiting to enter the Busan port, and was pushed southward by wind and waves, and then grounded on shallows on north side of Mitsushima.</p> <p>It is probable that the vessel left port with both anchors out of service because the vessel was unable to complete repairs to the starboard anchor chain and the port anchor brake due to the typhoon approaching while having been moored at the Busan port.</p> <p>It is probable that the vessel’s main engine did not start because the internal mechanism did not work according to the fuel supply volume setting scale of the governor.</p> </td> </tr> <tr> <td>Report</td> <td colspan="2"> <p>https://www.mlit.go.jp/jtsb/ship/rep-acci/2022/MA2022-7-1_2020tk0009.pdf https://www.mlit.go.jp/jtsb/eng-mar_report/2022/2020tk0009e.pdf</p> </td> </tr> </tbody> </table>	Date of publication	Date and location	Vessel type and name, accident type	July 28, 2022	September 23, 2020 Mitsushima, Tsushima City, Nagasaki Prefecture	The cargo vessel CHANG SHUN I Grounding	Summary	<p>The vessel adrift in the west channel of the Tsushima Strait with the main engine stopped. Since the main engine failed to start, the vessel was pushed by wind and waves and grounded on shallows on the north side of Mitsushima.</p> <p>The master of Vessel was injured and the vessel sank after the hull was split into several blocks.</p>		Probable causes	<p>The cause of this accident is probable the vessel with both anchors disabled, having left port at night for the purpose of avoiding the typhoons, was unable to start the main engine while drifting in the west channel of the Tsushima Strait for the purpose of waiting to enter the Busan port, and was pushed southward by wind and waves, and then grounded on shallows on north side of Mitsushima.</p> <p>It is probable that the vessel left port with both anchors out of service because the vessel was unable to complete repairs to the starboard anchor chain and the port anchor brake due to the typhoon approaching while having been moored at the Busan port.</p> <p>It is probable that the vessel’s main engine did not start because the internal mechanism did not work according to the fuel supply volume setting scale of the governor.</p>		Report	<p>https://www.mlit.go.jp/jtsb/ship/rep-acci/2022/MA2022-7-1_2020tk0009.pdf https://www.mlit.go.jp/jtsb/eng-mar_report/2022/2020tk0009e.pdf</p>	
Date of publication	Date and location	Vessel type and name, accident type														
July 28, 2022	September 23, 2020 Mitsushima, Tsushima City, Nagasaki Prefecture	The cargo vessel CHANG SHUN I Grounding														
Summary	<p>The vessel adrift in the west channel of the Tsushima Strait with the main engine stopped. Since the main engine failed to start, the vessel was pushed by wind and waves and grounded on shallows on the north side of Mitsushima.</p> <p>The master of Vessel was injured and the vessel sank after the hull was split into several blocks.</p>															
Probable causes	<p>The cause of this accident is probable the vessel with both anchors disabled, having left port at night for the purpose of avoiding the typhoons, was unable to start the main engine while drifting in the west channel of the Tsushima Strait for the purpose of waiting to enter the Busan port, and was pushed southward by wind and waves, and then grounded on shallows on north side of Mitsushima.</p> <p>It is probable that the vessel left port with both anchors out of service because the vessel was unable to complete repairs to the starboard anchor chain and the port anchor brake due to the typhoon approaching while having been moored at the Busan port.</p> <p>It is probable that the vessel’s main engine did not start because the internal mechanism did not work according to the fuel supply volume setting scale of the governor.</p>															
Report	<p>https://www.mlit.go.jp/jtsb/ship/rep-acci/2022/MA2022-7-1_2020tk0009.pdf https://www.mlit.go.jp/jtsb/eng-mar_report/2022/2020tk0009e.pdf</p>															

6	Date of publication	Date and location	Vessel type and name, accident type
	August 25, 2022	September 6, 2020 Off the coast of the Nakatahama (Lake Inawashiro), Aizuwakamatsu City, Fukushima Prefecture	Pleasure boat GOKEN III Fatalies and injuries waiting for their turn to board the floating body to be towed
	Summary	<p>When the Vessel with the master and nine other passengers including his/her friends on board was heading north east near the training buoy for small boats laid off the west coast of Nakatahama at Lake Inawashiro, Aizuwakamatsu City, Fukushima Prefecture, and the four people who were waiting for their turn to board the floating body to be towed by the personal watercraft (hereinafter referred to as “Vessel D”) were floating near the training buoy for small boats, the Vessel collided with the waiting floating people and the propulsion equipment, etc., came into contact with them.</p> <p>One of the four waiting floating people was died and two were injured.</p>	
	Probable causes	<p>It is probable that the accident occurred in the situation in which Nakatahama was very congested with pleasure boats, which sailed at various speeds, when the Vessel A headed north east and came close to the waiting people near the pale red-colored buoy (hereinafter referred to “the Buoy”) located at the south end of the east-side row of the two rows of training buoy for small boats (hereinafter referred to as “the Rows of Buoys”), and the four people were in a floating state waiting for their turn to board the floating body to be towed by Vessel D near the buoy, the master of the vessel did not notice the presence of the waiting people near the buoy and caused the Vessel to collide with them and the propulsion equipment, etc., also came into contact with them.</p> <p>It is probable that the reason why the Vessel approached toward the waiting people near the Buoy by proceeding northeast was due to the fact that when the Vessel proceeded east-northeast from her drifting state, the pleasure boat (hereinafter referred to as “Vessel B”) of a friend of the master of the Vessel which was located near the starboard bow turned to the left to head for the left end of the Zaimoku Yama toward the center of the lake to come toward the front of the bow of the Vessel, and with this in sight, the master of the Vessel increased the speed and took the course more on the west side than Vessel B by turning left with the Zaimoku Yama in sight in order to avoid Vessel B and overtake her on the port side.</p> <p>It is probable that the reason why the master of the Vessel did not notice the people waiting to board near the Buoy was due to the fact that since he did not expect that people would be floating near the Rows of buoys off the west coast of Nakatahama from the his past experience, he did not check visually the direction of the Buoy, that he was paying attention to the situation where a plurality of watercraft was speeding off the west coast of the place generating sailing waves and Vessel B was turning to the left, and that when he increased the speed of the Vessel to overtake Vessel B, the visibility to the bow deteriorated and the blind spot was widened.</p> <p>It is probable that the reason why the four people waiting to board were floating near the buoy because the master of Vessel D and his friend, the master of the personal watercraft, were off the east coast of Nakatahama and in the ship navigation area, which was crowded with pleasure boats, etc. The master of the personal water craft moved off the west coast of the beach thinking that it would be possible to operate a personal watercraft on the Lake Inawashiro usage Category Map. At the west coast, he thought that he can immediately detect the status of preparing departure and movements of pleasure boats moored the pier, and only personal water craft groups sail at safety speed or drift around there, so if the pleasure boats came closely, he believed masters of pleasure boats found people. Based on what he thought, it is probable that he intended to tow the towed floating body by personal water craft near the Rows of Buoys.</p> <p>It is probable that the reason why the ship, Vessel D and the people waiting to board were engaged in water sports activities in the preservation-focused zone set off the west coast of Nakadahama was due to the fact that since the zoning of Nakadahama and the usage rules thereof, etc., in the Aizuwakamatsu Zoning Plan were not sufficiently made known to water surface users and business operators using the water surface, there was a situation where water surface users were not well cognizant of the zoning and the usage rules thereof, pleasure boats, personal watercraft, towing of floating bodies to be towed were</p>	

	<p>all mixed up, and they sailed and drove the water areas within 150 m from the shore of the lake at their respective speed regardless of the zoning, etc.</p>	
<p>Safety Actions</p>	<p>Measures taken by the Council to Promote the Basic Plan for the Use of Lake Inawashiro’s Water Surface and relevant parties including its members</p> <p>(1) Holding of the Aizuwakamatsu Regional Subcommittee After the accident, on September 15, 2020, the Aizuwakamatsu Regional Subcommittee was held to share information on and discuss the following matters.</p> <ol style="list-style-type: none"> 1) Water accident at Nakadahama 2) Measures for safe usage and utilization Mainly the zoning at Nakadahama was discussed. (2) Installation of bulletin boards for the usage rules of Nakadahama After the accident, the Aizuwakamatsu Regional Subcommittee installed two A2 size bulletin boards regarding the “Rules for Using Nakadahama” (hereinafter referred to as the “Bulletin board regarding the rules for using Nakadahama”), in which the areas prohibited to be used and the matters that require attention are stated. <ol style="list-style-type: none"> 1) Windsurfers, canoes, personal watercraft, paddle boats, and motorboats are not permitted to enter the prohibited areas. 2) As a general rule, all vessels are obliged to be driven slowly before entering the navigation area. 3) When using a wakeboard, etc., within the navigation area, users shall pay due attention to the safety of the surroundings by keeping a look-out person, etc. 4) When navigating a ship in the bay, users shall pay due attention to the safety of the surroundings (3) Installation of guide buoys in the ship navigation area After the accident, the Nakadahama Ship Safety Association and the Minatomachi Tourism Association installed guide buoys in series in the ship navigation area, thereby all ships are obliged to navigate slowly in the ship guiding area and navigate along the guide buoys in the ship navigation area. (4) Updating and publication of the information on the rules for the use of each beach on Lake Inawashiro. The Secretariat of the Council to Promote the Basic Plan for the Use of Lake Inawashiro’s Water Surface wrapped up the zoning, the use category and others of each beach of Lake Inawashiro, including Nakadahama defined by each regional subcommittee and reported the information to the Advisory Council formed by relevant organizations within the Inawashiro Town, and the Council updated and published the latest version of the Lake Inawashiro’s Category Map on July 1, 2021, by reflecting the information therein. “Lake Inawashiro’s Category Map” https://www.town.inawashiro.fukushima.jp/cb/hpc/Article-25-5351.html 	
<p>Report</p>	<p>https://www.mlit.go.jp/jtsb/ship/rep-acci/2022/MA2022-8-2_2020tk0008.pdf https://www.mlit.go.jp/jtsb/ship/p-pdf/MA2022-8-2-p.pdf (Explanatory material)</p>	
<p>Reference</p>	<p>Major activities in the past year (page 10)</p>	
<p>7</p>	<p>Date of publication</p>	<p>Date and location</p>
<p>August 25, 2022</p>	<p>February 8, 2021 Off the south-southeast coast of Cape Ashizuri-misaki , Tosashimizu City, Kochi Prefecture</p>	<p>Vessel type and name, accident type</p> <p>Cargo ship OCEAN ARTEMIS (Vessel A, Hong Kong) Submarine SORYU (Vessel B) Collision</p>
<p>Summary</p>	<p>When Vessel A with the master and 20 crew members on board was heading northeast toward Mizushima Port, Kurashiki City, Okayama Prefecture and Vessel B with about 90 crew members on board including the captain was heading south-southeast while navigating underwater with a</p> <div style="display: flex; justify-content: space-around;">   </div>	

	<p>part of the periscope over the sea surface by ascending to the periscope depth from the state in which the ship body was fully submerged under the sea surface, they collided with each other off the south-southeast coast of Cape Ashizuri-misaki, Tosashimizu City, Kochi Prefecture.</p> <p>Three crew members of Vessel B were injured and the submarine right rudder (sail) (a single rudder installed on both sides of the hull upper structure) was bent, etc., while the cargo ship sustained dent damage with cracks in the bulbous bow plating.</p>
<p>Probable causes</p>	<p>It is probable that the accident occurred while Vessel A was heading northeast and Vessel B was cruising underwater in a fully submerged state*1, the captain and chief patrol officer*2 determined that there was a sufficient distance to the ship detected with the passive sonar*3 (hereinafter referred to as “the Sonar”) and there was no ship around which might cause problem in navigating at the periscope depth (to navigate underwater with a part of the periscope over the sea surface) and started to proceed south-southeast toward the sea surface on the course of Vessel A that continued to sail without noticing Vessel B under the sea surface and to work for navigating at the periscope depth (work to change the depth to the periscope depth), resulting in the collision with Vessel A.</p> <p>It is probable that the reason why the captain and chief patrol officer determined that there was a sufficient distance to the ship detected with the passive sonar and there was no ship around which might cause problem in navigating at the periscope depth was due to the fact that they evaluated that the azimuth which combined the azimuth (the line drawn by the continuous display over time on the sonar screen*4 of the heading of the radiation sound) of the container ship proceeding west southwest and the azimuth of Vessel A as the azimuth only of the container ship.</p> <p>It is probable that the reason why the captain and chief patrol officer evaluated the azimuth which combined the azimuth of the container ship and the azimuth of Vessel A as the azimuth only of the container ship was due to the following fact.</p> <ol style="list-style-type: none"> (1) Before the fact that the azimuth of Vessel A and that of the container ship overlapped with each other in nearly the same heading, the azimuth of Vessel A was not detected and thus, the azimuth of Vessel A was interpreted as a sound source other than a ship and was not recognized as that of a ship. (2) As they had not been informed of a change in the hearing sound near the azimuth of the container ship, they did not notice the possibility that they had heard the sailing sound of another ship. (3) The azimuth of Vessel A was detected automatically*5 again as the azimuth of the container ship. <p>It is probable that the reason why the chief sonar watchkeeper*6 of Vessel B did not conduct the detection operation of the azimuth of Vessel A and did not report that the hearing sound near the azimuth of the container ship had changed, and the azimuth of Vessel A was automatically detected again as that of the container ship was due to the combination of the following factors.</p> <ol style="list-style-type: none"> (1) Before the fact that the azimuth of Vessel A and that of the container ship overlapped with each other in nearly the same heading, since the sensitivity of the image near the azimuth of Ship A was not high and the sailing sound of a ship was not heard, the azimuth of Vessel A was not recognized as that of a ship. (2) For the reason of the item (1) above, after the overlapping of the azimuth of Vessel A and that of the container ship in nearly the same heading, since the azimuth of a ship continued to be displayed and there was only one container ship near the heading, it was recognized that the azimuth of the container ship continued to be displayed. (3) Since there was the recognition as the item (2) above and it was after the change of the course of own ship when a change in the hearing sound near the azimuth of the container ship was noticed, the change in the hearing sound was interpreted as a change of the hearing sound of the container ship due to the change of the attitude of own ship caused by the change of the course, etc, and it was determined that the change did not pose any emergency or seriousness. <p>Incidentally, it is probable that the reason why the chief sonar watchkeeper of Vessel B did not conduct the detection operation of the azimuth of Vessel A and did not report the change of the hearing sound of the detected ship was due to the fact that the appropriateness of reporting on the detection operation of the azimuth by sonar and the recognition of a change in the hearing sound of the detected ship was up to each crew member in the Japan Maritime Self-Defense Force.</p> <p>*1 “Fully submerged” means a state in which the entire ship hull is submerged under water.</p> <p>*2 “Chief patrol officer” means the officer on duty who steers the ship under the command of the captain</p> <p>*3 “Passive sonar” refers to a technique or device designed to receive and analyze sound waves emitted by sound sources such as other vessels and obtain information on the sound sources (presence, heading, characteristics, etc.), without emitting any sound wave itself. On the other hand, “Active sonar” refers to a technique or device which receives and analyzes sound waves emitted by</p>

	<p>itself and reflected by a distant object and returned to obtain information of the heading of the object and the distance</p> <p>*4 “Sonar screen” refers to a screen that displays the heading on the horizontal axis and the elapsed time, signal level, etc., on the vertical axis, and displays the signal level as an image using luminance, etc.</p> <p>*5 “Automatic detection” refers to the process in which the value of the heading of the emitted sound detected by sonar is automatically displayed continuously on the sonar screen, and when an azimuth is automatically detected, a target number is assigned. On the other hand, the process in which the operator operates each time to cause the value of the heading of the emitted sound by assigning a target number to be displayed is referred to as “manual detection,” and the “manual detection” and “automatic detection” are collectively referred to as “detection operation.”</p> <p>*6 “Chief sonar watchkeeper” refers to the chief sonar technician on duty (person who is engaged in detecting underwater sound sources using SONAR (Sound Navigation and Ranging)).</p>
<p>Safety Actions</p>	<p>Actions Taken by the Japan Maritime Self-Defense Force</p> <p>After the accident, the Japan Maritime Self-Defense Force has taken the following measures to prevent recurrence, and is considering necessary measures for sonar search procedures, criteria for determining the appropriateness of cruising at the periscope depth and future education and training.</p> <ol style="list-style-type: none"> (1) Order on the thorough implementation of the monitoring of the movements of ships sailing on the sea surface during the preparations for cruising at the periscope depth*7 was issued. (2) Education on the re-confirming of the manual for navigating at the periscope depth and education on the similar accidents in the past were given to all submarine crew members. (3) Education on the determination of the attitude of a target is underway to all submarine crew members. (4) Satellite mobile phones were distributed to submarines in action. <p>*7 “Preparations for navigating at the periscope depth” refers to the station in which not only crew members take up their designated positions, but also they search ships in the surrounding with sonar, detect their movements and check the safety for cruising at the periscope depth.</p>
<p>Report</p>	<p>https://www.mlit.go.jp/jtsb/ship/rep-acci/2022/MA2022-8-1_2021tk0001.pdf https://www.mlit.go.jp/jtsb/ship/p-pdf/MA2022-8-1-p.pdf (Explanatory material, in Japanese only)</p>
<p>Reference</p>	<p>Major activities in the past year (page 11) and Chapter 2 (page 28)</p>

9 Provision of factual information in 2022 (marine accidents and incidents)

In 2022, information was provided on one case (marine accident) only, and the details are as follows.

Provision of information on the flooding accident of the passenger ship KAZU I

(Information provided on August 10, 2020)

The Japan Transport Safety Board provided the factual information so far known on the flooding accident of the passenger ship KAZU I occurred off the Kashuni-no-taki waterfall, on the west side of the Shiretoko Peninsula on April 23, 2020 and information on the past marine accidents occurred in the sea areas near Shiretoko Peninsula to the Maritime Bureau of the Ministry of Land, Infrastructure, Transport and Tourism.

Summary of a marine Accident

While Passenger ship KAZU I, with the master and one crew member, and 24 passengers on board, was sailing after leaving the Utoro fishing port in Shari Town, Hokkaido Prefecture at around 10:00 on April 23, 2022, the ship was flooded, after the communication with the master to be disrupted, and it was confirmed that the ship had foundered at a point about 14 km southwest of the lighthouse at the Cape Shiretoko-misaki. A total of 26 people including two crew members and 24 passengers were died or went missing.

Details of the information provided to the Maritime Bureau

The details of the information provided are as attached.

A detailed investigation is scheduled to be conducted to determine the cause of this accident.

* For details of the information provided including the attachment, see the website of the JTSCB.

https://www.mlit.go.jp/jtsb/iken-teikyo/s-teikyo20_20220810.pdf

(Japanese only)

Column

Realization of the Importance of International Cooperation through Investigations Overseas

Marine Accident Investigator

On July 25, 2020, an accident occurred in which a Panamanian-flagged cargo ship operated by a Japanese shipping company grounded on a shallow on the southeastern of Mauritius Island. After the accident, the vessel was buckled and the fuel oil spilled out and was contaminated ashore on the coast of the southeastern of the island, causing oil pollution damage in a wide range of area.

This accident fell under the classification of “a very serious marine casualties” under the international treaties, which was involved by a Japanese merchant fleet. Since it was agreed based on the treaties with Panama in which the ship was registered and Mauritius as the coastal state that Japan would be the marine safety investigating state, the JTSB dispatched an investigation team to conduct the investigations. It was the first time for Japan to dispatch an investigation team for an accident involved a foreign flagged ship in foreign territorial waters.

In June 2022, the JTSB published the outline of the accident confirmed up to that point and the factual information on the grounding ashore as an interim report from the perspective of preventing the occurrence of the same type of accidents in the Japanese merchant fleet. The analysis of the circumstances leading up to the accident was that “while the cargo ship was proceeding west-southwest off the east-northeast coast of Mauritius without a nautical chart with the detailed coastlines of the Mauritius Island, she continued her navigation on a course approaching the island for the purposes of receiving signal for the smartphone of the crew member and grounded on shallows off the southeastern of the island.”

In addition, as measures to prevent recurrence based on the analysis of these circumstances leading to the occurrence of accidents, the analysis says that “it is necessary not only to obtain a nautical chart with the detailed coastlines of the sea area, but also not to approach the coasts for private reasons when the crew member navigates a ship along a coastal area.”

Furthermore, in order to enhance the safety performance of the Japanese merchant fleet in which multiple companies are involved in the operation of their ships like the cargo ship that involved the accident this time and to prevent similar accidents, the JTSB stated an opinion to the Minister of Land, Infrastructure Transport and Tourism in this interim report that instructions should be given to ship management companies and others on crew member training, by the ship management companies and charterers.



Oil spilling out from the grounded vessel



The severed vessel

In this investigation, we met various difficulties in conducting the onsite investigations in a foreign country, including the response to COVID-19. For example, the trial related to the accident was underway and there were restrictions in getting into contact with the crew members including the captain as the parties involved. For these reasons, there were concerns initially about whether or not the necessary investigation could be conducted smoothly.

However, thanks to the understanding and cooperation of the Mauritian government authorities, the JTSB was able to efficiently proceed with interviews with relevant parties, verification of the accident area and the ship, etc. within a limited dispatch schedule. In addition, the JTSB was able to receive a lot of support from the governments of the related countries regarding the investigation procedure for the publication of the aforementioned interim report wrapped up on the basis of these investigations.

This was made possible thanks to the efforts of not only the governments of the related countries, but also the Japanese authorities, such as the Ministry of Foreign Affairs of Japan, including the Embassy of Japan in Mauritius as the diplomatic establishment abroad.

Investigations abroad differ greatly from normal domestic investigations in the fact that a considerable amount of time is required for coordinating matters depending on the circumstances. Through the investigation on this occasion, the JTSB realized the importance of building relationships with related countries based on careful and polite response and of further promoting it with a view to smoothly conducting investigations abroad.

The JTSB will continue to work toward the publication of the final report while maintaining good international cooperative relationships with the governments of related countries.



Visit to the government authorities of Mauritius



Interviews with crew members