

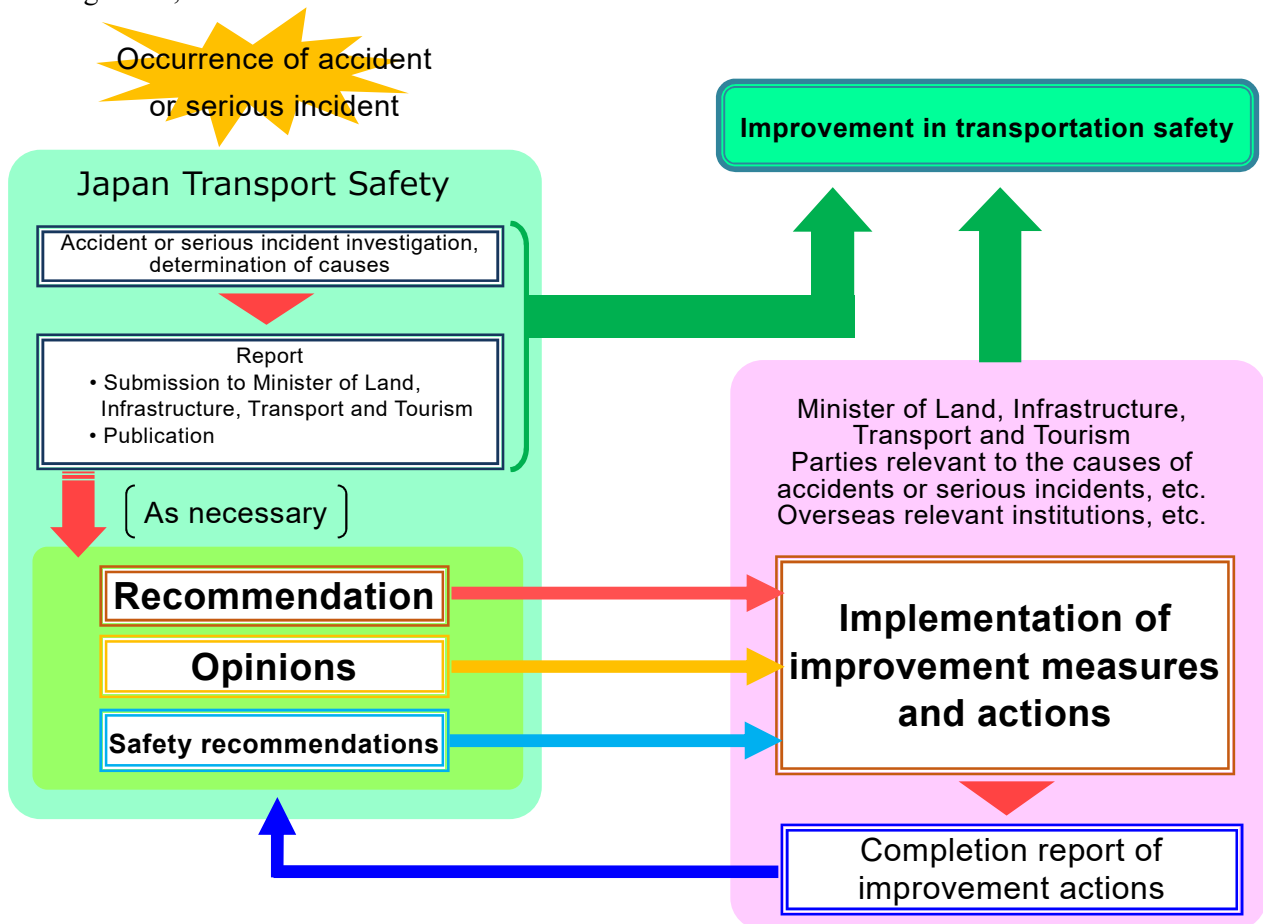
Chapter 2 Summary of recommendations and opinions issued in 2021

In order to fulfill the objectives of the law specified in Article 1 of the Act for Establishment of the Japan Transport Safety Board (hereinafter referred to as "Establishment Act"), the Japan Transport Safety Board has been established as an external bureau of the Ministry of Land, Infrastructure, Transport and Tourism based on the regulations of paragraph (2), Article 3 of the National Government Organization Act (Article 3 of the Establishment Act). Its duty is to accurately conduct investigations identifying the causes of aircraft, railway, and marine accidents and serious incidents, as well as the causes of damage occurring due to those accidents and serious incidents, while also requesting required measures and actions to be taken by the Minister of Land, Infrastructure, Transport and Tourism or parties relevant to the causes of accidents or serious incidents, based on the results of its investigations. (Article 4 of the Establishment Act)

The Japan Transport Safety Board has a system of "recommendations" and "opinions" as important systems along with accurate accident investigations in order to fulfill its mission of improving transportation safety. Specifically, the Japan Transport Safety Board has the ability to give recommendations to the Minister of Land, Infrastructure, Transport and Tourism or parties relevant to the causes of accidents or serious incidents, regarding measures that should be taken for the prevention of accidents or serious incidents, or for reducing their damage, based on the results of its accident investigations. The Minister of Land, Infrastructure, Transport and Tourism must provide notifications to the Japan Transport Safety Board on measures that have been taken based on its recommendations, and if parties relevant to the causes of accidents or serious incidents do not take measures in response to recommendations that have been given, the Japan Transport Safety Board has the ability to publicly disclose that fact. (Articles 26 and 27 of the Establishment Act)

In addition to actions based on individual accident investigation results, if it is recognized to be necessary at an interim stage of investigations or from investigation results of multiple past accidents, the Japan Transport Safety Board has the ability to state its opinions to the Minister of Land, Infrastructure, Transport and Tourism or the directors of related government institutions regarding measures that should be taken to prevent accidents or serious incidents and to reduce their damage. (Article 28 of the Establishment Act)

In the cases of aircraft and marine accidents and serious incidents, the Japan Transport Safety Board may provide recommendations (safety recommendations) on measures that should be taken quickly in order to improve safety, to related overseas institutions or parties as necessary in any stage of accident investigations, based on international treaties.



The recommendations and safety recommendations issued by the Japan Transport Safety Board in 2021 are summarized as follows.

1 Recommendations

(1) Recommendations on the railway accident resulting in casualties occurred at Shin-Sugita Station of Yokohama Seaside Line Co., Ltd.

(Recommendations on February 18, 2021)

Summary of the Accident and Probable Causes

See Chapter 4, page 70.

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

The direct cause of this accident was the breakage of the electric cable in the forward and backward switching circuit of the train, which resulted to start running as the direction of the driving motors was in the inbound direction toward the terminal end of the track. It is probable that the situation, that the confirmation and the arrangement of the designing organizations, etc., the extraction of the safety factors and the verification of the safety, had not been implemented sufficiently in the designing and manufacturing process of the vehicles, was the background of the situation that the dangerous incident in the occurrence of such troubles could not be excluded.

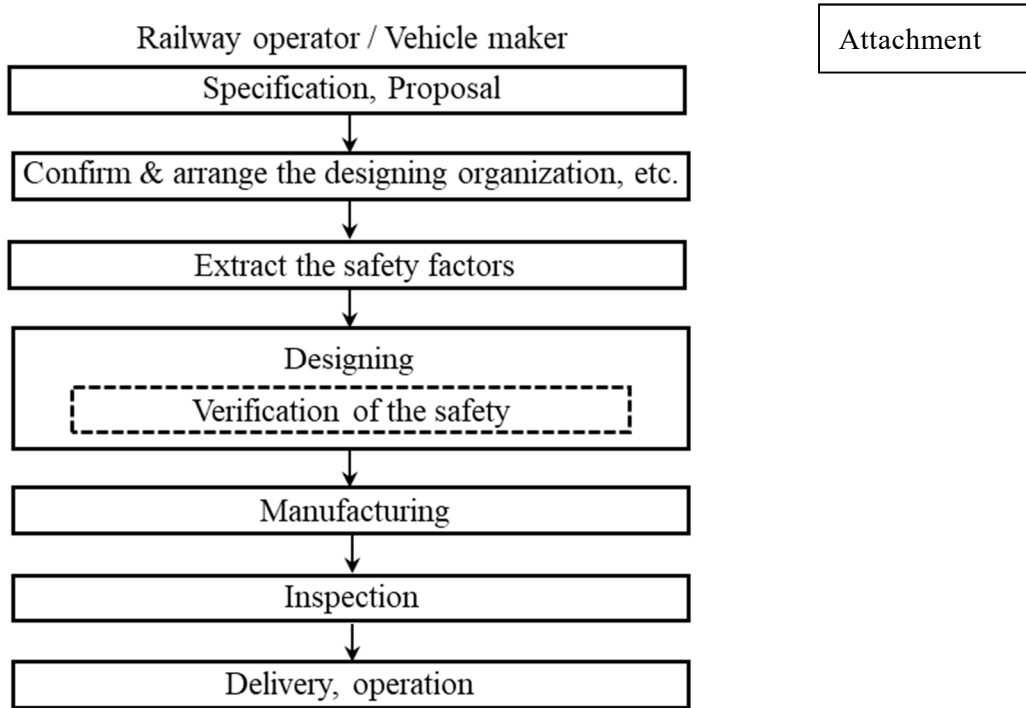
When designing, manufacturing or remodeling of the automatic operation system, etc., of the train, which neither the driver nor the staff to operate the emergency stop procedures boarding on the forefront of the train in the railway and tramway vehicle, in the situation that the vehicle design is advancing in complexity more and more in recent years, it is important to prepare the designing organization to implement the system integration, and extract and evaluate the conditions caused to the dangerous incidents without lack before designing, and reflect these measures as the matters of the safety factors, also it is necessary to manage the safety for the whole life cycle including the manufacturing and the operation. Among them, it is probable that the railway, tramway operators and so on should prepare the phases to confirm and arrange the designing organization, etc., to extract the safety factors carefully, and implement these phases sufficiently, and implement the verification of the safety sufficiently after finished the designing works.

In the view of the result of this accident investigation, the Japan Transport Safety Board recommends the Minister of the Land, Infrastructure, Transport and Tourism pursuant to Article 26, paragraph (1) of the Act for Establishment of the Japan Transport Safety Board, to implement the following measures, in order to prevent the railway accident and to reduce damages when the railway accident had happened.

Recommendations

The Railway Bureau, MLIT, should enforce the instruction on the following matters to the railway and tramway operators and the manufacturers related to the designing and manufacturing of the railway vehicles in the whole country.

- [1] When conduct the design of manufacturing or remodeling of the system to implement the automatic operation of the train which the driver did not boarded, prepare the phases to confirm and arrange the designing organization, etc., to extract safety factors, to verify the safety, and implement each phase sufficiently, referring the designing and manufacturing process shown in Attachment.
- [2] In the phase to confirm and arrange the designing organization, etc., prepare the designing organization to implement the system integration, and confirm and arrange the roles and the sharing responsibility between individual companies, the specifications that each company considered as the standard or considered as general for each device.
- [3] In the phase to extract the safety factors, conduct the systematic safety analysis, etc., corresponding to the characteristics of the system, and arrange the required matters, etc., necessary to secure the safety, in order to be confirmed the safety comprehensively against the abnormal status supposed to happen.
- [4] In the phase to verify the safety, verify the designed results whether the whole system secured the sufficient safety or not, for the safety factors extracted in the above [3].



* For details on the activities of the Japan Transport Safety Board, please see "Major activities in the past year 3" on page 4.

(2) Recommendations on the passenger injury accident involving pleasure boat GURILAND 900

(Recommendations on August 26, 2021)

Summary of the Accident and Probable Causes

See Chapter 5, page 110.

Recommendations to the parties relevant to the causes of accidents or serious incidents

The west-northwest wind gradually getting stronger with a strong wind warning announced, the captain of the pleasure boat GURILAND 900 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 50 cm. For this reason, the boat rode on the first wave with a wave height of approximately 50 cm 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 the impacts the passenger received on the buttocks caused by falling onto the seating surface multiple times.

On vessels operated by the irregular shipping business operator and safety manager and vessel operations controller (hereinafter referred to as "Vessel Business Operator") of passenger transport, a similar case of accident occurred in the past. The Vessel Business Operator has been providing safety education and training and so on to crew members, etc. after the similar case of accident.

However, although the captain of the pleasure boat GURILAND 900 had to stop the standard navigation pursuant to the safety management manual and the navigation standard, he continued to navigate the boat keeping the speed of approximately 18 knots at the time when the standard for decelerating, etc. was reached, consequently the accident occurred.

On the basis of the investigation results, in order to prevent the recurrence of similar cases of accident, the Japan Transport Safety Board submits recommendations pursuant to the provision of Article 27, paragraph (1) of the Act for Establishment of the Japan Transport Safety Board to the Vessel Business Operator as follows:

In addition, it is required to submit a report on measures taken in response to these recommendations pursuant to the same Article, paragraph (2).

Recommendations

The Vessel Business Operator must take the following measures to prevent the recurrence of similar cases of accident.

- (1) The Vessel Business Operator shall ensure its captains and crew members to stop the standard navigation pursuant to the safety management manual and the navigation standard when high waves are recognized, decelerate sufficiently to a speed that is appropriate for the wave height

when the standard for decelerating, etc. is reached, and take other measures to mitigate the vessel oscillation.

- (2) The Vessel Business Operator shall instruct its captain to convey instructions using a loudspeaker, etc., and also to confirm that the instructions have been certainly conveyed to passengers by carefully monitoring the movements of passengers because oral instructions provided by the captain may not be conveyed to passengers due to the influences of winds and/or engine noise while the boat is traveling.
- (3) The Vessel Business Operator shall not allow elderly passengers, etc. to sit on front seats as much as possible. If it is impossible to securely provide rear seats for elderly passengers, etc., allocate those passengers to another vessel for safety reason.

(3) Recommendations on the collision between cargo ship SENSYO MARU and cargo ship SUMIHO MARU

(Recommendations on December 16, 2021)

Summary of the Accident and Probable Causes

See Chapter 5, page 111.

Recommendations to the parties relevant to the causes of accidents or serious incidents

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 thick fog, while SENSHO MARU was traveling southwest and SUMIHO MARU was traveling northeast, both ships were approaching dead ahead. In that situation, while SENSHO MARU was approaching up to about 1,600 meters to SUMIHO MARU, SENSHO MARU turned right keeping the speed to navigate by port side to port side, and while SUMIHO MARU was approaching up to about two nautical miles to SENSHO MARU, SUMIHO MARU 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, it was late to notice they are approaching each other, resulting in collision.

In this accident, if the navigation officer on duty on both of the ships confirmed the movement of each other on the radar screen and also used acoustic signals or communicated each other through VHF earlier, it is probable that they could have been taken measures to avoid the collision by decelerating, etc. while confirming mutual movements and operational intentions.

In addition, if the individual captains were notified by their navigation officer on duty 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 been able to confirm mutual movements and operational intentions, leading to the avoidance of the occurrence of this accident.

Therefore, on the basis of the investigation results, in order to prevent the recurrence of similar cases of accident, the Japan Transport Safety Board submits recommendations pursuant to the provision of Article 27, paragraph (1) of the Act for Establishment of the Japan Transport Safety Board to the NS United Kaiun Kaisha, Ltd. and Otokura coastal shipping cooperative partnerships as follows:

In addition, it is required to submit a report on measures taken in response to these recommendations pursuant to paragraph (2) of the same Article.

Recommendations

- (1) NS United Kaiun Kaisha, Ltd. and Otokura coastal shipping cooperative partnerships shall continuously instruct crew members of their operating vessels to communicate with other ships using VHF and acoustic signals where approaching other ships under the condition of limited visibility.
- (2) NS United Kaiun Kaisha, Ltd. and Otokura coastal shipping cooperative partnerships shall continuously instruct crew members of their operating vessels to know the importance of instructions given by their captain on the bridge and reinforce the watch system under the condition of limited visibility.

2 Opinions

(1) Opinions on the railway accident resulting in casualties occurred at Shin-Sugita Station of Yokohama Seaside Line Co., Ltd.

(Opinions on February 18, 2021)

Summary of the Accident and Probable Causes

See Chapter 4, page 70.

Content of the opinions to the Minister of Land, Infrastructure, Transport and Tourism

When designing, manufacturing or remodeling of the automatic operation system and others, of the train, which the driver nor the staff to operate the emergency stopping procedures boarded on the forefront of the train in the railway and tramway vehicle, it is important to extract and evaluate the conditions to cause the dangerous incidents without lack before designing, and reflect these measures as the matters of the safety factors, also it is necessary to manage the safety for the whole life cycle including the manufacturing and the operation.

Therefore, accompanied with the "recommendations on the railway accident resulting in casualties occurred at Shin-Sugita Station of Yokohama Seaside Line Co., Ltd." (UN-I-SAN No. 99; hereinafter referred to "Recommendations") issued to the Minister of Land, Infrastructure, Transport and Tourism as of today's date, the Japan Transport Safety Board, the JTSB expresses its opinions as follows to the Minister of the Land, Infrastructure, Transport and Tourism pursuant to Article 28 of the Act for Establishment of the Japan Transport Safety Board, as the measures to be implemented in order to prevent the accidents and incidents when the automatic operation system spread in the future.

In addition, it would be appreciated if the content of any measures taken in response to these opinions are notified to the Japan Transport Safety Board.

Recommendations

The Railway Bureau of the MLIT, preparing for the spread of the automatic operation system in the future, study on the institutionalize individual matters described in Recommendations, in the view point to prevent the occurrence of the latent causes for the dangerous incidents when implemented designing, manufacturing or remodeling of the system.

* For details on the activities of the Japan Transport Safety Board, please see "Major activities in the past year 3" on page 4.

3 Safety Recommendations

(1) Collision accident between container ship APL GUAM, container ship MARCLIFF, and container ship HANSA STEINBURG

(Safety Recommendations on February 18, 2021)

Summary of the Accident and Probable Causes

See Chapter 5, page 101.

Safety recommendations to the parties relevant to the causes of accidents or serious incidents

In view of the results of this accident investigation, the Japan Transport Safety Board recommends that APL MARITIME Ltd., which is the management company of APL GUAM, and MARCONSULT SCHIFFFAHRT GMBH, which is the management company of MARCLIFF take the following measures for the purpose of preventing the recurrence of similar accidents.

APL MARITIME Ltd. and MARCONSULT SCHIFFFAHRT GMBH should instruct the captains, etc. of all the vessels that they manage or operate to ensure to implement the following matters.

- (1) Avoid a situation on large vessels as much as possible, in which there is an anchoring vessel whose course intersects another vessel's in the anchored area which is narrow.
- (2) Captains shall confirm mutually their operational intentions earlier by proactively and appropriately communicating using VHF without judging with an assumption about the movement of an approaching vessel if any.
- (3) Captains shall consider the situation of see-going vessels, anchored vessels and so on surrounding their vessels, and judge if their vessels may significantly approaching to or colliding with other vessels. If they judge that their vessels collide with other approaching vessels, they shall take measures to avoid collision at a sufficiently earlier timing for deceleration, etc.

* For details on the activities of the Japan Transport Safety Board, please see "Major activities in the past year 5" on page 7.

(2) Foundering accident involving cargo ship JIA DE

(Safety Recommendations on February 18, 2021)

Summary of the Accident and Probable Causes

See Chapter 5, page 103.

Safety recommendations to the Panama Maritime Authority

It is probable that the accident occurred because the cargo vessel JIA DE 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. It is probable that this situation began while JIA DE was anchoring in the nighttime under conditions of rolling and pitching 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.

It is probable that the Retained Water on the deck of JIA DE 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 part of the panels of the hatch covers 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 freeboard had been decreasing due to ingress water into the interior of the cargo holds and the Retained Water.

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 the 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 supply line, and then the diesel generator engines experienced combustion failure or misfiring, and subsequently stopped, and thereby the blackout occurred.

In view of the results of this accident investigation, the Japan Transport Safety Board recommends that the Panama Maritime Authority, the Republic of Panama (hereafter referred to as “Panama”) as the flag state of JIA DE should take the following measures to prevent similar accidents and to reduce damage.

The Panama Maritime Authority, Panama should instruct the Owners and the Management Companies (hereafter referred to as "the Companies") of Panama flag vessels to engage in the following practices due to securing safety for crew members and vessels in stormy weather and rough seas.

- (1) The Companies should instruct masters and crew members to reliably carry out closing of opening parts on exposed decks such as lids of opening parts of ventilation cylinders of cargo holds, etc. in case that stormy weather and rough seas are expected.

- (2) The Companies should instruct masters and crew members to secure significant freeboard in any sea condition, and therefore should crew members to carry out adjustment of the ship's condition.
- (3) The Companies should instruct masters and crew members to carry out the drain discharging operation in which each drain valve of fuel oil tanks is operated not only periodically as routine work, but also on a timely basis in a condition of rolling and pitching in stormy weather and rough seas so as not to supply fuel oil with infiltrated water into the fuel oil supply lines such as generator engines in case that air vent pipes of fuel oil tanks were not equipped automatic opening and closing-type air vent head, etc. to automatically prevent the infiltration of water.
- (4) The Companies should instruct masters and crew members to conduct refresher training for crew members concerning survival techniques at sea for getting ready for abandon ship, such as taking out belongings, escape behavior from the interior of the vessel, putting on a life jacket and immersion suit, dressing warmly, etc.
- (5) The Companies should implement maintenance necessary including the water receiver railings of the hatch cover to secure weather-tightness of the hatch cover of the cargo holds themselves with regard to the vessels managed and owned by the Companies.

(3) Accident involving fatality of the crew member of cargo ship FIRST AI

(Safety Recommendations on June 24, 2021)

Summary of the Accident and Probable Causes

See Chapter 5, page 108.

Safety recommendations to the parties relevant to the causes of accidents or serious incidents

In view of the results of this accident investigation, the Japan Transport Safety Board recommends that JANGHO SHIPPING Co., Ltd., which is the management company of FIRST AI, takes the following measures for the purpose of preventing the recurrence of a similar accident and reducing damage.

1. JANGHO SHIPPING Co., Ltd. should make the crew of ships under their management aware of the danger of being caught in the hatch cover and instruct them not to pass through the space between the winding drum and the hatch coaming unless it is absolutely necessary. Furthermore, when it is unavoidable to work under the panel, the crew should be instructed to take measures to prevent falling before starting the work.
2. If the hatch covers of vessels managed by the company are damaged, JANGHO SHIPPING Co., Ltd. should carry out appropriate repairing measures before opening and closing them.