# **Chapter 6 Information dissemination for accident**

#### 1 Information dissemination for accident prevention

The JTSB prepares and issues various publications and individual reports regarding specific cases to better understand the efforts to prevent recurrence and contribute to accident prevention.

We place these publications on our website and, in order to make them more accessible to the public, we also introduce them through our JTSB E-Mail Magazine service (only available in Japanese).

The e-mail magazine distribution service is being used by people, including aviation, railway, and shiprelated businesses, government agencies, and educational and research institutions.

Moreover, from FY2020 to FY2022, we are exchanging opinions with business operators and other parties regarding how the JTSB should disseminate its information and an effective and appropriate dissemination method. Also in the future, we will make improvements based on opinions we receive.



#### 2 Issuance of the JTSB Digest

With the aim of fostering awareness of safety, and preventing similar accidents from occurring, we issue "JTSB Digests." This publication introduces you to statistics-based analyses and must-know cases of accidents.

We also issue the English version of "JTSB Digests" as part of our efforts to disseminate information overseas.

In 2023, we released four issues of "JTSB Digest" (February, August and September: Issue Nos. 40 to 43).

# (1) JTSB Digest No. 40 [Digest of Marine Accident Analyses] "For Prevention of Accidents Caused by Dozing Watchkeepers on Cargo ships and Tankers" (issued on February 14, 2023)

This issue introduces the occurrence and case studies of drowsy navigation that can lead directly to dangerous maritime accidents such as grounding or collision due to negligence in the lookout. If such accidents occur, they may develop into serious accidents causing damage to coastal areas, such as oil spills from cargo ships or tankers.

- Statistics on accidents caused by dozing
- Case studies of accidents caused by dozing
- Column "Inattention is not a cause but a consequence: Chronic sleep deprivation doesn't prevent dozing!" etc.

(2) JTSB Digest No. 41 [Digest of Marine Accident Analyses] "Safe navigation of recreational fishing vessels For prevention of accidents involving vertebral fractures of anglers" (issued on February 16, 2023)

Due to the frequent occurrence of accidents where passengers on recreational fishing vessels suffer spinal fractures and other injuries caused by the vertical movement of the boats or falling overboard, this issue introduces the occurrence and case studies of such accidents, along with key points for preventing these accidents.

- · Situations where accidents occurred due to pitching
- · Cases of accidents due to pitching
- · Questionnaire survey results on initiatives to prevent accidents due to pitching of the bow, etc.

(3) JTSB Digest No. 42 [Digests of Aircraft Accident Analysis] "For

## Prevention of Accidents of Small Aircraft -Do you know flight data monitoring device (FDM)?" (issued on August 29, 2023)

This issue features flight data monitoring (FDM) devices that can record information such as an aircraft's position, altitude, and other data during the flight, as well as audio and video from the cockpit. It introduces how the information obtained from FDM can contribute to safe operations by improving pilots' skills and managing risks in daily operations. It also explains how equipping many aircraft with FDM can enhance the availability of objective flight information, thus contributing to the prevention of accident recurrence.

- · Data of recent aircraft accidents
- What is a flight data monitoring device (FDM)?
- · Utilization of information stored in FDM by operators for safe operations
- · Importance of objective information in terms of accident investigations
- Usefulness of information in accident analysis
- Trends of overseas investigation authorities

This Digest was introduced in aviation industry newspapers and quarterly magazines promoting the safe operation of small aircraft.





# (4) JTSB Digest No. 43 [Digests of Analyses of Railway Accidents] "Accident Prevention Measure in Local Railway (issued on September 26, 2023)

Regarding local railways as an essential means of transportation for residents, this issue shows that many train derailments are caused by factors related to the maintenance conditions of tracks and other ground facilities. Additionally, it highlights that means make as shell being the pressions.

facilities. Additionally, it highlights that measures such as abolishing the crossings are often not taken after level crossing accidents at class 3 and class 4 level crossings. The "JTSB Digest" analyzes each issue, introducing case studies and technical support systems, and discusses accident characteristics, current problems, and necessary safety measures.

- · Status of occurrence of accidents and necessary safety measures
- Cases of the accident investigations (train derailment accident caused by track)
- Cases of the accident investigations (Level crossing accidents at the class 3 and class 4 level crossings)
- Introduction of the support systems to prevent accidents

This Digest was featured in industry newspapers related to transportation.

## [Link to the page featuring the "JTSB Digests"]



https://www.mlit.go.jp/jtsb/bunseki-kankoubutu/jtsbdigests/jtsbdi\_backnumber.html https://www.mlit.go.jp/jtsb/jtsbdigests\_e.html



## 3 Issuance of the Analysis Digest Local Office Edition

The JTSB has issued the analysis digest in the local office edition (only available in Japanese). It has issued this publication to provide various kinds of information to help prevent marine accidents. The information is based on the analyses made by our regional offices and relates to specific accidents that occurred in their respective jurisdictions. This information focuses on cases with characteristic features such as the sea area, vessel type, and accident type.

(Analysis Digest Local Office Edition in 2023)

	Preventing capsizing accidents of pleasure boats	~●####################################
Sendai	(Main contents) • The occurrence of capsizing accidents • Causes of capsizing accidents • Case studies of capsizing accidents • Summary	<page-header><section-header><section-header><section-header><text><text><text><text><text></text></text></text></text></text></section-header></section-header></section-header></page-header>



Kobe	Enjoy Safe and Fun Recreational Fishing!—Wakasa Bay (Main contents) · Characteristics of Wakasa Bay · Trends in accidents related to recreational fishing vessels in Wakasa Bay · Case studies of collision accidents · Summary	<page-header><section-header></section-header></page-header>
Hiroshima	Learn About Fisheries in the Seto Inland Sea for Safe Navigation! (Main contents) • The occurrence of collision accidents between large ships and fishing vessels • The occurrence of accidents where large ships damaged aquaculture facilities, etc. • Accident locations (Marine accident hazard map) • Case studies of accidents • Summary—Towards the prevention of similar accider	<section-header><section-header><section-header><section-header><text><text><text><text><text></text></text></text></text></text></section-header></section-header></section-header></section-header>
Nagasaki	Towards safe and secure fishing—Preventing roller entanglement accidents on fishing vessels (Main contents) ·Occurrence of accidents ·Factors causing accidents ·Summary	<text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text><text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text></text>
Naha	Prevent electrical fires on fishing vessels (Main contents) · The occurrence of fire accidents on fishing vessels · Case studies of fire accidents · Electrical knowledge · Inspection of electrical equipment on deck · Conclusion	<page-header><image/><section-header><section-header><section-header></section-header></section-header></section-header></page-header>

[Link to the page featuring analysis digest in the local office edition]

https://www.mlit.go.jp/jtsb/bunseki-kankoubutu/localanalysis/localanalysis\_new.html (Japanese)



Japan Transport Safety Board Annual Report 2024

As you read these local office digests, you can not only find out the circumstances of local accidents, but can also gain some tips for accident prevention. The local offices will make further efforts to regularly issue the analysis digest local office editions. By doing so, they will ensure that you will be provided with more satisfactory content.

## 4 Issuance of the JTSB Annual Report

In order to publicize the JTSB's general activities in 2022 and prevent the occurrence of accidents based on what was learned in past accidents, the JTSB issued the "JTSB Annual Report 2023" in March 2023.

As part of our efforts to provide information overseas, we issued the English version of the report "Japan Transport Safety Board Annual Report 2023" in December 2023. We did so to let people overseas know about the topics in this Annual Report.

[Link to the page featuring the JTSB Annual Report] <u>https://www.mlit.go.jp/jtsb/bunseki-</u> <u>kankoubutu/jtsbannualreport/jtsbannualreport new.html</u> <u>https://www.mlit.go.jp/jtsb/jtsbannualreport2023.html</u>

## **5** Preparation of safety leaflet

The JSTB creates leaflets that concisely summarize information useful for accident prevention, thus utilizing them to disseminate safety-related information.

In 2023, the JSTB created a leaflet to publicize this page to many people in conjunction with the publication of the special safety awareness page "For Safe Flight of Ultralight Planes and Other Aircraft" (for details, refer to Section 8, page 122 of this chapter).

The JTSB promotes safety awareness and dissemination by publishing on its website, distributing through related organizations, and handing out materials at outreach lectures.

> Safety awareness leaflet for "For Safe Flight of Ultralight Planes and Other Aircraft"

[Link to the page featuring safety awareness leaflets

<u>https://www.mlit.go.jp/jtsb/keihatuleaflet.html</u> (Japanese)









# A Story of Scallop Fishing

# Hakodate Office Secretariat

Scallops, popular as return gifts for hometown tax donations, are delicious whether eaten as sashimi, grilled with butter and soy sauce, or fried. Did you know that there are two main methods of scallop fishing: the seabed sowing method and the suspended culture method?

## Seabed Sowing Method

This method involves releasing juvenile scallops into the sea, allowing them to grow for two to four years, and then catching them using dredge nets. It is mainly practiced along the coast of the Sea of Okhotsk, and scallops caught using this method are sometimes referred to as "natural products."



#### **Suspended Culture Method**

In this aquaculture method, holes are drilled into the shells of juvenile scallops, which are then tied to ropes or placed in baskets and suspended in the sea to grow for one to two years before being harvested. This method is practiced in Uchiura Bay in southern Hokkaido and along the coast of the Sea of Japan.



Combined, the catch from the seabed sowing method and the harvest from the suspended culture method in Hokkaido account for over 80% of the national production. Each fishing method has inherent dangers. In the five years since 2019, there have been three accidents involving the handling of dredge nets in the seabed sowing method and 13 accidents involving the use of fishing machines to haul up scallops in the suspended culture method.

#### Examples of Accidents in Each Fishing Method

#### **Seabed Sowing Method**

While retrieving a dredge net weighing several hundred kilograms, the crew was caught between the beam of the dredge net and the hull and injured.

#### **Suspended Culture Method**

While retrieving scallops suspended in the sea, the crew was injured by getting their hand caught in the winch.



Dredge net

Winch

The Hakodate Office will continue to carry out timely and accurate accident investigations and actively disseminate information that helps prevent recurrence and mitigate damage. We are committed to ensuring that everyone involved in scallop fishing can operate safely.

#### 6 Dissemination of information to prevent accidents involving pleasure boats,

#### recreational fishing vessels and fishing vessels

Regarding the number of vessels by ship types involved in marine accidents occurred in 2023 and investigated by the JTSB, the highest number was that of fishing vessels with 257 (32.2%), followed by pleasure boats with 175 (22.0%), and these two types of ships account for 50% or more of the total. In addition, recreational fishing vessels with 56 (7.0%) accounted for a high percentage of the total.

Regarding the number of vessels by ship types involved in marine incidents occurred in 2023, the highest number was that of pleasure boats with 93 (62.4%), followed by fishing vessels with 16 (10.7%) and these two types of vessels account for about 70% of the total, as well as recreational fishing vessels with six (4.0%).



Number of ships involved in marine accidents and incidents occurred in 2023

In addition, the number of accidents involving small vessels, such as pleasure boats, recreational fishing vessels, fishing vessels, with less than 20 tons of the marine accidents investigated by the JTSB reached 624 mainly including pleasure boats and fishing vessels and accounted for 60.6% to the total number of marine accidents investigated in 2023.

Given the occurrence and trends of accidents involving pleasure boats, recreational fishing vessels, and fishing vessels, the JTSB regularly publishes digests and regional analysis collections to help operators of these vessels prevent similar accidents from recurring or occurring in the first place. These publications are available on its website, and upon request from related organizations, the JTSB also provides printed materials.

Notably, pleasure boats tend to have a high occupancy rate in accidents or incidents, with collision accidents accounting for about 30% of these accidents or incidents and operational inability incidents such as engine failures accounting for about 30%. To help prevent the recurrence and occurrence of similar accidents, the JTSB continuously publishes content titled "For Safe Navigation of Pleasure Boats" on its website, featuring pre-departure inspection, maintenance tips, lookout techniques, and regional alerts. This content is updated alongside its publications, such as digests, regional analysis collections, leaflets, and the JTSB web search system to strengthen the dissemination of safety awareness information.

In addition to the publications mentioned above, the JTSB website features web content titled "For Safe Navigation of Pleasure Boats," which aggregates safety information based on accident investigation reports. The JTSB also provides the marine accident hazard map, allowing users to search and display accident locations, types, and summaries based on its accumulated accident investigation reports. Furthermore, the JTSB provides an overview of the usage of the Small Ship Engine Trouble Search System (S-ETSS), which allows users to search for accidents involving specific engine types or parts of small ships. The JTSB encourages the organic use of these resources to help prevent accidents.

These search systems, like the "For Safe Navigation of Pleasure Boats" content, can be accessed from its website. The JTSB also includes QR codes below for your convenience.

As mentioned above, the "Marine Accident Hazard Map" allows users to search for accident summaries based on accident investigation reports, including information on shipping traffic and fishing grounds. Besides the



Page for "For Safe Navigation of Pleasure Boats"

web version, a mobile version of the marine hazard map is also available for operators to use on-site. The mobile version features touch panel-compatible buttons and layout for improved usability, and it uses the mobile device's GPS function to display information near the users' current locations, making it easy for users of small vessels such as pleasure boats and recreational fishing vessels to check accident information and navigation-related information for the intended navigation areas.

Please note that the introduced marine accident hazard map and S-ETSS are free (users are responsible for communication fees).

[Web content "For Safe Navigation of Pleasure Boats"]



https://www.mlit.go.jp/jtsb/guide/pleasure.html (Japanese)

[Marine Accident Hazard Map]



https://jtsb.mlit.go.jp/hazardmap/

https://jtsb.mlit.go.jp/hazardmap/index\_en.html

[Small ship Engine Trouble Search System (S-ETSS)]



<u>https://jtsb.mlit.go.jp/hazardmap/s\_etss/</u> (Japanese)



#### [Marine Accident Hazard Map] Example of search and display screen from the website

[Mobile Version of Marine Accident Hazard Map] Awareness leaflet and example of display screen





When searching an accident involving an engine itself and an electrical system in the engine layout of your vessel



# 7 Dissemination of information to prevent accidents of medium and large vessels of 20 gross tons or more

In 2023, the JTSB investigated accidents involving vessels of 20 gross tons or more, including general cargo ships, tankers, passenger ships, fishing vessels, and others (various work vessels, public-service vessels, etc.). Cargo ships accounted for the highest number of accidents, with 127 vessels (52%), followed by 33 passenger ships (14%), making up about 70% of the total for these two types of vessels.

Furthermore, looking at the types of accidents for these two vessel types, collisions were the most frequent for cargo ships, with 78 cases (61%), followed by groundings with 30 cases (24%), and injuries or fatalities with 5 cases (4%). For passenger ships, collisions were also the most frequent, with 12 cases (36%), followed by injuries or fatalities with 6 cases (18%), and groundings with 5 cases (15%).

This shows that the common accident trends for these two vessel types are mostly due to collisions in congested waterways and near coastal navigation routes and groundings due to positional errors during close coastal navigation.

Additionally, there were 33 incidents involving commercial vessels, passenger ships, and fishing vessels of 20 gross tons or more each year due to engine maintenance issues or blackouts. Incidents like loss of propulsion can often lead to serious secondary disasters, so it is important to prevent the recurrence and occurrence of such incidents.

Therefore, to prevent accidents involving commercial vessels, passenger ships, and fishing vessels of 20 gross tons or more, not only operational factors but also the owners and operators of these vessels should make organic use of the JTSB's publications such as digests and regional analysis collections, along with the marine accident hazard map and Engine Trouble Search System (ETSS).

The JTSB developed the Engine Trouble Search System in response to requests from maritime stakeholders for a device to search and utilize accident investigation reports related to engine parts failures, and the system has been operating since April 2019. Users can easily view the relevant accident investigation reports by searching for engine parts on the web interface.

[Engine Trouble Search System (ETSS)



https://jtsb.mlit.go.jp/hazardmap/etss/ (Japanese)

# 8 Website summarizing information on the prevention of aircraft accidents —For safe flight of ultralight planes and other aircraft

In March 2023, the JTSB launched a special page on its website titled "For Safe Flight of Ultralight Planes and Other Aircraft," which compiles information on preventing accidents involving ultralight planes, gyroplanes, and homebuilt aircraft.



Ultralight and similar aircraft are  $\bigcirc \land$  simple-structured aircraft that have become

popular for sky leisure activities. From 2001 to 2022, there have been 59 accidents involving these aircraft. Among these accidents, 78% resulted in fatalities or serious injuries, and 87% resulted in significant or moderate damage to the aircraft. This rate is higher than that of small aeroplanes and helicopters, indicating that ultralight aircraft and similar aircraft accidents lead to more severe consequences.

In order to prevent accidents, it is effective to reduce risks by focusing on the underlying factors (safety risks) that lead to the causes of accidents and avoiding the situations that cause them. This special page highlights the main factors contributing to accidents (inappropriate piloting, weather (wind) influences, lack of knowledge,



Banner and part of the contents from the special page

skill, or experience, issues with the aircraft or parts, and improper inspections, maintenance, and assembly) identified from analyzing accident investigation reports. It introduces safety points along with case studies of accidents.

Please note that this special page will be updated periodically with new information. Use it as a reference to enjoy safe flying.

[Link to the special page summarizing information on aviation accident prevention

-For safe flight of ultralight planes and other aircraft]



https://www.mlit.go.jp/jtsb/guide/microlight.html (Japanese)

# 9 Website summarizing information on the prevention of level crossing accidents

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## —To prevent level crossing accidents from occurring

In February 2021, the JTSB posted the "To prevent level crossing accidents from occurring," summarizing information on the prevention of level crossing accidents, on our website.

Level crossing accidents comprise a large percentage (40.0%) of the overall railway operation accidents (in 2021). In particular, level crossings (classes 3 and 4) where crossing gates are not

installed have higher accident risk, comparing to level crossings (class 1) where level crossing safety equipment (crossing gate, road warning device) is installed, therefore it is important to comply with rules when crossing level crossings, and also take measures, such as abolishing level crossings without such safety equipment or installing such safety equipment (i.e., upgrading to class 1 level crossings).

The promotion of such measures needs to be understood by many people, including the users. Therefore, the JTSB has been

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Web page on "To prevent level cross accidents from occurring"

calling for complying with the rules for crossing level crossings with slogans, e.g., "Stop, look, and listen" for users of level crossings. Moreover, for railway operators, road administrators, and other relevant parties, we provide examples of initiatives, e.g., abolishing level crossings, as references for proceeding with discussions and taking measures in order to prevent accidents, so we hope referring them to reduce level crossing accidents.

[Web page on "To prevent level cross accidents from occurring"]
<u>https://www.mlit.go.jp/jtsb/guide/fumikiri.html</u> (Japanese)

#### 10 Outreach lectures (dispatch of lecturers to seminars, etc.)

The JTSB holds a series of outreach lectures as part of its efforts to raise awareness on the work of JTSB, and to create an opportunity for collecting the feedback and opinions of the general public. Seminars that lecturers can be dispatched to cover topics that are useful in preventing or reducing damage from aircraft, railway, and marine accidents. The JTSB staffs are dispatched to or remotely participated in various seminars and schools as lecturers.

We can provide flexible support for the content of lectures, such as by incorporating content to match the needs of participants, based on courses chosen by requesting groups. In 2023, a total of 20 outreach lectures were conducted, including those held by local offices.



Scene of an outreach lecture

[Link to the page for outreach lectures]



From the links below, you can check the list of outreach lectures, how to apply for them, and the implementation results by year.

https://www.mlit.go.jp/jtsb/demaekouza.html (Japanese)

#### List of outreach lectures

No	Course	Main targets	Contents
1	About the Japan Transport Safety Board	General (High school students and older), transportation businesses, etc.	Easy-to-understand explanation about the organizational background, work etc. of the JTSB
2	What is accident investigation?	Elementary school students and older	Easy-to-understand explanation about accident investigation for elementary school students and older
3	About aircraft accident investigation	General (High school students and older), aviation businesses, etc.	Easy-to-understand explanation about aircraft accident investigations, including the background, concrete examples, etc.
4	About railway accident investigation	General (High school students and older), railway businesses, etc.	Easy-to-understand explanation about railway accident investigations, including the background, concrete examples, etc.
5	About marine accident investigation	General (High school students and older), maritime businesses, etc.	Easy-to-understand explanation about marine accident investigations, including the background, concrete examples, etc.
6	About marine accident investigation (fire, explosion, engine failure)	General (High school students and older), maritime businesses, etc.	Explanation about marine accident investigations related to fire, explosion and engine failure, including the background, concrete examples, countermeasures, etc.
7	About the JTSB Digests	General (High school students and older), transportation businesses, etc.	Introduction to case studies of accidents and explanation of various statistical materials across various modes, based on the JTSB Digests that have been issued to date.
8	About the JTSB Digests (Analyses of Aircraft Accidents)	General (High school students and older), aviation businesses, etc.	Explanation about various themes taken up in the analyses of aircraft accidents in the JTSB Digests.
9	About the JTSB Digests (Analyses of Railway Accidents)	General (High school students and older), railway businesses, etc.	Explanation about various themes taken up in the analyses of railway accidents in the JTSB Digests.
10	About the JTSB Digests (Analyses of Marine Accidents)	General (High school students and older), maritime businesses, etc.	Explanation about various themes taken up in the analyses of marine accidents in the JTSB Digests.
11	Trends in the occurrence of marine accidents, and preventing recurrence	General (High school students and older), maritime businesses, etc.	Schematic explanations about risks and waters where marine accidents frequently occur using the J-MARISIS, and explanations about accident prevention methods.
12	Analysis digests local office edition (marine accident- related) [each regional office in Hakodate, Sendai, Yokohama, Kobe, Hiroshima, Moji, Nagasaki, and Naha]	General (High school students and older), maritime businesses, etc.	Explanations on each topic regarding analysis digests from regional offices. *Lists can be found by clicking the link below. <u>https://www.mlit.go.jp/jtsb/bunseki-</u> <u>kankoubutu/localanalysis/localanalysis_new.html</u>

\*No. 12, in principle, is restricted to requests from the areas under the jurisdiction of the local office.

## Flow chart from application to implementation of lecture



#### 11 Activities of the Accident Victim Information Liaison Office

The Japan Transport Safety Board gives full consideration to the emotions of the victim and their families, as well as bereaved families. In addition to providing information on accident investigations in an appropriate manner at the appropriate time, a contact point for providing accident investigation information to victims, etc. was established in April 2011 with the aim of providing attentive response to opinions and feedback. Furthermore, in order to promote the provision of information, the Accident Victim Information Liaison Office was established under the directive of the organization in April 2012. Contact points for the provision of information were also set up in local offices to provide integral support alongside with Tokyo.

In 2023, information on accident investigation and other matters was provided to 38 persons, including the 15 cases of aircraft/railway/marine accidents.

Regarding the foundering of the passenger ship KAZU I that occurred on April 23, 2022, explanations were provided to the victims' families during the public hearing and the publication of the accident investigation report (for details, please refer to Chapter 5, page 104).

The Accident Victim Information Liaison Office hands out "Contact Information Cards" to victims of accidents.

The Office receives inquiries and consultation about the accident investigations from victims and families of accidents, as well as bereaved families. Please feel free to contact the following where necessary.



#### **Contact Information Cards**