

Chapter 6 Efforts toward accident prevention

1 Publications

The JTSB prepares and issues various publications, as well as investigation reports, regarding specific cases.

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

Our e-mail magazine service is widely used by people in the aviation, railway, and shipping industries, as well as administrative agencies and educational/research organizations.

We also exchange opinions with business operators and other parties on effective information dissemination from the JTSB, and we will continue to make improvements based on the opinions that we receive.

JTSB Website

The screenshot shows the JTSB website interface. At the top, there is a navigation bar with the JTSB logo, the text '運輸安全委員会 Japan Transport Safety Board', and various utility icons like '音声読み上げ・ルビふり' and 'English'. Below this is a teal banner with three main categories: '航空' (Aviation), '鉄道' (Railway), and '船舶' (Shipping). To the right of the banner is a search bar and two buttons for '船舶事故ハザードマップ' (Ship Accident Hazard Map) and '船舶事故ハザードマップモバイル' (Mobile). Below the banner is a dark teal navigation bar with several menu items: '運輸安全委員会について', '業務改善の取り組み', 'ダイジェスト・その他刊行物' (highlighted with a red circle), '安全情報', '報道・会見', and '申請・お知らせ'. Below the navigation bar is a main content area with a 'ダイジェスト・その他刊行物' section. This section contains a list of links: '運輸安全委員会ダイジェスト', '運輸安全委員会年報', '過去の刊行物', '地方事務所における分析', '安全啓発リーフレット', and 'IMO (国際海事機関) における海上事故分析'. An orange arrow points from a green callout box to the 'ダイジェスト・その他刊行物' menu item. The callout box contains the text: 'Subscribe to the JTSB E-Mail Magazine here. (in Japanese)'.

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 2018, we released four issues of “JTSB Digests” (January, June, July and December: Issues No.

27-30).

The contents of each issue are as follows.

(1) JTSB Digest No. 27 [Marine accident analysis digest] “Analyses of engine failure-accidents and incidents of coastal cargo vessels and coastal tankers” (Issued on January 23, 2018)

- Occurrence trend of engine failure-related accidents and incidents
- Accident investigation case: “Cooling fresh water leaked into the crankcase, causing the seizure of main bearing metal, resulting in the inability to sail”
- Accident investigation case: “Sea water entered the fuel oil system and on-board power was lost, resulting in the inability to sail”
- Accident investigation case: “Breakage occurred to the cooling sea water inlet valve of the power generator motor, causing the immersion of the engine room”
- Accident investigation case: “Fuel return oil pipe broke and the spewing oil came in contact with a hot area, causing a fire”

(2) JTSB Digest No. 28 [Railway accident analysis digest] “To prevent derailment accidents — Key points in track maintenance” (Issued on June 28, 2018)

- Accident occurrence circumstances
- Accident investigation case: “Derailment due to rail tilting caused by continued failure of rail fastening device”
- Accident investigation case: “Derailment due to rail tilting caused by continued failure of sleepers”
- Accident investigation case: “Derailment of train due to rail breakage”
- Accident investigation case: “Track displacement in an exit-side transition curve caused the wheels to lift and derail”



(3) JTSB Digest No. 29 [Marine accident analysis digest] “To prevent accidents caused by leisure fishing boat crashes” (Issued on July 24, 2018)

- Occurrence circumstances of leisure fishing boat crashes
- Accident investigation case: “Crash due to failure to notice an anchored motorboat hiding in the blind spot created by bow elevation during navigation”
- Accident investigation case: “Crash due to failure to notice an anchored leisure fishing boat while checking a fishing spot with a GPS plotter during navigation”
- Accident investigation case: “Crash due to failure to notice an approaching leisure fishing boat while dealing with fishing customers during navigation”
- Accident investigation case: “Crash occurred because a fishing boat underway did not notice an anchored leisure fishing boat”



- (4) JTSB Digest No. 30 [Aircraft accident analysis digest] “Trend in helicopter accidents and incidents” (Issued on October 25, 2018)
- Occurrence circumstances of helicopter accidents and incidents
 - Accident investigation case: “Crash due to collision with trees”
 - Accident investigation case: “Crash due to collision with power lines during release from hovering”
 - Accident investigation case: “Crash into mountain slope”
 - Accident investigation case: “Falling part (iron plate) during suspended cargo delivery”



Column

Let's learn necessary knowledge and behavior through "Good Job" cases!

— Accident prevention activities for small-scale business operators and individuals —

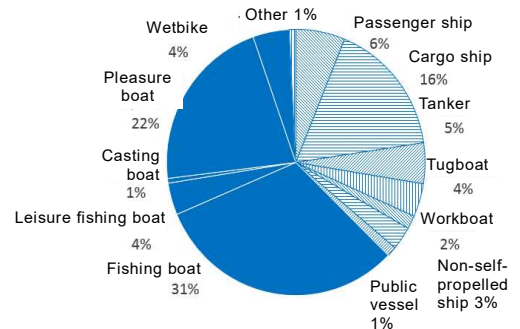
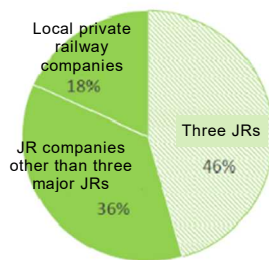
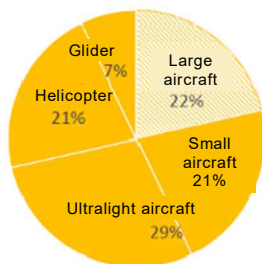
Director for Analysis, Recommendation and Opinion

When hearing the name Japan Transport Safety Board, you may think of those who rush to the scene of a major accident with significant social impact to investigate the cause. It may be partly because television broadcasts tend to focus on major accidents. JTSB, however, also actively works on recurrence prevention of accidents involving relatively small business operators and individuals.

In fact, accidents involving small-scale business operators and individuals account for a large percentage of the total number of accidents. 2018 statistics show that aircraft accidents of small aircraft, etc. (i.e. other than large aircraft) account for 78% of a total of 14 accidents. In addition, when compared to the number of accidents in 1974 (when our predecessor, the Aircraft and Railway Accidents Investigation Commission, was established), the percentage of accidents involving small aircraft, etc. (41 to 11 cases), relative to the accidents of large aircraft (8 to 3 cases), remains at the same level (84% to 78%). These indicate that preventing accidents of small aircraft, etc. is important to reduce the total number of accidents. Similarly, regarding railway accidents, the sum of accidents in JR companies other than the three major JRs (East, West, Tokai) and local private railway companies account for 55% of a total of 11 railway accidents. For marine accidents, the sum of accidents of fishing boats, leisure fishing boats, casting boats, pleasure boats and wetbikes accounts for 62% of a total of 1,233 accidents.

Accidents of aircraft other than large aircraft account for about 80% of total aircraft accidents (according to the number of accidents in 2018).

- Aircraft accidents (total 14 cases)
- Railway accidents (total 11 cases)
- Marine accidents (total 1,233 cases)



The reasons for frequent accidents by small-scale business operators include the following: they may lack adequate safety management organizations/systems due to the scale of the business and as a result have only insufficient safety rules and operation procedures to ensure safety; and education and training to learn the rules, equipment usage skills, and so on may be inadequate. As a result, the field workers may lack sufficient knowledge and information required for quick thinking, making non-safe behavior and decision errors more likely. In such cases,

unless a systematic backup to fix the error is fully provided, an accident may occur.

In order to cope with such situations, JTSB examines real examples of accidents to pick up as many cases in which an accident might have occurred but was prevented (“Good Job” cases) and failure cases as possible, and summarize them simply. These examples can be seen in “[JTSB Digest](#)”*. We expect that the examples will serve as mock experiences of accidents and help field workers make appropriate decisions in the case of a near-miss situation in the field.

The “Good Job” cases in the Digest can be read on our website and are also introduced in various opportunities such as seminars and outreach lectures. However, there are still few places to provide Good Job cases to small business operators and individuals, which we consider one of the issues to be addressed. We plan to increase such opportunities, such as safety workshops held by business operators and clubs for individuals. We hope that learning “Good Job” cases will lead to an opportunity to enhance safety awareness and acquire necessary knowledge and behavior.

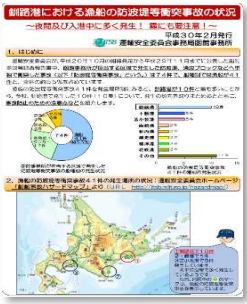
* JTSB Digests (for small-scale business operators and individuals published in the last 5 years)

- Aviation: [No. 22 Private small aircraft, etc.](#), [No. 30 Helicopters](#),
- Railway: [No. 28 Maintenance and management of railway track](#),
- Marine: [No. 25 Pleasure boats](#), [No. 29 Leisure fishing boats](#)




3 Issuance of the Analysis Digest Local Office Edition

The JTSB has issued the analysis digest local office edition (only available in Japanese). It has issued this publication in order 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, the type of vessel, and the type of accident.

(Analysis Digest Local Office Edition in 2018)

<p>Hakodate</p>	<p>Circumstances of accidents caused by a fishing boat crashing into the breakwater in Kushiro Port — Many accidents occur during the night and during entry into the port! Also pay careful attention to fog! —</p> <p>(Main contents)</p> <ul style="list-style-type: none"> - Circumstances of 41 accidents caused by a fishing boat crashing into the breakwater - Accident occurrence situation, circumstances by cause - Accident case studies (2 cases) - Summary <p style="text-align: center;">— To prevent accidents caused by fishing boats crashing into breakwaters —</p>	
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<p>Sendai</p>	<p>About 60% of fishing boats involved in a crash did not notice the other ship before crashing. — Circumstances of ship-to-ship crashes involving a fishing boat —</p> <p>(Main contents)</p> <ul style="list-style-type: none"> - Occurrence circumstances of ship-to-ship crashes - Accident case studies (6 cases) - Summary (To prevent fishing boat crashes) 	
<p>Yokohama</p>	<p>Early detection! To prevent immersion of engine room — Effective utilization of engine room bilge water level warning device —</p> <p>(Main contents)</p> <ul style="list-style-type: none"> - What is a level sensor? - Accident case: “The level sensor in the engine room had a malfunction, leading to a delayed detection of immersion, resulting in the widespread of damage” - Accident case: “The warning device was activated by the immersion of the engine room, but checks were not conducted anywhere, leading to delayed detection of immersion” 	
<p>Hiroshima</p>	<p>In the Seto Inland Sea, many groundings / crashes are occurring due to operators falling asleep on the boat.</p> <p>(Main contents)</p> <ul style="list-style-type: none"> - Type of vessel of 41 ships involved in drowsy driving and the type of accident - Posture of bridge watchman and the steering condition when the operator fell asleep - Accident case studies (2 cases) - Summary (To prevent accidents caused by drowsy operation) 	
<p>Moji</p>	<p>Groundings occurring frequently! Circumstances of groundings in Dokai Bay</p> <p>(Main contents)</p> <ul style="list-style-type: none"> - Ensuring safe navigation environment in Dokai Bay - Countermeasures for groundings - Safe navigation in Dokai Bay - Groundings cases in Dokai Bay (4 cases) - Summary 	

<p>Nagasaki</p>	<p>To ensure safety in passenger transport — Analysis of passenger injury accidents along the Kyushu West Coast —</p> <p>(Main contents)</p> <ul style="list-style-type: none"> - Q & A regarding passenger injury accidents - Summary (To prevent/reduce passenger injuries and damage due to hull vibration) - Request to passengers 	
<p>Naha</p>	<p>No more accidents caused by immersion of small ships! — Back to basics —</p> <p>(Main contents)</p> <ul style="list-style-type: none"> - Occurrence factors related to inspection and maintenance - Occurrence factors related to anchorage - Occurrence factors related to waves 	
	<p>No more accidental contact with divers/swimmers! — Accidental contact with small ships during diving or snorkeling —</p> <p>(Main contents)</p> <ul style="list-style-type: none"> - Circumstances of accidents with diving ships - Accident case studies (3 cases) - Summary (To prevent fatal accidents and injury of divers/swimmers caused by contact with small ships) 	

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.



Speedy investigation of foreign ships

Sendai Office

Need of speedy response to foreign ships

Foreign ships depart the port and leave Japan as soon as the required procedures are completed, even after an accident. Therefore, investigators must be dispatched immediately. It is also needed to minimize the delay in the schedule to reduce the costs for cargo transportation*.

* It may cost several million yen per day, depending on the scale of the ship.

Problems in actual experience

- Visiting and investigating a ship alone with no interpreter (A [possibly dangerous] ship with the flag of Country A)

During a business trip in Prefecture B to investigate another case, the investigator was informed that a ship with the flag of Country A had an engine incident and became unable to continue sailing, and that the ship was pulled by a tug boat and entered another port in Prefecture B. In the evening, when calling the office to make a report, the investigator was ordered by the director to head for the ship next day and make an investigation.

All the crew members of the ship were nationals of Country A. However, there was information that they understood English. When the investigator contacted the agent, the agent said that they would give the ship notice but could not go with the investigator. As a result, the investigator had to visit and investigate the ship alone.

The investigator arrived at the quay designated by the SOLAS convention, where the ship was moored. For security reasons, the ship was tied up away from other ships. There was no one around.

Fortunately, there was a security guard at the quay gate. Thinking that there might be a need to ask the security guard to wait just outside the ship in case of a worst-case situation, the investigator observed the attitude of the Captain and the Officer at the gangway, which was alright, before entering the ship.

- Difficult communication (Captain of the ship spoke little English.)

The investigator tried to explain to the Captain and the Chief Engineer that JTSB would not examine their responsibility but just would investigate the facts to prevent re-occurrence and asked for their cooperation, but they barely understood. The investigator was puzzled and thought that may be his/her English was too poor, but fortunately the Officer was good at English, and the investigator was finally able to make him/herself understood.

It was found out later that the Captain and the Chief Engineer spoke only a little English.

- Making efforts to build a trusting relationship

The investigator made a persistent effort to explain the purpose of JTSB and that JTSB would not examine their responsibility, trying to build a trusting relationship. At this point, it is important to create a peaceful atmosphere. An acrid atmosphere should be avoided.

(It may make the crew members angry.)

At the same time, it is also important to keep one's guard up.

This was all that the investigator could do, and it was not impossible to secure time to obtain sufficient objective data.

Lessons learned

- Due to time constraints, it is important that multiple persons visit the ship to obtain objective data.

The ship was planned to leave the port as soon as receiving the repair parts of the main engine, replacing the parts, performing commissions, and receiving classification survey. In addition, a long-time investigation will reduce the willingness of the crew to cooperate.

Data collection, interviews and photography need to be done efficiently. For this reason, we, although in a regional office with little staff, are trying to ensure that at least two persons visit the ship for investigations whenever possible.

4 Issuance of the JTSA Annual Report

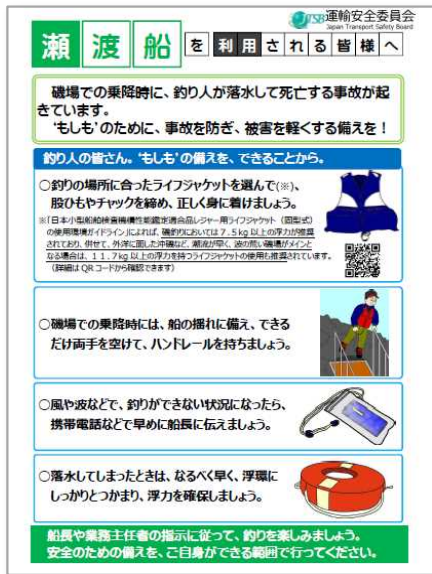
In June 2018, we issued the JTSA Annual Report 2018. We did so in order to share the lessons learned from accidents and incidents with interested parties, by introducing our general activities in 2017.

As part of our efforts to provide information overseas, we issued the English version of the report “Japan Transport Safety Board Annual Report 2018” on December 2018. We did so to let people overseas know about the topics in this Annual Report.

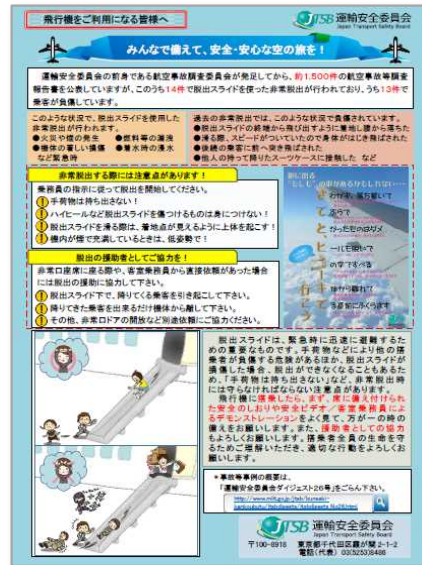


5. Preparation of safety leaflet

When the Japan Transport Safety Board published the JTSA Digest or releases investigation reports on accidents and incidents for which measures to prevent the recurrence thereof need to be urgently implemented, it prepared single-page, A4-sized leaflets to let as many people as possible see various safety information mentioned in them. To raise attention to the prevention of accidents, the board distributed the leaflets at event venues and asked organs concerned for cooperation in distributing them.



To those who use a casting boat for fishing



Prepare well and enjoy a safe and secure flight!

6 J-MARISIS – Now even easier to use

So that more effective use can be made of published marine accident investigation reports, the Japan Transport Safety Board began providing the Japan-Marine Accident Risk and Safety Information System (J -MARISIS) as an Internet service from the end of May 2013, allowing users to search reports from maps. In April 2014, we also released the global version of J-MARISIS, further allowing users to search investigation reports published by overseas marine accident investigation organizations from world maps.

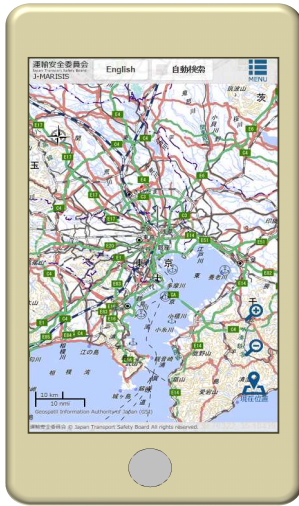
Given the increase in the number of people using the Internet on mobile terminals, as well as requests to make this system easier to use on smartphones and tablets, we released the mobile version of J-MARISIS at the end of June 2015.

With touch panel support as well as revised display buttons and layouts, its ease of use has been increased, and the GPS functions of mobile terminals can be used to display information on areas near the user’s current location. As a result, users on pleasure boats, recreational fishing boats or other small vessels can easily check information on accidents and other relevant information on navigation in sea areas they are planning to visit.



J-MARISIS http://jtsb.mlit.go.jp/hazardmap/mobile/index_en.html





Top page



Screen showing the information of current location using GPS function



Screen showing accident information

- Menu button
- Mark indicating the location of an accident, etc.
- Accident information
- Zoom in / zoom out
- Current location display

- The service can be used free of charge, excluding the connection fee. The traffic volume of ships and fishing points will also be indicated.

The Japan Transport Safety Board welcomes your views, requests and other comments/communication from users of J-MARISIS. Please use the “Contact us” section of our website.

Contact us <http://www.mlit.go.jp/jtsb/contact.html>

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

The Japan Transport Safety Board 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 mitigating damage from aircraft, railway, and marine accidents. Members of the staff are dispatched as lecturers to various seminars and schools.



Scene of an outreach lecture

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.

<http://www.mlit.go.jp/jtsb/demaekouza.html> (in Japanese)

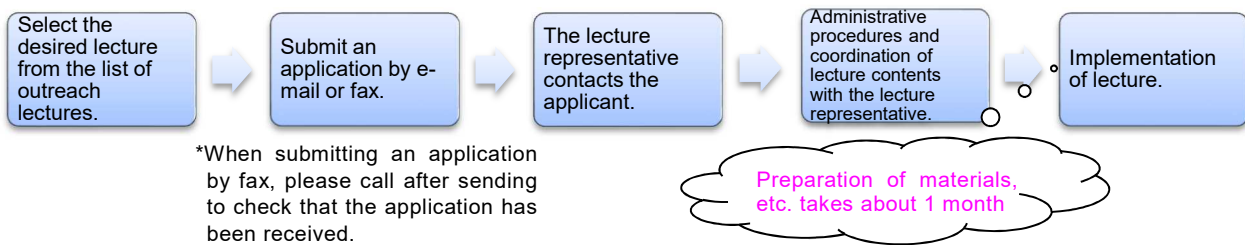
List of outreach lectures

No.	Course	Main audience	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 Japan Transport Safety Board
2	What is accident investigation?	Elementary school students	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 JTSD 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 JTSD 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 of regional offices (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. http://www.mlit.go.jp/jtsb/bunseki-kankoubutu/localanalysis/localanalysis_new.html

*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



8 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 2018, information on accident investigation and other matters was provided to 71 persons, including the victims, of 36 cases of aircraft/railway/marine accidents.

The status for other activities is as follows.

○Memorials for accident victims

The JTSD made memorial visits to accident sites including Mount Osutaka in Ueno Village, Tano District, Gunma Prefecture, the site of the JAL Flight 123 crash, and presented offerings of flowers from

the Board members and the Director-General at each accident site including the “Inori no Mori (Memorial Grove), the site of the Fukuchiyama Line Accident in Amagasaki City, Hyogo Prefecture, to express our deepest sympathy for those lost in these accidents.

By presenting these memorial offerings first-hand, we deeply felt the emotions of those who still have painful memories of these events, and renewed our awareness of the importance of closely sharing the feelings of bereaved families and victims.



Prayer at the altar for flowers at the Mount Osutaka crash site

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

**Information for Victims
and their Families**

Japan Transport Safety Board

Victims and their Families
Liaison Office

Japan Transport Safety Board

(Front)

Japan Transport Safety Board
Victims and their Families
Liaison Office

2-1-2 Kasumigaseki, Chiyoda,
Tokyo, Japan 100-8918
Tel: +81-3-5253-8823
Fax: +81-3-5253-1680
e-mail: hqt-jtsb_faminfo@gxb.mlit.go.jp

Japan Transport Safety Board

(Back)

Column

Retransfer of Japan Transport Safety Board

General Affairs Division

On June 4th, 2018, the Tokyo Office of Japan Transport Safety Board was temporarily transferred to Otemachi Government Building No. 3 located at Otemachi 1-chome, Chiyoda-ku, Tokyo, due to the layout change of the divisions of Ministry of Land, Infrastructure, Transport and Tourism, then located in the Central Government Building No. 2 and adjacent building No. 3. On March 4th, 2019, the office of JTSB was moved back to Central Government Building No. 2 at Kasumigaseki 2-chome, Chiyoda-ku, Tokyo.

The Otemachi Government Building No. 3 was very old and inconvenient in several respects. For example, the air conditioner broke down around the end of the rainy season, when the real summer was about to start. Also, when you called the elevator on the 8th floor, it would go all the way up to the 10th floor before arriving at the destination. On the other hand, there were many good restaurants around the building and even the JTSB staff particular with their tastes were so satisfied with the food that there were even some who did not want to go back to Kasumigaseki.

After the retransfer, the offices of General Affairs Division and the Director for Management are on the 16th floor, the offices of aircraft, railway and marine accident investigators are on the 15th floor, and the committee room is on the 14th floor. Although the divisions are located over different floors, their cooperation in daily operations has been further strengthened by the two relocations.

[Address after retransfer]

Japan Transport Safety Board

Central Government Building No. 2, 14F to 16F, 2-1-2 Kasumigaseki,

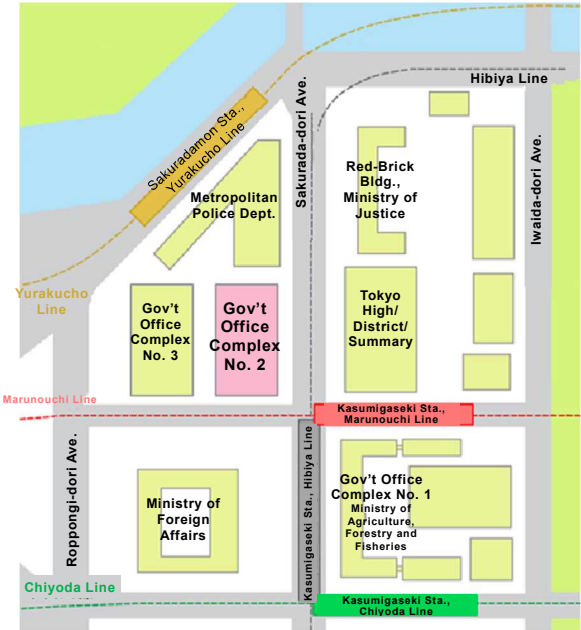
Chiyoda-ku, Tokyo, 100-8918, Japan

Telephone: +81-3-5253-8486 (main)

* Calls can be forwarded from the main phone number for the Ministry of Land, Infrastructure, Transport and Tourism (81-3-5253-8111).



Central Government Building No. 2



Information map