

Chapter 7 International efforts for accident prevention

1 Objectives and significance of international cooperation

The investigative scope employed by the JTSB when investigating accidents and serious incidents include that international in nature as aircraft and marine accidents. Creating and operating systems for these kinds of investigations therefore involve international organizations. Also, it will be necessary to cooperate and collaborate with accident investigation authorities in interested states, etc. during the investigation process.

In addition to the nation where an aircraft accident occurred, the state of registry, the state of the operator and the state where the aircraft was designed and manufactured are the states concerned. An annex to the Convention on International Civil Aviation (the Chicago Convention) states that the state of occurrence is responsible for starting and accomplishing an accident investigation while the other states also have the right and responsibility to appoint a representative to participate in the investigation. Proper cooperation with the accident investigation authorities of those states concerned is necessary for the accomplishment of the investigation.

Similarly, in marine accidents involving vessels above a certain level, the International Convention for the Safety of Life at Sea (SOLAS) places the obligation of investigation on the flag state of the vessel. Additionally, other states concerned, such as coastal states in whose territory the marine accident occurs and the state(s) of victims are entitled to investigate the accident. The convention defines the standard framework of marine accident investigations. The flag state and states concerned must cooperate with each other in multiple ways, such as through information sharing, when conducting accident investigations.

Based on this background, a variety of international meetings are held for each mode, which JTSB actively participates in. The meetings are for the purpose of facilitating collaboration in the case of accidents or incidents, sharing information on accidents and investigation methods on a regular basis, and achieving results of prevention for repeated accidents all over the world. Additionally, for the investigation of railway accidents, for which there is no international organization, various international seminars to exchange information on accident and incident investigations are held in major countries. Because in regards to this area, the fundamental investigation system of each state is generally standardized. Furthermore, some universities overseas have specialized training courses for accident and incident investigations, to which JTSB is also actively dispatching investigators.

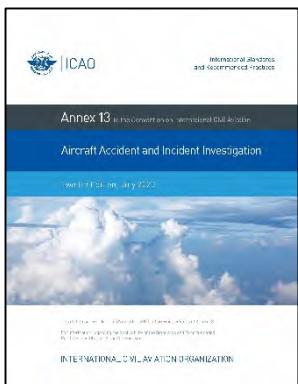
As shown above, JTSB aims to improve transport safety in Japan and all over the world through sharing of our findings worldwide, which have been acquired in individual accident and incident investigations. Relating to this, the following sections introduce each of our international activities in 2024.

2 Efforts of international organizations and JTSB's contributions

(1) Efforts of the International Civil Aviation Organization and JTSB's involvement

The International Civil Aviation Organization (ICAO, Headquarters: Montreal, Canada) is a United Nations specialized agency established in 1947. Japan acceded to it in 1953. ICAO comprises the Assembly, Council, and Secretariat, and as of August 2024, 193 states are members of ICAO. The Council has subordinate bodies, such as Air Navigation Commission, Legal Committee, Air Transportation Committee, Joint Operation Committee, and Finance Committee. In addition, it has regional offices in seven locations, including Bangkok, Cairo, and Paris. Besides, there are expert meetings such as Air navigation conference, a variety of working groups, and panel meetings which are called in for certain projects.

The objectives of ICAO are provided in Article 44 of the Convention on International Civil Aviation as being “to develop the principles and techniques of international air navigation and to foster the planning and development of international air transport.” ICAO is engaging in a wide variety of activities, including the drafting of conventions regarding international air transport services and aviation security such as countermeasures against hijacking. It also engages in audits of contracting states’ safety monitoring systems, and responses to environmental problems.



Annex 13 to the
Convention on
International Civil
Aviation

of the JTSB participated. Regarding the working groups (WGs) established under the panel, the JTSB participated in the “Safety Recommendation of Global Concerns WG” and the “Family Information WG” in 2024.

ICAO establishes the Annexes of the Chicago Convention for items that must be covered by globally unified rules. The Annexes determines the rules for 19 fields, including personnel licensing, rules of the air, registration of aircraft, airworthiness, aeronautical telecommunications, search and rescue, security, and the safe transport of dangerous goods and safety management. Among them, Annex 13 establishes the international standards and recommendations for aircraft accident and incident investigations. In addition, the Act for the Establishment of the Japan Transport Safety Board states that: “The Board shall conduct investigations (omitted) in conformity with the provisions of the Convention on International Civil Aviation and with the Standards, Practices and Procedures adopted as Annexes thereto.” (Article 18).

The Accident Investigation Panel (AIGP), which is a subordinate organization of the Air Navigation Commission, is mainly a forum for discussion on the revision to Annex 13 and the preparation of guidance materials. The JTSB has participated as a member since the 4th meeting held in May 2018. The 9th Accident Investigation Panel Meeting (AIGP/9) was held in Montreal, Canada in September 2024, in which panel members and aircraft accident investigators

(2) Efforts of the International Maritime Organization and JTSB's involvement

The International Maritime Organization (IMO, Headquarters: London, United Kingdom) was established in 1958 as a specialized agency of the United Nations. It was originally called as the Inter-Governmental Maritime Consultative Organization (IMCO). The IMO comprises the Assembly, the Council and five committees. These are the Maritime Safety Committee (MSC), Legal Committee (LEG), Marine Environmental Protection Committee (MEPC), Technical Cooperation Committee (TC) and Facilitation Committee (FAL). In addition, there is a Secretariat, and the MSC (and MEPC) has seven subcommittees. As of October 2024, IMO has 176 member states and three regions as associate members.

IMO engages in various activities, such as the facilitation of intergovernmental cooperation, effective safety measures and drafting of conventions that relate to technical and legal problems with safety of life at sea and safe navigations.

The Sub-Committee on Implementation of IMO Instruments (III) is a subordinate group of MSC and MEPC. It discusses how to ensure the responsibility of the flag state, including the investigation of marine accidents and incidents. III analyzes the accident or incident investigation reports submitted from states based on SOLAS and the International Convention for the Prevention of Pollution from Ships (MARPOL) to draw lessons from, which III subsequently makes public on the IMO website. By doing so, III promotes activities for the prevention of the repeated occurrence of marine accidents.

The Correspondence Group (which undertakes analysis during periods outside of the sessions) and the Working Group (which verifies the analysis results during the session period) comprises volunteer investigators from some member states. They discuss these analysis results, which the III plenary subsequently approves. Depending on the matter in question, if III determines that further discussion is required for a convention revision, it will submit recommendations or information to MSC, MEPC and other IMO subcommittees. The 10th session of the Sub-Committee on Implementation of IMO Instruments (III 10) was held in London, UK in July 2024. A JTSB marine accident investigator became the group member and conducted analyses of accident and incident investigation reports submitted by each member states. The provisional translation of the past analysis results is shown in the JTSB website:

(URL: https://www.mlit.go.jp/jtsb/casualty_analysis/casualty_analysis_top.html [Japanese])

3 Cooperation and information exchange with foreign accident investigation authorities and investigators

(1) Participation in international meetings

i) Chairperson meeting of the International Transportation Safety Association

The International Transportation Safety Association (ITSA) was established by accident investigation boards from the Netherlands, the United States, Canada, and Sweden in 1993. As of May 2024, the international organization has members from the transport accident investigation authorities of 18 countries and territories. Organizations that are permitted to join must be permanent accident investigation authorities that are independent from any regulatory authority. Based on the idea that any findings from an accident and incident investigation in one field can be used as a lesson for another field, ITSA holds annual chairperson meetings where the participating accident investigation authorities present their experiences in accident investigation. These presentations are for all the modes of aviation, railway, and marine accidents and incidents. The chairpersons learn about the causes of accidents and the methodologies of accident investigations, thus aiming to improve transport safety in general.

As for Japan, the Aircraft and Railway Accidents Investigation Commission was approved for accession in June 2006. The board has participated in all the meetings held after 2007. It was held in Buenos Aires, Argentina in May 2024.

At this conference, a panel discussion was held in which each country introduced research examples and initiatives for each theme. The chairman of the JTSB gave a presentation on recent accidents on the theme of ensuring safety on runways. In addition, JTSB members gave presentations on cases; how to respond to accident victims and how accident investigations have progressed by communicating with accident victims.



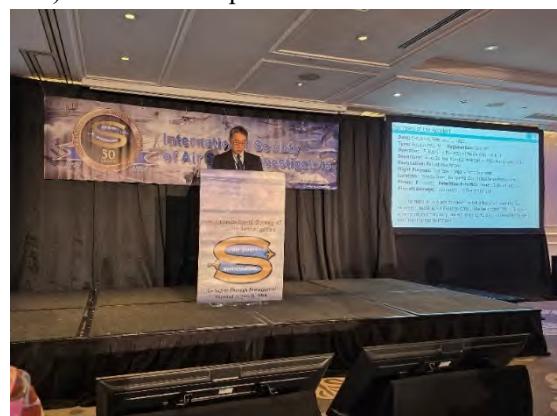
Presentation by the Chairperson of the JTSB at the ITSA2024

ii) International Society of Air Safety Investigators and Asian Society of Air Safety Investigators

The International Society of Air Safety Investigators (ISASI) has been organized by national aircraft accident investigation authorities. The purpose of this society is to support accident investigations aimed at preventing repeating occurrences of aircraft accidents and incidents. This aim is to be achieved by improving further a cooperative system of investigation authorities, through the facilitation of communications between member countries about their experience and knowledge, as well as information about the technical aspects of aircraft accident investigations.

ISASI holds annual seminar each year, and Japan has participated in each one of them since the establishment of Japan Aircraft Accident Investigation Commission in 1974. In this seminar, working groups including the Flight Recorder Working Group, the Investigator Training and Education Working Group, the Cabin Safety Working Group, and the Government Air Safety Investigators Group are held in parallel with the general meeting. Japan also participates in these working groups to endeavor to improve investigation technologies for aircraft accidents and incidents.

In September 2024, the Annual Seminar was held in Lisbon, Portugal. This seminar provided three keynote speeches and 25 presentations and the JTSB also gave a presentation on the analysis of helicopter accidents, and participated in a tutorial on improving investigative techniques and group meetings of regional association of ISASI, the Asia Society of Air Safety Investigators (AsiaSASI). The current president of the AsiaSASI is the Indonesian National Transportation Safety Committee, the vice president is the Taiwan Transportation Safety Board, and the secretariat is the Singapore Transport Safety Investigation Bureau. The JTSB serves as an executive committee member. ISASI has other regional associations in Australia (ASASI), Canada (CSASI), Europe (ESASI), France (ESASI French), Korea (KSARAI), Middle East and North Africa (MENASASI), Latin America (LARSASI), New Zealand (NZSASI), Pakistan (PakistanSASI), Russia (RSASI), the United States (USSASI). Each of these associations also holds their seminars.



Presentation by the aircraft accident investigator from the JTSB at ISASI in 2024

iii) Accident Investigator Recorder (AIR) Meeting and Asia (and Oceania) Accident Investigator Recorder Meeting and the Accident Investigation Body – Technical Group (AIB-TG) Meeting

The Accident Investigator Recorder (AIR) Meeting is an international conference for aircraft accident investigators who analyze digital flight data recorders (DFDR) and cockpit voice recorders (CVR). At this meeting, aircraft accident investigation analysts from all over the world share know-how by exchanging their experience, knowledge, information relating to the analysis of DFDR, and discuss the relevant technologies on DFDR. The conference aims to further develop the technical capacity of accident investigation authorities. Initially, aircraft accident investigators who analyze flight data recorders (FDR) and cockpit voice recorders (CVR) mainly participated. However, recently, the scope has broadened to include other fields due to the applicability of these technologies.

This meeting was established in 2004, and the accident investigation authorities of each country hold a meeting every year. JTSB has participated in nearly all the conferences since 2006. It was held in Reykjavik, Iceland, and aircraft accident investigators from the JTSB participated in 2024.



Presentation by the aircraft accident investigator from the JTSB at AIR in 2024

The Accident Investigation Body - Technical Group (AIB-TG) Meeting has been held since 2023, and was attended by analysts who handle electronic records of vessels (VDR, AIS, GPS, ECDIS, CCTV, etc.) at accident investigation organizations in each country, with the aim of sharing research cases related to analysis work specialized in marine accidents and considering solutions to issues in each country.

To share analysis and research cases, and the latest knowledge and technologies from other countries, as well as establish and maintain mutual cooperative relationships with accident investigation agencies in each country, the JTSB also has participated in this conference since its inception.

Continuing from the previous time, it was also held in Southampton, UK in 2024, during which the JTSB marine accident investigators participated.



Presentation by the Marine Accident Investigator from the JTSB at the AIB-TG in 2024

iv) Accident Investigators on Material Analysis Meeting (AIM Meeting)

Accident Investigators on Material Analysis Meeting (AIM Meeting) is held every one to two years to share research cases on materials analysis and consider solutions to issues in each country, and attended by accident investigators who are in charge of analyzing materials such as alloys and composites used in aircraft fuselages and hulls as part of accident investigation authorities in each country. The host country is rotated and it was held in the United States in 2024.

In response to the growing need for materials analysis technology in accident investigations in recent years, the staff in charge of analysis from the JTSB participated for the first time to refine the ability to investigate accidents, etc., by grasping the latest international trends in materials analysis and gaining knowledge of the latest specialized technologies by exchanging opinions with members of the participating countries.

v) Railway Accident Investigation International Forum (RAIIF)

The Railway Accident Investigation International Forum (RAIIF) was established at the suggestion of Japan, based on international achievements and connections cultivated by the JTSB to date, in the field of railway accident investigation, where no public framework established by international organizations had existed to date.

Through this forum, we aim to improve the safety of global railways through active information exchange and strengthening cooperation among relevant organizations in countries and regions worldwide.

The first event was held in Tokyo in October 2024. For details, please see 9 (page 18) of "Major activities in the past year."

vi) Marine Accident Investigators' International Forum

The Marine Accident Investigators' International Forum (MAIIF) is an international conference held annually since 1992. It was originally based on a proposal from the Transportation Safety Board of Canada. Its purpose is to maintain and develop international cooperation among marine accident investigators and to foster and improve international cooperation in marine accident investigations and thus, advancing maritime safety and prevent marine pollution. In 2008, MAIIF was granted the status of an Inter-Governmental Organization (IGO) in IMO.

Under this forum, marine accident investigators around the world take the opportunities to exchange frankly opinions and share information on marine accident investigations. Recently, there has been more demand to make use of the findings obtained from the marine accident and incident investigations in the discussions in IMO. In 2009, MAIIF made a proposal based on the investigation results from the state investigation authorities to IMO for the first time. The JTSB has joined the forum every year since the third conference. The 31st conference was held in Beijing, China, in September 2024, attended by a marine accident investigator from the JTSB.

vii) Marine Accident Investigators Forum in Asia

The Marine Accident Investigators Forum in Asia (MAIFA) was established by a proposal from Japan to build a mutual cooperation system for marine accident and incident investigations in the Asia region and to assist developing countries in enhancing their investigation systems. Since 1998, meetings have been held annually, and Japan has been playing a leading role in this forum, including the sponsorship of the 13th meeting in Tokyo in 2010. The network of investigators that has been established through the forum is now effective in its promotion of rapid and smooth international cooperation in accident and incident investigations. Encouraged by the success of MAIFA, E-MAIIF was established in Europe in 2005. A-MAIF was then established in North, Central and South Americas in 2009. These trends contribute more than ever in furthering the exchange and cooperation between marine accident investigators in each region. In the Asia region, there are not only a lot of straits with sea traffic congestion, but also severe weather and hydrographic phenomena that often give rise to tragic marine accidents. While tragic marine accidents have occurred, some countries have insufficient capacities or systems for accident investigations. This situation makes the regional forum very important. The 24th meeting was held in Boracay Island, Philippines, in September 2024, attended by a marine accident investigator.

(2) Examples of international cooperation among accident investigation agencies in individual cases

For the aircraft accident and incident investigations, based on the provisions in Annex 13 of ICAO, the state where an aircraft accident occurred must notify the state of registry, the state of design/manufacturing, and the state of operation. If necessary, these states concerned may appoint their own Accredited Representative (AR) to join the investigation.

Regarding the collision between a Bombardier DHC-8-315 of the Japan Coast Guard and an Airbus A350-941 of Japan Airlines Co., Ltd. at Tokyo International Airport on January 6 2024, we have conducted an investigation in cooperation with Canada, the country in which the Japan Coast Guard aircraft was designed and manufactured, France, the country in which the aircraft fuselage belonging to Japan Airlines Co., Ltd. was designed, Germany, the country in which the engine of the same aircraft was designed, the United Kingdom, the country in which it was manufactured and the United States, the country in which the equipment of both aircrafts were manufactured.

Other cases included one where injuries occurred when a rotorcraft made a precautionary landing, one where AR was appointed in the United States where the aircraft was designed and manufactured, one where an object fell to the ground from a rotorcraft, and one where AR was appointed in Italy, the country of manufacture of the aircraft.

In marine accident and incident investigations, the IMO Code of the International Standards and Recommended Practices for a Safety Investigation into a Marine Casualty or Marine Incident (Casualty Investigation Code) states that the interested states, including the flag state of the ship and the coastal state of the accident, must cooperate in the marine accident investigation. Also in Japan, if a marine

accident or incident occurs that concerns more than one state, Japan's accident investigators are to collaborate with the accident investigation authorities of the other interested states to obtain information about the accident.

Regarding the case where Cargo ship XIN HAI ZHOU 2 ran aground on a shallow reef off the northwest coast of Taketomi Island in January 2023, we made an inquiry to Panama, which is a flag state, before the accident investigation report was released.

Among the marine accident and incident investigation reports that were published in 2024, the JTSB sent two draft reports to the flag states and other interested states upon request to invite their comments.

4 Technical cooperation

In response to requests from overseas railway accident investigation organizations, the JTSB implements human resource development support including the training of railway accident investigators. So far, we have not only participated in the field of railway accident investigation in the “Indian Railway Safety Capability Enhancement Project” implemented as a technical assistance project of the Japan International Cooperation Agency (JICA), but also have been contributing to the improvement of overseas railway safety by recently establishing a department to investigate railway accidents to provide Japanese railway accident investigation technologies according to their challenges, including the provision of training to overseas railway accident investigation organizations which have started railway accident investigations as a technical aid to them.

These efforts contribute to the initiative “to support efforts related to technology transfer and human resource development to allow overseas countries to properly operate and maintain their own railway” in the “Infrastructure Systems Overseas Expansion Action Plan 2023 of the Ministry of Land, Infrastructure, Transport and Tourism” which summarizes its projects to promote the expansion of the infrastructure systems to overseas and we will continue to work for improving the transportation safety in the future through technical cooperation with overseas accident investigation organizations.

5 Participation in overseas training

The JTSB is making efforts to advance the capacity of accident investigators through measures such as training and international information exchanges to investigate accidents accurately, and also actively participates in overseas training for accident investigations.

Additionally, every year, aircraft or marine accident investigators are sent to Cranfield University in the UK, which has a track record of accident investigation training, the JTSB aircraft accident investigators participated in 2024. The training covers a wide range of topics, from the basics to specialized knowledge of accident investigation. After the training, the participants disseminate the results to other accident investigators in each transportation mode, aiming to improve the overall capabilities of the accident investigators.