

Chapter 7 International efforts for accident prevention

1 Objectives and significance of international cooperation

Aircraft and marine accidents, which are part of Japan Transport Safety Board's investigation scope, are international in nature. Creating and operating systems for these kinds of investigations therefore involve international organizations. Also, it is necessary to cooperate and coordinate with the accident investigation authorities of the states concerned 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. In regards to this, 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. It hopes to do so 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 2017.

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) was established as a specialized agency of the United Nations in 1947. Japan acceded to it in 1953. ICAO comprises the Assembly, Council, Air Navigation Commission (a supporting body of the Council), Legal Committee, Air Transport Committee, and Committee on Joint Support of Air Navigation Services, all of which are the subordinate bodies of the Council, secretariat and regional offices. In addition, Air Navigation Conferences, Regional Air Navigation meetings, a variety of working groups and panel meetings, which are called in for certain projects. As of March 2018, 192 states are members of ICAO.

The objectives of ICAO is 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.

ICAO establishes the Annexes of the Convention on International Civil Aviation 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 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 prescribed in items (i) to (ii) of Article 5 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).



APAC-AIG/5
(Singapore)

In addition, the Asia Pacific Accident Investigation Group (APAC-AIG) operates as a framework for safety in Asia and Pacific Regions, and considers the building of a cooperative system for accident investigation in these regions.

When the APAC-AIG/5 held a meeting in Singapore in August 2017, JTSB members, including a Deputy Investigator-General for Aircraft Accident, attended to discuss questions related to accident investigations and other issues, based on features of the Asia-Pacific region, and to exchange views on, among others, ways of improving the investigation capacity.

(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 Co-operation Committee (TC) and Facilitation Committee (FAL). In addition, there is a Secretariat, and the MSC (and MEPC) has seven subcommittees. As of March 2018, IMO has 173 member states/territories 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 maritime life safety and safe marine 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



III4

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 III4 was held in September 2017. In this event, JTSB's marine accident investigators took part as group members and analyzed accident investigation reports from various states. Tentative translations of these analysis results are published on JTSB website.

(URL: http://www.mlit.go.jp/jtsb/casualty_analysis/casualty_analysis_top.html)

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

(1) Participation in international meetings

① Chairman 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 March 2018, the international organization has members from the transport accident investigation authorities of 16 countries and territories. Organizations that are permitted to join must be permanent accident investigation bodies that are independent from any regulatory body.

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 chairman 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.



Participants in the ITSA chairman meeting (Japan)

The 2017 meeting was held in Japan in September and attended by 14 countries and territories. The meeting listened to activity reports from the countries and territories, confirmed the direction of future activities by ITSA and discussed challenges in accident and other investigations.

② 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 bodies, 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 contribute to technical improvements in these areas.

The annual seminar in 2017 was held in San Diego, United States, with the theme “Investigations - Do they really make a difference?” This was attended by a Board member and a Senior Aircraft Accident Investigator from JTSB, who participated in active exchange of opinions with accident investigation personnel from various countries.

ISASI has 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) and Asia (AsiaSASI). Each of these associations also holds their own seminars.



ISASI annual seminar
(United States)

In AsiaSASI, JTSB currently serves as Chairman, with Hong Kong Civil Aviation Department as Vice Chairman, and Transport Safety Investigation Bureau of Singapore as Secretariat.

③ Accident Investigator Recorder (AIR) 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 around the world and to further improvement the cooperative system amongst the authorities.

This meeting was established in 2004, and the accident investigation bodies of each country hold a meeting every year. JTSB has participated in nearly all the conferences since 2006.

The 2017 conference was held in September in Dublin, Ireland. JTSB dispatched an aircraft accident investigator to acquire the latest information and know-how for the analysis of flight recorders. This was achieved through the exchange of information and ideas with foreign accident investigation analysts.

④ 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. Its aim is to advance 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. Japan has joined and actively contributed to the forum every year since the third conference and hosted the eighth conference in Tokyo in 1999.

The 26th conference, held in Rotorua, New Zealand in November 2017, was attended by a Deputy Investigator-General for Marine Accident and others from JTSB, who gave a presentation on cases of marine accident investigation conducted by JTSB in cooperation with investigation authorities in other countries.

⑤ 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. Nonetheless, some countries have insufficient capacities or systems for accident investigations. This situation makes these regional fora very important.



MAIFA20
(Indonesia)

The 20th meeting, held in Yogyakarta, Indonesia, in October 2017, was attended by a Senior Marine Accident Investigator and others from JTSB, who gave a presentation on major marine accident investigations conducted by JTSB.

(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.

On the serious incident in which a panel that fell from a KLM Royal Dutch Airlines Boeing 777-200 after taking off from Kansai International Airport hit a moving vehicle on the ground in September 2017, an investigation is in progress with the cooperation of the accident investigation authorities of the United States as the state of design/manufacture and the Netherlands as the state of the operator.

On the accident in which a helicopter operated by Toho Air Service Co., Ltd. crashed in Ueno Village in Gunma Prefecture in November 2017, an investigation is in progress with the cooperation of the accident investigation authority of France as the state of design/manufacture.

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 in order to obtain information about the accident.

Among the marine accidents and incidents that JTSB launched investigations in 2017, with regard to the six serious accidents involving ships engaged on international voyages, the accident investigation authorities of the states to which the ships were registered were notified of the accidents.

On the accident in which an auxiliary boiler on the Japanese container vessel MANHATTAN BRIDGE exploded and one crewmember died and another was injured in Felixstowe Port, United Kingdom, in January 2016, JTSB conducted an investigation with the cooperation of the accident investigation authority of the United Kingdom as the coastal state and published the investigation report in December 2017. On the accident in which the container vessel ACX CRYSTAL and the warship FITZGERALD collided with each other off to the southeast of Cape Irozaki in Shizuoka Prefecture and 10 crewmembers on the warship died in June 2017, an investigation is in progress with the cooperation of the accident investigation authorities of the Philippines and the United States as the flag state.

Among the marine accident and incident investigation reports that were published in 2017, JTSB sent 14 draft reports to the flag states and other interested states upon request in order to invite their comments.

4 Participation in overseas training

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.

In 2017, JTSB made efforts to improve our accident investigation capabilities, continuing from the previous year to dispatch an aircraft accident investigator and a marine accident investigator to Cranfield University in the UK, which has a good track record in accident and incident investigation training. The content of this training session lets the participants learn about a variety of topics, from the basics to expert knowledge about accident investigations. After the training, the participating investigators made the other investigators of each mode of transport aware of what was learned in the training, thereby helping to improve the capabilities of all of our investigators.

JTSB also dispatched an aircraft accident investigator to training held by a manufacturer in Canada to be familiarized with analysis software to analyze data from DFDRs in preparation for future investigations.

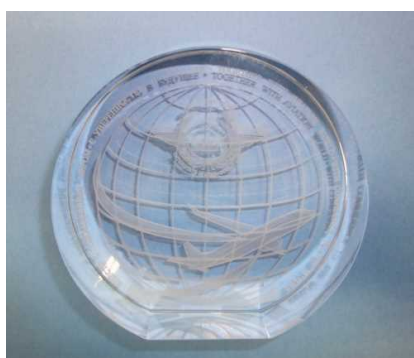
Column

Thoughts on International Conferences

International Affairs Office

As mentioned in Chapter 7, the International Transportation Safety Association held its chairman meeting in Tokyo on September 25 to 27, 2017. With Japan hosting the event for the first time, I was gravely concerned about whether it would go smoothly. Thanks to preparations made incorporating a variety of advice from ITSA members, all participants, after the meeting, praised not only JTSB Chairman Kazuhiro Nakahashi's chairmanship of the conference but also the arrangement of the venue and the management of the event. I therefore heaved a sigh of relief. I would like to introduce some "thank you" gifts for our efforts from participant countries.

1. When I shook farewell hands with the chairman of the U.S. National Transportation Safety Board, he was holding a colorful medal with a diameter of around 3.5cm. A message etched on the back of the medal reads, "From Tragedy We Draw Knowledge to Improve Safety for Us All." I was reminded anew of our primary responsibility as an accident investigation organ.



2. From the Russian Interstate Aviation Committee, I received a paperweight as thick as about 2.5cm on which a message was etched, along with a passenger plane illustration, saying in Russian and English, "Together with Aviation World with Confidence to the Future." Although flight services using Boeing and Airbus planes are becoming the mainline of operations in Russia as in other countries, the message may be taken as hope that Russian-made aircraft have a bright future and a determination to ensure safety. We pin hopes on the first Japanese-made jet airliner MRJ.

3. The Dutch Safety Board presented me with a Christmas tree ornament. I was told that the Dutch celebrate Christmas twice in December and enjoy Christmas trees until early January. The spherical ornament, with a diameter of around 7cm, has an illustrated windmill drawn on it, reflecting the advancement of windmills in the Netherlands. The beautiful ceramic ornament is so heavy that it may bend a Christmas tree unless it is solid enough. (When I think of giving Christmas gifts to my family members, I am glad, as Christmas is celebrated only once a year in Japan.)



While achievements are discussed as the top priority agenda at international conferences, participants also need to deepen relations with other participants and gather information. The JTSB is willing to expand its international network of cooperation through such means as the preparation of gifts that present Japaneseness.