Bridge to Safety

The JTSB staff, including accident investigators, are working daily to help improve transportation safety. In this section, we will introduce the various activities of our staff. I would be happy if this gives you fresh insights into our organization.

- Bridges with Foreign Countries -

Overseas business trips for aircraft accident investigations

Aircraft accident investigators

Since we had the opportunity to conduct an overseas investigation regarding serious aircraft-related incidents, I would like to take this opportunity to give more details.

Aircraft accident investigators investigate aircraft accidents and serious incidents (hereinafter referred to as "accidents and incidents"). In cases where the designers and manufacturers of the aircraft, engines, etc. are located overseas, investigations will be conducted in cooperation with the accident investigation authorities of the states concerned in accordance with international agreements.

This time, to investigate the foreign-made engine, we sent the engine to the factory of the designer and manufacturer located in Cardiff, UK, and carried out detailed investigations, together with investigation members from the state concerned.

In foreign investigations, many matters have to be resolved before traveling, such as consideration of how to transport engines broken in accidents and incidents, and arranging on-site investigation schedules. We will also conduct these adjustments in cooperation with investigation members from the states concerned. Given the numerous procedures that also apply to investigators traveling abroad, we will proceed while receiving support from the JTSB administrative department. After such adjustments and preparations, it was decided to leave for the UK, but since the end date would change depending on the progress of the on-site investigation, the return date was undecided at the time of departure.

We arrived safely in the UK, and the investigation finally began. The priority on the first day was to arrive on time from our accommodation to the factories where the investigations were being carried out. We finally arrived as scheduled using the trains and buses we had checked in advance. We used trains and buses daily during our 11-day stay in the UK, and everything was on schedule and very convenient.

City of Cardiff (around 19:30)

The investigation at the factory was carried out together with investigation members such as investigators from accident investigation authorities in the states concerned and staff of the designer and manufacturer of the aircraft and engine. The engine was disassembled little by little, and we checked and recorded them down to the individual parts. Each time, we checked the status while exchanging opinions with the investigation members. It was very steady work, but crucial as part of efforts to determine the cause.

The investigations were conducted all day long, from 8:00 am to around 6:00 pm. Although we felt like taking a break once we returned to the accommodation, having come all the way to the UK, we went out for dinner. There were many restaurants in the city offering delicious but pricey dishes, costing around 5,000 yen each time. We enjoyed the exotic atmosphere by eating delicious meat dishes etc. at restaurants for a few days, but on the other days, we ate bread, salad, and fruit bought at supermarkets in the city, and packed cooked rice, and ready meals brought from Japan.

While in the accommodation, we woke up in the middle of the night and could not get back to sleep due to jet lag. Fortunately (or unfortunately), technology has progressed so far that we were more or less able to do all the jobs we had left behind in Japan, despite being overseas. We therefore used the time difference as an opportunity to progress on our work from Japan in the middle of the night.

The investigation was progressing smoothly, but as we reached the midway point, the members involved also seemed tired, so we decided to take a day off just during weekend and I could refresh myself by walking around Cardiff and its suburbs.

After this short break, the second half of the investigation got underway. Despite the fact a final verdict remained pending, since the end date was finally in sight, we also extended our accommodation reservation.

The second half of the investigation progressed smoothly right up to the final day. All investigation members confirmed the investigative results, which rounded off the investigation in the UK.

Investigations will continue even after returning to Japan. Through on-site investigation in the UK, we will continue to carry out investigations while cooperating with investigation members from the states concerned that we actually met and with whom we talked.

Participation in the 6th International Conference on Railway Technology: Research, Development and Maintenance

Railway accident investigators

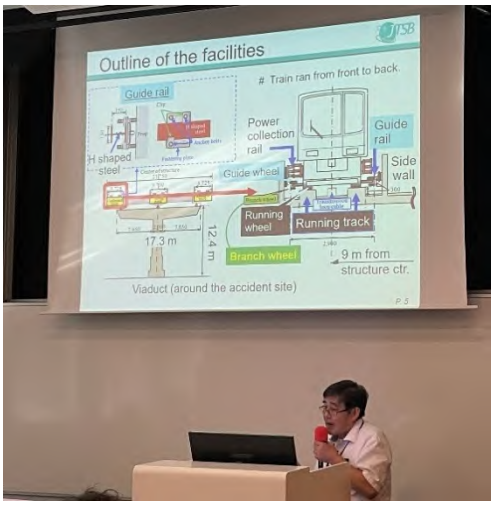
Railways 2024: The 6th International Conference on Railway Technology: Research, Development and Maintenance is an international conference held once every two years, in which railway accident investigators from the JTSB have been participating since the third such event.

The 6th conference was held in the Czech Republic capital, Prague, as a joint event with STECH2024: the 10th International Symposium on Speed-up and Sustainable Technology for Railway and Maglev Systems.

Prague is the largest city in the Czech Republic, and Prague Main Railway Station, the largest station in the city, is where most international trains arrive and depart. It is also connected to all Czech railway lines and Prague metro systems. The Prague Metro has three lines (A, B, and C) with a total of 58 stations. I also rode on the train, and the interior was barrier-free and quiet, with minimal shaking and a comfortable ride. Trams (streetcars) crisscross Prague and while many are low-floor cars, there are also older models, making for a diverse fleet. Numerous routes and operations make them very convenient, and they blend seamlessly into the city.

The international conference drew a total of 296 participants from 30 countries, not only from Western Europe, China and Japan, but also Eastern Europe. There were a total of 260 presentations, with many university personnel, railway operators and engineers from manufacturers. We have participated in this conference ever since the third event and have been striving to disseminate information about Japan's know-how on accident investigations and recurrence prevention, as well as collect the latest knowledge and information on railway safety, share information and exchange opinions with relevant parties from other countries.

The main conference sessions included presentations on aerodynamics and crosswind issues, noise, vibration and comfort, wheel-rail contact boundary issues, railway vehicle design, manufacturing and



Presentation by the JTSB

Trams in Prague

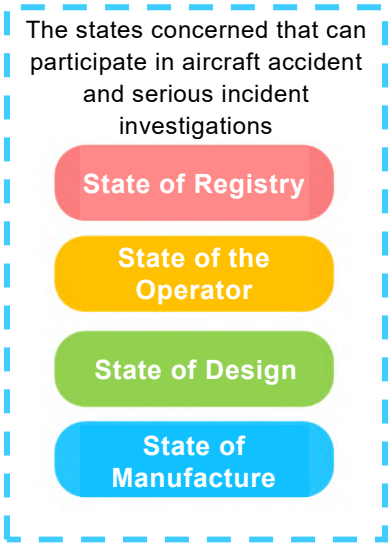
maintenance, accident analysis, condition monitoring technology and simulation, etc. There was also lively discussion about various condition monitoring technologies and data analysis techniques, and we gained insights into new technologies as well as overseas trends in matters directly relevant to our accident investigations. We would like to use the knowledge and information we gained through the conference to further improve our technology for accident investigations going forward.

Acceptance of AR in aircraft accidents investigation

International Affairs Office

Do you know the term "AR" in aircraft accident investigations? The recently popular “Augmented Reality” may come to mind, but in the context of aircraft accident investigations, it refers to an "Accredited Representative." "AR" may not be very familiar to dear readers, but I will take this opportunity to introduce how it works and the support that the International Affairs Office provides.

The second sentence of Article 26 of the Convention on International Civil Aviation (Chicago Convention) requires the State where an accident occurs to give the State of registry of the aircraft the opportunity to appoint persons to attend the investigation, and Annex 13 to the Convention stipulates that these persons are known as ARs and Advisers. ARs and advisors from the states concerned (see figure on the right) will participate in investigations in the investigating countries within the scope stipulated in the Annex.



Even when ARs and advisors participate in investigations, they rarely conduct actual on-site investigations. In most cases, communication is completed through written documents or emails. However, in accidents where the states concerned are of great interest, ARs may conduct on-site investigations, and the International Affairs Office, which is responsible for liaison and coordination with the states concerned and international organizations, will support their visit to Japan as necessary.

<Major support examples>

- Liaison and coordination with ARs and advisors prior to their arrival in Japan
- Necessary tasks and coordination when they come to Japan such as accompanying ARs and advisors to the accident sites, guiding them, managing schedules.
- Setting up meetings between the states relevant to the accident and the JTSB

In the case of the collision accident that occurred at Haneda Airport in January 2024, ARs and advisors from the states concerned such as France and the UK came to Japan, and the International Affairs Office provided support to ensure that the investigation proceeded smoothly. Although this meant viewing the accident site in person and coordinating with the parties involved and imposed tasks on us that were completely different from our usual duties, we were able to flexibly resolve the issues that arose on-site. All the experiences and lessons learned from this accident will be accumulated as knowledge and used to help investigate future accidents.