News Release

Railway Technical Research Institute

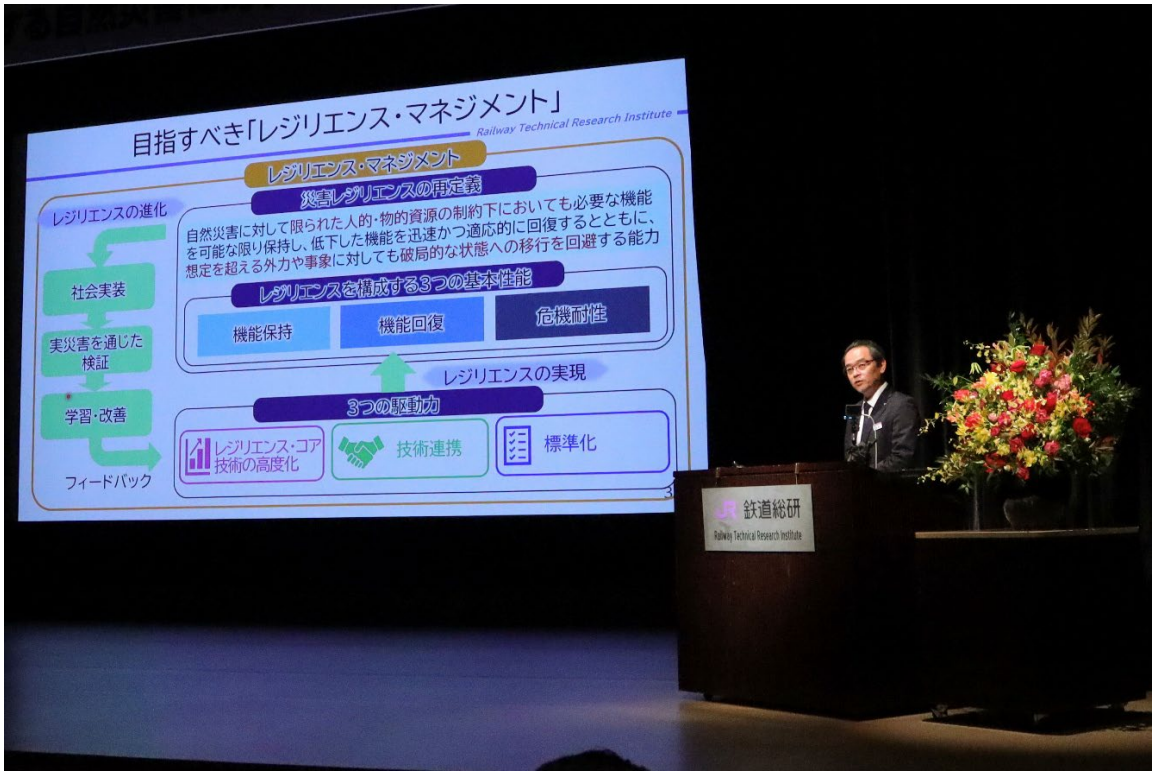
October 22, 2026

RTRI Hosts 39th Annual Conference

The Railway Technical Research Institute (RTRI) held its 39th Annual Conference under the main theme "Enhancing Railway Resilience to Intensifying Natural Disasters."

The conference opened with a welcome address by Dr. Masao Mukaidono, Chairman of RTRI, followed by six lectures and a presentation of recommendations. Approximately 400 participants attended, representing railway operators, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), universities, companies, and other organizations.

1. **Date and Time: Wednesday, October 21, 2026, 1:00–5:20 p.m.**
2. **Venue: Yurakucho Asahi Hall, Yurakucho, Chiyoda-ku, Tokyo**



Keynote lecture in progress

3. Lecture Summaries

■ Special Lecture

"Strategies for Enhancing Railway Resilience to Intensifying Natural Disasters—From a Focus on Service Continuity to Integrated Crisis Response—"
Dr. Haruo Hayashi, Professor Emeritus, Kyoto University

In recent years, natural disasters have become more severe, more widespread, and more prolonged, while the social environment has also undergone major changes, including population decline, population aging, and aging infrastructure. Amid these changes, a new approach to crisis response involving planned suspensions of train services has taken hold, and railway operation, traditionally focused on service continuity, are now at a major turning point.

The lecture considered railway organizations themselves as a focus of resilience and examined the organizational transformation prompted by planned suspensions of train services from three perspectives: Absorb, Adapt, and Transform. Here, Transform refers to a shift toward comprehensive crisis management. It then proposed a next-generation railway resilience strategy based on information sharing across track maintenance and train operation control, together with shared situational awareness.

■ Keynote Lecture

"Resilience Management in a Rapidly Changing Social Environment—Redefining Disaster Resilience—"
Dr. Yoshitaka Murono, Executive Director, RTRI

At this year's Annual Conference, I redefined the disaster resilience required of railways in the years ahead in light of intensifying natural disasters and labor shortages. This redefinition encompasses three fundamental capabilities: the two conventional capabilities of maintaining and restoring functionality, together with the newly added capability of anti-catastrophe performance—the ability to avoid a transition to a catastrophic state even when events exceed anticipated levels.

I also introduced resilience management as an approach to continually enhancing resilience through a cycle of research and development, practical implementation, verification, and improvement. I identified advances in core resilience technologies, technology integration, and standardization as the three driving forces behind achieving and further enhancing railway resilience. RTRI's role is to strengthen these three drivers and support this cycle with its technologies and expertise.

■ Lectures

"Enhancing Resilience to Weather-Related Disasters"
Dr. Osamu Nunokawa, Director, Head of Disaster Prevention Technology Division, RTRI

Lecture topic: Measures to address train stranding caused by heavy rainfall or snowfall as part of efforts to enhance resilience to weather-related disasters

The aim is to improve safety while reducing labor requirements. Advances in simulation and monitoring technologies help support investigations and decision-making and reduce the personnel required for these tasks. Integrating disaster prevention technologies and promoting standardization also help put these

technologies into practical use.

"Enhancing Resilience to Earthquake Disasters"
Dr. Akihiro Toyooka, Director, Head of Center for Railway Earthquake Engineering Research, RTRI

Lecture topic: Enhancing resilience to earthquake disasters in light of large-scale earthquakes with widespread impacts and constraints on available resources

The aim is to build earthquake-resilient railway systems. These efforts include using the seismic hazard simulator for railways, earthquake early warning systems for railways, and DISER to assess damage and support early restoration. They also include developing a concept for a future damage information platform.

"Disaster Prevention Technologies for Rolling Stock"
Dr. Makoto Ishige, Principal Researcher, Research and Development Promotion Division, RTRI

Lecture topic: Initiatives to protect rolling stock against earthquakes and strong winds in response to intensifying natural disasters

The aim is to improve the safety of railway systems. Simulations, wind tunnel tests, wind direction and speed estimation techniques, and other tools are used to enhance multi-layered protection during earthquakes and refine operational restrictions during strong winds.

"Disaster Prevention Technologies for Civil Engineering Structures and Electrical Equipment"
Dr. Kenichi Kojima, Principal Researcher, Research and Development Promotion Division, RTRI

Lecture topic: Disaster prevention technologies for civil engineering structures and electrical equipment in response to intensifying earthquake and rainfall disasters

The aim is to build disaster-resilient railway systems that can be restored quickly after a disaster. These efforts include liquefaction countermeasures, seismic performance assessment of viaducts and overhead contact line equipment, and techniques for restoring embankments and scour-damaged bridge piers. They also include enhancing anti-catastrophe performance against tsunamis and compound disasters.

■ Recommendations

"Toward Enhancing Railway Resilience to Intensifying Natural Disasters"
Dr. Hideki Arai, General Director, Research and Development Promotion Division, RTRI

At this year's Annual Conference, I proposed a set of cross-cutting measures to strengthen the three driving forces behind achieving and further enhancing railway resilience: advances in core resilience technologies, technology integration, and standardization.

These measures include continually enhancing technical capabilities through scientific inquiry that complements experience-based engineering; exploring the uncharted domain of anti-catastrophe performance; reducing labor requirements by integrating advanced technologies such as AI; fostering co-creation with other organizations and partners in other fields; and promoting the practical application of technologies through technical standards and related measures.

RTRI will accelerate resilience management by supporting its implementation across society and facilitating the sharing of information on progress.