

1. Purpose

Taking the opportunity where the Tokaido Shinkansen rolling stock made full model change for the first time in 13 years, IHRA, together with JR Central provided a special briefing and ride tour for embassy officials to better understand and to experience the significance of the launch of the new model and its technological capabilities.

The tour was aimed to increase Shinkansen's presence in the global HSR market by having participants to be aware of not only the high technological level of Shinkansen and its tireless improvement, but also its new features, including the global standardized design that can be easily constituted to any length of trainsets in accordance with local demand throughout the world.

2. Date and Time

Tuesday, October 6, 2020, 13:10-17:30

3. Co-hosted

International High-speed Rail Association (IHRA), JR Central

4. Participants (29 in total)

- Embassy officials with HSR construction plans (concepts) in their countries or has interest in HSR.

Participating countries:

Australia, Canada, Finland, India, Indonesia, Singapore, Taiwan, Thailand, US, UK, and Vietnam (11 countries)

Representing attendees:

Mr. Frank C T. Hsieh, Representative, Taipei Economic And Cultural Representative Office in Japan

H.E. Mr. Singtong Lapisatepun, Ambassador Extraordinary and Plenipotentiary, Royal Thai Embassy

Ms. Lam Thanh Phuong, Minister, Deputy Chief of Mission, Embassy of the Socialist Republic of Vietnam

Mr. Nahoom Oh and Liza Watts, First Secretary, Australian Embassy

Mr. David Bostwick, Counselor, Embassy of Canada

Mr. Mikke Kinnari, Vice Consul, Embassy of Finland

Mr. Ravindra Verma, Counselor, Embassy of India

Mr. Syamsu Rizal, Transport Attache, Embassy of the Republic of Indonesia

Ms. Zhang Junyu, Second Secretary (Political), Embassy of Singapore

Ms. Marie-Claire Joyce, First Secretary, Head of Trade, British Embassy

Ms. Jessica Walsh, Economic Officer, Embassy of the United States of America

Mr. Gary Schaefer, Principal Officer, American Consulate Nagoya

Mr. Dao Thanh Tung, Chief of Representative in Tokyo office, Vietnamese News Agency

Mr. Mikio Numata, Advisor, Taiwan High-Speed Rail Corporation

- In addition, representatives from Japanese ministries and agencies attended the tour, including Mr. Yasaburo Hikasa, Assistant Vice Minister for International Affairs, Ministry of Land, Infrastructure, Transport and Tourism and Mr. Tokuro Ambe, Assistant Director, Southeast and Southwest Asian Affairs Department, Asian and Oceanian Affairs Bureau, Ministry of Foreign Affairs.

5. Outline

(1) Itinerary

13:10 Meet at Tokyo Station

13:27 Inspection of the N700S Verification Testing Trainset "J0" at Tokyo Station
(check the nose shape, photo session)

13:42 Board "J0" and depart from Tokyo Station

In-car briefing (significance of developing a verification testing rolling stock, new functions applied to cabins of Ordinary Car and Green Car)

Mr. Masayuki Ueno, Corporate Officer, Deputy Director General, General Technology Division, JR Central

14:27 Arrive at Mishima Station and move to JR Central's General Education Center

14:45 Technical briefing on N700S

Mr. Masayuki Ueno, Corporate Officer, Deputy Director General, General Technology Division, JR Central

Q&A Session

16:05 Coffee & Tea Break

16:20 Briefing of JR Central's General Education Center (DVD) and site tour
at Shinkansen General Training Room and Driver Training

Mr. Hiroshi Matsuo, Corporate Officer, General Manager, General Education Center, JR Central

17:30 End

(2) Briefing overview

"Tireless progress of the Tokaido Shinkansen -From Series 0 to SeriesN700S-"

Mr. Masayuki Ueno, Corporate Officer, Deputy Director General, General Technology Division, JR Central

- Introduced features and achievements of the present Tokaido Shinkansen enabling its absolute safety, reliability, mass and high-speed transportation performance, and harmonization with the environment, while explaining its dramatic development under the basic concept (using a high-speed dedicated passenger rail, on-board signal (ATC) and

power distributed motor power system) since its opening in 1964.

- Explained JR Central's thorough improvements to overcome Tokaido Shinkansen's various challenges (e.g. earthquake, noise and vibration countermeasures, and ride comfort at curves) made by implementation of the basic R&D cycle which includes acquisition and demonstration of large amount of operation dataset from commercial rolling stock, ground equipment and test cars, verification through large test equipment at R&D facility, and theoretical analysis through computer-based simulation.)
- Presented that N700S is the next generation and fully remodeled Shinkansen rolling stock incorporating the results of JR Central's continuous R&D, and explained its development concepts.
- Explained the following five development concepts: ①Pursue further safe and reliable transportation (shortening brake distance in the case of an earthquake), ②Strengthen the ability of responding to emergencies (realizing the world's first battery based self-propulsion system for HSR), ③Strengthen competitiveness of the Tokaido Shinkansen (improving ride comfort and quietness), ④Reduction of system total cost (reducing running cost), and ⑤Realization of "standard designed rolling stock" applicable to various alignments worldwide.
- Regarding technological developments, Ueno introduced standardization of rolling stock and downsizing and weight reduction of equipment, and especially emphasized the technical significance brought by the standardization of equipment layout enabled through downsizing underfloor equipment.
- Presented that no matter domestic or international corridors, and without modifying the basic design, the standard designed rolling stock will give flexibility to change the number of trainsets while ensuring the same level of system reliability as the Tokaido Shinkansen.
- Introduced Taiwan HSR and the US Texas HSR Project as examples of which JR Central promotes overseas HSR deployment and provides technical consulting by utilizing the basic concept of the Tokaido Shinkansen as the global standard proven by its commercial operation records.
- Lastly, Ueno introduced that the US Federal Railroad Administration (FRA) is expected to promulgate the Rule of Particular Applicability (RPA) specific to the Texas HSR project as part of the Code of Federal Regulations (CFR). The case was introduced as an example of standardization in which Tokaido Shinkansen system can be utilized almost as it is with only the minimum safety requirement, and concluded the briefing with the emphasize on the fact that JR Central has achieved great progress with its tireless technological development based on the basic concept from the time of the development of the Tokaido Shinkansen.

(3) Participants' responses

- Participant's interest in Japanese HSR and its technological development was very high, where more participants than expected joined the event.
- At the on-board briefing in the "J0" Verification Testing Trainset, questions from the

participants continued until the time of arrival at Mishima station.

- During the N700S briefing, participants asked a wide variety of questions, including the mechanism of regenerative braking system, the effects to rolling stock maintenance due to data accumulation through on-board inspections, the staff educational system in overseas HSR projects, cooperation with manufacturers in rolling stock development, and the authorization process for new rolling stock developments.
- At the General Education Center site tour, participants experienced train simulators for the training of Shinkansen drivers, and many participants showed high interest in the operation system and educational methods for Shinkansen drivers.
- The tour received favorable reviews receiving comments such as "It was a truly fruitful visit (Frank C T. Hsieh, Representative, Taipei Economic And Cultural Representative Office in Japan)", "Briefings and visits were conducted in a sophisticated manner and the difficult technical features were well understood (Ravindra Verma, Counselor, Embassy of India)", "The tour was a great opportunity to learn the technological developments of JR Central in depth", and "Excited and impressed by having the experience to handle actual operating facilities".

【Briefing of N700S in-car equipment】



【Briefing of JR Central's General Education Center】



【N700S Briefing by Mr. Masayuki Ueno (JR Central)】



【Group Photo】

