Latest Total Solution Systems for Next-generation Railways

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SINCE the opening of Japan's first railway in 1872, the Japanese railway industry has come to be one of the world's finest, with an excellent reputation for safety, punctuality, precision, and reliability. These features have helped make railway passenger volume in Japan the largest in the world at 1.0 billion people per day per km. This figure is 6 times that of France, 8 times that of the United Kingdom, and 43 times that of the United States.

In terms of accurate operations, the average delay time for trains is 0.3 minutes for the Shinkansen lines (the bullet trains) and 1.0 minutes for conventional trains. Compared to figures for railways in Europe and United States, these are remarkable. Moreover, the Shinkansen boasts an outstanding safety record, with no fatal accidents in almost 40 years of operation since its inception in 1964.

These achievements have been attributed to the diligent efforts of Japan Railway (JR) and other private railway companies. Consequently, railway services have earned the confidence and trust of most Japanese commuters.

Since its founding, Hitachi has played a major role in the support of Japan's railway system in railway equipment and machinery design and manufacturing. Today, Hitachi is providing total solutions for railway systems, as Japan's only total system integrator with innovative technologies. These solutions cover a broad area, from rolling stock, traffic management systems, signaling systems, communications systems, information systems, power stations, and maintenance facilities.

Recently, the world is reevaluating the quality of railway systems from the environmental standpoint, while railway companies are demanding even greater operational efficiency and higher levels of maintainability. In response to these needs, Hitachi is working to provide the world with total solutions, which include the following:

- A recyclable rolling stock system with an aluminum structure and modularized interior components that suppress noise and increase passenger comfort and safety while conserving the environment
- A train traction and propulsion system that provides a comfortable moving space for passengers while reducing maintenance
- A hybrid propulsion system that combines an engine generator with storage batteries, to provide a regenerative braking system that saves energy
- A traffic management system that can control high-density railway traffic operations
- A signaling system that makes field operations more efficient and ensures passenger safety
- A compact monorail system designed for small-scale urban transportation, eliminating delays due to traffic jams on the road
- An information service system that provides up-to-the minute information and services to railway users

This issue introduces some of our solutions.

As a total solution partner, Hitachi is striving to create "railway systems with an undisputed and unexcelled reputation" that will contribute to the progress of the railway industry throughout the world.