

Development of Environmentally Conscious and Comfortable Railway Transport Systems



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RAILWAYS have an inherently low impact on the environment and as a result their importance has been growing in step with the heightened severity of global environmental problems in recent years. Meanwhile, economic stagnation has also become a major political issue internationally and this is creating a need for economic stimulus measures. As a potential solution to these problems, the expectations placed on railways have reached unprecedented levels with notable developments including a steady stream of new announcements about the construction of high-speed railways on the American continent and in Asia, not only as an environmental measure but also with the aim of supporting domestic industry and establishing the environmentally conscious transport infrastructure that will be indispensable to future economic growth.

Hitachi has been engaged in unrelenting technology development for the Japanese railway market which is the toughest in the world and we have been working on the development of technology for all aspects of railway systems, from technologies for further reducing the environmental burden through to technologies that support high-speed transport services. The results of this work are applied in ultra-high-density reliable train operations for urban services that are unmatched anywhere in the world, and in highly reliable long-distance, high-speed, and high-density railway services such as the Shinkansen. The level of interest in technologies for comfortable travel is also growing as society progresses and we are intensively developing technologies in this area also. Now, these

technologies that we have developed in Japan are starting to be recognized worldwide and the number of projects being undertaken in the international market has been increasing.

In addition to developing technologies for safe and reliable transport, we develop technologies that are attracting a growing level of interest and we also aim to contribute to global railway transport with attention to global standards.

From among the activities in which Hitachi is involved, this issue looks at the following technologies in particular.

- The “A-train” technologies for high-speed operation and reduced environmental burden which are being promoted by Hitachi
- Technologies for reducing losses and shrinking the size of the main drive circuit
- Technologies for reducing energy consumption by making effective use of regenerative electric power
- The Class 395 train system which has generated significant public interest in the UK and formally commenced operation in December 2009, and the monorail system for the Palm Jumeirah Transit System in Dubai of the United Arab Emirates which commenced operation in April 2009.

While this issue of Hitachi Review has only been able to cover some of what we are doing, we intend to continue developing leading-edge technologies so that we can go on contributing to railway systems around the world as a total system integrator. We will work hard to become the most trusted partner in the world.