



Newsletter on the
Latest Technologies
Developed by RTRI

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Research and Development for the Future of Railways

Kimitoshi ASHIYA

Director, Research and Development Promotion Division

Foreseeing the future five to ten years ahead, RTRI is now promoting research and development of wide-ranging subjects under the overall title of "Research and Development for the Future of Railways." Some subjects are expected to have far-reaching effects after commercialization. RTRI is also implementing basic studies to analyze various phenomena and constructing tools that will result in highly significant breakthroughs in railway research and development.

The five subjects currently under promotion are (1) improvement of safety and reliability of railway systems, (2) high-efficiency use of energy, (3) innovation of maintenance, (4) sustainability and development of railway networks and (5) construction of railway simulators. Among these subjects, those in (1) and (2) are specified as "subjects of particular importance" on the basis of the experience in The Great East Japan Earthquake Disaster in March, 2011.

Regarding the subject (1), RTRI is developing technology to predict the occurrence of natural disasters such as destructive earthquakes, tsunamis, strong winds and heavy rains as well as measures to prevent damage therefrom. To attain the target in (2), RTRI promotes development of high-efficiency induction motors to save energy consumed by rolling stock, improvement of power transmission effi-



ciency in DC sections and development of superconductive cables to reduce energy consumption by power supply equipment. Additionally, RTRI is making efforts to develop basic technology to run trains on virtual permanent ways constructed in computers in order to reproduce various phenomena specific to railways and facilitate solutions through simulation.

The research and development programs referred to above are generally being promoted as scheduled, with their outcomes expected to contribute to the sustainability and development of railways, not only in Japan but also in other countries around the world.

芦谷公稔