



Newsletter on the
Latest Technologies
Developed by RTRI

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Foreword

Mitsutoshi INAMI

By Mitsutoshi INAMI, General Manager, Planning Division

The Joetsu Shinkansen, which was disrupted by the Niigata Chuetsu Earthquake, restarted services on December 28, 2004, and was put back into normal operation for the first time in 66 days. Despite the fact that the earthquake caused derailment of a train on the line, there was not a single casualty. Some say that was "lucky." I do not think that this was merely good luck. Forty years have passed since the first Shinkansen was put into operation. Since then, Japanese railway engineers have made continued efforts to improve the earthquake-resistance of the Shinkansen system, while learning lessons from, say, the great Hanshin-Awaji Earthquake in 1995. I feel, therefore, that in the Niigata Chuetsu earthquake, fortune favored these efforts. However, there are still many things to do to make the Shinkansen system much more resistant to earthquakes. RTRI has been striving to clarify the mechanisms of train derailment during an earthquake. At present, a significant amount of resources is being poured into the research on this particular subject. As increasing quantities of research results are accumulated, we anticipate that new technology developments will be implemented for improving the earthquake-resistance of the Shinkansen system, including vehicle/track structures which reduce the possibility of derailment, inventions to minimize the damage to passengers in case of derailment, wayside structures having better resistance to earthquakes, and more sophisticated early warning systems.

Starting in April 2005, RTRI will launch research activities based on its new master plan—Research 2005. For the coming five years, RTRI will implement R&D in accordance with this master plan. (For a detailed description of the master plan, see the relevant article in this volume.)

Since 1990, RTRI has implemented technology

development for Maglev on the Yamanashi test line. This stage of project was finalized in March 2005. The Maglev Practical Technology Evaluation Committee of the Ministry of Land,

Infrastructure and Transport has judged that "The key technologies for practical application of Maglev have now been established." In Research 2005, therefore, RTRI is to focus on applying its accumulated Maglev technologies to conventional railways, instead of extensive Maglev technology development.

Research 2005 has been formulated based on predicted changes in the Japanese railways and social structure during the next 5 to 10 years. The major changes predicted include: (1) a continually declining birthrate and increasingly aged society in Japan, (2) growing national awareness of the global environment and (3) rapid progress in IT.

With the recognition of the above trends, RTRI intends to create new technologies for the future of railways by implementing R&D activities more energetically than ever before. These include new railway management technologies for saving labor, railway services that are convenient and comfortable even to the elderly, fuel cell vehicles, technology for saving energy, and maintenance technology applying remote monitoring and satellite communication.

Mr. Mitsutoshi INAMI



From Editor

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