

Editorial **The next 50 years**

Feature **Evolution of Railway Technology**

Japan's Rail Technology Development from 1945 to the Future

Satoru Sone Professor at Kogakuin University

Japan's railways have continued its technical developments since the end of WWII, and have probably achieved the world's premier position in terms of EMU technology and safety, although they suffered from devastations caused by the war, serious accidents during the 1950s and the early 1960s, severe competition with motor transport, etc. As Japan's leading scholar in power electronics and railway systems engineering, the author explains the postwar Japan's major advances in rail technology in the context of world developments. He also examines current problems and their possible solutions

Railway Technology—The Last 50 Years and Future Prospects

Roderick A. Smith Professor at Imperial College, London

The past 50 years have seen a greater pace of change in technology, operation and management of railways than any other period since the pioneering days. Reviewing the past developments in the UK and Japan, the author, Britain's leading scholar of railway engineering with close contacts with Japan, also examines some key issues that would determine the course of railways in the next fifty years.

50 Years of Progress in Railway Technology

François Lacôte ALSTOM Transport

French National Railroad (SNCF) has been the major driving force of high-speed railways in the postwar Europe. The author, having led the SNCF engineers in developing the TGV-Atlantique train that still holds the world speed record of the steel-wheel-on-steel-rail system, looks back into the past technical development and examines various challenges that are confronting European railways.

Reflections on Postwar Technical Exchanges between Japanese and French Railways

Terushi Hara Professor at Waseda University

By inspiring French railway engineers through the opening of shinkansen, the world's first dedicated high-speed railway, Japanese engineers returned what they had borrowed from France. The author, specialized in economic and management history of France and Japan, presents a historical reflection on the postwar Franco-Japanese exchange of railway engineering, focusing on the development and introduction of AC electrification at 25 kV-50 Hz.

JNR's Choice of Traction System—From Loco-hauled to Multiple-unit Trains

Kenji Inayama Lecturer at Meiji Gakuin University

Today, most of Japan's long-distance express passenger trains are multiple-units. Until the late 1950s, however, they were mostly locomotive-hauled in Japan, too. The author, a young and energetic scholar of management administration, investigates how the postwar national railways of Japan developed its EMU technologies and how it adopted multiple-unit trains as its long-distance express services prior to the opening of the Tokaido Shinkansen in 1964.

**Another Perspective
Breaking Borders**

Torsten Bathmann Humboldt University

The 1989 fall of the Berlin Wall and the subsequent end of the Cold War brought immense changes in world politics and economy, and it seems now that nation states are losing their ability to control worldwide competitions that are being played by global players. In history, however, the 19th century saw the early railways creating new borders by unifying nations and strengthening national economies. A young German student looks into the historical significance of railway nationalization in his county and Japan.

**Railway Operators in Japan 1
Railways in Japan—Public & Private Sectors**

Kazushige Terada Associate Professor at Tokyo University of Mercantile Marine

This new serial is to introduce Japan's numerous rail operators region by region. The first installment explains the structure of Japan's railway industry including the JR's, private railways and municipal subways as well as the regulatory and financial roles of the government

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