

# JRTR

Japan Railway & Transport Review

## Feature

### IC Cards

- Launch of Nationwide Interoperable Transport System IC Cards

### Special Feature

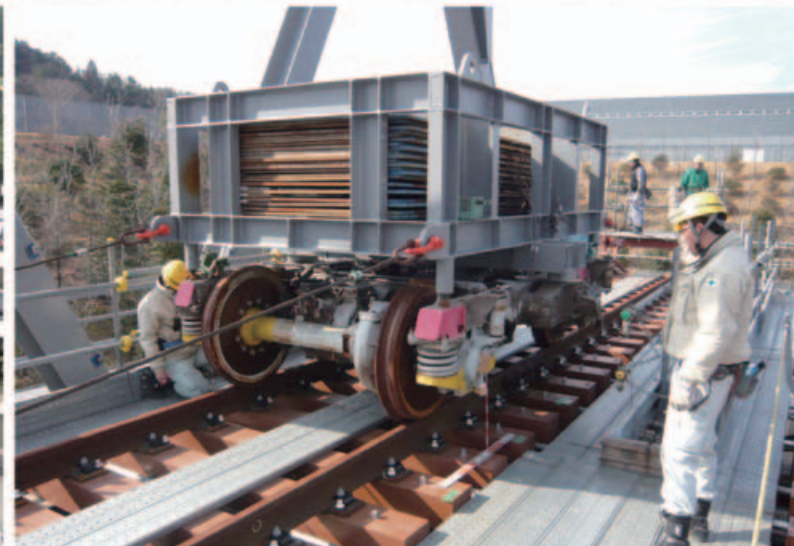
- Establishment of Japan Transport Engineering Company (J-TREC)

### Maintenance of Railway Infrastructure

- Large-scale Renovations of Civil Engineering Structures on Tokaido Shinkansen
- Maintenance of Railway Structures with Aging Deterioration and Amarube Bridge Reconstruction
- Countermeasures to Deterioration of Infrastructure on Small- and Mid-Sized Railways

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Clockwise from top left: JR West's tunnel  
maintenance; JR Central's full-sized truss  
model; JR Central's dynamic load testing  
with shinkansen bogie; Reconstruction of JR  
West's Amarube Bridge. All photographs are  
courtesy of JR Central and JR West.

## Responsibility to Enhance and Maintain Infrastructure

The year was 1985 when the decline of the United States economy and the prosperity being enjoyed by Japan provided the backdrop to the currency adjustment that was concluded under the Plaza Agreement. Already at that time it had been more than 50 years since the Empire State Building and George Washington Bridge had been constructed, 70 years since the Manhattan Bridge had appeared on the skyline and a century since the pylons of the Brooklyn Bridge had taken to the skies. The number of lanes on the highway on the bridge had been reduced off and a large-scale refurbishment was taking place. Over the course of several decades the paving of the FDR East River Drive had degraded and there were frequent incidents where parts of the concrete ceiling of the tunnel would fall off. In addition to the high rate of crime on the subway, the system was beset by train breakdowns, signal failures, damaged tracks and fires caused by accumulated dirt and grime, which resulted in many people thinking twice about using the subway. The situation in New York at that time provided a cautionary example about while it is good to develop infrastructure on the one hand, if maintenance costs are not expanded accordingly at the same time, or if the maintenance is neglected, what kinds of situation may arise. So what is the status in Japan? There was a time in 1999, approximately 10 years following the bursting of the economic bubble, when there were frequent reports of concrete falling from railway tunnels. Fortunately none of these incidents caused a large-scale accident, but sadly in subsequent years a large accident would actually occur in a road tunnel. It was in December 2012 when a suspended ceiling panel fell from the ceiling of the Sasago Tunnel on the Chuo Expressway in Yamanashi Prefecture, claiming the lives of nine people. The architect Kisho Kurokawa noted at the time 'The wonder of the shinkansen lies in the fact that decades have been spent engaged in thorough maintenance and that is something that should never cease to be praised, rather than its creation'. As a general principle it is preferable for the 'birth parents' of any organization or structure to continue to be the 'foster parents responsible for rearing and nurturing'. If we look at the organizational structure of JR, which took on the networks and businesses of Japanese National Railways (JNR), we can see that both the construction and maintenance divisions remain under the control of each of the successor companies. This is significant in that it has ensured consistency in responsibility and also the sharing of information. Although people tend to focus their interest and attention on building things, we are now in an era in which the newer and/or the more advanced the technology is, the greater our attention needs to be focused on post-construction maintenance.

K. Aoki

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