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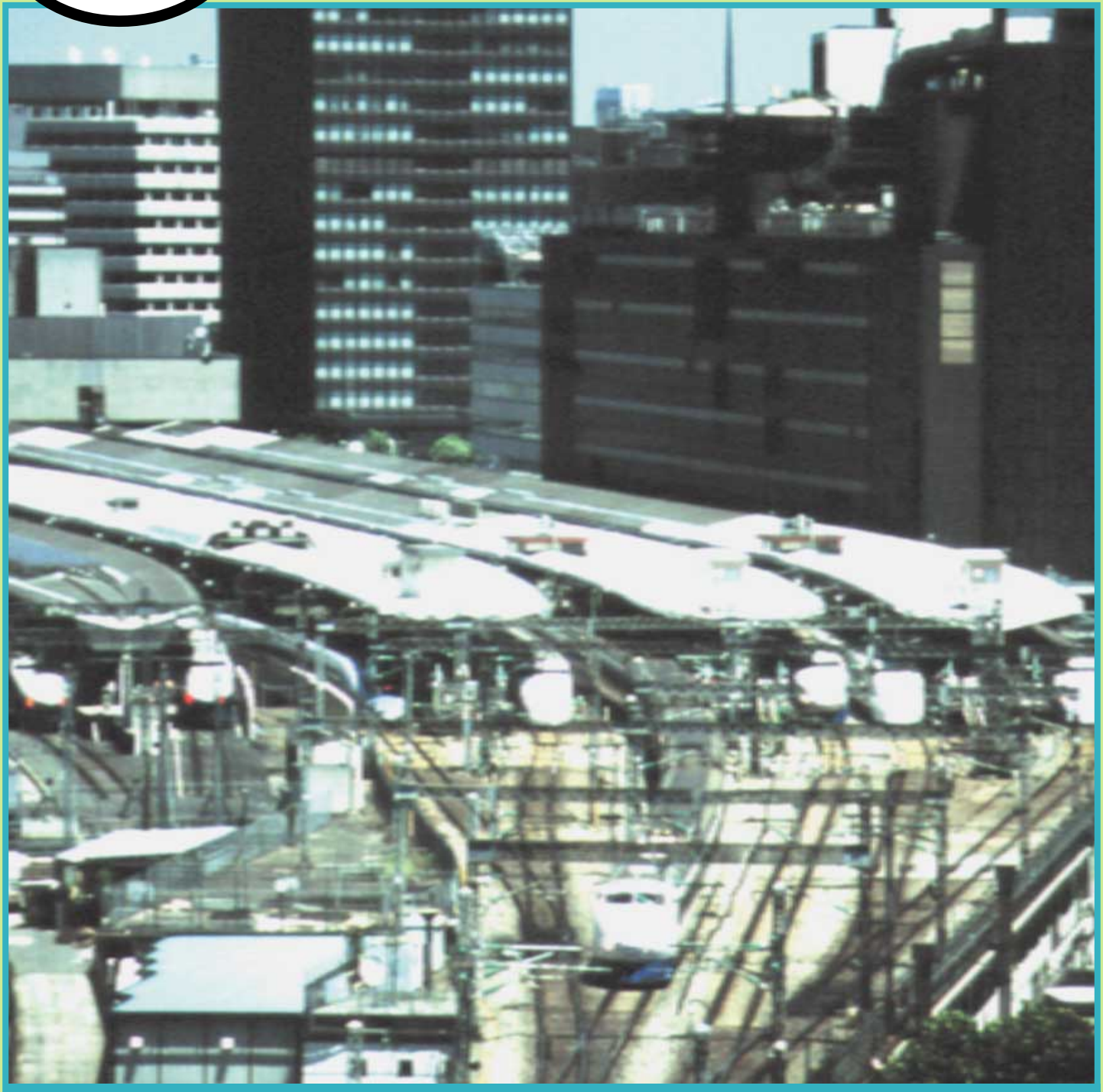

FEATURE: Evolution of Railway Technology

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Shinkansen trains at Tokyo Station. The three platforms from the right are for the Tokaido Shinkansen. One of the two platforms for the Tohoku, Joetsu and Nagano shinkansen is at the far left. (M. Miura)

Editorial

The next 50 years

The past 50 years saw some remarkable achievements in transportation technology, including the opening of high-speed railways such as the Japanese shinkansen and French TGV, widespread use of jumbo jets, container ships and supertankers, and explosive growth of automobiles. But will the next 50 years see more remarkable progresses? Given environmental constraints and limited natural resources, it is highly unlikely that technologies such as supersonic jumbo jets or ultra-monster tankers will see the light of day in the foreseeable future. Germany and Japan are still trying to develop magnetic levitation technology for high-speed trains, but the lack of compatibility with existing infrastructure and uncertain construction and operation costs mean that maglev trains will never be the leading actor on trunk lines. Future technical developments will more likely be directed to improving management efficiency, reducing environmental impact, and upgrading the human interface for both customers and railway staff, with full use of information technology and energy-saving methods. Previous big advances in transportation have always been encouraged by high economic growth, but the economies of Europe, North America and Japan have matured, suggesting that the next big breakthroughs may occur in regions such as China and India.

T. SUGA

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