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FEATURE: Railways and The Environment (part 2)

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Single-car DMU running through  
snowdrifts on JR East Ominato Line  
between Arito and Fukkoshi in Tohoku,  
northern Honshu  
(M. Mashima Photo Office)

## Editorial

### Are Trains Almighty?

It is commonly assumed that trains are more environmentally friendly than automobiles. This is largely true, but not always. We must remember that the environmental friendliness of trains is based on the high efficiency of rail transport. A train carrying hundreds of passengers or thousands of tonnes of goods is surely much more efficient than motor vehicles. However, a train carrying only a few people or a very small amount of goods is much less efficient than automobiles in terms of energy consumption, CO<sub>2</sub> emissions, etc.

When the reform of Japanese National Railways was being discussed some 15 years ago, a government calculation showed that if the passenger traffic density (passenger-km/route-km) of a railway line does not exceed 4000 per day, motor transport could carry those passengers more efficiently from the viewpoint of national economy. Even if the environmental factors are taken into account more carefully, the result would be much the same. Today, the average passenger traffic density of Japanese railways exceeds 30,000 per day, but there are many lines below the 4000-per-day level. Surprisingly, the same calculation shows that most European railways have average traffic density of about 5000, suggesting the existence of numerous underused lines.

Environmental considerations do not justify maintaining inefficient rail operations in low-demand areas, nor eliminating motor transport completely. The realistic solution should therefore be pursuing both more efficient rail operation and more advanced anti-pollution technology for motor vehicles.

T. SUGA

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