

Transportation

TRANSPORTATION

Learning Efficiency from Kingfishers

The Shinkansen Bullet Train of the West Japan Railway Company is the fastest train in the world, traveling 200 miles per hour. The problem? Noise. Air pressure changes produced large thunder claps every time the train emerged from a tunnel, causing residents one-quarter a mile away to complain. Eiji Nakatsu, the train's chief engineer and an avid bird-watcher, asked himself, "Is there something in Nature that travels quickly and smoothly between two very different mediums?" Modeling the front-end of the train after the beak of kingfishers, which dive from the air into bodies of water with very little splash to catch fish, resulted not only in a quieter train, but 15% less electricity use even while the train travels 10% faster.