

such as the use of RFID for passenger identification could easily speed up the disembarkation process, but then a bottleneck would quickly occur in the terminal facilities. To alleviate this problem, significant investments will need to be made in these facilities similar to those that had to be made as the airlines put larger and larger aircraft into service.

Transportation Transformations

Significant changes will be noticed in all forms of transportation. Speed and efficiency will increase thanks to advances in technologies and materials. Every form of transportation from automobiles to ferries will see change. For example, ferry transportation, which has been an old standby, should become more prevalent and popular in the face of increasing demands for energy efficiency. New high-speed ferries cut down on travel time by taking shorter across-the-water routes than land-based alternatives or over shorter routes that would be prohibitively expensive for air service. For example, introduced in 2004, the *Lake Express* ferries cross Lake Michigan from Milwaukee to Muskegon in just two and one-half hours.

Expanded rail service will also provide additional relief to crowded transportation corridors. Proliferation of high-speed rail service will be the hallmark of this transportation mode for years to come. Although speeds of 100 miles per hour are commonplace, plans are already being tested to produce trains that travel at much higher speeds. Magnetic levitation (Maglev) trains, especially on shorter high-traffic routes, will replace traditional track-based trains. Maglev trains generate their own energy from the friction created over their magnetic lines and will travel at speeds in excess of 300 miles per hour. As the convenience and comfort of magnetic levitation technology spreads from its experimental status to the norm for high-speed rail travel, more and more passengers will be drawn from the airports to the ground.

To get an idea of how efficient train travel could be, think about the following proposal. Brad Swartzwelter, a conductor for Amtrak, has suggested that the solution to transportation problems within the United States could be solved by underground trains. He proposes that tunnels be dug, connecting points A and B, and a magnetic levitation system be installed to carry travelers between these points at speeds up to 900 miles per hour. Future technological advances could lead to a transcontinental trip that could be completed in approximately three hours.³²

In the meantime, in the United States and throughout the world, you can expect that more high-speed trains will be put into service as demand continues to be fueled by the efficiencies of point-to-point service in high-demand corridors prompted by fuel costs, security delays, and continuing customer-service problems at crowded airports. Noticeable increases in this type of service in China and India have been seen as the appetite for travel explodes.

Connector trains will become the norm for mass transit in densely populated corridors and as connectors for newly built airports. As you will see next, there will be a boom in new airport construction. In these new facilities, ticket counters, parking, and baggage checking will be located at substantial distances from the airports, which will be built far outside of urban areas to alleviate noise, road traffic, and airspace congestion. These new airports will become destinations in themselves, featuring a wide variety of entertainment options for locals and travelers alike.³³

The future of air travel presents a picture that at first seems to be incongruous. As airline fleets are upgraded, these new planes will be larger or smaller, faster or slower, and be designed to fly more direct routes. First, you will see more of the double-decker superjumbo jets, the 555-seat A380, serving long-haul trans-Pacific and trans-Atlantic routes. These extremely large aircrafts can serve routes only between airports that have made infrastructure investments to handle the weight of the planes on the runways, and