

TRACKING THE ECONOMY

AN OLD INDUSTRY CHUGS ALONG



The freight railroad system was one of America's early infrastructure successes, and, despite great changes in the U.S. economy, it remains a vital link in the nation's commerce.

Every six hours, a freight train more than a mile long glides into a 200-acre asphalt expanse 25 miles south of Atlanta, in Fairburn. Many originating in California, the trains are double-stacked with metal containers stuffed with everything from iPhones to T-shirts to auto parts to appliances to toys to FedEx packages. The containers—800 of them each day—are decoupled, and then lifted from flat cars by towering cranes that straddle the tracks and by more modest “side loaders.” Next, smaller cranes as well as trucks place the containers on a chassis so tractor-trailer trucks can deliver them to their next destination. Most of the products will be used within a 200-mile radius of the Fairburn, Georgia, CSX Intermodal Terminal, explained Mike

Herman, terminal manager. (“Intermodal” refers to transporting cargo via multiple modes of transport, trains, trucks, and—for some cargo—oceangoing ships.)

The Fairburn terminal is but one of dozens like it in the Southeast and of hundreds like it across the country. (CSX alone has more than 60.) The rail yards are cogs in an important if largely unseen part of the nation's transport system. In terms of “ton miles,” a measure of cargo volume that considers weight and distance carried, railroads haul the most goods of any form of transport in the country, about 40 percent of the total, up from 27 percent in 1980, according to the U.S. Bureau of Transportation Statistics (see the infographic on page 8).





WHO CARRIES HOW MUCH U.S. FREIGHT IN TON-MILES

 40% railroad

33% trucks 

 14% pipelines

12% barges 

 0.3% airplanes

Note: Data do not total 100 due to rounding.
Source: U.S. Bureau of Transportation statistics



country's largest industry in the early 20th century—are now less than half those of Apple Inc.

At the crossroads of the nation's economy

Though its profile might have diminished, the freight rail business sits at literal and figurative intersections of the economy. Because trains haul such a variety of cargo, rail plays a role in virtually every industry, making it a highly cyclical business and a reliable economic barometer. Economic and population growth leads to more movement of goods, which means more business for railroads, according to Bruce Lambert, executive director of the New Orleans-based Institute for Trade and Transportation Studies.

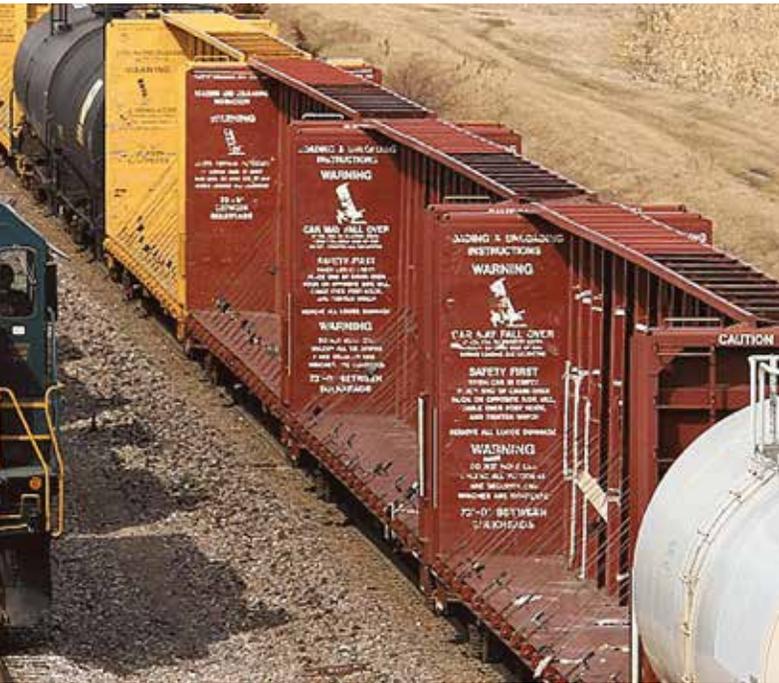
Rail industry dynamics offer a great deal of fodder for interpretation. The average American annually consumes enough products to fill nearly three of the 40-foot-long containers that move through Fairburn and other rail yards, Lambert said. So more Americans mean more consumption and thus more containers. A growing economy and population fuel the industry, and railroads have fared well, said Clarence Gooden, executive vice president of CSX Transportation. CSX is, along with Norfolk Southern, one of two major rail lines operating in the eastern United States.

"I think this economy's a lot stronger than we're giving it credit for," Gooden, a member of the Atlanta Fed's trade and transportation advisory council, said recently. Gooden noted that through May, cargo volume at Jacksonville, Florida-based CSX was up 8 to 9 percent over the same period a year ago. "Something's moving," Gooden said. "Somebody's buying something."

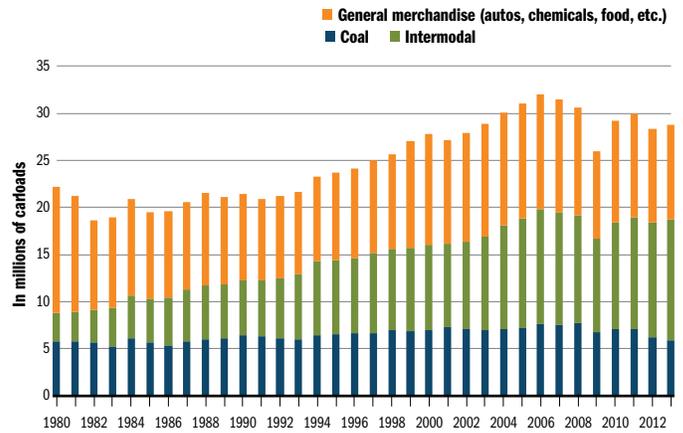
After enduring severe financial woes during the 1960s and 1970s, regulatory reforms helped the freight rail industry become more competitive. Rail lines shed unprofitable miles of track and consolidated. Today, there are seven Class I, or major, railroad companies, down from 106 in 1960. Though there are still hundreds of smaller rail lines, five of the seven big companies account for nearly 90 percent of the industry's total revenue.

Freed in the 1980s from federal requirements to provide service where it was not financially feasible, freight railroads today operate about 140,000 miles of track nationally, less than half the track they had in the mid-1960s, according to the Association of American Railroads (AAR).

Certainly, the industry remains formidable. Overall revenues topped \$70 billion last year and employment rose to roughly 180,000, the AAR notes. Yet in a sign of how much the economy has changed, the annual revenues of the entire rail industry—the



What's on the Trains?



Source: Association of American Railroads

As coal declines, intermodal rises

Some of what people are buying moves through the Fairburn Intermodal Terminal, where every movement of every container feeds wirelessly into global positioning systems, to be relayed among CSX and its customers. These systems can track their containers in the same way that consumers track packages for delivery. The rail line's customers in this case are mostly trucking firms that dispatch hundreds of tractor-trailers a day to the terminal to fetch containers and deliver them to their final destination—a typical example of intermodal transport.

Intermodal is the present and the future for the freight rail industry. In the past couple of decades, intermodal shipping became the second-largest freight category on the rails (in terms of revenue) behind coal, as the number of containers carried by trains has more than doubled since 1990, according to the AAR (see the chart).

Containers' growth comes at a good time for rail because the demand to haul coal is slipping. During 2013, the industry generated more revenue from intermodal cargo than from coal for the first time in many years, said Dan Keen, the AAR's assistant vice president of policy analysis. Rail lines hauled a record 13 billion containers in 2013, and during the second quarter of 2014 were well on the way to breaking that record, Keen said. Intermodal accounted for 22 percent of industry revenue last year, a share that has steadily grown over the past quarter century and figures to keep rising.

Global trade plays a large role in intermodal transport. Ships carry hundreds of strategically stacked containers, most of which eventually end up on trains. According to the World Bank, international merchandise trade accounted for 24 percent of U.S. gross domestic product in 2012, up from 14 percent 25 years earlier. Adjusted for inflation, that growth equates to a jump to nearly \$4 trillion in trade in 2012 from about \$700 billion in 1987.

Railroads continue to invest heavily in their intermodal facilities. Each of the Class I firms typically opens or upgrades several intermodal terminals every year, Keen said. These firms have also strengthened tracks and bridges and expanded tunnels to support the taller and heavier double-decked trains, which currently make up 90 percent of CSX's intermodal traffic, according to Gooden.

Power plants cool on coal

Intermodal will continue to be vital for railroads. As they look ahead, a coal comeback would seem unlikely. Trains carry most of their coal to electricity-generating plants, but in the past four and a half years, 167 coal-fired power plants have closed or announced they are closing, and another 183 proposed coal plants have been canceled since 2005, according to the Sierra Club. In 2013, coal generated 39 percent of U.S. electricity, down from 50 percent in 2005, according to data from the U.S. Energy Information Administration.

Power companies are turning away from coal because of tighter antipollution standards and moving toward cheaper, cleaner alternative fuels such as natural gas and solar and wind power. Gooden doesn't foresee a bright future for coal in the

Continued on page 35



United States, but he believes demand to haul coal to seaports for export to other countries will persist.

The two railroads that dominate the Southeast certainly have run fewer coal trains lately. Revenue from coal hauling for CSX and Norfolk Southern combined declined nearly \$2 billion, or 25 percent, from 2011 to 2013, according to the companies' financial reports. At the same time, combined intermodal revenue for the firms rose by 15 percent. Crude oil shipments have also risen dramatically, but still make up a smaller business than intermodal for the rail lines.

"If you would've told me four, five, six, seven years ago that my [coal] revenue would be down a billion dollars in three years and my earnings after that would still be up, I would've told you, 'No way,'" Gooden said. "But in fact they have been up, way up, since then." Indeed, from 2009 to 2013 combined operating income at CSX and Norfolk Southern climbed 59 percent.

Intermodal alone isn't making up for the dip in coal shipments. A stronger economy, higher prices and wider profit margins, and rising crude oil shipments have also helped offset the declining coal business.

Shipments of crude oil and liquefied petroleum gas were behind big increases in the volume of chemicals that the two major eastern railroads carried in 2013 and early 2014. Chemicals posted double-digit percentage volume and revenue gains for CSX and Norfolk Southern in 2013 and the first quarter of 2014, according to the companies' financial reports filed with the Securities and Exchange Commission.

Whether oil represents a sustainable growth opportunity for railroads is not clear, said Gooden and Lambert. Even though volume has soared recently because of the shale fracturing boom and a shortage of pipelines out of the Great Plains states, crude still represents a small share of train cargo, Gooden said. He believes pipelines will eventually supplant trains in moving oil and gas.

Also, just how long the gusher will last is unclear, Lambert noted. If production continues at a high rate for many years, rail

lines could continue to see that part of their business grow. On the other hand, long-term robust oil and gas production would also increase the feasibility of major pipeline construction, Lambert said. In addition, safety concerns about hauling petroleum products on trains have received widespread media and public attention. Those concerns are leading rail companies to purchase expensive rail cars better suited than their predecessors to carrying oil.

An old mode goes high tech

No oil comes through the Fairburn Intermodal Terminal, only big metal boxes. But those boxes are handled with great care. Modern-day rail lines employ all manner of technology: robots to hook and unhook cars that are headed to different destinations, drones with video cameras to inspect the undersides of bridges, and onboard systems that automatically transmit information about the condition of wheels and other gear. Those mile-long trains carry only two people to run them and could easily operate with one, Gooden said.

And rail companies track exactly how long it takes cars to move through their yards. (For CSX, it took an average of 27 hours during the first quarter this year. Bad winter weather was the culprit in pushing that figure up from 22 hours in the first quarter of 2013.) Whether a little faster or slower, the cars keep rolling through in an endless stream, every day of the year.

"I don't think there's any question the U.S. population is going to continue to grow," said the AAR's Keen, "and these people are going to need clothes and food and fuel and lumber." ■

This article was written by Charles Davidson, a staff writer for EconSouth.