



## Breaking Free of Intermodal Gridlock

New models in intermodal shipping are creating regionalized opportunities in inland and rural markets.

By David Warren (Aug/Sep 06)

Malcolm McLean had a good idea. Instead of handling freight piece by piece at each step along the supply chain, why not load it once into a big box and not touch it again until it arrived at its final destination? Thus was born the revolution in shipping known as intermodal, now accounting, by one estimate, for up to 70 percent of all freight movement in the United States.

Just as containerized shipping itself was a response to inefficiencies and high cost, so is the next wave in intermodal shipping — the movement away (but not too far away) from crowded big city intermodal facilities. Since the beginning of the new millennium, "next generation" container yards have been showing up in relatively rural locations, sometimes as "build-it-and-they-will-come" projects, but more often as a response to a strategic alliance of factors. An underserved market, frustration with congestion in major hubs, proximity to rail and highways, and the presence of existing rail-served facilities — or, more likely, the combination of several of these — is driving today's new intermodal hubs.

### Historical Perspective

It was just over 50 years ago that this revolutionary way of moving cargo was born. The moment was well-documented when Malcolm McLean, the founder of McLean Trucking and later Sea-Land, loaded 58 truck trailers onto his converted World War II tanker ship, the SS Ideal X, at the Port of Newark, New Jersey. On April 26, 1956, the ship set sail down the East Coast, around Florida, to the Port of Houston and into the record books as the first documented containerized cargo shipment that didn't require the muscle power of hundreds of longshoremen.

Containerization wasn't embraced enthusiastically immediately after that first shipment. In fact, as Marc Levinson writes in his book, *The Box: How the Shipping Container Made the World Smaller and the World Economy Bigger*, it wasn't until the rapid troop buildup in Vietnam in 1965 that containerized shipping came into its own. In response to the Pentagon's request, McLean won a \$70 million contract to move material to Vietnam by container. The success of that venture proved that the increase in efficiency would be well worth the millions of dollars required to invest in specialized cranes, new port facilities and rail infrastructure to make the system work on a large scale. And it has worked. Research by Oakland-based Matson Navigation Company indicates in 1959 the shipping industry could load and unload a little over a half-ton of cargo per man-hour using traditional "break-bulk" methods where hundreds of longshoremen muscled individual items into and out of cargo ship holds. By 1976, with container shipping well underway, that six-tenths of a ton per man-hour had exploded to 4,234 tons per man-hour. A ship's time in port had shrunk from three weeks to just 18 hours.

Today's huge container ships, capable of carrying 6,000 containers or 40,000 tons at a time (the next generation may carry as many as 10,000 boxes), guarantee even greater efficiency in mixed cargo transit. But the growth in container volume that mirrors the growth in global trade creates its own problems that threaten to undermine the efficiency containers were designed to eliminate.

### The Rural Solution

Too many containers arriving too quickly tax the capacity of big container ports like Long Beach, Calif.; Newark, N.J.; and Hampton Roads, Va. And inland rail hubs like Chicago, where six Class I railroads converge, are feeling the strain as well. "It can take as long to get across town in Chicago as it does to move across the country," says A. Michael Knemeyer, Ph.D., assistant professor of logistics at Ohio State University. "We've seen a lot of discussion about smaller satellite intermodal terminals driven by congestion at some of the bigger facilities."

The discussion has recently turned into reality in Marion, Ohio. Schneider National Inc., the Green Bay, Wisconsin-based trucking firm, has combined with CSX Intermodal, the Kansas City Southern railroad, and the Marion Industrial Center to create a dedicated intermodal service into and out of the Ohio Valley region. Unlike most intermodal terminals run by the railroads, this is the first operated by a truckload carrier, according to a Schneider news release announcing the new service.

"This gives our customers seamless service no matter the mode of transport," says Scott Arves, president of the transportation sector at Schneider National. Arves is hoping to tap what he considers an underserved intermodal market within 150 miles of Marion. He believes major customers — like Whirlpool, which makes 20,000 dryers a day in Marion and washers in Clyde, Ohio, or Proctor and Gamble, which makes Tide detergent in nearby Lima, Ohio — will use the new Marion service to bypass the congested Chicago ramps. "With this service, we can shorten the transit time to the West Coast and cut costs in our customers' supply chains," says Arves.

Bill Matheson, Schneider's general manager for intermodal services, says it is a combination of factors that makes Marion work as an intermodal hub. "We can reach markets like Detroit, Toledo, Cleveland, Columbus, Dayton, Cincinnati, Pittsburgh, and Indianapolis easily from Marion," says Matheson. "Being able to shorten the dray saves fuel and is easier on drivers who can make the round trip and be home in the evening."

Another huge factor in the Marion project was the fact that most of the infrastructure for the new facility was already in place. The Marion Industrial Center was built as a supply depot during World War II. Ted Graham, its president, bought the 275-acre facility in 1989 and has spent the years since improving the 1.5 million square feet of buildings and upgrading the eight miles of rail track through the facility. To accommodate Schneider, Graham upgraded the rail spur into his facility and acquired a 100-ton Mi-Jack crane that now straddles two mile-long tracks where unit trains carrying up to 150 containers will park every morning.

"We're thrilled to work with Schneider to bring intermodal service to Marion," he says. "Since it was constructed, this facility has served strategic logistics functions and will now continue that role with the introduction of modern intermodal capabilities. We've put millions into improvements at the Marion Industrial Center, so that today, with eight miles of rail here, ample buildings, and greenfield space in and near the center, we're prepared to serve any customer's needs."

Serving similar functions as the new Marion facility are intermodal centers in Rochelle and Joliet, Illinois. Rochelle's \$181 million, two-square-mile "Global III" intermodal center is operated by the Union Pacific Railroad. Close to the intersection of I-88 and I-39, the Global III center has helped Rochelle land distribution centers for retailers Target and Lowe's. Just like Marion's proximity to Ohio Valley markets, truckers leaving Rochelle, population 9,500, can reach major metro areas like Chicago, Milwaukee, Rockford, Davenport, and Indianapolis in a one-day out-and-back trip, according to Jason Anderson, Rochelle's economic development director. "With fuel costs high and getting higher and the shortage of truck drivers, that's a big deal," says Anderson.

At 621 acres, Joliet's ramp is run by Burlington Northern Santa Fe. Like Rochelle and Marion, the Center Point Properties Joliet facility also allows intermodal traffic to bypass the busy Chicago ramps. The Joliet terminal is, like Marion, a former defense depot. Upgrading the Joliet Army Ammunition Manufacturing Plant to a modern intermodal terminal cost \$148 million. In its first year of operation 80,000 containers were moved at Joliet. Center Point officials say the facility can perform 1.2 million lifts a year when completely built out.

#### **Future Growth**

The Intermodal Association of North America reports that since 1990, the number of intermodal containers shipped on U.S. rail lines has more than doubled to 13.6 million annually. And it appears the growth is far from over. The Pacific Maritime Association projects cargo from Asia will double at major West Coast ports like Long Beach, Oakland, and Seattle-Tacoma by 2020.

It's that kind of projection that makes communities clamor for an intermodal yard. They're seen as catalysts for jobs and economic growth. But not every town can feasibly have one, says Carol Johnson, Ph.D. of the University of Denver's Daniels College of Business: "There has to be a combination of factors to make a particular area work for intermodal." These include ample business within a reasonable distance that will use the service. In addition, it's helpful if the business is balanced — that is, roughly similar amounts of freight heading outbound as inbound, to keep the flow of containers and chassis evened out, she says. "At present, there is an unequal flow of containers

west and product east in the U.S. This doesn't prevent intermodal business; it just makes it a bit more costly since many times containers must be shipped west when they are empty. And they can't be spaced too close together, or the railroads lose efficiency." Railroads are at their most efficient making long runs with few stops.

With the dramatic increases in intermodal shipping, rail capacity is becoming an issue. After years of pruning excess track, "the railroads are now in the position of having to invest in additional line capacity, terminals, and locomotives," says rail consultant Avery Grimes, Ph.D., formerly of Kansas City Southern and Union Pacific railroads. He suggests government can help by creating incentives to investment, such as accelerated depreciation schedules, and avoiding attempts to reregulate the industry: "The North American freight railroad network is the most cost-efficient in the world, and that creates economic advantages that everyone benefits from."

"What's encouraging," says Marion Industrial Center's Graham, "is we keep finding new uses for those things we've built in the past. The Marion Depot is now the Marion Intermodal Center. The railroads are re-inventing themselves into efficient long-haulers. And companies like Schneider are no longer just trucking companies. They're total transportation providers. It's this constant re-invention that will keep communities like Marion vibrant and alive."

Fifty years after his ship sailed, we're now learning Malcolm McLean's boxes contained more than bulk freight. They housed the seeds of the new global economy.

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