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INTERMODAL IS JUST THE TICKET

With rail facility and infrastructure upgrades nailed down and intermodal network improvements on track, these ports and sites are riding high on intermodal's advantages.

The pandemic, along with consumers' shift to purchasing more goods than services over the past two years, has changed the normal ebb and flow of intermodal volumes, says Joni Casey, president and CEO of the Intermodal Association of North America (IANA). International and domestic loads were uncharacteristically low at the end of 2019 and into the spring of 2020. Following stimulus legislation, however, volumes took off for the rest of 2020 well into 2021.

Total North American intermodal volume rose 3.6% in 2021, IANA reports, halting the declines of the previous two years. Business was uneven, however, rising 15.4% in the first half of the year before dropping 6.4% in the second half, as terminal congestion, severe weather, and labor and equipment shortages took a toll.

Intermodal transportation refers to containerized products that travel via two or more transport modes. Often, shipments start and/or end on a truck or ship, and then shift to rail for the middle portion of the journey.

While intermodal is sometimes perceived as more complicated than other types of transportation modes, it's "as straightforward as any other mode these days," says David Fisher, executive director with the Transportation & Supply Chain Institute at the University of Denver. "Big shippers have used intermodal since inception. They do so for obvious reasons: reliability, stable cost, and capacity."

Intermodal can be somewhat slower than over-the-road (OTR) shipments, but the variability is typically about one to two days, says Sean Maharaj, managing director in the logistics practice of consulting firm, AArete. The lower cost of intermodal when compared to trucking often more than offsets the longer time, he adds.

In addition, shipment damage and/or theft is rare, Maharaj says. Intermodal shipments pass through frequent checkpoints, providing tracking data.

"Overall, intermodal has made strides in improving service through enhancements of facilities, tracks, and technology," he adds, noting that shippers have started to see it as an indispensable option in the logistics toolbox.

That has become even more true over the past few years, as truck capacity has been constrained due to driver and equipment shortages. One train can carry the loads of approximately 280 trucks, according to a Stephens, Inc. report. What's more, rail is about four times as fuel efficient as trucking, the report notes.

MEETING INTERMODAL CHALLENGES

Intermodal transportation, like most supply chain operations, has been challenged over the past few years. During the post-pandemic surge, it ran out of capacity, as high demand and lower velocity "vaporized supply," says Lawrence Gross, president and founder, Gross Transportation Consulting.

Once congestion builds, it's hard to dig out absent a break in volume. This time, volume never tailed off. Transportation workers "got behind and never could catch up," Gross says.

The intermodal "pipeline" is only as strong as its weakest link, Casey notes. The links continue to change, based on a range of factors, including terminal and warehouse capacity, inland congestion, increased equipment dwell and turn times, and the return of empty containers.

"Despite ongoing challenges, the system is working, just not as smoothly as it could," she adds.

Shippers can take steps to boost intermodal service. To start, consider the distance the shipment will travel,

Maharaj says. Intermodal tends to work best with routes of about 700 miles or more.

Load choice is another consideration. Shipments of raw materials tend to be suited for intermodal, because they're typically not subject to immediate sale, and can afford longer transit times at lower cost.

It also makes sense to try to align shipments with rail schedules, and when possible, to time the quote process to avoid the typical fourth quarter peak season. Shippers also want to keep in mind "potential weight-dimension imbalances that could affect rail-to-road compliance," Maharaj says.

"Efficient transfers from container terminals to the transloading facility equates to improved product distribution," says Raul Alfonso, executive vice president and chief commercial officer with Port Tampa Bay in Florida.

Strong, collaborative partnerships are key as well. Fisher recommends choosing intermodal partners that offer visibility, on-time performance, cost stability, problem-solving and issue mitigation, and solid communication.

Similarly, the best shippers "don't overcommit to volume as a lever to gain more capacity, they don't run an auction every time the market contracts by a few points, they don't have unrealistic expectations, and, most importantly, they communicate," he says.

“It is essential that both parties up their game in terms of total communication,” Fisher says. “Transactional communication and relationship management need to increase to ensure both parties get what they need from their relationships.”

Timely and accurate data is key to fluid intermodal operations, as indicated by the various data initiatives that both the private and public sectors have launched, Casey says. To date, however, what’s been missing is a cohesive, coordinated effort to meld the information collected—either by mode and/or region—and create a comprehensive North American freight transportation data initiative.

That’s changing, with “an unprecedented level of cooperation aimed at creating new capacity, supported by 2021’s bipartisan infrastructure bill,” Casey says.

One example is the launch in late 2021 of the Federal Maritime Commission’s (FMC) Maritime Data Infrastructure initiative.

The initiative will “focus on identifying data constraints that impede the flow of ocean cargo and add to supply chain inefficiencies. It also aims to establish data standards and best practices for data access and transmission essential for a reliable and stable ocean transportation system,” according to an FMC release.

LOOKING AHEAD

Given increased cargo flows, intermodal will continue to play a vital role in transportation. “All modes—including rail, truck, and barge—are levers we will rely on,” says Michael Bozza, assistant director, commercial development, with the Port Authority of New York and New Jersey.

Among the factors driving intermodal growth will be capacity build out, technology advancements, and ongoing truck driver and equipment shortages, among other factors. All of these will lead many shippers to consider intermodal.

“Intermodal still represents a powerful tool for any shipper seeking to employ a sound logistics strategy,” Maharaj says.



Port Tampa Bay handles more than 33 million tons of cargo annually and encompasses more than 5,000 acres, making it Florida’s largest port in terms of tonnage and area. As part of the recent expansion of its container terminal facilities, Port Tampa Bay added 13,000 linear feet of rail, allowing for on-dock intermodal service.

“While challenges exist, the collective commitment of intermodal stakeholders to address their piece of the supply chain and work with their partners will provide resiliency once the current unprecedented volumes of freight start to temper,” Casey says.

PORT TAMPA BAY: RIDING HIGH ON LONG-TERM GROWTH PLANS

Florida continues to rank as one of the most rapidly growing states in the United States. An estimated 1,000 people move into the Sunshine State each day, while every year, about 200,000 new households are created, boosting demand for new homes, home improvement and construction materials, food products, and other consumer goods.

Within Florida, about half the population calls the Tampa Bay region and the nearby Highway I-4 corridor home. “Port Tampa Bay has planned for this growth and has in place the infrastructure needed to grow as the population continues to surge,” says Raul Alfonso, executive VP and CCO.

It’s Florida’s largest port in terms of tonnage, handling more than 33 million tons of cargo annually, as well as area—the port encompasses more than 5,000 acres. Because terminals extend for miles, shippers largely avoid the congested gates and long lines seen at other ports.

What really sets Port Tampa Bay apart is the diverse nature of the cargo it handles, including bulk, breakbulk and containerized cargo, along with energy products, building materials, consumer goods, and food and beverage products.

“Having such diversified lines of business results in strong financial performance, allowing the port to invest in facilities to meet the growing demand,” Alfonso says.

In addition, more than 400 distribution centers, spanning 380 million square feet, dot the Tampa Bay/Orlando area. “In the past few years, this region has emerged as Florida’s distribution hub, home to the largest concentration of DCs in the state,” Alfonso says.

As the closest port to serve this region, Port Tampa Bay allows importers and exporters to enjoy substantial savings in drayage costs, as drivers can make multiple round-trip deliveries per day to the nearby distribution centers. Moreover, expanded global container services, including direct services from Asia, as well as new services from Latin America, offer importers and exporters a supply chain solution that’s more efficient than what’s often available at other, more congested ports, Alfonso adds.

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“This ready infrastructure presents a great opportunity for port customers to reach other out-of-state markets via the intermodal network and is a huge opportunity for port users to balance their traffic flows,” Alfonso says.

Port Tampa Bay recently worked closely with an ocean carrier to facilitate the successful launch of a new service that calls at a state-of-the-art cold storage warehouse. The facility spans 135,000 square feet and offers more than 6,300 racked pallet positions, on-site fumigation services, 148 reefer plugs, and an adjacent berth served by two dedicated mobile harbor cranes.

The Tampa Bay/I-4 Corridor region is the hub for Florida’s grocery and food and beverage sectors. Companies moving perishable products can see substantial savings, Alfonso says. In addition, competitive northbound backhaul trucking rates allow the port to efficiently serve the carrier’s import and export customers beyond Florida.

Port Tampa Bay continues to build on its current offerings. Later in 2022, among other projects, construction will begin on a 77,000-square-foot rail-served transload warehouse adjacent to the intermodal rail network and the container terminal.

The port also will add a third deep-water berth, three gantry cranes, and a new gate complex. And unlike many ports, Port Tampa Bay has land for expansion.

“Together with our tenants, Port Tampa Bay continues to invest in expanding capacity, so tenants and users can confidently implement their long-term growth plans,” Alfonso says.

PORT AUTHORITY OF NEW YORK AND NEW JERSEY: ELEVATED VOLUMES, ELEVATED SERVICE

More than 13 million people live within a one-hour drive of the Port of New York and New Jersey, and more than 46 million are within four hours. “We have unequalled access to major North American markets,” says Michael Bozza, assistant director, commercial development.

And within 50 miles of the port lie one billion square feet of warehousing and distribution space.

The largest port on the U.S. East Coast, the Port of New York and New Jersey handled a record 8.9 million twenty-foot equivalent units (TEUs) of cargo in 2021. In preparation for future growth, it has completed a Port Master Plan that provides a framework to handle forecasted growth of up to 17 million TEUs by 2050.

Along with container shipments, the port is one of the largest in the United States for automobiles, moving about 450,000 in 2021. A number of bulk commodities, including salt, juice, and food-grade oil, also regularly pass through the port. The port serves all major ocean carriers and is the first call for 75% of the ships that come to the port, Bozza says.

The Port’s ExpressRail network is a \$600-million program with dedicated rail facilities and additional support track and rail yards for the port’s major container terminals. It provides capacity for 1.5 million rail lifts each year, as well as efficient on-dock rail service.

The port’s intermodal network handled 709,000 rail lifts in 2021. Often, customers can access their rail containers before the ship even leaves the terminal. “Intermodal is a key element of our growth strategy,” Bozza says.

Also critical to the Port Authority’s strong performance, particularly over the past few years, has been its Council on Port Performance (CPP). Originally formed in 2015, it’s composed of all major stakeholders, including representatives from terminal operators, railway systems, customs, labor, trucking, and the Port Authority.

The actions taken by CPP members was a primary reason the port didn’t need to shut down, even briefly, during the pandemic. “This group has been instrumental in building business relationships to tackle the issues we’re facing,” Bozza says.

For instance, a subgroup of the CPP that focuses on the rail networks collaborated with terminal operators to open additional destinations and alleviate congestion.

The skill and dedication of the port’s workforce has also driven performance, even as volumes have skyrocketed, Bozza says. Many employees have been working six days each week to keep port terminals and warehouses open into the evenings and on weekends. “We have a dedicated cadre of workers who are committed to improving our service and infrastructure,” he adds.

With cargo volumes continuing to remain elevated, intermodal rail



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Port of Baltimore officials and federal, state, and local leaders joined CSX executives in November 2021 at Mount Royal Station, just outside the entrance to the historic Howard Street Tunnel in Baltimore, to announce the start of work on \$466 million worth of improvements that will enlarge the tunnel and clear CSX's entire intermodal network for double-stack train service.

will remain a vital tactic for moving them, Bozza says. The Port Authority's Port Master Plan also contemplates the addition of inland ports—inland terminals connected to the seaport by road or rail—to boost capacity.

Several attributes allow the Port Authority to stand out: its access to millions of consumers, numerous terminal and transportation options, expansive warehouse and distribution space, and quality of service.

"Together, they make us an unrivaled choice for people shipping goods," Bozza says.

MARYLAND PORT ADMINISTRATION: IMPROVEMENTS STACK UP

Late in 2021, Maryland Governor Larry Hogan broke ground on the \$466-million Howard Street Tunnel Expansion project. This will reconstruct the 126-year-old freight rail tunnel to accommodate double-stacked container trains traveling to and from the Helen Delich Bentley Port of Baltimore. The project is expected to generate 6,550 construction jobs and an additional 7,300 ongoing jobs from increased business at the port.

Among other changes, the project will improve vertical clearance at the Howard Street Tunnel and at 21 other locations between Baltimore and Philadelphia. This will allow for double stacking, in which two shipping containers are stacked and transported on top of each other. The Howard Street Tunnel, which is owned

by CSX, will be reconstructed to provide an additional 18 inches of clearance.

"Freight rail is an essential link in the nation's supply chain," said Greg Slater, secretary of the Maryland Department of Transportation. "This investment strengthens that link for generations."

While the project had initially been estimated to cost between \$1 billion and \$4 billion, advances in construction technology cut the estimated price tag significantly, according to the announcement. In addition, the proposed project will avoid significant disruption to surrounding communities.

These enhancements will build on the Port of Baltimore's history as one of the top ports in the United States in several sectors, including automobiles. In fact, in 1963, the Port of Baltimore handled the entry of the first Volkswagen Beetle.

Since then, it's attracted additional auto cargo and now handles the majority of Ro/Ro cargo on the East Coast. One reason is its low damage rate. The port's Ro/Ro Rodeo works with manufacturers to educate workers on the unique handling requirements of each vehicle type. The 200 acres of pavement available at Dundalk Marine Terminal also helps ensure the port can efficiently handle rising volumes of Ro/Ro cargo.

The Port of Baltimore also specializes in handling forest products. Balterm, its forest products terminal, offers 1.1 million square feet of warehouse space and is one of the leading handlers of imported forest products in the United

States. Employees receive extensive training in the requirements of the forest products industry.

When measured in tonnage, most cargo that moves through the Port of Baltimore is containerized. Its Seagirt Marine Tunnel, one of the most efficient container terminals in the country, offers a berth that's 50 feet deep, as well as 11 cranes, including four Neo-Panamax cranes that can reach across 22 containers. It can move 40 containers per hour.

Several other features distinguish the Port. NAVIS, its electronic terminal management planning and control system links truck drivers, freight forwarders, customs brokers, stevedores and others, streamlining communication. The e-modal trucker check enhances security.

The Port of Baltimore is 150 miles farther inland than other Mid-Atlantic ports, cutting the distance between manufacturers, customers, and the port. The port offers on-dock rail service to two Class 1 rail carriers, offering direct connections to midwestern states, and is within an overnight drive to two-thirds of the U.S. population.

The port is also near Interstate 95—"the main street of the East Coast," says spokesperson Richard Scher—as well as Interstate 70. The convenient highway connections make it easy for trucks to efficiently come and go, he adds. Approximately 250 trucking companies connect the port with numerous regions across North America. ■



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