

East Coast ports such as New York via either the West Coast (using rail double-stack service), or by the all-water route through the Panama Canal. The all-water route is generally about 10-15 days longer. For higher value and time-sensitive cargoes this time difference can actually result in transportation cost savings using the minibridge alternative.

Projections of container tonnage at West Coast ports by the Pacific Maritime Association for 1990 and 2000 show an increase from 87.4 million revenue tons in 1990 to 171.9 million tons in 2000 based on a 7% growth rate. Using an 11% growth rate, these revenue tonnage figures would be 101.3 million tons in 1990 and 287.5 million tons in 2000.

PORT OF TACOMA:
BUILDING THE INTERMODAL ADVANTAGE
BY
CHARLES E. DOAN
Port of Tacoma

In 1981, the Port of Tacoma introduced the original on-dock rail intermodal yard. The Port also introduced the use of the high-speed straddle carrier for loading/unloading containers from rail cars.

Our intermodal traffic increased from 8 lifts per week in 1984, to 1,330 lifts weekly in 1985, to over 3,800 lifts per week at present. We have achieved a total of 937 lifts in an eight-hour shift. That is the equivalent of a 28 car double stack unit train completely unloaded and reloaded.

The Port of Tacoma now operates two on-dock rail intermodal yards where the longest distance from ship to rail is only 1,100 feet. We have the capacity to handle 117 double stack cars. That's 1,170 TEU's (twenty-foot equivalent units) or about 4 unit trains of 28 cars each.

On-dock railroading is not new to Tacoma. Since 1873, when Tacoma was chosen as the western terminus of the Northern Pacific Railroad Co., rails have been important fixtures on our docks. The silk trains of the 1890's originated here. Even today, 10 of our modern general cargo berths have double rail tracks alongside the berth.

Just as speed was important to the silk trade, so is it today. Be it auto parts or electronics, dresses or foodstuffs, the shipper expects to realize the fastest delivery and the most economical. With last port of call from Tokyo, Japan, we can have cargo to Chicago in 12 days and to New York in 15 days which compares to 22 days all-water. That 12 days to Chicago is comprised of 9 days on the water, less than 1 day in port and 3 days on the rails.

Saving a week in-transit over the all-water route to the East Coast means that achieving just-in-time deliveries to a manufacturer's assembly line is closer to reality. It means that consumer goods are on the showroom floor ready for sale a week early. It means real dollar inventory savings, as a container valued at \$100,000 would generate about \$250 in carrying costs in these 7 days. And finally, it's cheaper. A container of auto parts for diesel engines will cost \$200 less going via a landbridge move at \$6,348 than via an ocean

carrier's slow boat rate of \$6,550.

When we built the \$6,000,000 intermodal yards, we were primarily serving our ocean carriers, but we also serve the shipper. Our shippers like our ship-to-rail-to-truck program because of four characteristics beyond price:

- Flexibility.
- Greater frequency of ocean carriers.
- Better ship schedules, and
- More reliable train schedules.

Rail deregulation and double stack rail car technology made significant contributions to the port's economics. Deregulation gave the railroads a new competitive posture, particularly with ocean carriers, and double stacks allowed railroads to realize about a 40% operational cost savings.

Tacoma, by eliminating the "intermodal gap" between ocean shipping and rail, has removed the last major un-addressed cost in intermodal transportation. Port terminal efficiencies throughout the United States have reached relative parity. The intermodal gap, however, can be a key factor in the low margin container business, as Tacoma has discovered. Even if the rail yard is only a few hundred yards away, if it still needs terminal gates, trucking connections, and city streets, the gap is not eliminated. Tacoma's on-dock service can save an ocean carrier's intermodal service a relative cost that equates to about half the profit on a Yokohama-Chicago box move.

In addition to creating highly efficient on-dock facilities, we have also streamlined the administrative side of container movements.

Today, ports, shipping lines, and the railroads must find new ways to expand their marketing potential, foreign and new domestic and international cargo for the intermodal market.

Burlington Northern has experienced tremendous growth in the intermodal area. Six years ago, BN transported 200,000 trailers and containers. This year, they expect to handle 1.1 million. Intermodal traffic now accounts for about 15% of railroad traffic.

While ports, railroads, and shipping lines all expand their Midwest and East Coast marketing efforts to generate new westbound intermodal cargoes, the efforts to generate westbound cargo for doublestack trains should not be viewed as merely a domestic search. It is also an international one. For example, Maersk Line has started moving some of its containerized cargo that comes into the East Coast from Europe out to Tacoma via the doublestack train. From there, it is reloaded on ships.

One of the challenges that the Port of Tacoma, along with all the other ports, faces is how to handle growth. In some cases, our intermodal yards are faced with "The Star Trek" challenge--where Space Really is the Final Frontier. It's

great to have huge quantities of containers coming westbound on the doublestack trains, as long as once they arrive at the port, you have enough space and the right equipment and infrastructure to move the containers to their ultimate destination. The challenge is to be able to do this without interfering with what you have going eastbound.

If the shipping world were Utopia, the volume and value of intermodal containerized cargo going eastbound and westbound would be the same. But it's not. A 40-foot container full of linerboard or hay that's exported to Japan doesn't have the same value as a 40-foot container full of VCR's coming in from Japan. Our efforts to balance our intermodal trade must include getting more cargo as well as getting higher value cargo.

While the growth in containerization and intermodalism has been a "Revolution", "Balancing our Trade" in terms of east/west doublestack container traffic will be a slower "Evolution." As ports, railroads, and steamship lines all focus more attention on marketing this aspect of the business, it is expected that they will work out new coalitions and new partnerships to achieve some common goals. And while there may be more cooperation in these areas, it is clear that there will be more competition as well.

The Port of Tacoma has a number of unique selling points--points which we call "The Tacoma Advantage". I have addressed one of these - the modal interface. Our future is linked to it. As we look to the future, I hope you agree with Charles Kettering, who once said, "We should all be concerned about the future, because we will have to spend the rest of our lives there."

PREPARING THE PORT OF SEATTLE
FOR THE 21st CENTURY
BY
GORDON NEUMILLER
Port of Seattle

The Port of Seattle got its official start in 1911, when it received a charter from the State of Washington to be a port authority. The first overseas ship called in Seattle in 1890, a vessel operated by NYK Line of Japan.

The port has over \$1 billion in assets, and 1,100 employees working both at the seaport and at Sea-Tac Airport. This is the 13th largest airport in the U.S., and we hope to handle about 15 million passengers this year.

The cargo terminals in the port encompass about 700 acres, of which about 400 acres are used for container terminals. The port handled 1 million containers in 1987. We also handle bulk cargo such as grain and break-bulk cargoes such as steel, autos and apples. While we export apples from the State of Washington, we also handle apples imported from New Zealand for distribution throughout the U.S.

To plan for the future, it is sometimes helpful to look at what has happened in the past, to see what worked and what didn't. Seattle has been quite successful, for a few reasons, one of which is geography. Seattle, with sailing via the Great Circle Route, is one of the closest ports to most of the