

- Shippers desire mandatory independent action with a short notice period.
- The new provisions of the Shipping Act have made the conference structure fairly workable. No urgent request exists on the part of agriculture to abandon the Act, but shippers desire to modify some provisions pertaining to service contracts and independent action.

COMPETITIVE ROUTINGS
VIA MINIBRIDGE AND THE PANAMA CANAL
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Introduction

Imports of foreign goods into the United States experienced tremendous growth during the 1980's as rapidly increasing domestic consumption, coupled with the soaring value of the U.S. dollar abroad, drove import demand to record highs. The growth in containerized imports from the Pacific Rim nations of East and Southeast Asia was particularly dramatic with the volume more than doubling from 1.3 million TEUs (Twenty-Foot Equivalent Unit containers) in 1982 to nearly 2.8 million TEUs by the end of 1987.

Traditionally, such imports moved by all-water routes to a port nearest to the final U.S. destination, since maximizing the water leg generally provided the lowest cost transportation option. In recent years this pattern has changed dramatically. Today, imports from the Far East to destinations on or near the U.S. East or Gulf coasts can continue to use the all-water route, transiting the Panama Canal, or alternatively these imports can be unloaded at West Coast ports and shipped by rail "minibridge" across the country to points of destination. Conversely, imports from Europe to the West Coast of the United States can transit the Canal westbound, or these imports can be unloaded at a U.S. Atlantic port and be shipped overland by rail.

West Coast Port Container Traffic

The growth in containerized import traffic has been distributed unequally among U.S. ports. The rapid growth in traffic from the Asian Pacific Rim nations to the United States has been felt most at West Coast ports, which have benefitted from both a growing hinterland market and the use of rail minibridge to reach interior and East Coast markets. U.S. Pacific ports increased their share of the nation's container trade from 31 to 44 percent between 1981 and 1986. This increase has been almost entirely at the expense of ports on the Atlantic and Gulf coasts. However, among the West Coast ports themselves, growth has also been unequal. The ports of Los Angeles and Long Beach have experienced the greatest increase in total container throughput (import and export, foreign and domestic), growing at an annual rate of nearly 20 percent from just over 1 million TEUs in 1981 to over 3 million TEUs in 1987. Figure 1 indicates the growth in West Coast container traffic.

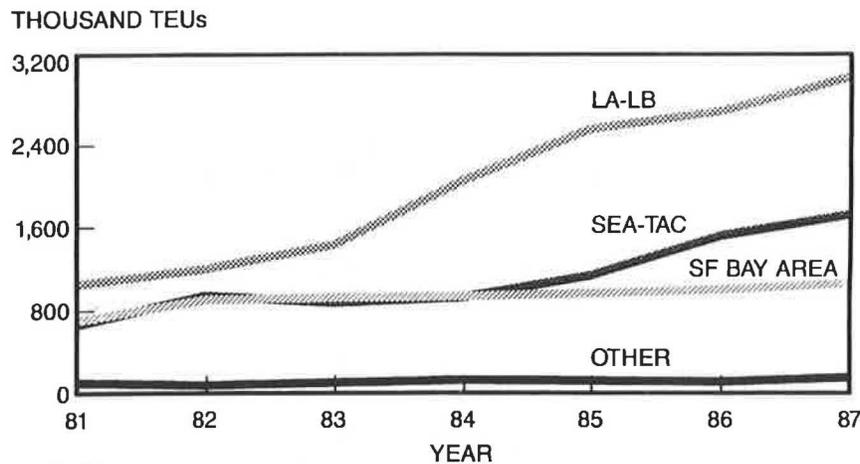


FIGURE 1. Growth in container traffic at West Coast ports, 1981-1987

The ports of Seattle and Tacoma experienced modest growth to 1984, but then containerized traffic began to increase significantly. Volume nearly doubled between 1984 and 1987, increasing from 926 thousand TEUs to over 1.7 million. This rapid growth in container throughput at Pacific Northwest ports coincides with the introduction of dedicated double-stack rail service from the West Coast to Chicago and the location of added terminal facilities at these ports. Container throughput at Bay Area ports (Oakland, San Francisco) has grown also, but much more slowly than the other West Coast port regions for a variety of reasons. Volume increased from around 700 thousand TEUs in 1981 to a little less than 1.1 million TEUs in 1987, corresponding to an annual growth rate of 7 percent. Growth in container traffic in the Bay Area has been constrained by low tunnel clearances in the region which limited the height of double-stack trains and by ocean carrier decisions to "load center," concentrating their port operations at fewer locations and thus limiting their number of port calls.

Growth of Minibridge Traffic

An analysis of Census Bureau foreign trade data by the Port of Oakland estimated containerized imports to the U.S. East Coast based on liner traffic statistics. Assumptions were made that liner traffic is generally containerized and that liner imports to the U.S. East Coast that were unloaded at a West Coast port moved across the country by rail "minibridge". The study found that minibridge rail traffic in Far East containerized imports bound for the U.S. East and Gulf coast areas has been growing nearly every year since 1978. Minibridge volume is estimated to have grown from less than 1.1 million tons in 1978 to 1.7 million tons by 1983 (an annual rate of 9 percent). The rate of growth then increased to over 15 percent annually, and the volume of traffic reached 3.0 million tons in 1987. Total West Coast liner imports from the Far East have grown at an even faster rate since 1983, increasing from 7.3 to 13.7 million tons in 1987.

Meanwhile, Asian Pacific Rim liner traffic destined for the East and Gulf coasts of the United States by the all-water route via the Panama Canal fluctuated over the early part of the period from 1978 to 1983, but increased thereafter from 4.1 to 5.6 million tons in 1987.

Therefore, the data indicates that while the minibridge rail traffic in Far East imports bound for the U.S. East and Gulf coasts has been increasing, so generally has traffic through the Panama Canal, albeit at a slower rate. Minibridge has nonetheless captured a slowly increasing share of the East Coast market, growing from 29.7 percent in 1983 to 34.8 percent in 1987 (for an annual growth rate of 4.0 percent).

Panama Canal Traffic

Total traffic moving through the Panama Canal has begun to rebound after dropping significantly in 1983 with the opening of a \$300 million oil pipeline across the isthmus. Canal traffic fell to 11,707 vessel transits in 1983 from 14,009 a year earlier. Traffic recovered to 12,230 ships in 1987, and data for the first five months of 1988 indicate continued growth. Traffic using the Canal is increasingly bulk commodities, especially grain and coal from the U.S. East and Gulf coasts to the Far East, some crude petroleum eastbound, and automobiles being shipped to the U.S. East and West coasts. Containership tonnage, however, has continued to grow throughout the 1980's, and container movements to or from the U.S. dominate container tonnage through the Canal, accounting for over 70 percent.

Attraction of Minibridge

The economics driving this increase in minibridge rail traffic are based on the savings associated with the use of double-stack container unit trains in dedicated scheduled service between West Coast ports and points in the Midwest and the East. A double-stack container train can carry more than twice the cargo volume of a conventional piggyback service and do so with only a marginal increase in locomotive power and virtually no increase in labor.

The potential efficiencies of double-stacks for both railroads and ocean carriers has led to a rapid increase in the number and routes of double-stack unit or mixed trains departing West Coast ports every week for interior and East Coast destinations. The number and destinations of stack trains has proliferated dramatically over the last two years, growing from 22 per week in February 1986 to at least 76 by January 1988.

The services are operated by both the railroads on their own lines (such as Burlington Northern, Santa Fe, CSX), and by ocean carriers or intermodal subsidiaries using their own or leased equipment and railroad supplied headend power (such as APL, Sea-Land, and many others). Los Angeles and Long Beach have claimed the lion's share of these double-stack departures with over 45 per week, compared to 29 in the Pacific Northwest and only 2 per week from the Bay Area.

West Coast Port Competition

The rapid growth in double-stacks has opened up virtually the entire U.S. market east of the Rockies to West Coast ports. Each of the major port areas has a natural hinterland generally served by truck, and imported containers to these areas will usually move via one of the local ports. The size of this local market is one reason many trans-Pacific carriers make Los Angeles/Long Beach their first port of call. The use of double-stack trains, however, has opened a secondary market in the interior and eastern United States which can be considered discretionary since it can be served nearly equally efficiently from any of the West Coast port areas. Consequently, fierce competition has developed among West Coast ports to capture as large a percentage of this discretionary traffic as possible.

The port region of Los Angeles/Long Beach has done well in this contest because of the size of its "local" market, which consumes about 55 percent of incoming container traffic. The remaining 45 percent generally moves by rail to markets in the interior and eastern parts of the country. By contrast, the Pacific Northwest has a much smaller local market and about 70-75 percent of the containerized imports in this area move eastward into the discretionary market area. One advantage of the Pacific Northwest ports is the shorter steaming time across the Pacific to Japan and Korea, making this region attractive for picking up containers for the return trip to the Orient.

Beyond Panamax

Further evidence of the importance that minibridge rail traffic has gained is the development of the "Beyond Panamax" containership. Early containerships were modified general cargo ships with a beam of about 76-90 feet. "Panamax" size vessels followed with a beam of about 105 feet, which was the largest practical vessel beam which would still permit transit of the Canal. This year American President Line is taking the delivery of five new "C-10" ships with a beam of 129 feet, making them the first containerships too wide to transit the Panama Canal. APL has committed to a strategy of relying on rail minibridge to move Far East imports from West Coast ports to markets in the East.

Conclusions

The use of rail minibridge offers certain advantages which have attracted significant amounts of cargo that would have otherwise moved entirely by water between the Far East and the U.S. East Coast via the Panama Canal. Minibridge offers considerable savings in time of 10 to 15 days between Far East ports and New York, and these savings in time can also translate into savings in cost, depending on the type of cargo and its destination.

A number of factors will affect the future of container traffic moving both by minibridge rail and via the Panama Canal. The weakened U.S. dollar has begun to dampen import demand and strengthen exports. East Coast ports are improving container handling facilities and reducing costs to carriers and shippers in an effort to retain traffic. These ports are also looking at ways to encourage more westbound double-stacks for cargo arriving via the Atlantic. Success of such marketing efforts could make further inroads into container traffic that

would have moved through the Canal. Shifting production areas in Asia may also have an impact in the future as manufacturers look for cheaper labor in southeastern and southern Asia. Changes in production areas could lead to a shift in favor of U.S. East Coast ports (a container from Singapore to New York takes 23 days all-water via Suez and 30 days via a West Coast port and rail minibridge). Currently, however, the volume of containerized traffic passing through the Canal has continued to grow. It is apparent that competition among ports for containerized cargo will be increasingly fierce in the future, and the ultimate role of the Panama Canal in this trade remains dynamic.

Future Research

Further analysis of transportation costs could provide an indication of the sensitivity of alternative routings for containers, including the Asia to U.S. East Coast routing via the Panama Canal and via minibridge through West Coast ports. A series of cost curves can be developed based on a variety of assumptions regarding the degree of utilization of container ships, the provision of backhaul for the double-stack rail movement, various port costs and inventory costs for different valued commodities. These curves should help ascertain the level of sensitivity of routings for various commodities and foreign areas.

A recent paper by John L. Eyre, published in International Trade and Transport, April 1988, indicated a cost of 0.3 cents per ton-mile to operate a new 4,200 twenty-foot equivalent ECON container vessel, which compares to the cost of 0.5 cents for the 3,000 TEU containership, 1.0 cents for the 1,800 TEU containership and 4.0 cents for the conventional freighter. For rail, the double-stack express train costs 2.0 to 4.0 cents per ton-mile to operate compared to 4.0 to 15.0 cents or an average of 8.0 cents per ton-mile for conventional rail. For trucks, the jumbo super twin costs 3.0 to 6.0 cents per ton-mile to operate which is about 1/2 of that of a conventional long-haul truck movement.

NAVIGATION ON THE COLUMBIA-SNAKE RIVER SYSTEM

BY

PEGGY BIRD

Pacific Northwest Waterways Association

The Pacific Northwest Waterways Association (PNWA) is a 54-year old non-profit organization. The Association represents the interests of a broad base of members who are committed to the economic development of the region through the appropriate use of the region's natural resources. The association was formed by a group of farm interests and ports on the Columbia River. They wanted the plans for the Bonneville Dam that was about to be built to include a lock that would allow passage of grain barges.

PNWA's members include firms, organizations and public bodies in the states of Oregon, Idaho and Washington. Members range from ports to engineering firms, public and private utilities to grain growers, financial institutions to river pilots. They come from the Puget Sound, the coasts of Oregon and Washington, the dryland areas east of the Cascade Mountains, the major metropolitan areas