

The multiport analysis for the Delaware River ports also found that if the Delaware was not deepened, and their competitors did deepen, that the Delaware ports would lose substantial tonnage. If competing ports were deepened to 42 feet, a total of 7.0 million tons of cargo would be diverted from the Delaware River ports, at a saving to shippers of \$1.7 million, while deepening competing ports to 50 feet would result in the diversion of 10.3 million tons at a savings of \$4.2 million.

Conclusion

Analysis of competing ports can be accomplished with moderate investment in time and money. It holds open an opportunity to obtain more comparable data and analysis from various studies, and it systematically explores more "what if" scenarios in both the "with and without" project context.

PORTS: MANAGING THE CHALLENGES OF CHANGE

By

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To successfully manage the challenges of change, ports should assess the following factors:

- What changes have occurred in the external environment?
- What are the implications for ports?
- How are ports responding?
- What does the future hold?

A. External Environment

1. Trade Patterns

The dominance of the Far East in U.S. liner trades will continue, and ocean shipments will involve increased numbers of high-value containers that require faster transit times. This reflects the growing trend toward just-in-time manufacturing and retail operations. Container shipments in the U.S./Far East liner trades increased from 2.7 million twenty-foot equivalent units (TEU) in 1982 to 4.4 million TEU in 1987, while container shipments between the U.S. and Europe increased only from 1.1 million TEU to 2.0 million TEU. It is forecast that container shipments in the U.S./Far East trades will increase to 6.5 million TEU by 1991, while the U.S./Europe trade will reach only 2.7 million TEU by 1991.

The outlook in U.S. trade patterns is for continued healthy growth in imports along with strengthening export demand. However, the persistent imbalance in favor of import shipments will continue. This imbalance is particularly evident in the U.S./Far East trade, where

eastbound or imported containers totalled 2.8 million TEU in 1987 while 1.6 million TEU were shipped westbound from the U.S. to the Far East. By 1991, eastbound container traffic will reach 4.3 million TEU while westbound traffic will be only 2.2 million TEU.

2. Transportation Trends

a. Deregulation

Deregulation of railroads, motor carriers, and ocean steamship service has allowed for increased modal integration, which is creating true intermodalism and is blurring the distinction between domestic and international carriers and transport service.

b. Rationalization

Related to deregulation and business conditions in the steamship industry, there will continue to be rationalization of ocean carriers and services.

c. Cargo Concentration

Increased volumes of cargo need to be concentrated to effectively operate the larger containerships and stack trains to and from ports.

B. Implications for Ports

To respond to the changing environment in trade patterns and intermodalism, ports need to emphasize service to steamship companies and shippers. Ports can no longer focus on defining their markets by a geographic area encompassing a local captive market for a port.

Ports need to adjust their operations in terms of pricing, services and facilities. In the past, a port charged each steamship company a fixed rate per acre of backup area. In response to the changing shipping environment, ports now offer volume-based contracts. In terms of services, ports have begun to take steps to enhance cargo distribution by implementing electronic data interchange systems and computerized systems to expedite Customs clearances. In the past, the primary concern of ports was on shipside facilities such as cranes. While this continues, there is growing attention to landside facilities such as improved rail access to handle stack trains.

C. Responses By Ports To Increase Competitiveness

1. Facility and Service Improvements

Following is a list of facility and service improvements undertaken by various ports to maintain and increase their competitive position: Seattle - Intermodal Container Transfer

Facility (ICTF), double-stack train service, warehousing service, truck shipment consolidation.

Los Angeles/Long Beach - ICTF, stack-train service, warehousing, distribution.

Oakland - ICTF, stack-train service, warehousing.

North Carolina State Port Authority - large capital expansion, inland terminals.

Miami - improved truck and rail access.

Virginia Port Authority - ICTF, inland terminals.

Houston - reverse mini-landbridge.

2. Intermodal Container Transfer Facilities

The recent boom in the construction of Intermodal Container Transfer Facilities by ports is seen as being critical to a port's competitive position. However, ports need to focus on such factors as the type of ICTF to construct and the needs of domestic container shipments, and ports need to avoid over-building the facility which could strain their financial resources.

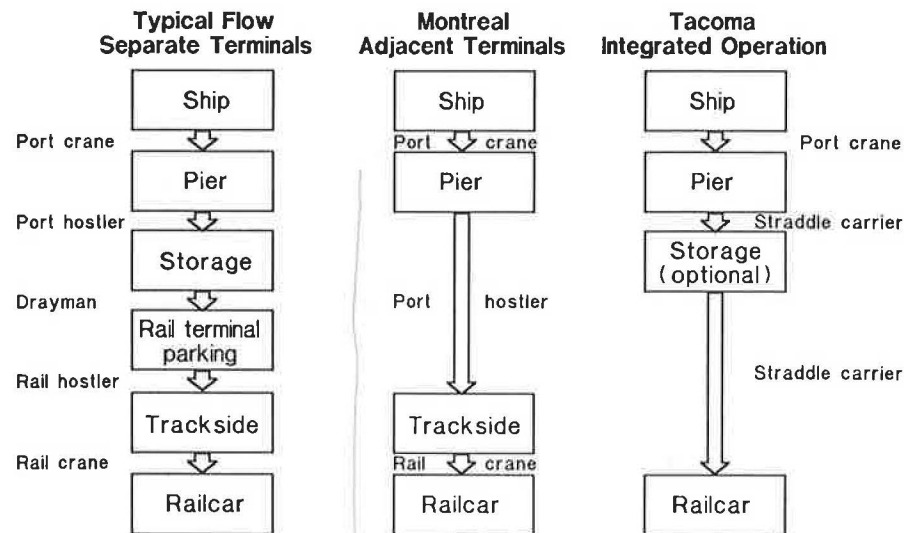
At various ports, ICTFs have been constructed either separate from the port facilities, adjacent to port facilities, or as integrated port/intermodal facilities. Examples of ICTFs as separate facilities include the ports of Los Angeles/Long Beach, Baltimore, Jacksonville, and Seattle. Adjacent ICTFs have been constructed at the ports of New Jersey (Elizabeth), Norfolk, Savannah, San Francisco, and Montreal. The Port of Tacoma is a good example of an integrated ICTF/port operation.

The following diagram indicates the differences in container handling operations caused by differing locations of the ICTF.

- Where the ICTF is separate from the port (as shown in the left column), off-loaded containers are first moved by port hostlers from the pier to the port's marshalling yard for storage. The container is then moved by commercial truck to the ICTF where it is placed in a parking area until the train arrives, and the container is then moved by hostler vehicle to track side for loading onto the rail car.
- In an adjacent ICTF (center column), the container is off-loaded from the ship and, instead of going into storage, the container is moved by a port hostler direct from the pier to track side for loading onto the rail car.
- Where the ICTF is integrated into the port (right column), the

rail facilities are located on or nearby the pier, and containers off-loaded from the vessel can be readily transferred from the pier to trackside (or to storage if a train is not available for loading), using straddle carriers or other container-handling vehicles without the need for port hostlers and chassis.

Port/Rail Access: ICTF Operations



D. What Does the Future Hold

Ports will find themselves in an increasingly competitive environment in which they will have to focus on several key areas:

- Forming strategic alliances with ocean carriers, railroads, forwarders and warehousing operations to ensure rapid, low cost services to shippers.
- Developing facilities and services that meet the needs of both international and domestic shippers of containers and that enable the port to optimize the use of intermodal transfer facilities.