

Port strategists have alternatives for the future

Increasingly one of the more popular and profitable strategies for port planners will be to convert land and facilities to non-transportation uses. In many cases, such strategy will increase the economic impact of the port and remove inefficient facilities and underutilized workers from the nation's transportation network. More efficient transportation reduces the unit cost of commerce, increases demand and stimulates economic growth.

For those ports that do stay in transportation, there must be a focus on increased efficiency. Ports must increase facility volume so that fixed costs can be spread over a greater throughput of cargo, thereby reducing the unit cost of transshipment.

Future port strategies will include facilities that specialize in:

- load center container ports
- specialized container ports
- market niche breakbulk/neobulk ports
- multi-use industrial ports.

THE COMPETITIVE BATTLE AMONG GULF PORTS

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Changing Shipping Patterns in the Gulf

Recent trends in ocean transportation are changing traditional ways of doing business at seaports. These trends, which are inter-related, are: deregulation of transportation; intermodalism; the increasing cost of operating modern vessels; and the development of "land bridge" and "load center" concepts. These trends have implications for Gulf seaports which are largely negative.

Intermodalism, generally speaking, is any transfer of goods between two modes of transportation, however accomplished, which achieves an intermodal transfer (Mahoney 1985). However, in common usage the term usually means the development of systems for rationalizing and facilitating intermodal transfers. Of these systems, the one which has had the most profound effects on global logistics is containerization.

Briefly, containerization involves the use of standard-sized steel containers, holding up to 20 tons of cargo, which can be quickly transferred between rail, highway, and ocean carriers, using special container-handling equipment and vehicles. As an illustration of the productivity increases brought about by containerization, a single crane operator, assisted by a handful of spotters and yard drivers, can load or discharge as much cargo in containers in 15

minutes as a gang of 20 or more longshoremen, handling breakbulk cargo, can accomplish in an entire working day (Nersesian 1981).

This additional productivity comes at the cost of increased capital investment. However, full enjoyment of the benefits of containerization requires special terminals, container handling equipment, and vessels. Nevertheless, liner steamship companies, reacting to shipper preference for the advantage in speed, convenience, and reduced damaged and pilferage that containerization has over break-bulk, have invested massively in containerization over the past twenty years. Beginning with high-unit value, high value-added cargoes and working downward, virtually every kind of cargo which moves in liner service has been containerized.

At the port level, traditional waterfronts do not readily lend themselves to the requirements of container operations because of the land required. A rule of thumb is that a minimum of seven acres of paved container marshalling area is required for each container-vessel berth. This has promoted the growth of container terminals in areas remote from traditional waterfronts, and has hampered the development of container operations in the major U.S. Gulf ports of Houston, New Orleans, and Mobile. In addition, at least one, and ideally two, container cranes are needed per berth, at a cost of 3.5 million dollars each.

Even when ports in the Gulf have been willing to make this investment, other factors, such as the cost of vessel operations and the rise of mini-landbridge services, have made it difficult for them to attract container service.

The deregulation of transportation in the United States, culminating with the Shipping Act of 1984, has had profound effects on transportation in general, and port development in particular. The most important development, from the point of view of Gulf ports, has been the freedom of steamship companies to issue ocean bills of lading from any point, including inland points, and to use other modes of transportation. This has led to the development of the "mini-landbridge." (This term is an offshoot of the concept of the "landbridge" -- for example, transporting cargo originating in Japan and destined for Europe by ship to the West Coast of the U.S., by rail to an East Coast port, and by ship again for the balance of the voyage, thus avoiding the Panama Canal transit, and saving time and distance.)

Mini-landbridge operations allow a steamship company to issue an ocean bill of lading from a port at which its ships do not actually call, and to rail or truck the cargo to another port for loading on one of the company's ships. (The reverse takes place for inbound cargo.) Incentives for steamship companies to do this arise from lower truck and rail freight rates, due to deregulation, and higher vessel operating costs which encourage minimizing the number of port calls.

Mini-landbridge service has deprived Gulf ports of container service between both Europe and the Far East, representing the bulk of U.S. foreign trade. As an example, a large U.S. flag container operator offered service to all major Gulf ports--but its vessels never entered the Gulf. Instead, this cargo was railed to Savannah. The Port of Savannah, in trade advertisements, billed itself (somewhat tongue-in-cheek) as the "fastest-growing port in the Gulf."

Liner cargoes inbound from the Far East for East Coast and Gulf destinations using mini-landbridge rather than the all-water route through the Panama Canal more than doubled, from 0.8 to 1.7 million tons between 1976 and 1983 (O'Brien 1985). The ratio of sea containers unloaded at the Port of Long Beach, California and transferred to unit trains (that is, mini-landbridge cargo) to those trucked to local California markets has risen from three per cent in 1981 to nearly 50 per cent in 1986, and was reported to be still rising (McJunkin 1986).

Load-center ports, such as Long Beach and Savannah, serve huge hinterlands through the use of mini-landbridge services. The trend among container operators toward calling at fewer and fewer ports is called "load-centering." It is worth noting that no container operator has picked a U.S. Gulf port to be a load-center; the all-water container service which remains in the Gulf is provided by operators who have not fully adopted this concept in their operations.

Along with containerization of general cargo has come a trend toward larger, faster, more expensive vessels. This trend is by no means confined to container operations. In breakbulk cargo, there has been a trend away from conventional geared (self-unloading) vessels to rollon-roll off ships which are larger and more expensive than those they replaced.

Daily operating costs plus the variable costs associated with a port call (pilotage, fees, etc.) are compared by the ship operator to the marginal revenue likely to be derived from the port call in order to determine the economic feasibility of calling at any given port. As daily operating costs rise--in 1980, the daily financial cost alone of a 20,000 dwt containership averaged nearly \$8,000, as opposed to \$4,240 for a general cargo ship of similar size (Frankel 1982)--the amount of cargo needed to justify a port call rises, too. Twenty years ago, the scheduling of ports of call by conventional breakbulk vessels was induced by as little as ten tons of cargo. By contrast, a survey of steamship companies to ascertain the volume of cargo necessary to induce calls at a particular Gulf port showed ranges from several hundred to a thousand tons, and from \$40,000 to \$150,000 in revenue, per call (PRC Harris 1983).

In fact, the economics of modern container operations can result in a decision not to call at any Gulf port, but to serve the region instead by mini-landbridge. Consider a hypothetical steamship company in the transatlantic trade, operating an 18-knot containership with a total operational cost-per-day of \$30,000. Calling at Gulf ports as opposed to land-bridging cargo to Savannah adds nearly 1,000 nautical miles, or about two and one-quarter steaming days or more than \$69,000 in operating costs for a call at Mobile, plus port costs. A similar calculation for transpacific service, comparing landbridge service vs. the all-water route through the Panama Canal to Gulf ports, would show even more dramatic cost differences.

Coping strategies of Gulf ports

Port managers and local authorities in the Gulf are of course cognizant of these trends. The Journal of Commerce and Cargo Systems have featured several articles on the competitive actions taken by Gulf ports. Depending upon the circumstances of each port, a variety of coping strategies appear to have

revolved. These include: gaining a larger share of the declining container traffic; becoming a specialist or "market nicher;" becoming a bulk port; or abandoning the cargo market and finding other uses for the waterfront.

The authors evaluated the competitive strategies being used by eleven Gulf ports, which included Tampa, Panama City, Pensacola, Mobile, Pascagoula, Gulf Port, New Orleans, Baton Rouge, Lake Charles, Houston, and Galveston. This study addressed four questions:

- 1) Had the port developed a strategic plan?
- 2) Had the port developed a tactical plan?
- 3) Was the port plan an operationally orientated plan?
- 4) Was the port plan a marketing orientated plan?

A strategic plan can be defined as a plan to determine the primary objectives of a port and the adoption of actions and allocation of resources necessary to achieve those objectives. A strategic plan for a port might be to attract bulk cargo. This might require the development of new, efficient bulk loading and unloading facilities, deepening the inlet channel, and concentrating on identifying and contacting bulk shippers and carriers.

Tactical plans are more short-term and focus on current and near term activities. Lowering wharfage fees, improving stevedore services in response to a competitor's action would signify tactical planning.

A marketing orientation is when the port managers have identified the shippers and carriers they feel the port can satisfy. They then carefully select the capital equipment and facilities necessary for those customers; coordinate the necessary inland transportation; develop the appropriate support services; identify the applicable promotion; and set the pricing structure. Marketing requires identification of the market and developing a complete package that will satisfy that market.

Operational orientation is when the port managers are mainly interested in improving operating efficiency. Ports must be careful how they spend their limited funds--increasing operational effectiveness does not necessarily mean increased throughput.

The study found that only three ports had developed a strategic marketing plan and were actively developing tactical plans to support the strategic plan. One port manager had developed a computer model to show the changes resulting from the strategic marketing plan.

Over half of the ports visited relied mainly on short range planning and adjusting to competitive pressures. This does not infer that they did not have some type of long term plan, but they relied mainly on short term adjustments and the long term plans were mainly to improve the efficiency of the port infrastructure. One port had a definite long term plan which was to improve operational efficiency. In this case, the customer needs did not appear to have been evaluated.

Research Needs by Gulf Ports

There is a need to examine the extent to which the adverse trends identified are fundamental and long-lasting, as opposed to the effects of temporary problems such as the strong dollar, imbalances in U.S. trade with the Far East and Europe, and depression in U.S.-South American trade.

Another area for investigation is the possibility that innovative strategies for Gulf ports can mitigate the negative effects of, or even reverse, one or more of the adverse trends identified. For example, the North Carolina State Ports Authority has enjoyed considerable recent success in competing with Hampton Roads and Charleston due to its Charlotte Intermodal Terminal, which, in effect, moved the Port of Wilmington inland to a more favorable conjunction with inland modes of transportation. Is this innovation transferable to one or more Gulf ports? If so, under what conditions?

Finally, is it feasible for a Gulf port to become a terminus for a new, as yet undeveloped land bridge, such as one between the Far East and the east coast of South America--or western Canada and the east coast of South America?

Summary

The adverse trends in Gulf shipments are the result of several inter-related trends in ocean shipping, and has had, and will continue to have negative impacts on U.S. seaports in the Gulf of Mexico. Coping strategies have evolved through the efforts of individual ports, but are believed to be suboptimal due to a lack of information on which to base sound strategic planning. As a result, port managers have tended to avoid long term strategic plans and have worked on improving the facilities without fully evaluating future requirements. Research is badly needed in this area.

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