Should the Ports of New Orleans and Mobile be United Under a Single Port Authority

Charles E. Dorsett

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1990
SHOULD THE PORTS OF NEW ORLEANS AND MOBILE BE UNITED UNDER A SINGLE PORT AUTHORITY

by

Charles E. Dorsett

Major paper submitted in partial fulfillment of the requirements for the degree of Master of Marine Affairs

University of Rhode Island
1990
ABSTRACT

United States ports along the coast of the Gulf of Mexico are engaged in fierce competition among themselves to attract existing and future trade. This competition has served to force modernization and expansion of facilities in all the ports. The effort is running into the billions of dollars and there are concerns that there is too much duplication of costly facilities.

The Port of New Orleans benefits from its location at the southern terminus of the Mississippi River System. Until five years ago it was the sole significant transhipment node between the nation's midsection and its customers and suppliers. In 1985, with the opening of the Tennessee-Tombigbee Waterway, the Port of Mobile gained access to the Mississippi River System and set out to compete for trade that once had no alternative transhipment point.

The unanswered question is whether or not the investments being made to improve competitiveness will prove to be resources well spent or wastefully dissipated. The answer may be cooperation vice competition.
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CHAPTER I

INTRODUCTION

The purpose of this paper is to examine the changes in the competitive factors between the ports of New Orleans, Louisiana and Mobile, Alabama. Change does exist since the opening of the Tennessee-Tombigbee Waterway in 1985 which puts the Port of Mobile squarely in competition with the Port of New Orleans for trade which relies upon the Mississippi River Inland Waterway System.

Successful competition on the part of any port demands the presence of a port authority capable of providing, at the very least; 1) suitable and adequate equipment and services, 2) appropriate operational activities, 3) supporting commercial/economic services, and 4) the encouragement of correct personal attitudes through a sound and fair labor policy.¹ Proper port development and efficient operations are two areas of interest requiring substantial investments by port authorities that involve incurring long-term debts to effect the changes necessary for a port to remain competitive.
In the past a port's interests could be tied to its direct competition with neighboring ports. Today such competition has expanded beyond the individual port to pit region against region, state against state; even seaboard against seaboard. Remaining competitive in this ever growing arena requires increasingly larger investments.

On the United States West Coast the realization that cooperation between port authorities in planning and operations could result in greater efficiency and lowered investment costs resulted in the preparation of state and regional port systems studies that were joint efforts with the Maritime Administration.

In California, San Francisco Bay regional port authorities cooperated with the Metropolitan Transportation Commission towards developing a plan for the Bay Area. Additionally, through the California Association of Ports Authorities (CAPA), all California ports joined to develop a maritime plan for the state.

A more ambitious study from the Northwest was issued in 1975. That study, Port Systems Study for the Public Ports of Washington State and Portland, Oregon, had as its primary objective:
...develop a sound planning base on which future policy decisions may be made relative to the development and use of public port facilities in the State of Washington and Portland."²

A principal recommendation of that report was that

"Coordination of individual port actions in the future is the element necessary to ensure mutually supportive port developments. To effect such coordination, individual port authorities of the region need a mechanism for making regional port policy decisions and for guiding future developments of the region's ports."³

This paper views the ports of New Orleans and Mobile under the light of the above recommendation. Further, it is the hypothesis of this paper that the creation of a regional port authority, in effect combining and controlling the operations and future development of the two ports, would be more beneficial than an all out competitive effort resulting in a wasteful and expensive duplication of facilities that could prove damaging to their respective economies and ecologies.

In support of this hypothesis, the geography, history of the area, port facilities, capital investment, transhipment capabilities and port administrations are explored. This is followed by a discussion of the developmental issues that impact on seaports, in general. The final chapter provides insights into how the two ports have dealt
with pertinent developmental issues and draws conclusions.

Information for this paper has been gathered from the respective port authorities, the United States Maritime Administration and texts.

In general, developmental issues faced by U.S. ports can be classified into four major categories:

(a) decision-making on federal, regional, and local levels;

(b) measures of national, regional, and local requirements;

(c) institutional constraints; and

(d) use of shorelines. 4

The issue of institutional constraints, (c) above, will not be discussed since institutional constraints are artificial barriers subject to amendment through government policy and/or public requirements.
CHAPTER II
THE PORT OF NEW ORLEANS

Geography

The Port of New Orleans, Louisiana is positioned at the southern end of the Mississippi River, centrally situated on the northern rim of the Gulf of Mexico. Located in a subtropical zone, it allows year-round access to the Mississippi. The Port has long been the primary gateway to the heartland of North America. Long before any trails linked the central area of the continent with the East Coast, commercial trade and social intercourse flourished between communities along the Mississippi and its tributaries and their counterparts in Northern Europe and along the Mediterranean Sea. As the principal shipping node between a vast hinterland and the outside world, the Port of New Orleans grew in wealth and importance. In many instances, the history of New Orleans and the mighty Mississippi River is the history of the United States.

Situated along the north bank of a U-shaped bend on the Mississippi River, just before it
makes its final run into the Gulf, the Port of New Orleans is the focal point of a 14,500-mile network of inland waterways. This network (see Figure 1) covers the central United States from the Allegheny Mountains to the tabletop plains of Oklahoma providing ingress and egress for the agricultural and industrial areas around such far-flung places as Minneapolis, Omaha, Chicago, Cincinnati and Knoxville to markets the world over. In 1988 the Port had 3,787 vessel calls at its Mississippi River wharves and Industrial Canal Terminals. 

**Port Description**

Today, the Port of New Orleans spreads along 22 miles of waterfront and offers 22,600,00 square feet of cargo handling area. Twenty-one terminals and wharves make up the Class "A" facilities available for the loading and unloading demands of modern commercial vessels. Listed in Table 1, these facilities provide 23,135 feet (over four miles) of waterfront with 2,454,594 square feet of covered (shed) space and over 8.67 million square feet of open handling area.
FIGURE 1
INLAND RIVER WATERWAY SYSTEM OF MID-AMERICA

Source: Maritime Administration, 1980.
## TABLE 1

THE PORT OF NEW ORLEANS  
(CLASS A BERTHS)

<table>
<thead>
<tr>
<th>Facility</th>
<th>Frontage</th>
<th>Area</th>
<th>Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Henry</td>
<td>842 ft L</td>
<td>95,020 ft² Shed</td>
<td>General Containers</td>
</tr>
<tr>
<td>Wharf</td>
<td>62 ft W</td>
<td>170,858 ft² Open Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>154,125 ft² Additional</td>
<td></td>
</tr>
<tr>
<td>Nashville</td>
<td>2,759 ft L</td>
<td>756,000 ft² Shed</td>
<td>General Containers</td>
</tr>
<tr>
<td>Avenue Wharf</td>
<td>62 ft W</td>
<td>110,000 ft² Open Area</td>
<td></td>
</tr>
<tr>
<td>Nashville Avenue</td>
<td></td>
<td>463,000 ft² Additional</td>
<td></td>
</tr>
<tr>
<td>Napoleon</td>
<td>1,099 ft L</td>
<td>144,876 ft² Shed</td>
<td>General Containers</td>
</tr>
<tr>
<td>Avenue A</td>
<td>48 ft W</td>
<td>129,766 ft² Open Area</td>
<td></td>
</tr>
<tr>
<td>Napoleon Avenue A</td>
<td></td>
<td>97,844 ft² Additional</td>
<td></td>
</tr>
<tr>
<td>Open Wharf</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Napoleon Avenue B</td>
<td>762 ft L</td>
<td>100,381 ft² Shed</td>
<td>Steel Breakbulk</td>
</tr>
<tr>
<td>Wharf</td>
<td>108 ft W</td>
<td>36,521 ft² Open Area</td>
<td></td>
</tr>
<tr>
<td>Napoleon Avenue C</td>
<td>48 ft W</td>
<td>28,313 ft² Open Area</td>
<td>Steel Breakbulk</td>
</tr>
<tr>
<td>Wharf</td>
<td></td>
<td>22,903 ft² Additional</td>
<td></td>
</tr>
<tr>
<td>Napoleon Avenue C</td>
<td>375 ft L</td>
<td>118,420 ft² Open Area</td>
<td>Breakbulk Containers</td>
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<tr>
<td>Wharf</td>
<td></td>
<td>36,300 ft² Additional</td>
<td></td>
</tr>
<tr>
<td>Milan St</td>
<td>1,263 ft L</td>
<td>107,081 ft² Shed</td>
<td>12 ft draft</td>
</tr>
<tr>
<td>Wharf</td>
<td>31 ft W</td>
<td>65,000 ft² Additional</td>
<td></td>
</tr>
<tr>
<td>Louisiana Avenue</td>
<td>1,590 ft L</td>
<td>48,915 ft² Shed</td>
<td>Containers</td>
</tr>
<tr>
<td>Avenue E</td>
<td>150 ft W</td>
<td>178,360 ft² Open Area</td>
<td></td>
</tr>
<tr>
<td>E &amp; F Wharf</td>
<td>48 ft W</td>
<td>92,486 ft² Backup Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,221,243 ft² Additional</td>
<td></td>
</tr>
<tr>
<td>Harmony St</td>
<td>1,089 ft L</td>
<td>135,653 ft² Shed</td>
<td>Steel</td>
</tr>
<tr>
<td>Wharf</td>
<td>49 ft W</td>
<td>104,380 ft² Open Area</td>
<td></td>
</tr>
<tr>
<td>Seventh St</td>
<td>1,196 ft L</td>
<td>119,280 ft² Shed</td>
<td>General Containers</td>
</tr>
<tr>
<td>Wharf</td>
<td>50 ft W</td>
<td>134,911 ft² Open Area</td>
<td></td>
</tr>
<tr>
<td>First St</td>
<td>1,275 ft L</td>
<td>140,655 ft² Shed</td>
<td>General Containers</td>
</tr>
<tr>
<td>Wharf</td>
<td>50 ft W</td>
<td>99,440 ft² Open Area</td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 1

**THE PORT OF NEW ORLEANS**  
*(CLASS A BERTHS)*  
*(CONT)*

<table>
<thead>
<tr>
<th>Facility</th>
<th>Frontage</th>
<th>Area</th>
<th>Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governor</td>
<td>1,210 ft L</td>
<td>156,617 ft²</td>
<td>Shed, Containers</td>
</tr>
<tr>
<td>Nichols St Wharf</td>
<td>30 ft W</td>
<td>37,694 ft²</td>
<td>Open Area, General</td>
</tr>
<tr>
<td>Poland Ave Wharf Berths 4 &amp; 5</td>
<td>932 ft L</td>
<td>84,328 ft²</td>
<td>Shed, General</td>
</tr>
<tr>
<td>Wharf 4 &amp; 5</td>
<td>35 ft W</td>
<td>96,257 ft²</td>
<td>Open Area, General</td>
</tr>
<tr>
<td>Alabo St Wharf</td>
<td>1,313 ft L</td>
<td>125,310 ft²</td>
<td>Shed, General</td>
</tr>
<tr>
<td>Wharf 4 &amp; 5</td>
<td>81 ft W</td>
<td>182,821 ft²</td>
<td>Open Area, Containers</td>
</tr>
<tr>
<td>France Rd Container Terminal #1</td>
<td>830 ft L</td>
<td>67,019 ft²</td>
<td>Shed, Containers</td>
</tr>
<tr>
<td>Container Terminal #1</td>
<td>147 ft W</td>
<td>1.46 M ft²</td>
<td>Marshall Area</td>
</tr>
<tr>
<td>France Rd Container Terminal #4</td>
<td>700 ft L</td>
<td>1 Mil. ft²</td>
<td>Marshall Area, Containers</td>
</tr>
<tr>
<td>Container Terminal #4</td>
<td>120 ft W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>France Rd Container Terminal 5 &amp; 6</td>
<td>1,700 ft L</td>
<td>2.10 M ft²</td>
<td>Marshall Area, Containers</td>
</tr>
<tr>
<td>Container Terminal 5 &amp; 6</td>
<td>(5) 31,200 ft²</td>
<td>Shed</td>
<td></td>
</tr>
<tr>
<td>Container Terminal 5 &amp; 6</td>
<td>(6) 100,000 ft²</td>
<td>Shed</td>
<td></td>
</tr>
<tr>
<td>Jourdan Rd Terminal</td>
<td>1,400 ft L</td>
<td>142,400 ft²</td>
<td>Shed, RO-RO</td>
</tr>
<tr>
<td>Terminal</td>
<td>70 ft W</td>
<td>157,413 ft²</td>
<td>Open Area, Containers</td>
</tr>
<tr>
<td>Terminal</td>
<td></td>
<td>435,600 ft²</td>
<td>Marshall Area</td>
</tr>
<tr>
<td>N Orleans Bulk Terminal -3 Berths-</td>
<td>1,800 ft L</td>
<td>30,000 ton</td>
<td>Covered Pad, Bulk</td>
</tr>
<tr>
<td>Bulk Terminal</td>
<td></td>
<td>750,000 ton</td>
<td>Open Pad</td>
</tr>
</tbody>
</table>

*Source: Port of New Orleans*
Additionally, the Public Bulk Terminal has a 750,000 ton open storage pad and a 30,000 ton covered storage pad.

**Transportation Services**

Over 100,000 barges transit the Port each year carrying both traditional bulk (grain, petroleum, coal) and general cargos (steel, plywood, timber, paper, cotton). Half of all U.S. grain exports are shipped from the ten grain elevators in the lower Mississippi River region.⁸

Trucks hauling goods in and out of the Port of New Orleans have easy access to Interstate Highway 10 running east-west through the city. North-south truckers have direct connections to Interstate Highways 55 and 59. As can be seen in Figure 2, these routes allow trucks to reach any point in North America.

The Port’s central location has attracted six mainline railroads; CSX Transportation, Kansas City Southern, Illinois Central, Norfolk Southern Corp., Southern Pacific Co., and Union Pacific. Figures 3 through 8 depict the far reaches of these railway systems. The major advantage of having so many railroads is minimizing delays by avoiding time-consuming interchanges for cars caught on another company’s tracks. These six
FIGURE 3
CSX RAIL CONNECTIONS

A. New Orleans  I. Knoxville  Q. Buffalo
B. Mobile       J. Memphis    R. Baltimore
C. Tallahassee  K. St. Louis   S. Philadelphia
D. Jacksonville L. Indianapolis T. Washington
E. Savannah    M. Chicago     U. Richmond
F. Charleston  N. Detroit     V. Norfolk
G. Birmingham  O. Columbus    W. Charlotte
H. Atlanta     P. Cleveland   X. Miami
FIGURE 4

KANSAS CITY SOUTHERN RAIL CONNECTIONS

A. New Orleans
B. Shreveport
C. Texarkana
D. Fort Smith
E. Kansas City
F. Dallas
G. Houston
FIGURE 5

ILLINOIS CENTRAL RAIL CONNECTIONS

A. New Orleans
B. Memphis
C. St. Louis
D. Chicago
E. Cairo
F. Birmingham
FIGURE 6
NORFOLK SOUTHERN RAIL CONNECTIONS

A. New Orleans J. Richmond S. Kansas City
B. Birmingham K. Norfolk T. Louisville
C. Atlanta L. Washington
D. Memphis M. Pittsburgh
E. Jacksonville N. Cleveland
F. Savannah O. Buffalo
G. Charleston P. Detroit
H. Wilmington Q. Chicago
I. Charlotte R. St. Louis
FIGURE 7
SOUTHERN PACIFIC RAIL CONNECTIONS

A. New Orleans
B. Houston
C. San Antonio
D. El Paso
E. Los Angeles
F. San Francisco
G. Portland
H. Salt Lake City
I. Denver
J. Wichita
K. Kansas City
L. St. Louis
M. Little Rock
N. Texarkana
O. Dallas
P. Amarillo
FIGURE 8
UNION PACIFIC RAIL CONNECTIONS

A. New Orleans  G. Los Angeles  M. Kansas City
B. Houston  H. San Francisco  N. St. Louis
C. Brownsville  I. Portland  O. Chicago
D. Shreveport  J. Seattle  P. Memphis
E. Dallas  K. Salt Lake City  Q. Little Rock
F. El Paso  L. Denver  R. Austin
S. Tulsa
railroads move 350 trains through New Orleans each week. 9

Between 1973 and 1978 the Port of New Orleans led the Gulf Coast in new construction expenditures (and was fourth nationally) amounting to a total of $10,850,000. In proposed construction for the period 1979 to 1983, the Port of New Orleans actually led the entire nation with an estimated $25,910,000; allocating more for specialized general cargo facilities and bulk cargo facilities than any other port in the nation. 10

The Port is already preparing for the 21st Century. A $187 million development plan calls for the creation of three major terminals in an upriver area of the port bounded by the Nashville Avenue and Seventh Street wharves. The Public Grain Elevator is being demolished and the land redeveloped as part of one of the terminals. From the current wharves will emerge the Nashville/Napoleon Multipurpose Terminal, the Louisiana Avenue Multipurpose Terminal and a heavy cargo terminal, encompassing the present Harmony, Seventh Street and First Street wharves, and it will specialize in steel and forest products. In all, 3,937 feet of new wharf will be built and an additional 40 acres of marshalling area in two yards
serving the new terminals will be added.

Administration

A seven member Board of Commissioners sets all policies and makes major decisions concerning the administration and operation of the Port. All seven members are appointed by the Governor of Louisiana. They serve five-year staggered terms and receive no salary.

Daily operations and administration are executed by a president assisted by five division directors and a staff of marketing, planning and engineering, and finance and administration professionals.11
CHAPTER III
THE PORT OF MOBILE

Geography

The Port of Mobile, Alabama sits approximately 130 miles east of New Orleans. Like its larger neighbor to the west it has some of the same advantages. It is centrally located in the Gulf of Mexico and situated at the mouth of a navigable river system (the Alabama and Warrior Rivers) providing year-round service to and from markets upriver.

However, the Alabama and Warrior River System does not extend beyond the State of Alabama. In the past this was a major constraint to Mobile’s port development since transportation in and out of its hinterland was dependent upon trucking and rail services. Thus, Mobile’s competitiveness with New Orleans was limited to certain cargos generated by, or destined for, a small geographical area. Simply put, the Inland Waterway System put New Orleans directly in touch with 41 percent of the Continental United States; while
Mobile was restricted to providing its services to a small portion of the South.

**Development**

During the 1970s and early 1980s, the Port of Mobile concentrated on developing its strengths. While the Port of New Orleans was among the nation's leading ports in expenditures in all types of facilities (as discussed above), the Port of Mobile was the nation's leading sea-port in expenditures for dry bulk cargo facilities between 1973 and 1978. Today, Mobile's McDuffie Terminal bulk coal facility is the largest such facility on the Gulf Coast and the second largest in the nation with an annual throughput capacity of 23 million tons.

In 1985 the 234 mile long Tennessee-Tombigbee Waterway, a controlled depth waterway, was opened. As Figure 1 (p. 7) shows, the Port of Mobile was connected to the Mississippi River System and became an alternate outlet to the Gulf of Mexico for cargo generated in the nation's midsection. The importance and usefulness of this waterway was established during the Drought of 1988 when the United States experienced the worst dry spell since the days of the Dust Bowl and the Mississippi River fell to its lowest levels since records were first kept in 1872. Tennessee-
Tombigbee was unaffected by the lack of rainfall and remained open as the only viable barge route between the nation's interior and the Gulf of Mexico.\textsuperscript{14}

The Port has aggressively sought out new customer. A strong indication of the expansion being experienced by the port is the difference between Fiscal Year 1987 income and Fiscal Year 1988 income where losses for 1987 were $5,386,811 as compared to the following year's losses of only $206,395.\textsuperscript{15}

**Port Description**

Except for the McDuffie Terminal facility which is three miles down river from the rest of the port complex, the Port of Mobile is concentrated in a few square miles along the western bank of the Mobile River. The Port offers almost four miles of pier space. Up to 26 commercial vessels can be accommodated at the Port's piers and wharves. Listed in Table 2, these provide 2,322,700 square feet of covered (shed) space as well as 22 acres of container marshalling area.
<table>
<thead>
<tr>
<th>Facility</th>
<th>Frontage</th>
<th>Area</th>
<th>Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marginal Wharf #2</td>
<td>894 ft L</td>
<td></td>
<td>Containers</td>
</tr>
<tr>
<td>Marginal Wharf #3</td>
<td>500 ft L 30 ft W</td>
<td>100,000 ft²</td>
<td>Shed General</td>
</tr>
<tr>
<td>Marginal Wharf #4</td>
<td>500 ft L 30 ft W</td>
<td>100,000 ft²</td>
<td>Shed General</td>
</tr>
<tr>
<td>Marginal Wharf #5</td>
<td>500 ft L 30 ft W</td>
<td>100,000 ft²</td>
<td>Open area Containers</td>
</tr>
<tr>
<td>Marginal Wharf #6</td>
<td>500 ft L 30 ft W</td>
<td>100,000 ft²</td>
<td>Shed Containers</td>
</tr>
<tr>
<td>Marginal Wharf #7</td>
<td>500 ft L 30 ft W</td>
<td>100,000 ft²</td>
<td>Shed General</td>
</tr>
<tr>
<td>Marginal Wharf #8</td>
<td>637 ft L 30 ft W</td>
<td>100,000 ft²</td>
<td>Shed General</td>
</tr>
<tr>
<td>8A Pier A South</td>
<td>570 ft L 30 ft W</td>
<td>120,000 ft²</td>
<td>Shed Fish Meal</td>
</tr>
<tr>
<td>8A Pier A River End</td>
<td>350 ft L</td>
<td>17,500 ft²</td>
<td>Shed General</td>
</tr>
<tr>
<td>8A Pier A North</td>
<td>1,496 ft L 42 ft W</td>
<td>153,000 ft²</td>
<td>Shed General</td>
</tr>
<tr>
<td>8A Pier B South</td>
<td>1,496 ft L 42 ft W</td>
<td>280,000 ft²</td>
<td>Shed General</td>
</tr>
<tr>
<td>8A Pier B River End</td>
<td>622 ft L 30 ft W</td>
<td></td>
<td>Vehicles</td>
</tr>
<tr>
<td>8A Pier B North</td>
<td>1,600 ft L 42 ft W</td>
<td>280,000 ft²</td>
<td>Shed General</td>
</tr>
</tbody>
</table>
### TABLE 2

**THE PORT OF MOBILE**  
**(CLASS A BERTHS)**  
**(CONT)**

<table>
<thead>
<tr>
<th>Facility</th>
<th>Frontage</th>
<th>Area</th>
<th>Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pier C South</td>
<td>1,550 ft L 210,600 ft² Shed</td>
<td>General</td>
<td></td>
</tr>
<tr>
<td>Pier C River End</td>
<td>896 ft L 70 ft W</td>
<td>Containers Vehicles</td>
<td></td>
</tr>
<tr>
<td>Pier C North</td>
<td>1,404 ft L 116,400 ft² Shed</td>
<td>General Bulk</td>
<td></td>
</tr>
<tr>
<td>Public Grain</td>
<td>3,200,000 bushel capacity</td>
<td>Grain</td>
<td></td>
</tr>
<tr>
<td>Elevator</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2 Ship Berths</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2 Barge Berths</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2 Truck Dumps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2 Rail Dumps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Berth</td>
<td>1,612 ft L 3,000 tons/hr to rail</td>
<td>Grain Ore</td>
<td></td>
</tr>
<tr>
<td>Bulk Material</td>
<td>1,612 ft L 3,000 tons/hr to rail</td>
<td>Coal</td>
<td></td>
</tr>
<tr>
<td>Handling Plant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>McDuffie Terminals</td>
<td></td>
<td>7,000 tons/hr</td>
<td>Coal</td>
</tr>
<tr>
<td>-2 Loading Berths</td>
<td></td>
<td>3,000,000 tons storage</td>
<td></td>
</tr>
<tr>
<td>-3 Barge Unloaders</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2 rail car dumps</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**  
(1) The port has a 22 acre container marshaling yard.  
(2) The port has an additional 645,200 ft² of covered space.  
(3) The port has an additional 192,200 ft² of open storage.

**Source:** Port of Mobile
During Fiscal Year 1988, 709 ocean-going general cargo carriers, 146 ocean-going coal carriers and 51 ocean-going bulk carriers berthed in Mobile. A total of 75,750 rail cars, 3,132 barges, and 45,513 trucks provided transportation into and out of the hinterland. An additional 5,155 rail cars, 18 barges and 3,037 trucks brought in 21,245,812 bushels of grain for export. 16

Like New Orleans (as seen in Figure 2, p. 11), Mobile has immediate access to Interstate 10 and Interstate 65 systems. Additionally, three of the railroads that operate in and out of New Orleans also provide service for Mobile; CSX (Figure 3, p. 12), Illinois Central (Figure 5, p. 14), and Norfolk Southern (Figure 6, p. 15). A fourth railroad serving Mobile is the Burlington Northern Railroad which provides similar coverage to Chicago and the West Coast as that provided New Orleans by Union Pacific (Figure 8, p. 17).

Administration

The Port of Mobile is administered by the Alabama State Docks Department. Created in 1928, the Department is a State agency whose responsibility is promoting, developing, constructing, maintaining and operating harbors, seaports and riverports within the State. Along with the Port of Mobile there are ten inland ports administered by
the Department.

Daily operations and administration are executed by a director and an assistant director assisted by an executive staff of five division directors and a staff of marketing, engineering, finance, bulk operations and railway professionals.
CHAPTER IV
INTRODUCTION TO DEVELOPMENTAL PRESSURES AND PROBLEMS

History and Growth

In just four short decades there has been a revolutionary change in the manner cargo is shipped by sea. In the recent past the traditional method of stowing highly varied cargos by hand involved low levels of overall productivity per man, per gang, per berth. At the average cargo handling rate of 12-20 tons per gang-hour, ships were forced to spend considerable amounts of time at pier side. To minimize the time spent in port by these labor-intensive operations, ships were kept relatively small.

A rapid increase in labor and port costs in the 1950s and 1960s resulted in the introduction of more productive cargo-handling methods, such as containerization, palletization along with improved ship designs. Just two decades later cargo-handling had evolved to the movement and carriage of unit-loads of standardized dimensions, neutralized characteristics, and weights appropriate for the maximum use of mechanical handling
equipment in which units of freight could, wherever possible, move from origin to destination without breaking of bulk.17

The resultant rapid growth in the size of cargo vessels since the end of World War II has had a profound impact on sea ports; influencing port channel depths, development of valuable and scarce waterfront property, and, even, construction of offshore facilities.

Yet, deepening and widening the channels, approaches, and anchorages at all major ports in the United States would be both physically impracticable and financially prohibitive. Additionally, even before the U.S. Congress enacted specific laws (see Table 3) designed to protect the environment, environmental considerations in large population centers had worked against the introduction of deep-draft tankers, new refining centers, ore smelters, and petrochemical complexes. The result is that, today, ports face difficult choices in terms of the environment, safety, capital expenditures, and national defense considerations.18

Environmental Constraints

Heightened public involvement and environmental regulations have allowed the most modest
<table>
<thead>
<tr>
<th>LAW</th>
<th>PROVISIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Act to Prevent Pollution from Ships</td>
<td>Implements the IMO International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78). Provides for the prevention of pollution from ships by the discharge of harmful substances or effluents.</td>
</tr>
<tr>
<td>Marine Protection Research and Sanctuaries Act</td>
<td>Regulates the disposal of materials at sea, preventing or strictly limiting the dumping of materials which would adversely affect the human health, welfare, amenities or the marine environment, ecological systems, or economic potentialities. Activities under this act are also governed by the International Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972. (London Dumping Convention).</td>
</tr>
<tr>
<td>Resource Conservation and Recovery Act and treatment,</td>
<td>Provides for cradle to grave management of hazardous wastes by imposing management requirements on generators and transporters of hazardous materials upon owners and operators of storage, and disposal facilities. Prohibits continued land disposal of hazardous wastes unless the wastes meet specified treatment standards.</td>
</tr>
<tr>
<td>Comprehensive Environmental Response, Compensation, Liability Act (CERCLA or Superfund)</td>
<td>Provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment and the cleanup of inactive hazardous waste disposal sites.</td>
</tr>
<tr>
<td>LAW</td>
<td>PROVISIONS</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Clean Air Act</td>
<td>Protects and enhances the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.</td>
</tr>
<tr>
<td>Clean Water Act</td>
<td>Restores and maintains the chemical, physical and biological integrity of the Nation’s waters. Provisions include federal effluent limitations and clean up of spills in navigable waters.</td>
</tr>
<tr>
<td>Ports and Waterways Safety Act</td>
<td>Increases navigation and vessel safety, protection of the marine environment, and protection of life, property, and structures in, on, or immediately adjacent to the navigable waters of the States. Implements many IMO standards.</td>
</tr>
<tr>
<td>United standards</td>
<td></td>
</tr>
</tbody>
</table>

Source: Maritime Administration, Office of Port and Intermodal Development
local interest group to halt a port project by utilizing the legal process to involve a port in complex and lengthy regulatory procedures.

The most prevalent single environmental issue facing ports is the disposal of dredged materials and contaminated sediments. There are fewer and fewer sites available for disposal; upland sites are scarce, wetlands are increasingly protected from being filled, federal statutes limit open water disposal, and ocean disposal sites are being moved farther out to sea. The concern over contamination has lead state and local environmental agencies to demand sediment testing and monitoring programs that can cost more than the dredging operations themselves.¹⁹

Public concern over wetlands conservation is another problem for port development. While ports need to maintain and proceed with needed developments, they must meet requirements to offset any resulting loss of critical wetlands.²⁰

Another major problem for ports is the safe and environmentally sound management of wastes generated by vessels and port facilities. Marine terminal and ship operators are concerned about the potential economic impact of waste reception facility regulatory requirements for oil, chemicals, and garbage under the Act to Prevent Pollu-
tion from Ships. Principal concern centers upon the provisions of the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

**Competing Interests**

The resurging interest in urban development has regentrified the areas around the ports and increased real estate values. Ports find themselves in competition with non-maritime commercial interests for what little waterfront properties are available. The pressure is now being applied for ports to reduce the scope of their operations or to relocate away from the returning populations. Both options are expensive and neither is attractive.21

**Economic Pressure**

First and foremost, commercial port development has, is, and will continue to be dependent upon ships -- their design, their shipping services, and the perceived needs or preferences of their owners. Additionally, global patterns of trade and specific characteristics of the foreland areas beyond the seas with which ports are linked influence how and why certain ports receive more development than do others.22 Figure 9 displays
FIGURE 9
SOME ELEMENTS IN PORT GEOGRAPHY

those significant elements that impact on port location and development. For the reasons cited above, each port remains unique, each port complex distinctive."

Containerships, themselves, are so expensive to operate that economical operation precludes calls at numerous ports. Profitable operations demand the full exploitation of their high productivity. That productivity can only be increased by reducing voyage time. Voyage time is a function of speed at sea and time spent in port. Speed at sea is essentially a design function modified by such variables as sea-state, fuel costs, etc. Time spent in port can be reduced by making fewer port calls or by shortening turnaround time. Fewer port calls, therefore, show the greatest net savings of time by eliminating additional sailing time, harbor transit and maneuvering time, docking and undocking time, support activity to prepare for cargo handling, and readying for sea required for each additional port visit."

The extent of change as far as ports are concerned is partially illustrated by the comparison displayed in Figure 10.

Because of the capital-intensive nature of containerization, it is more costly to construct a
<table>
<thead>
<tr>
<th></th>
<th>Break-bulk cargo liner</th>
<th>Second-generation containership</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Antenor Class</td>
<td>Liverpool Bay</td>
</tr>
<tr>
<td></td>
<td>1950-60</td>
<td>1972</td>
</tr>
<tr>
<td>Length</td>
<td>490 ft</td>
<td>807 ft</td>
</tr>
<tr>
<td>Cargo capacity (tons of 40 ft³)</td>
<td>13,687</td>
<td>60,000 (2450 TEU)</td>
</tr>
<tr>
<td>Approximate no. of round trips per year</td>
<td>2.7</td>
<td>5.4</td>
</tr>
<tr>
<td>Annual capacity (tons of 40 ft³)</td>
<td>74,000</td>
<td>648,000 (27,000 TEU)</td>
</tr>
<tr>
<td>Tons handled per working day in port</td>
<td>1,000</td>
<td>19,000</td>
</tr>
<tr>
<td>Total no. of discharging and loading days per year</td>
<td>28</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Seaport Systems and Spatial Change.
modern marine container terminal than a more labor-intensive breakbulk facility. Whereas conventional cargo handling was land-intensive, at the most about 2.5 acres per berth, often with multistoried transit sheds close to pier-side; a containerized port terminal’s facilities include not only a wharf or pier with 10-20 acres of open, hard surfacing, but also specialized handling equipment such as container cranes, straddle carriers, portainers and other related terminal service requirements. Included in the related terminal service category are cargo consolidation/distribution sheds and sizable back-up areas. Figure 10 displays such a generic modern port.

Another problem has been the competitiveness among ports, which often results in the duplication of expensive facilities. Competition has introduced new, efficient cargo handling systems and operational procedures, and has provided incentives for port management to adapt to, and advance, technological progress. However, maintaining a port’s competitiveness involves large investments in land and money that could well result in wasteful competition and a dissipation of resources by ports as they compete for business.
FIGURE 10
GENERIC CONTAINER SEAPORT

Source: "Seaports, An Introduction to Their Place and Purpose," by L.G. Taylor.
For example, the estimated construction costs of a new container terminal with 900 linear feet of berthing space, a 40-ton gantry crane and 20 acres of paved back-up area range between $9-17 million (in 1980 dollars).\textsuperscript{27}

In the bulk trades the most spectacular trend has been that of increasing ship size in response to economies of scale over long hauls. Ultra Large Crude Carriers (ULCCs) of over 500,000 dwt are in operation with loaded drafts of over 90 feet, and for Very Large Crude Carriers (VLCCs) in the 250,000-300,000 dwt range, drafts of about 75 feet are usual. Dry-bulk carriers of over 200,000 dwt are in use but the average is probably nearer 100,000 dwt. In the 1950s both oil and dry-bulk cargos were carried in vessels of a size close to the average of the time, and were frequently found in ports accommodating general cargo as well as bulk trades. The increase in the size of these vessels has produced a greater diversification with respect to size and specialization and a wide range of new port facilities has been created to meet the increasingly rigorous demands of the new trades -- Bantry Bay, Milford Haven, Antifer, Rotterdam Europort, and New Orleans LOOP for oil, and ports such as Port Talbot, Port Hedland, and
Tuburao for iron ore.\textsuperscript{28}

The end result is the concentration of cargo and calls at a limited number of ports on a given coast. Each port has been forced to make the decision whether or not to supply, at high cost, economical and efficient services to attract and retain more traffic or to wait for a demand to develop. In general ports go ahead and make the necessary investments in anticipation of the demand. The potential for inefficient allocation of resources is great; the long life of port structures ensures that any mistakes now made with respect to technology or location will have long-term implications for the geography of development, could be costly in financial terms, and possibly even counterproductive in overall development terms\textsuperscript{29}, but the prevailing view has been that competition is basic to the free enterprise system and has led to the strong port system in the United States.\textsuperscript{30}

A matter of major concern has been the dredging and maintenance of adequate channels to handle traffic demands. The federal government, through its power to withhold or extend authorization and funding for channel projects, has the capability to directly influence port development and port use. Because funds are limited, there
has been an inherent tendency to promote a selective policy towards those ports that appear to be economically successful, to the detriment of marginal ports.\textsuperscript{31}

Another factor that will have a tremendous impact on U.S. ports is the Water Resources Development Act of 1986. The first authorization bill enacted by Congress since 1970, this Act significantly alters the roles, obligations, and opportunities for United States ports by requiring that non-federal (local) interests assume proportionately greater responsibility and share of the costs of desired channel improvements and dredged material disposal. This cost sharing is dependent upon the type of project undertaken and can range from zero percent up to 60 percent, under a general guideline that requires local interests to contribute a greater percentage as the overall costs increase.

With respect to port improvements, this Act allows the non-federal interests to levy port or harbor dues to finance the non-federal share of project costs for construction and certain operations and maintenance (O&M) costs associated with deep-draft harbor projects. The non-federal share of port O&M expenditures is financed by the imposition of a new "harbor maintenance tax" on the
value of domestic and international cargoes loaded or unloaded at U.S. ports. This tax is equal to 0.04 percent of the cargo value (4 cents per $100) and is paid by either the exporter, importer, or carrier. The revenue received from this tax is deposited in a Harbor Maintenance Trust Fund. In Fiscal Year 1988 this fund disbursed 148 million dollars to the Corps of Engineers.

The 1986 Act also affects the Inland Waterway System by amending the 1978 law that required user contribution to the construction of that system by means of a fuel tax. Revenues from the tax are paid into the Inland Waterway Trust Fund and may be drawn upon by the Corps of Engineers for up to 50 percent of the capital costs of a project only after appropriation by the Congress for the project. Beginning this year there will be an incremental phase-in of an increase to the fuel tax to 20 cents per gallon (up from a current 10 cents) by 1995. In Fiscal Year 1988 the Corps of Engineers received 58.8 million dollars from this fund.

The Debate Over Port Development

Implicit in this discussion is the two-fold question that has been the subject of much debate: 1) Should a public policy for ports be established by the federal government that will determine the
number, type, and location of ports in the United States, or 2) should the principle of competition and independence from federal involvement and control be the guiding factor? There is certainly a school of thought that port planning is too important to be left to the ports, and that some degree of wider co-ordination and possibly political intervention is necessary. However, the tradition of the U.S. port industry is that general port planning, financing and construction of marine terminals as well as efforts for increasing operating capability and efficiency are all matters to be determined at the individual port or the state level.

Ports in larger population centers are becoming increasingly involved with social considerations. Water pollution, recreational use of waterfront land, threats to wildlife and fisheries, redevelopment of waterside areas, rapid transit, freeway systems, and urban renewal all impinge on port development and demand attention. The conflicting demands may require new multistate or intrastate agencies to deal with jurisdictional, political, and financial problems of local, state, and national authority and responsibility. In any event, the challenge to port development is considerable: to rethink the ways in
which ports should be built, to create new or modified forms of coastal settlements, to provide better environments for people living and working in maritime zones and to provide new stimuli for regions and nations within which industrial ports are set. 40
Chapter V
ECONOMICS OF PORT DEVELOPMENT
The Effects

It is imperative to remember that ports have a significant impact on the economies of the cities, states and regions in which they are located. First, the production or processing of goods, especially agricultural products, is not all carried out within the limited confines of any port. A port may be a robust manufacturing center, but it can not survive without the inflow and outflow of commerce generated by the much vaster hinterland it serves. During the Industrial Revolution in Massachusetts ports grew substantially due to the flow of manufactured goods; however, the actual manufacturing centers like Lowell developed around areas where power was obtainable for the factories. The ports benefitted from the increased flow of trade, not from their own manufacturing capabilities; ports that could serve the vital interests of the industrialized centers waxed while those that could not waned. Today it is easy to picture ports like New York, New
Orleans, and Los Angeles as funnels serving industrial areas far outside their metropolitan limits.

Second, available transhipment capability can quickly attract other functions. Cities along the Inland Waterway System attracted the railroads because of their connectivity to the ocean shipping lanes. The railroads, in turn, brought in other industries and interests. Cities like Pittsburgh, Cincinnati, St Louis, Memphis, Kansas City and Louisville grew because of their land and water ties. The modern era has introduced aviation, another link in the transportation chain which brings more benefits to those communities that already have water and land connections.

Third, the influence of the port, as well as the influences affecting it, can be identified over wider areas beyond the port limits. "Banned in Boston" would have meant little without the influence brought about by the economic wealth generated within the seaport.

Fourth, the relationships between the port and the transport links to and from it will be affected by technical developments in maintaining these links. As discussed in the previous chapter, not every port benefits from technological advancements. The economies of scale that demand
larger and larger ships can result in ports being cut out of a particular trade because of draft limitations that can not be successfully dealt with.

Fifth, the development of the port will be affected by the development of other ports. Competitiveness on the part of a seaport requires compatibility with the capabilities of other ports involved in the same trades. Failure to adapt can result in carriers bypassing a port in favor of others better suited to their needs.

Sixth, the development of the port will be subject to the politico-economic influence of the national territory and economic grouping of states in which it is located. Or, more simply, the rich get richer much faster than the poorer do.

Seventh, growth of the port and decay within the port area may pose environmental problems. There is no clearer example than New Bedford, Massachusetts for an examination of the deadly fruits of some technological advancements. New Bedford typifies the small, decaying seaport suffering through a region-wide recession that is faced with the problem of dealing with a poisoned environment.
Costs and Benefits

The U.S. port industry, in 1972, handled over 1.6 billion tons of cargo, generated over $30 billion in direct dollar income, provided jobs for over 1.2 million people, and contributed over $1.1 billion to the balance of payments account.42

Sixteen years later, in 1988, those same activities generated an equal number of jobs (1.2 million), $98 billion in direct dollar income, and $50 billion to the gross national product. In addition, with 70 percent of U.S. Customs revenues coming from import duties generated at the ports, over $13 billion was earned for the federal treasury.43

To handle the huge tonnages involved in the country's waterborne commerce, the port industry invested over $3.2 billion in facilities from 1966 to 1973.44 In 1974 the Maritime Administration estimated that U.S. port capital expenditures from 1973 to 1977 would be about $1.5 billion.45
The Gulf Coast

Between 1973 and 1977 Gulf Coast expenditures were estimated to account for 34 percent of the total cited above; with the following breakdown:

- Conventional General Cargo - 8% of national total
- Specialized General Cargo - 8% of national total
- Liquid and Dry Bulk - 84% of national total

Between 1973 and 1978 U.S. public ports actually allocated over $1.6 billion for construction and modernization of commercial shiphandling facilities. This figure represents about 36 percent of the total amount spent on public ports since 1946 and is due primarily to the increasingly capital-intensive nature of modern port facilities.

Between January 1973 and December 1978 a total of $626,765,000 in port development funds were allocated to Gulf Coast ports. That figure is 38 percent of the grand total spent overall; no other area of the country allocated nearly as much (the next closest area was the Pacific Coast with 20 percent of the grand total). But a good way to show the growing importance of the Gulf Coast is to examine the six year period from 1973 to 1978. While that period comprised only 15.6 percent of
the time since 1946, those capital expenditures account for 53 percent of the total capital outlays in the Gulf region during that 33 year period. For the five year period from 1979 to 1983 it was estimated that $3,371,556,000 would be spent nationally on U.S. ports. Of that amount the Gulf Coast was expected to receive 58 percent, or $1,958,456,000. Significantly, 96 percent of those expenditures were destined for new construction vice maintenance and repair.
CHAPTER VI
RESULTS OF PORT DEVELOPMENT

The Reasons For Change

Since World War II, many changes have been made in the basic physical and operational pattern of port facilities and their locations, rendering most of the general cargo piers obsolete in both location and design and creating demands for new facilities and new locations. At the same time, new forms of port organization and management have become necessary.51

Ports, especially commercial and diversified ports, create a multiplier effect. They set in motion a chain of economic activities that, in turn, creates demands for commercial and industrial establishments dependent upon and related to maritime commerce. In turn, these demands create further needs for land for residential, recreational, and service uses required by the population deriving its support from those port-based activities.52

As the locations for a port's terminals became obsolete, new waterfront and landward areas
for terminals and associated facilities had to be absorbed closer to the urban periphery. Generally, new ports tend to be located seaward of the older clusters, partly because of the deeper channels required by the larger ships and partly to reduce transit time between the terminals and open water. 53

The tremendous increase in capacity and cargo handling speed of containerships represents a significant increase in prospective cargo flow through the port. The need for increased capacity has resulted in a demand for more land adjacent to the port terminals, for mechanization of the terminals themselves, for better landward connections by rail and highway, for deeper, wider, and straighter approach channels, and for marginal wharves to replace centrally located but obsolete finger piers in some ports. Furthermore, to justify large investments in channels, land, sophisticated and expensive cargo handling equipment, while the ship owners were demanding maximum efficient use of their assets, it became necessary to concentrate traffic in relatively few but highly efficient ports (load centers). Because of their efficiency, these load centers could attract traffic from ever-widening hinterlands and forelands and from less competitive ports on the same and
other coasts. 54

In terms of scale economies, the containerships have their landward counterparts in container trains, unit trains, and semi-trailer and "double bottom" trucks operating on express highways. 55

Containerships cannot economically serve ports that do not offer very substantial volumes of cargo and that do not permit rapid turnaround. Consequently, some of the most important routes are served by a limited number of ports; in some instances only one at each end. 56

The rapid move to containerization of cargo has made a high proportion of conventional break-bulk ships, carrying miscellaneous general-cargo as discrete items, obsolete. Since containerships are much faster, turn around in port much more quickly, and are substantially larger than the break-bulk vessels, one containership may effectively replace four or five conventional vessels. 57

Replacement of smaller conventional break-bulk ships by containerships has produced notable effects on the physical patterns of the ports they serve, changing the emphasis from providing piers to that of providing upland areas for marshalling containers. The advantages of high speed and
large capacity would be largely lost if turnaround time in port were not very much less than for break-bulk ships. Fewer ships that spend less time in port need less total contact area between water and land in the ports, since the need to accommodate large numbers of ships at berth is reduced. 58

There is a greatly increased need for land adjacent to the berths. A typical berth for a containership, involving from 700 to 900 lineal feet of wharf, requires at least 20 to 30 acres of contiguous level land for the sorting and handling of containers, while ideal conditions might call for as many as 50 acres per berth. Obviously, these extensive tracts of land are not generally available adjacent to the waterfronts in or near the central parts of port cities. 59

With the barge-carrying ships, inland ports along the river systems -- the Mississippi system in North America and the extensive waterways of Western Europe, for example -- are provided with break-bulk, or unitized, cargo service directly overseas. 60

As in the case of dry bulk, the petroleum terminals, both crude and product, are almost entirely privately owned and operated. Consequently, public port facilities are not generally
a consideration. However, providing channels with adequate depth for the large tankers involves a complex of public policy issues. 61

The Influence on the Hinterland

Since construction began to replace World War II era commercial vessels, economies of scale forced the building of larger and larger ships. Both for liquid and dry bulk commodities, the increase in ship size and the consequent savings in transportation costs have been spectacular. Complementing those revolutionary changes, land transportation of goods also underwent significant technological change through the following:

- Completion of the Interstate Highway System and analogous systems in other countries;
- Development of long-distance trucking and pipelines;
- Growth of inland waterway transportation in the United States and Western Europe;
- Establishment of COFC (container on flat-car) and TOFC (trailer on flatcar), or "piggyback," to take advantage of scale economies in water and rail transportation over long distances and the flexibility of the truck; and
- Development of barge-carrying ships combining inland water transportation and ocean carriage. 62

Developmental Considerations

These developments created a need for efficient planning and operation at the interfaces
between the different modes to ensure the fast turn around of ships, which produce no economic return while they are loading and discharging. As the efficiency and speed of movement between terminals improved, the need for comparable efficiencies in the operation of terminals increased.63 Technological changes in transportation, together with large costs for the "hardware" of modern transportation systems and the need for effective utilization of the transport plant and labor force, dictated the necessity for developing efficient ports.64

All these developments pointed to the need for a re-examination of the traditional policies and practices of port development and operation at national, regional, and local levels. Added to these forces were the problems related to the environment, the energy crisis, a new social awareness, and urban decay.

Simply put, ports cannot be planned, developed and operated independently of the regions on which they depend for traffic and for which they serve as gateways. They also cannot be considered independently of their relations to their immediate vicinities because of their effects on employment and the local economic base. In addition, demands for land - particularly shore land
with deep water access, an increasingly scarce resource - commonly involve the ports in competition with other land uses.

What was once true for seaports in this country no longer applies. During the early stages of economic development there was likely close symbiotic relationships between particular ports and their home regions. With time and the extension and improvement of transport links the hinterlands were enlarged and became more complex in character. Initially well defined, even discrete, port hinterlands became blurred as each port and region generated its own momentum and as competitive forces created intervening opportunities and new possibilities for linkages. ⁶⁵

The United States has never had a national port plan, and no commercial port or group of ports has ever been under complete control of the national government. The port industry, historically, has been decentralized. Individual ports compete with each other for the available traffic. This competition reflects the American traditions of free enterprise and local control. At the same time, the ports of the United States have received from federal agencies many benefits directly related to their development and operation. The navigable rivers and harbors, with very
few exceptions, are maintained and improved under congressional authorization by the U.S. Army Corps of Engineers. In no other nation is the improvement and maintenance of navigable channels within harbors a central concern of the national government while the building and operation of terminal facilities remains a decentralized local concern.66

**Port Development on the Gulf Coast**

In the beginning each port developed its own connections with its hinterland, first by road and inland waterway, later by canals and railroads. Because of the difficulties of inland transportation, the hinterlands of the various coastal ports rarely overlapped.67

On the Gulf Coast, railroad penetration into the interior came somewhat later than on the Atlantic Seaboard, primarily because the Mississippi River system furnished easy waterway transportation. The Civil War, however, interrupted North-South river traffic, and led to increasing importance of the railroads. New Orleans, on the Mississippi Delta, dominated the North-South trade and was the major port for the Gulf of Mexico. However, with the decline of steamboat traffic on the rivers, New Orleans relied increasingly upon its railroad connections between St. Louis and
Chicago. Other Gulf ports such as Tampa, Gulfport, Mobile, and Port Arthur, although without major inland waterway routes to the interior, were in large measure developed by particular railroads. 68

Railroad penetration from both the Atlantic and Gulf Coasts in the overlapping Midwestern hinterland during the latter half of the nineteenth century brought all of the Atlantic and Gulf ports into competition. 69
CHAPTER VI
ISSUES CONCERNING PORT DEVELOPMENT

Ports have developed competitively throughout our national history, largely with private capital and under private control. In recent years there has been an increasing trend toward control and operation of the terminal facilities by local public bodies, mainly states and municipalities, or bodies created by them.70

A major institutional issue, and perhaps the most complex and troublesome one, is the extent to which port planning and development should be done on a regional or national basis. Subsumed within that question is the need for comprehensive studies of port requirements. The American Association of Port Authorities, representing the public port industry, has traditionally held that ports are competitive, that competition is in the public interest, and that any prospect of nationwide research on port requirements, whether conducted by the federal government or not, could lead to national port planning.71
Arguments for the study of the port requirements of the United States are strong. The hinterlands of the individual ports are no longer mutually exclusive but overlap, so that extensive areas of the United States are served by more than one port, commonly by several ports or even ranges of ports on different coasts.72

The federal interest in ports is complex. Navigable channels are a federal responsibility, and many millions of dollars are spent each year in the discharge of that responsibility. Several questions bear on this subject: 1) To what extent are such expenditures justified in enabling a potentially obsolete port to remain in competition? 2) Will there be sufficient traffic for many such ports in view of the trend toward concentration? 3) Are expenditures for channel construction and maintenance discriminatory?73

One argument against national determination of port requirements is that each port has unique attributes. New Orleans, for example, has an easily accessible and extensive natural hinterland in the Mississippi Basin but poor natural site conditions, with silting and flooding requiring constant dredging.74

Each port body and private interest involved in port development and operation, it is argued,
should take its own risks and should make its decisions on the basis of the knowledge that it generates or that is made available to it. The argument against centralization of port studies is based on the fear that such studies would lead to national port planning and eventually federal control. This would reduce the freedom of action of those ports with inherent disadvantages that are willing to apply local initiative and investment in return for the benefits of the multiplier effect on the local and regional economy. Opponents of central planning feel there is no certainty that national port planning will lead to an improvement in the nation's port industry, particularly when economic, political, and social conditions are changing so rapidly, both internationally and domestically. Development of a national port plan could remove some of the flexibility ports now have to adjust to varying conditions.

Completely local or regional determination of port investment could result in excessive unused capacity if each port competes for the same traffic. Some unused capacity may be beneficial, desirable or undesirable. There are strong arguments for unused capacity. One is that it provides a choice for the shipper, ship operator, and land carrier. Ports would compete on a cost basis
and on their ability to give good service. Competition with the better ports ultimately getting the most traffic, is held by many to be a desirable condition, even at the expense of investment in facilities used at less than capacity. A second argument in favor of unused capacity is that provision must be made for all peaks, but even though cargo berths may be unused for substantial periods, this does not mean they are not needed. A high load factor - ratio of use to available capacity - may divert traffic from a port or may produce intolerable delays during peak periods. A possible result is substantial investments by individual ports that would not be justified by the traffic that could be diverted from other ports. 78

Throughout much of the nineteenth century and in the early twentieth century, the navigable waterways and harbors were, as they continue to be, a federal responsibility. Port facilities have traditionally been a private or local responsibility. In virtually no other major maritime nation is there the dichotomy between federal responsibility for channels and local responsibility for ports that exists in the United States and that underscores the current controversy over the prospective role of the federal government in port development. 79 Significantly, there is no evidence
that ports in other countries where such complete control exists have developed any more efficiently than those in the United States.  

Following the port congestion of World War I, the Port of New York Authority (now the Port Authority of New York and New Jersey) was organized to simplify the transfer and movement of port-related cargo and passenger traffic within the metropolitan port district. It was the first public interstate port agency, established by bi-state compact and approved by the U.S. Congress.  

During recent decades the special-purpose port authority has become increasingly common. In many instances, the definition of "port" has been stretched to include many ancillary and some unrelated activities. Port authorities, in addition to operating port terminals and port-oriented railroad switching facilities, may operate airports, transit lines, convention and exhibition halls, bridges, tunnels, and office buildings.  

The underlying basis for the trend toward public port development and operation is the public benefit. A public agency can ensure that all prospective users able to benefit from the port facilities have access to them on equitable terms and can bear the high costs of capital financing. Port facilities rarely produce suffi-
cient income to amortize increasingly large investments; they commonly do not even cover the out-of-pocket costs. Many of the benefits and some of the costs are "external" and benefit the community as a whole. Therefore, the community is justified in assuming some of the port costs in return for tangible and intangible benefits.
CHAPTER VII
CONCLUSIONS

Before reaching a conclusion about the most advantageous relationship between the ports of New Orleans and Mobile one needs to consider two other elements; the other ports in the Gulf of Mexico region and significant natural occurrences.

Ports in the Gulf Region

Overall, no ports in any other region of the nation entered the final two decades of the Twentieth Century as ready for growth as the U. S. ports along the Gulf of Mexico. Port development expenditures discussed in Chapter V compared the Gulf region as a whole to the rest of the nation and showed the emphasis placed upon improving and increasing the capacity of those ports. As Table 4 shows, by 1980 the facilities offered by ports along the Gulf were in much better condition, overall, than the ports in any other region. Besides New Orleans and Mobile, Houston, Galveston, Corpus Christi, Tampa and Pascagoula had devoted
<table>
<thead>
<tr>
<th>Region</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Not recorded</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Atlantic</td>
<td>59%</td>
<td>27%</td>
<td>8%</td>
<td>6%</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>61%</td>
<td>26%</td>
<td>12%</td>
<td>1%</td>
</tr>
<tr>
<td>Gulf</td>
<td>75%</td>
<td>16%</td>
<td>8%</td>
<td>1%</td>
</tr>
<tr>
<td>South Pacific</td>
<td>54%</td>
<td>28%</td>
<td>16%</td>
<td>2%</td>
</tr>
<tr>
<td>North Pacific</td>
<td>55%</td>
<td>24%</td>
<td>19%</td>
<td>2%</td>
</tr>
<tr>
<td>Great Lakes</td>
<td>44%</td>
<td>47%</td>
<td>8%</td>
<td>1%</td>
</tr>
<tr>
<td>National Average</td>
<td>58%</td>
<td>29%</td>
<td>11%</td>
<td>2%</td>
</tr>
</tbody>
</table>

**Good** - Weakest part of the facility is above average in its ability to fulfill its designed function.

**Fair** - Weakest part of the facility is adequate in its ability to fulfill its designed function.

**Poor** - Weakest part of the facility is marginal in its ability to fulfill its designed function.

considerable resources to upgrading their facilities to keep up with the changing requirements of shippers.\textsuperscript{84}

An additional advantage enjoyed by the Gulf region ports was the larger number of deeper draft berths available for the larger vessels entering into the ocean-going trades. A comparison of Table 5 (Predicted Vessel Size by 1990) with Table 6 (Berthing Depth Distribution by Region) clearly shows that the major ports along the Gulf Coast are poised to handle greater numbers of deep-draft vessels than their competitors on the other coasts.

These factors, combined with the superb transportation infrastructure in the South and the rapidly increasing populations in the Sunbelt, led the U.S. Department of Commerce to conclude that:

"...the Gulf coast regions is expected to experience significant tonnage growth in all...cargo categories, with the most dramatic growth occurring in the area of foreign trade...general cargo...will significantly increase on a percentage basis."\textsuperscript{85}

Therefore, competition has been keen among the Gulf ports. However, while the Port of New Orleans provides facilities for all varieties of trade, other ports have concentrated on developing their individuals strengths. Houston handles almost twice as much containerized cargo
### TABLE 6

**PREDICTED VESSEL SIZE BY THE YEAR 1990**

<table>
<thead>
<tr>
<th>VESSEL TYPE</th>
<th>LARGEST VESSEL IN THE WORLD FLEET</th>
<th>Capacity (000)</th>
<th>Length (ft)</th>
<th>Beam (ft)</th>
<th>Draft (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakbulk</td>
<td></td>
<td>27 dwt</td>
<td>598</td>
<td>82</td>
<td>37</td>
</tr>
<tr>
<td>Partial Containership</td>
<td></td>
<td>30+ dwt</td>
<td>668</td>
<td>89</td>
<td>40</td>
</tr>
<tr>
<td>Containership</td>
<td></td>
<td>40+ dwat</td>
<td>943</td>
<td>106</td>
<td>42</td>
</tr>
<tr>
<td>Barge Carrier</td>
<td></td>
<td>45 dwt</td>
<td>879</td>
<td>103</td>
<td>38</td>
</tr>
<tr>
<td>Dry Bulk Carrier</td>
<td></td>
<td>150 dwt</td>
<td>1,000</td>
<td>144</td>
<td>56</td>
</tr>
<tr>
<td>Combination Carrier</td>
<td></td>
<td>200 dwt</td>
<td>1,076</td>
<td>164</td>
<td>63</td>
</tr>
<tr>
<td>LNG</td>
<td></td>
<td>65 dwt</td>
<td>936</td>
<td>144</td>
<td>36</td>
</tr>
<tr>
<td>Tanker</td>
<td></td>
<td>550 dwt</td>
<td>1,315</td>
<td>207</td>
<td>93</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VESSEL TYPE</th>
<th>AVERAGE EXPECTED VESSEL SIZE</th>
<th>Capacity (000)</th>
<th>Length (ft)</th>
<th>Beam (ft)</th>
<th>Draft (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breakbulk</td>
<td></td>
<td>13 dwt</td>
<td>500</td>
<td>69</td>
<td>30</td>
</tr>
<tr>
<td>Partial Containership</td>
<td></td>
<td>13 dwt</td>
<td>509</td>
<td>75</td>
<td>31</td>
</tr>
<tr>
<td>Containership</td>
<td></td>
<td>18 dwt</td>
<td>657</td>
<td>89</td>
<td>32</td>
</tr>
<tr>
<td>Barge Carrier</td>
<td></td>
<td>40 dwt</td>
<td>876</td>
<td>103</td>
<td>38</td>
</tr>
<tr>
<td>Dry Bulk Carrier</td>
<td></td>
<td>35 dwt</td>
<td>660</td>
<td>83</td>
<td>37</td>
</tr>
<tr>
<td>Combination Carrier</td>
<td></td>
<td>100 dwt</td>
<td>852</td>
<td>111</td>
<td>46</td>
</tr>
<tr>
<td>LNG</td>
<td></td>
<td>60 dwt</td>
<td>932</td>
<td>141</td>
<td>36</td>
</tr>
<tr>
<td>Tanker</td>
<td></td>
<td>40 dwt</td>
<td>671</td>
<td>78</td>
<td>37</td>
</tr>
</tbody>
</table>
### TABLE 7

**BERTHING DEPTH DISTRIBUTION BY REGION**

<table>
<thead>
<tr>
<th>Coast</th>
<th>Range of Water Depths at Berthing Facilities</th>
<th>Total No. of Berths</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26-30</td>
<td>31-35</td>
</tr>
<tr>
<td>North Atlantic</td>
<td>141</td>
<td>367</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>86</td>
<td>99</td>
</tr>
<tr>
<td>Gulf</td>
<td>111</td>
<td>166</td>
</tr>
<tr>
<td>South Pacific</td>
<td>45</td>
<td>247</td>
</tr>
<tr>
<td>North Pacific</td>
<td>77</td>
<td>140</td>
</tr>
<tr>
<td>Great Lakes</td>
<td>257</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>717</td>
<td>1020</td>
</tr>
</tbody>
</table>

as does New Orleans, and Mobile's McDuffie Terminal, discussed in Chapter III, has a yearly throughput equal to, or greater than, the tonnage shipped from New Orleans.

For Calendar Year 1987, eight of the top twenty-five ports, measured both by total tonnage and total value, handled in foreign trades were Gulf ports. There clearly is enough trade for everyone to pursue.

It is evident that the Port of New Orleans has one main advantage -- the Mississippi River. However, the river is subject to natural events that can play havoc with trade. Lower Mississippi River barge traffic was severely disrupted in the summer of 1988 and cargos normally shipped out through the Port of New Orleans were diverted through the ports of Mobile, Chicago, Duluth-Superior, and Milwaukee.

The Lower Mississippi River is also subject to the other extreme of nature - flooding. As shown in Table 7, major floods occur at frequent intervals. These floods not only affect shipping, they can also cause significant damage to the physical infrastructure along the river.

Over the past 5000 years the Mississippi River Delta has changed seven times as the River
<table>
<thead>
<tr>
<th>Year</th>
<th>Interval Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1882</td>
<td>10</td>
</tr>
<tr>
<td>1892</td>
<td>11</td>
</tr>
<tr>
<td>1903</td>
<td>9</td>
</tr>
<tr>
<td>1912</td>
<td>1</td>
</tr>
<tr>
<td>1913</td>
<td>3</td>
</tr>
<tr>
<td>1916</td>
<td>6</td>
</tr>
<tr>
<td>1922</td>
<td>5</td>
</tr>
<tr>
<td>1927</td>
<td>2</td>
</tr>
<tr>
<td>1929</td>
<td>8</td>
</tr>
<tr>
<td>1937</td>
<td>8</td>
</tr>
<tr>
<td>1945</td>
<td>5</td>
</tr>
<tr>
<td>1950</td>
<td>23</td>
</tr>
<tr>
<td>1973</td>
<td>2</td>
</tr>
<tr>
<td>1975</td>
<td>4</td>
</tr>
<tr>
<td>1979</td>
<td>4</td>
</tr>
<tr>
<td>1973</td>
<td></td>
</tr>
</tbody>
</table>

found new routes into the Gulf of Mexico. The portion of River that flows from Old River, Louisiana (just north of Baton Rouge) to New Orleans is maintained today only through the Low Sill and Overbank Structures constructed at Old River in the late 1940s by the U.S. Army Corps of Engineers to prevent the River from shifting its channel to the Atchafalaya River. Had the River shifted, New Orleans would have been left 70 miles east of the new main river channel.87

The massive flooding of 1973 sent a wall of water down river that came close to overwhelming the manmade barriers at Old River. Although a new Auxiliary Structure was added to the defences at Old River in 1987, the River can never be considered a complacent presence.

In contrast to New Orleans, Mobile can rely upon the depth-controlled Tennessee-Tombigbee Waterway for access to the nation’s midsection. As was shown in 1988, Mobile can benefit when conditions on the Mississippi slows trade through New Orleans.

Both ports have successfully responded to the pressures generated by modern shipping technology. The infrastructure of each, from pierside facilities to rail and road access, is designed
to effect the fastest possible offload and onload of cargo.

Endowed with naturally deep shipping channels the ports attract all but the deepest draft vessels in the world. Where New Orleans constructed the Louisiana Offshore Oil Port (LOOP) to better handle the biggest of the supertankers, Mobile initiated a dredging program designed to give the largest of the coal colliers access to the McDuffie Terminal; once again showing the emphasis on building upon their strengths.

The two ports are environmentally attuned, also. The Mississippi River Delta is the nation’s largest, while the Mobile Delta is the second largest. Dredged material from the two systems is being used to construct additional wetlands in their respective delta systems. Both entities are working at becoming contributors to the difficult solutions and taking the necessary actions to minimize the problems.

Now to answer the question of combining the planning and operations of the ports under one supervisory agency. Although the ports are in two different states 130 miles apart, it would only require a political agreement between the two states to create a management agency for the oper-
ations of both ports, but to what end.

Today the ports are competitive, not only with each other, but with the other ports along the Gulf. They have expended the resources necessary to achieve their developmental goals, and, as has been discussed, each port has defined its goals mindful of the cargos and markets most suited to its trade relationship with the common hinterland and its overseas markets.

A significant percentage, if not a majority, of the expenditures allocated for development are derived from public funding. It is doubtful that the citizens of one state would appreciate their tax dollars being spent on port development outside of the state, yet, differences in land prices, wages, and materials would bar any possibility of balanced spending between the two ports.

The concern about an over-duplication of facilities seems unfounded. Yes, both ports offer similar facilities; however, today’s shipping requirements and modern technologies dictate what a port must provide to remain competitive. All ports now offer similar facilities, some more modest and some considerably larger.

Additionally, specialized cargo handling facilities common to the two ports reflect the
commercial requirements of the hinterland both ports serve. It is these specific cargos (grains, ores, coals, etc.) that require abundant facilities throughout ports serving the nation's midsection since natural events such as drought and floods can cause significant perturbations in their transportation flow.

Regional port authorities, both bistate and intrastate, have been created in areas throughout the United States and are functioning well. The primary intent of their creation has been to improve efficiency and/or create a more competitive environment for their ports. As has been discussed in the preceding pages, the Ports Authorities of Mobile and New Orleans have successfully provided the leadership and foresight necessary to maintain the competitiveness of their respective ports. In addition, while the two ports continue to be involved in direct competition for certain cargoes between themselves, as well as with other regional ports, they have also successfully identified themselves as preeminent ports for particular cargoes. In this way they have avoided the need to tie the two ports together.

Competition between the ports is the engine that drives the planning, financing and construction designed to attract trade. The successful
ports along the Gulf Coast, among them New Orleans and Mobile, have invested and planned wisely and are reaping the fruits of their efforts over the last two decades. These efforts have been on an individual basis and there is no compelling reason to believe that any cooperative effort between ports would improve upon their efficient operations or make them more competitive with other ports serving the same hinterland. Therefore, the hypothesis that the creation of a regional port authority, combining and controlling the operations and future development of the two ports, would be more beneficial than an all out competitive effort resulting in wasteful and expensive duplication of facilities cannot be supported.
NOTES


3. Ibid., p. 44.

4. Ibid., p. 1.


6. Ibid., p. 21.

7. Ibid., p. 31.

8. Ibid., p. 25.


15. Ibid.

16. Ibid.


20. Ibid., p. 28.

21. Ibid., p. 29.

22. B.S. Hoyle, p. 3.

23. Ibid., p. 3.


25. B.S. Hoyle, p. 11.


27. Ibid., p. 9.


29. Ibid., p. 13.

30. Maritime Transportation Research Board, p. 5.

31. Ibid., p. 5.

32. Pisani, p. 4.

33. Ibid., p. 6.

34. Ibid., p. 8.

35. Ibid., p. 6.

36. Maritime Transportation Research Board, p. 5.


40. B.S. Hoyle, p. 17.

41. Ibid., p. 21.


43. Pisani, p. 1.


45. Ibid., p. 9.

46. Ibid., p. 10.

47. Ibid., p. 4.

48. Ibid., p. 5.

49. Ibid., p. 8.

50. Ibid., p. 9.


52. Ibid., p. 21.

53. Ibid., p. 22.

54. Ibid., pp. 22-23.

55. Ibid., pp. 23-24.

56. Ibid., p. 24.

57. Ibid., p. 25.
60. Ibid., p. 28.
61. Ibid., p. 30.
63. Ibid., p. 14.
64. Ibid., p. 14.
65. B.S. Hoyle, p. 6.
67. Ibid., p. 15.
68. Ibid., p. 17.
69. Ibid., p. 17.
70. Ibid., p. 33.
71. Ibid., p. 33.
72. Ibid., p. 33.
73. Ibid., p. 34.
74. Ibid., p. 34.
75. Ibid., p. 34.
76. Ibid., p. 34.
77. Ibid., p. 35.
78. Ibid., p. 35.
NOTES
(CONT)

79. Ibid., p. 35.
80. Ibid., p. 36.
81. Ibid., p. 36.
82. Ibid., p. 36.
83. Ibid., p. 38.
84. Ibid., pp. 30-31.


86. Pisani, pp. 20-21.

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