

The Port of New York and New Jersey: Lifeline to the Region

New York and New Jersey jointly possess one of the greatest natural harbors in the world. The New York-New Jersey Port is also, by most standards, the busiest in the United States, with more vessels, general cargo, and international passengers passing through it than through any other port (Chart 1). The port leads the nation, too, in value of cargo handled in United States Customs Service collections.

In addition to serving as a point of arrival and departure for both trade and passengers, the New York-New Jersey Port is a hub of economic activity. Many different industries supply services necessary for port operations, including insurance, ships' chandlers, towing services within the port, and shipbuilding and repairing. At the same time, a network of land transportation and communications connects the port with points inland. Without a doubt, the New York-New Jersey Port—or Bi-State Port—makes an important contribution to the regional economy.

However, the port has suffered from numerous problems that have stunted its growth over the past three decades. To some extent, the port has mirrored the sagging economic fortunes of the Northeastern region

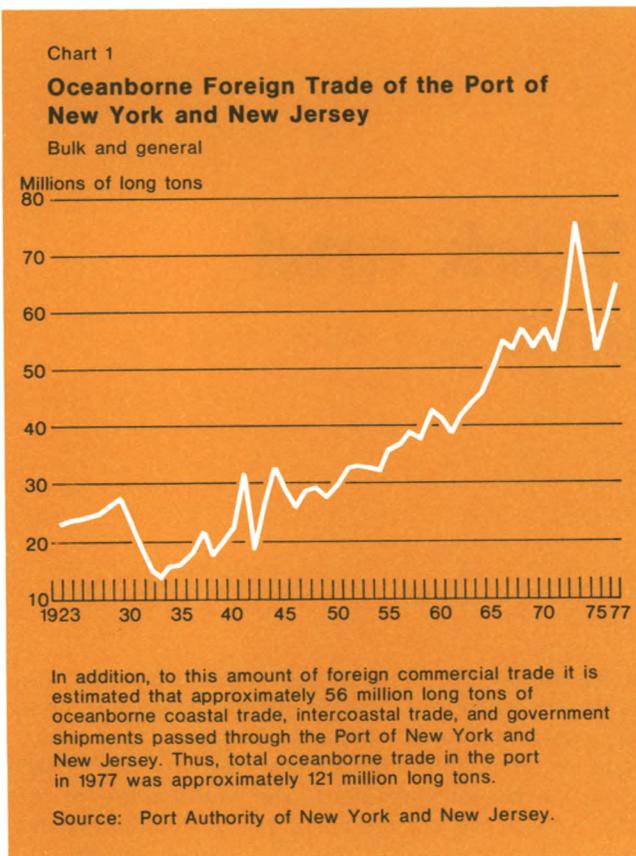
of the nation. But the port has suffered from its own particular problems—developmental, regulatory, labor, and cost—that have hampered its growth and weakened its competitive advantage vis-à-vis other ports along the Eastern seaboard. The port's share of the total waterborne commerce of the United States has been declining steadily from 17.4 percent in 1948 to 9.8 percent in 1976 (Chart 2). The port has been able to retain its position as the busiest harbor in the country, largely because of the technological revolution of containerization.

The future holds both opportunities and difficulties for the Port of New York and New Jersey. The contribution of the port to the regional economy will depend on a multitude of decisions to be made in government, business, and labor. No attempt is made here to foretell the outcome of these decisions. Rather, this article deals with the economic forces that have contributed to or crimped the prosperity of the Bi-State Port and the current economic problems that will influence the port's ability to compete effectively in the future. While the total port encompasses air transportation, the focus here is on its marine operations.

The Port of New York and New Jersey

Certain natural attributes of both sea and land facilitate the development of a port. Deep water, shelter from the open sea, little tidal variation, and security from silting and flooding are important qualities. No less important is the presence of flat land near enough to the harbor for both the development of industries

This study would not have been possible without the assistance of many individuals who shared their knowledge of the workings of the port and of the industries that comprise it. In particular, thanks are due to Francis J. Barry, O. Carey, John J. Farrell, Kenneth W. Gundling, Amos Ilan, John P. Laufer, Melvin E. Lemmerhirt, David Malamud, Clifford O'Hara, George Panitz, Vice Admiral William F. Rea III, U.S.C.G. (Ret.), Hans G. Rieger, Robert L. Safarik, Vincent C. Smith, Nai-Ching Sun, Frank G. Tatnall, and Catherine S. Vandyck, none of whom bear responsibility for the opinions expressed herein.



and cities and the location of waterfront warehouses. Because a port is the conjunction of land and water transport, extension of transportation and communications inland from the waterfront must be economically feasible. Being close to a very great concentration of population and commercial activity is another enormous advantage. A brief examination of the New York-New Jersey Port indicates that it possesses these qualities in abundance.

The geography of the Port of New York and New Jersey

The New York-New Jersey Port District covers an area of approximately 1,500 square miles and includes all or part of 17 counties and 213 municipalities. In total, the port has 750 miles of water frontage: 460 miles in New York and 290 miles in New Jersey. This definition was established in the Port Compact of 1921 under which New York and New Jersey pledged joint cooperation in the planning and development of the port, thus ending a long rivalry.

Under the terms of the compact, the Port Authority of New York and New Jersey is the principal adminis-

trative agency for developing and operating the seaports and airports and promoting commerce in the Port District. It is also responsible for planning, developing, and operating transportation and terminal facilities authorized by the states within a 25-mile radius of the Statue of Liberty. (It should be noted that other agencies and organizations have different definitions of the port area.)

The Port District has eight large bays, each bigger and with more potential as a developed port than many harbors elsewhere in this country or in Europe. It is ice-free, seldom hampered by fog, and has little tidal variation. The principal route through the port is Ambrose Channel, a ten-mile path between Sandy Hook and Rockaway point (map). This seaway, used mainly by oceangoing vessels, is maintained at a depth of 45 feet below mean water level and at a width of 2,000 feet. Numerous other channels of varying widths link all the bays of the port. Although containerships tend to have larger drafts (i.e., the depth of water a ship draws when loaded) than conventional vessels, none have a draft much greater than 35 feet. Oil tankers, however, may have drafts of as much as 92 feet. Thus, the port is able to handle most oceangoing ships, with the exception of very large tankers. Only a few harbors on the West Coast have a significant advantage over the Bi-State Port because of their greater depths.

The economics of the port: the port service

In essence, a seaport's main economic service is the transportation of goods over water. However, it is often difficult to decide which specific industries comprise the "port industry". Past studies attempting to estimate the impact of the port on the region's economy have suffered to some extent from this problem.¹ Where such studies examine only the waterfront activities necessary for loading and unloading of cargo, they ignore other port activities such as cargo insurance and warehousing that are equally essential for the transportation of goods over water. Where the studies include as part of the port industry production activities in the port area regardless of output, they confuse geographical proximity with functional association. Where the studies include production of goods that are moved by water as part of the port industry, they confuse users of port services with suppliers of port services. An input-output analysis (a model through which the interrelationships and interdependencies of industries can be estimated in dollar terms) of the economic impact of

¹ Port of New York Authority, *The Port and the Community* (May 1956); and First National City Bank, *The Port of New York: Challenge and Opportunity* (June 1967).

this country's 170 major coastal and inland ports recently completed by the Port Authority of New York and New Jersey avoids these pitfalls.²

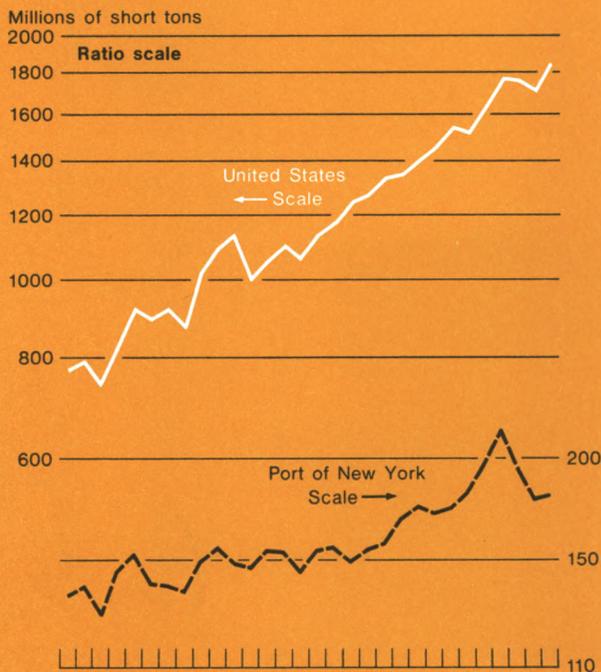
The national analysis of the Port Authority investigation provides a basis for assessing the impact of the Bi-State Port on the region's economy. The precise definition of the port industry is "any economic activity that is directly needed in the movement of waterborne cargo".³ The relevant industries that together provide the port service then are those directly involved in moving goods over the water, transferring those goods from the means of water transportation to land conveyances, moving goods overland to the point of destination, or vice versa. Physical proximity to the piers is not necessary to be part of the port industry. Thus the port industry includes, for example, activities such as banking, warehousing, cargo documentation, and cargo insurance, as well as the actual carriage of goods over water. In this analytical framework, activities that are more removed in a functional sense from the basic port service, though still part of the port industry's economic impact, are not part of the port industry itself. These include such activities as shipment of exports and the supply of fuel, port machinery, and ship-repair services. Nevertheless, they do have an important bearing on the overall impact of a port on its surrounding region. Input-output analysis helps estimate both direct and indirect effects of the port industry on the economy. This is valuable since a port not only fulfills its vital function in water transportation but also generates jobs and income in other industries, as well as tax revenues at all levels of government.

Oceanborne foreign trade passing through the Bi-State Port in 1977 generated \$5.1 billion in port industry revenues. This is based on the Port Authority input-output analysis estimate that the movement of every ton of waterborne cargo in United States foreign trade generates, on average, \$53 of port industry revenues (in 1977 dollars). The port industry has further indirect or multiplier effects through the chain reactions a change in the demand for the port industry services generates. Thus the multiplier can measure the effects that ripple through the economy from the industries supporting the port industry because of a change in demand for the port service.

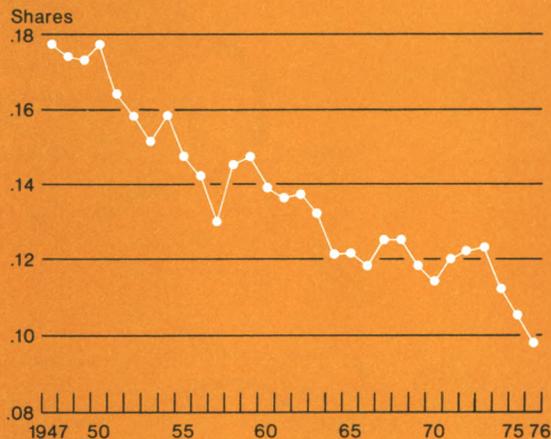
The estimated multiplier for the port industry is 1.6; that is, every dollar of port industry sales generates \$1.60 in sales throughout the economy. In other words,

Chart 2

Net Total Waterborne Commerce in the United States and Port of New York and New Jersey



The Bi-State Port's Share of Net Total Waterborne Commerce in the United States



Includes total net traffic, eliminating all known duplications, i.e., foreign (imports and exports) and domestic (coastwise, lakewise, internal, local, and intraterritorial).

Source: United States Army Corps of Engineers, *Waterborne Commerce of the United States, Calendar Year 1976, Part 1, Part 5.*

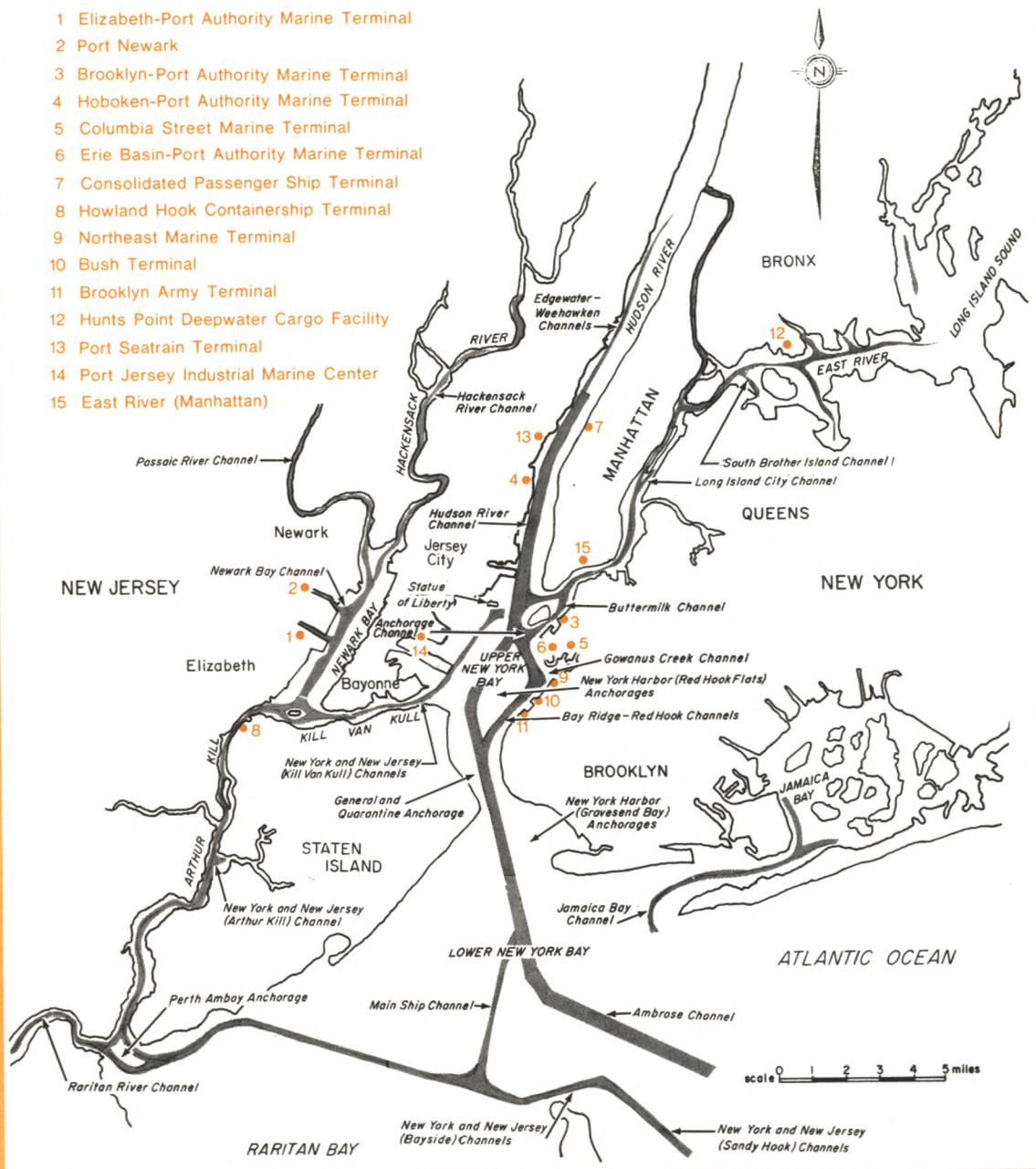
² The Port Authority of New York and New Jersey, Planning and Development Department, *The Economic Impact of the U.S. Port Industry: An Input-Output Analysis of Waterborne Transportation*, Vol. 1, prepared for United States Department of Commerce, Maritime Administration (April 1978), pages 80-84.

³ *Ibid*, page 17.

Major Federal Ocean Channels

General Cargo Terminals

- 1 Elizabeth-Port Authority Marine Terminal
- 2 Port Newark
- 3 Brooklyn-Port Authority Marine Terminal
- 4 Hoboken-Port Authority Marine Terminal
- 5 Columbia Street Marine Terminal
- 6 Erie Basin-Port Authority Marine Terminal
- 7 Consolidated Passenger Ship Terminal
- 8 Howland Hook Containership Terminal
- 9 Northeast Marine Terminal
- 10 Bush Terminal
- 11 Brooklyn Army Terminal
- 12 Hunts Point Deepwater Cargo Facility
- 13 Port Seatrain Terminal
- 14 Port Jersey Industrial Marine Center
- 15 East River (Manhattan)



Source: New York Port Handbook 1978 (published by the Maritime Association of the Port of New York and the Port Resources Information Committee, Inc.), pages 13, 14, and 18.

each ton of waterborne foreign cargo generates direct and indirect revenues of approximately \$85 (in 1977 dollars). This means that foreign waterborne cargo passing through the Bi-State Port in 1977 generated at least \$8.2 billion in sales throughout the national economy. Most of this impact was probably realized within the port region.

The operations of the port industry, of course, generate jobs as well as revenues. At the national level, every 600 long tons of waterborne foreign trade moved is estimated to have created one job, according to the Port Authority study. In 1977, waterborne foreign trade moving through the Bi-State Port created at least 161,000 jobs throughout the nation. Again, most of these jobs were probably within the port region.

The estimated revenue and employment effects per ton of cargo are greater for the Bi-State Port than for the average United States port. At the national level, exports and imports are largely low-value commodities which tend to generate low levels of employment. In the Bi-State Port, however, cargo is generally high value. In 1977, for example, the average value per long ton of general cargo passing through the port was \$1,844, approximately 2.5 times the national average of \$729. High-value cargo generally has greater employment and revenue-generating effects since it often requires special handling. Furthermore, the Bi-State Port is a regional center for certain port-related government activities such as the United States Coast Guard and a national center for port-related industries such as marine insurance. Thus some portion of the activity in the port-related industries in the Bi-State Port results from the demand for port services in other regions. Hence, it is likely that the estimates presented above represent a lower bound for the economic impact of the port industry on this region.

Study of the Port of New York and New Jersey requires separate analysis of each of the major industries that comprise either the port or supportive industries through which the indirect effects of the port are felt. Certain developments within these industries help explain the port's current economic position and may also affect its future.

The maritime industry

At the present time, shipbuilders and shipowners throughout the world are feeling the effects of reduced demand. Between 1965 and 1975, the world's merchant fleet increased from 157 million gross tons to 340 million gross tons. (Gross tonnage is the ship's total volume in cubic feet, and 100 cubic feet equal one gross ton.) However, with the sharp increase in oil prices in 1973-74 and the subsequent world recession, demand for both tanker and merchant ship services col-

lapsed just as supply was increasing. Indeed, 354 tankers and 417 dry cargo ships (9 percent of the world fleet) stood idle at the end of April 1978.

As a result of the Federal subsidy program, however, the United States maritime industry is largely insulated from the effects of fluctuations in world demand for shipping services. Since the end of World War II, the United States maritime industry (*i.e.*, shipping and shipbuilding) has received more than \$10 billion in direct Federal aid—not to mention a wide variety of indirect aid.⁴ This protected position has had an important influence on the development of both United States shipping and shipbuilding. Bi-State Port users include ships of many flags, but particular attention is directed here to the United States flag merchant marine because it pioneered the technological innovations that have been essential to the port's economic prosperity.

United States flag shipping

During the last twenty years, leading United States shipping lines have pioneered the use of containerization—the most significant maritime technological innovation since the changeover from sail to steam. This is the shipping of cargo in large aluminum or steel boxes.⁵ Due to its containerships the United States merchant marine is in a period of rebirth, while simultaneously conventional vessels are in sharp decline. (The number of United States flag conventional or breakbulk vessels, in which cargo is handled in nets or slings, has been declining since the end of World War II.) Conventional vessels have declined principally because of the competitive disadvantage of United States vessels relative to foreign-flag vessels. Operating and construction costs of American ships are the highest among major maritime nations. At the same time, productivity is approximately the same on all conventional vessels. Even with large Government subsidies, the United States merchant fleet has fallen from the position of the largest merchant fleet at the end of World War II to tenth place as a maritime power (measured in number of ships and total tonnage).

However, United States operators of containerships have been able to compete successfully against foreign lines *without* Government subsidies. The Port of New York and New Jersey has played a major role in the development of this new service and is the world's largest container port. Containerized shipping has benefited not only the port but also the New York-New

⁴ For a thorough discussion and critique of these subsidies, see Gerald R. Jantscher, *Bread Upon the Waters: Federal Aids to the Maritime Industries* (Washington, D.C.: The Brookings Institution, 1975).

⁵ These boxes have doors at one end and measure eight feet across, eight feet high, and come in sizes of ten-foot lengths up to forty feet.

Jersey region as a whole through the direct and indirect effects of this expanding demand for the port service.

One sector of the shipping industry which has declined in a relative sense for fleets of all flags and in all ports is that of passenger liners. Although there are still large numbers of individuals traveling by sea who pass through the Port of New York and New Jersey, the number has declined sharply since the early 1960's. This drop in passengers results from a reduced cruise market and a continuing decline in transatlantic crossings. At a more basic level, it reflects an increasing preference by travelers for the speed of air transportation.

Containerization: an idea whose time had come

Part of the recent decrease in number of United States flag ships is due to the spread of containerization. Because containerships tend to be larger and more efficient than conventional ships, more cargo can be carried on fewer ships. Thus a switch to containerization implies a reduction in the total number of ships in the fleet.

The movement to containerization began in the Port of New York and New Jersey.⁶ Pan Atlantic Corporation, later Sea-Land, pioneered this service in 1955 by carrying cargo in experimental containers on a tanker between New York and Houston. After three months of service, handling costs had plummeted from \$5.83 a ton to approximately \$0.15 a ton. Sea-Land subsequently began containership service between New York and Puerto Rico. Handling costs on this service were established to be less than 5 percent of a conventional ship's costs, and the port turnaround time dropped from seven days to fifteen hours.⁷

In August 1962, construction began on the first specially designed container port. This harbor terminal complex includes both Port Elizabeth and Port Newark. The Port Authority's Elizabeth Marine Terminal represents a \$215 million investment and has been called the "container capital of the world". Altogether, the Port Authority has invested approximately \$528 million in marine terminals (of all kinds). At present, 55 percent of the oceanborne foreign general cargo trade (as defined by the Port Authority) in the port is containerized. With approximately 35 container cranes, the port handled the equivalent of 1,620,000 twenty-

⁶ For an excellent survey of the early history of containerization, see the supplement to *The Economist* (September 14, 1968).

⁷ Although a United States flag line, Sea-Land does not operate under Federal subsidy. A line may prefer to be unsubsidized because once it is on Federal operating differential subsidy—a subsidy intended to offset the higher costs associated with operating a United States vessel rather than a foreign vessel—it is restricted to its specific trade route, possibly for as long as twenty years, and cannot switch operations to a more profitable trade route.

Table 1

Containerized Cargo by Selected United States Ports

Calendar year 1974; in thousands

Port*	Number of containers†	Number of total tons‡
		(in long tons)
New York	583	8,038
Los Angeles	180	2,262
Norfolk	121	1,678
Baltimore	108	1,584
Oakland	101	1,290
Seattle	90	1,114
San Francisco	84	1,001
Long Beach	74	951
Charleston	36	615
Philadelphia	44	613
Houston	37	530
New Orleans	38	521
Miami	30	414
Savannah	27	364
Portland	24	331
Boston	22	314
All other ports	51	731
Total	1,650	22,351

* Ports selected on the basis of total tons moved.

† Mixed units of standard and nonstandard size containers.

‡ Includes military cargoes; a long ton is 2,240 pounds.

Source: United States Department of Commerce, Maritime Administration, *Containerized Cargo Statistics Calendar Year 1974* (August 1976).

foot containers in 1976. Rotterdam, the world's second largest container port, handled the equivalent of 950,000 of these containers.

New York's lead over the country's other container ports is enormous, whether measured by number of containers or total tonnage of containerized cargo handled (Table 1). In 1974 (the latest available data), the figures for both the number of containers and total tonnage of containerized cargo handled in the Port of New York and New Jersey were more than three times the levels recorded for Los Angeles, the nation's number two container port.

The rate of growth of containerization appears to have slowed throughout the United States shipping industry since 1974 because most cargoes that can be readily containerized have already been so adapted. Reflecting in part the fact that the United States has been the world leader in this technological change, a larger proportion of United States liner cargoes is containerized than foreign liner cargoes (57 percent versus 33 percent in 1974).

Containerization affects the maritime industry in

three different ways. First, because it decreases pier time from one day in port for every day at sea to one day in port for every four days at sea, vessel utilization increases significantly. Second, stevedoring becomes a much more capital-intensive process. Third, unit costs fall significantly with volume increases, mainly in loading and discharging cargo because of the high fixed-capital costs. In addition, there are substantial savings in packaging and claims, since containerized cargo is less subject to damage and theft.

Containerization has been only one of several technological developments—each consisting of some form of preloading which can be done away from the docks—that have made shipping more capital-intensive during the last fifteen years. One such innovation is LASH shipping, or Lighter Aboard Ship, in which freight ships carry preloaded barges of about 300 tons called lighters. Another is Ro/Ro Shipping, or “Roll on-Roll off” shipping, in which freighter ships are built with traffic ramps and trucks are driven on board to unload their cargo directly. Pallet ships, another innovation, have cargo loaded on portable platforms.

Prior to these technological innovations, the typical breakbulk freighter required six work gangs of eighteen men each as long as a week to unload. Such procedures, which are still necessary on the remaining conventional vessels in service, have actually changed little since the days of the ancient Phoenicians. By contrast, in the modern, automated container terminals, one or two work gangs can usually unload an entire vessel in one day. This major and rapid technological change has had an important impact on the jobs available to longshoremen.

Longshoremen and containerization

A reduction in the demand for longshoremen is evident from the sharp decline in membership in the International Longshoremen's Association (ILA) in New York from over 40,000 in the mid-1950's to about 20,000 in 1970 and to 11,000 in 1978. The longshore register remains closed. Only a relatively few new members have been added since 1969 to fill special needs. These circumstances have led the ILA to attempt to preserve jobs on the waterfront for their members.⁸ The ILA was successful in obtaining major concessions in the form of a guaranteed annual income (GAI) plan and a job security program (JSP)—whereby carriers make up

any shortfalls in existing funds for the GAI and for welfare and pension payments. (The GAI plan was first proposed in 1962 in response to a demand by the New York Shipping Association to reduce the size of the work gang on breakbulk ships and actually began in 1966. However, it has since helped ease the change for longshoremen to a market in which the demand for their services is sharply reduced.)

An especially noteworthy feature of the GAI plan is that it provides larger guarantees for the Port of New York and New Jersey than for any other port. The plan guarantees 2,080 hours a year at \$8.80 an hour (this rate will increase to \$10.40 an hour in the third year of the present contract which began October 1, 1977). The guarantee in Boston, by contrast, is for 1,700 hours of work per year, while in Baltimore it is for 1,900 hours. The guarantee in most South Atlantic ports is for approximately 1,250 hours.

Estimates indicate that there are on average only 7,500 jobs a day available for the 11,000 ILA members who are eligible for the GAI plan. When there is no work on a particular pier, the GAI plan is administered in the hiring hall for fill-in jobs on other piers according to a system of reverse seniority. The least senior ILA members are called first for jobs, while the most senior ILA members are most likely to receive their full minimum annual salary (*i.e.*, \$18,304 at present but this will rise to \$21,632 by October 1, 1979) without working.

Beginning in 1974, a full tonnage assessment was instituted on all oceanborne freight passing through the Bi-State Port as the means of funding the GAI plan. (Between 1969 and 1974, a combination tonnage and man-hour assessment was used.) This fee, which is paid by steamship operators, provides a fund to pay for the GAI plan as well as for the health services, pensions, welfare, and other benefits of the dockworkers. Although these tonnage assessments are not generally passed directly and immediately into the rates charged by steamship companies, they can have an important impact on the frequency with which a steamship line uses a port. In a joint effort by longshoremen and shipping-industry employers to reduce cargo-handling costs in the port, this tonnage fee was cut twice in 1976. From its all-time high of \$8.28 a ton, it was reduced first to \$6.85 a ton and then to \$5.85. These reductions have been maintained to retain present users of the port and attract more ocean freight.

In many ports, longshore benefits are paid by an assessment on each hour longshoremen work rather than on tonnage moved. Longshoremen's productivity on breakbulk ships is fairly uniform along the Atlantic Coast at one-half ton per man-hour. Although the present longshore contract increased the number of hours

⁸ The ILA contains four major district councils: Atlantic Coast, South Atlantic and Gulf Coast, Great Lakes, and West Coast. The Atlantic Coast District Council, which covers ports from Norfolk, Virginia, into Canada, has been the most important of these councils. See Vernon H. Jensen, *Strike on the Waterfront: The Port of New York since 1945* (Ithaca, N.Y.: Cornell University Press, 1974) for a thorough discussion of collective bargaining on the New York docks.

guaranteed in some ports, the guarantee remains more liberal in the Bi-State Port. Nevertheless, because there is greater tonnage handled in the port, the cost of supporting the GAI here is less for breakbulk carriers than in ports which support the fund through hourly assessments since that cost is shared by container carriers.

Because containerships usually carry greater tonnage than breakbulk but require fewer longshoremen per ton to load or unload, the tonnage fee is biased against operators of containerships.⁹ At the same time, containerization is the reason for the need to reduce the longshore register. In recognition of this, container carriers have given full support to the GAI as a means of easing the transition through attrition to a stable, much smaller register. It is expected that the GAI plan will then decline in significance.

The Port of New York and New Jersey is at a competitive disadvantage relative to other Atlantic Coast ports for both container and breakbulk shipping with respect to the total terminal expenses for two reasons. First, terminal labor costs (that is, nonstevedore labor) are higher in this port because of traditionally higher manning practices. Second, the full terminal operating costs are much higher in the Bi-State Port because terminal operators here must pay full charges for leasing facilities, whereas in many other ports the local port authority retains ownership of the facility and charges a tariff for dockage and wharfage that does not cover actual costs. Thus, it is more expensive for shippers to use the Bi-State Port than other ports along the Atlantic Coast.

Shipbuilding and ship repair

Until shortly after World War II, the Bi-State Port was a major shipbuilding center. While many major shipbuilders currently are located on the East Coast, there is only one shipyard in the port with large shipbuilding capabilities—Seatrains, on the site of the old Brooklyn Navy Yard. There are about fourteen major shipyards in the port engaged in ship repairs. These yards are also capable of constructing smaller vessels (such as tug boats, barges, fishing boats) and offshore drilling units and equipment.

Certain ship repairs are necessary to assure that the vessel is in good operating condition. Although complete maintenance procedures should be done every year or every other year to assure efficient and safe vessel operation, the actual frequency with which

a vessel is sent into drydock for this purpose depends on where it has been operating and on the coating on the hull. Other repairs, labeled voyage repairs, are necessitated by damages incurred during use of the vessel.

Although there is no question of choosing the geographic location of the yard to do certain ship repairs, the location of the yard doing the work is a very important choice variable for other repairs. Time is a crucial point to be considered in making such a decision, since anything that decreases the time the ship can sail decreases the income it can earn.

Labor costs in the port appear to be considerably higher than those in Southern shipyards. Although productivity may be slightly higher in the port's shipyards, the differences are not substantial. In addition, any shipyard in the port has potential problems with respect to other operating expenses. Because drydocks are raised electrically, shipyards use extraordinarily large amounts of electricity. Table 2 shows typical industrial electric bills in some representative cities in which shipyards are located. This suggests that shipyards operating in the port are at a disadvantage with respect to the utility portion of their costs and must compensate for it through changes in their technology to avoid losing a large proportion of their repair business to a low cost shipyard. These observations are consistent with the results of studies of regional variation in shipbuilding costs conducted annually by the Maritime Administration. The most recent of these reports (1977) suggests that the overall cost of shipbuilding is lower on the Gulf Coast than in New York.¹⁰ There is, in general, ample availability of drydocks. Several yards contain graving docks (large drydocks permanently built into the water) for merchant ships. The important questions are whether the proper dock is available *at the time it is needed* and whether the cost differential between work performed in a shipyard in the port and that performed in a Gulf Coast shipyard exceeds the cost of lost sailing time from sending the vessel to a Gulf Coast yard.

If a repair job is sufficiently large, it is put out on bid. The yards in the port have been successful on many occasions in winning such bids. To some extent this success is the result of the large amount of shipping traffic into and out of the port. Thus, these yards have the advantage that ships they bid to repair are already stopping in New York. However, it has become increasingly difficult for port yards to compete against Southern yards for work on ships that are not scheduled to stop in the port.

As rising labor and utility costs reduce the ability of

⁹ The JSP fund is also financed through tonnage assessments. However, these assessments are uniform throughout North Atlantic and Gulf Coast ports. The assessments do differ by type of cargo; the present assessments are 20 cents a ton for containerized cargo, 12 cents a ton for breakbulk cargo, and 2 cents a ton for bulk cargo.

¹⁰ United States Department of Commerce, Maritime Administration, *Relative Cost of Shipbuilding* (June 1977).

Table 2

Typical Industrial Electric Bills, January 1, 1977

Billing category by peak demand level (kilowatts) and monthly consumption amount (kilowatt-hours)

City	Peak demand of 500 kilowatts		Peak demand of 1,000 kilowatts		Utility
	100,000 kwh	200,000 kwh	200,000 kwh	400,000 kwh	
Baltimore, Md.	\$3,891	\$ 6,420	\$ 7,680	\$12,308	Baltimore Gas and Electric Co.
Galveston, Tex.	\$2,918	\$ 4,587	\$ 4,900	\$ 7,901	Houston Lighting and Power Co.
Mobile, Ala.	\$3,735	\$ 5,739	\$ 6,962	\$10,844	Alabama Power Co.
New Orleans, La.	\$4,011	\$ 6,609	\$ 7,654	\$12,850	New Orleans Public Service Inc.
Newport News, Va.	\$4,593	\$ 6,354	\$ 8,978	\$12,036	Virginia Electric and Power Co.
New York, N.Y. (Manhattan)	\$9,083	\$13,593	\$18,166	\$27,186	Consolidated Edison Co. of N.Y., Inc.
Quincy, Mass.	\$4,633	\$ 7,746	\$ 8,768	\$14,994	Massachusetts Electric Co.

Source: Federal Power Commission, *Typical Electric Bills 1977*.

Table 3

Container Shipping Costs via Conrail, 1977*

In dollars

Point of origin	Point of destination	Charge for single container	Charge for double container	Difference from New York City for single container	Difference from New York City for double container
Peoria	New York City	708	1,132		
	Baltimore	621	1,005	87	127
	Philadelphia	655	1,059	53	73
Cincinnati	New York City	538	872		
	Baltimore	448	732	90	140
	Philadelphia	486	785	52	87
Chicago	New York City	645	1,045		
	Baltimore	576	934	69	111
	Philadelphia	594	963	51	82

* These figures are the costs of shipping a container via Conrail from point of origin to the railroad ramp at point of destination but do not include any longshore work.

Source: Subcommittee on City Management, Chairman, Assemblyman Charles Schumer, Counsel Dan Feldman, *Report on Railroad Cargo Facilities and the Port of New York* (August 1977).

shipyards in the port to win bids for the larger jobs, this means a relatively lower and more uncertain level of business. Such conditions discourage costly capital investments that, in the long run, help make the port's yards competitive with the Southern shipyards.

An important part of the attraction of the Bi-State Port for merchant shippers is the availability of docks for the repair and maintenance of most vessels. The shipping and ship-repairing industries depend critically on one another for their continued well-being.

Moving freight in the port

Landing cargo at a pier is only part of the service the port supplies. Goods must also be transported overland to or from the waterfront by either railroads or trucks. Many judge truck transport service in the port as the best in the nation. Rail transport service, however, appears to lag behind other ports.

Part of the traditional distinction between rail and truck transportation has been blurred by recent innovations in intermodal or "piggyback" service, *i.e.*, the long-haul movement of either trucks on railroad flatcars (TOFC) or containers on flatcars (COFC). These combine the national coverage of railroads with the local flexibility of trucks. This is, in fact, the primary system used in the Bi-State Port. It is estimated that nearly three quarters of the general cargo in the port moves in intermodal containers.

However, intermodal service is concentrated on the New Jersey side of the harbor, while the New York side has been cut out of such service because these railroad tracks cannot accommodate the size of the TOFC and COFC due to clearance restrictions on height and length of the new cars. This situation is expected to improve in the future.

Rail difficulties in the Port of New York and New Jersey are more complex than those associated with track renovations. The problems fall under three categories: rate equalization across Atlantic Coast ports, rate equalization within the Bi-State Port, and absence of direct overland rail service to the Brooklyn waterfront.¹¹ These undermine the competitive position of part or all of the Bi-State Port.

Rate equalization across ports

In a 1963 Supreme Court decision, rail rates for freight moving in conventional rail cars between inland cities and the Bi-State Port were equalized with those of competing ports. This decision has been viewed as an extension of the principles of the Shipping Act of 1916, which equalized transatlantic rates among East Coast ports so that no port would be at a competitive advantage over another. The decision is based on the reasoning that discriminatory freight rates are tariff barriers that "may arrest the development of a state or put it at a decided disadvantage in competitive markets". The ruling, which has been held to apply only to conventional cargo, is consistent with the general Federal policy toward port development that prohibits discrimination among ports by government or private action.

At present, Conrail (the Federally subsidized successor to the Penn Central and other bankrupt railroads) sets container shipping rates per unit that vary by distance. These are consistent with the rates of its principal competitors, motor carriers. The sole exception is that since 1972 Conrail has charged a low equalized rate on multiple containers (*i.e.*, 10, 30, and 60) that move on a single bill of lading between Baltimore-Philadelphia-New York and Chicago and St. Louis. Only in the Bi-State Port is the volume of traffic sufficiently large to justify 60-container shipments on which there is a cost advantage of \$19 per container. Approximately 70 percent of Conrail's container traffic into the port on the Chicago-New York route consists of multiple containers. Charges on the remaining container traffic to New York from inland cities are as much as 20 percent higher than for cargo shipped to the more inland ports of Philadelphia or Baltimore (Table 3). An unsuccessful attempt was made to equalize container shipping rates from inland cities to North Atlantic ports through the Interstate Commerce Commission. Consequently, the port authorities of New York and New Jersey, Massachusetts, and Virginia have allied in an effort to have the Congress pass a rate equalization bill. At present, many shippers of nonmultiple containers prefer to use the Port of New York and New Jersey despite the cost differential, because it has more frequent and regular service to nearly all overseas destinations. However, such a choice is becoming increasingly expensive, since the shipper's absolute dollar saving on using other ports increases with every general percentage increase in rail freight rates while ocean freight rates remain equal for all North Atlantic seaports.

Rate equalization within the port

Another rail-related problem that may affect the future growth and development of the port arises from

¹¹ Subcommittee on City Management, Chairman, Assemblyman Charles Schumer, Counsel, Dan Feldman, *Report on Cargo Facilities and the Port of New York* (August 1977); Statement of Louis F. Mastriani, Commissioner, Department of Ports and Terminals, City of New York, before the 12th Port of New York Congressional Breakfast (Washington, D.C., February 1, 1978), "Railroad Matters Affecting New York City's Port Facilities"; Statement of Peter C. Goldmark, Jr., Executive Director, The Port Authority of New York and New Jersey, before the 12th Port of New York Congressional Breakfast (Washington, D.C., February 1, 1978), "Railroad Rate Problems of the Port".

rate differentials for container shipments across sections of the port. At present, most of the container traffic is directed to the New Jersey side. Most of the cargo on the Brooklyn piers is breakbulk. However, the shipping lines using Brooklyn piers are beginning to introduce containerized service on certain trade routes and a container terminal has been established at North-east Marine Terminal. A new container terminal has also been established on Staten Island at Howland Hook.

Conrail does not provide service direct to any pier but rather to an intermodal terminal. Although Conrail has four container terminals in New Jersey, there has never been a rate or route established for container service to Brooklyn. Instead, container freight arriving from inland cities is shipped to Kearny, New Jersey, where it is loaded on trucks and hauled by toll route through Staten Island to Brooklyn at high drayage charges. ("Drayage" is the movement of containers from railroad ramps to the piers of seagoing vessels.)

Lower cost methods of shipment to Brooklyn are available. If Conrail were to establish a container sub-terminal in Greenville, New Jersey, and the Chessie System were to establish one at St. George, Staten Island, containers could be shipped to the Brooklyn piers via car float at reduced cost without the air pollution and traffic congestion associated with trucking. At present most *conventional* cargo (i.e., breakbulk) arrives at the Brooklyn piers through float service from Greenville. However, Conrail maintains that it cannot afford to provide this additional service at the same rate when costs to Brooklyn are higher than to the New Jersey side of the port.

A direct rail connection to Howland Hook, though possible on tracks owned by Conrail and the Chessie System, is unavailable at present because a joint rate has not been set. Ocean carriers using this marine terminal want equal rate treatment with the New Jersey terminals which Conrail maintains it cannot provide and still earn the same return on its service to all areas of the port. Without rail service, all container shipments to Howland Hook must now be trucked from New Jersey at high drayage costs.

These rate differentials may have a decidedly negative impact on the future growth and development of the Brooklyn and Staten Island waterfronts. Present policies by state, city, and port authorities, putting greater emphasis on modernizing the New York side of the port, require cooperative effort to lower costs of shipping to the New York terminals in order to reduce these rate differentials.

Rail service to the Brooklyn waterfront

The third major problem in land transportation in the port is that there is no direct overland rail service to

the Brooklyn waterfront. At present, the last 1,000 feet of the rail link from Oak Point in the Bronx via Hell Gate Bridge to Bay Ridge in Brooklyn has been left in disrepair. New York State has approved a \$9.9 million contract with New York Dock Railway that is to be funded through proceeds from the Rail Preservation Bond Act of 1974. This will provide a new rail link between Conrail's Bay Ridge line and the 65th Street terminal in Brooklyn and rehabilitate certain other portions of the railroad system in the Bush Terminal area of Brooklyn. In a second phase of this project, the 65th Street terminal will be reconstructed to become the principal classification and rail terminal facility on the New York side of the port. A grant of \$4.5 million from the Federal Railroad Administration is to cover part of this cost. However, these renovations will not resolve the clearance difficulties.

In the meantime, New York State has provided a \$300,000 subsidy as a temporary measure to equalize drayage costs from railroad ramps on the New Jersey side of the port to the Brooklyn docks with the drayage costs to Port Elizabeth or Port Newark. (Drayage costs at present are more than \$100 per container to the Brooklyn docks, compared with approximately \$20 per container to the New Jersey terminals.)

Other rail difficulties

Another rail-related problem in the Port of New York and New Jersey results from navigational hazards arising from old railroad bridges and poses a potential obstacle for the continued health and the future development of the port. The bridge which is the principal cause for concern is the Central Railroad of New Jersey's Lift Bridge across Newark Bay. It is used only for a Bayonne passenger shuttle train service with ridership that has decreased from 2,400 daily in 1967 to 400 in 1976. With the growth of the container terminals in New Jersey, Newark Bay has become an increasingly important waterway; annual vessel traffic there rose from about 17,600 in 1963 to more than 49,000 in 1976. The bridge machinery is old and subject to frequent breakdowns. Moreover, with the increasing size of containerships, the hazards associated with negotiating the narrow span of the open lift bridge have intensified. In 1972, a Coast Guard report concluded that removal of this obstruction (at an estimated cost of \$12 million) was preferable to alteration (at an estimated cost of \$63.7 million). However, before the Coast Guard can act to remove the bridge, the Bayonne shuttle must first be terminated and then the Congress must appropriate the funds that have been authorized in the 1978 budget.

Another problem arises as a consequence of several rulings of the Federal Maritime Commission (FMC).

Under General Orders 8 and 26 of the FMC, now under review, the Bi-State Port is subject to stricter restrictions with respect to the amount of "free time" cargo may be held on dock without demurrage (*i.e.*, storage charges) than at any other Eastern port. Of all Eastern ports, only the Bi-State Port is subject to free time restrictions on imports and only the Bi-State Port and Philadelphia are subject to such restrictions on exports. In the Bi-State Port, the free time limit varies from five to ten days for imports and from ten to fifteen days for exports, depending on the type of cargo. In ports without such restrictions, free time may be as much as forty-five days.

Rules for setting and changing demurrage rates also vary among ports. Where rates are filed with the FMC, they can be changed automatically on thirty days' notice in all ports except the ports of New York and New Jersey, Philadelphia, and San Francisco, where an appeal to the FMC is required. Consideration of free time restrictions and demurrage charges is particularly important for shippers of bulk commodities. These rules place the Bi-State Port at a relative disadvantage in shipping bulk commodities. There are valid reasons for free time and demurrage rules to vary across ports. However, there is no obvious justification for differences in the procedures for setting these rules.

Offshore drilling in the Baltimore Canyon and the Bi-State Port

From a long-term perspective, offshore oil drilling in the Baltimore Canyon may have a very large impact on the Port of New York and New Jersey through an increase in demand for marine insurance, shipbuilding, and other supportive services. In August 1976, the Federal Government sold leases amounting to \$1.1 billion to private companies covering drilling rights in the Baltimore Canyon area. This extends 75 to 135 miles south of Long Island and 55 to 100 miles east of New Jersey. Early estimates indicated that approximately 12 percent of the United States outer continental shelf production of oil and gas in 1985 will come from areas off the Atlantic coast (this includes North Atlantic, Mid-Atlantic, and South Atlantic).¹² Although the first two exploratory wells were dry holes, industry spokesmen have estimated that the chances of finding oil or gas in the Canyon area are between one in

five and one in ten. Although no commitments have been made, there is ample cause to believe that, if a large discovery is made, the Bi-State Port and the region may nevertheless obtain much of the business—such as construction of drilling platforms (at an estimated cost of \$100 million) and a pipeline to transport the oil, refining oil, processing gas, and shipping finished fuel products.

Outlook

By most measures, the Port of New York and New Jersey is the number one port in the country, a position it has held since 1800. It has played a principal role in the evolution and spread of containerization. However, a number of impediments have affected port development. These include: higher labor and other operating costs than in competing ports; higher rail freight rates for some containerized cargo than in competing ports; inadequate rail services to sections of the port; and potential navigational hazards in important sections of the port.

Action has been taken in several areas: the tonnage assessment has been reduced, Congressional effort has begun to equalize container rail freights to competing ports, and the first steps have been taken to improve rail service to the Brooklyn waterfront. Continuation of these actions as well as renewed effort in other areas are essential for the future prosperity of the port.

The Port of New York and New Jersey will probably still be the number one port in the country in the year 2000. However, many changes are anticipated. An important change is expected in the near future in the handling of petroleum. Because the port cannot accommodate large tankers and the dredging costs to achieve this purpose are prohibitive, it is probable that offshore tanker terminals will be built instead. Petroleum would then be shipped by pipeline or smaller tanker vessels. It is very likely that such a terminal will be in operation by the year 2000. Improving economic conditions in the region will have a positive impact on the port, for the economic health of both are intimately related. However, it is vital that the port do more than rest on past achievements. Aggressive activity in new areas—such as containerization of new trade routes and the establishment of light construction bases within the Port District for support of offshore drilling activities—would strengthen the port's position as the national leader in the port industry in the future. Beyond this, such action could contribute significantly to a return to prosperity for the region.

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¹² Frederik W. Mansvelt Beck and Karl M. Wiig, *The Economics of Offshore Oil and Gas Supplies* (Lexington, Mass.: Lexington Books, D.C. Heath and Company, 1977), page 117.