

# CONTAINER SHIPPING: FULL AHEAD

You Are Viewing an Archived Copy from the New Jersey State Library

NEW JERSEY STATE LIBRARY  
NJD 974.90 H255, 1967a c. 2

Container shipping: full ahead : a forecast



3 3009 00463 0408

## A Forecast of How Containerization of Oceanborne Foreign Trade Will Develop by 1975, and its Effect on the New York - New Jersey Port

*Port of New York Authority*  
*974.90*  
*H255*  
*1967a*  
*copy 2*



The Port of New York Authority May 1967

**Commissioners**

S. Sloan Colt  
*Chairman*

James C. Kellogg, III  
*Vice Chairman*

Howard S. Cullman  
*Honorary Chairman*

Gerard F. Brill

John J. Clancy

Charles W. Engelhard

Alexander Halpern

Donald V. Lowe

Joseph A. Martino

Bayard F. Pope

Ben Regan

W. Paul Stillman

**Staff**

Austin J. Tobin  
*Executive Director*

Matthias E. Lukens  
*Deputy Executive Director*

Roger H. Gilman  
*Director of Planning and Development*

A. Lyle King  
*Director of Marine Terminals*

Clifford B. O'Hara  
*Director of Port Commerce*

*This report is based on a study prepared under the direction of Clayton D. Peavey, Acting Chief, Central Planning Division of the Planning and Development Department, in collaboration with the Central Research and Statistics Division of the Planning and Development Department, the Marine Terminals Department and the Port Commerce staff of the World Trade Department.*

*Design/Robert Leydenfrost*

**TABLE OF CONTENTS**

PAGE

INTRODUCTION	5
Containerization Revolution	6
Shipping Procedures	6
Containerization	8
Containerships	9
Containers	11
<b>Why International Containerization Will Grow</b>	13
INCENTIVES FOR INCREASED CONTAINERIZATION	14
Shipper Advantages	14
Savings to Ocean and Inland Carriers	14
Competition	15
Commitments	16
DETERRENTS TO CONTAINERIZATION	16
U.S. Government Regulation	16
Compatibility	18
Overseas Countries	18
<b>How Much Containerization Will There Be In 1975?</b>	21
BASE MARKET	21
PROJECTION OF BASE MARKET	21
FORECASTS OF CONTAINER VOLUMES	24
Europe—Bordeaux-Hamburg Range	24
Europe—Baltic-Scandia	25
Europe—Italy, Spain and Southern France	27
Far East	28
Latin America	29
Canada	29
Other Trade Routes	30
OTHER ELEMENTS IN THE 1975 FORECAST	32
Military Traffic	32
Container Cargoes Diverted from Other Ports	32
Generation of New Cargo	33
Transshipment Cargoes	34
SUMMARY	34
<b>Will Containerization Change The New York-New Jersey Port?</b>	37
Containership Terminals	37
Combination Ship Terminals	39
Conventional Terminals	39
Consolidation Facilities	40
Conclusion	40



## Introduction

The Port of New York and the New Jersey-New York Metropolitan Region which the Port serves have undergone vast changes in the last decade. Greater developments will occur in the next ten years to accommodate the population and industrial expansions now taking place in the Port area. Symbolic of the many physical changes will be the construction of the World Trade Center as a much needed focal point for the international business activity that negotiates, processes and expedites the movement of millions of tons of commerce annually through the bi-State Port.

The Port Compact of 1921 between New York and New Jersey delegated to The Port of New York Authority, as part of its function to promote and protect the commerce in the bi-State Port District, the responsibility for planning and developing facilities to meet new transportation demands. As a first step towards fulfillment of this vital responsibility, the Port Authority continually analyzes past and present trends to gauge their impact on future transportation requirements.

"Metropolitan Transportation: 1980," published four years ago by the bi-State agency, provided in one comprehensive volume an analysis and synthesis of the transportation outlook for the years immediately ahead. This publication is admirably serving the purpose stated in its subtitle of furnishing "A framework for the long-range planning of transportation facilities to serve the New York-New Jersey Metropolitan Region."

Because transportation is a dynamic field, the Port Authority regarded this book principally as the first of a series of reports to keep the public abreast of new developments as they take place. In "The Next Twenty Years," published in August 1966, some basic findings on population and employment were modified in light of changed conditions.

The study leading to publication of "Metropolitan Transportation: 1980" produced little evidence

to indicate that containerization of foreign commerce would deviate from the slow but steady development it had experienced in the previous years. Yet such containerization has exploded recently into an ocean transportation revolution which will profoundly affect shipping through the New York-New Jersey Port to and from all parts of the world.

When the revolution began, steamship lines which previously had resisted this advanced method of handling cargo suddenly reversed their positions and are now competing in building and operating special container-carrying ships, particularly in the North Atlantic trade route.

Truck lines, freight forwarders and cargo consolidators are initiating elaborate programs for door-to-door pickup and delivery of exports and imports in the United States and abroad. Manufacturers are swamped with inquiries about container specifications and, in many instances, with orders calling for delivery of large numbers of containers within a short period of time.

This revolution is certain to accelerate in the coming years as shippers and ship operators become increasingly aware of its manifold benefits. Powerful pressures are being generated here and abroad to eliminate barriers to its growth. By 1975, a very large part of the high valued general cargo imports and exports routed through this Port is expected to move in containers.

The Port of New York has taken the lead in getting ready for the terminal requirements of this transportation revolution. Anticipating the radically different terminal needs resulting from containerization, The Port of New York Authority in 1956 acquired meadowland property along Newark Bay in Elizabeth, New Jersey and initiated construction there of an entirely new marine terminal with berths and upland areas designed to accommodate the containerships which, this agency felt, would handle a large part of United States trade with the rest of the world. This confidence in the future has been fully justified to an extent that the

New Jersey-New York Port is today recognized as the "Container Capital of the World."

In order to look ahead and be further prepared for the Port's needs in the years to come, the Port Authority undertook during the past year a detailed and comprehensive examination of the present and potential application of containerization to foreign trade routes and its significance to the Port of New York. The results of that study are contained in this report which is being made available for the information and guidance of those who are concerned with all aspects of foreign trade and its transportation.

The study was restricted to ocean transportation and no attempt was made to reflect the distinct possibility that in the future, air cargo will compete very vigorously for prime container cargoes. Transportation of exports and imports by air has been growing at an astonishing rate. In 1961, a total of only 39,902 long tons of commercial foreign trade moved into or out of the Port by air. By 1965, this had grown to 142,469 tons and there is every indication that a high increase rate will continue.

Many predictions are being made about the amount of freight that will be carried by air when the "jumbo jets" begin to appear in 1970. Such cargo planes are expected to carry three times the load of the present generation of large jet aircraft. Since cargo moving overseas by air will be highly susceptible to containerization, it can be expected that much of it will be drawn from freight which would otherwise have moved on containerships. Indeed, airlines are announcing "container planes" which will carry containers up to forty feet in length and which will be able to be unloaded in thirty minutes.

The impact of these developments is currently under study and will become increasingly measurable as the economics of containers, containerships and "container planes" are more precisely determined. Obviously, the extent to which air will penetrate traditional sea markets will depend on

how both modes respond to the opportunities offered by container systems and the nature of the systems and rate structures created.

### **Containerization Revolution**

Cargo containerization in ocean transportation is not new. For almost a decade the New York-New Jersey Port's shippers and ship operators have been enjoying the benefits of this form of transportation in trade routes to United States coastal ports and to Puerto Rico. But until 1965, there was no widespread planning for operating containerships in foreign routes. Today only a handful of such ships are engaged in foreign trade.

Containerization in shipping is equivalent to mass production in manufacturing in which the application of mass production methods has enabled American manufacturers to meet competition here and abroad in the face of high production costs.

This has not been true in transportation of the nation's foreign commerce. Although tremendous progress has been accomplished in the propulsion of ships—from sail to nuclear power in little more than a century—the basic methods of loading and unloading cargo have changed very little. Packages have continued to be hoisted from the quay or pier in small quantities and stowed in holds by men. At destination ports men have had to deposit the same packages into slings so that they could be hoisted out of the ship and placed on the wharf.

Because these ancient methods are time-consuming, requiring ships to remain in port for long periods in which they are earning no revenue, many of the costly improvements built into power plants and navigational equipment are partially negated. Further, the manual handling of cargo has been growing ever more expensive as dock costs have increased while productivity has remained static.

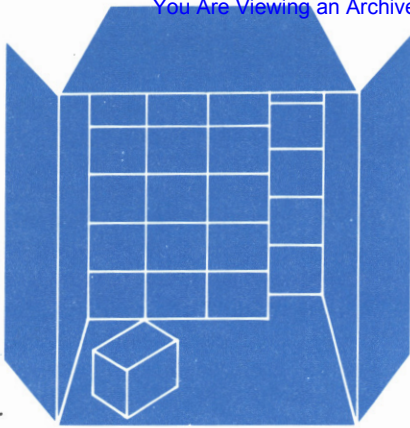
### **Shipping Procedures**

Basically, foreign commerce is the exchange of

**How It Works.**



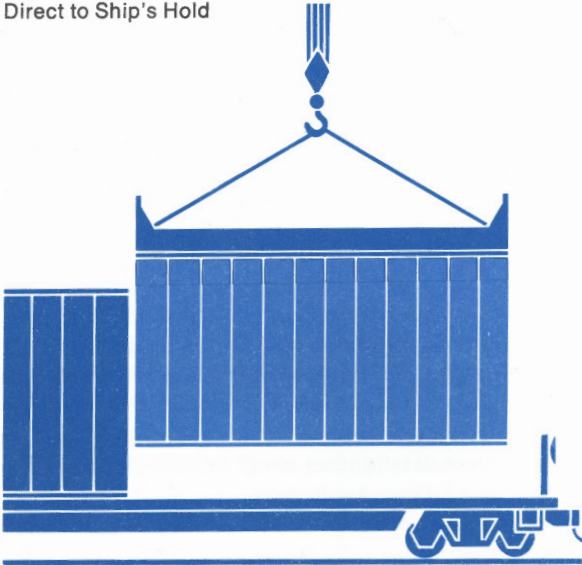
Loading by Shipper



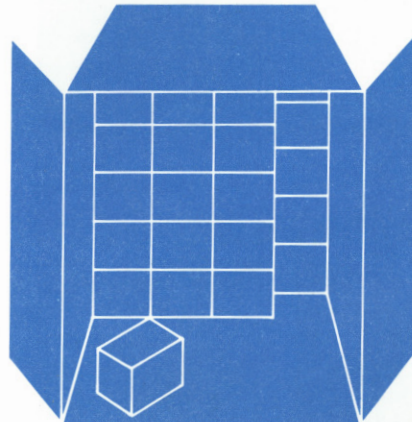
Over-the-road to Port by Truck or Rail



Direct to Ship's Hold



Inland by Fast Train or by Truck



Delivery to Consignee





American exports for imports from other nations. The cost of the shipping process can determine whether imports and exports will move freely. The more complicated and costly the shipping process, the more American foreign trade is restricted.

Under the traditional breakbulk shipping procedure, each parcel of cargo—whether it is a small carton of needles or a five-ton consignment of automobile parts—must undergo a series of separate handlings on its way from the manufacturer to consignee. It may have to be packaged for export. Then it must move by truck or rail, or both, from an inland point to the pier. There it is stacked and checked and later put into a sling to be deposited in the hold of a ship. In the hold it must be stowed carefully, by manpower, to prevent damage from the ship's motion at sea. When the ship reaches its destination the cargo parcel must be unloaded by sling and stacked at the pier or warehouse to await customs examination. Finally, it is claimed by its consignee.

Each handling involves time and labor. It also requires considerable paperwork, for separate shipping documents must be prepared for each mode of transportation—land or sea. Further, shipping of valuable cargo in small parcels increases the risk of damage or theft, thus adding to cargo insurance rates.

### **Containerization**

In its ultimate form, containerization consists of stowing large amounts of cargo into strongly constructed, standard-sized boxes or vans at the manufacturer's plant inland and shipping that vanload of cargo as a unit to its destination. From the moment the box is locked and sealed, the cargo is untouched by human hands until it reaches the consignees. It is loaded aboard trucks, rail flatcars and ships by mechanical devices which speed up the shipping process and reduce overall labor costs. During the time the cargo is in its container, the box also acts as its warehouse.

When an inland shipper desires to send less than a container load of freight he may truck his shipment to a consolidating station near his plant. At this station the shipment is stowed into containers with other cargo enroute to the same destination area. Then the container moves by truck, rail or ship as a unit. The small shipment finally leaves its protective box either at the door of the consignee or at a customs inspection station where it can be picked up by its owner.

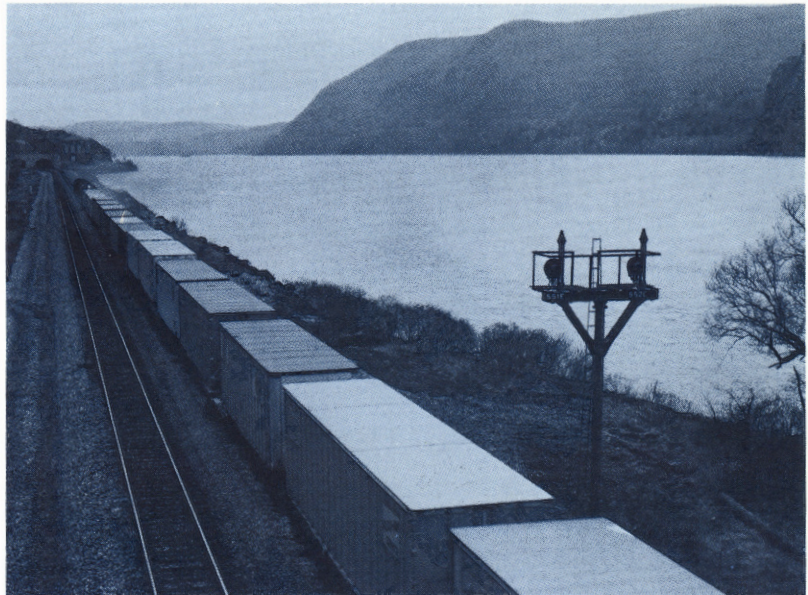
Door-to-door or station-to-door delivery of containerized cargo is expected to come in the future for most exports and imports if they can be handled conveniently in containers. In some foreign countries conditions are already suitable for instituting door-to-door pickup and delivery. In others, certain restrictions and restraints may delay full containerization for a short time, but they will eventually disappear.

Even while these barriers to the ultimate use of containerization are being eliminated, partial use of this efficient process will still be profitable. For example, shipments coming to piers as breakbulk cargo will be loaded into containers before being hoisted aboard ship. At destination ports the containers will be opened at the terminal and the cargo sorted for Customs inspection and delivery to consignee. Thus the ships will be loaded and unloaded by cranes in a fraction of the time needed for handling general breakbulk cargo.

### Containerships

As containerization of world trade grows, increasing numbers of specially constructed ships will appear on the oceans. These full containerships will carry only containerized cargo. Containers with up to 20 tons of valuable commodities carefully sealed within them will be loaded aboard ships within minutes after reaching the wharf.

Three types of containerships are already in use and more types may be designed as the containerization revolution progresses. The cellular stow-



Container Train



Container Control Center



age type appears to be the most favored for commercial operations. On these, vertical rails guide the containers as they are being lowered into the hold. When the container comes to rest in its cell, it is automatically secured for its sea voyage without requiring any manual lashings. Special gantry cranes equipped with automatic locking frames pick up the container from its truck trailer, and the locks automatically disengage after the box is safely deposited in its cell. The process works in reverse when a ship is being unloaded.

The roll-on-roll-off containership is the oldest form for truck body handling. Its methods are very similar to those used for years by car and rail ferries. On such vessels the entire vehicle or the trailer part of a truck is rolled on to the ship and locked in place for the voyage. However, excessive cubage loss due to unnecessary transportation of the wheeled chassis and the requirement that they be secured to the deck by manpower tends to render this type of operation practical for short voyages only. The use of such vessels for overnight runs on the English Channel and Baltic Sea has been successful. In domestic operations such as to Hawaii, Puerto Rico and Alaska, the cube loss was a significant economic factor working against the roll-on-roll-off method and most operators have adopted a straight container concept.

The horizontal stowage containership is the evolutionary conversion into container vessels of ships originally designed to carry rail cars. Rail cars were deposited aboard these ships by cranes and warped along tracks until they reached the place they were to be secured. As containers replaced rail cars, rollers were installed on which the boxes could be moved while the tracks acted as rail guides. These ships are expected to give way eventually to the cellular containerships.

### Containers

Secure packaging has customarily been one of the most expensive items to exporters in sending their

products abroad. And the incidence of damage and pilferage to cargo has been high in breakbulk general cargo shipping despite the care and material used in crating commodities. This has been a major cause of high cargo insurance rates.

One of the principal advantages of containerization is that it provides exporters with seagoing strongboxes which not only protect their shipments from damage and theft but which also can be used again and again, reducing or eliminating entirely the expensive export packaging costs.

Containers are being designed to fit every need. There are dry vans, refrigerated vans, bulk liquid, dry bulk, racktainers, pressure tanks and open top vans.

The dry bulk and refrigerated vans are the two in most common use. Dry cargo vans can double as dry bulk units for some commodities, such as coffee beans, by being fitted with special linings. As containerization grows, wide use of open top, half high and racktainers is anticipated. These skeletal type containers, which will be constructed so as to fit in the cells of a containership, will be employed for irregularly shaped, high density or low value cargo requiring little protection such as copper ingots, baled rags, etc.

Most containers are constructed of aluminum because this durable metal is light and does not rust. But other materials have been utilized, including plywood, plastics and combinations of laminated wood. Steel producers have also been experimenting in the construction of containers.



## Why International Containerization Will Grow

Containerization of ocean trade has undergone a process of slow development. However, during this past year, the combination of forces favoring containerization have become stronger than the forces retarding its growth, beginning a revolution in the transportation of foreign commerce. This revolution is expected to continue and grow as the incentives to use containerization gain in strength while the barriers that have been inhibiting its development weaken and finally disappear.

While labor belongs in any discussion of forces affecting containerization, it should not be classified either as an incentive or inhibitive force. In the Port of New York and on the Pacific Coast, dock labor has benefited in the following ways:

- 1. Financially.** On the West Coast dock workers were granted higher wages and pensions in return for their cooperation in unlimited development of containerization. Longshoremen in the Port of New York were granted the first guaranteed annual wages in waterfront history in addition to increased pensions in return for cooperation in increased use of containers.
- 2. Job security.** No regular longshoreman has lost his job as the result of the introduction of containerization. Indeed, where this type of operation has been introduced, regular dock workers have been able to expect more regularity of employment. Also new types of jobs have been created such as the maneuvering of containers in marshalling areas.
- 3. Safety.** This has perhaps been the greatest benefit to dock workers. The loading and unloading of ships has long been classified as one of the most dangerous occupations. Longshoremen have frequently been killed

or maimed for life by loose packages falling from slings in breakbulk operations. Containerization reduces the hazards of waterfront work.

#### **Incentives for Increased Containerization**

Incentives which will accelerate the use of containerization are:

1. Shipper advantages
2. Savings to transportation companies
3. Competition between ocean carriers
4. Commitments through investments in container systems

Forces which could inhibit containerization's development are:

1. Possibility of restrictive government regulation in the U.S.
2. Incompatibility of hardware
3. Lack of readiness overseas for containerization
4. Non-receptive attitudes by foreign governments

#### **Shipper Advantages**

Progressive importers and exporters are demanding containerization because of the many benefits to be derived from its use. Some, but not all, of these benefits are: extensive savings in export packaging; reduced damage or pilferage of cargo; lower cargo insurance rates; savings in the cost of documentation; and savings in pier loading charges. Beyond these is the potential of lower inventory costs by the shortening of delivery time for export and import commodities. This potential has proven to be a major factor in the growth of air cargo transportation.

Since these savings vary from shipper to shipper and commodity by commodity, they cannot be quantified. However, two examples demonstrate their tremendous significance. Shipping costs examined during the study indicated an average saving of \$12 a ton through elimination of export packaging. Even greater savings are achievable for commodities of high value which are particularly vulnerable to theft. In exceptional cases, sav-

ings in packages could reach as much as \$100 per ton. Another important saving is the reduction of truck loading charges at the piers. The loaded container becomes the truck body after it is hoisted out of the ship so that there is no need for handling the contents.

Shippers' demands for this more efficient form of ocean transportation will create pressure for container service in routes where it has not yet even been contemplated. This pressure will steadily increase as more and more importers and exporters experience container "economies" on routes where container service is being pioneered.

#### **Savings to Ocean and Inland Carriers**

Steamship companies' operating costs have been mounting continually since World War II until they have reached a level in this country which could discourage export trade. Containerization provides these ship operators with an opportunity to attack that problem where the increases have been greatest—on the pier. The Port Authority study showed that containership operators could save at least \$8 a ton on pier-to-pier movement of containerized cargo in the North Atlantic trades.

Major savings are effected through faster turnaround for ships. The less time a freighter spends in port discharging and loading cargo, the more voyages it can make per year, thus increasing its earnings for the owner. While potential savings decline as voyage lengths increase, they are substantial for the longest voyages.

As ocean carriers fully realize that considerable savings are possible even when they must containerize cargo themselves at the pier, the trend to extend containerships to all routes having possibilities for such service will accelerate to "full ahead."

Potential savings to operators of combination container/breakbulk cargo ships will be far less than for full containerships, but the costs incurred with combination vessels will be somewhat less

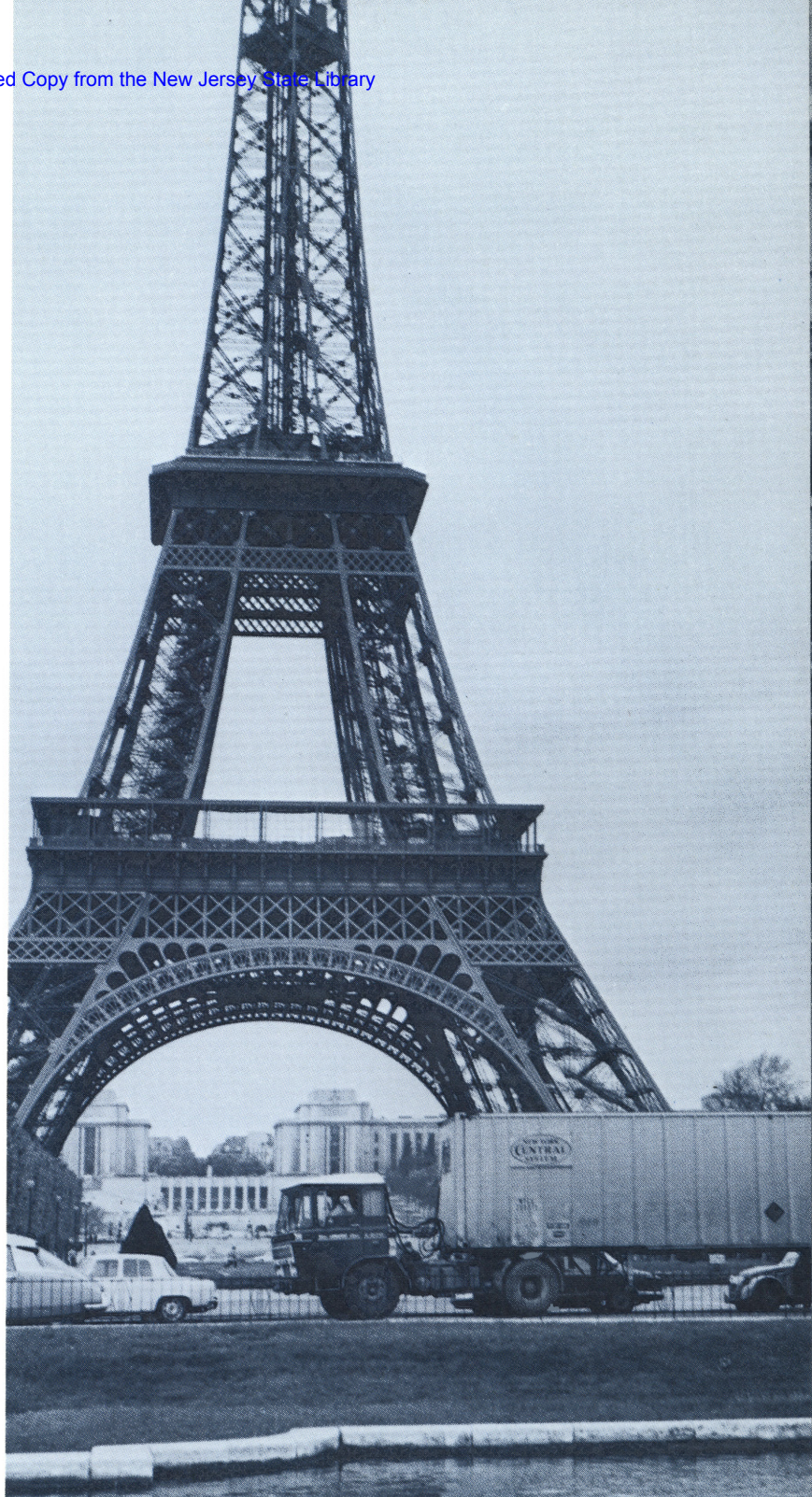
than for conventional ships. Combination ships are vessels which have accommodations for container cargoes in some holds while the remainder of the cargo space is reserved for breakbulk freight. Costs of operating such vessels vary depending upon the ratio of container to breakbulk cargoes. Such ships will be popular during the early transitional period from breakbulk to container operation. Eventually they will give way to full container-ships, beginning on the busy container routes.

Rail and motor carriers also will achieve substantial benefits with the growth of international containerization. For example: substantial economies will be realized by motor carriers through the elimination of the long lines outside piers on which trucks now lose many hours while waiting their turn to pick up or deliver small parcels of cargo. For railroads, containerization will mean a significant cost saving by reducing the need for lighterage and other services now provided in New York Harbor.

#### Competition

Although the many advantages of containerization were known for some time, no serious movement toward its use in overseas commerce got under way until competition became a factor. Announcements by several companies in late 1965 and early 1966 that they would provide a container service from New York to European ports triggered a chain of similar announcements from their competitors. Operators accepted the premise that they must join in the new trend to remain competitive.

Today almost sixty steamship companies offer some form of container service out of the Port of New York. New container plans or revisions of plans are reported almost daily in the maritime press. As of this printing, sixty-four container vessels are scheduled to be produced for twelve companies. This number may well increase as more steamship companies make the decision to inaugurate container services. Many will be full con-



tainerships; some will be combination container/breakbulk carriers. Their total container capacity is estimated to be equivalent to 30,000 units.

The trend already is toward larger vessels. The first containerships, built for domestic trade routes, could carry less than 250 vans. New designs envision 900- to 1,000-foot supervessels with capacities for over 1,000 containers. And these vessels are being designed for high speed.

Competition will continue to act as a potent force in spreading containerization to other routes. Shippers in non-containerized trades will demand the benefits, such as lower rates, enjoyed by their counterparts on the container routes. Few ship companies will be able to resist this pressure.

### Commitments

Each containership operator will, of necessity, become an advocate of containerization. The shift from breakbulk to containerization of foreign commerce entails heavy investment in construction of ships, containers, chassis and terminals.

To protect commitments to this new venture, foreign and American operators can be expected to work vigorously to overcome any restraints which block the greatest possible employment of their new vessels and hardware. These commitments will therefore be powerful forces working with other incentives toward the rapid growth of containerized international trade.

### Deterrents to Containerization

A general belief that "they are not ready for containerization abroad" acted until the past year as one of the principal deterrents to the adoption of this more efficient method of handling foreign commerce. Other constraints also inhibited the container trend but, fortunately, did not halt it.

The Port Authority study examined all these restraining forces in detail. In some areas, particularly in non-industrial nations, the inhibiting factors

were found to be strong. But there were equally strong indications that these barriers would not be likely to resist over the long haul the pressures favoring containerization.

### U.S. Government Regulation

Several government agencies could impose inhibitive restrictions on house-to-house deliveries of containerized imports and exports. On the whole, these agencies have cooperated fully in efforts to encourage container use and they are expected to continue to do so.

United States Customs is the agency most closely associated with the flow of foreign commodities into this country. Under its mandate to enforce laws requiring the inspection of all imports, Customs is in a position to erect regulatory barriers which could impede the development of international containerization. However, the agency has not done so but rather, is arranging for examination of full containers at actual points of receipt instead of the ports where they are discharged from the ship. Inspectors are also being assigned to off-pier consolidation stations to expedite examination of less-than-containerload shipments.

However, these have been stopgap activities. Customs has not yet announced any long-range plans for adjusting to large-scale container movements in which vans will move to thousands of destinations all over the nation.

Containerization could very well require a radical change in Customs organization. Instead of concentrating customs activities at "ports of entry," it may be necessary to establish "regional inspection stations" in the nation's interior as well as along the coastline. There, cargo examinations could be arranged with a minimum of interference in the efficiency of door-to-door container movements.

It is interesting to note that France and Great Britain have already adopted such systems as a means of encouraging the inland movement of





Photo/Distribution Age

sealed containers of imports. With full development of containerization, the traditional concept of "ports of entry" may change.

#### Compatibility

In its early stages container development was slowed down by appearance here and there of containers of different sizes and designs. Success of a world-wide container system depends upon global use of standard sized containers so that they can be handled with equal ease by equipment in the United States and overseas.

Much progress has been made recently toward standardization of containers and their hardware. The United States Standards Association Committee, MH-5, has adopted standard specifications which will be submitted to the International Standards Organization for ratification. The U.S. Maritime Administration is requiring that containerships be built to these standards to be eligible for construction subsidies.

The accepted standard container is a box eight feet wide, eight feet high and either ten, twenty, thirty, or forty feet long. The twenty and forty-footers are most numerous for hauls over-the-road or across the seas. Two twenty-footers can be "married" for truck or piggyback rail transportation either in the United States or abroad. This is one of the many advantages of standard sizes. Another advantage is the incentive to container leasing firms to maintain pools of standard boxes which can be leased to containership companies or shippers during peak periods when the carriers are unable to supply demands for vans from their own stocks.

#### Overseas Countries

To determine readiness overseas for international containerization, the Port Authority study focused on foreign Customs practices, potential labor difficulties, availability of adequate port facilities, con-

ditions and capacity of rail and road systems and the attitudes of the freight forwarding industry in Europe and the Far East. The preponderance of evidence indicated that barriers to full development of containerization will fall last in the non-industrial areas of the world. The more progressive nations will be first to eliminate obstructions which bar them from enjoying the benefits inherent in this mode of transportation.

Much progress already has been made in abolishing obstacles in the highly industrial areas of Europe and Japan. In some of the more developed nations conditions for containerization are as good or better than in the United States.

Containerization will grow more slowly in the world's less advanced countries. Poor road, rail and wharf facilities are major impediments. However, increased pressures by shippers and ship companies along with national desires to match the progress of more advanced communities will stimulate action in less developed regions. This will eventually erode the inhibiting conditions until full containerization is obtained.

Meanwhile, foreign impediments to door-to-door movement of containers will not prevent introduction of containerships where the trade warrants such service. Containers will move across the ocean from pier to pier even though they cannot be routed inland. The ultimate removal of the barriers to door deliveries will merely accelerate a trend which already is well under way.



U.S.L.20-004

U.S.L.

ROTTERDAM  
R  
1945

ROTTERDAM  
R  
1945

TRAILER

TRAILER

ROTTERDAM  
R  
1945

ROTTERDAM  
R/D  
1945

TRAILER

TRAILER

U.S.L.20-039

U.S.L.20-024

## How Much Containerization Will There Be in 1975?

Within the next decade the containerization revolution will have progressed to the point where, by 1975, an estimated 8,800,000 long tons of foreign commerce will move through the Port of New York either aboard full containerships or in vans carried by combination breakbulk container vessels. This will represent almost 50 per cent of the Port's total general cargo.

This forecast is based upon Port Authority study of the following elements:

1. New York-New Jersey Port's base commercial cargoes.
2. Military and other cargoes.
3. Traffic diverted from other ports.
4. New foreign trade generated by the cost savings and other advantages of an integrated container system.
5. Transshipped cargo.

### Base Market

In developing the forecast, it was found that more data was available on the first element—the New York-New Jersey Port's base commercial cargoes—than on any of the other four. The Port's 1964 trade was selected as the base year and was analyzed on a commodity-by-commodity, country-by-country basis. The commodities were then classified into the following categories according to their susceptibility to container handling:

**PRIME**—Commodities of high value with relatively high shipping rates, which can be readily packed in containers, reducing their high degree of susceptibility to damage and pilferage.

**SUITABLE**—Commodities of moderate value, lower shipping rates and only moderate susceptibility to damage and pilferage. Commodities which can become contaminated or incur penalty rates came under this category.

**MARGINAL**—Commodities physically suitable to containerization but of low value, low shipping rates and little susceptibility to damage and pilferage. Many marginal commodities would be difficult to containerize because of size and weight.

**UNSUITABLE**—Cargoes that physically cannot be put in containers or generally are much more efficiently carried in specialized vessels when moving in large volume.

By constructing a model of "container susceptibility" and programming it for electronic processing, the study determined how much of New York's 1964 trade could have been moved in containers on a country-by-country, commodity-by-commodity basis.

The analysis showed that during 1964, some 10,478,000 long tons, or about 75 per cent of the Port of New York's total of 13,838,000 long tons of export-import general cargo, could have moved in containers. More significantly, about 62 per cent of the total was in prime and suitable categories, indicating a very large basic container market.

### Projection of Base Market

By taking into account past trends, anticipated economic growth in various trade centers and the future prospects for commodities which are moving in large volumes, the container market was projected to 1975. This projection indicated that 12,750,000 long tons would be containerizable, an increase of 2,272,000 tons or 22 per cent over the 1964 base. Classification of this tonnage into the three container categories showed the following:

---

	<b>PRIME</b>	<b>SUITABLE</b>	<b>MARGINAL</b>	<b>TOTAL CONTAINER</b>
Volume*	6,100,000	4,450,000	2,200,000	12,750,000

---

\*Numbers rounded for simplicity

# UK Moves Toward Containers

You Are Viewing an Archived Copy from the New Jersey State Library

Special to Journal of Commerce

LONDON, Oct. 12—The chairman of the Port of London Authority (PLA) told a conference of British exporters today that the new container berths at Tilbury would be in operation by the beginning of 1968.

These berths, said Mr. Dudley Perkins, would be used for trans-ocean traffic of which two-thirds would be British and one-third American. Negotiations with British shipping lines were now taking place. It is assumed that the talks...

Tilbury. Additional depots are expected to be constructed in Britain's other major ports, also to handle the increase in container business.

The Director General thought the freight liner depot might be the start of a diversion from road to rail. "Since 1930 the trend had been from rail to road, though British roads had not been and were still not up to this swing."

He thought the "significance of complete container liner business is enormous."

ers that the port development work at Tilbury would be "the biggest single contribution to the flow of (British) exports.

The work involves 12-14 traditional type berths, 2,400 ft. quays for container vessels and roll-on-roll-off ferries, and jetties for the discharge of paper, lumber and packaged timber.

Managing director S. A. Finnis of the British Transport Docks Board (BTDB), which administers 25 docks including Southampton, Hull and South Wales, also told the conference...

# Japan Eyes Containership Role

Tokyo Bureau

TOKYO, Aug. 24 — A vast program for development of containerships and allied equipment that should make the Japanese...

Plan Will Be Costly

Although the plan will be costly, the Transportation Ministry is hoping only for a relatively modest appropriation...

seven for the North America Atlantic Coast run and eight for the Japan-Europe route.

The first stage program also calls for...

# Containerization Impact Seen

By GRAHAM BOOKER

BRISTOL, Oct. 20 — The ICHCA Conference opened here today with the forecast that containerization and unit load in the general cargo trades will drastically change the role of Britain's ports.

The theme of the International Cargo Handling Coordination Association's (ICHCA) Conference is the future prospects for general cargo in the deep sea trades.

ter. Ordinary berths would still be required in the 'unit' stage and here again the emphasis would be on control, if there was to be efficiency.

These developments would bring a greater concentration of traffic at a smaller number of ports.

"Other ports will become terminals for feeder services to and from concentration points and again these will need specialized berths with cranes...

major role in promoting the new systems and in physically gearing the new types of handling techniques to the known requirements of the cargo."

He hoped the experience of the agent would be borne in mind and that he would be given the opportunity to contribute further to the growth and practical success of new cargo flow techniques.

For the export packing side, a retired naval officer compared...

# Containerships Pose Problems for Ports

By GEORGE PANITZ

DETROIT, Sept. 13—Containerization—the integrated transport concept holding vast potential savings for freight shippers and carriers—may prove to be a serious problem to many of the nation's ports, harbor officials here were told today. While integrated ship, rail and road...

# Containerships Pose Problems for Ports

By GEORGE PANITZ

DETROIT, Sept. 13—Containerization—the integrated transport concept holding vast potential savings for freight shippers and carriers—may prove to be a serious problem to many of the nation's ports, harbor officials here were told today. While integrated ship, rail and road containers transport keyed to operation of full container...

## ELIZABETH TO GET FIVE MORE BERTHS

\$25.2-Million Project to Add Containership Space

By WERNER BAMBERGER

A \$25.2-million project to create more containership space at its margin terminal in Elizabeth, N. J., was announced yesterday by the Port of New York Authority.

The project, which will implement one phase of the overall development of the terminal, all development of the terminal. These berths, according to James C. Kellogg 3d, vice chairman of the agency, are needed to meet "the unprecedented demand for containership space in the bistate port."

Work on the project, the fourth phase in the development of the Elizabeth seaport, is scheduled to begin immediately, with completion in stage...

## CONTAINER RATE EXPERIMENTS SET

Permission Given By FMC To 'Create Optimum Use'

Detroit, Sept. 14 [Special]—Containership operators today were told that the Federal Maritime Commission will allow them to experiment with container freight rates in an effort to "create optimum use of containers."

Speaking to the convention of the American Association of Port Authorities here, Rear Adm. John Harlee, the commission chairman, said:

## CONTAINER RATE EXPERIMENTS SET

Permission Given By FMC To 'Create Optimum Use'

Detroit, Sept. 14 [Special]—Containership operators today were told that the Federal Maritime Commission will allow them to experiment with container freight rates in an effort to "create optimum use of containers."

Speaking to the convention of the American Association of Port Authorities here, Rear Adm. John Harlee, the commission chairman, said:

## SHIP LINE ORDERS CONTAINER VESSEL

Time Will Be Reduced From New York to Puerto Rico

A \$25-million containership project for the New York-Puerto Rico trade was announced here yesterday by American Union Transport, Inc. The vessel, which has been...

# Panel Says Containers Hold 'Key to Progress'

You Are Viewing an Archived Copy from the New Jersey State Library

## Door-to-Door Test Held Encouraging

By ROBERT F. MORISON  
Washington Bureau

WASHINGTON, Oct. 26 — The United States and United Kingdom, thanks to a unique joint experiment, have found that containers of freight can move fairly smoothly from an inland point in one country to an inland point in another. However, there are problems.

Still to be ironed out were such matters as allocation of liability as the container moves from one carrier to another, more universally accepted documentation, more careful attention to packing, and better and more thorough container markings and packing.

The now-completed joint report also noted that "it is evident that the established pattern of seaboard warehousing, forwarding and other facilities

Some 1,000 containers were estimated to be moving in North Atlantic trades now. By the early 1970's that volume was expected to swell to 5,000-6,000 a week, according to calculations by the U. S. Commerce Department.

Thus the need for short cuts and time savers — if the full economic benefits of containerization are to be realized — was apparent.

### Allocation of Liability

"Allocation of liability appears to be a major impediment to simplifying container documentations by substitution of a genuine through document for the multiple documentation normally used to cover shipments," the report said.

The "house bill of lading" of U. S. nonoperating carriers "represents a halfway stage of some convenience to shippers who are quoted a single rate and billed accordingly, but it does not eliminate the necessity for the forwarder or carrier to ob-

# \$500,000,000 Ready Soon For Container Construction

By HELEN DELICH BENTLEY  
Maritime Editor of The Sun

Detroit, Sept. 13 — American steamship lines will soon have \$500,000,000 committed for new construction of container ships, Mattland Pennington, chief of the office of maritime promotion of the Maritime Administration, said today.

Pennington also told the American Association of Port Authorities that, on a world-wide scale, he expected the programmed investment in container ships to be in the vicinity of \$1,000,000,000

McCormack Lines, immediately retorted that it was not going to affect small ports or small freight forwarders.

In fact, he went on, the freight forwarders business could well be stepped up because of the need for more documentation arising from the rapid handling of larger quantities of commodities.

Lewis J. Welter, who heads Sea-Land Service container operations, said that future growth in the steamship field will depend greatly upon the closest of cooperation with the railroad and

# Shippers Keep Eye On Container Center

ADVANCE WASHINGTON BUREAU

WASHINGTON — The new

Wilfred J. McNeil, president of Grace Lines, showed con-

# Anglo-Swedish Container Service Planned

London Bureau

LONDON, Sept. 22 — A container service will be inaugurated next Spring as a joint venture by a British shipping company and a Swedish line.

The London-based short sea trader firm MacAndrews and Swedish Lloyd of Gothenburg will start a drive-on, drive-off

er, MacAndrews runs regular services from London and Liverpool to the Spanish Mediterranean and Italy. Swedish Lloyd has extensive European and Mediterranean cargo and passenger routes as well as ocean freighters and oilers.

## Container Terminal On Clyde Considered

Clyde, over 20 miles downriver from Glasgow.

It is proposed that an area of about 30 acres should be developed, affording direct access to road transport. The scheme includes using the existing railway line to the pierhead by freight liner trains. With the development of containerization, it is envisaged that these trains could

## SHIP LINE ORDERS CONTAINER VESSEL

Time Will Be Reduced From

### New York to Puerto Rico

A \$25-million container ship project for the New York-Puerto Rico trade was announced here yesterday by American Union Transport, Inc.

The company, which has been active in the trade since 1958 with conventional vessels, has ordered a 700-foot roll-on, roll-off container ship from the Sun Shipbuilding and Dry Dock Company, Chester, Pa.

Eric Holzer, president of the ship line, said at a news conference that as far as his company was concerned "break bulk cargo handling operations will be phased out" by December, 1967, when the new vessel is expected to be completed.

Mr. Holzer added that his company was convinced that its future cargo trade would be handled by wheeled trailers and not by vessels handling conventionally loaded general cargo shipments.

## Tilbury Seen Becoming Leading Container Port

Special to Journal of Commerce

OSLO, Oct. 6 — A director of the Port of London (PLA) addressing the Ship Research Institute of Norway has commented that Tilbury, near the Thames Estuary, will be among the world's leading container ports.

gle inclusive rate per container of a given size and covering all port charges enabling the container ship operator to quote a simple charge from door to door. Other forms of unit loads such as pallets were being encouraged by offering a discount, the director continued.

Turning to the grain trad-

## Containership Project Pushed

By ALAN F. SCHOEDEL

Work on the country's best container ship terminal — the Port of New York Authority's Elizabeth development on the West Shore of Newark Bay — has literally "turned the cor-

Five additional berths have been authorized along the bay; and the first two of them are in the same stage as the fifth berth for Atlantic Container and McCormac. That is, driving of piles will be completed next April, after which comes the fill-

## Container Shipping Jump Seen

By ALAN F. SCHOEDEL

What shapes up as one of the most important forward strides

vocated by the late Morris For-gash, president of the United States Freight Co. — which last

Baltimore is closer than New York to points where cargo originates in the indus-

## Trailership Fleet to Increase by 1970

By EDWARD A. MORROW

Special to The New York Times

DETROIT, Sept. 13 — United

line's piers for ocean movement.

By 1970, Mr. Pennington

to see the United States en-

joying 50 per cent participa-

tion." Mr. Pennington said

### Forecasts of Container Volumes

Using the same factors, forecasts of the 1975 container potential were made for each trade route. Each route also was studied to determine:

1. The volume, concentration, balance and susceptibility of cargoes to containerization.
2. The probable availability of ship capacity.

3. The degree of competition anticipated between steamship lines.
4. The cost advantages available from containerization, as an indicator of possible special container rates.
5. The readiness of countries in the trade route for house-to-house container movements.

**Europe-Bordeaux-Hamburg Range**/New York's 1964 trade with countries in the Europe-Bordeaux-Hamburg route was as follows (in long tons):

	PRIME	SUITABLE	MARGINAL	TOTAL CONTAINER POTENTIAL	UNSUITABLE	TOTAL
Import	683,376	303,929	145,376	1,132,681	112,625	1,245,306
Export	<u>612,910</u>	<u>312,091</u>	<u>175,127</u>	<u>1,100,128</u>	<u>174,547</u>	<u>1,274,675</u>
Total	1,296,286	616,020	320,503	2,232,809	287,172	2,519,981

### Forecast

The total container potential will grow to an estimated 2,621,000 tons in 1975 of which 2,097,000, or 80 per cent, will actually be handled in containers.

The United Kingdom, the Netherlands, Belgium, West Germany and France, which make up most of this trade route, have all the elements for rapid growth of container traffic. Not only does most of the freight moving in this route consist of prime or suitable cargoes for containerization, but a difference of only one per cent between east and west-bound traffic assures two-way loads for containers. In 1964 these countries generated more than 1.8 million tons of prime and suitable container cargoes, about 81 per cent of the containerizable tonnage for the entire trade route. This proportion is expected to continue.

Almost a dozen steamship lines have announced plans for containership service in this one route. As a high degree of competition develops, rate cuts can be expected, an inducement which will

persuade many shippers to try containerization.

Another circumstance will foster the trend toward containerization. Steamship lines committed to containership operations will find it more and more uneconomic to operate parallel breakbulk services. Instead they will undoubtedly containerize breakbulk cargoes coming to their piers to maximize the use of their containerships. This in turn will stimulate their efforts to solve any problems hampering the development of house-to-house movements of containerized cargo. Thus, pressure will mount on both sides of the ocean as investment in container hardware increases, until the barriers to house-to-house movement are eliminated.

Tonnage not moving in containerships on this route in 1975 will consist principally of cargo not destined for the five core countries, marginal traffic and a small portion of the prime and suitable cargoes which, for various reasons, will be handled on conventional ships.

**Europe-Baltic-Scandia**/New York's 1964 trade with countries in the Baltic-Scandia trade routes was as follows (in long tons).

	PRIME	SUITABLE	MARGINAL	TOTAL CONTAINER POTENTIAL	UNSUITABLE	TOTAL
Import	181,055	58,556	72,403	312,014	147,278	459,292
Export	<u>126,162</u>	<u>96,563</u>	<u>55,976</u>	<u>278,701</u>	<u>109,432</u>	<u>388,133</u>
Total	307,217	155,119	128,379	590,715	256,710	847,425

### Forecast

The container potential on this route will grow to an estimated 668,000 tons by 1975 of which containerizations will handle 434,000 tons.

The Baltic-Scandia route has many advantages for containerization. Denmark and Sweden appear ready and receptive to container handling while Norway, Finland and Poland are geographically situated to permit transshipment of containers through Swedish or North Sea ports. In 1964, Denmark, Sweden, and Norway generated 62 per cent of the volume of containerizable trade on the route. Of this total, about 241,000 tons were in the prime and suitable categories. Since these countries are actually northern extensions of the Bordeaux-Hamburg range, they will be highly influenced by the rate reduction factors of containerization enjoyed by their neighbors. As containerization capacity becomes available to Denmark, Sweden and Norway, and as competition increases to bring about rate reductions, containerization will be accelerated.

Finland and Poland generate about 13 and 16 per cent, respectively, of the route's total containerizable tonnage. Combined, they account for about 24 per cent of the route's prime and suitable container cargoes. This would justify establishment of feeder services between these countries and loading centers in Sweden or on the North Sea.

Projecting to 1975, the majority of growth in containerizable traffic will be in Denmark, Sweden and Norway where a large percentage of the prime and suitable cargoes of the route will be generated. Combining the favorable factors with the possibility of feeder services to and from Poland and Finland, makes a forecast that 65 per cent of this route's trade with New York will be handled in containerizations by 1975 seem reasonable. The remaining 35 per cent will be made up of marginal cargoes for Denmark, Sweden and Norway; non-containerizable traffic moving to and from Finland and Poland; and all cargoes of the other countries on the route.

**FORECAST OF CONTAINER VOLUMES—1975**

**Port of New York Base Forecast of Export and Import General Cargo**  
(000's of long tons)

	*Forecast 1975 Containerizable Volume	Percent on Full Container- Ships	Full Container- Ship Volume	Percent on Combination Ships	Combination Ship- Volume	Total Container Volume
<b>Europe</b>						
Bordeaux-Hamburg	2621	80	2097	—	—	2097
<b>Europe</b>						
Baltic-Scandia	668	65	434	—	—	434
<b>Mediterranean</b>						
Italy, Spain, South France	1031	60	619	—	—	619
<b>Far East</b>	1870	60	1122	—	—	1122
<b>Latin America</b>	3267	40	1307	20	653	1960
<b>Canada</b>	519	—	—	—	—	—
<b>Other</b>	2765	—	—	25	691	691
<b>Total</b>	12,741	—	5579	—	1344	6923

\*Minor differences from figures used in text result from rounding-off for simplicity.

**Europe-Italy, Spain and Southern France** In 1964, Italy, Spain and Southern France generated the following trade with New York (in long tons):

	PRIME	SUITABLE	MARGINAL	TOTAL CONTAINER POTENTIAL	UNSUITABLE	TOTAL
Import	207,400	124,800	43,300	375,500	49,700	425,200
Export	<u>203,100</u>	<u>123,300</u>	<u>109,600</u>	<u>436,000</u>	<u>256,000</u>	<u>692,000</u>
Total	410,500	248,100	152,900	811,500	305,700	1,117,200

### Forecast

The container potential will grow to an estimated 1,031,000 tons by 1975 with 60 per cent, or 619,000 tons, actually handled in containers.

Full containership services to Italy, Spain and Southern France are virtually certain by the end of this decade. These countries have a highly balanced two-way market of containerizable traffic and, in 1964, about 81 per cent of their container potential consisted of prime or suitable cargoes. In addition, the route is highly competitive, being served by many lines. Several have pioneered in

handling containers on conventional ships for some time. Another advantage is the route's relatively short distance (4,053 miles, New York to Genoa), providing opportunities to maximize the economies of containership operation.

While some forces, such as those already discussed, will retard the development of house-to-house traffic, they are not expected to stop it. Indeed, the factors favoring containerization are strong enough to justify the forecast that 60 per cent of containerizable cargo will be handled in containers by 1975.



Photo/Distribution Age

	PRIME	SUITABLE	MARGINAL	TOTAL CONTAINER POTENTIAL	UNSUITABLE	TOTAL
Import	389,022	285,324	232,503	906,849	498,901	1,405,750
Export	176,550	109,955	215,547	502,052	711,256	1,213,308
Total	565,572	395,279	448,050	1,408,901	1,210,157	2,619,058

### Forecast

The container potential will grow to an estimated 1,870,000 tons of which 60 per cent, or 1,122,000 tons will actually be handled in containerships.

Containerization has a promising future in the Far East route where sources of tonnage are highly concentrated. Japan accounted for over 900,000 tons of containerizable cargo in 1964, about 65 per cent of the route's total tonnage. Hong Kong's 1964 containerizable tonnage totaled 122,000; the Philippines, 282,000. Almost 70 per cent of the containerizable tonnage generated by the three countries was either prime or suitable.

Several steamship lines have already recognized this container potential. Two lines have announced plans for a containership service between the West Coast and Japan. A consortium of Japanese lines is reported to be far advanced in similar planning of services to New York as well as to Pacific Coast ports.

A financial margin will be available for freight rate cuts, but to a lesser degree than on the North Atlantic. Savings in terminal and ship operating costs are maximized by the heavy concentration of cargo in Japan, Hong Kong and the Manila area of the Philippines. However, these savings are offset somewhat by the long voyage between New York and Far East ports. Development of Japan as a center of feeder container lines to Hong Kong

and the Philippines could help shorten the trans-Pacific voyages and lead to cut rates.

One of the most serious retarding factors is the absence of a balanced two-way container traffic in this route. The preponderance of cargo consists of a heavy movement of containerizable freight from the Far East into New York and a relatively light movement of containerizable exports to that area.

House-to-house movement of cargo also appears to be facing more formidable problems in this route than in the North Atlantic trade. However, they do not seem to be insurmountable. Shipper advantages in container handling for many of the commodities moving in the Far East route as well as expected reductions in transportation costs will work to eliminate the barriers.

Japanese trades appear likely to convert rapidly to containers starting late in this decade and accelerating in the first five years of the 1970s. Trade with Hong Kong will also be containerized but will probably be transshipped via smaller vessels to and from Japan. The Philippine Islands appear to have a sufficient volume of cargo to justify full containership services, but on a less frequent schedule than for Japan. Perhaps the Philippines will be served by feeder ships from Japan. At any rate, 60 per cent of the containerizable tonnage on this route is expected to be handled on containerships.

**Latin America**/The Port of New York's 1964 trade with Latin America was as follows (in long tons):

	<b>PRIME</b>	<b>SUITABLE</b>	<b>MARGINAL</b>	<b>TOTAL CONTAINER POTENTIAL</b>	<b>UNSUITABLE</b>	<b>TOTAL</b>
Import	492,910	877,302	113,922	1,484,134	391,410	1,875,544
Export	<u>622,097</u>	<u>395,233</u>	<u>171,685</u>	<u>1,189,015</u>	<u>141,491</u>	<u>1,330,506</u>
Total	1,115,007	1,272,535	285,607	2,673,149	532,901	3,206,050

### Forecast

Containerizable cargo is expected to rise to an estimated 3,268,000 tons in 1975 of which 1,960,000 tons will move in containers (see Tables 1 and 2). This containerized tonnage will be divided: 1,307,000 tons in full containerhips, 653,000 tons in combination ships.

Trade between New York and South America, Central America and the Caribbean area is characterized by a good movement of prime and suitable exports southbound, and a return movement of lower rated agricultural products, particularly bananas and coffee. Containerization will, therefore, depend on solving the technical problems of containerizing the northbound agricultural commodities. When the great economies of container systems are demonstrated in the North Atlantic trades, these problems will be overcome.

The routes are not highly competitive at this time and not likely to become so. The bulk of South American trade with New York is shared between two American lines and various government-owned South American lines. Some countries in this area move a sufficient concentration of cargoes to justify containership operations. Ports such as Santos and Rio de Janeiro, in Brazil; Buenos Aires, Argentina; Callao, Peru; Guayaquil, Ecuador; and Santa Marta, Colombia, are in countries which generate a fairly large volume of containerizable trade. But the middle region, com-

prised of the Caribbean, Central America and the North Coast of South America, will require the development of 'feeder' services to accumulate a sufficient volume to justify containership services.

Plans are under way to introduce partial containerships in the East Coast run within three years and full containerships by 1970 or 1971. The West Coast route is served by six partial containerships and additional conventional ships with container capability are under construction. By 1975, both coasts will probably be served by full containerships to centers of cargo concentration and partially containerized ships will serve more widely dispersed sources of cargo.

Some Central American and Caribbean points are already receiving service through San Juan transshipment. This service is expected to grow. Additional container operators may eventually service these routes. Thus, competition will appear at least in the Middle American segment and possibly to some ports in South America.

### Canada

New York's ocean trade with Canada does not offer a market for containerized cargo. Lumber and newsprint make up more than 80 per cent of the cargoes in this route. Both are southbound commodities, efficiently handled on specialized ships. Most containerizable cargoes moving between New York and Canada are transported over-the-road or by piggyback rail service.

**Other Trade Routes**/New York's 1964 commerce with Africa, Australia, New Zealand and parts of Asia not included in the Far East forecast was as follows (in long tons):

	PRIME	SUITABLE	MARGINAL	TOTAL CONTAINER POTENTIAL	UNSUITABLE	TOTAL
Import	370,146	608,657	117,286	1,096,089	229,166	1,325,255
Export	<u>599,336</u>	<u>366,978</u>	<u>200,946</u>	<u>1,167,260</u>	<u>217,731</u>	<u>1,384,991</u>
Total	969,482	975,635	318,232	2,263,349	446,897	2,710,246

### Forecast

By 1975 the total container potential to these other areas will have grown to an estimated 2,765,000 tons of which 691,000 tons or 25 per cent will be containerized and carried in combination ships.

The remaining trade routes between New York and other parts of the world have been grouped together because of certain similarities in their commerce with New York. Similarities include low volumes of traffic from a large number of countries and an exchange of commodities which are less susceptible to containerization than those moving between the more industrialized parts of the world.

Eighty-two countries are included in the six trade routes which have been grouped together. Although these countries produced a total of over two million tons of cargo in 1964, the average trade between any one country and New York was less than 30,000 tons. Only six accounted for more than 100,000 tons of New York's 1964 ocean commerce. India produced the highest volume at 270,000 tons. Because the sources of cargo are scattered over

tens of thousands of miles of ocean, there appears to be little opportunity for maximizing the economic advantages of containership operations.

Nevertheless, shippers are expected to demand container movement of certain commodities in these trades. One major steamship line is already considering initiation of container services between United States ports and Australia, in response to such demands. Similar arrangements appear likely for other countries which accounted for more than 100,000 tons of New York's 1964 trade. Such service is expected to be provided by combination container cargo ships since it would be difficult to justify full containership service in these trade routes as they are presently aligned. In the event there are substantial realignments of these less densely trafficked trade routes, full containership operations might, in some cases, be justified. The combination of shipper demands and early availability of partial containership service is expected to lead to containerization of about 25 per cent of the tonnage in the busier trades in 1975.

**Table 2**

**FORECAST OF POTENTIAL CONTAINER VOLUMES—1975**

**Between Port of New York and Latin American Nations**  
(in 000's of long tons)

	Prime	Suitable	Marginal	Total
<b>Middle America*</b>				
Exports	461	286	102	849
Imports	<u>391</u>	<u>452</u>	<u>86</u>	<u>929</u>
Total	852	738	188	1,778
<b>Ecuador, Peru, Chile</b>				
Exports	122	94	27	243
Imports	<u>239</u>	<u>214</u>	<u>31</u>	<u>484</u>
Total	361	308	58	727
<b>Venezuela, Brazil, Argentina, Paraguay, Uruguay</b>				
Exports	134	90	47	271
Imports	<u>109</u>	<u>343</u>	<u>40</u>	<u>492</u>
Total	243	433	87	763
<b>Total Area</b>				
Exports	717	470	176	1,363
Imports	<u>739</u>	<u>1,009</u>	<u>157</u>	<u>1,905</u>
Total	1,456	1,479	333	3,268

\*Includes Mexico, Nicaragua, Costa Rica, Panama, El Salvador, British Guiana and the Caribbean Islands.

## Other Elements In The 1975 Forecast

In addition to normal growth of its base commercial cargo, New York can be expected to attract new containerized business in the next decade from military sources; diversions of cargo from other ports to the Port of New York as a load center; and from entirely new foreign trade generated by the advantages of containerization.

The amount of increased traffic from these elements is difficult to assess. However, each element is discussed in a general sense and broad conclusions have been reached about their possible contributions to New York's future containerized commerce.

### Military Traffic

The New York-New Jersey Harbor has long been a major port for the shipment of military cargoes. Considering the harbor's natural advantages, its excellent rail and road transportation services and its nearness to manufacturing centers, there is no reason why it should not continue to serve as the principal military port on the Atlantic Coast.

As containerization of trans-ocean traffic develops, military officials are certain to take advantage of its cost-saving features just as commercial shippers will. This may mean that many types of military shipments which now move through other ports as breakbulk cargo will be routed through Port of New York containership terminals.

To forecast with any accuracy the movement of military traffic in 1975 would require information that is not available. The state of world politics at that time, the nation's commitments to its allies and other factors will play dominant roles in determining military logistics. Nevertheless, it is reasonable to assume that the United States will continue to send military cargo abroad.

In 1964, the Port of New York handled about 800,000 tons of containerizable military traffic and the 1975 volume will probably be about the same to fulfill the nation's international commitments.

Furthermore, much of the military traffic will probably be destined for the Mediterranean and Northern Europe as it is currently from the East Coast. Since a large portion of 1975's commercial traffic to those areas will be carried in containerships, a high percentage of the military traffic can be expected to be handled in the same way.

### Container Cargoes Diverted From Other Ports

The economics of efficient containership services demand that such vessels operate through load centers created along the seacoasts of trading nations. It would be impossible to effect the maximum savings inherent in containership operations if these vessels continue the operating practices of conventional ships by sailing up and down various seacoasts to visit all the outports. Instead of routing their cargoes to the nearest ports, most shippers will arrange to dispatch their containerized traffic through the load centers which, in a sense, would become huge funnels for containerized overseas cargoes.

The Port of New York will be a major load center. The large volume of foreign trade generated and consumed in the immediate port area provides an attractive market for which containership operators will vigorously compete. New York also affords operators greater possibility of return loads without excessive haulage to position containers.

Beyond these important considerations is the fact that this Port has achieved a tremendous headstart in providing modern and effective containership terminals at Elizabeth and Port Newark, developed and operated by The Port of New York Authority. The pioneer container operations from this Port have attracted the interest of other steamship enterprises about to embark in containership services. This will make the New Jersey-New York Port the world's largest containership center, offering more frequent containership service to all parts of the globe than any other.

The fact that several major lines have already

announced plans for containership operations in foreign trade out of the Port of New York supports this conclusion. In addition, many other companies are known to be planning foreign services. Although any quantification of the future diversion of cargo would be highly speculative, the Port Authority believes that diverted cargo will make up a significant part of the containerized foreign traffic moving through the Port of New York in 1975.

#### Generation of New Cargo

Opinion in the shipping industry varies widely on the amount of new foreign commerce likely to be generated by containerships. Some optimistically predict that low transportation costs and other advantages will usher in a new era of expanded trade. For example, one shipper of citrus fruits expressed the opinion that cost savings through containerization could make it possible for him to compete in Southern Europe for a market which is now held

by Israeli citrus growers.

The Port Authority study showed that some manufacturers who have been discouraged from the export market by the high incidence of theft in breakbulk shipments might be induced to try again. For example, one producer stated that the disappearance of one small case from a large shipment of high value surgical instruments spelled the difference between profit and loss on an entire consignment. He said the protection afforded by metal containers could cause him to re-enter a market from which he had withdrawn.

Savings in delivery time by using a fast containership service could also generate new business, according to a consensus of exporters and importers. Quick service would enable many businessmen to operate with low inventories of high value items which now hardly move because of the capital that must be tied up in large inventories.

Thus, the many advantages of containerization—cost, security, possible rate reductions, low in-



ventories, etc.—strongly suggest that new traffic will be generated.

#### Transshipment Cargoes

A shipper in Spain wishes to send a consignment of bottled olive oil to Australia. Because direct service from his country to the Antipodes is slow and almost non-existent, he finds it more convenient to dispatch his merchandise to New York where it can be quickly transshipped to a vessel bound for Sydney.

The Port of New York at one time was a major transshipment center. It still is to some extent, but the high costs of unloading and loading breakbulk cargo have reduced this type of port activity to a fraction of what it once was. Containerization holds out the possibility of restoring the service to its former status. Sealed containers of foreign cargo can be offloaded at one containership terminal and be hauled, under bond, to another terminal for further shipment at small cost. Close proximity of containership terminals in the Port would minimize transfer costs, another inducement for transshipment cargoes.

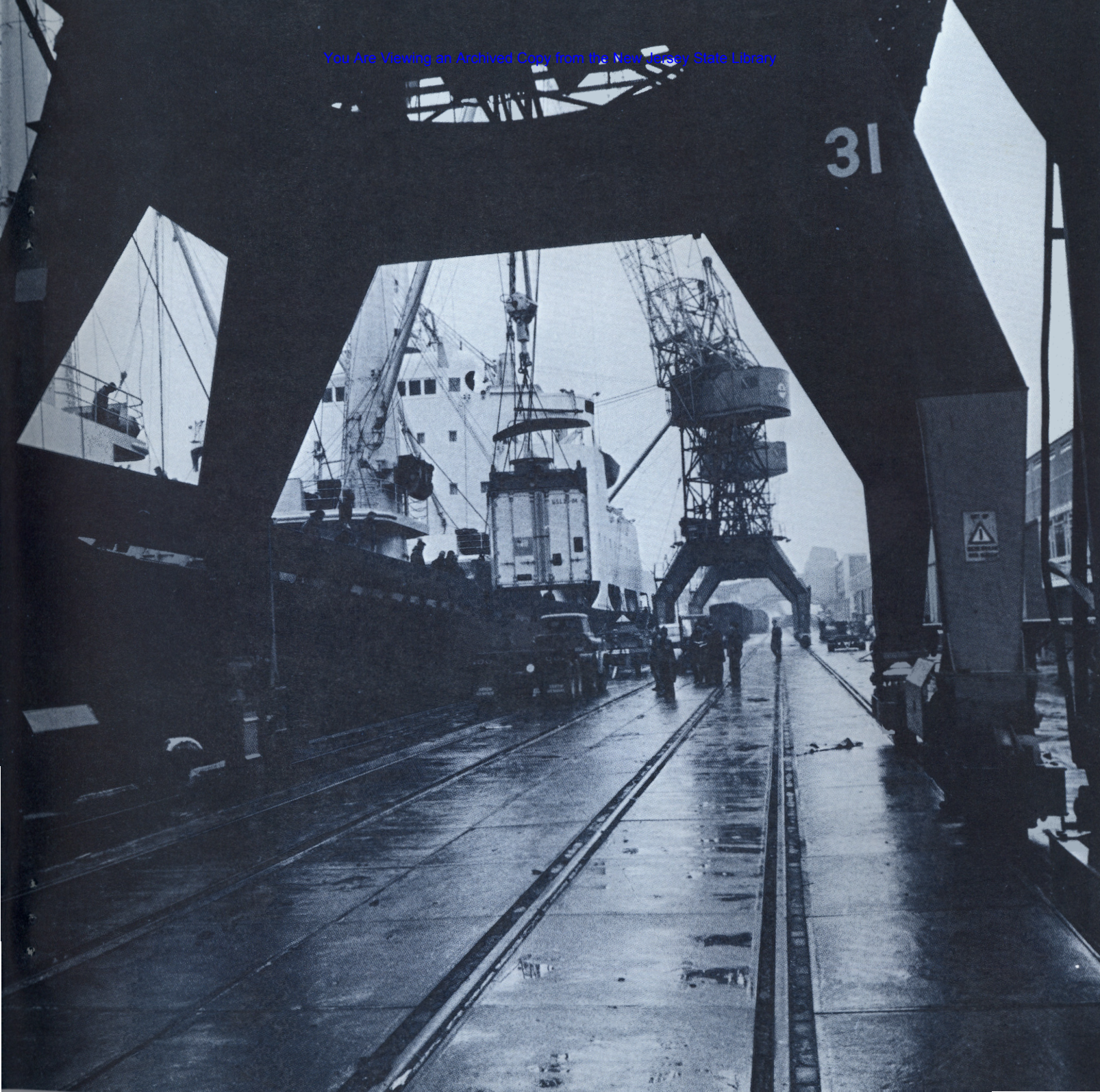
#### Summary.

To arrive at the Port Authority forecast of 8,800,000 long tons of containerized cargoes moving through the New York-New Jersey Port in containers in 1975, the following elements were considered:

**5,579,000** tons projected from the New York-New Jersey Port's base volume in 1964 to move in full containerships  
**1,612,000** tons moving in combination container/breakbulk vessels  
**7,191,000** tons **Total**

Adding roughly 22.5 per cent of this figure, or 1,609,000 tons, as an estimate of the Port's containerized military cargo and gains by 1975 from diverted, newly generated and transshipped cargoes, a total of 8,800,000 tons is obtained. This will represent almost 50 per cent of the Port's total general cargo. As already noted, the estimates for military, diverted, newly generated and transshipped cargoes are speculative. However, the study concluded that available information warrants those estimates and that events will justify their inclusion.

31





## Will Containerization Change The New York-New Jersey Port?

You Are Viewing an Archived Copy from the New Jersey State Library

The recent acceleration of containerization of foreign trade has been accompanied in the United States and abroad by an upsurge in planning and construction of appropriate water facilities for this revolutionary method of handling ocean cargoes.

The New York-New Jersey Port has been the trail blazer for such development because it has been pioneering the handling of containerized cargoes in domestic ocean routes for almost a decade. Special facilities for such cargo have long been operating at The Port of New York Authority Marine Terminals in Port Newark and Elizabeth, New Jersey. Indeed, the gigantic new terminal in Elizabeth may accurately be described as the prototype for containership facilities anywhere.

As a result of its pioneering, the New York-New Jersey Port has earned the title "Container Capital of the World." That the harbor is determined to retain this title is evidenced by the new containership berths already completed, under construction or planned for the near future.

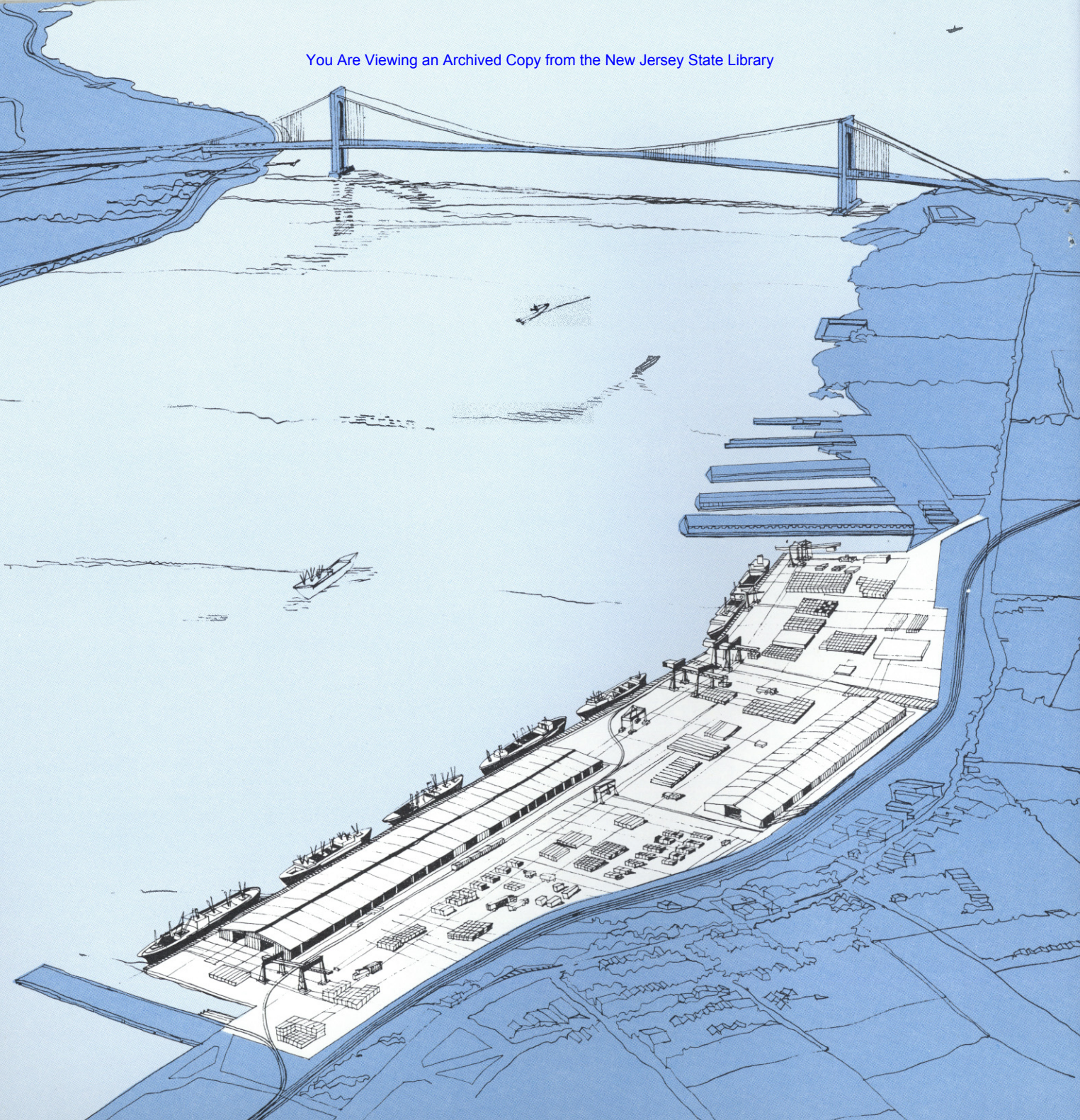
### Containership Terminals

To operate at maximum efficiency, containership terminals must be designed far differently from the conventional shedded general cargo piers which today typify the ocean commerce of most ports. Containerships operate best from quay-type berths where wide aprons provide easy access to the ship's side for tractors delivering or picking up containers.

The most advanced containership terminals, such as Sea-Land's, will be equipped with shore-based gantry cranes for loading and unloading the vans. However, this is not yet an absolute necessity, for many containerships are equipped with their own gantries to enable them to operate in ports where shore-based cranes are unavail-



You Are Viewing an Archived Copy from the New Jersey State Library



able. As containerization develops, most major ports are expected to acquire shore-based facilities.

The Port Authority study showed that container-ship terminals, to be most effective, should be located close to main traffic arteries with good access to transfer points. They should also be convenient to trunkline rail facilities so that full advantage may be taken of rail piggyback container service. Although full containerization is still in its infancy, inland carriers and steamship lines already are considering plans for operation of special "full trains" of containers from Midwest points at reduced freight rates. The location of ship berths located near this railroad service is a vital factor in such operations.

During the years that Sea-Land Service, Inc., has been pioneering ocean containerization at Port Newark and Elizabeth, its operations have shown that a properly designed and located containership terminal has an annual capability of 500,000 long tons per ship berth. This figure is particularly striking when compared with production on conventional shedded piers—even those of the most modern design. Most ship operators would be delighted if their breakbulk operations at such terminals averaged from 70,000 to 110,000 tons per ship berth annually.

The terminal's container storage area must have adequate room for assembling vans to be shipped overseas as they are brought in from the inland points. There also must be space for containers unloaded from the ship while they await the tractors which will take them to their destinations. The Port Authority study indicated that at least 10 to 12 acres should be available as storage area for each ship berth. This would provide a storage capability and adequate space for handling 1,000 containers—500 to be loaded aboard the ship; 500 to be unloaded.

#### **Combination Ship Terminals**

Combination ships, which carry containerized

cargo in some holds and breakbulk shipments in others, will operate from modified versions of the traditional shedded pier terminal. Some shedded areas will be required for storage of breakbulk cargo while some open container storage areas will be necessary. The container storage area will not be as large for combination ships as it must be for full containerships. On the other hand, it will have to be larger than the average upland space needed for conventional breakbulk terminals. Some of the Port's conventional piers can be converted into combination ship terminals with relatively small expenditure of funds. Conversion would include removal of some shedded areas and widening of pier aprons so that tractors can deliver and pick up trailers at shipside.

Location of combination ship terminals near to expressways and railroad facilities will still be a vital factor. Conventional piers situated where there is good access to highways will probably be favored for conversion to combination terminals. It will be impractical to attempt to operate a combination terminal in a highly congested city area where space for storage of vans is unobtainable at a reasonable rental.

#### **Conventional Terminals**

Although a major part of the Port of New York's commerce will be carried in containers aboard full containerships or combination ships in 1975, there will still be a sizable movement of breakbulk cargo. Traffic between the United States and some areas of the world will not be sufficient to make container operations to those areas economically feasible in the next decade. In addition, some commodity items, such as large machinery, do not require containerization.

Conventional piers will therefore continue to function for this movement of breakbulk cargo. Probably the most suitable piers for handling this share of the Port's commerce will be the modern conventional terminals which have been built on the Brooklyn waterfront in recent years. With

breakbulk operations diminishing, it is unlikely that new conventional piers will be built in the near or distant future.

### Consolidation Facilities

Since cargo must be containerized before it can be loaded aboard full containerships, facilities will be required in the Port area for consolidating loose package shipments routed to containership terminals. Such facilities will be required because some exporters will continue to send out their commodities as breakbulk cargo until containerization is fully established as the general pattern for moving exports.

Consolidation facilities also will be needed to handle less-than-containerload shipments. There they will be put into containers with other small shipments consigned to the same destination area.

As containerization of foreign commerce becomes the common practice, the need for consolidation stations at the Port will probably diminish. Exporters will load volume cargo into containers supplied to their factory by the steamship companies carrying their shipments. Much of the less-than-containerload cargo requiring consolidation will be handled by non-vessel-owning common carriers and trucking lines offering through land-and-sea international container services. Some consolidators already operate facilities inland for less-than-containerload shipments and can be expected to provide additional inland stations as needed.

Nevertheless, during containerization's development period containership operators will have to operate consolidation stations within the Port area.

Should large scale use of "full trains" of containerized overseas commerce materialize, construction of trackage between railroads and containership terminals may be warranted. This would enable the trainloads of containers to be delivered directly to staging areas where the vans

would be stored pending being loaded aboard ship.

Trackage to shipside is unlikely, for the possibility of direct transfer of containers from rail cars to ship is remote. Port Authority studies showed that there were many technical reasons why such a practice would be economically unfeasible. Because the use of motor transport allows the most flexibility in producing the right container at the right time at shipside, it is virtually certain that containers will be transferred from railcar to containership terminal on "rubber" whether the transfer begins at a distant freight yard or from a railroad siding into the terminal storage area.

### Conclusion

The extent to which the Port's waterfront will change during the containerization revolution will depend upon how various parts of the waterfront meet the specifications for efficient containership operations.

Because ample ground areas exist on the meadowlands along the western shore of the Port of New York where other factors for such operations are ideal, The Port of New York Authority has embarked on a construction program on Newark Bay which will produce a total of 37 full containership berths. Ten deepsea containership berths supported by some 120 acres of paved transit area for container marshalling, are already built at the Elizabeth-Port Authority Marine Terminal and two berths exist at Port Newark. The remaining 25 container berths are either under construction or will be completed by 1975.

The City of New York has announced plans for development of the eastern shore of Staten Island at Stapleton into a containership complex. The project would include 5,400 lateral feet of wharf for nine containership berths, upland areas, warehouses and a truck marshalling yard. Twelve obsolete piers will be torn down to make way for the terminal while 80 of its 135 acres will be created



Cheeses Once Were Packaged in Wooden Tubs for The Trans-Atlantic Voyage.

Today They Cross the Ocean in Refrigerated Containers.



with landfill along the waterfront. The City's schedule calls for the first container berth to be ready by 1968.

Since each containership berth has a potential annual capability of up to 500,000 tons, the con-

tainer berths already in operation, under construction or in the firm planning stages should be fully adequate to handle the estimated 8,800,000 long tons of containerized foreign trade at the New York-New Jersey Port in 1975.



Plan for Ultimate Development of Elizabeth-Port Authority Marine Terminal

You Are Viewing an Archived Copy from the New Jersey State Library





You Are Viewing an Archived Copy from the New Jersey State Library



The Port of New York Authority/111 Eighth Avenue/New York, N.Y. 10011