

~~FAIRLEIGH DICKINSON UNIVERSITY~~

# The Delaware River Ports



COMPILED AND PREPARED  
BY  
THE PORT DEVELOPMENT DEPARTMENT  
OF  
THE DELAWARE RIVER PORT AUTHORITY  
OF  
PENNSYLVANIA AND NEW JERSEY

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**THE DELAWARE RIVER PORT AUTHORITY  
 OF PENNSYLVANIA AND NEW JERSEY**

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**THE DELAWARE RIVER (U.S.A.) PORTS  
 PHILADELPHIA, PENNSYLVANIA  
 PORT AREA**



From the Capes of the Delaware to the head of navigation at Trenton, New Jersey, the Delaware River provides a strategically located water highway 135 miles long. Dotting its banks are many port communities: Philadelphia, Chester, Marcus Hook, Fairless, and Bristol in Pennsylvania; Camden, Gloucester, Paulsboro, Trenton, Deepwater Point, and Burlington in New Jersey; and Wilmington in Delaware. Collectively, these ports form the Delaware River Port.

Largest of the Delaware River Ports, Philadelphia is located 100 miles from the Atlantic Ocean. Its harbor covers 23 miles of waterfront on the Delaware and 8.5 miles on the Schuylkill River. Most of the general cargo of the Delaware River Port is handled by facilities at the Port of Philadelphia.

The history of the Delaware dates back to the Lenni-Lenape Indians whose tents originally lined its banks. They fished, trapped and traded for their existence on what they called the Poutaxat, the Makiriskitton, Makarish-Kisken and Whitituck. It was not until the year 1610 that the Delaware River and Bay received its present name. Ironically enough, the man for whom it was named never saw it. He was Baron de la Warr, then Governor of

Virginia, who in 1610 saw the need for new food sources for the starving Virginians. He dispatched the Vice Governor, Sir Samuel Argall, to Bermuda in search of food; but heavy storms blew Sir Samuel off his course and he came into what he described as "a very great bay." In accordance with the custom of the time, he named the bay Delaware after his superior, Baron de la Warr.

The name of William Penn has long been attached to the Delaware as the first settler. History manuals, however, record that Penn was not the first settler nor was Philadelphia the first port. In the year 1623, or 23 years before Penn was born, Dutch soldiers built a fort at the present site of Gloucester, New Jersey, and in 1638, the Swedes built Fort Christina near present day Wilmington, Delaware.

William Penn sailed up the Delaware in 1682 to the site of present-day Philadelphia where he chose a place he described as "high, dry and healthy . . . where the most ships may best ride . . . to load and unload . . . without boating and liting." Penn made peace with the Indians and laid out his city in geometric design and began life based upon his "Holy Experiment." Before docking his vessel, Welcome, at Philadelphia, Penn had stopped off at New Castle, Delaware, for his first step on American soil. He tried to set up a friendly provincial government but was told his new province would be land-locked if the colonies on either side of the River or Bay were hostile. He petitioned the Crown for the land on the west side of the River below his province and this was conveyed to him in March, 1682. Thus it was that Penn gained control of The Three Lower

Counties—now the State of Delaware—and granted them a place in his "Frame of Government." This was not found satisfactory because of time and distance in attending general assembly meetings, and in 1704 Penn consented to demands for a General Assembly for the Three Lower Counties. Delaware became a state on December 7, 1787, and was the first state to ratify the new Federal Constitution.

For more than a century after Penn's arrival at Philadelphia, the area was an important logging community; but as the forests along the Delaware's banks began disappearing, logging was followed by farming and new communities began springing up as a new nation was in the making. Light industry and trade supplanted the previous way of life, and Philadelphia and the Delaware River were the center of much of the Revolutionary War days' activities; and, as the War came to a close, such men as Stephen Girard made the Port of Philadelphia and its ships known to the Seven Seas.

## PORT FACILITIES

The Delaware has a river channel depth of 40 feet from deepwater in Delaware Bay to the Philadelphia Naval Base, a distance of approximately 63 miles. The depth then reduces to 37 feet for 8.5 miles northward to the upper end of the Philadelphia harbor, with a minimum width of 800 feet. Further north it is 28 feet for 1.5 miles and then 25 feet in depth north to Trenton, or 27 miles.

In 1954, the Congress of the United States approved a 40-foot project depth from the Navy Yard to the

upper end of Newbold Island, and a 35-foot channel from that point to Trenton. Work has just begun on the first phase of the project and it is expected the entire work will last over several years and involve an expenditure exceeding \$100,000,000.

The river is navigable throughout the entire year and is tidal to Trenton. The mean tidal range is 4.4 feet at the Delaware Cape; 5.3 feet at Philadelphia and Camden and 5.75 feet at Trenton. The extreme range in the Port varies about 2 feet below to 9.5 feet above mean low water under the influence of heavy and long continued winds. Tidal currents never exceed three miles an hour.

The City of Philadelphia owns 14 general cargo piers which are commercially operated by private shipping interests. These facilities represent an investment of \$50,000,000 and are controlled and administered by the Division of Port Operations, Department of Commerce of the City. A long-range modernization program has been undertaken by the City resulting in extensive pier improvement. Pier 80 South, completed in 1951, is recognized as one of the most modern of pier facilities.

A contract has been let to convert two City piers, 38 and 40 South, into one large marine terminal. This improvement is to cost \$2,300,000, with the City appropriating \$1,400,000 and the Pennsylvania Department of Forests and Waters the remaining \$900,000.

These two piers are now finger piers 551 feet long and 620 feet wide. They will be joined to accommodate three ocean-going vessels, one each at the north and south finger sides and another at the marginal front. There will be double rail tracks on each

apron and the center, which is now water, will be filled in and concrete decking installed to serve motor-trucks with tailgate level service and full turnaround. It will increase the general cargo handling capacity of the two piers from 190,000 to 332,500 tons a year.

One of the largest integrated marine terminals along the Atlantic Coast is Port Richmond, a 225-acre, mile-long facility for the handling of all types of cargo. Owned by the Reading Company, Port Richmond is located at the north end of the main Philadelphia harbor and has a rail storage yard with 85 miles of track and a capacity of 5,600 cars. It has 10 piers with 17 berths for large cargo vessels. These include two coal piers, an ore pier, a grain elevator with a 2,500,000 bushel capacity with a pier and grain gallery and six general merchandise piers, four of them shedded. Two open piers are equipped with traveling gantry cranes with capacities of 10 to 50 tons. There is a stiff-leg derrick on one pier with a capacity of 100 tons. In addition to its Port Richmond facilities, the Reading Company owns Pier 24 and 27 North, general merchandise piers used principally by coastwise and intercoastal services.

The Pennsylvania Railroad owns and operates pier facilities at three locations in Philadelphia Harbor. The Girard Point Terminal is located on the Schuylkill River just above its confluence with the Delaware. This terminal includes an ore pier, another used principally for china clay, a grain elevator with a 2,225,000 bushel capacity with a pier and grain gallery. Eight vessels can berth at this terminal. At Greenwich Point on the Delaware River just

north of the Philadelphia Naval Base, the Pennsylvania Railroad maintains a coal pier with two modern rotary coal dumpers with a capacity of 1,000 tons per hour and a 60-car capacity thawing plant, and bunkering facilities for tugs and small vessels. Also at Greenwich Point is this railroad's ore-handling facility which was placed in operation in 1954. This is the largest and most modern of its kind on tidewater in the United States. It is equipped with four ore-unloading machines and can work two vessels simultaneously and discharge up to 5,600 tons per hour. It is operated by the Pennsylvania Tidewater Dock Company.

The Pennsylvania Railroad also owns and operates a group of general merchandise piers called the Washington Avenue Wharf group in the central harbor area. Pier 82 South, a leased Municipal pier, is equipped with two 25-ton gantry cranes. Four other piers have accommodations for 8 ships.

Piers 96, 98, and 100 South, in the extreme southern section of Philadelphia, are owned by the United States Government and are presently under lease to Philadelphia Piers, Inc., a private terminal operator. Providing 12 deep-water berths, they are regularly served by many steamship lines operating in the foreign trade. Rail tracks on these piers have a capacity of 448 cars. Covered transit and storage space totals 960,000 feet and open storage of 25 acres is available. Modern construction and convenient pier location make this terminal especially convenient for receipts or shipments by rail or truck. These piers are served by the Pennsylvania Railroad, Reading Company, and the Baltimore & Ohio Railroad.

At Camden, New Jersey, just across the Delaware from Philadelphia, the Camden Marine Terminals are operated by the South Jersey Port Commission, a public agency of the State of New Jersey. The concrete marginal wharf is 1,050 feet long with a wide apron and surface rail tracks to facilitate direct shipside service. Transit cargo sheds and warehouses provide 207,000 square feet of enclosed storage space. Eighteen acres of open storage and two covered lumber storage sheds make the terminal ideal as a lumber facility. These terminals are equipped with two gantry cranes for the handling of bulk and heavy commodities at shipside. Complete bagging equipment for bulk materials is also available. The terminals are served by the Pennsylvania Railroad and the Pennsylvania-Reading Seashore Lines.

On the Christina River near its juncture with the Delaware River at Wilmington, Delaware, the Board of Harbor Commissioners of the City of Wilmington operates the Wilmington Marine Terminal. This terminal has a marginal wharf 2,060 feet long, providing berthing space for 4 ships. The channel in the Christina is 30 feet deep from the Delaware to the marine terminal. The terminal is well equipped with three traveling gantry cranes and other mechanized handling equipment. There are 336,000 square feet of covered storage space and approximately 100 acres of open storage space.

Midway between Philadelphia and Wilmington at Chester, Pennsylvania, the Chester Tidewater Terminal, Inc., owns and operates an open pier. This

terminal, in addition to its pier, has 100 acres of land and buildings for manufacturing and storage.

Up river from Philadelphia, at Trenton, New Jersey, the head of navigation, the City of Trenton owns the Trenton Marine Terminal. This terminal, operated by Trenton Marine Terminals, Inc., has a bulkhead wharf 1,200 feet long, approximately 80,000 square feet of covered storage space, and an open storage area of 700,000 square feet.

The Delaware River Port Area is served by approximately 83 scheduled steamship lines which link the Port directly with 233 ports in approximately 75 foreign countries or territories. There are also 11 domestic steamship lines providing regular service between the Port of Philadelphia and the ports along the South Atlantic, Gulf and West Coasts. These regular line operations are in addition to the numerous special purpose vessels which, under private ownership or charter, transport such cargoes as oil, ores, grain, and coal, to and from the Port Area.

#### PORT ADMINISTRATION OF THE DELAWARE RIVER PORTS

The administration of the Delaware River Port is a joint enterprise of many Federal, State, and Municipal agencies, each operating within a special sphere of activity and control.

The Delaware River Port Authority, as the successor of the Delaware River Joint Commission, was created on July 17, 1952, by a compact between the two states, with the consent of Congress, as a self-sustaining, public corporate instrumentality of the

Commonwealth of Pennsylvania and the State of New Jersey. It is composed of 16 commissioners, eight resident voters of each of the states who serve without compensation. The Auditor-General and State Treasurer of Pennsylvania are member ex-officio.

The Authority operates and maintains the Benjamin Franklin Bridge between central Philadelphia, Pennsylvania, and Camden, New Jersey, and the new vehicular suspension bridge across the Delaware River connecting South Philadelphia and Gloucester City, New Jersey. This bridge, costing \$90,000,000, has been named the Walt Whitman Bridge and was opened to traffic in 1957.

The Authority has no power of taxation nor can it pledge the credit of either state in any of its undertakings. It is permitted, however, to pool the revenues from its river crossings to other construction undertakings and for the development and improvement of the Port District as well as promotion of the Delaware River as a highway of commerce.

Its legislation also charges the Authority with the cooperation with all other bodies interested in, or affected by the promotion, development, or use of the Delaware River and the Port District; the study and making of recommendations for the improvement of terminal and other facilities necessary for the promotion of commerce; institution through its counsel or such other counsel as it shall designate, or intervention in, any litigation involving rates, preferences, rebates or other matters vital to the interest of the Port District; and the performance of such other functions which may be of mutual benefit to the

Commonwealth of Pennsylvania and the State of New Jersey, insofar as concerns the development and promotion of the Port District and the use of its facilities by commercial vessels.

Although the Authority does not at present own or operate any marine terminal facilities, the Port Development Department of the Authority is engaged in developing and promoting the commerce of the Port Area. This Department maintains a Traffic Bureau, a Statistics and Research Bureau, and a Solicitation Bureau with field offices in New York City, Chicago, Illinois, and Pittsburgh, Pennsylvania.

The Federal agencies with responsibilities in the administration of the Delaware River Ports include the Corps of Engineers, Department of the Army, and the United States Coast Guard, Department of the Treasury. The Corps of Engineers, under the direction of the Secretary of the Army, is responsible for the improvement and maintenance of rivers, harbors, connection channels and other waterways. The Delaware River Port Area is under the jurisdiction of the District Engineer, Philadelphia District, of the Corps of Engineers. His responsibilities include the dredging and maintenance of channel projects as authorized by Congress, recommendations for the establishment of bulkhead and pierhead lines and the granting of permits for improvement and construction work beyond such lines. The Coast Guard, through the Captain of the Port, is responsible for port security and the enforcement of rules and regulations governing the anchorage and movement of vessels on the river, maintaining aids to

navigation, supervision of explosives, and inspection of vessels and equipment.

The control of the Pennsylvania waterfront is vested in the Navigation Commission for the Delaware River of the Commonwealth of Pennsylvania and in the Division of Port Operations, Department of Commerce, City of Philadelphia. The Division of Port Operations has supervision over the waterfront within the limits of the City of Philadelphia, while the Navigation Commission for the Delaware River has jurisdiction over the remainder of the Pennsylvania Port Area.

The riparian laws of New Jersey are administered by the Bureau of Navigation, Department of Conservation and Economic Development of the State of New Jersey. Another New Jersey state agency, the South Jersey Port Commission has jurisdiction over a Port District which includes the seven counties of New Jersey bordering on the navigable portion of the Delaware River. The Camden Marine Terminals at Camden, New Jersey, are owned and operated by this Commission.

The operation of the Port of Wilmington, Delaware, is administered by the Board of Harbor Commissioners, a municipal corporation created by an act of the State Legislature to act for the mayor and council of Wilmington. This Board operates the Wilmington Marine Terminal.

In addition to the agencies which control and administer the waterways and waterfront of the Ports of the Delaware, there are many other Federal and local agencies and organizations which either exercise some jurisdiction over waterborne commerce in

the Port or are engaged in the development and promotional aspects of the area's maritime activities. Philadelphia and the other Ports on the Delaware are well served by local and amply-staffed offices of these Federal and regional agencies.

#### WATERFRONT INDUSTRIES OF THE DELAWARE RIVER PORTS

More than 80% of the tonnage of the Delaware River Ports is handled over piers owned and operated by private industrial firms. The area's location and terrain have been vital factors contributing to its development as an outstanding industrial center. The land along its banks is generally level, lending itself ideally to industrial construction. Paralleling the River is a complete range of transportation facilities—major rail lines, truck services, air lines and modern superhighways linked by modern bridges. And the River which furnishes the water highway also provides fresh water for industrial use.

The Delaware River Port Area has the largest network of oil refineries on the East Coast of the United States. The seven refineries, Atlantic and Gulf in Philadelphia; Sinclair and Sun in Marcus Hook, Pennsylvania; Socony Mobil in Paulsboro, New Jersey; Tide Water at Delaware City, Delaware; and the Texas Company at Claymont, Delaware, and Westville, New Jersey, import more crude petroleum than all other ports of the United States combined. They have a productive capacity of more than 700,000 barrels a day. One of the main reasons for the oil industry's choice of the Delaware River for

location of refineries is the advantage of abundant quantities of fresh water which is so vital to oil refining processes. One recently constructed plant alone is pumping 275,000 gallons of river water a minute through its cooling system and back into the river, the only effect on the water being to warm it slightly. This same plant has a treatment system for well water large enough to serve a city of 200,000 persons.

Chemical manufacturing is another major industry of the Delaware River Port area. Wilmington, Delaware, has earned the title, "Chemical Capital of the World." Chemical plants are not limited to Wilmington, however, but are found throughout the entire region. They are located along the riverfront in Pennsylvania, New Jersey, and Delaware, maintaining piers and wharves for the receipt of raw materials and the shipment of finished products. Among the largest of these firms are: Atlas Powder Co., E. I. du Pont de Nemours & Co., Inc., General Chemical Division of Allied Chemical and Dye Corp., Publicker Industries, Inc., MacAndrews and Forbes Co., Calco Chemical Division of American Cyanamid Co., Rohm and Haas Co., and Hercules Powder Co.

Steel production also has become one of the Delaware River's important industries. At Fairless, Pennsylvania, the United States Steel Corporation has built a \$450,000,000 integrated mill which has a 1,000-foot dock for the handling of import iron ore from Venezuela and other ore producing countries of the world. Other steel plants in the immediate area and in the interior receive ore through the ore-handling

facilities of the Pennsylvania Railroad and The Reading Company.

The waterfront at Philadelphia is the home of two large sugar refineries, the Franklin Sugar Refinery of the American Sugar Refining Company and the Pennsylvania Sugar Division of the National Sugar Refining Company. Each maintains its own pier facilities for the receipt of raw sugar and other waterborne cargo. Approximately a million tons of sugar are handled at these piers annually.

The Delaware River Port Area is served by four electric companies, Philadelphia Electric, Delaware Power and Light Company, Atlantic City (N. J.) Electric Company, and Public Service Electric and Gas Company (N. J.). Each company has one or more steam generating plants on the Delaware River, and they are so interconnected that an unlimited supply of power is available to meet peak or emergency needs in the entire Port Area.

The Delaware River has long been known as the "Clyde of America" because of its shipbuilding activities since Colonial times. One of the best known shipbuilding concerns is the New York Shipbuilding Corporation at Camden, New Jersey, where such famed ships as the passenger liners Manhattan and Washington, the aircraft carrier Saratoga, and the USS South Dakota that won world renown in World War II as Battleship X were built. The site consists of about 160 acres and extends along the waterfront for nearly a mile. The Company was founded in 1899 and since that time has built more than 600 vessels. An aircraft carrier of the Forrestal class is under construction at this yard now.

At the confluence of the Delaware and Schuylkill Rivers is the Philadelphia Naval Base and Shipyard where many of the U. S. Navy's outstanding fighting ships, including the Battleships Washington, New Jersey, and Wisconsin, were built. This yard has more than 150 years of Naval tradition and covers an area of 440 acres with 7,000 feet of waterfront wharfage. The facilities include two shipways, two marine railways, three graving docks for repairs and two super graving docks for building ships which are rated the largest in the world. The yard has a crane capable of lifting 350 tons.

A third large shipbuilding facility on the Delaware is the Sun Shipbuilding and Drydock Company at Chester, Pennsylvania. Founded in 1916, the prime interest of this yard has been the construction of merchant vessels with emphasis placed on tanker work. Sun Ship engineers designed the famous T-2 type tanker, the workhorse of World War II. During this war, the shipyard grew until there were 28 shipways, 10 wet basins, shops of all kinds, huge cranes and other large equipment stretching for almost two and one-half miles along the River. Since its founding, Sun Ship has built 537 vessels, repaired 13,000, of which over 5,000 have been raised on two floating drydocks. Since the end of the war, this yard's output has included 15 supertankers of 600 feet or better.

Several other smaller shipbuilding and ship repair yards dot the Delaware between Philadelphia and Wilmington, Delaware, engaged in the filling of many contracts for both government and private ship operators.

## COMMERCE OF THE DELAWARE RIVER PORTS

Since World War II, commerce of the Delaware River Ports has shown a very rapid rate of growth. In 1948, the total tonnage of the Ports was 57,010,990 short tons. By 1955, official figures show 86,858,624 tons; and the 1956 total was in excess of 93,000,000 tons.

Foreign commerce of the Delaware River Ports has shown the most rapid increase since the war. In 1948, the Ports handled 16,576,215 short tons of exports and imports. In 1955, the total had reached 39,761,738 tons, and in 1956, it was approximately 46,000,000 tons.

The Delaware River Port is an industrial port, and the greatest tonnage increases have been made in the importation of raw materials to supply this industrial complex. Imports for 1956 were about 40,500,000 short tons. Crude petroleum imports accounted for over 25,000,000 tons of this figure, while ores (iron, chrome and manganese) accounted for another 11,000,000 tons. Other bulk commodity imports included sugar, molasses, gypsum, clays and earths, and fluorspar. General cargo imports amounted to approximately 1,700,000 tons in 1956.

Export tonnage for 1956 was 5,500,000 short tons, of which approximately 25% was general cargo and 75% bulk cargo. Bulk cargo exports of the Delaware River Ports are chiefly anthracite coal and grain.