Maritime History of the Reading
1833-1905

Now the true Reason why this Fruitful Countrey and Flourishing City advance so considerably in the Purchase of Lands . . . is their great and extended Traffique and Commerce, both by Sea and Land." Thus did Gabriel Thomas, writing only fourteen years after William Penn’s landing at Dock Creek on the Delaware, record the significance of the port of Philadelphia. For more than two hundred and seventy-five years this port and harbor have served the commerce of the United States. For more than one hundred and sixteen of those years, the Reading Railroad has played a part in Philadelphia’s maritime progress.

The term “port of Philadelphia” is somewhat of a misnomer. Originally, the word “port” was used to describe the immediate Philadelphia water front from Kensington to Southwark, approximately eight miles in length. Since 1952, however, the word has come to mean the entire seventy-five-mile water front between Philadelphia and the sea, embracing port installations at Camden, Chester, and Wilmington, as well as Philadelphia. The Philadelphia port facilities between Allegheny Avenue on the north and Girard Point on the south are now called Philadelphia “harbor.” It was this area, fronting William Penn’s “greene country town,” that first brought maritime fame to the Atlantic capital of Philadelphia.

The nation’s leading port for many years, Philadelphia in colonial times supplied flour to the West Indies, bread and cheese to the Carolinas, and sent hides, rum, sugar, and wood to the mother country. Later, the ships of Thomas Willing, Robert Morris, and Stephen Girard established an almost legendary maritime tradition in the city. In the 1820’s, twenty-three major shipping lines operated

2 U. S. Army Engineers (Philadelphia District), The Delaware River—A Brief History of its Improvement (Washington, D. C., 1952).
out of the port, Thomas Cope’s Liverpool packets began to plough the Atlantic, and the Camden ferries passed Windmill Island where bathers splashed and Tory ghosts still haunted the beach. By 1827, more than 3,000 ships a year were sailing outbound with the product of Pennsylvania’s interior—anthracite coal. The period of the Atlantic frontier was over; Pennsylvania had begun to look to the West.

On July 24, 1824, the *Stephen Girard*, a packet boat, left on the first trip to Philadelphia from Reading along the newly completed Schuylkill Canal. Cadwalader Evans and his associates in the canal company read the future rightly when they reported to their stockholders:

> The daily experiments which are making for the introduction of [anthracite] into the houses of our citizens; its applicability to all purposes of manufacture, and the extensive purchase which has been made by a number of respectable citizens of New York of coal lands at the head of the Schuylkill, for the purpose of establishing a coal company for the supply of that city, fully warrants the belief, that to meet the demand which both objects will create, will require all the industry of those who may be engaged in the transportation of the river.  

Nobody knows when the value of anthracite was first recognized. Its introduction to the city of Philadelphia was certainly not propitious. Dumped on the sidewalk because it failed to burn, displayed as a curiosity in the collections of the American Philosophical Society, its value and usefulness were not realized. Colonel George Shoemaker brought down nine wagonloads of it in 1812, but he had to flee for his life after being accused of selling stones as fuel. In 1820, only three hundred and sixty-five tons were sent from the Lehigh region; but in 1825, 34,893 tons were taken out of Lehigh and Schuylkill counties.

Most of the coal-carrying trade went to the canal, but only for a decade. While the Schuylkill Canal brought coal down to the locks at Fairmount for the port of Philadelphia, the necessity for transshipping to the Delaware, or to ocean-going ships, created long de-

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4 *History of Schuylkill County, Pennsylvania* (New York, 1881), 42-43.
lays and an unsteady market. But transportation was improving. Railroads were growing in Pennsylvania, and they were reaching out to the coal fields from which they would soon be carrying directly to the port of Philadelphia this new major export product.

While the first phase of the drive for internal improvements had withdrawn capital and initiative from the development of the port, it ultimately led to the emergence of a new port. It is interesting to note that when the Board of Trade convened in Philadelphia in 1833, its first act was not to seek improvement for the Delaware, but to attend the Ohio Internal Improvement Convention. Railroads and canal navigation, not international trade, held the interest of speculator and investor. The significance of the Erie Canal to Philadelphians was that it opened up the vast American West. This was the challenge that Philadelphia was preparing to meet. Philadelphia would no longer be simply a city on the Delaware. It would become the center of one of the most heavily industrialized river valley areas in the world. Its port would no longer be just a local point of departure, but a great commercial terminal for the products of a nation. For a while, the port would reflect the time lapse between the days of the Atlantic frontier and the days of the Atlantic rebirth. But the stage was set for change. The Reading Railroad, chartered on April 4, 1833, at the very beginning of Pennsylvania's industrial boom, played a major role in this reshaping of the port.

The Reading was not the first railroad in Pennsylvania. Its historic antecedents, some of which were later consolidated with the Reading, included the Mill Creek and Mine Hill, the Mine Hill and Schuylkill Haven, and the Mount Carbon lines, and the Little Schuylkill Railroad and Navigation Company. These short lines, not one of which was more than thirty miles long, were built during the Schuylkill County coal boom, between 1828 and 1833. Their primary purpose was to connect the mining ridges of the southern and middle coal fields to the still dominant means of long-distance transportation, the Schuylkill Canal.

The Philadelphia and Reading Railroad, first corporate name of the Reading, was chartered, not as an auxiliary to some other form of transportation, but as a parallel, competing transportation system

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7 History of Schuylkill County . . . , 40a (statistical table).
to the canal. The incorporators, of course, denied this, for they were running against a strong pro-canal current. 8 "We conceive the system of Railroads, is but to act a friendly part towards the Canals of our State," they said. What is more significant, however, is that the Philadelphia and Reading was empowered by law to run to tide-water on the Delaware River at Philadelphia. It was to follow the course of the canal to Fairmount, and then to cut across the expanding city of Philadelphia to the shores of the Delaware, thus creating a mine-to-ship transportation system from the coal regions to the port.

No wonder the canal advocates roared. No wonder that in 1844, within two years after completion, the Reading was hauling the greater percentage of Pennsylvania anthracite, and the canal people were muttering that "diminution has been caused by diverting a portion of the Schuylkill coal trade from the natural channel of navigation, and forcing it upon the Reading railroad." 9 By 1851, more than a million tons of coal were being shipped annually from the Reading's wharves at the port of Philadelphia.

Finding space on the Delaware waterfront in the 1830's had not been easy. It took room to handle increasing coal tonnages, and in 1833 there was competition for what port space remained. The river was a busy place from Kensington to Southwark. The Navy Yard was then at the foot of Federal Street, and India Wharf still harbored the ships of the China trade. Shipping merchants like John Welsh and John and Elliston Perot were looking forward to the completion of the protective Delaware breakwater at Lewes, and the construction of the first steam-propelled ice-breaker. London packets continued to leave from the south wharves, and the incredibly successful Cope Line was experiencing competition from another transatlantic packet line known as the New Line. 10 The Kensington shipyards of the Eyres, of Grice, Bowers, and Vandusen were busy, and William Cramp's shipyard, also at Kensington and only three years old, was

8 Philadelphia and Reading Railroad, Commissioners' Report (Philadelphia, 1833), 1. Unless otherwise noted, Philadelphia and Reading reports, minutes, and letters, published and unpublished, hereinafter cited are from the archives of the Reading Railroad in the Reading Terminal, Philadelphia, and in The Historical Society of Pennsylvania.


already humming with activity. Rumors were spreading that the Frankford Arsenal in the Northern Liberties would soon be expanded under Federal control.

Property adjacent to the Delaware water front was being grabbed up by the Philadelphia and Trenton Railroad on the north, and by the Northern Liberties and Penn Township Railroad in the heart of the city. Kensington Borough, founded in 1820, was swelling with an immigrant population which had risen from 8,337 to 40,000. If real estate was to be purchased along the navigable Delaware, it had to be purchased at once.

The area still available had a colorful history. Between the unique industrial village of Dyottsville on the south, where Dr. Thomas W. Dyott ran a glass-making community, and a relatively undeveloped area depressingly called Point No Point on the north, lay the estate of Joseph Ball at Richmond. Directly facing Petty's Island, the Ball estate was a remnant of one of William Penn's original grants. But history and tradition did not concern the builders of the railroad; what they wanted was real estate, at little cost.

One June 22, 1835, a resolution was passed by the Philadelphia and Reading Railroad managers to authorize a conference with the authorities of the northern districts of Philadelphia, "in relation to the location of the rail road from the Schuylkill to the Delaware through some main avenue of said districts." It was not until two years later, however, that the first real estate transaction took place. On February 22, 1837, Coleman Fisher, a member of the board and a friend of the Ball family, requested the company to reimburse him $18,184 for the purchase of the Richmond property.

The original plan of the Reading was to make the water-front area a depot for passengers as well as for coal. But the company's engineer, Moncure Robinson, reported:

It is an object also of great moment to provide the best accommodation which can be had for the travel and the miscellaneous transportation of the road. The undersigned were at one time disposed to think that the travel could in the first instance be accommodated by a depot at or near the

11 June 22, 1835, Managers' Minutes A (1834-1839).
12 Feb. 22, 1837, ibid. See also entries for July 12 and Nov. 8, 1837. Fisher was apparently repaid in Philadelphia and Reading bonds over a period of time. A payment to him was made, for example, on Apr. 4, 1838. Ibid.
Delaware termination of the road to which travelers might be conveyed by a steam boat on the Delaware during summer and the Trenton Rail Road in the winter season of the year. On looking, however, more closely into this matter, it seems to them that such an arrangement will be in many respects objectionable, in all respects ineligible even as a temporary one and that the travel and a large portion of the trade between Philadelphia and Reading can be accommodated as well in no other manner as by a connection with Broad Street.\(^{13}\)

Robinson's advice was followed, and the Reading's first Philadelphia passenger depot was located at Broad and Cherry streets.

Construction of the Richmond branch, even on the wharves, did not begin until after January 4, 1839. In a memorial to the legislature in 1837, William Keating, eminent Philadelphia scientist and teacher and a manager of the company, summarized plans for the depot at Richmond:

Your memorialists were induced to select for the termination of their road a point on the Delaware River, at some short distance above the city of Philadelphia where sufficient ground could be obtained to admit of a depot calculated for a large and increasing trade and supplied with schutes [sic] that will permit of the discharge of the coal from the railroad wagons directly into large ships—the spot which they have selected admits of a navigation to it, by vessels drawing at least fifteen feet of water. In making the selection of their depot below the village of Richmond, your memorialists have therefore been influenced chiefly by a desire to afford the amplest facilities to a large descending trade.\(^{14}\)

In March, 1838, a bill passed the legislature approving the construction of the Richmond branch.\(^{15}\)

Records show that construction of the main line of the Reading began in the late summer of 1835, either at the end of July or the first of August. But the problems were many. The Second Bank of the United States had been hard hit as a result of President Jackson’s removal of Federal deposits during his bank war with Nicholas Biddle. Since so much of Pennsylvania's internal improvement stock was held by the Bank, the bank war was a costly one for young corporations. Even after Biddle established his private bank, substantial

\(^{13}\) Nov. 29, 1837, ibid.

\(^{14}\) Dec. 13, 1837, ibid.

\(^{15}\) Jan. 4, 1838, ibid.
amounts of railroad stock still shared the fortunes of a confused and speculative money market.

As late as 1840, Elihu Chauncey, first president of the Reading, was writing to his agent abroad:

> It is proper for you to know that the Bank of U. S. has regained nearly the interest she formerly had in the stock of our company. That Bank now holds 8908 shares which I believe is the bona fide property of the Bank. In addition to the interest the Bank has in the works above—say in Little Schuylkill, Danville & Pottsville, Cattawissa, Sunbury and Erie &c and in addition to the deep concern certain individuals in that Bank have in our stock, it will be impossible for that Bank to suffer our work to go smash.16

But it was possible; in February, 1841, the bank failed. Financial uncertainty at home forced Reading representatives to look abroad to England and Wales where other corporations had also gone to secure cash, railroad iron, and rolling stock. Although Reading agents met with considerable success, the company had found itself over-committed, for, on the promise, in 1839, of the support of Joseph Cowperthwaite, cashier of the Bank, they had undertaken to build an extension from Reading to Pottsville.

Throughout 1837, 1838, and 1839, Chauncey had been under terrible pressure for cash to pay his contractors. “The pecuniary concerns of this country are now so unfavorable,” he wrote, “that it is very certain no new improvements will be commenced for the ensuing two years, and that nearly all those works which had been commenced must be forthwith suspended.”17 Despite his fears, construction progressed. The track was opened between Reading and Norristown on July 16, 1838, and between Reading and Philadelphia on December 5, 1839.

Construction at Port Richmond had been deferred to October 17, 1839, when Robinson wrote that “all of the work connected with the line of railroad to the Delaware including the wharves at Richmond is, as you are aware, under contract, but only pressed so far as seems necessary to insure the completion of the whole, by the time of the completion of the road to the coal region. This portion of the road might have been completed at an earlier date, but there would have

17 Chauncey to Keating, Nov. 15, 1839, ibid.
been no motive in doing so, & it has been deemed best not to draw on
the resources of the company faster than was indispensable."\(^{18}\) By
June, 1839, however, the Reading was rafting timber to the Delaware
water front. In July, Joseph Anthony built a storehouse and coun-
inghouse at Richmond; in August, James Ridgeway started to sink
the pilings for the wharves; and in November, Robert Walker was
busy dredging the necessary channels.\(^{19}\)

In the decade that passed between incorporation of the Philadel-
phia and Reading and the completion of Port Richmond, Pennsyl-
vania's industrial might continued to grow. Four hundred and
twenty additional railroad miles had been completed and were in
operation. Anthracite coal production had increased from 487,748
tons in 1833 to a total of well over a million tons in 1842. Production
in the Schuylkill region alone, the wellspring of the Reading's
strength, had more than doubled.

The 1840's marked maritime history in the port of Philadelphia.
Ships of sail found themselves for the first time competing with ships
of steam. Along the Delaware, iron steamships, Ericsson screw-
propeller vessels, and the products of the booming shipyards of
Neafie & Levy at Kensington, the Navy Yard at Federal Street, and
the Harlan & Hollingsworth Corporation at Wilmington were cre-
ing America's great merchant fleet. Extension of steam to navigation,
extension of steam locomotion over the nation's expanding railroad
system, demanded more and more fuel.\(^{20}\) This was the stimulus for
the completion of the Reading between Philadelphia and Pottsville
and between Port Richmond terminal and the company's main line.
In January, 1843, the Reading president reported to his managers
that "the entire line of the rail road was opened for the transportation
of freight and passengers, on the 13th day of January last \(1842\) and
on the 17th day of May following, the branch for the accommodation

\(^{18}\) Report of the Engineers (Philadelphia, 1839), 5.

\(^{19}\) Notebook of General Memoranda connected with the Transportation Department (July
17, 1839–May 3, 1841).

\(^{20}\) For summaries of maritime developments, see E. P. Cheyney, *Commerce, Navigation and
Ship-building on the Delaware River* (Harrisburg, Pa., 1891); V. S. Clark, *History of Manufactures
Maritime Industries and Public Policy, 1789–1914 . . .* (Cambridge, Mass., 1941); and
Robert Miller, "New York Coastwise Trade, 1865–1915," an unpublished thesis available on
microfilm at Princeton University.
of the coal trade on the Delaware was opened to the company’s wharves at Richmond.”

At first, there were but five piers on the northern tier of wharves, Richard Osborne adding eight more of varying capacities between 1842 and 1846, thus making a major port installation of thirteen piers with intermediate docks, the largest depot of its kind in the port of Philadelphia. Although the original piers were rather primitive docks upon which cars were hauled by horses, “trussels,” or trestles, were erected within the next year which carried the tracks some forty feet above water level. The coal was then dropped out of the bottom of the cars into ships through long chutes. The first wharves of their kind in the United States, they attracted wide attention in the years that followed. By 1844, after less than two full years of operation, Port Richmond was handling the greater percentage of Pennsylvania anthracite, exceeding the Schuylkill Canal’s tonnage at the Fairmount locks by almost 450,000 tons.

The unique tidewater transportation system of the Reading created special traffic problems as it grew. In 1846, these attracted the attention of a stockholders’ investigating committee which was trying to find out why the railroad had accumulated liabilities of more than $10,000,000. Its study of the Reading indicated several weaknesses, most of them attributable to an incomplete understanding of railroad management which could easily be ascribed to limited American experience in freight hauling by rail.

In the first place, the Reading permitted coal producers and other shippers to supply and direct the movement of their own cars. This “private” car operation, in the hands of men primarily interested in the production rather than the transportation of goods, was subject to poor handling, backlog, and jamming. Moreover, the Port Richmond piers were at first leased to private coal shippers. At both the eastern and western ends of the Reading’s line, therefore, the movement of traffic depended on demands over which the railroad had no direct control. It was extremely difficult to regulate the flow of railroad traffic under these circumstances, and within a year the company realized that in some way it had to organize general traffic.

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22 Report of a Committee of Investigation into the Affairs of the Philadelphia and Reading Railroad Company (Boston, 1846).
In 1845, President John Tucker had started a program of controls that included rules for operators at Port Richmond. "All loaded cars arriving at Richmond before 2 P.M. to be unloaded the same day before 9 P.M. After 9 P.M. the Company's agent will proceed to dump any cars that may remain loaded, at the expense and risk of the consignees." After this, when a backlog of cars developed either at the mines or at the port, the shipper was charged part of a "dumpage" fee. It was this problem of delay, dumpage fees, and shipper costs that attracted the attention of the investigating committee:

Dumpage is represented to be an allowance made to the consignee of coal when it is dropped upon a wharf at Richmond, instead of being delivered on board of a vessel, and is designed to compensate in part for the additional charges incurred under such circumstances in shipping it. It is thus dropped, when from any cause vessels are not ready to receive it, or the owner is not desirous to ship it, because the Company cannot without serious interruption of their business permit their cars to remain idle. The rents of the wharves at Richmond do not appear in the weekly and monthly statements during the period in question. No leases are executed, the tenure of the occupant depending upon temporary engagements resulting from the convenience of both parties.

Over the ten-year period between 1844 and 1854, these dumpage costs, shared by the company to maintain equitable relations with shippers, amounted to more than $600,000. The need to expedite traffic—at the mines, on the road, at the port, and from the port to coastal markets—was becoming a matter of increasing concern.

The Reading first attempted to resolve the problem by developing a continuous and intensive plan of expansion, both at the wharves at Richmond and at the various terminal and connecting points of the railroad. In 1848, the company purchased an additional twenty-two acres of Delaware River frontage, at a cost of $93,000. In 1852, fifty additional feet of right-of-way, extending a mile and a quarter back on the Richmond branch, were acquired, and in 1853, an additional water frontage of 1,269 feet was added. By 1858, eighteen piers were in service at Port Richmond, capable of handling ninety vessels, all loading at the same time.

23 Quoted in Report of the President and Managers (Philadelphia, 1845), 7.
24 Report of a Committee of Investigation ..., 1.
The gigantic installation was a source of wonder and admiration. Eli Bowen, writing in 1852, proclaimed:

At Richmond, the lower terminus of the road, at tide water on the river Delaware, are constructed the most extensive and commodious wharves, in all probability, in the world, for the reception and shipping, not only of the present, but of the future vast coal tonnage of the railway. . . . The whole length of the lateral railways extending over the wharves at Richmond will probably exceed ten miles, and affording a shipping capacity for upwards of *three millions of tons!* and it will probably not be many years before this amount, extraordinary as it may seem, (as, indeed, it really is,) will be annually transported over this great thoroughfare. The company has laid a *foundation* for a trade as broad as the future destiny of the coal trade itself.25

In 1853, *Gleason's Pictorial Drawing-Room Companion* ran a fine full-page story, showing the wharves in perspective and in detail. The accompanying description noted:

Some years since Port Richmond was considered three and a half miles from the city of Philadelphia, but may *now* be spoken of as a part of the city, for houses are built and streets paved all the way out to it. The number and extent of wharves and docks, erected for the accommodation of the immense business done at this depot, suggests an outlay of moneys that we cannot pretend to compute. The town presents an animated bustle of business, whilst the docks and wharves show a forest of masts and an activity of labor, which has no parallel that we can call to mind. . . .26

By the 1850's, competition was beginning to affect and direct the Reading's growth; for the first time, it was beginning to endanger seriously the exclusive position of the railroad at the port of Philadelphia. J. Dutton Steele, chief engineer, reported to the president in 185527 that there were three major threats to the Reading's supremacy in the anthracite trade: the Lehigh Valley-Bel Del route, the Lehigh Valley and New Jersey Central route, and the Schuylkill-Delaware-Raritan Canal route. These routes all had their seaboard termini adjacent to New York City. On the western rail frontier of

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26 *Gleason's Pictorial Drawing-Room Companion*, IV (Jan. 15, 1853), 41.
Pennsylvania, the giant Pennsylvania Railroad was threatening control of the business to and from the West. At the eastern end of its lines, the Pennsylvania threatened Philadelphia and Reading leadership even more critically when its board passed a resolution forming a committee to study a more effective approach to the Delaware. And there were other railroads in the city competing for river-front advantage: the Wilmington and Baltimore, the Philadelphia and Trenton, and the North Penn.

The Reading met these competitive challenges head on, acquiring additional Port Richmond property, purchasing the old state works access to Broad Street via the Columbia Bridge, and acquiring the property of the Northern Liberties and Penn Township Railroad, with access to the Delaware at the foot of Willow and Noble streets. To assure itself a gateway to the West, the Reading acquired, by merger, the Lebanon Valley Railroad which ran from Reading to Harrisburg.

Another solution, designed to protect and expand the source of the railroad’s coal supply, was foreseen by John Tucker in March, 1850. Not only was it necessary to make certain of adequate shipping schedules to carry away the coal, it was just as necessary to the Reading’s link belt system to guarantee an unbroken, continuous feed of coal. The grading and engineering of the road were perfect for the task; to make less than full use of them would have been folly. The one way to ensure a steady supply of coal was to control the coal-producing sources. This Tucker did by leasing three mines in the middle, or Pottsville, coal area.28

Having developed a guaranteed supply of coal, Tucker complained of the lack of ships at Port Richmond and of maritime outlets elsewhere. “During the whole season, the trade at Richmond has suffered by the irregular supply of vessels, and the same difficulty was experienced at the other shipping ports. The only remedy is for the trade to own a sufficient number of vessels to keep their business active when from any cause the arrival of chance vessels is interrupted.”29

Several plans were proposed, including the exploration of other facilities along the Delaware, particularly at Newcastle, Delaware.

28 The first two leases were for the Silver Creek Colliery and the Tuscarora Colliery in 1850.
This plan, however, was never carried out.\textsuperscript{30} In 1862, other steps were taken to develop the Philadelphia and Reading's maritime trade. The legislature of Pennsylvania passed an act enabling the railroad to charter vessels for carrying coal in the coastwise trade.\textsuperscript{31} Competition was the principal spur, but so, too, was the rapid and expanding growth of international shipping, motivated by the construction of iron steam colliers which required anthracite not only for the manufacture of iron, but for the production of steam to propel the ships. In 1859, Tucker had reported:

The exportation of coal to foreign places has hitherto been greatly neglected, while in England it has become of great commercial importance, and is annually increasing. The advantages of anthracite coal for steam vessels are so great, that a constant supply of it at the usual coaling ports appears to be all that is necessary to secure its being adopted on board foreign vessels.\textsuperscript{32}

Charter and lease failed to guarantee an adequate supply of shipping and mining facilities, however. Apparently at the suggestion of Robert McCalmont, English financier who had a long financial interest in the railroad, plans were made as early as March, 1860, for the experimental construction of iron screw colliers, the coastwise iron steamships that had already proved successful in the English carrying trades.\textsuperscript{33}

The Reading had begun to acquire its own power fleet in 1859, when it purchased from Neafie & Levy the steam propeller ship \textit{Philadelphia} for $13,940. She apparently failed to perform to their satisfaction, however, for records show that she was sold for $8,500 on April 22, 1868. Between 1864 and 1868 approximately seventy-

\textsuperscript{30} \textit{Report of the President and Managers} (Philadelphia, 1862). President Charles E. Smith reported the Newcastle plan to the stockholders. Cited in \textit{The Pilot}, a Reading Company publication, in November, 1903, with the comment that the pier was never put to use.

\textsuperscript{31} Apr. 4, 1862. See \textit{Journal of the Senate of the Commonwealth of Pennsylvania} (1862), 445, 532.

\textsuperscript{32} \textit{Report of the President and Managers} (Philadelphia, 1859), 6.

\textsuperscript{33} The McCalmont interest dates back to about April, 1843, when an agreement was made between John Gihon, investor in New York, and the Reading Company for a loan of £10,000 sterling to be negotiated by McCalmont Brothers of London. The financial obligations thus incurred were continued until 1889. The minutes of the company for Apr. 29, 1889, note that "the firm of Messrs. McCalmont Brothers is no longer in existence owing to the death of Robert, 1882, Hugh, 1887, and W. J. Newell [a partner], 1888." The minutes further record that the McCalmont interest was then transferred to Junius S. Morgan & Co., London.
one barges and two-masted schooners were purchased from the Delaware and Raritan Canal, primarily to run the canal route to the New York market. Attempts to adapt a few of these canal boats to steam propulsion failed. Time was at a premium. Newport News, Norfolk, and other rail-coal facilities were emerging as lively competitors. After some debate and at the cost of $7,400, the first steam collier, appropriately named Monitor, was ordered and constructed in 1867, after the design of W. D. Crane, by Reaney & Son at Chester.

Thus was launched another move toward an absolute cartel, one which was to grow stronger and stronger in the 1870's. From the mineral-rich mountains of Pennsylvania to the anthracite-hungry harbors of the Atlantic maritimes, the house flag with the anchor and four black diamonds, the maritime flag of the Philadelphia and Reading Railroad, was to become a symbol of industrial, railroad, and marine wealth. Robert G. Albion has commented: “Philadelphia had entered upon the one branch of maritime activity [the coastwise coal trade] in which it surpassed New York and in which it also enjoyed national primacy.”

Edward C. Kirkland, in his brilliant study of New England transportation, says: “The undependable schooner, the mainstay of the coal trade, must go. In this direction, as in others, the Philadelphia and Reading undertook to pioneer.”

In 1868, a second steam propeller ship, the Pusey, was purchased from Neafie & Levy. By September, 1869, the president was able to report that “the two steam colliers were working favorably, and on motion of Mr. Lippincott, it was resolved that he be authorized at the discretion of the board to contract for four additional coal steamships of heavier tonnage than those already built.”

In 1869, three were ordered from Reaney & Son, and one from Harlan & Hollingsworth.

By 1874, a fleet of fourteen iron steam colliers and one hundred and twenty-one fore-and-aft rigged schooners and barges was in operation. The Rattlesnake, Centipede, Achilles, Hercules, Leopard, Panther, Reading, Harrisburg, Lancaster, Perkiomen, Berks, Wil-

36 Sept. 21, 1869, Minute Book D (Dec. 30, 1868–Apr. 30, 1879). There are no references to the Monitor or Pusey after 1871.
Liamsport, Allentown, and Pottsville were ploughing the seas, each making approximately thirty voyages a year to deliver coal to the ports of Boston, Providence, and New York.

By the time Franklin B. Gowen, the stormiest of the Reading's nineteenth-century presidents, caught the full fever of maritime expansion after his appointment in February, 1871, the Philadelphia and Reading Coal and Iron Company had been formed, operating some twenty-seven mines, shipping approximately two million tons of coal a year from a terminal facility at Port Richmond which had twenty-one wharves, capable of handling a thousand cars and one hundred seventy-five ships simultaneously. At its Reading shops, the railroad was manufacturing most of its own rail iron.

Expansive plans mushroomed. McCalmont had set the pace earlier when he suggested the formation of a Philadelphia-New York, a Philadelphia-West Indies, and a transoceanic coal steamship line. Although all of these plans did not materialize, the way was clear to win board support for extension of shipping and for the construction of a shipbuilding facility at Port Richmond.37 The shipyard was constructed in 1874, but by 1880 it was reported in poor condition, with evidence that it had never really been used.38 Marvin W. Schlegel suggests that failure of the city of Philadelphia to release the property necessary made the shipyard construction impossible.39 There is also the possibility that the plan was too expansive. Although there were public reports in 1874 that thirty-seven steam colliers were in operation, a company official noted that only seven had been commissioned;40 evidence indicates that no more than fourteen were ever built for the fleet.

The first marine reporting agent for the railroad was M. S. Bulkley, one of its most active coal dealers and a lessee of one of the coal piers. In 1871, Thomas M. Richards became general agent, with

37 Gowen reported: "A ship-yard for the construction of new vessels and the repair of existing ones is being built at Port Richmond and will be ready for operation within five months. . . ." Report of the President and Managers (Philadelphia, 1874), 7.

38 "The building and machinery at the Company's yard for constructing and repairing iron ships have not been in use. The whole arrangement is obviously founded upon some very extensive plan, which when completed would afford facilities for the construction and repair of a large number of iron vessels. . . ." F. W. Sickles' report to the receivers, Nov. 19, 1881.

39 Marvin W. Schlegel, Ruler of the Reading: The Life of Franklin B. Gowen, 1836-1889 (Harrisburg, Pa., 1947), 52.

40 Clipping with attached memorandum, Apr. 25, 1874.
READING SAIL BARGES AT PORT RICHMOND

Courtesy of the Reading Company
THE STEAM COLLIER Williamsport

Courtesy of the Peabody Museum of Salem
John L. Howard as his assistant. Howard took over in 1874, and was named superintendent of steam colliers, watching over the fleet with the consulting assistance of civil engineer, Samuel Archbold, who earlier had been a partner in the shipbuilding company of Reaney & Son. Howard’s reports to his superiors were regular and precise, and full of pride. The fleet was indeed a handsome one, known for the beauty of the fine cherry-wood pilot houses and the particular quality of the ships’ bells.

There were six classes of steam colliers: the 500-ton Rattlesnake and Centipede; the 600-ton Berks; 800-ton Leopard and Panther; 1,000-ton Achilles and Hercules; 1,200-ton Perkiomen; and 1,500-ton Reading, Harrisburg, Lancaster, Williamsport, Allentown, and Pottsville. They ranged in over-all length from 173 feet to 215 feet, and all carried cargo masts fore and aft. They were worked by crews of thirteen to eighteen men. The Rattlesnake, for example, carried a crew consisting of captain, first mate, second mate, engineer, assistant engineer, steward, cabin boy, three seamen, and three firemen. The larger ships carried one or two additional seamen, an ordinary, and “coal passers.”

The captains of these ships averaged about $1,200 a year, including bonus (offered for rapid loading and unloading); the first mate, about $600 a year; the seamen, $240; and the cabin boys, $120 a year. The total costs for labor for the smaller ships thus amounted to $467.13 a month, and for the largest, $622.19 a month.41 Even this small pay the crews had little time to spend, for thirty voyages a year, running 30,000 sea miles on ten-day trips to and from Boston and Providence and seven-day round trips to New York, accounted for about three hundred days of their year. The fastest ship of the fleet in 1876 was the Berks, with the Hercules running a handsome second.

But speed was not everything in the coastwise coal trade; tonnage was. In 1876, the steam colliers carried a total of 509,317 tons of coal, individual ship tonnages averaging 35,000 tons. Every aspect of the fleet and its performance was a matter of pride to Superintendent Howard. From the day of the launch, through the trial of the first journey down to the Delaware capes, through the shipbuilder’s two trial ocean runs to Boston, during record unloadings and salvage rescues, Howard proved to be an excellent maritime supervisor.

41 Schedule of wages, Sept. 22, 1876.
With pride he enclosed in a letter to G. A. Nicholls, a Reading vice-president, a clipping from the New York Daily Graphic of January 23, 1875, which described the ice-breaking voyage of the steamer Pottsville. She had ventured where ferryboats had failed and destroyed the solid freeze that had made it possible for pedestrians to walk across the East River from Manhattan to Brooklyn.  

On May 15, 1878, he reported to Nicholls on the trip of the Pottsville to Havre, France, on a mission to the Paris Exhibition to demonstrate in a floating exhibit the efficiency of American hard coal in both rail and sea operations:

The outward voyage was an eminent success. As you know the fuel was pea coal, the engine was never slowed down or stopped from the time she left Cape Henlopen until she took a pilot at Havre. The average time was 8½ knots, the best running from midnight to midnight was 241 miles, and from midday to midday 236 miles. . . . The first eight days out gave bad weather but the only loss sustained was one scupper door and one boiler tube. She was visited by a great many English steamship and collier people, who were in Havre and greatly admired by them.

Not all was success and glory, however. On June 14, 1878, the Leopard went ashore at Cape Ann. A telegram sent by an agent at Port Richmond reported: “Our Mr. Howard is now there.” But even his presence and the presence of tugs and pumpers failed. The Leopard was lost. In his recommendation for replacing her, Howard noted: “A 3,000 ton collier of the most approved model compound engine & outfit, should be built for about $300/325,000. . . . You may have noticed that the question of steel ships is being agitated in England.” In this instance, his recommendations were not followed. The first steel ships of the Reading were the sea tugs built by Cramp’s, Harlan & Hollingsworth, and Neafie & Levy, but they were not built until the 1890’s.

The year 1878 was a good one. More than two million tons of coal were shipped to ports in Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, the District of Columbia and Virginia,

42 Howard to Nicholls, Feb. 8, 1875.
43 Howard to Nicholls, May 15, 1878. Clipping from the New York Herald, Apr. 5, 1878, gives full details of the Pottsville and her mission.
44 Charles K. Schull to Nicholls, June 14 and 15, 1878.
45 Howard to Nicholls, Nov. 9, 1878.
and to Cuba and Brazil. Most of the coal was destined for Newburyport, Salem, New Bedford, Providence, New London, Fall River, and Boston.

Even as Howard reported faithfully on the fleet, maritime activities were altered by the railroad's business ashore. From the first, Franklin B. Gowen had been a force to reckon with. Envisioning an ultimate monopoly in the coal trade, Gowen made enemies by sheer force of movement, cutting a trough in life like the sea trough cut by his fleet. This is not the place in which to discuss his methods of acquiring coal lands, nor is it the proper place for a study of his use of proxy ballots in stockholders' elections. It is, however, essential to the study of the maritime Reading to note that Gowen attempted to oust the middleman from the coal trade by establishing Philadelphia and Reading coal wharves and offices at ports in New England, at New York, and at Buffalo on Lake Erie. But his empire was crumbling at home while he was building it elsewhere. Labor troubles, setting the pace for the labor strife that was to erupt throughout the country at the turn of the century, were but one factor in the decline of the Reading cartel. Gowen fought an outright war with the Workmen's Benevolent Association, with the McCalmont investors in London, and with his own board of managers. Overextended, over-invested in anthracite lands of great promise but little production, Gowen employed every device of his persuasive personality and his brilliant legal mind to keep the Reading expansive. But the courts, violent competition, and incredibly bad public relations all contributed to the disintegration of the mining, railroad, manufacturing and shipping combine. From 1879 to 1905, the railroad declined, went into receivership, withdrew its grasp from the coastwise trade, and lost its collier fleet.\textsuperscript{46} Alteration in the organization and management of the company became necessary, but it did not mean an end to the Reading's maritime activities.

Since tonnage was requisite to profits, tonnage had to be increased. The colliers had had limited capacities, with a maximum of 1,650 tons. But steam tugs with barges in tow could vastly increase the haul. The first steam tug assigned to the coastal trade was the

\textsuperscript{46}The decline of the colliers was rapid, and by 1905 was final. Five of the ships had been lost at sea, the \textit{Hercules} was converted into a tow barge, seven were sold, and the fate of the \textit{Centipede} is unknown.
International, built probably in 1897. Nine additional tugs were purchased from Harlan & Hollingsworth and from the Maryland Steel Company of Sparrows Point, Maryland. These sturdy vessels, with a tow of up to twenty barges, were sea trains, chugging the water track of the Philadelphia Transportation Company (the new name assigned to the marine arm of the Reading after receivership) between Philadelphia and Boston, and across Long Island Sound from Port Reading near New York to harbors at Fall River and Boston. Harbor facilities at Philadelphia, matched by harbor facilities at Port Reading, had developed new rail-maritime services for the Reading to compensate through coastwise shipping for the loss of her sea trade.

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