The Antebellum Railroads of Petersburg, Virginia

by Marvin Broyhill

Working Draft 215
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I have long known that Petersburg was a railroad pioneer, but there was almost nothing known of its rich railroad heritage. Wyatt and Scott in their classic *Petersburg Story* devote only six pages to the subject. Pollack's *1878 Industrial History of Petersburg* covers it in only two pages. Both simply name the railroads, cite the dates they were chartered, their routes and their fates. No details are provided. No books or reports have ever been written on the subject.

This work is the first to provide a comprehensive overview of Petersburg's antebellum railroads. In compiling it, I accumulated a great deal of previously unknown information, much of it from obscure but reliable sources. I have also identified other resources that may provide even more information, but it will take time and effort to obtain it.

This is a "working draft." Its purpose is to consolidate text and images so far obtained into a cohesive presentation to provide a springboard for further research. It utilizes images gleaned from many different sources. The color images of the various Petersburg locomotives are original art, commissioned by me. Many other images will be replaced by original art that has yet to be done. There may be other useful photographs that have yet to be discovered. New information also will be incorporated.

Once the content is finalized, the final book will be designed by a graphics professional.

A PDF of this document and other ones relating to the Petersburg Railroads
and the proposed Petersburg Parks may be downloaded from
www.Petersburg-Parks.com

Introduction

Virginia is a Mid-Atlantic state, located about halfway between Maine and Florida. The magnificent Chesapeake Bay, one of the worlds's great estuaries, divides it into two parts — the small Eastern Shore peninsula, and the bulk of the state, located west of the bay. Richmond is its capital and is located 122 miles due south of the nation's capital, Washington, D.C. Petersburg is only 22 miles south of Richmond.

The antebellum south was so predominately agricultural that it was often considered one vast plantation. Petersburg was a notable exception. It began in 1646 as a trading post, and by 1740 had evolved into a major trade center. Industry soon followed. Trade requires transportation. Petersburg is located on the Appomattox River, which provided the means to move its goods to port. It was soon supplemented by two canal systems. This resulted in Petersburg also becoming a major transportation center.

Its merchants and business leaders were quick to recognize the opportunities provided by railroads. The Petersburg Railroad was chartered in 1830 and began providing service in the late summer of 1832. It was the nation's third common carrier (a company that transports passengers and freight for anyone). It was only preceded by Maryland's Baltimore and Ohio Railroad, which ran its first train on May 24, 1830, and New York's Mohawk and Hudson Railroad, which began operations on August 9, 1831.

The Petersburg Railroad was operational a full year before New Jersey's Camden and Amboy Railroad ran its first train on September 9, 1833 (the famous *John Bull*), and the South Carolina Canal and Railroad Company began running scheduled trips on the *Best Friend of Charleston* in October 1833. The Petersburg Railroad was the first operational steam railway in the southern states. It was formed to bring in goods from North Carolina, 40 miles away. It began doing that in 1833, becoming the nation's first interstate railroad.

Its first locomotive was the first successful one manufactured by the Edward Bury Company of Liverpool, England. The Petersburg Railroad used the first stagecoach-design passenger cars and the first tandem coach designs. Its chief engineer, Moncure Robinson, was one of the great American railroad pioneers. A sketch from his scrapbook provides the first illustration of an American freight car.

The Petersburg Railway was enormously successful, but the city was confronted with finding a more efficient way to get its goods to a port for transport. The City Point Railroad (later the Appomattox Railroad) was chartered in 1836. It connected Petersburg to City Point, a deep water point on the nearby James River. The Richmond and Petersburg Railroad was chartered in 1838, connecting the two cities. urg became the nation's first railroad hub, but there was more to come.

The Southside Railroad opened in 1854 to serve the vast hinterland to the west. It became famous for constructing High Bridge at Farmville, Virginia, then the largest bridge in the world. Next came the remarkable Norfolk and Petersburg Railway with its own fascinating history. By 1860, the city had five railroads.

The American Civil War began with the Battle of Bull Run in July 1861, when Union forces attempted to march south from Washington, D.C. to capture Richmond, which was the capital of the Confederate States of America. The Union Army was soundly routed and ran back to Washington in disarray.

There were three fronts in the Civil War: the naval blockade of the ports, control of the Mississippi River, and the capture of Richmond, which proved to be the most difficult by far. The Union Army spent the next two and half years trying to capture it, but was continually repulsed. The 100 miles between Washington and Richmond are littered with battlefields.

President Abraham Lincoln appointed General Ulysses S. Grant as the commander of the Union Army. He dismissed attempting any more bloody frontal approaches and changed his objective. He would capture Petersburg, as its rail hub supplied Richmond from the south. Once captured, starvation would force the Confederate capital into submission and surrender. Petersburg became the Union's primary military objective. Grant landed an enormous army at City Point, which was the Normandy Invasion of the Civil War. The Union Army captured the west end of the City Point's railroad tracks and its City Point depot. It added 21 miles of new track and soon the U.S. Army Military Railroad was supplying the 100,000 troops that surrounded Petersburg.

Petersburg was gallantly defended. The Battle for Petersburg lasted for ten months. It was the longest battle in the history of the United States, and it was fought for the possession of the city's railroads. When Petersburg fell, Confederate Commander General Robert E. Lee withdrew his forces to the west, only to be forced into surrendering a week later at the nearby Appomattox Court House. When Petersburg fell, the Confederacy fell with it. In terms of human lives, the Petersburg railroads were the most expensive in the United States.

Petersburg's antebellum railroads are a microcosm of early American railroad history. They used every new type of locomotive and rolling stock. They not only provide an extensive account of the technologic developments between 1830 and 1860, but vividly demonstrate the interplay of trade and transportation that made railroads possible. They demonstrate the intense rivalry and competition of the early railroads.

To top it off, Petersburg was also the first city in the entire world to charter a modern rapid transit system - the electric street railway or streetcar. Richmond immediately jumped on the idea and was able to fund one first, and it became the home of the world's first electric street railroad. The Petersburg Electric Street Railroad opened two years later. The Richmond street railroad and the Petersburg street railroad were soon joined by one connecting the two cities. They had to produce their own electricity and became so good at it that they were soon selling the excess. This was the beginning of Virginia Electric and Power, now Dominion.

The most amazing thing about all of this is that so many of Petersburg's historic railroad resources still survive. The Southside Station depot is the only surviving antebellum train station in the south. The majestic Norfolk and Western Union Station is only a block away. The Electric Building is midpoint between them. It was the Petersburg terminal of the Richmond and Petersburg Electric Railway.

Interstate 95 is the main north-south Interstate highway on the east coast. This primary transportation route crosses the Appomattox River just a few hundred yards away. Union Station sits in its shadow.

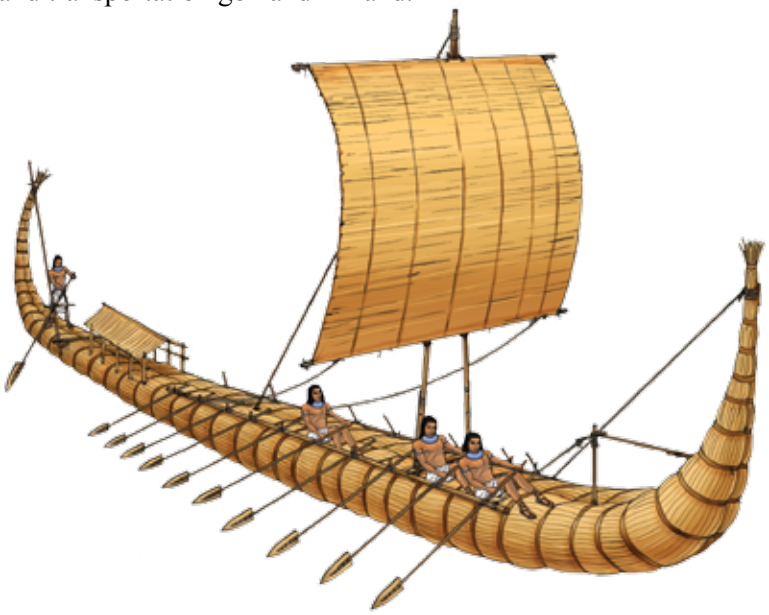
Nowhere in the entire world is so much early railroad history crammed into so small a space. This makes Petersburg the ideal focal point for the study of American pioneer railroading.

Trade and Transportation

Roman market

Trade is the transfer of ownership of goods and services from one person or entity to another. It came into being due to the division of labor and diversity in local resources. Trade is the means by which the farmer can exchange his crops to obtain things that he cannot produce himself, such as metal tools, either through direct barter or through the use of a common currency. An area rich in a natural resource, such as coal, may trade its goods for things not available locally, such as ocean fish. Humans have engaged in trade for thousands of years. It is a basic human activity.

Trade is dependent on the ability to transport goods from where they are available to where they are needed. Trade and transportation go hand in hand.



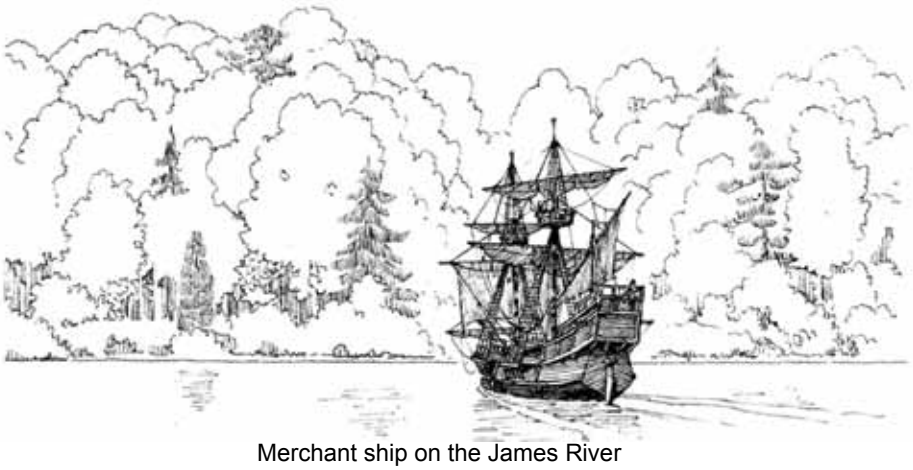
The Egyptians were transporting goods throughout the eastern Mediterranean over 3,000 years ago.

Early Virginia

Jamestown, Virginia was the first permanent English settlement in North America. It was not founded by the crown, but rather by private investors, primarily merchants who sought to commercially exploit the riches of the New World. The Virginia Company was formed to provide them with commodities needed by their customers and to provide an outlet for English goods.

The Virginia colony had been named after Queen Elizabeth, the "Virgin Queen." It was a heavily forested wilderness, and overland travel was made especially difficult by Virginia creeper (*Parthenocissus quinquefolia)*, a five-leaved ivy. It is a prolific climber that reaches a length of 30 feet. It forms a web between trees, creating a formidable barrier that made travel through the forests difficult, if not impossible.

This liability was more than offset by a wonderful asset, an outstanding water transportation system. Over a dozen rivers and more than 100 streams emptied into the magnificent Chesapeake Bay, one of the world's largest estuaries. These became the highways of the colonial period.



Merchant ship on the James River

The 15 years that followed the initial Jamestown settlement were an ongoing disaster. Over 7,000 people immigrated to the colony, but six out of seven died because of disease, starvation, heat exhaustion and Native American attack. The Virginia Company was far more concerned about the colony's failure to provide a cash crop than it was about the fate of the early settlers.

Native tobacco seemed to offer opportunities, but it did not appeal to the English market. John Rolfe came to the colony in 1611 and brought Spanish tobacco seed from Trinidad. It was much sweeter than the native plant and was quickly accepted by European markets. Soon it was being grown everywhere, even in the streets of Jamestown. People who raised it and other agricultural products were called planters, and their farms were called plantations.

By 1620, England was importing more than 30,000 pounds of tobacco a year. King James I considered smoking "a vile custom" and tobacco "a stinking weed," but his disapproval carried little weight. The Virginia Company was causing him bigger problems. Members of Parliament were clamoring for more rights for the English people, and they wanted more control over the government. James believed in the "divine right of kings," and became so disgusted with the movement that he dissolved parliament. Many of its members had invested in the Virginia Company and met in its hall. King James called the company "a seditious parliament." He was determined to abolish it.

He appointed sea captain John Harvey to form a commission to investigate conditions in the colony, presumably to gather evidence about its mismanagement. Harvey spent 1622 in the colony, and when he completed his report, he had it hand-carried to England by John Pory, a commission member.

The exact date that King James received the report is unknown. However, he had become increasingly annoyed by the Virginia Company, so he revoked its charter and personally took over all of its assets. Virginia became the first English crown colony.

When Harvey returned to England the following year, he learned that King James had died and that his son Charles had taken the throne. Charles was familiar with the Virginia Company report and thought that its many recommendations were valid. He took an immediate liking to Harvey and appointed him as the governor of the colony.

Harvey introduced a host of reforms. He knew that the frequent famines were largely due to the Virginia Company forcing the settlers to devote all their time and energy to raising tobacco. They were prohibited from raising their own food. They were required to buy it from the company, a policy resulting from many of the Virginia Company investors being members of the Grocer's Guild of London, which controlled the nation's imports and exports. They profited by selling food to the Virginia Company. Harvey introduced new laws that required the colonists to grow their own food. One of its early settlers wrote, "We now eat better than most people in London."

Harvey restored the Virginia House of Burgesses, which had been suspended by King James. Fearing a concentration of power, he divided the colony into shires, soon renamed counties, to disperse power to the people. Harvey made peace with the Native Americans. He granted them land on the York River, some 20 miles north of the James River, and then constructed palisades connecting the new York Town with Jamestown.

His greatest achievements were economic. He introduced new crops to the colony and established new industries. By 1635, he had transformed a starving death camp into a mecca of prosperity. Jamestown became North America's first trade center. Sea captain John Harvey put the colony on the course that led to it eventually evolving into the most powerful and prosperous nation on Earth.

John Harvey

Governor Harvey also made many enemies. King Charles stripped the Virginia colony of its lands north of the Potomac River and gave them to Lord Baltimore to establish a colony for Catholics. Baltimore named it Mary Land, after Charles' papist wife. The protestant Virginians deeply resented this intrusion and pressed Harvey to chase out the newcomers. Instead, Harvey followed the orders he had received from King Charles and supported it. He gave the Mary Land colonists livestock, fruit trees and seeds for crops.

His reforms cut into the profits of the wealthy planters, who controlled vast amounts of land owned by English investors. In 1635 they launched a mutiny. Harvey was thrown into chains and shipped back to England. King Charles was furious at this defiance of his authority and sent Harvey back to the colony where he served for two more years.

John Harvey has never been recognized for his remarkable achievements. Instead, he has gone down in Virginia history as a villain, largely because that history was written by the descendants of those who rebelled against him. *The Virginia Encyclopedia of Biography* devotes only three paragraphs to him and characterizes him as a tyrant.

Historians often refer to the mutiny of 1635 as the "First American Revolution." The story so intrigued this author that he spent six months researching Harvey, which revealed the information cited above. He concluded that Harvey was certainly not a villain. If anything, he was America's first true hero. His story is told in this author's original screenplay, *The Adventurers.*

Petersburg

Peter Jones' Trading Post

In 1646, fearing Native American attacks, the Virginia House of Burgesses granted Abraham Wood a large track of land in exchange for building a fort at the falls of the Appomattox River.

Wood was a skilled trader and was soon doing business with the Native Americans, who brought him furs from as far away as Ohio. Wood also led and sponsored expeditions into the unknown west. Some time around 1675, Wood's son-in-law, Peter Jones, opened a trading post. It was located next to a spit of land that jutted into the Appomattox. This resulted in it being called "Peter's Point."

Fall Line Cities

Modern-day Virginia is shaped somewhat like a squashed triangle. Mountains run the length of its western side. To the east are gently rolling hills with a rock substrate. This area is known as the Piedmont. Over millions of years, the elements eroded the mountains, and the rivers washed the sediment downstream. It collected and formed Virginia's third geological region, the Tidewater, so named because the low-lying land was affected by the tides. This area is about 100 miles wide.

Virginia has four great rivers that flow from the west into the Chesapeake Bay. From north to south, they are: the Potomac, Rappohannock, York and James. Waterfalls formed where the Piedmont abruptly turns into the Tidewater. They became a natural barrier that blocked ships from going any further upstream. In the years to come, trading stations were established next them that provided the means for people in the area and those to the west to trade with ports all over the world. These would evolve into the "Fall Line Cities": Georgetown and Alexandria on the Potomac, Fredericksburg on the Rappohannock, Richmond on the James and Petersburg on the Appomattox.

Jamestown was situated on the north bank of the James River, which flowed from west by northwest. Around 35 miles upstream, the small Appomattox River flowed into it. Peter's Point was situated on the falls of the Appomattox.

Furs were a small part of the colonial Virginia economy, which was dominated by tobacco. Planters packed it into a large round cask called a "hogshead." They were originally 40 inches long and 30 inches in diameter and were designed for the shipment of tobacco. They weighed between 900 and 1,000 pounds. Later they became much larger, weighing as much as 1,600 pounds. They were big, bulky and heavy, making them hard to transport. This was solved by running an axle through the center of a hogshead, permitting it to be rolled like a wheel. Crude roads were cut out of the wilderness and these, quite aptly, became known as "rolling roads."

Hogsheads were generally pulled by mules or oxen.

Nearby planters rolled their tobacco to Peter's Point. The hogsheads were loaded aboard pole-driven flat-bottomed boats, known as batteaus, that carried them nine miles to the James River, where they were loaded onto ships for export.

Tobacco quickly exhausts the soil, and planters learned that it could be somewhat restored by permitting the land to lie fallow for a few years. The Virginia plantations were small, generally 100 to 300 acres. Planters did not like to see land not being used, so they planted other crops, such as wheat and corn, which actually helped speed up land regeneration.

They were soon enjoying such abundant harvests that they began exporting their surplus. The Peter Jones trading post developed a symbiotic relationship with the plantations in the hinterland. It provided them a way to export their goods, and a market for them to purchase goods imported from England. It also acted as a local trade center because planters tended to raise only one alternate crop a year, and it provided them with a place to exchange the goods they had with what they needed. Success attracts success and soon other merchants were establishing other trading posts. A community began to form.

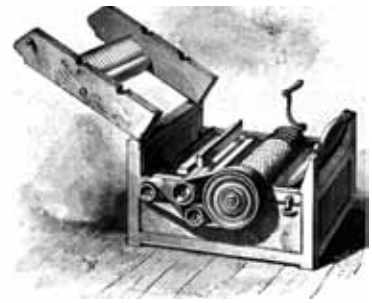
By 1700, all of the land on the James and York Rivers was covered with plantations. New settlers and the offspring of established ones wanted their own land, but it was expensive. A solution was nearby.

Neighboring North Carolina was unique among the original colonies, as the barrier islands that line its Atlantic coast made it impossible to land ships. To encourage immigrations, the colony began giving away land. This attracted many people from Virginia. Only 40 miles from the North Carolina border, Petersburg was the nearest trading center. It evolved from a local one into a regional one.

Peter's Point flourished. In 1733, Col. William Byrd II conceived plans for establishing it as a city. The Virginia General Assembly formally incorporated it as the city of Petersburg on December 17, 1748.

The Piedmont region provided the ideal conditions for growing tobacco, and Petersburg became the tobacco center of colonial America. Some planters jeopardized the excellent reputation of Virginia tobacco by stuffing hogsheads with substandard grades and even unusable stalks. This led to the Tobacco Inspection Act of 1730. It required that tobacco be delivered to warehouses for inspection prior to export. As many as 19 tobacco warehouses of various sizes were located in Petersburg between 1730 and 1842. An 1817 visitor wrote, "Petersburg is growing into a place of importance, being the emporium of export and import to a large district. Tobacco is the chief staple, and every article of British or German manufacture the return." Three years later, another visitor wrote, "The streets of Petersburg were crowded with hogsheads of tobacco, drawn by two horses, coming 80 or 100 miles from the interior." The tobacco was sold or consigned and then transported down the Appomattox River for shipment to foreign ports.

Tobacco had always been shipped as packed leaves. During the 1820s, Petersburg businessmen took the business to the next level. They began producing consumer products, such as plug tobacco and chewing tobacco. By 1835, there were six tobacco factories in the town. By 1857, there were eight to 10, and more were under construction.



In 1793, Eli Whitney invented the cotton gin, a machine that quickly and easily separates the cotton fibers from the seeds, a job formerly performed by hand. Hand cleaning could produce a bale a day. The cotton gin could produce 50 bales a day.

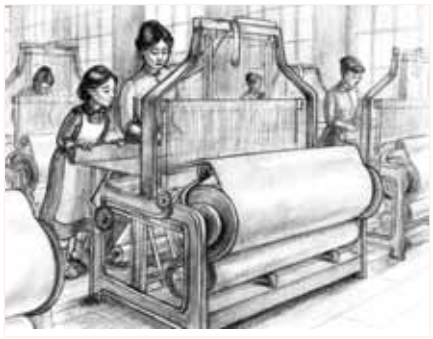
Virginia's economy had long been based on tobacco, which quickly exhausted the soil. Cotton provide another cash crop, one that could be rotated with tobacco.

Wool and flax had always been favored by the English textile industry, but the more versatile and lower cost cotton coming out of America changed that. It became a big business. By 1818, there were 32 factories with 5,732 looms in Manchester, England alone.

This enormous demand had a major impact on central Virginia. Cotton cultivation began slowly, but picked up momentum and speed. Local planters began devoting from 20 to 100 acres to cotton and began regarding it as a staple crop. In October 1825, cotton was coming into Petersburg at the rate of 200 bales a day. The following spring the city was regarded as the "cotton market of Virginia."

Spinning is the twisting or otherwise bonding fibres together to make thread, yarn and rope. This was a labor intensive process that was often done with the help of a manually operated spinning wheel. English weaver James Hargreaves invented the "Spinning Jenny" around 1764. It was a multi-spool spinning frame that streamlined the process. Many improvements were made, making the machines extremely efficient.

Spinning Jenny



Lowell Girls Weaving

Weaving is the process by which thread and yarn are interlaced to form fabric or cloth. It uses two distinct sets of yarns or threads. Those that run lengthways are called the warp, and the threads which run across from side to side are the weft or filling. Cloth is woven on a loom, a device that holds the warp threads in place while filling threads are woven through them.

Edmund Cartwright built and patented a water-powered loom in 1785, and it was adopted by England's textile industry.

The Industrial Revolution

1776 saw the birth of the Industrial Revolution. It began in England and was the result of three new technologies: Abraham Darby developed a way to produce low cost iron; James Watt invented the steam engine that provided a mechanical source of power; and several English inventors introduced machine tools. These were lathes, milling machines, planers, drill presses and other tools that were used to fabricate iron into other machines that could produce just about anything.

This resulted in identical, interchangeable parts and the assembly line. The Portsmouth Block Mills used it to make ships' pulley blocks for the Royal Navy. It was soon being used to make clocks, watches and small arms.

The Industrial Revolution had a profound and immediate impact on the textile industry. Keenly aware of the economic boom it was creating in England, Massachusetts businesses quickly imported the new machines. Americans are innovative and rarely leave anything in its original form. This was the case with textiles. Cabot Lowell invented the first factory system "where people and machines were all under one roof." Mills and factories were built along the Merrimack River, as it provided the power to run the machines. The mills were soon employing thousands of people, mostly women, and the town of Lowell, Massachusetts became the textile capital of America.

Restored weaving factory at Lowell

The mills were powered by waterwheels, and the power was distributed through a complex networks of shafts and pulleys.

Petersburg businessmen were also aware of the phenomenal success of English and northern mills. They observed they were shipping cotton to them that was transformed into thread, yarn and fabric, which was then shipped back to them.

The area around Petersburg was perfect for cotton cultivation and became the center of the nation's cotton industry. They knew that the Appomattox River not only provided a means of transportation, but could also provide a source of power. The falls begin a few miles west of the city, and the river dropped 120 feet, giving it the strength to produce as much as 3,000 horsepower. Petersburg began evolving from a trading center into an industrial center.

Canals

The first organized transportation system

The Appomattox River falls impeded trade with the west, and many other cities suffered from similar problems. The coastal region of North Carolina was especially affected. Its east coast is blocked from ocean trade by the barrier islands. The landlocked sounds were entirely dependent upon goods from Norfolk, Virginia. They could only be delivered by way of horse-drawn wagons hauling them along poor roads, or by small boats along the treacherous Carolina coast.

In May 1763, George Washington made his first visit to the Great Dismal Swamp and suggested draining it and digging a north-south canal to connect the waters of the Chesapeake Bay in Virginia and Albemarle Sound in North Carolina. As the first president, Washington agreed with Virginia Governor Patrick Henry that canals were the easiest answer for an efficient means of internal transportation and urged their creation and improvement.

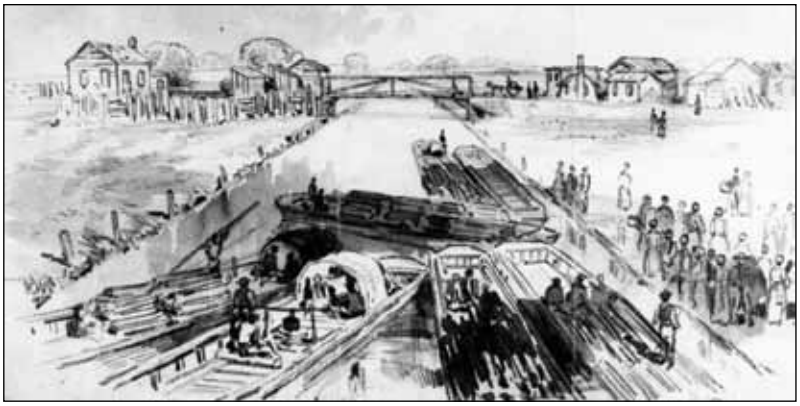
In 1784, the Dismal Swamp Canal Company was created. Work was started in 1793. The canal was dug completely by hand; most of the labor was done by slaves hired from nearby landowners. It took approximately 12 years of back-breaking construction under highly unfavorable conditions to complete the 22-mile long waterway, which opened in 1805. Its success spurred canals being built all over the country.

The Dismal Swamp Canal is now part of the Intercoastal Waterway that runs almost the entire length of America's east coast.

Petersburg was inspired by the effort. In 1795, the Upper Appomattox Company was incorporated to build a canal and oversee river improvements in the area. Several early 19th Century projects were undertaken to ease navigation and improve access to the wharf at Petersburg for larger vessels. In 1807, the Appomattox Canal was built. It was a seven-mile conduit around the falls of the river. It was initially 16 feet wide and three feet deep. It opened a navigation system stretching 100 miles from Petersburg to Farmville.

The Appomattox River was too narrow and shallow for sailing ships. Goods were carried by flat-bottomed pole-driven boats, known as batteaus, from the city to the deep-water port at City Point, now part of Hopewell. It was a slow and tedious process.

The ever-increasing trade in tobacco, lumber, flour, cotton and textiles put an enormous burden on the Appomattox River batteaus. An act of the General Assembly in late 1824 authorized the incorporation of the Lower Appomattox Company to improve the navigation on the river from the Pocahontas Bridge at Petersburg to a landing below the town called Broadway, near City Point. The project was undertaken by the Appomattox Company, which was then working to clear obstructions in the river and bring the depth to seven feet. That was achieved by 1829. It proved a great boost to trade. By the late 1820s, Petersburg exports to foreign ports exceeded $2 million a year. Another $1 million in goods was exported to the east coast of the southern states.



The Appomattox Canal in 1865

The canal was short lived. In 1836, the City Point Railroad was established, which could move goods much faster at lower cost. The canal fell into disuse until the Civil War. During the siege of Petersburg, it was used by the Union Army to supply its soldiers.

Westward migration had resulted in the settlement of the states around the Great Lakes. They were producing agricultural products badly needed on the east coast and overseas. New York Governor DeWitt Clinton proposed a canal running 363 miles from Albany to Buffalo. Albany was on the wide Hudson River, easily accessible to New York City and the Atlantic Ocean. Buffalo was located on the south coast of Lake Erie. From there, goods could be transported throughout the enormous Great Lakes region. The transportation system would literally link the interior of America with all ports of the world. It would be highly efficient, as goods did not require portage.

Erie Canal

It was an enormously ambitious project. The New York legislature appropriated $7 million for its construction. When the Erie Canal was finished in 1825, Governor Clinton sailed from the mouth of Lake Erie to New York City and symbolically emptied two casks of water from Lake Erie into New York Harbor. The canal cut transportation costs by 95 percent and was an enormous success. It carried tremendous quantities of freight and passengers, including many immigrants heading for the west. It resulted in New York City becoming America's trade and business center.

Wagonways, Trackways & Railways

Poor roads have impeded transportation for thousands of years. In 600 BC, a wagonway was used to transport boats across the Isthmus of Corinth in Greece. Wheeled vehicles pulled by men and animals ran in grooves worn in the limestone bedrock, which provided the track element, preventing the wagons from leaving the intended route. It was the first wagonway and remained in use for over 600 years.

The idea of using "tracked" roads is at least 2,000 years old: quarries in Ancient Greece, Malta and the Roman Empire used cut-stone tracks to haul loads pulled by animals. The first true railways, using a flange to keep the wheel on a rail, were developed in the early 17th Century. These were often used to haul coal from mines. The rails were made of wood a few inches wide, and were fastened down, end to end, on logs of wood or "sleepers" placed crosswise at intervals of two or three feet. In time, it became a common practice to cover them with a thin flat sheathing or "plating" of iron, in order to add to their life and reduce friction.

In 1767, the Coalbrookdale Iron Works began to cast iron rails. These were probably six feet long with four projecting ears, or lugs, that enabled them to be fixed to the sleepers.

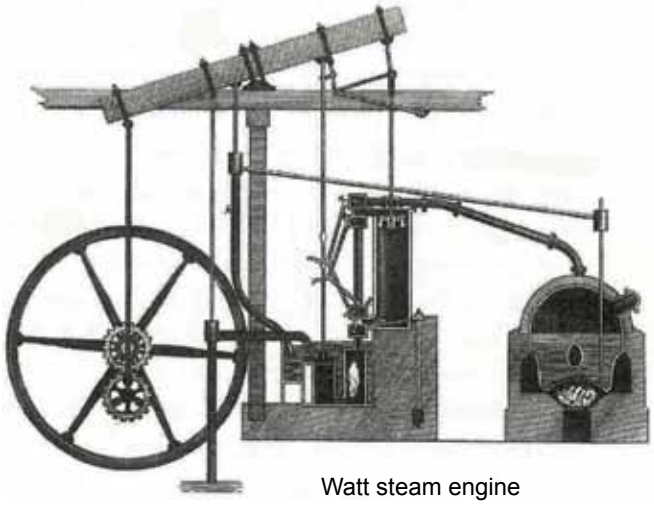
The Granite Railway was one of the first railroads in the United States, built to carry granite from Quincy to a dock on the Neponset River in Milton. From there, boats carried the heavy stone to Charlestown for construction of the Bunker Hill Monument. The Granite Railway is popularly termed the first commercial railroad in the United States, as it was the first chartered railway to evolve into a common carrier without an intervening closure.

Virginia's First Railroad

English horse-drawn train

The idea of hauling freight on rails was not new. The English had been using the technology for over 100 years to move heavy commodities, such as iron ore. These systems consisted of a heavily-built ore cars pulled by horses. The Chesterfield Railroad was such a system. It began operations in 1832 and hauled coal from mines in Midlothian to wharves on the James River. During its entire 13 year existence, it relied on horse power.

The Birth of Modern Railroads

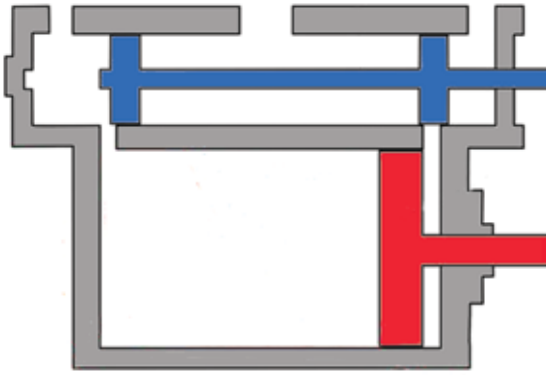


Watt steam engine

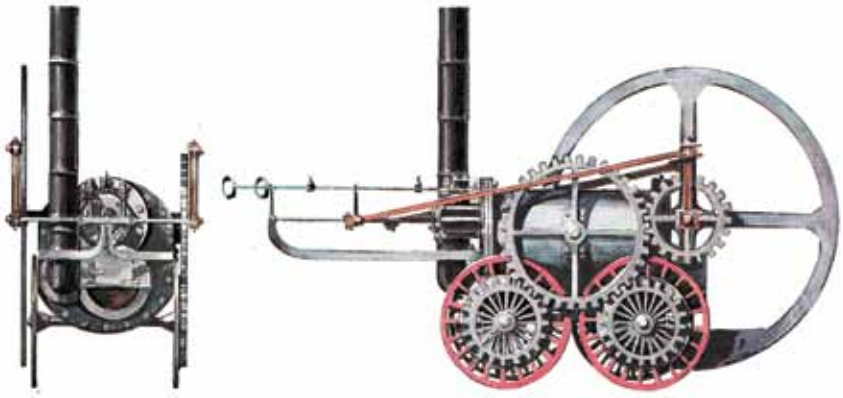
In 1712, English Engineer Thomas Newcomen introduced his steam engine. It used a combination of steam and atmospheric pressure to pump water from mines.

Another English engineer, James Watt, worked somewhat sporadically from 1763 to 1775 to improve it. His engine was the first to make use of steam to drive the piston, helped by a partial vacuum.

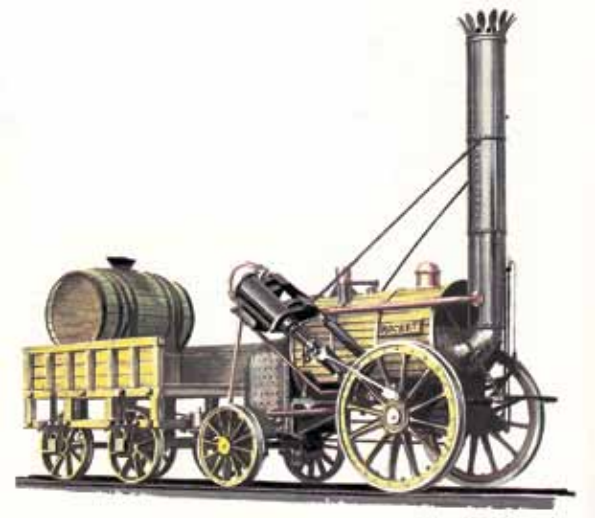
The Watt engines were complex and very large. They had a 50-inch cylinder and were built of iron, brick and huge beams.



Another English engineer, Richard Trevithick, combined the idea of piston and steam but with an all-new design. His high-pressure, double-acting engine had a piston in the center of cylinder, and steam was alternately admitted into one side or the other, forcing the piston back and forth. It was a very compact design that provided great power.



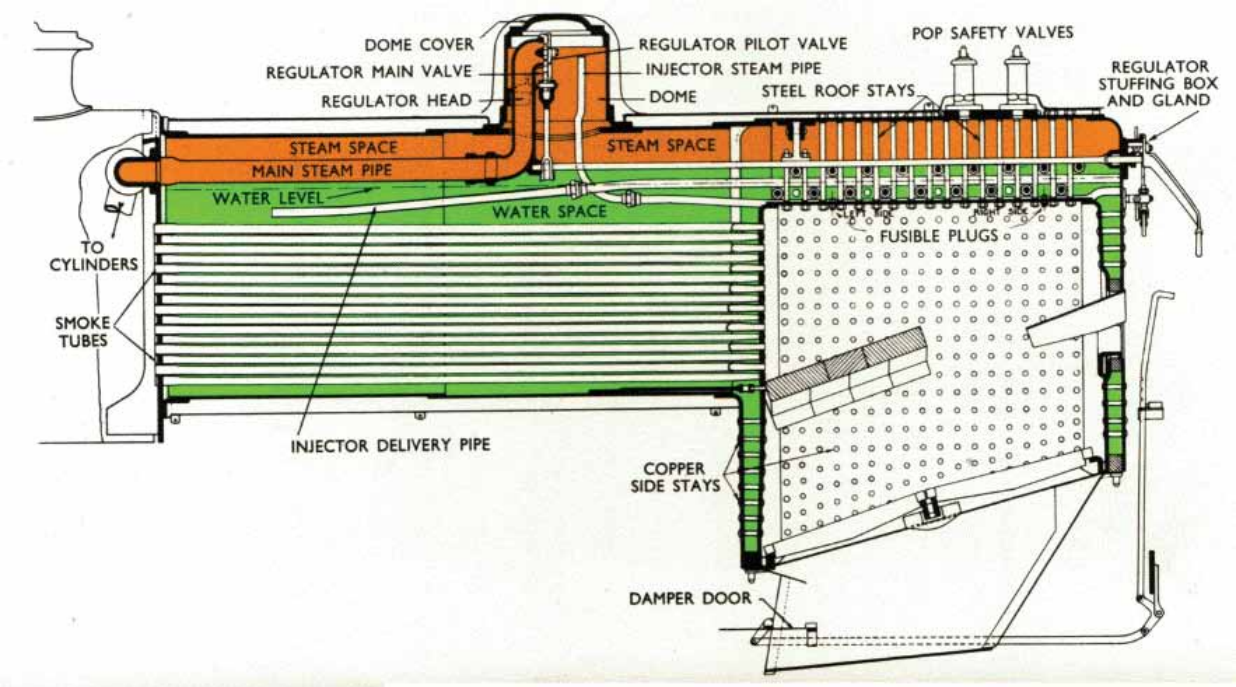
Trevithick built the first full-scale working railway steam locomotive. On February 21, 1804, the unnamed locomotive hauled a train along the tramway of the Penydarren Ironworks, in Merthyr Tydfil, Wales. It was the world's first railroad.



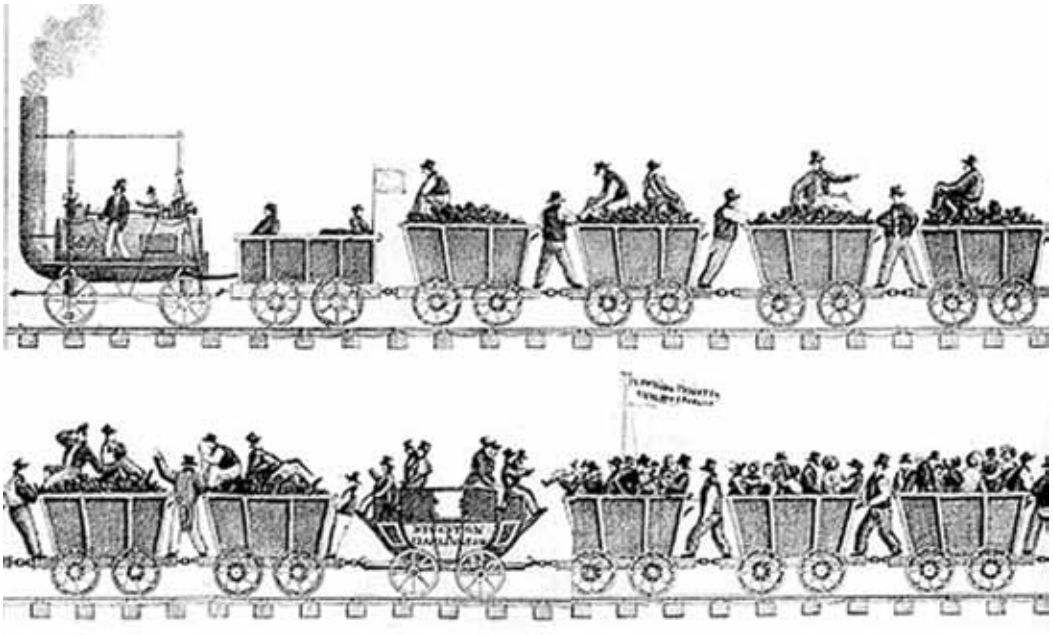
English engineer Robert Stephenson built the *Rocket* in 1829. It was the most advanced steam engine of its day. It introduced the multi-tubular boiler, which made for much more efficient and effective heat transfer between the exhaust gases and the water.

It was powered by a Trevithick engine. Because of its shape, railroaders referred to it as the "cylinder."

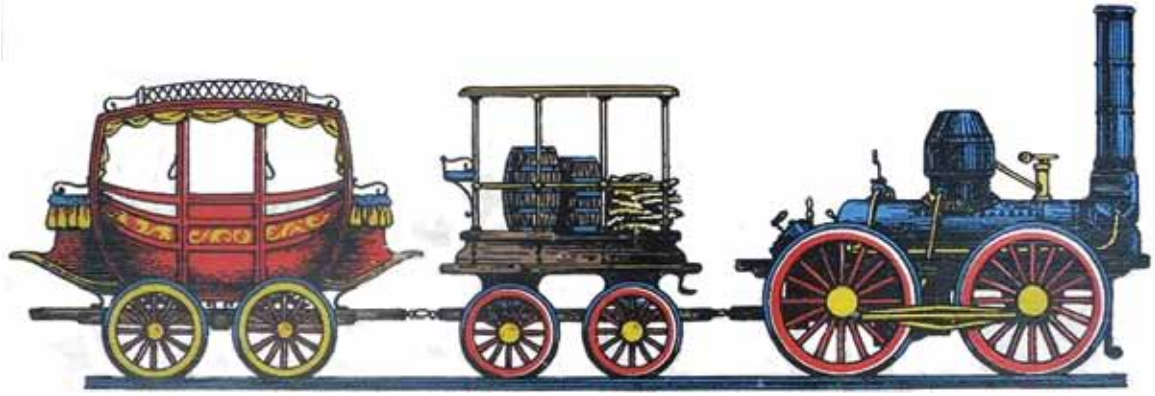
The compact double-acting engine is clearly shown on the 1829 *Rocket*.



Previous locomotive boilers consisted of a single pipe surrounded by water. The *Rocket* had 25 copper tubes running the length of the boiler to carry the hot exhaust gases from the firebox. This was a significant development as it greatly increased the amount of steam produced for a given quantity of fuel, which was then wood. Subsequent designs increased the numbers of boiler tubes. The *Rocket* also used a blast pipe, feeding the exhaust steam from the cylinders into the base of the chimney so as to induce a partial vacuum and pull air through the fire.



In September 1825, the Stockton & Darlington Railroad Company began as the first railroad to carry both goods and passengers on regular schedules using locomotives designed by English inventor George Stephenson. Stephenson's locomotive pulled six loaded coal cars and 21 passenger cars with 450 passengers over nine miles in about one hour.

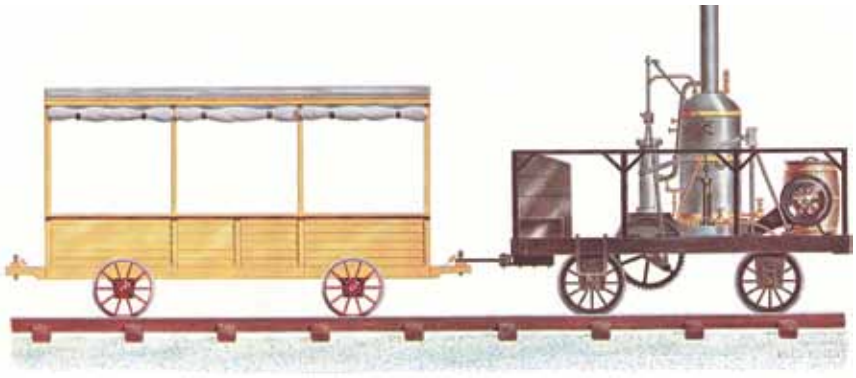


New York businessmen recognized that this new technology presented an opportunity. The Mohawk & Hudson Railroad was incorporated April 17, 1826 by the Mohawk & Hudson Company and opened August 9, 1831. It was the first railroad built in the State of New York and one of the first railroads in the United States. Its train was named the *DeWitt Clinton* after the New York governor who was the driving force behind the construction of the Eire canal.

Railroads come to America

The Erie Canal had an immediate and enormously negative financial impact on the port of Baltimore, Maryland. This led two of its businessmen, Philip Thomas and George Brown, to spend 1826 in England learning all they could about the new technology. They returned to Baltimore and on February 12, 1827, and held an organizational meeting attended by about 25 citizens, mostly bankers and merchants. Thomas and Brown recommended building a railroad that would run from Baltimore to a suitable point on the Ohio River. On February 28 – only 16 days later – they were granted a charter by the state of Maryland. The company was formally incorporated on April 24. Its goal was to provide a faster and less expensive way to move freight and passengers between the Atlantic seaboard and the interior.

The Baltimore and Ohio Railroad, commonly called the "B&O," was America's first common carrier, which meant that it was chartered specifically for public use. Twenty thousand investors purchased $5 million in stock to import the rolling stock and build the line. Management extensively explored the new steam technology.



Tom Thumb

The *Tom Thumb* was the first American-built steam locomotive used on a common-carrier railroad. Built by Peter Cooper in 1830, it was designed to convince the owners of the newly formed Baltimore and Ohio Railroad to use steam engines. It is especially remembered as a participant in an impromptu race with a horse-drawn car; the *Tom Thumb* led the race until a belt slipped off a pulley and the engine lost power. The demonstration was successful, however, and in the next year the railroad committed to the use of steam locomotion and held trials to find a working engine.

First American Railroads

Technology steadily evolved and knowing the dates that various components and features were introduced makes it possible to get a fairly good idea of what was in use during a given year.

Locomotives

The locomotive is the most important element in a railroad, as it provides the motive power that makes everything else possible. The early locomotives were big news, resulting in engravings that appeared in scientific, engineering and railroad journals, as well as newspapers. Manufacturers produced promotional lithographs resulting in extensive documentation of their appearance.

English engineers developed the locomotive, and the first ones used in America were imported from England. However, American needs were far different from those of the British. Yankee ingenuity kicked in, and Americans were soon making their own locomotives.

The West Point Foundry of Cold Spring, New York was America's first manufacturer of locomotives. It achieved fame for building the *DeWitt Clinton,* the *Best Friend of Charleston,* the *West Point,* the *Phoenix* and the *Experiment*. In spite of this success, it began devoting its efforts to the production of artillery and projectiles and withdrew from the locomotive business.

Three locomotive works started up within months of each other in 1832. All were located in Philadelphia. They were the Norris, the Baldwin and the Rogers works. In 1835, Norris and Baldwin accounted for America's entire locomotive production of 35 units. Rogers works was then concentrated on making machinery for the textile industry and did not actually build its first locomotive until 1837. Eighty-five locomotives were manufactured in the United States in 1840: nine by Baldwin, 15 by Norris, seven by Rogers and 50 by other builders. The short-lived period of English imports was over. One authority estimates that not more than 100 locomotives were imported into America.

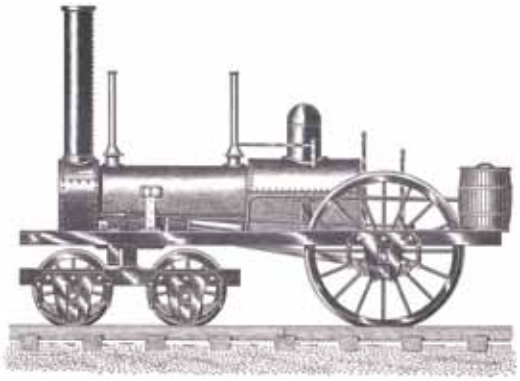
More and more railroads came into existence, and production rapidly increased. Two hundred American locomotives were made in 1845, 359 in 1850 and 500 in 1850, and the numbers were still climbing.

American companies introduced new features.

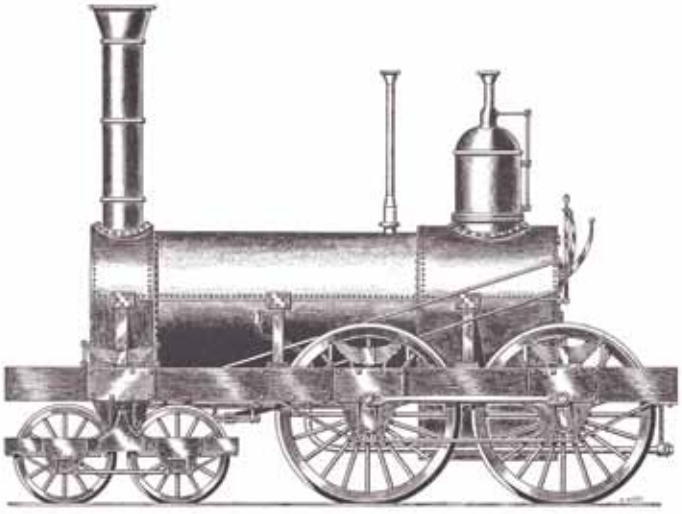
Best Friend of Charleston
a 0-4-0

In 1832, the West Point Foundry introduced a new design. Its *Brother Jonathon* featured four small wheels mounted on a truck. It was connected to the boiler frame with a center pivot, permitting it move freely. It permitted a much better weight distribution and made the second set of drive wheel unnecessary. It was invented by Mohawk and Hudson engineer John Jervis, and these six-wheeled locomotives became known as the Jervis class.

The Best Friend of Charleston was one of the first American-built locomotives and was manufactured by the West Point Foundry of New York in 1830. It had two large drive wheels. These were placed close together to make it easy to navigate curves. Locomotives with the same wheel arrangement constitute a class. The *Best Friend* was a Stephenson class locomotive named after Robert Stephenson, the English engineer who developed it.



Brother Jonathon
First 4-2-0

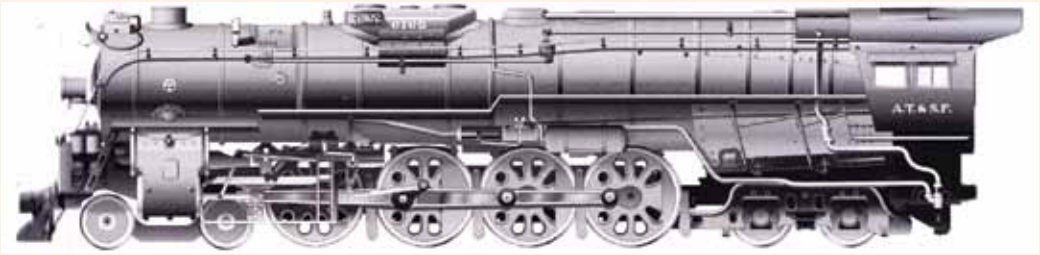


The first locomotives had four drive wheels. In 1831, the West Point Foundry's *Experiment* introduced a new design, one pair of drive wheels and two pair of lead wheels to guide the locomotive into curves.

In 1836, Philadelphia locomotive maker James Brooks realized that more power was needed and coupled the two lead wheels with two drive wheels This became the most popular wheel arrangement in history. It was known as the "American Design."

The Experiment
The first 4-4-0

Locomotive Notation



Leading wheels Drive Wheels Trailing Wheels

1927 Atchison Topeka and Sante Fe locomotive
4-8-4 wheel arrangement

As the 19th Century progressed, there was need for more and more power, so more drive wheels were added and boilers were enlarged. To support this mass of weight, trailing wheels were added.

Locomotives were identified by their wheel arrangement at a very early date, but as the 19th Century progressed, it became increasingly complex. In 1900, engineer Frederick Methvan Whyte introduced his notation system. It cites the number of leading wheels, then the number of driving wheels, and finally the number of trailing wheels. The numbers are separated by dashes.

The 1850s saw an introduction of new classes, such as 0-6-0 and the 0-8-0, but these saw limited specialized use. The Petersburg Railroad and the Richmond and Petersburg Railroad started out using the Stephenson class 0-4-0s. The City Point Railroad bean with two Jervis class 4-2-0s. When it was taken over by the City of Petersburg, the city purchased a new 4-4-0 American design from Baldwin. As time passed, all of Petersburg's railroads added new locomotives, usually of the latest design. The Richmond and Petersburg Railroad had two Baldwin 4-6-0s or "ten wheelers."

Locomotive Components

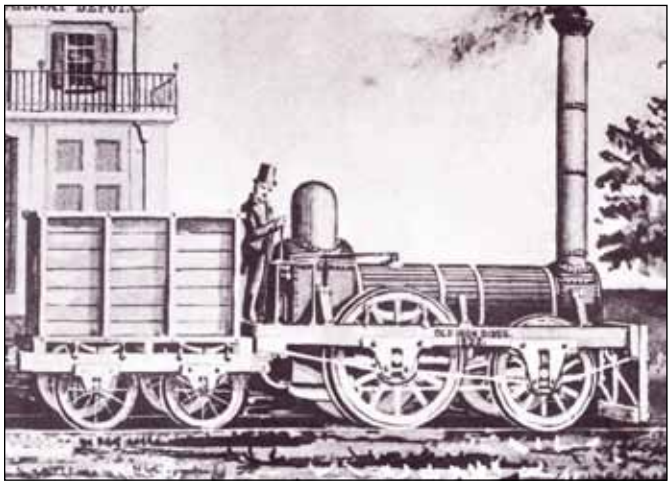
Boilers & Boiling Lagging

In 1831 the English firm of Edward Bury and Company introduced the boiler dome, which was placed over the firebox to catch moisture in the steam. It was first used on the *Liverpool,* which was sold to the Petersburg Railroad. It became a standard locomotive feature.

Throughout the period from 1830 to 1860, boilers were very consistent. Almost all were 48 inches in diameter and were made of 5/8-inch rolled iron sheets. This size was determined by weight considerations. A larger diameter would require thicker iron, substantially increasing the weight of the locomotive. American tracks were lightweight, often crudely built and could not carry the additional weight.

Exposed boilers lost a great amount of their heat through radiation. It was estimated that stationary steam engines lost 12 to 25 percent of their heat because of it. An operating locomotive is not stationary, and wind rushing across it resulted in even higher loss. English engineers were quick to recognize that a great deal of fuel would be saved if the heat loss could be reduced. They introduced lagging, strips of wood strapped around the boiler to provide insulation.

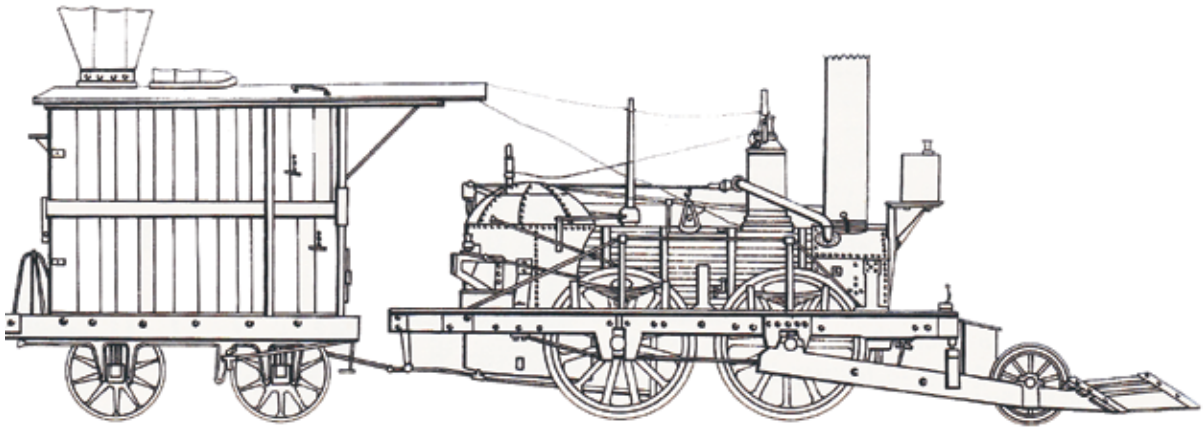
Wood was the natural material for lagging. It was plentiful and cheap. It was, in fact, the only insulating material available. The lagging consisted of strips of wood, two to three inches wide and a little less than an inch thick. They were tongued and grooved, and held in place by brass hoops. Lagging substantially reduced heat loss. It is clearly visible on many of the early locomotives.



Early locomotive showing lagging.

The problem with lagging was that the wood rapidly deteriorated, resulting in high maintenance. This may be the reason it does not appear on the first American-built locomotives, but it was soon added. The lagging was painted to slow down wood deterioration. Alternating strips were often painted in different colors. Painting proved to be an inadequate solution so sheet metal was placed around the boiler to protect the lagging. It was attached with brass hoops. This became known as the “full metal jacket.” Today the terms refers to doing something wholeheartedly with no thought to the consequences.

Cowcatcher

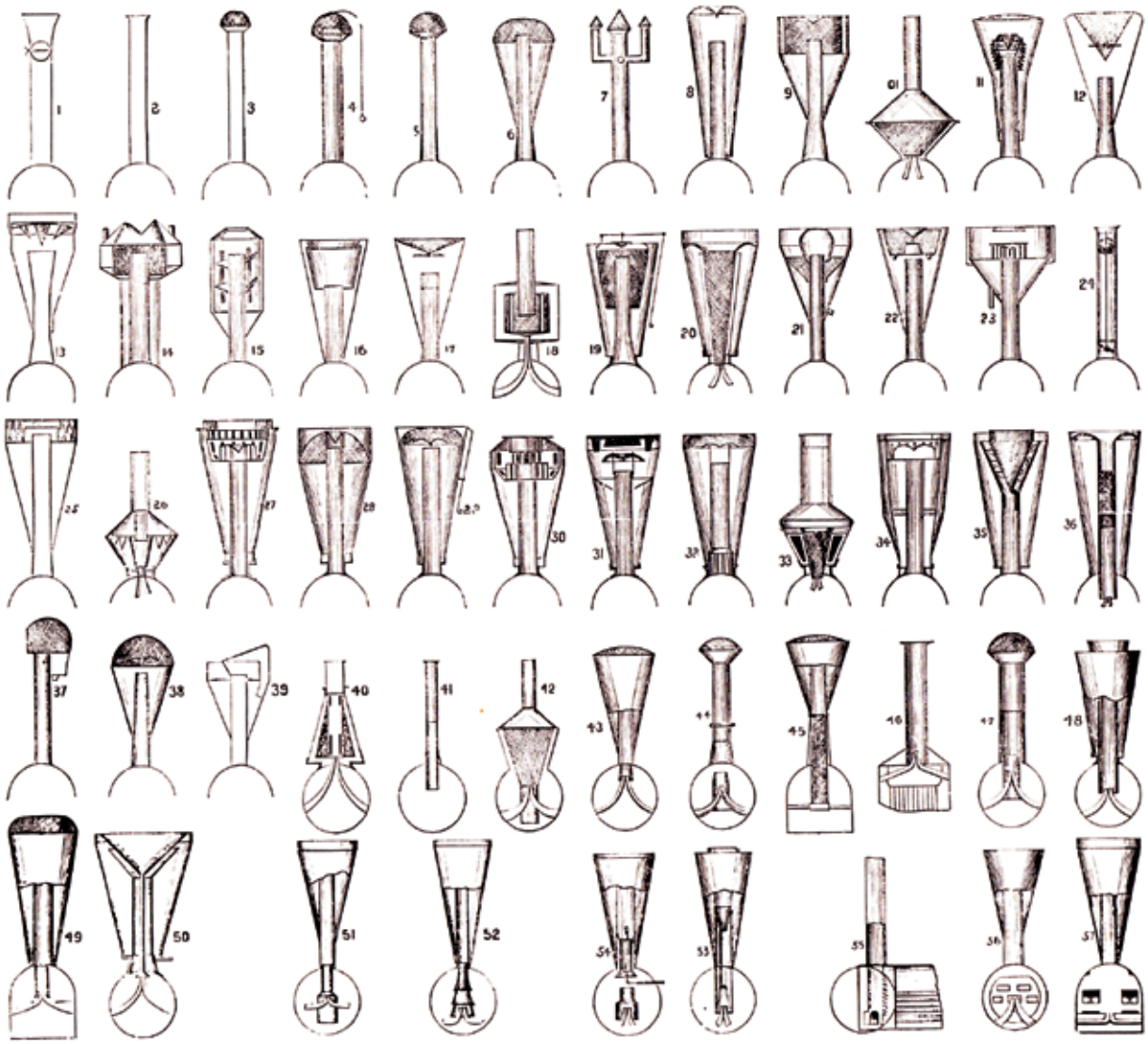


John Bull with 1833 addition of cowcatcher

The *John Bull* was a British-built locomotive built by Robert Stephenson and Company in England. It was purchased by the Camden and Amboy Railroad and was run for the first time on September 15, 1831. It became the world's oldest operable steam locomotive in the world when the Smithsonian Institution operated it in 1981.

American railroads run through farmland, and cattle often strayed on to the track, presenting a great hazard. Stalled or runaway wagons and carriages at grade crossings were another somewhat regular cause of disaster. Camden and Amboy engineer Isaac Dripps came up with a solution. He attached a wedge-shaped guard to the front of the locomotives, held in place by two stout beams. It was a good idea, but a bad design. If the wedge didn't break a cow's legs, it certainly knocked them out from under it, causing the animal to fall on the beams. This earned it the name "cowcatcher." It was quickly replaced by a large wedge, designed to push the cow off the tracks.

Smokestacks / Spark Arrestors



Summary of spark arrestors documented by
the Baldwin Locomotive Works in 1860

The early locomotives produced an enormous amount of embers and sparks. They damaged passengers' clothes, destroyed freight and caused many roadside fires. The damage was extensive and expensive. Both locomotive manufacturers and railroads devoted considerable resources to the problem. Smokestacks were fitted with internal spark arrestors. Over 1,000 were eventually patented. The smoke stacks were so distinctive that they could often be used to identify a locomotive's manufacturer.

Bells, whistles and headlights were introduced in the 1830s. Promotional lithographs published by locomotive manufacturers began showing bells and whistles in the 1840s. Headlights begin appearing on those published in the 1850s, but, at best, that can be taken as a general indicator of timing. During the antebellum period manufacturers had standard locomotive designs, but every engine was custom made and there were always small differences between them. Bells, whistles and headlights might not have been shown because they were an option.

Every railroad had its own engineering shop, and its engineers and mechanics were constantly striving to improve their locomotives. Certainly a great many of them added bells, whistles and headlights to their existing locomotives, just as they added cabs for the engineer and fireman. By the mid-1850s, they had become standard equipment.

Bells

The Boston and Worcester Railroad was involved in a crossing accident in 1834. It added bells to its locomotives to provide an effective, but inoffensive, warning of an approaching train. The following year Massachusetts enacted a law requiring bells on all locomotives. Other railroads were also encountering crossing problems and began to add bells to their engines. By 1850, they were widely used.

Whistles

The steam whistle was a much louder and forceful alarm. Its shrill, piercing sound could be heard one mile away. It was invented in England, but at least one had found its way to the United States by 1835. Thomas Rogers' first locomotive, the *Sandusky,* which was completed in 1837, is credited with being the first U.S. engine to have one.

Headlights

The early railroads almost always only ran during daylight hours. The necessity for running at night led the Auburn and Syracuse Railroads to make a lamp. It was a sheet metal box with a cast parabolic reflector. In 1838, Nathan Rogers and William Wakeley, also of Auburn, began to manufacture them. Two years later, the Boston and Worcester Railroad was reported to have a developed "a very bright headlight" for the night operation of freight trans. In 1855, headlights had become standard equipment.

Locomotive Cabs

1837 *Alert* showing wedge-shaped cowcatcher and cab

Many of the first railroads were in northern states that had long cold winters, and the engineers and firemen needed protection from the elements. All railroads had their own engineering shops, and certainly some added wooden sheds to their locomotives.

Baldwin built the *Alert* in 1837. It was the first locomotive known to have a cab. Most of the lithographs of the 1840s produced by manufacturers do not show cabs. This may have been because they may have been an option.

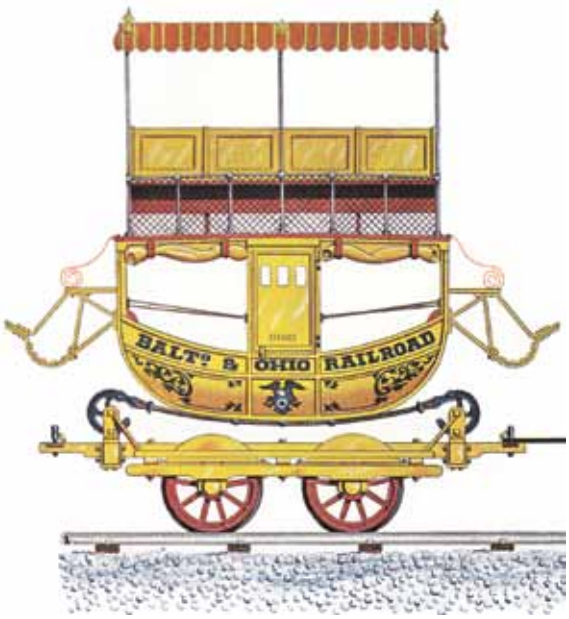
Locomotive Color

There is virtually no information available on the color of early locomotives. The few surviving examples are of no help because the original paint was removed when they were later repainted. There were no color lithographs, but a few locomotives are shown in paintings.

It is known that they were quite colorful and were usually painted in the primary colors. Red and green were the most popular. The railroad specified the color it wanted, but those records have not survived. The railroad's name was almost always written on the side, often in gold leaf, outlined in black. During the 1850s, decorative borders were added, and the locomotives became increasingly ornate.

This continued until the 1880s when locomotives began burning coal. These locomotives produced so much soot that it was impossible to keep them clean. This resulted in locomotives being painted black.

Passenger Cars
Coach Design



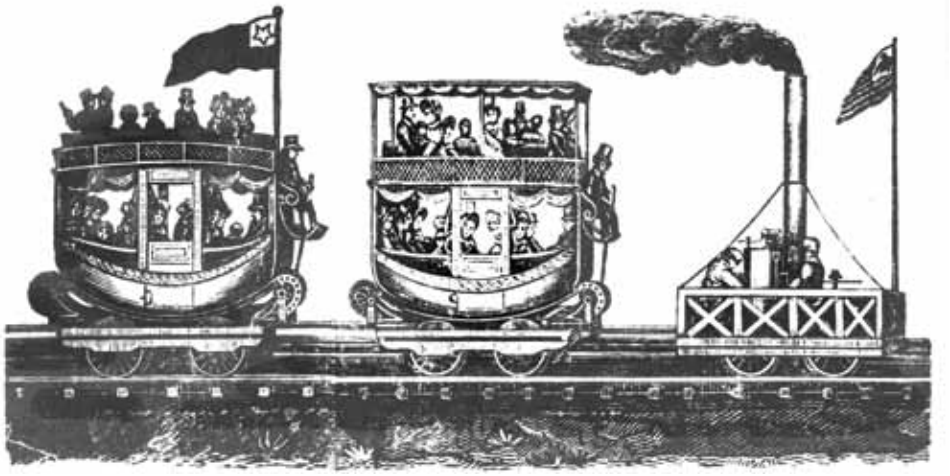
1832 Single coach design

The purpose of a locomotive is to pull rolling stock. Freight cars were relatively easy to make as they were little more than platforms mounted on wheels.

Passengers require more. The railroad pioneers turned to the only resource at hand – the stage coach builders. They had the knowledge, patterns, equipment and skills to provide passenger cars. Such coaches were not the ideal solution. A horse-drawn coach had to be lightweight, so they were made relatively narrow, as the design required minimal materials. To provide passengers with room, they bulged at the sides. A locomotive had far more power and traveled over a much smoother road, so weight not a major consideration. The coaches could be wider and larger.

The coach design was used simply because it was available. The railroad contracted out the building of the coach, but built the frame and wheels. They mounted the coach on the frame. These cars were used at least until 1840.

Richard Imlay began carriage building in Baltimore around 1828. The Baltimore and Ohio Railroad asked him to build its first passenger cars. A contemporary newspaper account praising one of the cars spoke of its "beauty, comfortable arrangement and excellence of construction." It mentioned roof top seats and a canvas awning, but gave few details. The roof top seats were no doubt added to increase passenger capacity.



More Imlay cars.
Note the vertical boiler on the engine.

Imlay was soon building passenger cars for other railroads. He built six for the Newcastle and Frenchtown Railroad, completing one them, the *Red Rover,* in February 1832. A broadsheet published the following year shows two of these cars. The pictures provide a revealing detail. Unlike a traditional stagecoach which contained two benches facing one another, the illustration shows six rows of seats.

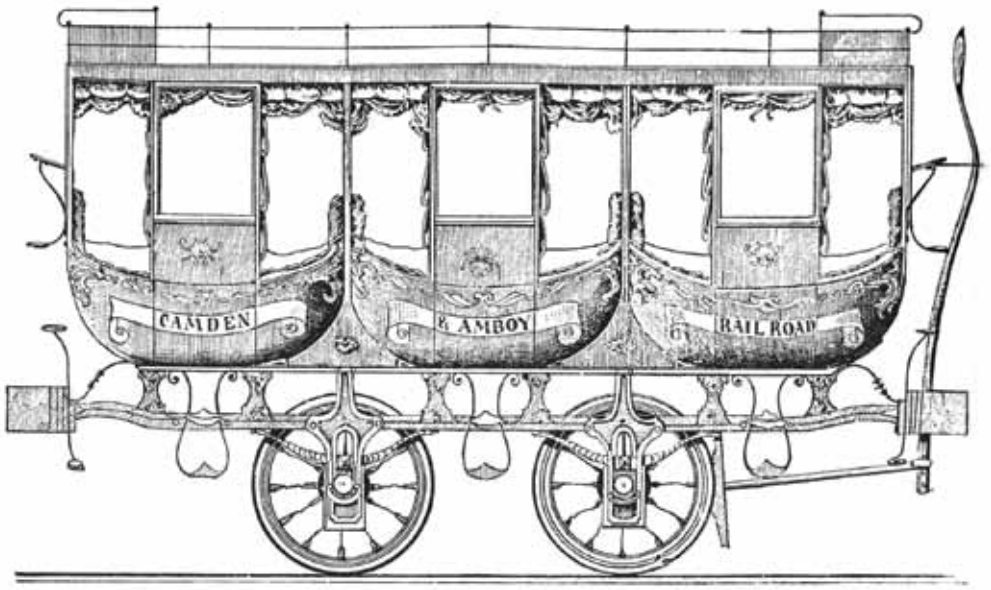
Although these looked like stagecoaches, they were much larger. Several accounts state that they carried 36 passengers but do not state if that included the roof seats.

In 1832, Imlay constructed 20 similar cars for the Philadelphia, Germantown and Norristown Railroad. *The Baltimore Daily Press* gave the name and color scheme of three of them: the *President* was blue and gold, the *Robert Morris* was green and gold, and the *Philadelphia* sage and gold.

This is significant in that it suggests that liveries (standard color schemes) had not yet come into use. Certainly the railroad buyer could specify the color. The fact that these cars were named indicates that each was considered an individual, valuable asset – one to be honored and cherished. Certainly a multi-colored train would be the source of jokes, so liveries were probably adopted at a very early date.

The shortcomings of the single coach design were obvious and less than 100 such cars were built by all manufacturers. The last one was made in 1835. One is on display at the B&O Museum in Baltimore.

Tandem Design



Green tandem car

The tandem design was introduced at about the same time as the coach design but was far more efficient. It mounted three stagecoach type cabins on a single frame carried by four wheels. The earliest American tandem cars were built by M.P. and M.E. Green of Hoboken, New Jersey. A Philadelphia newspaper of the day reported that the cars seated 36 passengers and had wooden-spoked wheels, which the paper described as being safer than imported iron wheels.

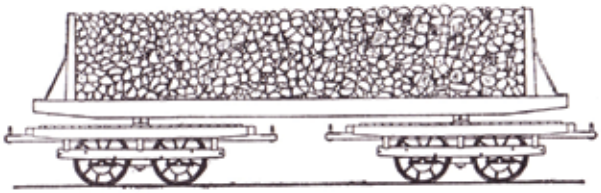
The Green shop built other cars of this style for the New Orleans and Carrolton Railroad. The February 27, 1836 issue of the *American Railroad Journal* said that more cars by the same maker were bound for the Petersburg and Roanoke Railroad, another name used by the Petersburg Railroad.

Eight-Wheel Passenger Cars

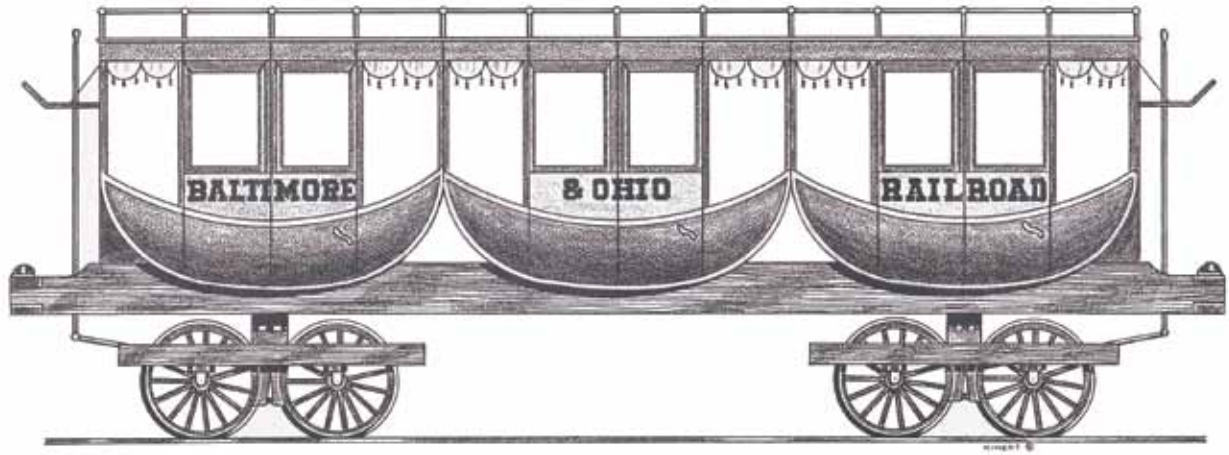
The first railroad cars – both passenger and freight – had four wheels. These wheels had to be placed close together to permit the train to make tight turns. If the wheels were too far apart, the car might jump the tracks. This severely limited the length of cars.

This problem was solved by the new eight-wheel design. There were two sets of four wheels, each mounted in a truck. The railroad car was mounted on the trucks by a pivot. This permitted the front and the rear of the car to turn independently of each other.

In 1829, the Granite Railroad in Quincy, Massachusetts used eight-wheeled cars to move lon blocks of granite. Mechanics on the Baltimore & Ohio Railroad inadvertently stumbled on the eight-wheel arrangement by loading long timbers on two four-wheeled cars. The plan worked so well that double-truck cars were built to haul cord wood and other products. Several saw service in 1830.

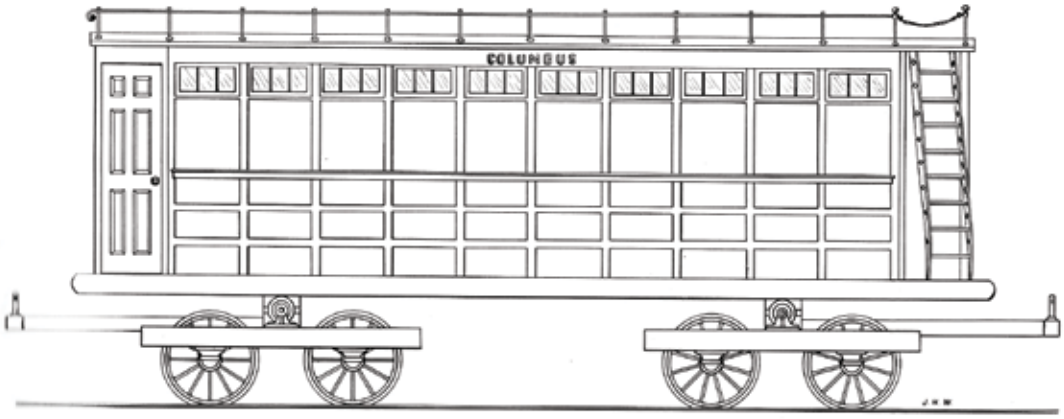


B&O cord wood car

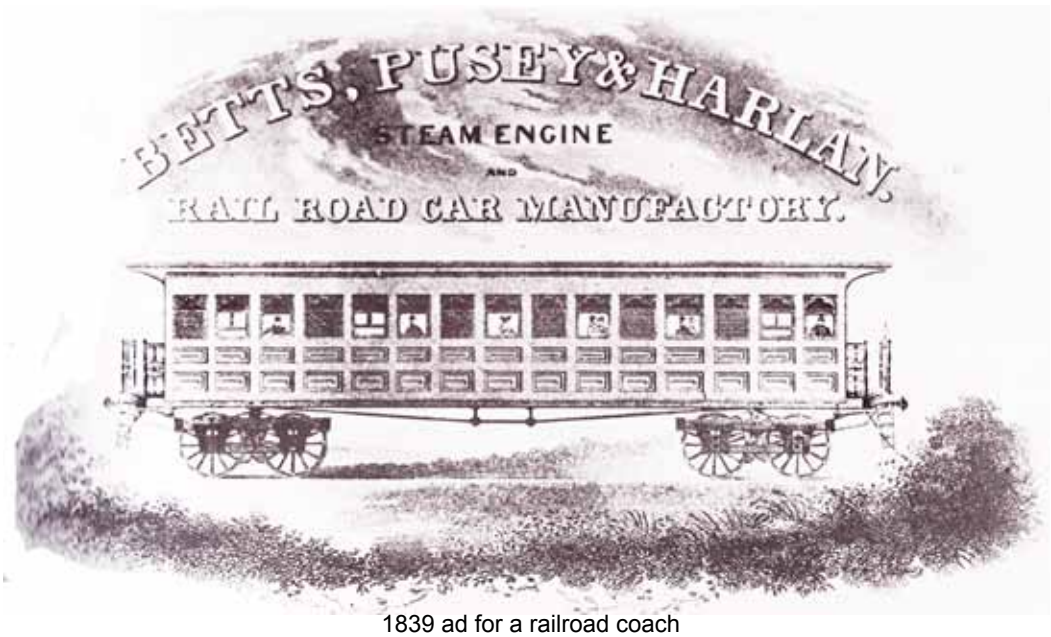


1832 *Winchester*

The design worked so well that it was soon being used for passenger cars, such as the *Winchester* built for the B&O Railroad in 1832. While adapting the existing tandem design to the new double-truck configuration, the B&O began working on new design. The *Columbus* was a radical departure from the stagecoach design. It had square sides. It measured 7 by 24 feet. It had a door at one end and a staircase leading to the roof on the other.



1831 *Columbus*



1839 ad for a railroad coach

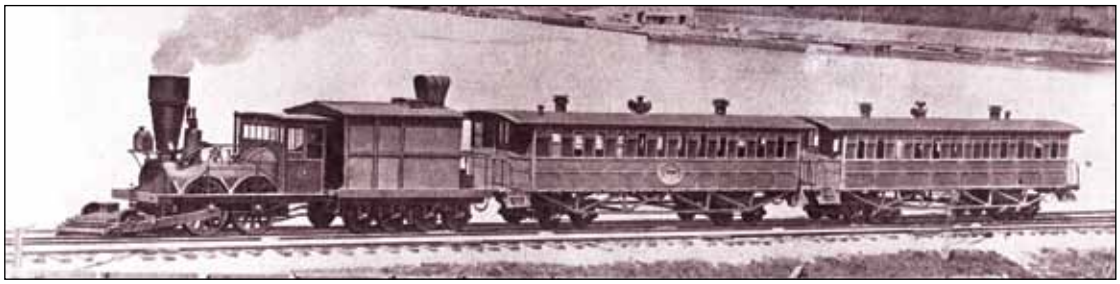
The design evolved over the next few years, and the "American Passenger Car" began to appear in the late 1830s. The big change was inside. The first passenger cars had compartments where passengers sat on opposing benches, as in a stagecoach. These new cars were open, and all of the benches faced forward. This was considered more democratic. English railroads still use compartments with opposing benches, so this new configuration was exclusively American.


1852 passenger car interior

The records of Petersburg's antebellum railroads often cite the number of passenger cars, but provide no details of their design. The very early Petersburg Railroad is an exception, because when it started in 1832, only the stagecoach design was available. It is documented that it purchased tandem cars from the Green Company, and both types are shown in its 1838 ad. As it added or replaced cars, it would have used the more modern design.

The date of purchase or use provides a guideline as to what the other railroads used. The City Point Richmond and Fredericksburg railroads both began operations in 1838, so they most likely used eight-wheel designs. By the early 1840s, the American Passenger Car was well established, and that is what would have been used. This basic design remained in use for the rest of the century.

Baggage Cars



1836 Camden and Amboy train, photographed when retired in 1866

Often, early railroad passengers did not travel light. A woman going to visit her sister for a few months might need a couple of large trunks to carry her clothes. A farmers and planter would periodically take the train to a nearby city so that he could do his shopping. He might return with a crate of tools and boxes of supples. The passenger train aisles become so crowed that railroads quickly added baggage cars.

1842 eight-wheel baggage car

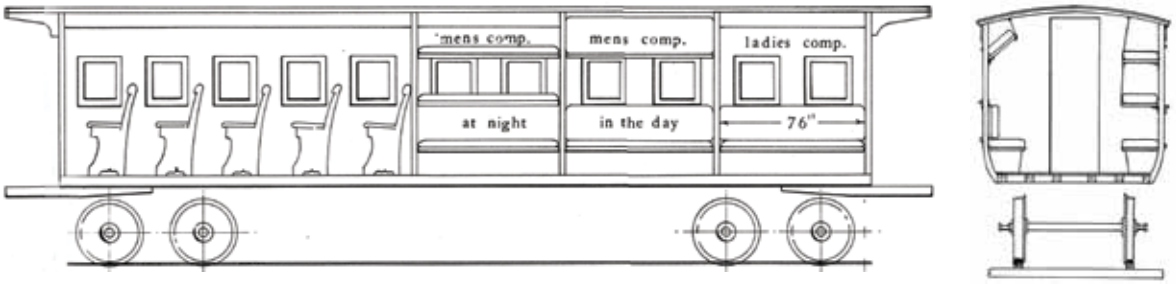
All of the Petersburg railroads required slaves and free blacks to ride in the baggage car. To compensate for this, it charged only half-fare. Many poor whites took advantage of this offer.

Four-wheeled cars were used prior to 1838, and eight-wheel cars were standard by 1845. During the interim years, either could have been used.

Sleeping Cars

Early railroads ran short distances and always traveled during daylight hours, so coaches were called “day cars.” Some cars left in the afternoon, spent the night at another station and returned the next morning. Sleeping cars were probably added as overnight accommodation for round-trip passengers.

In *Petersburg Story*, authors Scott and Wyatt cite the claim that the Petersburg Railroad was the first in the country to introduce sleeping cars, but they note that the Baltimore & Ohio is usually credited with that distinction. The Petersburg Railroad was not far behind it, if indeed it was behind. In spite of this controversy, they conclude “There is no doubt that it was the first in the United States to carry sleeping cars.” They were wrong.



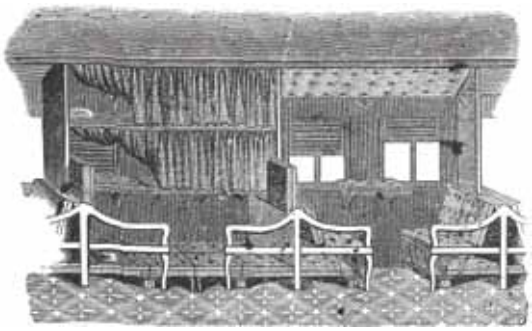
1838 Cumberland Valley Railroad Chambersburg sleeping car

The Cumberland Valley Railroad in Pennsylvania is credited with operating the first sleeping car. It was called the *Chambersburg.* Popular accounts claim that it entered service as early as 1836 or 1837, but other evidence suggests 1838.

The interior was divided into four compartment with a center aisle extending the length of the car. The first provided standard coach seating. Two compartments for men had benches that converted into two bunks, and a third bunk unfolded from the side. The ladies’ compartment had two upholstered benches. At night, hinged flaps were raised to make a double-width berth. There were no upper berths.

The Philadelphia, Wilmington & Baltimore Railroad introduced sleeping cars in 1838, as did the Richmond, Fredericksburg & Potomac. The Philadelphia & Columbia began offering them in 1839 and the New York & Erie in 1842.

The Petersburg Railroad, then called the Petersburg and Roanoke, began sleeping car services in 1846, as did the B&O.



1859 Woodruff sleeping car

Mail Cars

Early railroads carried bags of mail between cities. In 1860, the Post Office established mail cars so that mail could be sorted while in transit. Surprisingly, the Petersburg Railroad had a dedicated mail car in 1839, which carried post office employees. Obviously, they were sorting mail. Dedicated mail cars were not built until 1861, so the Petersburg Railroad must have converted a boxcar for such use.

1861 mail car interior

Caboose

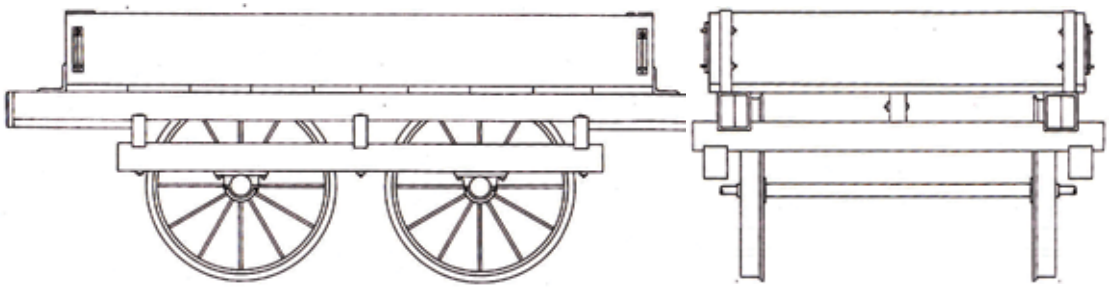
The caboose was a car attached to the end of freight trains. It provided overnight accommodations for the crew, was used to store supplies, and most importantly it had a brightly-lit rear end to prevent other trains from running into it.

There was no use for such cars in the 1850s as few railroads were more than a hundred miles long, and crews rarely stayed overnight. In spite of this, a few early models did come into use during the decade. The caboose was not widely used until the 1890s when long-distance trips became commonplace. The Petersburg antebellum railroads did not have cabooses.

Freight Cars

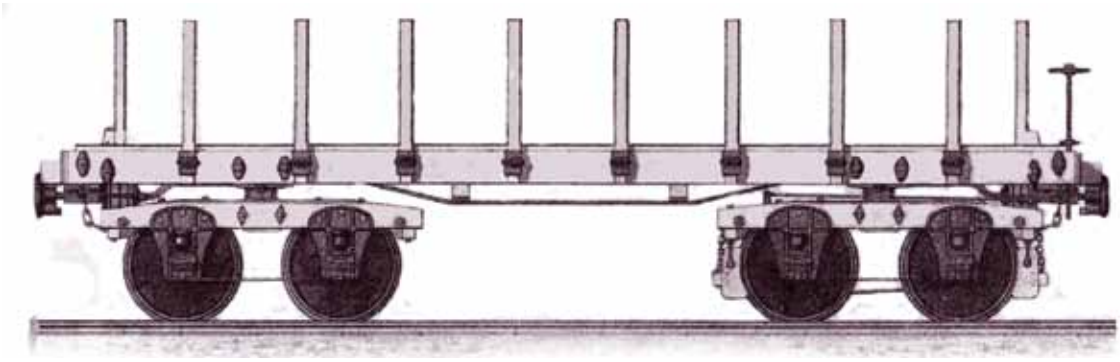
Locomotives are the lifeblood of railroads and represent large capital investments. New designs were continually introduced, and they were big news, constantly covered by the press. Railroad historians have focused on them because they were the most glamorous aspect of railroads. By comparison, very little is known about early freight cars, even though freight was the major source of income for many railroads. Annual reports listed the number of cars on hand, but provide no information on their design or who built them.

There is one notable exception. Moncure Robinson, the engineer who built the Petersburg Railroad, sketched its freight car. The original drawing was hastily sketched and is badly crumpled, but provided the necessary information for the modern mechanical drawing shown below.



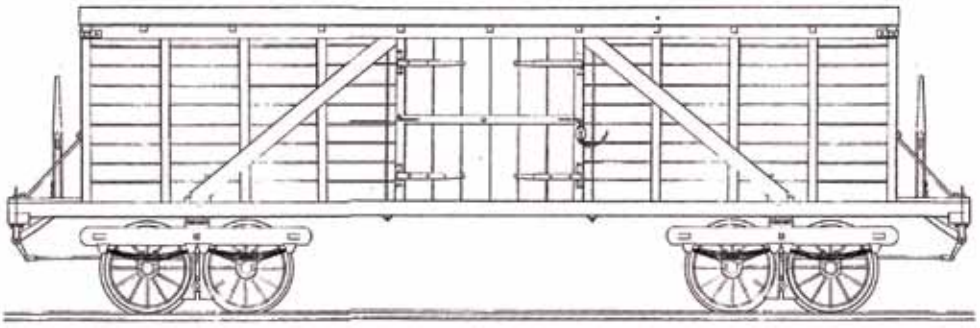
1832 Petersburg freight car

Such raised-side cars are now called gondolas, but were then sometimes called flour cars. An interesting feature is that spacers raise the floor well above the wheels. The elegant proportions of the wooden part, together with the well-shaped iron-work, suggest it was designed by an experienced carriage or coach maker.



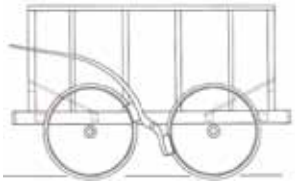
1860 Harlan & Hollingtood platform car

A flat car or platform car does not have raised sides. In both cases, eight-wheeled versions became popular in the early 1840s. The Petersburg Railroad then had over 200 freight cars and all would have been four-wheelers. A freight car has a lifespan of 20 to 30 years, so no cost-conscious railroad would have replaced its existing cars. Instead, it would have ordered the eight-wheelers when it needed new cars.

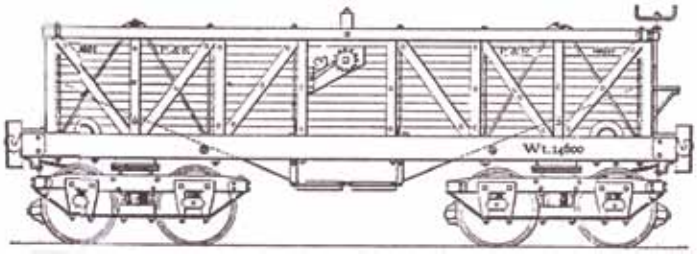


1834 box car

In the early 1830s, perishable goods were carried on gondolas, but covered with a tarpaulin. The first box car made its appearance in 1833. By the end of the decade, they had become common.



1830 hopper car

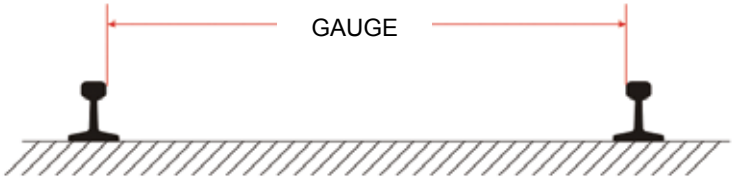


Eight-wheel hopper of the 1860s

Hopper cars were used for bulk cargo. They had very high sides designed to permit the load to be dumped from the bottom of the car. The Richmond and Petersburg Railroad hauled a great amount of coal. It used hopper cars to dump coal from one into another. To do this one car had to be above the other, which required a raised section of track for one and low section for the other.

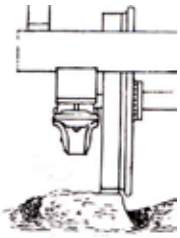
Tracks

Gauge



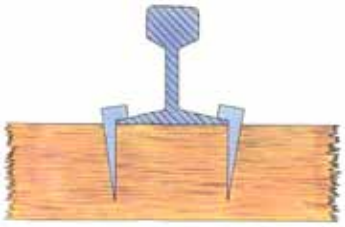
All of Petersburg's antebellum railroads used the same standard gauge track, which is 4 feet, 8 1/2 inches between the inside edges of the rails. It is also called the Stephenson gauge after English railroad engineer George Stephenson, who developed it, or Normal gauge. Some authorities maintain that it was established by the Romans over 1,200 years earlier. They base this on the fact that when the Romans occupied Britain they built granite roads. Over the years, wagons wore ruts in them. This established a gauge, because if wagon wheels were spaced differently, one wheel would invariably ride inside the rut and the other outside. Many centuries later, wagon and carriage makers continued the gauge for the same reason. It was so well accepted and proven that Stephenson adopted it for the first railroads. Almost all of the first American locomotives came from England and thus American railroads had to use the same gauge. Thus, the gauge of American railroads was established by the Romans.

Rail Design



The familiar T-rail had not yet come into use. The Petersburg Railroad, like its contemporaries, used wood track with a metal strap attached to the top. The yellow pine rails were five inches by nine inches. The iron straps measured 1/2 an inch by 2 inches. The white oak cross ties were 12 inches in diameter.

This is shown in the illustration at left. It is a detail from a drawing of an 1831 B&O Railroad gondola. However, the iron strap is mounted on granite block, which the B&O quickly discarded because of cost, the difficulty in working with it, and that it was easily broken. Wood was far more flexible and far less expensive.



Above: Early Brunel "U" rail
Right: Typical "T" rail

The early horse-drawn wagonways used wooden rails, but from the 1760s on, strap iron rails were used. These consisted of thin strips of cast iron fixed onto wooden rails. They were too fragile to carry heavy loads, but cost little. This reduced the cost of initial construction, which made it favored by new railroads, such as the Petersburg. It was soon learned that these rails separated from the wooden base and speared into the floor of the carriages, causing what was referred to as "snake head." The brittle nature of cast iron caused the rails to break under heavy loads. In May 1831, the first flanged T-rail (also called T-section) arrived in America from Britain and was used by the Camden and Amboy Railroad. It was far more expensive than strap, and railroads were slow to adopt it.

Virginia's Support

Virginia was the largest and most populated of the original states. Almost all of its citizens lived on plantations, and there were no major cities. They were spread out over vast distances. This resulted in internal communications being a major concern.

Toward helping to alleviate this problem, in 1816 the Commonwealth of Virginia established the Board of Public Works and set up an Internal Improvement Fund. The board began efforts to improve river navigation, construct a large number of roads and build a few canals. This was all done by private companies, who received support from the state. A law was passed that required the Commonwealth to purchase 40 percent of the stock of any such company once it had sold the first 60 percent of its stock. When railroads began to appear, the law was applied to them. The state reserved the right to choose some of the members of the board of directors It did not claim any additional privileges.

In order to make stock subscription payment simultaneously with those of the private stockholders, the state from time to time obtained loans. As of January 1, 1839, these loans totaled over $5 million. Forty-one companies had then received money, and they were required to submit an annual report that was presented to the state General Assembly.

The Petersburg Railroad

James G. Scott and Edward A. Wyatt IV in *Petersburg Story* wrote that in September 1829, a national news magazine reported that Petersburg citizens "have seriously taken into consideration the project of a railroad from that town to the Roanoke River." Apparently these forward-thinking businessmen closely followed early railroad development and concluded that one would provide an efficient and profitable way to move goods back and forth between the city and North Carolina. They were so confident in the success of such a venture that they obtained a charter from the Commonwealth of Virginia on February 10, 1830, three months before the B&O opened its first section of track from Baltimore west to Ellicott's Mills on May 24, 1830, and 18 months before the *DeWitt Clinton* first ran.

The Petersburg Railroad was born. Construction began immediately. The engineer who designed and built the railroad was Moncure Robinson, one of America's railroad pioneers. In October 1832, the first stretch of track extending almost due south from Petersburg was opened. It was the third operational common carrier in the United States, and the first in the south.

The following October, the entire 60-mile stretch to Weldon, North Carolina was opened, and the Petersburg Railroad became the nation's first interstate railroad.

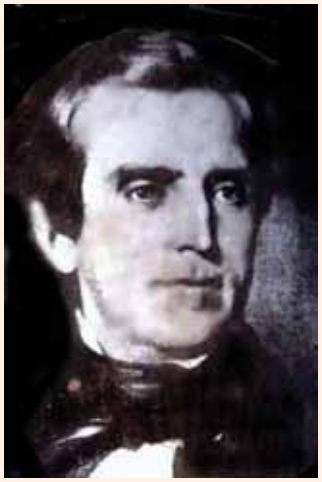
Although chartered as the Petersburg Railroad by 1835, it was operating under the names Petersburg and Weldon Railroad (its North Carolina destination) and Petersburg and Roanoke Railroad (referring to the Roanoke River at Weldon). During the Civil War, it was often called the Weldon Railroad.

Capital & Costs

The Petersburg Railroad was initially capitalized at $440,000, but this was soon increased to $605,000. Private investors put up $401,400, the Commonwealth of Virginia purchased $160,000 in stock, and the City of Petersburg bought another $44,100. It was not enough. The railroad obtained a $150,000 loan from the state in the form of five-percent stocks

As of February 1, 1939, the laying and maintaining of track building, replacing depots and making improvements had cost $624,814. Another $110,888 was spent for locomotives, passenger and freight cars, horse and mules. The exact total was $735,695, which works out to $12,262 per mile over 60 miles. This does not include the inn at Blakely, which cost $12,840 and another $17,732 spent for steamboats.

Moncure Robinson



Moncure Robinson (1802-1891) was one of the great railroad pioneers. He was born in Richmond and studied physics and engineering at William and Mary College, and drafting in New York. He then began working with the James River Company, which was building a canal to connect the coast to the west. Although only 20 years old, he surveyed the route from Richmond to the Ohio River and was then placed in charge of the widening of the James River Canal.

In 1825, he embarked on a two-year trip to Europe, studying railroad, bridge, canal and harbor engineering in England, Holland, Italy and at the Sorbonne in Paris, France. Upon his return, the State of Pennsylvania commissioned him to survey the anthracite coal fields around Pottsville in conjunction what became the Danville-Pottsville Railroad. In 1831, he designed and built the Chesterfield Railroad, the first in Virginia.

The Petersburg Railroad had certainly obtained the talents of an incredible man. After he set up the Petersburg Railroad, he moved on to the next project. He became one of America's most prominent railroad pioneers. After building another Virginia railroad, he returned to Pennsylvania, and constructed what is considered his crowning achievement – the Philadelphia and Reading Railroad. Its large stone bridge and the Black Rock Tunnel ran almost 2,000 feet. His reputation grew, such that in 1840 that Czar Nicholas I of Russia sent commissioners to Virginia to offer him the position of chief engineer of the massive railroad engineering project he was planning for his empire - an offer that Robinson declined.

From 1840 to 1847, he served as President of the Richmond, Fredericksburg and Potomac Railroad in Virginia, and in 1847, he constructed the Palmetto Railway line, which connected Augusta, Georgia with Washington, D.C. It would prove to be his last railroad project as he retired from civil railroad engineering after its completion.

Road and Rail

The Petersburg Railroad had a very well defined and direct route. It was to run south from Petersburg to a point one-and-a-half miles below the falls of the Roanoke River in North Carolina, a total distance of 59 miles. Among the requirements was that it must be at least 300 feet from any dwelling, and ornamental trees could not be cut without paying damages.

Moncure Robinson surveyed the road. By the fall of 1830 his surveying team was locating the road from the Rowanty River to the Nottoway River. Whenever possible it ran in a straight line, but to minimize the grade, it had to circle hills. There was a curve near Petersburg that had a 716 foot radius and a grade of 1 to 106 (1 foot rise in 106 feet of rail), but the rest of the railroad was characterized by very wide curves and minimal grades. The curves varied in radius from one to four-and-a-half miles. The maximum grade did not exceed 30 feet to the mile. The grade rises and falls over the 60 mile run. Between Petersburg and Weldon, the total of all upgrades was 437.5 feet, and the total of all downgrades was 388 feet. The Roanoke River terminal was 49.5 feet higher than Petersburg.

The entire line consisted of a single track. There were many very short passing sidings with an aggregate length of two miles, including the track sidings at the depots. Steam locomotives consume a lot of wood and water. A water station and freight shed were constructed every ten miles along the entire line.

Scott and Wyatt reported that the much of the grading was done by slaves and that sawmills were erected along the way, no doubt to provide the wood rails and ties. Some were surely kept in use to provide fuel for the locomotives.

Permission had been received to erect toll-gates on the line and weighing scales at its various depots. The Petersburg Railroad was allowed to begin operations when ten miles of track had been laid. It was to charge 12 1/2 cents per ton per mile for freight. When the entire road was completed, the rate was to be $8 per ton for the entire distance.

It apparently took time to obtain the right-of-way and survey the route because it does not appear that actual construction began until 1832. The ten mile requirement was quickly met as the Petersburg Railroad opened its first 30 miles of track to the public in the fall of that year. The Petersburg Railroad became the third operational common carrier in North America and the first in the south.

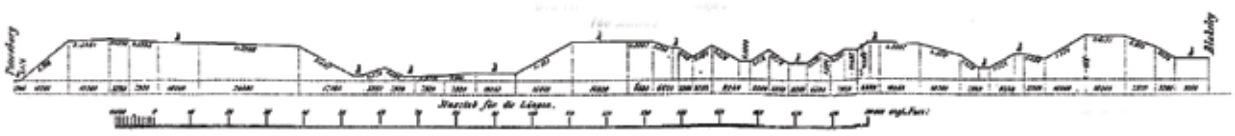
By the end of the year, the line extended halfway to the North Carolina border.

The line was completed in 1833. Scott and Wyatt reported that in September 1933, "a journey which formerly required two days is now performed between breakfast and dinner, and may be retraced by tea-time." The 60 miles were covered in four hours with ample time allowed for stops at stations, for getting cows off the tracks and occasionally even helping a farmer along the route extinguish a fire. The public was assured that the trains could make 30 miles per hour, had it been thought prudent to proceed at so great a velocity. Perhaps the ultimate compliment was the statement that the trips were "made with as much regularity as could have been expected from horse power." Another source states that the trip was made in two-and-a-half hours, but that may have been a year or two later, when the railroad had gained experience and efficiency.

Scott and Wyatt neglected to mention that the many trackside fires were caused by sparks and cinders from the locomotives.

The track was the standard strap design used on all the early Virginia Railroads. The Petersburg Railroad initially used 2 inch by 1/2 inch strap rail, but it was not strong enough. It was replaced with 2 inch by 3/4 inch strap rail, but they were found to be too weak and were eventually replaced with 2 1/2 by 3/4 inch straps. The track wood lasted an average of five years.

Map showing the year each section of Virginia track was laid

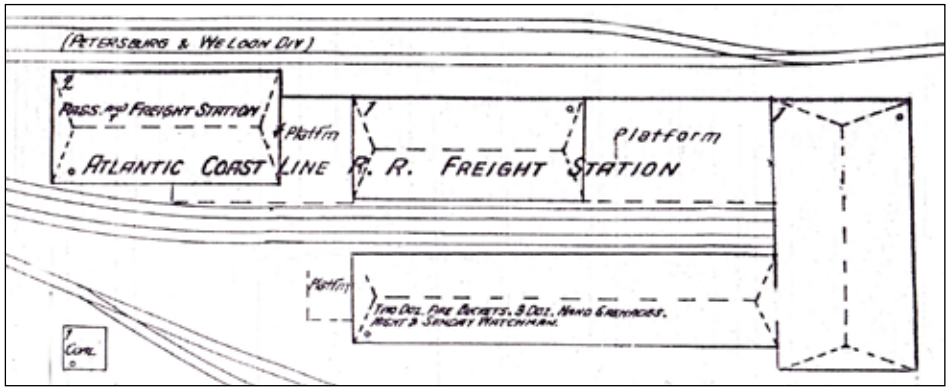


Petersburg Railroad track elevations

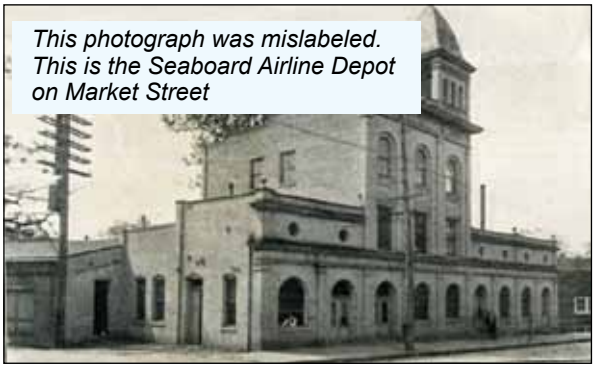
Depots and Terminals

On May 1, 1822 the president and directors of the Petersburg Railroad purchased two lots on the south side of Washington Street in Petersburg from William Clark, Jr. One was bounded on the west by Walnut Street (now Sycamore Street) and the other was bounded on the east by Union Street. They were separated by the lot of Mary Ann Gray. They purchased it from her on June 1, 1832. This was to become the site of their depot. Obviously, they were expecting a great deal of business to have purchased a block-wide lot.

In 1836, a fire destroyed the Petersburg depot and its outbuildings. In 1839, there were passenger loading facilities, freight sheds, repair shops and a large shed that housed 14 locomotives.



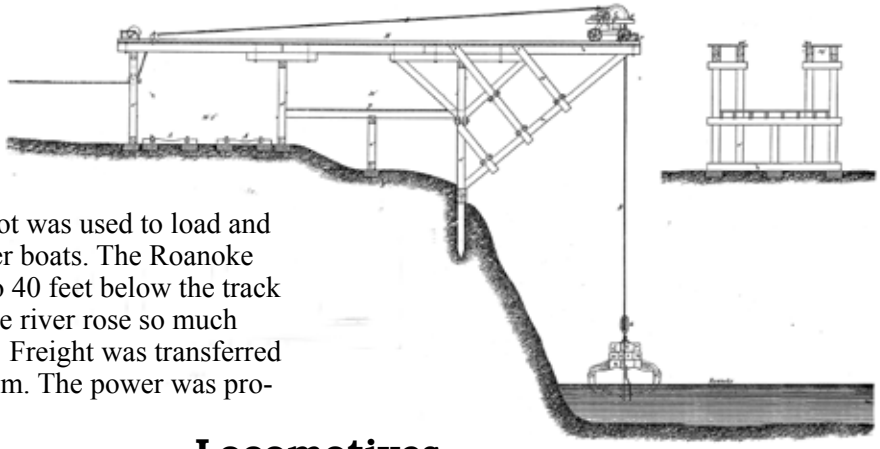
Detail from the 1891 Insurance Map of Petersburg


This photograph was mislabeled. This is the Seaboard Airline Depot on Market Street

Atlantic Coast Line terminal in 1909

The earliest known image of the Petersburg facility appears on the 1885 Sanborn Insurance Map of Petersburg. The 1891 map is identical, but shows more detail. These maps do not show any locomotive sheds, repair shops or large complex of sidings for rolling stock. They must have been in a location not covered by the maps.

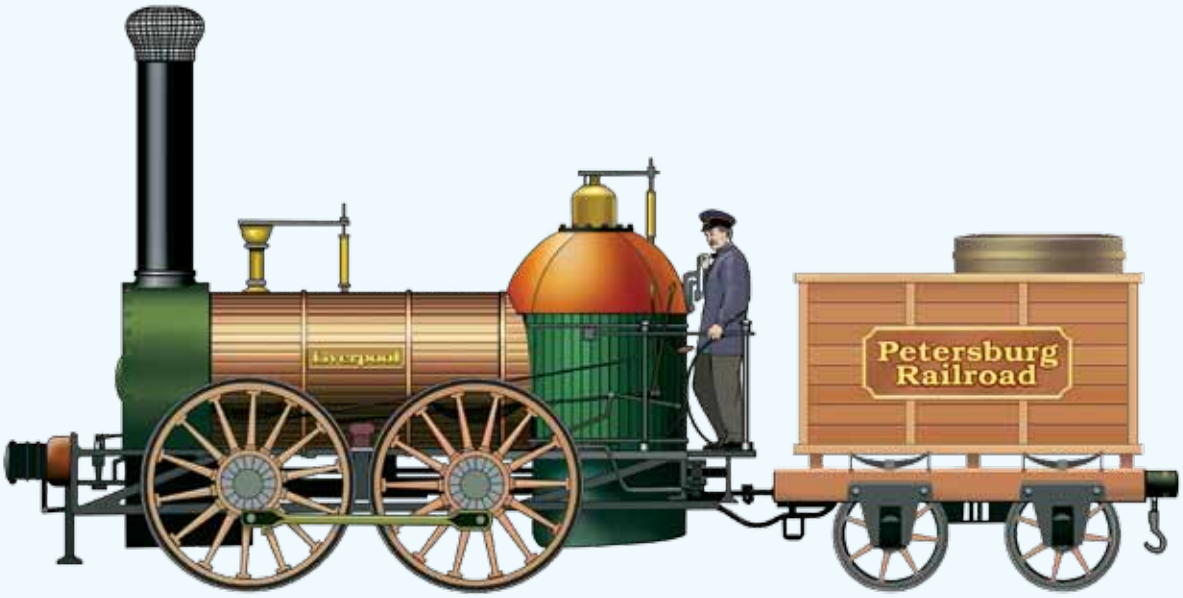
In March 1898, the Petersburg Railroad was merged into the Richmond and Petersburg Railroad, which was renamed the Atlantic Coast Line Railroad of Virginia. A 1909 photograph shows its Petersburg terminal. It is not known when it was constructed.



The Blakely depot was used to load and off-load freight from river boats. The Roanoke River was normally 30 to 40 feet below the track level, but occasionally the river rose so much that it covered the tracks. Freight was transferred through a hoist mechanism. The power was provided by horses.

Locomotives

When Moncure Robinson began working with the Petersburg Railroad, there were no locomotives in the United States other than the experimental *Tom Thumb*. His first task was finding one suitable for the required use. There were no established locomotive manufacturers in the United States. All were in England. Robinson sailed there to meet with them. No details of the trip survive, but he was almost surely accompanied by representative of the Petersburg Railroad who had the authority to commit it to substantial purchases. The details of the transaction are unknown, but in May 1831, the Edward Bury Company of Liverpool shipped its locomotive *Liverpool* to the Petersburg Railroad of America.



Liverpool

The *Liverpool* was the first really important locomotive used in North America. It was the first one sold by the newly-established Edward Bury Company of Liverpool, England. The previous year it had built as the *Dreadnought.* It was tested on the Liverpool and Manchester Railway, but was rejected because it had six wheels and each had a huge six-foot diameter. This resulted in a wheelbase too long to navigate the tight turns that characterized English railroads.

Although the Liverpool was the first locomotive ordered by the Petersburg Railroad, it may not have been the first in service. Bury records show that it was to have shipped in March 1831, but one railroad historian wrote that it had been run by the Bolton & Leyton Railroad, wrecked, then returned to Bury who rebuilt it, but the cited dates are after the shipping date. Another record shows it being the Petersburg Railroad's third operational locomotive.

Moncure Robinson may have first called on railroad engineer Robert Stephenson. He was probably swamped with locomotive orders, and it seems likely that he referred Robinson to Bury because he employed former Stephenson engineer James Kennedy.

The *Dreadnought* had been completely rebuilt and renamed the *Liverpool*. Robinson could not have helped having reservations about a rejected and recycled prototype locomotive, made by a brand-new start-up company, so he almost surely tested it extensively. He was obviously pleased with the results because the Petersburg Railroad purchased it.

It turned out to be a very smart decision. The number of wheels had been reduced to four, and they had a smaller 54-inch diameter. The little engine weighed only seven tons with tender filled with wood and water. This permitted it to run on inexpensive lightweight tracks. Boilers lose a lot of heat due to radiation so the *Liverpool* boiler was wrapped in "logging," wood strips that provided insulation to retain heat.

Liverpool combined near-horizontal inside cylinders with a multi-tubular boiler mounted on a simple wrought-iron bar frame inside the wheels rather than wooden outside frames and inside iron sub-frames. This reduced the width of the engine permitting it to pass through narrower openings. Most important was Bury's new steam dome. It rested directly above the firebox and provided space for steam to lose much of its moisture prior to entering the boilers. This resulted in hotter heat and more efficient operations.

Later, Bury locomotives used the same basic features. The "Bury Design" was extensively copied by other firms, both in Europe and in the U.S.

Petersburg Railroad Antebellum Locomotives

Acquired	Name	Type	Manufacturer	Drivers	Tons
1831	Liverpool	4-4-0	Bury	54”	?
1832	Pioneer	2-2-0	Rothwell	54”	?
1832	Roanoke	0-4-0	Bury	54”	?
1833	Appomattox	0-4-0	Bury	54”	?
1833	Meherin	0-4-0	Bury	54”	?
1833	Nottoway	0-4-0	Rothwell	54”	?
1833	Staunton	2-2-0	Bury	60”	?
1833	Virginia	0-4-2	Hicks	?	?
1833	New York	0-4-0	Mather Dixon	?	?
1833	Philadelphia	0-4-0	Mather Dixon	?	?
1833	Petersburg	2-2-0	Mather Dixon	?	?
1837	Yadkin	4-2-0	D. I. Butts	54”	12
Before 1841	Meteor	4-2-0	Unknown	60”	18
Before 1841	Savannah	4-2-0	Unknown	?	18
Before 1861	Cockade	4-2-0	Unknown	?	?
1847	Carro Gordo	4-4-0	Baldwin	?	?
1847	Scott	4-4-0	Baldwin	?	?
1855	Comet	4-4-0	Norris	54”	?
Before 1861	Petersburg	4-4-0	Uriah Wells	?	?
Before 1861	Donald McKensie	4-4-0	Uriah Wells	?	?
Before 1861	Northampton	4-4-0	Unknown	54”	?
Before 1861	Charleston	4-4-0	Unknown	?	?
Before 1861	Buena Vista	4-4-0	Unknown	?	?
1860	The Union	4-4-0	Uriah Wells	54”	?

The Petersburg Railroad’s second locomotive was the *Pioneer*, built in 1832 by the Rothwell, Hick and Rothwell Company in Bolton, England. Its first engine was a 2-2-0 for the Bolton and Leigh Railway. The company’s next three engines were shipped to America. The *Pioneer* was probably one of them.

Planet

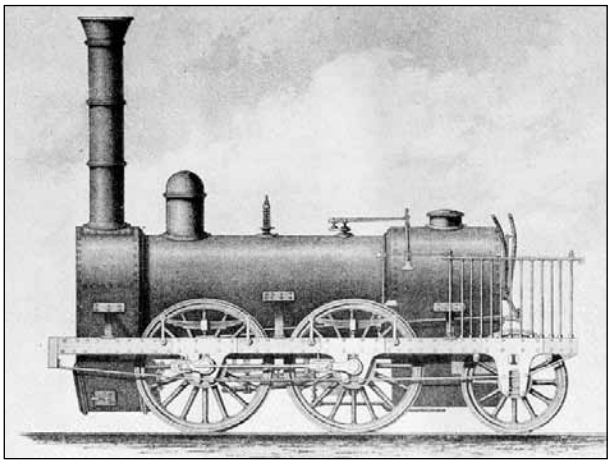
The *Pioneer* had two drive wheels and two smaller lead wheels. Robert Stephenson and Company introduced the design in 1830 with the *Planet,* which it built for the Liverpool and Manchester Railway. The 2-2-0 type became known as “planets.”

The *Planet* was the first locomotive known to employ inside cylinders. The *Liverpool* was the second.

The Petersburg Railroad must have been happy with the *Liverpool* because it purchased four more locomotives from Bury and another of the same design from Rothwell. All were probably identical to the prototype except for minor improvements.

In 1833, the Petersburg Railroad purchased the *Stanton* from Bury. It was another 2-2-0. It differed from the *Planet* design in that it incorporated many of Bury's improvements. Bury also built one for the London and Birmingham Railway. It was identified as being a passenger engine.

London and Birmingham 2-2-0



Stephenson 0-4-2

Benjamin Hicks had worked with the Rothwell Company and trained his two sons as engineers. In 1833, they set up their own firm, Benjamin Hick and Sons at the Soho Foundry, Bolton. The Petersburg Railroad was one of its first customers. It purchased the *Virginia* from them in 1833.

The new design had just been introduced by Robert Stephenson and Company. It had four drive wheels and two trailing wheels. The *Virginia* may have been the first locomotive in America to have trailing wheels. This engine was easily recognizable by its prominent outside frame.

Three locomotives were made by the Mather Dixon and Company of Liverpool under subcontract from the Bury Company. No record has been found of D.I. Butt or any locomotive manufacturer with an even remotely similar name. He may have been an engineer who worked for a company.

An 1839 inventory states the Petersburg Railroad had fifteen locomotives. Ten were built in England and five in America. The list on the previous page contains 11 English locomotives, including the one made by but D.I. Butt and three of unknown origin. All were of the Jervis designs made in or after 1837. The lack of information suggests that they were not made by one of three big U.S. companies — Baldwin, Norris and Rogers — but rather by a small independent one.

The first locomotive builder in Virginia was the Smith & Perkins Locomotive Works. T.W. and R.C. Smith opened a machine shop in Alexandria, Virginia and manufactured three locomotives in 1837. Nothing is known about them, but the 2-2-0 Jervis design was the only one then being made, so surely that is what they built. The year and the number of locomotives corresponds with the Petersburg Railroad inventory, so they may have been made by Smith and Perkins. The company did not make any more locomotives until after 1851.

What is really amazing is that the Petersburg Railroad had at least one of every type of locomotive then being made.

Rolling Stock

In 1839, the Petersburg Railroad had three eight-wheeled passenger cars, each with 50 seats, and six four-wheeled passenger cars that had 24 seats and six baggage cars.

It also had 200 four-wheeled freight cars. Each weighed 4,500 pounds and could carry a 6,000 pound load. An additional 100 cars were then being built. The railroad had been importing wheels with wrought-iron tires from England, but was then replacing them with chill-cast wheels.

Operations

Recalling the earliest years of the Petersburg Railroad, Robert Alston Martin of Petersburg wrote that "the engines were very small and the passenger cars were of like character. The engineer, when doing duty, had to stand up all the time and was exposed to sun and rain. There was around him a little iron railing, as to steady himself he had to hold on to the top. The bed of the railroad was of heavy wooden rails, mortised in and laid on the sills; on these rails bars of flat iron with holes driven in at proper intervals were nailed. There was no shed or house to protect passengers, while getting in or off the cars. The engines of that date compared with the enormous freight engines of the present date (1899) might almost be called miniature engines."

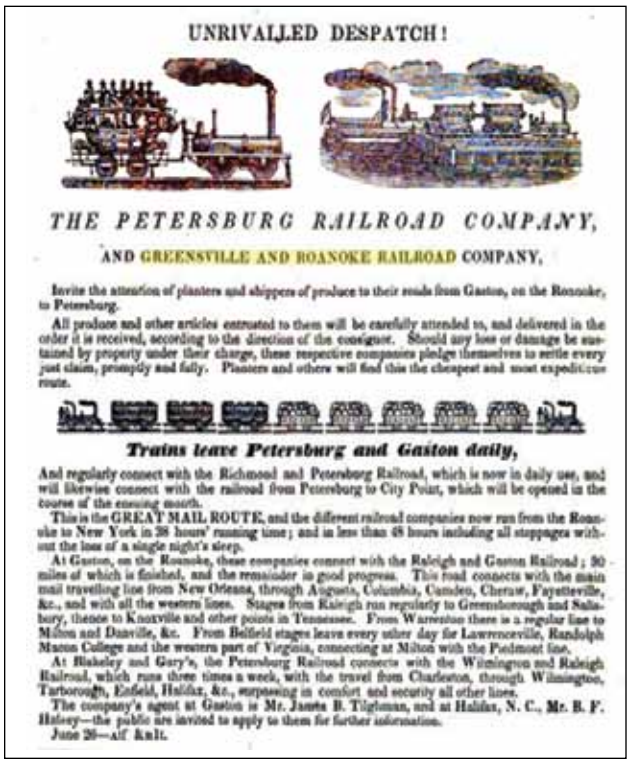
The Petersburg Railroad's success had a profound impact on its home city. Merchants on Old and Bank Street relocated their businesses to be close to the terminal. Old Towne became the industrial area. Its many federal period buildings had previously housed businesses on the first floor and the owner and his family had lived upstairs. When the merchants moved uptown, almost all converted their former homes into tenements.

In 1856, the Petersburg Railroad had an income of $263,874, and operating expenses of $167,576. Passenger train mileage was 99,924 and freight train mileage was 75,120. The railroad carried 459,370 passengers. Passenger trains then averaged 21 miles per hour.

The railroad's stock was then valued at $883,200. It paid three-percent dividends, and the rest of the profits were used to reduce debt. This put it a good position when the Great Panic of 1857 hit the following year.

The Petersburg Railroad placed an ad in the 1838 issue of *Farmer's Register.* It contained three pictures, which confirm information found elsewhere. The locomotive is certainly a 4-4-0 Bury design. The upper left picture shows a stagecoach type passenger car and the other two show the tandem passenger cars made by Green.

The picture at the bottom shows a fictional configuration. An esteemed European engineer carefully examined the Petersburg Railroad in 1839 and wrote a highly detailed report describing its operations. He wrote, "Passenger trains normally contained one eight-wheel passenger coach, one four-wheel baggage car and a mail car, in which postal employees reside. They covered the 60 mile run in four-and-a-quarter hours, traveling at a rate of 15 miles per hour. Freight trains move at the rate of eight miles an hour. In the summer, 15 cars, each bearing a load of three tons, are often coupled to one locomotive ... Very little freight moves from Petersburg to the Roanoke River, and the freight trains going that way are empty for the most part."



UNRIVALLED DESPATCH!

THE PETERSBURG RAILROAD COMPANY,

AND GREENSVILLE AND ROANOKE RAILROAD COMPANY,

Invite the attention of planters and shippers of produce to their roads from Gaston, on the Roanoke, to Petersburg.

All produce and other articles entrusted to them will be carefully attended to, and delivered in the order it is received, according to the direction of the consignor. Should any loss or damage be sustained by property under their charge, these respective companies pledge themselves to settle every just claim, promptly and fully. Planters and others will find this the cheapest and most expeditious route.

Trains leave Petersburg and Gaston daily,

And regularly connect with the Richmond and Petersburg Railroad, which is now in daily use, and will likewise connect with the railroad from Petersburg to City Point, which will be opened in the course of the ensuing month.

This is the GREAT MAIL ROUTE, and the different railroad companies now run from the Roanoke to New York in 38 hours' running time; and in less than 68 hours including all stoppages without the loss of a single night's sleep.

At Gaston, on the Roanoke, these companies connect with the Raleigh and Gaston Railroad; 80 miles of which is finished, and the remainder in good progress. This road connects with the main mail travelling line from New Orleans, through Augusta, Columbia, Camden, Cheraw, Fayetteville, &c., and with all the western lines. Stages from Raleigh run regularly to Greensborough and Salisbury, thence to Knoxville and other points in Tennessee. From Warrenton there is a regular line to Milton and Danville, &c. From Bellfield stages leave every other day for Lawrenceville, Randolph Macon College and the western part of Virginia, connecting at Milton with the Piedmont line.

At Blakeley and Gary's, the Petersburg Railroad connects with the Wilmington and Raleigh Railroad, which runs three times a week, with the travel from Charleston, through Wilmington, Tarborough, Enfield, Halifax, &c., surpassing in comfort and security all other lines.

The company's agent at Gaston is Mr. James B. Tilghman, and at Halifax, N. C., Mr. B. F. Halsey—the public are invited to apply to them for further information.

June 26—aif &nlt.

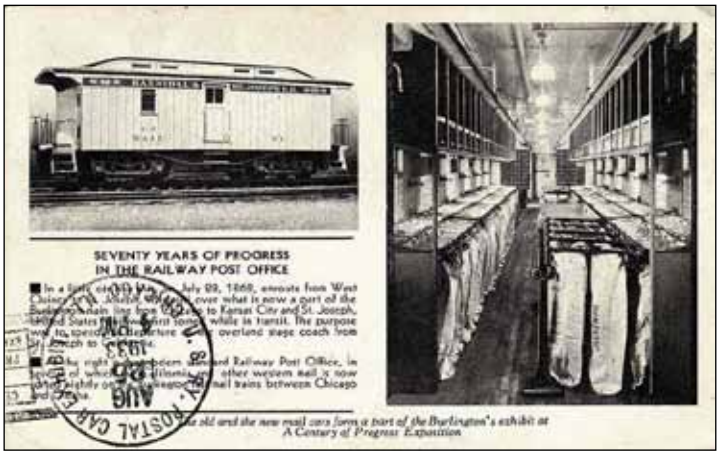
The primary cargo was cotton, tobacco and grain. The charge was 25 cents per 100 pounds, or $5.00 per ton for the entire 60 mile trip. That worked out to 8 1/3 cents per ton per mile. In 1840, the rate was increased by 40 percent.

Passengers were then paying a fare of $3.75 from Petersburg to Blakely, which represented a recent increase from $3.00. As was customary with all the Petersburg antebellum railroads, Negroes paid half-fare when they rode in the baggage car, but the Petersburg Railroad also allowed them to ride in the coaches. The European engineer wrote, "In this regard the slaves in the South have it better than their colored brothers in the North for the latter are not permitted to ride on the railroad in the same coaches with whites." The engineer was apparently not aware of Petersburg's very large free black population.

Innovations

The engineer's reference to the dedicated mail car is surprising. The world's first official carrying of mail was by the United Kingdom's General Post Office in November 1830, using adapted railway carriages on the Liverpool and Manchester Railway. Sorting of mail en-route first occurred in the United Kingdom with the introduction of the Travelling Post Office in 1838 on the Grand Junction Railway. In the United States, some references suggest that the first shipment of mail carried on a train (sorted at the endpoints and merely carried in a bag on the train with other baggage) occurred in 1831 on the South Carolina Rail Road. Other sources state that the first official contract to regularly carry mail on a train was made with the Baltimore & Ohio Railroad in either 1834 or 1835.

Wyatt and Scott wrote that the Petersburg Railroad was the second in the United States to receive a government mail contract.



The Railway Post Office was introduced in the United States on July 28, 1862, using converted baggage cars on the Hannibal and St. Joseph Railroad (which also delivered the first letter to the Pony Express). Purpose-built Railway Post Office (RPO) cars entered service on this line a few weeks after the service was initiated. Their purpose was to separate mail for connection with a westbound stagecoach departing soon after the train's arrival at St. Joseph.

The engineer referred to the post office employees aboard the car. Their only function could have been to sort mail en-route. Although not a purpose-built car, the Petersburg Railroad inaugurated such a service over 20 years before it was officially introduced.

The Portsmouth and Roanoke Railroad

Norfolk and Portsmouth were fiercely competitive with Petersburg, which had access to the navigable portion of the James River at City Point via about eight miles of the Appomattox River below its fall line. Its merchants were not sit by and watch the Petersburg Railroad capture the lion's share of the North Carolina trade. They acted promptly. In 1832 while the Petersburg Railroad was laying its tracks toward the North Carolina border, they chartered the Portsmouth and Weldon Railroad. It was to begin in Portsmouth, just across the Elizabeth River from Norfolk, then extend to the rapids of the Roanoke River at its fall line near Weldon, North Carolina.

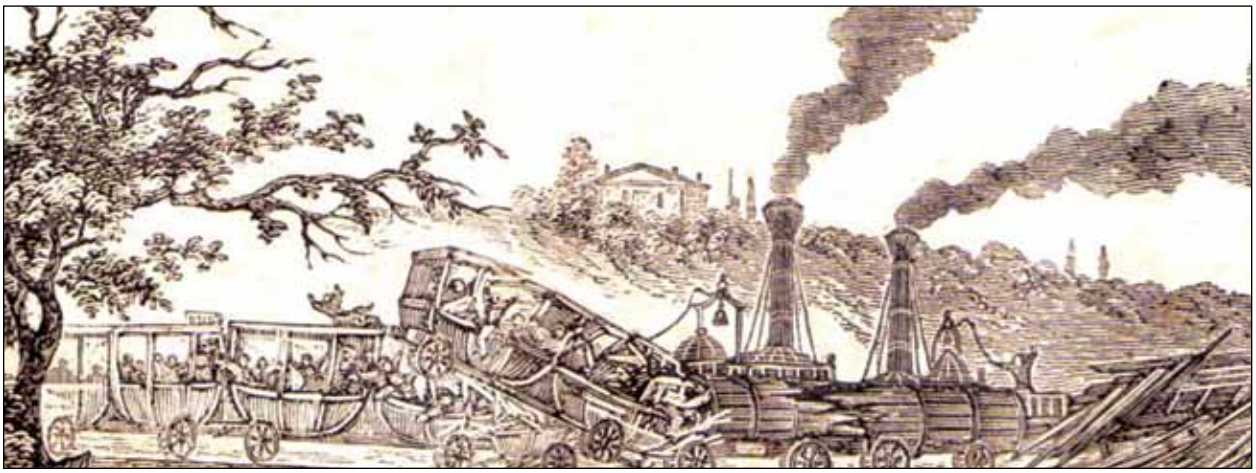
The railroad's goal was to provide a link for shipments of goods originating on the Roanoke River and its canal system from points west, to reach port facilities in the Norfolk area on the harbor of Hampton Roads. Lumber was the largest commodity originating along the line, and the facilities of the Camp Company's lumber and paper mill operations in Franklin, Virginia were located there due to the new railroad.

With Arthur Emmerson as the first president of the railroad, the town of Norfolk subscribed to $100,000 in stock, and the town of Portsmouth subscribed to $50,000 in stock. Benjamin B. Reynolds was the original contractor, and by August 1833, the tracks had progressed from the depot at High and Chestnut streets in Portsmouth, four miles to the southwest toward Bowers Hill.

Other than their being competitors, the relationship between the two railroads is unclear. One historian states that the Petersburg Railroad ran to Blakely's depot in North Carolina, which was soon renamed Garysburg. Three years later, its charter was amended to permit the building of a branch road from the intersection with the Portsmouth & Roanoke Railroad to Weldon, NC. The tracks were extended to Weldon in June 1837. Another historian wrote that the tracks of the Petersburg Railroad were crossed via an overhead bridge by the Portsmouth and Weldon.

It is known that in 1837 the new bridge of the Portsmouth & Roanoke Railroad was completed over the Roanoke River, and trains began running over the remaining two miles of track into Weldon on the south bank of the Roanoke River. Four years later, the Wilmington & Raleigh Railroad (later renamed to the Wilmington & Weldon Railroad), connected with the Portsmouth & Roanoke Railroad at Weldon.

The Petersburg Railroad was often called the Petersburg and Weldon Railroad. This seems to have begun around the time the bridge was completed.



On August 11, 1837 the first head-on railroad collision to result in passenger fatalities in the United States occurred near Suffolk, when an eastbound Portsmouth and Roanoke lumber train coming down a grade at speed rounded a sharp curve and struck the morning passenger train from Portsmouth, Virginia. The first three of 13 stagecoach-style cars were smashed, killing three daughters of the prominent Ely family and injuring dozens of the 200 people on board. They were returning from a steamboat cruise when the accident happened.

In its zeal to beat the Petersburg Railroad, the Portsmouth and Roanoke may have overextended, because in 1838 its track and facilities were in a deplorable condition. The company soon had a new president, William Joyner, and a new chief engineer. Tracks were rebuilt and four lighter locomotives were acquired over a two-year period from the Norris Locomotive Works in Philadelphia. One was named the *Portsmouth*, a 4-2-0 type, and one was named the *Roanoke*. It was a 4-4-0 type.

The Portsmouth & Roanoke continued to have financial difficulties. On October 7, 1843, the company was sold at foreclosure to James S. French and James Magitt, who almost immediately assigned their bid to Francis E. Rives. Actually, Rives was considered an agent for the competing Petersburg Railroad and immediately took steps to close down the Portsmouth & Roanoke Railroad.

On the night of January 6, 1844, Rives brought 40 slaves to a point below Margaretville and began tearing up track. When this news reached the citizens of Portsmouth, a train was dispatched to repair the destruction and to stop further vandalism. Rives was arrested and fined $25 in the Superior Court of Law and Equity in Northampton County, NC. The damage was soon repaired, and trains again operated temporarily until the legal battle could be settled in higher courts. Finally in the spring of 1845, the North Carolina Supreme Court not only awarded Rives legal title to the 17 miles of the road in that state, but permitted him to dispose of this property as he saw fit.

Soon, however, the railroad was back in operations. But this was not to last. It was again sold at public auction on September 5, 1846 to the State Board of Public Works for about $60,000, and immediately leased to the town of Portsmouth to be operated as the Seaboard & Roanoke Railroad, which was incorporated on September 4, 1846.

Greensville & Roanoke Railroad

The Greenville and Roanoke Railroad was chartered in 1835 and completed in 1840. It ran from Emporia, Virginia to Gaston, North Carolina. It was operated by the Petersburg Railroad until it merged with the Petersburg Railroad in 1855. An article dated December 1, 1836 in the *American Railroad Journal* explains how it came into being.

> "As the Greenville and Roanoke Railroad is about to go into operation, a concise account of its origin, location, construction and probable revenues may not be uninteresting to least a portion of your readers.
>
> "To secure the trade and bring to its own market the produce of the great and fertile valley of the Roanoke has always been considered a matter of the greatest importance to the town of Petersburg. For this purpose (among the first in the country though still a new work) was the Petersburg and Roanoke Railway constructed — an improvement which has far surpassed the expectations of its warmest advocates. Blakely on the Roanoke, and nearly four miles below the falls, was selected as the point of termination of this road. This work, however, had scarcely gone into operation, when the Portsmouth and Roanoke Railroad was projected, to connect the towns of Portsmouth and Weldon (the latter place on the Roanoke, four miles above Blakely) the object of which was to divert this same trade to Portsmouth and Norfolk. The Petersburg interest, thus in danger of being cut off from the trade of the upper Roanoke saw at once the necessity of a branch from their own road, to some point on that river still up than Weldon; and for this purpose was a joint charter was obtained from the legislatures of Virginia and North Carolina for a railroad from some point in the vicinity of Hicksford, in Greenville County, to Wilkin's Ferry, now Gaston, fifteen miles above Weldon."

The remainder of this lengthy articles describes the right-of-way in detail and provides great deal of additional information.

A yearly rental of $11,000 was paid to the Greensville & Roanoke Railroad for trackage rights. This contract continued until the Petersburg Railroad purchased the Greensville & Roanoke Railroad outright in 1855.

Raleigh & Gaston Railroad

North Carolina's Raleigh and Gaston Railroad was chartered in 1835. George W. Mordecai was its president. Construction began the following November on the first 40 miles of standard gauge track. The first major task was to construct a 1,040 foot long bridge across the Roanoke River at Gaston, North Carolina in Northampton County on the north bank. The following year a connection was made at that point with the Greensville & Roanoke Railroad, which was operated by the Petersburg Railroad of Virginia. The town of Gaston was named in honor of a noted North Carolina jurist, Judge William Gaston, and as time went on it was renamed to South Gaston.

The Raleigh & Gaston Railroad was to extend to Raleigh, about 85 miles away. Rather than try to build a road and to operate it at the same time, the company decided to lease the line to the Petersburg Railroad, which was to provide all of the rolling stock and the locomotives. Thus, the first two engines of the Raleigh & Gaston Railroad, the *Raleigh* and the *Gaston*, were delivered to Petersburg instead.

The lease of the road to the Petersburg Railroad was terminated on December 1, 1839, and on that date the Raleigh & Gaston Railroad began to operate its own railroad with equipment and motive power on loan from the former lessee. Soon, four new six-wheeled 4-4-0 type engines were delivered from Messrs. D.J. Burr & Company of Richmond.

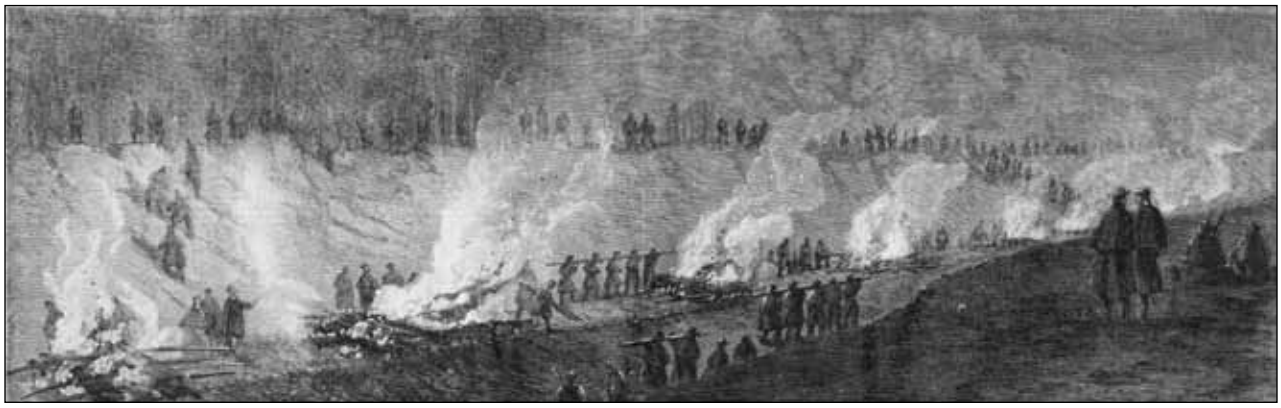
Petersburg Railroad 1840-1860

With the completion of the Raleigh & Gaston Railroad and the Wilmington & Raleigh Railroad (later renamed to Wilmington & Weldon Railroad), the Petersburg Railroad was in the perfect position to capitalize on all of the North Carolina freight, and its financial position was very solid. However, with a tremendous increase in traffic, its operating costs soared. The fragile track was not adequate for such constant loads and had to be replaced frequently. In the spring of 1842, the Petersburg Railroad began laying T-rail, but was soon abandoned it in favor of 3/4 inch flat iron. This may have been rolled wrought-iron that was being produced in America, and which was stronger and more flexible than the earlier cast iron. It also cost far less than the T-rail.

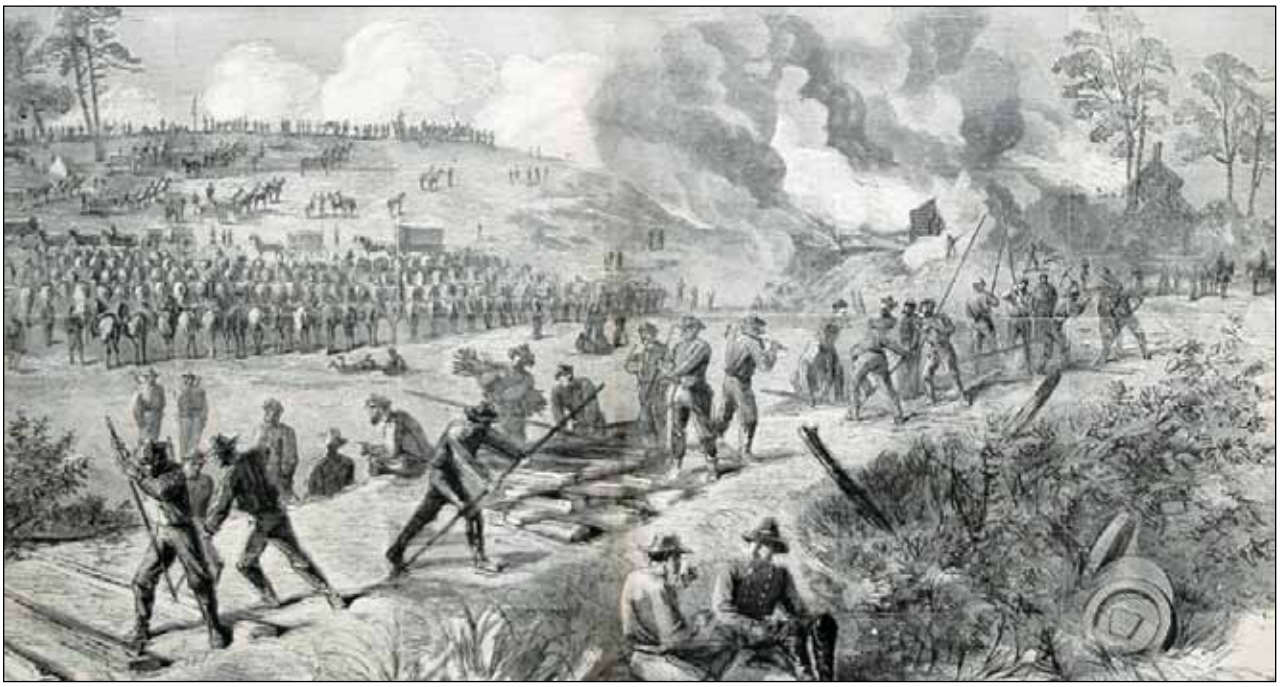
In 1850, the entire line was relaid with new U-rails of 50 pounds to the yard. Some of these were replaced between 1855 and 1859 with 50-pound T-rail, including the Gaston branch, which was formerly the Greensville & Roanoke Railroad. When the Civil War broke out in 1861, the Petersburg Railroad was one of the very few Southern railroads in good shape, both financially and physically.

Civil War

The entire purpose of the 10-month siege of Petersburg, Virginia was to capture its railroads, thus denying Richmond, the capital of the Confederacy, with the food, ammunition and other supplies coming in from the south. The Petersburg Railroad was its prime objective.



Burning of the Petersburg and Weldon Railroad



Tearing up the track

Rail Pretzels

Fate

Although the Petersburg Railroad was badly damaged, once the Civil War was over it was promptly rebuilt. In March 1898, it merged with the Richmond and Petersburg Railroad, which was renamed as the Atlantic Coast Line Railroad of Virginia. In 1967, it merged with the Seaboard Air Line Railroad, its long-time rival, to form the Seaboard Coast Line Railroad. Today, much of the original Atlantic Coast Line exists as part of CSX Transportation.

City Point Railroad
1836-1838

The Petersburg Railroad did such an outstanding job of bringing in goods from North Carolina that the bottleneck became transporting them down the Appomattox River from Petersburg to the deep-water port at City Point, now part of the city of Hopewell.

The Appomattox River had been constantly dredged and improved during the 1820s and 1830s, but to no avail. It was described as almost impassable at times. It was narrow, crooked and so shallow in some places that small vessels were delayed by adverse winds. Critics of the system maintained that it took longer to transport good from Petersburg to City Point than it did to transport them from City Point to New York City.

A railroad seemed to provide the answer. The City Point Railroad was chartered on January 26, 1836. Construction began in mid-1837. The first train was run on September 7, 1838. It was ten miles long, and like all Virginia railroads, it had standard gauge track.

Capital

The City Point Railroad was financed through the sale of $150,000 in stock. The funds were to be used to build the track, construct the depots, and purchase the locomotives and rolling stock. The Commonwealth of Virginia loaned the railroad another $50,000 to build wooden bridges and purchase additional freight cars.

Depots

John Bolling established a large tobacco warehouse near the falls of the Appomattox River in 1750. It was the first of four buildings to occupy the site. The most recent is Farmer's Market, which still stands today. The Petersburg terminal was either on or very near this property. In 1839, it contained a passenger waiting room, a freight warehouse and a shed for locomotives and cars.

City Point is where the Appomattox River flows into the James River. There is a deep and spacious bay easily accessed by ships. A number of large pilings were driven into the river bed to create a landing where the water is 20 feet deep. A large freight depot was constructed on the pilings that could accommodate two ships. Railroad tracks went into the depot and around the exterior of building to connect with each other. Cranes transferred freight directly from the ships to rail cars or the freight depot. The total cost of the landing and depot was $10,000.

Road and Rail

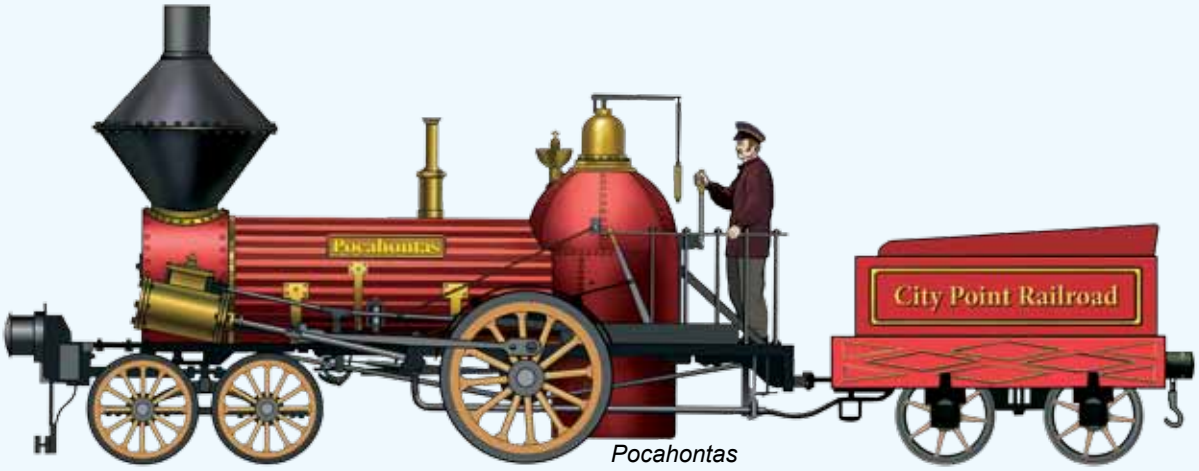
The line was only ten miles long. It ran mostly in cuttings and used wood bridges to cross creeks and ravines. The City Point Railroad used the same type of track as all other contemporary Virginia Railroads, two 1 by 1/2 inch steel straps mounted on wooden rails.

Locomotives and Rolling Stock

The City Point Railroad had two locomotives.

City Point Railroad Locomotives

Acquired	Name	Type	Manufacturer	Drivers	Tons
1838	Pocahontas	4-2-0	Norris	48"	8
1838	Powhatan	4-2-0	Norris	48"	8



Pocahontas

Pocahontas and *Powhatan* were both made by the Norris Locomotive Works based in Philadelphia, Pennsylvania. It was one of the big three locomotive companies, the others being Baldwin and Rogers. Norris produced around 1,000 railroad engines between 1832 and 1866. Both of the City Point Railroad engines were of the new 4-2-0 Jervis design, which for all practical purposes was the only design produced between 1837 and 1842. Each had 8 1/4-inch cylinders with a 16-inch stroke. The weight with a fully-loaded tender was 7.2 tons.

The City Point Railroad also had two four-wheeled passenger cars seating 24 each, and an eight-wheeled coach seating 60. It also had 50 freight cars.

Operations

Trips on the City Point Railroad were run to connect the City of Petersburg with the steamboats that plied the James River between Richmond and Norfolk

A typical train drew a single passenger car and 12 to 14 freight cars. It ran the full distance in 50 minutes. Passengers paid 75 cents for a one-way trip and $1.00 for a round trip, if the transfer was used the same day or the next day. On Sundays, it ran a passenger train. Most of the passengers were poor, so the rate was reduced to half-price.

The freight rate for one hogshead of tobacco (1,600 units) was 40 cents; for a bale of cotton (400 pounds), 16 cents; and for a barrel of flour, (214 pounds) 5 cents. The rate on dry goods was 2 1/2 cents per cubic foot. These rate were low in comparison with other Virginia railroads, considering that on such a short line the cost of loading and unloading added greatly to the railroad's costs.

The low freight rates may have been the result of competition from the Richmond and Petersburg Railroad, which began operations at about the same time.

Fate

In 1847, the City Point line was purchased by the City of Petersburg and was renamed the Appomattox Railroad. It was then sold to the South Side Railroad in 1854.

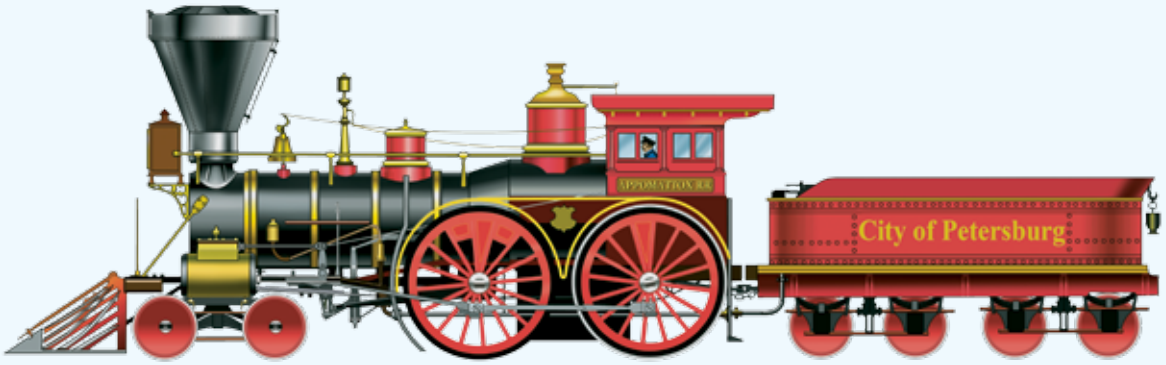
William Mahone built the Norfolk and Petersburg Railroad, which was completed in 1858. In the wake of the Civil War, he combined the N&P, the Southside Railroad and the Virginia and Tennessee Railroad into the Atlantic, Mississippi & Ohio Railroad (AM&O). The new line, composed of the three railroads, ran 408 miles from Norfolk to Bristol, Virginia in 1870. Through mergers and acquisitions, it is now the Norfolk and Southern, the second largest railroad in North America. Petersburg and the City Point Railroad were its birthplace.

The Bolling Question

In 1750, forward-thinking Petersburg citizens set out to establish a new town directly across the Appomattox River from the Bolling property. It was to have been named Wittington, but ended up being named Pocahontas. The Bollings took great pride in being descended from the Native American princess and were almost surely behind the name change. The names given to the two locomotives and the location of the Petersburg terminal suggest Bolling involvement. This needs to be researched.

Appomattox Railroad

1847-1854



1855 Baldwin 4-4-0, believed to be identical to the 1852 model

The new Baldwin engine purchased by the City of Petersburg was state-of-the-art. It used the new 4-4-0 American Design. It was 50 percent heavier than the earlier Norris locomotives and had larger wheels.

The new engine was the twin of the *General*, one of the most famous locomotives in American history as a result of the "Great Locomotive Chase" of the Civil War.

The City Point Railroad was purchased by the City of Petersburg on July 17, 1847 and renamed the Appomattox Railroad. It was purchased by the Norfolk and Petersburg Railroad in 1854. The only significant change during this period was the purchase of the new Baldwin locomotive. As it was purchased by the city, it was appropriately named *City of Petersburg*.

City Point Railroad Locomotives

Acquired	Name	Type	Manufacturer	Drivers	Tons
1838	Pocahontas	4-2-0	Norris	48"	8
1838	Powhatan	4-2-0	Norris	48"	8
1852	City of Petersburg	4-4-0	Baldwin	54"	12

Richmond and Petersburg Railroad

Richmond business watched the great success of the Petersburg Railroad and were aware of its problems in getting goods to City Point. They wanted to attract those goods to their own merchants and wharves. Petersburg was close and a railroad could be of obvious benefit.

The Richmond and Petersburg Railroad was chartered March 14, 1836, and the company was organized on May 5. In 1826, a privately operated toll road, known as the Manchester and Petersburg Turnpike, opened between Richmond and Petersburg. At some point it became known as the Richmond and Petersburg Turnpike. The newly formed railroad purchased the turnpike as it provided a right-of-way. Construction began almost immediately, but so did the problems. The 1837 recession resulted in only partial payments on stock pledges. The fledgling railroad almost went bankrupt, but the state of Virginia intervened and provided money for bond interest.

The line opened in April 1838. It then ran from Manchester on the south shore of the James River to Petersburg. The James River had yet to be crossed. The bridge was completed in September 1838

The R&P stations and their distance in miles from Richmond were Temple's, 5; Rice's, 8; Half Way Station, 11; Chester Station, 13; Port Walthall Junction, 16; and Petersburg, 22

Moncure Robinson

The Richmond and Petersburg Railway Bridge was designed and built by Moncure Robinson, Virginia's premier engineer. Later annual reports show that he owned considerable stock in the line.

Richmond and Petersburg Railroad in 1865
Dark blue - main line
Red - Clover leaf branch
Green - Walthall branch

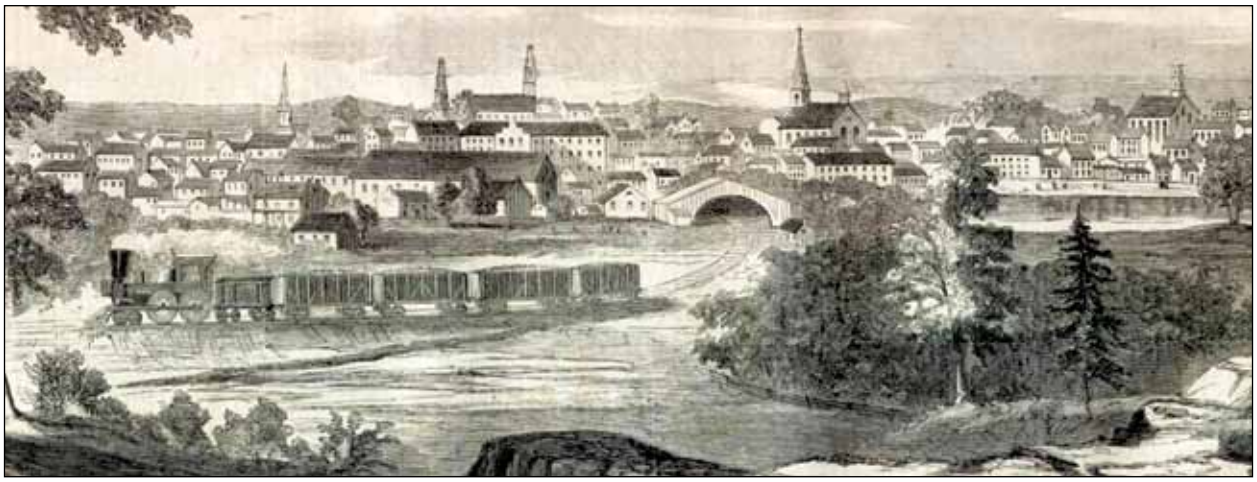
Depots

Depot in ruins, 1865

Depot location

The original temporary depot was located in Manchester on the south bank of the James River. The new James River Bridge was soon completed, and a permanent depot was built on the north side of the river. It was surrounded by sheds and shops for the locomotives and rolling stock. All of the buildings were made of stone. The only known images of the depot show it in ruins at the end of the Civil War.

A wood station was built on the north bank of the Appomattox River at Petersburg because it was intended to be temporary. The Richmond and Petersburg Railroad wanted to build a bridge across the river and then build a permanent depot on the south shore. This effort was blocked by Petersburg for over 20 years. During the Civil War, this greatly hindered the transfer of goods from one railroad to another and the bridge was finally built.



Harper's Weekly engraving of Petersburg

The *Harper's Weekly* engraving shows Petersburg from the north shore of the Appomattox River, which is hidden by the train shed and trees. A Richmond and Petersburg Railroad train is shown in the foreground. The single track leads into a large shed, which must have doubled as both passenger and freight depot. Surprisingly, no sidings are shown, and there is no apparent way to turn the engine around. The locomotive is pulling gondolas or hopper cars, which are freight cars intended for bulk goods. In 1839, the railroad had 180 "freight and gravel cars." The cargo appears to be gravel, which is still mined about 10 miles west of the city.

Road and Rail

The road from Richmond to Petersburg was 22 1/2 miles long. Most of it ran in a straight line. It had one curve with a radius of 1,910 feet. Nearly all other curves had 1 1/2 mile radii. The maximum grade was 31 2/3 feet per mile (1 in 167).

The original track was of the iron strap design. In 1843, it was replaced with a heavier 2 1/2 inch by 3/5 inch bar rail. Apparently, it failed to do the job as an August 20, 1853 report stated that the entire line was to be replaced with T-rail at an estimated cost of $220,000, or almost $10,000 per mile.

In 1844, the Richmond and Petersburg Railroad purchased the Chesterfield Railroad, thus acquiring its coal traffic. It also built a branch to Walthall. The following year the railroad purchased a tug boat to bring ships into port.

James River Bridge

The Richmond and Petersburg railroad initially terminated at Manchester on the south bank of the James River, across from Richmond. This was a temporary measure as Moncure Robinson had designed and was then building a bridge to cross the James River. A visiting European railroad engineer described it as being "among the most noteworthy civil engineering achievements on North American railroads."

Construction began in December 1836 and was finished in September 1838. It cost only $115,000, which, including the piers, amounted to only $40 per running foot. The Richmond and Petersburg Railway was allowed to only use the bridge for the railroad so the owners of another bridge would suffer no loss.

The bridge's superstructure consisted of a 2,850 foot wooden lattice that rested on two dry-land piers and 18 more in the river. The piers were grounded on solid rock made of squared granite blocks. Those rose 40 feet from the water to the wooden superstructure. At the top, the piers were four feet thick and 18 feet wide. They widened as they tapered downward toward the base at the rate of one inch per foot. The maximum distance between piers was 160 feet.

Additional stone was added to the top of the each pier, creating a foundation for the superstructure. These were made of granite blocks and were six feet long and two feet square. They were precisely fit together and joined by iron clamps. This foundation provided a base for the main wood beams and ensured the superstructure would have strong wind resistance.

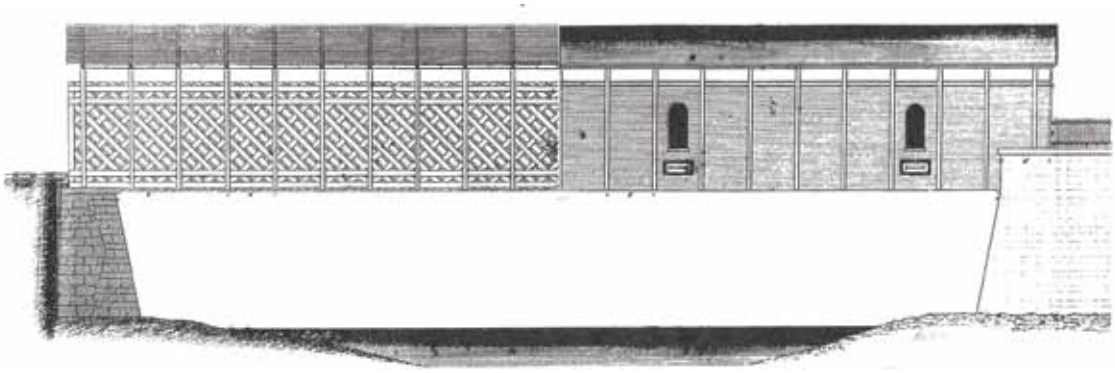
Retreating Confederate forces burned the bridge in 1865, anticipating the fall of Richmond. It was rebuilt the following year. It burned again in 1882. Its south side has been used for rock climbing since the 1980s. Today, its pilings can still be seen just upstream of the Manchester Bridge.

Bridge Piers

Superstructure foundation at top of pier

It would be many years before the technology was available to make long steel beams, and using wood to span 160 feet was asking a lot. Robinson designed a remarkable superstructure, one that used lattice work to create a continuous truss. The lattice walls were 16 feet high, a height equal to one-tenth of the span. The wooden superstructure was 17 1/2 feet wide. At both the top and the bottom, the two lattice walls were joined every eight feet by transverse beams. The stone foundations prevented the latticework from moving in high winds.

The bridge deck had a width of 22 1/2 feet, and overhung the lattice work on each side by 2 1/2 feet. Robinson designed each span to have a convex surface. The height in the middle was five inches higher than the sides. This created a roadbed that permitted rainwater to drain away quickly and easily.



Philadelphia, Wilmington and Baltimore railroad bridge

The lattice walls were fabricated from 12-inch wide planks that were three inches thick. They were spaced three feet apart and joined where they intersected with two-inch oak pegs. The lattice work was doubled. The exterior was covered with planks. The European engineer wrote that the construction was nearly identical to that of the one recently constructed by the Philadelphia, Wilmington and Baltimore Railroad, which he had previously illustrated.

The roadbed carried two tracks. For greater safety, longitudinal stringers were placed inside the tracks, along the two inner rails. On their underside they were recessed into the cross ties. This hindered derailment of engines and cars, which could result in a plunge into the river far below. On either side of the track there were railings. The total height of the bridge was close to 60 feet. The superstructure was painted with oil paint.

Fire was a major concern. The roadbed was covered with tar and sand to protect it from sparks and burning cinders. There was a walkway through the latticework, accessed by a trap door and staircase. This made it possible to walk from one bank to the other. Buckets of water were hung on railings every six feet on both sides of the walkway.

Locomotives

Moncure Robinson had apparently been very pleased with the Bury locomotives that were used by the Petersburg Railroad, so the Richmond and Petersburg Railroad purchased four of them in 1837. Two were 0-4-0s, with 54-inch diameter drive wheels, identical to those used by the Petersburg Railroad. The *Stafford* was also a 0-4-0 but had smaller 42-inch diameter drive wheels. All had 10-inch cylinders with a 16-inch stroke. They were received at about the same time as the new Jervis design had proved its superiority in handling curves and driving over rough track. The front drive wheels of the new Burys were quickly replaced with four four-wheel trucks.

The fourth locomotive was the The *John Randolph,* a 2-2-0 with large 66-inch drive wheels. In 1838, the railroad purchased two locomotives from Rothwell. These were the Bury design, but had 48-inch diameter drive wheels. They were converted to the Jervis design.

In 1839, the R&P purchased an engine from the Hick Company of Bolton, England, but it was not used to pull trains. It served as the boiler for the stationary steam engine in the machine shop. The railroad certainly purchased machine tools because in 1842 it built its own locomotive.

Richmond & Petersburg Railroad Antebellum Locomotives

Acquired	Name	Type	Manufacturer	Drivers	Tons
1837	John Randolph	2-2-0	Bury	66”	?
1837	Sheppard	2-2-0	Bury	54”	9
1837	Stafford	0-4-0	Bury	42”	9
1837	Patrick Henry	0-4-0	Bury	54”	?
1838	J. H. Hopkins	0-4-0	Rothwell	48”	?
1838	Phoenix	0-4-0	Rothwell	48”	10.5
1842	J. B. Coates	?	Company Shop	54”	?
1842	G. W. Johnson	4-6-0	Baldwin	42”	14
1846	James H. Cox	4-6-0	Baldwin	42”	14
1848	Pocahontas	4-4-0	Baldwin	54”	17.5
1852	Chesterfield	4-4-0	Baldwin	54”	17.5
1852	Henrico	4-4-0	Burr & Ettinger	54”	17.5
1852	No. 1	4-4-0	Smith & Perkins	?	?
1852	No. 2	4-4-0	Smith & Perkins	?	?
1852	No. 3	4-4-0	Smith & Perkins	?	?
1853	Clover Hill	4-4-0	J. F. Anderson	60”	19
1854	M. W. Baldwin	4-2-0	Baldwin	60”	19
1854	Mazecoa	4-4-0?	Company Shop	54”	19
1857	T. Dodamead	4-4-0	Uriah Wells	66”	30

Other Locomotives

1862	Tecumeh	4-4-0	A. M McCausland	?	?
1862	Atlantic	4-4-0	Tredegar	?	?
1863	Washington	4-4-0	Baldwin	?	?
1863	Jefferson Davis	4-4-0	Mason	?	?
1863	Holden Rhodes	4-4-0	Mason	?	?

In 1862, the *Atlantic* was purchased from Richmond & York River Railroad, and Tecumseh was purchased in February from Richmond, Fredericksburg & Potomac Railroad. In March, Locomotive Number 1 is listed as having run 122 miles; it was probably rented from the Manassas Gap Railroad.

In 1863, the *Washington, Jefferson Davis*, and *Holden Rhodes* were captured engines purchased from the Confederate government. *Jefferson Davis* and *Holden Rhodes* were probably Baltimore & Ohio Railroad locomotives No 231 and 235, but there is no evidence of which name belongs to which number. *Washington* was captured from Pope. Two additional locomotives were rented from the Manassas Gap Railroad (one in April and the other in August). Three locomotives — Numbers 1-3 — are shown in the chart accompanying that statement. The *Jefferson Davis* exploded in July.

Six locomotives were purchased from the well-known Baldwin Works in Philadelphia. Two were purchased from the Mason Machine Works of Tauton, Massachusetts. Mason produced around 100 locomotives during the 1850s, but then went back to its primary business of manufacturing textile machinery.

Black Diamond

In June of 1856, the Richmond and Petersburg Railroad purchased a new 4-6-0 locomotive, *G.W. Johnson*, from Baldwin. It was probably the first "ten-wheeler" in Virginia. It had 12-inch x 16-inch cylinders and six 42-inch diameter drive wheels. The combination of two additional drive wheels and smaller wheel radius gave it enormous pulling power.

It was the pride of the R&P locomotive fleet, and was renamed *Black Diamond* because it was the workhorse that pulled coal trains from Clover Hill to the Tredegar Iron Works in Richmond. There the coal was used to feed the furnaces that made artillery, munitions, locomotives and railroad cars for the Confederate army and armor for the first iron-clad ship. Because of this role, it is depicted in fictional Confederate "warpaint," as it actual color is unknown.

The Richmond and Petersburg Railroad supported the establishment of a Virginia railroad manufacturing industry. It purchased one locomotive from the short-lived Burr & Ettinger Company that built locomotives in Richmond between 1849-1855. Another was produced by Uriah Wells' Petersburg Iron Works.

Two were purchased from Richmond's Tredegar Iron Works. It produced about 70 locomotives between 1850 and 1860. Its work is sometimes listed with combinations of the names Anderson (from Joseph R. Anderson, the manager), Souther, Delaney, and Pickering. No record was found of a J.F. Anderson, who produced a train in 1857. This may refer to J.R. because handwritten "F" and "R" can be easily confused.

An 1856 Smith and Perkins locomotive

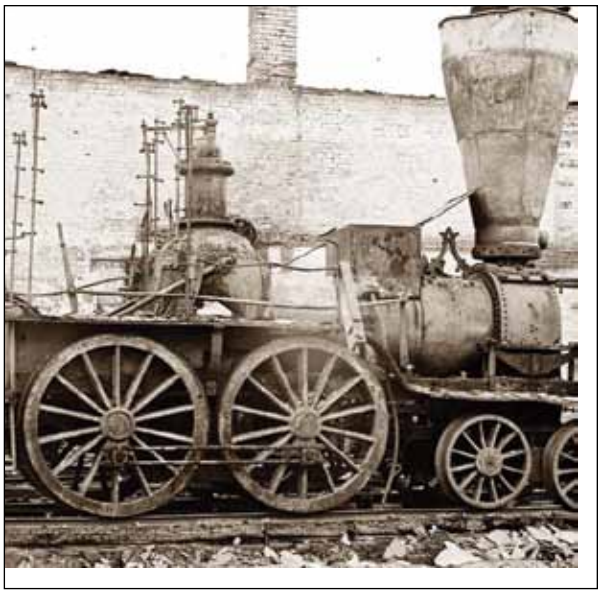
Three locomotives were purchased by the Smith & Perkins Locomotive Works. They were built in 1852, but apparently not purchased by the Richmond and Petersburg Railroad until after 1860. This company began in the 1830s when Thatcher, Perkins, T.W. and R.C. Smith opened a machine shop at Alexandria, Virginia. They manufactured three locomotives in 1837. The first was completed in three months and went to the Orange & Alexandria Railroad. The company apparently turned its efforts to other pursuits because it did not build any more locomotives until 1851.

Smith and Perkins also operated under the name of the Virginia Locomotive & Car Works. It produced about 50 locomotives during the 1850s. It then made locomotives that burned coal, which was unusual for the day, as wood was cheaper and more readily available. This feature must have appealed to the Richmond and Petersburg because of its Clover Hill coal mines. The Panic of 1857 forced it into bankruptcy.

During the 4/1/1860 – 3/31/1861 fiscal year, its primary passenger locomotive was the *M. W. Baldwin,* an 1854 Baldwin 4-4-0 with large 60-inch drive wheels to provide maximum speed. During the fiscal year, it logged 12,058 passenger miles and 4,240 passenger and freight miles

The *Black Diamond* and *Pocahontas* were used exclusively for pulling coal trains. They logged 13,781 and 10,545 miles respectively. The *Clover Hill* logged 5,658 miles hauling coal trains, 4,652 in passenger trains and 2,406 in combination freight and passenger trains. Between April 1, 1861 and March 31, 1862, the Richmond and Petersburg hauled 50,608 tons of coal from Clover Hill

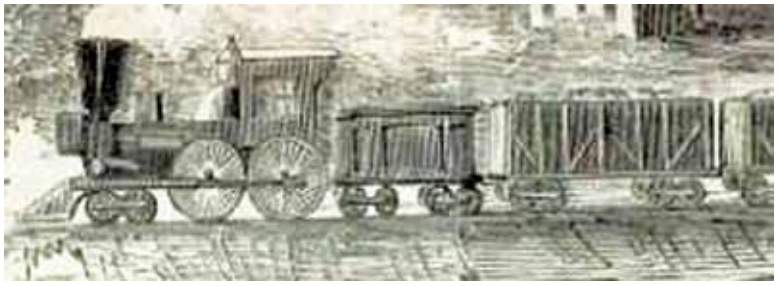
The *Phoenix* was its primary switching engine, logging in 4,680 miles. The *J.H. Cox* was the only other switcher, and it logged on only 795 miles. It was worn out and dismantled during the summer.



The photograph at left shows a locomotive at the Richmond depot in 1865 after it had been occupied by Union troops. The caption states that it has been burned, which is confirmed by the absence of paint. A second photograph shows it after it was blown up.

This is an unusual little locomotive. It is a 4-4-0, but the distance between the lead wheels and the drive wheels is extremely short.

The locomotive shown in the *Harper's Weekly* engraving has the same unique design. They are apparently the same engine.



It is not any known locomotive. The *Harper's Weekly* engraving provides a valuable clue as to its identity. The locomotive is pulling five gondola type freight cars. These cars were used for hauling loose bulk goods. The *Black Diamond* and *Pocahontas* were used for pulling coal trains, and there was no coal in Petersburg. However, Petersburg was the site of huge gravel pits, which are still in operation. The load could very well be gravel, and it is significant that the cars are being pulled away from Petersburg. The gravel was most likely used in building the Richmond and Petersburg Railroad's roadbeds.

Company records show that the *Henrico* was the R&P's primary gravel-hauling locomotive. It pulled 10,553 miles in 1861 and 11,330 miles in 1862. The *Henrico* was a 4-4-0 and was built by Burr & Ettinger. This short-lived company left no known records. There are no known pictures of its locomotives.

Rolling Stock

In 1839, the Richmond and Petersburg Railroad had three eight-wheel passengers cars with 48 to 52 seats and four four-wheel ones with 24 seats. It had 50 freight cars designed for three-ton loads and two eight-wheeled baggage cars, which had sections for Negroes who traveled at half-fare.

On September 30, 1860, it owned seven first class passenger cars and five second-class passengers cars. Company records provide no details as to the differences. It also had three baggage, mail and express cars and 20 covered freight or cattle cars, which are described the following year as box cars and platform cars. It had eight construction and repair cars, and a whopping 126 coal cars, for a total of 191 cars.

1839 Operations

In 1839, three trips were made in each direction between Richmond and Petersburg. One carried passengers and mail; it completed its run in one hour and twenty minutes. A second was the R&P's "high speed" passenger train. It only carried passengers and made its run in just over an hour. The third train took two hours. It was basically a freight train, but one passenger car was coupled to it. Passenger trains ran at an average of 15 to 20 miles an hour, including stops. Freight trains maintained an average of 12 miles an hour.

Speeds were always lowered on the Richmond bridge. Passenger trains were required to pass over it within four minutes, which is eight miles an hour.

The times included stops at the various stations. They were Temple's (5 miles south of Richmond), Rice's (8 miles), Half Way Station (11 miles), Chester (13 miles) and Port Walthall Junction (16 miles). The route ended in Petersburg (22 miles).

Chesterfield Railroad

Two miles below Manchester the track of horse-drawn Chesterfield Railroad traversed a wood bridge that crossed the track of the Richmond and Petersburg Railroad. Provision was made to dump the coal hauled by the former directly into cars of the latter so that it could be easily moved to Richmond or Petersburg. The P&R took over the Chesterfield Railroad in 1844.

Clover Hill Mines and Railroad

James Cox owned the Clover Mill plantation just west of Chester. Legend states that in 1837 a slave named Moses discovered coal on the land. This lead to the operation of several mines. The Clover Hill Railroad was built. It consisted of 22 miles of track, but the actual trains were operated by the Richmond and Petersburg Railroad, which provided the locomotives and freight cars. There is a station at Chesterfield Court House, five miles from the junction with the main R&P line, and another at Clover Hill, 14 miles away. All of the coal from the Clover Hill Mines was sold to the Tredegar Iron Works in Richmond.

The *Black Diamond* (formerly the *G.W. Johnson)* was the primary coal hauler. During the 1860-61 fiscal year, it hauled 13,781 miles — a lot of trips for so short a route. The *Pocahontas*, a Baldwin 4-4-0, was the other primary coal-hauling locomotive. It logged 10,545 miles. The *Clover Hill*, built by Tredegar Iron Works, logged 5,658 miles returning coal to its birthplace. Together, they hauled more than 50,000 tons of coal.

Port Walthall

Port Walthall was located on the north bank of the Appomattox River in Chesterfield County, Virginia, a few miles upriver from its confluence with the James River at City Point. The Richmond and Petersburg Railroad began construction on its Walthall branch in May 1842; it was complete in 1844. The R&P bought a steam tug to bring in ships. The point where the Port Walthall branch joined the Richmond and Petersburg Railroad was known as Port Walthall Junction.

At the beginning of the Civil War, Port Walthall was a major shipping and passenger embarkation terminal. Once the Union gained control of the James River, it was useless. The railroad tracks leading to it were torn up and taken to Tredegar, where they were melted down to make Confederate cannon.

The Battle of Port Walthall Junction was fought on May 6-7, 1864. Though initially successful, the Confederates were eventually defeated, allowing Union forces to cut the Richmond and Petersburg's main line, depriving Richmond of vital supply lines.

After the war, the railroad branch to Port Walthall was never restored, and Port Walthall came into disuse. In modern times, the name is memorialized by the Walthall exit of Interstate 95.

Omnibus

Kimball & Gorton omnibus of 1852

On January 13, 1861, the *Richmond Dispatch* reported, "An away omnibus has just been manufactured for the Richmond & Petersburg Railroad Company. It has capacity to seat thirty passengers, and is remarkable for its strength, while the ornamentation is of such a character as to give it the appearance of lightness. The ground work on the exterior is salmon color; on one of the side panels is a beautiful painting of Pocahontas saving the life of Captain Smith, and on the other a representation of Smith's famous combat with Bonney Mulgrove. The door panel is ornamented with a picture of a Knight Templar in full costume, as a compliment to E. H. Gill, Esq., former Superintendent of this railroad. Besides the historical illustrations, the sides of the vehicle are decorated with arabesque drapery, Cupids and wreaths of roses. Inside are eighteen beautiful vignettes, representing landscapes and water scenes. The roof is constructed in what is called the "French style," enabling a tall man to stand erect without peril to his beaver. The omnibus was made by John Stephenson, of New York, to the order and under the direction of the company. Last, but not least, we may mention that it has been christened *Petersburg Station*"

Two wooden benches along the right and left side of the wagon platform could hold several sitting people facing each other. The driver sat on a separate, front-facing bench.

An omnibus or wagonette (little wagon) was a horse-drawn wagon for passenger transport. It was the ancestor of the modern motor bus. Annual reports show that the R&P had been using them for many years. The Petersburg Railroad operated one as early as 1841. .

The ornate decor is significant as it suggests that the same lavish attention may have been used on the railroad's passenger cars.

Operations in 1861

In March 1861, the Richmond and Petersburg Railroad had 51 employees, which included locomotive engineers, firemen, conductors, freight agents, mechanics in its shops and road repair men. It also owned 56 slaves. Most were assigned to the freight depots. A dozen of them maintained the track.

It had 28 miles of four-foot, eight-inch gauge; two miles of 60# T-rail, four miles of 52# U-rail, six miles of 57# T-rail, 12 miles of 55# T-rail, and 11 miles of 51# T-rail.

It also had 207 cars of various types and 18 locomotives. 15 of them are listed on the locomotive chart, along with type, date and builder.

Fate

In 1898, the Petersburg Railroad was merged into the Richmond and Petersburg Railroad, and the resulting corporation was renamed the Atlantic Coast Line Railroad of Virginia. Today, most of the original line of the Richmond and Petersburg Railroad is still in use as part of the A-line of CSX Transportation.

Southside Railroad

The Southside Railroad was part of a very ambitious project for the day. It was to begin in Petersburg and run 122 miles to Lynchburg, Virginia. There it was to connect with the proposed Virginia and Tennessee Railroad, which was to carry trains over the mountains of Virginia and Tennessee all the way to the Mississippi River.

The Commonwealth of Virginia issued a charter to the new Southside Railroad on March 5, 1846. $1,371,700 worth of stock was sold. The project's chief engineer, C.O. Sanford (Sanford, North Carolina is named after him), surveyed the area and proposed running the new track from a point just northeast of Petersburg. Construction began in March 1859, and the entire 122 miles route from Petersburg to Lynchburg became operational on November 8, 1854. The cost per mile, excluding locomotives and rolling stock, was $22,562. Slightly more than half the cost was paid by the Commonwealth of Virginia and the City of Petersburg.

Virginia refused to fund the Virginia and Tennessee Railroad, so the city of Lynchburg incorporated the Lynchburg and Tennessee Railroad on March 24, 1848. Construction of the roadbeds began in 1850, and on February 18, 1852, the railroad's first locomotive, the *Virginia*, was tested when it steamed out of Lynchburg's James River basin, climbing the nearby low mountains. Regular cargo services soon followed.

In 1854, the Southside Railroad purchased the Appomattox (formerly City Point) Railroad from the City of Petersburg. This linked the deep-water port at City Point with the western interior.

During the Civil War, the Southside/Lynchburg and Tennessee Railroads were vital to the Confederacy. They moved troops and supplied Richmond, the capital of the Confederacy. The two railroads also moved raw materials from the copper mines near Cleveland, Tennessee, the lead mines near Bristol, the salt works at Saltville, Virginia and several saltpeter caves throughout the region.

Cavalry raids disrupted service during the Civil War. The Union army destroyed tracks and rolling stock in late 1864.

Depots

Petersburg's Southside Station is the only surviving antebellum train station in the south. The first floor of the two-story center section served as the passenger station. Company offices were located upstairs.

There are seven freight bays on the west and six to the east. The latter were leveled from the floor up by the tornado of August 6, 1993.

No information has been found on the Lynchburg station.

Road & Rail

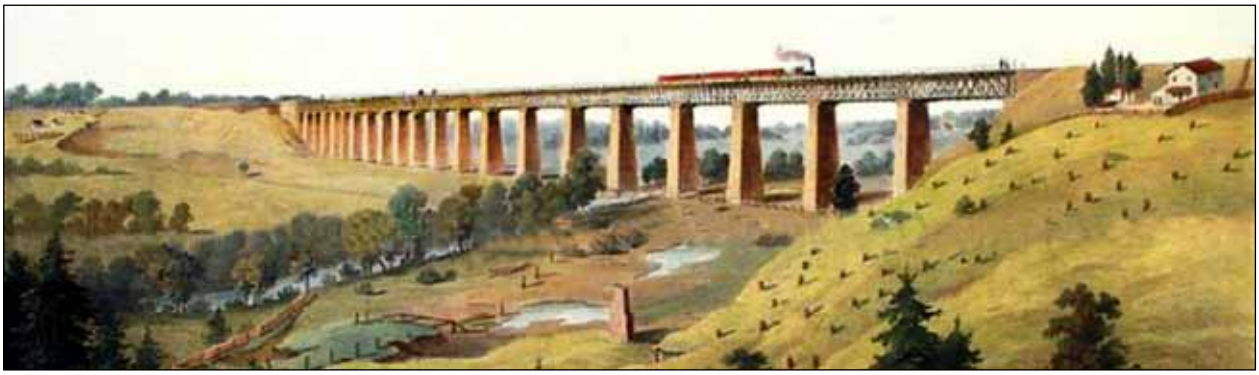
The Petersburg to Lynchburg main line was a single track running for 123 miles. There were another three miles of main line sidings and turnouts. The City Point branch was nine miles long and had a half-mile of sidings. There were 18 stations, including City Point and Farmville.

The track had 2,740 cross ties per mile. They were made of oak and seven inches thick. In 1860, inverted U-rail covered 125.5 miles of track. Another 10 had been converted to T-rail. This railroad had five-foot gauge tracks, the only Petersburg railroad not to use the standard 4-foot, 8 1/4-inch gauge.

Trestle Bridge

This large trestle bridge crossed the Appomattox River somewhere west of Petersburg. The exact location has not yet been determined.

High Bridge



1858 painting of High Bridge by Edward Beyer

The biggest challenge facing the engineers was constructing a bridge to span the valley of the Appomattox River floor plain. It became known as the High Bridge. It was 2,529 feet long and ranged from 60 to 125 feet in height. Twenty brick piers set on stone foundations supported a wooden superstructure. It was considered an engineering marvel for its size. Chief Engineer Sanford's report to the Southside stockholders stated that "there have been higher bridges not so long, and longer bridges not so high, but taking the length and height together, this is, perhaps, the largest bridge in the world."

High Bridge brought many spectators from around the world, including the German artist Edward Beyer, who sketched and painted scenes and views of Virginia's landscapes in the late 1850s. Some of Beyer's artwork was later published in a book, *The Album of Virginia*, which consisted of 40 lithographic plates such as the one above, titled "The High Bridge near Farmville, Virginia."

The Southside Railroad and High Bridge changed ownership in the 20th century. The original wooden superstructure of the bridge was replaced with steel. As locomotives and rail cars improved, an entirely new bridge was built parallel to the first, even higher and longer than its predecessor, to support the heavier traffic. The last commercial ownership was by the Norfolk Southern Railway Company, who abandoned the portion of railroad with the High Bridge.

In order to preserve this historic landmark, the Norfolk Southern Railway donated 33.8 miles of the abandoned line in December 2006 to the state of Virginia, forming the High Bridge Trail State Park. At present, 22 miles of the High Bridge Trail have been opened to the public, and the High Bridge can be closely viewed from the Cumberland County side.

Southside Railroad Antebellum Locomotives

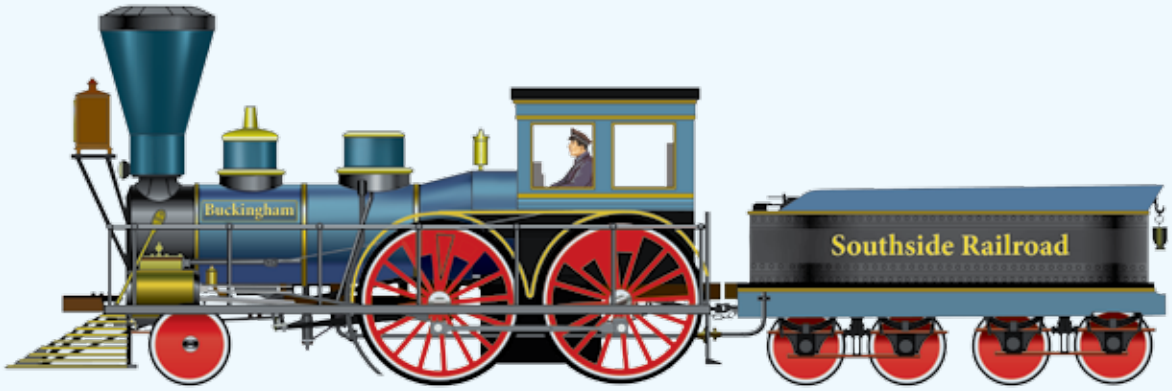
Acquired	Name	Type	Manufacturer	Drivers	Tons
1838	Pocahontas	4-2-0	Norris	48”	8
1838	Powhatan	4-2-0	Norris	48”	9
1851	Lynchburg	4-4-0	Uriah Wells	54”	18
1851	Farmville	4-4-0	Uriah Wells	54”	20
1852	Appomattox	4-4-0	Uriah Wells	54”	20
1852	City of Petersburg	4-4-0	Baldwin	60”	21
1852	Nottoway	4-4-0	Baldwin	54”	20
1852	Mississippi	4-4-0	Baldwin or Wells	60”	22
1854	Campbell	4-4-0	Uriah Wells	60”	23
1854	Sam Patch	4-4-0	Uriah Wells	60”	23
1854	Cumberland	4-4-0	Newcastle	62”	23
1854	Prince George	4-4-0	Uriah Wells	54”	24
1854	Virginia	4-4-0	Anderson Dulaney	62”	27
1854	Amherst	4-4-0	Anderson Dulaney	62”	27
1854	Buckingham	2-4-0	J. Southern	56”	23
1855	Prince Edward	4-4-0	Baldwin	54”	23
1855	Tennessee	4-4-0	Baldwin	54”	27
1856	Mountaineer	4-4-0	Uriah Wells	?	?
1857	Memphis	4-4-0	Norris	48”	26
1857	Knoxville	4-4-0	Norris	48”	26
1858	Norfolk	4-4-0	Baldwin	60”	24
1858	Name Unknown	4-4-0	Uriah Wells	54”	27
1860	Nashville	4-4-0	Uriah Wells	54”	27

The *Powhatan*, *Pocahontas* and *Petersburg* were owned by the Appomattox Railroad (formerly the City Point Railroad) when it was purchased by the Southside Railroad. The remarkable thing about the fleet is the number of locomotives that were made locally. Anderson and Dulaney were engineers at the Tredegar Iron Works in Richmond. Uriah Wells owned the Petersburg Iron Works. He provided six of the locomotives. He sometimes operated under the name Appomattox Locomotive Company. It was just a couple of feet west of the depot.

Finding a locomotive to represent the Southside Railroad has been a challenging task. Its *Pocahontas* was used to represent the City Point Railroad, and *City of Petersburg* represents the short-lived Appomattox Railroad, so they can't be used. Southside Railroad extensively used the popular American 4-4-0 design. The *City of Petersburg* was one and has already been shown, so what locomotive should represent the Southside Railroad?

Most of them were made by Uriah Wells and his Petersburg Iron Works/Appomattox Locomotive Company. It would be wonderful to show one of his engines, but there are no known pictures of them. Our knowledge of early locomotives comes primarily from lithographs prepared by the manufacturers to sell their products. Uriah Wells' factory was next door to the Southside Railroad. Specifications were almost surely established in conversations. There may have been a few shop drawings, but Wells had no need to prepare lithographs, so it is doubtful if any were ever produced. Even if they were, all of his locomotives were the American 4-4-0 design, and there would have been little difference between them and the others that need to be shown.

Two locomotives were made by Anderson and Dulaney. They were engineers at the Tredegar Iron Works in Richmond. J. (John) Souther made the 1854 *Buckingham*. The company still survives as the Montreal Locomotive Works (See article on Tredegar Iron Works), so it may be possible to obtain early pictures.



The *Buckingham*

Meanwhile, there is one known photograph of a Tredegar locomotive. It is of the *Roanoke*, a 4-4-0 made for the Virginia and Tennessee Railroad in 1854. It differed from other American designs by having a railing around the engine permitting the engineer to walk to the front while the engine was moving. It also has an unusually large cab.

The *Roanoke* was by designed and built by John Souther of Tredegar. He built the *Buckingham* for the Southside Railroad that same year, so the two engines are almost surely identical. The photograph is poor, but does provide the basic design. It provides enough information for an artist to recreate it. Details can be provided by contemporary engines.

City Point/Appomattox Railroad

In 1854, the Southside Railroad acquired the nine-mile long City Point Railroad. It had been purchased by the City of Petersburg in 1847 and renamed Appomattox Railroad. Completed in 1838 and paralleling the Appomattox River from Petersburg to its confluence with the James River at City Point, the City Point Railroad provided an ideal link for the Southside Railroad to reach a deep-water steamship connection on the navigable portion of the larger river.

The problem was that the City Point tracks had standard 4-foot, 8 1/2-inch gauge, and the Southside tracks had a five-foot gauge, so the trains could not run on the tracks of the other. Either the rails on the City Point Railroad had to be moved or freight had to be transferred at Petersburg.

Rolling Stock

On September 30, 1860, the Southside Railroad had nine first class passenger cars, two second-class passenger cars, four baggage mail and express cars, 80 repair cars and 215 freight cars for a total of 311 cars.

The 1861 inventory reflects the addition of a first class passenger car and provides a breakdown of the freight cars by type: 168 box cars, 40 flat cars, dump cars and 42 crank cars. No "repair cars" are listed. There were a total of 309 cars.

Operations

Little detail is available on operations. The September 30, 1851 annual report showed that passenger revenues were $117,498 and those for freight were $224,873. Mail services added another $12,500 for a total of $355,270. The operating expenses were $188,054.

1854 saw 53,117 freight miles and 77,324 passenger miles. Mileage in 1855 was 53,117 freight and 71,324 passenger miles. It served 62,163 passengers.

City Point Branch

In 1859, the Appomattox River from City Point to Petersburg was deepened to eight feet. This made is possible to bring larger ships into Petersburg, where they could be loaded. The City Point branch fell into disuse until taken over by the Union Army.

Civil War

The Southside Railroad was a vital resource for the Confederacy as a supply line for Richmond and Petersburg during the American Civil War. Beyond the lines of battle, the principal damage it suffered was the financial weakness caused by Confederate compensation policies and currency. During the last year of the war, considerable damage was inflicted by both sides until the conflict finally ended near Appomattox Station on the Southside Railroad at Appomattox Courthouse in April 1865.

Ironically, the City Point Railroad portion of the Southside Railroad was of great value to the Union forces during the Siege of Petersburg in 1864-65. General Ulysses S. Grant used and extended it to move supplies and troops from the port at City Point to the area south and east of Petersburg, operating it as the U.S. Military Railroad. This is the subject of another article.

Fate

After the Civil War, the managers of the Southside Railroad worked hard to rebuild bridges, stations and rolling stock so that the railroad could restore service. The stockholders elected Major General William Mahone as president of their railroad before the end of 1865.

The Southside Railroad was acquired by the Atlantic, Mississippi and Ohio Railroad on April 1, 1871. Quite an April Fool's joke.

Virginia and Tennessee Railroad

Although not a Petersburg railroad, the Virginia and Tennessee Railroad played a vital role in Petersburg's railroad history. Its tracks began at Lynchburg and ran southwest through the Shenandoah Valley to the present-day city of Roanoke. There they turned southwest and followed the Great Valley to Bristol, a total distance of 204 miles. It was completed on October 1, 1856.

At Lynchburg, the V&T connected with the tracks of the Southside Railroad. During the Civil War, it served as a key supply, food and troop movement route for the Confederate States Army, particularly from the capital of Richmond to the interior at Chattanooga, Tennessee. Among the vital transportation services provided by the V&T was to move raw materials from the copper mines near Cleveland, Tennessee, the lead mines near Bristol, the salt works at Saltville, Virginia and saltpeter caves throughout the region. Union forces finally captured much of the railroad and destroyed tracks and rolling stock in late 1864, although service was periodically interrupted by a series of cavalry raids earlier in the war.

Its long term goal was to extend to the Mississippi River and New Orleans.

After the war, the road was rebuilt and came under the control of former Confederate General William Mahone, who was already leading the Southside Railroad and the Norfolk and Petersburg Railroad. He was named president of the V&T by the end of 1867.

Norfolk and Petersburg Railroad

Railroads began to play a major role in American transportation in the 1830s. The Portsmouth and Roanoke Railroad was completed in 1835 to compete with the Petersburg Railroad. Norfolk wanted its own railroad, but representatives of inland port cities, such as Richmond and Petersburg, anticipated that the such a railroad would severely cut into their export shipping trade, so they continually blocked all attempts. Finally, after many years of lobbying, Norfolk area politicians finally overcome the opposition in the Virginia General Assembly. On May 17,1851, the Norfolk and Petersburg was chartered.

The Norfolk and Petersburg Railroad Company was organized on April 6, 1852. Dr. Francis Mallory (1807-1860), a former Representative in the United States Congress and later a member of the Virginia General Assembly, was named the railroad's first president.

William Mahone became its chief engineer. He immediately began to survey the route. Track laying was completed on August 28, 1858, and the first train ran on July 25, 1858. The railroad and equipment cost $1,973,982.

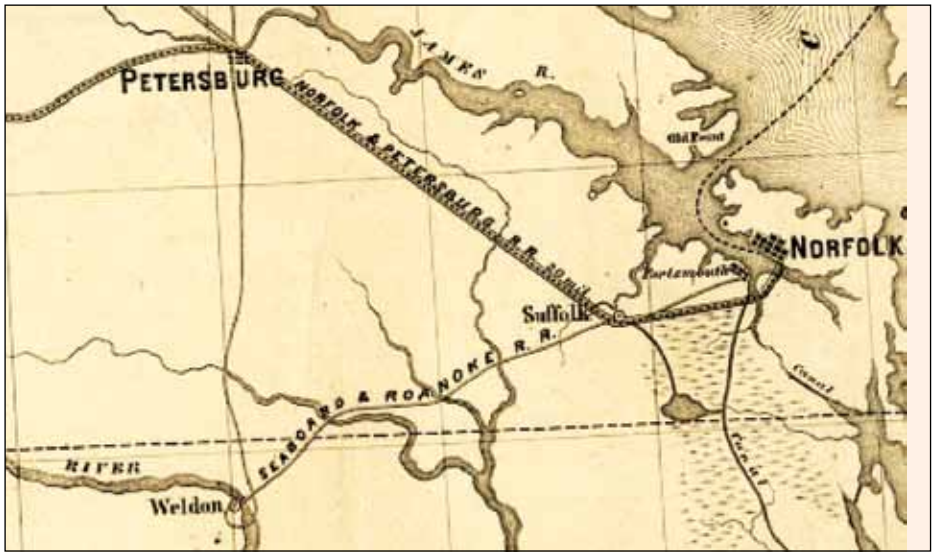
William Mahone

William Mahone (1826-1895) was educated at Virginia Military Institute. Small of stature, he was nicknamed "Little Billy." At age 26, he became the chief engineer of the Norfolk and Petersburg Railroad, which he built.

He proved his leadership skills during the American Civil War, and rose to the rank of major general of the Confederate States Army, He is credited with turning the tide of the Battle of the Crater against the Union advance during the Siege of Petersburg in 1864.

When the war was over, he returned to the Norfolk and Petersburg Railroad and rebuilt it. He soon became the president of the Southside Railroad and later the Virginia and Tennessee Railroad. In 1870, he combined them form the Atlantic, Mississippi and Ohio Railroad (AM&O), which was headquartered in Lynchburg.

Road and Rail



Norfolk and Petersburg Map
Also shows the Portsmouth and Roanoke line and the
Petersburg Railroad line, which is not labeled

The main line from Norfolk to Petersburg was 80 miles long, mostly in a straight line. There were an additional five miles of side tracks. The cross ties were made of oak and eight feet long. They were six inches deep and had an eight-inch bearing surface. They were spaced 2,640 per mile. The track was 62# T-rail that weighed 62.4 pounds per yard. The Norfolk and Petersburg used the same five-foot gauge as the Southside Railroad,

Mahone had previously built plank roads and used that experience to construct an innovative roadbed through the Great Dismal Swamp near Norfolk. It employed a corduroy log foundation laid at right angles beneath the surface of the swamp. The roadbed was so well constructed that most of it in use today, carrying trains many times heavier than those for which it was designed. The rest of the roadbed was equally well constructed. Today, over 150 years later, almost all of the roadbed is still use, including the section through the Great Dismal Swamp, which is regarding as an engineering wonder. It carries coal traffic that weighs many, many times more than the trains for which the roadbed was designed. Mahone also built the famous 52 mile-long tangent track between Suffolk and Petersburg, which is also part of a major artery of modern Norfolk Southern rail traffic.

Ever frugal, Mahone was widely credited with staying within a very tight budget while maintaining his high engineering standards, earning considerable public esteem along the line.

In 1855, Mahone married Otelia Butler (1837-1911). She was the daughter of the late Dr. Robert Butler from Smithfield, Virginia, who had been Treasurer of the State of Virginia. Otelia, who was said to have been a "cultured" lady, and William Mahone settled in Norfolk. They were described as being a very "colorful couple."

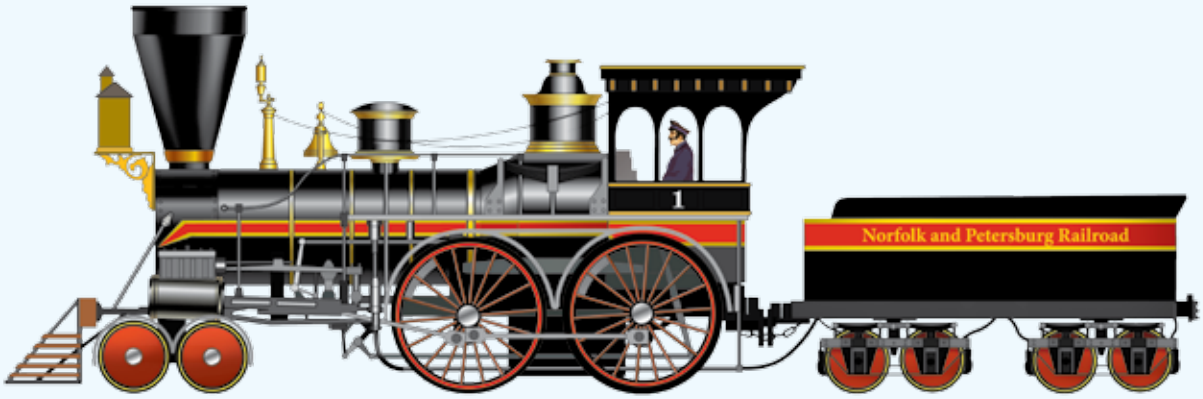
A Yellow Fever epidemic swept through Norfolk in 1855 and within several months killed 2,000 people, nearly a third of the population. However, the Mahones went to stay with his mother in Courtland, about 40 miles away, until the epidemic passed. Construction of the new railroad was delayed for more than a year due to the many deaths and resulting financial hardships to those financing the project.

Otelia Mahone became a well-known character in her own right. Popular legend has it that Otelia and William Mahone traveled along the newly completed railroad naming stations from *Ivanhoe*, a book she was reading by Sir Walter Scott. From Scott's historical Scottish novels, she chose the place names of Windsor, Waverly and Wakefield. She tapped the Scottish Clan "McIvor" for the name of Ivor, a small Southampton County town.

When they reached a location in Prince George County not far from the end of the line in Petersburg, apparently the couple could not agree so they invented a name to honor their "dispute." That resulted in the town of Disputanta.

Norfolk and Petersburg Antebellum Locomotives

Acquired	Number	Type	Manufacturer	Drivers	Tons
1857	1	4-4-0	Norris	66”	23
1857	2	4-4-0	Norris	66”	23
1858	3	4-4-0	Baldwin	54”	25
1858	4	4-4-0	Baldwin	54”	25
1857	5	4-4-0	Norris	54”	25
1860	6	?-2-0	Norris	54”	8



Norfolk and Petersburg *Number 1*

The Norfolk and Petersburg had three Baldwin 4-4-0s and three Norris 4-4-0s. The Baldwins were the same as the *City of Petersburg*. The Norris is shown above.

The famous *Pocahontas Arrow* of the 1940s

The modern day Norfolk and Southern Railroad began as Petersburg’s City Point Railroad. It evolved into the Norfolk and Western, and later the Norfolk and Southern.

In the 1940s, the Norfolk and Western ran two streamlined, high-speed passenger trains between Norfolk and Cincinnati, Ohio. They were the pride of the fleet and the most famous trains that the N&W ever ran. In recognition of its heritage, the N&W named the locomotives *Pocahontas Arrow* and *Powhatan Arrow* after the first two City Point Railroad locomotives.

The color of the first six N&P locomotives is not yet known, so *Number 1* carries a variant of the livery used by its descendent, *Pocahontas Arrow.*

Rolling Stock

On September 30, 1860, the Norfolk and Petersburg Railroad had two passenger cars, one baggage and mail car, 21 box cars, 50 flat cars, 15 dump cars, six timber cars, and a ballast car, for a total of 96 cars.

Depots

Petersburg Union Station was constructed in 1909-1910 for the Norfolk and Western Railway, replacing an earlier structure damaged by a flood. The station remained in use until the formation of Amtrak in 1971, when passenger services on the Norfolk and Western's tracks ended. It saw a brief revival in 1975-1977 when Amtrak operated the *Mountaineer* between Norfolk and Cincinnati,

Note the long curved roadbed leading to the upper right corner. That is the long uphill curve of track that goes to Washington Street and the Petersburg Railroad Depot.

Nothing is known of the original Norfolk and Petersburg station, or the one in Norfolk.

The Civil War

Virginia voted to cede from the Union on April 17, 1861. Norfolk officials immediately tried to gain control of federal property in the city. The valuable Gosport Shipyard in Portsmouth was guarded by federal troops.

Mahone, then a civilian, bluffed the troops into abandoning their posts. He ran one of his passenger trains into Norfolk with great noise and whistle-blowing, creating the illusion that large numbers of Confederate troops were arriving. Then he quietly sent the train back west. It quickly returned, creating even more noise and confusion. The ruse worked and Union authorities quickly set fire to the yard and ships and abandoned the area, retreating to Fort Monroe across Hampton Roads.

Early in the war, the N&P was valuable to the Confederacy and transported ordnance to the Norfolk area where it was used during the Confederate occupation. Norfolk fell to the Union in the spring of 1862. Most of his railroad was in enemy hands, and Mahone was out of a job.

He was a graduate of the Virginia Military Institute, and knew his services would be needed, so he joined the Confederate Army. He led troops in many Virginia campaigns. Otelia worked as a nurse in Richmond. Brigadier General Mahone became the hero of the Battle of the Crater during the Siege of Petersburg in 1864 and was with Confederate General Robert E. Lee at the surrender at Appomattox Court House in April 1865.

Battle of the Crater

Brigadier General Mahone became the hero of the Battle of the Crater during the Siege of Petersburg in 1864 and was with Confederate General Robert E. Lee at the surrender at Appomattox Court House in April 1865.

Fate

After the war, Mahone rebuilt the Norfolk and Petersburg Railroad and became president of the South Side Railroad, which ran from Petersburg to Lynchburg, After several years of lobbying the Virginia General Assembly, he and his allies received permission to merge them with the Virginia and Tennessee Railroad. The new railroad was formally established in 1870. It was named the Atlantic, Mississippi & Ohio Railroad (AM&O). It lines extending from Norfolk to Bristol, Virginia. Those who knew of their strong ambitions joked that the letters stood for "All Mine and Otelia's."

The AM&O operated successfully for several years, but fell behind in bond payments during the financial panic of 1873. The bondholders worked well with Mahone until 1876 when they had other receivers appointed. After several years of operating under receiverships, Mahone's role as a railroad builder ended in 1881 when northern interests purchased the AM&O and renamed it Norfolk and Western.

The Norfolk and Western itself grew into a great system, and the former Norfolk and Petersburg Railroad formed a major piece of the line used to transport bituminous coal from the mines in southwestern Virginia and southern West Virginia to port at Norfolk, where a huge coal pier was built at Lambert's Point. The N&W merged with the smaller but also highly efficient Virginian Railway in 1959, facilitating a more favorable route for eastbound coal than offered by the former South Side Railroad west of Burkeville. However, from that point east, the combination brought an increase to the South Side Railroad alignment as former VGN traffic was rerouted through Crewe to connect with the former N&P on its way to Lambert's Point. Norfolk & Western Railway was combined with the Southern Railway, another profitable carrier, to form Norfolk Southern Railway (NS) in 1982. It is the second largest railroad in North America. The only one larger is the CSX, whose heritage includes the Petersburg Railroad.

Over 150 years after completion, much of the former Norfolk and Petersburg Railroad route is still in active use and is a vital portion of Norfolk Southern Railway, a Class I railroad which has its headquarters in Norfolk, only a short distance from the coal piers at Lambert's Point.

Railroad Independence

English railroads were designed to link large cities that were relatively close to one another. Its railroads quickly evolved into a system that would permit passengers and freight to quickly and efficiently move from one place to another.

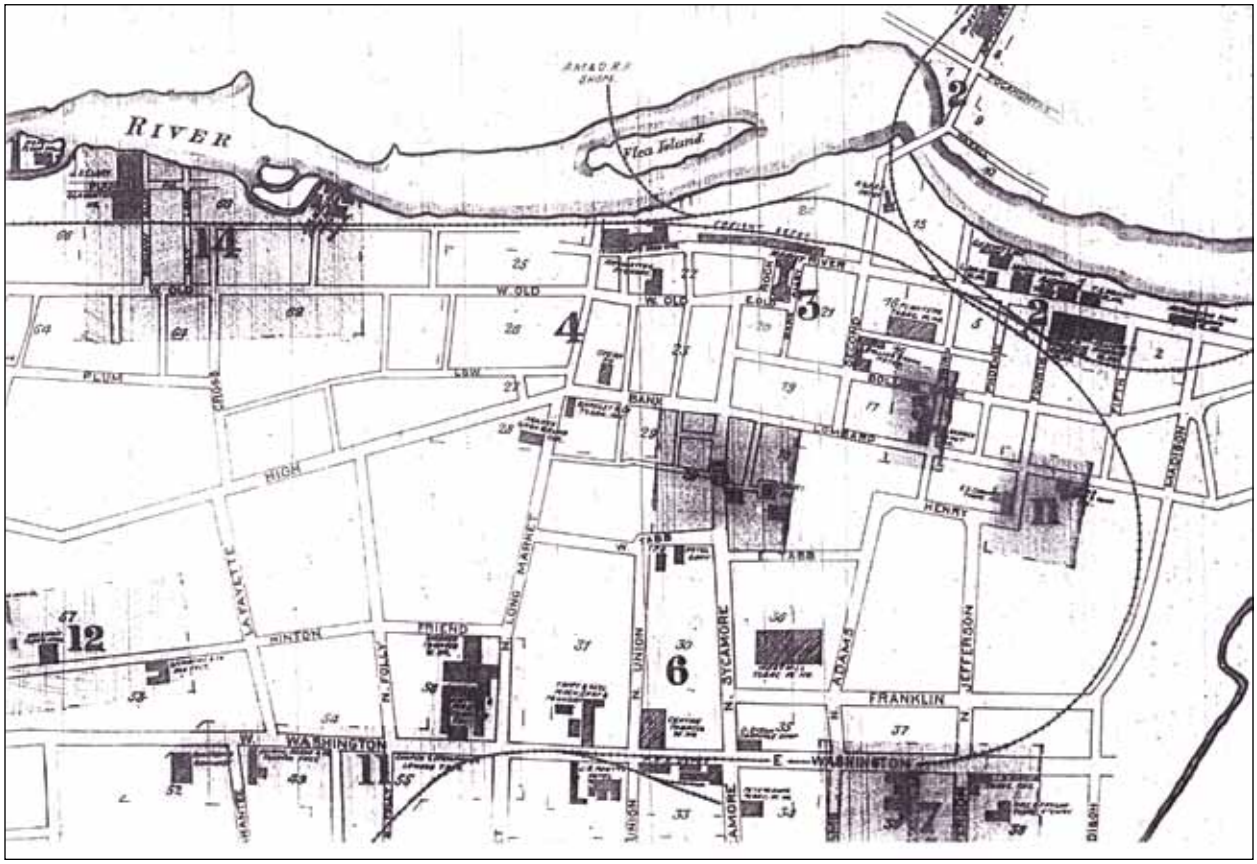
America had a totally different situation. Its railroads had to cover vast distances, most of it across sparsely populated rural areas. The primary purpose of American railroads was to bring goods into a city. The city had to be the destination, not a way-station. Because of this, the railroads in both Petersburg and Richmond did not connect their tracks, thus preventing trains from running through them.

In this way, the commission merchants, forwarders and innkeepers were not deprived of their livelihood. The Petersburg Railroad terminated at Washington Street. The Richmond and Petersburg Railroad ended on the North Shore of the Appomattox River. The Southside and Norfolk and Petersburg Railroads ran between them. Freight arriving on one railroad had to be unloaded at one terminal, placed on wagons, driven to the other terminal and then loaded on the other train. Passengers often complained, but nothing was done.

These gaps were common in all American cities. City businessmen and politicians wanted to force spending in their city. City ordinances were adopted that prevented the running of trains on the city streets, and it was not possible to run a railroad across the town and connect to another railroad without crossing streets. Railroads in the same town were encouraged to configure their passenger train schedules so that passengers had to spend the night in town. The distance between stations gave work to cargo handlers at both stations and draymen to haul the goods from station to station. Of course, this was very inefficient to the movement of goods and troops, but local demands died hard. Even in Richmond, the connection of some railroads was allowed only for the emergency movement of locomotives to prevent them being captured.

This situation really hurt the Confederate army because its supplies of arms, ammunition and food were often delayed. As the war progressed, Richmond depots were filled with needed supplies that could not be forwarded to the next train because there were not enough wagons to carry it.

Petersburg was more quick to react. Upon the outbreak of hostilities, the Richmond and Petersburg Railroad was allowed to construct a bridge across the Appomattox River. A long, sweeping curve soon connected the Petersburg Railroad with those on the river. Soon all of the railroad were linked.



1885 Sanborn Insurance Map

The Sanborn Insurance Map of 1885 shows the city's railroads. Tracks are very rarely moved, so this also shows their position at the end of the Civil War, 20 years earlier.

The Richmond and Petersburg Railroad enters at the top, from the north, then makes a long graceful curve to the east, then turns back west to connect with the Petersburg Railroad depot on Washington Street, at the bottom of the map. Its tracks head south. The long curve was no doubt required to reduce the grade, as the train had to climb a large hill.

This track crosses and connects with the Southside Railroad, which goes off to the left (west) and the City Point Railroad, which goes off to the right (east).

Petersburg's railroads radiated in all four directions.

Detail from Union Station Postcard

This postcard showing the Norfolk and Petersburg Union Station reveals an interesting detail. The track heading into the upper right corner is that of the Richmond and Petersburg Railroad climbing the hill to Washington Street. There is a train next to it at a considerably lower elevation. There must have been a wall between the two, which on the Sanborn map appear to be adjacent.

U.S. Military Railroad

Virginia was the main front of the American Civil War. Richmond, the capital of the Confederate States of America, was only a little over 100 miles from Washington, D.C., the capital of the United States. Dozens of bloody battles were fought in the short distance between them, but Union forces were unable to capture Richmond.

Ulysses S. Grant was an aggressive general who seized control of most of Kentucky and Tennessee at the Battle of Shiloh. In July 1863, after a long and complex campaign, he defeated five Confederate armies and seized Vicksburg. This famous victory gave the Union control of the Mississippi River, split the Confederacy, and opened the way for more Union victories and conquests. After another victory at the Battle of Chattanooga in late 1863, President Abraham Lincoln promoted Grant to the rank of Lieutenant General and gave him charge of all the Union armies.

In May 1864, Grant launched his Overland Campaign, also known the Wilderness Campaign, in an attempt to capture Richmond. Grant suffered such severe losses that he decided to change his strategy: he would apply steady pressure on Richmond from the north, but flank it so that he could capture the railroads that supplied the Confederate capital, thus starving it into submission.

Richmond–Petersburg Campaign

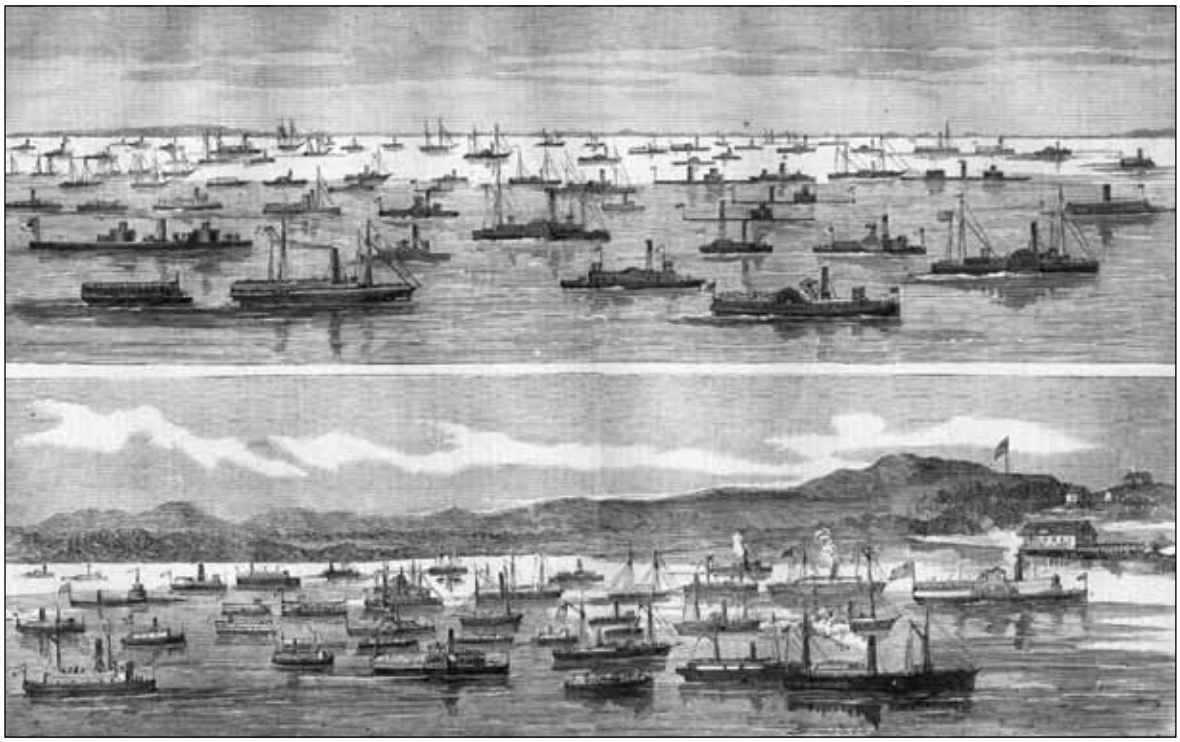
This resulted in the Richmond–Petersburg Campaign. It was a series of battles around Petersburg, Virginia, fought from June 9, 1864, to March 25, 1865. Although it is popularly known as the Siege of Petersburg, neither was it a classic military siege in which a city is usually surrounded and all supply lines are cut off, nor was it strictly limited to actions against Petersburg. The campaign was nine months of trench warfare in which the Union forces commanded assaulted Petersburg unsuccessfully, and then constructed trench lines that eventually extended over 30 miles from the eastern outskirts of Richmond to the eastern and southern outskirts of Petersburg.

City Point Depot

Grant recognized the need for logistical support. He and Brigadier General Rufus Ingalls, Chief Quartermaster for the Army of the Potomac, selected City Point – strategically located at the confluence of the James and Appomattox Rivers – as the main forward supply depot.

Some 200-250 ships began arriving daily. It was the Civil War equivalent to the Normandy Invasion of World War II.

The City Point depot was designed to provide support for a half-million soldiers. More than a mile and a half of wharves were built, along with scores of new buildings and warehouses. A railroad terminal with 25 engines and 275 boxcars, and thousands of mule-drawn wagons, stood ready to transport 1,500 tons of supplies off-loaded daily to the siege lines at Petersburg eight miles away.



Departure of the invasion fleet from Newport News, VA, May 4, 1864

City Point quickly grew into an enormous logistics complex. Eight huge wharves were built and over 100,000 square feet of warehouses were built on them. There were another 280 support buildings. The complex employed over 10,000 workers, 3,000 of them simply to off-load the flotilla of supply ships that arrived every day, sometimes as many as 25.

The City Point Depot was issued 31,386 horses and 18,891 mules. There were seven large field hospitals, with a capacity for 15,000 casualties. 2,500 cattle were delivered to feed the troops and a like number were captured locally. The bakeries provided over 100,000 loaves of bread a day.

One of the City Point Wharves

One of the seven field hospitals

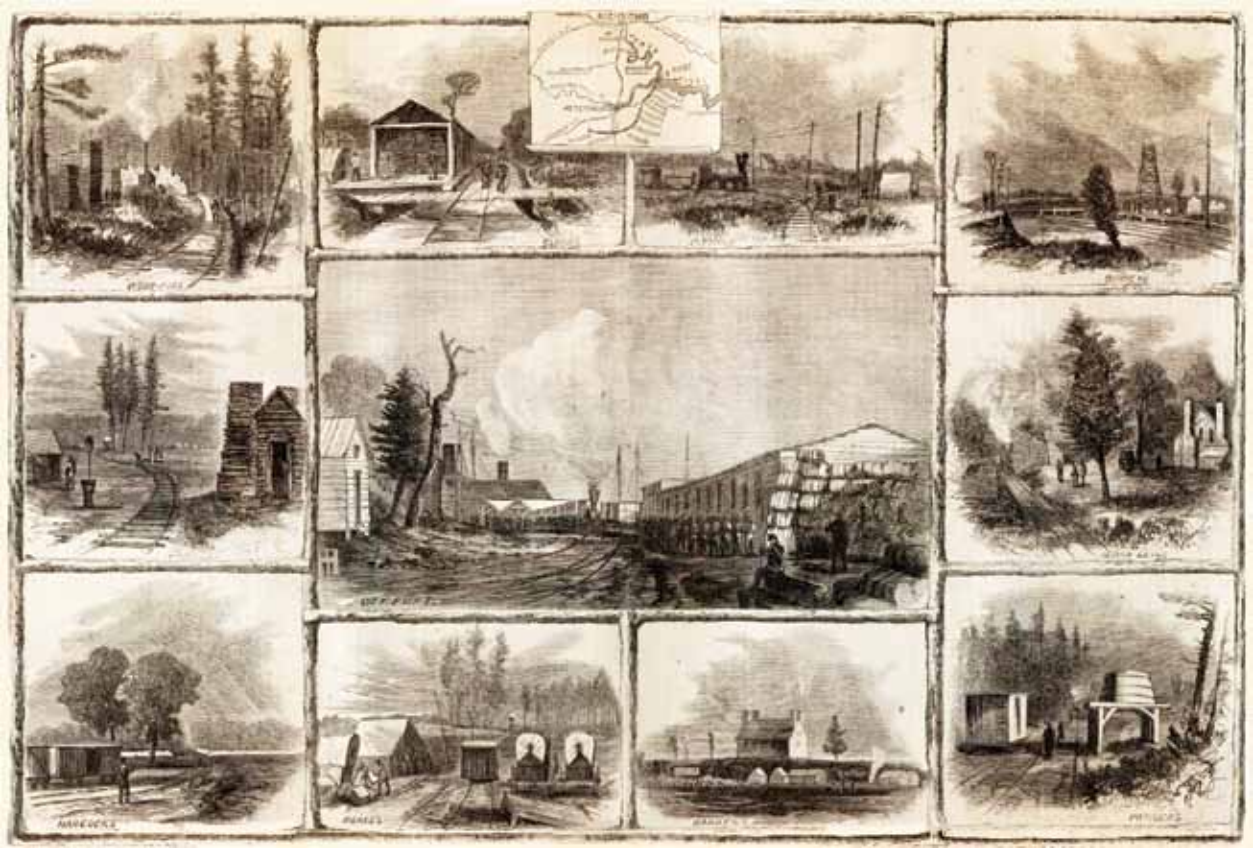
U.S. Military Railroad at City Point

The United States Military Railroad was an organization that ran railroads for the Union wherever they were needed. It was established in 1862 under General Daniel McCallum. Although it performed a number of small, short-term tasks, it is famous for its support of the Petersburg campaign in which it quickly expanded to become the largest railroad in Virginia, if not the entire south.

The railroad began by capturing the eastern portion of the nine-mile long City Point Railroad, which extended to Petersburg. It then built twenty-one miles of new track that ran southwest and west behind Union lines, to provide logistical support to the 100,000 troops and more than 65,000 horses.

It had 25 steam locomotives and more than 275 pieces of rolling stock. During the ten-month campaign, they logged more than 2,300,000 miles.

City Point Depot



Harper's Weekly engraving showing U.S. Military Railroad stations on the City Point-Petersburg line.

Detail of line from the above illustration

Locomotives

The locomotives used by the U.S. Military Railroad in the Petersburg Campaign have not yet been researched in detail. They no doubt included state-of-the-art engines made by Baldwin, Norris and Rogers, both older ones and those captured from the Confederacy. Selection of a representative locomotive will be deferred until a complete list is obtained, and each engine has been researched.

Meanwhile, a few U. S. Military Railroad locomotives are shown below.

J. C. Robinson at City Point

General Haupt

The *Whiton* pulling President Lincoln's private car.
It is not yet known if it served in the Petersburg campaign.

Railway Guns

Dictator

Railway Battery

Railway guns were first used in the American Civil War. Confederate General Robert E. Lee had a 32-pounder Brooke naval rifle mounted on a flat car and shielded by a sloping casemate of railroad iron. He then had a locomotive push it over the Richmond and York River line. It was used at the Battle of Savage's Station on June 29, 1862.

Apparently Union General Ulysses S. Grant thought it was a good idea as the next recorded use of railway guns was during the Petersburg Campaign, where they were used extensively. Petersburg has the distinction of being the first city in the world to be bombarded by such weapons of mass destruction.

There were at least two railway guns used to bombard the city. They are known primary through photographs. The first was a Union 13-inch siege mortar mounted on a rail car. It was nicknamed the *Dictator*. A photo of another rail-mounted gun exists. It caption simply states "Railway battery used in siege of Petersburg." It was significantly different from the *Dictator*. The big mortar was carried on a conventional four-wheel freight car. The railway battery gun was a cannon, as its barrel can be seen through the firing opening in the shield protecting it. It must been very heavy and very long, because it is carried by a ten-wheel flat car.

Tredegar Iron Works

In 1833, a group of Richmond businessmen and industrialists hired Rhys Davies, then a young engineer, along with a number of fellow iron workers to construct furnaces. Davies and his workers were from the town of Tredegar, in Wales in the United Kingdom, where iron works of the same name were constructed in the early 19th century. The new iron works at Richmond were named after the town and works in the UK.

Davies died in 1838, and the owners turned management over to a 28-year-old civil engineer named Joseph Reid Anderson, who acquired ownership of the foundry in 1848. By 1860, the Tredegar Iron Works was the largest of its kind in the south, a fact that played a significant role in the decision to relocate the capital of the Confederacy from Montgomery, Alabama, to Richmond in May 1861. The works were virtually the sole source of heavy guns, projectiles, gun carriages, plates for iron-clad vessels, wheels and axles for railroad rolling stock, furnace machinery, and a variety of other products for Confederate munitions factories and navy yards.

Tredegar Iron Works in 1865.

The location of the current visitor center is indicated by the red arrow.

Tredegar began building railroad steam locomotives in the 1850s. In 1887, that operation was spun off as the Richmond Locomotive Works. In 1901, it employed about 1,600 workers and produced two locomotives. Tredegar was purchased by Joseph Leiter for $3 million. Leiter had also purchased seven other manufacturing companies and merged them to form the American Locomotive Company (ALCO). Locomotive production at Richmond Locomotive Works ceased in September 1927. ALCO became the second-largest steam locomotive builder in the U.S.

ALCO was purchased in 1964 by the Worthington Corporation, which merged with the Studebaker corporation in 1967 to form Studebaker-Worthington, Inc. (SWI), ALCO remaining a wholly-owned subsidiary. After the termination of steam locomotive production in 1969, the locomotive designs were transferred to the Montreal Locomotive Works, who continued their manufacture. The diesel engine business was sold to White Motor Corporation in 1970.

Tredegar Iron Works made many things besides locomotives. The company remained in business throughout the first half of the 20th Century, and supplied U.S. Armed Forces during both World Wars. It was destroyed by fire in 1952.

In 1957, it sold its Richmond plant to the Albemarle Paper Manufacturing Company and moved some of its rolling mill equipment to Chesterfield County, where operations persisted until 1986. In 1987, the rolling mill was sold to Cleveland Track Material in Cleveland, Ohio. In 1962, the Albemarle Paper Manufacturing Company purchased the Ethyl Corporation, including the name, and so in turn, the Tredegar property in Richmond became the Ethyl Corporation property. In 1973, Ethyl Corporation paid for the restoration of the gun foundry and its chimney.

In 1991, Petersburg's tourism director, Bill Martin, became director of the Valentine Museum in Richmond. Following the opening of Petersburg's Appomattox Iron Works, the Valentine Museum established the Valentine Riverside Museum at the old site of the Tredegar Iron Works. It restored the outdoor machinery and structures, as well as the pattern building, office building and carpenter's shop. Unfortunately, the museum was not a success and closed on September 4,1995.

In 2000, the former Tredegar Iron Works facility overlooking the James River near downtown Richmond became the site of the main visitor's center of the Richmond National Battlefield Park. In 2003, the Tredegar National Civil War Center was created to operate a museum at the site.

Uriah Wells

Petersburg Iron Works/Appomattox Locomotive Company

Uriah Wells moved from Pennsylvania to Petersburg in 1830 and established the Petersburg Iron Works on the north-east corner of Old and Market Street, across from the Golden Ball Tavern. Nothing is known of his early operations, but such an enterprise was essential to a dynamic, fast-growing town. He almost certainly would have made plowshares for local planters. The booming cotton industry was becoming increasingly mechanized. Its factories used water wheels to drive their machinery, and this is the area that Wells most likely devoted the bulk of his efforts. The tobacco industry was changing. It had previously simply shipped the leaves out in bulk, but now they were beginning to make manufactured goods. Most of their factories were downtown, far from water power, so they had to rely on steam power.

During the 1830s, Wells was reported to have built railroad cars. It may have began quite early in the decade. On August 2, 1832, the Petersburg Railroad received the sample freight car from England along with the hardware for the ironwork to build 15 more.

The Petersburg Iron Works had a large beam planer, which was acquired by the Appomattox Iron Works in the 1870s. It is still on site. Experts examined it some 20 years ago, and reported that there were only three other such machines in existence. They said it was made in the early 1830s. It was used to plane 24-foot logs into large beams.

An iron works would not normally have use for such big and expensive wood-working machines, but one would have been essential for building the frames of early freight cars. The existence of that planer and the fact the Petersburg Railroad only purchased the hardware suggests that the Petersburg Railroad's first freight cars were made by Wells. If that is true, then Uriah Wells built the first railroad cars made in the south.

American iron was considered inferior to that of the English, and Virginia's early railroads imported most of their wheel rims and tracks. Iron mining and production began in Virginia in 1619 at the Falling Creek Mine just east of Richmond. By the time of the American Revolution, there were at least four operating mines. Uriah Wells' business received a big boost in 1838 when the Richmond and Petersburg Railroad began operations as it could provide him with coal.

By 1840, Wells was almost certainly repairing steam engines and possibly making them. That and the making of shafts, gears, connecting rods, and other hardware would have required him to have a number of machine tools, such as planers and milling machines. Since he had no water power, they would have been powered by steam engines.

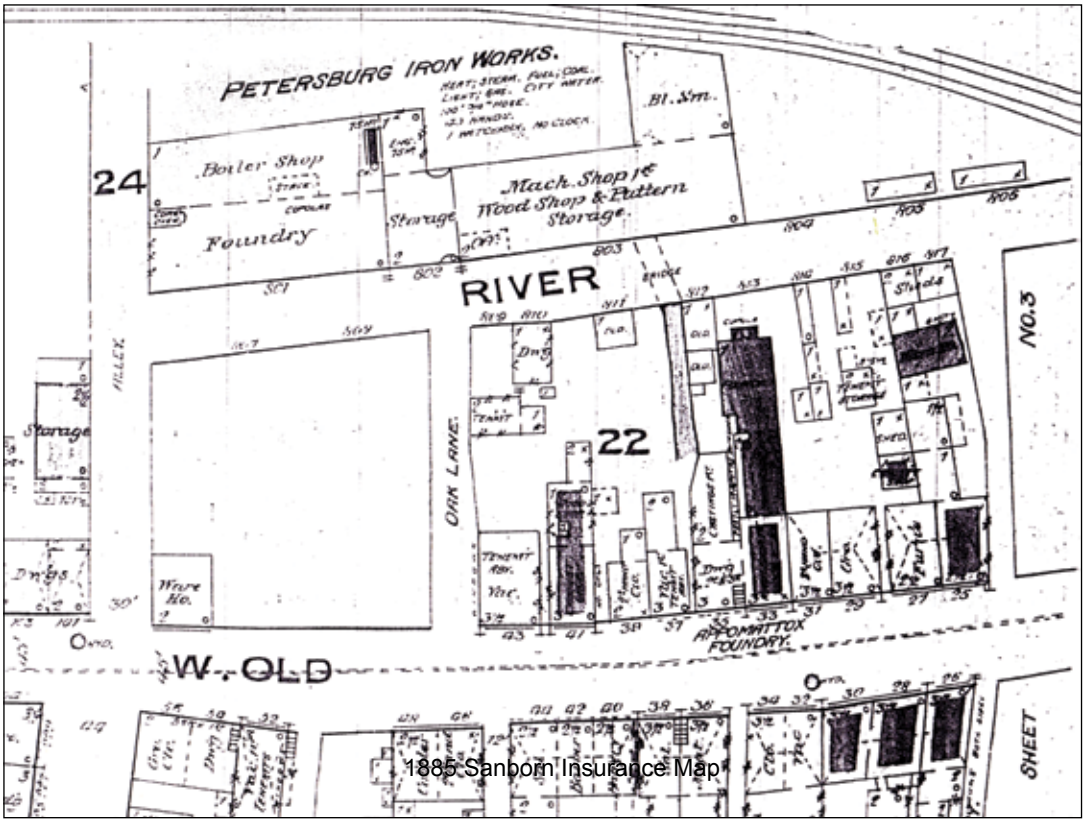
The *Petersburg Press* (Nov. 22, 1859 page 1) said that Uriah Wells was the city's primary mechanic, and he had just completed the mechanics for Raccoon Pit at Clover Hill. That was one of the coal mines serviced by the Richmond and Petersburg Railroad.

During the 1850s, Uriah Wells made railroad locomotives. One report says that he made around 20 and that he also operated under the name Appomattox Locomotive Company.

Years ago, I encountered a story in a Petersburg newspaper about Uriah Wells. It described how a locomotive was delivered from his iron works on Old Street to the Petersburg Railroad on Washington Street, up the steep Market Street hill. A portable section of track was placed in front the locomotive and it pulled forward onto it. The section the locomotive had just left was then placed in front of the locomotive, and it drove on that. It inched its way up the hill, a step at a time. The newspaper reported that it was quite an event and that many came out to witness it.

I recently learned that Uriah Wells went bankrupt in 1857, as did almost every other locomotive manufacturer, as a result of the financial panic of that year. The *Petersburg Daily Express* (September 3, 1864) contains his obituary. It said that he could not be immediately buried at Blandford because much of the area was under Union Army control.

After Wells' death, there was at least one attempt to get the Petersburg Iron Works going again, but it failed.



1885 Sanborn Insurance Map

The 1885 Sanborn Insurance Map shows the Old Street lots formerly occupied by the Petersburg Iron Works are vacant. Most likely the buildings were destroyed by a fire. It is significant that the buildings behind the lot are still intact. They include the foundry, boiler shop, blacksmith shop, machine shop and wood shop. Although not labeled on this section of the map, the street at the far left is Market Street. The Peter Jones trading post is shown as being used for storage.

Also shown on this map is the Appomattox Foundry at its original location. The alley just across the street and slightly to the left is Exchange Alley. The Appomattox Iron Works later occupied the five buildings to the west of it.

When the Appomattox Foundry was established in 1876, the Petersburg Iron Works had been out of business for many years. The AIW founders were two very frugal yankees from Pennsylvania. They certainly purchased some of the Petersburg Iron Works machinery, including the beam planer, as a 1990 inventory showed that some of the machines dated back to the 1840s and 1850s. Most, if not all, of this machinery is still at the AIW complex.

The Role of African-Americans

PERSONAL NOTE

The U.S. Constitutions requires that a census be taken every 10 years. The first was taken in 1790, The Virginia Census for 1790 and 1800 have been lost, believed destroyed when the British burned Washington, D.C. during the War of 1812. The earliest surviving census is the one for 1810. Around 20 years ago I entered the data for Petersburg into an Excel spreadsheet and added additional columns that contained additional information. For example, I added one for "status" that indicated free, slave or free black. The spreadsheet format permitted me to compile a wealth of interesting demographics. My copy of that census is in storage and when I retrieve it, I'll plug in the actual numbers. (I am fairly sure that I gave a copy to the Petersburg Library). Meanwhile, the numbers cited below are guesses.

African-Americans played a major role in Petersburg's railroads. In 1810, Petersburg had the largest population of free blacks in the south. As I recall there were about 1,500 slaves and 1,000 free blacks. Modern conveniences had not yet come into being and running a household required a lot of work, so many were used in a domestic capacity, but others had occupations. The batteaus that ran from City Point to Petersburg were exclusively owned and operated by them.

Scottish harness and saddle maker John Read built John Read's Row in 1810. This substantial brick double building was one of the few Petersburg buildings to survive the Great Fire of 1815. It now carries the street address of 102-104 Old Street, then called Water Street. It is immediately west of the Appomattox Iron Works but separated from it by the 10 feet wide Penniston's Alley. The large yard behind the house was filled with workshops. The census shows that Read owned 14 slaves. They were the harness and saddle makers.

Across the alley at the other end of the block, John Penniston's 1810 double building, which also survived the Great Fire, faced Bank Street. Penniston was a blacksmith and his rear lot then ran almost all the way to Old Street, encompassing the lot now occupied by the Appomattox Iron Works Foundry. The census shows that Penniston owned 24 slaves. William Thayer was another Petersburg blacksmith. I have not searched the census for him.

William Prentice ran the city's first newspaper. The census shows that he owned six slaves.

Thus slaves were making the saddles and harnesses, forging iron into plowshares, and printing the newspaper, all in 1810, a half-century before emancipation. The census does not reflect how many free blacks were likewise employed.

Anglo-Americans may have designed the locomotives, rolling stock and right of way, but much of the actual work was certainly performed by blacks. They were the "blue collar" workers of the day, be they slave or free black.

This is supported by a detailed report of the Richmond and Petersburg Railroad dated March 31, 1861. It shows that the company had 51 employees, which included the president and five directors. It also owned 61 slaves. Twelve worked at the Richmond Depot and Office, five were Richmond omnibus and wagon drivers, three worked in the Richmond shops, four were Richmond shop mechanics. Five were assigned to the Petersburg depot and six more were at Clover Hill and other stations. Three worked as fireman and train hands, eight were section men charged with road repairs, and seven worked on the materials and gravel train. Being so widely dispersed, they would have had minimal supervision indicating that they were trusted not to run away.

The demands of the Civil War resulted in more work. The report for March 31, 1864 shows 78 employees, but the number of slaves has jumped to 118. Twenty-two are at the Richmond depot, but 23 are in the Richmond shops and nine more are Richmond shops mechanics. They were literally keeping the trains running. A new work category was added. In 1863, there were 18 wood choppers, no doubt providing fuel for the locomotives, again contributing to keeping them going.

Over half the workman at the Tredegar Iron Works were slaves. I have not yet checked the figures for Uriah Wells. It would be interesting to know how many worked at his iron works and locomotive factory. I have recently received new data on this which has not yet been added.