



Transportation: Railroads

B & O

P & C

PRR

P & LE

WM

Choose one of the railroads. Use a variety of resources to find out as much as you can about the railroad and its relationship to the steelmaking industry:

- * identify the name of the railroad, what the abbreviation stands for, and where the name came from;
- * describe the location of the railroad on a map and the main routes taken by the railroad during the steel era;
- * identify the people important in the development of the railroad system;
- * describe the main products transported by the railroad, where they were loaded, and where the products were taken;
- * anything else that might be of interest or importance with relation to the railroad and its impact on the steel industry.

Gandydancer

There are many words and meanings associated with the railroad industry. The term, gandydancer, is one of the more colorful words:

- * write your own definition of the word, trying to guess as to the meaning of the word and its origin; illustrate your definition;
- * look up the definition and compare it to your definition;
- * research the origin of the word and explain its meaning.

(“gandy” – comes from the name of the company that made the tools for the track workers to use; “dancer” – comes from the foot stomping that is done to tamp down the rocks and sediment around the rails and ties; “gandydancer” = the pick-and-shovel track repairmen)



Intramodal Intermodal

Railroads were vital to the success of the steel industry. Two main types of railroads were used for the transportation of the raw materials and of the finished products:

- * write your own definition of each word, trying to determine the different meaning and use of each type of railroad;
- * look up the definitions and compare them to your definitions;
- * explain the use and importance of each type of railroad in the steel industry and illustrate your explanation.

(“intramodal” – competition within a single mode or type of transportation; an example would be several railroads competing for the same market, as in the same steel mill;
“intermodal” – competition between different modes or types of transportation; an example would be trucks, railroads, barges, and/or others)

Narrow Gauge Standard Gauge

The gauge of a railroad is the measure of the distance between the rails. Railroads are either narrow gauge or standard gauge, depending on the measurement.

- * find out the measurement of each of the railroad gauges;
- * explain the reasons for the two different gauge measurements; explain the use of each of the railroad gauges in industry;
- * describe problems that would be encountered as a result of the two different gauge measurements;
- * find examples of the two types of railroads in Pennsylvania.

(gauge measurement is taken between the parallel rails;
standard gauge measurement is 4 feet 8.5 inches, or 56.5 inches; the original standard gauge was built in England;
narrow gauge measurement is less than the standard gauge measurement; most are 3 feet 6 inches or less; narrow gauge was cheaper to build, equip, and operate, and was especially good for different terrain such as mountains, mines, logging operations, or quarries)



Ella Campbell

Amy Fisher

Olive Dennis

Ida Hewitt

Jocelyn Wagner

Women were not encouraged to work in the railroad industry. The women listed above were involved in the railroad industry despite the obstacles they faced as women.

* Choose one of the women listed. Use a variety of resources to find out how she was involved in the railroad industry. Describe the kind of job she did, how long she worked, how she originally got her job with the railroad, and the difficulties she faced.

* Choose two of the women listed. After researching their backgrounds, compare and contrast their lives and their jobs. Write your opinion as to which of the women had more difficulties to face, and which of the women had a more important impact on the industry.

* Find other women who were involved in the railroad industry. Explain their roles and their impact on railroading.



Transportation: Canals, the Lock & Dam System, and River Travel

C & O Canal

Erie Canal

- * Choose one of the canals. Locate it on a map and show the route. Identify the natural waterways connected by the canal. Describe the importance of the canal in the transportation of products from local industry.
- * Research both canals. Compare and contrast their locations and routes, the natural waterways connected by each, and the importance of each canal in the transportation of products from local industries. Express your opinion as to the importance of each canal in our local industry.

Lock & Dam System, Barge Transportation, and River Travel in the Pittsburgh Area

- Basic facts:
- * there is a 147 foot drop on the Monongahela River
 - * there are 9 locks located on the Monongahela River
 - * there is a 700 foot drop on the water from the Ohio River to the Mississippi River
 - * there are 70 miles of riverfront land in Pittsburgh
 - * there are 23 locks on the three rivers, the Monongahela, the Allegheny, and the Ohio
 - * there is a specific order set for passage of boats through the lock and dam system:
 - 1 – U.S. military craft
 - 2 – mail boats
 - 3 – commercial passenger craft
 - 4 – commercial tows
 - 5 – commercial fishermen
 - 6 – recreation boats
 - * the air horns are used for the safety of boats passing through the locks:
 - 1 long blast = enter the landward lock
 - 2 long blasts = enter the riverward lock
 - 1 short blast = leave the landward lock
 - 2 short blasts = leave the riverward lock
-
- * Explain how the lock and dam system works in order for boats to pass through. Describe each step in sequential order. Illustrate each main step in the process. Create a flow-chart to show the movement of a boat through the lock, or create



a poster with an overview illustration of the passage of boats through the locks. Label each of the parts of your illustrations and explain the purpose of each.

- * Explain the importance of the lock and dam system on the transportation of goods, services, and people, especially in the Pittsburgh area. Explain the impact the lock and dam system had on the development of industry in the Pittsburgh area. Explain how the industry relied on river transportation, and how the transportation would not have been possible without the lock and dam system. Describe how industry in the Pittsburgh area would have been different if the lock and dam system had not been built.
- * There are three sizes of barge. Explain the dimensions of each size barge and how much material each type of barge can carry. Describe the purpose of each size of barge, and the main products transported on each. The three sizes are called:
 - standard
 - stumbo
 - jumbo
- * Explain the use of the air horn signals on the safe passage of rivercraft through the lock and dam system. Describe the meaning of each signal and how the river pilot follows each signal. The most important air horn signals include:
 - 1 long blast = enter the landward lock
 - 2 long blasts = enter the riverward lock
 - 1 short blast = leave the landward lock
 - 2 short blasts = leave the riverward lock
- * The barges are maneuvered by large boats, called tugboats or towboats. The tugs or tows actually **push** the barges. Use a variety of resources to find out:
 - the method used to attach the barges together and to the towboats;
 - the skills needed for piloting the towboat and pushing the barges along the rivers and through the lock and dam system;



- procedures followed if a barge breaks loose and must be “captured”;
- create an illustration to show the connections of the barges to the tows.

* In 1918, over 17 million tons of materials were shipped along the Monongahela River, through its system of locks and dams. This exceeded the tonnage that was shipped through the Panama Canal and the Suez Canal together, which was less than 15 million tons. After production, steel was then shipped west to Cincinnati, Chicago, and St. Louis.

- Explain how the lock and dam system, and the use of barge travel, enabled the steel industry to flourish in Pittsburgh.

* There are some important dates in river travel history. Choose one of the dates and events. Use a variety of resources to find out more about the incident. Describe what happened, why it happened, how it happened, the importance of the event in the history and development of the region, and what the final results were. Choose from one of the following dates and events:

- 1770: George Washington explored down the Ohio River from where the Monongahela meets the Allegheny River to form the Ohio;
- 1773: John Ormsby operated the first ferry boat in Pittsburgh; the fare for a one-way trip was 4 ½ cents;
- 1811: the first steamboat inland cruise left from the Mon Wharf; it was the side-wheeler, the *New Orleans*;
- 1812: supplies were sent via the rivers to Andrew Jackson’s army in New Orleans, during the War of 1812; the captain of the boat was Major William B. Foster, Stephen Foster’s father;
- 1929: the completion of the system of 50 locks and dams on the three rivers;
- 1956: a B-52 disappeared into the Monongahela River and has never been found; the mystery continues.