

# **Augusta Canal**

## **Background Information for Educators**

*(This information is taken directly from panel exhibits in our Interpretive Museum.)*

### **Boom and Bust**

During the 1820s, Augusta was a successful cotton trade center. Wagons piled high with heavy cotton bales lumbered into town. Warehouses brimmed with the product. Steamboats and barges waited for loading on the Savannah River, their cargo destined for eastern markets. As America grew, Augusta's fortune changed. Competition from other river towns, the new railroad and a national depression in 1837 ended all Augusta's prosperity. Times got tougher; many residents considered leaving town for the promise of the western frontier. Augusta faced the real danger of becoming a ghost town. The native son, Henry Cumming, proposed a plan that would change the city forever.

### **Henry Cumming, Canal Visionary**

To revive Augusta, Henry Cumming proposed building a canal to power industry. He based his idea on the success of Lowell, Massachusetts, which built a network of power canals and transformed itself into America's most profitable manufacturing center. With careful planning and hard work, Cumming believed that Augusta could do the same.

### **Natural Assets**

Two geographical features helped make Augusta a natural host for the canal to power industry. The Savannah River, which bordered the city's northern edge, offered more than

enough water to supply the canal. But to power industry, the canal needed more than just an adequate water source. It also needed water that "dropped," or moved from a higher elevation to a lower one, because falling water contains energy that industry can use to drive machines. Here Augusta had a second advantage. The city lay on the "Fall Line," where the Savannah River dropped 52 feet in elevation over the course of six miles as it left the hard rock of the Piedmont Plateau and hit the softer rock of the Atlantic Coastal Plain.

### **Building the Canal**

In 1845, Augusta was on its way to building a canal. The city approved plans and financiers worked out an "imaginative" arrangement to pay for construction. Contractors began in the Spring of 1845. Slaves, Freedmen, local white laborers, and possibly some Irish, used shovels and pick axes to dig into Augusta's rich, red earth. When summer came, most white workers laid down their tools, unable to bare the oppressive heat. The African-American workers preserved under the hot sun. Workers strained and shoveled, as legal battles, engineering complications, and cost overruns delayed the project's completion. Water finally ran through all three levels of the canal on the 23<sup>rd</sup> of July, 1850. The men dug the entire canal by hand.

### **The Enlargement**

Before construction began, engineers convinced Henry Cumming that the canal would be large enough to power new textile mills. But the experts were wrong. After the canal was built, it became clear that the waterway could not even power the city's only textile factory. After much debate and delay, Augusta decided to enlarge its canal. In 1872, hundreds of men arrived in

Augusta to work on the project. Chinese laborers who helped build the transcontinental railroad, convict crews from local prisons, and Italian stonemasons joined the workers already on the job. Some used steam-powered equipment to dig the canal, quarry stone, and transport dam materials. Others used pick axes or cleared away dirt with shovels. They carved out sections parallel to the first level before connecting them to the waterway, so the canal would stay in operation as they worked. By 1875 Augusta had a canal that was big enough to drive the city's industrial revolution.

### ***The Aqueduct***

When the Augusta Canal was first built engineers constructed a wooden aqueduct to carry the waterway over Rae's Creek. The bridge-like structure proved troublesome from the start, sinking into the mud and threatening the integrity of the canal. Eventually, workers replaced the old aqueduct with one of stone. But during the canal enlargement in the 1870s, engineer, Charles Olmstead, realized that it could not accommodate the expansion. He turned the aqueduct into a dam, rerouted the canal, and diverted Rae's Creek into a new man-made lake.

### ***Mills and Boom Times***

By 1875, Augusta's newly enlarged canal was open and ready for business. With the first level three times its original size, the canal was able to provide more water and power than ever before. Finally the city was set to become a major industrial force – and an example for the rest of the South.

The first new textile factory to open on Augusta's larger canal was the Enterprise Mill. Others followed, and soon "manufactories" lined the banks of the canal, offering new jobs and new

hope to people from all over the countryside who poured into the city. By the late 19<sup>th</sup> century, Augusta had become what it set out to be - a bustling manufacturing center and a southern leader in textile production. The textile mills, having diverted industry from the North, turned out hundreds of thousands of yards of cloth. Other businesses produced a wide variety of goods, including flour, lumber, and equipment that helped keep the mills running.

### ***Augusta's Advantage***

Augusta's textile mills offered advantages to investors that northern mills never could. With cotton fields nearby, the mills saved on the expense of shipping cotton out of state. They bought waterpower at prices much cheaper than anywhere in the North. Mill owners kept unions out of the city and paid their employees far less than what mill workers in northern states earned. On every count, it was cheaper to do business in the South than it was in the North, allowing Augusta's mills to offer larger profits to investors. Would-be manufacturers looked at Augusta Factory, the city's first textile mill, as an example of success. The mill paid over 1 million in dividends to its investors between 1865 and 1880.

### ***A Life of Leisure***

As soon as the canal opened, people discovered the new waterway was not just functional – it was fun. Early Augustans paid 50 cents to ride boats up and down the canal, while later residents flocked to Lake Olmstead for swimming and boating.

### ***Work on the Move***

Labor and management clashed during three major strikes in 1886, 1898, and in 1902. Each time the national labor

unions arrived to help Augusta's beleaguered textile workers. The workers wanted - and needed - more money than the mill owners were willing to pay. During all three strikes the owners presented a united front. Intent on making sure that industry remained in Augusta, the owners refused to cut into investors' profits in order to pay their workers more. Instead they evicted strikers from their homes, shut down the mills throughout Augusta, and turned the strikes into lockouts. The strikes ended without management making any significant concessions. Labor lost, and the unions left Augusta for three decades.

### ***Changes and Challenges***

At the dawn of the 20<sup>th</sup> century, technological progress began changing how the mills operated. Electricity and advances in mill machinery streamlined the manufacturing process. To stay competitive, factories needed to modernize, but modernization cost money. Some companies folded. Others struggled to stay in business. As the century wore on, mill owners found themselves dealing with other economic realities. The Great Depression of the 1930s strained already burdened

finances, and labor reforms threatened an even greater outlay of capital. Soon the availability of cheap electric power, which did not depend on waterpower, allowed mills to leave the canal and move to other locations. By the latter half of the century, much of Augusta's prime industry – textiles – headed overseas, leaving behind empty buildings and abandoned equipment.

### ***End of an Era***

While other mills around Augusta closed, the Enterprise defied the odds and stayed open. Then as the twentieth century wound down, the reality of a changing world economy dealt the mill a fatal blow. Foreign competition from Asia, coupled with a national recession, forced the mill to close its doors in 1983.

### ***New Waters, New Life***

The late 1800s proved to be the golden years for the canal. But during the 20<sup>th</sup> century, the canal began losing out to progress and almost disappeared from the city. The residents banded together and saved Augusta's waterway, claiming it as a valuable historical, educational and natural resource.

## Glossary of Canal Terms

Agent - A man hired by a mill owner to run a mill.

Aqueduct – An artificial channel carrying water across land or another body of water, especially one built like a bridge above low ground; a structure for carrying the canal across a river or stream.

Back Water- A condition that occurs when downstream water in the canal system raises and floods the wheel pits of the water wheels, causing them to slow down or stop.

Bale – A large bundle of cotton strapped together and weighing about 500 pounds.

Bell System- Large bells on top of tall towers that rang many times each day telling workers when to begin or end activities, such as eating or working.

Bobbin – Holds the yarn and is placed inside a shuttle that carries the weft thread between the warp threads.

Bolt – Rolls of finished cloth.

Canal – A human-made water way used for transportation or power.

Carding – Combing cotton to straightened the strands. This must be done before the cotton can be spun into thread.

Chute Case – A turbine part which guides water from penstock to runners.

Coastal Plain- A plain running along the coast

Fall Line- An imaginary line, marked by waterfalls and rapids, where rivers descend abruptly from upland to lowland. Drop in elevation causes water to flow rapidly and this force can be harnessed to make hydropower. Where Piedmont plateau meets the coastal plain.

Flywheel – A heavy wheel attached to machinery to regulate speed and maintain smooth rotary motion.

Gatehouse – A structure on the canal with mechanisms to open and shut gates that control the flow of water to or from another canal channel.

Harnesses – The rectangular frames hanging or resting inside the major frame of the loom. They are located behind the beater bar, threaded with warp threads.

Head – The height or vertical distance water falls to supply a mill with power.

Headrace – A channel, which carries water to a mill.

Headgate – The main water entrance to a canal that allows water and water born traffic into the canal.

Hydropower – The production of energy created by the potential energy of falling water.

Integrated Manufacturing System – A system of manufacturing in which all aspects of production take place under one roof.

Industrial Revolution – The period of time when people started to make products using machines in factories instead of making things by hand.

Levee – An embankment built to prevent river floods a continuous dike or ridge (as of earth) for confining the irrigation areas of land to be flooded.

Line Shaft – A long bar which transfers power from the flywheel to individual machines by means of pulleys.

Lock – A section of a canal or waterway where water levels are changed. A lock chamber is fitted with watertight gates and sluices so that water can be let in or out to raise or lower boats from one level to another

Lockout- Work stoppage caused by management’s decision to “lock workers out.” It is usually done when a strike is anticipated or in an attempt to break a union.

Loom- A machine that weaves threads together to make cloth.

Millwright – A person who designs or builds mills or installs mill machinery.

National Heritage Area - Is a place designated by the United States Congress, where natural, cultural, historic and recreational resources combine to form a cohesive, nationally distinctive landscape arising from patterns of human activity shaped by geography. These patterns make National Heritage Areas representative of the national experience through the physical features that remain and the traditions that have evolved in the areas. Continued use of the National Heritage Areas by people whose traditions helped to shape the landscapes enhances their significance. National Heritage Areas are a new kind of national designation, which seeks to preserve and celebrate many of America's defining landscapes.

Operative – A factory worker responsible for tending machines.

Overseer- Factory floor supervisor responsible for meeting production quota.

Penstock – A tube or tunnel used to bring water from canal to turbine.

Petersburg Boat – A long slender wooden boat, manned by six riverboat men who propel the vessel with long poles. The boats received their name from a now extinct trading town that was located on the banks of the Savannah River in what is now Columbia County, GA.

Piedmont region- A plateau between the coastal plain and the Appalachian Mountains.

Power Loom – A machine used to weave cloth and is run by something other than human power.

Premium system- A system where overseers receive bonuses if workers exceed production quotas.

Quarry – A place where stone and rock are mined for industrial and commercial use.

Shotgun houses- Long narrow houses built and owned by the mill owners for factory workers to live in.

Shuttle – The tool that carries the weft thread through the warp threads.

Sluice – A channel that carries off water; it can be natural or artificially made.

Speed-up – Increase the speed of machinery in order to increase production and profit.

Spinning – Cotton or wool that has been carded and twisted and pulled until it becomes thread. This can be done by hand, on a spinning wheel, or by machine.

Spillway- A passage for surplus water from a dam. An overflow channel.

Stretch- out – Increase the number of machines assigned to each worker in order to increase production and profit.

Strike – When a large group of workers refuse to work, hoping to force their employer to give pay raises, improve working conditions, etc. Also called a “turnout”.

Tailrace –A pipe for conveying water away from the turbine after use.

Technology – The ideas and tools that enable people to do the things they want to do and make the things they want to have.

Ten Hour Movement – A petition drive by mill workers in the 1840’s which attempted to persuade the legislature to reduce the work day from twelve to ten hours.

Time line – A chronological schedule of events.

Towpath – A road, usually about 12 feet wide and made of packed earth, along the side of a canal or river that draft animals travel upon to pull boats along the water way.

Turbine – An improved instrument for harnessing waterpower; 80% - 90% efficient; works under water, so is less affected by backwater.

Union – An organization of workers that attempts to bargain with employers regarding wages and working conditions.

Warp – The yarn attached to the loom, held under tension during the weaving process.

Waterpower – The power of falling or running water used to drive machinery; the greater the weight of the falling water the more power is available.

Water Wheel – An early device which uses the weight of falling water to generate power; 40%-60% efficient; subject to the effects of backwater.

Weft- Also called the woof; this is the horizontal thread or the yarn running perpendicular to the warp.

Works Progress Administration – A national government agency, established as part of the New Deal that provided unemployed people with jobs in construction, garment making, teaching, the arts and other professions.

## Books to Explore

- *The Brightest Arm of the Savannah* by Edward J. Cashin
- *The Story of Augusta* by Edward J. Cashin
- *From Plant to Blue Jeans* by John L'Hommedieu
- *How We Use Cotton* by Chris Oxlade
- *Alligators All Around* by Maurice Sendak
- *Mill* by David Macaulay
- *Yurtle the Turtle* by Dr. Suess
- *Canals* by Elaine Landau
- *Cotton Now & Then: Fabric Making from Boll to Bolt* by Karen B. Willing
- *Kids at Work* by Lewis Hine
- *Kids on Strike* by Susan C. Bartoletti
- *Up Before Daybreak: Cotton and People in America* by Deborah Hopkinson
- *Working Cotton* by Sherley Anne Williams
- *War Terrible War* by Joy Hakin
- *The Civil War for Kids* by Janis Herbert
- *The Magic School Bus-At the Waterworks* by Joanna Cole & Bruce Degen