

Steamboats and the Ohio River

General River History

The Ohio River is formed by the confluence of the Allegheny and Monongahela Rivers at Pittsburgh, Pennsylvania, originally named Fort Pitt. It travels 981 miles to its mouth at Cairo, Illinois, a town named by the Egyptian immigrants who settled the area (now pronounced KAY-row).

The river was discovered in 1669 by Robert Cavalier who thought it was a passage to China. He abandoned his exploration at the Falls of the Ohio, though he later returned and explored all of the Ohio and the lower Mississippi River to the Gulf of Mexico.

Thomas Hutchins, involved in the post-Revolutionary War occupation of the Old Northwest, wrote *Courses of the Ohio River* in 1766, the first known hydrographic survey of the river. It gave direction, time required for navigation, speed of the current, and other details beginning at Fort Pitt and ending at the river's mouth. It took seven weeks (mid-June to early August) to make the trip and record the findings.

Using Hutchins' work, British Army Captain Harry Gordon, Chief Engineer of the Western Development, drew the first map of the Ohio that gave accurate details.

Steamboat Travel Begins

Have You Heard of John Fitch?

While history has given credit to Robert Fulton for the invention of the steamboat, it was actually John Fitch who, in August, 1787, launched the first working American steamboat to travel on a US river, the Delaware. He named her *The Perseverance*, and she was propelled by oars attached to each side of the boat. His second model, the *Perseverance II*, launched in 1788 and propelled by a paddlewheel, was the first river steamboat to carry payloads and passengers on schedule. She traveled between Philadelphia, Pennsylvania, and Burlington, New Jersey. Fitch received a patent for his invention in August, 1791; and though he built two more mechanically-successful models and proved that steam could be used for river and lake transportation, he couldn't get additional financial backing to build and maintain his boats.

Around this same time, James Rumsey was also experimenting with a steamboat design, and he and Fitch battled over who would receive credit for the development of the steamboat. Fitch finally succeeded, though Rumsey and another inventor, John Stevens of Hoboken, New Jersey, were both ultimately given patents for their steamboat designs as well. However, the most significant impact of Fitch's invention came about in 1807, 16 years later.

Fitch was born on January 21, 1743, and became skilled as a clock-maker and metalsmith. He briefly served under George Washington at Valley Forge in 1776, but left to manage a gun factory in Trenton, New Jersey, and then made even more money selling beer and tobacco to soldiers in the Continental Army. In 1780 he began surveying Kentucky lands between the Green River and the Ohio River. He settled first in Pennsylvania, then later moved to acreage he owned near Bardstown, Kentucky, and traveled from there to northeastern cities to experiment with designs and build steamboats.

After years of struggle, penniless and despondent over not securing the money needed to make his invention a commercial success, Fitch poisoned himself with an opium overdose and died on July 2, 1798, nine years before Fulton built his first American steamboat. In a journal found after his suicide, he prophesied that there would be a day when someone else would become rich and famous from his steamboat invention and no one would believe that [John Fitch] had done anything noteworthy. He was right.

Here's Where Fulton Comes In

In 1807 Fitch's plans were put into the hands of Robert Fulton and his friend and partner, Nicholas Roosevelt, who eventually secured a patron in Robert Livingston, the Ambassador to France.

Fulton and Roosevelt's first inland waterway steamboat, *North River* (in history known as the *Clermont*) sailed on the Hudson River in New York. Seeing the success of that boat, they began planning for steam travel on other waterways.

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With Livingston's help and financial backing, in 1810 Fulton petitioned for and was granted exclusive navigation rights for all boats operated by fire or steam from the Louisiana border to New Orleans, thereby creating a monopoly that he and his heirs and business partners held for 14 years. It effectively prohibited shipping to the markets in New Orleans by any boat other than ones built – or licensed – by Fulton. Penalties for infractions were stiff.

A Steamboat on the Ohio!

The first steam-powered vessel on the Ohio River was the *New Orleans*, a sidewheeler built at Pittsburgh, Pennsylvania, in 1811 by Nicholas Roosevelt with financing from Robert Fulton. They launched in October of that year, passing villages and settlements and town after town, through primeval forest most of the way. Roosevelt, his wife, Lydia, and their young daughter were on board for the entire trip; and they spent some time in Louisville while Lydia gave birth to their son.

This was the *New Orleans'* "shakedown" voyage, and it all had to be planned according to where supplies – especially fuel to fire her boilers – could be found. Even the most significant towns along the river, including Cincinnati and Louisville, were just small communities, so finding provisions was a constant adventure. Wood stops along the river didn't exist yet, so the crew had to stop and cut wood regularly along the way. Locating sources of coal was an advantage because it burned more efficiently than wood. She loaded coal below Pittsburgh, and expected to take on coal again from an exposed vein below Louisville, Kentucky.

The land was in upheaval from earthquakes along the New Madrid fault, affecting the Ohio and Mississippi Rivers. Water flow would change direction and banks would disappear overnight. After surviving the drop at the Falls of the Ohio and facing all the other navigational challenges of the voyage, the boat eventually made it to New Orleans, Louisiana, on January 10, 1812.

It Was A Miracle!

The *New Orleans* proved that river travel by steam power was not only possible but profitable. She was a phenomenon in her day, frightening and mesmerizing people wherever she went. As she arrived in Cincinnati, Ohio, a rider galloped through the streets yelling, "A steamboat is coming! A steamboat is coming!" and the town's entire population went down to the river to see the new – and amazing – invention. They were disappointed when the boat passed Cincinnati without landing.

It was the time of The Great Comet of 1811, and when the *New Orleans* reached Louisville in pitch dark about three weeks after leaving Pittsburgh, the citizens awoke not knowing if the sparks they saw and noises they heard were from the comet hitting the water or a night raid by Indians.

The water was low at the Falls of the Ohio at that time of year; and since there was no way to continue on except by "running the falls," the boat had to wait until the water level rose high enough to allow for a more safe "drop" after going over the top. For three more weeks, the *New Orleans* made several trips between Cincinnati and Louisville until she finally ran the falls the last week of November.

She tied up at Natchez, Mississippi, in the first week of January, 1812, then picked up a payload bound for New Orleans and became a lucrative venture from the start. Though she made history and ran several trade voyages between Natchez and New Orleans, it was learned her engines were not powerful enough to travel back upriver to the Falls; so she never returned to the Louisville area. The *New Orleans* was famous but short-lived, and she burned and sank in 1813.

With John Fitch out of the picture (and a dim memory at best in the public's eye), Robert Fulton received the acclaim for building the "first" river steamboat without giving credit to the man who set the stage and provided the plans.

And Then What?

Fulton's monopoly was finally overturned by the Supreme Court in 1824 because of a legal challenge brought by Henry Shreve. He designed and built boats, and his 1815 design of a shallow-draw, flat-bottomed hull (eventually dubbed "Mississippi River-style") made it possible for steamboats to travel on more inland rivers for more months of the year than ever before. It was a distinct advantage over the ocean-style, deeper-draw Fulton (Fitch) hull design.

From that time on, nearly all river steamboats in the country were built with a Mississippi River-style hull. The shallowest draft on record was about 9 inches, the deepest about 10 feet. Most were built as packet (freight) boats, moving people and cargo on all the country's navigable rivers.

The steamboat-building business was very active and lucrative. By 1835, nearly 700 boats had been built on the Ohio River – most of them at or near Pittsburgh and Louisville and nearby Indiana towns. And that was just the beginning. Working steam packets and towboats were built well into the 20th century.

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However, by the late 1920s, towboats became the wave of the shipping future and most of the steam packet trade was gone from the rivers. Remaining boats were generally converted to excursion service. Today, only a few river steamboats exist, and the oldest and most authentic is the *Belle of Louisville* built in 1914. She saw service as a ferry and packet boat before moving exclusively to excursion trade in the early 1930s.

Ohio River Travelers of Note

During the heyday of the steamboat era, from about 1820 to the 1880s, many famous people traveled through America by way of river – artists, musicians, writers, entertainers, military men, U.S. Presidents, heroes, and political figures – all riding along with the “common” farmers, laborers, businessmen, pioneering families, adventurers, and vagabonds.

In fact, in the early days of steamboats and through the Civil War, the fastest and most efficient way of travel was waterways. Railroads were not plentiful and good roads were hard to build and maintain. The country was settled and developed primarily through the river commerce.

After the Civil War and following the completion of the first transcontinental railroad in 1868, transportation across the USA began to change; but rivers were still effective ways of moving people and products from place to place.

William Clark, explorer, Indian agent, and governor of Missouri, traveled the Ohio many times in many fashions. His most famous trip was by keelboat in 1803 when he and Meriwether Lewis began their epic journey by river (most of the way) to the Pacific coast.

The Marquis de Lafayette, instrumental in the colonist's victory in the Revolutionary War, traveled on the Ohio River in 1825.

General Andrew Jackson was a passenger on a packet boat to Cincinnati in 1832 while on his way to accept the United States Presidency. Zachary Taylor, US President-elect, traveled on the *Courtland* to Louisville in 1849.

Other political figures like Oliver Wendell Holmes and Henry Clay, and Presidents James Madison and Abraham Lincoln, as well as many others, traveled by steamboat across the country.

Washington Irving, a writer known famously for *Rip Van Winkle* and *The Legend of Sleepy Hollow*, also traveled on the Ohio in 1832. So did Herman Melville, Walt Whitman, and Ralph Waldo Emerson. Charles Dickens, well-known British writer, traveled extensively in the United States in 1842. Used to

rail travel in England and Europe, he made many disparaging remarks about steamboats, and felt they were simply too slow to be practical.

P.T. Barnum, businessman and circus organizer, and Jenny Lind, famous singer and stage performer, both traveled downriver on the *Messenger No. 2* in 1851.

The first woman to receive a captain's license in the United States was Mary Miller in 1884. She was a resident of Portland, KY outside of Louisville, and she and her husband made their living by owning and operating the *Saline*, a sternwheel packet. It was a very radical step then, to grant a license to a woman, so the story was carried in newspapers around the country.

Samuel Clemens may be history's most famous river traveler, as he not only wrote about it (*Life on the Mississippi*, 1888), he lived it as a riverboat pilot from 1857 – 1861. He left the river at the start of the Civil War because pilot jobs were getting harder to come by as more and more boats were taken out of commission.

He chose his pen name, Mark Twain, from the early method of gauging a river's depth (to determine safe – or unsafe – passage) by throwing a weighted, graduated line into the water and retrieving it to see how many feet of water was under the hull of the boat. “Mark twain” indicated a water depth of 12 feet.

He traveled by river as often as he could. In fact, the *Elon G. Smith* was eventually renamed the *Mark Twain*; and a high point of her service was when the world-renowned author of the same name piloted her late in his life.

The Ohio – How Busy Was It?

Steamboats were built in many ports along the Ohio River, including Pittsburgh, Wheeling, Cincinnati, Jeffersonville, New Albany, and Paducah. One of the major shipyards in the 1800s was in Madison, IN – the Madison Marine Ways which built over 500 packet boats during the 100 years it was in operation. Another was the Howard Shipyards at Jeffersonville, building over 1100 boats before they sold their business to the US government in 1941.

To give you an idea of how busy river ports could be, 500 boats docked at Cincinnati in 1838. In 1839, 40 boats a day landed there. During the year 1852, 8000 boats, an all-time record, docked at Cincinnati, just one port along thousands of miles of inland rivers.

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Between 1820 and 1880, more than 6000 boats were built – 75% of them on the Ohio River.

Interestingly enough, two different ocean accesses can be made from the Ohio River – from Pittsburgh to the east coast, and from Pittsburgh to the Gulf of Mexico. One of the most well-known boat builders of the 19th century was James Rees & Sons, in business from 1845 into the 20th century. He began by building steam-powered engines and boilers, and then later entered into steamboat construction as well.

Though Rees built many boats for the inland waterways of America (including the present-day *Belle of Louisville*), he also built boats that operated in Egypt, Russia, South America, and other waterways of the world.

Yep. It's a Business, All Right

The river has always been an important source of commerce. For example, in 1765, \$250,000 worth of goods was transported on flatboats and keelboats. In 1798, \$1,000,000 worth of goods traveled on the river. By 1865, 2,500,000 tons of freight and 1,000,000 passengers were being transported each year on the Ohio. And from then to the 1880s, millions of tons of freight and millions of passengers were transported annually between Pittsburgh and Cairo.

However, river commerce is as important today as at any time in history. Even with a tremendous Interstate highway system and railroads reaching every nook and cranny of the country, as much as 15% of all shipping is done by river towboats – a significant amount of tonnage and a significant impact on our nation's economy.

Making the River Navigable

Before locks and dams were built, towboats (including life-preserving coal boats) could get delayed for months waiting for the water level to rise enough to allow travel on different sections of the river. They could get hung up on sandbars and chutes, and snags were always a problem. The river could be as shallow as 1 to 2 feet anywhere along its length. Boat operators could generally expect a rise in the water level in the spring and late fall; but since Mother Nature was in charge (then *and now*), there were no guarantees.

As early as 1824 the Federal government recognized the need for consistently raising the water level, and by the 1870s they began to put things in motion. In the 1880s the US Congress

gave the job of maintaining the country's waterways to the U.S. Army Corps of Engineers.

In 1910, Congress mandated a lock and dam system that would guarantee a navigable channel of 9 feet for the entire length of the Ohio River. By 1929, the mission was completed with 51 locks and dams constructed.

Canalization (the building of locks and dams) provided a consistent 9-foot channel. It did not, however, remove the need for dredging. In some stretches of the Ohio River dredges operate 24 hours a day to keep the required channel open.

Because of rebuilding – with better technology and available materials – today there are 21, and by 2011 it is expected there will be 19 locks and dams on the Ohio River.

Some Facts of Fascination

For comparison:

Missouri River: 2540 miles long, from the Rocky Mountains in western Montana to St. Louis, MO.

Mississippi River: 2340 miles long, from Lake Itasca, MN to the Gulf of Mexico.

Ohio River: 981 miles long, from Pittsburgh, PA to Cairo, IL

At Louisville, in a normal flow, 90 *billion* gallons of water pass by every day! The Louisville Water Company uses 130 million gallons of water to serve the area's residents each day.

The Ohio River drain basin affects at least 30 states and drains 25% of the United States.

The river ranges from 5' to 105' in depth. The deepest section is at Cannelton, IN near Owensboro, KY.

Each new (or reconstructed) dam built between 1963 and 1980 contains enough concrete to build 70 miles of Interstate highway.

History reported by Kadie Engstrom, Education Coordinator, 2005; latest rev 2009