

The advent of steamboats in the 1810s effectively ended the problem of contra-current navigation, and made sail- and oarpowered keelboats all but obsolete on the main arteries of the West. Flatboats, however, were so cost-effective—cheap to build and mobilized gratis by the current—that they coexisted symbiotically with steamboats for nearly half a century, as depicted in this detail of *Bound Down the River* by Currier & Ives (1870). Courtesy Library of Congress.

he political Americanization of Louisiana commenced as the ink dried on the Louisiana Purchase in 1803. Demographic, cultural and economic integration into the United States, however, did not gain momentum until the 1810s, in large part because of a technological resolution to an age-old problem: contra-current navigation.

Shipping downriver in the 18th century was no easy task; treacherous cross-currents, sand bars, subsurface logs, and withering exposure made a trip from Pittsburgh to New Orleans grueling, risky and long. But at least fuel was not an issue: the river's flow propelled the vessel, and crewmembers need only steer. Frontiersmen navigated Western rivers in this era with a lineage of vernacular water craft ranging from the indigenous-inspired birch-bark or bison-skin canoe, to the sturdier wooden pirogue or dugout canoe, to a "skiff" (a pirogue with a hull widened with boards), to a bateau (a skiff with tapered ends), to a "raft" of strapped-together logs, and finally to a "flatboat" — a raft with walls and a cabin. Flatboats, which came to dominate downriver traffic from the late 1700s to the 1850s, were as varied in construction as they were in nomenclature. Some called them "flat-bottomed boats," "barges" (a term also applied to skiffs and rafts), or "boxes;" others dubbed them by their origin or destination ("Kentucky boats," "New Orleans boats") or their cargo ("tobacco boats," "cattle boats"). The French called them voitures (carts, carriages) or chalans (rafts). Most famously, flatboats were called "broad horns" for the long oars or "sweeps" protruding on each side.

After docking at New Orleans, a flatboat crew sold the cargo, dismantled the now-useless craft, and sold off the scrap wood. Flatboat lumber was often purchased by the city to cover the wharf, build docks, construct *banquettes* (raised wooden sidewalks), or for other municipal purposes. Massive gunwales might also see a second life as structural beams, while floor boards often became walls for the city's thousands of wooden cottages, and smaller planks ended up in the ubiquitous picket fences lining the muddy streets of outlying faubourgs.

The problem for the river men now was how to return upriver, against the current. Getting from New Orleans to Natchez usually entailed a vessel called a "keelboat," a large canoe-like craft with multiple oarsmen, a sail and towlines. With great effort and a specialized design, keelboats were capable of navigating against the weaker currents of the lower river - but barely. Fifteen miles a day was considered a fair clip for an upriver-bound keelboat, and every passing mile grew more challenging, as the gradient steepened and current strengthened. Keelboats needed larger and more skilled crew than flatboats and, with less carrying capacity and longer voyages, charged much higher fees. Usually a keelboat passenger boarding in New Orleans made it no farther than Natchez, above which the river's inclination steepened and its velocity accelerated. From that southwestern outpost back up to the Ohio Valley, travelers usually journeyed overland by foot or on horseback from inn to inn along wilderness roads like the Natchez Trace.

Entrepreneurs competed to develop a better contra-current solution. Some tried to utilize the wind, but sailing ships struggled to make it so far as Nat-

## "THE IDEA IS AN ABSURD ONE:"

## STEAMING AGAINST THE CURRENT TWO CENTURIES AGO

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chez, as sharp meanders reversed wind directions, narrow river widths precluded tacking, and shallow banks endangered deep-draft hulls. Others rigged keelboats with horses, tethering the unfortunate beasts to poles geared to paddles or trotting them awkwardly on deck-based treadmills.

The solution to the upriver problem emerged from the increasingly successful British and American efforts of the late 18th century to harness the pressure released by boiling water. Mechanics competed to adapt steam engine technology to watercraft, with some of the most promising work coming out of Philadelphia. In 1786, John Fitch attached a three-inch-cylinder steam engine to a side-mounted screw and successfully propelled a large skiff on the Delaware River. Another prototype utilized what might be described as mechanical oarsmen to move the vessel. Other inventors demonstrated a subsequent model to the framers of the Constitution as they convened in 1787 - a noteworthy historical moment if ever there was one. Further experimentation led to better designs and new models during the 1790s. Meanwhile, terrestrially based steam engines, promising to outwork man and beast in everything from the sawing of logs to the spinning of cotton, diffused rapidly from Philadelphia workshops to the southwestern



One of the best illustrations of flatboats moored at New Orleans dates from 1828 and shows not the main uptown flatboat wharf, which ran along present-day South Peters Street, but rather the smaller downtown station around Conti Street (note St. Louis Church in extreme left). Sketched by Captain Basil Hall using a camera lucida, this drawing may be the closest thing we have to a photograph of the antebellum flatboat wharves. Courtesy Louisiana State Museum.



George Caleb Bingham's The Jolly Flatboatmen (1846) captures how most Americans came to perceive Mississippi boatmen. Flatboats were commonly called "broad horns," for the two long oars ("sweeps") protruding from the sides, as depicted in Bingham's painting. Courtesy Library of Congress.

frontier. By one account, Captain James McKeever and M. Louis Valcour were the first to introduce the emerging technology to the Mississippi River in 1803, building a steamboat for service between New Orleans and Natchez. But the craft ran into shallow water, and the men ran out of capital before the concept could be demonstrated. It soon became clear that existing craft designs could not be simply retrofitted with steam engines; they had to be redesigned entirely with broad, flat bottoms to minimize draft and maximize carrying capacity.

What also became clear was that lucrative business opportunities awaited whomever came up with an optimal design and monopolized legal rights to serve the busiest waterways. Pennsylvania-born inventor Robert Fulton brought to bear the design skills, improving both engine and craft in the U.S. and France during the 1790s-1800s. While in Paris, Fulton befriended the American diplomat and steam-engine investor Robert R. Livingston, who provided the legal prowess and financial wherewithal. Together Fulton and Livingston obtained patents and secured exclusive legal rights for steam shipping on key waterways. While most jurisdictions bordering the Ohio and Mississippi rivers resisted granting steamboat monopolies, Louisiana - the most important because it received the most traffic agreed to the arrangement. Fulton and Livingston's Ohio Steam Boat Company then contracted Nicholas J. Roosevelt to conduct research on river hydrology and assist in vessel design. Working the banks of Pittsburgh's Monongahela River, the company brought in a team of New York mechanics to construct a 116-by-20-foot vessel with a 34-inch cylinder and boiler driving a stern-wheel, with sails to assist when the winds blew favorably. Optimistically christened New Orleans, the craft launched in September 1811 amid great throngs seeing it off down the Ohio destined for its namesake city. "Your boat may go down the river," wrote one observer, giving voice to the skeptical crowd, "but as to coming up, the idea is an absurd one." Perhaps wary that the contraption might just perform as promised, "[t]he keel-boat men crowded around the strange visitor and shook their head[s]."

The maiden voyage of the *New Orleans* proved extraordinary. That autumn saw a spectacular astronomical event, the Great Comet of 1811, which passengers witnessed nightly; at one point they feared that it might plunge nearby. River levels at the Great Falls of the Ohio — the navigation obstacle whose circumventing portage led to the foundation of Louisville — flowed too low to allow passage. The *New Orleans* had to return upriver, but took advantage of the delay by demonstrating to onlookers its ability to navigate against the current. When water levels finally rose, the *New Orleans* gingerly made its way over the falls and proceeded downriver.

Soon after, a fire broke out on board. Then, while anchored below Louisville, the passengers felt an odd shock wave. They later discovered, upon reaching Missouri, that what came to be recognized as the most powerful earthquake ever recorded in North America had altered the channel of the Mississippi and brought devastation to the river town of New Madrid. There, according to passengers, "terrorstricken people begged to be taken on board, while others, dreading the steamboat more than the earthquake, hid themselves as she approached." Tremors felt as far away as New Orleans continued for weeks. Continuing downriver, the vessel next contended with "shoals, snags and sawyers" (floating subsurface timbers which sometimes bobbed into hulls) which had become mobilized by the quake. Passengers pondered if the coinciding celestial and tectonic oddities bore any spiritual significance. In fact, the newfangled conveyance beneath their feet would prove far more historically significant.

The remainder of the trip went smoothly, and on Friday evening, January 10, 1812, the steamboat New Orleans docked at its namesake city. Travel time, excluding numerous stops, totaled 259 hours. "She is intended as a regular trader between [here] and Natchez," explained the Louisiana Gazette, "and will, it is generally believed, meet the most sanguine expectations of [Fulton and Livingston's] company." Another demonstration occurred a week later when the *New Orleans* "left [here] at 11 o'clock, went five leagues down, and returned at 4 o'clock," proving to skeptical bankers and investors its capabilities. Ever the entrepreneurs, the operators ran excursions to English Turn for the hefty price of two to three dollars per passenger, and commenced freight and passenger service to Natchez a few days later. The *New Orleans* served for three years until a snag pierced its hull and sunk it. By then, the technology had proven its worth.

Subsequent years saw new steamboats demonstrate increasing capacity, speed and power, promising to transform dramatically traditional river travel. Captain Henry Shreve's record 25-day journey of the 400-ton Washington, from New Orleans all the way to Louisville in 1817, convinced the last skeptics that the power of steam had finally solved the upriver problem.

After a few years of resolving technological, logistical and legal barriers (namely the monopoly granted to Fulton and Livingston, overruled by the Supreme Court in 1824), steamboats proceeded to revolutionize western river travel and communities. Increased competition meant larger numbers of bigger and better craft charging lower rates for swifter service. A decade after the maiden voyage of the New Orleans, 73 steamboats averaging 200 tons apiece plied western rivers. Roughly a dozen new vessels joined the western fleet annually until the end of the Fulton-Livingston monopoly, after which two to three dozen were built each year. Twenty years after the New Orleans, 183 steamboats traveled Western rivers; that number would more than triple by the 40th anniversary, when New Orleans alone tallied 3,566 steamboat arrivals in a year - a pace of one every 147 minutes round-the-clock. Steam technology also aided ocean-going shipping arriving to New Orleans, as brigs and schooners once dependent entirely on wind now added steam-driven side wheels to their power supply. They benefited additionally from the new steam-powered towboats (tugs) that could rescue them from sand bars at the mouth of the river or guide them into their narrow berths along the crowded riverfront.

Steamboats on the Mississippi River would accelerate Western expansion and play a major role in integrating Louisiana and New Orleans into the Union. They would also foster the development of a cotton-based plantation economy, breathe new life and impart codified rigidity into the institution of slavery, and help send the South down a path of agrarianism against the North's increasing industrialization, all of which would eventually lead to a disintegration of that Union — with violent consequences. Optimistic Westerners during the halcyon of the 1810s, however, foresaw little of this, and would come to view "the year 1811 [as] the *annus mirabilis* of the West."

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