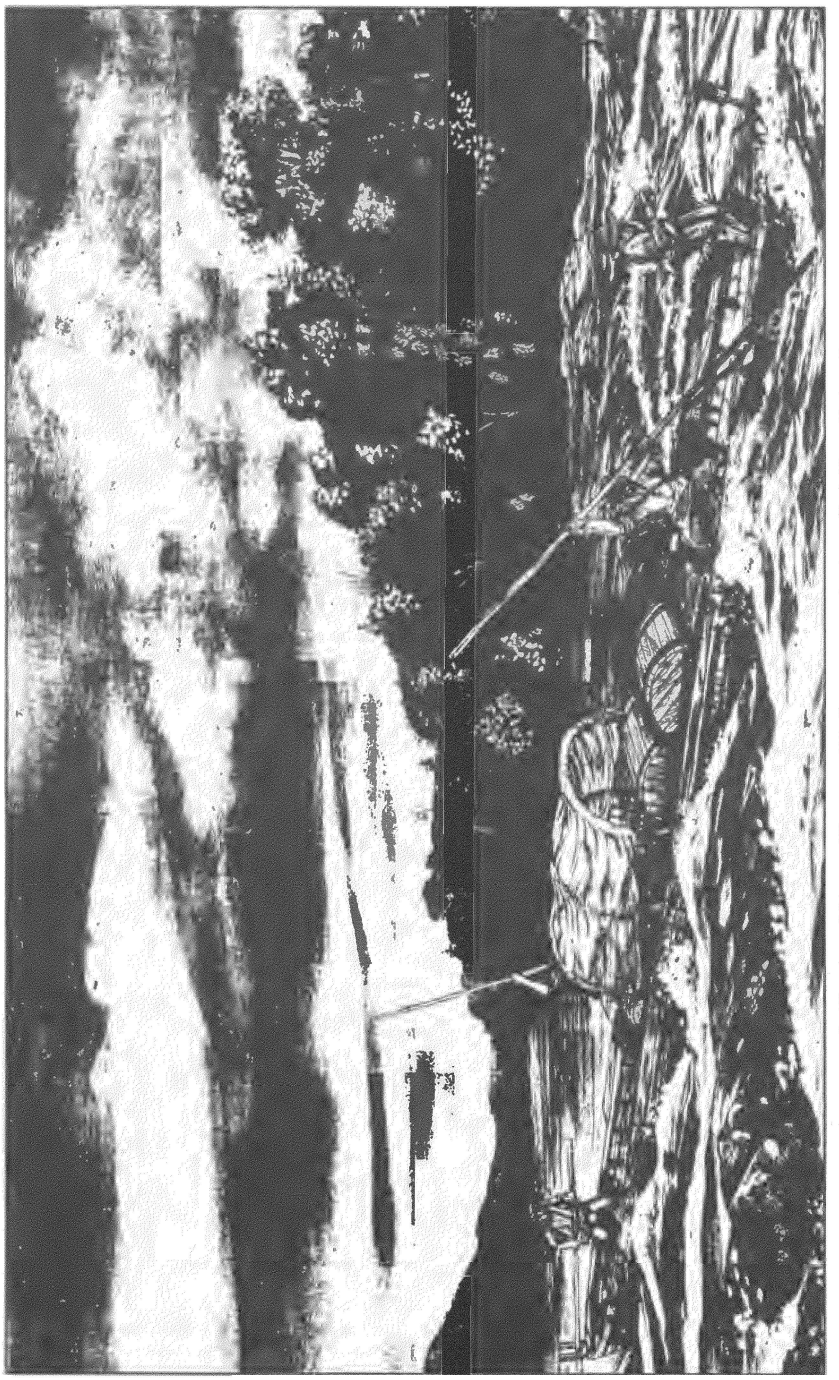


A James River Batteau, from a painting by Jon Roark.
(Copied from A Guide to Historic Salem, *vol. 3, no. 2 (Summer 1997)*

Batteaux* on Virginia's Rivers

Dan Crawford

Dan Crawford is the lead interpreter of the batteau site at Virginia's Explore Park, off the Blue Ridge Parkway in Roanoke County. He has 25 years of experience on and around salt water, including working on museum square-rigged ships; he notes that many sailing ships filled their holds with the cargo of such inland watercraft as canal boats and James River batteaux.

In the spring of 1771 Virginia suffered her greatest known natural disaster, "The Great Freshet of 1771." It rained on ten consecutive days, at times torrentially, and parts of the James River basin were swept by 25 feet of water.[1] Nearly all of the boats the tobacco planters depended upon for hauling their goods to Richmond were swept away.

At that time, the most widely used boat type for this trade was actually a combination of two boats, called the Rose tobacco canoe. Two large dugout canoes, 50 to 60 feet long, were fitted with cross-beams, using lashings and pins, thus making a twin-hulled craft that could carry up to ten hogsheads of tobacco. After delivery, the canoes could be separated for the return upstream. Three to five men could handle the down-river trip, and two men to a canoe could handily pole and/or paddle a canoe on the return. This scheme was introduced sometime between 1748 and 1750 by two tobacco planters in Albemarle County, the Rev. Robert Rose and his neighbor, a Mr. Ripley. The system was subsequently widely used on the upper James and some of her tributaries.[2]

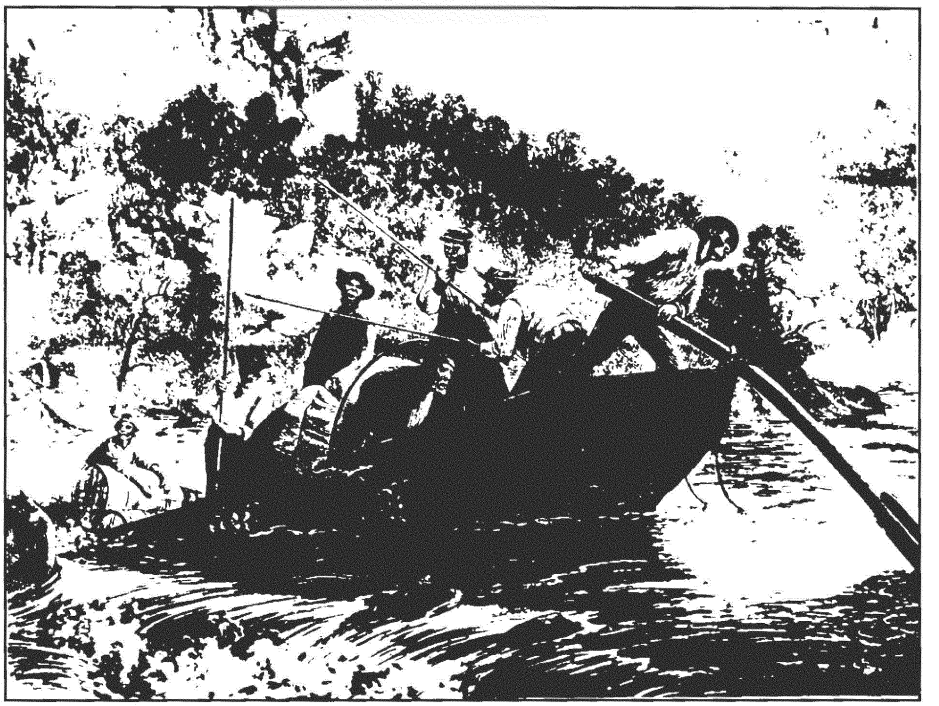
After the flood of 1771, however, the prospect of replacing the lost dugouts was unattractive to the tradesmen involved. The abundant sup-

Batteaux is spelled herein according to the custom of the Virginia Canals and Navigation Society and the operators of the James River Batteaux Festival, though the usual English spelling has only one "t".

ply of large trees along the river was long gone and, even if trees of suitable size had been conveniently available, dugouts were time-consuming and laborious to build, compared to plank boats. The conditions were ripe, therefore, for a new kind of boat, one that was destined to have a significant impact on cargo hauling from the mountains to the tidewater: a boat that could haul cargo by the tons on the rivers of the region. These were the rivers falling out of the Appalachians down through the hilly Piedmont to the fall line, rivers with lots of shoals, standing rocks, and rapids. This new boat was the James River Batteau, so named because it was developed on the James and because its greatest use was on the James, although it also plied the upper reaches of both the Roanoke and the New rivers west of the Blue Ridge, making an important contribution to commerce in that region as well.

Two tobacco planters, Anthony and Benjamin Rucker of Amherst County, introduced the boat, which was also called the "Rucker Batteau" and the "James River tobacco boat." Sometime between the late 1760s and early 1770s, the Rucker brothers had been working on a boat design that would improve on the Rose tobacco canoe.[3] Though the record seems to give the credit for this creation solely to the brothers, it is likely that at least some of the design details were the result of input by their watermen, most of whom would likely have been enslaved Africans. The first record of the new boat is found in Thomas Jefferson's account book in 1775. He purchased a batteau from Rucker and included these details: "Apr. 29. Rucker's battoe is 50. f. long. 4. f. wide in the bottom & 6. f. at the top. She carries 11. hhds & draws 13 1/2 I. water."[4] Since the Great Freshet of 1771 is recognized as seminal to the introduction of the new boat type, it is likely that the first examples of the type were put in service prior to Mr. Jefferson's record.

The design was so perfect for the job that it was widely copied, and eventually it was found in use on rivers from Maryland to Georgia. Down the rivers went tons of goods, mostly raw materials like tobacco, pig iron, grains and grain products such as flour, meal, and whiskey, barrel staves, lumber, gypsum for making plaster, salt, lime, marble, "freestone," and tanbark.[5] Goods to be hauled back up the rivers were generally goods that would be measured by the pound rather than by the ton. Among the many goods mentioned as coming back up the rivers were coffee, sugar, molasses, rum, salt, shingles, fabrics not produced locally, and manufactured goods.[6]



A James River batteau runs the rapids, the men navigating using the sweep. (Courtesy Virginia State Library, as published in Harpers Weekly, *February 21, 1874)*

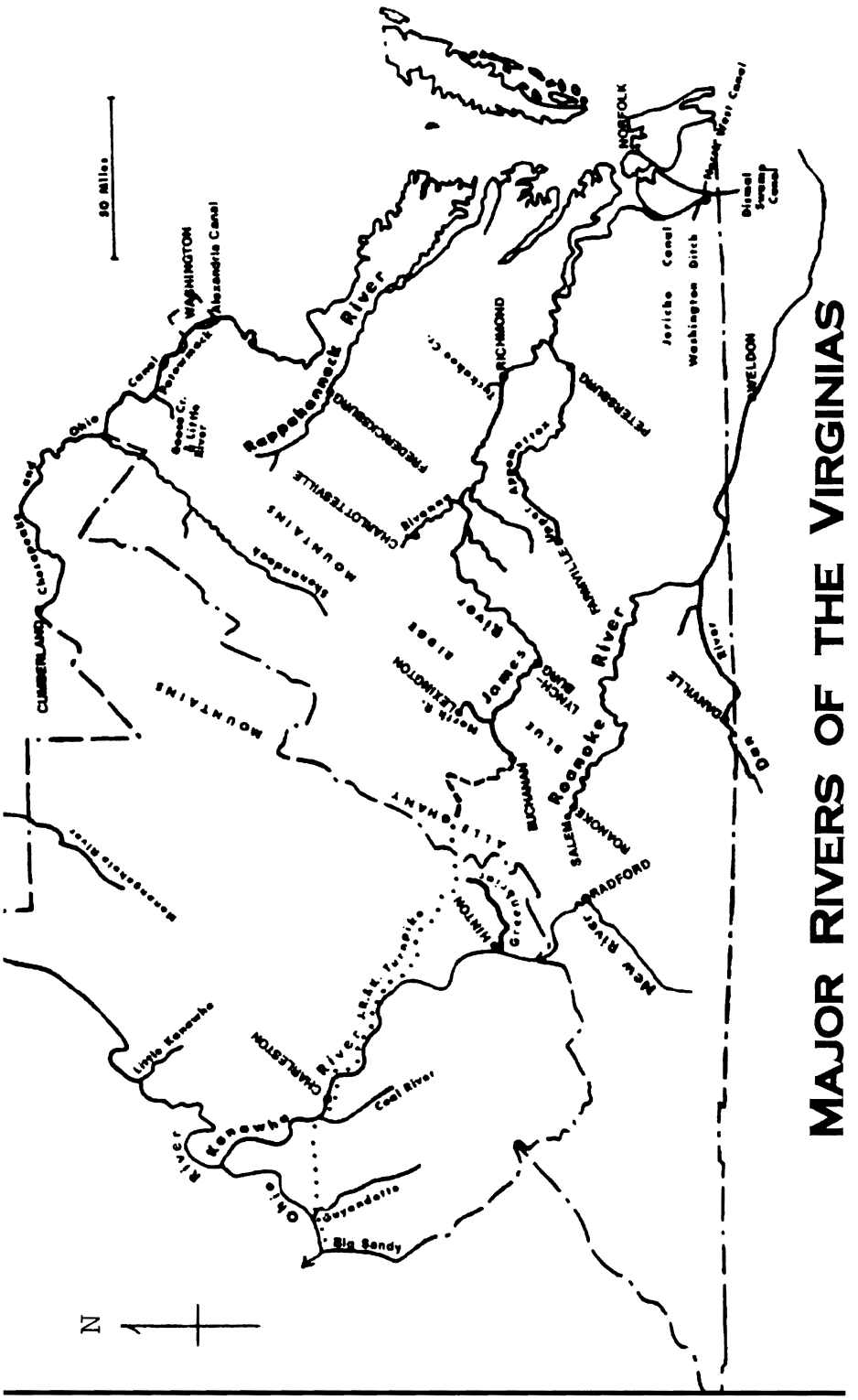
In 1821, seeing how Rucker's boat design was being copied in the thousands, the estate of Anthony Rucker secured a patent and appointed agents for the collection of royalties. One agent was appointed for the "middle, eastern and northern" states, and one for the states of South Carolina, Georgia, Kentucky, Tennessee, and Alabama. Announcements advertising these agents were run in newspapers in Richmond and Petersburg, Va.; Lexington, Ky.; Raleigh, N.C.; Columbia, S.C.; Augusta, Ga.; and Washington, D.C.[7] Such a vast area indicates that this unique design was widely copied.

The Rucker design was successful for two reasons. First, the relative size and shape and the attendant techniques used for the boat's operation were perfect for hauling tons of cargo on rock-strewn, shallow rivers. The boats ranged in length from forty to seventy-five feet, and with their flat bottom could work in water one to two feet deep; most references place

their loaded draft at between twelve and sixteen inches. A load could be as much as ten to twelve tons on the bigger boats. The heavy oak planking used for bottoms served the function of a keel or backbone and also imparted the durability needed to survive frequent contact with the rocky river bottoms. Width was limited to six to eight feet so the boat could fit through rapids and rocks. A design with identical pointed ends allowed the boat to proceed at no disadvantage if it fetched up on a rock and turned around; it didn't have to be turned back around to proceed on its way. Instead of a "hard chine," where the sides meet the bottom at a sharp angle, Rucker's design featured a fairly easy turn at the bilge, allowing the hull to survive the beating it would often take and making it more likely to ride safely over and through rocky places. The frames were made of five pieces of wood, usually oak, notched together. Hulls were carvel planked, meaning the planks were fitted edge-to-edge, not lapped. The only mention of caulking is a reference to tar being used in the seams on hulls of batteaux on the Roanoke River.[8]

There were large sweeps at each end for steering, which was not at all like swinging a single rudder at the stern; it was more like rowing both ends sideways. The boat could easily move sideways through the water as it was carried downstream by the current, an obvious asset for a boat having to go first here, then over there, picking its way down rock-strewn rivers and creeks. Walk-planks were rigged along both sides, often with beams lashed rail to rail to support them. One or two men to a side would walk the boat from under themselves as they leaned into their iron-tipped poles with pads on their shoulders, alternating sides so there was always at least one pole in contact with the bottom. There was a man at the stern sweep for upstream work, and men at both bow and stern for downstream work.[9] Mid-ship covers like those we associate with "covered wagons" were standard equipment. They were not permanent, but rigged as needed.

The second reason for this design's tremendous success was that, compared with most boat designs, it was fairly easy to copy. There were two types of hulls, tapered and non-tapered. The latter would have been the easier, since the hull planking would be straight-edged. Neither type necessitated the use of steam boxes or heavy clamps. The end pieces, called cones, were separate structures attached after completion of the hull. Boats of this design could be built by the producers' regular workmen, which was the tendency during the early years of their use. This "in


MAJOR RIVERS OF THE VIRGINIAS
50 Miles
N
Rappahannock River
James River
Roanoke River
Potomac River
New River
Kanawha River
Ohio River
Big Sandy
Coal River
Little Kanawha
Monongahela River
Shenandoah
MOUNTAINS
ALLEGHANY
WASHINGTON
Alexandria Canal
Chesapeake & Ohio Canal
Seneca Cr.
Little River
FREDERICKSBURG
CHARLOTTESVILLE
RICHMOND
PETERSBURG
Rivanna
Appomattox
FARMVILLE
LYNCHBURG
BLACKSBURG
SALEM
ROANOKE
BRISTOL
BRADFORD
WHITE SULPHUR SPRINGS
Greenbrier
CHARLESTON
Coal R.
Guyandotte
Tuscarora
Jericho Canal
Washington Ditch
NORFOLK
Dismal Swamp Canal
WELDON
Dan River

house" manufacturing trend evidently continued, though the record is light in this regard.

Owing to cultural influences and other factors, nautical nomenclature is not exact, and definitions of boat types are sometimes blurred. In French, "bateau" means boat, any boat, and the preferred English spelling of the word is "bateau," in the French style. Most Virginia batteau enthusiasts insist on spelling it with two "t's", as it was spelled by the Virginia General Assembly and by virtually all of the canal companies and batteau owners. The Virginia Canals and Navigation Society spells it "batteau", as do the operators of the annual James River Batteau Festival, and the word is spelled with two "t's" in most of the considerable recent literature that has developed about it.

In our usage of the word, a batteau is a double-ended, flat-bottomed chine-built boat. We have several different types of batteaux in our history, each design reflecting the type of service performed and the particular demands of the waterways for which it was intended. So, batteaux on the upper Mississippi, or on the rivers of Maine, or on coastal waters aren't the same as James River batteaux. It is important to remember that with boat designs, as with other tools or devices, form follows function. The James River Batteau is an excellent example of "the right tool for the job."

Because of the very abusive nature of working in rocky rivers, batteaux were generally expected to last only two or three years. Finishes were rarely used. Dirt was usually thrown into one end to accommodate a fire aboard when it was not convenient to camp ashore — not something one would generally do in a wooden boat intended for a longer life.[10]

As inland population, production, and ensuing trade grew, increasing numbers of batteaux were built professionally. There is record of a successful Maury River boat yard run by a Thomas Paxton. Paxton was reputed to be one of the best boat builders on the river, and his boat yard was "... famous for the quality and swiftness of its work. In his day the road leading from Lexington to his establishment on the river was one of the county's best known roads."[11]

A typical destination for batteaux was the fall line, where the hilly Piedmont meets the flat Tidewater region. Fall line cities on Virginia rivers are Weldon, N.C., on the Roanoke; Petersburg on the Appomattox; Richmond on the James; Fredericksburg on the Rappahannock; and Georgetown on the Potomac.

The tremendous difference between hauling goods downstream and hauling goods back upstream, against the current and up-hill at the rapids, was a source of great challenge. The crew of three that could deliver tons of goods downstream was hard-pressed to get the boat back, even when it was empty, especially as the distance from the fall line increased. Salem is 244 miles from Weldon, N.C., the fall line of the Roanoke/Staunton River. Some boats paid for themselves on a one-way trip, being sold for lumber upon reaching market. But there was a definite demand for commodities available in the fall-line cities, or along the way, and if you could get a boat back with some cargo, all the better.

There were ways to deal with crewing needs. One scheme was for two or three loaded boats, each with a typical crew of three, to work their way down the river together, possibly as a joint venture of several planters/producers or perhaps the operation of one big producer. After delivering the goods, the men would dispose of all but one boat, either selling the others or taking them apart and selling the long, wide planks as building materials. They sometimes kept the boat frames and even the end pieces, called cones, for reuse in new boats. Thus there were six or nine men available for the difficult job of poling, hauling, dragging, and generally manhandling one boat back upstream, loaded with the relatively light goods desired inland and the more difficult-to-produce parts of the batteaux that had been disposed of.[12]

To facilitate batteau traffic on Virginia rivers, some improvements to the rivers were implemented, usually by navigation companies. These companies sold shares of stock and paid dividends from tolls collected on goods using the improvements, or so the plan went. The most common improvement attempted to alleviate those situations where a shoal extended across the entire river. Wing-dams were constructed, usually by piling rocks at a diagonal to river flow, forcing enough water to one side to create a sluice through which the boats could pass. Some wing dams were constructed by building wooden crib dams filled with rock to force the water into the sluice. In addition, obstructions were blasted, channels deepened, iron rings installed in rock to facilitate hauling and/or dragging, and tow paths built along river banks for the crews.[13] When the boats had to be towed or dragged, the crew did the work; animals typically were not used.

Canals and locks were built where changes in elevation demanded them. Generally, the first canals were dug for batteaux at the fall line on

the Roanoke, Appomattox, James, Rappahannock, and Potomac rivers. Canal, lock, and dam works were constructed inland on these systems, the extent varying in the different river systems. One hundred eighty-seven batteau lock sites have been identified in Virginia.[14]

Most of these were the common pound lock type in which a chamber is fitted at both ends with gates that swing upstream and meet at an angle to create a tight seal due to water pressure. Water is let into, and out of, the chamber by sluice gates, thus raising or lowering the water level and the boat. On the Willis and the Slate rivers that flow into the James in Cumberland and Buckingham counties, flash locks were built as well. A typical flash lock involved a low crib dam at the top of a shoal, with an opening about ten feet wide that was fitted with a gate that worked like a pick-up truck tailgate. A descending boat would wait above the dam until enough water was impounded. The gate would be dropped, and down the boat would go. For ascending, the boat would wait below the shoal and be hauled up quickly on the rush of water, an effort that called for good timing, stout rope, and most likely a capstan or draft animals to provide the power. On the Willis and Slate rivers, a combined total of twenty flash lock sites have been identified.[15]

Most batteaumen were enslaved African Americans,[16] but the work was also some of the best available to freemen who gravitated to the rivers, and the river environment developed its own unique society. In it one would have seen and heard things not seen or heard elsewhere. David Hunter Strother, a prominent writer of the day, described the batteaumen, saying "... such attitudes! such costume! such character!"[17] There is no record of white overseers running boats with African-American crews. Typically an African American was in charge. He was the "headman," and would sometimes know how to read, write, and work with numbers, since he would sometimes have to transact business. The bulk of the business would have been conducted in advance between the producer and his agent or agents in the city, but details of availability and price would change regarding those goods the headman was instructed to bring back on the return trip. He would have the skill and authority to transact business when necessary.[18]

When enslaved workers were used in positions for which the owner needed a high degree of reliability, skill, and determination, a system called "overwork," or the task system, was used. The minimum required output was established by the owner, and all results in excess of this yielded a

bonus.[19] The standard expectation for a batteau was 20 miles a day. Though the record is spare on this detail, these men would have been prime candidates for such inducements.

The riverside encampments were often lively affairs, with numerous batteau crews and often passengers gathering to swap tales, pass the jug, and make music and dance. Out would come the banjoes, fiddles, bones, primitive drums, and an instrument using the lower jaw of a horse that was raked by an iron key. One writer described the music as

> wild and plaintive, occasionally mingled with strange, uncouth cadences. ... the music and manner of singing were thoroughly African, and as different from the negro music of the day as from the Italian opera.[20]

There were problems with pilferage and theft of cargo on these river voyages. Property owners along the rivers complained about raids on hen houses and gardens. In 1811 laws were enacted in Virginia to address these problems. Manifests came under stricter regulation, and punishments for transgressors were specified. The black boatmen specifically were forbidden to go

> ... above the banks of the river, or any of its branches, while on a trip up or down ... or at any place while loading.[21]

To get a sense of the magnitude and range of batteau traffic in the area, let us take a closer look at three of Virginia's river systems: the James, the Roanoke/Staunton and the New.

The James River and Its Tributaries

The James and her tributaries were by far the most significant system of the three. Colonial tobacco exports from 1761 to 1765 averaged about 80 million pounds per year. From 1771 to 1775 the average increased to about 102 million pounds. This increase could have been coincidental, but was likely influenced by the introduction of the James River batteau.[22] At this time between twenty and thirty million pounds of tobacco came from the upper James alone. Sailing vessels of up to two hundred tons could reach Richmond.[23]

In 1785 the James River Company was formed, with George Washington as its honorary president, for

> ... clearing and improving the navigation of the James River, [so that it could be] navigated in dry seasons by vessels drawing one foot of water at the highest place practicable to the Great Falls.[24]

In 1795 the James River Canal system was completed, allowing the loaded boats to get over most of the fall line, right into Richmond. The system consisted of two canals beginning six and a half miles above Richmond at Westham. Boats bound for Richmond entered the first canal, which was about two hundred yards long and had three locks. They then re-entered the river and continued for three and a half miles. The second canal, three and a half miles long, carried them into Richmond.[25] These canals are recognized as the first operating canal system in the United States.

In 1804, 78,687 bushels of wheat and 50,732 barrels of flour were shipped by batteaux to Richmond. A batteau could carry 500 to 600 bushels of wheat or 75 to 100 barrels of flour. Norfolk had become the center of grain trade with the West Indies. In this same year, 13,881 hogsheads, or approximately 9,717 tons, of tobacco arrived in Richmond by batteaux.[26] By 1830, five hundred batteaux were working on the James between Lynchburg and Richmond.[27]

The James courses through the Blue Ridge Mountains at a place called Balcony Falls. Here, the river falls two hundred feet in just four miles, creating a formidable obstacle to trade. The agricultural goods of the region west of the Blue Ridge, and iron from the iron-rich area that extends as far west as Iron Gate, were denied convenient access to market by this violent stretch of river. Steersmen who could take a boat through the falls were much in demand, and boats passing through had to carry a lighter load than those continuing on down the river. In 1828 the Blue Ridge Canal was completed to address this hindrance to trade: a seven-mile long system of canals, dams, and slack water navigation that partially alleviated the problem, but the stretch was still dangerous during periods of high water.[28]

On January 21, 1854, Balcony Falls was the scene of a famous act of self-sacrificing heroism. The weather was nasty, and worsening. The canal boat *Clinton*, working her way upstream with 45 to 50 men aboard and almost clear of this treacherous stretch of water, parted her towline. She was swept back into the perilous waters of Balcony Falls, putting the lives of all aboard in great danger. The African-American batteau headman, Frank Padget, stepped up to head the rescue effort and was recog-

nized as the best hope for all involved. With several men assisting, he made two successful rescue trips into the raging river. On the third trip, however, the boat foundered; Padget and a man he had gone to rescue lost their lives.

Padget's heroism was witnessed by many from the bank, including Captain Edward Echols, a canal boat captain. He was so moved by what he had witnessed that he erected a monument to Frank Padget at the scene, a spot not legally accessible to the public now. In 1975 a new monument was erected at the original site, bearing the same inscription as the original. In 1997 the original monument was moved to Glasgow to be placed in a newly created Frank Padget Memorial Park at the mouth of the Maury River, where the *Clinton* disaster began. Though heavily weathered, the awkwardly phrased inscription can still be read:

> In memory of Frank Padget a colored slave, who, during a freshet in James River, in January 1854 ventured and lost his life, by drowning, in the noble effort to save some of his fellow creatures who, in the midst of the flood, from death.[29]

The Roanoke/Staunton Rivers

The Roanoke suffered a big disadvantage in comparison to the other Virginia rivers because it flows into Albemarle Sound, where there have never been any deep-water ports. Begun in 1793 with slave labor, the Dismal Swamp Canal eventually connected Albemarle Sound with Norfolk, but it was not completed until 1805 because of the extreme difficulty of digging through a swamp. Once the canal was operable, southeast Virginia and northern North Carolina had access to a deep-water port.[30] In 1814 the canal was deep enough for a twenty-ton decked boat (most likely a steamboat) to arrive in Norfolk with a load of brandy and bacon from Scotland Neck on the Roanoke.[31] By 1826 the Dismal Swamp Canal had been enlarged as a shoal-draft ship canal.[32]

Landowners along the Roanoke/Staunton and Dan rivers no doubt were well aware of the tremendous stimulus to trade generated by developments on the James. In December of 1815, promoters of Roanoke River improvements shipped a barrel of flour, presumably by batteau, from Green Hill, Virginia (about ten miles east-southeast of Altavista), to Norfolk. Shortly after this demonstration of the feasibility of river transport, the Roanoke Navigation Company was formed as a joint enterprise of Vir-

ginia and North Carolina. The sale of stock raised $300,000; the state of Virginia bought $80,000 of it.[33]

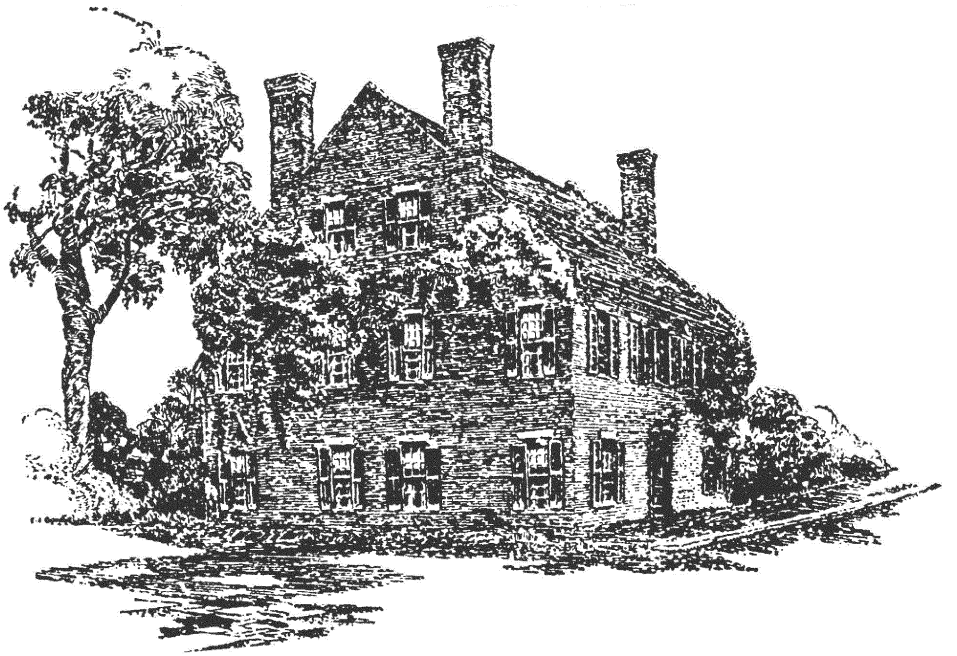
With Salem, Virginia, as the western terminus of the planned navigation system, visions of prosperity and growth prompted a minor boom there in the 1815-1819 period. William Bowyer and William Ross built a three-story brick warehouse to be the regional headquarters of the Roanoke Navigation Company. There were even visions of connecting the Roanoke with the New River further to the west. A Prestonville Company was chartered in 1817 with the objective of establishing an agricultural community to ship tons of tobacco and wheat down an improved Tinker Creek for transshipment down the Roanoke River. "Prestonville" was laid out along the creek near where U.S. Highway 460 now crosses it in the present city of Roanoke. Neither the town nor the Tinker Creek improvements ever materialized, however.[34]

The Roanoke Canal was completed in 1823. This was a nine-mile system that included four locks and brought the batteaux into the fall-line city of Weldon, North Carolina. By 1828, an aqueduct 110 feet long (which can still be seen today) had been added to the Roanoke Canal and the system was at its maximum. The hundred miles from Weldon to the Albemarle had been prepared for steamboats. The upper Roanoke, with two locks, was navigable by batteaux for sixty miles to its forks, the Dan and the Staunton. The Dan, with four locks at Danville, was navigable 110 miles to the mouth of the Mayodan River at Madison, N.C. The Staunton/Roanoke was navigable for 177 miles to Salem.[35]

In 1828, Samuel Pannil, the Roanoke Navigation Company's superintendent of works, reported that its employees

> reached Salem on the 11th of last month, with three boats, one of them being 62 feet long and 8 feet and 2 inches wide, and by driving staples, fastened them to Mr. Charles Johnson's mill dam, at that place. ... There is now tolerable good and safe navigation to and from Salem, and this important object has been effected to the great benefit, joy and gratification of the people in that region of the country.[36]

Improvements to the upper Roanoke/Staunton River in the Salem area continued for several more years with clearing of channels and building of towing walls and wing dams. In 1984, Dr. W. E. Trout III of Richmond, the leading authority on the James River batteau, reported finding in the Salem area several rock ledges of the kind used in sluice navigation.



The Navigation Company's headquarters, at Union and Main, Salem, Virginia. Main Street is on the right. The building was torn down in 1930. (*from* Virginia Beautiful *by Wallace Nutting [New York: Bonanza Books, 1930], p. 160*)

He described one such ledge in Roanoke (at Station 555, a location defined in Corps of Engineers planning documents) as

> ... the clearest example of a batteau sluice, and proof that organized navigation improvements were indeed carried out all the way up to Salem.[37]

Heavy batteau traffic out of Salem never materialized. Of one batteau that had ascended the river, historian Raymond Barnes reported: "Salem residents witnessed the batteau rot on the flats along the river." Navigation improvements were not maintained above Brookneal after 1837.[38] The Roanoke Navigation Company managed to continue functioning until about 1859, when competition from railroads and other problems crippled its operations; its property was sold at auction in 1882. The three-story Bowyer-Ross building, having survived from before 1819, was described in 1930 in a book on Virginia beauty spots as a rare "gable ender."

It was torn down that same year, and a car wash occupies the site today.

For at least two decades after reaching peak development in 1828, the Roanoke River enjoyed activity in its maximal state, except for that portion between Brookneal and Salem, which was not kept up after 1837.[39] There was not necessarily a cessation of traffic, however. To date, we have no record of tonnage shipped out of the Roanoke Valley. The westernmost find of a batteau on the Staunton/Roanoke was in Altavista in 1999, when Dr. Trout discovered a 33-foot batteau section of frames and planking. This section, fastened with cut nails, meaning that it was built after 1840, was placed in the Altavista Booker Building for preservation.

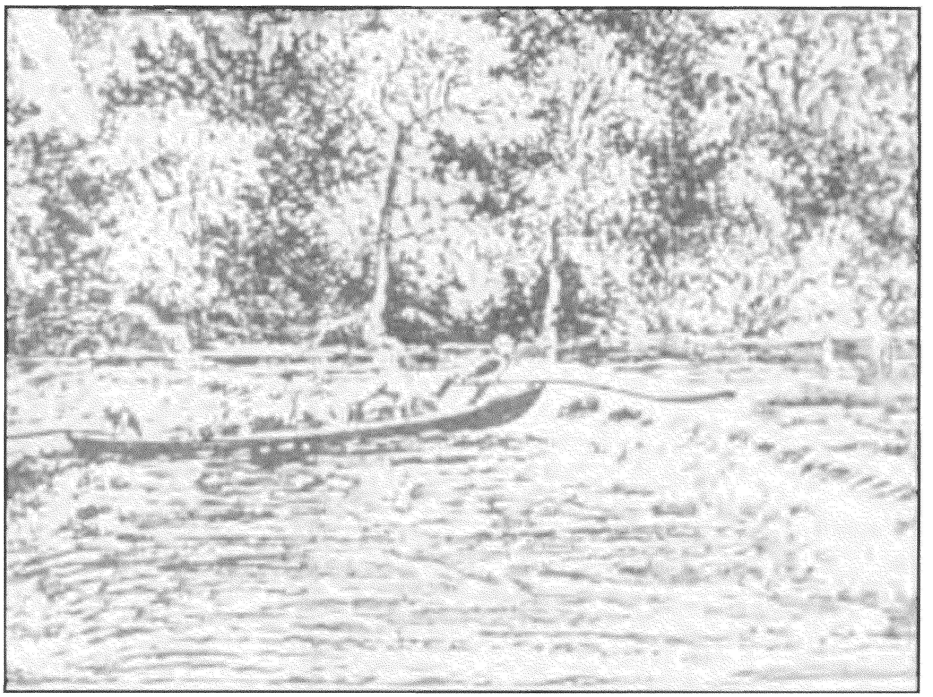
In 1829, the North Carolina Transportation Company bought the steamer *Petersburg* to tow barges from Weldon, and ports on the sound, to Elizabeth City. The company's sailboats *Chowan* and *Mehrrin* then carried the goods through the newly-enlarged Dismal Swamp Canal to Norfolk.[40]

In 1835, 6,877 hogsheads of tobacco, 10,646 barrels of flour, and a multitude of other articles of commerce passed through the Roanoke Canal.[41] As so often happens, a new technology can replace an older one and at the same time stimulate it, depending on circumstances. In 1833 the Petersburg Railroad reached Weldon and likely stimulated trade on the Roanoke River and Canal by offering competitive rates for goods on their way to a deep-water port.[42]

Batteaux probably used the Roanoke and its tributaries well into the late nineteenth century.[43]

The New River

James River batteaux were used on the New River, a northwesterly flowing river that constitutes part of the Ohio/Mississippi River system, from 1819 to 1936.[44] Most of the batteau traffic on the New occurred after the coming of rail to the area, the first railroad being the Virginia & Tennessee that connected Lynchburg with Bristol in 1856. The batteaux primarily served the railroad trade, delivering goods downstream for transshipment, and returning upstream with goods having been brought in by rail. The deepwater coastal ports important to trade on other Virginia rivers were not a factor in traffic on the New River.



A batteau at the falls on New River at McCoy, Virginia, drawn in 1872. (From M.L. Sheppard, Picturesque America, *p. 6)*

The many descriptions of batteaux (also called keel boats) on the New River include details of construction and relative size and shape that make them true James River batteaux. Virtually all references to batteaumen on the New River indicate that they too were mostly African Americans, with a few references to mixed-race crews.

The first recorded improvements on the New were accomplished by the state of Virginia in 1860-61. With appropriations totaling $30,000, the stretch of river from Central Depot (now Radford) to the mouth of the Greenbrier River was improved for military purposes "under urgent necessity."[45] In 1876 the U.S. Congress appropriated $15,000 for further New River improvements. Work began in 1877 and proceeded until 1886; total appropriations reached $112,000.[46]

There was never an attempt to create continuous improved navigation on the New. The U.S. Corps of Engineers created three New River divisions. The Lower, or Greenbrier, Division extended upstream from Hinton, West Virginia, where the C&O railroad crossed in 1872, to Wiley's Shoals, just downstream from Narrows, Va., a distance of about twenty-

six miles. The Middle Division extended about thirty miles upstream from Central Depot (now Radford) in Virginia, or New River Bridge, to Pine Creek, in the vicinity of Allisonia, Va. The Upper Division, or Lead Mines Division, extended about eight miles upstream from the Lead Mines, which are about six miles upstream from Foster's Falls. When the last work of this upper division was completed in 1889, an unexpended balance of several thousand dollars was returned to the U.S. Treasury, it being determined that further work would be inexpedient. This division was not very successful,[47] though there was some traffic of limited volume, and dependent on appropriate water level.

The Lower, or Greenbrier, Division saw the greatest volume of batteau traffic. It was regular, continuous and year-round, except when the river was frozen or in flood.[48] At one time, five barrel-stave mills owned by A. Knabb & Company shipped a total of forty thousand staves a day by batteaux to Hinton. For about forty-five years, an annual average of 7 to 10 million feet of timber were shipped from as far as Narrows down to Hinton. "Millions of pounds" of tobacco, loaded at the mouth of East River, were shipped to Hinton. In 1880, 1,250 tons of wheat, 104 tons of corn, and 400 tons of leaf tobacco were shipped out of Hinton by rail, practically all of it having been delivered by batteaux.[49] In 1882, immediately following a period of extreme drought, 530 tons of "merchandise," 300 tons of "sundries," 300 tons of corn, 190 tons of flour, and 100 tons of hay were shipped into Hinton by rail. Most of these goods were then shipped up the New River to valley destinations.[50] One batteau was hauling staves and sand to Hinton and returning with "butter, eggs, potatoes, or anything that anybody wanted to send up there."[51] In 1912, twelve batteaux were working the New River between Glen Lyn, Va., and Hinton.[52]

The Middle, or New River, Bridge, Division connected the iron works around Allisonia with Central Depot. Numerous small furnaces twenty-five to thirty miles upstream shipped pig iron by batteaux down to Central Depot to be loaded onto trains.[53] The boats returned with those market goods available in Central Depot. Though iron comprised most of the traffic in this division, other goods were shipped. A laborer for the Norfolk and Western Railway told of loading ties from 1919 to 1923 which had come down by batteaux almost every day during the summer season. The boats carried around 50 ties each, with each tie weighing between 200 and 250 pounds.[54] Another batteau hauled white pine shingles down

to Central Depot, returning with the usual goods for iron workers and others along the river.

Prior to the rail line that connected Central Depot to Glen Lyn in 1883, and along with the traffic already mentioned, there was passenger traffic all along the New River from Allisonia to Hinton. Traffic along the unimproved section between Central Depot and Glen Lyn continued for about fifteen years after the rail line was completed.[55] A Captain Eggleston ran a resort at Eggleston Springs and provided batteau passenger service between his place and Central Depot.[56] The batteau operations between Mercer's Salt Works and Hinton, a distance of twenty-two miles, included passengers aboard on almost every trip.[57]

In addition to those already mentioned, the variety of goods moving up and down the New River included oats, rice, molasses, sugar, coffee, salt, bacon, crated chickens, hogs, charcoal, tanbark, lumber, timber, plaster, fertilizer, and stone for railroad bridge construction.

The coming of canals, railroads, and automobile roads eventually drove the spirited batteaumen and their unique boats from our rivers, though the process took decades to unfold. The James River and Kanawha Canal was completed by 1840 from Richmond to Lynchburg and from there to Buchanan by 1851.[58] This canal sent hundreds of batteaux into retirement, but there remained certain situations in which they provided the answer to transport needs. In 1854, there were still 54 batteaux in service on this system.[59]

There is record of batteau service on the Roanoke/Staunton early in the twentieth century. Goods were being hauled down to the railroad bridge at Hurts, Virginia (just across the river from Altavista), to be hoisted aboard freight cars with block and tackle.[60]

As mentioned earlier, rail stimulated batteau traffic on the New, which had the more recent batteau service. The latest year cited for batteau traffic on the New River was 1936, and there are numerous references to traffic into the 1920s. The remoteness and challenging geography of the area slowed the coming of roads that could accommodate truck traffic, or cars for that matter, and extended the usefulness of the remaining batteaux. Eventually these too passed into obscurity, leaving us only rough sketches and general descriptions of this important piece of our transport history.

In 1983, during a construction project in downtown Richmond at the site of the former James River and Kanawha Canal's Great Basin, about sixty boats were discovered, as had been predicted by the Virginia

Canals and Navigation Society and the Archaeological Society of Virginia, which had negotiated for time to excavate, measure, and photograph the finds. With limited time and resources, dedicated volunteers were able to salvage and work on five James River batteaux. The construction details gleaned from this effort make it possible to build accurate reproductions, and there are now around two dozen batteau reproductions in Virginia. Every year in mid-June, fifteen to twenty of these boats gather in Lynchburg for the James River Batteau Festival and spend a week floating down to Maiden's Adventure, about thirty miles above Richmond.

Endnotes

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8. Ibid., p. 66.
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11. Ibid., p. 65.
12. Ibid., p. 121.
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49. Ibid., pp. 91-92.
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52. Ibid., p. 92.
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