

Pedal, Paddle and Hike

By Trent Carbaugh

Tonoloway Creek Aqueduct and Environs

Mile 122.50 to 122.59, Hancock, Maryland

I can unabashedly say that Tonoloway Creek Aqueduct is one of my favorite structures on the C&O Canal. It's odd, which always gets my attention, and it had problems early in its working life. The problems and their solutions are a testament to the skill of the engineers and builders that solved these potentially catastrophic problems.

The aqueduct is in a well kept short section of the C&O Canal and is just on the downriver side of the town of Hancock, Maryland. There are a series of interesting structures in this short area of the canal as well as a restored 18th century house, the Bowles House, which is an occasional National Park Service visitor center.

Tonoloway Creek Aqueduct (also known as Great Tonoloway or Bowles Aqueduct) is unique in being the only asymmetrically arched aqueduct on the canal. This was done due to the difficulty of the steep rocky terrain at the mouth of Tonoloway Creek. The creek narrows between two red shale, siltstone, and sandstone bluffs just before entering the Potomac. The downstream side is higher than the upstream bluff. Robert Brown was the contractor who built the aqueduct and completed work in the summer of 1839. Originally a timber waste weir was built into the downstream side of the aqueduct stonework to allow water to be drained into the Tonoloway Creek as well as adding a measure of flood control. This weir was later replaced by a concrete weir structure.

Due to structural issues with this aqueduct, it was modified within a few years of its construction. Because of the uneven load on the arch and the qualities of the stone available for building, compression fracturing was an issue. Compression fracturing in stonework occurs when the cut stone is not



Above – Tonoloway Aqueduct from the Potomac

Below – View from the upstream side of the aqueduct

All photos by Trent Carbaugh



Above – Some of the intricate structural steel support structure under the aqueduct's single arch

Below – The wooden walkway across the aqueduct that approximates the early repair



strong enough to take the weight of the stone above it. Part of the problem was uneven loading due to the non-symmetrical arch; one side had to handle more of the weight distribution than the other. On a symmetrical arch, pressure is evenly distributed downward onto a pier or end wall, in effect making the arch stronger than its constituent parts. To alleviate this problem, some stone was removed on both the towpath side and the berm side to lighten the load on the arch. The stone was replaced with a timber wall on both sides to retain water and a wooden walkway was added on top of the river side wall to serve as the towpath. Concrete was used as an early repair to the aqueduct's prism's floor to add strength.

Structural issues still plague this unique aqueduct. The National Park Service installed extensive steel bracing in 1979-80, with timber used as padding. This support structure in its complexity is almost as impressive as the original stonework of the aqueduct.

Just downstream from the aqueduct, at Mile 122.59, is Lock 52. This lock was built by contractor William Storey in the fall of 1838. The lock and its bypass flume, built of limestone, are in good shape and a limestone wall connects the lock to the aqueduct on the towpath side. From the modern

walkway on top of the lock you can get a good idea of how everything worked. From this same vantage you can clearly see the drop in elevation from Lock 52 to Lock 51. On the river side of the towpath, there are remains of a stone structure that may have been a small store that operated from 1865.

The Bowles House, Mile 122.85, circa 1780, is a stately colonial brick house that has been restored and occasionally serves as a seasonal visitor center. It is known for the rocking chairs on the porch. Originally a one story house built on a parcel of land known as "Sarah's Fancy" deeded to the Yates family by Lord Baltimore in 1775, the parcel was sold to the Bowles family in 1875.

Lock 51, at Mile 122.96, was also built by William Storey in the fall of 1838. On the river side of the lock are the remains of the one and a half story lock keepers house. The 18 by 30 foot limestone and red shale stone lock house had a stone foundation on a full basement. The wooden floors and support beams and roof no longer exist, but the central chimney with two opposing fireplaces remains.

If you have a good imagination and squint a bit, it's easy to imagine the canal operating in its heyday anywhere along this section: Lock keeper Rowland manning the locks,



Above – A waste weir is built into the aqueduct structure on the berm side

Below – Some of the original wrought iron railing can be observed on both ends of the aqueduct



Above – A fine view of the Potomac River is visible from the aqueduct walkway

Below – The view of the canal prism looking upstream from Lock 51 towards the TonoLOWay Aqueduct



children running around, mules braying, and the canal boats making their stately passage on the water.

A little more than a mile to the west is the Town of Hancock, with all of the amenities that a weary modern towpath traveler might need. Plus there is a good bike shop for repairs and rentals and a boat ramp and picnic area at Mile 124.33. The Western Maryland Rail Trail and the C&O Canal parallel each other closely in the area and a pleasant evening biking or walking loop can be done from either end.

You can start at the Bowles House parking lot or the Hancock parking lot, travel one way on the C&O and go back on the rail trail or vice versa. Along the rail trail you can see some of the remaining railroad infrastructure used to load apples from the extensive orchards which the Hancock area was once famous for.

References:

Towpath Guide to the C&O Canal, Thomas F. Hahn, 2015, Harpers Ferry Association

Historic Resource Study: Chesapeake and Ohio Canal, Harlan Unrau, 2017, National Park Service



Lock 51



The Bowles House, just across from Lock 52



Tonoloway Creek upstream from the aqueduct



Rope "burns" on the edge of Lock 52



A beaver slide on Tonoloway Creek. The entire area between the creek and Hancock is a good place to see wildlife, herons in particular like this area. One day I saw a river otter swimming under the aqueduct.



The beautiful stone work on the back basement door of the house near Locks 51 and 52. The mix of red shale and limestone blocks used to construct the house.



A view from the towpath entering the town of Hancock

Personal History

One of those things I find fascinating about history is when we find those little personal details of individual people's lives. Mr. Upton Rowland was the lock keeper of both Lock 51 and Lock 52 from 1840 to 1848. Mr. Rowland must have been proud of his job, or possibly quite bored, as his name or initials are carved on stones on the front of the house in several places.

On a stone between the door and window "Upton Rowland March 29 1843" is inscribed. "D Rowland+AD" and "Upton Rowland March 29 1843" are inscribed on other parts of the house. "R Jonathan" (left) is also inscribed on the front of the house.

An inscription "Upton Rowland+ March 29+ 1845" is below a front window (right).

A very typical styled 19th century decorative carving "D-R-1843" is shown to the right. This inscription has a decorative "X" border with chiseled stars surrounding the initials and the date. The carver used the natural light color concretion on the face of the stone to enhance the carving.

